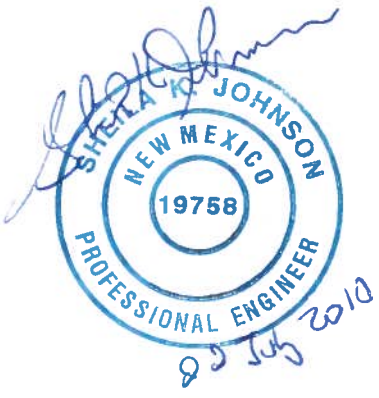
A-09 ID001

CENTRAL NEW MEXICO COMMUNITY COLLEGE
NORTH ACCESS DRIVE

DRAINAGE REPORT
TECHNICAL MEMORANDUM

July 22, 2010



Prepared for:
Central New Mexico Community College
Albuquerque, New Mexico 87114

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URS Project Number: 24343152

URS

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APPENDIX

1. INTRODUCTION

Central New Mexico Community College (CNM) plans to construct a new access drive into the north side of their Westside Campus at 10549 Universe Boulevard NW. The project location is shown in Figure 1 below.

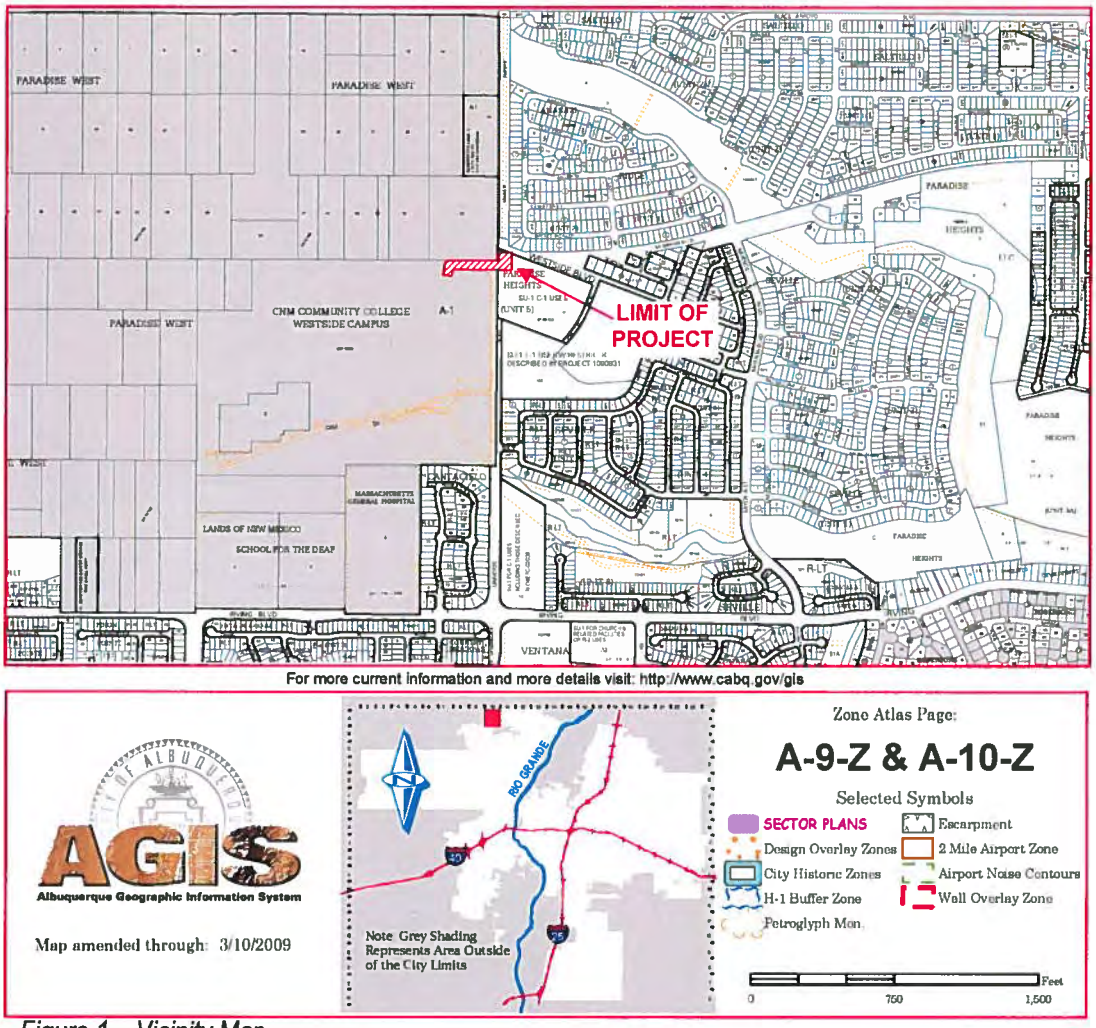


Figure 1 – Vicinity Map

The proposed drive will connect CNM's north side parking lot to the western terminus of McMahon Boulevard NW at the intersection of Universe Boulevard NW. This technical memorandum presents final drainage design and storm drain construction plans required for the access drive. Preliminary design was developed for the access drive as necessary to complete the drainage design. Final design plans for the access drive will be completed at a later date by others and the storm drain and sediment pond plan sheets will be incorporated into their final plan set.

The location of the planned access drive is covered by the drainage report previously approved by the City of Albuquerque (COA) entitled McMahon Boulevard Extension Final Drainage Report, Revision 2, dated April 8, 2010, by URS Corporation (McMahon Report). All drainage information presented herein is based on the McMahon Report.

The new access drive will consist of two 12-ft. diving lanes with 2-ft. shoulders and a 1-ft. deep v-ditch on the north side and at the eastern end of the south side. The preliminary layout and profile developed for the access drive are shown in Figure 2. The proposed layout lies directly over an existing temporary sediment collection pond at the west end of McMahon Boulevard. The pond, surrounding storm drain, and roadway improvements were constructed under COA Project No. 6816.04. Construction of the proposed drive will require relocation of the temporary sediment pond to the north side of the drive and extension of the 24-inch storm drain.

The CNM access drive and the relocated sediment pond are temporary facilities and will be removed when McMahon Boulevard is extended to the west. CNM access will then be provided from McMahon Boulevard and runoff to the storm drain will be generated from developed areas, eliminating the need for a sediment collection pond.

Final design plans for the storm drain and sediment collection pond are included in the Appendix.

2. PROJECT DESIGN CRITERIA

The COA Development Process Manual (DPM) procedures were used to calculate the peak 10-year and 100-year flow rates and volumes for this project. The DPM criteria was supplemented with direction from the COA City Hydrologist /Hydrology Section Head, Bradley Bingham, P.E, C.F.M., as documented in an e-mail memo, dated June 30, 2010, attached in the Appendix. Hydrologic and hydraulic calculation procedures outlined in the McMahon Report were also adhered to. The hydrologic model created for the McMahon Report was modified for this project.

The sediment pond is to be relocated north of the proposed access drive causing some design constraints. Right-of-way to the north of the current pond location is limited and the ground is rising, making placement of a similarly sized sediment pond difficult. The proposed sediment pond will function as a temporary pond used for gathering flow from undeveloped land and provide a location for sediment to collect prior to flow entering the storm drain. The downstream facilities have sufficient capacity to convey the peak design flow, therefore the proposed pond is not functioning as a detention structure. Mr. Bingham was consulted on appropriate sizing criteria for a pond of this nature, resulting in the following criteria:

- Design for the 10-year storm volume with appropriate sediment bulking - 10% sediment bulking was determined appropriate in the McMahon Report and was also used for this design.
- Place the top of standpipe below the surrounding roads – McMahon Boulevard to the east and the access drive to the south.
- The opening in the standpipe, and the downstream storm drain, should be large enough to pass the 100-year peak flow.

Roadside ditches are designed to carry the 100-year flow and the storm drain is designed to convey the 100-year future watershed condition flow. The future watershed condition consists of the western extension and ultimate build-out of McMahon Boulevard to a four-lane section with curb, gutter, and sidewalk. This condition is described in the McMahon Report and is unchanged by this project.

3. HYDROLOGY & HYDRAULICS

Arid Lands Hydrology Model (AHYMO) was used to calculate the peak design flows. The AHYMO model prepared as part of the McMahon Report was modified to reflect construction of the proposed access drive. Soils, land use, time of concentration, 10% sediment bulking, and precipitation values are as described in the McMahon Report and can be found in the AHYMO input file included in the attached Appendix. Basins RW-1D and RW-1.3 are the only basins affected by construction of this project. Both basins remain the same size and overall drainage patterns are unaffected. The revisions include changing RW-1D to drain to the proposed pond and adjusting the impervious area percentage in basin RW-1.3. Figure 3, included in this memo, provides a drainage basin map showing the proposed access drive and sediment pond.

Three watershed conditions are described in the McMahon Report: Existing, Proposed, and Future. The Existing Condition and Future Condition are unaffected by this project. Once ultimate build-out of McMahon Boulevard occurs, the access drive and sediment pond will not be needed. The Proposed Watershed Condition described in the McMahon Report encompassed construction of the existing sediment pond, and adjacent drainage and roadway improvements. The Proposed Watershed Condition was modified to include impervious area created by the new access drive, and removal of a small area (0.49 acres) from Basin RW-1.3. Runoff from the 0.49 acre basin will now drain south to a beehive inlet constructed under COA Project 6816.04 within the Universe Boulevard right-of-way.

Runoff drains primarily overland southeast across basins RW-1D and RW-1.3 and will be collected in the 1-ft. deep v-ditch running along the north side of the proposed access drive. The earth-lined ditch has side slopes of 3H:1V, with maximum and minimum longitudinal slopes of 5.9% and 1.1% respectively. As the ditch nears the pond rundown, it is riprap lined. Ditch flow and velocity are summarized in the table below.

Location	100-year Peak Flow (cfs)	Slope (%) / lining material	Depth (feet)	Velocity (fps)
Approximate Station 103+50	3.5	5.9 / Earth	0.5	4.6
Approximate Station 104+50	5.2	1.1 / Earth	0.8	2.7
Approximate Station 104+70	5.2	1.1 / Riprap	0.9	2.2
Corner of Sediment Collection Pond	5.2	20.0 / Riprap	0.5	6.1

The ditch delivers flow to the sediment pond. As shown on sheet SD-1 in the Appendix, the pond bottom is at elevation 5410 feet and the top at 5413 feet. A 24-inch diameter standpipe with three 6-inch diameter openings is to be constructed in the pond, similar to the standpipe in the existing pond. As with the existing sediment pond, regular maintenance will be required until full build-out of McMahon Boulevard is complete.

The proposed sediment pond can contain the full 10-year volume with an additional 0.5 ft. for sediment.

The top of the standpipe is at elevation 5413. The top, covered with a trash grating, is partially open, and provides an emergency flow outlet. The following table summarizes pond hydrologic and hydraulics results, and compares them with the original project design. Minimum elevations along McMahon Boulevard adjacent to the pond range from 5413.62 to 5414.12. Detailed results can be found in the Appendix.

	Peak Inflow to Pond (cfs / ac. ft.)	Design Condition		Assume holes in standpipe are plugged	
		Design Water Surface Elevevation (ft)	Outflow from Pond (cfs)	Water Surface Elevation (ft)	Outflow from Pond (cfs)
Current Design	5.7 / 0.16	5412.4	2.0	5413.1	1.0
w/CNM Access Drive	1.98 /0.062 (Q10)	5411.5	1.1	5412.5	0.0
	5.20/ 0.162(Q100)	5412.7	3.1	5413.3	3.3

Flow drains from the pond via a 24-inch pipe. The storm drain is sized to accommodate inlets in McMahon Boulevard under the future full build-out condition. The future condition storm drain analysis, using StormCad, is presented in the McMahon Report and is unchanged. The hydraulic grade line, peak discharge and velocity for the 24-inch storm drain to be constructed as part of this project are shown on the profile on sheet SD-1.

On the south side of the western portion of the proposed access drive, runoff will flow overland to the southeast similar to how it currently does. At the eastern end of the access drive pavement grades are below the existing ground elevation and a roadside ditch is created. This flow will be directed in a new ditch curving to the south running parallel to Universe Boulevard. It will drain to an existing beehive inlet constructed as part of COA Project 6816.04. The south side ditch location and corresponding flowline elevations are shown on sheet SD-1 attached in the Appendix. Design of both features is based on the preliminary access drive profile shown on Figure 2 and will need to be finalized once the final access drive design is completed.

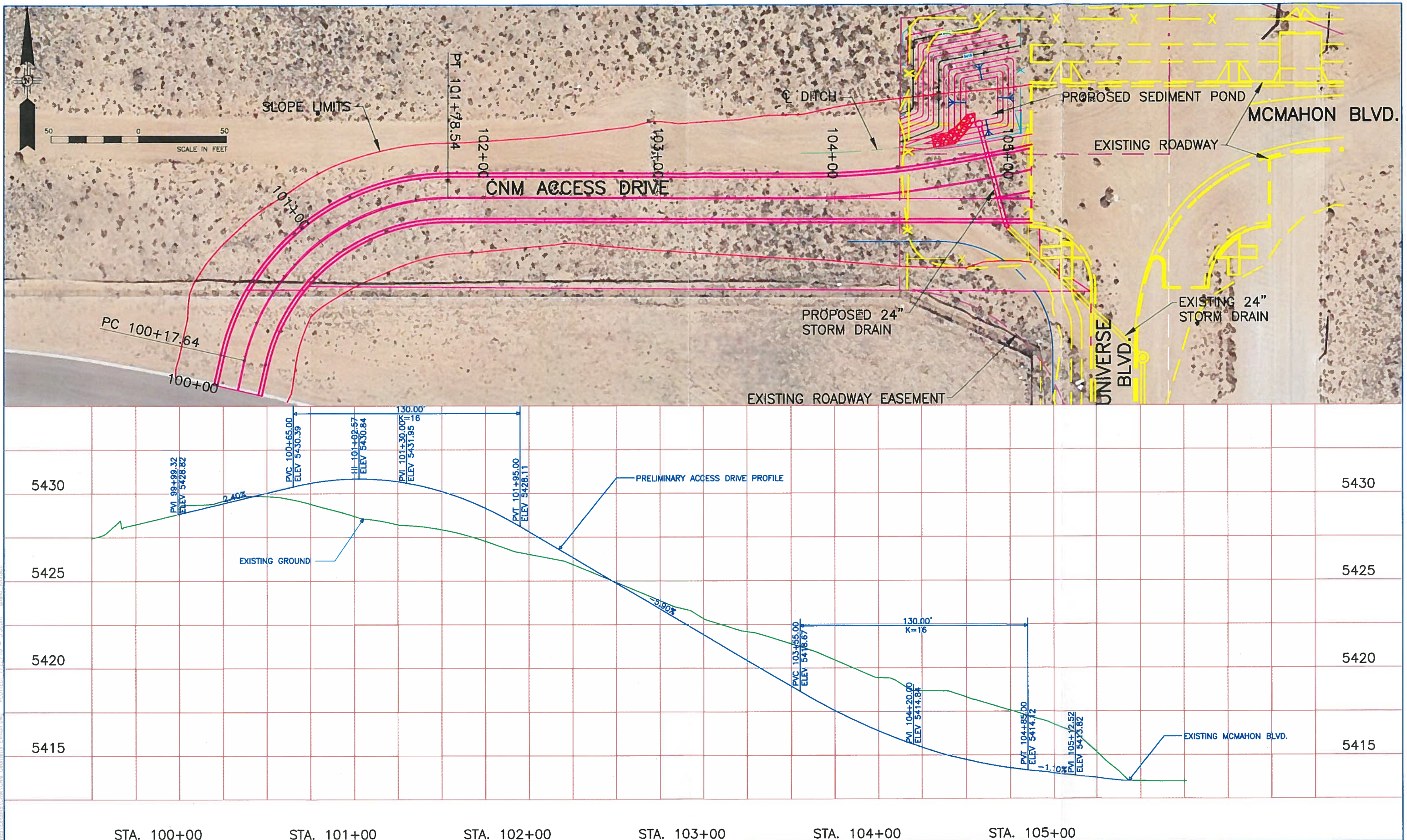
4. CONCLUSION

Construction of this project minimally changes the hydrology of the affected basins; the currently constructed pond will need to be relocated and the 24-inch storm drain extended by approximately 60 feet. Future development of McMahon Boulevard is unaffected by this project.

APPENDIX

- **Construction Plans Sheets SD-1 to SD- 4**
- **Bradley Bingham Criteria e-mail**
- **AHYMO Printouts**

  Input
  Summary Output
  Full Output
- **Flowmaster Results**

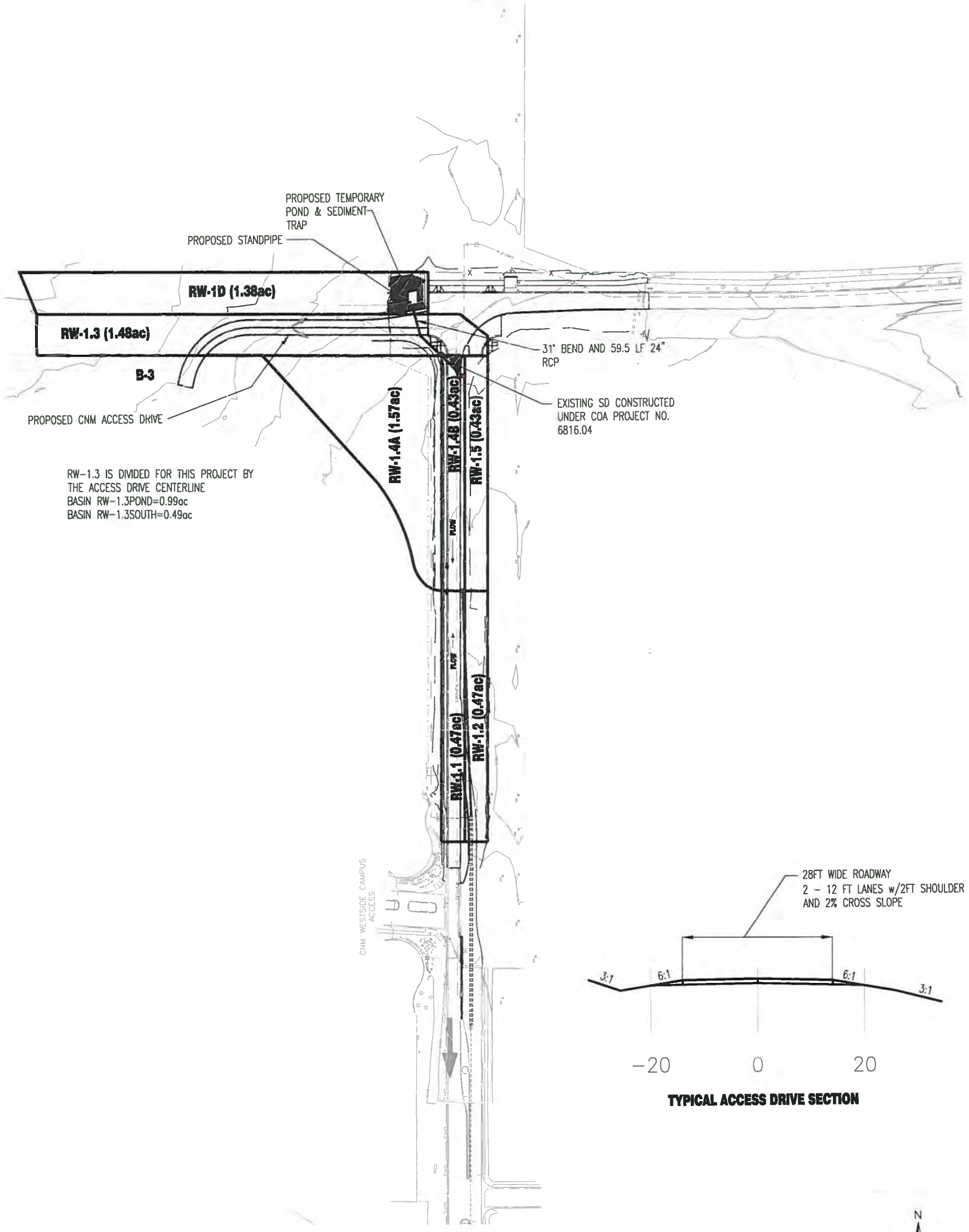


CNM
Access Road
Central New Mexico
Community College

CNM ACCESS DRIVE
PRELIMINARY ACCESS DRIVE AND FINAL POND/STORM DRAIN LAYOUT

FIGURE 2

URS



NOTE:
FIGURE WAS TAKEN FROM FIGURE 4, FROM THE MCMAHON BOULEVARD EXTENSION FINAL DRAINAGE REPORT, REV. 2 APRIL 8, 2010, URS CORPORATION AND MODIFIED FOR THIS PROJECT

CNM
Access Road
Central New Mexico
Community College

DRAINAGE BASIN MAP
SUB-BASINS OF RW-1.3 & RW-1D

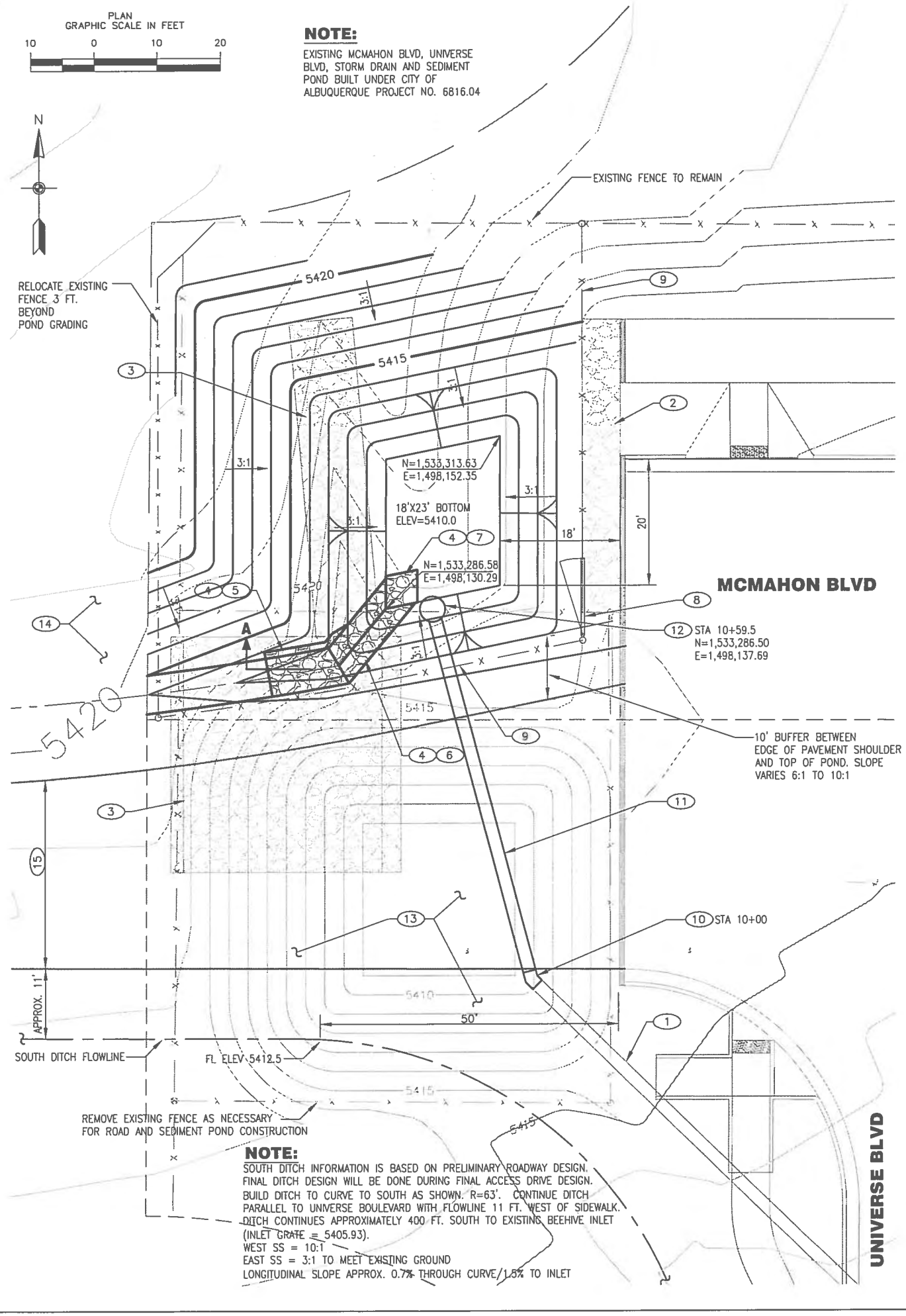
FIGURE 3

URS

PLAN
GRAPHIC SCALE IN FEET
10 0 10 20

NOTE:

EXISTING MCMAHON BLVD, UNIVERSE BLVD, STORM DRAIN AND SEDIMENT POND BUILT UNDER CITY OF ALBUQUERQUE PROJECT NO. 6816.04

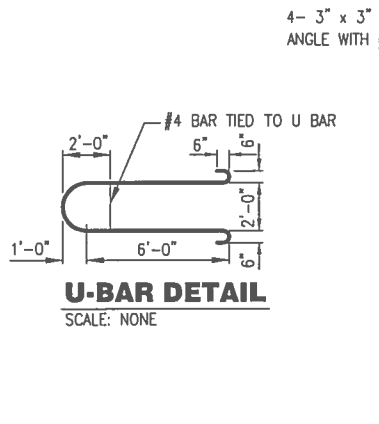


NOTE:

SOUTH DITCH INFORMATION IS BASED ON PRELIMINARY ROADWAY DESIGN. FINAL DITCH DESIGN WILL BE DONE DURING FINAL ACCESS DRIVE DESIGN. BUILD DITCH TO CURVE TO SOUTH AS SHOWN. R=63'. CONTINUE DITCH PARALLEL TO UNIVERSE BOULEVARD WITH FLOWLINE 11 FT. WEST OF SIDEWALK. DITCH CONTINUES APPROXIMATELY 400 FT. SOUTH TO EXISTING BEEHIVE INLET (INLET GRATE = 5405.93).
WEST SS = 10:1
EAST SS = 3:1 TO MEET EXISTING GROUND
LONGITUDINAL SLOPE APPROX. 0.7% THROUGH CURVE/1.5% TO INLET

KEYED NOTES

1. EXISTING 24" RCP STORM DRAIN.
2. EXISTING RIPRAP TO REMAIN.
3. REMOVE EXISTING WIRE ENCLOSED RIPRAP AT EXISTING POND. ROCK IS TO BE REUSED IN PROPOSED RIPRAP CONSTRUCTION, THIS PROJECT.
4. GEOTEXTILE MAY BE USED IN LIEU OF 6" THICK FILTER MATERIAL FOR ALL RIPRAP CONSTRUCTION IN THIS PROJECT.
5. INSTALL 7'x11'x2' THICK WIRE ENCLOSED RIPRAP VEE DITCH – 1' DEEP WITH 3H:1V SIDE SLOPES PER COA STD DWG 2270. BUILD 1' FLATTENED EDGE ON NORTH SIDE WHERE DITCH IS PARALLEL TO ROAD AS SHOWN. TRANSITION TO 6' WIDE RUNDOWN. BUILD THICKENED EDGE AT UPSTREAM END PER DETAIL A, THIS SHEET.
6. INSTALL 6'x12'x 2' THICK WIRE ENCLOSED RIPRAP RUNDOWN PER COA STD. DWG. 2270.
7. INSTALL 5'x5'x3' THICK WIRE ENCLOSED RIPRAP PAD IN POND BOTTOM, AS SHOWN, PER COA STD DWG 2270.
8. INSTALL 12' WIDE SINGLE LEAF PIPE GATE PER COA STD DWG 2251.
9. INSTALL BARRIER/ACCESS CONTROL FENCE PER NMDOT STD DWGS 607-07-1/2 AND 2/2. SEE SD-3 AND SD-4 FOR INFORMATION. INSTALL FENCE REFLECTORS PER DETAIL 4b ON SHEET SD-4.
10. REMOVE EXISTING STANDPIPE AND INSTALL 24"X31" BEND SD USING CL IV RCP.
11. INSTALL 59.5 LF RCP CL IV SD, AS SHOWN ON PLAN & PROFILE THIS SHEET.
12. BUILD 24" STANDPIPE PER DETAIL THIS SHEET.
13. FILL AND COMPACT EXISTING POND AS NEEDED FOR ACCESS DRIVE CONSTRUCTION AND TO MATCH SURROUNDING GROUND. MAXIMUM SLOPE 3H:1V.
14. MATCH GRADING TO ACCESS DRIVE GRADING.
15. LIMITS OF PROPOSED ACCESS DRIVE.



U-BAR DETAIL

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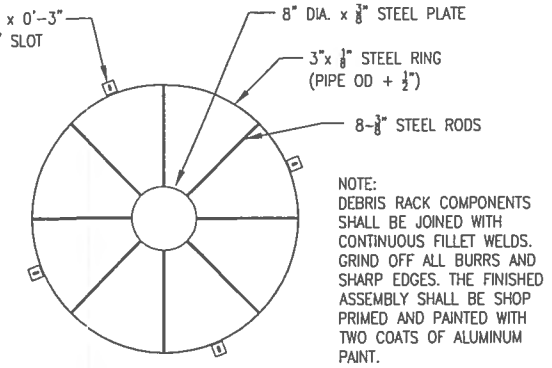
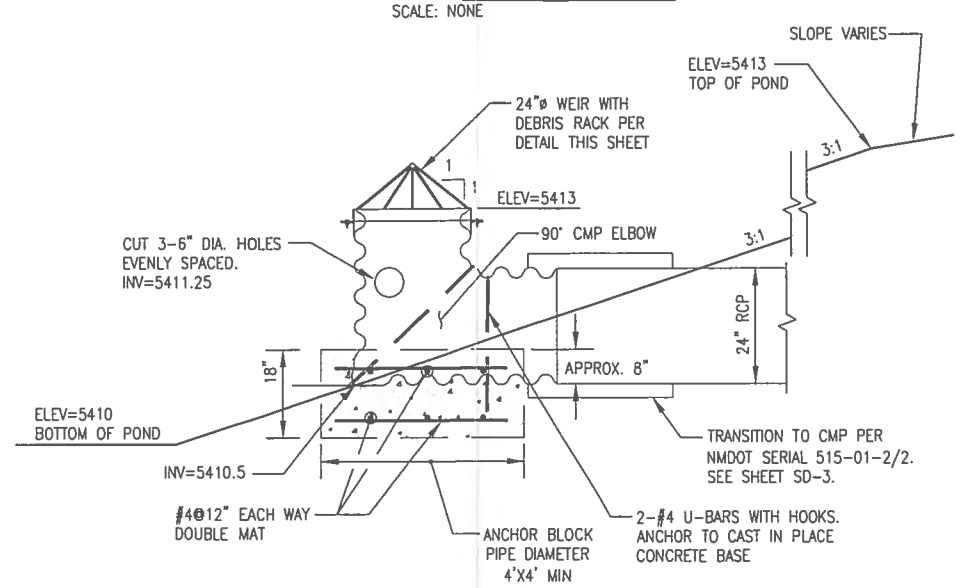


NOTE:
DEBRIS RACK COMPONENTS SHALL BE JOINED WITH CONTINUOUS FILLET WELDS. GRIND OFF ALL BURRS AND SHARP EDGES. THE FINISHED ASSEMBLY SHALL BE SHOP PRIMED AND PAINTED WITH TWO COATS OF ALUMINUM PAINT. (AASTHO M-69)

DEBRIS RACK

SCALE: NONE



STANDPIPE DETAIL

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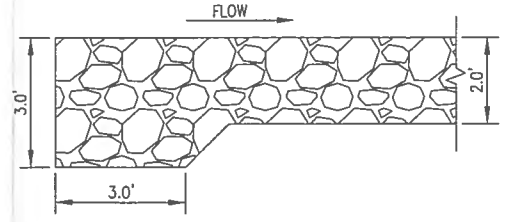

DETAIL A

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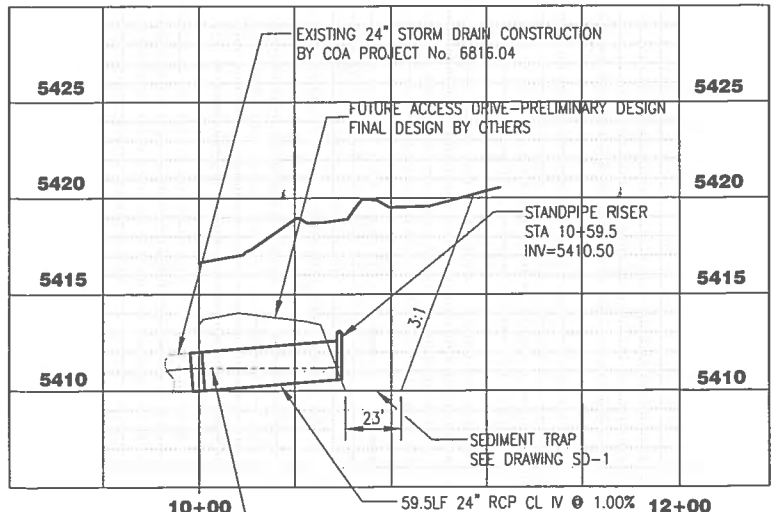

STA 10+00=
STA 118+58, 85' LT
COA PROJECT No. 6816.04
31° BEND
MATCH EXISTING INV=5410.00

PROFILE
GRAPHIC SCALE IN FEET
40 0 40 80
HORIZONTAL

PROFILE
GRAPHIC SCALE IN FEET
5 0 5 10
VERTICAL

AS BUILT INFORMATION
CONTRACTOR DATE
WORK STAKED BY DATE
ASBUILTS PREPARED BY DATE
FIELD VERIFICATION BY DATE
DRAWINGS CORRECTED BY DATE
MICRO-FILM INFORMATION
RECORDED BY DATE

BENCH MARKS
ACS 3-1/4" BRASS CAP SET IN CONCRETE POST
0.5' ABOVE THE GROUND STAMPED "1-A8, 1980",
STATE PLANE COORDINATES(CENTRAL ZONE)
NAD83/NAVD88) N=1531880.970, E= 1490397.999
(GROUND) ELEVATION=5573.004

SURVEY INFORMATION
FIELD NOTES

No.	By	Date

ENGINEER'S SEAL
SHEILA K. JOHNSON
NEW MEXICO
19758
REGISTERED PROFESSIONAL ENGINEER

No.	Remarks	By	Date
	REVISIONS		
	DESIGN		07/10
	Designed By SKJ		07/10
	Drawn By EWK		07/10
	Checked By JP/MF		

URS
ONE PARK SQUARE
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SUITE 900
ALBUQUERQUE, NM 87110
(505) 855-7500

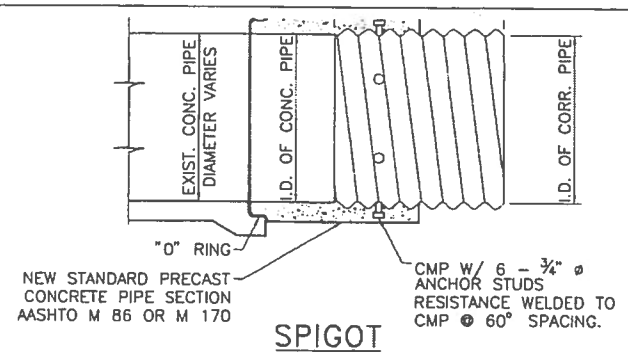
CENTRAL NEW MEXICO COMMUNITY COLLEGE

TITLE: **ACCESS DRIVEWAY**

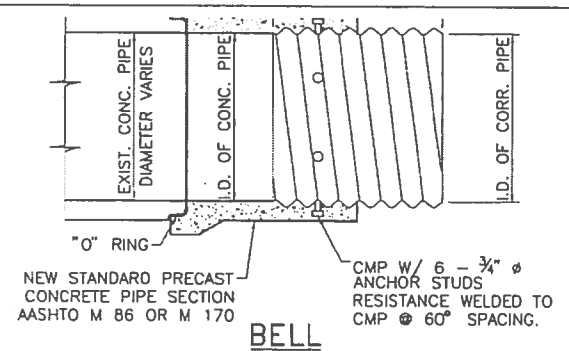
STORM DRAIN AND SEDIMENT POND

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

City Project No.	Zone Map No.	Sheet	Of	DRAWING:
	A-9, A-10	XX	XX	SD-1



SPIGOT



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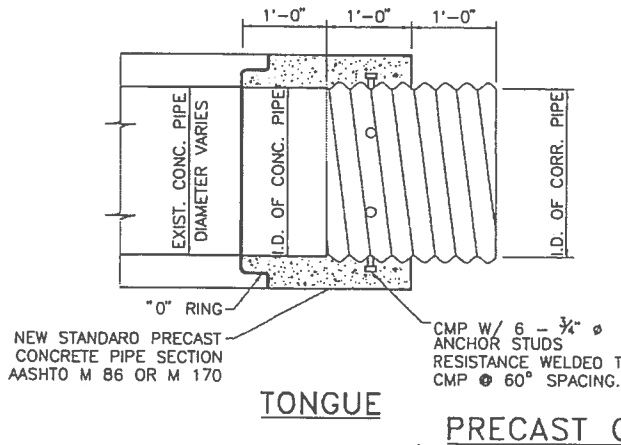
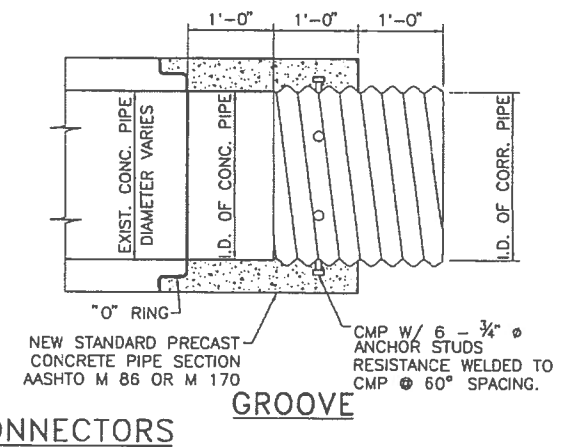
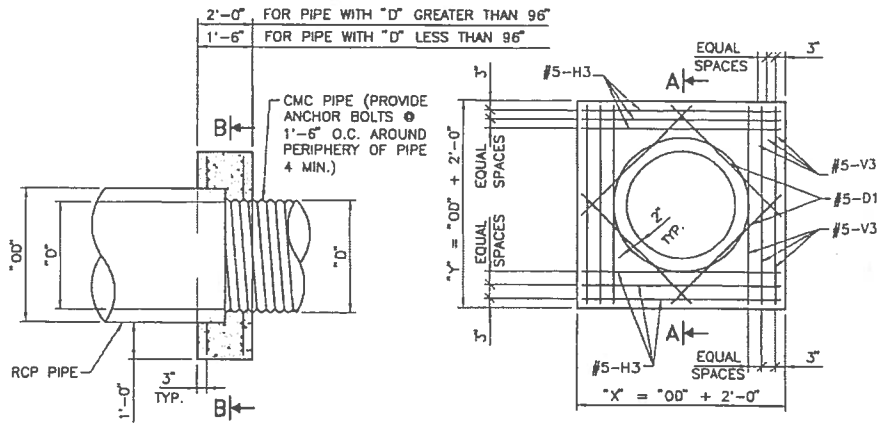


TONGUE



GROOVE

PRECAST CONNECTORS

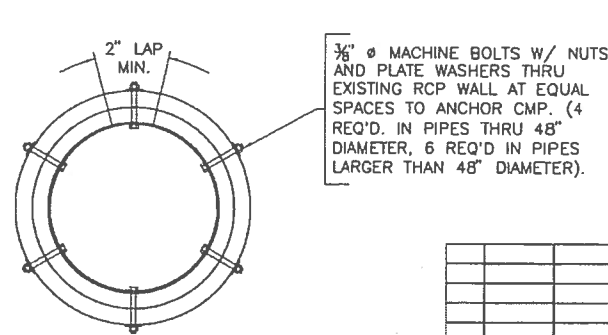


SECTION "A-A" SECTION "B-B"

CAST IN PLACE CONNECTOR

#5-H3	"X" - 3"	REQ'D 12 PER CONNECTOR
#5-V3	"Y" - 3"	REQ'D 12 PER CONNECTOR
#5-D1	"D" - 3"	REQ'D 8 PER CULVERT PIPE

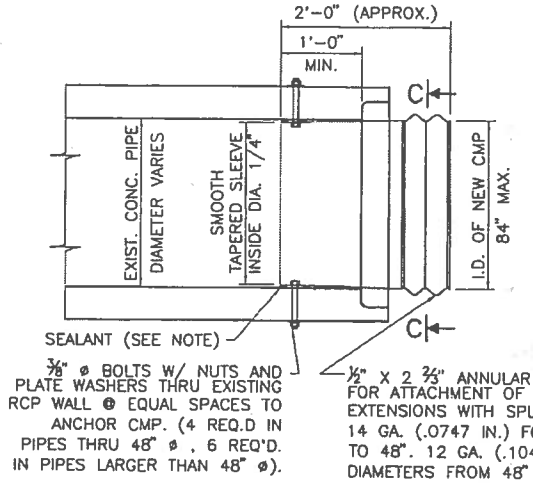
REINFORCING BAR DETAILS



SECTION C-C

NOTE:

PAYMENT ON THESE ITEMS SHALL BE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE PROJECT AND NO DIRECT PAYMENT WILL BE MADE THEREFORE.



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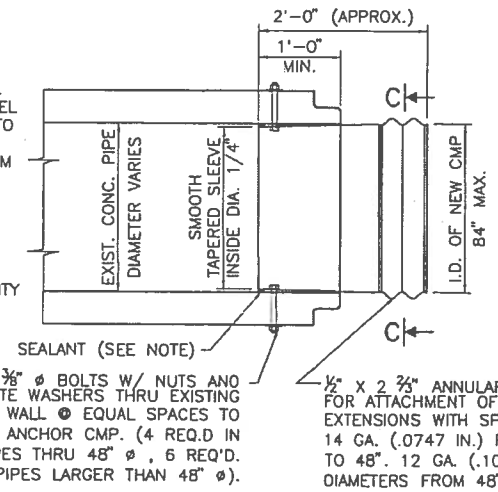

GROOVE

NOTE:

1. CORRUGATED PIPE MATERIAL SHALLL BE GALVANIXED STEEL IN ACCORDANCE WITH AASHTO M 218 OR ALUMINUM IN ACCORDANCE WITH AASHTO M 197.
2. OPENING BETWEEN EXISTING RCP AND NEW CMP SLEEVE SHALL BE SEALED WITH A HIGH QUALITY SEALEANT TO ASSURE WATERTIGHT INTEGRITY AS PER AASHTO M 198.

PREFABRICATED CORRUGATED CONNECTORS

NO.	DATE	REV.BY	DESCRIPTION
			REVISIONS (OR CHANGE NOTICES)

NEW MEXICO
DEPARTMENT OF TRANSPORTATION
STANDARD DRAWING

CAST-IN -PLACE, PRECAST, AND PREFABRICATED CONNECTORS FOR CULVERTS

DESIGNED BY ____ DRAWN BY SKL CHECKED BY YML/TM

515-01-2/2 2 of 2

AS BUILT INFORMATION
CONTRACTOR DATE
WORK STAKED BY
WORK ACCEPTED BY DATE
FIELD VERIFICATION BY DATE
DRAWINGS CORRECTED BY DATE
MICRO-FILM INFORMATION
RECORDED BY DATE

BENCH MARKS
ACS 3-1/4" BRASS CAP SET IN CONCRETE POST
0.5' ABOVE THE GROUND STAMPED "1-AB, 1980".
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(GROUND) ELEVATION=5573.004

SURVEY INFORMATION
FIELD NOTES
No. By Date

ENGINEER'S SEAL

No. By Remarks Date
REVISIONS
DESIGN Date
Designed By Date
Drawn By Date
Checked By Date

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ALBUQUERQUE, NM 87110
(505) 855-7500

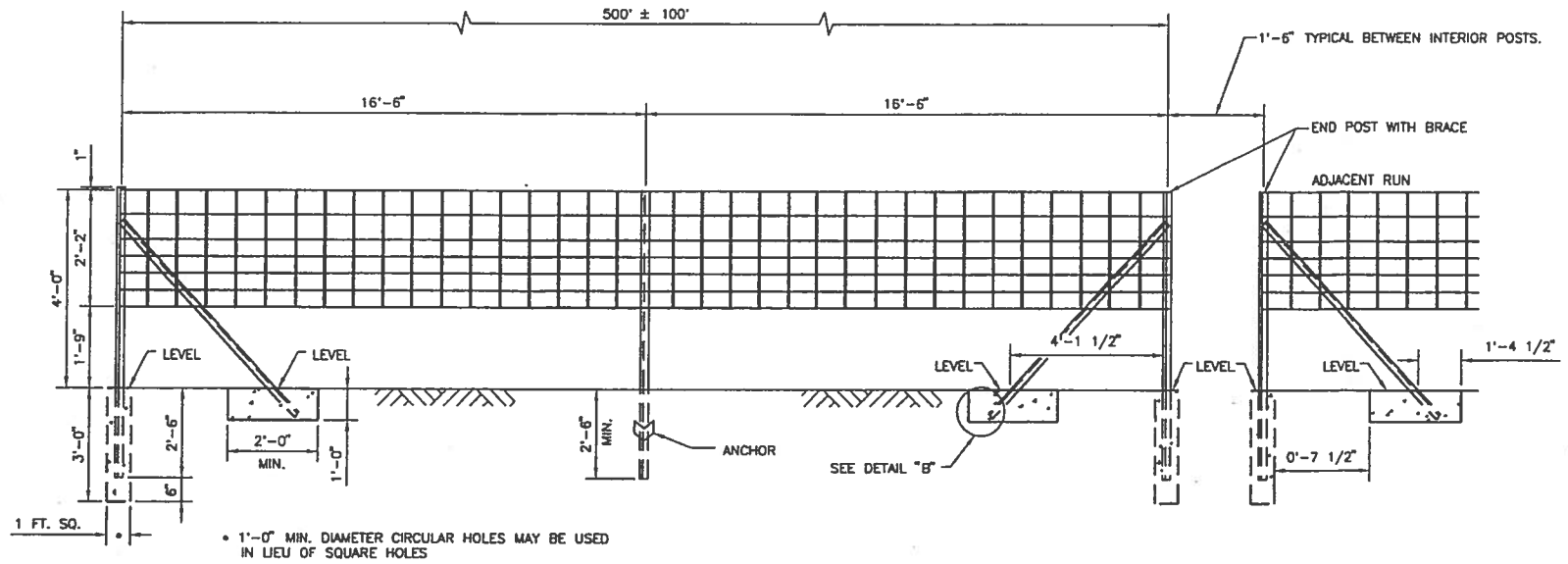
CENTRAL NEW MEXICO COMMUNITY COLLEGE

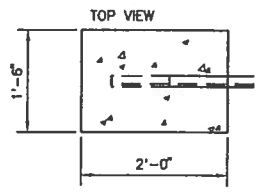
TITLE: ACCESS DRIVEWAY

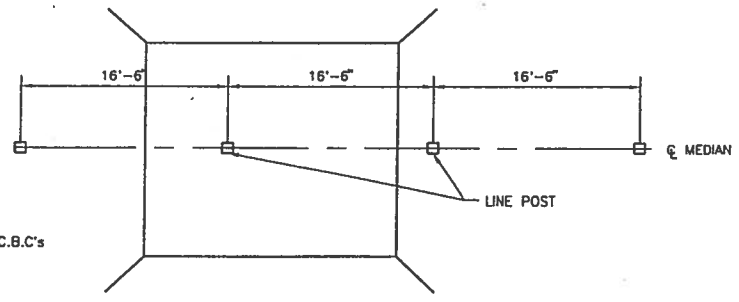
STORM DRAIN CONNECTION DETAIL

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

City Project No.	Zone Map No.	Sheet	Of	DRAWING:
	A-9, A-10	XX	XX	SD-2



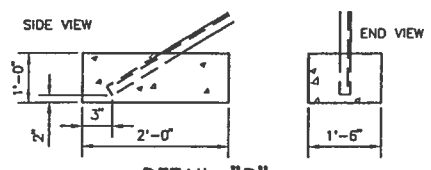




NOTE: 16'-6" SPACING OF THE POSTS SHALL REMAIN CONSTANT ACROSS C.B.C's

NOTE: LINE POST ON C.B.C. TO BE CUT SO THAT HEIGHT OF FENCE POSTS ABOVE CENTER LINE OF MEDIAN OF GROUND IS MAINTAINED

LOCATION OF ACCESS CONTROL FENCE AT BOX CULVERTS WITH NO FILL



DETAIL "B"

ANCHOR DETAIL OF DIAGONAL METAL END POST MEMBER

GENERAL NOTES

1. PLACEMENT OF ACCESS CONTROL FENCE SHALL BE AS SHOWN ON PLANS.
2. METAL POSTS, BRACES AND WIRE FABRIC SHALL CONFORM TO THE REQUIREMENT OF OF SECTION 607-FENCE.
3. ALL POSTS SHALL BE OF THE SAME TYPE THROUGHOUT THE PROJECT.
4. ON CURVES, FENCE WIRE SHALL BE PLACED ON THE SIDE OF THE POST WHICH WOULD PREVENT TENSION ON FENCE TIES.
5. WIRE MESH USED AS SHOWN SHALL BE GALVANIZED.
6. ADDITIONAL END POSTS SHALL BE SUPPLIED FOR PULL BRACE POSTS WHEN REQUIRED BY THE ENGINEER.
7. ALL FOOTINGS FOR END POSTS SHALL BE CLASS "A" CONCRETE. THE COST INVOLVED SHALL BE INCLUDED IN THE BID PRICE FOR BARRIER FENCE.
8. BARRIER FENCE SHALL NOT BE PLACED WITHIN CLEAR ZONE.

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS (OR CHANGE NOTICES)

NEW MEXICO
DEPARTMENT OF TRANSPORTATION
STANDARD DRAWING

BARRIER/ACCESS CONTROL FENCE

APPROVED DPE — DESIGN ENGINEER — 11/29/10 DATE

DESIGNED BY___ DRAWN BY ___ CHECKED BY___

607-07-1/2 SHEET 1 OF 2

(4) DETAIL: NMDOT BARRIER/ACCESS CONTROL FENCE
SHEET 1 OF 2

AS BUILT INFORMATION

CONTRACTOR	DATE
WORK STAKED BY	
INSPECTOR'S ACCEPTANCE BY	DATE
FIELD VERIFICATION BY	DATE
DRAWINGS CORRECTED BY	DATE
MICRO-FILM INFORMATION	
RECORDED BY	DATE

BENCH MARKS

ACS 3-1/4" BRASS CAP SET IN CONCRETE POST 0.5' ABOVE THE GROUND STAMPED "1-A8, 1980".
STATE PLANE COORDINATES(CENTRAL ZONE)
NAD83/(NAVD88) N=1531880.970, E= 1490397.999
(GROUND) ELEVATION=5573.004

SURVEY INFORMATION

FIELD NOTES

No.	By	Date

ENGINEER'S SEAL

No.	Remarks	By	Date
	REVISIONS DESIGN		Date
			Designed By Date
			Drawn By Date
			Checked By Date

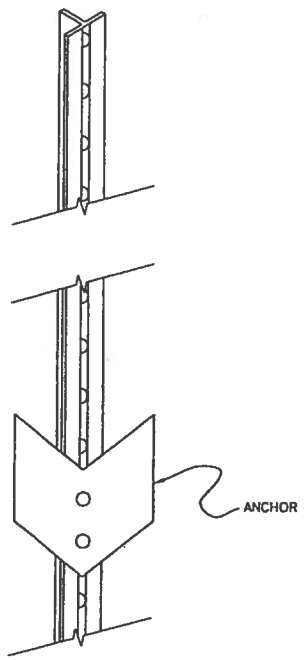
URS
ONE PARK SQUARE
6501 AMERICAS PARKWAY, NE
SUITE 900
ALBUQUERQUE, NM 87110
(505) 855-7500

CENTRAL NEW MEXICO COMMUNITY COLLEGE

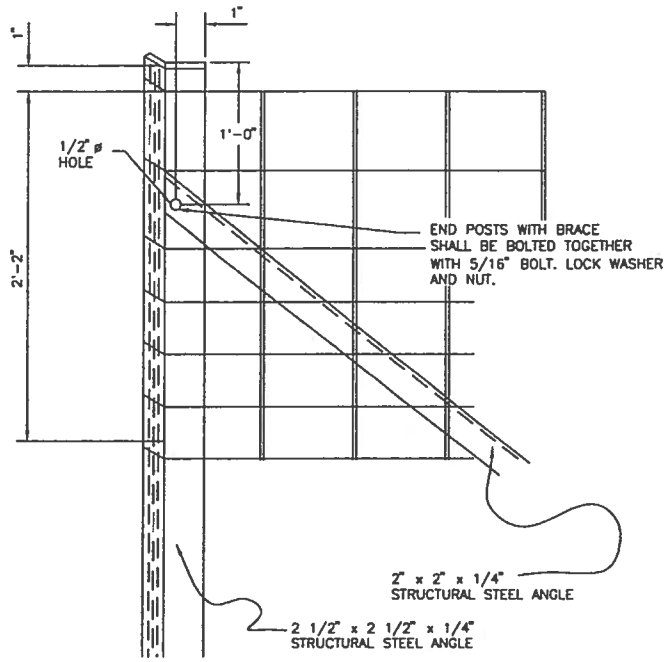
TITLE: **ACCESS DRIVEWAY**
FENCE DETAILS

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

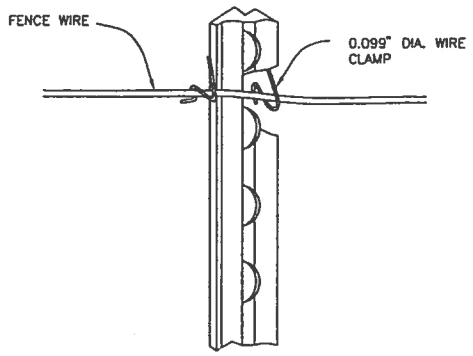
City Project No. | Zone Map No. A-9, A-10 | Sheet XX Of XX | DRAWING: SD-3



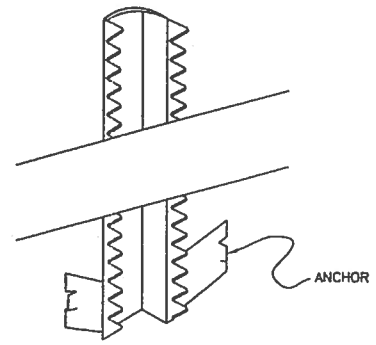
"STUDDED TEE"
LINE POST



END POST WITH
BRACING



TIES FOR "STUDDED"
TEE OR "U" POSTS



ALTERNATE LINE POST
("U" POST)

END POSTS

TYPE – 2 1/2" X 2 1/2" X 1/4" STRUCTURAL STEEL ANGLES

WGT. – 4.10 LBS. PER LIN. FT. MIN., ASTM A 702

LENGTH – 6'-6" MIN.

NO. OF BRACES –1

LINE POSTS

TYPE – "STUDDED TEE" OR "U" POST

WGT. – 1.33 LBS. PER. LIN. FT. MIN., WITHOUT ANCHOR.

LENGTH – 6'-6" MIN. ASTM A702

ANCHOR – SECURELY FASTENED, WITH BEARING
SURFACE SUFFICENT TO RESIST MOVEMENT OF POST

WGT. – 0.67 LBS. MIN. ASTM A702

BRACES

TYPE – 2" X 2" X 1/4" STRUCTURAL STEEL ANGLES

WGT. – 3.19 LBS. PER LIN. FT. MIN., ASTM A702

LENGTH – 7'-0" MAXIMUM

WOVEN WIRE FENCE

WIDTH – 2'-2"

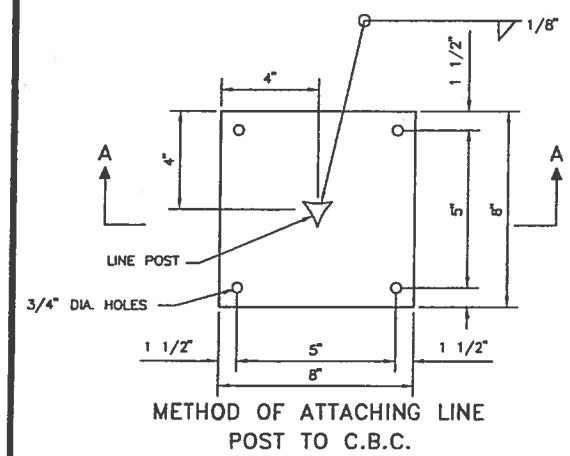
WGT. – 0.39 LBS. PER. LIN. FT. MIN.,

STYLE OR DESIGN NO. – 726-6-12-8 ATSM A116

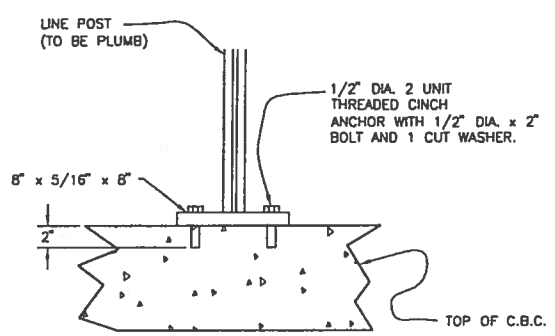
TIES

END POSTS – EACH HORIZONTAL WIRE OF MESH TO BE WRAPPED
AROUND POST AND FASTENED IN ADDITION TO TWO TIE WIRES.

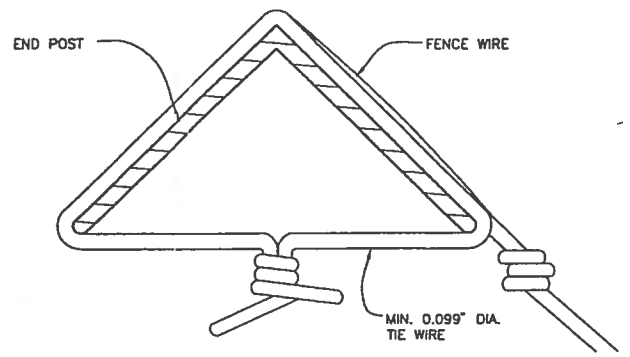
LINE POSTS – MIN. THREE TIES PER POST FOR MESH.



METHOD OF ATTACHING LINE
POST TO C.B.C.



SECTION A–A



END POST TIE

NOTE: HOLES IN END POST AND BRACES SHALL ACCOMMODATE 1/2" DIA. GALVANIZED MACHINE BOLTS.

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS (OR CHANGE NOTICES)

NEW MEXICO
DEPARTMENT OF TRANSPORTATION
STANDARD DRAWING

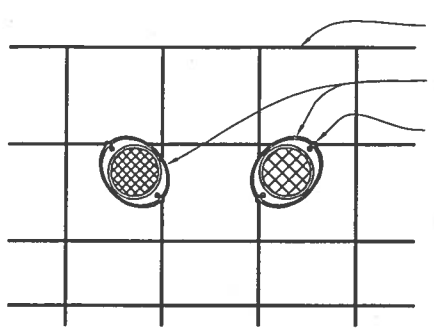
BARRIER/ACCESS CONTROL FENCE

APPROVED _____ DESIGN ENGINEER 11/24/04 DATE

DESIGNED BY___ DRAWN BY ___ CHECKED BY ___

607-07-2/2 SHEET 2 OF 2

DETAIL: NMDOT BARRIER/ACCESS CONTROL FENCE
SHEET 2 OF 2



4b **DETAIL: FENCE REFLECTORS**

SURVEY INFORMATION
FIELD NOTES

No.	By	Date

BENCH MARKS
ACS 3-1/4" BRASS CAP SET IN CONCRETE POST
0.5' ABOVE THE GROUND STAMPED "1-A8, 1980".
STATE PLANE COORDINATES(CENTRAL ZONE)
NAD83/NAVD88) N=1531880.970, E= 1490397.999
(GROUND) ELEVATION=5573.004

AS BUILT INFORMATION
CONTRACTOR DATE
WORK STAKED BY
INSPECTOR'S ACCEPTANCE BY DATE
FIELD VERIFICATION BY DATE
DRAWINGS CORRECTED BY DATE
MICRO-FILM INFORMATION
RECORDED BY DATE

ENGINEER'S SEAL

No.	Remarks	By	Date
	REVISIONS		
	DESIGN		Date
	Designed By		Date
	Drawn By		Date
	Checked By		

URS
ONE PARK SQUARE
6501 AMERICAS PARKWAY, NE
SUITE 900
ALBUQUERQUE, NM 87110
(505) 855-7500

CENTRAL NEW MEXICO
COMMUNITY COLLEGE

TITLE: ACCESS DRIVEWAY
FENCE DETAILS

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

City Project No.
Zone Map No. A-9, A-10
Sheet XX Of XX
DRAWING: SD-4

URS

Roxanne Blatz/Albuquerque/URSCorp
06/30/2010 08:27 AM

To Sheila Johnson/Albuquerque/URSCorp, Nicole Friedt/Albuquerque/URSCorp
cc drbriggs@bernco.gov
bcc
Subject Fw: DRAFT e-mail for review - back to you

Everyone,

Please see the outlined criteria noted in the below e-mail. This is how we will be designing the CNM Access Road pond. Sheila is finalizing the design this week.

Roxanne Bebee Blatz, P.E.
Senior Structural Project Manager
URS
6501 Americas Parkway, NE
Suite 900
Albuquerque, NM 87110
Office 505-855-7500
FAX 505-855-7555
Direct Line 505-855-7475

----- Forwarded by Roxanne Blatz/Albuquerque/URSCorp on 06/30/2010 08:23 AM -----

"Bingham, Brad L." <BBingham@cabq.gov>
06/30/2010 07:58 AM

To <Roxanne_Blatz@URSCorp.com>
cc
Subject RE: DRAFT e-mail for review - back to you

sounds right to me

From: Roxanne_Blatz@URSCorp.com [mailto:Roxanne_Blatz@URSCorp.com]
Sent: Tuesday, June 29, 2010 5:00 PM
To: Bingham, Brad L.
Subject: Fw: DRAFT e-mail for review - back to you

Brad,
This e-mail is to summarize the phone conversation between you, Sheila Johnson(URS) and myself.

Sheila and I called to ask about design parameters of the sediment collection pond at the west end of McMahon Boulevard at Universe Boulevard, currently included in COA Project 6816.04 - designed by URS. URS is looking at relocating the pond to allow CNM to construct a new access drive.

As background information, Roxanne noted the pond was originally requested by Chuck Thompson (COA), to collect sediment in a location where flow entered the proposed storm drain from undeveloped basins. Grading would be needed to direct flow to the storm drain pipe and it made sense to build a sediment collection pond at that location. This was early in the design phase of the project. URS designed the pond to contain the 100 year volume, including 10% sediment bulking and nearly 2 feet of freeboard when routed through the storm drain, even though the pond is not a detention facility and the proposed pipe is capable of carrying 100% of the anticipated ultimate development flow. The facility as designed originally was to be a sediment collection pond. URS was able to fit this pond within the ROW.

In looking at the CNM's new access drive, a culvert pipe is needed to get flow to the storm drain. This would still require a sediment collection pond and the logical location for the new pond is the north side of the driveway on the upstream side of the culvert. In looking at the pond, due to the limited right of way on the north, and the rising terrain, we decided to get more definitive criteria for the design of the pond as a sediment collection pond and not a detention pond.

Brad said the 10 year design storm including the bulking factor is reasonable for this type of sediment collection pond. Freeboard is not really a requirement on these types of ponds. Generally approximately 1 foot is used. The opening at the top of the standpipe can carry the 100 year peak flow and as long as the top of the standpipe is below the surrounding roadways (below the shoulder of the CNM drive and below McMahon Boulevard to the east, that should be adequate.

Please let me know if you have changes or additions. Please send me an e-mail that you concur with this e-mail.

Thank you

Roxanne Bebee Blatz, P.E.
Senior Structural Project Manager
URS
6501 Americas Parkway, NE
Suite 900
Albuquerque, NM 87110
Office 505-855-7500
FAX 505-855-7555
Direct Line 505-855-7475

```
*S UniverseMcMahon Boulevard By James D. Hughes 2009/10/13
*S Revised by Sheila Johnson  2010/01/23
*S Revised by Sheila Johnson to include the CNM driveway 2010/6/29
*
*
START                TIME=0.0 HR  PUNCH CODE=0
*S 100-YEAR, 24-HOUR STORM EVENT, EXISTING CONDITIONS
RAINFALL             TYPE=2  QUARTER HR RAIN=0.00  ONE HR RAIN=1.90
                     SIX HR RAIN=2.26  DAILY RAIN=2.75 DT=0.05 HR
SEDIMENT BULK        CODE = 1 BULK FACTOR = 1.10
COMPUTE NM HYD       ID=4  HYD=RW-1 DA=.0075
                     A B C D 25 0 75 0
                     TP=0.13330   MASS RAIN=-1
PRINT HYD            ID=4  CODE=1
COMPUTE NM HYD       ID=2  HYD=OS-1 DA=.0467
                     A B C D 100 0 0 0
                     TP=0.22   MASS RAIN=-1
PRINT HYD            ID=2  CODE=1
COMPUTE NM HYD       ID=1  HYD=RW-2 DA=.0078
                     A B C D 85 0 15 0
                     TP=0.13330   MASS RAIN=-1
PRINT HYD            ID=1  CODE=1
ADD HYD              ID=3  HYD=RW-2.1 1 2
COMPUTE NM HYD       ID=1  HYD=B-3 DA=.0750
                     A B C D 25 5 30 40
                     TP=0.13330   MASS RAIN=-1
PRINT HYD            ID=1  CODE=1
ADD HYD              ID=2  HYD=B-3.1 1 3
COMPUTE NM HYD       ID=1  HYD=OS-1A DA=.0189
                     A B C D 90 0 10 0
                     TP=0.1333   MASS  AIN=-1
PRINT HYD            ID=1  CODE=1
COMPUTE NM HYD       ID=1  HYD=OS-1B DA=.0059
                     A B C D 90 0 10 0
                     TP=0.13330   MASS RAIN=-1
PRINT HYD            ID=1  CODE=1
COMPUTE NM HYD       ID=2  HYD=RW-1C DA=.0161
                     A B C D 20 0 55 25
                     TP=0.13330   MASS RAIN=-1
PRINT HYD            ID=2  CODE=1
ADD HYD              ID=2  HYD=RW1C.1 1 2
PRINT HYD            ID=1  CODE=1
*
*
*S 100-YEAR, 24-HOUR STORM EVENT, DEVELOPED CONDITIONS
RAINFALL             TYPE=2  QUARTER HR RAIN=0.00  ONE HR RAIN=1.90
                     SIX HR RAIN=2.26  DAILY RAIN=2.75 DT=0.05 HR
SEDIMENT BULK        CODE = 1 BULK FACTOR = 1.10
COMPUTE NM HYD       ID=4  HYD=RW-1 DA=.0075
                     A B C D 0 0 87 13
                     TP=0.13330   MASS RAIN=-1
PRINT HYD            ID=4  CODE=1
COMPUTE NM HYD       ID=2  HYD=OS-1 DA=.0467
                     A B C D 100 0 0 0
                     TP=0.22   MASS RAIN=-1
PRINT HYD            ID=2  CODE=1
COMPUTE NM HYD       ID=1  HYD=RW-2 DA=.0078
                     A B C D 85 0 15 0
                     TP=0.13330   MASS RAIN=-1
PRINT HYD            ID=1  CODE=1
ADD HYD              ID=3  HYD=RW-2.1 1 2
COMPUTE NM HYD       ID=1  HYD=B-3 DA=.0750
                     A B C D 25 5 30 40
```

```
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=1  CODE=1
ADD HYD             ID=2  HYD=B-3.1 1 3
ADD HYD             ID=3  HYD=RW-1.1 2 4
COMPUTE NM HYD      ID=1  HYD=OS-1A DA=.0189
                    A B C D 90 0 10 0
                    TP=0.13330   MASS  AIN=-1
PRINT HYD           ID=1  CODE=1
COMPUTE NM HYD      ID=1  HYD=OS-1B DA=.0059
                    A B C D 90 0 10 0
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=1  CODE=1
COMPUTE NM HYD      ID=2  HYD=RW-1C DA=.0161
                    A B C D 20 0 50 30
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=2  CODE=1
ADD HYD             ID=2  HYD=RW1C.1 1 2
PRINT HYD           ID=1  CODE=1
*
*
* following is current development condition of basin RW1-3 if the CNM driveway is built
* entire basin not needed divied for flow to pond and flow south
*COMPUTE NM HYD      ID=5  HYD=RW-1.3 DA=.0023
*                   A B C D 79 0 0 21
*                   TP=0.13330   MASS RAIN=-1
*PRINT HYD           ID=5  CODE=1
* divide basin into area draining north to pond and south to storm drain
COMPUTE NM HYD      ID=5  HYD=RW1.3POND DA=.00154
                    A B C D 83 0 0 17
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=5  CODE=1
*
COMPUTE NM HYD      ID=7  HYD=RW1.3SOUTH DA=.00076
                    A B C D 71 0 0 29
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=5  CODE=1
*
*following is the part of RW-1C that is west of Universe under current development
conditions
COMPUTE NM HYD      ID=6  HYD=RW-1D  DA=0.00215
                    A B C D  49 0 51 0
                    TP=0.13330  MASS RAIN=-1
PRINT HYD           ID=6  CODE=1
*
ADD HYD             ID=5  HYD=PONDIN  5   6
PRINT HYD           ID=5 CODE=1
* FOLLOWING ROUTING IS FOR INFORMATION ONLY - THE POND IS DESIGNED FOR 10 YEAR STORM
* with CNM driveway
* 24 inch  Route through pond = outlet is 24" riser pipe w/.5in dia holes
ROUTE RESERVOIR     ID=8  HYD=PONDOUT  INFLOW ID=5  CODE=5
                     OUTFLOW   STORAGE(AF)  ELEV (FT)
                         0       0          5410
                         0.06    0.01300    5411
                         2.0     0.03344    5412
                         3.5     0.06302    5413
                         14.7    0.10588    5414
PRINT HYD           ID=8  CODE=1
*
*Run pond with only weir flow - say low flow holes are plugged
ROUTE RESERVOIR     ID=8  HYD=PONDOUT  INFLOW ID=5  CODE=5
                     OUTFLOW   STORAGE(AF)  ELEV (FT)
                         0       0          5410
                         0.06    0.01300    5411
```

```
                        0.07    0.03344    5412
                        0.08    0.06302    5413
                        10.4    0.10588    5414
PRINT HYD           ID=8  CODE=1
*
*S 100-YEAR, 24-HOUR STORM EVENT, FUTURE CONDITIONS
RAINFALL            TYPE=2  QUARTER HR RAIN=0.00  ONE HR RAIN=1.90
                    SIX HR RAIN=2.26  DAILY RAIN=2.75 DT=0.05 HR
SEDIMENT BULK       CODE = 1 BULK FACTOR = 1.10
COMPUTE NM HYD      ID=4  HYD=RW-1 DA=.0075
                    A B C D 0 0 74 26
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=4  CODE=1
COMPUTE NM HYD      ID=2  HYD=OS-1 DA=.0467
                    A B C D 100 0 0 0
                    TP=0.22   MASS RAIN=-1
PRINT HYD           ID=2  CODE=1
COMPUTE NM HYD      ID=1  HYD=RW-2 DA=.0078
                    A B C D 0 0 40 60
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=1  CODE=1
ADD HYD             ID=3  HYD=RW-2.1 1 2
COMPUTE NM HYD      ID=1  HYD=B-3 DA=.05590
                    A B C D 0 10 20 70
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=1  CODE=1
ADD HYD             ID=2  HYD=RW-1.1 1 4
COMPUTE NM HYD      ID=1  HYD=OS-1A DA=.0189
                    A B C D 75 0 20 5
                    TP=0.13330   MASS  AIN=-1
PRINT HYD           ID=1  CODE=1
COMPUTE NM HYD      ID=1  HYD=OS-1B DA=.0059
                    A B C D 75 0 20 5
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=1  CODE=1
COMPUTE NM HYD      ID=2  HYD=RW-1C DA=.0161
                    A B C D 0 0 40 60
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=2  CODE=1
ADD HYD             ID=2  HYD=RW1C.1 1 2
PRINT HYD           ID=1  CODE=1
COMPUTE NM HYD      ID=4  HYD=RW-1.1 DA=.0007
                    A B C D 0 0 33 67
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=4  CODE=1
COMPUTE NM HYD      ID=4  HYD=RW-1.3 DA=.0023
                    A B C D 0 0 40 60
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=4  CODE=1
COMPUTE NM HYD      ID=5  HYD=RW-1.4A DA=.0025
                    A B C D 0 0 100 0
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=5  CODE=1
*
*following is part of Basin RW-1C west of McMahon - future (ultimate) condition
*it is also still included in Basin RW-1C as per planning documents in which
*this flow will remain in McMahon flowing west, however to allow
* future flexibility it is also being added to Universe pipe
COMPUTE NM HYD      ID=7  HYD=RW-1D  DA=0.00215
                    A B C D 0 0 40 60
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=7  CODE=1
*
```

```
ADD HYD             ID=8 HYD=RW-1D.1  7  4
PRINT HYD           ID=8  CODE=1
**********************************************************************
*S 10-YEAR, 24-HOUR STORM EVENT, EXISTING CONDITIONS
RAINFALL            TYPE=2  QUARTER HR RAIN=0.00  ONE HR RAIN=1.27
                    SIX HR RAIN=1.50  DAILY RAIN=1.83 DT=0.05 HR
SEDIMENT BULK       CODE = 1 BULK FACTOR = 1.10
COMPUTE NM HYD      ID=4  HYD=RW-1 DA=.0075
                    A B C D 25 0 75 0
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=4  CODE=1
COMPUTE NM HYD      ID=2  HYD=OS-1 DA=.0467
                    A B C D 100 0 0 0
                    TP=0.22   MASS RAIN=-1
PRINT HYD           ID=2  CODE=1
COMPUTE NM HYD      ID=1  HYD=RW-2 DA=.0078
                    A B C D 85 0 15 0
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=1  CODE=1
ADD HYD             ID=3  HYD=RW-2.1 1 2
COMPUTE NM HYD      ID=1  HYD=B-3 DA=.0750
                    A B C D 25 5 30 40
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=1  CODE=1
ADD HYD             ID=2  HYD=B-3.1 1 3
ADD HYD             ID=3  HYD=RW-1.1 2 4
COMPUTE NM HYD      ID=1  HYD=OS-1A DA=.0189
                    A B C D 90 0 10 0
                    TP=0.13330   MASS  AIN=-1
PRINT HYD           ID=1  CODE=1
COMPUTE NM HYD      ID=1  HYD=OS-1B DA=.0059
                    A B C D 90 0 10 0
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=1  CODE=1
COMPUTE NM HYD      ID=2  HYD=RW-1C DA=.0161
                    A B C D 20 0 55 25
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=2  CODE=1
ADD HYD             ID=2  HYD=RW1C.1 1 2
PRINT HYD           ID=1  CODE=1
*
*
*S 10-YEAR, 24-HOUR STORM EVENT, DEVELOPED CONDITIONS
RAINFALL            TYPE=2  QUARTER HR RAIN=0.00  ONE HR RAIN=1.27
                    SIX HR RAIN=1.50  DAILY RAIN=1.83 DT=0.05 HR
SEDIMENT BULK       CODE = 1 BULK FACTOR = 1.10
COMPUTE NM HYD      ID=4  HYD=RW-1 DA=.0075
                    A B C D 0 0 87 13
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=4  CODE=1
COMPUTE NM HYD      ID=2  HYD=OS-1 DA=.0467
                    A B C D 100 0 0 0
                    TP=0.22   MASS RAIN=-1
PRINT HYD           ID=2  CODE=1
COMPUTE NM HYD      ID=1  HYD=RW-2 DA=.0078
                    A B C D 85 0 15 0
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=1  CODE=1
ADD HYD             ID=3  HYD=RW-2.1 1 2
COMPUTE NM HYD      ID=1  HYD=B-3 DA=.0750
                    A B C D 25 5 30 40
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=1  CODE=1
```

```
ADD HYD             ID=2  HYD=B-3.1 1 3
ADD HYD             ID=3  HYD=RW-1.1 2 4
COMPUTE NM HYD      ID=1  HYD=OS-1A DA=.0189
                    A B C D 90 0 10 0
                    TP=0.13330   MASS  AIN=-1
PRINT HYD           ID=1  CODE=1
COMPUTE NM HYD      ID=1  HYD=OS-1B DA=.0059
                    A B C D 90 0 10 0
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=1  CODE=1
COMPUTE NM HYD      ID=2  HYD=RW-1C DA=.0161
                    A B C D 20 0 50 30
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=2  CODE=1
ADD HYD             ID=2  HYD=RW1C.1 1 2
PRINT HYD           ID=1  CODE=1
*
* following is current development condition of basin RW1-3 if the CNM driveway is built
* divide basin into area draining north to pond and south to storm drain
COMPUTE NM HYD      ID=5  HYD=RW1.3POND DA=.00154
                    A B C D 83 0 0 17
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=5  CODE=1
*
COMPUTE NM HYD      ID=7  HYD=RW1.3SOUTH DA=.00076
                    A B C D 71 0 0 29
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=5  CODE=1
*
COMPUTE NM HYD      ID=6  HYD=RW-1D  DA=0.00215
                    A B C D  49 0 51 0
                    TP=0.13330  MASS RAIN=-1
PRINT HYD           ID=6  CODE=1
*
ADD HYD             ID=5  HYD=PONDIN  5   6
PRINT HYD           ID=5 CODE=1
* 24 inch  Route through pond = outlet is 24" riser pipe w/.5in dia holes
ROUTE RESERVOIR     ID=8  HYD=PONDOUT  INFLOW ID=5  CODE=5
                     OUTFLOW   STORAGE(AF)  ELEV (FT)
                         0       0          5410
                         0.06    0.01300    5411
                         2.0     0.03344    5412
                         3.5     0.06302    5413
                         14.7    0.10588    5414
PRINT HYD           ID=8  CODE=1
*
*Run pond with only weir flow - say low flow holes are plugged
ROUTE RESERVOIR     ID=8  HYD=PONDOUT  INFLOW ID=5  CODE=5
                     OUTFLOW   STORAGE(AF)  ELEV (FT)
                         0       0          5410
                         0.06    0.01300    5411
                         0.07    0.03344    5412
                         0.08    0.06302    5413
                         10.4    0.10588    5414
PRINT HYD           ID=8  CODE=1
*
*S 10-YEAR, 24-HOUR STORM EVENT, FUTURE CONDITIONS
RAINFALL            TYPE=2  QUARTER HR RAIN=0.00  ONE HR RAIN=1.27
                    SIX HR RAIN=1.50  DAILY RAIN=1.83 DT=0.05 HR
SEDIMENT BULK       CODE = 1 BULK FACTOR = 1.10
COMPUTE NM HYD      ID=4  HYD=RW-1 DA=.0075
                    A B C D 0 0 74 26
                    TP=0.13330   MASS RAIN=-1
```

```
PRINT HYD           ID=4  CODE=1
COMPUTE NM HYD      ID=2  HYD=OS-1 DA=.0467
                    A B C D 100 0 0 0
                    TP=0.22   MASS RAIN=-1
PRINT HYD           ID=2  CODE=1
COMPUTE NM HYD      ID=1  HYD=RW-2 DA=.0078
                    A B C D 0 0 40 60
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=1  CODE=1
ADD HYD             ID=3  HYD=RW-2.1 1 2
COMPUTE NM HYD      ID=1  HYD=B-3 DA=.0559
                    A B C D 0 10 20 70
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=1  CODE=1
ADD HYD             ID=2  HYD=RW-1.1 1 4
COMPUTE NM HYD      ID=1  HYD=OS-1A DA=.0189
                    A B C D 75 0 20 5
                    TP=0.13330   MASS  AIN=-1
PRINT HYD           ID=1  CODE=1
COMPUTE NM HYD      ID=1  HYD=OS-1B DA=.0059
                    A B C D 75 0 20 5
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=1  CODE=1
COMPUTE NM HYD      ID=2  HYD=RW-1C DA=.0161
                    A B C D 0 0 40 60
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=2  CODE=1
ADD HYD             ID=2  HYD=RW1C.1 1 2
PRINT HYD           ID=1  CODE=1
COMPUTE NM HYD      ID=4  HYD=RW-1.1 DA=.0007
                    A B C D 0 0 33 67
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=4  CODE=1
COMPUTE NM HYD      ID=4  HYD=RW-1.3 DA=.0023
                    A B C D 0 0 40 60
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=4  CODE=1
COMPUTE NM HYD      ID=5  HYD=RW-1.4A DA=.0025
                    A B C D 0 0 100 0
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=5  CODE=1
*following is part of Basin RW-1C west of McMahon - future (ultimate) condition
*it is also still included in Basin RW-1C as per planning documents in which
*this flow will remain in McMahon flowing west, however to allow
* future flexibility it is also being added to Universe pipe
COMPUTE NM HYD      ID=7  HYD=RW-1D  DA=0.00215
                    A B C D 0 0 40 60
                    TP=0.13330   MASS RAIN=-1
PRINT HYD           ID=7  CODE=1
ADD HYD             ID=8 HYD=RW-1D.1  7  4
PRINT HYD           ID=8  CODE=1
FINISH
```

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) - - VERSION: 1997.02d RUN DATE (MON/DAY/YR) =07/07/2010
INPUT FILE = P:\AHYMOCNM.DAT USER NO.= AHYMO-S-9702c3URSGrnr-AH

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
*S UniverseMcMahon Boulevard By James D. Hughes 2009/10/13										
*S Revised by Sheila Johnson 2010/01/23										
*S Revised by Sheila Johnson to include the CNM driveway 2010/6/29										
START										TIME= .00
*S 100-YEAR, 24-HOUR STORM EVENT, EXISTING CONDITIONS										
RAINFALL TYPE= 2										RAIN24= 2.750
SEDIMENT BULK										PK BF = 1.10
COMPUTE NM HYD	RW-1	-	4	.00750	13.13	.374	.93401	1.500	2.735	PER IMP= .00
COMPUTE NM HYD	OS-1	-	2	.04670	28.90	1.276	.51224	1.600	.967	PER IMP= .00
COMPUTE NM HYD	RW-2	-	1	.00780	8.50	.241	.58021	1.500	1.702	PER IMP= .00
ADD HYD	RW-2.1	1& 2	3	.05450	35.67	1.517	.52197	1.600	1.023	
COMPUTE NM HYD	B-3	-	1	.07500	160.20	6.334	1.58343	1.500	3.337	PER IMP= 40.00
ADD HYD	B-3.1	1& 3	2	.12950	190.72	7.851	1.13671	1.500	2.301	
COMPUTE NM HYD	OS-1A	-	1	.01890	19.72	.561	.55696	1.500	1.630	PER IMP= .00
COMPUTE NM HYD	OS-1B	-	1	.00590	6.16	.175	.55696	1.500	1.631	PER IMP= .00
COMPUTE NM HYD	RW-1C	-	2	.01610	33.29	1.188	1.38361	1.500	3.231	PER IMP= 25.00
ADD HYD	RW1C.1	1& 2	2	.02200	39.45	1.363	1.16190	1.500	2.802	
*S 100-YEAR, 24-HOUR STORM EVENT, DEVELOPED CONDITIONS										
RAINFALL TYPE= 2										RAIN24= 2.750
SEDIMENT BULK										PK BF = 1.10
COMPUTE NM HYD	RW-1	-	4	.00750	16.44	.538	1.34594	1.500	3.424	PER IMP= 13.00
COMPUTE NM HYD	OS-1	-	2	.04670	28.90	1.276	.51224	1.600	.967	PER IMP= .00
COMPUTE NM HYD	RW-2	-	1	.00780	8.50	.241	.58021	1.500	1.702	PER IMP= .00
ADD HYD	RW-2.1	1& 2	3	.05450	35.67	1.517	.52197	1.600	1.023	
COMPUTE NM HYD	B-3	-	1	.07500	160.20	6.334	1.58343	1.500	3.337	PER IMP= 40.00
ADD HYD	B-3.1	1& 3	2	.12950	190.72	7.851	1.13671	1.500	2.301	
ADD HYD	RW-1.1	2& 4	3	.13700	207.16	8.389	1.14816	1.500	2.363	
COMPUTE NM HYD	OS-1A	-	1	.01890	19.72	.561	.55696	1.500	1.630	PER IMP= .00
COMPUTE NM HYD	OS-1B	-	1	.00590	6.16	.175	.55696	1.500	1.631	PER IMP= .00
COMPUTE NM HYD	RW-1C	-	2	.01610	34.13	1.259	1.46663	1.500	3.312	PER IMP= 30.00
ADD HYD	RW1C.1	1& 2	2	.02200	40.29	1.435	1.22266	1.500	2.861	
COMPUTE NM HYD	RW1.3POND	-	5	.00154	2.04	.074	.89556	1.500	2.072	PER IMP= 17.00
COMPUTE NM HYD	RW1.3SOUTH	-	7	.00076	1.21	.047	1.16614	1.500	2.486	PER IMP= 29.00
COMPUTE NM HYD	RW-1D	-	6	.00215	3.16	.089	.77480	1.500	2.295	PER IMP= .00
ADD HYD	PONDIN	5& 6	5	.00369	5.20	.162	.82511	1.500	2.202	
ROUTE RESERVOIR	PONDOUT	5	8	.00369	3.06	.162	.82465	1.650	1.296	AC-FT= .054
ROUTE RESERVOIR	PONDOUT	5	8	.00369	3.27	.162	.82457	1.650	1.383	AC-FT= .076
*S 100-YEAR, 24-HOUR STORM EVENT, FUTURE CONDITIONS										
RAINFALL TYPE= 2										RAIN24= 2.750
SEDIMENT BULK										PK BF = 1.10
COMPUTE NM HYD	RW-1	-	4	.00750	17.43	.623	1.55829	1.500	3.631	PER IMP= 26.00
COMPUTE NM HYD	OS-1	-	2	.04670	28.90	1.276	.51224	1.600	.967	PER IMP= .00

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
COMPUTE NM HYD	RW-2	-	1	.00780	20.83	.879	2.11366	1.500	4.174	PER IMP= 60.00
ADD HYD	RW-2.1	1& 2	3	.05450	45.64	2.155	.74143	1.550	1.309	
COMPUTE NM HYD	B-3	-	1	.05590	151.57	6.665	2.23570	1.500	4.237	PER IMP= 70.00
ADD HYD	RW-1.1	1& 4	2	.06340	169.00	7.289	2.15555	1.500	4.165	
COMPUTE NM HYD	OS-1A	-	1	.01890	23.49	.722	.71666	1.500	1.942	PER IMP= 5.00
COMPUTE NM HYD	OS-1B	-	1	.00590	7.35	.226	.71666	1.500	1.945	PER IMP= 5.00
COMPUTE NM HYD	RW-1C	-	2	.01610	42.98	1.815	2.11366	1.500	4.171	PER IMP= 60.00

ADD HYD	RW1C.1	1& 2	2	.02200	50.33	2.040	1.73899	1.500	3.574	
COMPUTE NM HYD	RW-1.1	-	4	.00070	1.94	.083	2.22800	1.500	4.320	PER IMP= 67.00
COMPUTE NM HYD	RW-1.3	-	4	.00230	6.16	.259	2.11366	1.500	4.182	PER IMP= 60.00
COMPUTE NM HYD	RW-1.4A	-	5	.00250	5.15	.151	1.13359	1.500	3.219	PER IMP= .00
COMPUTE NM HYD	RW-1D	-	7	.00215	5.75	.242	2.11366	1.500	4.182	PER IMP= 60.00
ADD HYD	RW-1D.1	7& 4	8	.00445	11.91	.502	2.11353	1.500	4.182	
*S 10-YEAR, 24-HOUR STORM EVENT, EXISTING CONDITIONS										
RAINFALL TYPE= 2										
										RAIN24= 1.830
SEDIMENT BULK										PK BF = 1.10
COMPUTE NM HYD	RW-1	-	4	.00750	5.97	.147	.36685	1.500	1.244	PER IMP= .00
COMPUTE NM HYD	OS-1	-	2	.04670	5.58	.259	.10385	1.600	.187	PER IMP= .00
COMPUTE NM HYD	RW-2	-	1	.00780	2.13	.059	.14284	1.500	.427	PER IMP= .00
ADD HYD	RW-2.1	1& 2	3	.05450	7.32	.318	.10943	1.600	.210	
COMPUTE NM HYD	B-3	-	1	.07500	87.36	3.481	.87016	1.500	1.820	PER IMP= 40.00
ADD HYD	B-3.1	1& 3	2	.12950	93.38	3.799	.55001	1.500	1.127	
ADD HYD	RW-1.1	2& 4	3	.13700	99.35	3.945	.53998	1.500	1.133	
COMPUTE NM HYD	OS-1A	-	1	.01890	4.61	.131	.12951	1.550	.381	PER IMP= .00
COMPUTE NM HYD	OS-1B	-	1	.00590	1.44	.041	.12951	1.550	.381	PER IMP= .00
COMPUTE NM HYD	RW-1C	-	2	.01610	17.61	.609	.70928	1.500	1.709	PER IMP= 25.00
ADD HYD	RW1C.1	1& 2	2	.02200	19.05	.650	.55378	1.500	1.353	
*S 10-YEAR, 24-HOUR STORM EVENT, DEVELOPED CONDITIONS										
RAINFALL TYPE= 2										
										RAIN24= 1.830
SEDIMENT BULK										PK BF = 1.10
COMPUTE NM HYD	RW-1	-	4	.00750	9.04	.265	.66338	1.500	1.884	PER IMP= 13.00
COMPUTE NM HYD	OS-1	-	2	.04670	5.58	.259	.10385	1.600	.187	PER IMP= .00
COMPUTE NM HYD	RW-2	-	1	.00780	2.13	.059	.14284	1.500	.427	PER IMP= .00
ADD HYD	RW-2.1	1& 2	3	.05450	7.32	.318	.10943	1.600	.210	
COMPUTE NM HYD	B-3	-	1	.07500	87.36	3.481	.87016	1.500	1.820	PER IMP= 40.00
ADD HYD	B-3.1	1& 3	2	.12950	93.38	3.799	.55001	1.500	1.127	
ADD HYD	RW-1.1	2& 4	3	.13700	102.42	4.064	.55621	1.500	1.168	
COMPUTE NM HYD	OS-1A	-	1	.01890	4.61	.131	.12951	1.550	.381	PER IMP= .00
COMPUTE NM HYD	OS-1B	-	1	.00590	1.44	.041	.12951	1.550	.381	PER IMP= .00
COMPUTE NM HYD	RW-1C	-	2	.01610	18.41	.664	.77323	1.500	1.787	PER IMP= 30.00
ADD HYD	RW1C.1	1& 2	2	.02200	19.85	.705	.60058	1.500	1.410	
COMPUTE NM HYD	RW1.3POND	-	5	.00154	.78	.032	.38530	1.500	.792	PER IMP= 17.00
COMPUTE NM HYD	RW1.3SOUTH	-	7	.00076	.56	.024	.58398	1.500	1.146	PER IMP= 29.00
COMPUTE NM HYD	RW-1D	-	6	.00215	1.20	.030	.26428	1.500	.873	PER IMP= .00

ADD HYD	PONDIN	5& 6	5	.00369	1.98	.062	.31472	1.500	.839	
ROUTE RESERVOIR	PONDOUT	5	8	.00369	1.12	.062	.31441	1.650	.475	AC-FT= .024
ROUTE RESERVOIR	PONDOUT	5	8	.00369	.08	.062	.31439	2.350	.032	AC-FT= .048
*S 10-YEAR, 24-HOUR STORM EVENT, FUTURE CONDITIONS										
RAINFALL TYPE= 2										RAIN24= 1.830
SEDIMENT BULK										PK BF = 1.10
COMPUTE NM HYD	RW-1	-	4	.00750	9.98	.331	.82716	1.500	2.079	PER IMP= 26.00
COMPUTE NM HYD	OS-1	-	2	.04670	5.58	.259	.10385	1.600	.187	PER IMP= .00
COMPUTE NM HYD	RW-2	-	1	.00780	12.91	.522	1.25551	1.500	2.587	PER IMP= 60.00
ADD HYD	RW-2.1	1& 2	3	.05450	16.80	.781	.26867	1.500	.482	
COMPUTE NM HYD	B-3	-	1	.05590	94.58	4.036	1.35364	1.500	2.644	PER IMP= 70.00
ADD HYD	RW-1.1	1& 4	2	.06340	104.56	4.366	1.29135	1.500	2.577	
COMPUTE NM HYD	OS-1A	-	1	.01890	7.54	.242	.24028	1.500	.623	PER IMP= 5.00
COMPUTE NM HYD	OS-1B	-	1	.00590	2.36	.076	.24028	1.500	.625	PER IMP= 5.00
COMPUTE NM HYD	RW-1C	-	2	.01610	26.64	1.078	1.25551	1.500	2.586	PER IMP= 60.00

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 3 NOTATION
ADD HYD	RW1C.1	1& 2	2	.02200	29.00	1.154	.98322	1.500	2.060	
COMPUTE NM HYD	RW-1.1	-	4	.00070	1.22	.050	1.34370	1.500	2.713	PER IMP= 67.00
COMPUTE NM HYD	RW-1.3	-	4	.00230	3.81	.154	1.25551	1.500	2.592	PER IMP= 60.00
COMPUTE NM HYD	RW-1.4A	-	5	.00250	2.71	.067	.49960	1.500	1.691	PER IMP= .00
COMPUTE NM HYD	RW-1D	-	7	.00215	3.57	.144	1.25551	1.500	2.592	PER IMP= 60.00
ADD HYD	RW-1D.1	7& 4	8	.00445	7.38	.298	1.25536	1.500	2.592	
FINISH										

```
   AHYMO PROGRAM (AHYMO_97) -                          - Version:  1997.02d
         RUN DATE (MON/DAY/YR) = 07/07/2010
         START TIME (HR:MIN:SEC) = 15:38:54      USER NO.= AHYMO-S-9702c3URSGrnr-AH
         INPUT FILE = P:\AHYMOCNM.DAT

*S UniverseMcMahon Boulevard By James D. Hughes 2009/10/13
*S Revised by Sheila Johnson  2010/01/23
*S Revised by Sheila Johnson to include the CNM driveway 2010/6/29
*
*
START               TIME=0.0 HR  PUNCH CODE=0
*S 100-YEAR, 24-HOUR STORM EVENT, EXISTING CONDITIONS
RAINFALL            TYPE=2  QUARTER HR RAIN=0.00  ONE HR RAIN=1.90
                    SIX HR RAIN=2.26  DAILY RAIN=2.75 DT=0.05 HR

                 COMPUTED 24-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
                 DT =     .050000 HOURS        END TIME =     24.000000 HOURS
                    .0000   .0029   .0058   .0089   .0120   .0153   .0187
                    .0222   .0259   .0297   .0336   .0378   .0422   .0468
                    .0516   .0567   .0622   .0680   .0742   .0809   .0882
                    .0962   .1051   .1307   .1913   .2955   .4566   .6887
                   1.0059  1.2562  1.3692  1.4636  1.5463  1.6202  1.6872
                   1.7483  1.8043  1.8559  1.9035  1.9475  1.9882  1.9976
                   2.0063  2.0144  2.0219  2.0291  2.0358  2.0423  2.0484
                   2.0543  2.0599  2.0653  2.0705  2.0755  2.0804  2.0851
                   2.0897  2.0941  2.0984  2.1026  2.1067  2.1107  2.1146
                   2.1183  2.1221  2.1257  2.1292  2.1327  2.1361  2.1395
                   2.1427  2.1459  2.1491  2.1522  2.1552  2.1582  2.1612
                   2.1641  2.1670  2.1698  2.1725  2.1753  2.1780  2.1806
                   2.1832  2.1858  2.1883  2.1909  2.1933  2.1958  2.1982
                   2.2006  2.2030  2.2053  2.2076  2.2099  2.2121  2.2144
                   2.2166  2.2187  2.2209  2.2230  2.2252  2.2272  2.2293
                   2.2314  2.2334  2.2354  2.2374  2.2394  2.2413  2.2433
                   2.2452  2.2471  2.2490  2.2509  2.2527  2.2546  2.2564
                   2.2582  2.2600  2.2621  2.2642  2.2662  2.2683  2.2703
                   2.2724  2.2744  2.2765  2.2785  2.2805  2.2825  2.2845
                   2.2865  2.2885  2.2905  2.2925  2.2944  2.2964  2.2984
                   2.3003  2.3023  2.3042  2.3061  2.3081  2.3100  2.3119
                   2.3138  2.3157  2.3176  2.3195  2.3214  2.3232  2.3251
                   2.3270  2.3288  2.3307  2.3325  2.3344  2.3362  2.3381
                   2.3399  2.3417  2.3435  2.3453  2.3471  2.3489  2.3507
                   2.3525  2.3543  2.3561  2.3578  2.3596  2.3614  2.3631
                   2.3649  2.3666  2.3684  2.3701  2.3718  2.3735  2.3753
                   2.3770  2.3787  2.3804  2.3821  2.3838  2.3855  2.3872
                   2.3889  2.3905  2.3922  2.3939  2.3955  2.3972  2.3988
                   2.4005  2.4021  2.4038  2.4054  2.4071  2.4087  2.4103
                   2.4119  2.4135  2.4152  2.4168  2.4184  2.4200  2.4216
                   2.4231  2.4247  2.4263  2.4279  2.4295  2.4310  2.4326
                   2.4342  2.4357  2.4373  2.4388  2.4404  2.4419  2.4434
                   2.4450  2.4465  2.4480  2.4496  2.4511  2.4526  2.4541
                   2.4556  2.4571  2.4586  2.4601  2.4616  2.4631  2.4646
                   2.4661  2.4675  2.4690  2.4705  2.4720  2.4734  2.4749
                   2.4763  2.4778  2.4792  2.4807  2.4821  2.4836  2.4850
                   2.4864  2.4879  2.4893  2.4907  2.4921  2.4936  2.4950
                   2.4964  2.4978  2.4992  2.5006  2.5020  2.5034  2.5048
                   2.5062  2.5076  2.5090  2.5103  2.5117  2.5131  2.5145
                   2.5158  2.5172  2.5185  2.5199  2.5213  2.5226  2.5240
                   2.5253  2.5267  2.5280  2.5293  2.5307  2.5320  2.5333
                   2.5347  2.5360  2.5373  2.5386  2.5399  2.5413  2.5426
                   2.5439  2.5452  2.5465  2.5478  2.5491  2.5504  2.5517
                   2.5530  2.5543  2.5555  2.5568  2.5581  2.5594  2.5606
                   2.5619  2.5632  2.5645  2.5657  2.5670  2.5682  2.5695
                   2.5707  2.5720  2.5732  2.5745  2.5757  2.5770  2.5782
                   2.5795  2.5807  2.5819  2.5831  2.5844  2.5856  2.5868
                   2.5880  2.5893  2.5905  2.5917  2.5929  2.5941  2.5953
                   2.5965  2.5977  2.5989  2.6001  2.6013  2.6025  2.6037
                   2.6049  2.6061  2.6073  2.6084  2.6096  2.6108  2.6120
```

```
2.6131  2.6143  2.6155  2.6166  2.6178  2.6190  2.6201
2.6213  2.6224  2.6236  2.6248  2.6259  2.6271  2.6282
2.6293  2.6305  2.6316  2.6328  2.6339  2.6350  2.6362
2.6373  2.6384  2.6395  2.6407  2.6418  2.6429  2.6440
2.6451  2.6463  2.6474  2.6485  2.6496  2.6507  2.6518
2.6529  2.6540  2.6551  2.6562  2.6573  2.6584  2.6595
2.6606  2.6617  2.6627  2.6638  2.6649  2.6660  2.6671
2.6681  2.6692  2.6703  2.6714  2.6724  2.6735  2.6746
2.6756  2.6767  2.6778  2.6788  2.6799  2.6809  2.6820
2.6830  2.6841  2.6851  2.6862  2.6872  2.6883  2.6893
2.6904  2.6914  2.6924  2.6935  2.6945  2.6956  2.6966
2.6976  2.6986  2.6997  2.7007  2.7017  2.7027  2.7038
2.7048  2.7058  2.7068  2.7078  2.7088  2.7098  2.7109
2.7119  2.7129  2.7139  2.7149  2.7159  2.7169  2.7179
2.7189  2.7199  2.7209  2.7219  2.7228  2.7238  2.7248
2.7258  2.7268  2.7278  2.7288  2.7297  2.7307  2.7317
2.7327  2.7336  2.7346  2.7356  2.7366  2.7375  2.7385
2.7395  2.7404  2.7414  2.7424  2.7433  2.7443  2.7452
2.7462  2.7471  2.7481  2.7490  2.7500

SEDIMENT BULK       CODE = 1 BULK FACTOR = 1.10
COMPUTE NM HYD      ID=4  HYD=RW-1 DA=.0075
                    A B C D 25 0 75 0
                    TP=0.13330   MASS RAIN=-1

     K =   .120386HR    TP =   .133300HR    K/TP RATIO =   .903119     SHAPE CONSTANT, N =  3.923407
     UNIT PEAK =   19.694    CFS   UNIT VOLUME =    1.000       B =   350.03      P60 = 1.9000
     AREA =      .007500 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=4  CODE=1

                                    HYDROGRAPH FROM AREA RW-1


    RUNOFF VOLUME =      .93401 INCHES     =        .3736 ACRE-FEET
    PEAK DISCHARGE RATE =      13.13 CFS  AT   1.500 HOURS   BASIN AREA =   .0075 SQ. MI.


COMPUTE NM HYD      ID=2  HYD=OS-1 DA=.0467
                    A B C D 100 0 0 0
                    TP=0.22   MASS RAIN=-1

     K =   .268898HR    TP =   .220000HR    K/TP RATIO =  1.222262     SHAPE CONSTANT, N =  2.911962
     UNIT PEAK =   58.282    CFS   UNIT VOLUME =    .9995       B =   274.56      P60 = 1.9000
     AREA =      .046700 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=2  CODE=1

                                    HYDROGRAPH FROM AREA OS-1


    RUNOFF VOLUME =      .51224 INCHES     =       1.2758 ACRE-FEET
    PEAK DISCHARGE RATE =      28.90 CFS  AT   1.600 HOURS   BASIN AREA =   .0467 SQ. MI.


COMPUTE NM HYD      ID=1  HYD=RW-2 DA=.0078
                    A B C D 85 0 15 0
                    TP=0.13330   MASS RAIN=-1

     K =   .154419HR    TP =   .133300HR    K/TP RATIO =  1.158433     SHAPE CONSTANT, N =  3.059499
```

```
      UNIT PEAK =   16.772    CFS   UNIT VOLUME =     .9985       B =   286.64      P60 = 1.9000
      AREA =       .007800 SQ MI    IA =     .60500 INCHES    INF =   1.54400 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

     BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

 PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA RW-2


     RUNOFF VOLUME =       .58021 INCHES      =        .2414 ACRE-FEET
     PEAK DISCHARGE RATE =       8.50 CFS  AT   1.500 HOURS   BASIN AREA =    .0078 SQ. MI.


 ADD HYD             ID=3  HYD=RW-2.1 1 2
 COMPUTE NM HYD      ID=1  HYD=B-3 DA=.0750
                     A B C D 25 5 30 40
                     TP=0.13330   MASS RAIN=-1

      K =    .072846HR    TP =    .133300HR    K/TP RATIO =    .546479     SHAPE CONSTANT, N =  7.081791
      UNIT PEAK =   118.18    CFS   UNIT VOLUME =     .9990       B =   525.12      P60 = 1.9000
      AREA =       .030000 SQ MI    IA =     .10000 INCHES    INF =    .04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000


      K =    .131149HR    TP =    .133300HR    K/TP RATIO =    .983865     SHAPE CONSTANT, N =  3.589055
      UNIT PEAK =   110.31    CFS   UNIT VOLUME =    1.001       B =   326.77      P60 = 1.9000
      AREA =       .045000 SQ MI    IA =     .48750 INCHES    INF =   1.21500 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

     BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

 PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA B-3


     RUNOFF VOLUME =     1.58343 INCHES      =       6.3337 ACRE-FEET
     PEAK DISCHARGE RATE =     160.20 CFS  AT   1.500 HOURS   BASIN AREA =    .0750 SQ. MI.


 ADD HYD             ID=2  HYD=B-3.1 1 3
 COMPUTE NM HYD      ID=1  HYD=OS-1A DA=.0189
                     A B C D 90 0 10 0
                     TP=0.1333   MASS  AIN=-1

      K =    .157255HR    TP =    .133300HR    K/TP RATIO =  1.179710     SHAPE CONSTANT, N =  3.008112
      UNIT PEAK =    40.052    CFS   UNIT VOLUME =     .9986       B =   282.48      P60 = 1.9000
      AREA =       .018900 SQ MI    IA =     .62000 INCHES    INF =   1.58600 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

     BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

 PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA OS-1A


     RUNOFF VOLUME =       .55696 INCHES      =        .5614 ACRE-FEET
     PEAK DISCHARGE RATE =      19.72 CFS  AT   1.500 HOURS   BASIN AREA =    .0189 SQ. MI.


 COMPUTE NM HYD      ID=1  HYD=OS-1B DA=.0059
                     A B C D 90 0 10 0
```

```
                    TP=0.13330    MASS RAIN=-1

      K =   .157255HR     TP =   .133300HR     K/TP RATIO =  1.179710      SHAPE CONSTANT, N =  3.008112
      UNIT PEAK =   12.503     CFS   UNIT VOLUME =     .9978        B =   282.48       P60 = 1.9000
      AREA =       .005900 SQ MI     IA =     .62000 INCHES     INF =   1.58600 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

     BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

 PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA OS-1B


     RUNOFF VOLUME =       .55696 INCHES      =         .1753 ACRE-FEET
     PEAK DISCHARGE RATE =        6.16 CFS  AT    1.500 HOURS    BASIN AREA =    .0059 SQ. MI.



 COMPUTE NM HYD      ID=2  HYD=RW-1C DA=.0161
                     A B C D 20 0 55 25
                     TP=0.13330    MASS RAIN=-1

      K =   .072649HR     TP =   .133300HR     K/TP RATIO =   .545000      SHAPE CONSTANT, N =  7.106420
      UNIT PEAK =   15.891     CFS   UNIT VOLUME =     .9985        B =   526.28       P60 = 1.9000
      AREA =       .004025 SQ MI     IA =     .10000 INCHES     INF =     .04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000


      K =   .121331HR     TP =   .133300HR     K/TP RATIO =   .910211      SHAPE CONSTANT, N =  3.891032
      UNIT PEAK =   31.509     CFS   UNIT VOLUME =    1.001         B =   347.84       P60 = 1.9000
      AREA =       .012075 SQ MI     IA =     .43000 INCHES     INF =   1.05400 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

     BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

 PRINT HYD           ID=2  CODE=1

                                        HYDROGRAPH FROM AREA RW-1C


     RUNOFF VOLUME =      1.38361 INCHES      =        1.1880 ACRE-FEET
     PEAK DISCHARGE RATE =       33.29 CFS  AT    1.500 HOURS    BASIN AREA =    .0161 SQ. MI.



 ADD HYD             ID=2  HYD=RW1C.1 1 2
 PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA OS-1B


     RUNOFF VOLUME =       .55696 INCHES      =         .1753 ACRE-FEET
     PEAK DISCHARGE RATE =        6.16 CFS  AT    1.500 HOURS    BASIN AREA =    .0059 SQ. MI.



 *
 *
 *S 100-YEAR, 24-HOUR STORM EVENT, DEVELOPED CONDITIONS
 RAINFALL            TYPE=2  QUARTER HR RAIN=0.00  ONE HR RAIN=1.90
                     SIX HR RAIN=2.26  DAILY RAIN=2.75 DT=0.05 HR

                COMPUTED 24-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
                DT =     .050000 HOURS        END TIME =     24.000000 HOURS
                   .0000    .0029    .0058    .0089    .0120    .0153    .0187
                   .0222    .0259    .0297    .0336    .0378    .0422    .0468
                   .0516    .0567    .0622    .0680    .0742    .0809    .0882
```

.0962	.1051	.1307	.1913	.2955	.4566	.6887
1.0059	1.2562	1.3692	1.4636	1.5463	1.6202	1.6872
1.7483	1.8043	1.8559	1.9035	1.9475	1.9882	1.9976
2.0063	2.0144	2.0219	2.0291	2.0358	2.0423	2.0484
2.0543	2.0599	2.0653	2.0705	2.0755	2.0804	2.0851
2.0897	2.0941	2.0984	2.1026	2.1067	2.1107	2.1146
2.1183	2.1221	2.1257	2.1292	2.1327	2.1361	2.1395
2.1427	2.1459	2.1491	2.1522	2.1552	2.1582	2.1612
2.1641	2.1670	2.1698	2.1725	2.1753	2.1780	2.1806
2.1832	2.1858	2.1883	2.1909	2.1933	2.1958	2.1982
2.2006	2.2030	2.2053	2.2076	2.2099	2.2121	2.2144
2.2166	2.2187	2.2209	2.2230	2.2252	2.2272	2.2293
2.2314	2.2334	2.2354	2.2374	2.2394	2.2413	2.2433
2.2452	2.2471	2.2490	2.2509	2.2527	2.2546	2.2564
2.2582	2.2600	2.2621	2.2642	2.2662	2.2683	2.2703
2.2724	2.2744	2.2765	2.2785	2.2805	2.2825	2.2845
2.2865	2.2885	2.2905	2.2925	2.2944	2.2964	2.2984
2.3003	2.3023	2.3042	2.3061	2.3081	2.3100	2.3119
2.3138	2.3157	2.3176	2.3195	2.3214	2.3232	2.3251
2.3270	2.3288	2.3307	2.3325	2.3344	2.3362	2.3381
2.3399	2.3417	2.3435	2.3453	2.3471	2.3489	2.3507
2.3525	2.3543	2.3561	2.3578	2.3596	2.3614	2.3631
2.3649	2.3666	2.3684	2.3701	2.3718	2.3735	2.3753
2.3770	2.3787	2.3804	2.3821	2.3838	2.3855	2.3872
2.3889	2.3905	2.3922	2.3939	2.3955	2.3972	2.3988
2.4005	2.4021	2.4038	2.4054	2.4071	2.4087	2.4103
2.4119	2.4135	2.4152	2.4168	2.4184	2.4200	2.4216
2.4231	2.4247	2.4263	2.4279	2.4295	2.4310	2.4326
2.4342	2.4357	2.4373	2.4388	2.4404	2.4419	2.4434
2.4450	2.4465	2.4480	2.4496	2.4511	2.4526	2.4541
2.4556	2.4571	2.4586	2.4601	2.4616	2.4631	2.4646
2.4661	2.4675	2.4690	2.4705	2.4720	2.4734	2.4749
2.4763	2.4778	2.4792	2.4807	2.4821	2.4836	2.4850
2.4864	2.4879	2.4893	2.4907	2.4921	2.4936	2.4950
2.4964	2.4978	2.4992	2.5006	2.5020	2.5034	2.5048
2.5062	2.5076	2.5090	2.5103	2.5117	2.5131	2.5145
2.5158	2.5172	2.5185	2.5199	2.5213	2.5226	2.5240
2.5253	2.5267	2.5280	2.5293	2.5307	2.5320	2.5333
2.5347	2.5360	2.5373	2.5386	2.5399	2.5413	2.5426
2.5439	2.5452	2.5465	2.5478	2.5491	2.5504	2.5517
2.5530	2.5543	2.5555	2.5568	2.5581	2.5594	2.5606
2.5619	2.5632	2.5645	2.5657	2.5670	2.5682	2.5695
2.5707	2.5720	2.5732	2.5745	2.5757	2.5770	2.5782
2.5795	2.5807	2.5819	2.5831	2.5844	2.5856	2.5868
2.5880	2.5893	2.5905	2.5917	2.5929	2.5941	2.5953
2.5965	2.5977	2.5989	2.6001	2.6013	2.6025	2.6037
2.6049	2.6061	2.6073	2.6084	2.6096	2.6108	2.6120
2.6131	2.6143	2.6155	2.6166	2.6178	2.6190	2.6201
2.6213	2.6224	2.6236	2.6248	2.6259	2.6271	2.6282
2.6293	2.6305	2.6316	2.6328	2.6339	2.6350	2.6362
2.6373	2.6384	2.6395	2.6407	2.6418	2.6429	2.6440
2.6451	2.6463	2.6474	2.6485	2.6496	2.6507	2.6518
2.6529	2.6540	2.6551	2.6562	2.6573	2.6584	2.6595
2.6606	2.6617	2.6627	2.6638	2.6649	2.6660	2.6671
2.6681	2.6692	2.6703	2.6714	2.6724	2.6735	2.6746
2.6756	2.6767	2.6778	2.6788	2.6799	2.6809	2.6820
2.6830	2.6841	2.6851	2.6862	2.6872	2.6883	2.6893
2.6904	2.6914	2.6924	2.6935	2.6945	2.6956	2.6966
2.6976	2.6986	2.6997	2.7007	2.7017	2.7027	2.7038
2.7048	2.7058	2.7068	2.7078	2.7088	2.7098	2.7109
2.7119	2.7129	2.7139	2.7149	2.7159	2.7169	2.7179
2.7189	2.7199	2.7209	2.7219	2.7228	2.7238	2.7248
2.7258	2.7268	2.7278	2.7288	2.7297	2.7307	2.7317
2.7327	2.7336	2.7346	2.7356	2.7366	2.7375	2.7385
2.7395	2.7404	2.7414	2.7424	2.7433	2.7443	2.7452
2.7462	2.7471	2.7481	2.7490	2.7500		

SEDIMENT BULK CODE = 1 BULK FACTOR = 1.10

```
COMPUTE NM HYD       ID=4  HYD=RW-1 DA=.0075
                     A B C D 0 0 87 13
                     TP=0.13330   MASS RAIN=-1

     K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   3.8494    CFS   UNIT VOLUME =    .9966       B =   526.28      P60 = 1.9000
     AREA =      .000975 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .106205HR    TP =   .133300HR    K/TP RATIO =   .796738     SHAPE CONSTANT, N =  4.498737
     UNIT PEAK =   18.951    CFS   UNIT VOLUME =    1.001       B =   387.15      P60 = 1.9000
     AREA =      .006525 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD            ID=4  CODE=1

                                        HYDROGRAPH FROM AREA RW-1


    RUNOFF VOLUME =      1.34594 INCHES      =        .5384 ACRE-FEET
    PEAK DISCHARGE RATE =      16.44 CFS  AT   1.500 HOURS   BASIN AREA =   .0075 SQ. MI.


COMPUTE NM HYD       ID=2  HYD=OS-1 DA=.0467
                     A B C D 100 0 0 0
                     TP=0.22   MASS RAIN=-1

     K =   .268898HR    TP =   .220000HR    K/TP RATIO =  1.222262     SHAPE CONSTANT, N =  2.911962
     UNIT PEAK =   58.282    CFS   UNIT VOLUME =    .9995       B =   274.56      P60 = 1.9000
     AREA =      .046700 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD            ID=2  CODE=1

                                        HYDROGRAPH FROM AREA OS-1


    RUNOFF VOLUME =      .51224 INCHES      =       1.2758 ACRE-FEET
    PEAK DISCHARGE RATE =      28.90 CFS  AT   1.600 HOURS   BASIN AREA =   .0467 SQ. MI.


COMPUTE NM HYD       ID=1  HYD=RW-2 DA=.0078
                     A B C D 85 0 15 0
                     TP=0.13330   MASS RAIN=-1

     K =   .154419HR    TP =   .133300HR    K/TP RATIO =  1.158433     SHAPE CONSTANT, N =  3.059499
     UNIT PEAK =   16.772    CFS   UNIT VOLUME =    .9985       B =   286.64      P60 = 1.9000
     AREA =      .007800 SQ MI    IA =    .60500 INCHES    INF =   1.54400 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD            ID=1  CODE=1

                                        HYDROGRAPH FROM AREA RW-2


    RUNOFF VOLUME =      .58021 INCHES      =        .2414 ACRE-FEET
    PEAK DISCHARGE RATE =       8.50 CFS  AT   1.500 HOURS   BASIN AREA =   .0078 SQ. MI.
```

```
ADD HYD             ID=3  HYD=RW-2.1 1 2
COMPUTE NM HYD      ID=1  HYD=B-3 DA=.0750
                    A B C D 25 5 30 40
                    TP=0.13330   MASS RAIN=-1

     K =   .072846HR    TP =   .133300HR    K/TP RATIO =   .546479     SHAPE CONSTANT, N =  7.081791
     UNIT PEAK =   118.18    CFS   UNIT VOLUME =    .9990       B =   525.12      P60 = 1.9000
     AREA =      .030000 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .131149HR    TP =   .133300HR    K/TP RATIO =   .983865     SHAPE CONSTANT, N =  3.589055
     UNIT PEAK =   110.31    CFS   UNIT VOLUME =    1.001       B =   326.77      P60 = 1.9000
     AREA =      .045000 SQ MI    IA =    .48750 INCHES    INF =   1.21500 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=1  CODE=1

                                    HYDROGRAPH FROM AREA B-3


    RUNOFF VOLUME =     1.58343 INCHES     =       6.3337 ACRE-FEET
    PEAK DISCHARGE RATE =     160.20 CFS  AT   1.500 HOURS   BASIN AREA =   .0750 SQ. MI.


ADD HYD             ID=2  HYD=B-3.1 1 3
ADD HYD             ID=3  HYD=RW-1.1 2 4
COMPUTE NM HYD      ID=1  HYD=OS-1A DA=.0189
                    A B C D 90 0 10 0
                    TP=0.13330   MASS  AIN=-1

     K =   .157255HR    TP =   .133300HR    K/TP RATIO =  1.179710     SHAPE CONSTANT, N =  3.008112
     UNIT PEAK =   40.052    CFS   UNIT VOLUME =    .9986       B =   282.48      P60 = 1.9000
     AREA =      .018900 SQ MI    IA =    .62000 INCHES    INF =   1.58600 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=1  CODE=1

                                    HYDROGRAPH FROM AREA OS-1A


    RUNOFF VOLUME =      .55696 INCHES     =        .5614 ACRE-FEET
    PEAK DISCHARGE RATE =      19.72 CFS  AT   1.500 HOURS   BASIN AREA =   .0189 SQ. MI.


COMPUTE NM HYD      ID=1  HYD=OS-1B DA=.0059
                    A B C D 90 0 10 0
                    TP=0.13330   MASS RAIN=-1

     K =   .157255HR    TP =   .133300HR    K/TP RATIO =  1.179710     SHAPE CONSTANT, N =  3.008112
     UNIT PEAK =   12.503    CFS   UNIT VOLUME =    .9978       B =   282.48      P60 = 1.9000
     AREA =      .005900 SQ MI    IA =    .62000 INCHES    INF =   1.58600 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=1  CODE=1

                                    HYDROGRAPH FROM AREA OS-1B
```

```
    RUNOFF VOLUME =       .55696 INCHES      =         .1753 ACRE-FEET
    PEAK DISCHARGE RATE =       6.16 CFS  AT    1.500 HOURS    BASIN AREA =    .0059 SQ. MI.


COMPUTE NM HYD       ID=2  HYD=RW-1C DA=.0161
                     A B C D 20 0 50 30
                     TP=0.13330   MASS RAIN=-1

     K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   19.069    CFS   UNIT VOLUME =     .9986       B =    526.28      P60 = 1.9000
     AREA =       .004830 SQ MI    IA =     .10000 INCHES    INF =     .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000


     K =    .122412HR    TP =    .133300HR    K/TP RATIO =    .918316     SHAPE CONSTANT, N =  3.854800
     UNIT PEAK =   29.200    CFS   UNIT VOLUME =     1.001       B =    345.37      P60 = 1.9000
     AREA =       .011270 SQ MI    IA =     .43571 INCHES    INF =    1.07000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD            ID=2  CODE=1

                                        HYDROGRAPH FROM AREA RW-1C


    RUNOFF VOLUME =      1.46663 INCHES      =       1.2593 ACRE-FEET
    PEAK DISCHARGE RATE =      34.13 CFS  AT    1.500 HOURS    BASIN AREA =    .0161 SQ. MI.


ADD HYD              ID=2  HYD=RW1C.1 1 2
PRINT HYD            ID=1  CODE=1

                                        HYDROGRAPH FROM AREA OS-1B


    RUNOFF VOLUME =       .55696 INCHES      =         .1753 ACRE-FEET
    PEAK DISCHARGE RATE =       6.16 CFS  AT    1.500 HOURS    BASIN AREA =    .0059 SQ. MI.


*
*
* following is current development condition of basin RW1-3 if the CNM driveway
* entire basin not needed divied for flow to pond and flow south
*COMPUTE NM HYD       ID=5  HYD=RW-1.3 DA=.0023
*                     A B C D 79 0 0 21
*                     TP=0.13330   MASS RAIN=-1
*PRINT HYD            ID=5  CODE=1
* divide basin into area draining north to pond and south to storm drain
COMPUTE NM HYD       ID=5  HYD=RW1.3POND DA=.00154
                     A B C D 83 0 0 17
                     TP=0.13330   MASS RAIN=-1

     K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   1.0336    CFS   UNIT VOLUME =     .9891       B =    526.28      P60 = 1.9000
     AREA =       .000262 SQ MI    IA =     .10000 INCHES    INF =     .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000


     K =    .162928HR    TP =    .133300HR    K/TP RATIO =   1.222262     SHAPE CONSTANT, N =  2.911962
     UNIT PEAK =   2.6328    CFS   UNIT VOLUME =     .9929       B =    274.56      P60 = 1.9000
     AREA =       .001278 SQ MI    IA =     .65000 INCHES    INF =    1.67000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.
```

```
PRINT HYD           ID=5  CODE=1

                                    HYDROGRAPH FROM AREA RW1.3POND


    RUNOFF VOLUME =      .89556 INCHES     =        .0736 ACRE-FEET
    PEAK DISCHARGE RATE =       2.04 CFS  AT   1.500 HOURS   BASIN AREA =   .0015 SQ. MI.



*
COMPUTE NM HYD      ID=7  HYD=RW1.3SOUTH DA=.00076
                    A B C D 71 0 0 29
                    TP=0.13330   MASS RAIN=-1

     K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   .87015    CFS   UNIT VOLUME =    .9865       B =   526.28      P60 = 1.9000
     AREA =      .000220 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .162928HR    TP =   .133300HR    K/TP RATIO =  1.222262     SHAPE CONSTANT, N =  2.911962
     UNIT PEAK =   1.1114    CFS   UNIT VOLUME =    .9860       B =   274.56      P60 = 1.9000
     AREA =      .000540 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=5  CODE=1

                                    HYDROGRAPH FROM AREA RW1.3POND


    RUNOFF VOLUME =      .89556 INCHES     =        .0736 ACRE-FEET
    PEAK DISCHARGE RATE =       2.04 CFS  AT   1.500 HOURS   BASIN AREA =   .0015 SQ. MI.



*
*following is the part of RW-1C that is west of Universe under current developme
COMPUTE NM HYD      ID=6  HYD=RW-1D  DA=0.00215
                    A B C D  49 0 51 0
                    TP=0.13330  MASS RAIN=-1

     K =   .133999HR    TP =   .133300HR    K/TP RATIO =  1.005245     SHAPE CONSTANT, N =  3.511709
     UNIT PEAK =   5.1804    CFS   UNIT VOLUME =    .9985       B =   321.18      P60 = 1.9000
     AREA =      .002150 SQ MI    IA =    .49700 INCHES    INF =   1.24160 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=6  CODE=1

                                    HYDROGRAPH FROM AREA RW-1D


    RUNOFF VOLUME =      .77480 INCHES     =        .0888 ACRE-FEET
    PEAK DISCHARGE RATE =       3.16 CFS  AT   1.500 HOURS   BASIN AREA =   .0022 SQ. MI.



*
ADD HYD             ID=5  HYD=PONDIN  5   6
PRINT HYD           ID=5 CODE=1

                                    HYDROGRAPH FROM AREA PONDIN
```

RUNOFF VOLUME = .82511 INCHES = .1624 ACRE-FEET
PEAK DISCHARGE RATE = 5.20 CFS AT 1.500 HOURS BASIN AREA = .0037 SQ. MI.

* FOLLOWING ROUTING IS FOR INFORMATION ONLY - THE POND IS DESIGNED FOR 10 YEAR S
* with CNM driveway
* 24 inch Route through pond = outlet is 24" riser pipe w/.5in dia holes
ROUTE RESERVOIR ID=8 HYD=PONDOUT INFLOW ID=5 CODE=5

OUTFLOW	STORAGE(AF)	ELEV (FT)
0	0	5410
0.06	0.01300	5411
2.0	0.03344	5412
3.5	0.06302	5413
14.7	0.10588	5414

* * * * * * * * * * * * * * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	5410.00	.000	.00
.25	.00	5410.00	.000	.00
.50	.00	5410.00	.000	.00
.75	.00	5410.00	.000	.00
1.00	.00	5410.00	.000	.00
1.25	.10	5410.03	.000	.00
1.50	5.20	5412.02	.034	2.04
1.75	1.77	5412.54	.050	2.82
2.00	.60	5411.65	.026	1.33
2.25	.27	5411.23	.018	.50
2.50	.14	5411.08	.015	.22
2.75	.08	5411.03	.014	.12
3.00	.05	5411.00	.013	.07
3.25	.03	5410.97	.013	.06
3.50	.01	5410.91	.012	.05
3.75	.01	5410.84	.011	.05
4.00	.01	5410.77	.010	.05
4.25	.01	5410.71	.009	.04
4.50	.01	5410.66	.009	.04
4.75	.01	5410.60	.008	.04
5.00	.01	5410.56	.007	.03
5.25	.01	5410.52	.007	.03
5.50	.01	5410.48	.006	.03
5.75	.01	5410.44	.006	.03
6.00	.01	5410.41	.005	.02
6.25	.01	5410.39	.005	.02
6.50	.01	5410.36	.005	.02
6.75	.01	5410.34	.004	.02
7.00	.01	5410.32	.004	.02
7.25	.01	5410.30	.004	.02
7.50	.01	5410.29	.004	.02
7.75	.01	5410.27	.004	.02
8.00	.01	5410.26	.003	.02
8.25	.01	5410.24	.003	.01
8.50	.01	5410.23	.003	.01
8.75	.01	5410.22	.003	.01
9.00	.01	5410.21	.003	.01
9.25	.01	5410.20	.003	.01
9.50	.01	5410.19	.002	.01
9.75	.01	5410.18	.002	.01
10.00	.01	5410.18	.002	.01
10.25	.01	5410.17	.002	.01
10.50	.01	5410.16	.002	.01
10.75	.01	5410.16	.002	.01
11.00	.01	5410.15	.002	.01
11.25	.01	5410.15	.002	.01

```
    11.50        .01   5410.14       .002        .01
    11.75        .01   5410.14       .002        .01
    12.00        .01   5410.13       .002        .01
    12.25        .01   5410.13       .002        .01
    12.50        .01   5410.13       .002        .01
    12.75        .01   5410.12       .002        .01
    13.00        .01   5410.12       .002        .01
    13.25        .01   5410.12       .002        .01
    13.50        .01   5410.11       .001        .01
    13.75        .01   5410.11       .001        .01

    TIME       INFLOW    ELEV       VOLUME    OUTFLOW
    (HRS)      (CFS)     (FEET)     (AC-FT)   (CFS)

    14.00        .01   5410.11       .001        .01
    14.25        .00   5410.11       .001        .01
    14.50        .00   5410.10       .001        .01
    14.75        .00   5410.10       .001        .01
    15.00        .00   5410.10       .001        .01
    15.25        .00   5410.10       .001        .01
    15.50        .00   5410.10       .001        .01
    15.75        .00   5410.10       .001        .01
    16.00        .00   5410.09       .001        .01
    16.25        .00   5410.09       .001        .01
    16.50        .00   5410.09       .001        .01
    16.75        .00   5410.09       .001        .01
    17.00        .00   5410.09       .001        .01
    17.25        .00   5410.09       .001        .01
    17.50        .00   5410.09       .001        .01
    17.75        .00   5410.08       .001        .01
    18.00        .00   5410.08       .001        .00
 PEAK DISCHARGE =         3.061 CFS - PEAK OCCURS AT HOUR    1.65
 MAXIMUM WATER SURFACE ELEVATION =     5412.707
 MAXIMUM STORAGE =          .0544 AC-FT      INCREMENTAL TIME=     .050000HRS

PRINT HYD            ID=8  CODE=1

                                        HYDROGRAPH FROM AREA PONDOUT


    RUNOFF VOLUME =       .82465 INCHES      =        .1623 ACRE-FEET
    PEAK DISCHARGE RATE =        3.06 CFS  AT    1.650 HOURS   BASIN AREA =    .0037 SQ. MI.



*
*Run pond with only weir flow - say low flow holes are plugged
ROUTE RESERVOIR      ID=8  HYD=PONDOUT  INFLOW ID=5  CODE=5
                      OUTFLOW   STORAGE(AF)  ELEV (FT)
                          0       0          5410
                          0.06    0.01300    5411
                          0.07    0.03344    5412
                          0.08    0.06302    5413
                          10.4    0.10588    5414

  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *

    TIME       INFLOW    ELEV       VOLUME    OUTFLOW
    (HRS)      (CFS)     (FEET)     (AC-FT)   (CFS)

      .00        .00   5410.00       .000        .00
      .25        .00   5410.00       .000        .00
      .50        .00   5410.00       .000        .00
      .75        .00   5410.00       .000        .00
     1.00        .00   5410.00       .000        .00
     1.25        .10   5410.03       .000        .00
     1.50       5.20   5412.26       .041        .07
     1.75       1.77   5413.22       .072       2.34
```

2.00	.60	5413.06	.066	.72
2.25	.27	5413.02	.064	.32
2.50	.14	5413.01	.063	.16
2.75	.08	5413.00	.063	.09
3.00	.05	5412.99	.063	.08
3.25	.03	5412.96	.062	.08
3.50	.01	5412.92	.061	.08
3.75	.01	5412.87	.059	.08
4.00	.01	5412.82	.058	.08
4.25	.01	5412.77	.056	.08
4.50	.01	5412.72	.055	.08
4.75	.01	5412.67	.053	.08
5.00	.01	5412.62	.052	.08
5.25	.01	5412.57	.050	.08
5.50	.01	5412.52	.049	.08
5.75	.01	5412.47	.047	.07
6.00	.01	5412.42	.046	.07
6.25	.01	5412.38	.045	.07
6.50	.01	5412.33	.043	.07
6.75	.01	5412.29	.042	.07
7.00	.01	5412.24	.041	.07
7.25	.01	5412.19	.039	.07
7.50	.01	5412.15	.038	.07
7.75	.01	5412.10	.037	.07
8.00	.01	5412.06	.035	.07
8.25	.01	5412.02	.034	.07
8.50	.01	5411.96	.033	.07
8.75	.01	5411.90	.031	.07
9.00	.01	5411.83	.030	.07
9.25	.01	5411.77	.029	.07
9.50	.01	5411.71	.027	.07
9.75	.01	5411.65	.026	.07
10.00	.01	5411.59	.025	.07
10.25	.01	5411.53	.024	.07
10.50	.01	5411.47	.023	.06
10.75	.01	5411.41	.021	.06
11.00	.01	5411.35	.020	.06
11.25	.01	5411.29	.019	.06
11.50	.01	5411.23	.018	.06
11.75	.01	5411.18	.017	.06
12.00	.01	5411.12	.015	.06
12.25	.01	5411.06	.014	.06
12.50	.01	5411.01	.013	.06
12.75	.01	5410.93	.012	.06
13.00	.01	5410.85	.011	.05
13.25	.01	5410.78	.010	.05
13.50	.01	5410.72	.009	.04
13.75	.01	5410.66	.009	.04

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
14.00	.01	5410.61	.008	.04
14.25	.00	5410.56	.007	.03
14.50	.00	5410.52	.007	.03
14.75	.00	5410.48	.006	.03
15.00	.00	5410.44	.006	.03
15.25	.00	5410.41	.005	.02
15.50	.00	5410.38	.005	.02
15.75	.00	5410.35	.005	.02
16.00	.00	5410.33	.004	.02
16.25	.00	5410.30	.004	.02
16.50	.00	5410.28	.004	.02
16.75	.00	5410.26	.003	.02
17.00	.00	5410.25	.003	.01
17.25	.00	5410.23	.003	.01
17.50	.00	5410.22	.003	.01
17.75	.00	5410.20	.003	.01

```
    18.00        .00   5410.19       .002       .01
    18.25        .00   5410.18       .002       .01
    18.50        .00   5410.17       .002       .01
    18.75        .00   5410.16       .002       .01
    19.00        .00   5410.15       .002       .01
    19.25        .00   5410.15       .002       .01
    19.50        .00   5410.14       .002       .01
    19.75        .00   5410.13       .002       .01
    20.00        .00   5410.13       .002       .01
    20.25        .00   5410.12       .002       .01
    20.50        .00   5410.12       .002       .01
    20.75        .00   5410.11       .001       .01
    21.00        .00   5410.11       .001       .01
    21.25        .00   5410.10       .001       .01
    21.50        .00   5410.10       .001       .01
    21.75        .00   5410.10       .001       .01
    22.00        .00   5410.09       .001       .01
    22.25        .00   5410.09       .001       .01
    22.50        .00   5410.09       .001       .01
    22.75        .00   5410.09       .001       .01
    23.00        .00   5410.08       .001       .00
 PEAK DISCHARGE =         3.265 CFS - PEAK OCCURS AT HOUR    1.65
 MAXIMUM WATER SURFACE ELEVATION =     5413.309
 MAXIMUM STORAGE =          .0762 AC-FT      INCREMENTAL TIME=     .050000HRS

PRINT HYD           ID=8  CODE=1

                                      HYDROGRAPH FROM AREA PONDOUT


    RUNOFF VOLUME =      .82457 INCHES     =        .1623 ACRE-FEET
    PEAK DISCHARGE RATE =       3.27 CFS  AT   1.650 HOURS   BASIN AREA =    .0037 SQ. MI.



*
*S 100-YEAR, 24-HOUR STORM EVENT, FUTURE CONDITIONS
RAINFALL            TYPE=2  QUARTER HR RAIN=0.00  ONE HR RAIN=1.90
                    SIX HR RAIN=2.26  DAILY RAIN=2.75 DT=0.05 HR

               COMPUTED 24-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
               DT =    .050000 HOURS       END TIME =    24.000000 HOURS
                  .0000   .0029   .0058   .0089   .0120   .0153   .0187
                  .0222   .0259   .0297   .0336   .0378   .0422   .0468
                  .0516   .0567   .0622   .0680   .0742   .0809   .0882
                  .0962   .1051   .1307   .1913   .2955   .4566   .6887
                 1.0059  1.2562  1.3692  1.4636  1.5463  1.6202  1.6872
                 1.7483  1.8043  1.8559  1.9035  1.9475  1.9882  1.9976
                 2.0063  2.0144  2.0219  2.0291  2.0358  2.0423  2.0484
                 2.0543  2.0599  2.0653  2.0705  2.0755  2.0804  2.0851
                 2.0897  2.0941  2.0984  2.1026  2.1067  2.1107  2.1146
                 2.1183  2.1221  2.1257  2.1292  2.1327  2.1361  2.1395
                 2.1427  2.1459  2.1491  2.1522  2.1552  2.1582  2.1612
                 2.1641  2.1670  2.1698  2.1725  2.1753  2.1780  2.1806
                 2.1832  2.1858  2.1883  2.1909  2.1933  2.1958  2.1982
                 2.2006  2.2030  2.2053  2.2076  2.2099  2.2121  2.2144
                 2.2166  2.2187  2.2209  2.2230  2.2252  2.2272  2.2293
                 2.2314  2.2334  2.2354  2.2374  2.2394  2.2413  2.2433
                 2.2452  2.2471  2.2490  2.2509  2.2527  2.2546  2.2564
                 2.2582  2.2600  2.2621  2.2642  2.2662  2.2683  2.2703
                 2.2724  2.2744  2.2765  2.2785  2.2805  2.2825  2.2845
                 2.2865  2.2885  2.2905  2.2925  2.2944  2.2964  2.2984
                 2.3003  2.3023  2.3042  2.3061  2.3081  2.3100  2.3119
                 2.3138  2.3157  2.3176  2.3195  2.3214  2.3232  2.3251
                 2.3270  2.3288  2.3307  2.3325  2.3344  2.3362  2.3381
                 2.3399  2.3417  2.3435  2.3453  2.3471  2.3489  2.3507
                 2.3525  2.3543  2.3561  2.3578  2.3596  2.3614  2.3631
                 2.3649  2.3666  2.3684  2.3701  2.3718  2.3735  2.3753
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                2.3770  2.3787  2.3804  2.3821  2.3838  2.3855  2.3872
                2.3889  2.3905  2.3922  2.3939  2.3955  2.3972  2.3988
                2.4005  2.4021  2.4038  2.4054  2.4071  2.4087  2.4103
                2.4119  2.4135  2.4152  2.4168  2.4184  2.4200  2.4216
                2.4231  2.4247  2.4263  2.4279  2.4295  2.4310  2.4326
                2.4342  2.4357  2.4373  2.4388  2.4404  2.4419  2.4434
                2.4450  2.4465  2.4480  2.4496  2.4511  2.4526  2.4541
                2.4556  2.4571  2.4586  2.4601  2.4616  2.4631  2.4646
                2.4661  2.4675  2.4690  2.4705  2.4720  2.4734  2.4749
                2.4763  2.4778  2.4792  2.4807  2.4821  2.4836  2.4850
                2.4864  2.4879  2.4893  2.4907  2.4921  2.4936  2.4950
                2.4964  2.4978  2.4992  2.5006  2.5020  2.5034  2.5048
                2.5062  2.5076  2.5090  2.5103  2.5117  2.5131  2.5145
                2.5158  2.5172  2.5185  2.5199  2.5213  2.5226  2.5240
                2.5253  2.5267  2.5280  2.5293  2.5307  2.5320  2.5333
                2.5347  2.5360  2.5373  2.5386  2.5399  2.5413  2.5426
                2.5439  2.5452  2.5465  2.5478  2.5491  2.5504  2.5517
                2.5530  2.5543  2.5555  2.5568  2.5581  2.5594  2.5606
                2.5619  2.5632  2.5645  2.5657  2.5670  2.5682  2.5695
                2.5707  2.5720  2.5732  2.5745  2.5757  2.5770  2.5782
                2.5795  2.5807  2.5819  2.5831  2.5844  2.5856  2.5868
                2.5880  2.5893  2.5905  2.5917  2.5929  2.5941  2.5953
                2.5965  2.5977  2.5989  2.6001  2.6013  2.6025  2.6037
                2.6049  2.6061  2.6073  2.6084  2.6096  2.6108  2.6120
                2.6131  2.6143  2.6155  2.6166  2.6178  2.6190  2.6201
                2.6213  2.6224  2.6236  2.6248  2.6259  2.6271  2.6282
                2.6293  2.6305  2.6316  2.6328  2.6339  2.6350  2.6362
                2.6373  2.6384  2.6395  2.6407  2.6418  2.6429  2.6440
                2.6451  2.6463  2.6474  2.6485  2.6496  2.6507  2.6518
                2.6529  2.6540  2.6551  2.6562  2.6573  2.6584  2.6595
                2.6606  2.6617  2.6627  2.6638  2.6649  2.6660  2.6671
                2.6681  2.6692  2.6703  2.6714  2.6724  2.6735  2.6746
                2.6756  2.6767  2.6778  2.6788  2.6799  2.6809  2.6820
                2.6830  2.6841  2.6851  2.6862  2.6872  2.6883  2.6893
                2.6904  2.6914  2.6924  2.6935  2.6945  2.6956  2.6966
                2.6976  2.6986  2.6997  2.7007  2.7017  2.7027  2.7038
                2.7048  2.7058  2.7068  2.7078  2.7088  2.7098  2.7109
                2.7119  2.7129  2.7139  2.7149  2.7159  2.7169  2.7179
                2.7189  2.7199  2.7209  2.7219  2.7228  2.7238  2.7248
                2.7258  2.7268  2.7278  2.7288  2.7297  2.7307  2.7317
                2.7327  2.7336  2.7346  2.7356  2.7366  2.7375  2.7385
                2.7395  2.7404  2.7414  2.7424  2.7433  2.7443  2.7452
                2.7462  2.7471  2.7481  2.7490  2.7500

SEDIMENT BULK       CODE = 1 BULK FACTOR = 1.10
COMPUTE NM HYD      ID=4  HYD=RW-1 DA=.0075
                    A B C D 0 0 74 26
                    TP=0.13330   MASS RAIN=-1

     K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   7.6987    CFS   UNIT VOLUME =    .9978       B =   526.28      P60 = 1.9000
     AREA =      .001950 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .106205HR    TP =   .133300HR    K/TP RATIO =   .796738     SHAPE CONSTANT, N =  4.498737
     UNIT PEAK =   16.119    CFS   UNIT VOLUME =    1.001       B =   387.15      P60 = 1.9000
     AREA =      .005550 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=4  CODE=1

                                    HYDROGRAPH FROM AREA RW-1


    RUNOFF VOLUME =     1.55829 INCHES      =        .6233 ACRE-FEET
```

```
    PEAK DISCHARGE RATE =      17.43 CFS  AT   1.500 HOURS   BASIN AREA =   .0075 SQ. MI.


COMPUTE NM HYD      ID=2  HYD=OS-1 DA=.0467
                    A B C D 100 0 0 0
                    TP=0.22   MASS RAIN=-1

     K =   .268898HR    TP =   .220000HR    K/TP RATIO =  1.222262     SHAPE CONSTANT, N =  2.911962
     UNIT PEAK =   58.282    CFS   UNIT VOLUME =    .9995       B =   274.56      P60 = 1.9000
     AREA =      .046700 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=2  CODE=1

                                    HYDROGRAPH FROM AREA OS-1


    RUNOFF VOLUME =      .51224 INCHES     =       1.2758 ACRE-FEET
    PEAK DISCHARGE RATE =      28.90 CFS  AT   1.600 HOURS   BASIN AREA =   .0467 SQ. MI.


COMPUTE NM HYD      ID=1  HYD=RW-2 DA=.0078
                    A B C D 0 0 40 60
                    TP=0.13330   MASS RAIN=-1

     K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   18.477    CFS   UNIT VOLUME =    .9985       B =   526.28      P60 = 1.9000
     AREA =      .004680 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .106205HR    TP =   .133300HR    K/TP RATIO =   .796738     SHAPE CONSTANT, N =  4.498737
     UNIT PEAK =   9.0615    CFS   UNIT VOLUME =    1.000       B =   387.15      P60 = 1.9000
     AREA =      .003120 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=1  CODE=1

                                    HYDROGRAPH FROM AREA RW-2


    RUNOFF VOLUME =     2.11366 INCHES     =        .8793 ACRE-FEET
    PEAK DISCHARGE RATE =      20.83 CFS  AT   1.500 HOURS   BASIN AREA =   .0078 SQ. MI.


ADD HYD             ID=3  HYD=RW-2.1 1 2
COMPUTE NM HYD      ID=1  HYD=B-3 DA=.05590
                    A B C D 0 10 20 70
                    TP=0.13330   MASS RAIN=-1

     K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   154.49    CFS   UNIT VOLUME =    .9990       B =   526.28      P60 = 1.9000
     AREA =      .039130 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .114390HR    TP =   .133300HR    K/TP RATIO =   .858142     SHAPE CONSTANT, N =  4.144590
     UNIT PEAK =   45.881    CFS   UNIT VOLUME =    1.001       B =   364.70      P60 = 1.9000
     AREA =      .016770 SQ MI    IA =    .40000 INCHES    INF =    .97000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000
```

```
    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

 PRINT HYD           ID=1  CODE=1

                                   HYDROGRAPH FROM AREA B-3


     RUNOFF VOLUME =     2.23570 INCHES     =       6.6653 ACRE-FEET
     PEAK DISCHARGE RATE =     151.57 CFS  AT   1.500 HOURS   BASIN AREA =   .0559 SQ. MI.


 ADD HYD             ID=2  HYD=RW-1.1 1 4
 COMPUTE NM HYD      ID=1  HYD=OS-1A DA=.0189
                     A B C D 75 0 20 5
                     TP=0.13330   MASS  AIN=-1

      K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
      UNIT PEAK =   3.7309    CFS   UNIT VOLUME =    .9966       B =   526.28      P60 = 1.9000
      AREA =      .000945 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


      K =   .150986HR    TP =   .133300HR    K/TP RATIO = 1.132678     SHAPE CONSTANT, N =  3.124937
      UNIT PEAK =   39.312    CFS   UNIT VOLUME =    .9993       B =   291.85      P60 = 1.9000
      AREA =      .017955 SQ MI    IA =    .58684 INCHES    INF =   1.49316 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

     BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

 PRINT HYD           ID=1  CODE=1

                                   HYDROGRAPH FROM AREA OS-1A


     RUNOFF VOLUME =      .71666 INCHES     =        .7224 ACRE-FEET
     PEAK DISCHARGE RATE =      23.49 CFS  AT   1.500 HOURS   BASIN AREA =   .0189 SQ. MI.


 COMPUTE NM HYD      ID=1  HYD=OS-1B DA=.0059
                     A B C D 75 0 20 5
                     TP=0.13330   MASS RAIN=-1

      K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
      UNIT PEAK =   1.1647    CFS   UNIT VOLUME =    .9891       B =   526.28      P60 = 1.9000
      AREA =      .000295 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


      K =   .150986HR    TP =   .133300HR    K/TP RATIO = 1.132678     SHAPE CONSTANT, N =  3.124937
      UNIT PEAK =   12.272    CFS   UNIT VOLUME =    .9985       B =   291.85      P60 = 1.9000
      AREA =      .005605 SQ MI    IA =    .58684 INCHES    INF =   1.49316 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

     BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

 PRINT HYD           ID=1  CODE=1

                                   HYDROGRAPH FROM AREA OS-1B


     RUNOFF VOLUME =      .71666 INCHES     =        .2255 ACRE-FEET
     PEAK DISCHARGE RATE =       7.35 CFS  AT   1.500 HOURS   BASIN AREA =   .0059 SQ. MI.


 COMPUTE NM HYD      ID=2  HYD=RW-1C DA=.0161
```

```
                A B C D 0 0 40 60
                TP=0.13330   MASS RAIN=-1

     K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   38.138    CFS   UNIT VOLUME =    .9989       B =   526.28      P60 = 1.9000
     AREA =      .009660 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .106205HR    TP =   .133300HR    K/TP RATIO =   .796738     SHAPE CONSTANT, N =  4.498737
     UNIT PEAK =   18.704    CFS   UNIT VOLUME =    1.001       B =   387.15      P60 = 1.9000
     AREA =      .006440 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=2  CODE=1

                                    HYDROGRAPH FROM AREA RW-1C


    RUNOFF VOLUME =     2.11366 INCHES     =       1.8149 ACRE-FEET
    PEAK DISCHARGE RATE =      42.98 CFS  AT   1.500 HOURS   BASIN AREA =   .0161 SQ. MI.


ADD HYD             ID=2  HYD=RW1C.1 1 2
PRINT HYD           ID=1  CODE=1

                                    HYDROGRAPH FROM AREA OS-1B


    RUNOFF VOLUME =      .71666 INCHES     =        .2255 ACRE-FEET
    PEAK DISCHARGE RATE =       7.35 CFS  AT   1.500 HOURS   BASIN AREA =   .0059 SQ. MI.


COMPUTE NM HYD      ID=4  HYD=RW-1.1 DA=.0007
                    A B C D 0 0 33 67
                    TP=0.13330   MASS RAIN=-1

     K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   1.8516    CFS   UNIT VOLUME =    .9928       B =   526.28      P60 = 1.9000
     AREA =      .000469 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .106205HR    TP =   .133300HR    K/TP RATIO =   .796738     SHAPE CONSTANT, N =  4.498737
     UNIT PEAK =   .67090    CFS   UNIT VOLUME =    .9848       B =   387.15      P60 = 1.9000
     AREA =      .000231 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=4  CODE=1

                                    HYDROGRAPH FROM AREA RW-1.1


    RUNOFF VOLUME =     2.22800 INCHES     =        .0832 ACRE-FEET
    PEAK DISCHARGE RATE =       1.94 CFS  AT   1.500 HOURS   BASIN AREA =   .0007 SQ. MI.


COMPUTE NM HYD      ID=4  HYD=RW-1.3 DA=.0023
                    A B C D 0 0 40 60
                    TP=0.13330   MASS RAIN=-1
```

```
     K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   5.4483    CFS   UNIT VOLUME =    .9971       B =   526.28      P60 = 1.9000
     AREA =      .001380 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .106205HR    TP =   .133300HR    K/TP RATIO =   .796738     SHAPE CONSTANT, N =  4.498737
     UNIT PEAK =   2.6720    CFS   UNIT VOLUME =    .9969       B =   387.15      P60 = 1.9000
     AREA =      .000920 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=4  CODE=1

                                    HYDROGRAPH FROM AREA RW-1.3


    RUNOFF VOLUME =     2.11366 INCHES     =        .2593 ACRE-FEET
    PEAK DISCHARGE RATE =       6.16 CFS  AT   1.500 HOURS   BASIN AREA =   .0023 SQ. MI.



COMPUTE NM HYD      ID=5  HYD=RW-1.4A DA=.0025
                    A B C D 0 0 100 0
                    TP=0.13330   MASS RAIN=-1

     K =   .106205HR    TP =   .133300HR    K/TP RATIO =   .796738     SHAPE CONSTANT, N =  4.498737
     UNIT PEAK =   7.2608    CFS   UNIT VOLUME =   1.000       B =   387.15      P60 = 1.9000
     AREA =      .002500 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=5  CODE=1

                                    HYDROGRAPH FROM AREA RW-1.4A


    RUNOFF VOLUME =     1.13359 INCHES     =        .1511 ACRE-FEET
    PEAK DISCHARGE RATE =       5.15 CFS  AT   1.500 HOURS   BASIN AREA =   .0025 SQ. MI.



*
*following is part of Basin RW-1C west of McMahon - future (ultimate) condition
*it is also still included in Basin RW-1C as per planning documents in which
*this flow will remain in McMahon flowing west, however to allow
* future flexibility it is also being added to Universe pipe
COMPUTE NM HYD      ID=7  HYD=RW-1D  DA=0.00215
                    A B C D 0 0 40 60
                    TP=0.13330   MASS RAIN=-1

     K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   5.0930    CFS   UNIT VOLUME =    .9971       B =   526.28      P60 = 1.9000
     AREA =      .001290 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .106205HR    TP =   .133300HR    K/TP RATIO =   .796738     SHAPE CONSTANT, N =  4.498737
     UNIT PEAK =   2.4977    CFS   UNIT VOLUME =    .9969       B =   387.15      P60 = 1.9000
     AREA =      .000860 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=7  CODE=1
```

HYDROGRAPH FROM AREA RW-1D

RUNOFF VOLUME = 2.11366 INCHES = .2424 ACRE-FEET
PEAK DISCHARGE RATE = 5.75 CFS AT 1.500 HOURS BASIN AREA = .0022 SQ. MI.

```
*
ADD HYD             ID=8 HYD=RW-1D.1  7  4
PRINT HYD           ID=8  CODE=1
```

HYDROGRAPH FROM AREA RW-1D.1

RUNOFF VOLUME = 2.11353 INCHES = .5016 ACRE-FEET
PEAK DISCHARGE RATE = 11.91 CFS AT 1.500 HOURS BASIN AREA = .0044 SQ. MI.

```
**********************************************************************
*S 10-YEAR, 24-HOUR STORM EVENT, EXISTING CONDITIONS
RAINFALL            TYPE=2  QUARTER HR RAIN=0.00  ONE HR RAIN=1.27
                    SIX HR RAIN=1.50  DAILY RAIN=1.83 DT=0.05 HR
```

COMPUTED 24-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
DT = .050000 HOURS END TIME = 24.000000 HOURS

.0000	.0018	.0036	.0054	.0074	.0094	.0114
.0136	.0158	.0182	.0206	.0232	.0258	.0286
.0316	.0348	.0381	.0417	.0455	.0496	.0541
.0594	.0654	.0825	.1230	.1926	.3004	.4554
.6675	.8348	.9103	.9734	1.0287	1.0781	1.1229
1.1637	1.2012	1.2357	1.2675	1.2969	1.3241	1.3303
1.3360	1.3413	1.3462	1.3509	1.3553	1.3595	1.3635
1.3673	1.3710	1.3745	1.3779	1.3812	1.3843	1.3874
1.3904	1.3932	1.3960	1.3987	1.4014	1.4040	1.4065
1.4089	1.4113	1.4137	1.4160	1.4182	1.4204	1.4226
1.4247	1.4268	1.4288	1.4308	1.4328	1.4347	1.4366
1.4385	1.4403	1.4421	1.4439	1.4457	1.4474	1.4491
1.4508	1.4524	1.4541	1.4557	1.4573	1.4589	1.4604
1.4619	1.4635	1.4650	1.4664	1.4679	1.4693	1.4708
1.4722	1.4736	1.4750	1.4763	1.4777	1.4790	1.4804
1.4817	1.4830	1.4843	1.4856	1.4868	1.4881	1.4893
1.4905	1.4918	1.4930	1.4942	1.4954	1.4965	1.4977
1.4989	1.5000	1.5014	1.5028	1.5042	1.5056	1.5070
1.5083	1.5097	1.5111	1.5124	1.5138	1.5152	1.5165
1.5178	1.5192	1.5205	1.5219	1.5232	1.5245	1.5258
1.5271	1.5284	1.5297	1.5310	1.5323	1.5336	1.5349
1.5362	1.5375	1.5388	1.5400	1.5413	1.5426	1.5438
1.5451	1.5463	1.5476	1.5488	1.5501	1.5513	1.5525
1.5538	1.5550	1.5562	1.5574	1.5586	1.5598	1.5610
1.5623	1.5635	1.5646	1.5658	1.5670	1.5682	1.5694
1.5706	1.5717	1.5729	1.5741	1.5753	1.5764	1.5776
1.5787	1.5799	1.5810	1.5822	1.5833	1.5845	1.5856
1.5867	1.5879	1.5890	1.5901	1.5912	1.5923	1.5935
1.5946	1.5957	1.5968	1.5979	1.5990	1.6001	1.6012
1.6023	1.6033	1.6044	1.6055	1.6066	1.6077	1.6087
1.6098	1.6109	1.6119	1.6130	1.6141	1.6151	1.6162
1.6172	1.6183	1.6193	1.6204	1.6214	1.6224	1.6235
1.6245	1.6255	1.6266	1.6276	1.6286	1.6296	1.6307
1.6317	1.6327	1.6337	1.6347	1.6357	1.6367	1.6377
1.6387	1.6397	1.6407	1.6417	1.6427	1.6437	1.6446
1.6456	1.6466	1.6476	1.6486	1.6495	1.6505	1.6515
1.6524	1.6534	1.6544	1.6553	1.6563	1.6572	1.6582
1.6591	1.6601	1.6610	1.6620	1.6629	1.6639	1.6648
1.6657	1.6667	1.6676	1.6685	1.6694	1.6704	1.6713
1.6722	1.6731	1.6741	1.6750	1.6759	1.6768	1.6777
1.6786	1.6795	1.6804	1.6813	1.6822	1.6831	1.6840

```
1.6849  1.6858  1.6867  1.6876  1.6885  1.6894  1.6902
1.6911  1.6920  1.6929  1.6937  1.6946  1.6955  1.6964
1.6972  1.6981  1.6990  1.6998  1.7007  1.7016  1.7024
1.7033  1.7041  1.7050  1.7058  1.7067  1.7075  1.7084
1.7092  1.7101  1.7109  1.7117  1.7126  1.7134  1.7142
1.7151  1.7159  1.7167  1.7176  1.7184  1.7192  1.7200
1.7209  1.7217  1.7225  1.7233  1.7241  1.7250  1.7258
1.7266  1.7274  1.7282  1.7290  1.7298  1.7306  1.7314
1.7322  1.7330  1.7338  1.7346  1.7354  1.7362  1.7370
1.7378  1.7386  1.7393  1.7401  1.7409  1.7417  1.7425
1.7433  1.7440  1.7448  1.7456  1.7464  1.7471  1.7479
1.7487  1.7495  1.7502  1.7510  1.7518  1.7525  1.7533
1.7540  1.7548  1.7556  1.7563  1.7571  1.7578  1.7586
1.7593  1.7601  1.7608  1.7616  1.7623  1.7631  1.7638
1.7646  1.7653  1.7660  1.7668  1.7675  1.7683  1.7690
1.7697  1.7705  1.7712  1.7719  1.7727  1.7734  1.7741
1.7748  1.7756  1.7763  1.7770  1.7777  1.7784  1.7792
1.7799  1.7806  1.7813  1.7820  1.7827  1.7835  1.7842
1.7849  1.7856  1.7863  1.7870  1.7877  1.7884  1.7891
1.7898  1.7905  1.7912  1.7919  1.7926  1.7933  1.7940
1.7947  1.7954  1.7961  1.7968  1.7975  1.7981  1.7988
1.7995  1.8002  1.8009  1.8016  1.8023  1.8029  1.8036
1.8043  1.8050  1.8056  1.8063  1.8070  1.8077  1.8083
1.8090  1.8097  1.8104  1.8110  1.8117  1.8124  1.8130
1.8137  1.8144  1.8150  1.8157  1.8163  1.8170  1.8177
1.8183  1.8190  1.8196  1.8203  1.8209  1.8216  1.8222
1.8229  1.8235  1.8242  1.8248  1.8255  1.8261  1.8268
1.8274  1.8281  1.8287  1.8294  1.8300
```

```
SEDIMENT BULK       CODE = 1 BULK FACTOR = 1.10
COMPUTE NM HYD      ID=4  HYD=RW-1 DA=.0075
                    A B C D 25 0 75 0
                    TP=0.13330   MASS RAIN=-1

     K =   .125564HR    TP =   .133300HR    K/TP RATIO =   .941969     SHAPE CONSTANT, N =  3.753540
     UNIT PEAK =   19.039    CFS   UNIT VOLUME =    1.001       B =   338.39      P60 = 1.2700
     AREA =      .007500 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=4  CODE=1

                                    HYDROGRAPH FROM AREA RW-1


    RUNOFF VOLUME =      .36685 INCHES      =        .1467 ACRE-FEET
    PEAK DISCHARGE RATE =       5.97 CFS  AT   1.500 HOURS   BASIN AREA =   .0075 SQ. MI.



COMPUTE NM HYD      ID=2  HYD=OS-1 DA=.0467
                    A B C D 100 0 0 0
                    TP=0.22   MASS RAIN=-1

     K =   .295110HR    TP =   .220000HR    K/TP RATIO =  1.341408     SHAPE CONSTANT, N =  2.682299
     UNIT PEAK =   54.088    CFS   UNIT VOLUME =    .9991       B =   254.81      P60 = 1.2700
     AREA =      .046700 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=2  CODE=1

                                    HYDROGRAPH FROM AREA OS-1


    RUNOFF VOLUME =      .10385 INCHES      =        .2587 ACRE-FEET
```

```
    PEAK DISCHARGE RATE =       5.58 CFS  AT   1.600 HOURS   BASIN AREA =   .0467 SQ. MI.


COMPUTE NM HYD      ID=1  HYD=RW-2 DA=.0078
                    A B C D 85 0 15 0
                    TP=0.13330   MASS RAIN=-1

     K =   .168161HR    TP =   .133300HR    K/TP RATIO =  1.261520     SHAPE CONSTANT, N =  2.830338
     UNIT PEAK =   15.663    CFS   UNIT VOLUME =    .9972       B =   267.68      P60 = 1.2700
     AREA =      .007800 SQ MI    IA =    .60500 INCHES    INF =   1.54400 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=1  CODE=1

                                    HYDROGRAPH FROM AREA RW-2


    RUNOFF VOLUME =      .14284 INCHES     =        .0594 ACRE-FEET
    PEAK DISCHARGE RATE =       2.13 CFS  AT   1.500 HOURS   BASIN AREA =   .0078 SQ. MI.


ADD HYD             ID=3  HYD=RW-2.1 1 2
COMPUTE NM HYD      ID=1  HYD=B-3 DA=.0750
                    A B C D 25 5 30 40
                    TP=0.13330   MASS RAIN=-1

     K =   .073365HR    TP =   .133300HR    K/TP RATIO =   .550372     SHAPE CONSTANT, N =  7.017790
     UNIT PEAK =   117.50    CFS   UNIT VOLUME =    .9990       B =   522.10      P60 = 1.2700
     AREA =      .030000 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .140346HR    TP =   .133300HR    K/TP RATIO =  1.052857     SHAPE CONSTANT, N =  3.353471
     UNIT PEAK =   104.47    CFS   UNIT VOLUME =    .9999       B =   309.48      P60 = 1.2700
     AREA =      .045000 SQ MI    IA =    .48750 INCHES    INF =   1.21500 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=1  CODE=1

                                    HYDROGRAPH FROM AREA B-3


    RUNOFF VOLUME =      .87016 INCHES     =       3.4806 ACRE-FEET
    PEAK DISCHARGE RATE =      87.36 CFS  AT   1.500 HOURS   BASIN AREA =   .0750 SQ. MI.


ADD HYD             ID=2  HYD=B-3.1 1 3
ADD HYD             ID=3  HYD=RW-1.1 2 4
COMPUTE NM HYD      ID=1  HYD=OS-1A DA=.0189
                    A B C D 90 0 10 0
                    TP=0.13330   MASS  AIN=-1

     K =   .171710HR    TP =   .133300HR    K/TP RATIO =  1.288149     SHAPE CONSTANT, N =  2.778464
     UNIT PEAK =   37.323    CFS   UNIT VOLUME =    .9975       B =   263.23      P60 = 1.2700
     AREA =      .018900 SQ MI    IA =    .62000 INCHES    INF =   1.58600 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=1  CODE=1
```

HYDROGRAPH FROM AREA OS-1A

RUNOFF VOLUME = .12951 INCHES = .1306 ACRE-FEET
PEAK DISCHARGE RATE = 4.61 CFS AT 1.550 HOURS BASIN AREA = .0189 SQ. MI.

```
COMPUTE NM HYD      ID=1  HYD=OS-1B DA=.0059
                    A B C D 90 0 10 0
                    TP=0.13330   MASS RAIN=-1
```

K = .171710HR TP = .133300HR K/TP RATIO = 1.288149 SHAPE CONSTANT, N = 2.778464
UNIT PEAK = 11.651 CFS UNIT VOLUME = .9967 B = 263.23 P60 = 1.2700
AREA = .005900 SQ MI IA = .62000 INCHES INF = 1.58600 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .050000

BULKING FACTOR APPLIED TO HYDROGRAPH. FACTOR = 1.10000 AT PEAK FLOW.

```
PRINT HYD           ID=1  CODE=1
```

HYDROGRAPH FROM AREA OS-1B

RUNOFF VOLUME = .12951 INCHES = .0408 ACRE-FEET
PEAK DISCHARGE RATE = 1.44 CFS AT 1.550 HOURS BASIN AREA = .0059 SQ. MI.

```
COMPUTE NM HYD      ID=2  HYD=RW-1C DA=.0161
                    A B C D 20 0 55 25
                    TP=0.13330   MASS RAIN=-1
```

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 15.891 CFS UNIT VOLUME = .9985 B = 526.28 P60 = 1.2700
AREA = .004025 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .050000

K = .126748HR TP = .133300HR K/TP RATIO = .950845 SHAPE CONSTANT, N = 3.717159
UNIT PEAK = 30.423 CFS UNIT VOLUME = 1.001 B = 335.85 P60 = 1.2700
AREA = .012075 SQ MI IA = .43000 INCHES INF = 1.05400 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .050000

BULKING FACTOR APPLIED TO HYDROGRAPH. FACTOR = 1.10000 AT PEAK FLOW.

```
PRINT HYD           ID=2  CODE=1
```

HYDROGRAPH FROM AREA RW-1C

RUNOFF VOLUME = .70928 INCHES = .6090 ACRE-FEET
PEAK DISCHARGE RATE = 17.61 CFS AT 1.500 HOURS BASIN AREA = .0161 SQ. MI.

```
ADD HYD             ID=2  HYD=RW1C.1 1 2
PRINT HYD           ID=1  CODE=1
```

HYDROGRAPH FROM AREA OS-1B

RUNOFF VOLUME = .12951 INCHES = .0408 ACRE-FEET
PEAK DISCHARGE RATE = 1.44 CFS AT 1.550 HOURS BASIN AREA = .0059 SQ. MI.

*

```
*
*S 10-YEAR, 24-HOUR STORM EVENT, DEVELOPED CONDITIONS
RAINFALL          TYPE=2  QUARTER HR RAIN=0.00  ONE HR RAIN=1.27
                  SIX HR RAIN=1.50  DAILY RAIN=1.83 DT=0.05 HR

               COMPUTED 24-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
               DT =    .050000 HOURS       END TIME =    24.000000 HOURS
                  .0000   .0018   .0036   .0054   .0074   .0094   .0114
                  .0136   .0158   .0182   .0206   .0232   .0258   .0286
                  .0316   .0348   .0381   .0417   .0455   .0496   .0541
                  .0594   .0654   .0825   .1230   .1926   .3004   .4554
                  .6675   .8348   .9103   .9734  1.0287  1.0781  1.1229
                 1.1637  1.2012  1.2357  1.2675  1.2969  1.3241  1.3303
                 1.3360  1.3413  1.3462  1.3509  1.3553  1.3595  1.3635
                 1.3673  1.3710  1.3745  1.3779  1.3812  1.3843  1.3874
                 1.3904  1.3932  1.3960  1.3987  1.4014  1.4040  1.4065
                 1.4089  1.4113  1.4137  1.4160  1.4182  1.4204  1.4226
                 1.4247  1.4268  1.4288  1.4308  1.4328  1.4347  1.4366
                 1.4385  1.4403  1.4421  1.4439  1.4457  1.4474  1.4491
                 1.4508  1.4524  1.4541  1.4557  1.4573  1.4589  1.4604
                 1.4619  1.4635  1.4650  1.4664  1.4679  1.4693  1.4708
                 1.4722  1.4736  1.4750  1.4763  1.4777  1.4790  1.4804
                 1.4817  1.4830  1.4843  1.4856  1.4868  1.4881  1.4893
                 1.4905  1.4918  1.4930  1.4942  1.4954  1.4965  1.4977
                 1.4989  1.5000  1.5014  1.5028  1.5042  1.5056  1.5070
                 1.5083  1.5097  1.5111  1.5124  1.5138  1.5152  1.5165
                 1.5178  1.5192  1.5205  1.5219  1.5232  1.5245  1.5258
                 1.5271  1.5284  1.5297  1.5310  1.5323  1.5336  1.5349
                 1.5362  1.5375  1.5388  1.5400  1.5413  1.5426  1.5438
                 1.5451  1.5463  1.5476  1.5488  1.5501  1.5513  1.5525
                 1.5538  1.5550  1.5562  1.5574  1.5586  1.5598  1.5610
                 1.5623  1.5635  1.5646  1.5658  1.5670  1.5682  1.5694
                 1.5706  1.5717  1.5729  1.5741  1.5753  1.5764  1.5776
                 1.5787  1.5799  1.5810  1.5822  1.5833  1.5845  1.5856
                 1.5867  1.5879  1.5890  1.5901  1.5912  1.5923  1.5935
                 1.5946  1.5957  1.5968  1.5979  1.5990  1.6001  1.6012
                 1.6023  1.6033  1.6044  1.6055  1.6066  1.6077  1.6087
                 1.6098  1.6109  1.6119  1.6130  1.6141  1.6151  1.6162
                 1.6172  1.6183  1.6193  1.6204  1.6214  1.6224  1.6235
                 1.6245  1.6255  1.6266  1.6276  1.6286  1.6296  1.6307
                 1.6317  1.6327  1.6337  1.6347  1.6357  1.6367  1.6377
                 1.6387  1.6397  1.6407  1.6417  1.6427  1.6437  1.6446
                 1.6456  1.6466  1.6476  1.6486  1.6495  1.6505  1.6515
                 1.6524  1.6534  1.6544  1.6553  1.6563  1.6572  1.6582
                 1.6591  1.6601  1.6610  1.6620  1.6629  1.6639  1.6648
                 1.6657  1.6667  1.6676  1.6685  1.6694  1.6704  1.6713
                 1.6722  1.6731  1.6741  1.6750  1.6759  1.6768  1.6777
                 1.6786  1.6795  1.6804  1.6813  1.6822  1.6831  1.6840
                 1.6849  1.6858  1.6867  1.6876  1.6885  1.6894  1.6902
                 1.6911  1.6920  1.6929  1.6937  1.6946  1.6955  1.6964
                 1.6972  1.6981  1.6990  1.6998  1.7007  1.7016  1.7024
                 1.7033  1.7041  1.7050  1.7058  1.7067  1.7075  1.7084
                 1.7092  1.7101  1.7109  1.7117  1.7126  1.7134  1.7142
                 1.7151  1.7159  1.7167  1.7176  1.7184  1.7192  1.7200
                 1.7209  1.7217  1.7225  1.7233  1.7241  1.7250  1.7258
                 1.7266  1.7274  1.7282  1.7290  1.7298  1.7306  1.7314
                 1.7322  1.7330  1.7338  1.7346  1.7354  1.7362  1.7370
                 1.7378  1.7386  1.7393  1.7401  1.7409  1.7417  1.7425
                 1.7433  1.7440  1.7448  1.7456  1.7464  1.7471  1.7479
                 1.7487  1.7495  1.7502  1.7510  1.7518  1.7525  1.7533
                 1.7540  1.7548  1.7556  1.7563  1.7571  1.7578  1.7586
                 1.7593  1.7601  1.7608  1.7616  1.7623  1.7631  1.7638
                 1.7646  1.7653  1.7660  1.7668  1.7675  1.7683  1.7690
                 1.7697  1.7705  1.7712  1.7719  1.7727  1.7734  1.7741
                 1.7748  1.7756  1.7763  1.7770  1.7777  1.7784  1.7792
                 1.7799  1.7806  1.7813  1.7820  1.7827  1.7835  1.7842
                 1.7849  1.7856  1.7863  1.7870  1.7877  1.7884  1.7891
                 1.7898  1.7905  1.7912  1.7919  1.7926  1.7933  1.7940
```

```
                1.7947  1.7954  1.7961  1.7968  1.7975  1.7981  1.7988
                1.7995  1.8002  1.8009  1.8016  1.8023  1.8029  1.8036
                1.8043  1.8050  1.8056  1.8063  1.8070  1.8077  1.8083
                1.8090  1.8097  1.8104  1.8110  1.8117  1.8124  1.8130
                1.8137  1.8144  1.8150  1.8157  1.8163  1.8170  1.8177
                1.8183  1.8190  1.8196  1.8203  1.8209  1.8216  1.8222
                1.8229  1.8235  1.8242  1.8248  1.8255  1.8261  1.8268
                1.8274  1.8281  1.8287  1.8294  1.8300

SEDIMENT BULK       CODE = 1 BULK FACTOR = 1.10
COMPUTE NM HYD      ID=4  HYD=RW-1 DA=.0075
                    A B C D 0 0 87 13
                    TP=0.13330   MASS RAIN=-1

     K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   3.8494    CFS   UNIT VOLUME =    .9966       B =   526.28      P60 = 1.2700
     AREA =      .000975 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .107816HR    TP =   .133300HR    K/TP RATIO =   .808822     SHAPE CONSTANT, N =  4.423424
     UNIT PEAK =   18.722    CFS   UNIT VOLUME =    1.001       B =   382.48      P60 = 1.2700
     AREA =      .006525 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=4  CODE=1

                                    HYDROGRAPH FROM AREA RW-1


    RUNOFF VOLUME =      .66338 INCHES     =        .2653 ACRE-FEET
    PEAK DISCHARGE RATE =       9.04 CFS  AT   1.500 HOURS   BASIN AREA =   .0075 SQ. MI.


COMPUTE NM HYD      ID=2  HYD=OS-1 DA=.0467
                    A B C D 100 0 0 0
                    TP=0.22   MASS RAIN=-1

     K =   .295110HR    TP =   .220000HR    K/TP RATIO =  1.341408     SHAPE CONSTANT, N =  2.682299
     UNIT PEAK =   54.088    CFS   UNIT VOLUME =    .9991       B =   254.81      P60 = 1.2700
     AREA =      .046700 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=2  CODE=1

                                    HYDROGRAPH FROM AREA OS-1


    RUNOFF VOLUME =      .10385 INCHES     =        .2587 ACRE-FEET
    PEAK DISCHARGE RATE =       5.58 CFS  AT   1.600 HOURS   BASIN AREA =   .0467 SQ. MI.


COMPUTE NM HYD      ID=1  HYD=RW-2 DA=.0078
                    A B C D 85 0 15 0
                    TP=0.13330   MASS RAIN=-1

     K =   .168161HR    TP =   .133300HR    K/TP RATIO =  1.261520     SHAPE CONSTANT, N =  2.830338
     UNIT PEAK =   15.663    CFS   UNIT VOLUME =    .9972       B =   267.68      P60 = 1.2700
     AREA =      .007800 SQ MI    IA =    .60500 INCHES    INF =   1.54400 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.
```

```
PRINT HYD           ID=1  CODE=1

                                    HYDROGRAPH FROM AREA RW-2

    RUNOFF VOLUME =      .14284 INCHES     =        .0594 ACRE-FEET
    PEAK DISCHARGE RATE =       2.13 CFS  AT   1.500 HOURS   BASIN AREA =    .0078 SQ. MI.


ADD HYD             ID=3  HYD=RW-2.1 1 2
COMPUTE NM HYD      ID=1  HYD=B-3 DA=.0750
                    A B C D 25 5 30 40
                    TP=0.13330   MASS RAIN=-1

     K =   .073365HR    TP =   .133300HR    K/TP RATIO =   .550372     SHAPE CONSTANT, N =  7.017790
     UNIT PEAK =   117.50    CFS   UNIT VOLUME =    .9990       B =   522.10      P60 = 1.2700
     AREA =      .030000 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .140346HR    TP =   .133300HR    K/TP RATIO =  1.052857     SHAPE CONSTANT, N =  3.353471
     UNIT PEAK =   104.47    CFS   UNIT VOLUME =    .9999       B =   309.48      P60 = 1.2700
     AREA =      .045000 SQ MI    IA =    .48750 INCHES    INF =   1.21500 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=1  CODE=1

                                    HYDROGRAPH FROM AREA B-3

    RUNOFF VOLUME =      .87016 INCHES     =       3.4806 ACRE-FEET
    PEAK DISCHARGE RATE =      87.36 CFS  AT   1.500 HOURS   BASIN AREA =    .0750 SQ. MI.


ADD HYD             ID=2  HYD=B-3.1 1 3
ADD HYD             ID=3  HYD=RW-1.1 2 4
COMPUTE NM HYD      ID=1  HYD=OS-1A DA=.0189
                    A B C D 90 0 10 0
                    TP=0.13330   MASS  AIN=-1

     K =   .171710HR    TP =   .133300HR    K/TP RATIO =  1.288149     SHAPE CONSTANT, N =  2.778464
     UNIT PEAK =   37.323    CFS   UNIT VOLUME =    .9975       B =   263.23      P60 = 1.2700
     AREA =      .018900 SQ MI    IA =    .62000 INCHES    INF =   1.58600 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=1  CODE=1

                                    HYDROGRAPH FROM AREA OS-1A

    RUNOFF VOLUME =      .12951 INCHES     =        .1306 ACRE-FEET
    PEAK DISCHARGE RATE =       4.61 CFS  AT   1.550 HOURS   BASIN AREA =    .0189 SQ. MI.


COMPUTE NM HYD      ID=1  HYD=OS-1B DA=.0059
                    A B C D 90 0 10 0
                    TP=0.13330   MASS RAIN=-1

     K =   .171710HR    TP =   .133300HR    K/TP RATIO =  1.288149     SHAPE CONSTANT, N =  2.778464
     UNIT PEAK =   11.651    CFS   UNIT VOLUME =    .9967       B =   263.23      P60 = 1.2700
```

```
     AREA =      .005900 SQ MI    IA =     .62000 INCHES    INF =   1.58600 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=1  CODE=1

                                    HYDROGRAPH FROM AREA OS-1B


    RUNOFF VOLUME =      .12951 INCHES     =        .0408 ACRE-FEET
    PEAK DISCHARGE RATE =       1.44 CFS  AT   1.550 HOURS   BASIN AREA =    .0059 SQ. MI.


COMPUTE NM HYD      ID=2  HYD=RW-1C DA=.0161
                    A B C D 20 0 50 30
                    TP=0.13330   MASS RAIN=-1

     K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   19.069    CFS   UNIT VOLUME =     .9986       B =   526.28      P60 = 1.2700
     AREA =      .004830 SQ MI    IA =     .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000


     K =    .128100HR    TP =    .133300HR    K/TP RATIO =    .960990     SHAPE CONSTANT, N =  3.676630
     UNIT PEAK =   28.154    CFS   UNIT VOLUME =     1.001       B =   333.00      P60 = 1.2700
     AREA =      .011270 SQ MI    IA =     .43571 INCHES    INF =   1.07000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=2  CODE=1

                                    HYDROGRAPH FROM AREA RW-1C


    RUNOFF VOLUME =      .77323 INCHES     =        .6639 ACRE-FEET
    PEAK DISCHARGE RATE =      18.41 CFS  AT   1.500 HOURS   BASIN AREA =    .0161 SQ. MI.


ADD HYD             ID=2  HYD=RW1C.1 1 2
PRINT HYD           ID=1  CODE=1

                                    HYDROGRAPH FROM AREA OS-1B


    RUNOFF VOLUME =      .12951 INCHES     =        .0408 ACRE-FEET
    PEAK DISCHARGE RATE =       1.44 CFS  AT   1.550 HOURS   BASIN AREA =    .0059 SQ. MI.


*
* following is current development condition of basin RW1-3 if the CNM driveway
* divide basin into area draining north to pond and south to storm drain
COMPUTE NM HYD      ID=5  HYD=RW1.3POND DA=.00154
                    A B C D 83 0 0 17
                    TP=0.13330   MASS RAIN=-1

     K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   1.0336    CFS   UNIT VOLUME =     .9891       B =   526.28      P60 = 1.2700
     AREA =      .000262 SQ MI    IA =     .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000


     K =    .178810HR    TP =    .133300HR    K/TP RATIO =  1.341408     SHAPE CONSTANT, N =  2.682299
     UNIT PEAK =   2.4433    CFS   UNIT VOLUME =     .9909       B =   254.81      P60 = 1.2700
```

```
     AREA =      .001278 SQ MI    IA =     .65000 INCHES    INF =   1.67000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=5  CODE=1

                                        HYDROGRAPH FROM AREA RW1.3POND


    RUNOFF VOLUME =      .38530 INCHES     =        .0316 ACRE-FEET
    PEAK DISCHARGE RATE =        .78 CFS  AT   1.500 HOURS   BASIN AREA =    .0015 SQ. MI.



*
COMPUTE NM HYD      ID=7  HYD=RW1.3SOUTH DA=.00076
                    A B C D 71 0 0 29
                    TP=0.13330   MASS RAIN=-1

     K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =    .87015    CFS   UNIT VOLUME =     .9865       B =   526.28      P60 = 1.2700
     AREA =       .000220 SQ MI    IA =     .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000


     K =    .178810HR    TP =    .133300HR    K/TP RATIO =  1.341408     SHAPE CONSTANT, N =  2.682299
     UNIT PEAK =    1.0315    CFS   UNIT VOLUME =     .9829       B =   254.81      P60 = 1.2700
     AREA =       .000540 SQ MI    IA =     .65000 INCHES    INF =   1.67000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=5  CODE=1

                                        HYDROGRAPH FROM AREA RW1.3POND


    RUNOFF VOLUME =      .38530 INCHES     =        .0316 ACRE-FEET
    PEAK DISCHARGE RATE =        .78 CFS  AT   1.500 HOURS   BASIN AREA =    .0015 SQ. MI.



*
COMPUTE NM HYD      ID=6  HYD=RW-1D  DA=0.00215
                    A B C D  49 0 51 0
                    TP=0.13330  MASS RAIN=-1

     K =    .142603HR    TP =    .133300HR    K/TP RATIO =  1.069789     SHAPE CONSTANT, N =  3.301424
     UNIT PEAK =   4.9281    CFS   UNIT VOLUME =     .9975       B =   305.54      P60 = 1.2700
     AREA =       .002150 SQ MI    IA =     .49700 INCHES    INF =   1.24160 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=6  CODE=1

                                        HYDROGRAPH FROM AREA RW-1D


    RUNOFF VOLUME =      .26428 INCHES     =        .0303 ACRE-FEET
    PEAK DISCHARGE RATE =       1.20 CFS  AT   1.500 HOURS   BASIN AREA =    .0022 SQ. MI.



*
ADD HYD             ID=5  HYD=PONDIN  5   6
PRINT HYD           ID=5 CODE=1
```

HYDROGRAPH FROM AREA PONDIN

RUNOFF VOLUME = .31472 INCHES = .0619 ACRE-FEET
PEAK DISCHARGE RATE = 1.98 CFS AT 1.500 HOURS BASIN AREA = .0037 SQ. MI.

* 24 inch Route through pond = outlet is 24" riser pipe w/.5in dia holes
ROUTE RESERVOIR ID=8 HYD=PONDOUT INFLOW ID=5 CODE=5

OUTFLOW	STORAGE(AF)	ELEV (FT)
0	0	5410
0.06	0.01300	5411
2.0	0.03344	5412
3.5	0.06302	5413
14.7	0.10588	5414

* * * * * * * * * * * * * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	5410.00	.000	.00
.25	.00	5410.00	.000	.00
.50	.00	5410.00	.000	.00
.75	.00	5410.00	.000	.00
1.00	.00	5410.00	.000	.00
1.25	.03	5410.01	.000	.00
1.50	1.98	5411.04	.014	.13
1.75	.63	5411.46	.022	.96
2.00	.25	5411.19	.017	.42
2.25	.10	5411.06	.014	.18
2.50	.05	5411.01	.013	.08
2.75	.03	5410.98	.013	.06
3.00	.02	5410.92	.012	.06
3.25	.01	5410.86	.011	.05
3.50	.01	5410.79	.010	.05
3.75	.00	5410.72	.009	.04
4.00	.00	5410.66	.009	.04
4.25	.00	5410.60	.008	.04
4.50	.00	5410.55	.007	.03
4.75	.00	5410.50	.007	.03
5.00	.00	5410.46	.006	.03
5.25	.00	5410.42	.006	.03
5.50	.00	5410.39	.005	.02
5.75	.00	5410.36	.005	.02
6.00	.00	5410.33	.004	.02
6.25	.01	5410.31	.004	.02
6.50	.01	5410.29	.004	.02
6.75	.00	5410.27	.004	.02
7.00	.00	5410.25	.003	.02
7.25	.00	5410.24	.003	.01
7.50	.00	5410.22	.003	.01
7.75	.00	5410.21	.003	.01
8.00	.00	5410.20	.003	.01
8.25	.00	5410.19	.002	.01
8.50	.00	5410.18	.002	.01
8.75	.00	5410.17	.002	.01
9.00	.00	5410.16	.002	.01
9.25	.00	5410.15	.002	.01
9.50	.00	5410.14	.002	.01
9.75	.00	5410.14	.002	.01
10.00	.00	5410.13	.002	.01
10.25	.00	5410.13	.002	.01
10.50	.00	5410.12	.002	.01
10.75	.00	5410.12	.001	.01
11.00	.00	5410.11	.001	.01

```
    11.25        .00   5410.11       .001       .01
    11.50        .00   5410.10       .001       .01
    11.75        .00   5410.10       .001       .01
    12.00        .00   5410.10       .001       .01
    12.25        .00   5410.09       .001       .01
    12.50        .00   5410.09       .001       .01
    12.75        .00   5410.09       .001       .01
    13.00        .00   5410.08       .001       .01
    13.25        .00   5410.08       .001       .00
 PEAK DISCHARGE =         1.122 CFS - PEAK OCCURS AT HOUR    1.65
 MAXIMUM WATER SURFACE ELEVATION =     5411.548
 MAXIMUM STORAGE =          .0242 AC-FT      INCREMENTAL TIME=     .050000HRS

PRINT HYD           ID=8  CODE=1

                                        HYDROGRAPH FROM AREA PONDOUT


    RUNOFF VOLUME =      .31441 INCHES     =        .0619 ACRE-FEET
    PEAK DISCHARGE RATE =       1.12 CFS  AT   1.650 HOURS   BASIN AREA =   .0037 SQ. MI.



*
*Run pond with only weir flow - say low flow holes are plugged
ROUTE RESERVOIR     ID=8  HYD=PONDOUT  INFLOW ID=5  CODE=5
                     OUTFLOW   STORAGE(AF)  ELEV (FT)
                         0       0          5410
                        0.06    0.01300     5411
                        0.07    0.03344     5412
                        0.08    0.06302     5413
                        10.4    0.10588     5414

  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *

    TIME      INFLOW    ELEV      VOLUME    OUTFLOW
    (HRS)     (CFS)     (FEET)    (AC-FT)   (CFS)

      .00        .00   5410.00       .000       .00
      .25        .00   5410.00       .000       .00
      .50        .00   5410.00       .000       .00
      .75        .00   5410.00       .000       .00
     1.00        .00   5410.00       .000       .00
     1.25        .03   5410.01       .000       .00
     1.50       1.98   5411.04       .014       .06
     1.75        .63   5412.22       .040       .07
     2.00        .25   5412.44       .046       .07
     2.25        .10   5412.50       .048       .08
     2.50        .05   5412.50       .048       .08
     2.75        .03   5412.48       .047       .07
     3.00        .02   5412.44       .046       .07
     3.25        .01   5412.40       .045       .07
     3.50        .01   5412.35       .044       .07
     3.75        .00   5412.30       .042       .07
     4.00        .00   5412.25       .041       .07
     4.25        .00   5412.20       .039       .07
     4.50        .00   5412.15       .038       .07
     4.75        .00   5412.10       .037       .07
     5.00        .00   5412.06       .035       .07
     5.25        .00   5412.01       .034       .07
     5.50        .00   5411.95       .032       .07
     5.75        .00   5411.88       .031       .07
     6.00        .00   5411.82       .030       .07
     6.25        .01   5411.75       .028       .07
     6.50        .01   5411.69       .027       .07
     6.75        .00   5411.63       .026       .07
     7.00        .00   5411.56       .025       .07
     7.25        .00   5411.50       .023       .07
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      7.50        .00    5411.44        .022        .06
      7.75        .00    5411.38        .021        .06
      8.00        .00    5411.32        .020        .06
      8.25        .00    5411.26        .018        .06
      8.50        .00    5411.21        .017        .06
      8.75        .00    5411.15        .016        .06
      9.00        .00    5411.09        .015        .06
      9.25        .00    5411.03        .014        .06
      9.50        .00    5410.97        .013        .06
      9.75        .00    5410.88        .011        .05
     10.00        .00    5410.81        .011        .05
     10.25        .00    5410.74        .010        .04
     10.50        .00    5410.68        .009        .04
     10.75        .00    5410.63        .008        .04
     11.00        .00    5410.57        .007        .03
     11.25        .00    5410.53        .007        .03
     11.50        .00    5410.49        .006        .03
     11.75        .00    5410.45        .006        .03
     12.00        .00    5410.41        .005        .02
     12.25        .00    5410.38        .005        .02
     12.50        .00    5410.35        .005        .02
     12.75        .00    5410.32        .004        .02
     13.00        .00    5410.30        .004        .02
     13.25        .00    5410.28        .004        .02
     13.50        .00    5410.26        .003        .02
     13.75        .00    5410.24        .003        .01

     TIME       INFLOW     ELEV       VOLUME     OUTFLOW
     (HRS)      (CFS)      (FEET)     (AC-FT)    (CFS)

     14.00        .00    5410.22        .003        .01
     14.25        .00    5410.21        .003        .01
     14.50        .00    5410.19        .003        .01
     14.75        .00    5410.18        .002        .01
     15.00        .00    5410.17        .002        .01
     15.25        .00    5410.16        .002        .01
     15.50        .00    5410.15        .002        .01
     15.75        .00    5410.14        .002        .01
     16.00        .00    5410.13        .002        .01
     16.25        .00    5410.13        .002        .01
     16.50        .00    5410.12        .002        .01
     16.75        .00    5410.11        .001        .01
     17.00        .00    5410.11        .001        .01
     17.25        .00    5410.10        .001        .01
     17.50        .00    5410.10        .001        .01
     17.75        .00    5410.09        .001        .01
     18.00        .00    5410.09        .001        .01
     18.25        .00    5410.08        .001        .01
     18.50        .00    5410.08        .001        .00
  PEAK DISCHARGE =          .075 CFS - PEAK OCCURS AT HOUR     2.35
  MAXIMUM WATER SURFACE ELEVATION =      5412.505
  MAXIMUM STORAGE =          .0484 AC-FT       INCREMENTAL TIME=      .050000HRS

PRINT HYD           ID=8  CODE=1

                                        HYDROGRAPH FROM AREA PONDOUT


    RUNOFF VOLUME =       .31439 INCHES      =         .0619 ACRE-FEET
    PEAK DISCHARGE RATE =         .08 CFS  AT    2.350 HOURS   BASIN AREA =    .0037 SQ. MI.



*
*S 10-YEAR, 24-HOUR STORM EVENT, FUTURE CONDITIONS
RAINFALL            TYPE=2  QUARTER HR RAIN=0.00  ONE HR RAIN=1.27
                    SIX HR RAIN=1.50  DAILY RAIN=1.83 DT=0.05 HR
```

COMPUTED 24-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
DT = .050000 HOURS END TIME = 24.000000 HOURS

.0000	.0018	.0036	.0054	.0074	.0094	.0114
.0136	.0158	.0182	.0206	.0232	.0258	.0286
.0316	.0348	.0381	.0417	.0455	.0496	.0541
.0594	.0654	.0825	.1230	.1926	.3004	.4554
.6675	.8348	.9103	.9734	1.0287	1.0781	1.1229
1.1637	1.2012	1.2357	1.2675	1.2969	1.3241	1.3303
1.3360	1.3413	1.3462	1.3509	1.3553	1.3595	1.3635
1.3673	1.3710	1.3745	1.3779	1.3812	1.3843	1.3874
1.3904	1.3932	1.3960	1.3987	1.4014	1.4040	1.4065
1.4089	1.4113	1.4137	1.4160	1.4182	1.4204	1.4226
1.4247	1.4268	1.4288	1.4308	1.4328	1.4347	1.4366
1.4385	1.4403	1.4421	1.4439	1.4457	1.4474	1.4491
1.4508	1.4524	1.4541	1.4557	1.4573	1.4589	1.4604
1.4619	1.4635	1.4650	1.4664	1.4679	1.4693	1.4708
1.4722	1.4736	1.4750	1.4763	1.4777	1.4790	1.4804
1.4817	1.4830	1.4843	1.4856	1.4868	1.4881	1.4893
1.4905	1.4918	1.4930	1.4942	1.4954	1.4965	1.4977
1.4989	1.5000	1.5014	1.5028	1.5042	1.5056	1.5070
1.5083	1.5097	1.5111	1.5124	1.5138	1.5152	1.5165
1.5178	1.5192	1.5205	1.5219	1.5232	1.5245	1.5258
1.5271	1.5284	1.5297	1.5310	1.5323	1.5336	1.5349
1.5362	1.5375	1.5388	1.5400	1.5413	1.5426	1.5438
1.5451	1.5463	1.5476	1.5488	1.5501	1.5513	1.5525
1.5538	1.5550	1.5562	1.5574	1.5586	1.5598	1.5610
1.5623	1.5635	1.5646	1.5658	1.5670	1.5682	1.5694
1.5706	1.5717	1.5729	1.5741	1.5753	1.5764	1.5776
1.5787	1.5799	1.5810	1.5822	1.5833	1.5845	1.5856
1.5867	1.5879	1.5890	1.5901	1.5912	1.5923	1.5935
1.5946	1.5957	1.5968	1.5979	1.5990	1.6001	1.6012
1.6023	1.6033	1.6044	1.6055	1.6066	1.6077	1.6087
1.6098	1.6109	1.6119	1.6130	1.6141	1.6151	1.6162
1.6172	1.6183	1.6193	1.6204	1.6214	1.6224	1.6235
1.6245	1.6255	1.6266	1.6276	1.6286	1.6296	1.6307
1.6317	1.6327	1.6337	1.6347	1.6357	1.6367	1.6377
1.6387	1.6397	1.6407	1.6417	1.6427	1.6437	1.6446
1.6456	1.6466	1.6476	1.6486	1.6495	1.6505	1.6515
1.6524	1.6534	1.6544	1.6553	1.6563	1.6572	1.6582
1.6591	1.6601	1.6610	1.6620	1.6629	1.6639	1.6648
1.6657	1.6667	1.6676	1.6685	1.6694	1.6704	1.6713
1.6722	1.6731	1.6741	1.6750	1.6759	1.6768	1.6777
1.6786	1.6795	1.6804	1.6813	1.6822	1.6831	1.6840
1.6849	1.6858	1.6867	1.6876	1.6885	1.6894	1.6902
1.6911	1.6920	1.6929	1.6937	1.6946	1.6955	1.6964
1.6972	1.6981	1.6990	1.6998	1.7007	1.7016	1.7024
1.7033	1.7041	1.7050	1.7058	1.7067	1.7075	1.7084
1.7092	1.7101	1.7109	1.7117	1.7126	1.7134	1.7142
1.7151	1.7159	1.7167	1.7176	1.7184	1.7192	1.7200
1.7209	1.7217	1.7225	1.7233	1.7241	1.7250	1.7258
1.7266	1.7274	1.7282	1.7290	1.7298	1.7306	1.7314
1.7322	1.7330	1.7338	1.7346	1.7354	1.7362	1.7370
1.7378	1.7386	1.7393	1.7401	1.7409	1.7417	1.7425
1.7433	1.7440	1.7448	1.7456	1.7464	1.7471	1.7479
1.7487	1.7495	1.7502	1.7510	1.7518	1.7525	1.7533
1.7540	1.7548	1.7556	1.7563	1.7571	1.7578	1.7586
1.7593	1.7601	1.7608	1.7616	1.7623	1.7631	1.7638
1.7646	1.7653	1.7660	1.7668	1.7675	1.7683	1.7690
1.7697	1.7705	1.7712	1.7719	1.7727	1.7734	1.7741
1.7748	1.7756	1.7763	1.7770	1.7777	1.7784	1.7792
1.7799	1.7806	1.7813	1.7820	1.7827	1.7835	1.7842
1.7849	1.7856	1.7863	1.7870	1.7877	1.7884	1.7891
1.7898	1.7905	1.7912	1.7919	1.7926	1.7933	1.7940
1.7947	1.7954	1.7961	1.7968	1.7975	1.7981	1.7988
1.7995	1.8002	1.8009	1.8016	1.8023	1.8029	1.8036
1.8043	1.8050	1.8056	1.8063	1.8070	1.8077	1.8083
1.8090	1.8097	1.8104	1.8110	1.8117	1.8124	1.8130
1.8137	1.8144	1.8150	1.8157	1.8163	1.8170	1.8177

```
                1.8183  1.8190  1.8196  1.8203  1.8209  1.8216  1.8222
                1.8229  1.8235  1.8242  1.8248  1.8255  1.8261  1.8268
                1.8274  1.8281  1.8287  1.8294  1.8300

 SEDIMENT BULK       CODE = 1 BULK FACTOR = 1.10
 COMPUTE NM HYD      ID=4  HYD=RW-1 DA=.0075
                     A B C D 0 0 74 26
                     TP=0.13330   MASS RAIN=-1

      K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
      UNIT PEAK =   7.6987    CFS   UNIT VOLUME =    .9978       B =   526.28      P60 = 1.2700
      AREA =      .001950 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


      K =   .107816HR    TP =   .133300HR    K/TP RATIO =   .808822     SHAPE CONSTANT, N =  4.423424
      UNIT PEAK =   15.925    CFS   UNIT VOLUME =    1.001       B =   382.48      P60 = 1.2700
      AREA =      .005550 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

     BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

 PRINT HYD           ID=4  CODE=1

                                    HYDROGRAPH FROM AREA RW-1


     RUNOFF VOLUME =      .82716 INCHES     =        .3309 ACRE-FEET
     PEAK DISCHARGE RATE =      9.98 CFS  AT   1.500 HOURS   BASIN AREA =   .0075 SQ. MI.


 COMPUTE NM HYD      ID=2  HYD=OS-1 DA=.0467
                     A B C D 100 0 0 0
                     TP=0.22   MASS RAIN=-1

      K =   .295110HR    TP =   .220000HR    K/TP RATIO =  1.341408     SHAPE CONSTANT, N =  2.682299
      UNIT PEAK =   54.088    CFS   UNIT VOLUME =    .9991       B =   254.81      P60 = 1.2700
      AREA =      .046700 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

     BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

 PRINT HYD           ID=2  CODE=1

                                    HYDROGRAPH FROM AREA OS-1


     RUNOFF VOLUME =      .10385 INCHES     =        .2587 ACRE-FEET
     PEAK DISCHARGE RATE =      5.58 CFS  AT   1.600 HOURS   BASIN AREA =   .0467 SQ. MI.


 COMPUTE NM HYD      ID=1  HYD=RW-2 DA=.0078
                     A B C D 0 0 40 60
                     TP=0.13330   MASS RAIN=-1

      K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
      UNIT PEAK =   18.477    CFS   UNIT VOLUME =    .9985       B =   526.28      P60 = 1.2700
      AREA =      .004680 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


      K =   .107816HR    TP =   .133300HR    K/TP RATIO =   .808822     SHAPE CONSTANT, N =  4.423424
      UNIT PEAK =   8.9522    CFS   UNIT VOLUME =    1.001       B =   382.48      P60 = 1.2700
      AREA =      .003120 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000
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    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA RW-2


    RUNOFF VOLUME =     1.25551 INCHES     =        .5223 ACRE-FEET
    PEAK DISCHARGE RATE =      12.91 CFS  AT   1.500 HOURS   BASIN AREA =   .0078 SQ. MI.



ADD HYD             ID=3  HYD=RW-2.1 1 2
COMPUTE NM HYD      ID=1  HYD=B-3 DA=.0559
                    A B C D 0 10 20 70
                    TP=0.13330   MASS RAIN=-1

     K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   154.49    CFS   UNIT VOLUME =    .9990       B =   526.28      P60 = 1.2700
     AREA =      .039130 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .119060HR    TP =   .133300HR    K/TP RATIO =   .893177     SHAPE CONSTANT, N =  3.969878
     UNIT PEAK =   44.429    CFS   UNIT VOLUME =    1.001       B =   353.16      P60 = 1.2700
     AREA =      .016770 SQ MI    IA =    .40000 INCHES    INF =    .97000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA B-3


    RUNOFF VOLUME =     1.35364 INCHES     =       4.0356 ACRE-FEET
    PEAK DISCHARGE RATE =      94.58 CFS  AT   1.500 HOURS   BASIN AREA =   .0559 SQ. MI.



ADD HYD             ID=2  HYD=RW-1.1 1 4
COMPUTE NM HYD      ID=1  HYD=OS-1A DA=.0189
                    A B C D 75 0 20 5
                    TP=0.13330   MASS  AIN=-1

     K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   3.7309    CFS   UNIT VOLUME =    .9966       B =   526.28      P60 = 1.2700
     AREA =      .000945 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .163864HR    TP =   .133300HR    K/TP RATIO =  1.229284     SHAPE CONSTANT, N =  2.896883
     UNIT PEAK =   36.813    CFS   UNIT VOLUME =    .9980       B =   273.30      P60 = 1.2700
     AREA =      .017955 SQ MI    IA =    .58684 INCHES    INF =   1.49316 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA OS-1A


    RUNOFF VOLUME =      .24028 INCHES     =        .2422 ACRE-FEET
    PEAK DISCHARGE RATE =       7.54 CFS  AT   1.500 HOURS   BASIN AREA =   .0189 SQ. MI.
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```
COMPUTE NM HYD       ID=1  HYD=OS-1B DA=.0059
                     A B C D 75 0 20 5
                     TP=0.13330   MASS RAIN=-1

     K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   1.1647    CFS   UNIT VOLUME =    .9891       B =   526.28      P60 = 1.2700
     AREA =      .000295 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .163864HR    TP =   .133300HR    K/TP RATIO =  1.229284     SHAPE CONSTANT, N =  2.896883
     UNIT PEAK =   11.492    CFS   UNIT VOLUME =    .9971       B =   273.30      P60 = 1.2700
     AREA =      .005605 SQ MI    IA =    .58684 INCHES    INF =   1.49316 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD            ID=1  CODE=1

                                    HYDROGRAPH FROM AREA OS-1B


    RUNOFF VOLUME =      .24028 INCHES     =        .0756 ACRE-FEET
    PEAK DISCHARGE RATE =       2.36 CFS  AT   1.500 HOURS   BASIN AREA =   .0059 SQ. MI.


COMPUTE NM HYD       ID=2  HYD=RW-1C DA=.0161
                     A B C D 0 0 40 60
                     TP=0.13330   MASS RAIN=-1

     K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   38.138    CFS   UNIT VOLUME =    .9989       B =   526.28      P60 = 1.2700
     AREA =      .009660 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .107816HR    TP =   .133300HR    K/TP RATIO =   .808822     SHAPE CONSTANT, N =  4.423424
     UNIT PEAK =   18.478    CFS   UNIT VOLUME =    1.001       B =   382.48      P60 = 1.2700
     AREA =      .006440 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD            ID=2  CODE=1

                                    HYDROGRAPH FROM AREA RW-1C


    RUNOFF VOLUME =     1.25551 INCHES     =       1.0781 ACRE-FEET
    PEAK DISCHARGE RATE =      26.64 CFS  AT   1.500 HOURS   BASIN AREA =   .0161 SQ. MI.


ADD HYD              ID=2  HYD=RW1C.1 1 2
PRINT HYD            ID=1  CODE=1

                                    HYDROGRAPH FROM AREA OS-1B


    RUNOFF VOLUME =      .24028 INCHES     =        .0756 ACRE-FEET
    PEAK DISCHARGE RATE =       2.36 CFS  AT   1.500 HOURS   BASIN AREA =   .0059 SQ. MI.


COMPUTE NM HYD       ID=4  HYD=RW-1.1 DA=.0007
                     A B C D 0 0 33 67
                     TP=0.13330   MASS RAIN=-1
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     K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   1.8516    CFS   UNIT VOLUME =    .9928       B =   526.28      P60 = 1.2700
     AREA =      .000469 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .107816HR    TP =   .133300HR    K/TP RATIO =   .808822     SHAPE CONSTANT, N =  4.423424
     UNIT PEAK =   .66281    CFS   UNIT VOLUME =    .9841       B =   382.48      P60 = 1.2700
     AREA =      .000231 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=4  CODE=1

                                    HYDROGRAPH FROM AREA RW-1.1


    RUNOFF VOLUME =     1.34370 INCHES     =        .0502 ACRE-FEET
    PEAK DISCHARGE RATE =       1.22 CFS  AT   1.500 HOURS   BASIN AREA =   .0007 SQ. MI.


COMPUTE NM HYD      ID=4  HYD=RW-1.3 DA=.0023
                    A B C D 0 0 40 60
                    TP=0.13330   MASS RAIN=-1

     K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   5.4483    CFS   UNIT VOLUME =    .9971       B =   526.28      P60 = 1.2700
     AREA =      .001380 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .107816HR    TP =   .133300HR    K/TP RATIO =   .808822     SHAPE CONSTANT, N =  4.423424
     UNIT PEAK =   2.6398    CFS   UNIT VOLUME =    .9974       B =   382.48      P60 = 1.2700
     AREA =      .000920 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=4  CODE=1

                                    HYDROGRAPH FROM AREA RW-1.3


    RUNOFF VOLUME =     1.25551 INCHES     =        .1540 ACRE-FEET
    PEAK DISCHARGE RATE =       3.81 CFS  AT   1.500 HOURS   BASIN AREA =   .0023 SQ. MI.


COMPUTE NM HYD      ID=5  HYD=RW-1.4A DA=.0025
                    A B C D 0 0 100 0
                    TP=0.13330   MASS RAIN=-1

     K =   .107816HR    TP =   .133300HR    K/TP RATIO =   .808822     SHAPE CONSTANT, N =  4.423424
     UNIT PEAK =   7.1733    CFS   UNIT VOLUME =    1.000       B =   382.48      P60 = 1.2700
     AREA =      .002500 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=5  CODE=1

                                    HYDROGRAPH FROM AREA RW-1.4A


    RUNOFF VOLUME =      .49960 INCHES     =        .0666 ACRE-FEET
    PEAK DISCHARGE RATE =       2.71 CFS  AT   1.500 HOURS   BASIN AREA =   .0025 SQ. MI.
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*following is part of Basin RW-1C west of McMahon - future (ultimate) condition
*it is also still included in Basin RW-1C as per planning documents in which
*this flow will remain in McMahon flowing west, however to allow
* future flexibility it is also being added to Universe pipe
COMPUTE NM HYD      ID=7  HYD=RW-1D  DA=0.00215
                    A B C D 0 0 40 60
                    TP=0.13330   MASS RAIN=-1

     K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   5.0930    CFS   UNIT VOLUME =    .9971       B =   526.28      P60 = 1.2700
     AREA =      .001290 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .107816HR    TP =   .133300HR    K/TP RATIO =   .808822     SHAPE CONSTANT, N =  4.423424
     UNIT PEAK =   2.4676    CFS   UNIT VOLUME =    .9967       B =   382.48      P60 = 1.2700
     AREA =      .000860 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD           ID=7  CODE=1

                                    HYDROGRAPH FROM AREA RW-1D

    RUNOFF VOLUME =     1.25551 INCHES      =        .1440 ACRE-FEET
    PEAK DISCHARGE RATE =       3.57 CFS  AT   1.500 HOURS   BASIN AREA =   .0022 SQ. MI.


ADD HYD             ID=8 HYD=RW-1D.1  7  4
PRINT HYD           ID=8  CODE=1
                                    HYDROGRAPH FROM AREA RW-1D.1

    RUNOFF VOLUME =     1.25536 INCHES      =        .2979 ACRE-FEET
    PEAK DISCHARGE RATE =       7.38 CFS  AT   1.500 HOURS   BASIN AREA =   .0044 SQ. MI.

FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 15:38:54
```

Sediment Pond Outlet Pipe - 100 year

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.01000	ft/ft
Diameter	2.00	ft
Discharge	5.20	ft^3/s

Results

Normal Depth	0.65	ft
Flow Area	0.89	ft^2
Wetted Perimeter	2.43	ft
Top Width	1.87	ft
Critical Depth	0.80	ft
Percent Full	32.6	%
Critical Slope	0.00457	ft/ft
Velocity	5.85	ft/s
Velocity Head	0.53	ft
Specific Energy	1.18	ft
Froude Number	1.50	
Maximum Discharge	24.33	ft^3/s
Discharge Full	22.62	ft^3/s
Slope Full	0.00053	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	32.59	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s

Sediment Pond Outlet Pipe - 100 year

GVF Output Data

Normal Depth	0.65	ft
Critical Depth	0.80	ft
Channel Slope	0.01000	ft/ft
Critical Slope	0.00457	ft/ft

Messages

Notes	100 year peak pond inflow of 5.2 cfs was used - in all pond routing senarios, outflow is less.

Roadside ditch Upstream end of access drive

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.030	
Channel Slope	0.05900	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	3.50	ft^3/s

Results

Normal Depth	0.50	ft
Flow Area	0.76	ft^2
Wetted Perimeter	3.18	ft
Top Width	3.01	ft
Critical Depth	0.61	ft
Critical Slope	0.02090	ft/ft
Velocity	4.63	ft/s
Velocity Head	0.33	ft
Specific Energy	0.83	ft
Froude Number	1.63	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.50	ft
Critical Depth	0.61	ft
Channel Slope	0.05900	ft/ft
Critical Slope	0.02090	ft/ft

Roadside ditch Upstream end of access drive

Messages

Notes	Flow to the steeper part of the Access Drive is approximately 2/3 of the total flow - use 5.2 x (2/3) = 3.5

Roadside ditch downstream end of access drive - Earth

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.030	
Channel Slope	0.01100	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	5.20	ft^3/s

Results

Normal Depth	0.80	ft
Flow Area	1.91	ft^2
Wetted Perimeter	5.05	ft
Top Width	4.79	ft
Critical Depth	0.71	ft
Critical Slope	0.01982	ft/ft
Velocity	2.72	ft/s
Velocity Head	0.11	ft
Specific Energy	0.91	ft
Froude Number	0.76	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.80	ft
Critical Depth	0.71	ft
Channel Slope	0.01100	ft/ft
Critical Slope	0.01982	ft/ft

Roadside ditch downstream end of access drive - Riprap

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.040	
Channel Slope	0.01100	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	5.20	ft^3/s

Results

Normal Depth	0.89	ft
Flow Area	2.37	ft^2
Wetted Perimeter	5.63	ft
Top Width	5.34	ft
Critical Depth	0.71	ft
Critical Slope	0.03524	ft/ft
Velocity	2.19	ft/s
Velocity Head	0.07	ft
Specific Energy	0.96	ft
Froude Number	0.58	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.89	ft
Critical Depth	0.71	ft
Channel Slope	0.01100	ft/ft
Critical Slope	0.03524	ft/ft

Pond Corner Channel

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.040	
Channel Slope	0.20000	ft/ft
Left Side Slope	4.00	ft/ft (H:V)
Right Side Slope	4.00	ft/ft (H:V)
Discharge	5.20	ft^3/s

Results

Normal Depth	0.46	ft
Flow Area	0.85	ft^2
Wetted Perimeter	3.80	ft
Top Width	3.69	ft
Critical Depth	0.64	ft
Critical Slope	0.03554	ft/ft
Velocity	6.12	ft/s
Velocity Head	0.58	ft
Specific Energy	1.04	ft
Froude Number	2.25	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.46	ft
Critical Depth	0.64	ft
Channel Slope	0.20000	ft/ft
Critical Slope	0.03554	ft/ft

Calendar Entry

Meeting

☐ Notify me ☐ Mark Private ☐ Pencil In

Subject	Cannon MACC Proposal Kick-off
When	Meeting occurs in a different time zone MDT Time in the local time zone Starts Fri 07/23/2010 01:00 PM Ends Fri 07/23/2010 02:00 PM 1 hour
Invitees	Required (to) Marshall Nay/Albuquerque/URSCorp, invalid:nomail

Chair	rkerns@sanjuanconstruction.com
Where	Location: Audio Conference A, HQ Conference Room
Categorize	

Description

When: Friday, July 23, 2010 1:00 PM-2:00 PM (GMT-07:00) Mountain Time (US & Canada).
Where: Audio Conference A, HQ Conference Room

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*

Team,
We will be doing a -
Proposal Kick-off Meeting with URS team for the Cannon MACC.
1. Proposal outline and deadlines
2. Seed Project
3. Site Visit Debrief

Conference Bridge 888-904-9570
Conference ID# 8570311

Thanks,
Risa

Your Notes