

AREA NO.	DRAINAGE AREA "A" (ACRES)	TIME OF CONCENTRATION (IN MINUTES)	RUNOFF COEFFICIENT "C"	INTENSITY "I" (IN/HR)	DESIGN FLOW "Q" (CFS)	REMARKS
A1	0.56	10	0.70	9.8	3.84	GRASS - AREA DRAIN
A2	0.11	10	0.70	9.8	0.75	GRASS - AREA DRAIN
A3	0.17	10	0.70	9.8	1.17	GRASS - AREA DRAIN
A4	0.67	10	0.70	9.8	4.60	BUILDING - 10' CURB INLET
A5	0.54	10	0.70	9.8	3.70	BUILDING - 10' CURB INLET
A6	0.77	10	0.70	9.8	5.28	BUILDING ROOF DRAINS
A7	0.19	10	0.70	9.8	1.30	BUILDING ROOF DRAINS
A8	0.23	10	0.70	9.8	1.58	BUILDING ROOF DRAINS
A9	0.32	10	0.70	9.8	2.20	BUILDING ROOF DRAINS
A10	0.33	10	0.70	9.8	2.26	GRASS - COURT YARD
A11	0.93	10	0.70	9.8	6.38	BUILDING ROOF DRAINS
A12	0.39	10	0.70	9.8	2.68	BUILDING ROOF DRAINS
A13	0.64	10	0.70	9.8	4.39	GRASS
A14	0.27	10	0.70	9.8	1.85	GRASS
A15	0.53	10	0.70	9.8	3.64	ROOF DRAINS - NAT.
A16	2.74	10	0.70	9.8	18.80	20' INLET
A17	3.86	10	0.70	9.8	26.48	PARKING AND DETENTION POND
OS-A18	10.80	10	0.35	8.3	31.37	OFF - SITE
B1	0.21	10	0.70	9.8	1.44	EXISTING BUILDING ROOF DRAINS
B2	0.47	10	0.70	9.8	3.22	EXISTING BUILDING / COURTYARD ROOF DRAINS
B3	0.27	10	0.70	9.8	1.85	EXISTING BUILDING / COURTYARD ROOF DRAINS
B4	0.52	10	0.70	9.8	3.57	EXISTING BUILDING / COURTYARD ROOF DRAINS
B5	2.10	10	0.70	9.8	14.40	EXISTING BUILDING / COURTYARD ROOF DRAINS - 10' INLET
B6	0.23	10	0.70	9.8	1.58	EXISTING BUILDING ROOF DRAINS
B7	0.34	10	0.70	9.8	2.33	EXISTING BUILDING ROOF DRAINS
OS-B8	10.90	10	0.35	8.30	31.66	OFF-SITE
B9	0.20	10	0.70	9.8	1.37	EXISTING BUILDING ROOF DRAINS
B10	0.43	10	0.70	9.8	2.95	BUILDING ROOF DRAINS
B11	0.51	10	0.70	9.8	3.50	GRASS - DRIVE - 5' 10' INLET
B12	0.60	10	0.70	9.8	4.11	GRASS - DRIVE - 5' 10' INLET
C1	1.41	10	0.70	9.8	9.67	EXISTING STORM
C2	1.30	10	0.70	9.8	8.92	EXISTING STORM
C3	0.35	10	0.70	9.8	2.40	TO TOWNSEND DRIVE
C4	0.50	10	0.70	9.8	3.43	ROOF DRAINS - NAT. - TO STORM
C5	4.50	10	0.70	9.8	30.87	EXISTING STADIUM
D1	0.42	10	0.70	9.8	2.88	TO TOWNSEND DRIVE
D2	1.30	10	0.70	9.8	8.92	EXISTING 10' CURB INLET
D3	0.66	10	0.70	9.8	4.53	EXISTING 10' CURB INLET
D4	0.52	10	0.70	9.8	3.57	EXISTING 10' CURB INLET
D5	1.97	10	0.70	9.8	13.51	EXISTING STORM
D6	2.28	10	0.70	9.8	15.64	EXISTING STORM
D7	0.69	10	0.70	9.8	4.73	EXISTING 10' CURB INLET
D8	2.40	10	0.70	9.8	16.46	TO POND "B"
E1	1.54	10	0.70	9.8	10.56	TO POND "B"
F1	0.34	10	0.70	9.8	2.33	OFFSITE TO ELLIS ADDN.
G1	0.72	10	0.70	9.8	4.94	TO TOWNSEND BLVD

PRESENT CONDITIONS DRANAGE AREA "D8"

Q = C\*I\*A  
C = 0.35  
Tc = 10 MINUTES  
I100 = 9.8 in/hr  
Q100 = (0.35)(9.8)(2.40 ACRES) = 6.97 MAXIMUM RELEASE RATE

PROPOSED CONDITIONS "D8" & "E1" - POND "B"

\* DA D8 2.40 Ac. + DA E1 1.54 = 3.94 ACRES = 11.44 cfs COMBINED

Q = C\*I\*A  
C = 0.70 SCHOOL  
Tc = 10 MINUTES  
I100 = 9.8 in/hr  
Q100 = (0.70)(9.8)(3.94 ACRES) = 27.03

STORM DURATIONS ONSITE DEVELOPED

10 MINUTES	I = 9.8 Q = (0.70)(9.8)(3.94 ACRES) = 27.03
15 MINUTES	I = 9.0 Q = (0.70)(9.0)(3.94 ACRES) = 24.82
20 MINUTES	I = 8.3 Q = (0.70)(8.3)(3.94 ACRES) = 22.89
30 MINUTES	I = 6.9 Q = (0.70)(6.9)(3.94 ACRES) = 19.03
40 MINUTES	I = 5.8 Q = (0.70)(5.8)(3.94 ACRES) = 16.00
50 MINUTES	I = 5.0 Q = (0.70)(5.0)(3.94 ACRES) = 13.79
60 MINUTES	I = 4.5 Q = (0.70)(4.5)(3.94 ACRES) = 12.41
70 MINUTES	I = 4.0 Q = (0.70)(4.0)(3.94 ACRES) = 11.03
80 MINUTES	I = 3.7 Q = (0.70)(3.7)(3.94 ACRES) = 10.20
90 MINUTES	I = 3.5 Q = (0.70)(3.5)(3.94 ACRES) = 9.65

MAXIMUM STORM VOLUMES

10 MINUTES	INFLOW	(10 min)(27.03 cfs)(60 sec/min)	= 7,614 cf
	OUTFLOW	(0.50)(20 min)(11.44 cfs)(60 sec/min)	= 3,810 cf
			= 3,804 cf
15 MINUTES	INFLOW	(15 min)(24.82 cfs)(60 sec/min)	= 10,494 cf
	OUTFLOW	(0.50)(25 min)(11.44 cfs)(60 sec/min)	= 4,763 cf
			= 5,731 cf
20 MINUTES	INFLOW	(20 min)(22.82 cfs)(60 sec/min)	= 12,900 cf
	OUTFLOW	(0.50)(30 min)(11.44 cfs)(60 sec/min)	= 5,715 cf
			= 7,185 cf
30 MINUTES	INFLOW	(30 min)(19.03 cfs)(60 sec/min)	= 16,092 cf
	OUTFLOW	(0.50)(40 min)(11.44 cfs)(60 sec/min)	= 7,620 cf
			= 8,472 cf
* 40 MINUTES	INFLOW	(40 min)(16.00 cfs)(60 sec/min)	= 38,400 cf
	OUTFLOW	(0.50)(50 min)(11.44 cfs)(60 sec/min)	= 17,160 cf
			= 21,240 cf*
50 MINUTES	INFLOW	(50 min)(13.79 cfs)(60 sec/min)	= 41,370 cf
	OUTFLOW	(0.50)(60 min)(11.44 cfs)(60 sec/min)	= 20,592 cf
			= 20,778 cf
60 MINUTES	INFLOW	(60 min)(12.41 cfs)(60 sec/min)	= 44,676 cf
	OUTFLOW	(0.50)(70 min)(11.44 cfs)(60 sec/min)	= 24,024 cf
			= 20,652 cf

PROPOSED CONDITIONS POND "B" COMBINE "D8" AND "E1"

MAXIMUM VOLUME REQUIRED IS 21,240 CF AT THE 50 MIN. STORM DURATION

MAXIMUM VOLUME PROVIDED IS 24,557 CF AT THE 50 MIN. STORM DURATION

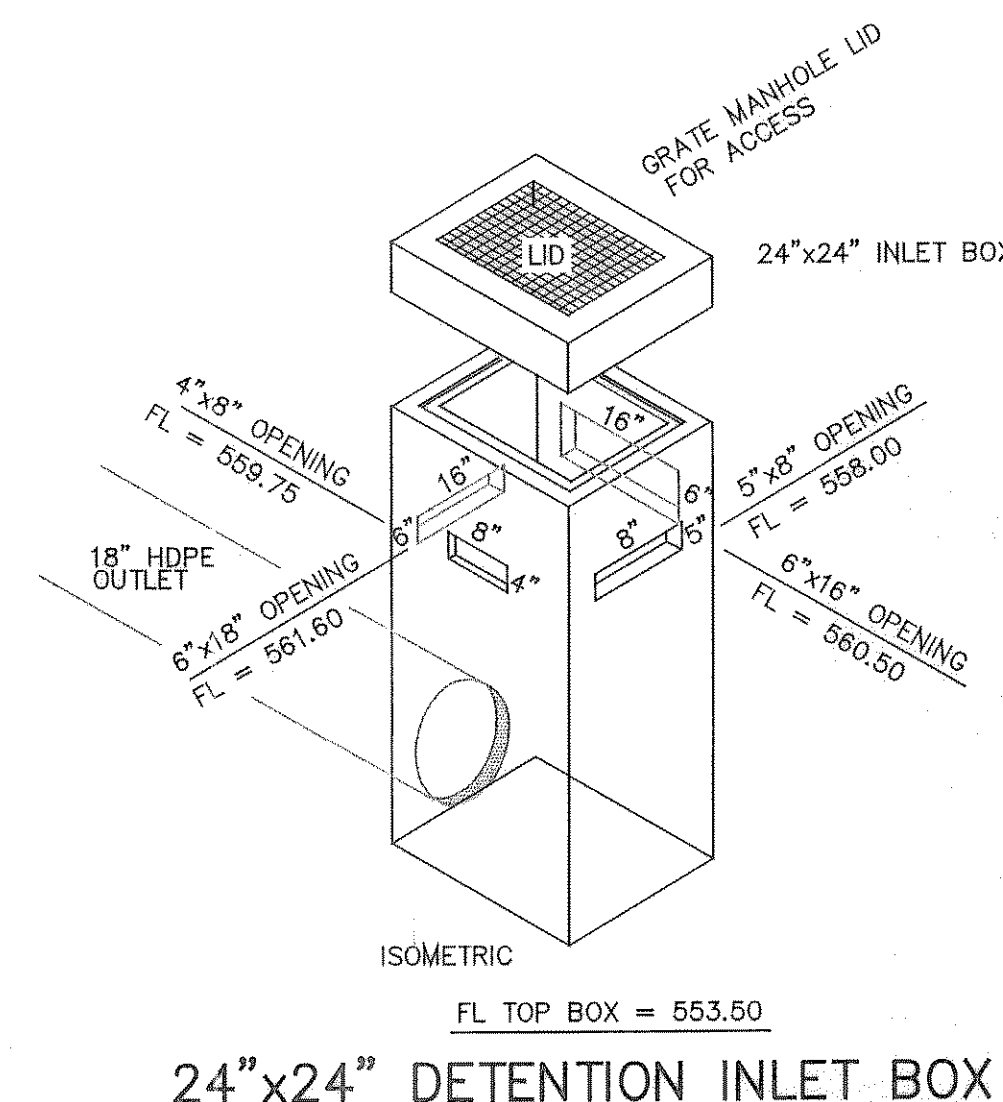
TOP OF POND "B" = 564.00  
100 YEAR WATER SURFACE = 562.48 ws

OUTLET - 1 - 5"x8" OPENING @ 558.00  
OUTLET - 1 - 4"x8" OPENING @ 559.75  
OUTLET - 1 - 6"x16" OPENING @ 560.50  
OUTLET - 1 - 6"x18" OPENING @ 561.60

POND "B"		("D8" + ("E1")) = 3.98 ACRES	
20 MIN.	Q allowable OUT OF POND "B"	Q actual OUT OF OUT FALL STRUCTURE	
4.0 -	Q5 = 5.52	5.38 cfs	561.23 W.S.
5.8 -	Q25 = 8.00	7.19 cfs	561.79 W.S.
7.4 -	Q50 = 10.20	9.42 cfs	562.12 W.S.
8.3 -	Q100 = 11.44	10.14 cfs	562.26 W.S.

**LEGEND**

- = PROPOSED DRAINAGE DIVIDE
- (A7) = PROPOSED DRAINAGE AREA
- 0.50 = PROPOSED NUMBER OF ACRES
- = PROPOSED CONTOUR
- = PROPOSED FINISH FLOOR
- = PROPOSED STORM SEWER
- = DIRECTION OF FLOW
- = EXISTING CONTOUR
- = EXISTING STORM SEWER



24"x24" DETENTION INLET BOX

**RECORD DRAWING**

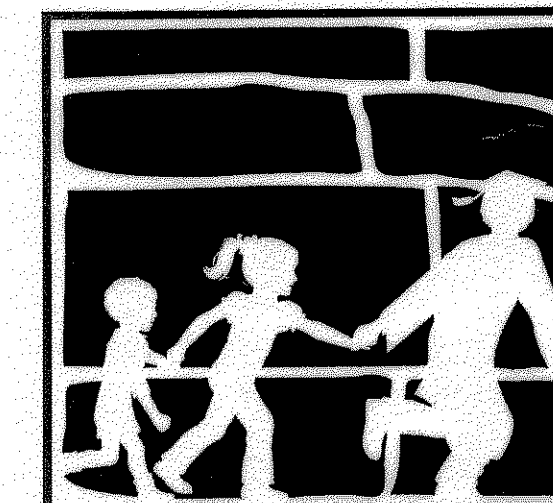
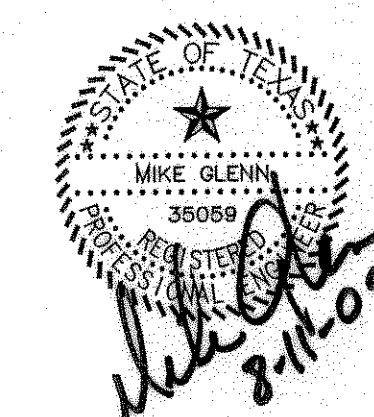
This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Signed: *[Signature]* Date: 5.26.10  
Glenn Engineering Corporation

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Final Plans for Bidding and Construction



**Rockwall**  
INDEPENDENT SCHOOL DISTRICT  
TENNIS COMPLEX AT  
WILKERSON SANDERS  
STADIUM  
ROCKWALL, TEXAS

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Revisions:

1	08/06/09	CITY REVISIONS
2	08/11/09	CITY REVISIONS

Sheet Title:  
**DETENTION POND "B" CALCULATIONS**

**CG 1.07**