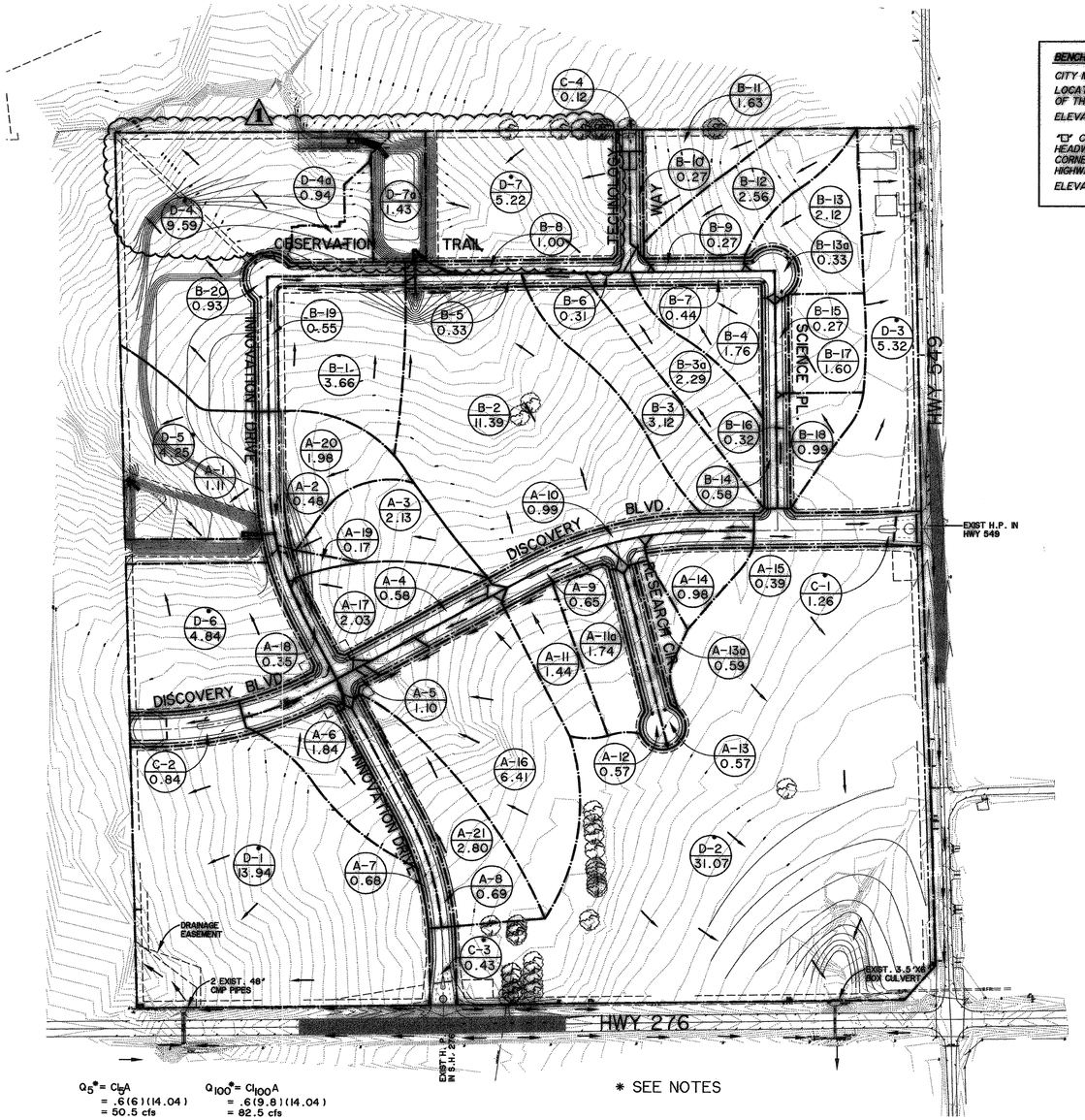


$Q_5^* = C_5 i A$
$= .6(6)(14.04)$
$= 50.5$ cfs

$Q_{100}^* = C_{100} i A$
$= .6(9.8)(14.04)$
$= 82.5$ cfs

* HYDROLOGY INFORMATION TAKEN FROM TxDOT PLANS FOR CONSTRUCTION OF S.H. 276 DATED 1968.

* SEE NOTES

**BENCHMARKS:**

CITY MON. NO. 2
LOCATED ON THE NORTHWEST CORNER OF THE BRIDGE @ I-30 AND F.M. 549
ELEVATION 609.56

"D" CUT IN THE CENTER OF A 4 FOOT HEADWALL LOCATED AT THE NORTHEAST CORNER OF F.M. 549 AND STATE HIGHWAY 276
ELEVATION 592.75

LEGEND

- FLOW ARROW
- DRAINAGE DIVIDE
- INLET & LATERAL
- TRUNK LINE
- TEMP. WYE
- H.P. HIGH POINT
- L.P. LOW POINT

0 200 400 600 800

## DRAINAGE AREA CALCULATIONS

| AREA DESIGNATION | AREA (ACRES) | INDUSTRIAL C=0.7 | INDIVIDUAL CxA | TIME OF CONC (MIN.) | I100 (IN/HR) | I25 (IN/HR) | I10 (IN/HR) | Q100 (CFS) | Q25 (CFS) | Q10 (CFS) | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A-1 | 1.11 | .7 | 0.78 | 10 | 9.8 | 8.4 | 7.4 | 7.6 | 6.5 | 5.7 | |
| A-2 | 0.48 | .7 | 0.34 | 10 | 9.8 | 8.4 | 7.4 | 3.3 | 2.8 | 2.5 | |
| A-3 | 2.13 | .7 | 1.49 | 10 | 9.8 | 8.4 | 7.4 | 14.6 | 12.5 | 11.0 | CROSSES ROAD IN RCP STRUCTURE |
| A-4 | 0.58 | .7 | 0.41 | 10 | 9.8 | 8.4 | 7.4 | 4.0 | 3.4 | 3.0 | |
| A-5 | 1.10 | .7 | 0.77 | 10 | 9.8 | 8.4 | 7.4 | 7.5 | 6.5 | 5.7 | |
| A-6 | 1.84 | .7 | 1.29 | 10 | 9.8 | 8.4 | 7.4 | 12.6 | 10.8 | 9.5 | |
| A-7 | 0.68 | .7 | 0.48 | 10 | 9.8 | 8.4 | 7.4 | 4.7 | 4.0 | 3.5 | |
| A-8 | 0.69 | .7 | 0.48 | 10 | 9.8 | 8.4 | 7.4 | 4.7 | 4.1 | 3.6 | |
| A-9 | 0.65 | .7 | 0.45 | 10 | 9.8 | 8.4 | 7.4 | 4.5 | 3.8 | 3.4 | |
| A-10 | 0.99 | .7 | 0.69 | 10 | 9.8 | 8.4 | 7.4 | 6.8 | 5.8 | 5.1 | |
| A-11 | 1.44 | .7 | 1.01 | 10 | 9.8 | 8.4 | 7.4 | 9.9 | 8.5 | 7.5 | |
| A-11a | 1.74 | .7 | 1.22 | 10 | 9.8 | 8.4 | 7.4 | 11.9 | 10.2 | 9.0 | |
| A-12 | 0.57 | .7 | 0.40 | 10 | 9.8 | 8.4 | 7.4 | 3.9 | 3.4 | 3.0 | |
| A-13 | 0.57 | .7 | 0.40 | 10 | 9.8 | 8.4 | 7.4 | 3.9 | 3.4 | 3.0 | |
| A-13a | 0.59 | .7 | 0.41 | 10 | 9.8 | 8.4 | 7.4 | 4.0 | 3.5 | 3.1 | |
| A-14 | 0.98 | .7 | 0.69 | 10 | 9.8 | 8.4 | 7.4 | 6.7 | 5.8 | 5.1 | |
| A-15 | 0.39 | .7 | 0.27 | 10 | 9.8 | 8.4 | 7.4 | 2.7 | 2.3 | 2.0 | |
| A-16 | 6.41 | .7 | 4.49 | 10 | 9.8 | 8.4 | 7.4 | 44.0 | 37.7 | 33.2 | |
| A-17 | 2.03 | .7 | 1.42 | 10 | 9.8 | 8.4 | 7.4 | 13.9 | 11.9 | 10.5 | |
| A-18 | 0.35 | .7 | 0.24 | 10 | 9.8 | 8.4 | 7.4 | 2.4 | 2.1 | 1.8 | |
| A-19 | 0.17 | .7 | 0.12 | 10 | 9.8 | 8.4 | 7.4 | 1.2 | 1.0 | 0.9 | |
| A-20 | 1.98 | .7 | 1.39 | 10 | 9.8 | 8.4 | 7.4 | 13.6 | 11.6 | 10.3 | |
| A-21 | 2.80 | .7 | 1.96 | 10 | 9.8 | 8.4 | 7.4 | 19.2 | 16.5 | 14.5 | |
| TOTAL | 50.27 | | | | | | TOTAL | 207.7 | 178.0 | 158.6 | |
| B-1 | 3.66 | .7 | 2.56 | 10 | 9.8 | 8.4 | 7.4 | 25.1 | 21.5 | 19.0 | CROSSES ROAD IN RCP STRUCTURE |
| B-2 | 11.39 | .7 | 7.97 | 10 | 9.8 | 8.4 | 7.4 | 78.1 | 67.0 | 59.0 | CROSSES ROAD IN RCP STRUCTURE |
| B-3 | 3.12 | .7 | 2.18 | 10 | 9.8 | 8.4 | 7.4 | 21.4 | 18.3 | 16.2 | |
| B-3a | 2.29 | .7 | 1.60 | 10 | 9.8 | 8.4 | 7.4 | 15.7 | 13.5 | 11.9 | |
| B-4 | 1.76 | .7 | 1.23 | 10 | 9.8 | 8.4 | 7.4 | 12.1 | 10.3 | 9.1 | |
| B-5 | 0.33 | .7 | 0.23 | 10 | 9.8 | 8.4 | 7.4 | 2.3 | 1.9 | 1.7 | |
| B-6 | 0.31 | .7 | 0.22 | 10 | 9.8 | 8.4 | 7.4 | 2.1 | 1.8 | 1.6 | |
| B-7 | 0.44 | .7 | 0.31 | 10 | 9.8 | 8.4 | 7.4 | 3.0 | 2.6 | 2.3 | |
| B-8 | 1.00 | .7 | 0.70 | 10 | 9.8 | 8.4 | 7.4 | 6.9 | 5.9 | 5.2 | |
| B-9 | 0.27 | .7 | 0.19 | 10 | 9.8 | 8.4 | 7.4 | 1.9 | 1.6 | 1.4 | |
| B-10 | 0.27 | .7 | 0.19 | 10 | 9.8 | 8.4 | 7.4 | 1.9 | 1.6 | 1.4 | |
| B-11 | 1.63 | .7 | 1.14 | 10 | 9.8 | 8.4 | 7.4 | 11.2 | 9.6 | 8.4 | |
| B-12 | 2.56 | .7 | 1.79 | 10 | 9.8 | 8.4 | 7.4 | 17.6 | 15.1 | 13.3 | |
| B-13 | 2.12 | .7 | 1.48 | 10 | 9.8 | 8.4 | 7.4 | 14.5 | 12.5 | 11.0 | |
| B-13a | 0.33 | .7 | 0.23 | 10 | 9.8 | 8.4 | 7.4 | 2.3 | 1.9 | 1.7 | |
| B-14 | 0.56 | .7 | 0.41 | 10 | 9.8 | 8.4 | 7.4 | 4.0 | 3.4 | 3.0 | |
| B-15 | 0.27 | .7 | 0.19 | 10 | 9.8 | 8.4 | 7.4 | 1.9 | 1.6 | 1.4 | |
| B-16 | 0.32 | .7 | 0.22 | 10 | 9.8 | 8.4 | 7.4 | 2.2 | 1.9 | 1.7 | |
| B-17 | 1.60 | .7 | 1.12 | 10 | 9.8 | 8.4 | 7.4 | 11.0 | 9.4 | 8.3 | |
| B-18 | 0.99 | .7 | 0.69 | 10 | 9.8 | 8.4 | 7.4 | 6.8 | 5.8 | 5.1 | |
| B-19 | 0.55 | .7 | 0.39 | 10 | 9.8 | 8.4 | 7.4 | 3.8 | 3.2 | 2.8 | |
| B-20 | 0.93 | .7 | 0.65 | 10 | 9.8 | 8.4 | 7.4 | 6.4 | 5.5 | 4.8 | |
| TOTAL | 36.72 | | | | | | | 245.5 | 210.4 | 185.4 | |
| C-1 | 1.26 | .7 | 0.88 | 10 | 9.8 | 8.4 | 7.4 | 8.6 | 7.4 | 6.5 | DRAINS TO EXISTING TXDOT S.D. SYSTEM |
| C-2 | 0.84 | .7 | 0.59 | 10 | 9.8 | 8.4 | 7.4 | 5.8 | 4.9 | 4.4 | |
| C-3 | .43 | .7 | 0.30 | 10 | 9.8 | 8.4 | 7.4 | 2.9 | 2.5 | 2.2 | DRAINS TO EXISTING TXDOT S.D. SYSTEM |
| C-4 | .12 | .7 | 0.08 | 10 | 9.8 | 8.4 | 7.4 | 0.8 | 0.7 | 0.6 | |
| D-1 | 13.94 | .7 | 9.76 | 10 | 9.8 | 8.4 | 7.4 | 95.6 | 82.0 | 72.2 | DRAINS TO EXISTING TXDOT S.D. SYSTEM |
| D-2 | 31.07 | .7 | 21.75 | 10 | 9.8 | 8.4 | 7.4 | 213.1 | 182.7 | 160.9 | DRAINS TO EXISTING TXDOT S.D. SYSTEM |
| D-3 | 5.32 | .7 | 3.72 | 10 | 9.8 | 8.4 | 7.4 | 36.5 | 31.3 | 27.6 | DRAINS TO EXISTING TXDOT S.D. SYSTEM |
| D-4 | 9.59 | .7 | 6.71 | 10 | 9.8 | 8.4 | 7.4 | 65.8 | 56.4 | 49.7 | DRAINAGE FROM LOT 4, BLOCK E |
| D-4a | 0.94 | .9 | 0.85 | 10 | 9.8 | 8.4 | 7.4 | 8.3 | 7.1 | 6.3 | DRAINS DIRECTLY TO DETENTION POND |
| D-5 | 4.03 | .7 | 2.97 | 10 | 9.8 | 8.4 | 7.4 | 29.2 | 25.0 | 22.0 | DRAINS DIRECTLY TO DETENTION POND |
| D-6 | 4.84 | .7 | 3.39 | 10 | 9.8 | 8.4 | 7.4 | 33.2 | 28.5 | 25.1 | |
| D-7 | 5.22 | .7 | 3.65 | 10 | 9.8 | 8.4 | 7.4 | 35.8 | 30.7 | 27.0 | |
| D-7a | 1.43 | .5 | 0.72 | 10 | 9.8 | 8.4 | 7.4 | 7.1 | 6.0 | 5.3 | DETENTION POND "B" (OPEN AREA) |

NOTES:

1. DRAINAGE AREAS C-1, C-3, D-2 & D-3 DRAIN TO EXISTING TXDOT SYSTEMS.
2. THE INTERIOR UNDERGROUND STORM SYSTEM IS DESIGNED FOR THE 100 YR. STORM EVENT. CAPACITY OF R.O.W. PLUS THE SYSTEM IS SUFFICIENT TO CONVEY THE 100 YR. STORM EVENT.
3. OUTLET WORKS OF DETENTION POND ARE DESIGNED FOR NON-GATED RELEASE OF RESIDENTIAL FLOW, RESIDENTIAL FLOW, C(factor) = 0.5.
4. DRAINAGE AREA D-3 DRAINS TO AN EXISTING ROADWAY DITCH. THE DEVELOPER OF THIS PROPERTY WILL BE REQUIRED TO ADDRESS INCREASING RUNOFF TO THE EXISTING DRAINAGE SYSTEM.
5. DRAINAGE AREA D-2 DRAINS TO AN EXISTING TxDOT STRUCTURE. THE DEVELOPER OF THIS PROPERTY WILL BE REQUIRED TO ADDRESS INCREASED RUN OFF TO THIS STRUCTURE.
6. DRAINAGE AREA D-1 CURRENTLY DRAINS TO A SWAIL THAT CONVERGES WITH THE EXISTING CREEK TO THE NORTH. THE DEVELOPER OF THIS PROPERTY WILL BE RESPONSIBLE FOR ADDRESSING INCREASING RUNOFF.
7. DRAINAGE AREA D-4 CURRENTLY DRAINS TO AN EXISTING CREEK BY SHEET FLOW. THE DEVELOPER OF THIS PROPERTY WILL BE RESPONSIBLE FOR ADDRESSING INCREASING RUNOFF.
8. DRAINAGE AREA D-5 CURRENTLY DRAINS TO THE EXISTING CREEK WEST OF THE PROPERTY. DETENTION POND A IS SIZED TO ALLOW FUTURE DEVELOPED FLOWS FROM THIS AREA.
9. DRAINAGE AREAS D-6 AND D-7 WILL DRAIN DIRECTLY INTO ON SITE DETENTION POND IN THE TEMPORARY AND FUTURE CONDITIONS.

1 REVISED CALCULATIONS AND ANALYSIS OF DRAINAGE AREAS D-4, D-4a, D-7 AND D-7a FOR POND B REVISIONS

**SHEET REVISED AS AMENDMENT TO ROCKWALL TECHNOLOGY PARK 15 FEB 2005**

PREPARED BY:
WIER & ASSOCIATES, INC.
ENGINEERS SURVEYORS LAND PLANNERS
4301 BELTWAY PLACE SUITE 130 ARLINGTON, TEXAS 76018 METRO (817)467-7700
1301 U.S. HIGHWAY 287 N, SUITE 101 MANSFIELD, TEXAS 76063 METRO (817)477-6000
6940 ELM STREET PLANO, TEXAS 75024 METRO (214)387-6000
www.wierassociates.com

ROCKWALL TECHNOLOGY PARK

DRAINAGE AREA MAP

STATE OF TEXAS — RONALD RAMIREZ — 81821 — REGISTERED PROFESSIONAL ENGINEER

2/16/05

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