DRAINAGE REPORT FOR WHISTLER SUBDIVISION **TRACT B-9** AT SEVEN BAR NORTH

JUNE 30, 1998

Prepared for:

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JUL - 9 1998

HYDROLOGY SECTION

TABLE OF CONTENTS

| | PAGE |
|--------------|---|
| I. INTRODUC | TION1 |
| II. PURPOSE | 1 |
| III. HYDROLO | GIC/HYDRAULIC COMPARISON BETWEEN REPORTS 1 |
| IV. PROPOSE | ED PHASING |
| V. CONCLUS | ION3 |
| | |
| | FIGURES |
| FIGURE 1 - | VICINITY MAP |
| FIGURE 2 - | CURB TYPE IDENTIFICATION |
| | |
| | APPENDIX |
| APPENDIX A | - JUNE 1995 HYDROLOGIC CALCULATIONS |
| APPENDIX B | - APRIL 1998 HYDROLOGIC CALCULATIONS |
| APPENDIX C | - INFRASTRUCTURE LIST |
| APPENDIX D | - EPA FORM (NOI) & WATER AND SEWER AVAILABILITY LETTER |
| | |
| | PLATES |
| PLATE 1 - | PREVIOUSLY PROPOSED CONDITION BASIN MAP (JUNE 1995) |
| PLATE 2 - | PREVIOUS SUBDIVISION SITE GRADING AND DRAINAGE PLAN (JUNE 1995) |
| PLATE 3 - | PROPOSED OVERALL SITE GRADING AND DRAINAGE PLAN (JULY 1998) |
| PLATE 4 - | PROPOSED PHASE ONE SITE GRADING AND DRAINAGE PLAN (JULY 1998) |
| PLATE 5 - | PROPOSED PHASE TWO SITE GRADING AND DRAINAGE PLAN (JULY 1998) |
| PLATE 6 - | PREVIOUS PRELIMINARY PLAT (JUNE 1995) |
| PLATE 7 - | PROPOSED PRELIMINARY PLAT (JULY 1998) |
| | |

I. INTRODUCTION

This report summarizes the revisions made to a previously submitted and approved Drainage Report. The previous report, "Revised Drainage Report for Tracts B-7, B-8, and B-9 Subdivision at Seven Bar North," dated June 1995 is in City A-13/D-7 file. These revisions are an increased lot count in Tract B-9 only from 64 lots in the June 1995 report to 100 lots in this revised report. Streets have remained essentially identical in layout between the two reports. We have included pertinent maps and plans from the 1995 report for your convenience and comparison.

II. PURPOSE

The purpose of this report is to obtain approval for the revised preliminary and final plat, grading plan, building permit, and work order for Tract B-9. Development of Tract B-9 will occur in two phases, to be called "Whistler at Seven Bar North, Units I and II."

The preliminary plat and grading plan is anticipated to be heard at DRB on August 4th, 1998. For clarity's and reduced paperwork's sake, we have not attempted to revise and resubmit the bulky previous report, but instead are submitting this report as an "addendum" that provides new calculations and materials only in areas where drainage conditions have changed.

III. HYDROLOGIC/HYDRAULIC COMPARISON BETWEEN REPORTS

All information pertaining to "Tract B-9" in the June 1995 report remains essentially unchanged except for lot density. It has changed from 3.40 to 5.32 dwelling units per acre. An analysis of impervious area was performed to compare the actual difference of the two fully developed conditions. The results show a negligible increase of only 0.6 cfs over the entire site in the 100-year, 6-hour storm event. Accordingly, there is no need to revise the vast majority of the storm drain/street drainage system calculations of the previous report. The results of the analysis are in the Appendix in a spreadsheet format.

As previously mentioned, we have enclosed plans and plats from the June 1995 and May 1998 reports in the Appendix for comparison and reference. The developed storm drainage system proposed and approved in the June 1995 report has not changed. The horizontal and vertical alignments of the residential streets have not changed except for the deletion of the connection road between Tracts B-9 and B-8. Essentially, we have moved lot lines and added thirty-six lots to the site. Due to the revised lot configuration, the majority of the pads have changed elevation only +/- one foot. We still incorporate split level pads and backyard ponds at some lots. Calculations for the backyard ponds are included in Appendix B.

IV. PROPOSED PHASING

The phasing of construction has no significant impact on the hydrologic calculations. An overall grading plan as well as Units I & II phased grading plans have been enclosed as Plates 3, 4 and 5 at the rear of this report. Please refer to Plate 4, Proposed Subdivision Site Grading and Drainage Plan, Unit I, (July 1998). Phase One will include rough grading of the Unit II site and the installation of the infrastructure and paving of Unit I. A temporary desilting pond will be constructed at each of the paving terminus. The rough grading of Unit II will insure its flows will be directed to these ponds, and onto the proposed roadways.

Please refer to Plate 5 proposed Subdivision Site Grading, Unit II (July 1998). Tie slopes will be kept to a 3:1 maximum. Runoff from the northern boundary tie slope, north of Westside Boulevard's median curb, is confined within the Westside Boulevard right-of-way and conveyed via earthen channels to an existing beehive covered manhole to the west, and the eastward flow to the temporary paved west bound driving lane. The runoff from the high point on Westside Boulevard's asphalt is conveyed east and west by the south curb and gutter. Westward flow is directed to an existing pair of inlets built with COA Project number 5752.83, located just east of the Westside Boulevard and Seven Bar Loop Road intersection. Eastward flow is directed to an existing battery of inlets, built with COA Project number 3725, near the intersection of Westside Boulevard and Sierrita Road.

V. CONCLUSION

In conclusion, the increase in lot density and revised pad elevations has a negligible impact on the hydrological and hydraulic calculations on the previously approved drainage plan. Therefore, we recommend that this revised plan be approved for revised preliminary and final plat, grading plan, building permit and work order for Tract B-9.

HYDROLOGIC DATA-SEVEN BAR NORTH TRACT 9 JUNE, 1995

| | D | 4.37 | 2.89 | 1.97 | 1.24 | 2.89 | |
|--------------------------|-------|------------|-----------|------|------|------|--|
| ACRE | С | 2.87 | 1.49 | 0.99 | 0.44 | 1.49 | |
| PEAK DISCHARGE, CFS/ACRE | В | 2.03 | 0.76 | 0.67 | 0.22 | 0.76 | |
| PEAK DISCH | A | 1.29 | 0.24 | 0.44 | 0 | 0.24 | |
| | EVENT | 100-YR (1) | 10-YR (2) | 3 | 4 | 2 | |

FULLY DEVELOPED CONDITIONS:

| SUMMARY | OF HYDRC | SUMMARY OF HYDROLOGIC DATA | | | | | | | | RATIONAL METHOD | OC OC | |
|-----------|----------|----------------------------|-----|----------|------------------|------|---------|-----------|---------|-----------------|---------|----------|
| | | | | % LAND T | % LAND TREATMENT | | | 10-YR | | | | |
| BASIN | AREA | AREA | | | | | TIME TO | DISCHARGE | Q(10YR) | COMPOSITE | _ | Q(100YR) |
| Ω | AC | SQ.MI. | ∢ | m | O | a | PEAK | CFS/AC | CFS | O | (IN/HR) | (CFS) |
| 9A | 3.016 | 0.0047 | 3.0 | 21.2 | 21.2 | 54.6 | 0.1333 | 2.06 | 6.2 | 0.74 | 4.70 | 10.4 |
| 88 | 1.930 | 0:0030 | 3.3 | 18.8 | 18.8 | 59.1 | 0.1333 | 2.14 | 4.1 | 0.75 | 4.70 | 6.8 |
| ეგ | 4.660 | 0.0073 | 3.3 | 20.4 | 20.4 | 55.9 | 0.1333 | 2.08 | 9.7 | 0.74 | 4.70 | 16.2 |
| 8 | 1.277 | 0.0020 | 3.6 | 18.0 | 18.0 | 60.3 | 0.1333 | 2.16 | 2.8 | 0.76 | 4.70 | 4.6 |
| 넁 | 2.683 | 0.0042 | 3.4 | 19.2 | 19.2 | 58.3 | 0.1333 | 2.12 | 5.7 | 0.75 | 4.70 | 9.5 |
| <u>16</u> | 2.467 | 0.0039 | 3.7 | 17.3 | 17.3 | 61.7 | 0.1333 | 2.18 | 5.4 | 0.76 | 4.70 | 8.9 |
| 96 | 1.533 | 0.0024 | 3.0 | 24.6 | 24.6 | 47.9 | 0.1333 | 1.94 | 3.0 | 0.71 | 4.70 | 5.1 |
| SMNS | 17.6 | | | | | | | | | | | 61.5 |
| | | | | | | | | | | | | - |

Total

HYDROLOGIC DATA-SEVEN BAR NORTH TRACT 9 JUNE, 1995

IMPERVIOUS AREA CALCULATIONS

ROADWAY CALCULATIONS

| | LOT WIDTH | (IN FEET) | 25 | 52 | 8 | 65 | 70 | 75 | 80 |
|----------------------------|------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | PAD WIDTH | | 40 | 45 | 25 | 55 | 09 | 65 | 70 |
| | PAD DEPTH | | 65 | 65 | 65 | 65 | 65 | 65 | 99 |
| | DRIVEWAY | (20'x20') | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| (INCLUDED W/ ROAD) WALKWAY | WALKWAY | (4' WDE) | 200 | 220 | 240 | 260 | 280 | 300 | 320 |
| (NOT INCLUDED W/PATIO | PATIO | (10'x10') | 100 | 100 | . 100 | 100 | 100 | 100 | 100 |
| BACKYARD PONDING) | | | | | | | | | |
| | TOTAL IMPERVIOUS | S | 3300 | 3645 | 3990 | 4335 | 4680 | 5025 | 5370 |
| | | | sa.ft/lot | sa.ft/lot | sa.ft/lot | sa.ft/lot | sq.ff/lot | sa.ft/lot | sq.fl/lot |

| CUL 1 | | 0 | 40 | 5027 | sq.ft |
|---------|-----------|----------|--------|------|----------|
| TYPE 4 | 0 | 0 | | 0 | sq.ft/ft |
| TYPE 3 | 56 | 4 | | 34 | sq.ft/ft |
| TYPE 2 | 51 | 4 | | 89 | sq.fvft |
| TYPE 1 | 28 | 4 | | 98 | sq.ft/ft |
| ROADWAY | F-F WIDTH | SIDEWALK | RADIUS | | |

| | | | | | | | | | | TOTAL LOT |
|--------------|-------|---|---|--|--|---|---|---|---|---------------------|
| | .08 | | - | 2 | 1 | - | 2 | 1 | 1 | o |
| | 15. | | 4 | - | 80 | 0 | - | 2 | 0 | 16 |
| PER BASIN | 70. | | 4 | 4 | 9 | 3 | 4 | 2 | 1 | 24 |
| MBER OF LOTS | 65 | | - | 0 | 2 | 1 | 3 | 5 | 3 | 15 |
| TOTAL NU | .09 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | c |
| | 55' | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | c |
| | 20, | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| PERCENT | TYPED | | 54.6 | 59.1 | 55.9 | 60.3 | 58.3 | 61.7 | 47.9 | |
| AREA | TYPED | AC | 1.65 | 1.14 | 2.61 | 72.0 | 1.56 | 1.52 | 0.73 | |
| | BASIN | QI | 9A | 96 | 90 | Q6 | 36 | 9F | 96 | |
| | | AREA PERCENT TOTAL NUMBER OF LOTS PER BASIN TYPE D 50 55' 60' 65' 70' 75' | PERCENT TOTAL NUMBER OF LOTS PER BASIN TYPE D 50' 55' 60' 65' 70' 75' | AREA PERCENT TOTAL NUMBER OF LOTS PER BASIN TYPED 50 55' 60' 65' 70' 75' AC AC 1.65 54.6 0 0 1 4 4 4 | AREA PERCENT TYPE D 50 55' 60' 65' 70' 75' AC 1.65 546 0 0 0 1 4 4 1 114 59.1 0 0 0 0 4 11 | AREA PERCENT TYPE D 50 55' 60' 65' 70' 75' AC 1.14 59.1 0 0 0 0 2 6 8 8 | AREA PERCENT TYPE D 50 55' 60' 65' 70' 75' AC 1.14 59.1 0 0 0 0 2 6 8 8 0 0 0 1 3 0 0 0 1 1 3 0 0 0 0 0 1 1 3 0 0 0 0 | AREA PERCENT TYPE D 50 55' 60' 65' 70' 75' AC 1.14 59.1 0 0 0 0 4 1 1 3 0 0 1.56 58.3 0 0 0 3 4 1 1 1.56 58.3 0 0 0 3 4 1 1 | AREA PERCENT 50° 55° 60° 65° 70° 75° 70° 75° 70° 75° 70° 75° 70° 75° 70° 75° 70° 75° 70° 75° 70° 75° 70° 75° 70° 75° 70° 75° 70° 70° 70° 70° 70° 70° 70° 70° 70° 70 | AREA PERCENT TYPE D |

| NUMBER OF | CUL-DE-SACS | PER BASIN | 0.49 | 00:00 | 1.12 | 00:00 | 0.26 | 1.00 | 1:00 |
|-----------------|-------------|-------------------|------|-------|------|-------|------|------|------|
| | TYPE 4 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NGTH OF | TYPE 3 | PER BASIN | 0 | 0 | 0 | 0 | 0 | 0 | 114 |
| TOTAL LENGTH OF | TYPE 2 | ROADWAY PER BASIN | 0 | 0 | 0 | 0 | 75 | 0 | 0 |
| | TYPE 1 | | 22.5 | 423 | 711 | 273 | 413 | 410 | 0 |
| | | | | | | | | | |

Data used to calculate Q100, 1995

HYDROLOGIC DATA-SEVEN BAR NORTH TRACT 9 APRIL, 1998

| | Q | 4.37 | 2.89 | 1.97 | 1.24 | 2.89 | |
|--------------------------|-------|------------|-----------|------|------|------|--|
| CFS/ACRE | ۵ | 2.87 | 1.49 | 0.99 | 0.44 | 1.49 | |
| CHARGE, (| В | 2.03 | 0.76 | 0.67 | 0.22 | 0.76 | |
| PEAK DISCHARGE, CFS/ACRE | A | 1.29 | 0.24 | 0.44 | 0 | 0.24 | |
| | EVENT | 100-YR (1) | 10-YR (2) | 3 | 4 | 2 | |

FULLY DEVELOPED CONDITIONS:

| 96 1.533 0.0024 4.8 21.2 21.2 52.9 0.1333 2.02 3.1 0.72 4.70 5.2 | Q(100YR) (CFS) 10.4 7.0 7.0 16.4 4.5 9.5 9.1 | I (IN/HR) 4.70 4.70 4.70 4.70 4.70 4.70 | COMPOSITE I L C (IN/HR 0.74 4.70 0.77 4.70 0.75 4.70 0.75 4.70 0.75 4.70 0.75 4.70 0.75 4.70 | Q(10YR) CFS 6.2 4.3 9.9 2.7 2.7 5.6 | 10-YR DISCHARGE CFS/AC 2.06 2.23 2.12 2.13 2.14 2.14 2.02 | TIME TO PEAK 0.1333 0.1333 0.1333 0.1333 0.1333 | | C C 20.0 14.5 17.9 17.9 17.9 13.2 21.2 | \$ LAND B 20.0 14.5 17.7 17.9 17.9 13.2 | ATA 4.6 4.6 5.7 5.0 5.0 6.0 6.0 4.8 | BASIN AREA AREA ID SUMMARY OF HYDROLOGIC DATA BASIN AREA AREA SO.MI. 9A 3.016 0.0047 4. 9B 1.930 0.0030 5. 9C 4.660 0.0073 5. 9D 1.277 0.0020 5. 9E 2.467 0.0039 6. | AREA AC 3.016 1.930 4.660 1.277 2.683 2.467 1.533 | BASIN ID 9A 9B 9C 9C 9D 9E 9F |
|--|--|--|--|-------------------------------------|---|---|------|--|---|---|--|---|-------------------------------|
| | 62.1 | | | | | | | | | | n | 17.6 | SUMS |
| | 62.1 | | | | | | | | | | | 17.6 | SUMS |
| | | | | | | | | | | | | ~ = 7 | (|
| | 9.1 | 4.70 | 0.78 | 5.6 | 2.26 | 0.1333 | 67.6 | 13.2 | 13.2 | 9.0 | 0.0039 | 2.467 | 9F |
| 2.467 0.0039 6.0 13.2 67.6 0.1333 2.26 5.6 0.78 4.70 | 9.5 | 4.70 | 0.75 | 5.7 | 2.14 | 0.1333 | 0.09 | 17.4 | 17.4 | 5.1 | 0.0042 | 2.683 | 9E |
| 2.683 0.0042 5.1 17.4 17.4 60.0 0.1333 2.14 5.7 0.75 4.70 2.467 0.0039 6.0 13.2 67.6 0.1333 2.26 5.6 0.78 4.70 | 4.5 | 4.70 | 0.75 | 2.7 | 2.13 | 0.1333 | 59.2 | 17.9 | 17.9 | 2.0 | 0.0020 | 1.277 | 9D |
| 1.277 0.0020 5.0 17.9 59.2 0.1333 2.13 2.7 0.75 4.70 2.683 0.0042 5.1 17.4 60.0 0.1333 2.14 5.7 0.75 4.70 2.467 0.0039 6.0 13.2 67.6 0.1333 2.26 5.6 0.78 4.70 | 16.4 | 4.70 | 0.75 | 9.9 | 2.12 | 0.1333 | 59.3 | 17.7 | 17.7 | 5.3 | 0.0073 | 4.660 | ე6 |
| 4.660 0.00073 5.3 17.7 19.7 59.3 0.1333 2.12 9.9 0.75 4.70 1.277 0.00020 5.0 17.9 17.9 59.2 0.1333 2.13 2.7 0.75 4.70 2.683 0.0042 5.1 17.4 60.0 0.1333 2.14 5.7 0.75 4.70 2.467 0.0039 6.0 13.2 67.6 0.1333 2.26 5.6 0.78 4.70 | 7.0 | 4.70 | 0.77 | 4.3 | 2.23 | 0.1333 | 65.2 | 14.5 | 14.5 | 5.7 | 0.0030 | 1.930 | 9B |
| 1.930 0.0030 5.7 14.5 65.2 0.1333 2.23 4.3 0.77 4.70 4.70 4.660 0.0073 5.3 17.7 17.7 59.3 0.1333 2.12 9.9 0.75 4.70 7 1.277 0.0020 5.0 17.9 17.4 60.0 0.1333 2.14 5.7 0.75 4.70 7 2.683 0.0042 5.1 17.4 60.0 0.1333 2.14 5.7 0.75 4.70 7 2.467 0.0039 6.0 13.2 67.6 0.1333 2.26 5.6 0.78 4.70 7 | 10.4 | 4.70 | 0.74 | 6.2 | 2.06 | 0.1333 | 55.4 | 20.0 | 20.0 | 4.6 | 0.0047 | 3.016 | 9A |
| 3.016 0.0047 4.6 20.0 25.4 0.1333 2.06 6.2 0.74 4.70 4.70 1.930 0.0030 5.7 14.5 14.5 65.2 0.1333 2.23 4.3 0.77 4.70 4.70 4.660 0.0073 5.3 17.7 17.7 59.3 0.1333 2.12 9.9 0.75 4.70 7 1.277 0.0020 5.0 17.9 59.2 0.1333 2.13 2.7 0.75 4.70 7 2.683 0.0042 5.1 17.4 60.0 0.1333 2.14 5.7 0.75 4.70 7 2.467 0.0039 6.0 13.2 67.6 0.1333 2.26 5.6 0.78 4.70 7 | | | | | | | | | | | | | |
| 3.016 0.0047 4.6 20.0 20.0 55.4 0.1333 2.06 6.2 0.74 4.70 1.930 0.0030 5.7 14.5 14.5 65.2 0.1333 2.23 4.3 0.77 4.70 4.660 0.0073 5.3 17.7 17.7 59.3 0.1333 2.12 9.9 0.75 4.70 1.277 0.0020 5.0 17.9 59.2 0.1333 2.13 2.7 0.75 4.70 2.683 0.0042 5.1 17.4 60.0 0.1333 2.14 5.7 0.75 4.70 2.467 0.0039 6.0 13.2 67.6 0.1333 2.26 5.6 0.78 4.70 | (CFS) | (IN/HR) | υ | CFS | CFS/AC | PEAK | Д | ŭ | Д | ď | SQ.MI. | AC | QI |
| AC SQ.MI. A B C D PEAK CFS/AC CFS/AC CFS C (IN/HR) 3.016 0.0047 4.6 20.0 20.0 55.4 0.1333 2.06 6.2 0.74 4.70 4.70 1.930 0.0030 5.7 14.5 14.5 65.2 0.1333 2.23 4.3 0.77 4.70 4.660 0.0073 5.0 17.7 17.7 59.3 0.1333 2.12 9.9 0.75 4.70 1.277 0.0020 5.0 17.9 59.2 0.1333 2.13 0.75 4.70 2.683 0.0042 5.1 17.4 60.0 0.1333 2.14 5.7 0.75 4.70 2.467 0.0039 6.0 13.2 67.6 0.1333 2.26 5.6 0.78 4.70 | Q(100YR) | н | COMPOSITE | Q(10YR) | DISCHARGE | TIME TO | | | | | AREA | AREA | BASIN |
| AREA AREA AREA AREA AREA C D PEAK CFS/AC CFS/AC COMPOSITE I 3.016 0.0047 4.6 20.0 20.0 55.4 0.1333 2.05 6.2 0.74 4.70 4.660 0.0030 5.7 14.5 14.5 65.2 0.1333 2.12 9.9 0.77 4.70 1.277 0.0020 5.0 17.9 59.3 0.1333 2.12 9.9 0.75 4.70 2.683 0.0042 5.0 17.9 59.2 0.1333 2.13 0.75 4.70 2.683 0.0042 5.1 17.4 60.0 0.1333 2.14 5.7 0.75 4.70 2.467 0.0039 6.0 13.2 67.6 0.1333 2.14 5.7 0.75 4.70 | | | | | 10-YR | | | TREATMENT | % LAND | | | | |
| AREA AREA AREA AREA AREA B C D DISCHARGE QUIOTR) COMPOSITE I IN/HR) 3.016 0.0047 4.6 20.0 20.0 55.4 0.1333 2.02 4.3 0.77 4.70 1.277 0.0042 5.0 13.2 1.2 5.4 17.9 59.2 0.1333 2.12 9.9 0.75 4.70 1.277 0.0042 5.0 13.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1 | | METHOD | RATIONAL | | | | | | | DATA | DROLOGIC I | Y OF HY | SUMMAF |

HYDROLOGIC DATA-SEVEN BAR NORTH TRACT 9 APRIL, 1998

IMPERVIOUS AREA CALCULATIONS

ROADWAY CALCULATIONS

| | LOT WIDTH | (IN FEET) | 50 | 55 | 60 | 65 | 7.0 | 7.5 | 80 |
|----------------------------|------------------|-----------|-----------|-----------|-----------|-----------|---|-----------|-----------|
| | PAD WIDTH | | 40 | 45 | 20 | 55 | 60 | 65 | 7.0 |
| | РАД ДЕРТН | | 65 | 65 | 65 | 65 | 65 | 65 | 65 |
| | DRIVEWAY | (20,×20') | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| (INCLUDED W/ ROAD) WALKWAY | WALKWAY | (4' WIDE) | 200 | 220 | 240 | 260 | 280 | 300 | 320 |
| (NOT INCLUDED W/ PATIO | / PATIO | (10,×10,) | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| BACKYARD PONDING) | | | | | | | | | |
| | TOTAL IMPERVIOUS | VIOUS | 3300 | 3645 | 3990 | 4335 | 4680 | 5025 | 5370 |
| | | | sa ft/lot | an ft/lot | an ft/lor | sa ft/lot | so fr/lot an fr/lot an fr/lot an fr/lot an fr/lot | sa ft/lot | ag ft/lot |

| COT 1 | | 0 | 40 | 5027 | sq.ft | |
|---------|-----------|----------|--------|------|-------------------------------------|--|
| TYPE 4 | 0 | 0 | | 0 | sq.ft/ft sq.ft/ft sq.ft/ft sq.ft/ft | |
| TYPE 3 | 26 | 4 | | 34 | sq.ft/ft | |
| TYPE 2 | 51 | 4 | | 59 | sq.ft/ft | |
| TYPE 1 | 28 | 4 | | 36 | sq.ft/ft | |
| ROADWAY | F-F WIDTH | SIDEWALK | RADIUS | | | |

| | | | | | | | | | | | TOTAL LOTS: |
|------------------|--------------------------------|--------|----|------|------|------|------|------|------|------|-------------|
| | | 108 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | IIN | 151 | | 0 | 0 | 0 | 0 | 0 | 0 :: | 0 | 0 |
| | TOTAL NUMBER OF LOTS PER BASIN | 107 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | UMBER OF LO | 651 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| LIONS | TOTAL N | 109 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| LOT CALCULATIONS | | 55' | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| LOT | | 50' | | 15 | 12 | 27 | 7 | 15 | 16 | 80 | 100 |
| | PERCENT | TYPE D | | 55.4 | 65.2 | 59.3 | 59.2 | 60.0 | 67.6 | 52.9 | |
| | AREA | TYPE D | AC | 1.67 | 1.26 | 2.76 | 0.76 | 1.61 | 1.67 | 0.81 | |
| | | BASIN | QI | 9A | 98 | 26 | 9D | 36 | 9F | 96 | |

CUL-DE-SACS PER BASIN NUMBER OF 0.49 1.12 0.00 1.00 TYPE 4 0 0 0 0 0 ROADWAY PER BASIN TYPE 2 TYPE 3 TOTAL LENGTH OF 0 0 0 ٥ 0 0 75 0 0 0 TYPE 1 577 711 413 273 410

Data used to calculate

100

WHISTLER AT SEVEN BAR NORTH BACKYARD POND DESIGN APRIL, 1998

BACKYARD PONDS

ASSUMING: (50% treatment "B" and 50% treatment "C") X (Backyard Area) + (100 sf X Treatment "D") for 10 day, 100 year volumes

V(10) =

V(360) + Ad*(P(10) - P(360)

Wher E is the weighted excess percipitation A is the area in each treatment type

eq. a-7 DPM

12 in/ft

E for treatment "B" and "C" portions:

 $E = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$

eq. a-5 DPM

Given:

Ea = n/a

P10 = 3.67

Eb = 0.67

P360 = 2.20

Ec = 0.99Ed = 1.97

E = [.67 + .99] = 0.069 ft

2*(12)

(converts inches to feet)

 $V(10) = [(X BACKYARD AREA -100 sf) \times E] + 100 sf^* [(1.97) + (3.67-2.20)]/12]$ eq. a-9 DPM $2^*(12)$

WHISTER AT SEVEN BAR NORTH:

| LOT# | BACKYARD AREA | | | | SION T.) | | POND VOLUME | | T | Q(100) |
|----------|------------------|-----------|-----|-----|-------------|------|----------------|------|-----|--------|
| UNIT B-9 | (SQ. FT.) | (CU. FT.) | L | W1 | W2 | D | (CU. FT.) | С | 1 | cfs |
| 8 | 1280 | 117 | 32 | 9 | 6 | 0.5 | 120 | 0.52 | 4.7 | 0.07 |
| 9 | 2002 | 167 | 27 | 14 | 11 | 0.5 | 169 | 0.52 | 4.7 | 0.11 |
| 59 | 2500 | 201 | 35_ | 13 | 10 | 0.5 | 201 | 0.52 | 4.7 | 0.14 |
| 84 | 5150 | 384 | 31 | 23 | 19.4 | 0.6 | 394 | 0.52 | 4.7 | 0.29 |
| 85 | 1400 | 125 | 20 | 14 | 11 | 0.5 | 125 | 0.52 | 4.7 | 0.08 |
| 86 | 1567 | 137 | 21 | 15_ | 12 | 0.5 | 142 | 0.52 | 4.7 | 0.09 |
| 87 | 1640 | 142 | 21 | 15 | 12 | 0.5 | 142 | 0.52 | 4.7 | 0.09 |
| 88 | 1649 | 142 | 21 | 15 | 12 | 0.5 | 142 | 0.52 | 4.7 | 0.09 |
| 89 | 1562 | 136 | 21 | 15 | 12 | 0.5 | 142 | 0.52 | 4.7 | 0.09 |
| 90 | 1552 | 136 | 21 | 15 | 12 | 0.5 | 142 | 0.52 | 4.7 | 0.09 |
| 91 | 1595 | 139 | 21 | 15 | 12 | 0.5 | 142 | 0.52 | 4.7 | 0.09 |
| 92 | 1638 | 142 | 21 | 15 | 12 | 0.5 | 142 | 0.52 | 4.7 | 0.09 |
| 93 | 1615 | 140 | 21 | 15 | 12 | 0.5_ | 142 | 0.52 | 4.7 | 0.09 |
| 94 | 1660 | 143 | 22 | 15 | 12 | 0.5 | 149 | 0.52 | 4.7 | 0.09 |
| 95 | 5391 | 401 | 42 | 18 | 14.4 | 0.6 | 408 | 0.52 | 4.7 | 0.30 |
| 96 | 3945 | 301 | 24 | 23 | 19.4 | 0.6 | 305 | 0.52 | 4.7 | 0.22 |

TOTAL = 2

2.03

checked SCA-29.98

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