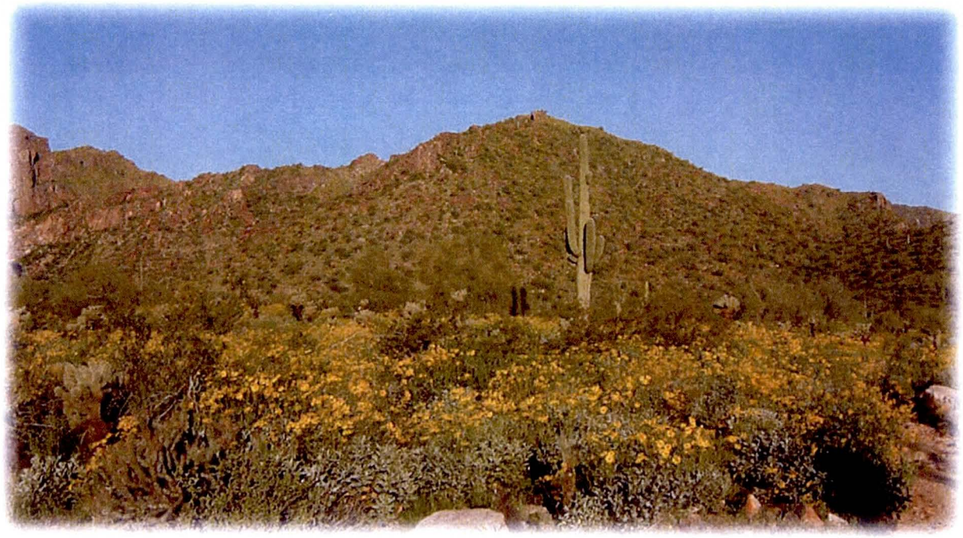

Volume 8: Subbasin Data – "N" Subbasins

Loop 303/White Tanks ADMPU Area Hydrologic Analysis in Maricopa County, Arizona

Flood Control District of Maricopa County

Version 1.2/ September 2009
HDR Project No. 079902
FCD Contract No. 2007C031

CERTIFICATE NO.
35571
LINDA A.
POTTER
Date Signed 9/4/09
ARIZONA U.S.A.

N01

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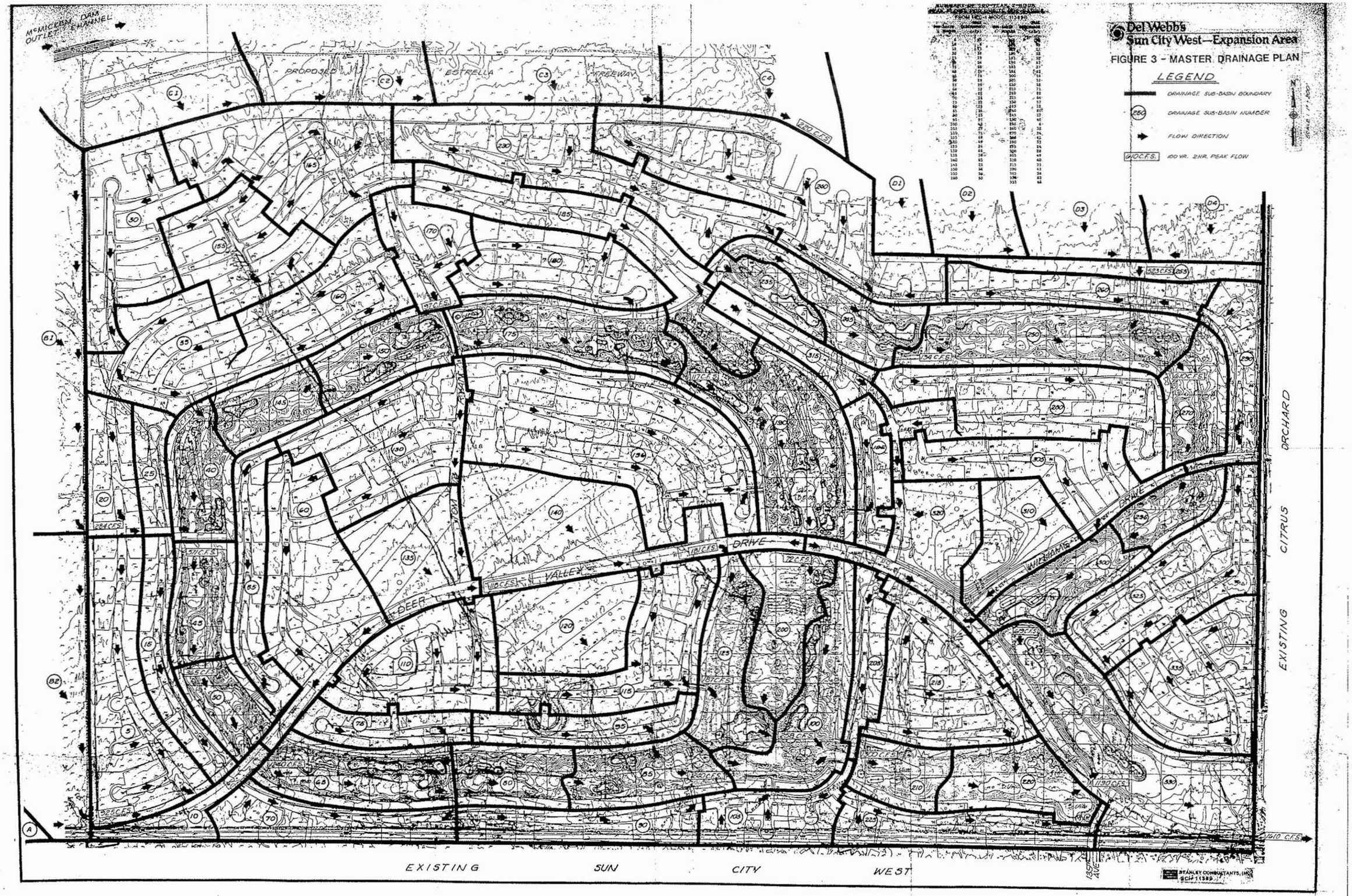
For information on this sub-basin, reference the hydrology model
Loop 303/White Tanks ADMPU Area Hydrologic Analysis

N02

Basins N02 – N06



N03

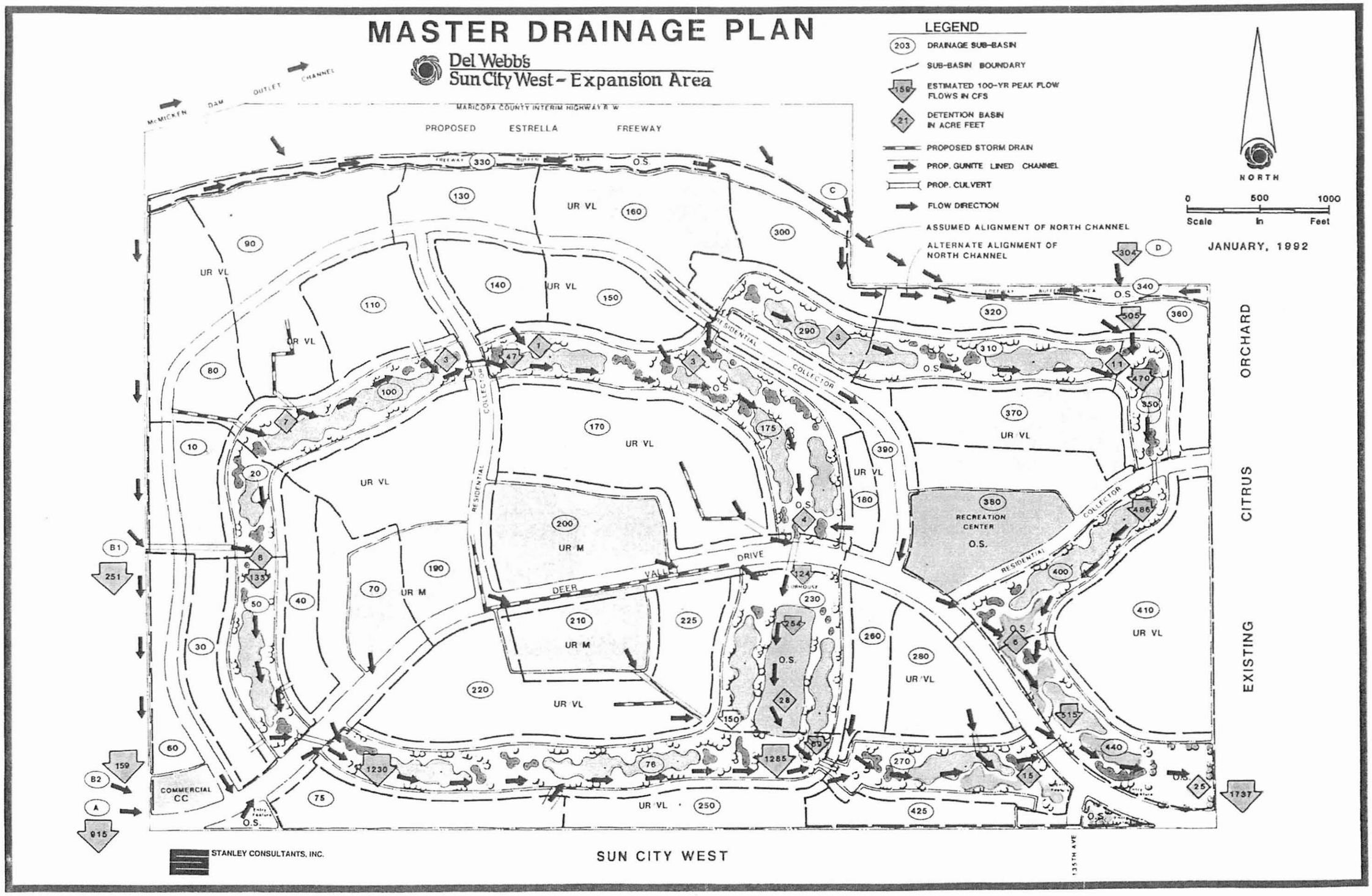
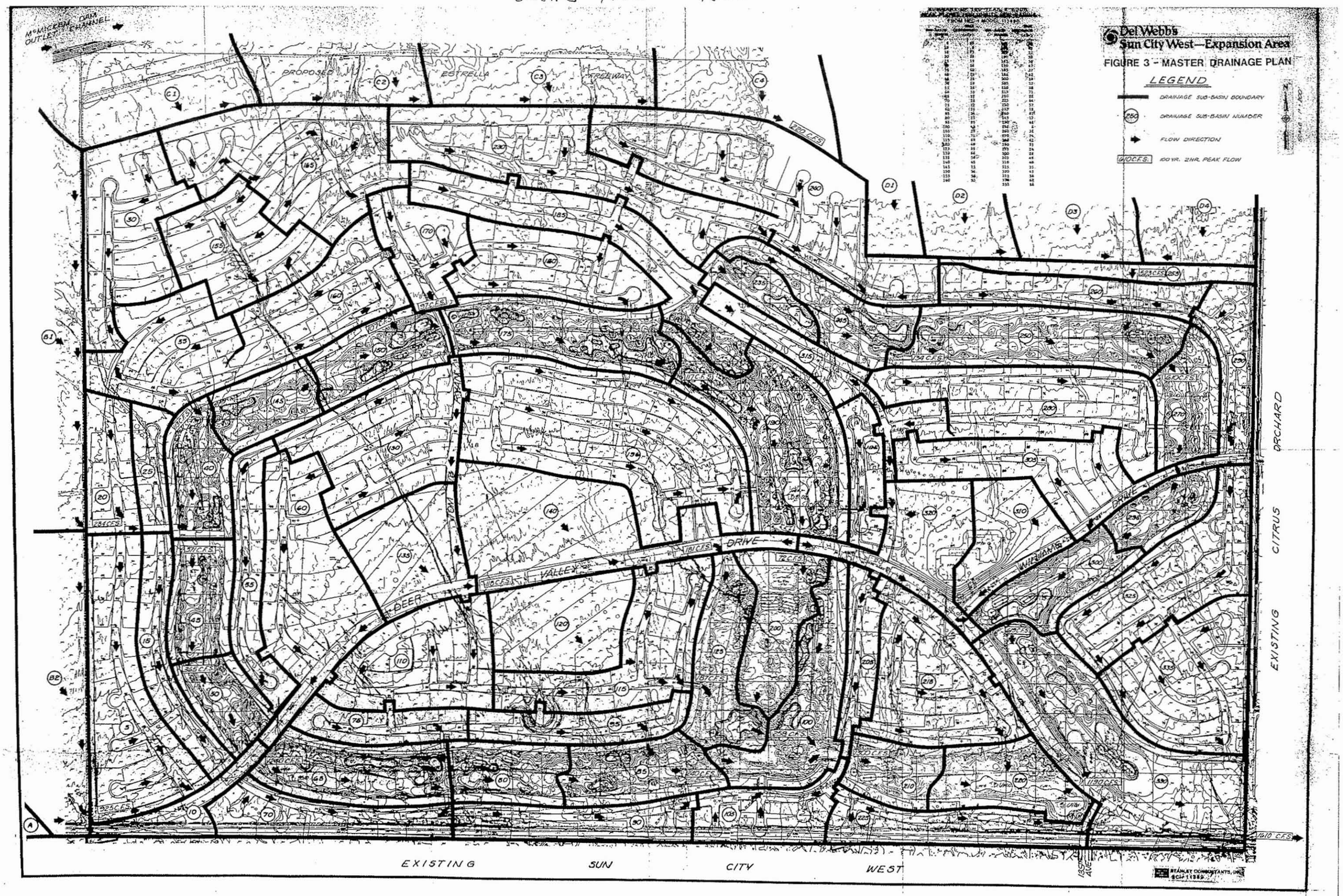

MASTER DRAINAGE PLAN
Del Webb's
Sun City West - Expansion Area
LEGEND
DRAINAGE SUB-BASIN
SUB-BASIN BOUNDARY
ESTIMATED 100-YR PEAK FLOW FLOWS IN CFS
DETENTION BASIN IN ACRE FEET
PROPOSED STORM DRAIN
PROP. GUNITE LINED CHANNEL
PROP. CULVERT
FLOW DIRECTION
ASSUMED ALIGNMENT OF NORTH CHANNEL
ALTERNATE ALIGNMENT OF NORTH CHANNEL
NORTH
0 500 1000
Scale In Feet
JANUARY, 1992
MCMICKEN DAM OUTLET CHANNEL
MARICOPA COUNTY INTERIM HIGHWAY R/W
PROPOSED ESTRELLA FREEWAY
UR VL
UR M
O.S.
RESIDENTIAL COLLECTOR
DEER VALLEY DRIVE
RECREATION CENTER
COMMERCIAL CC
ORCHARD
CITRUS
EXISTING
135TH AVE
STANLEY CONSULTANTS, INC.
SUN CITY WEST

FIGURE 11

Basins NU2 – NU6



N04

Detention – N03, N03B, N04

MASTER DRAINAGE PLAN

Del Webb's
Sun City West – Expansion Area

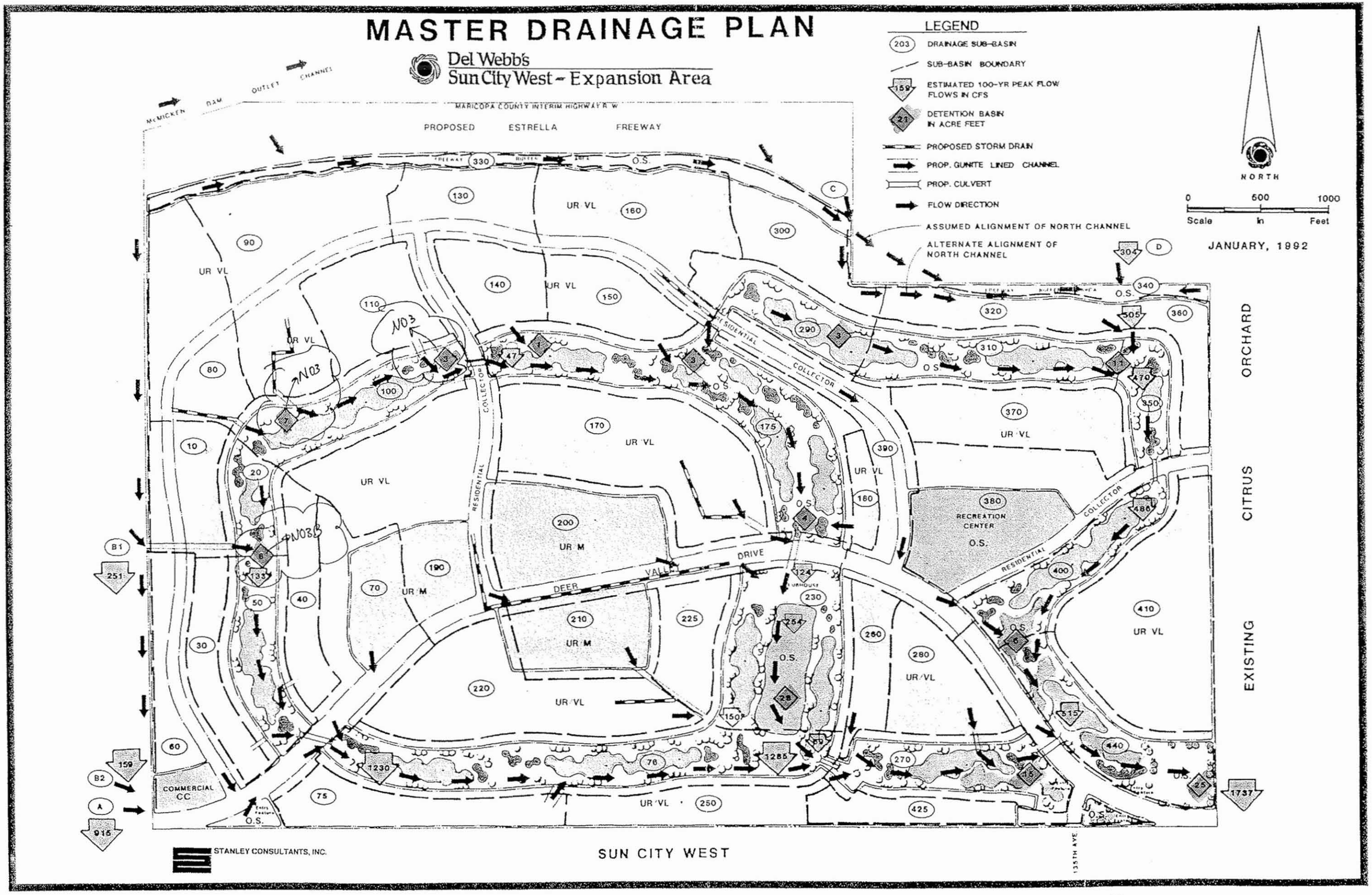
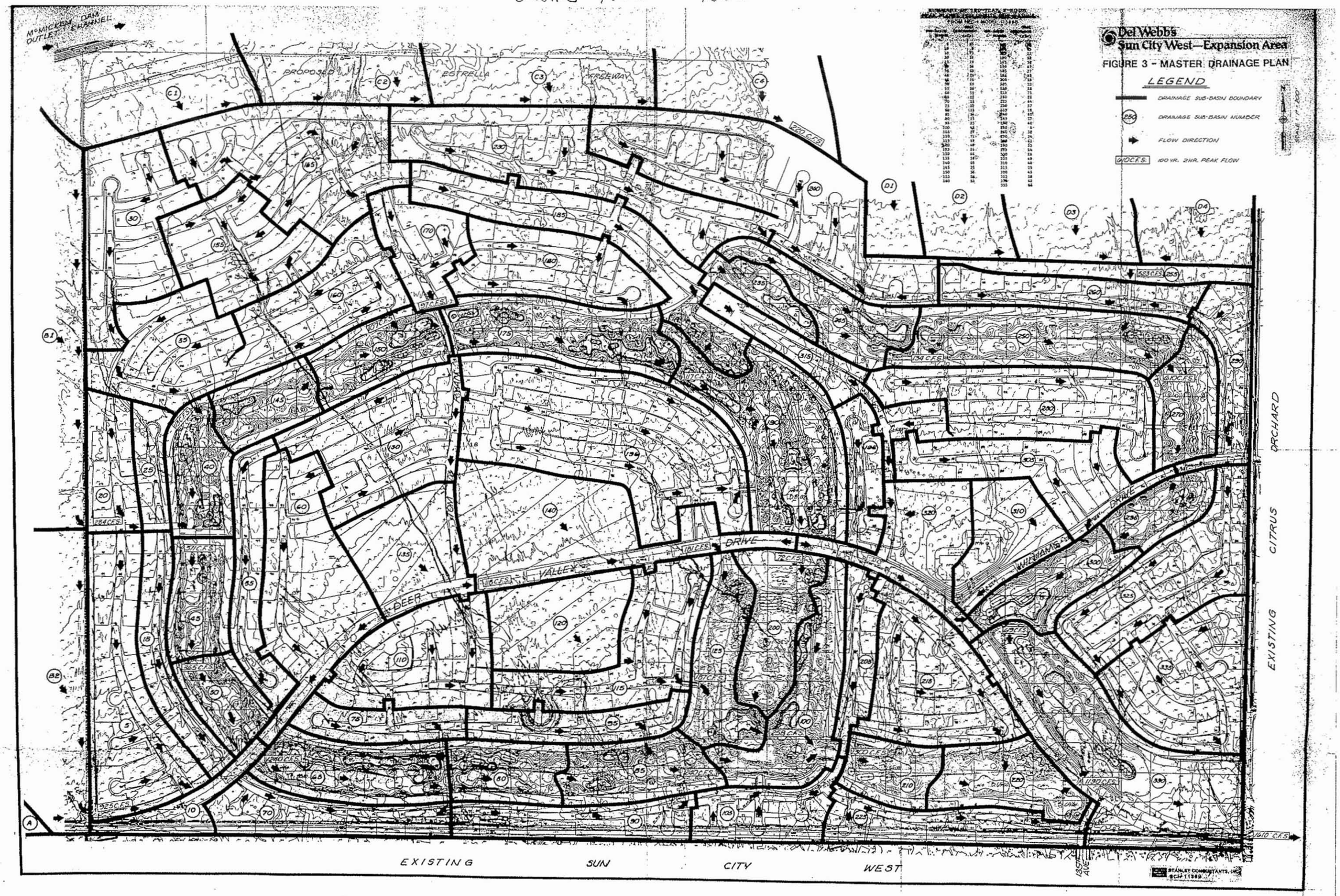


FIGURE 11

Basins N02 — N06



N05

```
ID
ID DDM MCUHP1 PLEASANT VALLEY-DEL WEB MASTER PLANNED COMMUNITY
IT     5                    300
IO     5
*D. ;RAM
* DDM   ***** Updated *****
KK     1
KM SUB-BASIN 1
KM 6-HOUR RAINFALL, PATTERN NO. 1.80 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .980
KM   L =  .64  Kb = .052  Adj. Slope =   25.0
BA  .159
IN    15
KM RAINFALL DEPTH OF 3.25 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
PB 3.186
KM THE FOLLOWING PC RECORD USED A 6-HOUR STORM WITH A PATTERN No. OF 1.80
PC  .000    .009    .016    .025    .034    .042    .051    .059    .067    .076
PC  .087    .100    .120    .158    .245    .437    .721    .851    .906    .940
PC  .952    .965    .977    .989   1.000
LG  .350    .400   6.000    .170    .000
UC  .542    .374
UA     0       3       5       8      12      20      43      75      90      96
UA   100
* DDM   ***** Preserved *****
KK  DI1S
KM DIVERT FLOW ALONG NORTH BOUNDARY IN EXISTING CHANNEL (BASED ON 1972 AERIAL)
KM TOTAL FLOW AT DIVERTION (DI CARD)
KM CONTINUING FLOW=DI1S (DI-DQ CARDS)
KM DIVERTED FLOW=DI1E (DQ CARD)
DT  DI1E
DI     0       9      64     243
DQ     0       9      38     127
* DDM   ***** Preserved *****
KKRTDI1S
KM ROUTE HYDROGRAPH DI1S THROUGH DRAINAGE AREA B2 (GOLF COURSE CHANNEL)
RS     1    FLOW      -1
RC  .035     .03    .035    3000    .005
RX  1000    1004    1264    1272    1282    1290    1296    1300
RY  1288    1286    1286    1284    1284    1286    1286    1288
* DDM   ***** Updated *****
KK    B2
KM SUB-BASIN B2
KM 6-HOUR RAINFALL, PATTERN NO. 1.80 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .980
KM   L =  .38  Kb = .093  Adj. Slope =   59.0
BA  .094
LG  .210    .150   8.000    .130   7.000
UC  .387    .229
UA     0       5      16      30      65      77      84      90      94      97
UA   100
* DDM   ***** Preserved *****
KK  CPB2
KM COMBINE HYDROGRAPHS B2 AND RTDI1S
HC     2
* DDM   ***** Preserved *****
KI  ;_B2
KM STORAGE ROUTE FLOWS THROUGH 4FT X 8FT BC
RS     1    FLOW       0
SA     0     1.8    2.43
SE  1281    1282    1283
```

N7AN05

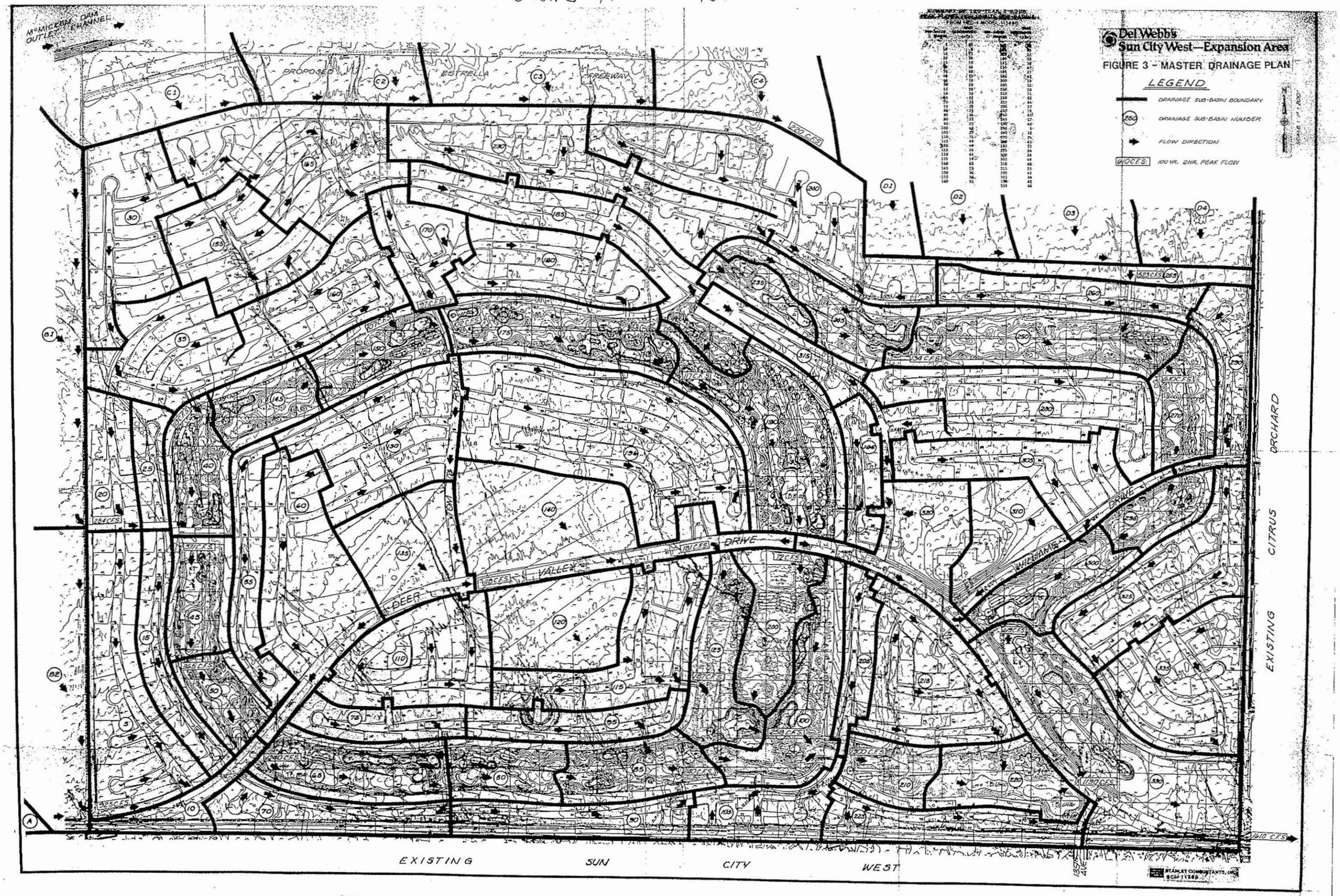
```
KK SR_LK
KM STORAGE ROUTE FLOWS THROUGH GOLF COURSE LAKE DETENTION
RS     1    FLOW       0
SA     0     2.5     2.5     2.5
SE  .288  1288.1    1290    1291
SQ     0       0       0   299.4
* DDM   ***** Updated *****
KK    B1
KM SUB-BASIN B1
KM 6-HOUR RAINFALL, PATTERN NO. 1.80 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .980
KM   L =  .55  Kb = .057  Adj. Slope =   47.0
BA  .073
LG  .250    .230   6.200    .200  30.000
UC  .392    .360
UA     0       5      16      30      65      77      84      90      94      97
UA   100
* DDM   ***** Preserved *****
KK  CPB1
KM COMBINE HYDROGRAPHS B1 AND SR_LK
HC     2
* DDM   ***** Preserved *****
KK SR_B1
KM STORAGE ROUTE FLOWS THROUGH 2-48 INCH CMP
RS     1    FLOW       0
SA     0     .33     .66       1    1.33
SE  1287    1288    1289    1290    1291
SQ     0      24      46      90     140
* DDM   ***** Preserved *****
KK  R-B1
KM ROUTE HYDROGRAPH SR-B1 THROUGH DRAINAGE AREA B5 (GOLF COURSE CHANNEL)
RS     2    FLOW      -1
RC  .035     .03    .035    3110   .0067
RX   100     120     196     200     300     301     380     400
RY  1285    1284    1281    1280    1280    1281    1284    1285
* DDM   ***** Updated *****
KK    B5
KM SUB-BASIN B5
KM 6-HOUR RAINFALL, PATTERN NO. 1.80 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .980
KM   L =  .57  Kb = .074  Adj. Slope =   18.0
BA  .211
LG  .220    .150   8.000    .120  15.000
UC  .650    .355
UA     0       5      16      30      65      77      84      90      94      97
UA   100
* DDM   ***** Preserved *****
KK  CPB5
KM COMBINE HYDROGRAPHS B5, RT-B1 AND RT-B3
HC     3
* DDM   ***** Preserved *****
KK SR_B5
KM STORAGE ROUTE FLOWS THROUGH GOLF COURSE DRIVING RANGE AND THROUGH 6FT X 8FT B
RS     1    FLOW       0
SA     0    10.8    18.1      23
SE  .266    1269    1274    1275
SQ     0      88     336     544
SE  1266    1269    1272    1275
* DDM   ***** Updated *****
KK    B4
```

N7BN05

```
SQ      0       32       58       76
SE   1259     1261     1262     1263
* DDM    ***** Preserved *****
KK   CB4B
KM   COMBINE HYDROGRAPHS B8, SR-B5 AND SR-B4
HC      3
* DDM    ***** Preserved *****
KK RT-B4
KM ROUTE HYDROGRAPH CPB4 THROUGH DRAINAGE AREA B9 (GOLF COURSE CHANNEL)
RS      1     FLOW      -1
RC   .035      .03     .035     2600     .005
RX   1110     1140     1160     1168     1350     1358     1368     1390
RY   1267     1261     1261     1266     1266     1261     1261     1268
* DDM    ***** Updated *****
KK      3
KM SUB-BASIN 3
KM 6-HOUR RAINFALL, PATTERN NO. 1.80 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .980
KM    L =  .65  Kb = .052  Adj. Slope =   35.0
BA   .159
LG   .350     .350    4.700     .300     .000
UC   .504     .350
UA      0        3        5        8       12       20       43       75       90       96
UA    100
* DDM    ***** Preserved *****
KK   DI2E
KM   RETURN DIVERSION FLOW ON NORTH BOUNDARY THAT TRAVELS EAST
DR   DI2E
* DDM    ***** Preserved *****
KK   CP3W
KM COMBINE HYDROGRAPHS 3 AND DI2E
HC      2
* DDM    ***** Preserved *****
KK   DI3S
KM DIVERT FLOW ALONG NORTH BOUNDARY IN EXISTING CHANNEL (BASED ON 1972 AERIAL)
KM TOTAL FLOW AT DIVERTION (DI CARD)
KM CONTINUING FLOW=DI3S (DI-DQ)
KM DIVERTED FLOW=DI3E (DQ)
DT   DI3E
DI      0     64.8      209      452
DQ      0     64.8      171      345
* DDM    ***** Preserved *****
KK RT-3S
KM ROUTE HYDROGRAPH DI3S THROUGH DRAINAGE AREA B6 (GOLF COURSE CHANNEL)
RS      1     FLOW      -1
RC   .035      .03     .035     1500     .005
RX   1000     1004     1264     1272     1282     1290     1296     1300
RY   1279     1277     1277     1275     1275     1277     1277     1279
* DDM    ***** Updated *****
KK     B6
KM SUB-BASIN B6
KM 6-HOUR RAINFALL, PATTERN NO. 1.80 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .980
KM    L =  .66  Kb = .078  Adj. Slope =   42.0
BA   .127
LG   .220     .250    5.800     .270   15.000
UC   .571     .462
UA      0        5       16       30       65       77       84       90       94       97
UA    100
* DDM    ***** Preserved *****
```

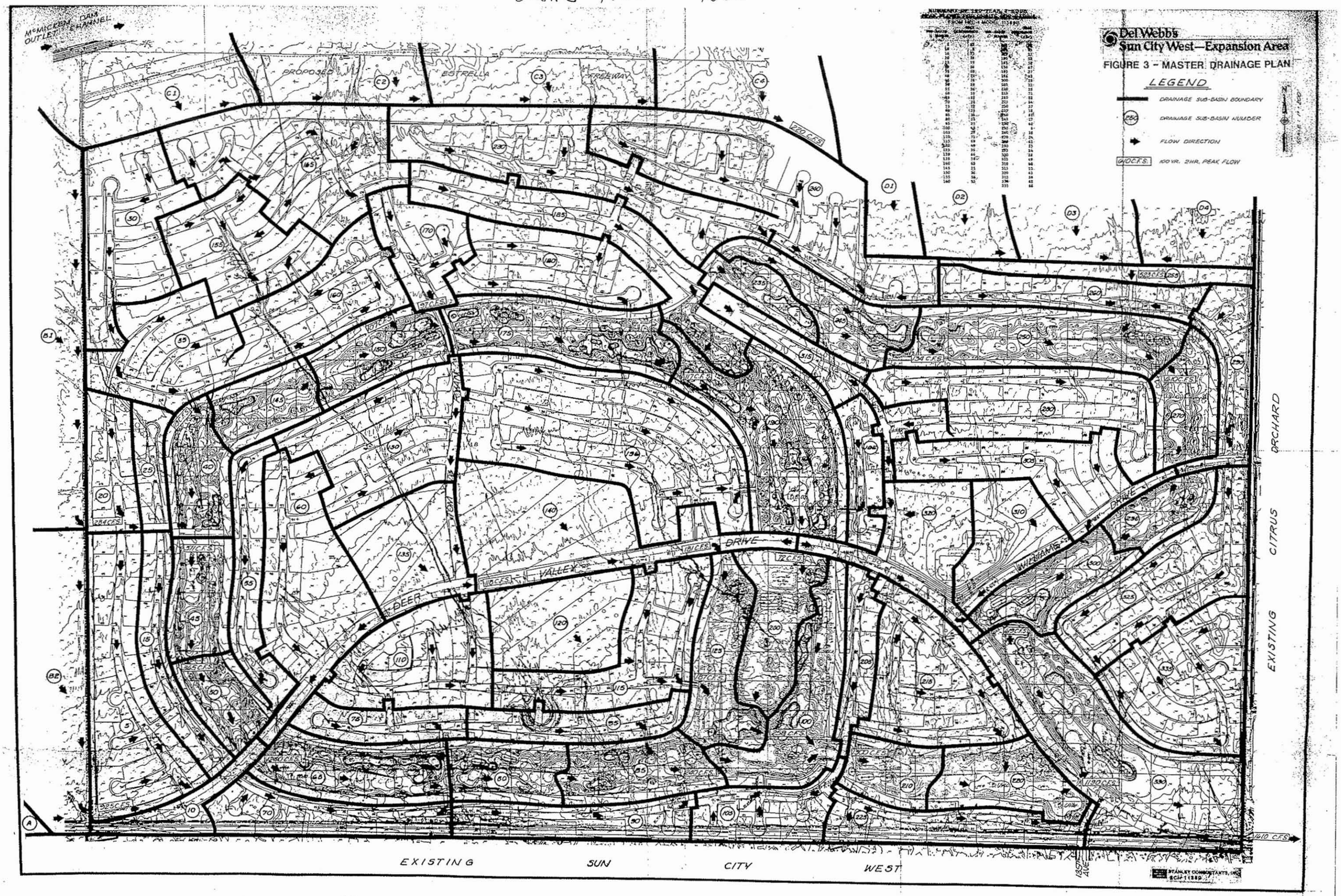
N7CN05

Basins NU2 — NU6



N06

Basins N02 – N06



N07

Pleasant Valley Country Club

By DR Webb

Pulte Home Plc

EARL, CURLEY & LAGARDE, P.C.

Greg Nash Design

DEI

Urban Design Studio LLC

```
ID
ID DDM MCUHP1 PLEASANT VALLEY-DEL WEB MASTER PLANNED COMMUNITY
IT     5                    300
IO     5
*D   ,RAM
* DDM   ***** Updated *****
KK     1
KM SUB-BASIN 1
KM 6-HOUR RAINFALL, PATTERN NO. 1.80 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .980
KM   L =  .64  Kb = .052  Adj. Slope =   25.0
BA  .159
IN    15
KM RAINFALL DEPTH OF 3.25 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
PB 3.186
KM THE FOLLOWING PC RECORD USED A 6-HOUR STORM WITH A PATTERN No. OF 1.80
PC  .000    .009    .016    .025    .034    .042    .051    .059    .067    .076
PC  .087    .100    .120    .158    .245    .437    .721    .851    .906    .940
PC  .952    .965    .977    .989   1.000
LG  .350    .400   6.000    .170    .000
UC  .542    .374
UA     0       3       5       8      12      20      43      75      90      96
UA   100
* DDM   ***** Preserved *****
KK  DI1S
KM DIVERT FLOW ALONG NORTH BOUNDARY IN EXISTING CHANNEL (BASED ON 1972 AERIAL)
KM TOTAL FLOW AT DIVERTION (DI CARD)
KM CONTINUING FLOW=DI1S (DI-DQ CARDS)
KM DIVERTED FLOW=DI1E (DQ CARD)
DT  DI1E
DI     0       9      64     243
DQ     0       9      38     127
* DDM   ***** Preserved *****
KKRTDI1S
KM ROUTE HYDROGRAPH DI1S THROUGH DRAINAGE AREA B2 (GOLF COURSE CHANNEL)
RS     1    FLOW      -1
RC  .035     .03    .035    3000    .005
RX  1000    1004    1264    1272    1282    1290    1296    1300
RY  1288    1286    1286    1284    1284    1286    1286    1288
* DDM   ***** Updated *****
KK    B2
KM SUB-BASIN B2
KM 6-HOUR RAINFALL, PATTERN NO. 1.80 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .980
KM   L =  .38  Kb = .093  Adj. Slope =   59.0
BA  .094
LG  .210    .150   8.000    .130   7.000
UC  .387    .229
UA     0       5      16      30      65      77      84      90      94      97
UA   100
* DDM   ***** Preserved *****
KK  CPB2
KM COMBINE HYDROGRAPHS B2 AND RTDI1S
HC     2
* DDM   ***** Preserved *****
KK  S_B2
KM STORAGE ROUTE FLOWS THROUGH 4FT X 8FT BC
RS     1    FLOW       0
SA     0     1.8    2.43
SE  1281    1282    1283
```

DN07A

```
SQ      0      68     120     184
SE   1281    1283    1284    1285
* DDM    ***** Preserved *****
KK  T-B2
KM  UTE HYDROGRAPH SR-B2 THROUGH DRAINAGE AREA B3 (GOLF COURSE CHANNEL)
RS      1    FLOW      -1
RC   .035     .03    .035    2060    .005
RX   1000    1004    1264    1272    1282    1290    1296    1300
RY   1279    1277    1277    1275    1275    1277    1277    1279
* DDM    ***** Updated *****
KK     B3
KM SUB-BASIN B3
KM 6-HOUR RAINFALL, PATTERN NO. 1.80 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .980
KM    L =  .49  Kb = .072  Adj. Slope =   23.0
BA   .106
LG   .230    .150   7.600    .130  20.000
UC   .533    .374
UA      0       5      16      30      65      77      84      90      94      97
UA    100
* DDM    ***** Preserved *****
KK  CPB3
KM COMBINE HYDROGRAPHS B8, SR-B5 AND SR-B4
HC      2
* DDM    ***** Preserved *****
KK RT-B3
KM ROUTE HYDROGRAPH SR-B3 THROUGH DRAINAGE AREA B5 (GOLF COURSE DRIVING RANGE)
RS      1    FLOW      -1
RC   .035     .03    .035     700    .005
RX   1000    1002  1002.1    1022    1058  1077.9    1078    1080
RY   1275  1274.5  1274.5    1270    1270  1274.5  1275.5    1275
* DDM    ***** Updated *****
KK      2
KM SUB-BASIN 2
KM 6-HOUR RAINFALL, PATTERN NO. 1.80 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .980
KM    L =  .63  Kb = .055  Adj. Slope =   25.0
BA   .109
LG   .350    .370   5.300    .230    .000
UC   .571    .485
UA      0       3       5       8      12      20      43      75      90      96
UA    100
* DDM    ***** Preserved *****
KK  DI1E
KM  RETURN DIVERSION FLOW ON NORTH BOUNDARY THAT TRAVELS EAST
DR  DI1E
* DDM    ***** Preserved *****
KK  CP2W
KM COMBINE HYDROGRAPHS B1 AND SR_LK
HC      2
* DDM    ***** Preserved *****
KK  DI2S
KM DIVERT FLOW ALONG NORTH BOUNDARY IN EXISTING CHANNEL (BASED ON 1972 AERIAL)
KM TOTAL FLOW AT DIVERTION (DI CARD)
KM CONTINUING FLOW=DI1S (DI-DQ)
KM  VERTED FLOW=DI1E (DQ)
DT  DI2E
DI      0    11.4    22.9   152.3   289.9
DQ      0    11.4      18    83.2     162
* DDM    ***** Preserved *****
```

DN07B

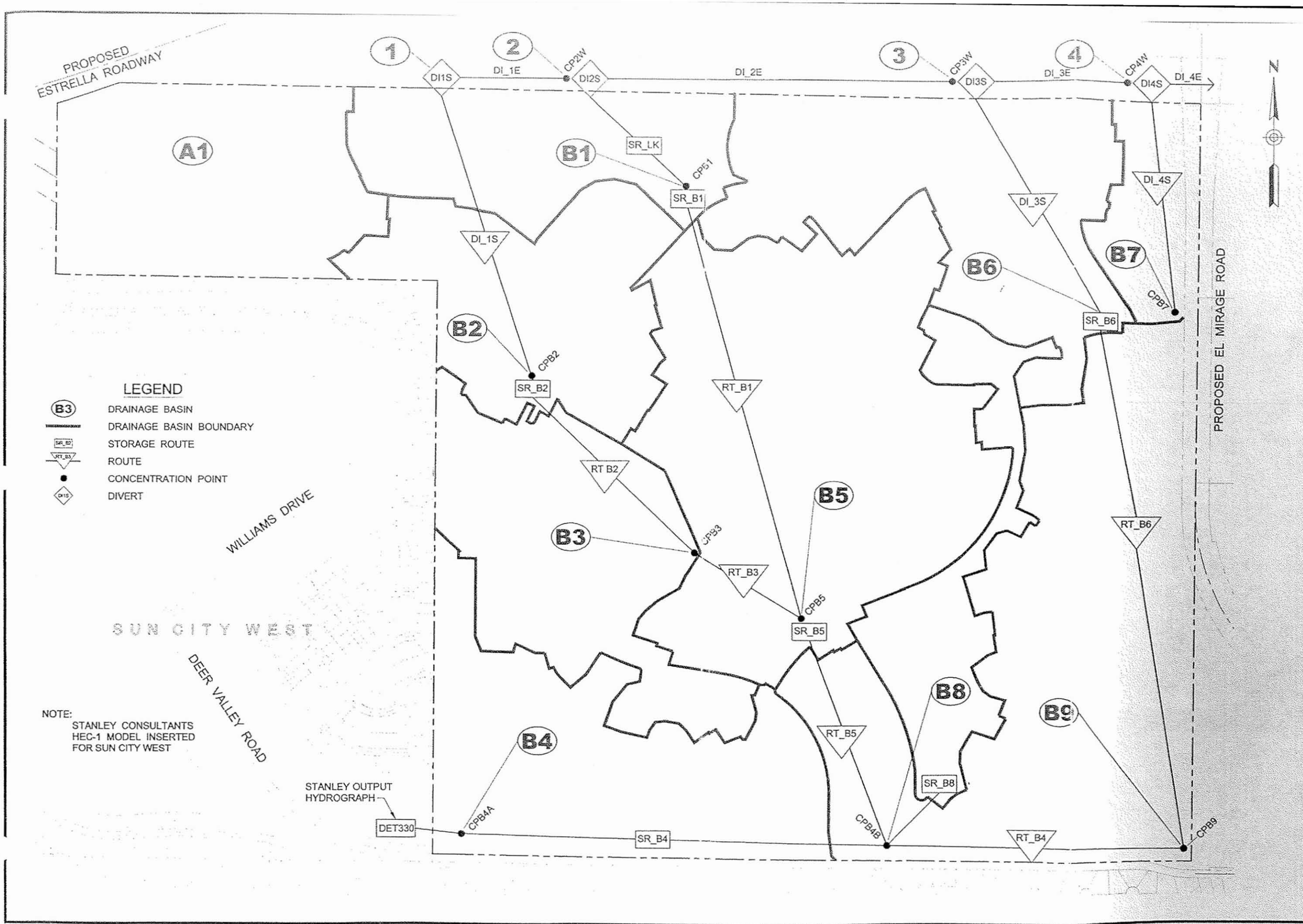
```
SQ      0      32      58      76
SE   1259    1261    1262    1263
* DDM    ***** Preserved *****
KK   ᐧB4B
KM   ᐧMBINE HYDROGRAPHS B8, SR-B5 AND SR-B4
HC      3
* DDM    ***** Preserved *****
KK RT-B4
KM ROUTE HYDROGRAPH CPB4 THROUGH DRAINAGE AREA B9 (GOLF COURSE CHANNEL)
RS      1    FLOW      -1
RC   .035     .03    .035    2600    .005
RX   1110    1140    1160    1168    1350    1358    1368    1390
RY   1267    1261    1261    1266    1266    1261    1261    1268
* DDM    ***** Updated *****
KK      3
KM SUB-BASIN 3
KM 6-HOUR RAINFALL, PATTERN NO. 1.80 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .980
KM    L =  .65  Kb = .052  Adj. Slope =   35.0
BA   .159
LG   .350    .350   4.700    .300    .000
UC   .504    .350
UA      0       3       5       8      12      20      43      75      90      96
UA    100
* DDM    ***** Preserved *****
KK   DI2E
KM   RETURN DIVERSION FLOW ON NORTH BOUNDARY THAT TRAVELS EAST
DR   DI2E
* DDM    ***** Preserved *****
KK   ᐧP3W
KM   ᐧOMBINE HYDROGRAPHS 3 AND DI2E
HC      2
* DDM    ***** Preserved *****
KK   DI3S
KM DIVERT FLOW ALONG NORTH BOUNDARY IN EXISTING CHANNEL (BASED ON 1972 AERIAL)
KM TOTAL FLOW AT DIVERTION (DI CARD)
KM CONTINUING FLOW=DI3S (DI-DQ)
KM DIVERTED FLOW=DI3E (DQ)
DT   DI3E
DI      0    64.8     209     452
DQ      0    64.8     171     345
* DDM    ***** Preserved *****
KK RT-3S
KM ROUTE HYDROGRAPH DI3S THROUGH DRAINAGE AREA B6 (GOLF COURSE CHANNEL)
RS      1    FLOW      -1
RC   .035     .03    .035    1500    .005
RX   1000    1004    1264    1272    1282    1290    1296    1300
RY   1279    1277    1277    1275    1275    1277    1277    1279
* DDM    ***** Updated *****
KK     B6
KM SUB-BASIN B6
KM 6-HOUR RAINFALL, PATTERN NO. 1.80 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .980
KM    L =  .66  Kb = .078  Adj. Slope =   42.0
BA   .127
LC    220    .250   5.800    .270  15.000
UC   .571    .462
UA      0       5      16      30      65      77      84      90      94      97
UA    100
* DDM    ***** Preserved *****
```

DN07C

```
KK SR_B6
KM STORAGE ROUTE FLOWS THROUGH 5FT X 10FTBOX CULVERT
RS      1     FLOW        0
SA      0     1.31     2.96     5.62
SE   273     1276     1278     1280
SQ      0      120      320
SE   1273   1275.5     1278
* DDM    ***** Preserved *****
KK  CPB6
KM COMBINE HYDROGRAPHS B6 AND SR_B6
HC      2
* DDM    ***** Preserved *****
KK RT-B6
KM ROUTE HYDROGRAPH SR-B6 THROUGH DRAINAGE AREA B9 (GOLF COURSE CHANNEL)
RS      1     FLOW       -1
RC  .035      .03     .035     2060     .005
RX  1000     1004     1264     1272     1282     1290     1296     1300
RY  1269     1267     1267     1265     1265     1267     1267     1269
* DDM    ***** Updated *****
KK     B9
KM SUB-BASIN B9
KM 6-HOUR RAINFALL, PATTERN NO. 1.80 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .980
KM   L =  .80  Kb = .074  Adj. Slope =    9.0
BA  .215
LG  .220     .250    5.400     .330   15.000
UC 1.258     .959
UA      0        5       16       30       65       77       84       90       94       97
UA    100
*    1   ***** Preserved *****
KK  CPB9
KM COMBINE HYDROGRAPHS B9 AND RT-B6
HC      3
* DDM    ***** Updated *****
KK      4
KM SUB-BASIN 4
KM 6-HOUR RAINFALL, PATTERN NO. 1.80 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .980
KM   L =  .71  Kb = .052  Adj. Slope =   32.0
BA  .177
LG  .350     .370    5.200     .240     .000
UC  .542     .382
UA      0        3        5        8       12       20       43       75       90       96
UA    100
* DDM    ***** Preserved *****
KK  DI3E
KM  RETURN DIVERSION FLOW ON NORTH BOUNDARY THAT TRAVELS EAST
DR  DI3E
* DDM    ***** Preserved *****
KK  CP4W
KM COMBINE HYDROGRAPHS 4 AND DI3E
HC      2
* DDM    ***** Preserved *****
KK  DI4S
KM DIVERT FLOW ALONG NORTH BOUNDARY IN EXISTING CHANNEL (BASED ON 1972 AERIAL)
KM  TOTAL FLOW AT DIVERTION (DI CARD)
KM CONTINUING FLOW=DI4S (DI-DQ)
KM DIVERTED FLOW=DI4E (DQ)
DT  DI4E
DI      0    138.7    164.6    352.2      558
```

DN07D

```
DQ      0   138.7   159.8   299.2     450
* DDM    ***** Preserved *****
KK RT-4S
KM ROUTE HYDROGRAPH DI4S THROUGH DRAINAGE AREA B7 (BOUNDARY CHANNEL)
RS      1    FLOW      -1
RC  .035     .03    .035    2600    .005
RX  1000    1001    1002    1014    1021    1033    1034    1035
RY  1285  1284.5  1284.5    1282    1282  1284.5  1284.5    1285
* DDM    ***** Updated *****
KK    B7
KM SUB-BASIN B7
KM 6-HOUR RAINFALL, PATTERN NO. 1.80 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .980
KM   L =  .30  Kb = .062  Adj. Slope =   17.0
BA  .033
LG  .250    .250   4.700    .380  30.000
UC  .433    .390
UA     0       5      16      30      65      77      84      90      94      97
UA   100
* DDM    ***** Preserved *****
KK  CPB7
KM COMBINE HYDROGRAPHS B7 AND RT-4S
HC      2
* DDM    ***** Updated *****
KK    A1
KM SUB-BASIN A1
KM 6-HOUR RAINFALL, PATTERN NO. 1.80 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .980
KM   L =  .55  Kb = .055  Adj. Slope =   47.0
BA  .097
LG  .250    .250   4.700    .380  30.000
UC  .396    .310
UA     0       5      16      30      65      77      84      90      94      97
UA   100
ZZ
```



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PLEASANT VALLEY COUNTRY CLUB
HEC-1 SCHEMATIC

DATE: 4/11/01 | PROJ. NO: 01016 | SCALE: 1" = 800' | CAD FILE: 1016X014

Del Webb

FIGURE
A-D4

N08

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For information on this sub-basin, reference the hydrology model
Loop 303/White Tanks ADMPU Area Hydrologic Analysis

N09

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Loop 303/White Tanks ADMPU Area Hydrologic Analysis

N10

1977 Del Webb Development Master Plan
Sun City West

Subbasins N10 – N19

This expansion will prevent the runoff from overtopping the culvert during a 100 year Frequency Storm, thus keeping Bell Road open to traffic in this section of roadway.

Discharge of storm water to the Agua Fria River in lieu of on-site detention was adopted for the following reasons:

1. The Agua Fria River is an adequate point of storm water discharge within reasonable proximity to the site.
2. The runoff from this project does not significantly increase the peak flow in the Agua Fria River.
3. Secondary discharge at the northeast corner of Section 26 is to the Mc Micken Dam Outlet Channel Floodway, a Maricopa County Flood Control District facility.
4. The proposed drainage channel along Bell Road to the Agua Fria River will alleviate a flood hazard in the town of Surprise.

3. STREET AND CHANNEL CAPACITIES

The Drainage Master Plan for Sun City West Phase I calls for storm water runoff to be conveyed to its outfall in the Agua Fria River by the roadway system, grass or lined channels, and a combination of roadway with a median channel.

Capacity of these storm water conveyance systems is based on Manning's Formula for open channel flow which is expressed as follows:

$$V = \frac{1.486}{n} R^{2/3} S^{1/2}$$

$$Q = AV$$

V = Mean Velocity of Water in feet per second

n = Manning's coefficient of roughness

R = Hydraulic radius in feet (cross-sectional area ÷ wetted perimeter)

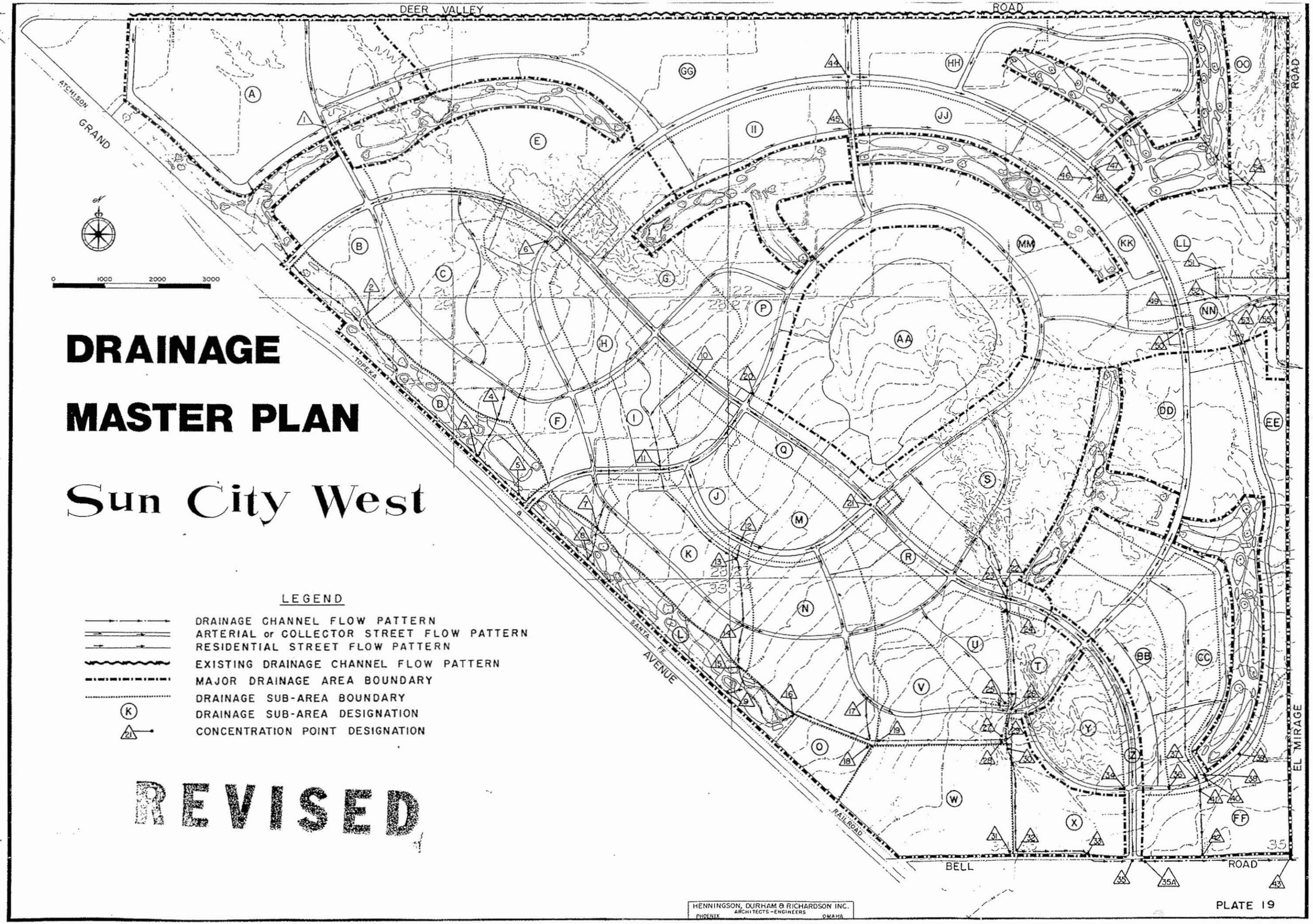
S = Slope of roadway or channel in feet per foot

Q = Conveyance quantity in cubic feet per second

A = Cross-sectional area of flowing water in square feet

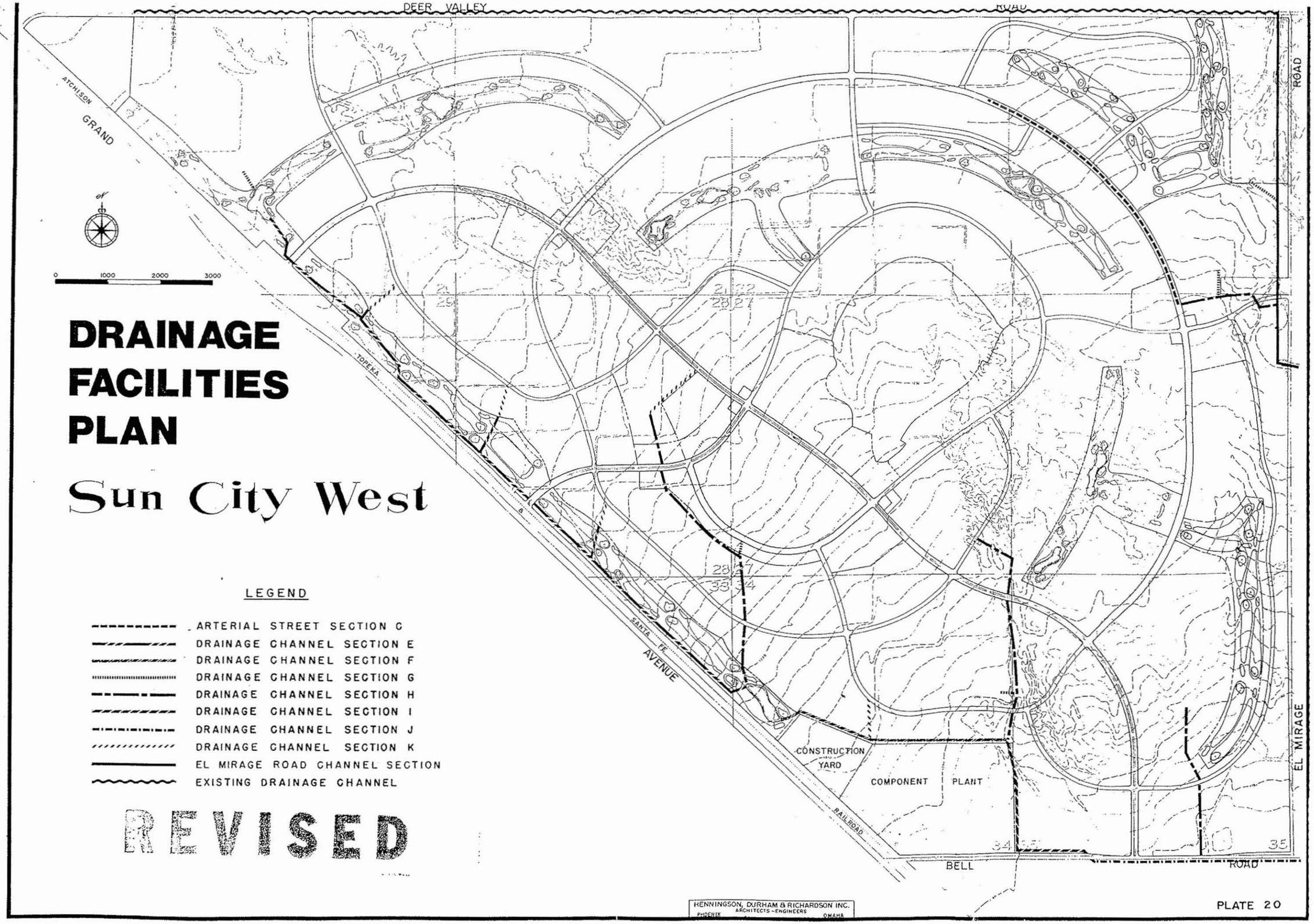
Manning's roughness coefficient varies with the type of surface over which the water is flowing. Values used for "n" are as follows:

"n"	surface type
0.016	asphalt pavement
0.018	pneumatically placed concrete channel lining
0.018	soil cement channel lining
0.03	dirt median
0.03	flood channel, earth bottom, rubble sides
0.033-0.05	grass lined channels



DRAINAGE MASTER PLAN

Sun City West



DRAINAGE FACILITIES PLAN

Sun City West

N11

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For information on this sub-basin, reference the hydrology model
Loop 303/White Tanks ADMPU Area Hydrologic Analysis

N12

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For information on this sub-basin, reference the hydrology model
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N13

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For information on this sub-basin, reference the hydrology model
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N14

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For information on this sub-basin, reference the hydrology model
Loop 303/White Tanks ADMPU Area Hydrologic Analysis

N15

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For information on this sub-basin, reference the hydrology model
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N16

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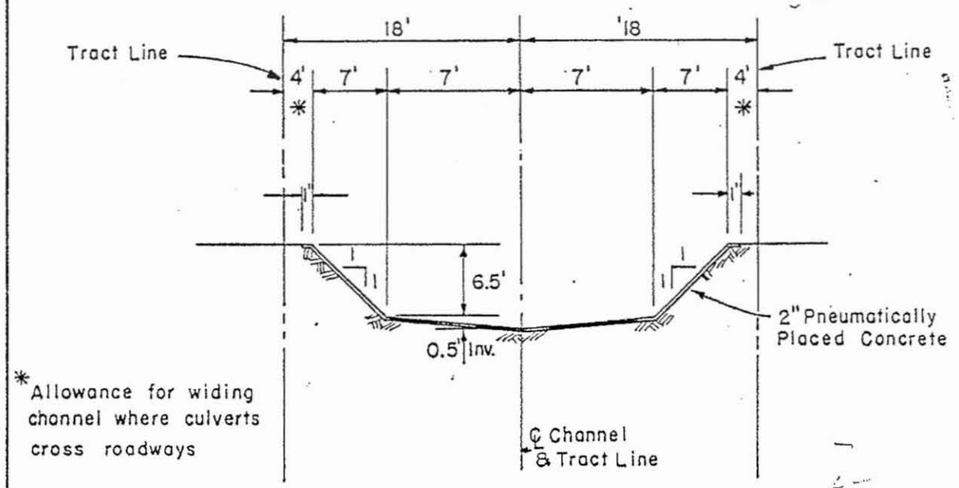
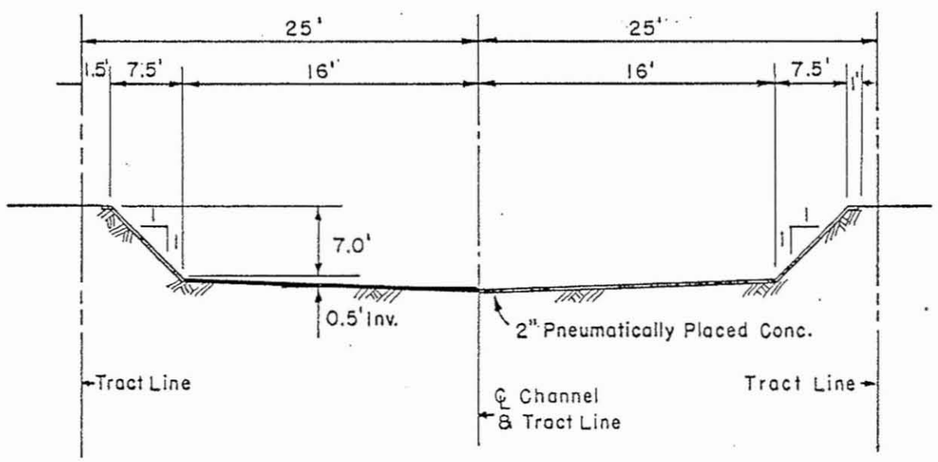
Loop 303/White Tanks ADMPU Area Hydrologic Analysis

N17

N15N17



SECTION "H"
TYPICAL DRAINAGE CHANNEL



SECTION "I"
DRAINAGE CHANNEL ALONG WEST SIDE OF COMPONENT PLANT
DRAINAGE CHANNEL ALONG NORTH SIDE OF BELL ROAD

PLATE 23

Rev. 12/77

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For information on this sub-basin, reference the hydrology model
Loop 303/White Tanks ADMPU Area Hydrologic Analysis

N19

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For information on this sub-basin, reference the hydrology model
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N20

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For information on this sub-basin, reference the hydrology model
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N21

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For information on this sub-basin, reference the hydrology model
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N22

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For information on this sub-basin, reference the hydrology model
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N23

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N24

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For information on this sub-basin, reference the hydrology model
Loop 303/White Tanks ADMPU Area Hydrologic Analysis

N25

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For information on this sub-basin, reference the hydrology model
Loop 303/White Tanks ADMPU Area Hydrologic Analysis

N26

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For information on this sub-basin, reference the hydrology model
Loop 303/White Tanks ADMPU Area Hydrologic Analysis

N27

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For information on this sub-basin, reference the hydrology model
Loop 303/White Tanks ADMPU Area Hydrologic Analysis