CITY OF ALBUQUERQUE

Richard J. Berry, Mayor

November 1, 2016

Scott J. Steffen, P.E.
Bohannan Huston
7601 Jefferson NE, Suite 100
Albuquerque, NM, 87109

RE: Montecito Vistas Units 1-4
Grading & Drainage Plan and Report
Stamp Date 8-16-2016 / Hydrology File: D09D005
Revisions Dated 10-13-2016

Dear Mr. Steffen:

Based upon the information provided in your submittal received 10-18-2016, the above-referenced Plan/Report is approved for Preliminary Plat and Site Plan for Subdivision.

Prior to ESC Grading Permit, the following must be addressed/acknowledged:

1. An ESC Plan will need to be approved before approval can be given for ESC Grading Permit. An approved ESC Plan and ESC Grading Permit are required prior to any grading on this project.
2. The 60" storm drain outfall will need a designed outlet structure that includes a permanent erosion control/energy dissipation feature. This item will need to be approved by the City Engineer prior to DRC sign off.
3. The 8" PVC that conveys flows from the bermed offsite area (Sheet 4) should be designed with elements to reduce the likelihood of clogging, such as a domed grate stand pipe. Also, please consider piping the flows directly to the swale instead of routing the flows between the retaining walls. This can be addressed prior to DRC sign off, if that element is designed with the work order.

If you have any questions, you can contact me at 924-3986.

Sincerely,

Abiel Carrillo, P.E.
Principal Engineer, Planning Dept.
Development Review Services

DRB: 1009506
Orig: Drainage file

PO Box 1293
Albuquerque
New Mexico 87103
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City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: MONTECITO VISTAS UNITS 1-4 Building Permit #: _____ City Drainage #: D09/D005

DRB#: 1009506 EPC#: _____ Work Order#: _____

Legal Description: Tracts 7- 8, 9A-C, 10B-C, 24-25, 26A-B & 27 Volcano Cliffs Subdivision Unit 6 and Tract 14 Volcano Cliffs Subdivision Unit 9

City Address: _____

Engineering Firm: BOHANNAN HUSTON INC Contact: SCOTT STEFFEN

Address: 7500 JEFFERSON ST NE COURTYARD I ALBUQUERQUE NM 87109

Phone#: 823-1000 Fax#: _____ E-mail: SSTEFFEN@BHINC.COM

Owner: PULTE GROUP Contact: KEVIN PATTON

Address: 7601 JEFFERSON ST NE STE 320 ALBUQUERQUE NM 87109

Phone#: 505-761-9606 Fax#: _____ E-mail: _____

Architect: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Other Contact: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Check all that Apply:

DEPARTMENT:

__x__ HYDROLOGY/ DRAINAGE
_____ TRAFFIC/ TRANSPORTATION
_____ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

_____ ENGINEER/ ARCHITECT CERTIFICATION

_____ CONCEPTUAL G & D PLAN
__X__ GRADING PLAN
_____ DRAINAGE MASTER PLAN
__X__ DRAINAGE REPORT
_____ CLOMR/LOMR

_____ TRAFFIC CIRCULATION LAYOUT (TCL)
_____ TRAFFIC IMPACT STUDY (TIS)
_____ EROSION & SEDIMENT CONTROL PLAN (ESC)

_____ OTHER (SPECIFY) _____

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

_____ BUILDING PERMIT APPROVAL
_____ CERTIFICATE OF OCCUPANCY

__X__ PRELIMINARY PLAT APPROVAL
__X__ SITE PLAN FOR SUB'D APPROVAL
_____ SITE PLAN FOR BLDG. PERMIT APPROVAL
_____ FINAL PLAT APPROVAL
_____ SIA/ RELEASE OF FINANCIAL GUARANTEE
_____ FOUNDATION PERMIT APPROVAL
__X__ GRADING PERMIT APPROVAL
_____ SO-19 APPROVAL
_____ PAVING PERMIT APPROVAL
_____ GRADING/ PAD CERTIFICATION
_____ WORK ORDER APPROVAL
_____ CLOMR/LOMR

_____ PRE-DESIGN MEETING
_____ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: __X__ Yes _____ No

DATE SUBMITTED: 10/18/16 By: SCOTT STEFFEN

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ____

Bohannan Huston

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7500 Jefferson St. NE
Albuquerque, NM
87109-4335

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facsimile: 505.798.7988
toll free: 800.877.5332

October 18, 2016

Abiel Carrillo, P. E.
Hydrology Section
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: Montecito Vistas Units 1-4, Drainage Report (D09/D005) Addendum #1

Dear Abiel:

This letter is an addendum to the previously approved drainage report for Montecito Vistas Units 1-4 (MV DR). The purpose of this addendum is to modify the drainage design of the lots in Basin 6-D.2F and the drainage outfall to the Middle Branch of the Boca Negra Arroyo from an open channel to a pipe.

The grading/drainage design for lots along the east side of Vista Luces Street has been revised from the lots draining to the rear to the lots draining to the front. The following items are included in this addendum as a result of this design modification:

- The private storm drain that extended into the HOA Tract (Tract F, Unit 2) to convey the flow to the Vista Luces Street storm drain is no longer necessary. The Storm Drain Network Map has been updated to reflect the removal of the private storm drain.
- Tract F has been replaced by an additional lot in Unit 2.
- The runoff conveyed in Vista Luces Street increases by 8 cfs, the runoff from Basin 6-D.2F, with 5 cfs draining to the northern sump and 3 cfs draining to the southern sump. The street capacity analysis for Vista Luces Street has been revised to reflect this change.
- The first flush for the lots in Basin 6-D.2F will be accommodated by a combination of ponding between the back of curb and sidewalk and onsite front yard ponding as described in the "First Flush Requirements" section of the approved drainage report. The paragraph regarding backyard ponds being utilized for the first flush for lots in Basin 6-D.2F is no longer valid.
- The drainage outfall to the Middle Branch of the Boca Negra Arroyo has been modified from an open channel to a pipe. The Storm Drain Network Map has been revised to reflect the storm drain pipe outfall.

Included for your review are the revised AHYMO input, output and summary output information, revised grading plan, revised street hydraulics for Vista Luces Street, and the revised Storm Drain Network Map.

The revised lot drainage design is consistent with the rest of the lots in Montecito Vistas and does not change the developed runoff discharging from Montecito Vistas to the Middle Branch of the Boca Negra Arroyo. Changing the storm drainage outfall to the Middle Branch of the Boca Negra Arroyo from an open channel to a pipe does not significantly impact the storm drain hydraulics. The proposed revisions in this Addendum do not change the results and conclusions of the previously approved drainage report.

If you have any questions or require further information, please feel free to contact me.

Sincerely,

Scott J. Steffen, P.E.
Vice President
Community Development and Planning Group

Enclosures

cc: Rick Beltramo, Wexford Construction

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*S  THE VISTA VIEJA SUBDIVISION DRAINAGE BASIN (D) PROPOSED
*S  100 YEAR - 6 HOUR STORM
*S
*S  REVISED 2005 AHYMO TO REFLECT UPDATED LAND TREATMENTS
*
*S  MONTECITO WEST DMP UPDATE WITH MONTEICTO VISTA DEVELOPMENT 5/12/16
*
*CONVERT TO NMHYMO
START                 TIME=0.0 HR  PUNCH CODE=0
*******************************************************
LOCATION   NM
*
*******************************************************
*
*******************************************************
*100 YEAR - 6 HOUR
RAINFALL              TYPE=1  RAIN QUARTER=0
                RAIN ONE=1.73 IN  RAIN SIX=2.23 IN
                RAIN DAY=2.60 IN  DT=0.033333 HRS

*S
*S                    ********************************
*S                    *  COMPUTE OFFSITE "D" BASINS  *
*S                    ********************************
*S
*S
*S
*S COMPUTE BASIN OS-D *******************************************************
*
*S NO CHANGE FROM MONTECITO WEST DMP
*
COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
                     NK=3  ISLOPE=-1
                     LENGTH=400 FT  SLOPE=0.0750 K=0.7
                     LENGTH=700 FT  SLOPE=0.04286 K=2.0
                     LENGTH=2900 FT  SLOPE=0.03793 K=3.0


COMPUTE NM HYD             ID=17  HYD=OS_D  AREA=0.2378 SQ MI
                      PER A=95.0  PER B=5.0  PER C=0.0  PER D=0.0
                      TP=0.0 HR  MASS RAIN=-1
PRINT HYD                  ID=17     CODE=1
*
*S ROUTE OS-D THRU 15-D IN CHANNEL NO.15***********************************
*
COMPUTE RATING CURVE  CID=1   VS NO=1   NO SEGS=1
                      MIN ELEV=0 MAX ELEV=3.80
                      CH SLOPE=0.038    FP SLOPE=0.038
                      N=0.038    DIST=32.0
                      DIST  ELEV      DIST  ELEV
                        0.0      5.0   6.0   0.0
                            26.0  0.0   32.0  5.0
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```
ROUTE MCUNGE         ID=50  HYD=100.01   INFLOW ID=17  DT=0HR  L=4900
                     NS=0   SLOPE=.038  MATCODE=0  REGCODE=0  CCODE=0
PRINT HYD            ID=50         CODE=1
*
*S COMPUTE BASIN 15-D ****************************************************
*S ABOVE 4W WATER ZONE DEVELOPED RUNOFF RESTRICTED TO UNDEVELOPED RUNOFF
*
*S NO CHANGE FROM MONTECITO WEST DMP
*
COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
                     NK=3  ISLOPE=-1
                     LENGTH=400 FT  SLOPE=0.050 K=0.7
                     LENGTH=500 FT  SLOPE=0.020 K=2.0
                     LENGTH=1200 FT  SLOPE=0.02167 K=3.0


COMPUTE NM HYD             ID=15  HYD=15_D  AREA=0.1506 SQ MI
                      PER A=68.0  PER B=8.0  PER C=8.0  PER D=16.0
                      TP=0.0 HR  MASS RAIN=-1
PRINT HYD                  ID=15     CODE=1
*
*S ADD SUB-BASIN OS-D TO SUB-BASIN 15-D***********************************
ADD HYD             ID=33   HYD NO=101.0 ID I=15 ID II=50
PRINT HYD           ID=33   CODE=1
*
*S ROUTE 15-D/OS-D THRU 9-D.1 IN CHANNEL NO.9*****************************
*
COMPUTE RATING CURVE  CID=1   VS NO=1   NO SEGS=1
                      MIN ELEV=0 MAX ELEV=3.80
                      CH SLOPE=0.038    FP SLOPE=0.038
                      N=0.038    DIST=32.0
                      DIST  ELEV      DIST  ELEV
                        0.0      5.0   6.0   0.0
                           26.0  0.0   32.0  5.0


ROUTE MCUNGE         ID=40  HYD=100.01   INFLOW ID=33  DT=0HR  L=4900
                     NS=0   SLOPE=.038  MATCODE=0  REGCODE=0  CCODE=0
PRINT HYD            ID=40         CODE=1
*
*S COMPUTE BASIN 9-D.1 ***************************************************
*S UPDATED TO SHOW 30% OPEN SPACE AND REMOVED 0.0125 SQ MI FROM BASIN
*S ABOVE 4W WATER ZONE DEVELOPED RUNOFF RESTRICTED TO UNDEVELOPED RUNOFF
*
*S LAND TREATMENT CHANGES DUE TO MORE COA OPEN SPACE DUE TO MW UNITS 3-6
*
COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
                     NK=3  ISLOPE=-1
                     LENGTH=400 FT  SLOPE=0.0084 K=0.7
                     LENGTH=0 FT  SLOPE=0.0 K=2.0
```

```
                      LENGTH=1600 FT  SLOPE=0.0250 K=3.0


COMPUTE NM HYD              ID=9  HYD=9_D.1  AREA=0.0603 SQ MI
                       PER A=40.0  PER B=21.0  PER C=19.0  PER D=20.0
                       TP=0.0 HR  MASS RAIN=-1
PRINT HYD                   ID=9     CODE=1
*
*S ADD 15-D/OS-D TO SUB-BASIN 9-D.1 ****************************************
ADD HYD             ID=44   HYD NO=104.0 ID I=40 ID II=9
PRINT HYD           ID=44   CODE=1
*
*S ROUTE 9-D.1/15-D/9-D.1 THRU 6-D.1 IN CHANNEL NO.6 **********************
*
COMPUTE RATING CURVE  CID=1   VS NO=1   NO SEGS=1
                       MIN ELEV=0 MAX ELEV=3.80
                       CH SLOPE=0.038    FP SLOPE=0.038
                       N=0.038    DIST=32.0
                       DIST  ELEV      DIST  ELEV
                         0.0      5.0   6.0   0.0
                             26.0  0.0   32.0  5.0


ROUTE MCUNGE         ID=30  HYD=104.1   INFLOW ID=44  DT=0HR  L=4900
                     NS=0   SLOPE=.038  MATCODE=0  REGCODE=0  CCODE=0
PRINT HYD            ID=30         CODE=1
*
*S COMPUTE BASIN 6-D.1 ****************************************************
*S UPDATED TO SHOW 30% OPEN SPACE (NON COA OPEN SPACE) AND REMOVED
*S 0.065625 SQ MI FROM BASIN
*
*S LAND TREATMENT CHANGES DUE TO MORE COA OPEN SPACE DUE TO MW UNITS 3-6
*
COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
                     NK=3  ISLOPE=-1
                     LENGTH=400 FT  SLOPE=0.05 K=0.7
                     LENGTH=0 FT  SLOPE=0.0084 K=2.0
                     LENGTH=2800 FT  SLOPE=0.03286 K=3.0


COMPUTE NM HYD              ID=6  HYD=6_D.1  AREA=0.0459 SQ MI
                       PER A=85.0  PER B=8.0  PER C=3.0  PER D=4.0
                       TP=0.0 HR  MASS RAIN=-1
PRINT HYD                   ID=6     CODE=1
*S
*S ADD SUB-BASIN (OS-D,15-D,9-D.1) TO SUB-BASIN 6-D.1 TO GET AP_OFF ********
*S

ADD HYD             ID=55   HYD NO=AP_OFF ID I=30 ID II=6
PRINT HYD           ID=55   CODE=1
*
*S COMPUTE BASIN 9-D.2 ****************************************************
```

```
*S ABOVE 4W WATER ZONE DEVELOPED RUNOFF RESTRICTED TO UNDEVELOPED RUNOFF
*
*S DECREASE AREA BY 0.00283 SQ MI, AREA INCORPORATED INTO MW UNITS 3-6
*
COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
                     NK=1  ISLOPE=0
                     LENGTH=1800 FT  SLOPE=0.0372 K=3.0
                     Kn=.021  CR=.5


COMPUTE NM HYD             ID=5  HYD=9_D.2  AREA=0.00945 SQ MI
                      PER A=43.0  PER B=10.0  PER C=27.0  PER D=20.0
                      TP=0.0 HR  MASS RAIN=-1
PRINT HYD                  ID=5     CODE=20
*
*S ROUTE 9D.2 FLOW THRU 1200' OF CHANNEL ***********************************
*
COMPUTE RATING CURVE  CID=1   VS NO=1   NO SEGS=1
                      MIN ELEV=0 MAX ELEV=3.80
                      CH SLOPE=0.0433    FP SLOPE=0.0433
                      N=0.038    DIST=32.0
                      DIST  ELEV      DIST  ELEV
                        0.0      5.0   6.0   0.0
                           26.0  0.0   32.0  5.0


ROUTE MCUNGE         ID=7  HYD=100.01   INFLOW ID=5  DT=0HR  L=1200
                     NS=0   SLOPE=.038  MATCODE=0  REGCODE=0  CCODE=0
PRINT HYD            ID=7         CODE=1
*
*S COMPUTE BASIN 6-D.2*****************************************************
*S UPDATED TO SHOW 30% OPEN SPACE (NON COA OPEN SPACE)
*
*S BREAK BASIN 6-D.2 INTO SUBBASINS FOR MW UNITS 3-6
*
*COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
*                     NK=1  ISLOPE=0
*                     LENGTH=1200 FT   SLOPE=0.0433 K=3.0
*                     Kn=.021  CR=.5
*
*
*COMPUTE NM HYD             ID=7  HYD=6_D.2  AREA=0.047369 SQ MI
*                     PER A=42  PER B=15  PER C=15  PER D=28
*                     TP=0.0 HR  MASS RAIN=-1
*PRINT HYD                  ID=7     CODE=20
*
*S
*S               ***********************************************
*S               *COMPUTE MONTECITO VISTAS UNITS 1-4 ONSITE BASINS*
*S               ***********************************************
*S
*S
```

```
*S
*S COMPUTE BASIN 6-D.2A ****************************************************
*
COMPUTE NM HYD       ID=31 HYD=6_D.2A  AREA=0.01709  PER A=0 PER B=29.5
                PER C=29.5 PER D=41  TP=0.13333  RAINFALL=-1
PRINT HYD        ID=31   CODE=1
*
*S COMPUTE BASIN 6-D.2B ****************************************************
COMPUTE NM HYD       ID=32 HYD=6_D.2B  AREA=0.016231  PER A=0 PER B=29
                PER C=29 PER D=42  TP=0.13333  RAINFALL=-1
PRINT HYD        ID=32   CODE=1
*
*S COMPUTE BASIN 6-D.2C ****************************************************
COMPUTE NM HYD       ID=33 HYD=6_D.2C  AREA=0.005902  PER A=0 PER B=34
                PER C=34 PER D=32  TP=0.13333  RAINFALL=-1
PRINT HYD        ID=33   CODE=1
*
*S COMPUTE BASIN 6-D.2D ****************************************************
COMPUTE NM HYD       ID=34 HYD=6_D.2D  AREA=0.01071  PER A=0 PER B=34.5
                PER C=34.5 PER D=31  TP=0.13333  RAINFALL=-1
PRINT HYD        ID=34   CODE=1
*
*S COMPUTE BASIN 6-D.2E ****************************************************
COMPUTE NM HYD       ID=35 HYD=6_D.2E  AREA=0.002415  PER A=0 PER B=30.5
                PER C=30.5 PER D=39  TP=0.13333  RAINFALL=-1
PRINT HYD        ID=35   CODE=1
*
*S COMPUTE BASIN 6-D.2F ****************************************************
COMPUTE NM HYD       ID=36 HYD=6_D.2F  AREA=0.004180  PER A=0 PER B=30
                PER C=30 PER D=40ss  TP=0.13333  RAINFALL=-1
PRINT HYD        ID=36   CODE=1
*
*S ADD 9-D.2 TO 6-D.2A ****************************************************
ADD HYD             ID=39   HYD NO=6_9D.2A ID I=7 ID II=31
PRINT HYD           ID=39   CODE=1
*
*S ADD 6-D.2B TO 6_9D.2A **************************************************
ADD HYD             ID=41   HYD NO=6_9D.2AB ID I=32 ID II=39
PRINT HYD           ID=41   CODE=1
*
*S ADD 6-D.2C TO 6_9D.2AB *************************************************
ADD HYD             ID=42   HYD NO=6_9D.2ABC ID I=33 ID II=41
PRINT HYD           ID=42   CODE=1
*
*S ADD 6_D.2D TO 6_9D.2ABC ************************************************
ADD HYD             ID=43   HYD NO=6_9D.2ABCD ID I=34 ID II=42
PRINT HYD           ID=43   CODE=1
*
*S ADD 6_D.2E TO 6_9D.2ABCD ***********************************************
ADD HYD             ID=46   HYD NO=6_D.2ABCDE ID I=35 ID II=43
PRINT HYD           ID=46   CODE=1
*
```

```
*S ADD 6_D.2F TO 6_9D.2ABCDE TO GET PROJECT SITE DISCHARGE, AP=6_9D.2*******
ADD HYD             ID=47   HYD NO=6_9D.2ABCDEF ID I=36 ID II=46
PRINT HYD           ID=47   CODE=1
*
*
*S COMPUTE BASIN 6-D.3*****************************************************
*S UPDATED TO SHOW 30% OPEN SPACE
*
*S NO CHANGE FROM MONTECITO WEST DMP
*
COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
                     NK=1  ISLOPE=0
                     LENGTH=600 FT   SLOPE=0.0433 K=3.0
                     Kn=.021  CR=.5


COMPUTE NM HYD             ID=9  HYD=6_D.3  AREA=0.018277 SQ MI
                      PER A=30.0  PER B=18  PER C=18  PER D=34
                      TP=0.0 HR  MASS RAIN=-1
PRINT HYD                  ID=9     CODE=20
*
*S***** ROUTE OFFSITE FLOW THRU 850' OF 36" RCP PIPE
COMPUTE RATING CURVE CID=10  VS NO=1   CODE=-1
                     SLP=0.0273
                     DIA=36 INCHES   N=0.013
ROUTE MCUNGE         ID=10  HYD= RT.2AB2   INFLOW ID=9  DT=0HR  L=850
                     NS=0   SLOPE=.0273  MATCODE=0  REGCODE=0  CCODE=0
PRINT HYD            ID=10         CODE=1
*S
*S
*S
*S                    ********************************
*S                    *  COMPUTE OFFSITE "A" BASINS  *
*S                    ********************************
*S
*S COMPUTE BASIN A-1.1 ****************************************************
*S ABOVE 4W WATER ZONE DEVELOPED RUNOFF RESTRICTED TO UNDEVELOPED RUNOFF
*
*S NO CHANGE FROM MONTECITO WEST DMP
*
COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
                     NK=3  ISLOPE=-1
                     LENGTH=400 FT  SLOPE=0.0340 K=0.7
                     LENGTH=1600 FT  SLOPE=0.0361 K=2.0
                     LENGTH=2800 FT  SLOPE=0.0346 K=3.0


COMPUTE NM HYD             ID=60 HYD=A_1.1  AREA=0.08421 SQ MI
                      PER A=90.0  PER B=5.0  PER C=5.0  PER D=0.0
                      TP=0.0 HR  MASS RAIN=-1
PRINT HYD                  ID=60     CODE=20
*
```

```
*S COMPUTE BASIN A-1.2 ****************************************************
*S UPDATED TO SHOW 30% OPEN SPACE
*
*S DECREASE AREA BY 0.0101 SQ MI, AREA INCORPORATED INTO MW UNITS 3-6
*
COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
                     NK=1  ISLOPE=0
                     LENGTH=3200 FT  SLOPE=0.0325 K=3.0
                     Kn=.021  CR=.5


COMPUTE NM HYD             ID=65 HYD=A_1.2  AREA=0.012613 SQ MI
                      PER A=30.0  PER B=18.0  PER C=18.0  PER D=34.0
                      TP=0.0 HR  MASS RAIN=-1
PRINT HYD                  ID=65     CODE=20
*
*S ADD A-1.1 TO A-2.2 TO GET FLOW IN VISTA VIEJA AVENUE ********************
ADD HYD             ID=66   HYD NO=A_1.1_1.2 ID I=60 ID II=65
PRINT HYD           ID=66   CODE=1
*
*S
*S                    ********************************
*S                    *  COMPUTE OFFSITE "E" BASINS  *
*S                    ********************************
*S
*S
*S COMPUTE BASIN E-1.1 ****************************************************
*
COMPUTE NM HYD       ID=21 HYD=1_E.1  AREA=0.006128  PER A=30.0 PER B=18.0
                PER C=18.0 PER D=34  TP=0.13333  RAINFALL=-1
PRINT HYD       ID=21   CODE=1
*
*S COMPUTE BASIN E-1.3 ****************************************************
*S UPDATED TO SHOW 30% OPEN SPACE
*
*S NO CHANGE FROM MONTECITO WEST DMP
*
COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
                     NK=1  ISLOPE=0
                     LENGTH=3800 FT  SLOPE=0.0325 K=3.0
                     Kn=.021  CR=.5


COMPUTE NM HYD             ID=70 HYD=E_1.3  AREA=0.08120 SQ MI
                      PER A=52.0  PER B=16.0  PER C=16.0  PER D=16.0
                      TP=0.0 HR  MASS RAIN=-1
PRINT HYD                  ID=70     CODE=20
*
*S COMPUTE BASIN E-1.4 ****************************************************
*S UPDATED TO SHOW 30% OPEN SPACE
*
*S NO CHANGE FROM MONTECITO WEST DMP
```

```
*
COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
                     NK=1  ISLOPE=0
                     LENGTH=5200 FT  SLOPE=0.0325 K=3.0
                     Kn=.021  CR=.5


COMPUTE NM HYD             ID=75 HYD=E_1.4  AREA=0.13593 SQ MI
                      PER A=60.0  PER B=13.0  PER C=13.0  PER D=14.0
                      TP=0.0 HR  MASS RAIN=-1
PRINT HYD                  ID=75     CODE=20
*
*S
*S                ************************************************
*S                *COMPUTE MONTECITO WEST UNITS 1-2 ONSITE BASINS*
*s                ************************************************
*S
*S NO CHANGE FROM MONTECITO WEST DMP
*S
*S COMPUTE BASIN 6-D.4 ******************************************************
*
COMPUTE NM HYD       ID=2 HYD=6_D.4  AREA=0.015778  PER A=0 PER B=29
                PER C=29 PER D=42  TP=0.13333  RAINFALL=-1
PRINT HYD        ID=2   CODE=1
*
*S COMPUTE BASIN 6-D.5 ******************************************************
COMPUTE NM HYD       ID=3 HYD=6_D.5  AREA=0.007522  PER A=0 PER B=34
                PER C=34 PER D=32  TP=0.13333  RAINFALL=-1
PRINT HYD        ID=3   CODE=1
*
*S COMPUTE BASIN 6-D.6 ******************************************************
COMPUTE NM HYD       ID=4 HYD=6_D.6  AREA=0.006441  PER A=100 PER B=0
                PER C=0 PER D=0  TP=0.13333  RAINFALL=-1
PRINT HYD        ID=4   CODE=1
*
*S COMPUTE BASIN 6-D.7 ******************************************************
COMPUTE NM HYD       ID=1 HYD=6_D.7  AREA=0.005236  PER A=0 PER B=31
                PER C=30 PER D=39  TP=0.13333  RAINFALL=-1
PRINT HYD        ID=1   CODE=1
*
*S COMPUTE BASIN 6-D.8 ******************************************************
COMPUTE NM HYD       ID=20 HYD=6_D.8  AREA=0.010762  PER A=0 PER B=30
                PER C=29 PER D=41  TP=0.13333  RAINFALL=-1
PRINT HYD       ID=20   CODE=1
*
*S COMPUTE BASIN E-1.2 ******************************************************
COMPUTE NM HYD       ID=22 HYD=1_E.2  AREA=0.001177  PER A=0 PER B=29
                PER C=29 PER D=42  TP=0.13333  RAINFALL=-1
PRINT HYD       ID=22   CODE=1
*
*S ADD E_1.1 TO E_1.2 *******************************************************
ADD HYD             ID=71   HYD NO=E.1_2 ID I=21 ID II=22
```

```
PRINT HYD           ID=71   CODE=1
*
*S ADD 6_D.8 TO E_1.1_1.2 TO GET PROJECT SITE DISCHARGE TO AP_2 ****************
ADD HYD             ID=72   HYD NO=AP2_ON ID I=71 ID II=20
PRINT HYD           ID=72   CODE=1
*
*S ADD 6_D.4 TO 6_D.7 TO GET PROJECT SITE DISCHARGE TO AP_1 ****************
ADD HYD             ID=11   HYD NO=6D.4_7 ID I=2 ID II=1
PRINT HYD           ID=11   CODE=1
*
*S ADD 6_D.5 TO 6_D.6 (RETAINED ONSITE FOR 30.0% RETAINAGE) ****************
ADD HYD             ID=12   HYD NO=6D.5_6 ID I=3 ID II=4
PRINT HYD           ID=12   CODE=1
*
*S
*S                    ***************************
*S                    * COMPUTE ANALYSIS POINTS *
*S                    ***************************
*S
*S
*S
*S
*S ANALYSIS POINT 2, MIDDLE BRANCH BOCA NEGRA (NORTHERN STORM DRAIN)
*
*S ADD AP_OFF TO 6_9D.2 (DIVERT FLOWS) TO GET NEW AP_OFF *******************
*
ADD HYD             ID=25  HYD NO=AP_OFF.NEW ID I=55  ID II=47
PRINT HYD      ID=25  CODE=1
*S
*S ADD AP2_ON TO NEW AP_OFF TO GET AP#2 AT MIDDLE BRANCH BOCA NEGRA ARROYO ***
*
ADD HYD             ID=24   HYD NO=AP_2 ID I=25 ID II=72
PRINT HYD           ID=24   CODE=1
*
*S ANALYSIS POINT 1, SOUTHERN STORM DRAIN TO VISTA VIEJA SUBDIVISION *******
*
*S DIVIDE 6D.3 FOR 30.0% RETAINAGE
DIVIDE HYD          ID=10   PER=-70.0  ID I=12  HYD NO=6D.3_OUT
                                     ID II=13  HYD NO=6D.3_RETAIN
*
*S ADD 6D.3_OUT TO 6D.4_7 TO GET AP_1 ***************************************
*
ADD HYD             ID=14   HYD NO=AP_1 ID I=12 ID II=11
PRINT HYD           ID=14   CODE=1
*S
*S
*S               ************************************************
*S               *COMPUTE VISTA VIEJA AVENUE FLOW*
*S               ************************************************
*S
*S
*S COMPUTE VISTA VIEJA AVE ******************************************************
```

```
*
COMPUTE NM HYD       ID=90 HYD=VV1  AREA=0.013219  PER A=0 PER B=0
                PER C=10 PER D=90  TP=0.13333  RAINFALL=-1
PRINT HYD       ID=90   CODE=1
*

FINISH
```

```
AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) -                        - VERSION:  1997.02c      RUN DATE (MON/DAY/YR) =05/12/2016
INPUT FILE = DEV_Cond.HYM                                                                USER NO.= AHYMO-S-9702c1BohanHu-AH

                             FROM  TO                   PEAK         RUNOFF               TIME TO    CFS      PAGE =   1
                HYDROGRAPH   ID   ID         AREA     DISCHARGE      VOLUME      RUNOFF     PEAK     PER
COMMAND       IDENTIFICATION   NO.  NO.      (SQ MI)      (CFS)        (AC-FT)    (INCHES)  (HOURS)    ACRE     NOTATION

*S  THE VISTA VIEJA SUBDIVISION DRAINAGE BASIN (D) PROPOSED
*S  100 YEAR - 6 HOUR STORM
*S
*S  REVISED 2005 AHYMO TO REFLECT UPDATED LAND TREATMENTS
*S  MONTECITO WEST DMP UPDATE WITH MONTEICTO VISTA DEVELOPMENT 5/12/16
START                                                                                                   TIME=       .00
LOCATION                      DEFAULT
RAINFALL  TYPE= 1                                                                                       RAIN6=    2.210
*S
*S                    ********************************
*S                    *  COMPUTE OFFSITE "D" BASINS  *
*S                    ********************************
*S
*S
*S COMPUTE BASIN OS-D ******************************************************
*S NO CHANGE FROM MONTECITO WEST DMP
COMPUTE NM HYD          OS_D   -    17        .23780       174.20       5.322       .41961    1.533    1.145 PER IMP=    .00
*S ROUTE OS-D THRU 15-D IN CHANNEL NO.15************************************
ROUTE MCUNGE          100.01   17   50        .23780       170.91       5.282       .41646    1.833    1.123 CCODE =      .1
*S COMPUTE BASIN 15-D ******************************************************
*S ABOVE 4W WATER ZONE DEVELOPED RUNOFF RESTRICTED TO UNDEVELOPED RUNOFF
*S NO CHANGE FROM MONTECITO WEST DMP
COMPUTE NM HYD          15_D   -    15        .15060       177.15       5.638       .70193    1.500    1.838 PER IMP=  16.00
*S ADD SUB-BASIN OS-D TO SUB-BASIN 15-D************************************
ADD HYD               101.00 15&50  33        .38840       213.08      10.920       .52715    1.800     .857
*S ROUTE 15-D/OS-D THRU 9-D.1 IN CHANNEL NO.9******************************
ROUTE MCUNGE          100.01   33   40        .38840       210.93      10.881       .52527    2.067     .849 CCODE =      .1
*S COMPUTE BASIN 9-D.1 *****************************************************
*S UPDATED TO SHOW 30% OPEN SPACE AND REMOVED 0.0125 SQ MI FROM BASIN
*S ABOVE 4W WATER ZONE DEVELOPED RUNOFF RESTRICTED TO UNDEVELOPED RUNOFF
*S LAND TREATMENT CHANGES DUE TO MORE COA OPEN SPACE DUE TO MW UNITS 3-6
COMPUTE NM HYD          9_D.1   -     9        .06030        68.56       2.691       .83686    1.567    1.777 PER IMP=  20.00
*S ADD 15-D/OS-D TO SUB-BASIN 9-D.1 ****************************************
ADD HYD               104.00 40& 9  44        .44870       223.13      13.572       .56714    2.067     .777
*S ROUTE 9-D.1/15-D/9-D.1 THRU 6-D.1 IN CHANNEL NO.6 ***********************
ROUTE MCUNGE          104.10   44   30        .44870       218.30      13.539       .56577    2.300     .760 CCODE =      .1
*S COMPUTE BASIN 6-D.1 *****************************************************
*S UPDATED TO SHOW 30% OPEN SPACE (NON COA OPEN SPACE) AND REMOVED
*S 0.065625 SQ MI FROM BASIN
*S LAND TREATMENT CHANGES DUE TO MORE COA OPEN SPACE DUE TO MW UNITS 3-6
COMPUTE NM HYD          6_D.1   -     6        .04590        39.17       1.218       .49739    1.533    1.333 PER IMP=   4.00
*S
*S ADD SUB-BASIN (OS-D,15-D,9-D.1) TO SUB-BASIN 6-D.1 TO GET AP_OFF ********
*S
ADD HYD               AP_OFF 30& 6  55        .49460       220.51      14.757       .55942    2.300     .697
```

```
                              FROM  TO                    PEAK         RUNOFF               TIME TO    CFS      PAGE =   2
                 HYDROGRAPH   ID   ID         AREA     DISCHARGE      VOLUME      RUNOFF     PEAK     PER
COMMAND        IDENTIFICATION  NO.  NO.      (SQ MI)      (CFS)        (AC-FT)    (INCHES)  (HOURS)   ACRE     NOTATION

*S COMPUTE BASIN 9-D.2 ****************************************************
*S ABOVE 4W WATER ZONE DEVELOPED RUNOFF RESTRICTED TO UNDEVELOPED RUNOFF
*S DECREASE AREA BY 0.00283 SQ MI, AREA INCORPORATED INTO MW UNITS 3-6
COMPUTE NM HYD         9_D.2   -     5        .00967        15.64        .539      1.04568    1.500    2.527 PER IMP=  34.00
*S ROUTE 9D.2 FLOW THRU 1200' OF CHANNEL ***********************************
ROUTE MCUNGE          100.01    5    7        .00967        15.09        .536      1.04013    1.767    2.439 CCODE =      .1
*S COMPUTE BASIN 6-D.2****************************************************
*S UPDATED TO SHOW 30% OPEN SPACE (NON COA OPEN SPACE)
*S BREAK BASIN 6-D.2 INTO SUBBASINS FOR MW UNITS 3-6
*S
*S               ***********************************************
*S               *COMPUTE MONTECITO VISTAS UNITS 1-4 ONSITE BASINS*
*s               ***********************************************
*S
*S
*S
*S COMPUTE BASIN 6-D.2A ***************************************************
COMPUTE NM HYD        6_D.2A   -    31        .01709        32.89       1.138      1.24844    1.500    3.007 PER IMP=  41.00
*S COMPUTE BASIN 6-D.2B ***************************************************
COMPUTE NM HYD        6_D.2B   -    32        .01623        31.42       1.091      1.26047    1.500    3.025 PER IMP=  42.00
*S COMPUTE BASIN 6-D.2C ***************************************************
COMPUTE NM HYD        6_D.2C   -    33        .00590        10.78        .359      1.14016    1.500    2.854 PER IMP=  32.00
*S COMPUTE BASIN 6-D.2D ***************************************************
COMPUTE NM HYD        6_D.2D   -    34        .01071        19.43        .644      1.12813    1.500    2.835 PER IMP=  31.00
*S COMPUTE BASIN 6-D.2E ***************************************************
COMPUTE NM HYD        6_D.2E   -    35        .00242         4.61        .158      1.22438    1.500    2.981 PER IMP=  39.00
*S COMPUTE BASIN 6-D.2F ***************************************************
COMPUTE NM HYD        6_D.2F   -    36        .00418         7.96        .273      1.22438    1.500    2.977 PER IMP=  39.00
*S ADD 9-D.2 TO 6-D.2A ****************************************************
ADD HYD              6_9D.2A  7&31  39        .02676        33.64       1.674      1.17314    1.500    1.964
*S ADD 6-D.2B TO 6_9D.2A **************************************************
ADD HYD             6_9D.2AB 32&39  41        .04299        65.06       2.765      1.20611    1.500    2.365
*S ADD 6-D.2C TO 6_9D.2AB *************************************************
ADD HYD            6_9D.2ABC 33&41  42        .04889        75.84       3.124      1.19814    1.500    2.424
*S ADD 6_D.2D TO 6_9D.2ABC ************************************************
ADD HYD           6_9D.2ABCD 34&42  43        .05960        95.27       3.769      1.18556    1.500    2.498
*S ADD 6_D.2E TO 6_9D.2ABCD ***********************************************
ADD HYD           6_D.2ABCDE 35&43  46        .06202        99.88       3.926      1.18706    1.500    2.516
*S ADD 6_D.2F TO 6_9D.2ABCDE TO GET PROJECT SITE DISCHARGE, AP=6_9D.2*******
ADD HYD         6_9D.2ABCDEF 36&46  47        .06620       107.84       4.199      1.18942    1.500    2.545
*S COMPUTE BASIN 6-D.3****************************************************
*S UPDATED TO SHOW 30% OPEN SPACE
*S NO CHANGE FROM MONTECITO WEST DMP
COMPUTE NM HYD         6_D.3   -     9        .01828        29.55       1.019      1.04568    1.500    2.526 PER IMP=  34.00
*S***** ROUTE OFFSITE FLOW THRU 850' OF 36" RCP PIPE
ROUTE MCUNGE         RT.2AB2    9   10        .01828        29.41       1.019      1.04577    1.533    2.514 CCODE =      .2
*S
```

```
                                FROM  TO                    PEAK         RUNOFF               TIME TO    CFS
                   HYDROGRAPH    ID   ID         AREA     DISCHARGE      VOLUME      RUNOFF     PEAK     PER
COMMAND       IDENTIFICATION    NO.  NO.      (SQ MI)      (CFS)        (AC-FT)    (INCHES)  (HOURS)    ACRE     NOTATION
*S
*S                    ********************************
*S                    *  COMPUTE OFFSITE "A" BASINS  *
*S                    ********************************
*S
*S COMPUTE BASIN A-1.1 ******************************************************
*S ABOVE 4W WATER ZONE DEVELOPED RUNOFF RESTRICTED TO UNDEVELOPED RUNOFF
*S NO CHANGE FROM MONTECITO WEST DMP
COMPUTE NM HYD         A_1.1   -    60        .08421        51.19       1.964       .43725    1.567     .950 PER IMP=    .00
*S COMPUTE BASIN A-1.2 ******************************************************
*S UPDATED TO SHOW 30% OPEN SPACE
*S DECREASE AREA BY 0.0101 SQ MI, AREA INCORPORATED INTO MW UNITS 3-6
COMPUTE NM HYD         A_1.2   -    65        .01261        20.39        .703      1.04568    1.500    2.527 PER IMP=  34.00
*S ADD A-1.1 TO A-2.2 TO GET FLOW IN VISTA VIEJA AVENUE ********************
ADD HYD            A_1.1_1.2 60&65  66        .09682        68.67       2.667       .51650    1.567    1.108
*S
*S                    ********************************
*S                    *  COMPUTE OFFSITE "E" BASINS  *
*S                    ********************************
*S
*S
*S COMPUTE BASIN E-1.1 ******************************************************
COMPUTE NM HYD         1_E.1   -    21        .00613         9.92        .342      1.04568    1.500    2.528 PER IMP=  34.00
*S COMPUTE BASIN E-1.3 ******************************************************
*S UPDATED TO SHOW 30% OPEN SPACE
*S NO CHANGE FROM MONTECITO WEST DMP
COMPUTE NM HYD         E_1.3   -    70        .08120       102.27       3.249       .75028    1.500    1.968 PER IMP=  16.00
*S COMPUTE BASIN E-1.4 ******************************************************
*S UPDATED TO SHOW 30% OPEN SPACE
*S NO CHANGE FROM MONTECITO WEST DMP
COMPUTE NM HYD         E_1.4   -    75        .13593       144.66       5.076       .70019    1.533    1.663 PER IMP=  14.00
*S
*S               ************************************************
*S               *COMPUTE MONTECITO WEST UNITS 1-2 ONSITE BASINS*
*s               ************************************************
*S
*S NO CHANGE FROM MONTECITO WEST DMP
*S
*S COMPUTE BASIN 6-D.4 ******************************************************
COMPUTE NM HYD         6_D.4   -     2        .01578        30.55       1.061      1.26047    1.500    3.025 PER IMP=  42.00
*S COMPUTE BASIN 6-D.5 ******************************************************
COMPUTE NM HYD         6_D.5   -     3        .00752        13.73        .457      1.14016    1.500    2.853 PER IMP=  32.00
*S COMPUTE BASIN 6-D.6 ******************************************************
COMPUTE NM HYD         6_D.6   -     4        .00644         4.95        .141       .41046    1.533    1.202 PER IMP=    .00
*S COMPUTE BASIN 6-D.7 ******************************************************
COMPUTE NM HYD         6_D.7   -     1        .00524         9.96        .341      1.22285    1.500    2.971 PER IMP=  39.00
```

```
                                FROM  TO                    PEAK         RUNOFF                TIME TO    CFS      PAGE =   4
                   HYDROGRAPH   ID   ID         AREA     DISCHARGE      VOLUME      RUNOFF     PEAK     PER
 COMMAND       IDENTIFICATION   NO.  NO.      (SQ MI)      (CFS)        (AC-FT)    (INCHES)  (HOURS)    ACRE     NOTATION

*S COMPUTE BASIN 6-D.8 ****************************************************
 COMPUTE NM HYD         6_D.8   -    20        .01076        20.69        .716      1.24691    1.500    3.004 PER IMP=  41.00
 *S COMPUTE BASIN E-1.2 ****************************************************
 COMPUTE NM HYD         1_E.2   -    22        .00118         2.29        .079      1.26047    1.500    3.044 PER IMP=  42.00
 *S ADD E_1.1 TO E_1.2 *****************************************************
 ADD HYD                E.1_2 21&22  71        .00731        12.21        .421      1.08022    1.500    2.611
 *S ADD 6_D.8 TO E_1.1_1.2 TO GET PROJECT SITE DISCHARGE TO AP_2 ****************
 ADD HYD               AP2_ON 71&20  72        .01807        32.90       1.137      1.17950    1.500    2.845
 *S ADD 6_D.4 TO 6_D.7 TO GET PROJECT SITE DISCHARGE TO AP_1 ****************
 ADD HYD               6D.4_7  2& 1  11        .02101        40.50       1.402      1.25107    1.500    3.012
 *S ADD 6_D.5 TO 6_D.6 (RETAINED ONSITE FOR 30.0% RETAINAGE) ****************
 ADD HYD               6D.5_6  3& 4  12        .01396        18.68        .598       .80354    1.500    2.091
 *S
 *S                    **************************

 *S                    * COMPUTE ANALYSIS POINTS *
 *s                    **************************
 *S
 *S
 *S
 *S
 *S ANALYSIS POINT 2, MIDDLE BRANCH BOCA NEGRA (NORTHERN STORM DRAIN)
 *S ADD AP_OFF TO 6_9D.2 (DIVERT FLOWS) TO GET NEW AP_OFF *******************
 ADD HYD           AP_OFF.NEW 55&47  25        .56080       232.17      18.956       .63379    2.000     .647
 *S
 *S ADD AP2_ON TO NEW AP_OFF TO GET AP#2 AT MIDDLE BRANCH BOCA NEGRA ARROYO ***
 ADD HYD                AP_2 25&72  24        .57886       237.91      20.093       .65082    2.000     .642
 *S ANALYSIS POINT 1, SOUTHERN STORM DRAIN TO VISTA VIEJA SUBDIVISION *******
 *S DIVIDE 6D.3 FOR 30.0% RETAINAGE
 DIVIDE HYD          6D.3_OUT   10   12        .01279        20.59        .714      1.04575    1.533    2.514
                  6D.3_RETAIN  and   13        .00548         8.82        .306      1.04575    1.533    2.514
 *S ADD 6D.3_OUT TO 6D.4_7 TO GET AP_1 *************************************
 ADD HYD                AP_1 12&11  14        .03381        60.74       2.116      1.17337    1.500    2.807
 *S
 FINISH
```

```
    AHYMO PROGRAM (AHYMO_97) -                          - Version:  1997.02c
         RUN DATE (MON/DAY/YR) = 10/17/2016
         START TIME (HR:MIN:SEC) = 14:39:36     USER NO.= AHYMO-S-9702c1BohanHu-AH
         INPUT FILE = DEV_Cond.HYM

*S  THE VISTA VIEJA SUBDIVISION DRAINAGE BASIN (D) PROPOSED
*S  100 YEAR - 6 HOUR STORM
*S
*S  REVISED 2005 AHYMO TO REFLECT UPDATED LAND TREATMENTS
*
*S  MONTECITO WEST DMP UPDATE WITH MONTEICTO VISTA DEVELOPMENT 5/12/16
*
*CONVERT TO NMHYMO
START                 TIME=0.0 HR  PUNCH CODE=0
*******************************************************
LOCATION            NM
     Soil infiltration values (LAND FACTORS) for this location are not available.
     The following default values were used.
     Land Treatment     Initial Abstr.(in)    Unif. Infilt.(in/hour)
           A            0.65                  1.67
           B            0.50                  1.25
           C            0.35                  0.83
           D            0.10                  0.04

*
*******************************************************
*
*******************************************************
*100 YEAR - 6 HOUR
RAINFALL              TYPE=1  RAIN QUARTER=0
                              RAIN ONE=1.73 IN  RAIN SIX=2.23 IN
                              RAIN DAY=2.60 IN  DT=0.033333 HRS


               COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
               DT =    .033333 HOURS       END TIME =     5.999940 HOURS
                  .0000   .0039   .0079   .0120   .0162   .0205   .0248
                  .0293   .0338   .0385   .0432   .0481   .0531   .0583
                  .0636   .0690   .0746   .0804   .0863   .0924   .0988
                  .1053   .1121   .1192   .1265   .1342   .1421   .1505
                  .1592   .1685   .1782   .1830   .1881   .1935   .2053
                  .2316   .2720   .3301   .4094   .5136   .6465   .8119
                 1.0137  1.2004  1.2786  1.3445  1.4032  1.4566  1.5058
                 1.5514  1.5941  1.6341  1.6717  1.7072  1.7407  1.7725
                 1.8025  1.8310  1.8581  1.8838  1.9082  1.9145  1.9205
                 1.9263  1.9318  1.9372  1.9423  1.9474  1.9522  1.9570
                 1.9616  1.9661  1.9704  1.9747  1.9789  1.9830  1.9870
                 1.9909  1.9947  1.9985  2.0022  2.0058  2.0094  2.0129
                 2.0163  2.0197  2.0231  2.0263  2.0296  2.0328  2.0359
                 2.0391  2.0421  2.0452  2.0481  2.0511  2.0540  2.0569
                 2.0598  2.0626  2.0654  2.0681  2.0708  2.0735  2.0762
                 2.0788  2.0815  2.0840  2.0866  2.0891  2.0917  2.0942
                 2.0966  2.0991  2.1015  2.1039  2.1063  2.1087  2.1110
                 2.1133  2.1156  2.1179  2.1202  2.1224  2.1247  2.1269
                 2.1291  2.1313  2.1335  2.1356  2.1377  2.1399  2.1420
                 2.1441  2.1462  2.1482  2.1503  2.1523  2.1543  2.1564
                 2.1584  2.1604  2.1623  2.1643  2.1662  2.1682  2.1701
                 2.1720  2.1739  2.1758  2.1777  2.1796  2.1815  2.1833
                 2.1852  2.1870  2.1888  2.1906  2.1924  2.1942  2.1960
                 2.1978  2.1996  2.2013  2.2031  2.2048  2.2066  2.2083
                 2.2100  2.2117  2.2134  2.2151  2.2168  2.2185  2.2201
                 2.2218  2.2235  2.2251  2.2267  2.2284  2.2300

*S
*S                    ********************************
*S                    *  COMPUTE OFFSITE "D" BASINS  *
*S                    ********************************
*S
*S
*S
*S COMPUTE BASIN OS-D ******************************************************
*
*S NO CHANGE FROM MONTECITO WEST DMP
*
COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
                     NK=3  ISLOPE=-1
                     LENGTH=400 FT  SLOPE=0.0750 K=0.7
                     LENGTH=700 FT  SLOPE=0.04286 K=2.0
                     LENGTH=2900 FT  SLOPE=0.03793 K=3.0


     Tc AND Tp COMPUTED BY UPLAND/LAG TIME PROCEDURE

     SCS UPLAND METHOD FACTORS
                                LENGTH (FT)      SLOPE (FT/FT)       COMPOSITE K
     SHEET FLOW PORTION            400.0           .075000             .7000
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     SHALLOW FLOW PORTION          700.0           .042860            2.0000
     CHANNEL FLOW PORTION         2900.0           .037930            3.0000
     TOTAL BASIN                  4000.0           .042500            2.2199


     TIME OF CONCENTRATION (HRS)=   .2428     TIME TO PEAK (HRS)=   .1619     LAG TIME (HRS)=   .1821

COMPUTE NM HYD         ID=17  HYD=OS_D  AREA=0.2378 SQ MI
                                PER A=95.0  PER B=5.0  PER C=0.0  PER D=0.0
                                TP=0.0 HR  MASS RAIN=-1
     TIME TO PEAK (hrs)=   .1619

     K =   .177439HR    TP =   .161864HR    K/TP RATIO =  1.096227     SHAPE CONSTANT, N =  3.224148
     UNIT PEAK =   440.17    CFS   UNIT VOLUME =    1.000       B =   299.61      P60 = 1.7300
     AREA =      .237800 SQ MI    IA =    .64250 INCHES    INF =   1.64900 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD              ID=17     CODE=1

                                          HYDROGRAPH FROM AREA OS_D


    RUNOFF VOLUME =      .42925 INCHES     =       5.4440 ACRE-FEET
    PEAK DISCHARGE RATE =     178.23 CFS  AT   1.533 HOURS   BASIN AREA =   .2378 SQ. MI.

*
*S ROUTE OS-D THRU 15-D IN CHANNEL NO.15***********************************
*
COMPUTE RATING CURVE  CID=1   VS NO=1   NO SEGS=1
                      MIN ELEV=0         MAX ELEV=3.80
                      CH SLOPE=0.038    FP SLOPE=0.038
                      N=0.038    DIST=32.0
                      DIST  ELEV         DIST  ELEV
                        0.0     5.0      6.0      0.0
                       26.0     0.0      32.0     5.0


                                     RATING CURVE VALLEY SECTION  1.0
                                         WATER       FLOW        FLOW        TOP
                                        SURFACE      AREA        RATE        WIDTH
                                         ELEV        SQ FT       CFS         FT
                                           .00         .00         .00       20.00
                                           .20        4.05       10.42       20.48
                                           .40        8.19       33.08       20.96
                                           .60       12.43       65.02       21.44
                                           .80       16.77      105.07       21.92
                                          1.00       21.20      152.51       22.40
                                          1.20       25.73      206.87       22.88
                                          1.40       30.35      267.81       23.36
                                          1.60       35.07      335.06       23.84
                                          1.80       39.89      408.42       24.32
                                          2.00       44.80      487.74       24.80
                                          2.20       49.81      572.90       25.28
                                          2.40       54.91      663.81       25.76
                                          2.60       60.11      760.37       26.24
                                          2.80       65.41      862.54       26.72
                                          3.00       70.80      970.27       27.20
                                          3.20       76.29     1083.52       27.68
                                          3.40       81.87     1202.26       28.16
                                          3.60       87.55     1326.48       28.64
                                          3.80       93.33     1456.17       29.12
ROUTE MCUNGE         ID=50  HYD=100.01   INFLOW ID=17  DT=0HR  L=4900
                     NS=0   SLOPE=.038  MATCODE=0  REGCODE=0  CCODE=0

     INFLOW END= 195            TABLE PTS= 20
     DT=  .033333               QMED=       89.11  CKMED=      9.2361
     WIDTH MED=       21.73     NREACH=  9         DX=      544.44

      DEPTH   AREA      Q    TRAVEL  WIDTH     ck      VEL      C       D      C1     C2     C3     Q-M      C1-M
C2-M   C3-M
       (FT)  (SQ FT)  (CFS)  TIME(HR) (FT)     (FPS)   (FPS)                                          (CFS)
        .00     .0       .0    .720   20.0     4.54   1.21    1.000   .000  1.000   .000   .000       .0   1.000
.000   .000
        .20    4.0     10.4    .529   20.5     4.51   2.57     .995   .005   .995   .000   .005      3.3    .998
.000   .002
        .40    8.2     33.1    .337   21.0     6.59   4.04    1.451   .012   .991   .188  -.179     20.5    .992
.098  -.090
        .60   12.4     65.0    .260   21.4     8.44   5.23    1.860   .017   .988   .305  -.293     48.0    .989
.253  -.242
        .80   16.8    105.1    .217   21.9    10.01   6.27    2.206   .023   .986   .381  -.366     84.1    .987
.346  -.332
       1.00   21.2    152.5    .189   22.4    11.39   7.19    2.510   .029   .984   .435  -.418    127.9    .985
.409  -.394
       1.20   25.7    206.9    .169   22.9    12.62   8.04    2.781   .035   .982   .476  -.458    178.9    .983
.456  -.439
       1.40   30.4    267.8    .154   23.4    13.73   8.82    3.027   .040   .980   .508  -.488    236.6    .981
.493  -.474
       1.60   35.1    335.1    .142   23.8    14.76   9.55    3.253   .046   .979   .535  -.513    300.7    .979
```

```
.522  -.501
         1.80   39.9    408.4    .133   24.3    15.71  10.24    3.462   .052   .977   .557  -.534    371.1    .978
.546  -.524
         2.00   44.8    487.7    .125   24.8    16.59  10.89    3.657   .057   .976   .576  -.551    447.4    .976
.567  -.543
         2.20   49.8    572.9    .118   25.3    17.42  11.50    3.840   .063   .974   .592  -.566    529.7    .975
.584  -.559
         2.40   54.9    663.8    .113   25.8    18.20  12.09    4.012   .068   .973   .606  -.579    617.8    .974
.599  -.573
         2.60   60.1    760.4    .108   26.2    18.94  12.65    4.175   .074   .972   .619  -.591    711.5    .972
.613  -.585
         2.80   65.4    862.5    .103   26.7    19.65  13.19    4.330   .079   .971   .630  -.601    810.9    .971
.625  -.596
         3.00   70.8    970.3    .099   27.2    20.32  13.70    4.478   .085   .969   .640  -.610    915.8    .970
.635  -.605
         3.20   76.3   1083.5    .096   27.7    20.96  14.20    4.620   .090   .968   .650  -.618   1026.3    .969
.645  -.614
         3.40   81.9   1202.3    .093   28.2    21.58  14.68    4.756   .096   .967   .658  -.626   1142.4    .968
.654  -.622
         3.60   87.6   1326.5    .090   28.6    22.17  15.15    4.886   .101   .966   .666  -.632   1263.8    .967
.662  -.629
         3.80   93.3   1456.2    .087   29.1    22.62  15.60    4.985   .107   .965   .672  -.637   1390.8    .966
.670  -.635
     MAXIMUM NO. ITERATIONS FOR SOLUTION (KKMAX) =   6 OCCURRED       1 TIMES.  AVERAGE NUMBER ITERATIONS =  1.0881
       DEPTH   AREA      Q    TRAVEL  WIDTH     ck      VEL      C       D      C1     C2     C3     Q-M      C1-M
C2-M   C3-M
        (FT)  (SQ FT)  (CFS)  TIME(HR) (FT)     (FPS)   (FPS)                                          (CFS)
          .00     .0       .0    .720   20.0     4.54   1.21    1.000   .000  1.000   .000   .000       .0   1.000
.000   .000
          .20    4.0     10.4    .529   20.5     4.51   2.57     .995   .005   .995   .000   .005      3.3    .998
.000   .002
          .40    8.2     33.1    .337   21.0     4.61   4.04    1.017   .017   .984   .016   .000     20.5    .990
.010   .000
          .60   12.4     65.0    .260   21.4     4.68   5.23    1.031   .031   .970   .030   .000     48.0    .977
.023   .000
          .80   16.8    105.1    .217   21.9     4.76   6.27    1.049   .049   .954   .046   .000     84.1    .962
.038   .000
         1.00   21.2    152.5    .189   22.4     4.85   7.19    1.068   .068   .936   .064   .000    127.9    .945
.055   .000
         1.20   25.7    206.9    .169   22.9     4.94   8.04    1.088   .088   .919   .081   .000    178.9    .928
.072   .000
         1.40   30.4    267.8    .154   23.4     5.04   8.82    1.110   .110   .901   .099   .000    236.6    .910
.090   .000
         1.60   35.1    335.1    .142   23.8     5.14   9.55    1.132   .132   .883   .117   .000    300.7    .892
.108   .000
         1.80   39.9    408.4    .133   24.3     5.24  10.24    1.155   .155   .866   .134   .000    371.1    .874
.126   .000
         2.00   44.8    487.7    .125   24.8     5.34  10.89    1.178   .178   .849   .151   .000    447.4    .857
.143   .000
         2.20   49.8    572.9    .118   25.3     5.45  11.50    1.201   .201   .833   .167   .000    529.7    .841
.159   .000
         2.40   54.9    663.8    .113   25.8     5.55  12.09    1.224   .224   .817   .183   .000    617.8    .825
.175   .000
         2.60   60.1    760.4    .108   26.2     5.66  12.65    1.247   .247   .802   .198   .000    711.5    .809
.191   .000
         2.80   65.4    862.5    .103   26.7     5.77  13.19    1.271   .271   .787   .213   .000    810.9    .794
.206   .000
         3.00   70.8    970.3    .099   27.2     5.87  13.70    1.294   .294   .773   .227   .000    915.8    .780
.220   .000
         3.20   76.3   1083.5    .096   27.7     5.97  14.20    1.317   .317   .759   .241   .000   1026.3    .766
.234   .000
         3.40   81.9   1202.3    .093   28.2     6.08  14.68    1.340   .340   .747   .253   .000   1142.4    .753
.247   .000
         3.60   87.6   1326.5    .090   28.6     6.18  15.15    1.362   .362   .734   .266   .000   1263.8    .740
.260   .000
         3.80   93.3   1456.2    .087   29.1     6.28  15.60    1.385   .385   .722   .278   .000   1390.8    .728
.272   .000
     MAXIMUM NO. ITERATIONS FOR SOLUTION (KKMAX) =   3 OCCURRED      32 TIMES.  AVERAGE NUMBER ITERATIONS =  1.0641
     Equations solved with two passes: first using the Ponce correction to C1, second using the Fread correction to C1, C2
and C3
     PRINT HYD            ID=50         CODE=1

                                        PARTIAL HYDROGRAPH   100.01


         RUNOFF VOLUME =      .42602 INCHES     =       5.4031 ACRE-FEET
         PEAK DISCHARGE RATE =     174.68 CFS  AT   1.833 HOURS   BASIN AREA =   .2378 SQ. MI.


     *
     *S COMPUTE BASIN 15-D ******************************************************
     *S ABOVE 4W WATER ZONE DEVELOPED RUNOFF RESTRICTED TO UNDEVELOPED RUNOFF
     *
     *S NO CHANGE FROM MONTECITO WEST DMP
     *
     COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
                          NK=3  ISLOPE=-1
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                    LENGTH=400 FT  SLOPE=0.050 K=0.7
                    LENGTH=500 FT  SLOPE=0.020 K=2.0
                    LENGTH=1200 FT  SLOPE=0.02167 K=3.0


     Tc AND Tp COMPUTED BY UPLAND/LAG TIME PROCEDURE

     SCS UPLAND METHOD FACTORS
                                LENGTH (FT)      SLOPE (FT/FT)       COMPOSITE K
     SHEET FLOW PORTION            400.0           .050000              .7000
     SHALLOW FLOW PORTION          500.0           .020000             2.0000
     CHANNEL FLOW PORTION         1200.0           .021670             3.0000
     TOTAL BASIN                  2100.0           .026669             1.8265


     TIME OF CONCENTRATION (HRS)=   .1956     TIME TO PEAK (HRS)=   .1304     LAG TIME (HRS)=   .1467


     TIME TO PEAK COMPUTED TO BE LESS THAN 0.133333 HOUR MINIMUM VALUE.
     REVISED VALUES: TIME OF CONCENTRATION (HRS)=   .2000     TIME TO PEAK (HRS)=   .1333     LAG TIME (HRS)=   .1500

COMPUTE NM HYD         ID=15  HYD=15_D  AREA=0.1506 SQ MI
                              PER A=68.0  PER B=8.0  PER C=8.0  PER D=16.0
                              TP=0.0 HR  MASS RAIN=-1
     TIME TO PEAK (hrs)=   .1333

     K =   .074721HR    TP =   .133333HR    K/TP RATIO =   .560410     SHAPE CONSTANT, N =  6.857998
     UNIT PEAK =   92.978    CFS   UNIT VOLUME =    .9995       B =   514.49      P60 = 1.7300
     AREA =      .024096 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


     K =   .149656HR    TP =   .133333HR    K/TP RATIO =  1.122422     SHAPE CONSTANT, N =  3.152041
     UNIT PEAK =   278.93    CFS   UNIT VOLUME =    .9999       B =   293.99      P60 = 1.7300
     AREA =      .126504 SQ MI    IA =    .60714 INCHES    INF =   1.55000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD              ID=15     CODE=1

                                        HYDROGRAPH FROM AREA 15_D


    RUNOFF VOLUME =      .71331 INCHES     =       5.7292 ACRE-FEET
    PEAK DISCHARGE RATE =     179.81 CFS  AT   1.500 HOURS   BASIN AREA =   .1506 SQ. MI.



*
*S ADD SUB-BASIN OS-D TO SUB-BASIN 15-D*************************************
ADD HYD             ID=33   HYD NO=101.0 ID I=15 ID II=50
PRINT HYD           ID=33   CODE=1

                                     PARTIAL HYDROGRAPH   101.00


    RUNOFF VOLUME =      .53741 INCHES     =      11.1323 ACRE-FEET
    PEAK DISCHARGE RATE =     217.66 CFS  AT   1.800 HOURS   BASIN AREA =   .3884 SQ. MI.



*
*S ROUTE 15-D/OS-D THRU 9-D.1 IN CHANNEL NO.9******************************
*
COMPUTE RATING CURVE  CID=1   VS NO=1   NO SEGS=1
                      MIN ELEV=0          MAX ELEV=3.80
                      CH SLOPE=0.038    FP SLOPE=0.038
                      N=0.038    DIST=32.0
                      DIST  ELEV         DIST  ELEV
                        0.0     5.0      6.0      0.0
                       26.0     0.0      32.0     5.0


                                     RATING CURVE VALLEY SECTION  1.0
                                         WATER       FLOW        FLOW        TOP
                                        SURFACE      AREA        RATE        WIDTH
                                         ELEV        SQ FT       CFS         FT
                                           .00         .00         .00       20.00
                                           .20        4.05       10.42       20.48
                                           .40        8.19       33.08       20.96
                                           .60       12.43       65.02       21.44
                                           .80       16.77      105.07       21.92
                                          1.00       21.20      152.51       22.40
                                          1.20       25.73      206.87       22.88
                                          1.40       30.35      267.81       23.36
                                          1.60       35.07      335.06       23.84
```

1.80	39.89	408.42	24.32
2.00	44.80	487.74	24.80
2.20	49.81	572.90	25.28
2.40	54.91	663.81	25.76
2.60	60.11	760.37	26.24
2.80	65.41	862.54	26.72
3.00	70.80	970.27	27.20
3.20	76.29	1083.52	27.68
3.40	81.87	1202.26	28.16
3.60	87.55	1326.48	28.64
3.80	93.33	1456.17	29.12

```
ROUTE MCUNGE         ID=40  HYD=100.01   INFLOW ID=33  DT=0HR  L=4900
                     NS=0   SLOPE=.038  MATCODE=0  REGCODE=0  CCODE=0

        INFLOW END= 220            TABLE PTS= 20
        DT=  .033333               QMED=      108.83  CKMED=     10.7047
        WIDTH MED=       21.96     NREACH=  8         DX=      612.50
```

DEPTH (FT)	AREA (SQ FT)	Q (CFS)	TRAVEL TIME(HR)	WIDTH (FT)	ck (FPS)	VEL (FPS)	C	D	C1	C2	C3	Q-M (CFS)	C1-M	C2-M	C3-M
.00	.0	.0	.720	20.0	5.10	1.21	1.000	.000	1.000	.000	.000	.0	1.000	.000	.000
.20	4.0	10.4	.529	20.5	5.08	2.57	.996	.004	.996	.000	.004	3.3	.999	.000	.001
.40	8.2	33.1	.337	21.0	6.59	4.04	1.290	.010	.991	.131	-.122	20.5	.993	.040	-.032
.60	12.4	65.0	.260	21.4	8.44	5.23	1.653	.015	.988	.251	-.239	48.0	.990	.197	-.187
.80	16.8	105.1	.217	21.9	10.01	6.27	1.961	.021	.986	.329	-.315	84.1	.987	.293	-.280
1.00	21.2	152.5	.189	22.4	11.39	7.19	2.231	.026	.984	.386	-.370	127.9	.985	.359	-.344
1.20	25.7	206.9	.169	22.9	12.62	8.04	2.472	.031	.982	.429	-.411	178.9	.983	.408	-.392
1.40	30.4	267.8	.154	23.4	13.73	8.82	2.691	.036	.981	.463	-.444	236.6	.982	.447	-.428
1.60	35.1	335.1	.142	23.8	14.76	9.55	2.892	.041	.979	.491	-.471	300.7	.980	.478	-.458
1.80	39.9	408.4	.133	24.3	15.71	10.24	3.077	.046	.978	.515	-.493	371.1	.978	.503	-.482
2.00	44.8	487.7	.125	24.8	16.59	10.89	3.251	.051	.976	.535	-.511	447.4	.977	.525	-.502
2.20	49.8	572.9	.118	25.3	17.42	11.50	3.413	.056	.975	.552	-.527	529.7	.976	.544	-.519
2.40	54.9	663.8	.113	25.8	18.20	12.09	3.566	.061	.974	.568	-.541	617.8	.974	.560	-.535
2.60	60.1	760.4	.108	26.2	18.94	12.65	3.711	.066	.972	.581	-.554	711.5	.973	.575	-.548
2.80	65.4	862.5	.103	26.7	19.65	13.19	3.849	.071	.971	.593	-.565	810.9	.972	.587	-.559
3.00	70.8	970.3	.099	27.2	20.32	13.70	3.981	.075	.970	.604	-.575	915.8	.971	.599	-.570
3.20	76.3	1083.5	.096	27.7	20.96	14.20	4.106	.080	.969	.614	-.583	1026.3	.970	.609	-.579
3.40	81.9	1202.3	.093	28.2	21.58	14.68	4.227	.085	.968	.624	-.592	1142.4	.968	.619	-.587
3.60	87.6	1326.5	.090	28.6	22.17	15.15	4.343	.090	.967	.632	-.599	1263.8	.967	.628	-.595
3.80	93.3	1456.2	.087	29.1	22.62	15.60	4.431	.095	.966	.638	-.604	1390.8	.966	.636	-.602

MAXIMUM NO. ITERATIONS FOR SOLUTION (KKMAX) = 5 OCCURRED 1 TIMES. AVERAGE NUMBER ITERATIONS = 1.1634

DEPTH (FT)	AREA (SQ FT)	Q (CFS)	TRAVEL TIME(HR)	WIDTH (FT)	ck (FPS)	VEL (FPS)	C	D	C1	C2	C3	Q-M (CFS)	C1-M	C2-M	C3-M
.00	.0	.0	.720	20.0	5.10	1.21	1.000	.000	1.000	.000	.000	.0	1.000	.000	.000
.20	4.0	10.4	.529	20.5	5.08	2.57	.996	.004	.996	.000	.004	3.3	.999	.000	.001
.40	8.2	33.1	.337	21.0	5.17	4.04	1.013	.013	.987	.013	.000	20.5	.992	.008	.000
.60	12.4	65.0	.260	21.4	5.23	5.23	1.025	.025	.976	.024	.000	48.0	.982	.018	.000
.80	16.8	105.1	.217	21.9	5.30	6.27	1.039	.039	.963	.037	.000	84.1	.969	.031	.000
1.00	21.2	152.5	.189	22.4	5.38	7.19	1.054	.054	.948	.052	.000	127.9	.956	.044	.000
1.20	25.7	206.9	.169	22.9	5.47	8.04	1.071	.071	.934	.066	.000	178.9	.941	.059	.000
1.40	30.4	267.8	.154	23.4	5.56	8.82	1.089	.089	.919	.081	.000	236.6	.926	.074	.000
1.60	35.1	335.1	.142	23.8	5.65	9.55	1.107	.107	.903	.097	.000	300.7	.911	.089	.000
1.80	39.9	408.4	.133	24.3	5.75	10.24	1.126	.126	.888	.112	.000	371.1	.896	.104	.000
2.00	44.8	487.7	.125	24.8	5.84	10.89	1.145	.145	.874	.126	.000	447.4	.881	.119	.000
2.20	49.8	572.9	.118	25.3	5.94	11.50	1.164	.164	.859	.141	.000	529.7	.866		

```
.134   .000
        2.40   54.9    663.8    .113   25.8     6.04  12.09    1.183   .183   .845   .155   .000    617.8    .852
.148   .000
        2.60   60.1    760.4    .108   26.2     6.14  12.65    1.203   .203   .831   .169   .000    711.5    .838
.162   .000
        2.80   65.4    862.5    .103   26.7     6.24  13.19    1.222   .222   .818   .182   .000    810.9    .825
.175   .000
        3.00   70.8    970.3    .099   27.2     6.34  13.70    1.242   .242   .805   .195   .000    915.8    .812
.188   .000
        3.20   76.3   1083.5    .096   27.7     6.44  14.20    1.261   .261   .793   .207   .000   1026.3    .799
.201   .000
        3.40   81.9   1202.3    .093   28.2     6.54  14.68    1.281   .281   .781   .219   .000   1142.4    .787
.213   .000
        3.60   87.6   1326.5    .090   28.6     6.64  15.15    1.300   .300   .769   .231   .000   1263.8    .775
.225   .000
        3.80   93.3   1456.2    .087   29.1     6.73  15.60    1.319   .319   .758   .242   .000   1390.8    .764
.236   .000
     MAXIMUM NO. ITERATIONS FOR SOLUTION (KKMAX) =   3 OCCURRED      32 TIMES.  AVERAGE NUMBER ITERATIONS =  1.1244
     Equations solved with two passes: first using the Ponce correction to C1, second using the Fread correction to C1, C2
and C3
     PRINT HYD            ID=40         CODE=1

                                        PARTIAL HYDROGRAPH   100.01


         RUNOFF VOLUME =      .53549 INCHES     =      11.0923 ACRE-FEET
         PEAK DISCHARGE RATE =     215.27 CFS  AT   2.067 HOURS   BASIN AREA =   .3884 SQ. MI.



     *
     *S COMPUTE BASIN 9-D.1 ****************************************************
     *S UPDATED TO SHOW 30% OPEN SPACE AND REMOVED 0.0125 SQ MI FROM BASIN
     *S ABOVE 4W WATER ZONE DEVELOPED RUNOFF RESTRICTED TO UNDEVELOPED RUNOFF
     *
     *S LAND TREATMENT CHANGES DUE TO MORE COA OPEN SPACE DUE TO MW UNITS 3-6
     *
     COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
                          NK=3  ISLOPE=-1
                          LENGTH=400 FT  SLOPE=0.0084 K=0.7
                          LENGTH=0 FT  SLOPE=0.0 K=2.0
                          LENGTH=1600 FT  SLOPE=0.0250 K=3.0


          Tc AND Tp COMPUTED BY UPLAND/LAG TIME PROCEDURE

          SCS UPLAND METHOD FACTORS
                                    LENGTH (FT)      SLOPE (FT/FT)       COMPOSITE K
          SHEET FLOW PORTION            400.0           .008400             .7000
          SHALLOW FLOW PORTION              .0           .010000            2.0000
          CHANNEL FLOW PORTION         1600.0           .025000            3.0000
          TOTAL BASIN                  2000.0           .021680            1.4138


          TIME OF CONCENTRATION (HRS)=   .2669     TIME TO PEAK (HRS)=   .1779     LAG TIME (HRS)=   .2002

     COMPUTE NM HYD         ID=9  HYD=9_D.1  AREA=0.0603 SQ MI
                                  PER A=40.0  PER B=21.0  PER C=19.0  PER D=20.0
                                  TP=0.0 HR  MASS RAIN=-1
          TIME TO PEAK (hrs)=   .1779

          K =   .096969HR    TP =   .177925HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
          UNIT PEAK =   35.672    CFS   UNIT VOLUME =    .9997       B =   526.28      P60 = 1.7300
          AREA =      .012060 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
          RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


          K =   .191415HR    TP =   .177925HR    K/TP RATIO =  1.075821     SHAPE CONSTANT, N =  3.283381
          UNIT PEAK =   82.467    CFS   UNIT VOLUME =    .9999       B =   304.17      P60 = 1.7300
          AREA =      .048240 SQ MI    IA =    .53938 INCHES    INF =   1.36025 INCHES PER HOUR
          RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

     PRINT HYD              ID=9     CODE=1

                                             HYDROGRAPH FROM AREA 9_D.1


         RUNOFF VOLUME =      .84944 INCHES     =       2.7318 ACRE-FEET
         PEAK DISCHARGE RATE =      69.46 CFS  AT   1.567 HOURS   BASIN AREA =   .0603 SQ. MI.



     *
     *S ADD 15-D/OS-D TO SUB-BASIN 9-D.1 ****************************************
     ADD HYD             ID=44   HYD NO=104.0 ID I=40 ID II=9
     PRINT HYD           ID=44   CODE=1
```

PARTIAL HYDROGRAPH 104.00

RUNOFF VOLUME = .57768 INCHES = 13.8241 ACRE-FEET
PEAK DISCHARGE RATE = 227.60 CFS AT 2.067 HOURS BASIN AREA = .4487 SQ. MI.

```
*
*S ROUTE 9-D.1/15-D/9-D.1 THRU 6-D.1 IN CHANNEL NO.6 **********************
*
COMPUTE RATING CURVE  CID=1   VS NO=1   NO SEGS=1
                      MIN ELEV=0         MAX ELEV=3.80
                      CH SLOPE=0.038    FP SLOPE=0.038
                      N=0.038    DIST=32.0
                      DIST  ELEV         DIST  ELEV
                        0.0     5.0      6.0      0.0
                       26.0     0.0      32.0     5.0
```

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
.00	.00	.00	20.00
.20	4.05	10.42	20.48
.40	8.19	33.08	20.96
.60	12.43	65.02	21.44
.80	16.77	105.07	21.92
1.00	21.20	152.51	22.40
1.20	25.73	206.87	22.88
1.40	30.35	267.81	23.36
1.60	35.07	335.06	23.84
1.80	39.89	408.42	24.32
2.00	44.80	487.74	24.80
2.20	49.81	572.90	25.28
2.40	54.91	663.81	25.76
2.60	60.11	760.37	26.24
2.80	65.41	862.54	26.72
3.00	70.80	970.27	27.20
3.20	76.29	1083.52	27.68
3.40	81.87	1202.26	28.16
3.60	87.55	1326.48	28.64
3.80	93.33	1456.17	29.12

```
ROUTE MCUNGE         ID=30  HYD=104.1   INFLOW ID=44  DT=0HR  L=4900
                     NS=0   SLOPE=.038  MATCODE=0  REGCODE=0  CCODE=0
```

INFLOW END= 228 TABLE PTS= 20
DT= .033333 QMED= 113.80 CKMED= 10.7047
WIDTH MED= 22.01 NREACH= 8 DX= 612.50

DEPTH (FT)	AREA (SQ FT)	Q (CFS)	TRAVEL TIME(HR)	WIDTH (FT)	ck (FPS)	VEL (FPS)	C	D	C1	C2	C3	Q-M (CFS)	C1-M	C2-M	C3-M
.00	.0	.0	.720	20.0	5.10	1.21	1.000	.000	1.000	.000	.000	.0	1.000	.000	.000
.20	4.0	10.4	.529	20.5	5.08	2.57	.996	.004	.996	.000	.004	3.3	.999	.000	.001
.40	8.2	33.1	.337	21.0	6.59	4.04	1.290	.010	.991	.131	-.122	20.5	.993	.040	-.032
.60	12.4	65.0	.260	21.4	8.44	5.23	1.653	.015	.988	.251	-.239	48.0	.990	.197	-.187
.80	16.8	105.1	.217	21.9	10.01	6.27	1.961	.021	.986	.329	-.315	84.1	.987	.293	-.280
1.00	21.2	152.5	.189	22.4	11.39	7.19	2.231	.026	.984	.386	-.370	127.9	.985	.359	-.344
1.20	25.7	206.9	.169	22.9	12.62	8.04	2.472	.031	.982	.429	-.411	178.9	.983	.408	-.392
1.40	30.4	267.8	.154	23.4	13.73	8.82	2.691	.036	.981	.463	-.444	236.6	.982	.447	-.428
1.60	35.1	335.1	.142	23.8	14.76	9.55	2.892	.041	.979	.491	-.471	300.7	.980	.478	-.458
1.80	39.9	408.4	.133	24.3	15.71	10.24	3.077	.046	.978	.515	-.493	371.1	.978	.503	-.482
2.00	44.8	487.7	.125	24.8	16.59	10.89	3.251	.051	.976	.535	-.511	447.4	.977	.525	-.502
2.20	49.8	572.9	.118	25.3	17.42	11.50	3.413	.056	.975	.552	-.527	529.7	.976	.544	-.519
2.40	54.9	663.8	.113	25.8	18.20	12.09	3.566	.061	.974	.568	-.541	617.8	.974	.560	-.535
2.60	60.1	760.4	.108	26.2	18.94	12.65	3.711	.066	.972	.581	-.554	711.5	.973	.575	-.548
2.80	65.4	862.5	.103	26.7	19.65	13.19	3.849	.071	.971	.593	-.565	810.9	.972	.587	-.559
3.00	70.8	970.3	.099	27.2	20.32	13.70	3.981	.075	.970	.604	-.575	915.8	.971	.599	-.570
3.20	76.3	1083.5	.096	27.7	20.96	14.20	4.106	.080	.969	.614	-.583	1026.3	.970		

```
.609  -.579
         3.40   81.9   1202.3    .093   28.2    21.58  14.68    4.227   .085   .968   .624  -.592   1142.4    .968
.619  -.587
         3.60   87.6   1326.5    .090   28.6    22.17  15.15    4.343   .090   .967   .632  -.599   1263.8    .967
.628  -.595
         3.80   93.3   1456.2    .087   29.1    22.62  15.60    4.431   .095   .966   .638  -.604   1390.8    .966
.636  -.602
     MAXIMUM NO. ITERATIONS FOR SOLUTION (KKMAX) =   4 OCCURRED       6 TIMES.  AVERAGE NUMBER ITERATIONS =  1.1844
       DEPTH   AREA      Q    TRAVEL  WIDTH     ck      VEL      C       D      C1     C2     C3     Q-M      C1-M
C2-M   C3-M
        (FT)  (SQ FT)  (CFS)  TIME(HR) (FT)     (FPS)   (FPS)                                          (CFS)
         .00     .0       .0    .720   20.0     5.10   1.21    1.000   .000  1.000   .000   .000       .0   1.000
.000   .000
         .20    4.0     10.4    .529   20.5     5.08   2.57     .996   .004   .996   .000   .004      3.3    .999
.000   .001
         .40    8.2     33.1    .337   21.0     5.17   4.04    1.013   .013   .987   .013   .000     20.5    .992
.008   .000
         .60   12.4     65.0    .260   21.4     5.23   5.23    1.025   .025   .976   .024   .000     48.0    .982
.018   .000
         .80   16.8    105.1    .217   21.9     5.30   6.27    1.039   .039   .963   .037   .000     84.1    .969
.031   .000
        1.00   21.2    152.5    .189   22.4     5.38   7.19    1.054   .054   .948   .052   .000    127.9    .956
.044   .000
        1.20   25.7    206.9    .169   22.9     5.47   8.04    1.071   .071   .934   .066   .000    178.9    .941
.059   .000
        1.40   30.4    267.8    .154   23.4     5.56   8.82    1.089   .089   .919   .081   .000    236.6    .926
.074   .000
        1.60   35.1    335.1    .142   23.8     5.65   9.55    1.107   .107   .903   .097   .000    300.7    .911
.089   .000
        1.80   39.9    408.4    .133   24.3     5.75  10.24    1.126   .126   .888   .112   .000    371.1    .896
.104   .000
        2.00   44.8    487.7    .125   24.8     5.84  10.89    1.145   .145   .874   .126   .000    447.4    .881
.119   .000
        2.20   49.8    572.9    .118   25.3     5.94  11.50    1.164   .164   .859   .141   .000    529.7    .866
.134   .000
        2.40   54.9    663.8    .113   25.8     6.04  12.09    1.183   .183   .845   .155   .000    617.8    .852
.148   .000
        2.60   60.1    760.4    .108   26.2     6.14  12.65    1.203   .203   .831   .169   .000    711.5    .838
.162   .000
        2.80   65.4    862.5    .103   26.7     6.24  13.19    1.222   .222   .818   .182   .000    810.9    .825
.175   .000
        3.00   70.8    970.3    .099   27.2     6.34  13.70    1.242   .242   .805   .195   .000    915.8    .812
.188   .000
        3.20   76.3   1083.5    .096   27.7     6.44  14.20    1.261   .261   .793   .207   .000   1026.3    .799
.201   .000
        3.40   81.9   1202.3    .093   28.2     6.54  14.68    1.281   .281   .781   .219   .000   1142.4    .787
.213   .000
        3.60   87.6   1326.5    .090   28.6     6.64  15.15    1.300   .300   .769   .231   .000   1263.8    .775
.225   .000
        3.80   93.3   1456.2    .087   29.1     6.73  15.60    1.319   .319   .758   .242   .000   1390.8    .764
.236   .000
     MAXIMUM NO. ITERATIONS FOR SOLUTION (KKMAX) =   3 OCCURRED      18 TIMES.  AVERAGE NUMBER ITERATIONS =  1.1351
     Equations solved with two passes: first using the Ponce correction to C1, second using the Fread correction to C1, C2
and C3
     PRINT HYD            ID=30         CODE=1

                                        PARTIAL HYDROGRAPH   104.10


         RUNOFF VOLUME =      .57627 INCHES     =      13.7905 ACRE-FEET
         PEAK DISCHARGE RATE =     222.92 CFS  AT   2.300 HOURS   BASIN AREA =   .4487 SQ. MI.



     *
     *S COMPUTE BASIN 6-D.1 ****************************************************
     *S UPDATED TO SHOW 30% OPEN SPACE (NON COA OPEN SPACE) AND REMOVED
     *S 0.065625 SQ MI FROM BASIN
     *
     *S LAND TREATMENT CHANGES DUE TO MORE COA OPEN SPACE DUE TO MW UNITS 3-6
     *
     COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
                          NK=3  ISLOPE=-1
                          LENGTH=400 FT  SLOPE=0.05 K=0.7
                          LENGTH=0 FT  SLOPE=0.0084 K=2.0
                          LENGTH=2800 FT  SLOPE=0.03286 K=3.0


         Tc AND Tp COMPUTED BY UPLAND/LAG TIME PROCEDURE

         SCS UPLAND METHOD FACTORS
                                   LENGTH (FT)      SLOPE (FT/FT)       COMPOSITE K
         SHEET FLOW PORTION            400.0           .050000             .7000
         SHALLOW FLOW PORTION              .0           .000000             .0000
         CHANNEL FLOW PORTION         2800.0           .032860            3.0000
         TOTAL BASIN                  3200.0           .035003            2.2201
```

```
     TIME OF CONCENTRATION (HRS)=   .2140     TIME TO PEAK (HRS)=   .1427     LAG TIME (HRS)=   .1605

COMPUTE NM HYD         ID=6  HYD=6_D.1  AREA=0.0459 SQ MI
                              PER A=85.0  PER B=8.0  PER C=3.0  PER D=4.0
                              TP=0.0 HR  MASS RAIN=-1
     TIME TO PEAK (hrs)=   .1427

     K =   .077756HR    TP =   .142672HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   6.7725    CFS   UNIT VOLUME =    .9986       B =   526.28      P60 = 1.7300
     AREA =      .001836 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


     K =   .173853HR    TP =   .142672HR    K/TP RATIO =  1.218557     SHAPE CONSTANT, N =  2.920000
     UNIT PEAK =   85.006    CFS   UNIT VOLUME =    .9996       B =   275.23      P60 = 1.7300
     AREA =      .044064 SQ MI    IA =    .62812 INCHES    INF =   1.60875 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD              ID=6     CODE=1

                                        HYDROGRAPH FROM AREA 6_D.1


    RUNOFF VOLUME =      .50718 INCHES     =       1.2416 ACRE-FEET
    PEAK DISCHARGE RATE =      39.87 CFS  AT   1.533 HOURS   BASIN AREA =   .0459 SQ. MI.



*S
*S ADD SUB-BASIN (OS-D,15-D,9-D.1) TO SUB-BASIN 6-D.1 TO GET AP_OFF ********
*S

ADD HYD             ID=55   HYD NO=AP_OFF ID I=30 ID II=6
PRINT HYD           ID=55   CODE=1

                                        HYDROGRAPH FROM AREA AP_OFF


    RUNOFF VOLUME =      .56986 INCHES     =      15.0320 ACRE-FEET
    PEAK DISCHARGE RATE =     225.17 CFS  AT   2.300 HOURS   BASIN AREA =   .4946 SQ. MI.



*
*S COMPUTE BASIN 9-D.2 ****************************************************
*S ABOVE 4W WATER ZONE DEVELOPED RUNOFF RESTRICTED TO UNDEVELOPED RUNOFF
*
*S DECREASE AREA BY 0.00283 SQ MI, AREA INCORPORATED INTO MW UNITS 3-6
*
COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
                     NK=1  ISLOPE=0
                     LENGTH=1800 FT  SLOPE=0.0372 K=3.0
                     Kn=.021  CR=.5



     Tc AND Tp COMPUTED BY UPLAND/LAG TIME PROCEDURE

     SCS UPLAND METHOD FACTORS
                                LENGTH (FT)      SLOPE (FT/FT)       COMPOSITE K
     SHEET FLOW PORTION               .0           .000000             .0000
     SHALLOW FLOW PORTION             .0           .000000             .0000
     CHANNEL FLOW PORTION         1800.0           .037200            3.0000
     TOTAL BASIN                  1800.0           .037200            3.0000


     TIME OF CONCENTRATION (HRS)=   .0864     TIME TO PEAK (HRS)=   .0576     LAG TIME (HRS)=   .0648



     TIME TO PEAK COMPUTED TO BE LESS THAN 0.133333 HOUR MINIMUM VALUE.
     REVISED VALUES: TIME OF CONCENTRATION (HRS)=   .2000     TIME TO PEAK (HRS)=   .1333     LAG TIME (HRS)=   .1500

COMPUTE NM HYD         ID=5  HYD=9_D.2  AREA=0.00945 SQ MI
                              PER A=43.0  PER B=10.0  PER C=27.0  PER D=20.0
                              TP=0.0 HR  MASS RAIN=-1
     TIME TO PEAK (hrs)=   .1333

     K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   7.4600    CFS   UNIT VOLUME =    .9978       B =   526.28      P60 = 1.7300
     AREA =      .001890 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


     K =   .141791HR    TP =   .133333HR    K/TP RATIO =  1.063436     SHAPE CONSTANT, N =  3.320711
     UNIT PEAK =   17.407    CFS   UNIT VOLUME =    .9993       B =   307.00      P60 = 1.7300
     AREA =      .007560 SQ MI    IA =    .53000 INCHES    INF =   1.33400 INCHES PER HOUR
```

```
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD              ID=5     CODE=20

                                          HYDROGRAPH FROM AREA 9_D.2

     TIME      FLOW           TIME      FLOW           TIME      FLOW           TIME      FLOW           TIME
FLOW
      HRS       CFS            HRS       CFS            HRS       CFS            HRS       CFS            HRS
CFS
      .000        .0          2.000       2.0          4.000        .1          6.000        .1
      .667        .0          2.667        .3          4.667        .1          6.667        .0
     1.333       1.9          3.333        .1          5.333        .1

    RUNOFF VOLUME =      .86130 INCHES     =        .4341 ACRE-FEET
    PEAK DISCHARGE RATE =      13.45 CFS  AT   1.500 HOURS   BASIN AREA =   .0095 SQ. MI.


*
*S ROUTE 9D.2 FLOW THRU 1200' OF CHANNEL ***********************************
*
COMPUTE RATING CURVE  CID=1   VS NO=1   NO SEGS=1
                      MIN ELEV=0         MAX ELEV=3.80
                      CH SLOPE=0.0433    FP SLOPE=0.0433
                      N=0.038    DIST=32.0
                      DIST  ELEV         DIST  ELEV
                        0.0     5.0      6.0      0.0
                       26.0     0.0      32.0     5.0


                                     RATING CURVE VALLEY SECTION  1.0
                                         WATER       FLOW        FLOW        TOP
                                        SURFACE      AREA        RATE        WIDTH
                                         ELEV        SQ FT       CFS         FT
                                          .00         .00         .00       20.00
                                          .20        4.05       11.12       20.48
                                          .40        8.19       35.31       20.96
                                          .60       12.43       69.41       21.44
                                          .80       16.77      112.16       21.92
                                         1.00       21.20      162.80       22.40
                                         1.20       25.73      220.83       22.88
                                         1.40       30.35      285.88       23.36
                                         1.60       35.07      357.66       23.84
                                         1.80       39.89      435.97       24.32
                                         2.00       44.80      520.65       24.80
                                         2.20       49.81      611.55       25.28
                                         2.40       54.91      708.59       25.76
                                         2.60       60.11      811.67       26.24
                                         2.80       65.41      920.73       26.72
                                         3.00       70.80     1035.72       27.20
                                         3.20       76.29     1156.61       27.68
                                         3.40       81.87     1283.37       28.16
                                         3.60       87.55     1415.97       28.64
                                         3.80       93.33     1554.41       29.12
ROUTE MCUNGE         ID=7  HYD=100.01   INFLOW ID=5  DT=0HR  L=1200
                     NS=0   SLOPE=.038  MATCODE=0  REGCODE=0  CCODE=0

     INFLOW END= 202            TABLE PTS= 20
     DT=  .033333               QMED=        6.72  CKMED=      2.7482
     WIDTH MED=       20.29     NREACH=  8         DX=      150.00

    DEPTH   AREA      Q    TRAVEL  WIDTH     ck      VEL      C       D      C1     C2     C3     Q-M      C1-M
C2-M   C3-M
     (FT)  (SQ FT)  (CFS)  TIME(HR) (FT)     (FPS)   (FPS)                                          (CFS)
      .00     .0       .0    .165   20.0     1.25   1.29    1.000   .000  1.000   .000   .000       .0   1.000
.000   .000
      .20    4.0     11.1    .121   20.5     4.53   2.75    3.622   .021   .991   .569  -.560      3.5    .994
.397  -.391
      .40    8.2     35.3    .077   21.0     7.03   4.31    5.624   .042   .987   .700  -.687     21.9    .989
.650  -.639
      .60   12.4     69.4    .060   21.4     9.01   5.58    7.206   .063   .985   .758  -.743     51.2    .986
.733  -.719
      .80   16.8    112.2    .050   21.9    10.68   6.69    8.548   .084   .983   .792  -.775     89.8    .984
.777  -.760
     1.00   21.2    162.8    .043   22.4    12.15   7.68    9.723   .105   .981   .815  -.796    136.6    .982
.805  -.786
     1.20   25.7    220.8    .039   22.9    13.47   8.58   10.775   .126   .979   .832  -.811    191.0    .980
.824  -.804
     1.40   30.4    285.9    .035   23.4    14.66   9.42   11.729   .146   .977   .845  -.822    252.6    .978
.839  -.817
     1.60   35.1    357.7    .033   23.8    15.76  10.20   12.604   .167   .976   .855  -.831    321.0    .976
.850  -.826
     1.80   39.9    436.0    .030   24.3    16.77  10.93   13.414   .188   .974   .863  -.837    396.1    .975
.859  -.834
     2.00   44.8    520.6    .029   24.8    17.71  11.62   14.169   .208   .973   .870  -.843    477.6    .974
.867  -.840
```

```
         2.20   49.8    611.6    .027   25.3    18.60  12.28   14.877   .228   .972   .876  -.847    565.4    .972
.873  -.845
         2.40   54.9    708.6    .026   25.8    19.43  12.90   15.544   .248   .970   .881  -.851    659.4    .971
.878  -.849
         2.60   60.1    811.7    .025   26.2    20.22  13.50   16.176   .268   .969   .885  -.855    759.5    .970
.883  -.853
         2.80   65.4    920.7    .024   26.7    20.97  14.08   16.777   .288   .968   .889  -.857    865.6    .969
.887  -.856
         3.00   70.8   1035.7    .023   27.2    21.69  14.63   17.350   .308   .967   .893  -.860    977.6    .968
.891  -.859
         3.20   76.3   1156.6    .022   27.7    22.37  15.16   17.899   .328   .966   .896  -.862   1095.6    .966
.894  -.861
         3.40   81.9   1283.4    .021   28.2    23.03  15.68   18.425   .347   .965   .899  -.864   1219.4    .965
.897  -.863
         3.60   87.6   1416.0    .021   28.6    23.67  16.17   18.932   .367   .964   .901  -.865   1349.1    .964
.900  -.865
         3.80   93.3   1554.4    .020   29.1    24.14  16.66   19.313   .388   .963   .903  -.866   1484.6    .963
.903  -.866
     MAXIMUM NO. ITERATIONS FOR SOLUTION (KKMAX) =   4 OCCURRED       5 TIMES.  AVERAGE NUMBER ITERATIONS =  1.0646
       DEPTH   AREA      Q    TRAVEL  WIDTH     ck      VEL      C       D      C1     C2     C3     Q-M      C1-M
C2-M   C3-M
        (FT)  (SQ FT)  (CFS)  TIME(HR) (FT)     (FPS)   (FPS)                                       (CFS)
         .00     .0       .0    .165   20.0     1.25   1.29    1.000   .000  1.000   .000   .000       .0   1.000
.000   .000
         .20    4.0     11.1    .121   20.5     1.34   2.75    1.071   .071   .934   .066   .000      3.5    .977
.023   .000
         .40    8.2     35.3    .077   21.0     1.50   4.31    1.197   .197   .835   .165   .000     21.9    .884
.116   .000
         .60   12.4     69.4    .060   21.4     1.67   5.58    1.339   .339   .747   .253   .000     51.2    .789
.211   .000
         .80   16.8    112.2    .050   21.9     1.85   6.69    1.484   .484   .674   .326   .000     89.8    .708
.292   .000
        1.00   21.2    162.8    .043   22.4     2.03   7.68    1.627   .627   .615   .385   .000    136.6    .643
.357   .000
        1.20   25.7    220.8    .039   22.9     2.21   8.58    1.767   .767   .566   .434   .000    191.0    .589
.411   .000
        1.40   30.4    285.9    .035   23.4     2.38   9.42    1.903   .903   .526   .474   .000    252.6    .545
.455   .000
        1.60   35.1    357.7    .033   23.8     2.54  10.20    2.035  1.035   .491   .509   .000    321.0    .508
.492   .000
        1.80   39.9    436.0    .030   24.3     2.70  10.93    2.163  1.163   .462   .538   .000    396.1    .476
.524   .000
        2.00   44.8    520.6    .029   24.8     2.86  11.62    2.288  1.288   .437   .563   .000    477.6    .449
.551   .000
        2.20   49.8    611.6    .027   25.3     3.01  12.28    2.409  1.409   .415   .585   .000    565.4    .426
.574   .000
        2.40   54.9    708.6    .026   25.8     3.16  12.90    2.527  1.527   .396   .604   .000    659.4    .405
.595   .000
        2.60   60.1    811.7    .025   26.2     3.30  13.50    2.643  1.643   .378   .622   .000    759.5    .387
.613   .000
        2.80   65.4    920.7    .024   26.7     3.44  14.08    2.755  1.755   .363   .637   .000    865.6    .370
.630   .000
        3.00   70.8   1035.7    .023   27.2     3.58  14.63    2.865  1.865   .349   .651   .000    977.6    .356
.644   .000
        3.20   76.3   1156.6    .022   27.7     3.72  15.16    2.973  1.973   .336   .664   .000   1095.6    .343
.657   .000
        3.40   81.9   1283.4    .021   28.2     3.85  15.68    3.078  2.078   .325   .675   .000   1219.4    .330
.670   .000
        3.60   87.6   1416.0    .021   28.6     3.98  16.17    3.181  2.181   .314   .686   .000   1349.1    .319
.681   .000
        3.80   93.3   1554.4    .020   29.1     4.10  16.66    3.282  2.282   .305   .695   .000   1484.6    .309
.691   .000
     MAXIMUM NO. ITERATIONS FOR SOLUTION (KKMAX) =   2 OCCURRED     220 TIMES.  AVERAGE NUMBER ITERATIONS =  1.0475
     Equations solved with two passes: first using the Ponce correction to C1, second using the Fread correction to C1, C2
and C3
     PRINT HYD            ID=7         CODE=1

                                        PARTIAL HYDROGRAPH   100.01


         RUNOFF VOLUME =      .85651 INCHES     =        .4317 ACRE-FEET
         PEAK DISCHARGE RATE =      13.10 CFS  AT   1.767 HOURS   BASIN AREA =   .0095 SQ. MI.



     *
     *S COMPUTE BASIN 6-D.2*****************************************************
     *S UPDATED TO SHOW 30% OPEN SPACE (NON COA OPEN SPACE)
     *
     *S BREAK BASIN 6-D.2 INTO SUBBASINS FOR MW UNITS 3-6
     *
     *COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
     *                     NK=1  ISLOPE=0
     *                     LENGTH=1200 FT   SLOPE=0.0433 K=3.0
     *                     Kn=.021  CR=.5
     *
     *
     *COMPUTE NM HYD                 ID=7  HYD=6_D.2  AREA=0.047369 SQ MI
```

```
*                              PER A=42  PER B=15  PER C=15  PER D=28
*                              TP=0.0 HR  MASS RAIN=-1
*PRINT HYD                     ID=7     CODE=20
*
*S
*S               ************************************************
*S               *COMPUTE MONTECITO VISTAS UNITS 1-4 ONSITE BASINS*
*s               ************************************************
*S
*S
*S
*S COMPUTE BASIN 6-D.2A ****************************************************
*
COMPUTE NM HYD       ID=31 HYD=6_D.2A  AREA=0.01709  PER A=0 PER B=29.5
                           PER C=29.5 PER D=41  TP=0.13333  RAINFALL=-1

     K =   .072665HR    TP =   .133330HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   27.657    CFS   UNIT VOLUME =    .9990       B =   526.28      P60 = 1.7300
     AREA =      .007007 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


     K =   .118898HR    TP =   .133330HR    K/TP RATIO =   .891759     SHAPE CONSTANT, N =  3.976619
     UNIT PEAK =   26.742    CFS   UNIT VOLUME =    1.000       B =   353.61      P60 = 1.7300
     AREA =      .010083 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD              ID=31   CODE=1

                                         HYDROGRAPH FROM AREA 6_D.2A


    RUNOFF VOLUME =     1.26357 INCHES     =       1.1517 ACRE-FEET
    PEAK DISCHARGE RATE =      33.19 CFS  AT   1.500 HOURS   BASIN AREA =   .0171 SQ. MI.



*
*S COMPUTE BASIN 6-D.2B ****************************************************
COMPUTE NM HYD       ID=32 HYD=6_D.2B  AREA=0.016231  PER A=0 PER B=29
                           PER C=29 PER D=42  TP=0.13333  RAINFALL=-1

     K =   .072665HR    TP =   .133330HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   26.908    CFS   UNIT VOLUME =    .9989       B =   526.28      P60 = 1.7300
     AREA =      .006817 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


     K =   .118898HR    TP =   .133330HR    K/TP RATIO =   .891759     SHAPE CONSTANT, N =  3.976619
     UNIT PEAK =   24.967    CFS   UNIT VOLUME =    .9999       B =   353.61      P60 = 1.7300
     AREA =      .009414 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD              ID=32   CODE=1

                                         HYDROGRAPH FROM AREA 6_D.2B


    RUNOFF VOLUME =     1.27567 INCHES     =       1.1043 ACRE-FEET
    PEAK DISCHARGE RATE =      31.70 CFS  AT   1.500 HOURS   BASIN AREA =   .0162 SQ. MI.



*
*S COMPUTE BASIN 6-D.2C ****************************************************
COMPUTE NM HYD       ID=33 HYD=6_D.2C  AREA=0.005902  PER A=0 PER B=34
                           PER C=34 PER D=32  TP=0.13333  RAINFALL=-1

     K =   .072665HR    TP =   .133330HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   7.4548    CFS   UNIT VOLUME =    .9978       B =   526.28      P60 = 1.7300
     AREA =      .001889 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


     K =   .118898HR    TP =   .133330HR    K/TP RATIO =   .891759     SHAPE CONSTANT, N =  3.976619
     UNIT PEAK =   10.644    CFS   UNIT VOLUME =    .9992       B =   353.61      P60 = 1.7300
     AREA =      .004013 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD              ID=33   CODE=1

                                         HYDROGRAPH FROM AREA 6_D.2C


    RUNOFF VOLUME =     1.15465 INCHES     =        .3635 ACRE-FEET
    PEAK DISCHARGE RATE =      10.88 CFS  AT   1.500 HOURS   BASIN AREA =   .0059 SQ. MI.
```

```
*
*S COMPUTE BASIN 6-D.2D ****************************************************
COMPUTE NM HYD       ID=34 HYD=6_D.2D  AREA=0.01071  PER A=0 PER B=34.5
                           PER C=34.5 PER D=31  TP=0.13333  RAINFALL=-1

     K =   .072665HR    TP =   .133330HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   13.105    CFS   UNIT VOLUME =    .9985       B =   526.28      P60 = 1.7300
     AREA =      .003320 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


     K =   .118898HR    TP =   .133330HR    K/TP RATIO =   .891759     SHAPE CONSTANT, N =  3.976619
     UNIT PEAK =   19.599    CFS   UNIT VOLUME =    .9998       B =   353.61      P60 = 1.7300
     AREA =      .007390 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD              ID=34   CODE=1

                                          HYDROGRAPH FROM AREA 6_D.2D


    RUNOFF VOLUME =     1.14255 INCHES     =        .6526 ACRE-FEET
    PEAK DISCHARGE RATE =      19.62 CFS  AT   1.500 HOURS   BASIN AREA =   .0107 SQ. MI.



*
*S COMPUTE BASIN 6-D.2E ****************************************************
COMPUTE NM HYD       ID=35 HYD=6_D.2E  AREA=0.002415  PER A=0 PER B=30.5
                           PER C=30.5 PER D=39  TP=0.13333  RAINFALL=-1

     K =   .072665HR    TP =   .133330HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   3.7176    CFS   UNIT VOLUME =    .9965       B =   526.28      P60 = 1.7300
     AREA =      .000942 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


     K =   .118898HR    TP =   .133330HR    K/TP RATIO =   .891759     SHAPE CONSTANT, N =  3.976619
     UNIT PEAK =   3.9070    CFS   UNIT VOLUME =    .9972       B =   353.61      P60 = 1.7300
     AREA =      .001473 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD              ID=35   CODE=1

                                          HYDROGRAPH FROM AREA 6_D.2E


    RUNOFF VOLUME =     1.23937 INCHES     =        .1596 ACRE-FEET
    PEAK DISCHARGE RATE =       4.65 CFS  AT   1.500 HOURS   BASIN AREA =   .0024 SQ. MI.



*
*S COMPUTE BASIN 6-D.2F ****************************************************
COMPUTE NM HYD       ID=36 HYD=6_D.2F  AREA=0.004180  PER A=0 PER B=30
                           PER C=30 PER D=40ss  TP=0.13333  RAINFALL=-1

     K =   .072665HR    TP =   .133330HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   6.5997    CFS   UNIT VOLUME =    .9976       B =   526.28      P60 = 1.7300
     AREA =      .001672 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


     K =   .118898HR    TP =   .133330HR    K/TP RATIO =   .891759     SHAPE CONSTANT, N =  3.976619
     UNIT PEAK =   6.6515    CFS   UNIT VOLUME =    .9984       B =   353.61      P60 = 1.7300
     AREA =      .002508 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD              ID=36   CODE=1

                                          HYDROGRAPH FROM AREA 6_D.2F


    RUNOFF VOLUME =     1.25147 INCHES     =        .2790 ACRE-FEET
    PEAK DISCHARGE RATE =       8.08 CFS  AT   1.500 HOURS   BASIN AREA =   .0042 SQ. MI.



*
*S ADD 9-D.2 TO 6-D.2A *****************************************************
ADD HYD             ID=39   HYD NO=6_9D.2A ID I=7 ID II=31
PRINT HYD           ID=39   CODE=1

                                          HYDROGRAPH FROM AREA 6_9D.2A


    RUNOFF VOLUME =     1.11860 INCHES     =       1.5833 ACRE-FEET
```

```
    PEAK DISCHARGE RATE =      33.61 CFS  AT   1.500 HOURS   BASIN AREA =   .0265 SQ. MI.


*
*S ADD 6-D.2B TO 6_9D.2A ***************************************************
ADD HYD             ID=41   HYD NO=6_9D.2AB ID I=32 ID II=39
PRINT HYD           ID=41   CODE=1

                                          HYDROGRAPH FROM AREA 6_9D.2AB


    RUNOFF VOLUME =     1.17820 INCHES     =       2.6876 ACRE-FEET
    PEAK DISCHARGE RATE =      65.32 CFS  AT   1.500 HOURS   BASIN AREA =   .0428 SQ. MI.


*
*S ADD 6-D.2C TO 6_9D.2AB ***************************************************
ADD HYD             ID=42   HYD NO=6_9D.2ABC ID I=33 ID II=41
PRINT HYD           ID=42   CODE=1

                                          HYDROGRAPH FROM AREA 6_9D.2ABC


    RUNOFF VOLUME =     1.17534 INCHES     =       3.0510 ACRE-FEET
    PEAK DISCHARGE RATE =      76.20 CFS  AT   1.500 HOURS   BASIN AREA =   .0487 SQ. MI.


*
*S ADD 6_D.2D TO 6_9D.2ABC **************************************************
ADD HYD             ID=43   HYD NO=6_9D.2ABCD ID I=34 ID II=42
PRINT HYD           ID=43   CODE=1

                                          HYDROGRAPH FROM AREA 6_9D.2ABCD


    RUNOFF VOLUME =     1.16942 INCHES     =       3.7036 ACRE-FEET
    PEAK DISCHARGE RATE =      95.82 CFS  AT   1.500 HOURS   BASIN AREA =   .0594 SQ. MI.


*
*S ADD 6_D.2E TO 6_9D.2ABCD *************************************************
ADD HYD             ID=46   HYD NO=6_D.2ABCDE ID I=35 ID II=43
PRINT HYD           ID=46   CODE=1

                                          HYDROGRAPH FROM AREA 6_D.2ABCDE


    RUNOFF VOLUME =     1.17215 INCHES     =       3.8633 ACRE-FEET
    PEAK DISCHARGE RATE =     100.47 CFS  AT   1.500 HOURS   BASIN AREA =   .0618 SQ. MI.


*
*S ADD 6_D.2F TO 6_9D.2ABCDE TO GET PROJECT SITE DISCHARGE, AP=6_9D.2*******
ADD HYD             ID=47   HYD NO=6_9D.2ABCDEF ID I=36 ID II=46
PRINT HYD           ID=47   CODE=1

                                          HYDROGRAPH FROM AREA 6_9D.2ABCDEF


    RUNOFF VOLUME =     1.17717 INCHES     =       4.1422 ACRE-FEET
    PEAK DISCHARGE RATE =     108.55 CFS  AT   1.500 HOURS   BASIN AREA =   .0660 SQ. MI.


*
*
*S COMPUTE BASIN 6-D.3*******************************************************
*S UPDATED TO SHOW 30% OPEN SPACE
*
*S NO CHANGE FROM MONTECITO WEST DMP
*
COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
                     NK=1  ISLOPE=0
                     LENGTH=600 FT   SLOPE=0.0433 K=3.0
                     Kn=.021  CR=.5


     Tc AND Tp COMPUTED BY UPLAND/LAG TIME PROCEDURE

     SCS UPLAND METHOD FACTORS
                                LENGTH (FT)    ADJUSTED SLOPE (FT/FT)COMPOSITE K
     SHEET FLOW PORTION               .0           .000000             .0000
```

```
     SHALLOW FLOW PORTION              .0           .000000             .0000
     CHANNEL FLOW PORTION           600.0           .043003            3.0000
     TOTAL BASIN                    600.0           .043003            3.0000


     TIME OF CONCENTRATION (HRS)=   .0268     TIME TO PEAK (HRS)=   .0179     LAG TIME (HRS)=   .0201



     TIME TO PEAK COMPUTED TO BE LESS THAN 0.133333 HOUR MINIMUM VALUE.
     REVISED VALUES: TIME OF CONCENTRATION (HRS)=   .2000     TIME TO PEAK (HRS)=   .1333     LAG TIME (HRS)=   .1500

COMPUTE NM HYD         ID=9  HYD=6_D.3  AREA=0.018277 SQ MI
                                PER A=30.0  PER B=18  PER C=18  PER D=34
                                TP=0.0 HR  MASS RAIN=-1
     TIME TO PEAK (hrs)=   .1333

     K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   24.528    CFS   UNIT VOLUME =    .9989       B =   526.28      P60 = 1.7300
     AREA =      .006214 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


     K =   .140880HR    TP =   .133333HR    K/TP RATIO =  1.056601     SHAPE CONSTANT, N =  3.341788
     UNIT PEAK =   27.919    CFS   UNIT VOLUME =    .9995       B =   308.60      P60 = 1.7300
     AREA =      .012063 SQ MI    IA =    .52727 INCHES    INF =   1.32636 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD              ID=9     CODE=20

                                        HYDROGRAPH FROM AREA 6_D.3

     TIME      FLOW           TIME      FLOW           TIME      FLOW           TIME      FLOW           TIME
FLOW
      HRS       CFS            HRS       CFS            HRS       CFS            HRS       CFS            HRS
CFS
      .000        .0          2.000       5.2          4.000        .2          6.000        .2
      .667        .0          2.667        .7          4.667        .2          6.667        .0
     1.333       5.6          3.333        .3          5.333        .2

    RUNOFF VOLUME =     1.05951 INCHES     =       1.0328 ACRE-FEET
    PEAK DISCHARGE RATE =      29.87 CFS  AT   1.500 HOURS   BASIN AREA =   .0183 SQ. MI.


*
*S***** ROUTE OFFSITE FLOW THRU 850' OF 36" RCP PIPE
COMPUTE RATING CURVE CID=10  VS NO=1   CODE=-1
                     SLP=0.0273
                     DIA=36 INCHES   N=0.013
     ******WARNING****** CID=1 USED

                                   RATING CURVE PIPE SECTION  1.0
                                       WATER       FLOW        FLOW        MAX
                                      SURFACE      AREA        RATE        WIDTH
                                       ELEV        SQ FT       CFS         FT
                                        .00         .00         .00         .00
                                        .16         .14         .58        1.33
                                        .31         .39        2.51        1.83
                                        .47         .71        5.83        2.18
                                        .63        1.07       10.49        2.44
                                        .78        1.46       16.38        2.63
                                        .94        1.89       23.37        2.78
                                       1.09        2.33       31.32        2.89
                                       1.25        2.79       40.04        2.96
                                       1.41        3.26       49.36        2.99
                                       1.56        3.72       59.07        3.00
                                       1.72        4.19       68.96        3.00
                                       1.88        4.65       78.80        3.00
                                       2.03        5.10       88.32        3.00
                                       2.19        5.53       97.23        3.00
                                       2.35        5.93      105.21        3.00
                                       2.50        6.30      111.85        3.00
                                       2.66        6.62      116.60        3.00
                                       2.81        6.89      118.55        3.00
                                       3.00        7.07      118.55        3.00
ROUTE MCUNGE         ID=10  HYD= RT.2AB2   INFLOW ID=9  DT=0HR  L=850
                     NS=0   SLOPE=.0273  MATCODE=0  REGCODE=0  CCODE=0

     INFLOW END= 210            TABLE PTS= 19
     DT=  .033333               QMED=       14.94  CKMED=     14.8344
     WIDTH MED=        2.59     NREACH=  1         DX=      850.00

      DEPTH   AREA      Q    TRAVEL  WIDTH     ck      VEL      C       D      C1     C2     C3     Q-M      C1-M
C2-M   C3-M
       (FT)  (SQ FT)  (CFS)  TIME(HR) (FT)     (FPS)   (FPS)                                        (CFS)
        .00     .0       .0    .078     .0      7.08   1.94    1.000   .000  1.000   .000   .000       .0   1.000
.000   .000
```

```
         .16     .1       .6    .057    1.3     7.06   4.11     .997   .003   .997   .000   .003       .1   1.000
.000   .000
         .31     .4      2.5    .037    1.8     9.34   6.42    1.319   .006   .995   .140  -.134      1.4    .995
.047  -.042
         .47     .7      5.8    .029    2.2    11.83   8.26    1.670   .010   .993   .254  -.246      4.0    .993
.201  -.194
         .63    1.1     10.5    .024    2.4    13.92   9.83    1.966   .013   .991   .329  -.320      8.0    .992
.294  -.286
         .78    1.5     16.4    .021    2.6    15.71  11.18    2.218   .017   .989   .382  -.371     13.3    .990
.357  -.348
         .94    1.9     23.4    .019    2.8    17.23  12.38    2.432   .021   .988   .421  -.409     19.8    .989
.403  -.392
        1.09    2.3     31.3    .018    2.9    18.50  13.43    2.612   .025   .986   .450  -.436     27.3    .987
.437  -.424
        1.25    2.8     40.0    .016    3.0    19.55  14.35    2.760   .030   .984   .472  -.456     35.6    .985
.463  -.448
        1.41    3.3     49.4    .016    3.0    20.37  15.16    2.875   .035   .982   .489  -.471     44.6    .983
.482  -.465
        1.56    3.7     59.1    .015    3.0    20.94  15.86    2.956   .041   .980   .500  -.479     54.2    .981
.496  -.477
        1.72    4.2     69.0    .014    3.0    21.07  16.46    2.975   .047   .977   .503  -.479     64.0    .978
.503  -.481
        1.88    4.7     78.8    .014    3.0    20.68  16.94    2.919   .055   .972   .497  -.469     73.8    .975
.501  -.476
        2.03    5.1     88.3    .014    3.0    19.70  17.33    2.781   .064   .967   .480  -.446     83.5    .970
.490  -.460
        2.19    5.5     97.2    .013    3.0    18.06  17.60    2.549   .077   .957   .448  -.406     92.8    .963
.467  -.430
        2.35    5.9    105.2    .013    3.0    15.62  17.75    2.205   .097   .941   .394  -.336    101.2    .951
.426  -.377
        2.50    6.3    111.8    .013    3.0    12.16  17.76    1.717   .132   .907   .298  -.205    108.5    .929
.356  -.286
        2.66    6.6    116.6    .013    3.0     7.12  17.61    1.006   .235   .790   .107   .102    114.2    .875
.228  -.103
        2.81    6.9    118.5    .014    3.0     4.24  17.21     .598   .402   .598   .000   .402    117.6    .693
.053   .254
     MAXIMUM NO. ITERATIONS FOR SOLUTION (KKMAX) =   3 OCCURRED       4 TIMES.  AVERAGE NUMBER ITERATIONS =  1.0794
     Equations solved using the Ponce correction to C2
     PRINT HYD            ID=10         CODE=1

                                          HYDROGRAPH FROM AREA RT.2AB2


         RUNOFF VOLUME =     1.05960 INCHES     =       1.0329 ACRE-FEET
         PEAK DISCHARGE RATE =      29.72 CFS  AT   1.533 HOURS   BASIN AREA =   .0183 SQ. MI.


     *S
     *S
     *S
     *S                    ********************************
     *S                    *  COMPUTE OFFSITE "A" BASINS  *
     *S                    ********************************
     *S
     *S COMPUTE BASIN A-1.1 ****************************************************
     *S ABOVE 4W WATER ZONE DEVELOPED RUNOFF RESTRICTED TO UNDEVELOPED RUNOFF
     *
     *S NO CHANGE FROM MONTECITO WEST DMP
     *
     COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
                          NK=3  ISLOPE=-1
                          LENGTH=400 FT  SLOPE=0.0340 K=0.7
                          LENGTH=1600 FT  SLOPE=0.0361 K=2.0
                          LENGTH=2800 FT  SLOPE=0.0346 K=3.0


          BASIN LONGER THAN 4000.0 FT AND ALL BASIN LAG FACTORS NOT SPECIFIED
          USE Kn=   .0160 AND Lca/L=  .50000


          Tc AND Tp COMPUTED BY UPLAND/LAG TIME PROCEDURE

          SCS UPLAND METHOD FACTORS
                                     LENGTH (FT)      SLOPE (FT/FT)       COMPOSITE K
          SHEET FLOW PORTION            400.0           .034000             .7000
          SHALLOW FLOW PORTION         1600.0           .036100            2.0000
          CHANNEL FLOW PORTION         2800.0           .034600            3.0000
          TOTAL BASIN                  4800.0           .035050            2.0799


          LAG EQUATION FACTORS:     Kn=   .0160     TOTAL BASIN LENGTH (FT)=      4800.0
          TOTAL BASIN SLOPE (FT/FT)=    .035050     CENTROUD LENGTH (FT)=         2400.0


          TIME OF CONCENTRATION (HRS)=   .2889     TIME TO PEAK (HRS)=   .1926     LAG TIME (HRS)=   .2167
```

```
COMPUTE NM HYD         ID=60 HYD=A_1.1  AREA=0.08421 SQ MI
                              PER A=90.0  PER B=5.0  PER C=5.0  PER D=0.0
                              TP=0.0 HR  MASS RAIN=-1
     TIME TO PEAK (hrs)=   .1926

     K =   .231321HR    TP =   .192581HR    K/TP RATIO =  1.201165     SHAPE CONSTANT, N =  2.958575
     UNIT PEAK =   121.75    CFS   UNIT VOLUME =    .9998       B =   278.43      P60 = 1.7300
     AREA =      .084210 SQ MI    IA =    .62750 INCHES    INF =   1.60700 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD              ID=60     CODE=20

                                        HYDROGRAPH FROM AREA A_1.1

     TIME      FLOW           TIME      FLOW           TIME      FLOW           TIME      FLOW           TIME
FLOW
      HRS       CFS            HRS       CFS            HRS       CFS            HRS       CFS            HRS
CFS
      .000        .0          2.000      10.9          4.000        .4          6.000        .0
      .667        .0          2.667       2.5          4.667        .1          6.667        .0
     1.333        .2          3.333       1.0          5.333        .1

    RUNOFF VOLUME =      .44665 INCHES     =       2.0060 ACRE-FEET
    PEAK DISCHARGE RATE =      52.27 CFS  AT   1.567 HOURS   BASIN AREA =   .0842 SQ. MI.



*
*S COMPUTE BASIN A-1.2 ****************************************************
*S UPDATED TO SHOW 30% OPEN SPACE
*
*S DECREASE AREA BY 0.0101 SQ MI, AREA INCORPORATED INTO MW UNITS 3-6
*
COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
                     NK=1  ISLOPE=0
                     LENGTH=3200 FT  SLOPE=0.0325 K=3.0
                     Kn=.021  CR=.5


     Tc AND Tp COMPUTED BY UPLAND/LAG TIME PROCEDURE

     SCS UPLAND METHOD FACTORS
                              LENGTH (FT)      SLOPE (FT/FT)       COMPOSITE K
     SHEET FLOW PORTION               .0           .000000             .0000
     SHALLOW FLOW PORTION             .0           .000000             .0000
     CHANNEL FLOW PORTION         3200.0           .032500            3.0000
     TOTAL BASIN                  3200.0           .032500            3.0000


     TIME OF CONCENTRATION (HRS)=   .1644     TIME TO PEAK (HRS)=   .1096     LAG TIME (HRS)=   .1233


     TIME TO PEAK COMPUTED TO BE LESS THAN 0.133333 HOUR MINIMUM VALUE.
     REVISED VALUES: TIME OF CONCENTRATION (HRS)=   .2000     TIME TO PEAK (HRS)=   .1333     LAG TIME (HRS)=   .1500

COMPUTE NM HYD         ID=65 HYD=A_1.2  AREA=0.012613 SQ MI
                              PER A=30.0  PER B=18.0  PER C=18.0  PER D=34.0
                              TP=0.0 HR  MASS RAIN=-1
     TIME TO PEAK (hrs)=   .1333

     K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   16.927    CFS   UNIT VOLUME =    .9987       B =   526.28      P60 = 1.7300
     AREA =      .004288 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


     K =   .140880HR    TP =   .133333HR    K/TP RATIO =  1.056601     SHAPE CONSTANT, N =  3.341788
     UNIT PEAK =   19.267    CFS   UNIT VOLUME =    .9993       B =   308.60      P60 = 1.7300
     AREA =      .008325 SQ MI    IA =    .52727 INCHES    INF =   1.32636 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD              ID=65     CODE=20

                                        HYDROGRAPH FROM AREA A_1.2

     TIME      FLOW           TIME      FLOW           TIME      FLOW           TIME      FLOW           TIME
FLOW
      HRS       CFS            HRS       CFS            HRS       CFS            HRS       CFS            HRS
CFS
      .000        .0          2.000       3.6          4.000        .1          6.000        .1
      .667        .0          2.667        .5          4.667        .1          6.667        .0
     1.333       3.9          3.333        .2          5.333        .1

    RUNOFF VOLUME =     1.05951 INCHES     =        .7127 ACRE-FEET
    PEAK DISCHARGE RATE =      20.62 CFS  AT   1.500 HOURS   BASIN AREA =   .0126 SQ. MI.
```

```
*
*S ADD A-1.1 TO A-2.2 TO GET FLOW IN VISTA VIEJA AVENUE ********************
ADD HYD             ID=66   HYD NO=A_1.1_1.2 ID I=60 ID II=65
PRINT HYD           ID=66   CODE=1

                                        HYDROGRAPH FROM AREA A_1.1_1.2


    RUNOFF VOLUME =      .52648 INCHES     =       2.7187 ACRE-FEET
    PEAK DISCHARGE RATE =      69.94 CFS  AT   1.567 HOURS   BASIN AREA =   .0968 SQ. MI.



*
*S
*S                    ********************************
*S                    *  COMPUTE OFFSITE "E" BASINS  *
*S                    ********************************
*S
*S
*S COMPUTE BASIN E-1.1 ****************************************************
*
COMPUTE NM HYD       ID=21 HYD=1_E.1  AREA=0.006128  PER A=30.0 PER B=18.0
                           PER C=18.0 PER D=34  TP=0.13333  RAINFALL=-1

     K =   .072665HR    TP =   .133330HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   8.2240    CFS   UNIT VOLUME =    .9980       B =   526.28      P60 = 1.7300
     AREA =      .002084 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


     K =   .140877HR    TP =   .133330HR    K/TP RATIO =  1.056601     SHAPE CONSTANT, N =  3.341788
     UNIT PEAK =   9.3611    CFS   UNIT VOLUME =    .9985       B =   308.60      P60 = 1.7300
     AREA =      .004044 SQ MI    IA =    .52727 INCHES    INF =   1.32636 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD                ID=21   CODE=1

                                        HYDROGRAPH FROM AREA 1_E.1


    RUNOFF VOLUME =     1.05951 INCHES     =        .3463 ACRE-FEET
    PEAK DISCHARGE RATE =      10.03 CFS  AT   1.500 HOURS   BASIN AREA =   .0061 SQ. MI.



*
*S COMPUTE BASIN E-1.3 ****************************************************
*S UPDATED TO SHOW 30% OPEN SPACE
*
*S NO CHANGE FROM MONTECITO WEST DMP
*
COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
                     NK=1  ISLOPE=0
                     LENGTH=3800 FT  SLOPE=0.0325 K=3.0
                     Kn=.021  CR=.5



     Tc AND Tp COMPUTED BY UPLAND/LAG TIME PROCEDURE

     SCS UPLAND METHOD FACTORS
                                LENGTH (FT)      SLOPE (FT/FT)       COMPOSITE K
     SHEET FLOW PORTION               .0           .000000             .0000
     SHALLOW FLOW PORTION             .0           .000000             .0000
     CHANNEL FLOW PORTION         3800.0           .032500            3.0000
     TOTAL BASIN                  3800.0           .032500            3.0000


     TIME OF CONCENTRATION (HRS)=   .1952     TIME TO PEAK (HRS)=   .1301     LAG TIME (HRS)=   .1464



     TIME TO PEAK COMPUTED TO BE LESS THAN 0.133333 HOUR MINIMUM VALUE.
     REVISED VALUES: TIME OF CONCENTRATION (HRS)=   .2000     TIME TO PEAK (HRS)=   .1333     LAG TIME (HRS)=   .1500

COMPUTE NM HYD         ID=70 HYD=E_1.3  AREA=0.08120 SQ MI
                              PER A=52.0  PER B=16.0  PER C=16.0  PER D=16.0
                              TP=0.0 HR  MASS RAIN=-1
     TIME TO PEAK (hrs)=   .1333

     K =   .073103HR    TP =   .133333HR    K/TP RATIO =   .548271     SHAPE CONSTANT, N =  7.052186
     UNIT PEAK =   51.032    CFS   UNIT VOLUME =    .9991       B =   523.72      P60 = 1.7300
     AREA =      .012992 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333
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```
K =   .147411HR    TP =   .133333HR    K/TP RATIO =  1.105586     SHAPE CONSTANT, N =  3.197897
UNIT PEAK =   152.23    CFS   UNIT VOLUME =    1.000       B =   297.58      P60 = 1.7300
AREA =      .068208 SQ MI    IA =    .56429 INCHES    INF =   1.43000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD              ID=70     CODE=20

                                        HYDROGRAPH FROM AREA E_1.3

     TIME      FLOW           TIME      FLOW           TIME      FLOW           TIME      FLOW           TIME
FLOW
      HRS       CFS            HRS       CFS            HRS       CFS            HRS       CFS            HRS
CFS
     .000        .0          2.000      14.5          4.000        .4          6.000        .4
     .667        .0          2.667       2.3          4.667        .4          6.667        .0
    1.333      12.7          3.333        .7          5.333        .4

   RUNOFF VOLUME =      .76220 INCHES     =       3.3008 ACRE-FEET
   PEAK DISCHARGE RATE =     103.73 CFS  AT   1.500 HOURS   BASIN AREA =   .0812 SQ. MI.


*
*S COMPUTE BASIN E-1.4 ****************************************************
*S UPDATED TO SHOW 30% OPEN SPACE
*
*S NO CHANGE FROM MONTECITO WEST DMP
*
COMPUTE LT TP        LCODE=1  UPLAND/LAG TIME TRANSITION METHOD
                     NK=1  ISLOPE=0
                     LENGTH=5200 FT  SLOPE=0.0325 K=3.0
                     Kn=.021  CR=.5


     Tc AND Tp COMPUTED BY UPLAND/LAG TIME PROCEDURE

     SCS UPLAND METHOD FACTORS
                                LENGTH (FT)      SLOPE (FT/FT)       COMPOSITE K
     SHEET FLOW PORTION               .0           .000000             .0000
     SHALLOW FLOW PORTION             .0           .000000             .0000
     CHANNEL FLOW PORTION         5200.0           .032500            3.0000
     TOTAL BASIN                  5200.0           .032500            3.0000


     LAG EQUATION FACTORS:     Kn=   .0210     TOTAL BASIN LENGTH (FT)=      5200.0
     TOTAL BASIN SLOPE (FT/FT)=    .032500     CENTROUD LENGTH (FT)=         2600.0


     TIME OF CONCENTRATION (HRS)=   .2385     TIME TO PEAK (HRS)=   .1590     LAG TIME (HRS)=   .1789

COMPUTE NM HYD         ID=75 HYD=E_1.4  AREA=0.13593 SQ MI
                              PER A=60.0  PER B=13.0  PER C=13.0  PER D=14.0
                              TP=0.0 HR  MASS RAIN=-1
     TIME TO PEAK (hrs)=   .1590

     K =   .088708HR    TP =   .159019HR    K/TP RATIO =   .557844     SHAPE CONSTANT, N =  6.898126
     UNIT PEAK =   61.800    CFS   UNIT VOLUME =    .9994       B =   516.41      P60 = 1.7300
     AREA =      .019030 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


     K =   .174685HR    TP =   .159019HR    K/TP RATIO =  1.098519     SHAPE CONSTANT, N =  3.217671
     UNIT PEAK =   219.89    CFS   UNIT VOLUME =    1.000       B =   299.11      P60 = 1.7300
     AREA =      .116900 SQ MI    IA =    .58198 INCHES    INF =   1.47953 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD              ID=75     CODE=20

                                        HYDROGRAPH FROM AREA E_1.4

     TIME      FLOW           TIME      FLOW           TIME      FLOW           TIME      FLOW           TIME
FLOW
      HRS       CFS            HRS       CFS            HRS       CFS            HRS       CFS            HRS
CFS
     .000        .0          2.000      24.2          4.000        .8          6.000        .6
     .667        .0          2.667       4.5          4.667        .6          6.667        .0
    1.333      13.5          3.333       1.5          5.333        .6          7.333        .0

   RUNOFF VOLUME =      .71155 INCHES     =       5.1585 ACRE-FEET
   PEAK DISCHARGE RATE =     146.85 CFS  AT   1.533 HOURS   BASIN AREA =   .1359 SQ. MI.


*
*S
*S              ***********************************************
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```
*S               *COMPUTE MONTECITO WEST UNITS 1-2 ONSITE BASINS*
*s               ************************************************
*S
*S NO CHANGE FROM MONTECITO WEST DMP
*S
*S COMPUTE BASIN 6-D.4 ****************************************************
*
COMPUTE NM HYD       ID=2 HYD=6_D.4  AREA=0.015778  PER A=0 PER B=29
                          PER C=29 PER D=42  TP=0.13333  RAINFALL=-1

     K =   .072665HR    TP =   .133330HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   26.157    CFS   UNIT VOLUME =    .9989       B =   526.28      P60 = 1.7300
     AREA =      .006627 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


     K =   .118898HR    TP =   .133330HR    K/TP RATIO =   .891759     SHAPE CONSTANT, N =  3.976619
     UNIT PEAK =   24.270    CFS   UNIT VOLUME =    .9999       B =   353.61      P60 = 1.7300
     AREA =      .009151 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD              ID=2   CODE=1

                                        HYDROGRAPH FROM AREA 6_D.4


    RUNOFF VOLUME =     1.27567 INCHES     =       1.0735 ACRE-FEET
    PEAK DISCHARGE RATE =      30.82 CFS  AT   1.500 HOURS   BASIN AREA =   .0158 SQ. MI.



*
*S COMPUTE BASIN 6-D.5 ****************************************************
COMPUTE NM HYD       ID=3 HYD=6_D.5  AREA=0.007522  PER A=0 PER B=34
                          PER C=34 PER D=32  TP=0.13333  RAINFALL=-1

     K =   .072665HR    TP =   .133330HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   9.5010    CFS   UNIT VOLUME =    .9982       B =   526.28      P60 = 1.7300
     AREA =      .002407 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


     K =   .118898HR    TP =   .133330HR    K/TP RATIO =   .891759     SHAPE CONSTANT, N =  3.976619
     UNIT PEAK =   13.566    CFS   UNIT VOLUME =    .9995       B =   353.61      P60 = 1.7300
     AREA =      .005115 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD              ID=3   CODE=1

                                        HYDROGRAPH FROM AREA 6_D.5


    RUNOFF VOLUME =     1.15465 INCHES     =        .4632 ACRE-FEET
    PEAK DISCHARGE RATE =      13.87 CFS  AT   1.500 HOURS   BASIN AREA =   .0075 SQ. MI.



*
*S COMPUTE BASIN 6-D.6 ****************************************************
COMPUTE NM HYD       ID=4 HYD=6_D.6  AREA=0.006441  PER A=100 PER B=0
                          PER C=0 PER D=0  TP=0.13333  RAINFALL=-1

     K =   .167251HR    TP =   .133330HR    K/TP RATIO =  1.254412     SHAPE CONSTANT, N =  2.844647
     UNIT PEAK =   12.990    CFS   UNIT VOLUME =    .9983       B =   268.90      P60 = 1.7300
     AREA =      .006441 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD              ID=4   CODE=1

                                        HYDROGRAPH FROM AREA 6_D.6


    RUNOFF VOLUME =      .42038 INCHES     =        .1444 ACRE-FEET
    PEAK DISCHARGE RATE =       5.07 CFS  AT   1.500 HOURS   BASIN AREA =   .0064 SQ. MI.



*
*S COMPUTE BASIN 6-D.7 ****************************************************
COMPUTE NM HYD       ID=1 HYD=6_D.7  AREA=0.005236  PER A=0 PER B=31
                          PER C=30 PER D=39  TP=0.13333  RAINFALL=-1

     K =   .072665HR    TP =   .133330HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   8.0603    CFS   UNIT VOLUME =    .9980       B =   526.28      P60 = 1.7300
     AREA =      .002042 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333
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```
     K =   .119137HR    TP =   .133330HR    K/TP RATIO =   .893552     SHAPE CONSTANT, N =  3.968104
     UNIT PEAK =   8.4571    CFS   UNIT VOLUME =    .9989       B =   353.04      P60 = 1.7300
     AREA =      .003194 SQ MI    IA =    .42623 INCHES    INF =   1.04344 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD              ID=1   CODE=1

                                        HYDROGRAPH FROM AREA 6_D.7


    RUNOFF VOLUME =     1.23783 INCHES     =        .3457 ACRE-FEET
    PEAK DISCHARGE RATE =      10.05 CFS  AT   1.500 HOURS   BASIN AREA =   .0052 SQ. MI.



*
*S COMPUTE BASIN 6-D.8 ****************************************************
COMPUTE NM HYD       ID=20 HYD=6_D.8  AREA=0.010762  PER A=0 PER B=30
                           PER C=29 PER D=41  TP=0.13333  RAINFALL=-1

     K =   .072665HR    TP =   .133330HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   17.417    CFS   UNIT VOLUME =    .9988       B =   526.28      P60 = 1.7300
     AREA =      .004412 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


     K =   .119145HR    TP =   .133330HR    K/TP RATIO =   .893613     SHAPE CONSTANT, N =  3.967809
     UNIT PEAK =   16.812    CFS   UNIT VOLUME =    .9996       B =   353.02      P60 = 1.7300
     AREA =      .006350 SQ MI    IA =    .42627 INCHES    INF =   1.04356 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD                ID=20   CODE=1

                                        HYDROGRAPH FROM AREA 6_D.8


    RUNOFF VOLUME =     1.26203 INCHES     =        .7244 ACRE-FEET
    PEAK DISCHARGE RATE =      20.88 CFS  AT   1.500 HOURS   BASIN AREA =   .0108 SQ. MI.



*
*S COMPUTE BASIN E-1.2 ****************************************************
COMPUTE NM HYD       ID=22 HYD=1_E.2  AREA=0.001177  PER A=0 PER B=29
                           PER C=29 PER D=42  TP=0.13333  RAINFALL=-1

     K =   .072665HR    TP =   .133330HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   1.9512    CFS   UNIT VOLUME =    .9932       B =   526.28      P60 = 1.7300
     AREA =      .000494 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


     K =   .118898HR    TP =   .133330HR    K/TP RATIO =   .891759     SHAPE CONSTANT, N =  3.976619
     UNIT PEAK =   1.8105    CFS   UNIT VOLUME =    .9929       B =   353.61      P60 = 1.7300
     AREA =      .000683 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD                ID=22   CODE=1

                                        HYDROGRAPH FROM AREA 1_E.2


    RUNOFF VOLUME =     1.27567 INCHES     =        .0801 ACRE-FEET
    PEAK DISCHARGE RATE =       2.31 CFS  AT   1.500 HOURS   BASIN AREA =   .0012 SQ. MI.



*
*S ADD E_1.1 TO E_1.2 *****************************************************
ADD HYD             ID=71   HYD NO=E.1_2 ID I=21 ID II=22
PRINT HYD           ID=71   CODE=1

                                        HYDROGRAPH FROM AREA E.1_2


    RUNOFF VOLUME =     1.09426 INCHES     =        .4263 ACRE-FEET
    PEAK DISCHARGE RATE =      12.34 CFS  AT   1.500 HOURS   BASIN AREA =   .0073 SQ. MI.



*
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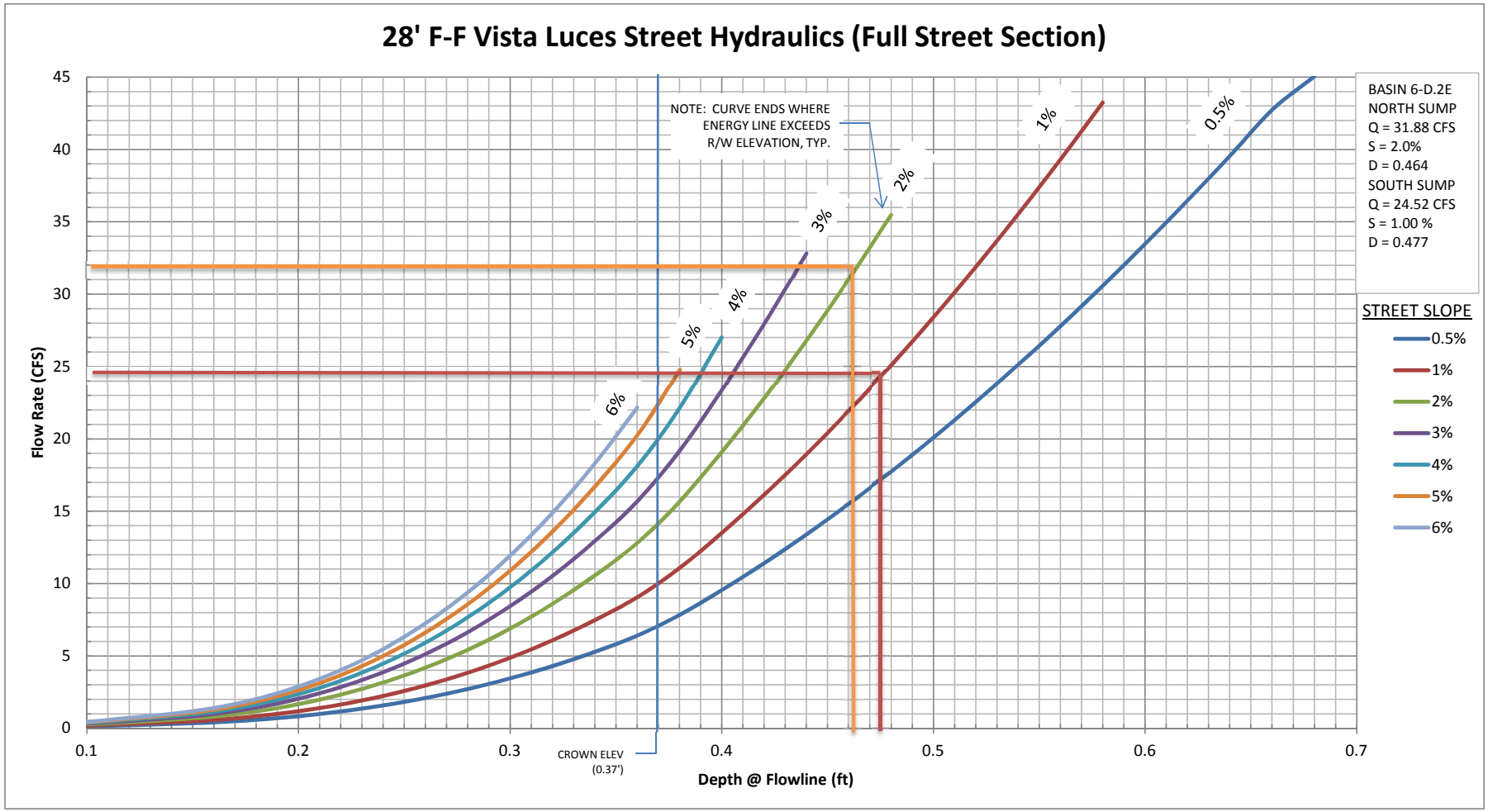
```
*S ADD 6_D.8 TO E_1.1_1.2 TO GET PROJECT SITE DISCHARGE TO AP_2 ****************
ADD HYD             ID=72   HYD NO=AP2_ON ID I=71 ID II=20
PRINT HYD           ID=72   CODE=1

                                        HYDROGRAPH FROM AREA AP2_ON


    RUNOFF VOLUME =     1.19418 INCHES     =       1.1507 ACRE-FEET
    PEAK DISCHARGE RATE =      33.22 CFS  AT   1.500 HOURS   BASIN AREA =   .0181 SQ. MI.



*
*S ADD 6_D.4 TO 6_D.7 TO GET PROJECT SITE DISCHARGE TO AP_1 ****************
ADD HYD             ID=11   HYD NO=6D.4_7 ID I=2 ID II=1
PRINT HYD           ID=11   CODE=1

                                        HYDROGRAPH FROM AREA 6D.4_7


    RUNOFF VOLUME =     1.26622 INCHES     =       1.4191 ACRE-FEET
    PEAK DISCHARGE RATE =      40.86 CFS  AT   1.500 HOURS   BASIN AREA =   .0210 SQ. MI.



*
*S ADD 6_D.5 TO 6_D.6 (RETAINED ONSITE FOR 30.0% RETAINAGE) ****************
ADD HYD             ID=12   HYD NO=6D.5_6 ID I=3 ID II=4
PRINT HYD           ID=12   CODE=1

                                        HYDROGRAPH FROM AREA 6D.5_6


    RUNOFF VOLUME =      .81592 INCHES     =        .6076 ACRE-FEET
    PEAK DISCHARGE RATE =      18.93 CFS  AT   1.500 HOURS   BASIN AREA =   .0140 SQ. MI.



*
*S
*S                    ***************************
*S                    * COMPUTE ANALYSIS POINTS *
*s                    ***************************
*S
*S
*S
*S
*S ANALYSIS POINT 2, MIDDLE BRANCH BOCA NEGRA (NORTHERN STORM DRAIN)
*
*S ADD AP_OFF TO 6_9D.2 (DIVERT FLOWS) TO GET NEW AP_OFF *******************
*
ADD HYD                   ID=25  HYD NO=AP_OFF.NEW ID I=55  ID II=47
PRINT HYD               ID=25  CODE=1

                                        HYDROGRAPH FROM AREA AP_OFF.NEW


    RUNOFF VOLUME =      .64134 INCHES     =      19.1743 ACRE-FEET
    PEAK DISCHARGE RATE =     234.54 CFS  AT   2.000 HOURS   BASIN AREA =   .5606 SQ. MI.



*S
*S ADD AP2_ON TO NEW AP_OFF TO GET AP#2 AT MIDDLE BRANCH BOCA NEGRA ARROYO ***
*
ADD HYD             ID=24   HYD NO=AP_2 ID I=25 ID II=72
PRINT HYD           ID=24   CODE=1

                                        HYDROGRAPH FROM AREA AP_2


    RUNOFF VOLUME =      .65860 INCHES     =      20.3250 ACRE-FEET
    PEAK DISCHARGE RATE =     240.34 CFS  AT   2.000 HOURS   BASIN AREA =   .5786 SQ. MI.



*
*S ANALYSIS POINT 1, SOUTHERN STORM DRAIN TO VISTA VIEJA SUBDIVISION *******
*
*S DIVIDE 6D.3 FOR 30.0% RETAINAGE
DIVIDE HYD          ID=10   PER=-70.0     ID I=12  HYD NO=6D.3_OUT
                                                ID II=13  HYD NO=6D.3_RETAIN
*
*S ADD 6D.3_OUT TO 6D.4_7 TO GET AP_1 ************************************
*
ADD HYD             ID=14   HYD NO=AP_1 ID I=12 ID II=11
PRINT HYD           ID=14   CODE=1
```

HYDROGRAPH FROM AREA AP_1

```
RUNOFF VOLUME =     1.18801 INCHES     =       2.1421 ACRE-FEET
PEAK DISCHARGE RATE =      61.33 CFS  AT   1.500 HOURS   BASIN AREA =   .0338 SQ. MI.


*S
*S
*S              ***********************************************
*S              *COMPUTE VISTA VIEJA AVENUE FLOW*
*s              ***********************************************
*S
*S
```

```
*S COMPUTE VISTA VIEJA AVE ****************************************************
*
COMPUTE NM HYD       ID=90 HYD=VV1  AREA=0.013219  PER A=0 PER B=0
                           PER C=10 PER D=90  TP=0.13333  RAINFALL=-1

     K =   .072665HR    TP =   .133330HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   46.960    CFS   UNIT VOLUME =    .9991       B =   526.28      P60 = 1.7300
     AREA =      .011897 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


     K =   .104311HR    TP =   .133330HR    K/TP RATIO =   .782353     SHAPE CONSTANT, N =  4.591870
     UNIT PEAK =   3.8951    CFS   UNIT VOLUME =    .9972       B =   392.87      P60 = 1.7300
     AREA =      .001322 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD              ID=90   CODE=1

                                         HYDROGRAPH FROM AREA VV1


    RUNOFF VOLUME =     1.87328 INCHES     =       1.3207 ACRE-FEET
    PEAK DISCHARGE RATE =      33.20 CFS  AT   1.500 HOURS   BASIN AREA =   .0132 SQ. MI.



*

FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 14:39:36
```


28' F-F Vista Luces Street Hydraulics (Full Street Section)
Flow Rate (CFS)
Depth @ Flowline (ft)
NOTE: CURVE ENDS WHERE ENERGY LINE EXCEEDS R/W ELEVATION, TYP.
CROWN ELEV (0.37')
0.5%
1%
2%
3%
4%
5%
6%
BASIN 6-D.2E
NORTH SUMP
Q = 31.88 CFS
S = 2.0%
D = 0.464
SOUTH SUMP
Q = 24.52 CFS
S = 1.00 %
D = 0.477
STREET SLOPE
0.5%
1%
2%
3%
4%
5%
6%

MONTECITO VISTAS UNITS 1-4

PROPOSED STORM DRAIN NETWORK

OCTOBER 2016

STORM INLET SUMMARY						
INLET	STREET GRADE (%)	UPSTREAM HALF ST FLOW (CFS)	UPSTREAM DEPTH (FT)	FLOW CAPTURED BY INLET (CFS)	BYPASS FLOW (CFS)	INLET TYPE
1	4.2%	9.0	0.36	5.8	3.3	A
2	4.2%	9.0	0.36	5.8	3.3	A
3	N/A SUMP	15.9	0.46	15.9	0.0	A
4	N/A SUMP	15.9	0.46	15.9	0.0	A
5	3.1%	12.6	0.41	6.5	6.1	A
6	3.1%	12.6	0.41	6.5	6.1	A
7	3.8%	9.2	0.37	6.5	2.7	C
8	3.8%	9.2	0.37	6.5	2.7	C
9	N/A SUMP	12.3	0.48	12.3	0.0	A
10	N/A SUMP	12.3	0.48	12.3	0.0	A
11	3.5%	13.7	0.42	7.0	6.7	A
12	3.5%	13.7	0.42	7.0	6.7	A

STORM DRAIN PIPE SUMMARY				
SDP	SIZE (IN)	SLOPE (%)	FLOW (CFS)	MAX CAPACITY (CFS)
1	24"	13.1%	11.6	81.9
2	60"	0.2%	108.0	123.6
3	60"	0.6%	108.0	201.4
4	60"	0.6%	108.0	201.4
5	48"	0.2%	96.4	67.9
6	REMOVED			
7	42"	0.2%	64.6	46.9
8	24"	6.0%	26.0	55.3
9	24"	4.0%	13.0	45.1
10	24"	4.0%	13.0	45.2
11	36"	0.2%	38.6	30.2
12	24"	2.1%	14.0	32.8
13	24"	2.8%	14.0	38.0
14	24"	3.6%	14.0	43.0

NOTES: 1. ALL INLETS ABOVE ARE SINGLE GRATE.
2. ALL LATERAL PIPES CONNECTING INLETS TO MANHOLES ARE 18" DIA., EXCEPT LATERAL TO MANHOLE FROM IN3, IN4, IN9, IN10, AND IN13 WHICH ARE 24" DIA.

LEGEND

PROPOSED STORM DRAIN PIPE

PROPOSED STORM DRAIN MANHOLE

PROPOSED STORM DRAIN INLET

N

100 50 0 100

SCALE: 1"=100'

Bohannan Huston

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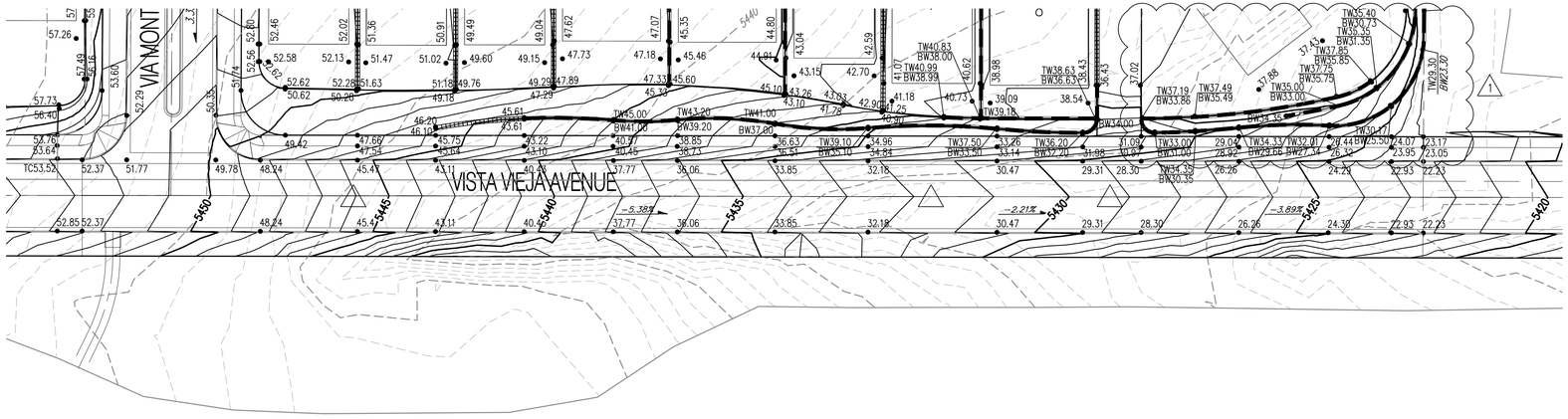

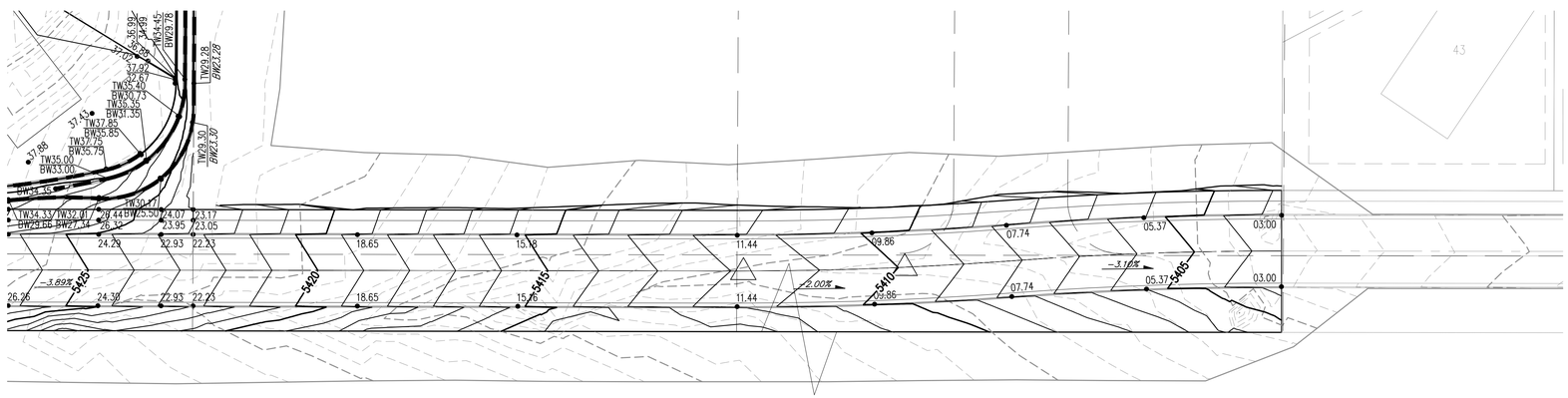

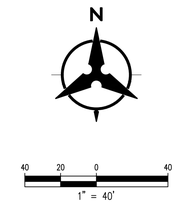

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LEGEND

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- PROPOSED SLOPE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN INLET
- HIGH POINT

SPOT ELEVATIONS BW=FINISHED GRADE ON LOW SIDE OF WALL, TW=FINISHED GRADE ON HIGH SIDE OF WALL.

AS-BUILT INFORMATION

	DATE
CONTRACTOR	
WORK STAKED BY	
ACCEPTANCE BY	
FIELD VERIFICATION BY	
DRAWINGS CORRECTED BY	

MICROFILM INFORMATION

	DATE
RECORDED BY	
NO.	

BENCH MARKS

AGS MONUMENT "2-D9"
GEOGRAPHIC POSITION (NAD 83)
N.M. STATE PLANE COORDINATES (CENTRAL ZONE)
X = 1,493,615.357 Y = 1,515,761.743
GROUND-TO-GRID FACTOR = 0.999667790
$\Delta\alpha$ = -00°16'58.43"
NAVD 1988 ELEVATION = 5441.396

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

No.	Date	REMARKS	By
1	10/13/15	REVISE LOT 9-19 GRADING	SJS

REVISIONS

DESIGN

Designed By: SJS DATE: 05/2016
Drawn By: BJS DATE: 05/2016
Checked By: SJS DATE: 05/2016

Bohannan Huston
www.bhinc.com 800.877.5332

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

MONTECITO VISTAS
GRADING PLAN
VISTA VIEJA AVENUE

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
Coa #	D-09	1	6

Thu, 13-Oct-2016 - 8:44:am, Plotted by: SSTEFFEN
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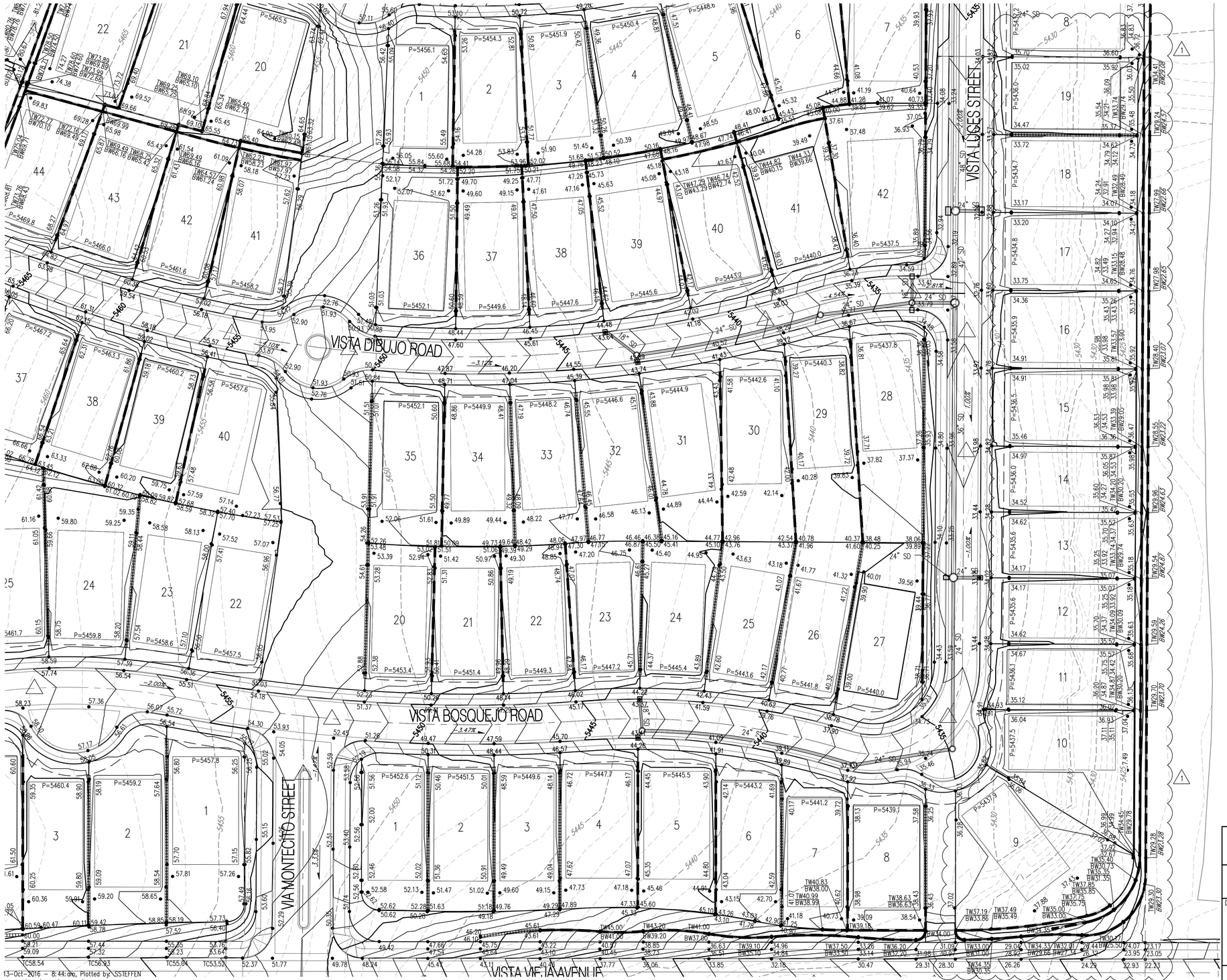

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N

40 20 0 40
1" = 40'

Bohannan Huston
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CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

MONTECITO VISTAS
GRADING PLAN
UNIT 1

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
Coa #	D-09	2	6

AS-BUILT INFORMATION
CONTRACTOR DATE
WORK STAKED BY DATE
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NO.

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SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL
STATE OF NEW MEXICO
JASON J. STEFFEN
14338
PROFESSIONAL ENGINEER

No.	Date	REMARKS	By
1	10/13/15	REVISE LOT 9-19 GRADING	SJS

REVISIONS

DESIGN
Designed By: SJS DATE: 05/2016
Drawn By: BJS DATE: 05/2016Q
Checked By: SJS DATE: 05/2016

Thu, 13-Oct-2016 - 8:44:00a, Plotted by: SSTEFFEN
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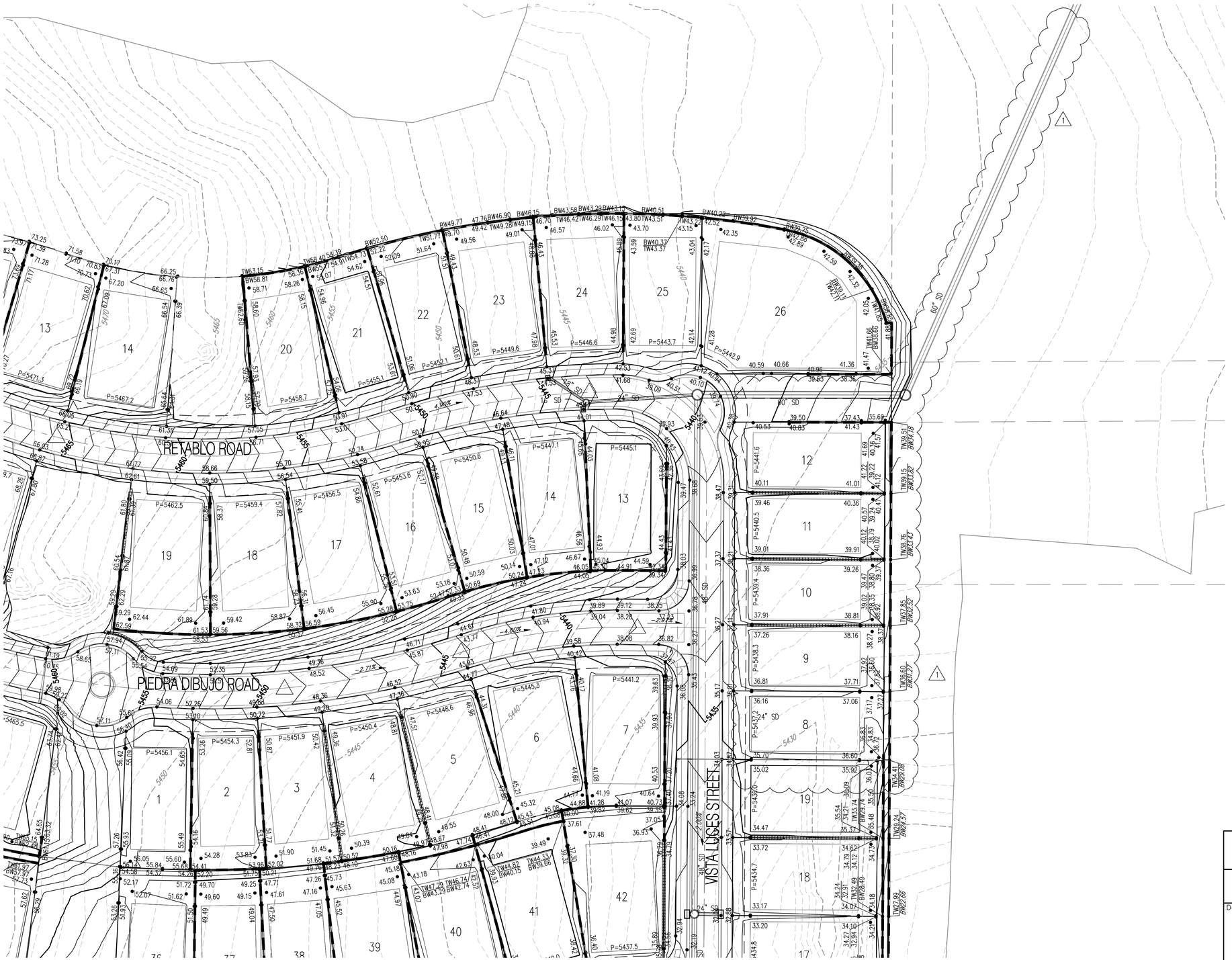

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N

40 20 0 40
1" = 40'

Bohannan Huston
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AS-BUILT INFORMATION

CONTRACTOR	DATE
WORK STAKED BY	DATE
INSPECTOR'S ACCEPTANCE	DATE
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SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

No.	Date	REVISIONS	By
1	10/13/15	REVISE LOT 8-12 GRADING & SD OUTFALL	SJS

DESIGN

Designed By: SJS	DATE: 05/2016
Drawn By: BJS	DATE: 05/2016
Checked By: SJS	DATE: 05/2016

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

MONTECITO VISTAS
GRADING PLAN
UNIT 2

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
Coa #	D-09	3	6

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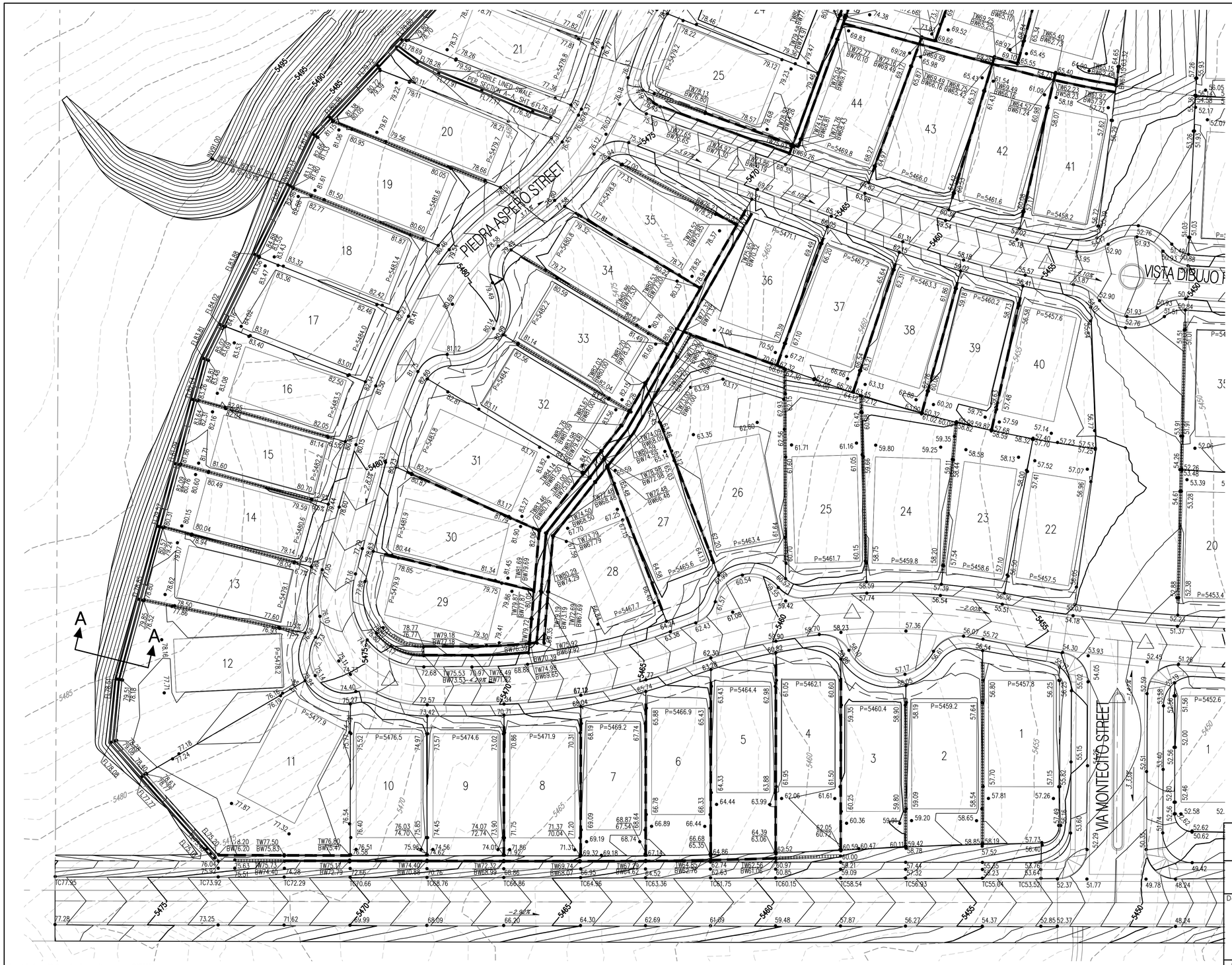

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- PROPOSED MOUNTABLE CURB & GUTTER
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- PROPOSED RETAINING WALL
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SPOT ELEVATIONS BW=FINISHED GRADE ON LOW SIDE OF WALL, TW=FINISHED GRADE ON HIGH SIDE OF WALL.

N

40 20 0 40

1" = 40'

Bohannan Huston
www.bhinc.com 800.877.5332

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

MONTECITO VISTAS
GRADING PLAN
UNIT 3

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
Coa #	D-09	4	6

AS-BUILT INFORMATION

	DATE
CONTRACTOR	
WORK STAKED BY	
INSPECTOR ACCEPTANCE BY	
FIELD VERIFICATION BY	
DRAWINGS CORRECTED BY	

MICROFILM INFORMATION

	DATE
RECORDED BY	
NO.	

BENCH MARKS

AGS MONUMENT "2-D9"
GEOGRAPHIC POSITION (NAD 83)
N.M. STATE PLANE COORDINATES (CENTRAL ZONE)
X = 1,493,615.357 Y = 1,515,761.743
GROUND-TO-GRID FACTOR = 0.99968790
$\Delta\alpha$ = -00°16'58.43"
NAVD 1988 ELEVATION = 5441.396

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

No.	Date	REMARKS	By

REVISIONS

DESIGN

Designed By: SJS DATE: 05/2016
Drawn By: BJC DATE: 05/2016
Checked By: SJS DATE: 05/2016

Thu, 13-Oct-2016 - 8:45:am, Plotted by: SSTEFFEN
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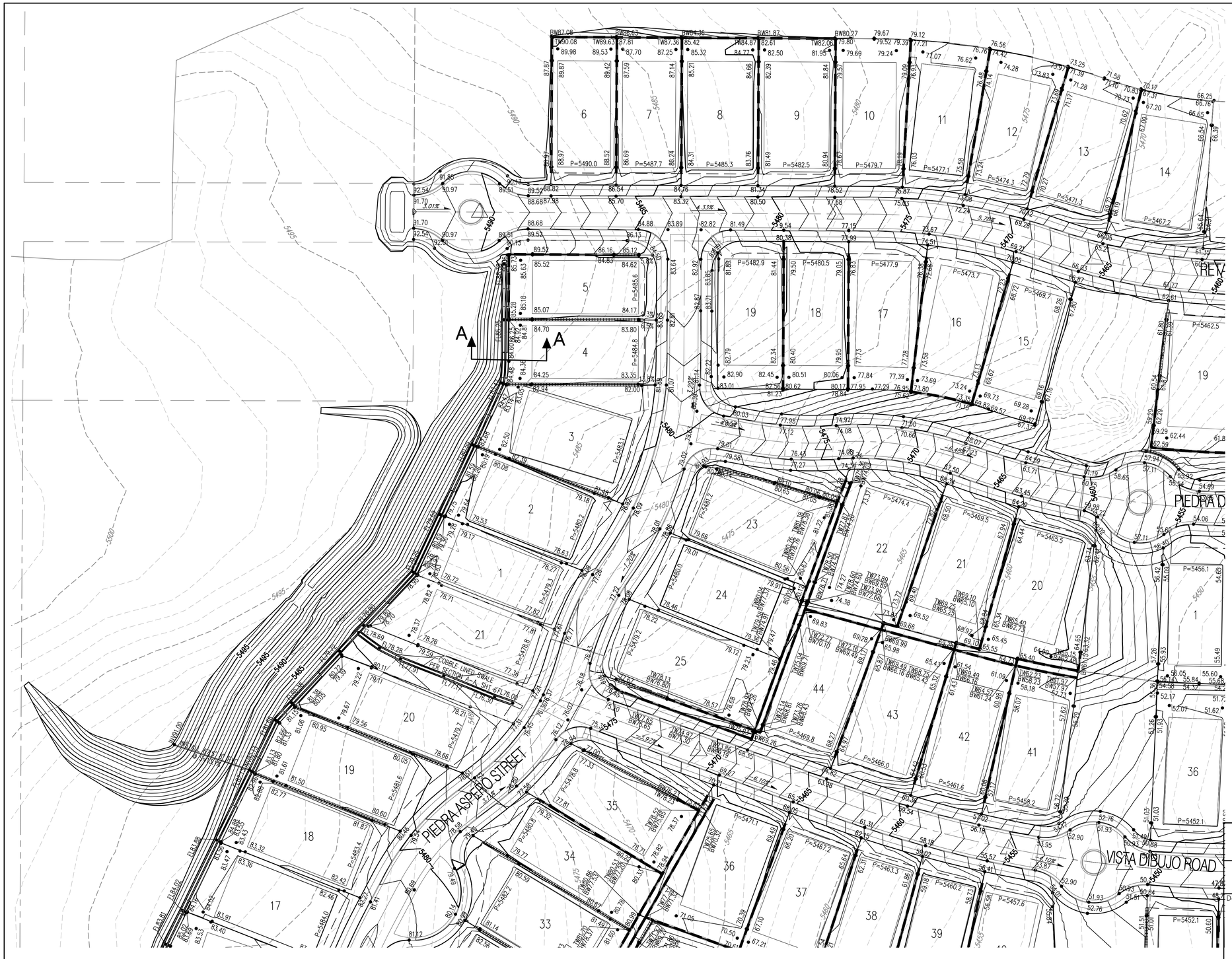

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CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

MONTECITO VISTAS
GRADING PLAN
UNIT 4

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
Coa #	D-09	5	6

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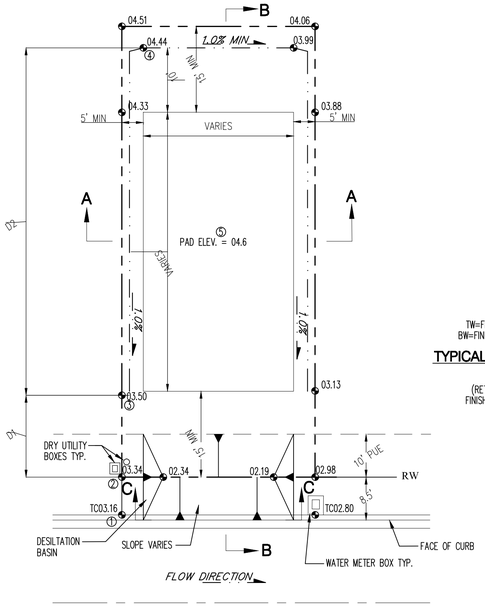
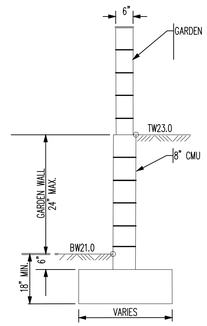


TYPICAL LOT GRADE DETAIL
WITH DESILTATION BASIN FOR SEDIMENTATION CONTROL
NOT TO SCALE

TO SET SPOT② – ADD 0.17' TO SPOT①
TO SET SPOT③ – MULTIPLY D1 BY 1.0% AND ADD TO SPOT②
TO SET SPOT④ – MULTIPLY D2 BY 1.0% AND ADD TO SPOT③
TO SET SPOT⑤ – ADD 0.2' TO SPOT④

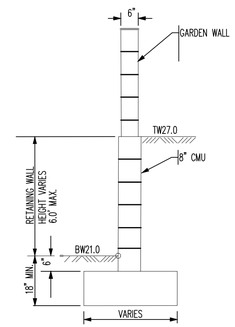
BOTTOM OF BASIN IS 1' BELOW PROPERTY LINE ELEVATION.
SEE GRADING PLANS FOR EXACT ELEVATIONS.
CONTRACTOR SHALL CONSTRUCT TEMPORARY DESILTATION BASIN AT EACH LOT.



TW=FINISHED GRADE ELEVATION AT TOP OF RETAINING WALL
BW=FINISHED GRADE ELEVATION AT BOTTOM OF RETAINING WALL

TYPICAL GARDEN WALL NOMENCLATURE
NOT TO SCALE

(RETAINING HEIGHT IS TAKEN TO BE DIFFERENCE IN FINISHED GRADES ON LEFT AND RIGHT SIDE OF WALL.)



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TYPICAL RETAINING WALL NOMENCLATURE
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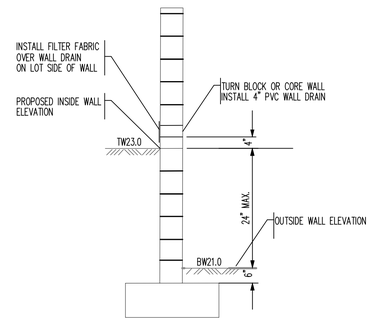
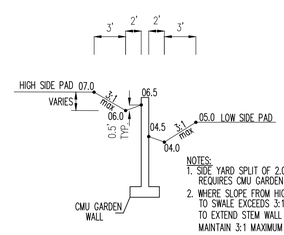
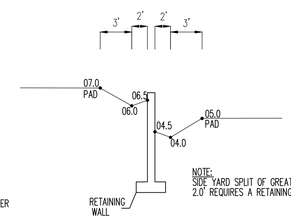


WALL DRAIN DETAIL
NOT TO SCALE



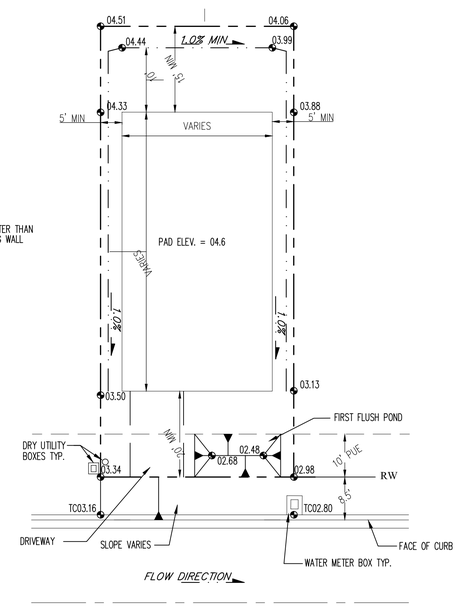
NOTES:
1. SIDE YARD SPLIT OF 2.0' OR LESS REQUIRES CMU GARDEN WALL
2. WHERE SLOPE FROM HIGH SIDE PAD TO SWALE EXCEEDS 3:1, HOMEBUILDER TO EXTEND STEM WALL LOWER TO MAINTAIN 3:1 MAXIMUM SIDE YARD SLOPE.

SIDE YARD GARDEN WALL DETAIL
NOT TO SCALE



NOTE:
SIDE YARD SPLIT OF GREATER THAN 2.0' REQUIRES A RETAINING WALL

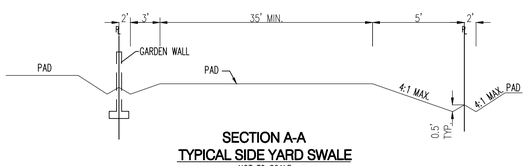
SIDE YARD RETAINING WALL DETAIL
NOT TO SCALE



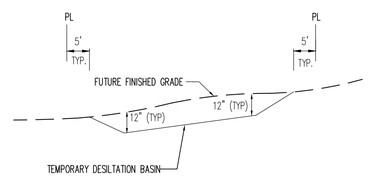
TYPICAL LOT GRADE DETAIL
WITH FIRST FLUSH POND
NOT TO SCALE

FIRST FLUSH VOLUME REQUIRED:
45'x75' PAD – 47 CUBIC FEET
50'x75' PAD – 53 CUBIC FEET

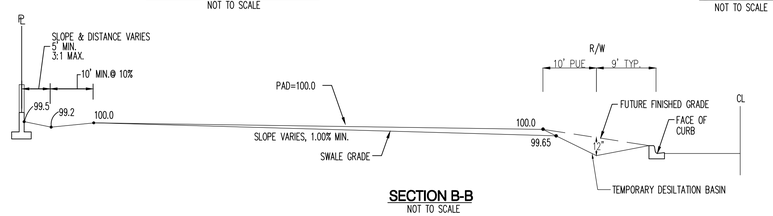
HOMEBUILDER SHALL CONSTRUCT FIRST FLUSH POND PRIOR TO LANDSCAPING FRONT YARD



SECTION A-A
TYPICAL SIDE YARD SWALE
NOT TO SCALE



SECTION C-C
NOT TO SCALE



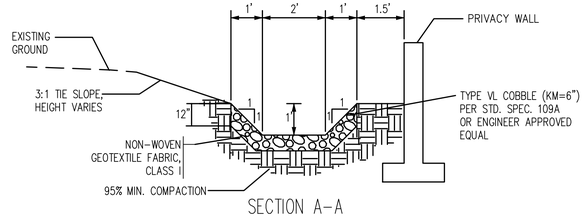
SECTION B-B
NOT TO SCALE

NOTE:

1. CONTRACTOR IS TO MASS GRADE ROADS TO 2' BEYOND FUTURE CURB. EXCESS FROM DRY UTILITY TRENCH IS TO BE USED TO BACK FILL BEHIND CURB.

2. FRONT YARDS ARE TO BE GRADED AS SHOWN ON THIS DETAIL FOR FINAL GRADING AND CERTIFICATION THIS DETAIL TO BE COORDINATED WITH.

3. HOME BUILDER TO BRING FRONT YARD TO ULTIMATE FRONT YARD GRADES AFTER HOME CONSTRUCTION IS COMPLETED. SEE ULTIMATE FRONT YARD GRADING DETAIL ON THIS SHEET.



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