Motte Country Plaza

TPM 2018-302

Preliminary Hydrology Report

Menifee, California

Palomarmar, LP
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Contact: Marwan Alabbasi

May 2020

This Drainage Report has been prepared by or under the direction of the following Registered Civil Engineer. The undersigned attests to the technical information contained herein and the qualifications of any technical specialist providing engineering data upon which recommendations, conclusions, and decisions are based:

_____ _____

Registered Civil Engineer Date

Teresa Gibbs, P.E.
Senior Engineer

SECTION 1 - Summary

Introduction

Tentative Parcel Map 2018-302 is located in the City of Menifee, California and is within the Santa Ana River watershed, more specifically the San Jacinto Sub-Watershed. The project site is bounded by Palomar Road to the east, Ethanac Road (Highway 74) to the south, TTM 34118 to the north, and an existing commercial site to the west. The project site is proposed to be split into two parcels; the western portion being Parcel 1 and the eastern portion being Parcel 2. The parcel map proposes the redevelopment of existing commercial areas located in Parcel 2 that will include but are not limited to: drive through facilities, a gas station, a car wash, landscaped areas, and proposed parking areas.

This report is prepared to address the drainage improvements for the ultimate improvements of the project site.

Existing Condition

In the existing condition, the site consists of a train cart restaurant, parking areas, drive aisles, and landscaped areas. Trees and other shrubs exist within the project limits and will be cleared or replaced in the redeveloped condition.

The site generally flows from north to south then east to west via existing ribbon gutters. The existing ribbon gutter is placed at the approximate center of the parking areas. This ribbon gutter continues throughout the parking area of TPM 2018-302 and into the adjacent western lot containing the Motte Historical Museum. The existing ribbon gutter outlets south onto Ethanac Road. Runoff flows west along Ethanac Road until they enter existing catch basins connected to the existing 48-inch Romoland-Motte Farms Storm Drain (RCFC Drawing No. 4-799). From the 48-inch storm drain, flows outlet to Antelope Road and eventually reach the San Jacinto River.

The existing condition rational method hydrologic calculations and map are included in Section 3 – Hydrologic Studies.

Proposed Condition

In the ultimate proposed condition, the project site will be a redeveloped commercial center. The existing train cart restaurants are proposed to be relocated to a western portion of Parcel 1 that is currently vacant. Parcel 2 will be redeveloped to include two proposed buildings, a proposed gas station, and revised parking areas.

The proposed drainage conditions mimic the existing conditions as runoff generally flows from north to south. However, runoff onsite drains towards a sump catch basin located near the southeastern boundary of the project area. This is done to ensure all runoff generated by the redevelopment of Parcel 2 will be captured and treated for water quality requirements, which were not in effect during the initial development of the existing site. Parcel 1 will continue to drain from east to west as it did in the existing conditions. Low flows captured within the catch basin will be directed towards a proposed biotreatment device (MWS vault) to treat for water quality requirements. In addition to being treated for water quality requirements, runoff generated onsite will need to be mitigated for HCOC requirements (the 2-

year, 24-hour and 100-year, 24-hour storm events). A proposed underground chamber system is proposed to store all captured runoff. Details pertaining to the proposed water quality devices can be found in the Preliminary Water Quality Management Plan.

In the proposed condition, a sump catch basin located near the southeastern boundary of the site is proposed to collect all runoff generated onsite. Curb and gutter as well as ribbon gutters are proposed throughout the site to convey flows towards the sump catch basin. Flows generally travel from north to south throughout the site. The parking area located along the southern boundary of the site drains north towards the proposed catch basin.

Low flow runoff collected within the catch basin will be redirected towards the proposed MWS vault in order to be treated for water quality requirements. All collected runoff is then directed towards the proposed underground chambers designed to store runoff in order to comply with HCOC mitigation requirements. An outlet structure with designed orifice openings is proposed on the western end of the underground chambers in order to mitigated developed flows down to their existing values. The outlet structure will also provide an emergency overflow mechanism in the case of the 100-year, 1-hour storm event.

A proposed 18-inch RCP storm drain line is proposed to convey all captured flows offsite. The proposed 18-inch RCP conveys flows north towards TTM 34118 then west along the southern boundary of TTM 34118 before discharging directly into the 48-inch RCP Romoland-Motte Farms Storm Drain. Flows are then proposed to outlet directly into the Romoland-Motte Farms Storm Drain at a point located in TTM 34118. In the existing condition, flows generated from the project area would enter the same storm drain system through catch basins located on Ethanac Road. Flows that have entered the existing Romoland-Motte Farms Storm Drain flows will ultimately drain to the San Jacinto River as they did in the existing condition.

In order to adequately size the storm drain facilities for ultimate runoff, the rational method hydrology calculations considered the entire project area a “Commercial” subarea. The developed condition rational method hydrology calculations and map are located in Section 3 – Hydrologic Studies.

Hydrologic Analysis

Design Criteria

Hydrologic calculations were computed in accordance with the parameters outlined in Riverside County Flood Control and Water Conservation District Hydrology Manual. Specifically, the rational method was used exclusively to determine all design discharges for the 100-year ultimate developed condition for storm drain pipeline design.

Hydrologic Soil Group

According to National Cooperative Soil Survey, the project site is located in the County’s subsidence potential zone and low liquefaction potential zone. The site is classified as Natural Resources Conservation Service (NRCS) Hydrologic Soil Group (HSG) B.

Rational Method

The rational method was performed to evaluate surface runoff for onsite and off-site areas associated with the 10-year and 100-year storms from the project watershed. The results of the rational method

calculations provides the runoff amounts used to establish the sizes of proposed storm drain facilities. For the 100-year storm, results produce a peak flow rate of 3.7 cfs. Table 1 below summarizes the results of the rational method calculations.

Table 1: Rational Method Results

RATIONAL METHOD RESULTS		
	Existing Peak Flow (cfs)	*Proposed Peak Flow (cfs)*
10-YEAR	1.8	2.6
100-YEAR	2.8	3.7

Unit Hydrograph Method Analysis

The Unit Hydrograph Hydrology Method was performed to evaluate the site pre- and post-developed flow rates and runoff volumes for the analyzed storm events. The pre- and post-condition runoff rates were used to establish the adequate underground storage size needed to comply with HCOC mitigation requirements. The 2-year, 24-hour and 100-year, 24-hour storm events were used to size the underground storage system. The outlet system is also designed with a weir to provide an emergency escape mechanism in the case of a severe storm or the clogging of the proposed orifice. This bypass was sized to convey the 100-year 1-hour storm event. Calculations regarding the unit hydrograph analysis, basin routing, and outlet structure can be found in Section 4. Table 2 below summarizes the results of all unit hydrograph and basin routing analyses.

Table 2: Unit Hydrograph and Basin Routing Results Summary

	UNDERGROUND STORAGE						
	EXISTING		PROPOSED		ROUTING		
	VOLUME (AC-FT)	*Q_{PEAK} (CFS)*	*VOLUME (AC-FT)*	*Q_{PEAK} (CFS)*	*VOLUME (AC-FT)*	*Q_{PEAK} (CFS)*	*MAX DEPTH (FT)*
2-YR, 24-HR	*0.09*	***0.15***	*0.13*	*0.21*	*0.12*	***0.14***	*1.28*
100-YR, 24-HR	0.21	**0.34**	0.29	0.49	0.28	**0.31**	3.42

*Rational method calculations provide a Q_{PEAK} of **3.70** cfs (100-yr, 1-hr storm)*

The proposed underground storage chambers are able to adequately mitigate for the 2-year and 100-year, 24-hour storm events.

Hydraulic Analysis

The project site will incorporate one storm drain system that will ultimately connect into the existing Romoland-Motte Farm Storm Drain.

For preliminary purposes, the storm drain systems have been sized according to the minimum sizes determined from the rational method hydrology. In final engineering, hydraulic calculations will be provided for the systems to determine pipe sizes needed to convey the 100-year 1-hour storm event.

Proposed Post Construction BMP's

The proposed post construction water quality management plan may include, but may not be limited to the following measures:

- Public education programs
- Scheduled street sweeping
- Slope planting

Due to site constraints, the water quality treatment will be obtained through a proposed biotreatment device (MWS Vault) and Hydrologic Conditions of Concern (HCOC) mitigation requirements will be obtained through an underground storage system. Details regarding the water quality facilities can be found in the PWQMP report for the Motte Country Plaza project.

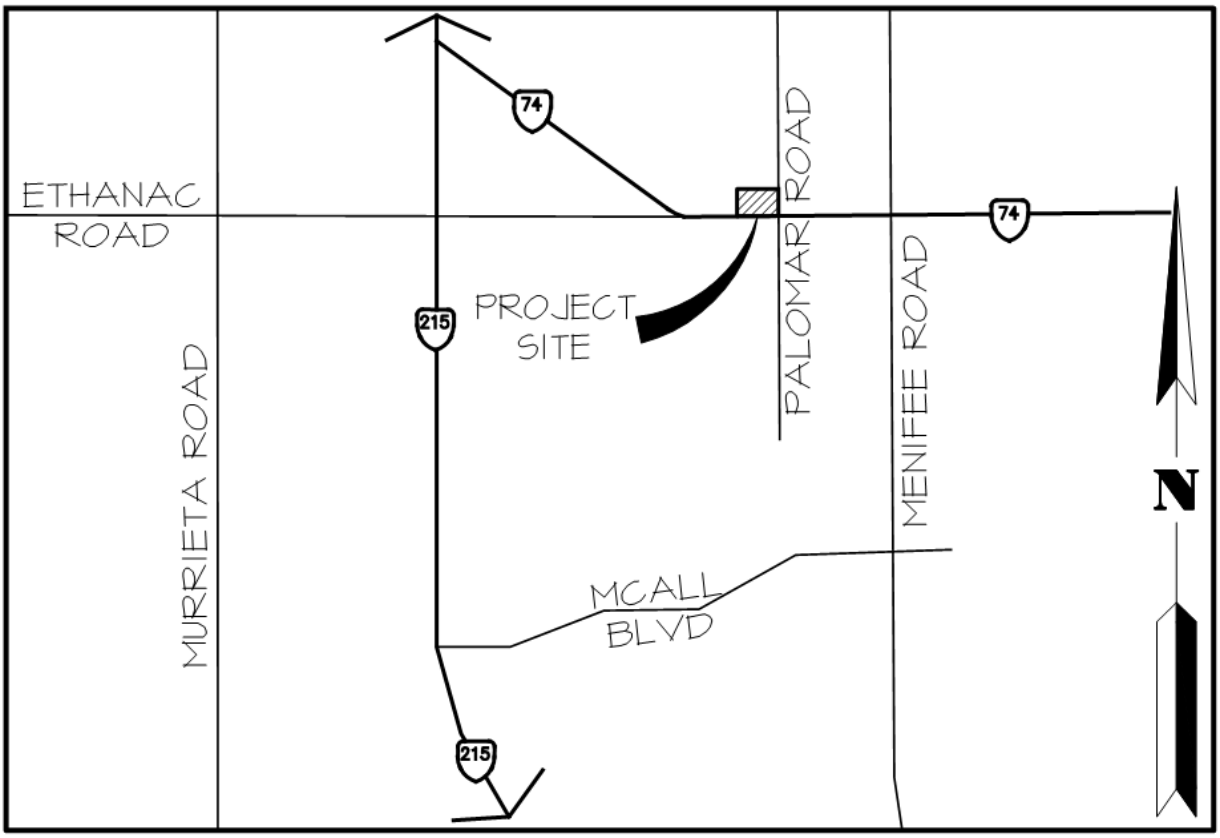
Methodology

Civil Design Version 7.0 Computer Software Program was utilized for Riverside County Rational Method calculations to determine on-site 100-year storm and for the Unit Hydrograph Method calculations.

Conclusion

Based upon the results of this report, it is concluded that the proposed facilities will adequately provide drainage conveyance for the ultimate design capacity. The proposed facilities, with ultimate development and adequate maintenance, will convey flows safely through the region in accordance with Riverside County Requirements.

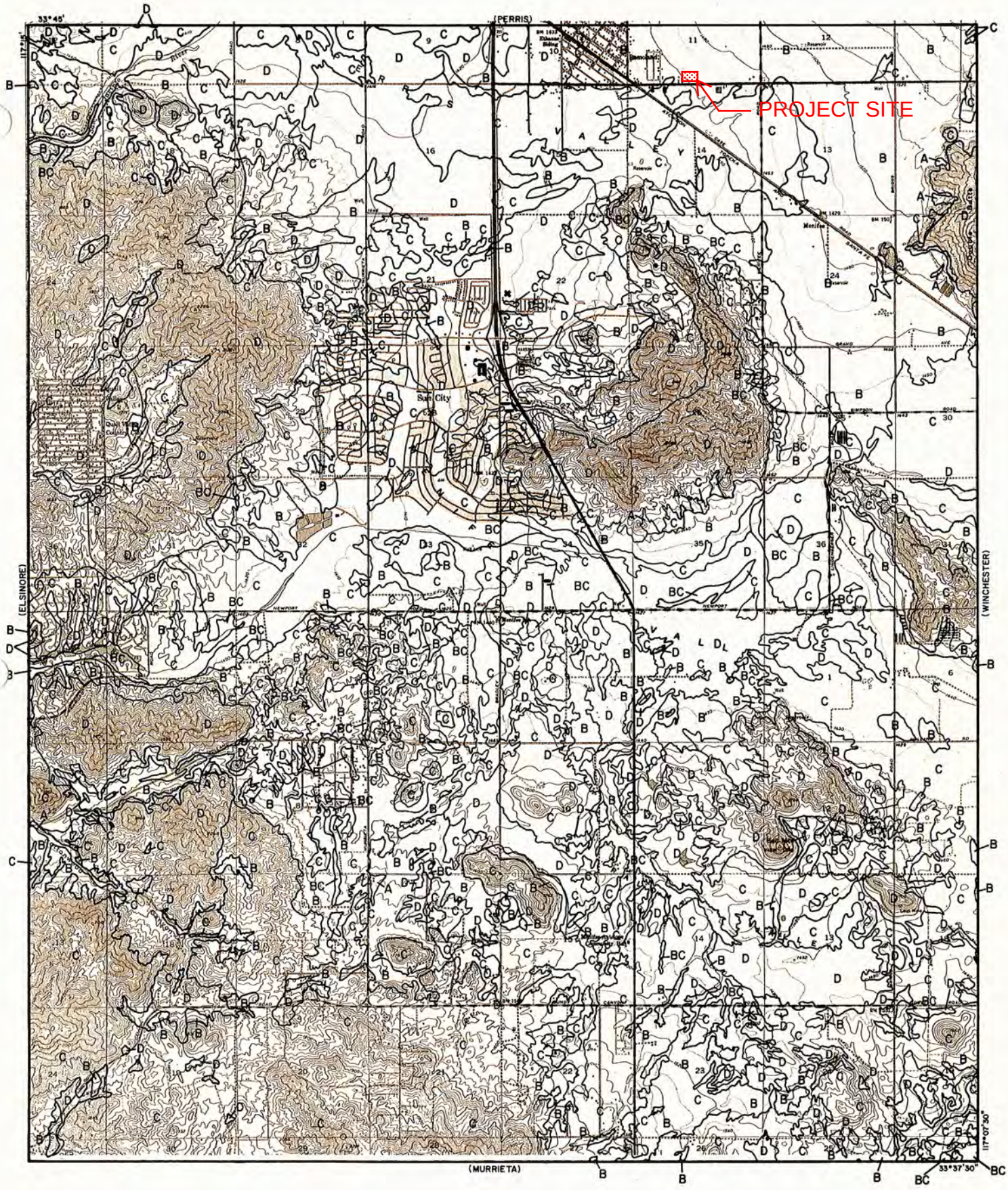
Location Map



VICINITY MAP
NTS
SECTION 11 T5S R3W

SECTION 2 - Backup Information

Soils Group Map



LEGEND

—— SOILS GROUP BOUNDARY

A SOILS GROUP DESIGNATION

RCFC&WCD

HYDROLOGY MANUAL

0 FEET 5000

HYDROLOGIC SOILS GROUP MAP FOR ROMOLAND

PLATE C-1.42

Rainfall Intensity

RAINFALL INTENSITY—INCHES PER HOUR

MIRA LOMA			MURRIETA - TEMECULA & RANCHO CALIFORNIA			NORCO			PALM SPRINGS			PERRIS VALLEY		
DURATION MINUTES	FREQUENCY		DURATION MINUTES	FREQUENCY		DURATION MINUTES	FREQUENCY		DURATION MINUTES	FREQUENCY		DURATION MINUTES	FREQUENCY	
	10 YEAR	100 YEAR		10 YEAR	100 YEAR		10 YEAR	100 YEAR		10 YEAR	100 YEAR		10 YEAR	100 YEAR
5	2.84	4.48	5	3.45	5.10	5	2.77	4.16	5	4.23	6.76	5	2.64	3.78
6	2.58	4.07	6	3.12	4.61	6	2.53	3.79	6	3.80	6.08	6	2.41	3.46
7	2.37	3.75	7	2.87	4.24	7	2.34	3.51	7	3.48	5.56	7	2.24	3.21
8	2.21	3.49	8	2.67	3.94	8	2.19	3.29	8	3.22	5.15	8	2.09	3.01
9	2.08	3.28	9	2.50	3.69	9	2.07	3.10	9	3.01	4.81	9	1.98	2.84
10	1.96	3.10	10	2.36	3.48	10	1.96	2.94	10	2.83	4.52	10	1.88	2.69
11	1.87	2.95	11	2.24	3.30	11	1.87	2.80	11	2.67	4.28	11	1.79	2.57
12	1.78	2.82	12	2.13	3.15	12	1.79	2.68	12	2.54	4.07	12	1.72	2.46
13	1.71	2.70	13	2.04	3.01	13	1.72	2.58	13	2.43	3.88	13	1.65	2.37
14	1.64	2.60	14	1.96	2.89	14	1.66	2.48	14	2.33	3.72	14	1.59	2.29
15	1.58	2.50	15	1.89	2.79	15	1.60	2.40	15	2.23	3.58	15	1.54	2.21
16	1.53	2.42	16	1.82	2.69	16	1.55	2.32	16	2.15	3.44	16	1.49	2.14
17	1.48	2.34	17	1.76	2.60	17	1.50	2.25	17	2.08	3.32	17	1.45	2.08
18	1.44	2.27	18	1.71	2.52	18	1.46	2.19	18	2.01	3.22	18	1.41	2.02
19	1.40	2.21	19	1.66	2.45	19	1.42	2.13	19	1.95	3.12	19	1.37	1.97
20	1.36	2.15	20	1.61	2.38	20	1.39	2.08	20	1.89	3.03	20	1.34	1.92
22	1.29	2.04	22	1.53	2.26	22	1.32	1.98	22	1.79	2.86	22	1.28	1.83
24	1.24	1.95	24	1.46	2.15	24	1.26	1.90	24	1.70	2.72	24	1.22	1.75
26	1.18	1.87	26	1.39	2.06	26	1.22	1.82	26	1.62	2.60	26	1.18	1.69
28	1.14	1.80	28	1.34	1.98	28	1.17	1.76	28	1.56	2.49	28	1.13	1.63
30	1.10	1.73	30	1.29	1.90	30	1.13	1.70	30	1.49	2.39	30	1.10	1.57
32	1.06	1.67	32	1.24	1.84	32	1.10	1.64	32	1.44	2.30	32	1.06	1.52
34	1.03	1.62	34	1.20	1.78	34	1.06	1.59	34	1.39	2.22	34	1.03	1.48
36	1.00	1.57	36	1.17	1.72	36	1.03	1.55	36	1.34	2.15	36	1.00	1.44
38	.97	1.53	38	1.13	1.67	38	1.01	1.51	38	1.30	2.09	38	.98	1.40
40	.94	1.49	40	1.10	1.62	40	.98	1.47	40	1.27	2.02	40	.95	1.37
45	.89	1.40	45	1.03	1.52	45	.92	1.39	45	1.18	1.89	45	.90	1.29
50	.84	1.32	50	.97	1.44	50	.88	1.31	50	1.11	1.78	50	.85	1.22
55	.80	1.26	55	.92	1.36	55	.84	1.25	55	1.05	1.68	55	.81	1.17
60	.76	1.20	60	.88	1.30	60	.80	1.20	60	1.00	1.60	60	.78	1.12
65	.73	1.15	65	.84	1.24	65	.77	1.15	65	.95	1.53	65	.75	1.08
70	.70	1.11	70	.81	1.19	70	.74	1.11	70	.91	1.46	70	.72	1.04
75	.68	1.07	75	.78	1.15	75	.72	1.07	75	.88	1.41	75	.70	1.00
80	.65	1.03	80	.75	1.11	80	.69	1.04	80	.85	1.35	80	.68	.97
85	.63	1.00	85	.73	1.07	85	.67	1.01	85	.82	1.31	85	.66	.94
SLOPE = .530			SLOPE = .550			SLOPE = .500			SLOPE = .580			SLOPE = .490		

RCFC & WCD

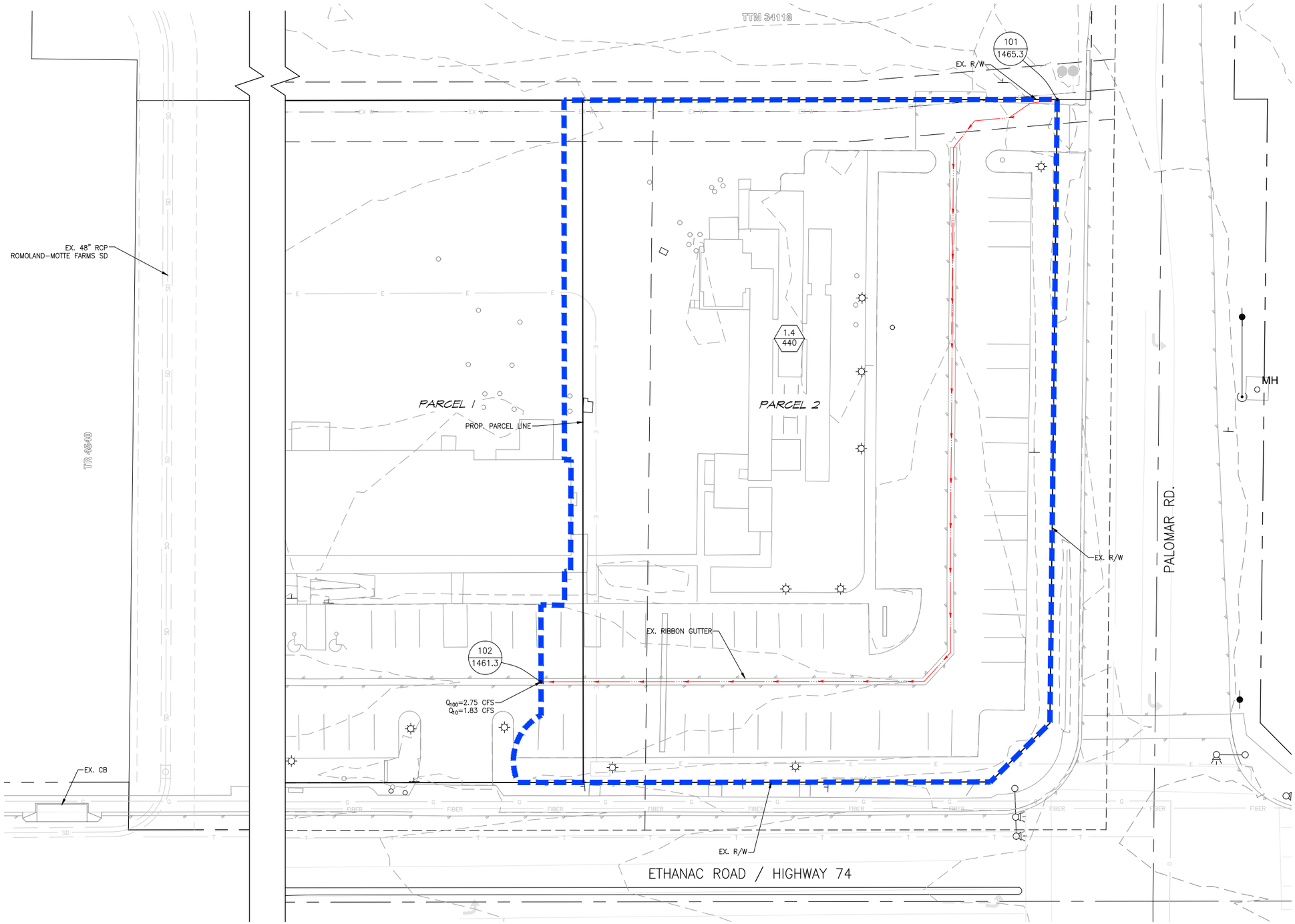
HYDROLOGY MANUAL

STANDARD INTENSITY-DURATION CURVES DATA

PLATE D-4.1 (4 of 6)

SECTION 3 - Hydrologic Studies

Rational Method Map



LEGEND

NODE / ELEV	– NODE NUMBER – ELEVATION (FT)
AC / FT	– AREA (AC) – LENGTH (FT)
	– DRAINAGE AREA BOUNDARY
	– FLOWLINE

N
W WEBB E
S

1" = 20'
10 0 20 40 60

REVISIONS	DATE	BY

UNIT HYDROGRAPH HYDROLOGY MAP

MOTTE COUNTRY PLAZA
CITY OF MENIFEE
EXISTING HYDROLOGY MAP

SCALE:	1"=20'
DATE:	6/24/2020
DESIGNED:	AYS
CHECKED:	JRG
PLN CK REF:	REF
F.B.	F.B.

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W.O.	18-0099
SHEET	1
OF	2 SHEETS
DWG. NO.	

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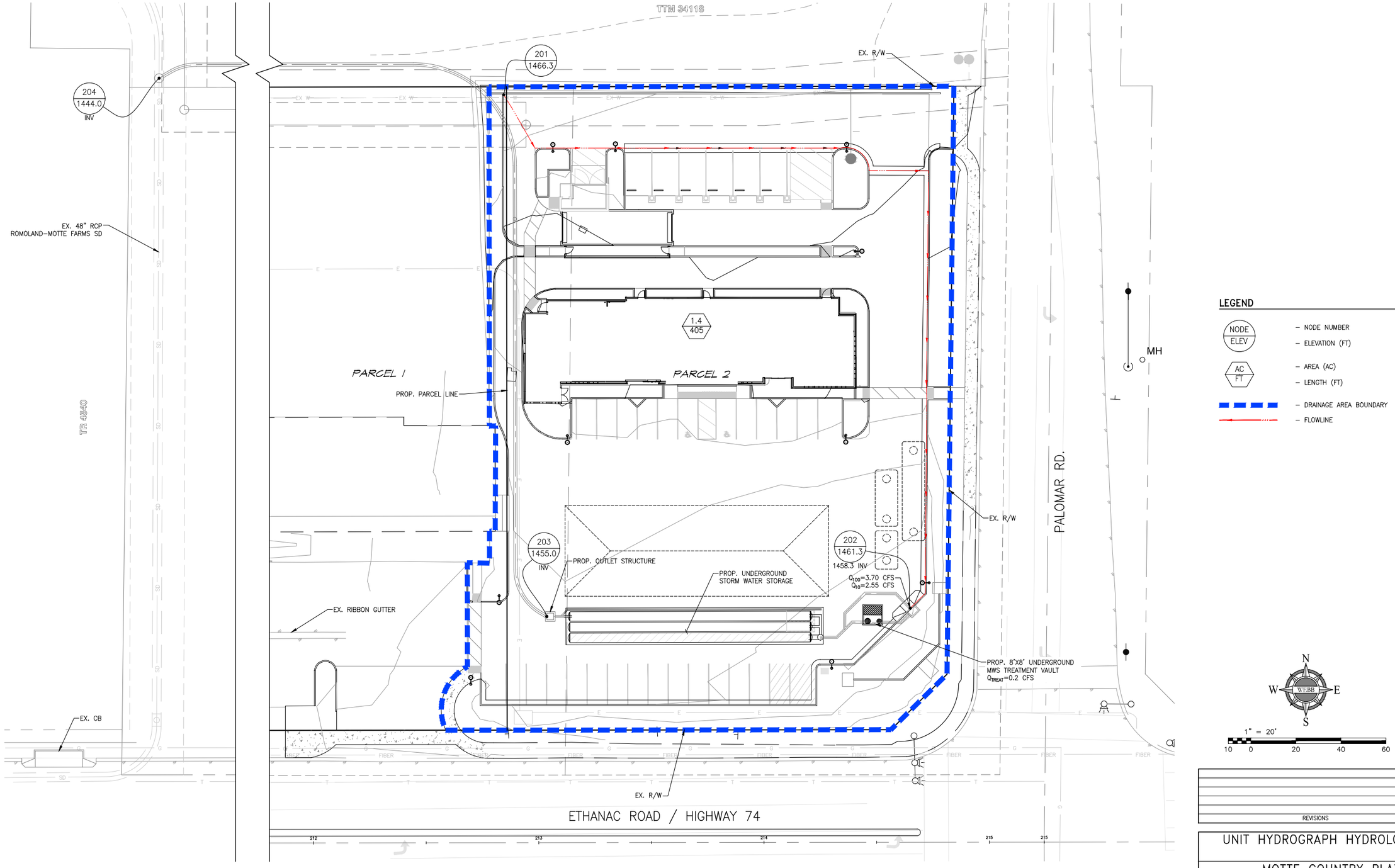

LEGEND

NODE / ELEV	– NODE NUMBER – ELEVATION (FT)
AC / FT	– AREA (AC) – LENGTH (FT)
	– DRAINAGE AREA BOUNDARY
	– FLOWLINE

N
W WEBB E
S

1" = 20'

10 0 20 40 60

REVISIONS	DATE	BY

UNIT HYDROGRAPH HYDROLOGY MAP

MOTTE COUNTRY PLAZA
CITY OF MENIFEE
PROPOSED HYDROLOGY MAP

SCALE:	1"=20'
DATE:	6/24/2020
DESIGNED:	AYS
CHECKED:	JRG
PLN CK REF:	REF
F.B.	F.B.

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W.O.	18-0099
SHEET	2
OF	2 SHEETS
DWG. NO.	

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Existing Condition Rational Method Study – 10 Year & 100-Year

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 05/18/20 File:EX10.out

MOTTE COUNTY PLAZA
10 YEAR STORM - EXISTING CONDITION
05-18-2020 AYS

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

Standard intensity-duration curves data (Plate D-4.1)
For the [Perris Valley] area used.
10 year storm 10 minute intensity = 1.880(In/Hr)
10 year storm 60 minute intensity = 0.780(In/Hr)
100 year storm 10 minute intensity = 2.690(In/Hr)
100 year storm 60 minute intensity = 1.120(In/Hr)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 0.780(In/Hr)
Slope of intensity duration curve = 0.4900

++

Process from Point/Station 101.000 to Point/Station 102.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 440.000(Ft.)
Top (of initial area) elevation = 1465.300(Ft.)
Bottom (of initial area) elevation = 1461.300(Ft.)
Difference in elevation = 4.000(Ft.)
Slope = 0.00909 s(percent)= 0.91
TC = k(0.387)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 11.317 min.
Rainfall intensity = 1.766(In/Hr) for a 10.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.739
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.480; Impervious fraction = 0.520
Initial subarea runoff = 1.828(CFS)
Total initial stream area = 1.400(Ac.)
Pervious area fraction = 0.480
End of computations, total study area = 1.40 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.480
Area averaged RI index number = 56.0

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 05/18/20 File:EX100.out

MOTTE COUNTY PLAZA
100-YEAR STORM - EXISTING CONDITION
05-18-2020 AYS

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

Standard intensity-duration curves data (Plate D-4.1)
For the [Perris Valley] area used.
10 year storm 10 minute intensity = 1.880(In/Hr)
10 year storm 60 minute intensity = 0.780(In/Hr)
100 year storm 10 minute intensity = 2.690(In/Hr)
100 year storm 60 minute intensity = 1.120(In/Hr)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.120(In/Hr)
Slope of intensity duration curve = 0.4900

++

Process from Point/Station 101.000 to Point/Station 102.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 440.000(Ft.)
Top (of initial area) elevation = 1465.300(Ft.)
Bottom (of initial area) elevation = 1461.300(Ft.)
Difference in elevation = 4.000(Ft.)
Slope = 0.00909 s(percent)= 0.91
TC = k(0.387)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 11.317 min.
Rainfall intensity = 2.536(In/Hr) for a 100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.774
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.480; Impervious fraction = 0.520
Initial subarea runoff = 2.747(CFS)
Total initial stream area = 1.400(Ac.)
Pervious area fraction = 0.480
End of computations, total study area = 1.40 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.480
Area averaged RI index number = 56.0

Developed Condition Rational Method Study – 10 Year & 100-Year

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 05/15/20 File:PROP10.out

MOTTE COUNTY PLAZA
10 YEAR STORM - PROPOSED CONDITION
2020-05-15 AYS

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

Standard intensity-duration curves data (Plate D-4.1)
For the [Perris Valley] area used.
10 year storm 10 minute intensity = 1.880(In/Hr)
10 year storm 60 minute intensity = 0.780(In/Hr)
100 year storm 10 minute intensity = 2.690(In/Hr)
100 year storm 60 minute intensity = 1.120(In/Hr)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 0.780(In/Hr)
Slope of intensity duration curve = 0.4900

++

Process from Point/Station 201.000 to Point/Station 202.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 405.000(Ft.)
Top (of initial area) elevation = 1466.300(Ft.)
Bottom (of initial area) elevation = 1461.300(Ft.)
Difference in elevation = 5.000(Ft.)
Slope = 0.01235 s(percent)= 1.23
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 7.976 min.
Rainfall intensity = 2.097(In/Hr) for a 10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.870
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 2.554(CFS)
Total initial stream area = 1.400(Ac.)
Pervious area fraction = 0.100

++

Process from Point/Station 202.000 to Point/Station 203.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****

Upstream point/station elevation = 1458.300(Ft.)
Downstream point/station elevation = 1455.000(Ft.)
Pipe length = 185.00(Ft.) Manning's N = 0.013

```
No. of pipes = 1  Required pipe flow  =     2.554(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =     2.554(CFS)
Normal flow depth in pipe =    6.26(In.)
Flow top width inside pipe =   11.99(In.)
Critical Depth =    8.22(In.)
Pipe flow velocity =      6.17(Ft/s)
Travel time through pipe =    0.50 min.
Time of concentration (TC) =     8.48 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      203.000 to Point/Station      204.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  1455.000(Ft.)
Downstream point/station elevation =  1444.000(Ft.)
Pipe length  =  1165.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     2.554(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =     2.554(CFS)
Normal flow depth in pipe =    7.66(In.)
Flow top width inside pipe =   11.53(In.)
Critical Depth =    8.22(In.)
Pipe flow velocity =      4.82(Ft/s)
Travel time through pipe =    4.03 min.
Time of concentration (TC) =    12.50 min.
End of computations, total study area =            1.40 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  56.0
```

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 05/15/20 File:PROP100.out

MOTTE COUNTY PLAZA
100 YEAR STORM - PROPOSED CONDITION
2020-05-15 AYS

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

Standard intensity-duration curves data (Plate D-4.1)
For the [Perris Valley] area used.
10 year storm 10 minute intensity = 1.880(In/Hr)
10 year storm 60 minute intensity = 0.780(In/Hr)
100 year storm 10 minute intensity = 2.690(In/Hr)
100 year storm 60 minute intensity = 1.120(In/Hr)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.120(In/Hr)
Slope of intensity duration curve = 0.4900

++

Process from Point/Station 201.000 to Point/Station 202.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 405.000(Ft.)
Top (of initial area) elevation = 1466.300(Ft.)
Bottom (of initial area) elevation = 1461.300(Ft.)
Difference in elevation = 5.000(Ft.)
Slope = 0.01235 s(percent)= 1.23
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 7.976 min.
Rainfall intensity = 3.010(In/Hr) for a 100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.877
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 3.695(CFS)
Total initial stream area = 1.400(Ac.)
Pervious area fraction = 0.100

++

Process from Point/Station 202.000 to Point/Station 203.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****

Upstream point/station elevation = 1458.300(Ft.)
Downstream point/station elevation = 1455.000(Ft.)
Pipe length = 185.00(Ft.) Manning's N = 0.013

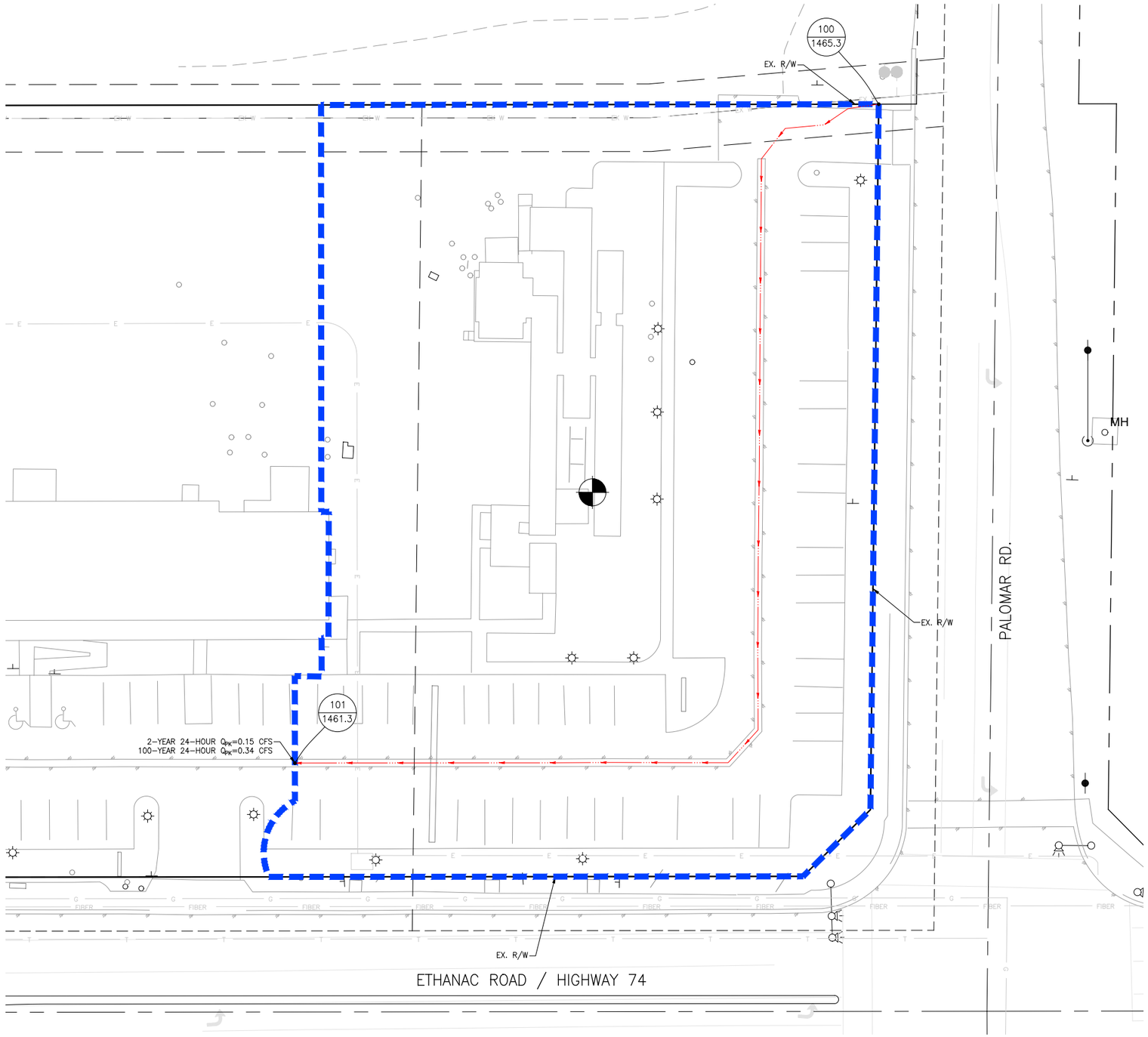
```
No. of pipes = 1  Required pipe flow  =     3.695(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =     3.695(CFS)
Normal flow depth in pipe =    7.95(In.)
Flow top width inside pipe =   11.35(In.)
Critical Depth =    9.83(In.)
Pipe flow velocity =      6.69(Ft/s)
Travel time through pipe =    0.46 min.
Time of concentration (TC) =     8.44 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      203.000 to Point/Station      204.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  1455.000(Ft.)
Downstream point/station elevation =  1444.000(Ft.)
Pipe length  =  1165.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     3.695(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =     3.695(CFS)
Normal flow depth in pipe =    8.27(In.)
Flow top width inside pipe =   14.92(In.)
Critical Depth =    9.32(In.)
Pipe flow velocity =      5.32(Ft/s)
Travel time through pipe =    3.65 min.
Time of concentration (TC) =    12.09 min.
End of computations, total study area =            1.40 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  56.0
```

SECTION 4 - Unit Hydrograph Method

Unit Hydrograph Maps



EXISTING CONDITION	
TOTAL AREA	1.4 AC
L_T	440 FT
L_{CA}	265 FT
ΔH	4.0 FT

LEGEND

NODE / ELEV – NODE NUMBER – ELEVATION (FT)

AC / FT – AREA (AC) – LENGTH (FT)

– DRAINAGE AREA BOUNDARY

– FLOWLINE

REVISIONS	DATE	BY

UNIT HYDROGRAPH HYDROLOGY MAP

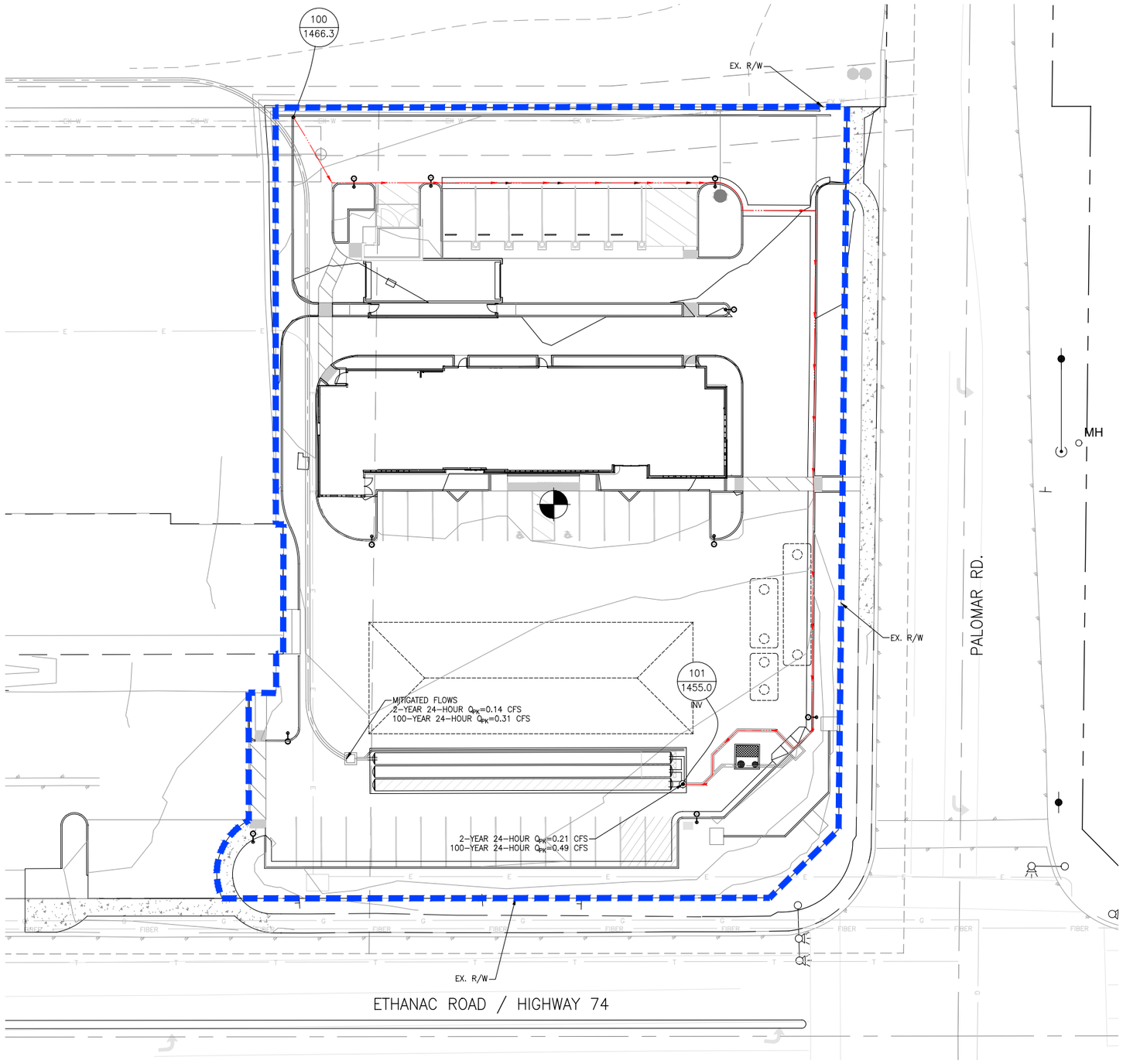
MOTTE COUNTRY PLAZA
CITY OF MENIFEE
EXISTING UNIT HYDROGRAPH MAP

SCALE:	1"=20'
DATE:	5/21/2020
DESIGNED:	AYS
CHECKED:	JRG
PLN CK REF:	REF
F.B.	F.B.

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE, CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

W.O.	18-0099
SHEET	1
OF	2 SHEETS
DWG. NO.	

G:\2018\18-0099\DRAWINGS\EXHIBITS\18-0099-UH EXHIBIT.DWG 5/18/2020 2:12:48 PM



PROPOSED CONDITION	
TOTAL AREA	1.4 AC
L_T	460 FT
L_{CA}	145 FT
ΔH	10.3 FT

LEGEND

NODE / ELEV – NODE NUMBER – ELEVATION (FT)

AC / FT – AREA (AC) – LENGTH (FT)

– DRAINAGE AREA BOUNDARY

– FLOWLINE

REVISIONS	DATE	BY

UNIT HYDROGRAPH HYDROLOGY MAP

MOTTE COUNTRY PLAZA
CITY OF MENIFEE
PROPOSED UNIT HYDROGRAPH MAP

SCALE:	1"=20'
DATE:	5/21/2020
DESIGNED:	AYS
CHECKED:	JRG
PLN CK REF:	REF
F.B.	F.B.

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W.O.	18-0099
SHEET	2
OF	2 SHEETS
DWG. NO.	

G:\2018\18-0099\DRAWINGS\EXHIBITS\18-0099-UH EXHIBIT.DWG 5/18/2020 2:12:48 PM

Existing Conditions (2-Year 24-Hour & 100-Year 24-Hour)

EXISTING CONDITION									
Cover Type	**Condition (Poor,Fair,Good)**	**Soil Type (A,B,C,D)**	**COVER TYPE**	**RI**	**Land Use**	**% Impervious**	**Area (SF)**	**Area (SF)**	**Impervious Area (SF)**
Urban	Good	B	RESIDENTIAL OR COMMERCIAL	56	Roof	0.9	4703	0.11	4233
Urban	Good	B	RESIDENTIAL OR COMMERCIAL	56	Streets/Conc	0.9	28043	0.64	25239
Urban	Good	B	RESIDENTIAL OR COMMERCIAL	56	Landscape	0	26372	0.61	0
			AVERAGE WEIGHTED RI VALUE	**56.00**		**TOTAL**	59118	1.4	
						TOTAL % IMPERVIOUS		**49.9%**	
						LOW LOSS RATE		**0.501**	

U n i t H y d r o g r a p h A n a l y s i s

Study date 05/18/20 File: ONSITEPRE242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

18-0099 - MOTTE COUNTY PLAZA
EXISTING ONSITE UNIT HYDROGRAPH
2-YEAR, 24-HOUR
2020-05-18 AYS

Drainage Area = 1.40(Ac.) = 0.002 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 1.40(Ac.) = 0.002 Sq. Mi.
Length along longest watercourse = 440.00(Ft.)
Length along longest watercourse measured to centroid = 265.00(Ft.)
Length along longest watercourse = 0.083 Mi.
Length along longest watercourse measured to centroid = 0.050 Mi.
Difference in elevation = 4.00(Ft.)
Slope along watercourse = 48.0000 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.022 Hr.
Lag time = 1.29 Min.
25% of lag time = 0.32 Min.
40% of lag time = 0.52 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.40	1.55	2.17

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.40	3.55	4.97

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.550(In)
Area Averaged 100-Year Rainfall = 3.550(In)

Point rain (area averaged) = 1.550(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.550(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
1.400	56.00	0.499

Total Area Entered = 1.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	36.0	0.706	0.499	0.389	1.000	0.389
					Sum (F) =	0.389

Area averaged mean soil loss (F) (In/Hr) = 0.389
Minimum soil loss rate ((In/Hr)) = 0.194
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.501

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	387.087	64.173	0.905
2	0.167	774.174	32.760	0.462
3	0.250	1161.261	3.067	0.043
			Sum = 100.000 Sum=	1.411

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.012	(0.689)	0.006	0.006
2	0.17	0.07	0.012	(0.687)	0.006	0.006
3	0.25	0.07	0.012	(0.684)	0.006	0.006
4	0.33	0.10	0.019	(0.681)	0.009	0.009
5	0.42	0.10	0.019	(0.679)	0.009	0.009
6	0.50	0.10	0.019	(0.676)	0.009	0.009
7	0.58	0.10	0.019	(0.674)	0.009	0.009
8	0.67	0.10	0.019	(0.671)	0.009	0.009
9	0.75	0.10	0.019	(0.668)	0.009	0.009
10	0.83	0.13	0.025	(0.666)	0.012	0.012
11	0.92	0.13	0.025	(0.663)	0.012	0.012
12	1.00	0.13	0.025	(0.660)	0.012	0.012
13	1.08	0.10	0.019	(0.658)	0.009	0.009
14	1.17	0.10	0.019	(0.655)	0.009	0.009
15	1.25	0.10	0.019	(0.653)	0.009	0.009
16	1.33	0.10	0.019	(0.650)	0.009	0.009
17	1.42	0.10	0.019	(0.647)	0.009	0.009
18	1.50	0.10	0.019	(0.645)	0.009	0.009
19	1.58	0.10	0.019	(0.642)	0.009	0.009
20	1.67	0.10	0.019	(0.640)	0.009	0.009
21	1.75	0.10	0.019	(0.637)	0.009	0.009
22	1.83	0.13	0.025	(0.635)	0.012	0.012
23	1.92	0.13	0.025	(0.632)	0.012	0.012
24	2.00	0.13	0.025	(0.629)	0.012	0.012
25	2.08	0.13	0.025	(0.627)	0.012	0.012
26	2.17	0.13	0.025	(0.624)	0.012	0.012
27	2.25	0.13	0.025	(0.622)	0.012	0.012
28	2.33	0.13	0.025	(0.619)	0.012	0.012
29	2.42	0.13	0.025	(0.617)	0.012	0.012
30	2.50	0.13	0.025	(0.614)	0.012	0.012
31	2.58	0.17	0.031	(0.612)	0.016	0.015
32	2.67	0.17	0.031	(0.609)	0.016	0.015
33	2.75	0.17	0.031	(0.607)	0.016	0.015
34	2.83	0.17	0.031	(0.604)	0.016	0.015
35	2.92	0.17	0.031	(0.602)	0.016	0.015
36	3.00	0.17	0.031	(0.599)	0.016	0.015
37	3.08	0.17	0.031	(0.597)	0.016	0.015
38	3.17	0.17	0.031	(0.594)	0.016	0.015
39	3.25	0.17	0.031	(0.592)	0.016	0.015
40	3.33	0.17	0.031	(0.589)	0.016	0.015
41	3.42	0.17	0.031	(0.587)	0.016	0.015
42	3.50	0.17	0.031	(0.584)	0.016	0.015
43	3.58	0.17	0.031	(0.582)	0.016	0.015
44	3.67	0.17	0.031	(0.580)	0.016	0.015
45	3.75	0.17	0.031	(0.577)	0.016	0.015
46	3.83	0.20	0.037	(0.575)	0.019	0.019
47	3.92	0.20	0.037	(0.572)	0.019	0.019

48	4.00	0.20	0.037	(0.570)	0.019	0.019
49	4.08	0.20	0.037	(0.567)	0.019	0.019
50	4.17	0.20	0.037	(0.565)	0.019	0.019
51	4.25	0.20	0.037	(0.563)	0.019	0.019
52	4.33	0.23	0.043	(0.560)	0.022	0.022
53	4.42	0.23	0.043	(0.558)	0.022	0.022
54	4.50	0.23	0.043	(0.555)	0.022	0.022
55	4.58	0.23	0.043	(0.553)	0.022	0.022
56	4.67	0.23	0.043	(0.551)	0.022	0.022
57	4.75	0.23	0.043	(0.548)	0.022	0.022
58	4.83	0.27	0.050	(0.546)	0.025	0.025
59	4.92	0.27	0.050	(0.544)	0.025	0.025
60	5.00	0.27	0.050	(0.541)	0.025	0.025
61	5.08	0.20	0.037	(0.539)	0.019	0.019
62	5.17	0.20	0.037	(0.537)	0.019	0.019
63	5.25	0.20	0.037	(0.534)	0.019	0.019
64	5.33	0.23	0.043	(0.532)	0.022	0.022
65	5.42	0.23	0.043	(0.530)	0.022	0.022
66	5.50	0.23	0.043	(0.527)	0.022	0.022
67	5.58	0.27	0.050	(0.525)	0.025	0.025
68	5.67	0.27	0.050	(0.523)	0.025	0.025
69	5.75	0.27	0.050	(0.520)	0.025	0.025
70	5.83	0.27	0.050	(0.518)	0.025	0.025
71	5.92	0.27	0.050	(0.516)	0.025	0.025
72	6.00	0.27	0.050	(0.513)	0.025	0.025
73	6.08	0.30	0.056	(0.511)	0.028	0.028
74	6.17	0.30	0.056	(0.509)	0.028	0.028
75	6.25	0.30	0.056	(0.507)	0.028	0.028
76	6.33	0.30	0.056	(0.504)	0.028	0.028
77	6.42	0.30	0.056	(0.502)	0.028	0.028
78	6.50	0.30	0.056	(0.500)	0.028	0.028
79	6.58	0.33	0.062	(0.498)	0.031	0.031
80	6.67	0.33	0.062	(0.495)	0.031	0.031
81	6.75	0.33	0.062	(0.493)	0.031	0.031
82	6.83	0.33	0.062	(0.491)	0.031	0.031
83	6.92	0.33	0.062	(0.489)	0.031	0.031
84	7.00	0.33	0.062	(0.486)	0.031	0.031
85	7.08	0.33	0.062	(0.484)	0.031	0.031
86	7.17	0.33	0.062	(0.482)	0.031	0.031
87	7.25	0.33	0.062	(0.480)	0.031	0.031
88	7.33	0.37	0.068	(0.478)	0.034	0.034
89	7.42	0.37	0.068	(0.475)	0.034	0.034
90	7.50	0.37	0.068	(0.473)	0.034	0.034
91	7.58	0.40	0.074	(0.471)	0.037	0.037
92	7.67	0.40	0.074	(0.469)	0.037	0.037
93	7.75	0.40	0.074	(0.467)	0.037	0.037
94	7.83	0.43	0.081	(0.465)	0.040	0.040
95	7.92	0.43	0.081	(0.462)	0.040	0.040
96	8.00	0.43	0.081	(0.460)	0.040	0.040
97	8.08	0.50	0.093	(0.458)	0.047	0.046
98	8.17	0.50	0.093	(0.456)	0.047	0.046
99	8.25	0.50	0.093	(0.454)	0.047	0.046
100	8.33	0.50	0.093	(0.452)	0.047	0.046
101	8.42	0.50	0.093	(0.450)	0.047	0.046
102	8.50	0.50	0.093	(0.448)	0.047	0.046
103	8.58	0.53	0.099	(0.445)	0.050	0.050
104	8.67	0.53	0.099	(0.443)	0.050	0.050
105	8.75	0.53	0.099	(0.441)	0.050	0.050
106	8.83	0.57	0.105	(0.439)	0.053	0.053
107	8.92	0.57	0.105	(0.437)	0.053	0.053
108	9.00	0.57	0.105	(0.435)	0.053	0.053
109	9.08	0.63	0.118	(0.433)	0.059	0.059
110	9.17	0.63	0.118	(0.431)	0.059	0.059
111	9.25	0.63	0.118	(0.429)	0.059	0.059
112	9.33	0.67	0.124	(0.427)	0.062	0.062
113	9.42	0.67	0.124	(0.425)	0.062	0.062
114	9.50	0.67	0.124	(0.423)	0.062	0.062
115	9.58	0.70	0.130	(0.421)	0.065	0.065
116	9.67	0.70	0.130	(0.419)	0.065	0.065
117	9.75	0.70	0.130	(0.417)	0.065	0.065
118	9.83	0.73	0.136	(0.415)	0.068	0.068
119	9.92	0.73	0.136	(0.413)	0.068	0.068
120	10.00	0.73	0.136	(0.411)	0.068	0.068
121	10.08	0.50	0.093	(0.409)	0.047	0.046
122	10.17	0.50	0.093	(0.407)	0.047	0.046

123	10.25	0.50	0.093	(0.405)	0.047	0.046
124	10.33	0.50	0.093	(0.403)	0.047	0.046
125	10.42	0.50	0.093	(0.401)	0.047	0.046
126	10.50	0.50	0.093	(0.399)	0.047	0.046
127	10.58	0.67	0.124	(0.397)	0.062	0.062
128	10.67	0.67	0.124	(0.395)	0.062	0.062
129	10.75	0.67	0.124	(0.393)	0.062	0.062
130	10.83	0.67	0.124	(0.391)	0.062	0.062
131	10.92	0.67	0.124	(0.389)	0.062	0.062
132	11.00	0.67	0.124	(0.387)	0.062	0.062
133	11.08	0.63	0.118	(0.385)	0.059	0.059
134	11.17	0.63	0.118	(0.384)	0.059	0.059
135	11.25	0.63	0.118	(0.382)	0.059	0.059
136	11.33	0.63	0.118	(0.380)	0.059	0.059
137	11.42	0.63	0.118	(0.378)	0.059	0.059
138	11.50	0.63	0.118	(0.376)	0.059	0.059
139	11.58	0.57	0.105	(0.374)	0.053	0.053
140	11.67	0.57	0.105	(0.372)	0.053	0.053
141	11.75	0.57	0.105	(0.370)	0.053	0.053
142	11.83	0.60	0.112	(0.369)	0.056	0.056
143	11.92	0.60	0.112	(0.367)	0.056	0.056
144	12.00	0.60	0.112	(0.365)	0.056	0.056
145	12.08	0.83	0.155	(0.363)	0.078	0.077
146	12.17	0.83	0.155	(0.361)	0.078	0.077
147	12.25	0.83	0.155	(0.359)	0.078	0.077
148	12.33	0.87	0.161	(0.358)	0.081	0.080
149	12.42	0.87	0.161	(0.356)	0.081	0.080
150	12.50	0.87	0.161	(0.354)	0.081	0.080
151	12.58	0.93	0.174	(0.352)	0.087	0.087
152	12.67	0.93	0.174	(0.350)	0.087	0.087
153	12.75	0.93	0.174	(0.349)	0.087	0.087
154	12.83	0.97	0.180	(0.347)	0.090	0.090
155	12.92	0.97	0.180	(0.345)	0.090	0.090
156	13.00	0.97	0.180	(0.343)	0.090	0.090
157	13.08	1.13	0.211	(0.342)	0.106	0.105
158	13.17	1.13	0.211	(0.340)	0.106	0.105
159	13.25	1.13	0.211	(0.338)	0.106	0.105
160	13.33	1.13	0.211	(0.337)	0.106	0.105
161	13.42	1.13	0.211	(0.335)	0.106	0.105
162	13.50	1.13	0.211	(0.333)	0.106	0.105
163	13.58	0.77	0.143	(0.331)	0.071	0.071
164	13.67	0.77	0.143	(0.330)	0.071	0.071
165	13.75	0.77	0.143	(0.328)	0.071	0.071
166	13.83	0.77	0.143	(0.326)	0.071	0.071
167	13.92	0.77	0.143	(0.325)	0.071	0.071
168	14.00	0.77	0.143	(0.323)	0.071	0.071
169	14.08	0.90	0.167	(0.321)	0.084	0.084
170	14.17	0.90	0.167	(0.320)	0.084	0.084
171	14.25	0.90	0.167	(0.318)	0.084	0.084
172	14.33	0.87	0.161	(0.317)	0.081	0.080
173	14.42	0.87	0.161	(0.315)	0.081	0.080
174	14.50	0.87	0.161	(0.313)	0.081	0.080
175	14.58	0.87	0.161	(0.312)	0.081	0.080
176	14.67	0.87	0.161	(0.310)	0.081	0.080
177	14.75	0.87	0.161	(0.308)	0.081	0.080
178	14.83	0.83	0.155	(0.307)	0.078	0.077
179	14.92	0.83	0.155	(0.305)	0.078	0.077
180	15.00	0.83	0.155	(0.304)	0.078	0.077
181	15.08	0.80	0.149	(0.302)	0.075	0.074
182	15.17	0.80	0.149	(0.301)	0.075	0.074
183	15.25	0.80	0.149	(0.299)	0.075	0.074
184	15.33	0.77	0.143	(0.298)	0.071	0.071
185	15.42	0.77	0.143	(0.296)	0.071	0.071
186	15.50	0.77	0.143	(0.295)	0.071	0.071
187	15.58	0.63	0.118	(0.293)	0.059	0.059
188	15.67	0.63	0.118	(0.292)	0.059	0.059
189	15.75	0.63	0.118	(0.290)	0.059	0.059
190	15.83	0.63	0.118	(0.289)	0.059	0.059
191	15.92	0.63	0.118	(0.287)	0.059	0.059
192	16.00	0.63	0.118	(0.286)	0.059	0.059
193	16.08	0.13	0.025	(0.284)	0.012	0.012
194	16.17	0.13	0.025	(0.283)	0.012	0.012
195	16.25	0.13	0.025	(0.281)	0.012	0.012
196	16.33	0.13	0.025	(0.280)	0.012	0.012
197	16.42	0.13	0.025	(0.278)	0.012	0.012

198	16.50	0.13	0.025	(0.277)	0.012	0.012
199	16.58	0.10	0.019	(0.276)	0.009	0.009
200	16.67	0.10	0.019	(0.274)	0.009	0.009
201	16.75	0.10	0.019	(0.273)	0.009	0.009
202	16.83	0.10	0.019	(0.271)	0.009	0.009
203	16.92	0.10	0.019	(0.270)	0.009	0.009
204	17.00	0.10	0.019	(0.269)	0.009	0.009
205	17.08	0.17	0.031	(0.267)	0.016	0.015
206	17.17	0.17	0.031	(0.266)	0.016	0.015
207	17.25	0.17	0.031	(0.265)	0.016	0.015
208	17.33	0.17	0.031	(0.263)	0.016	0.015
209	17.42	0.17	0.031	(0.262)	0.016	0.015
210	17.50	0.17	0.031	(0.261)	0.016	0.015
211	17.58	0.17	0.031	(0.259)	0.016	0.015
212	17.67	0.17	0.031	(0.258)	0.016	0.015
213	17.75	0.17	0.031	(0.257)	0.016	0.015
214	17.83	0.13	0.025	(0.256)	0.012	0.012
215	17.92	0.13	0.025	(0.254)	0.012	0.012
216	18.00	0.13	0.025	(0.253)	0.012	0.012
217	18.08	0.13	0.025	(0.252)	0.012	0.012
218	18.17	0.13	0.025	(0.250)	0.012	0.012
219	18.25	0.13	0.025	(0.249)	0.012	0.012
220	18.33	0.13	0.025	(0.248)	0.012	0.012
221	18.42	0.13	0.025	(0.247)	0.012	0.012
222	18.50	0.13	0.025	(0.246)	0.012	0.012
223	18.58	0.10	0.019	(0.244)	0.009	0.009
224	18.67	0.10	0.019	(0.243)	0.009	0.009
225	18.75	0.10	0.019	(0.242)	0.009	0.009
226	18.83	0.07	0.012	(0.241)	0.006	0.006
227	18.92	0.07	0.012	(0.240)	0.006	0.006
228	19.00	0.07	0.012	(0.239)	0.006	0.006
229	19.08	0.10	0.019	(0.238)	0.009	0.009
230	19.17	0.10	0.019	(0.236)	0.009	0.009
231	19.25	0.10	0.019	(0.235)	0.009	0.009
232	19.33	0.13	0.025	(0.234)	0.012	0.012
233	19.42	0.13	0.025	(0.233)	0.012	0.012
234	19.50	0.13	0.025	(0.232)	0.012	0.012
235	19.58	0.10	0.019	(0.231)	0.009	0.009
236	19.67	0.10	0.019	(0.230)	0.009	0.009
237	19.75	0.10	0.019	(0.229)	0.009	0.009
238	19.83	0.07	0.012	(0.228)	0.006	0.006
239	19.92	0.07	0.012	(0.227)	0.006	0.006
240	20.00	0.07	0.012	(0.226)	0.006	0.006
241	20.08	0.10	0.019	(0.225)	0.009	0.009
242	20.17	0.10	0.019	(0.224)	0.009	0.009
243	20.25	0.10	0.019	(0.223)	0.009	0.009
244	20.33	0.10	0.019	(0.222)	0.009	0.009
245	20.42	0.10	0.019	(0.221)	0.009	0.009
246	20.50	0.10	0.019	(0.220)	0.009	0.009
247	20.58	0.10	0.019	(0.219)	0.009	0.009
248	20.67	0.10	0.019	(0.218)	0.009	0.009
249	20.75	0.10	0.019	(0.217)	0.009	0.009
250	20.83	0.07	0.012	(0.216)	0.006	0.006
251	20.92	0.07	0.012	(0.216)	0.006	0.006
252	21.00	0.07	0.012	(0.215)	0.006	0.006
253	21.08	0.10	0.019	(0.214)	0.009	0.009
254	21.17	0.10	0.019	(0.213)	0.009	0.009
255	21.25	0.10	0.019	(0.212)	0.009	0.009
256	21.33	0.07	0.012	(0.211)	0.006	0.006
257	21.42	0.07	0.012	(0.211)	0.006	0.006
258	21.50	0.07	0.012	(0.210)	0.006	0.006
259	21.58	0.10	0.019	(0.209)	0.009	0.009
260	21.67	0.10	0.019	(0.208)	0.009	0.009
261	21.75	0.10	0.019	(0.207)	0.009	0.009
262	21.83	0.07	0.012	(0.207)	0.006	0.006
263	21.92	0.07	0.012	(0.206)	0.006	0.006
264	22.00	0.07	0.012	(0.205)	0.006	0.006
265	22.08	0.10	0.019	(0.205)	0.009	0.009
266	22.17	0.10	0.019	(0.204)	0.009	0.009
267	22.25	0.10	0.019	(0.203)	0.009	0.009
268	22.33	0.07	0.012	(0.203)	0.006	0.006
269	22.42	0.07	0.012	(0.202)	0.006	0.006
270	22.50	0.07	0.012	(0.202)	0.006	0.006
271	22.58	0.07	0.012	(0.201)	0.006	0.006
272	22.67	0.07	0.012	(0.200)	0.006	0.006

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273  22.75     0.07      0.012       (  0.200)       0.006        0.006
274  22.83     0.07      0.012       (  0.199)       0.006        0.006
275  22.92     0.07      0.012       (  0.199)       0.006        0.006
276  23.00     0.07      0.012       (  0.198)       0.006        0.006
277  23.08     0.07      0.012       (  0.198)       0.006        0.006
278  23.17     0.07      0.012       (  0.197)       0.006        0.006
279  23.25     0.07      0.012       (  0.197)       0.006        0.006
280  23.33     0.07      0.012       (  0.197)       0.006        0.006
281  23.42     0.07      0.012       (  0.196)       0.006        0.006
282  23.50     0.07      0.012       (  0.196)       0.006        0.006
283  23.58     0.07      0.012       (  0.196)       0.006        0.006
284  23.67     0.07      0.012       (  0.195)       0.006        0.006
285  23.75     0.07      0.012       (  0.195)       0.006        0.006
286  23.83     0.07      0.012       (  0.195)       0.006        0.006
287  23.92     0.07      0.012       (  0.195)       0.006        0.006
288  24.00     0.07      0.012       (  0.194)       0.006        0.006
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =     9.3
      Flood volume = Effective rainfall      0.77(In)
       times area       1.4(Ac.)/[(In)/(Ft.)] =       0.1(Ac.Ft)
      Total soil loss =      0.78(In)
      Total soil loss =     0.091(Ac.Ft)
      Total rainfall =      1.55(In)
      Flood volume =        3930.7 Cubic Feet
      Total soil loss =        3946.4 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      0.148(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                    R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
 ---------------------------------------------------------------------------
   0+ 5       0.0000      0.01  Q          |         |         |         |
   0+10       0.0001      0.01  Q          |         |         |         |
   0+15       0.0002      0.01  Q          |         |         |         |
   0+20       0.0002      0.01  Q          |         |         |         |
   0+25       0.0003      0.01  Q          |         |         |         |
   0+30       0.0004      0.01  Q          |         |         |         |
   0+35       0.0005      0.01  Q          |         |         |         |
   0+40       0.0006      0.01  Q          |         |         |         |
   0+45       0.0007      0.01  Q          |         |         |         |
   0+50       0.0008      0.02  Q          |         |         |         |
   0+55       0.0009      0.02  Q          |         |         |         |
   1+ 0       0.0010      0.02  Q          |         |         |         |
   1+ 5       0.0011      0.01  Q          |         |         |         |
   1+10       0.0012      0.01  Q          |         |         |         |
   1+15       0.0013      0.01  Q          |         |         |         |
   1+20       0.0014      0.01  Q          |         |         |         |
   1+25       0.0015      0.01  Q          |         |         |         |
   1+30       0.0016      0.01  Q          |         |         |         |
   1+35       0.0017      0.01  Q          |         |         |         |
   1+40       0.0018      0.01  Q          |         |         |         |
   1+45       0.0019      0.01  Q          |         |         |         |
   1+50       0.0020      0.02  Q          |         |         |         |
   1+55       0.0021      0.02  Q          |         |         |         |
   2+ 0       0.0022      0.02  Q          |         |         |         |
   2+ 5       0.0023      0.02  QV         |         |         |         |
   2+10       0.0024      0.02  QV         |         |         |         |
   2+15       0.0026      0.02  QV         |         |         |         |
   2+20       0.0027      0.02  QV         |         |         |         |
   2+25       0.0028      0.02  QV         |         |         |         |
   2+30       0.0029      0.02  QV         |         |         |         |
   2+35       0.0031      0.02  QV         |         |         |         |
   2+40       0.0032      0.02  QV         |         |         |         |
   2+45       0.0034      0.02  QV         |         |         |         |
   2+50       0.0035      0.02  QV         |         |         |         |
   2+55       0.0037      0.02  QV         |         |         |         |
   3+ 0       0.0038      0.02  QV         |         |         |         |
   3+ 5       0.0040      0.02  QV         |         |         |         |
   3+10       0.0041      0.02  QV         |         |         |         |
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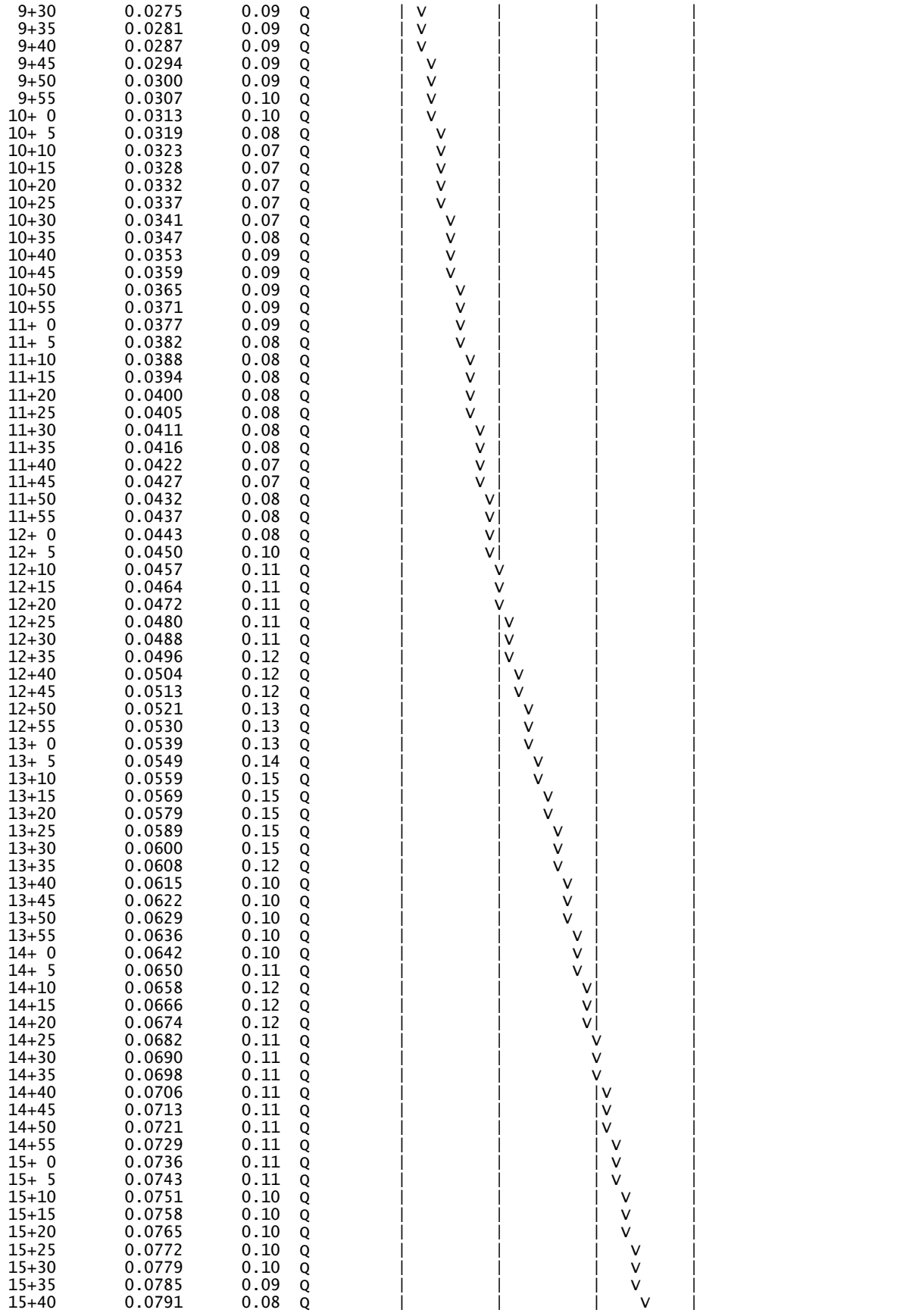
3+15       0.0043      0.02  QV         |          |          |          |
3+20       0.0044      0.02  QV         |          |          |          |
3+25       0.0046      0.02  Q V        |          |          |          |
3+30       0.0047      0.02  Q V        |          |          |          |
3+35       0.0049      0.02  Q V        |          |          |          |
3+40       0.0050      0.02  Q V        |          |          |          |
3+45       0.0052      0.02  Q V        |          |          |          |
3+50       0.0053      0.02  Q V        |          |          |          |
3+55       0.0055      0.03  Q V        |          |          |          |
4+ 0       0.0057      0.03  Q V        |          |          |          |
4+ 5       0.0059      0.03  Q V        |          |          |          |
4+10       0.0061      0.03  Q V        |          |          |          |
4+15       0.0062      0.03  Q V        |          |          |          |
4+20       0.0064      0.03  Q V        |          |          |          |
4+25       0.0067      0.03  Q V        |          |          |          |
4+30       0.0069      0.03  Q  V       |          |          |          |
4+35       0.0071      0.03  Q  V       |          |          |          |
4+40       0.0073      0.03  Q  V       |          |          |          |
4+45       0.0075      0.03  Q  V       |          |          |          |
4+50       0.0077      0.03  Q  V       |          |          |          |
4+55       0.0080      0.03  Q  V       |          |          |          |
5+ 0       0.0082      0.03  Q  V       |          |          |          |
5+ 5       0.0084      0.03  Q  V       |          |          |          |
5+10       0.0086      0.03  Q  V       |          |          |          |
5+15       0.0088      0.03  Q  V       |          |          |          |
5+20       0.0090      0.03  Q  V       |          |          |          |
5+25       0.0092      0.03  Q   V      |          |          |          |
5+30       0.0094      0.03  Q   V      |          |          |          |
5+35       0.0096      0.03  Q   V      |          |          |          |
5+40       0.0099      0.03  Q   V      |          |          |          |
5+45       0.0101      0.03  Q   V      |          |          |          |
5+50       0.0103      0.03  Q   V      |          |          |          |
5+55       0.0106      0.03  Q   V      |          |          |          |
6+ 0       0.0108      0.03  Q   V      |          |          |          |
6+ 5       0.0111      0.04  Q   V      |          |          |          |
6+10       0.0114      0.04  Q    V     |          |          |          |
6+15       0.0116      0.04  Q    V     |          |          |          |
6+20       0.0119      0.04  Q    V     |          |          |          |
6+25       0.0122      0.04  Q    V     |          |          |          |
6+30       0.0124      0.04  Q    V     |          |          |          |
6+35       0.0127      0.04  Q    V     |          |          |          |
6+40       0.0130      0.04  Q    V     |          |          |          |
6+45       0.0133      0.04  Q    V     |          |          |          |
6+50       0.0136      0.04  Q     V    |          |          |          |
6+55       0.0139      0.04  Q     V    |          |          |          |
7+ 0       0.0142      0.04  Q     V    |          |          |          |
7+ 5       0.0145      0.04  Q     V    |          |          |          |
7+10       0.0148      0.04  Q     V    |          |          |          |
7+15       0.0151      0.04  Q     V    |          |          |          |
7+20       0.0155      0.05  Q     V    |          |          |          |
7+25       0.0158      0.05  Q     V    |          |          |          |
7+30       0.0161      0.05  Q      V   |          |          |          |
7+35       0.0165      0.05  Q      V   |          |          |          |
7+40       0.0168      0.05  Q      V   |          |          |          |
7+45       0.0172      0.05  Q      V   |          |          |          |
7+50       0.0176      0.06  Q      V   |          |          |          |
7+55       0.0180      0.06  Q      V   |          |          |          |
8+ 0       0.0183      0.06  Q       V  |          |          |          |
8+ 5       0.0188      0.06  Q       V  |          |          |          |
8+10       0.0192      0.07  Q       V  |          |          |          |
8+15       0.0197      0.07  Q       V  |          |          |          |
8+20       0.0201      0.07  Q       V  |          |          |          |
8+25       0.0206      0.07  Q        V|          |          |          |
8+30       0.0210      0.07  Q        V|          |          |          |
8+35       0.0215      0.07  Q        V|          |          |          |
8+40       0.0220      0.07  Q        V|          |          |          |
8+45       0.0225      0.07  Q        V|          |          |          |
8+50       0.0230      0.07  Q         V          |          |          |
8+55       0.0235      0.07  Q         V          |          |          |
9+ 0       0.0240      0.07  Q         V          |          |          |
9+ 5       0.0245      0.08  Q         V          |          |          |
9+10       0.0251      0.08  Q          |V         |          |          |
9+15       0.0257      0.08  Q          |V         |          |          |
9+20       0.0263      0.09  Q          |V         |          |          |
9+25       0.0269      0.09  Q          |V         |          |          |
```



15+45	0.0796	0.08	Q	|	|	|	V |
15+50	0.0802	0.08	Q	|	|	|	V |
15+55	0.0808	0.08	Q	|	|	|	V |
16+ 0	0.0814	0.08	Q	|	|	|	V |
16+ 5	0.0816	0.04	Q	|	|	|	V |
16+10	0.0818	0.02	Q	|	|	|	V |
16+15	0.0819	0.02	Q	|	|	|	V |
16+20	0.0820	0.02	Q	|	|	|	V |
16+25	0.0821	0.02	Q	|	|	|	V |
16+30	0.0822	0.02	Q	|	|	|	V |
16+35	0.0823	0.01	Q	|	|	|	V |
16+40	0.0824	0.01	Q	|	|	|	V |
16+45	0.0825	0.01	Q	|	|	|	V |
16+50	0.0826	0.01	Q	|	|	|	V |
16+55	0.0827	0.01	Q	|	|	|	V |
17+ 0	0.0828	0.01	Q	|	|	|	V |
17+ 5	0.0829	0.02	Q	|	|	|	V |
17+10	0.0831	0.02	Q	|	|	|	V |
17+15	0.0832	0.02	Q	|	|	|	V |
17+20	0.0834	0.02	Q	|	|	|	V |
17+25	0.0835	0.02	Q	|	|	|	V |
17+30	0.0837	0.02	Q	|	|	|	V |
17+35	0.0838	0.02	Q	|	|	|	V |
17+40	0.0840	0.02	Q	|	|	|	V |
17+45	0.0841	0.02	Q	|	|	|	V |
17+50	0.0843	0.02	Q	|	|	|	V |
17+55	0.0844	0.02	Q	|	|	|	V |
18+ 0	0.0845	0.02	Q	|	|	|	V |
18+ 5	0.0846	0.02	Q	|	|	|	V |
18+10	0.0847	0.02	Q	|	|	|	V |
18+15	0.0849	0.02	Q	|	|	|	V |
18+20	0.0850	0.02	Q	|	|	|	V |
18+25	0.0851	0.02	Q	|	|	|	V |
18+30	0.0852	0.02	Q	|	|	|	V |
18+35	0.0853	0.01	Q	|	|	|	V |
18+40	0.0854	0.01	Q	|	|	|	V |
18+45	0.0855	0.01	Q	|	|	|	V |
18+50	0.0856	0.01	Q	|	|	|	V |
18+55	0.0856	0.01	Q	|	|	|	V |
19+ 0	0.0857	0.01	Q	|	|	|	V |
19+ 5	0.0858	0.01	Q	|	|	|	V |
19+10	0.0859	0.01	Q	|	|	|	V |
19+15	0.0860	0.01	Q	|	|	|	V |
19+20	0.0861	0.02	Q	|	|	|	V |
19+25	0.0862	0.02	Q	|	|	|	V |
19+30	0.0863	0.02	Q	|	|	|	V |
19+35	0.0864	0.01	Q	|	|	|	V |
19+40	0.0865	0.01	Q	|	|	|	V |
19+45	0.0866	0.01	Q	|	|	|	V |
19+50	0.0867	0.01	Q	|	|	|	V |
19+55	0.0867	0.01	Q	|	|	|	V |
20+ 0	0.0868	0.01	Q	|	|	|	V |
20+ 5	0.0869	0.01	Q	|	|	|	V |
20+10	0.0870	0.01	Q	|	|	|	V |
20+15	0.0870	0.01	Q	|	|	|	V |
20+20	0.0871	0.01	Q	|	|	|	V |
20+25	0.0872	0.01	Q	|	|	|	V |
20+30	0.0873	0.01	Q	|	|	|	V |
20+35	0.0874	0.01	Q	|	|	|	V |
20+40	0.0875	0.01	Q	|	|	|	V |
20+45	0.0876	0.01	Q	|	|	|	V |
20+50	0.0877	0.01	Q	|	|	|	V |
20+55	0.0877	0.01	Q	|	|	|	V |
21+ 0	0.0878	0.01	Q	|	|	|	V |
21+ 5	0.0879	0.01	Q	|	|	|	V |
21+10	0.0879	0.01	Q	|	|	|	V |
21+15	0.0880	0.01	Q	|	|	|	V|
21+20	0.0881	0.01	Q	|	|	|	V|
21+25	0.0882	0.01	Q	|	|	|	V|
21+30	0.0882	0.01	Q	|	|	|	V|
21+35	0.0883	0.01	Q	|	|	|	V|
21+40	0.0884	0.01	Q	|	|	|	V|
21+45	0.0885	0.01	Q	|	|	|	V|
21+50	0.0886	0.01	Q	|	|	|	V|
21+55	0.0886	0.01	Q	|	|	|	V|

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  22+ 0       0.0887      0.01  Q          |          |          |         v|
  22+ 5       0.0888      0.01  Q          |          |          |         v|
  22+10       0.0888      0.01  Q          |          |          |         v|
  22+15       0.0889      0.01  Q          |          |          |         v|
  22+20       0.0890      0.01  Q          |          |          |         v|
  22+25       0.0891      0.01  Q          |          |          |         v|
  22+30       0.0891      0.01  Q          |          |          |         v|
  22+35       0.0892      0.01  Q          |          |          |         v|
  22+40       0.0892      0.01  Q          |          |          |         v|
  22+45       0.0893      0.01  Q          |          |          |         v|
  22+50       0.0894      0.01  Q          |          |          |         v|
  22+55       0.0894      0.01  Q          |          |          |         v|
  23+ 0       0.0895      0.01  Q          |          |          |         v|
  23+ 5       0.0896      0.01  Q          |          |          |         v|
  23+10       0.0896      0.01  Q          |          |          |         v|
  23+15       0.0897      0.01  Q          |          |          |         v|
  23+20       0.0897      0.01  Q          |          |          |         v|
  23+25       0.0898      0.01  Q          |          |          |         v|
  23+30       0.0899      0.01  Q          |          |          |         v|
  23+35       0.0899      0.01  Q          |          |          |         v|
  23+40       0.0900      0.01  Q          |          |          |         v|
  23+45       0.0900      0.01  Q          |          |          |         v|
  23+50       0.0901      0.01  Q          |          |          |         v|
  23+55       0.0902      0.01  Q          |          |          |         v|
  24+ 0       0.0902      0.01  Q          |          |          |         v|
  24+ 5       0.0902      0.00  Q          |          |          |         v|
  24+10       0.0902      0.00  Q          |          |          |         v|
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U n i t H y d r o g r a p h A n a l y s i s

Study date 05/18/20 File: ONSITEPRE24100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

18-0099 - MOTTE COUNTY PLAZA
EXISTING ONSITE UNIT HYDROGRAPH
100-YEAR, 24-HOUR
2020-05-18 AYS

Drainage Area = 1.40(Ac.) = 0.002 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 1.40(Ac.) = 0.002 Sq. Mi.
Length along longest watercourse = 440.00(Ft.)
Length along longest watercourse measured to centroid = 265.00(Ft.)
Length along longest watercourse = 0.083 Mi.
Length along longest watercourse measured to centroid = 0.050 Mi.
Difference in elevation = 4.00(Ft.)
Slope along watercourse = 48.0000 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.022 Hr.
Lag time = 1.29 Min.
25% of lag time = 0.32 Min.
40% of lag time = 0.52 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.40	1.55	2.17

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.40	3.55	4.97

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.550(In)
Area Averaged 100-Year Rainfall = 3.550(In)

Point rain (area averaged) = 3.550(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.550(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
1.400	56.00	0.499

Total Area Entered = 1.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	56.0	0.511	0.499	0.281	1.000	0.281
					Sum (F) =	0.281

Area averaged mean soil loss (F) (In/Hr) = 0.281
Minimum soil loss rate ((In/Hr)) = 0.141
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.501

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	387.087	64.173	0.905
2	0.167	774.174	32.760	0.462
3	0.250	1161.261	3.067	0.043
			Sum = 100.000 Sum=	1.411

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.028	(0.499)	0.014	0.014
2	0.17	0.07	0.028	(0.497)	0.014	0.014
3	0.25	0.07	0.028	(0.495)	0.014	0.014
4	0.33	0.10	0.043	(0.493)	0.021	0.021
5	0.42	0.10	0.043	(0.491)	0.021	0.021
6	0.50	0.10	0.043	(0.489)	0.021	0.021
7	0.58	0.10	0.043	(0.487)	0.021	0.021
8	0.67	0.10	0.043	(0.485)	0.021	0.021
9	0.75	0.10	0.043	(0.484)	0.021	0.021
10	0.83	0.13	0.057	(0.482)	0.028	0.028
11	0.92	0.13	0.057	(0.480)	0.028	0.028
12	1.00	0.13	0.057	(0.478)	0.028	0.028
13	1.08	0.10	0.043	(0.476)	0.021	0.021
14	1.17	0.10	0.043	(0.474)	0.021	0.021
15	1.25	0.10	0.043	(0.472)	0.021	0.021
16	1.33	0.10	0.043	(0.470)	0.021	0.021
17	1.42	0.10	0.043	(0.468)	0.021	0.021
18	1.50	0.10	0.043	(0.467)	0.021	0.021
19	1.58	0.10	0.043	(0.465)	0.021	0.021
20	1.67	0.10	0.043	(0.463)	0.021	0.021
21	1.75	0.10	0.043	(0.461)	0.021	0.021
22	1.83	0.13	0.057	(0.459)	0.028	0.028
23	1.92	0.13	0.057	(0.457)	0.028	0.028
24	2.00	0.13	0.057	(0.455)	0.028	0.028
25	2.08	0.13	0.057	(0.454)	0.028	0.028
26	2.17	0.13	0.057	(0.452)	0.028	0.028
27	2.25	0.13	0.057	(0.450)	0.028	0.028
28	2.33	0.13	0.057	(0.448)	0.028	0.028
29	2.42	0.13	0.057	(0.446)	0.028	0.028
30	2.50	0.13	0.057	(0.444)	0.028	0.028
31	2.58	0.17	0.071	(0.443)	0.036	0.035
32	2.67	0.17	0.071	(0.441)	0.036	0.035
33	2.75	0.17	0.071	(0.439)	0.036	0.035
34	2.83	0.17	0.071	(0.437)	0.036	0.035
35	2.92	0.17	0.071	(0.435)	0.036	0.035
36	3.00	0.17	0.071	(0.434)	0.036	0.035
37	3.08	0.17	0.071	(0.432)	0.036	0.035
38	3.17	0.17	0.071	(0.430)	0.036	0.035
39	3.25	0.17	0.071	(0.428)	0.036	0.035
40	3.33	0.17	0.071	(0.426)	0.036	0.035
41	3.42	0.17	0.071	(0.425)	0.036	0.035
42	3.50	0.17	0.071	(0.423)	0.036	0.035
43	3.58	0.17	0.071	(0.421)	0.036	0.035
44	3.67	0.17	0.071	(0.419)	0.036	0.035
45	3.75	0.17	0.071	(0.418)	0.036	0.035
46	3.83	0.20	0.085	(0.416)	0.043	0.043
47	3.92	0.20	0.085	(0.414)	0.043	0.043

48	4.00	0.20	0.085	(0.412)	0.043	0.043
49	4.08	0.20	0.085	(0.411)	0.043	0.043
50	4.17	0.20	0.085	(0.409)	0.043	0.043
51	4.25	0.20	0.085	(0.407)	0.043	0.043
52	4.33	0.23	0.099	(0.405)	0.050	0.050
53	4.42	0.23	0.099	(0.404)	0.050	0.050
54	4.50	0.23	0.099	(0.402)	0.050	0.050
55	4.58	0.23	0.099	(0.400)	0.050	0.050
56	4.67	0.23	0.099	(0.398)	0.050	0.050
57	4.75	0.23	0.099	(0.397)	0.050	0.050
58	4.83	0.27	0.114	(0.395)	0.057	0.057
59	4.92	0.27	0.114	(0.393)	0.057	0.057
60	5.00	0.27	0.114	(0.392)	0.057	0.057
61	5.08	0.20	0.085	(0.390)	0.043	0.043
62	5.17	0.20	0.085	(0.388)	0.043	0.043
63	5.25	0.20	0.085	(0.386)	0.043	0.043
64	5.33	0.23	0.099	(0.385)	0.050	0.050
65	5.42	0.23	0.099	(0.383)	0.050	0.050
66	5.50	0.23	0.099	(0.381)	0.050	0.050
67	5.58	0.27	0.114	(0.380)	0.057	0.057
68	5.67	0.27	0.114	(0.378)	0.057	0.057
69	5.75	0.27	0.114	(0.376)	0.057	0.057
70	5.83	0.27	0.114	(0.375)	0.057	0.057
71	5.92	0.27	0.114	(0.373)	0.057	0.057
72	6.00	0.27	0.114	(0.371)	0.057	0.057
73	6.08	0.30	0.128	(0.370)	0.064	0.064
74	6.17	0.30	0.128	(0.368)	0.064	0.064
75	6.25	0.30	0.128	(0.367)	0.064	0.064
76	6.33	0.30	0.128	(0.365)	0.064	0.064
77	6.42	0.30	0.128	(0.363)	0.064	0.064
78	6.50	0.30	0.128	(0.362)	0.064	0.064
79	6.58	0.33	0.142	(0.360)	0.071	0.071
80	6.67	0.33	0.142	(0.358)	0.071	0.071
81	6.75	0.33	0.142	(0.357)	0.071	0.071
82	6.83	0.33	0.142	(0.355)	0.071	0.071
83	6.92	0.33	0.142	(0.354)	0.071	0.071
84	7.00	0.33	0.142	(0.352)	0.071	0.071
85	7.08	0.33	0.142	(0.350)	0.071	0.071
86	7.17	0.33	0.142	(0.349)	0.071	0.071
87	7.25	0.33	0.142	(0.347)	0.071	0.071
88	7.33	0.37	0.156	(0.346)	0.078	0.078
89	7.42	0.37	0.156	(0.344)	0.078	0.078
90	7.50	0.37	0.156	(0.342)	0.078	0.078
91	7.58	0.40	0.170	(0.341)	0.085	0.085
92	7.67	0.40	0.170	(0.339)	0.085	0.085
93	7.75	0.40	0.170	(0.338)	0.085	0.085
94	7.83	0.43	0.185	(0.336)	0.092	0.092
95	7.92	0.43	0.185	(0.335)	0.092	0.092
96	8.00	0.43	0.185	(0.333)	0.092	0.092
97	8.08	0.50	0.213	(0.331)	0.107	0.106
98	8.17	0.50	0.213	(0.330)	0.107	0.106
99	8.25	0.50	0.213	(0.328)	0.107	0.106
100	8.33	0.50	0.213	(0.327)	0.107	0.106
101	8.42	0.50	0.213	(0.325)	0.107	0.106
102	8.50	0.50	0.213	(0.324)	0.107	0.106
103	8.58	0.53	0.227	(0.322)	0.114	0.113
104	8.67	0.53	0.227	(0.321)	0.114	0.113
105	8.75	0.53	0.227	(0.319)	0.114	0.113
106	8.83	0.57	0.241	(0.318)	0.121	0.120
107	8.92	0.57	0.241	(0.316)	0.121	0.120
108	9.00	0.57	0.241	(0.315)	0.121	0.120
109	9.08	0.63	0.270	(0.313)	0.135	0.135
110	9.17	0.63	0.270	(0.312)	0.135	0.135
111	9.25	0.63	0.270	(0.310)	0.135	0.135
112	9.33	0.67	0.284	(0.309)	0.142	0.142
113	9.42	0.67	0.284	(0.307)	0.142	0.142
114	9.50	0.67	0.284	(0.306)	0.142	0.142
115	9.58	0.70	0.298	(0.304)	0.149	0.149
116	9.67	0.70	0.298	(0.303)	0.149	0.149
117	9.75	0.70	0.298	(0.301)	0.149	0.149
118	9.83	0.73	0.312	(0.300)	0.157	0.156
119	9.92	0.73	0.312	(0.299)	0.157	0.156
120	10.00	0.73	0.312	(0.297)	0.157	0.156
121	10.08	0.50	0.213	(0.296)	0.107	0.106
122	10.17	0.50	0.213	(0.294)	0.107	0.106

123	10.25	0.50	0.213	(0.293)	0.107	0.106
124	10.33	0.50	0.213	(0.291)	0.107	0.106
125	10.42	0.50	0.213	(0.290)	0.107	0.106
126	10.50	0.50	0.213	(0.289)	0.107	0.106
127	10.58	0.67	0.284	(0.287)	0.142	0.142
128	10.67	0.67	0.284	(0.286)	0.142	0.142
129	10.75	0.67	0.284	(0.284)	0.142	0.142
130	10.83	0.67	0.284	(0.283)	0.142	0.142
131	10.92	0.67	0.284	(0.282)	0.142	0.142
132	11.00	0.67	0.284	(0.280)	0.142	0.142
133	11.08	0.63	0.270	(0.279)	0.135	0.135
134	11.17	0.63	0.270	(0.277)	0.135	0.135
135	11.25	0.63	0.270	(0.276)	0.135	0.135
136	11.33	0.63	0.270	(0.275)	0.135	0.135
137	11.42	0.63	0.270	(0.273)	0.135	0.135
138	11.50	0.63	0.270	(0.272)	0.135	0.135
139	11.58	0.57	0.241	(0.271)	0.121	0.120
140	11.67	0.57	0.241	(0.269)	0.121	0.120
141	11.75	0.57	0.241	(0.268)	0.121	0.120
142	11.83	0.60	0.256	(0.267)	0.128	0.128
143	11.92	0.60	0.256	(0.265)	0.128	0.128
144	12.00	0.60	0.256	(0.264)	0.128	0.128
145	12.08	0.83	0.355	(0.263)	0.178	0.177
146	12.17	0.83	0.355	(0.261)	0.178	0.177
147	12.25	0.83	0.355	(0.260)	0.178	0.177
148	12.33	0.87	0.369	(0.259)	0.185	0.184
149	12.42	0.87	0.369	(0.257)	0.185	0.184
150	12.50	0.87	0.369	(0.256)	0.185	0.184
151	12.58	0.93	0.398	(0.255)	0.199	0.198
152	12.67	0.93	0.398	(0.254)	0.199	0.198
153	12.75	0.93	0.398	(0.252)	0.199	0.198
154	12.83	0.97	0.412	(0.251)	0.206	0.205
155	12.92	0.97	0.412	(0.250)	0.206	0.205
156	13.00	0.97	0.412	(0.248)	0.206	0.205
157	13.08	1.13	0.483	(0.247)	0.242	0.241
158	13.17	1.13	0.483	(0.246)	0.242	0.241
159	13.25	1.13	0.483	(0.245)	0.242	0.241
160	13.33	1.13	0.483	(0.243)	0.242	0.241
161	13.42	1.13	0.483	(0.242)	0.242	0.241
162	13.50	1.13	0.483	0.241	(0.242)	0.242
163	13.58	0.77	0.327	(0.240)	0.164	0.163
164	13.67	0.77	0.327	(0.239)	0.164	0.163
165	13.75	0.77	0.327	(0.237)	0.164	0.163
166	13.83	0.77	0.327	(0.236)	0.164	0.163
167	13.92	0.77	0.327	(0.235)	0.164	0.163
168	14.00	0.77	0.327	(0.234)	0.164	0.163
169	14.08	0.90	0.383	(0.233)	0.192	0.191
170	14.17	0.90	0.383	(0.231)	0.192	0.191
171	14.25	0.90	0.383	(0.230)	0.192	0.191
172	14.33	0.87	0.369	(0.229)	0.185	0.184
173	14.42	0.87	0.369	(0.228)	0.185	0.184
174	14.50	0.87	0.369	(0.227)	0.185	0.184
175	14.58	0.87	0.369	(0.226)	0.185	0.184
176	14.67	0.87	0.369	(0.224)	0.185	0.184
177	14.75	0.87	0.369	(0.223)	0.185	0.184
178	14.83	0.83	0.355	(0.222)	0.178	0.177
179	14.92	0.83	0.355	(0.221)	0.178	0.177
180	15.00	0.83	0.355	(0.220)	0.178	0.177
181	15.08	0.80	0.341	(0.219)	0.171	0.170
182	15.17	0.80	0.341	(0.218)	0.171	0.170
183	15.25	0.80	0.341	(0.216)	0.171	0.170
184	15.33	0.77	0.327	(0.215)	0.164	0.163
185	15.42	0.77	0.327	(0.214)	0.164	0.163
186	15.50	0.77	0.327	(0.213)	0.164	0.163
187	15.58	0.63	0.270	(0.212)	0.135	0.135
188	15.67	0.63	0.270	(0.211)	0.135	0.135
189	15.75	0.63	0.270	(0.210)	0.135	0.135
190	15.83	0.63	0.270	(0.209)	0.135	0.135
191	15.92	0.63	0.270	(0.208)	0.135	0.135
192	16.00	0.63	0.270	(0.207)	0.135	0.135
193	16.08	0.13	0.057	(0.206)	0.028	0.028
194	16.17	0.13	0.057	(0.205)	0.028	0.028
195	16.25	0.13	0.057	(0.203)	0.028	0.028
196	16.33	0.13	0.057	(0.202)	0.028	0.028
197	16.42	0.13	0.057	(0.201)	0.028	0.028

198	16.50	0.13	0.057	(0.200)	0.028	0.028
199	16.58	0.10	0.043	(0.199)	0.021	0.021
200	16.67	0.10	0.043	(0.198)	0.021	0.021
201	16.75	0.10	0.043	(0.197)	0.021	0.021
202	16.83	0.10	0.043	(0.196)	0.021	0.021
203	16.92	0.10	0.043	(0.195)	0.021	0.021
204	17.00	0.10	0.043	(0.194)	0.021	0.021
205	17.08	0.17	0.071	(0.193)	0.036	0.035
206	17.17	0.17	0.071	(0.192)	0.036	0.035
207	17.25	0.17	0.071	(0.191)	0.036	0.035
208	17.33	0.17	0.071	(0.190)	0.036	0.035
209	17.42	0.17	0.071	(0.190)	0.036	0.035
210	17.50	0.17	0.071	(0.189)	0.036	0.035
211	17.58	0.17	0.071	(0.188)	0.036	0.035
212	17.67	0.17	0.071	(0.187)	0.036	0.035
213	17.75	0.17	0.071	(0.186)	0.036	0.035
214	17.83	0.13	0.057	(0.185)	0.028	0.028
215	17.92	0.13	0.057	(0.184)	0.028	0.028
216	18.00	0.13	0.057	(0.183)	0.028	0.028
217	18.08	0.13	0.057	(0.182)	0.028	0.028
218	18.17	0.13	0.057	(0.181)	0.028	0.028
219	18.25	0.13	0.057	(0.180)	0.028	0.028
220	18.33	0.13	0.057	(0.179)	0.028	0.028
221	18.42	0.13	0.057	(0.179)	0.028	0.028
222	18.50	0.13	0.057	(0.178)	0.028	0.028
223	18.58	0.10	0.043	(0.177)	0.021	0.021
224	18.67	0.10	0.043	(0.176)	0.021	0.021
225	18.75	0.10	0.043	(0.175)	0.021	0.021
226	18.83	0.07	0.028	(0.174)	0.014	0.014
227	18.92	0.07	0.028	(0.174)	0.014	0.014
228	19.00	0.07	0.028	(0.173)	0.014	0.014
229	19.08	0.10	0.043	(0.172)	0.021	0.021
230	19.17	0.10	0.043	(0.171)	0.021	0.021
231	19.25	0.10	0.043	(0.170)	0.021	0.021
232	19.33	0.13	0.057	(0.169)	0.028	0.028
233	19.42	0.13	0.057	(0.169)	0.028	0.028
234	19.50	0.13	0.057	(0.168)	0.028	0.028
235	19.58	0.10	0.043	(0.167)	0.021	0.021
236	19.67	0.10	0.043	(0.166)	0.021	0.021
237	19.75	0.10	0.043	(0.166)	0.021	0.021
238	19.83	0.07	0.028	(0.165)	0.014	0.014
239	19.92	0.07	0.028	(0.164)	0.014	0.014
240	20.00	0.07	0.028	(0.163)	0.014	0.014
241	20.08	0.10	0.043	(0.163)	0.021	0.021
242	20.17	0.10	0.043	(0.162)	0.021	0.021
243	20.25	0.10	0.043	(0.161)	0.021	0.021
244	20.33	0.10	0.043	(0.161)	0.021	0.021
245	20.42	0.10	0.043	(0.160)	0.021	0.021
246	20.50	0.10	0.043	(0.159)	0.021	0.021
247	20.58	0.10	0.043	(0.159)	0.021	0.021
248	20.67	0.10	0.043	(0.158)	0.021	0.021
249	20.75	0.10	0.043	(0.157)	0.021	0.021
250	20.83	0.07	0.028	(0.157)	0.014	0.014
251	20.92	0.07	0.028	(0.156)	0.014	0.014
252	21.00	0.07	0.028	(0.155)	0.014	0.014
253	21.08	0.10	0.043	(0.155)	0.021	0.021
254	21.17	0.10	0.043	(0.154)	0.021	0.021
255	21.25	0.10	0.043	(0.153)	0.021	0.021
256	21.33	0.07	0.028	(0.153)	0.014	0.014
257	21.42	0.07	0.028	(0.152)	0.014	0.014
258	21.50	0.07	0.028	(0.152)	0.014	0.014
259	21.58	0.10	0.043	(0.151)	0.021	0.021
260	21.67	0.10	0.043	(0.151)	0.021	0.021
261	21.75	0.10	0.043	(0.150)	0.021	0.021
262	21.83	0.07	0.028	(0.150)	0.014	0.014
263	21.92	0.07	0.028	(0.149)	0.014	0.014
264	22.00	0.07	0.028	(0.149)	0.014	0.014
265	22.08	0.10	0.043	(0.148)	0.021	0.021
266	22.17	0.10	0.043	(0.148)	0.021	0.021
267	22.25	0.10	0.043	(0.147)	0.021	0.021
268	22.33	0.07	0.028	(0.147)	0.014	0.014
269	22.42	0.07	0.028	(0.146)	0.014	0.014
270	22.50	0.07	0.028	(0.146)	0.014	0.014
271	22.58	0.07	0.028	(0.145)	0.014	0.014
272	22.67	0.07	0.028	(0.145)	0.014	0.014

273	22.75	0.07	0.028	(0.145)	0.014	0.014
274	22.83	0.07	0.028	(0.144)	0.014	0.014
275	22.92	0.07	0.028	(0.144)	0.014	0.014
276	23.00	0.07	0.028	(0.143)	0.014	0.014
277	23.08	0.07	0.028	(0.143)	0.014	0.014
278	23.17	0.07	0.028	(0.143)	0.014	0.014
279	23.25	0.07	0.028	(0.143)	0.014	0.014
280	23.33	0.07	0.028	(0.142)	0.014	0.014
281	23.42	0.07	0.028	(0.142)	0.014	0.014
282	23.50	0.07	0.028	(0.142)	0.014	0.014
283	23.58	0.07	0.028	(0.141)	0.014	0.014
284	23.67	0.07	0.028	(0.141)	0.014	0.014
285	23.75	0.07	0.028	(0.141)	0.014	0.014
286	23.83	0.07	0.028	(0.141)	0.014	0.014
287	23.92	0.07	0.028	(0.141)	0.014	0.014
288	24.00	0.07	0.028	(0.141)	0.014	0.014

(Loss Rate Not Used)

Sum = 100.0 Sum = 21.3

Flood volume = Effective rainfall 1.77(In)
times area 1.4(Ac.)/[(In)/(Ft.)] = 0.2(Ac.Ft)
Total soil loss = 1.78(In)
Total soil loss = 0.207(Ac.Ft)
Total rainfall = 3.55(In)
Flood volume = 9002.8 Cubic Feet
Total soil loss = 9038.2 Cubic Feet

Peak flow rate of this hydrograph = 0.341(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.01	Q	|	|	|	|
0+10	0.0002	0.02	Q	|	|	|	|
0+15	0.0004	0.02	Q	|	|	|	|
0+20	0.0005	0.03	Q	|	|	|	|
0+25	0.0007	0.03	Q	|	|	|	|
0+30	0.0010	0.03	Q	|	|	|	|
0+35	0.0012	0.03	Q	|	|	|	|
0+40	0.0014	0.03	Q	|	|	|	|
0+45	0.0016	0.03	Q	|	|	|	|
0+50	0.0018	0.04	Q	|	|	|	|
0+55	0.0021	0.04	Q	|	|	|	|
1+ 0	0.0024	0.04	Q	|	|	|	|
1+ 5	0.0026	0.03	Q	|	|	|	|
1+10	0.0028	0.03	Q	|	|	|	|
1+15	0.0030	0.03	Q	|	|	|	|
1+20	0.0032	0.03	Q	|	|	|	|
1+25	0.0034	0.03	Q	|	|	|	|
1+30	0.0036	0.03	Q	|	|	|	|
1+35	0.0038	0.03	Q	|	|	|	|
1+40	0.0041	0.03	Q	|	|	|	|
1+45	0.0043	0.03	Q	|	|	|	|
1+50	0.0045	0.04	Q	|	|	|	|
1+55	0.0048	0.04	Q	|	|	|	|
2+ 0	0.0051	0.04	Q	|	|	|	|
2+ 5	0.0053	0.04	QV	|	|	|	|
2+10	0.0056	0.04	QV	|	|	|	|
2+15	0.0059	0.04	QV	|	|	|	|
2+20	0.0062	0.04	QV	|	|	|	|
2+25	0.0064	0.04	QV	|	|	|	|
2+30	0.0067	0.04	QV	|	|	|	|
2+35	0.0070	0.05	QV	|	|	|	|
2+40	0.0074	0.05	QV	|	|	|	|
2+45	0.0077	0.05	QV	|	|	|	|
2+50	0.0081	0.05	QV	|	|	|	|
2+55	0.0084	0.05	QV	|	|	|	|
3+ 0	0.0088	0.05	QV	|	|	|	|
3+ 5	0.0091	0.05	QV	|	|	|	|
3+10	0.0094	0.05	QV	|	|	|	|

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3+15       0.0098      0.05  QV         |          |          |          |
3+20       0.0101      0.05  QV         |          |          |          |
3+25       0.0105      0.05  Q V        |          |          |          |
3+30       0.0108      0.05  Q V        |          |          |          |
3+35       0.0112      0.05  Q V        |          |          |          |
3+40       0.0115      0.05  Q V        |          |          |          |
3+45       0.0119      0.05  Q V        |          |          |          |
3+50       0.0122      0.06  Q V        |          |          |          |
3+55       0.0127      0.06  Q V        |          |          |          |
4+ 0       0.0131      0.06  Q V        |          |          |          |
4+ 5       0.0135      0.06  Q V        |          |          |          |
4+10       0.0139      0.06  Q V        |          |          |          |
4+15       0.0143      0.06  Q V        |          |          |          |
4+20       0.0148      0.07  Q V        |          |          |          |
4+25       0.0152      0.07  Q V        |          |          |          |
4+30       0.0157      0.07  Q  V       |          |          |          |
4+35       0.0162      0.07  Q  V       |          |          |          |
4+40       0.0167      0.07  Q  V       |          |          |          |
4+45       0.0172      0.07  Q  V       |          |          |          |
4+50       0.0177      0.08  Q  V       |          |          |          |
4+55       0.0182      0.08  Q  V       |          |          |          |
5+ 0       0.0188      0.08  Q  V       |          |          |          |
5+ 5       0.0193      0.07  Q  V       |          |          |          |
5+10       0.0197      0.06  Q  V       |          |          |          |
5+15       0.0201      0.06  Q  V       |          |          |          |
5+20       0.0206      0.07  Q  V       |          |          |          |
5+25       0.0210      0.07  Q   V      |          |          |          |
5+30       0.0215      0.07  Q   V      |          |          |          |
5+35       0.0220      0.08  Q   V      |          |          |          |
5+40       0.0226      0.08  Q   V      |          |          |          |
5+45       0.0231      0.08  Q   V      |          |          |          |
5+50       0.0237      0.08  Q   V      |          |          |          |
5+55       0.0242      0.08  Q   V      |          |          |          |
6+ 0       0.0248      0.08  Q   V      |          |          |          |
6+ 5       0.0254      0.09  Q   V      |          |          |          |
6+10       0.0260      0.09  Q    V     |          |          |          |
6+15       0.0266      0.09  Q    V     |          |          |          |
6+20       0.0272      0.09  Q    V     |          |          |          |
6+25       0.0279      0.09  Q    V     |          |          |          |
6+30       0.0285      0.09  Q    V     |          |          |          |
6+35       0.0292      0.10  Q    V     |          |          |          |
6+40       0.0298      0.10  Q    V     |          |          |          |
6+45       0.0305      0.10  Q    V     |          |          |          |
6+50       0.0312      0.10  Q     V    |          |          |          |
6+55       0.0319      0.10  Q     V    |          |          |          |
7+ 0       0.0326      0.10  Q     V    |          |          |          |
7+ 5       0.0333      0.10  Q     V    |          |          |          |
7+10       0.0340      0.10  Q     V    |          |          |          |
7+15       0.0347      0.10  Q     V    |          |          |          |
7+20       0.0354      0.11  Q     V    |          |          |          |
7+25       0.0361      0.11  Q     V    |          |          |          |
7+30       0.0369      0.11  Q      V   |          |          |          |
7+35       0.0377      0.12  Q      V   |          |          |          |
7+40       0.0385      0.12  Q      V   |          |          |          |
7+45       0.0394      0.12  Q      V   |          |          |          |
7+50       0.0402      0.13  Q      V   |          |          |          |
7+55       0.0411      0.13  Q      V   |          |          |          |
8+ 0       0.0420      0.13  Q       V  |          |          |          |
8+ 5       0.0430      0.14  Q       V  |          |          |          |
8+10       0.0440      0.15  Q       V  |          |          |          |
8+15       0.0451      0.15  Q       V  |          |          |          |
8+20       0.0461      0.15  Q       V  |          |          |          |
8+25       0.0471      0.15  Q        V|          |          |          |
8+30       0.0482      0.15  Q        V|          |          |          |
8+35       0.0492      0.16  Q        V|          |          |          |
8+40       0.0503      0.16  Q        V|          |          |          |
8+45       0.0514      0.16  Q        V|          |          |          |
8+50       0.0526      0.17  Q         V          |          |          |
8+55       0.0538      0.17  Q         V          |          |          |
9+ 0       0.0549      0.17  Q         V          |          |          |
9+ 5       0.0562      0.18  Q         V          |          |          |
9+10       0.0575      0.19  Q          |V        |          |          |
9+15       0.0588      0.19  Q          |V        |          |          |
9+20       0.0602      0.20  Q          |V        |          |          |
9+25       0.0615      0.20  Q          |V        |          |          |
```

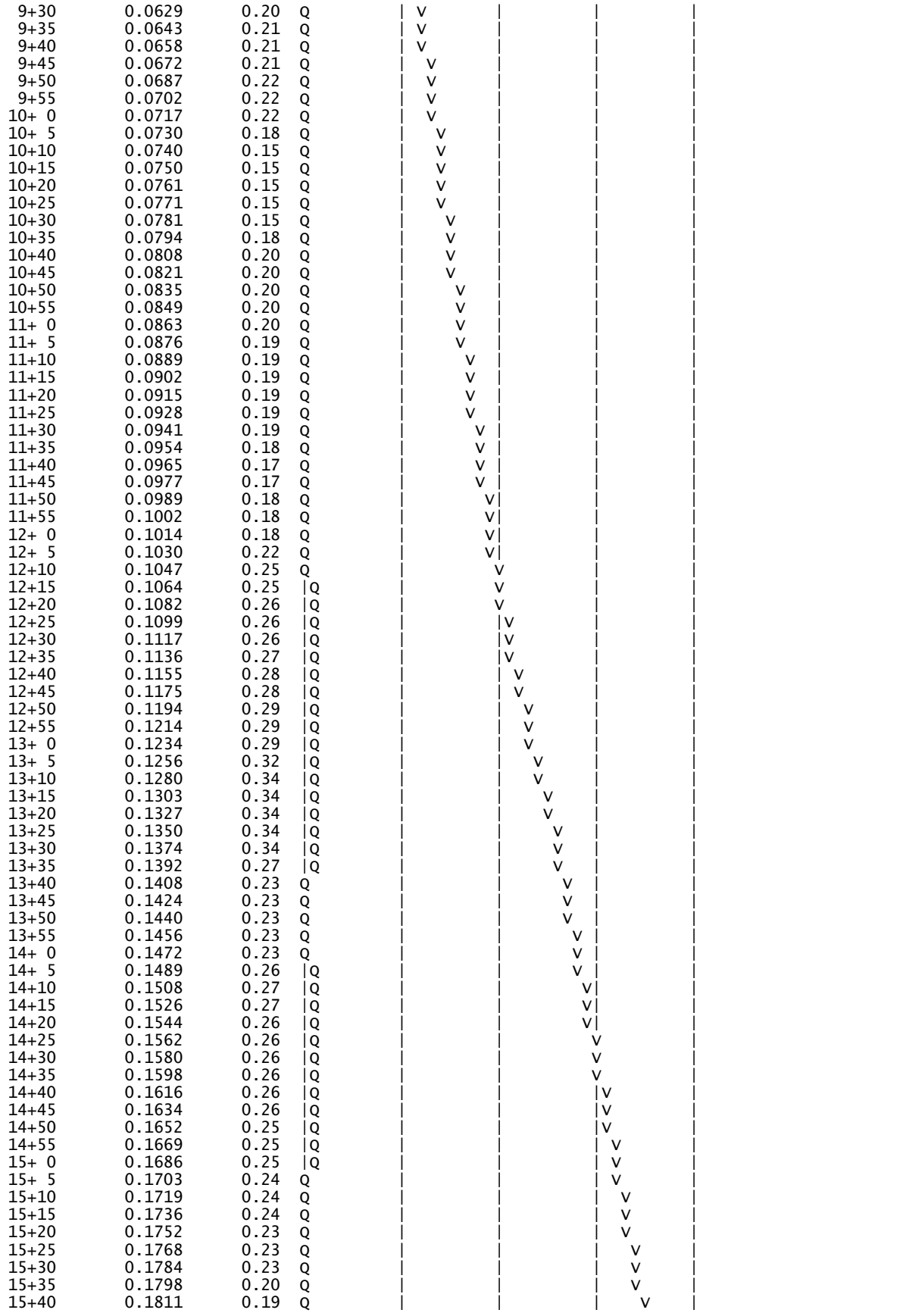

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15+45       0.1824      0.19  Q          |          |          |    V     |
15+50       0.1837      0.19  Q          |          |          |    V     |
15+55       0.1850      0.19  Q          |          |          |    V     |
16+ 0       0.1863      0.19  Q          |          |          |     V    |
16+ 5       0.1870      0.09  Q          |          |          |     V    |
16+10       0.1873      0.04  Q          |          |          |     V    |
16+15       0.1876      0.04  Q          |          |          |     V    |
16+20       0.1878      0.04  Q          |          |          |     V    |
16+25       0.1881      0.04  Q          |          |          |     V    |
16+30       0.1884      0.04  Q          |          |          |     V    |
16+35       0.1886      0.03  Q          |          |          |     V    |
16+40       0.1888      0.03  Q          |          |          |     V    |
16+45       0.1890      0.03  Q          |          |          |     V    |
16+50       0.1892      0.03  Q          |          |          |     V    |
16+55       0.1894      0.03  Q          |          |          |     V    |
17+ 0       0.1896      0.03  Q          |          |          |     V    |
17+ 5       0.1899      0.04  Q          |          |          |     V    |
17+10       0.1903      0.05  Q          |          |          |     V    |
17+15       0.1906      0.05  Q          |          |          |     V    |
17+20       0.1910      0.05  Q          |          |          |     V    |
17+25       0.1913      0.05  Q          |          |          |      V   |
17+30       0.1917      0.05  Q          |          |          |      V   |
17+35       0.1920      0.05  Q          |          |          |      V   |
17+40       0.1924      0.05  Q          |          |          |      V   |
17+45       0.1927      0.05  Q          |          |          |      V   |
17+50       0.1930      0.04  Q          |          |          |      V   |
17+55       0.1933      0.04  Q          |          |          |      V   |
18+ 0       0.1935      0.04  Q          |          |          |      V   |
18+ 5       0.1938      0.04  Q          |          |          |      V   |
18+10       0.1941      0.04  Q          |          |          |      V   |
18+15       0.1944      0.04  Q          |          |          |      V   |
18+20       0.1947      0.04  Q          |          |          |      V   |
18+25       0.1949      0.04  Q          |          |          |      V   |
18+30       0.1952      0.04  Q          |          |          |      V   |
18+35       0.1954      0.03  Q          |          |          |      V   |
18+40       0.1956      0.03  Q          |          |          |      V   |
18+45       0.1958      0.03  Q          |          |          |      V   |
18+50       0.1960      0.02  Q          |          |          |      V   |
18+55       0.1962      0.02  Q          |          |          |      V   |
19+ 0       0.1963      0.02  Q          |          |          |      V   |
19+ 5       0.1965      0.03  Q          |          |          |       V  |
19+10       0.1967      0.03  Q          |          |          |       V  |
19+15       0.1969      0.03  Q          |          |          |       V  |
19+20       0.1971      0.04  Q          |          |          |       V  |
19+25       0.1974      0.04  Q          |          |          |       V  |
19+30       0.1977      0.04  Q          |          |          |       V  |
19+35       0.1979      0.03  Q          |          |          |       V  |
19+40       0.1981      0.03  Q          |          |          |       V  |
19+45       0.1983      0.03  Q          |          |          |       V  |
19+50       0.1985      0.02  Q          |          |          |       V  |
19+55       0.1986      0.02  Q          |          |          |       V  |
20+ 0       0.1988      0.02  Q          |          |          |       V  |
20+ 5       0.1990      0.03  Q          |          |          |       V  |
20+10       0.1992      0.03  Q          |          |          |       V  |
20+15       0.1994      0.03  Q          |          |          |       V  |
20+20       0.1996      0.03  Q          |          |          |       V  |
20+25       0.1998      0.03  Q          |          |          |       V  |
20+30       0.2000      0.03  Q          |          |          |       V  |
20+35       0.2002      0.03  Q          |          |          |       V  |
20+40       0.2004      0.03  Q          |          |          |       V  |
20+45       0.2006      0.03  Q          |          |          |       V  |
20+50       0.2008      0.02  Q          |          |          |       V  |
20+55       0.2009      0.02  Q          |          |          |       V  |
21+ 0       0.2010      0.02  Q          |          |          |       V  |
21+ 5       0.2012      0.03  Q          |          |          |       V  |
21+10       0.2014      0.03  Q          |          |          |       V  |
21+15       0.2016      0.03  Q          |          |          |        V |
21+20       0.2018      0.02  Q          |          |          |        V |
21+25       0.2019      0.02  Q          |          |          |        V |
21+30       0.2021      0.02  Q          |          |          |        V |
21+35       0.2023      0.03  Q          |          |          |        V |
21+40       0.2025      0.03  Q          |          |          |        V |
21+45       0.2027      0.03  Q          |          |          |        V |
21+50       0.2028      0.02  Q          |          |          |        V |
21+55       0.2030      0.02  Q          |          |          |        V |
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  22+ 0       0.2031      0.02  Q          |          |          |         v|
  22+ 5       0.2033      0.03  Q          |          |          |         v|
  22+10       0.2035      0.03  Q          |          |          |         v|
  22+15       0.2037      0.03  Q          |          |          |         v|
  22+20       0.2039      0.02  Q          |          |          |         v|
  22+25       0.2040      0.02  Q          |          |          |         v|
  22+30       0.2041      0.02  Q          |          |          |         v|
  22+35       0.2043      0.02  Q          |          |          |         v|
  22+40       0.2044      0.02  Q          |          |          |         v|
  22+45       0.2046      0.02  Q          |          |          |         v|
  22+50       0.2047      0.02  Q          |          |          |         v|
  22+55       0.2048      0.02  Q          |          |          |         v|
  23+ 0       0.2050      0.02  Q          |          |          |         v|
  23+ 5       0.2051      0.02  Q          |          |          |         v|
  23+10       0.2052      0.02  Q          |          |          |         v|
  23+15       0.2054      0.02  Q          |          |          |         v|
  23+20       0.2055      0.02  Q          |          |          |         v|
  23+25       0.2057      0.02  Q          |          |          |         v|
  23+30       0.2058      0.02  Q          |          |          |         v|
  23+35       0.2059      0.02  Q          |          |          |         v|
  23+40       0.2061      0.02  Q          |          |          |         v|
  23+45       0.2062      0.02  Q          |          |          |         v|
  23+50       0.2063      0.02  Q          |          |          |         v|
  23+55       0.2065      0.02  Q          |          |          |         v|
  24+ 0       0.2066      0.02  Q          |          |          |         v|
  24+ 5       0.2067      0.01  Q          |          |          |         v|
  24+10       0.2067      0.00  Q          |          |          |         v|
-------------------------------------------------------------------------
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Developed Conditions (2-Year 24-Hour & 100-Year 24-Hour)

DEVELOPED CONDITION									
Cover Type	**Condition (Poor,Fair,Good)**	**Soil Type (A,B,C,D)**	**COVER TYPE**	**RI**	**Land Use**	**% Impervious**	**Area (SF)**	**Area (SF)**	**Impervious Area (SF)**
Urban	Good	B	RESIDENTIAL OR COMMERCIAL	56	Roof	0.9	5645	0.13	5081
Urban	Good	B	RESIDENTIAL OR COMMERCIAL	56	Streets/Conc	0.9	44279	1.02	39851
Urban	Good	B	RESIDENTIAL OR COMMERCIAL	56	Landscape	0	9085	0.21	0
			AVERAGE WEIGHTED RI VALUE	**56.00**		**TOTAL**	59009	1.4	
						TOTAL % IMPERVIOUS		**76.1%**	
						LOW LOSS RATE		**0.291**	

U n i t H y d r o g r a p h A n a l y s i s

Study date 05/18/20 File: ONSITEPROP242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

18-0099 - MOTTE COUNTY PLAZA
PROPOSED UNIT HYDROGRAPH
2-YEAR, 24-HOUR
2020-05-18 AYS

Drainage Area = 1.40(Ac.) = 0.002 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 1.40(Ac.) = 0.002 Sq. Mi.
Length along longest watercourse = 460.00(Ft.)
Length along longest watercourse measured to centroid = 145.00(Ft.)
Length along longest watercourse = 0.087 Mi.
Length along longest watercourse measured to centroid = 0.027 Mi.
Difference in elevation = 10.30(Ft.)
Slope along watercourse = 118.2261 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.015 Hr.
Lag time = 0.88 Min.
25% of lag time = 0.22 Min.
40% of lag time = 0.35 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.40	1.55	2.17

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.40	3.55	4.97

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.550(In)
Area Averaged 100-Year Rainfall = 3.550(In)

Point rain (area averaged) = 1.550(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.550(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
1.400	56.00	0.761

Total Area Entered = 1.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	36.0	0.706	0.761	0.222	1.000	0.222
					Sum (F) =	0.222

Area averaged mean soil loss (F) (In/Hr) = 0.222
Minimum soil loss rate ((In/Hr)) = 0.111
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.291

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	568.023	73.991	1.044
2	0.167	1136.046	26.009	0.367
		Sum = 100.000	Sum=	1.411

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.012	(0.394)	0.004	0.009
2	0.17	0.07	0.012	(0.393)	0.004	0.009
3	0.25	0.07	0.012	(0.391)	0.004	0.009
4	0.33	0.10	0.019	(0.390)	0.005	0.013
5	0.42	0.10	0.019	(0.388)	0.005	0.013
6	0.50	0.10	0.019	(0.387)	0.005	0.013
7	0.58	0.10	0.019	(0.385)	0.005	0.013
8	0.67	0.10	0.019	(0.384)	0.005	0.013
9	0.75	0.10	0.019	(0.382)	0.005	0.013
10	0.83	0.13	0.025	(0.381)	0.007	0.018
11	0.92	0.13	0.025	(0.379)	0.007	0.018
12	1.00	0.13	0.025	(0.378)	0.007	0.018
13	1.08	0.10	0.019	(0.376)	0.005	0.013
14	1.17	0.10	0.019	(0.375)	0.005	0.013
15	1.25	0.10	0.019	(0.373)	0.005	0.013
16	1.33	0.10	0.019	(0.372)	0.005	0.013
17	1.42	0.10	0.019	(0.370)	0.005	0.013
18	1.50	0.10	0.019	(0.369)	0.005	0.013
19	1.58	0.10	0.019	(0.367)	0.005	0.013
20	1.67	0.10	0.019	(0.366)	0.005	0.013
21	1.75	0.10	0.019	(0.364)	0.005	0.013
22	1.83	0.13	0.025	(0.363)	0.007	0.018
23	1.92	0.13	0.025	(0.361)	0.007	0.018
24	2.00	0.13	0.025	(0.360)	0.007	0.018
25	2.08	0.13	0.025	(0.359)	0.007	0.018
26	2.17	0.13	0.025	(0.357)	0.007	0.018
27	2.25	0.13	0.025	(0.356)	0.007	0.018
28	2.33	0.13	0.025	(0.354)	0.007	0.018
29	2.42	0.13	0.025	(0.353)	0.007	0.018
30	2.50	0.13	0.025	(0.351)	0.007	0.018
31	2.58	0.17	0.031	(0.350)	0.009	0.022
32	2.67	0.17	0.031	(0.348)	0.009	0.022
33	2.75	0.17	0.031	(0.347)	0.009	0.022
34	2.83	0.17	0.031	(0.346)	0.009	0.022
35	2.92	0.17	0.031	(0.344)	0.009	0.022
36	3.00	0.17	0.031	(0.343)	0.009	0.022
37	3.08	0.17	0.031	(0.341)	0.009	0.022
38	3.17	0.17	0.031	(0.340)	0.009	0.022
39	3.25	0.17	0.031	(0.339)	0.009	0.022
40	3.33	0.17	0.031	(0.337)	0.009	0.022
41	3.42	0.17	0.031	(0.336)	0.009	0.022
42	3.50	0.17	0.031	(0.334)	0.009	0.022
43	3.58	0.17	0.031	(0.333)	0.009	0.022
44	3.67	0.17	0.031	(0.331)	0.009	0.022
45	3.75	0.17	0.031	(0.330)	0.009	0.022
46	3.83	0.20	0.037	(0.329)	0.011	0.026
47	3.92	0.20	0.037	(0.327)	0.011	0.026
48	4.00	0.20	0.037	(0.326)	0.011	0.026

49	4.08	0.20	0.037	(0.325)	0.011	0.026
50	4.17	0.20	0.037	(0.323)	0.011	0.026
51	4.25	0.20	0.037	(0.322)	0.011	0.026
52	4.33	0.23	0.043	(0.320)	0.013	0.031
53	4.42	0.23	0.043	(0.319)	0.013	0.031
54	4.50	0.23	0.043	(0.318)	0.013	0.031
55	4.58	0.23	0.043	(0.316)	0.013	0.031
56	4.67	0.23	0.043	(0.315)	0.013	0.031
57	4.75	0.23	0.043	(0.314)	0.013	0.031
58	4.83	0.27	0.050	(0.312)	0.014	0.035
59	4.92	0.27	0.050	(0.311)	0.014	0.035
60	5.00	0.27	0.050	(0.310)	0.014	0.035
61	5.08	0.20	0.037	(0.308)	0.011	0.026
62	5.17	0.20	0.037	(0.307)	0.011	0.026
63	5.25	0.20	0.037	(0.306)	0.011	0.026
64	5.33	0.23	0.043	(0.304)	0.013	0.031
65	5.42	0.23	0.043	(0.303)	0.013	0.031
66	5.50	0.23	0.043	(0.302)	0.013	0.031
67	5.58	0.27	0.050	(0.300)	0.014	0.035
68	5.67	0.27	0.050	(0.299)	0.014	0.035
69	5.75	0.27	0.050	(0.298)	0.014	0.035
70	5.83	0.27	0.050	(0.296)	0.014	0.035
71	5.92	0.27	0.050	(0.295)	0.014	0.035
72	6.00	0.27	0.050	(0.294)	0.014	0.035
73	6.08	0.30	0.056	(0.292)	0.016	0.040
74	6.17	0.30	0.056	(0.291)	0.016	0.040
75	6.25	0.30	0.056	(0.290)	0.016	0.040
76	6.33	0.30	0.056	(0.288)	0.016	0.040
77	6.42	0.30	0.056	(0.287)	0.016	0.040
78	6.50	0.30	0.056	(0.286)	0.016	0.040
79	6.58	0.33	0.062	(0.285)	0.018	0.044
80	6.67	0.33	0.062	(0.283)	0.018	0.044
81	6.75	0.33	0.062	(0.282)	0.018	0.044
82	6.83	0.33	0.062	(0.281)	0.018	0.044
83	6.92	0.33	0.062	(0.279)	0.018	0.044
84	7.00	0.33	0.062	(0.278)	0.018	0.044
85	7.08	0.33	0.062	(0.277)	0.018	0.044
86	7.17	0.33	0.062	(0.276)	0.018	0.044
87	7.25	0.33	0.062	(0.274)	0.018	0.044
88	7.33	0.37	0.068	(0.273)	0.020	0.048
89	7.42	0.37	0.068	(0.272)	0.020	0.048
90	7.50	0.37	0.068	(0.271)	0.020	0.048
91	7.58	0.40	0.074	(0.269)	0.022	0.053
92	7.67	0.40	0.074	(0.268)	0.022	0.053
93	7.75	0.40	0.074	(0.267)	0.022	0.053
94	7.83	0.43	0.081	(0.266)	0.023	0.057
95	7.92	0.43	0.081	(0.264)	0.023	0.057
96	8.00	0.43	0.081	(0.263)	0.023	0.057
97	8.08	0.50	0.093	(0.262)	0.027	0.066
98	8.17	0.50	0.093	(0.261)	0.027	0.066
99	8.25	0.50	0.093	(0.260)	0.027	0.066
100	8.33	0.50	0.093	(0.258)	0.027	0.066
101	8.42	0.50	0.093	(0.257)	0.027	0.066
102	8.50	0.50	0.093	(0.256)	0.027	0.066
103	8.58	0.53	0.099	(0.255)	0.029	0.070
104	8.67	0.53	0.099	(0.254)	0.029	0.070
105	8.75	0.53	0.099	(0.252)	0.029	0.070
106	8.83	0.57	0.105	(0.251)	0.031	0.075
107	8.92	0.57	0.105	(0.250)	0.031	0.075
108	9.00	0.57	0.105	(0.249)	0.031	0.075
109	9.08	0.63	0.118	(0.248)	0.034	0.084
110	9.17	0.63	0.118	(0.246)	0.034	0.084
111	9.25	0.63	0.118	(0.245)	0.034	0.084
112	9.33	0.67	0.124	(0.244)	0.036	0.088
113	9.42	0.67	0.124	(0.243)	0.036	0.088
114	9.50	0.67	0.124	(0.242)	0.036	0.088
115	9.58	0.70	0.130	(0.241)	0.038	0.092
116	9.67	0.70	0.130	(0.239)	0.038	0.092
117	9.75	0.70	0.130	(0.238)	0.038	0.092
118	9.83	0.73	0.136	(0.237)	0.040	0.097
119	9.92	0.73	0.136	(0.236)	0.040	0.097
120	10.00	0.73	0.136	(0.235)	0.040	0.097
121	10.08	0.50	0.093	(0.234)	0.027	0.066
122	10.17	0.50	0.093	(0.233)	0.027	0.066
123	10.25	0.50	0.093	(0.232)	0.027	0.066

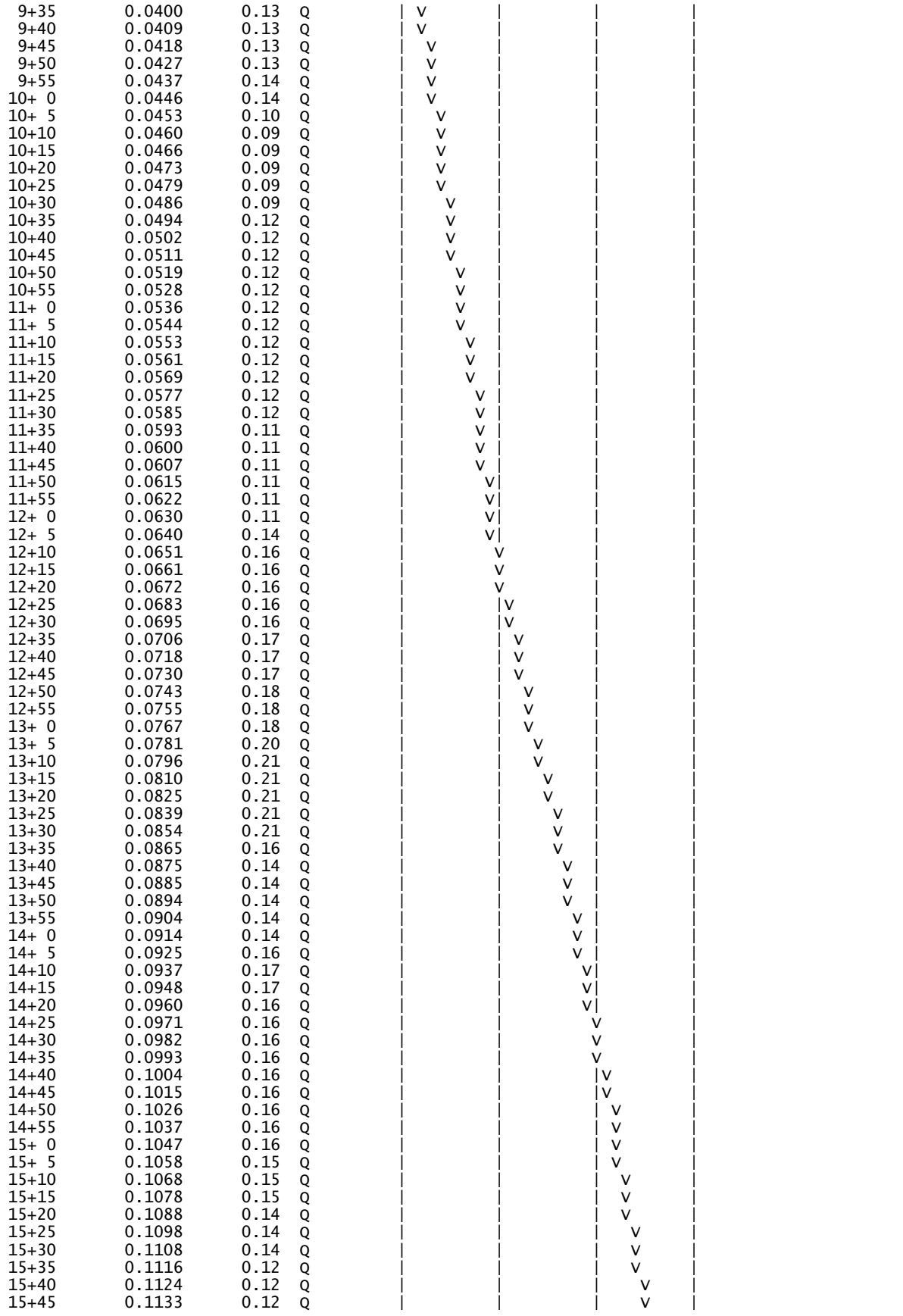
124	10.33	0.50	0.093	(0.230)	0.027	0.066
125	10.42	0.50	0.093	(0.229)	0.027	0.066
126	10.50	0.50	0.093	(0.228)	0.027	0.066
127	10.58	0.67	0.124	(0.227)	0.036	0.088
128	10.67	0.67	0.124	(0.226)	0.036	0.088
129	10.75	0.67	0.124	(0.225)	0.036	0.088
130	10.83	0.67	0.124	(0.224)	0.036	0.088
131	10.92	0.67	0.124	(0.223)	0.036	0.088
132	11.00	0.67	0.124	(0.222)	0.036	0.088
133	11.08	0.63	0.118	(0.220)	0.034	0.084
134	11.17	0.63	0.118	(0.219)	0.034	0.084
135	11.25	0.63	0.118	(0.218)	0.034	0.084
136	11.33	0.63	0.118	(0.217)	0.034	0.084
137	11.42	0.63	0.118	(0.216)	0.034	0.084
138	11.50	0.63	0.118	(0.215)	0.034	0.084
139	11.58	0.57	0.105	(0.214)	0.031	0.075
140	11.67	0.57	0.105	(0.213)	0.031	0.075
141	11.75	0.57	0.105	(0.212)	0.031	0.075
142	11.83	0.60	0.112	(0.211)	0.032	0.079
143	11.92	0.60	0.112	(0.210)	0.032	0.079
144	12.00	0.60	0.112	(0.209)	0.032	0.079
145	12.08	0.83	0.155	(0.208)	0.045	0.110
146	12.17	0.83	0.155	(0.207)	0.045	0.110
147	12.25	0.83	0.155	(0.206)	0.045	0.110
148	12.33	0.87	0.161	(0.205)	0.047	0.114
149	12.42	0.87	0.161	(0.204)	0.047	0.114
150	12.50	0.87	0.161	(0.203)	0.047	0.114
151	12.58	0.93	0.174	(0.201)	0.051	0.123
152	12.67	0.93	0.174	(0.200)	0.051	0.123
153	12.75	0.93	0.174	(0.199)	0.051	0.123
154	12.83	0.97	0.180	(0.198)	0.052	0.127
155	12.92	0.97	0.180	(0.197)	0.052	0.127
156	13.00	0.97	0.180	(0.196)	0.052	0.127
157	13.08	1.13	0.211	(0.195)	0.061	0.149
158	13.17	1.13	0.211	(0.194)	0.061	0.149
159	13.25	1.13	0.211	(0.193)	0.061	0.149
160	13.33	1.13	0.211	(0.192)	0.061	0.149
161	13.42	1.13	0.211	(0.192)	0.061	0.149
162	13.50	1.13	0.211	(0.191)	0.061	0.149
163	13.58	0.77	0.143	(0.190)	0.041	0.101
164	13.67	0.77	0.143	(0.189)	0.041	0.101
165	13.75	0.77	0.143	(0.188)	0.041	0.101
166	13.83	0.77	0.143	(0.187)	0.041	0.101
167	13.92	0.77	0.143	(0.186)	0.041	0.101
168	14.00	0.77	0.143	(0.185)	0.041	0.101
169	14.08	0.90	0.167	(0.184)	0.049	0.119
170	14.17	0.90	0.167	(0.183)	0.049	0.119
171	14.25	0.90	0.167	(0.182)	0.049	0.119
172	14.33	0.87	0.161	(0.181)	0.047	0.114
173	14.42	0.87	0.161	(0.180)	0.047	0.114
174	14.50	0.87	0.161	(0.179)	0.047	0.114
175	14.58	0.87	0.161	(0.178)	0.047	0.114
176	14.67	0.87	0.161	(0.177)	0.047	0.114
177	14.75	0.87	0.161	(0.176)	0.047	0.114
178	14.83	0.83	0.155	(0.176)	0.045	0.110
179	14.92	0.83	0.155	(0.175)	0.045	0.110
180	15.00	0.83	0.155	(0.174)	0.045	0.110
181	15.08	0.80	0.149	(0.173)	0.043	0.105
182	15.17	0.80	0.149	(0.172)	0.043	0.105
183	15.25	0.80	0.149	(0.171)	0.043	0.105
184	15.33	0.77	0.143	(0.170)	0.041	0.101
185	15.42	0.77	0.143	(0.169)	0.041	0.101
186	15.50	0.77	0.143	(0.168)	0.041	0.101
187	15.58	0.63	0.118	(0.168)	0.034	0.084
188	15.67	0.63	0.118	(0.167)	0.034	0.084
189	15.75	0.63	0.118	(0.166)	0.034	0.084
190	15.83	0.63	0.118	(0.165)	0.034	0.084
191	15.92	0.63	0.118	(0.164)	0.034	0.084
192	16.00	0.63	0.118	(0.163)	0.034	0.084
193	16.08	0.13	0.025	(0.163)	0.007	0.018
194	16.17	0.13	0.025	(0.162)	0.007	0.018
195	16.25	0.13	0.025	(0.161)	0.007	0.018
196	16.33	0.13	0.025	(0.160)	0.007	0.018
197	16.42	0.13	0.025	(0.159)	0.007	0.018
198	16.50	0.13	0.025	(0.158)	0.007	0.018

199	16.58	0.10	0.019	(0.158)	0.005	0.013
200	16.67	0.10	0.019	(0.157)	0.005	0.013
201	16.75	0.10	0.019	(0.156)	0.005	0.013
202	16.83	0.10	0.019	(0.155)	0.005	0.013
203	16.92	0.10	0.019	(0.154)	0.005	0.013
204	17.00	0.10	0.019	(0.154)	0.005	0.013
205	17.08	0.17	0.031	(0.153)	0.009	0.022
206	17.17	0.17	0.031	(0.152)	0.009	0.022
207	17.25	0.17	0.031	(0.151)	0.009	0.022
208	17.33	0.17	0.031	(0.151)	0.009	0.022
209	17.42	0.17	0.031	(0.150)	0.009	0.022
210	17.50	0.17	0.031	(0.149)	0.009	0.022
211	17.58	0.17	0.031	(0.148)	0.009	0.022
212	17.67	0.17	0.031	(0.148)	0.009	0.022
213	17.75	0.17	0.031	(0.147)	0.009	0.022
214	17.83	0.13	0.025	(0.146)	0.007	0.018
215	17.92	0.13	0.025	(0.145)	0.007	0.018
216	18.00	0.13	0.025	(0.145)	0.007	0.018
217	18.08	0.13	0.025	(0.144)	0.007	0.018
218	18.17	0.13	0.025	(0.143)	0.007	0.018
219	18.25	0.13	0.025	(0.143)	0.007	0.018
220	18.33	0.13	0.025	(0.142)	0.007	0.018
221	18.42	0.13	0.025	(0.141)	0.007	0.018
222	18.50	0.13	0.025	(0.141)	0.007	0.018
223	18.58	0.10	0.019	(0.140)	0.005	0.013
224	18.67	0.10	0.019	(0.139)	0.005	0.013
225	18.75	0.10	0.019	(0.138)	0.005	0.013
226	18.83	0.07	0.012	(0.138)	0.004	0.009
227	18.92	0.07	0.012	(0.137)	0.004	0.009
228	19.00	0.07	0.012	(0.137)	0.004	0.009
229	19.08	0.10	0.019	(0.136)	0.005	0.013
230	19.17	0.10	0.019	(0.135)	0.005	0.013
231	19.25	0.10	0.019	(0.135)	0.005	0.013
232	19.33	0.13	0.025	(0.134)	0.007	0.018
233	19.42	0.13	0.025	(0.133)	0.007	0.018
234	19.50	0.13	0.025	(0.133)	0.007	0.018
235	19.58	0.10	0.019	(0.132)	0.005	0.013
236	19.67	0.10	0.019	(0.132)	0.005	0.013
237	19.75	0.10	0.019	(0.131)	0.005	0.013
238	19.83	0.07	0.012	(0.130)	0.004	0.009
239	19.92	0.07	0.012	(0.130)	0.004	0.009
240	20.00	0.07	0.012	(0.129)	0.004	0.009
241	20.08	0.10	0.019	(0.129)	0.005	0.013
242	20.17	0.10	0.019	(0.128)	0.005	0.013
243	20.25	0.10	0.019	(0.127)	0.005	0.013
244	20.33	0.10	0.019	(0.127)	0.005	0.013
245	20.42	0.10	0.019	(0.126)	0.005	0.013
246	20.50	0.10	0.019	(0.126)	0.005	0.013
247	20.58	0.10	0.019	(0.125)	0.005	0.013
248	20.67	0.10	0.019	(0.125)	0.005	0.013
249	20.75	0.10	0.019	(0.124)	0.005	0.013
250	20.83	0.07	0.012	(0.124)	0.004	0.009
251	20.92	0.07	0.012	(0.123)	0.004	0.009
252	21.00	0.07	0.012	(0.123)	0.004	0.009
253	21.08	0.10	0.019	(0.122)	0.005	0.013
254	21.17	0.10	0.019	(0.122)	0.005	0.013
255	21.25	0.10	0.019	(0.121)	0.005	0.013
256	21.33	0.07	0.012	(0.121)	0.004	0.009
257	21.42	0.07	0.012	(0.120)	0.004	0.009
258	21.50	0.07	0.012	(0.120)	0.004	0.009
259	21.58	0.10	0.019	(0.120)	0.005	0.013
260	21.67	0.10	0.019	(0.119)	0.005	0.013
261	21.75	0.10	0.019	(0.119)	0.005	0.013
262	21.83	0.07	0.012	(0.118)	0.004	0.009
263	21.92	0.07	0.012	(0.118)	0.004	0.009
264	22.00	0.07	0.012	(0.117)	0.004	0.009
265	22.08	0.10	0.019	(0.117)	0.005	0.013
266	22.17	0.10	0.019	(0.117)	0.005	0.013
267	22.25	0.10	0.019	(0.116)	0.005	0.013
268	22.33	0.07	0.012	(0.116)	0.004	0.009
269	22.42	0.07	0.012	(0.116)	0.004	0.009
270	22.50	0.07	0.012	(0.115)	0.004	0.009
271	22.58	0.07	0.012	(0.115)	0.004	0.009
272	22.67	0.07	0.012	(0.115)	0.004	0.009
273	22.75	0.07	0.012	(0.114)	0.004	0.009

```
274  22.83     0.07      0.012       (  0.114)       0.004        0.009
275  22.92     0.07      0.012       (  0.114)       0.004        0.009
276  23.00     0.07      0.012       (  0.113)       0.004        0.009
277  23.08     0.07      0.012       (  0.113)       0.004        0.009
278  23.17     0.07      0.012       (  0.113)       0.004        0.009
279  23.25     0.07      0.012       (  0.113)       0.004        0.009
280  23.33     0.07      0.012       (  0.112)       0.004        0.009
281  23.42     0.07      0.012       (  0.112)       0.004        0.009
282  23.50     0.07      0.012       (  0.112)       0.004        0.009
283  23.58     0.07      0.012       (  0.112)       0.004        0.009
284  23.67     0.07      0.012       (  0.112)       0.004        0.009
285  23.75     0.07      0.012       (  0.112)       0.004        0.009
286  23.83     0.07      0.012       (  0.111)       0.004        0.009
287  23.92     0.07      0.012       (  0.111)       0.004        0.009
288  24.00     0.07      0.012       (  0.111)       0.004        0.009
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    13.2
      Flood volume = Effective rainfall      1.10(In)
       times area       1.4(Ac.)/[(In)/(Ft.)] =       0.1(Ac.Ft)
      Total soil loss =      0.45(In)
      Total soil loss =     0.053(Ac.Ft)
      Total rainfall =      1.55(In)
      Flood volume =        5584.8 Cubic Feet
      Total soil loss =        2292.2 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      0.211(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
 ---------------------------------------------------------------------------
   0+ 5       0.0001      0.01  Q          |         |         |         |
   0+10       0.0001      0.01  Q          |         |         |         |
   0+15       0.0002      0.01  Q          |         |         |         |
   0+20       0.0004      0.02  Q          |         |         |         |
   0+25       0.0005      0.02  Q          |         |         |         |
   0+30       0.0006      0.02  Q          |         |         |         |
   0+35       0.0007      0.02  Q          |         |         |         |
   0+40       0.0009      0.02  Q          |         |         |         |
   0+45       0.0010      0.02  Q          |         |         |         |
   0+50       0.0012      0.02  Q          |         |         |         |
   0+55       0.0013      0.02  Q          |         |         |         |
   1+ 0       0.0015      0.02  Q          |         |         |         |
   1+ 5       0.0016      0.02  Q          |         |         |         |
   1+10       0.0018      0.02  Q          |         |         |         |
   1+15       0.0019      0.02  Q          |         |         |         |
   1+20       0.0020      0.02  Q          |         |         |         |
   1+25       0.0021      0.02  Q          |         |         |         |
   1+30       0.0023      0.02  Q          |         |         |         |
   1+35       0.0024      0.02  Q          |         |         |         |
   1+40       0.0025      0.02  Q          |         |         |         |
   1+45       0.0027      0.02  Q          |         |         |         |
   1+50       0.0028      0.02  Q          |         |         |         |
   1+55       0.0030      0.02  Q          |         |         |         |
   2+ 0       0.0032      0.02  Q          |         |         |         |
   2+ 5       0.0033      0.02  QV         |         |         |         |
   2+10       0.0035      0.02  QV         |         |         |         |
   2+15       0.0037      0.02  QV         |         |         |         |
   2+20       0.0038      0.02  QV         |         |         |         |
   2+25       0.0040      0.02  QV         |         |         |         |
   2+30       0.0042      0.02  QV         |         |         |         |
   2+35       0.0044      0.03  QV         |         |         |         |
   2+40       0.0046      0.03  QV         |         |         |         |
   2+45       0.0048      0.03  QV         |         |         |         |
   2+50       0.0050      0.03  QV         |         |         |         |
   2+55       0.0052      0.03  QV         |         |         |         |
   3+ 0       0.0055      0.03  QV         |         |         |         |
   3+ 5       0.0057      0.03  QV         |         |         |         |
   3+10       0.0059      0.03  QV         |         |         |         |
   3+15       0.0061      0.03  QV         |         |         |         |
```

```
3+20       0.0063      0.03  QV         |          |          |          |
3+25       0.0065      0.03  Q V        |          |          |          |
3+30       0.0067      0.03  Q V        |          |          |          |
3+35       0.0070      0.03  Q V        |          |          |          |
3+40       0.0072      0.03  Q V        |          |          |          |
3+45       0.0074      0.03  Q V        |          |          |          |
3+50       0.0076      0.04  Q V        |          |          |          |
3+55       0.0079      0.04  Q V        |          |          |          |
4+ 0       0.0081      0.04  Q V        |          |          |          |
4+ 5       0.0084      0.04  Q V        |          |          |          |
4+10       0.0087      0.04  Q V        |          |          |          |
4+15       0.0089      0.04  Q V        |          |          |          |
4+20       0.0092      0.04  Q V        |          |          |          |
4+25       0.0095      0.04  Q V        |          |          |          |
4+30       0.0098      0.04  Q  V       |          |          |          |
4+35       0.0101      0.04  Q  V       |          |          |          |
4+40       0.0104      0.04  Q  V       |          |          |          |
4+45       0.0107      0.04  Q  V       |          |          |          |
4+50       0.0110      0.05  Q  V       |          |          |          |
4+55       0.0114      0.05  Q  V       |          |          |          |
5+ 0       0.0117      0.05  Q  V       |          |          |          |
5+ 5       0.0120      0.04  Q  V       |          |          |          |
5+10       0.0122      0.04  Q  V       |          |          |          |
5+15       0.0125      0.04  Q  V       |          |          |          |
5+20       0.0128      0.04  Q  V       |          |          |          |
5+25       0.0131      0.04  Q   V      |          |          |          |
5+30       0.0134      0.04  Q   V      |          |          |          |
5+35       0.0137      0.05  Q   V      |          |          |          |
5+40       0.0141      0.05  Q   V      |          |          |          |
5+45       0.0144      0.05  Q   V      |          |          |          |
5+50       0.0147      0.05  Q   V      |          |          |          |
5+55       0.0151      0.05  Q   V      |          |          |          |
6+ 0       0.0154      0.05  Q   V      |          |          |          |
6+ 5       0.0158      0.05  Q   V      |          |          |          |
6+10       0.0162      0.06  Q    V     |          |          |          |
6+15       0.0166      0.06  Q    V     |          |          |          |
6+20       0.0170      0.06  Q    V     |          |          |          |
6+25       0.0173      0.06  Q    V     |          |          |          |
6+30       0.0177      0.06  Q    V     |          |          |          |
6+35       0.0181      0.06  Q    V     |          |          |          |
6+40       0.0186      0.06  Q    V     |          |          |          |
6+45       0.0190      0.06  Q    V     |          |          |          |
6+50       0.0194      0.06  Q     V    |          |          |          |
6+55       0.0198      0.06  Q     V    |          |          |          |
7+ 0       0.0203      0.06  Q     V    |          |          |          |
7+ 5       0.0207      0.06  Q     V    |          |          |          |
7+10       0.0211      0.06  Q     V    |          |          |          |
7+15       0.0216      0.06  Q     V    |          |          |          |
7+20       0.0220      0.07  Q     V    |          |          |          |
7+25       0.0225      0.07  Q      V   |          |          |          |
7+30       0.0230      0.07  Q      V   |          |          |          |
7+35       0.0235      0.07  Q      V   |          |          |          |
7+40       0.0240      0.07  Q      V   |          |          |          |
7+45       0.0245      0.07  Q      V   |          |          |          |
7+50       0.0250      0.08  Q      V   |          |          |          |
7+55       0.0256      0.08  Q      V   |          |          |          |
8+ 0       0.0261      0.08  Q       V  |          |          |          |
8+ 5       0.0268      0.09  Q       V  |          |          |          |
8+10       0.0274      0.09  Q       V  |          |          |          |
8+15       0.0280      0.09  Q       V  |          |          |          |
8+20       0.0287      0.09  Q       V  |          |          |          |
8+25       0.0293      0.09  Q        V |          |          |          |
8+30       0.0300      0.09  Q        V |          |          |          |
8+35       0.0306      0.10  Q        V |          |          |          |
8+40       0.0313      0.10  Q        V |          |          |          |
8+45       0.0320      0.10  Q        V |          |          |          |
8+50       0.0327      0.10  Q         V          |          |          |
8+55       0.0334      0.11  Q         V          |          |          |
9+ 0       0.0342      0.11  Q         V          |          |          |
9+ 5       0.0350      0.11  Q         V          |          |          |
9+10       0.0358      0.12  Q         |V         |          |          |
9+15       0.0366      0.12  Q         |V         |          |          |
9+20       0.0374      0.12  Q         |V         |          |          |
9+25       0.0383      0.12  Q         |V         |          |          |
9+30       0.0391      0.12  Q         | V        |          |          |
```



```
15+50       0.1141      0.12  Q          |          |          |    V     |
15+55       0.1149      0.12  Q          |          |          |    V     |
16+ 0       0.1157      0.12  Q          |          |          |     V    |
16+ 5       0.1160      0.05  Q          |          |          |     V    |
16+10       0.1162      0.02  Q          |          |          |     V    |
16+15       0.1164      0.02  Q          |          |          |     V    |
16+20       0.1165      0.02  Q          |          |          |     V    |
16+25       0.1167      0.02  Q          |          |          |     V    |
16+30       0.1169      0.02  Q          |          |          |     V    |
16+35       0.1170      0.02  Q          |          |          |     V    |
16+40       0.1172      0.02  Q          |          |          |     V    |
16+45       0.1173      0.02  Q          |          |          |     V    |
16+50       0.1174      0.02  Q          |          |          |     V    |
16+55       0.1175      0.02  Q          |          |          |     V    |
17+ 0       0.1177      0.02  Q          |          |          |     V    |
17+ 5       0.1179      0.03  Q          |          |          |     V    |
17+10       0.1181      0.03  Q          |          |          |     V    |
17+15       0.1183      0.03  Q          |          |          |     V    |
17+20       0.1185      0.03  Q          |          |          |     V    |
17+25       0.1187      0.03  Q          |          |          |      V   |
17+30       0.1189      0.03  Q          |          |          |      V   |
17+35       0.1191      0.03  Q          |          |          |      V   |
17+40       0.1194      0.03  Q          |          |          |      V   |
17+45       0.1196      0.03  Q          |          |          |      V   |
17+50       0.1197      0.03  Q          |          |          |      V   |
17+55       0.1199      0.02  Q          |          |          |      V   |
18+ 0       0.1201      0.02  Q          |          |          |      V   |
18+ 5       0.1203      0.02  Q          |          |          |      V   |
18+10       0.1204      0.02  Q          |          |          |      V   |
18+15       0.1206      0.02  Q          |          |          |      V   |
18+20       0.1208      0.02  Q          |          |          |      V   |
18+25       0.1209      0.02  Q          |          |          |      V   |
18+30       0.1211      0.02  Q          |          |          |      V   |
18+35       0.1213      0.02  Q          |          |          |      V   |
18+40       0.1214      0.02  Q          |          |          |      V   |
18+45       0.1215      0.02  Q          |          |          |      V   |
18+50       0.1216      0.01  Q          |          |          |      V   |
18+55       0.1217      0.01  Q          |          |          |      V   |
19+ 0       0.1218      0.01  Q          |          |          |      V   |
19+ 5       0.1219      0.02  Q          |          |          |       V  |
19+10       0.1220      0.02  Q          |          |          |       V  |
19+15       0.1222      0.02  Q          |          |          |       V  |
19+20       0.1223      0.02  Q          |          |          |       V  |
19+25       0.1225      0.02  Q          |          |          |       V  |
19+30       0.1227      0.02  Q          |          |          |       V  |
19+35       0.1228      0.02  Q          |          |          |       V  |
19+40       0.1229      0.02  Q          |          |          |       V  |
19+45       0.1230      0.02  Q          |          |          |       V  |
19+50       0.1231      0.01  Q          |          |          |       V  |
19+55       0.1232      0.01  Q          |          |          |       V  |
20+ 0       0.1233      0.01  Q          |          |          |       V  |
20+ 5       0.1234      0.02  Q          |          |          |       V  |
20+10       0.1236      0.02  Q          |          |          |       V  |
20+15       0.1237      0.02  Q          |          |          |       V  |
20+20       0.1238      0.02  Q          |          |          |       V  |
20+25       0.1239      0.02  Q          |          |          |       V  |
20+30       0.1241      0.02  Q          |          |          |       V  |
20+35       0.1242      0.02  Q          |          |          |       V  |
20+40       0.1243      0.02  Q          |          |          |       V  |
20+45       0.1245      0.02  Q          |          |          |       V  |
20+50       0.1246      0.01  Q          |          |          |       V  |
20+55       0.1246      0.01  Q          |          |          |       V  |
21+ 0       0.1247      0.01  Q          |          |          |       V  |
21+ 5       0.1248      0.02  Q          |          |          |       V  |
21+10       0.1250      0.02  Q          |          |          |       V  |
21+15       0.1251      0.02  Q          |          |          |        V |
21+20       0.1252      0.01  Q          |          |          |        V |
21+25       0.1253      0.01  Q          |          |          |        V |
21+30       0.1254      0.01  Q          |          |          |        V |
21+35       0.1255      0.02  Q          |          |          |        V |
21+40       0.1256      0.02  Q          |          |          |        V |
21+45       0.1257      0.02  Q          |          |          |        V |
21+50       0.1258      0.01  Q          |          |          |        V |
21+55       0.1259      0.01  Q          |          |          |        V |
22+ 0       0.1260      0.01  Q          |          |          |        V |
```

22+ 5	0.1261	0.02	Q	|	|	|	V|
22+10	0.1263	0.02	Q	|	|	|	V|
22+15	0.1264	0.02	Q	|	|	|	V|
22+20	0.1265	0.01	Q	|	|	|	V|
22+25	0.1266	0.01	Q	|	|	|	V|
22+30	0.1266	0.01	Q	|	|	|	V|
22+35	0.1267	0.01	Q	|	|	|	V|
22+40	0.1268	0.01	Q	|	|	|	V|
22+45	0.1269	0.01	Q	|	|	|	V|
22+50	0.1270	0.01	Q	|	|	|	V|
22+55	0.1271	0.01	Q	|	|	|	V|
23+ 0	0.1272	0.01	Q	|	|	|	V|
23+ 5	0.1272	0.01	Q	|	|	|	V|
23+10	0.1273	0.01	Q	|	|	|	V|
23+15	0.1274	0.01	Q	|	|	|	V|
23+20	0.1275	0.01	Q	|	|	|	V|
23+25	0.1276	0.01	Q	|	|	|	V|
23+30	0.1277	0.01	Q	|	|	|	V|
23+35	0.1278	0.01	Q	|	|	|	V|
23+40	0.1278	0.01	Q	|	|	|	V|
23+45	0.1279	0.01	Q	|	|	|	V|
23+50	0.1280	0.01	Q	|	|	|	V|
23+55	0.1281	0.01	Q	|	|	|	V|
24+ 0	0.1282	0.01	Q	|	|	|	V|
24+ 5	0.1282	0.00	Q	|	|	|	V|

U n i t H y d r o g r a p h A n a l y s i s

Study date 05/18/20 File: ONSITEPROP24100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

18-0099 - MOTTE COUNTY PLAZA
PROPOSED UNIT HYDROGRAPH
100-YEAR, 24-HOUR
2020-05-18 AYS

Drainage Area = 1.40(Ac.) = 0.002 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 1.40(Ac.) = 0.002 Sq. Mi.
Length along longest watercourse = 460.00(Ft.)
Length along longest watercourse measured to centroid = 145.00(Ft.)
Length along longest watercourse = 0.087 Mi.
Length along longest watercourse measured to centroid = 0.027 Mi.
Difference in elevation = 10.30(Ft.)
Slope along watercourse = 118.2261 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.015 Hr.
Lag time = 0.88 Min.
25% of lag time = 0.22 Min.
40% of lag time = 0.35 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.40	1.55	2.17

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.40	3.55	4.97

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.550(In)
Area Averaged 100-Year Rainfall = 3.550(In)

Point rain (area averaged) = 3.550(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.550(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
1.400	56.00	0.761

Total Area Entered = 1.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	56.0	0.511	0.761	0.161	1.000	0.161
					Sum (F) =	0.161

Area averaged mean soil loss (F) (In/Hr) = 0.161
Minimum soil loss rate ((In/Hr)) = 0.080
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.291

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	568.023	73.991	1.044
2	0.167	1136.046	26.009	0.367
		Sum = 100.000	Sum=	1.411

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.028	(0.285)	0.008	0.020
2	0.17	0.07	0.028	(0.284)	0.008	0.020
3	0.25	0.07	0.028	(0.283)	0.008	0.020
4	0.33	0.10	0.043	(0.282)	0.012	0.030
5	0.42	0.10	0.043	(0.281)	0.012	0.030
6	0.50	0.10	0.043	(0.280)	0.012	0.030
7	0.58	0.10	0.043	(0.279)	0.012	0.030
8	0.67	0.10	0.043	(0.278)	0.012	0.030
9	0.75	0.10	0.043	(0.277)	0.012	0.030
10	0.83	0.13	0.057	(0.275)	0.017	0.040
11	0.92	0.13	0.057	(0.274)	0.017	0.040
12	1.00	0.13	0.057	(0.273)	0.017	0.040
13	1.08	0.10	0.043	(0.272)	0.012	0.030
14	1.17	0.10	0.043	(0.271)	0.012	0.030
15	1.25	0.10	0.043	(0.270)	0.012	0.030
16	1.33	0.10	0.043	(0.269)	0.012	0.030
17	1.42	0.10	0.043	(0.268)	0.012	0.030
18	1.50	0.10	0.043	(0.267)	0.012	0.030
19	1.58	0.10	0.043	(0.266)	0.012	0.030
20	1.67	0.10	0.043	(0.265)	0.012	0.030
21	1.75	0.10	0.043	(0.264)	0.012	0.030
22	1.83	0.13	0.057	(0.263)	0.017	0.040
23	1.92	0.13	0.057	(0.262)	0.017	0.040
24	2.00	0.13	0.057	(0.260)	0.017	0.040
25	2.08	0.13	0.057	(0.259)	0.017	0.040
26	2.17	0.13	0.057	(0.258)	0.017	0.040
27	2.25	0.13	0.057	(0.257)	0.017	0.040
28	2.33	0.13	0.057	(0.256)	0.017	0.040
29	2.42	0.13	0.057	(0.255)	0.017	0.040
30	2.50	0.13	0.057	(0.254)	0.017	0.040
31	2.58	0.17	0.071	(0.253)	0.021	0.050
32	2.67	0.17	0.071	(0.252)	0.021	0.050
33	2.75	0.17	0.071	(0.251)	0.021	0.050
34	2.83	0.17	0.071	(0.250)	0.021	0.050
35	2.92	0.17	0.071	(0.249)	0.021	0.050
36	3.00	0.17	0.071	(0.248)	0.021	0.050
37	3.08	0.17	0.071	(0.247)	0.021	0.050
38	3.17	0.17	0.071	(0.246)	0.021	0.050
39	3.25	0.17	0.071	(0.245)	0.021	0.050
40	3.33	0.17	0.071	(0.244)	0.021	0.050
41	3.42	0.17	0.071	(0.243)	0.021	0.050
42	3.50	0.17	0.071	(0.242)	0.021	0.050
43	3.58	0.17	0.071	(0.241)	0.021	0.050
44	3.67	0.17	0.071	(0.240)	0.021	0.050
45	3.75	0.17	0.071	(0.239)	0.021	0.050
46	3.83	0.20	0.085	(0.238)	0.025	0.060
47	3.92	0.20	0.085	(0.237)	0.025	0.060
48	4.00	0.20	0.085	(0.236)	0.025	0.060

49	4.08	0.20	0.085	(0.235)	0.025	0.060
50	4.17	0.20	0.085	(0.234)	0.025	0.060
51	4.25	0.20	0.085	(0.233)	0.025	0.060
52	4.33	0.23	0.099	(0.232)	0.029	0.070
53	4.42	0.23	0.099	(0.231)	0.029	0.070
54	4.50	0.23	0.099	(0.230)	0.029	0.070
55	4.58	0.23	0.099	(0.229)	0.029	0.070
56	4.67	0.23	0.099	(0.228)	0.029	0.070
57	4.75	0.23	0.099	(0.227)	0.029	0.070
58	4.83	0.27	0.114	(0.226)	0.033	0.081
59	4.92	0.27	0.114	(0.225)	0.033	0.081
60	5.00	0.27	0.114	(0.224)	0.033	0.081
61	5.08	0.20	0.085	(0.223)	0.025	0.060
62	5.17	0.20	0.085	(0.222)	0.025	0.060
63	5.25	0.20	0.085	(0.221)	0.025	0.060
64	5.33	0.23	0.099	(0.220)	0.029	0.070
65	5.42	0.23	0.099	(0.219)	0.029	0.070
66	5.50	0.23	0.099	(0.218)	0.029	0.070
67	5.58	0.27	0.114	(0.217)	0.033	0.081
68	5.67	0.27	0.114	(0.216)	0.033	0.081
69	5.75	0.27	0.114	(0.215)	0.033	0.081
70	5.83	0.27	0.114	(0.214)	0.033	0.081
71	5.92	0.27	0.114	(0.213)	0.033	0.081
72	6.00	0.27	0.114	(0.212)	0.033	0.081
73	6.08	0.30	0.128	(0.212)	0.037	0.091
74	6.17	0.30	0.128	(0.211)	0.037	0.091
75	6.25	0.30	0.128	(0.210)	0.037	0.091
76	6.33	0.30	0.128	(0.209)	0.037	0.091
77	6.42	0.30	0.128	(0.208)	0.037	0.091
78	6.50	0.30	0.128	(0.207)	0.037	0.091
79	6.58	0.33	0.142	(0.206)	0.041	0.101
80	6.67	0.33	0.142	(0.205)	0.041	0.101
81	6.75	0.33	0.142	(0.204)	0.041	0.101
82	6.83	0.33	0.142	(0.203)	0.041	0.101
83	6.92	0.33	0.142	(0.202)	0.041	0.101
84	7.00	0.33	0.142	(0.201)	0.041	0.101
85	7.08	0.33	0.142	(0.200)	0.041	0.101
86	7.17	0.33	0.142	(0.199)	0.041	0.101
87	7.25	0.33	0.142	(0.199)	0.041	0.101
88	7.33	0.37	0.156	(0.198)	0.045	0.111
89	7.42	0.37	0.156	(0.197)	0.045	0.111
90	7.50	0.37	0.156	(0.196)	0.045	0.111
91	7.58	0.40	0.170	(0.195)	0.050	0.121
92	7.67	0.40	0.170	(0.194)	0.050	0.121
93	7.75	0.40	0.170	(0.193)	0.050	0.121
94	7.83	0.43	0.185	(0.192)	0.054	0.131
95	7.92	0.43	0.185	(0.191)	0.054	0.131
96	8.00	0.43	0.185	(0.190)	0.054	0.131
97	8.08	0.50	0.213	(0.190)	0.062	0.151
98	8.17	0.50	0.213	(0.189)	0.062	0.151
99	8.25	0.50	0.213	(0.188)	0.062	0.151
100	8.33	0.50	0.213	(0.187)	0.062	0.151
101	8.42	0.50	0.213	(0.186)	0.062	0.151
102	8.50	0.50	0.213	(0.185)	0.062	0.151
103	8.58	0.53	0.227	(0.184)	0.066	0.161
104	8.67	0.53	0.227	(0.183)	0.066	0.161
105	8.75	0.53	0.227	(0.183)	0.066	0.161
106	8.83	0.57	0.241	(0.182)	0.070	0.171
107	8.92	0.57	0.241	(0.181)	0.070	0.171
108	9.00	0.57	0.241	(0.180)	0.070	0.171
109	9.08	0.63	0.270	(0.179)	0.079	0.191
110	9.17	0.63	0.270	(0.178)	0.079	0.191
111	9.25	0.63	0.270	(0.177)	0.079	0.191
112	9.33	0.67	0.284	(0.177)	0.083	0.201
113	9.42	0.67	0.284	(0.176)	0.083	0.201
114	9.50	0.67	0.284	(0.175)	0.083	0.201
115	9.58	0.70	0.298	(0.174)	0.087	0.211
116	9.67	0.70	0.298	(0.173)	0.087	0.211
117	9.75	0.70	0.298	(0.172)	0.087	0.211
118	9.83	0.73	0.312	(0.172)	0.091	0.221
119	9.92	0.73	0.312	(0.171)	0.091	0.221
120	10.00	0.73	0.312	(0.170)	0.091	0.221
121	10.08	0.50	0.213	(0.169)	0.062	0.151
122	10.17	0.50	0.213	(0.168)	0.062	0.151
123	10.25	0.50	0.213	(0.168)	0.062	0.151

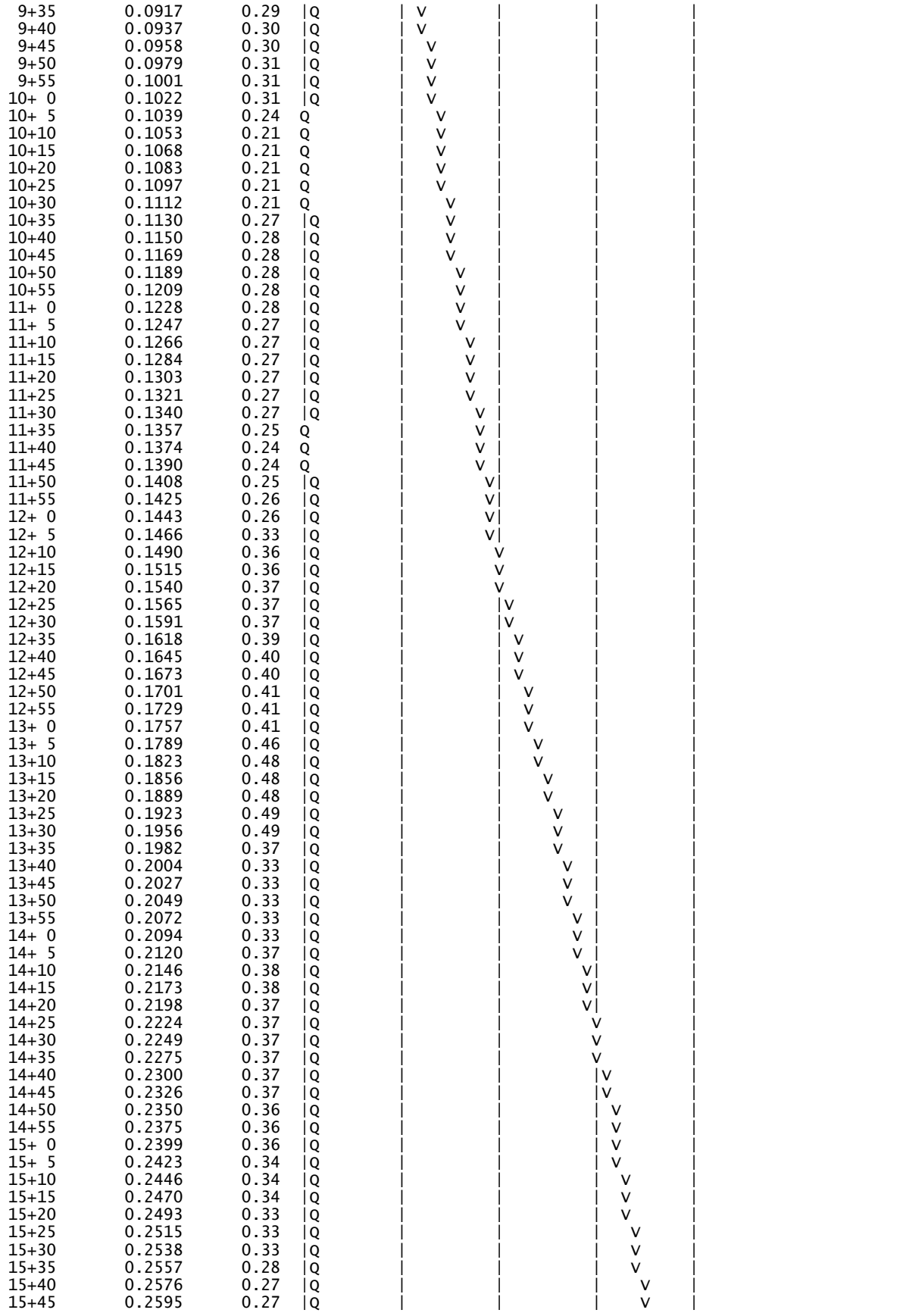
124	10.33	0.50	0.213	(0.167)	0.062	0.151
125	10.42	0.50	0.213	(0.166)	0.062	0.151
126	10.50	0.50	0.213	(0.165)	0.062	0.151
127	10.58	0.67	0.284	(0.164)	0.083	0.201
128	10.67	0.67	0.284	(0.163)	0.083	0.201
129	10.75	0.67	0.284	(0.163)	0.083	0.201
130	10.83	0.67	0.284	(0.162)	0.083	0.201
131	10.92	0.67	0.284	(0.161)	0.083	0.201
132	11.00	0.67	0.284	(0.160)	0.083	0.201
133	11.08	0.63	0.270	(0.159)	0.079	0.191
134	11.17	0.63	0.270	(0.159)	0.079	0.191
135	11.25	0.63	0.270	(0.158)	0.079	0.191
136	11.33	0.63	0.270	(0.157)	0.079	0.191
137	11.42	0.63	0.270	(0.156)	0.079	0.191
138	11.50	0.63	0.270	(0.156)	0.079	0.191
139	11.58	0.57	0.241	(0.155)	0.070	0.171
140	11.67	0.57	0.241	(0.154)	0.070	0.171
141	11.75	0.57	0.241	(0.153)	0.070	0.171
142	11.83	0.60	0.256	(0.153)	0.074	0.181
143	11.92	0.60	0.256	(0.152)	0.074	0.181
144	12.00	0.60	0.256	(0.151)	0.074	0.181
145	12.08	0.83	0.355	(0.150)	0.103	0.252
146	12.17	0.83	0.355	(0.149)	0.103	0.252
147	12.25	0.83	0.355	(0.149)	0.103	0.252
148	12.33	0.87	0.369	(0.148)	0.107	0.262
149	12.42	0.87	0.369	(0.147)	0.107	0.262
150	12.50	0.87	0.369	(0.147)	0.107	0.262
151	12.58	0.93	0.398	(0.146)	0.116	0.282
152	12.67	0.93	0.398	(0.145)	0.116	0.282
153	12.75	0.93	0.398	(0.144)	0.116	0.282
154	12.83	0.97	0.412	(0.144)	0.120	0.292
155	12.92	0.97	0.412	(0.143)	0.120	0.292
156	13.00	0.97	0.412	(0.142)	0.120	0.292
157	13.08	1.13	0.483	(0.141)	0.140	0.342
158	13.17	1.13	0.483	(0.141)	0.140	0.342
159	13.25	1.13	0.483	0.140	(0.140)	0.343
160	13.33	1.13	0.483	0.139	(0.140)	0.344
161	13.42	1.13	0.483	0.139	(0.140)	0.344
162	13.50	1.13	0.483	0.138	(0.140)	0.345
163	13.58	0.77	0.327	(0.137)	0.095	0.232
164	13.67	0.77	0.327	(0.136)	0.095	0.232
165	13.75	0.77	0.327	(0.136)	0.095	0.232
166	13.83	0.77	0.327	(0.135)	0.095	0.232
167	13.92	0.77	0.327	(0.134)	0.095	0.232
168	14.00	0.77	0.327	(0.134)	0.095	0.232
169	14.08	0.90	0.383	(0.133)	0.112	0.272
170	14.17	0.90	0.383	(0.132)	0.112	0.272
171	14.25	0.90	0.383	(0.132)	0.112	0.272
172	14.33	0.87	0.369	(0.131)	0.107	0.262
173	14.42	0.87	0.369	(0.130)	0.107	0.262
174	14.50	0.87	0.369	(0.130)	0.107	0.262
175	14.58	0.87	0.369	(0.129)	0.107	0.262
176	14.67	0.87	0.369	(0.128)	0.107	0.262
177	14.75	0.87	0.369	(0.128)	0.107	0.262
178	14.83	0.83	0.355	(0.127)	0.103	0.252
179	14.92	0.83	0.355	(0.126)	0.103	0.252
180	15.00	0.83	0.355	(0.126)	0.103	0.252
181	15.08	0.80	0.341	(0.125)	0.099	0.242
182	15.17	0.80	0.341	(0.124)	0.099	0.242
183	15.25	0.80	0.341	(0.124)	0.099	0.242
184	15.33	0.77	0.327	(0.123)	0.095	0.232
185	15.42	0.77	0.327	(0.123)	0.095	0.232
186	15.50	0.77	0.327	(0.122)	0.095	0.232
187	15.58	0.63	0.270	(0.121)	0.079	0.191
188	15.67	0.63	0.270	(0.121)	0.079	0.191
189	15.75	0.63	0.270	(0.120)	0.079	0.191
190	15.83	0.63	0.270	(0.119)	0.079	0.191
191	15.92	0.63	0.270	(0.119)	0.079	0.191
192	16.00	0.63	0.270	(0.118)	0.079	0.191
193	16.08	0.13	0.057	(0.118)	0.017	0.040
194	16.17	0.13	0.057	(0.117)	0.017	0.040
195	16.25	0.13	0.057	(0.116)	0.017	0.040
196	16.33	0.13	0.057	(0.116)	0.017	0.040
197	16.42	0.13	0.057	(0.115)	0.017	0.040
198	16.50	0.13	0.057	(0.115)	0.017	0.040

199	16.58	0.10	0.043	(0.114)	0.012	0.030
200	16.67	0.10	0.043	(0.113)	0.012	0.030
201	16.75	0.10	0.043	(0.113)	0.012	0.030
202	16.83	0.10	0.043	(0.112)	0.012	0.030
203	16.92	0.10	0.043	(0.112)	0.012	0.030
204	17.00	0.10	0.043	(0.111)	0.012	0.030
205	17.08	0.17	0.071	(0.111)	0.021	0.050
206	17.17	0.17	0.071	(0.110)	0.021	0.050
207	17.25	0.17	0.071	(0.110)	0.021	0.050
208	17.33	0.17	0.071	(0.109)	0.021	0.050
209	17.42	0.17	0.071	(0.108)	0.021	0.050
210	17.50	0.17	0.071	(0.108)	0.021	0.050
211	17.58	0.17	0.071	(0.107)	0.021	0.050
212	17.67	0.17	0.071	(0.107)	0.021	0.050
213	17.75	0.17	0.071	(0.106)	0.021	0.050
214	17.83	0.13	0.057	(0.106)	0.017	0.040
215	17.92	0.13	0.057	(0.105)	0.017	0.040
216	18.00	0.13	0.057	(0.105)	0.017	0.040
217	18.08	0.13	0.057	(0.104)	0.017	0.040
218	18.17	0.13	0.057	(0.104)	0.017	0.040
219	18.25	0.13	0.057	(0.103)	0.017	0.040
220	18.33	0.13	0.057	(0.103)	0.017	0.040
221	18.42	0.13	0.057	(0.102)	0.017	0.040
222	18.50	0.13	0.057	(0.102)	0.017	0.040
223	18.58	0.10	0.043	(0.101)	0.012	0.030
224	18.67	0.10	0.043	(0.101)	0.012	0.030
225	18.75	0.10	0.043	(0.100)	0.012	0.030
226	18.83	0.07	0.028	(0.100)	0.008	0.020
227	18.92	0.07	0.028	(0.099)	0.008	0.020
228	19.00	0.07	0.028	(0.099)	0.008	0.020
229	19.08	0.10	0.043	(0.098)	0.012	0.030
230	19.17	0.10	0.043	(0.098)	0.012	0.030
231	19.25	0.10	0.043	(0.097)	0.012	0.030
232	19.33	0.13	0.057	(0.097)	0.017	0.040
233	19.42	0.13	0.057	(0.096)	0.017	0.040
234	19.50	0.13	0.057	(0.096)	0.017	0.040
235	19.58	0.10	0.043	(0.096)	0.012	0.030
236	19.67	0.10	0.043	(0.095)	0.012	0.030
237	19.75	0.10	0.043	(0.095)	0.012	0.030
238	19.83	0.07	0.028	(0.094)	0.008	0.020
239	19.92	0.07	0.028	(0.094)	0.008	0.020
240	20.00	0.07	0.028	(0.093)	0.008	0.020
241	20.08	0.10	0.043	(0.093)	0.012	0.030
242	20.17	0.10	0.043	(0.093)	0.012	0.030
243	20.25	0.10	0.043	(0.092)	0.012	0.030
244	20.33	0.10	0.043	(0.092)	0.012	0.030
245	20.42	0.10	0.043	(0.091)	0.012	0.030
246	20.50	0.10	0.043	(0.091)	0.012	0.030
247	20.58	0.10	0.043	(0.091)	0.012	0.030
248	20.67	0.10	0.043	(0.090)	0.012	0.030
249	20.75	0.10	0.043	(0.090)	0.012	0.030
250	20.83	0.07	0.028	(0.090)	0.008	0.020
251	20.92	0.07	0.028	(0.089)	0.008	0.020
252	21.00	0.07	0.028	(0.089)	0.008	0.020
253	21.08	0.10	0.043	(0.088)	0.012	0.030
254	21.17	0.10	0.043	(0.088)	0.012	0.030
255	21.25	0.10	0.043	(0.088)	0.012	0.030
256	21.33	0.07	0.028	(0.087)	0.008	0.020
257	21.42	0.07	0.028	(0.087)	0.008	0.020
258	21.50	0.07	0.028	(0.087)	0.008	0.020
259	21.58	0.10	0.043	(0.086)	0.012	0.030
260	21.67	0.10	0.043	(0.086)	0.012	0.030
261	21.75	0.10	0.043	(0.086)	0.012	0.030
262	21.83	0.07	0.028	(0.086)	0.008	0.020
263	21.92	0.07	0.028	(0.085)	0.008	0.020
264	22.00	0.07	0.028	(0.085)	0.008	0.020
265	22.08	0.10	0.043	(0.085)	0.012	0.030
266	22.17	0.10	0.043	(0.084)	0.012	0.030
267	22.25	0.10	0.043	(0.084)	0.012	0.030
268	22.33	0.07	0.028	(0.084)	0.008	0.020
269	22.42	0.07	0.028	(0.084)	0.008	0.020
270	22.50	0.07	0.028	(0.083)	0.008	0.020
271	22.58	0.07	0.028	(0.083)	0.008	0.020
272	22.67	0.07	0.028	(0.083)	0.008	0.020
273	22.75	0.07	0.028	(0.083)	0.008	0.020

```
274  22.83     0.07      0.028       (  0.082)       0.008        0.020
275  22.92     0.07      0.028       (  0.082)       0.008        0.020
276  23.00     0.07      0.028       (  0.082)       0.008        0.020
277  23.08     0.07      0.028       (  0.082)       0.008        0.020
278  23.17     0.07      0.028       (  0.082)       0.008        0.020
279  23.25     0.07      0.028       (  0.082)       0.008        0.020
280  23.33     0.07      0.028       (  0.081)       0.008        0.020
281  23.42     0.07      0.028       (  0.081)       0.008        0.020
282  23.50     0.07      0.028       (  0.081)       0.008        0.020
283  23.58     0.07      0.028       (  0.081)       0.008        0.020
284  23.67     0.07      0.028       (  0.081)       0.008        0.020
285  23.75     0.07      0.028       (  0.081)       0.008        0.020
286  23.83     0.07      0.028       (  0.081)       0.008        0.020
287  23.92     0.07      0.028       (  0.081)       0.008        0.020
288  24.00     0.07      0.028       (  0.080)       0.008        0.020
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    30.2
      Flood volume = Effective rainfall      2.52(In)
       times area       1.4(Ac.)/[(In)/(Ft.)] =       0.3(Ac.Ft)
      Total soil loss =      1.03(In)
      Total soil loss =     0.120(Ac.Ft)
      Total rainfall =      3.55(In)
      Flood volume =       12793.8 Cubic Feet
      Total soil loss =        5247.3 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      0.487(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
 ---------------------------------------------------------------------------
   0+ 5       0.0001      0.02  Q          |         |         |         |
   0+10       0.0003      0.03  Q          |         |         |         |
   0+15       0.0005      0.03  Q          |         |         |         |
   0+20       0.0008      0.04  Q          |         |         |         |
   0+25       0.0011      0.04  Q          |         |         |         |
   0+30       0.0014      0.04  Q          |         |         |         |
   0+35       0.0017      0.04  Q          |         |         |         |
   0+40       0.0020      0.04  Q          |         |         |         |
   0+45       0.0023      0.04  Q          |         |         |         |
   0+50       0.0026      0.05  Q          |         |         |         |
   0+55       0.0030      0.06  Q          |         |         |         |
   1+ 0       0.0034      0.06  Q          |         |         |         |
   1+ 5       0.0037      0.05  Q          |         |         |         |
   1+10       0.0040      0.04  Q          |         |         |         |
   1+15       0.0043      0.04  Q          |         |         |         |
   1+20       0.0046      0.04  Q          |         |         |         |
   1+25       0.0049      0.04  Q          |         |         |         |
   1+30       0.0052      0.04  Q          |         |         |         |
   1+35       0.0055      0.04  Q          |         |         |         |
   1+40       0.0058      0.04  Q          |         |         |         |
   1+45       0.0061      0.04  Q          |         |         |         |
   1+50       0.0065      0.05  Q          |         |         |         |
   1+55       0.0068      0.06  Q          |         |         |         |
   2+ 0       0.0072      0.06  Q          |         |         |         |
   2+ 5       0.0076      0.06  QV         |         |         |         |
   2+10       0.0080      0.06  QV         |         |         |         |
   2+15       0.0084      0.06  QV         |         |         |         |
   2+20       0.0088      0.06  QV         |         |         |         |
   2+25       0.0092      0.06  QV         |         |         |         |
   2+30       0.0096      0.06  QV         |         |         |         |
   2+35       0.0101      0.07  QV         |         |         |         |
   2+40       0.0105      0.07  QV         |         |         |         |
   2+45       0.0110      0.07  QV         |         |         |         |
   2+50       0.0115      0.07  QV         |         |         |         |
   2+55       0.0120      0.07  QV         |         |         |         |
   3+ 0       0.0125      0.07  QV         |         |         |         |
   3+ 5       0.0130      0.07  QV         |         |         |         |
   3+10       0.0135      0.07  QV         |         |         |         |
   3+15       0.0140      0.07  QV         |         |         |         |
```

```
3+20       0.0145      0.07  QV        |         |         |         |
3+25       0.0149      0.07  Q V       |         |         |         |
3+30       0.0154      0.07  Q V       |         |         |         |
3+35       0.0159      0.07  Q V       |         |         |         |
3+40       0.0164      0.07  Q V       |         |         |         |
3+45       0.0169      0.07  Q V       |         |         |         |
3+50       0.0175      0.08  Q V       |         |         |         |
3+55       0.0181      0.09  Q V       |         |         |         |
4+ 0       0.0186      0.09  Q V       |         |         |         |
4+ 5       0.0192      0.09  Q V       |         |         |         |
4+10       0.0198      0.09  Q V       |         |         |         |
4+15       0.0204      0.09  Q V       |         |         |         |
4+20       0.0211      0.10  Q V       |         |         |         |
4+25       0.0217      0.10  Q V       |         |         |         |
4+30       0.0224      0.10  Q  V      |         |         |         |
4+35       0.0231      0.10  Q  V      |         |         |         |
4+40       0.0238      0.10  Q  V      |         |         |         |
4+45       0.0245      0.10  Q  V      |         |         |         |
4+50       0.0252      0.11  Q  V      |         |         |         |
4+55       0.0260      0.11  Q  V      |         |         |         |
5+ 0       0.0268      0.11  Q  V      |         |         |         |
5+ 5       0.0274      0.09  Q  V      |         |         |         |
5+10       0.0280      0.09  Q  V      |         |         |         |
5+15       0.0286      0.09  Q  V      |         |         |         |
5+20       0.0293      0.10  Q  V      |         |         |         |
5+25       0.0300      0.10  Q   V     |         |         |         |
5+30       0.0307      0.10  Q   V     |         |         |         |
5+35       0.0314      0.11  Q   V     |         |         |         |
5+40       0.0322      0.11  Q   V     |         |         |         |
5+45       0.0330      0.11  Q   V     |         |         |         |
5+50       0.0338      0.11  Q   V     |         |         |         |
5+55       0.0345      0.11  Q   V     |         |         |         |
6+ 0       0.0353      0.11  Q   V     |         |         |         |
6+ 5       0.0362      0.12  Q   V     |         |         |         |
6+10       0.0371      0.13  Q    V    |         |         |         |
6+15       0.0379      0.13  Q    V    |         |         |         |
6+20       0.0388      0.13  Q    V    |         |         |         |
6+25       0.0397      0.13  Q    V    |         |         |         |
6+30       0.0406      0.13  Q    V    |         |         |         |
6+35       0.0415      0.14  Q    V    |         |         |         |
6+40       0.0425      0.14  Q    V    |         |         |         |
6+45       0.0435      0.14  Q    V    |         |         |         |
6+50       0.0445      0.14  Q     V   |         |         |         |
6+55       0.0455      0.14  Q     V   |         |         |         |
7+ 0       0.0464      0.14  Q     V   |         |         |         |
7+ 5       0.0474      0.14  Q     V   |         |         |         |
7+10       0.0484      0.14  Q     V   |         |         |         |
7+15       0.0494      0.14  Q     V   |         |         |         |
7+20       0.0504      0.15  Q     V   |         |         |         |
7+25       0.0515      0.16  Q      V  |         |         |         |
7+30       0.0526      0.16  Q      V  |         |         |         |
7+35       0.0537      0.17  Q      V  |         |         |         |
7+40       0.0549      0.17  Q      V  |         |         |         |
7+45       0.0561      0.17  Q      V  |         |         |         |
7+50       0.0573      0.18  Q      V  |         |         |         |
7+55       0.0586      0.18  Q      V  |         |         |         |
8+ 0       0.0599      0.18  Q       V |         |         |         |
8+ 5       0.0613      0.21  Q       V |         |         |         |
8+10       0.0628      0.21  Q       V |         |         |         |
8+15       0.0642      0.21  Q       V |         |         |         |
8+20       0.0657      0.21  Q       V |         |         |         |
8+25       0.0672      0.21  Q        V|         |         |         |
8+30       0.0686      0.21  Q        V|         |         |         |
8+35       0.0702      0.22  Q        V|         |         |         |
8+40       0.0717      0.23  Q        V|         |         |         |
8+45       0.0733      0.23  Q        V|         |         |         |
8+50       0.0749      0.24  Q         V         |         |         |
8+55       0.0766      0.24  Q         V         |         |         |
9+ 0       0.0783      0.24  Q         V         |         |         |
9+ 5       0.0801      0.26  |Q        V         |         |         |
9+10       0.0819      0.27  |Q        |V        |         |         |
9+15       0.0838      0.27  |Q        |V        |         |         |
9+20       0.0857      0.28  |Q        |V        |         |         |
9+25       0.0877      0.28  |Q        |V        |         |         |
9+30       0.0896      0.28  |Q        | V       |         |         |
```



```
15+50       0.2613      0.27  |Q        |         |         |    V    |
15+55       0.2632      0.27  |Q        |         |         |    V    |
16+ 0       0.2650      0.27  |Q        |         |         |     V   |
16+ 5       0.2658      0.11  Q         |         |         |     V   |
16+10       0.2662      0.06  Q         |         |         |     V   |
16+15       0.2666      0.06  Q         |         |         |     V   |
16+20       0.2670      0.06  Q         |         |         |     V   |
16+25       0.2674      0.06  Q         |         |         |     V   |
16+30       0.2678      0.06  Q         |         |         |     V   |
16+35       0.2681      0.05  Q         |         |         |     V   |
16+40       0.2684      0.04  Q         |         |         |     V   |
16+45       0.2687      0.04  Q         |         |         |     V   |
16+50       0.2690      0.04  Q         |         |         |     V   |
16+55       0.2693      0.04  Q         |         |         |     V   |
17+ 0       0.2695      0.04  Q         |         |         |     V   |
17+ 5       0.2700      0.06  Q         |         |         |     V   |
17+10       0.2705      0.07  Q         |         |         |     V   |
17+15       0.2710      0.07  Q         |         |         |     V   |
17+20       0.2715      0.07  Q         |         |         |     V   |
17+25       0.2719      0.07  Q         |         |         |      V  |
17+30       0.2724      0.07  Q         |         |         |      V  |
17+35       0.2729      0.07  Q         |         |         |      V  |
17+40       0.2734      0.07  Q         |         |         |      V  |
17+45       0.2739      0.07  Q         |         |         |      V  |
17+50       0.2743      0.06  Q         |         |         |      V  |
17+55       0.2747      0.06  Q         |         |         |      V  |
18+ 0       0.2751      0.06  Q         |         |         |      V  |
18+ 5       0.2755      0.06  Q         |         |         |      V  |
18+10       0.2759      0.06  Q         |         |         |      V  |
18+15       0.2763      0.06  Q         |         |         |      V  |
18+20       0.2767      0.06  Q         |         |         |      V  |
18+25       0.2771      0.06  Q         |         |         |      V  |
18+30       0.2775      0.06  Q         |         |         |      V  |
18+35       0.2778      0.05  Q         |         |         |      V  |
18+40       0.2781      0.04  Q         |         |         |      V  |
18+45       0.2784      0.04  Q         |         |         |      V  |
18+50       0.2786      0.03  Q         |         |         |      V  |
18+55       0.2788      0.03  Q         |         |         |      V  |
19+ 0       0.2790      0.03  Q         |         |         |      V  |
19+ 5       0.2792      0.04  Q         |         |         |       V |
19+10       0.2795      0.04  Q         |         |         |       V |
19+15       0.2798      0.04  Q         |         |         |       V |
19+20       0.2802      0.05  Q         |         |         |       V |
19+25       0.2806      0.06  Q         |         |         |       V |
19+30       0.2810      0.06  Q         |         |         |       V |
19+35       0.2813      0.05  Q         |         |         |       V |
19+40       0.2816      0.04  Q         |         |         |       V |
19+45       0.2819      0.04  Q         |         |         |       V |
19+50       0.2821      0.03  Q         |         |         |       V |
19+55       0.2823      0.03  Q         |         |         |       V |
20+ 0       0.2825      0.03  Q         |         |         |       V |
20+ 5       0.2828      0.04  Q         |         |         |       V |
20+10       0.2831      0.04  Q         |         |         |       V |
20+15       0.2834      0.04  Q         |         |         |       V |
20+20       0.2836      0.04  Q         |         |         |       V |
20+25       0.2839      0.04  Q         |         |         |       V |
20+30       0.2842      0.04  Q         |         |         |       V |
20+35       0.2845      0.04  Q         |         |         |       V |
20+40       0.2848      0.04  Q         |         |         |       V |
20+45       0.2851      0.04  Q         |         |         |       V |
20+50       0.2853      0.03  Q         |         |         |       V |
20+55       0.2855      0.03  Q         |         |         |       V |
21+ 0       0.2857      0.03  Q         |         |         |       V |
21+ 5       0.2860      0.04  Q         |         |         |       V |
21+10       0.2863      0.04  Q         |         |         |       V |
21+15       0.2866      0.04  Q         |         |         |        V|
21+20       0.2868      0.03  Q         |         |         |        V|
21+25       0.2870      0.03  Q         |         |         |        V|
21+30       0.2872      0.03  Q         |         |         |        V|
21+35       0.2875      0.04  Q         |         |         |        V|
21+40       0.2878      0.04  Q         |         |         |        V|
21+45       0.2880      0.04  Q         |         |         |        V|
21+50       0.2883      0.03  Q         |         |         |        V|
21+55       0.2885      0.03  Q         |         |         |        V|
22+ 0       0.2887      0.03  Q         |         |         |        V|
```

22+ 5	0.2889	0.04	Q	|	|	|	V|
22+10	0.2892	0.04	Q	|	|	|	V|
22+15	0.2895	0.04	Q	|	|	|	V|
22+20	0.2897	0.03	Q	|	|	|	V|
22+25	0.2899	0.03	Q	|	|	|	V|
22+30	0.2901	0.03	Q	|	|	|	V|
22+35	0.2903	0.03	Q	|	|	|	V|
22+40	0.2905	0.03	Q	|	|	|	V|
22+45	0.2907	0.03	Q	|	|	|	V|
22+50	0.2909	0.03	Q	|	|	|	V|
22+55	0.2911	0.03	Q	|	|	|	V|
23+ 0	0.2913	0.03	Q	|	|	|	V|
23+ 5	0.2915	0.03	Q	|	|	|	V|
23+10	0.2917	0.03	Q	|	|	|	V|
23+15	0.2919	0.03	Q	|	|	|	V|
23+20	0.2921	0.03	Q	|	|	|	V|
23+25	0.2923	0.03	Q	|	|	|	V|
23+30	0.2925	0.03	Q	|	|	|	V|
23+35	0.2927	0.03	Q	|	|	|	V|
23+40	0.2929	0.03	Q	|	|	|	V|
23+45	0.2931	0.03	Q	|	|	|	V|
23+50	0.2933	0.03	Q	|	|	|	V|
23+55	0.2935	0.03	Q	|	|	|	V|
24+ 0	0.2937	0.03	Q	|	|	|	V|
24+ 5	0.2937	0.01	Q	|	|	|	V|

Basin Routing Calculations and Results

UG Chambers - Stage/Storage/Outflow Table

W.O.# 18-0099

Basin Information: Underground Storage Chambers			2/100-YEAR	ORIFICE
Tributary Area:	1.40 AC		Q EXISTING	0.15 / 0.34
DCV=	35,911 CF			
Bottom Elevation:	1455.00		Opening (in)	2.5
Bottom Length:	105	ft	# of Orifices	1
Bottom Area:	1,868	sf	Area (sf)	0.0341
Bottom Slope:	0	%	Opening (ft)	0.2083
			Total Area (sf)	0.0341
$Q_{ORIFICE}$= Cd*Area*(2*G*H)$^{0.5}$			G (ft/s^2)	32.2
Q_{WEIR}= C*L*H$^{3/2}$			Cd	0.66
			Invert H (ft)	0.125

2-Year & 100-Year

#	Elevation (ft)	Depth (ft)	Storage (cf)	Storage (ac-ft)	H (ft)	Q (cfs)	Total Q (cfs)	Comments
1	**1454.5**	**0**	**0.00**	**0.000**			**0.00**	**Bottom of Embedment Stone**
2	1455	0.5	373.70	0.009			0.00	Bottom of Chamber/Orifice Invert
3	1455.125	0.625	556.40	0.013	0	0.00	0.00	Middle of Orifice
4	1455.25	0.75	738.28	0.017	0.125	0.06	0.06	Top of Orifice
5	1455.5	1	1097.68	0.025	0.375	0.11	0.11	
6	**1456**	**1.5**	**1793.54**	**0.041**	**0.875**	**0.17**	**0.17**	**Top of 2-Year Event (1455.78)**
7	1456.5	2	2446.28	0.056	1.375	0.21	0.21	
8	1457	2.5	3032.06	0.070	1.875	0.25	0.25	
9	1457.5	3	3482.87	0.080	2.375	0.28	0.28	
10	**1458**	**3.5**	**3856.57**	**0.089**	**2.875**	**0.31**	**0.31**	**Top of 100-Year Event (1457.92)**
11	1458.5	4	4230.27	0.097	3.375	0.33	0.33	
12	1459	4.5	4603.97	0.106	3.875	0.36	0.36	Top of Chamber & Emedment Stone

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 05/18/20

18-0099 - MOTTE COUNTY PLAZA
BASIN ROUTING
2-YEAR, 24-HOUR ORIFICE
2020-05-18   AYS

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: ONSITEPROP242.rte
**********HYDROGRAPH DATA**********
Number of intervals =   289
Time interval =   5.0 (Min.)
Maximum/Peak flow rate =   0.211 (CFS)
Total volume =   0.128 (Ac.Ft)
Status of hydrographs being held in storage
Stream 1 Stream 2 Stream 3 Stream 4 Stream 5
Peak (CFS)   0.000   0.000   0.000   0.000   0.000
Vol (Ac.Ft)   0.000   0.000   0.000   0.000   0.000
****

++++++++++
Process from Point/Station   100.000 to Point/Station   101.000
**** RETARDING BASIN ROUTING ****
_____

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 289
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin =   0.00(Ft.)

Initial basin depth =   0.00 (Ft.)
Initial basin storage =   0.00 (Ac.Ft)
Initial basin outflow =   0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.500	0.009	0.001	0.009	0.009
0.625	0.013	0.001	0.013	0.013
0.750	0.017	0.060	0.017	0.017
1.000	0.025	0.110	0.025	0.025
1.500	0.041	0.170	0.040	0.042
2.000	0.056	0.210	0.055	0.057
2.500	0.070	0.250	0.069	0.071
3.000	0.080	0.280	0.079	0.081
3.500	0.089	0.310	0.088	0.090
4.000	0.097	0.330	0.096	0.098
4.500	0.106	0.360	0.105	0.107

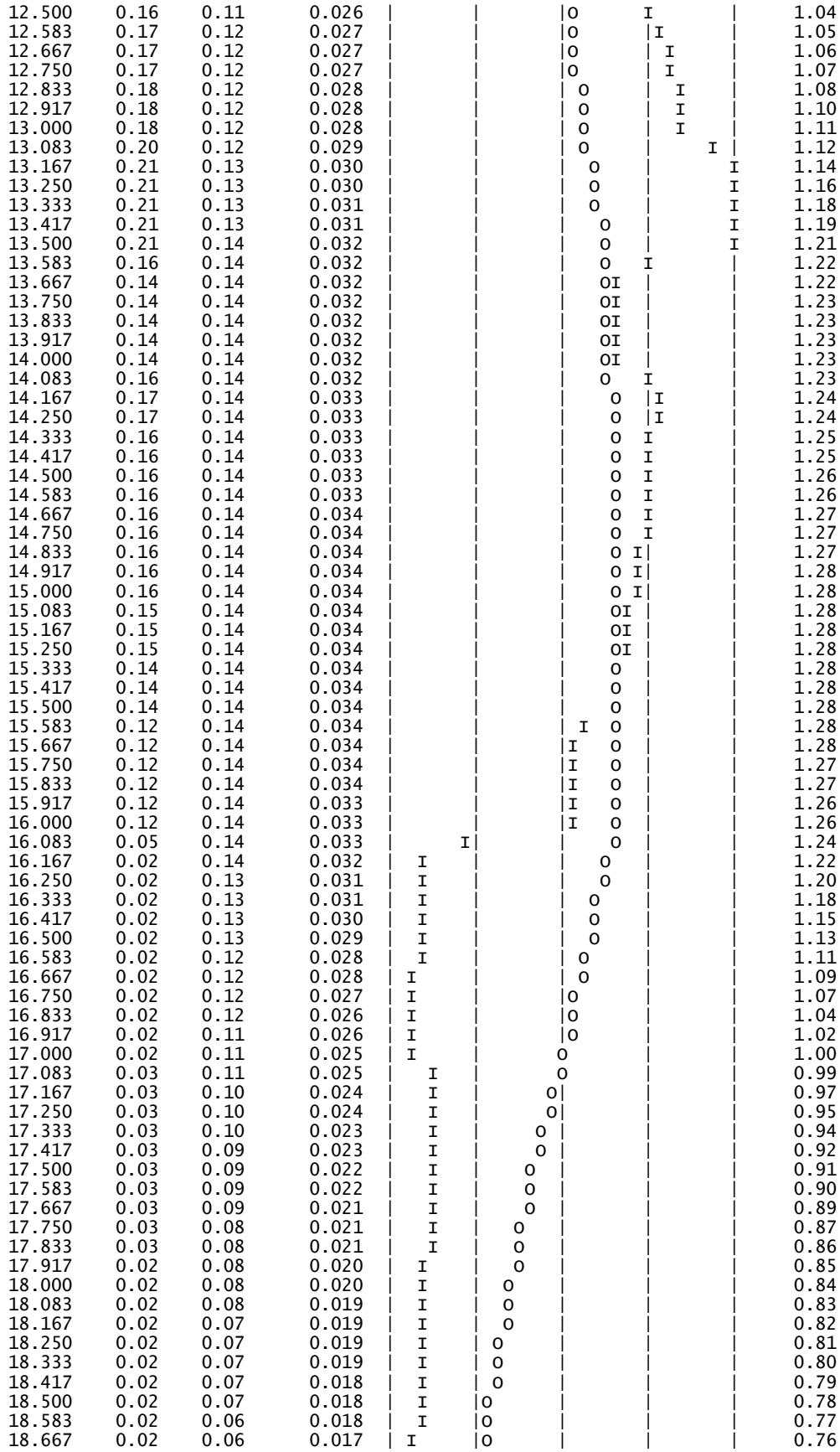
Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time Inflow Outflow Storage Depth

(Hours)	(CFS)	(CFS)	(Ac.Ft)	.0	0.1	0.11	0.16	0.21 (Ft.)
0.083	0.01	0.00	0.000	OI	|	|	|	| 0.00
0.167	0.01	0.00	0.000	OI	|	|	|	| 0.01
0.250	0.01	0.00	0.000	OI	|	|	|	| 0.01
0.333	0.02	0.00	0.000	O I	|	|	|	| 0.02
0.417	0.02	0.00	0.000	O I	|	|	|	| 0.02
0.500	0.02	0.00	0.001	O I	|	|	|	| 0.03
0.583	0.02	0.00	0.001	O I	|	|	|	| 0.04
0.667	0.02	0.00	0.001	O I	|	|	|	| 0.04
0.750	0.02	0.00	0.001	O I	|	|	|	| 0.05
0.833	0.02	0.00	0.001	O I	|	|	|	| 0.06
0.917	0.02	0.00	0.001	O I	|	|	|	| 0.07
1.000	0.02	0.00	0.001	O I	|	|	|	| 0.08
1.083	0.02	0.00	0.002	O I	|	|	|	| 0.09
1.167	0.02	0.00	0.002	O I	|	|	|	| 0.09
1.250	0.02	0.00	0.002	O I	|	|	|	| 0.10
1.333	0.02	0.00	0.002	O I	|	|	|	| 0.11
1.417	0.02	0.00	0.002	O I	|	|	|	| 0.12
1.500	0.02	0.00	0.002	O I	|	|	|	| 0.12
1.583	0.02	0.00	0.002	O I	|	|	|	| 0.13
1.667	0.02	0.00	0.002	O I	|	|	|	| 0.14
1.750	0.02	0.00	0.003	O I	|	|	|	| 0.14
1.833	0.02	0.00	0.003	O I	|	|	|	| 0.15
1.917	0.02	0.00	0.003	O I	|	|	|	| 0.16
2.000	0.02	0.00	0.003	O I	|	|	|	| 0.17
2.083	0.02	0.00	0.003	O I	|	|	|	| 0.18
2.167	0.02	0.00	0.003	O I	|	|	|	| 0.19
2.250	0.02	0.00	0.004	O I	|	|	|	| 0.20
2.333	0.02	0.00	0.004	O I	|	|	|	| 0.21
2.417	0.02	0.00	0.004	O I	|	|	|	| 0.22
2.500	0.02	0.00	0.004	O I	|	|	|	| 0.23
2.583	0.03	0.00	0.004	O I	|	|	|	| 0.24
2.667	0.03	0.00	0.004	O I	|	|	|	| 0.25
2.750	0.03	0.00	0.005	O I	|	|	|	| 0.26
2.833	0.03	0.00	0.005	O I	|	|	|	| 0.27
2.917	0.03	0.00	0.005	O I	|	|	|	| 0.28
3.000	0.03	0.00	0.005	O I	|	|	|	| 0.29
3.083	0.03	0.00	0.005	O I	|	|	|	| 0.31
3.167	0.03	0.00	0.006	O I	|	|	|	| 0.32
3.250	0.03	0.00	0.006	O I	|	|	|	| 0.33
3.333	0.03	0.00	0.006	O I	|	|	|	| 0.34
3.417	0.03	0.00	0.006	O I	|	|	|	| 0.35
3.500	0.03	0.00	0.007	O I	|	|	|	| 0.36
3.583	0.03	0.00	0.007	O I	|	|	|	| 0.38
3.667	0.03	0.00	0.007	O I	|	|	|	| 0.39
3.750	0.03	0.00	0.007	O I	|	|	|	| 0.40
3.833	0.04	0.00	0.007	O I	|	|	|	| 0.41
3.917	0.04	0.00	0.008	O I	|	|	|	| 0.42
4.000	0.04	0.00	0.008	O I	|	|	|	| 0.44
4.083	0.04	0.00	0.008	O I	|	|	|	| 0.45
4.167	0.04	0.00	0.008	O I	|	|	|	| 0.47
4.250	0.04	0.00	0.009	O I	|	|	|	| 0.48
4.333	0.04	0.00	0.009	O I	|	|	|	| 0.49
4.417	0.04	0.00	0.009	O I	|	|	|	| 0.51
4.500	0.04	0.00	0.009	O I	|	|	|	| 0.52
4.583	0.04	0.00	0.010	O I	|	|	|	| 0.52
4.667	0.04	0.00	0.010	O I	|	|	|	| 0.53
4.750	0.04	0.00	0.010	O I	|	|	|	| 0.54
4.833	0.05	0.00	0.011	O I	|	|	|	| 0.55
4.917	0.05	0.00	0.011	O I	|	|	|	| 0.56
5.000	0.05	0.00	0.011	O I	|	|	|	| 0.57
5.083	0.04	0.00	0.012	O I	|	|	|	| 0.58
5.167	0.04	0.00	0.012	O I	|	|	|	| 0.59
5.250	0.04	0.00	0.012	O I	|	|	|	| 0.60
5.333	0.04	0.00	0.012	O I	|	|	|	| 0.61
5.417	0.04	0.00	0.013	O I	|	|	|	| 0.62
5.500	0.04	0.00	0.013	O I	|	|	|	| 0.62
5.583	0.05	0.01	0.013	O I	|	|	|	| 0.63
5.667	0.05	0.01	0.014	|O I	|	|	|	| 0.64
5.750	0.05	0.01	0.014	| O I	|	|	|	| 0.65
5.833	0.05	0.02	0.014	| O I	|	|	|	| 0.66
5.917	0.05	0.02	0.014	| O I	|	|	|	| 0.67
6.000	0.05	0.02	0.014	| O I	|	|	|	| 0.67
6.083	0.05	0.03	0.015	| O I	|	|	|	| 0.68
6.167	0.06	0.03	0.015	| O I	|	|	|	| 0.68

6.250	0.06	0.03	0.015	o I				0.69
6.333	0.06	0.03	0.015	o I				0.69
6.417	0.06	0.04	0.015	o I				0.70
6.500	0.06	0.04	0.015	o I				0.70
6.583	0.06	0.04	0.016	o I				0.71
6.667	0.06	0.04	0.016	o I				0.71
6.750	0.06	0.04	0.016	o I				0.72
6.833	0.06	0.05	0.016	o I				0.72
6.917	0.06	0.05	0.016	o I				0.72
7.000	0.06	0.05	0.016	o I				0.73
7.083	0.06	0.05	0.016	o I				0.73
7.167	0.06	0.05	0.016	o I				0.73
7.250	0.06	0.05	0.016	o I				0.73
7.333	0.07	0.05	0.017	o I				0.74
7.417	0.07	0.05	0.017	o I				0.74
7.500	0.07	0.06	0.017	o I				0.74
7.583	0.07	0.06	0.017	o I				0.74
7.667	0.07	0.06	0.017	o I				0.75
7.750	0.07	0.06	0.017	o I				0.75
7.833	0.08	0.06	0.017	o I				0.75
7.917	0.08	0.06	0.017	o I				0.76
8.000	0.08	0.06	0.017	o I				0.76
8.083	0.09	0.06	0.018	o I				0.77
8.167	0.09	0.06	0.018	o I				0.77
8.250	0.09	0.07	0.018	o I				0.78
8.333	0.09	0.07	0.018	o I				0.78
8.417	0.09	0.07	0.018	o I				0.79
8.500	0.09	0.07	0.018	o I				0.80
8.583	0.10	0.07	0.019	o I				0.80
8.667	0.10	0.07	0.019	o I				0.81
8.750	0.10	0.07	0.019	o I				0.81
8.833	0.10	0.07	0.019	o I				0.82
8.917	0.11	0.08	0.019	o I				0.83
9.000	0.11	0.08	0.020	o I				0.83
9.083	0.11	0.08	0.020	o I				0.84
9.167	0.12	0.08	0.020	o I				0.85
9.250	0.12	0.08	0.020	o I				0.86
9.333	0.12	0.08	0.021	o I				0.86
9.417	0.12	0.08	0.021	o I				0.87
9.500	0.12	0.09	0.021	o I				0.88
9.583	0.13	0.09	0.021	o I				0.89
9.667	0.13	0.09	0.022	o I				0.90
9.750	0.13	0.09	0.022	o I				0.91
9.833	0.13	0.09	0.022	o I				0.92
9.917	0.14	0.09	0.023	o I				0.92
10.000	0.14	0.10	0.023	o I				0.93
10.083	0.10	0.10	0.023	oI				0.94
10.167	0.09	0.10	0.023	o				0.94
10.250	0.09	0.10	0.023	o				0.94
10.333	0.09	0.10	0.023	o				0.94
10.417	0.09	0.10	0.023	o				0.94
10.500	0.09	0.10	0.023	o				0.93
10.583	0.12	0.10	0.023	o I				0.94
10.667	0.12	0.10	0.023	o I				0.94
10.750	0.12	0.10	0.023	o I				0.95
10.833	0.12	0.10	0.023	o I				0.95
10.917	0.12	0.10	0.024	o I				0.96
11.000	0.12	0.10	0.024	o I				0.96
11.083	0.12	0.10	0.024	o I				0.97
11.167	0.12	0.10	0.024	o I				0.97
11.250	0.12	0.10	0.024	o I				0.97
11.333	0.12	0.10	0.024	o I				0.97
11.417	0.12	0.11	0.024	o I				0.98
11.500	0.12	0.11	0.024	oI				0.98
11.583	0.11	0.11	0.024	o				0.98
11.667	0.11	0.11	0.024	o				0.98
11.750	0.11	0.11	0.024	o				0.98
11.833	0.11	0.11	0.024	o				0.98
11.917	0.11	0.11	0.024	o				0.98
12.000	0.11	0.11	0.024	o				0.98
12.083	0.14	0.11	0.025	o I				0.99
12.167	0.16	0.11	0.025	o I				1.00
12.250	0.16	0.11	0.025	o I				1.01
12.333	0.16	0.11	0.026	o I				1.02
12.417	0.16	0.11	0.026	o I				1.03



18.750	0.02	0.06	0.017	| I |O | | | 0.75
18.833	0.01	0.06	0.017	| I O | | | 0.74
18.917	0.01	0.05	0.016	|I O| | | 0.73
19.000	0.01	0.05	0.016	|I O| | | 0.73
19.083	0.02	0.04	0.016	| I O | | | 0.72
19.167	0.02	0.04	0.016	| I O | | | 0.71
19.250	0.02	0.04	0.016	| I O | | | 0.71
19.333	0.02	0.04	0.016	| I O | | | 0.70
19.417	0.02	0.04	0.015	| I O | | | 0.70
19.500	0.02	0.04	0.015	| I O | | | 0.70
19.583	0.02	0.03	0.015	| I O | | | 0.70
19.667	0.02	0.03	0.015	| I O | | | 0.69
19.750	0.02	0.03	0.015	| I O | | | 0.69
19.833	0.01	0.03	0.015	| I O | | | 0.69
19.917	0.01	0.03	0.015	|I O | | | 0.68
20.000	0.01	0.03	0.015	|I O | | | 0.68
20.083	0.02	0.03	0.015	| IO | | | 0.68
20.167	0.02	0.02	0.015	| IO | | | 0.68
20.250	0.02	0.02	0.015	| IO | | | 0.67
20.333	0.02	0.02	0.015	| IO | | | 0.67
20.417	0.02	0.02	0.015	| IO | | | 0.67
20.500	0.02	0.02	0.014	| IO | | | 0.67
20.583	0.02	0.02	0.014	| IO | | | 0.67
20.667	0.02	0.02	0.014	| IO | | | 0.67
20.750	0.02	0.02	0.014	| IO | | | 0.67
20.833	0.01	0.02	0.014	| IO | | | 0.67
20.917	0.01	0.02	0.014	|I O | | | 0.67
21.000	0.01	0.02	0.014	|IO | | | 0.66
21.083	0.02	0.02	0.014	| O | | | 0.66
21.167	0.02	0.02	0.014	| O | | | 0.66
21.250	0.02	0.02	0.014	| O | | | 0.66
21.333	0.01	0.02	0.014	| O | | | 0.66
21.417	0.01	0.02	0.014	|IO | | | 0.66
21.500	0.01	0.02	0.014	|IO | | | 0.66
21.583	0.02	0.02	0.014	| O | | | 0.66
21.667	0.02	0.02	0.014	| O | | | 0.66
21.750	0.02	0.02	0.014	| O | | | 0.66
21.833	0.01	0.02	0.014	| O | | | 0.66
21.917	0.01	0.02	0.014	|IO | | | 0.66
22.000	0.01	0.02	0.014	|IO | | | 0.66
22.083	0.02	0.02	0.014	| O | | | 0.66
22.167	0.02	0.02	0.014	| O | | | 0.66
22.250	0.02	0.02	0.014	| O | | | 0.66
22.333	0.01	0.02	0.014	| O | | | 0.66
22.417	0.01	0.02	0.014	|IO | | | 0.66
22.500	0.01	0.02	0.014	|IO | | | 0.66
22.583	0.01	0.02	0.014	|IO | | | 0.66
22.667	0.01	0.02	0.014	|IO | | | 0.66
22.750	0.01	0.02	0.014	|IO | | | 0.65
22.833	0.01	0.01	0.014	|IO | | | 0.65
22.917	0.01	0.01	0.014	|IO | | | 0.65
23.000	0.01	0.01	0.014	|IO | | | 0.65
23.083	0.01	0.01	0.014	|IO | | | 0.65
23.167	0.01	0.01	0.014	|IO | | | 0.65
23.250	0.01	0.01	0.014	|IO | | | 0.65
23.333	0.01	0.01	0.014	|IO | | | 0.65
23.417	0.01	0.01	0.014	|IO | | | 0.65
23.500	0.01	0.01	0.014	|IO | | | 0.65
23.583	0.01	0.01	0.014	|IO | | | 0.65
23.667	0.01	0.01	0.014	|IO | | | 0.65
23.750	0.01	0.01	0.014	|O | | | 0.65
23.833	0.01	0.01	0.014	|O | | | 0.65
23.917	0.01	0.01	0.014	|O | | | 0.65
24.000	0.01	0.01	0.014	|O | | | 0.65
24.083	0.00	0.01	0.014	IO | | | 0.65
24.167	0.00	0.01	0.014	IO | | | 0.65
24.250	0.00	0.01	0.014	IO | | | 0.64
24.333	0.00	0.01	0.014	IO | | | 0.64
24.417	0.00	0.01	0.014	IO | | | 0.64
24.500	0.00	0.01	0.013	IO | | | 0.64
24.583	0.00	0.01	0.013	IO | | | 0.64
24.667	0.00	0.01	0.013	O | | | 0.64
24.750	0.00	0.01	0.013	O | | | 0.63
24.833	0.00	0.01	0.013	O | | | 0.63
24.917	0.00	0.00	0.013	O | | | 0.63

25.000	0.00	0.00	0.013	o	|	|	|	0.63
25.083	0.00	0.00	0.013	o	|	|	|	0.63
25.167	0.00	0.00	0.013	o	|	|	|	0.63
25.250	0.00	0.00	0.013	o	|	|	|	0.63
25.333	0.00	0.00	0.013	o	|	|	|	0.63
25.417	0.00	0.00	0.013	o	|	|	|	0.63
25.500	0.00	0.00	0.013	o	|	|	|	0.63
25.583	0.00	0.00	0.013	o	|	|	|	0.63
25.667	0.00	0.00	0.013	o	|	|	|	0.63
25.750	0.00	0.00	0.013	o	|	|	|	0.63
25.833	0.00	0.00	0.013	o	|	|	|	0.63
25.917	0.00	0.00	0.013	o	|	|	|	0.63
26.000	0.00	0.00	0.013	o	|	|	|	0.63
26.083	0.00	0.00	0.013	o	|	|	|	0.63
26.167	0.00	0.00	0.013	o	|	|	|	0.62

Remaining water in basin = 0.01 (Ac.Ft)

**********HYDROGRAPH DATA**********

Number of intervals = 314
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 0.144 (CFS)
Total volume = 0.115 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 05/18/20

18-0099 - MOTTE COUNTY PLAZA
BASIN ROUTING
100-YEAR, 24-HOUR ORIFICE
2020-05-18   AYS

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: ONSITEPROP24100.rte
**********HYDROGRAPH DATA**********
Number of intervals =   289
Time interval =   5.0 (Min.)
Maximum/Peak flow rate =   0.487 (CFS)
Total volume =   0.294 (Ac.Ft)
Status of hydrographs being held in storage
Stream 1 Stream 2 Stream 3 Stream 4 Stream 5
Peak (CFS)   0.000   0.000   0.000   0.000   0.000
Vol (Ac.Ft)   0.000   0.000   0.000   0.000   0.000
****

++++++++++
Process from Point/Station   100.000 to Point/Station   101.000
**** RETARDING BASIN ROUTING ****
_____

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 289
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin =   0.00(Ft.)

Initial basin depth =   0.00 (Ft.)
Initial basin storage =   0.00 (Ac.Ft)
Initial basin outflow =   0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.500	0.009	0.001	0.009	0.009
0.625	0.013	0.001	0.013	0.013
0.750	0.017	0.060	0.017	0.017
1.000	0.025	0.110	0.025	0.025
1.500	0.041	0.170	0.040	0.042
2.000	0.056	0.210	0.055	0.057
2.500	0.070	0.250	0.069	0.071
3.000	0.080	0.280	0.079	0.081
3.500	0.089	0.310	0.088	0.090
4.000	0.097	0.330	0.096	0.098
4.500	0.106	0.360	0.105	0.107

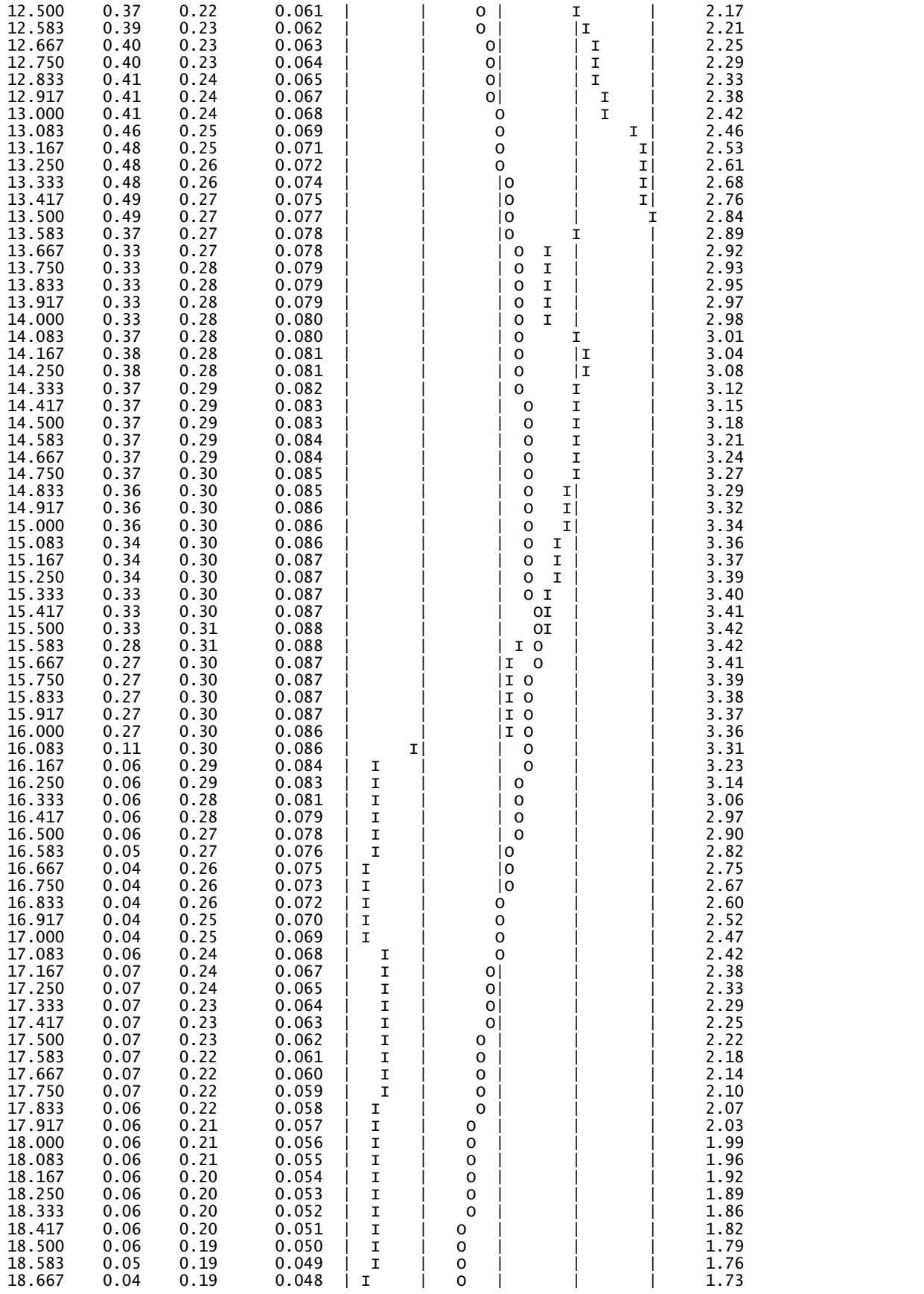
Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time Inflow Outflow Storage Depth

(Hours)	(CFS)	(CFS)	(Ac.Ft)	.0	0.1	0.24	0.37	0.49 (Ft.)
0.083	0.02	0.00	0.000	OI	|	|	|	| 0.00
0.167	0.03	0.00	0.000	OI	|	|	|	| 0.01
0.250	0.03	0.00	0.000	OI	|	|	|	| 0.02
0.333	0.04	0.00	0.001	O I	|	|	|	| 0.04
0.417	0.04	0.00	0.001	O I	|	|	|	| 0.05
0.500	0.04	0.00	0.001	O I	|	|	|	| 0.07
0.583	0.04	0.00	0.002	O I	|	|	|	| 0.09
0.667	0.04	0.00	0.002	O I	|	|	|	| 0.10
0.750	0.04	0.00	0.002	O I	|	|	|	| 0.12
0.833	0.05	0.00	0.002	O I	|	|	|	| 0.14
0.917	0.06	0.00	0.003	O I	|	|	|	| 0.16
1.000	0.06	0.00	0.003	O I	|	|	|	| 0.18
1.083	0.05	0.00	0.004	O I	|	|	|	| 0.20
1.167	0.04	0.00	0.004	O I	|	|	|	| 0.22
1.250	0.04	0.00	0.004	O I	|	|	|	| 0.23
1.333	0.04	0.00	0.004	O I	|	|	|	| 0.25
1.417	0.04	0.00	0.005	O I	|	|	|	| 0.26
1.500	0.04	0.00	0.005	O I	|	|	|	| 0.28
1.583	0.04	0.00	0.005	O I	|	|	|	| 0.30
1.667	0.04	0.00	0.006	O I	|	|	|	| 0.31
1.750	0.04	0.00	0.006	O I	|	|	|	| 0.33
1.833	0.05	0.00	0.006	O I	|	|	|	| 0.35
1.917	0.06	0.00	0.007	O I	|	|	|	| 0.37
2.000	0.06	0.00	0.007	O I	|	|	|	| 0.39
2.083	0.06	0.00	0.007	O I	|	|	|	| 0.41
2.167	0.06	0.00	0.008	O I	|	|	|	| 0.43
2.250	0.06	0.00	0.008	O I	|	|	|	| 0.45
2.333	0.06	0.00	0.009	O I	|	|	|	| 0.47
2.417	0.06	0.00	0.009	O I	|	|	|	| 0.50
2.500	0.06	0.00	0.009	O I	|	|	|	| 0.51
2.583	0.07	0.00	0.010	O I	|	|	|	| 0.52
2.667	0.07	0.00	0.010	O I	|	|	|	| 0.54
2.750	0.07	0.00	0.011	O I	|	|	|	| 0.55
2.833	0.07	0.00	0.011	O I	|	|	|	| 0.57
2.917	0.07	0.00	0.012	O I	|	|	|	| 0.58
3.000	0.07	0.00	0.012	O I	|	|	|	| 0.60
3.083	0.07	0.00	0.013	O I	|	|	|	| 0.61
3.167	0.07	0.00	0.013	O I	|	|	|	| 0.63
3.250	0.07	0.01	0.014	O I	|	|	|	| 0.64
3.333	0.07	0.01	0.014	O I	|	|	|	| 0.65
3.417	0.07	0.02	0.014	|O I	|	|	|	| 0.67
3.500	0.07	0.03	0.015	|O I	|	|	|	| 0.68
3.583	0.07	0.03	0.015	|O I	|	|	|	| 0.69
3.667	0.07	0.03	0.015	| O I	|	|	|	| 0.69
3.750	0.07	0.04	0.015	| O I	|	|	|	| 0.70
3.833	0.08	0.04	0.016	| O I	|	|	|	| 0.71
3.917	0.09	0.05	0.016	| O I	|	|	|	| 0.72
4.000	0.09	0.05	0.016	| O I	|	|	|	| 0.73
4.083	0.09	0.05	0.016	| O I	|	|	|	| 0.73
4.167	0.09	0.06	0.017	| O I	|	|	|	| 0.74
4.250	0.09	0.06	0.017	| O I	|	|	|	| 0.75
4.333	0.10	0.06	0.017	| O I	|	|	|	| 0.75
4.417	0.10	0.06	0.017	| O I	|	|	|	| 0.76
4.500	0.10	0.06	0.018	| O I	|	|	|	| 0.77
4.583	0.10	0.07	0.018	| O I	|	|	|	| 0.78
4.667	0.10	0.07	0.018	| O I	|	|	|	| 0.78
4.750	0.10	0.07	0.018	| O I	|	|	|	| 0.79
4.833	0.11	0.07	0.019	| O I|	|	|	| 0.80
4.917	0.11	0.07	0.019	| O I|	|	|	| 0.81
5.000	0.11	0.07	0.019	| O I|	|	|	| 0.82
5.083	0.09	0.07	0.019	| O I |	|	|	| 0.82
5.167	0.09	0.08	0.019	| OI |	|	|	| 0.83
5.250	0.09	0.08	0.019	| OI |	|	|	| 0.83
5.333	0.10	0.08	0.020	| OI |	|	|	| 0.83
5.417	0.10	0.08	0.020	| OI |	|	|	| 0.84
5.500	0.10	0.08	0.020	| OI |	|	|	| 0.84
5.583	0.11	0.08	0.020	| O I|	|	|	| 0.85
5.667	0.11	0.08	0.020	| O I|	|	|	| 0.85
5.750	0.11	0.08	0.021	| O I|	|	|	| 0.86
5.833	0.11	0.08	0.021	| O I|	|	|	| 0.87
5.917	0.11	0.08	0.021	| O I|	|	|	| 0.87
6.000	0.11	0.09	0.021	| O I|	|	|	| 0.88
6.083	0.12	0.09	0.021	| O I	|	|	| 0.89
6.167	0.13	0.09	0.022	| O I	|	|	| 0.89

6.250	0.13	0.09	0.022	o I				0.90
6.333	0.13	0.09	0.022	o I				0.91
6.417	0.13	0.09	0.022	o I				0.92
6.500	0.13	0.10	0.023	o I				0.93
6.583	0.14	0.10	0.023	o |I				0.93
6.667	0.14	0.10	0.023	o |I				0.94
6.750	0.14	0.10	0.023	o |I				0.95
6.833	0.14	0.10	0.024	o |I				0.96
6.917	0.14	0.10	0.024	o |I				0.97
7.000	0.14	0.11	0.024	o |I				0.98
7.083	0.14	0.11	0.025	o|I				0.98
7.167	0.14	0.11	0.025	o|I				0.99
7.250	0.14	0.11	0.025	o|I				1.00
7.333	0.15	0.11	0.025	o| I				1.01
7.417	0.16	0.11	0.026	o| I				1.02
7.500	0.16	0.11	0.026	o| I				1.03
7.583	0.17	0.11	0.026	o| I				1.04
7.667	0.17	0.12	0.027	o| I				1.05
7.750	0.17	0.12	0.027	o| I				1.06
7.833	0.18	0.12	0.027	o| I				1.07
7.917	0.18	0.12	0.028	o| I				1.09
8.000	0.18	0.12	0.028	o I				1.10
8.083	0.21	0.12	0.029	o I				1.11
8.167	0.21	0.13	0.029	o I				1.13
8.250	0.21	0.13	0.030	o I				1.15
8.333	0.21	0.13	0.030	o I				1.17
8.417	0.21	0.13	0.031	o I				1.19
8.500	0.21	0.13	0.032	o I				1.20
8.583	0.22	0.14	0.032	o I				1.22
8.667	0.23	0.14	0.033	|o I				1.24
8.750	0.23	0.14	0.033	|o I				1.26
8.833	0.24	0.14	0.034	|o I|				1.28
8.917	0.24	0.15	0.035	|o I|				1.30
9.000	0.24	0.15	0.035	|o I|				1.32
9.083	0.26	0.15	0.036	|o |I				1.34
9.167	0.27	0.15	0.037	| o |I				1.37
9.250	0.27	0.16	0.038	| o |I				1.39
9.333	0.28	0.16	0.038	| o | I				1.42
9.417	0.28	0.16	0.039	| o | I				1.44
9.500	0.28	0.17	0.040	| o | I				1.47
9.583	0.29	0.17	0.041	| o | I				1.49
9.667	0.30	0.17	0.042	| o | I				1.52
9.750	0.30	0.17	0.043	| o | I				1.55
9.833	0.31	0.18	0.043	| o | I				1.58
9.917	0.31	0.18	0.044	| o | I				1.61
10.000	0.31	0.18	0.045	| o | I				1.64
10.083	0.24	0.18	0.046	| o I|				1.66
10.167	0.21	0.18	0.046	| o I |				1.67
10.250	0.21	0.18	0.046	| o I |				1.68
10.333	0.21	0.18	0.047	| o I |				1.69
10.417	0.21	0.19	0.047	| o I |				1.69
10.500	0.21	0.19	0.047	| o I |				1.70
10.583	0.27	0.19	0.047	| o |I				1.71
10.667	0.28	0.19	0.048	| o | I				1.73
10.750	0.28	0.19	0.049	| o | I				1.75
10.833	0.28	0.19	0.049	| o | I				1.77
10.917	0.28	0.19	0.050	| o | I				1.80
11.000	0.28	0.20	0.050	| o | I				1.82
11.083	0.27	0.20	0.051	| o |I				1.84
11.167	0.27	0.20	0.052	| o |I				1.85
11.250	0.27	0.20	0.052	| o |I				1.87
11.333	0.27	0.20	0.053	| o |I				1.88
11.417	0.27	0.20	0.053	| o |I				1.90
11.500	0.27	0.20	0.053	| o |I				1.92
11.583	0.25	0.20	0.054	| o I				1.93
11.667	0.24	0.21	0.054	| o I|				1.94
11.750	0.24	0.21	0.054	| o I|				1.95
11.833	0.25	0.21	0.055	| o I				1.96
11.917	0.26	0.21	0.055	| o I				1.97
12.000	0.26	0.21	0.055	| o I				1.98
12.083	0.33	0.21	0.056	| o | I |				2.00
12.167	0.36	0.21	0.057	| o | I|				2.03
12.250	0.36	0.22	0.058	| o | I|				2.06
12.333	0.37	0.22	0.059	| o | I				2.10
12.417	0.37	0.22	0.060	| o | I				2.14



18.750	0.04	0.19	0.047	| I | o | | |	1.69
18.833	0.03	0.18	0.046	| I | o | | |	1.66
18.917	0.03	0.18	0.045	|I | o | | |	1.63
19.000	0.03	0.18	0.044	|I | o | | |	1.59
19.083	0.04	0.17	0.043	| I | o | | |	1.56
19.167	0.04	0.17	0.042	| I | o | | |	1.53
19.250	0.04	0.17	0.041	| I | o | | |	1.50
19.333	0.05	0.17	0.040	| I |o | | |	1.47
19.417	0.06	0.16	0.039	| I |o | | |	1.45
19.500	0.06	0.16	0.039	| I |o | | |	1.43
19.583	0.05	0.16	0.038	| I |o | | |	1.40
19.667	0.04	0.16	0.037	| I |o | | |	1.38
19.750	0.04	0.15	0.036	| I |o | | |	1.35
19.833	0.03	0.15	0.036	| I |o | | |	1.33
19.917	0.03	0.15	0.035	|I |o | | |	1.30
20.000	0.03	0.14	0.034	|I |o | | |	1.28
20.083	0.04	0.14	0.033	| I |o | | |	1.26
20.167	0.04	0.14	0.033	| I |o | | |	1.24
20.250	0.04	0.14	0.032	| I |o | | |	1.21
20.333	0.04	0.13	0.031	| I |o | | |	1.19
20.417	0.04	0.13	0.031	| I |o | | |	1.18
20.500	0.04	0.13	0.030	| I |o | | |	1.16
20.583	0.04	0.13	0.029	| I |o | | |	1.14
20.667	0.04	0.12	0.029	| I |o | | |	1.12
20.750	0.04	0.12	0.028	| I |o | | |	1.10
20.833	0.03	0.12	0.028	| I |o| | |	1.09
20.917	0.03	0.12	0.027	|I |o| | |	1.07
21.000	0.03	0.12	0.027	|I |o| | |	1.05
21.083	0.04	0.11	0.026	| I |o| | |	1.03
21.167	0.04	0.11	0.025	| I |o| | |	1.01
21.250	0.04	0.11	0.025	| I |o| | |	1.00
21.333	0.03	0.11	0.024	| I |o| | |	0.98
21.417	0.03	0.10	0.024	|I |o | | |	0.97
21.500	0.03	0.10	0.023	|I |o | | |	0.95
21.583	0.04	0.10	0.023	| I |o | | |	0.94
21.667	0.04	0.10	0.023	| I |o | | |	0.93
21.750	0.04	0.09	0.022	| I |o | | |	0.92
21.833	0.03	0.09	0.022	| I |o | | |	0.90
21.917	0.03	0.09	0.022	|I |o | | |	0.89
22.000	0.03	0.09	0.021	|I |o | | |	0.88
22.083	0.04	0.08	0.021	| I |o | | |	0.87
22.167	0.04	0.08	0.020	| I |o | | |	0.86
22.250	0.04	0.08	0.020	| I |o | | |	0.85
22.333	0.03	0.08	0.020	| I |o | | |	0.84
22.417	0.03	0.08	0.020	|I |o | | |	0.83
22.500	0.03	0.07	0.019	|I |o | | |	0.82
22.583	0.03	0.07	0.019	|I |o | | |	0.81
22.667	0.03	0.07	0.019	|I |o | | |	0.80
22.750	0.03	0.07	0.018	|I |o | | |	0.79
22.833	0.03	0.07	0.018	|I |o | | |	0.78
22.917	0.03	0.07	0.018	|I |o | | |	0.78
23.000	0.03	0.06	0.018	|I |o | | |	0.77
23.083	0.03	0.06	0.017	|I |o | | |	0.76
23.167	0.03	0.06	0.017	|I |o | | |	0.75
23.250	0.03	0.06	0.017	|I o | | |	0.75
23.333	0.03	0.06	0.017	|I o | | |	0.74
23.417	0.03	0.05	0.017	|I o | | |	0.74
23.500	0.03	0.05	0.016	|I o | | |	0.73
23.583	0.03	0.05	0.016	|I o | | |	0.73
23.667	0.03	0.05	0.016	|I o | | |	0.72
23.750	0.03	0.04	0.016	|IO | | |	0.72
23.833	0.03	0.04	0.016	|IO | | |	0.71
23.917	0.03	0.04	0.016	|IO | | |	0.71
24.000	0.03	0.04	0.016	|IO | | |	0.71
24.083	0.01	0.04	0.016	I o | | |	0.70
24.167	0.00	0.04	0.015	I o | | |	0.70
24.250	0.00	0.03	0.015	I o | | |	0.69
24.333	0.00	0.03	0.015	IO | | |	0.68
24.417	0.00	0.03	0.015	IO | | |	0.68
24.500	0.00	0.02	0.015	IO | | |	0.67
24.583	0.00	0.02	0.014	IO | | |	0.67
24.667	0.00	0.02	0.014	IO | | |	0.66
24.750	0.00	0.02	0.014	IO | | |	0.66
24.833	0.00	0.02	0.014	IO | | |	0.66
24.917	0.00	0.01	0.014	o | | |	0.65

25.000	0.00	0.01	0.014	O	|	|	|	0.65
25.083	0.00	0.01	0.014	O	|	|	|	0.65
25.167	0.00	0.01	0.014	O	|	|	|	0.64
25.250	0.00	0.01	0.014	O	|	|	|	0.64
25.333	0.00	0.01	0.014	O	|	|	|	0.64
25.417	0.00	0.01	0.013	O	|	|	|	0.64
25.500	0.00	0.01	0.013	O	|	|	|	0.64
25.583	0.00	0.01	0.013	O	|	|	|	0.64
25.667	0.00	0.01	0.013	O	|	|	|	0.63
25.750	0.00	0.01	0.013	O	|	|	|	0.63
25.833	0.00	0.00	0.013	O	|	|	|	0.63
25.917	0.00	0.00	0.013	O	|	|	|	0.63
26.000	0.00	0.00	0.013	O	|	|	|	0.63
26.083	0.00	0.00	0.013	O	|	|	|	0.63
26.167	0.00	0.00	0.013	O	|	|	|	0.63
26.250	0.00	0.00	0.013	O	|	|	|	0.63
26.333	0.00	0.00	0.013	O	|	|	|	0.63
26.417	0.00	0.00	0.013	O	|	|	|	0.63
26.500	0.00	0.00	0.013	O	|	|	|	0.63
26.583	0.00	0.00	0.013	O	|	|	|	0.63
26.667	0.00	0.00	0.013	O	|	|	|	0.63
26.750	0.00	0.00	0.013	O	|	|	|	0.63
26.833	0.00	0.00	0.013	O	|	|	|	0.63
26.917	0.00	0.00	0.013	O	|	|	|	0.63
27.000	0.00	0.00	0.013	O	|	|	|	0.63
27.083	0.00	0.00	0.013	O	|	|	|	0.62

Remaining water in basin = 0.01 (Ac.Ft)

**********HYDROGRAPH DATA**********

Number of intervals = 325
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 0.305 (CFS)
Total volume = 0.281 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

OUTLET STRUCTURE FOR UNDERGROUND CHAMBERS
Q100=3.70 CFS
3' WIDE WEIR WALL WITHIN OUTLET STRUCTURE

WEIR CALCULATIONS

EQUATIONS

Q=CL(h)^(3/2)
where
L= 3 ft
C= 3

WEIR	Q (WEIR)	50% CLOGGING
HIGH		
Ft	CFS	CFS
0.50	3.2	1.6
0.75	5.8	2.9
0.90	7.7	3.8

NOTE: ***Weir calculations above assume a clogging factor of 0.50. This reduction takes into account the grate bars. Calculations also assume the 2-year orifice and 100-year orifice are totally clogged (not conveying any flows).***

SECTION 5 - Hydraulics

To be provided in final engineering.

SECTION 6 - References

Hydrology and Hydraulics Memo

GENERAL NOTES

1. THE CONTRACTOR SHALL CONSTRUCT THE FLOOD CONTROL IMPROVEMENTS SHOWN ON THE DRAWINGS IN CONFORMANCE WITH THE REQUIREMENTS OF THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT'S SPECIAL PROVISIONS AND DETAILED SPECIFICATIONS DATED SEPTEMBER 1984, AND DESIGN MANUAL STANDARD DRAWINGS DATED MAY 1971.
2. AN ENCROACHMENT PERMIT IS REQUIRED FROM RIVERSIDE COUNTY FLOOD CONTROL. CONTACT ED LOTZ AT (909) 955-1266. AFTER THE PERMIT IS ISSUED THE DISTRICT MUST BE NOTIFIED TWO WEEKS PRIOR TO CONSTRUCTION.
3. CONSTRUCTION INSPECTION WILL BE PERFORMED BY RIVERSIDE COUNTY FLOOD CONTROL. CONTACT DALE ANDERSON AT (909) 955-1288. (THE DISTRICT MUST BE NOTIFIED 20 DAYS PRIOR TO CONSTRUCTION.)
4. ALL STATIONING REFERS TO CENTERLINE OF CONSTRUCTION UNLESS OTHERWISE NOTIFIED.
5. STATIONING FOR LATERALS AND CONNECTOR PIPE REFER TO THE CENTERLINE-CENTERLINE INTERSECTION STATION.
6. FORTY-EIGHT HOURS BEFORE EXCAVATION, CALL UNDERGROUND SERVICE ALERT 1-800-227-2600
7. ALL ELEVATIONS SHOWN ARE IN FEET AND DECIMALS THEREOF BASED ON U.S.C. & G.S. DATUM.
8. ALL CROSS SECTIONS ARE TAKEN LOOKING DOWNSTREAM.
9. ELEVATIONS OF UTILITIES ARE APPROXIMATE UNLESS OTHERWISE NOTED.
10. OPENINGS RESULTING FROM THE CUTTING OR PARTIAL REMOVAL OF EXISTING CULVERTS, PIPES OR SIMILAR STRUCTURES TO BE ABANDONED SHALL BE SEALED WITH 6" OF CLASS "B" CONCRETE.
11. PIPE CONNECTED TO THE MAINLINE PIPE SHALL CONFORM TO JUNCTION STRUCTURE NO. 4 (JS 229) UNLESS OTHERWISE NOTED.
12. BEDDING PIPE SHALL CONFORM TO RCFC&WCD STD. M815, EXCEPT FOR COVER<2 FEET. FOR COVER <2 FEET, CONCRETE SLURRY (2000 PSI PSI - 2 SACK) SHALL BE USED. THE ENTIRE TRENCH SHALL BE SLURRY EXTENDING 4 INCHES MINIMUM AND 12 INCHES MAXIMUM ABOVE THE TOP OF THE PIPE.
13. ALL EXCAVATION, BEDDING & BACKFILL FOR THESE PLANS SHALL BE PERFORMED PER THE SOILS REPORT BY JOHN R. BYERLY INCORPORATED DATED JANUARY 9, 1991.
14. "V" IS THE DEPTH OF INLET OF CATCH BASINS MEASURED FROM THE TOP OF CURB TO INVERT OF CONNECTOR PIPE.
15. CATCH BASINS SHALL BE LOCATED SO THAT LOCAL DEPRESSION SHALL BEGIN AT EXISTING CURB RETURN JOINT, UNLESS OTHERWISE SPECIFIED.
16. ALL CURBS, GUTTERS, SIDEWALKS, DRIVEWAYS AND OTHER EXISTING IMPROVEMENTS TO BE RECONSTRUCTED IN KIND AND AT THE SAME ELEVATION AND LOCATION AS THE EXISTING IMPROVEMENTS UNLESS OTHERWISE NOTED.
17. TEMPORARY EROSION CONTROL MEASURES SHALL BE IMPLEMENTED IMMEDIATELY FOLLOWING ROUGH GRADING TO PREVENT DEPOSITION OF DEBRIS ONTO DOWNSTREAM PROPERTIES OR DRAINAGE FACILITIES.

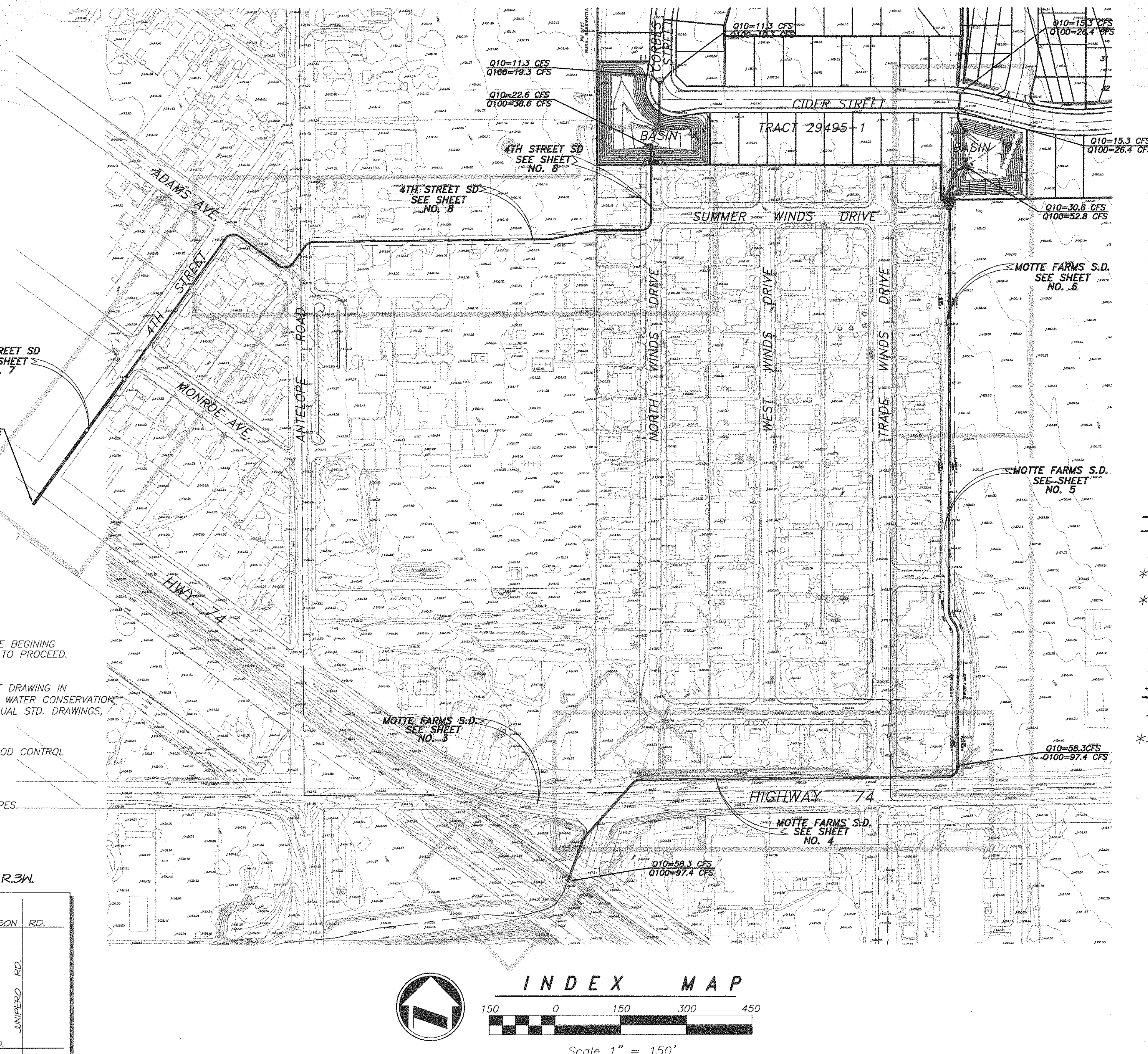
NOTICE:
THE CONTRACTOR SHALL NOTIFY THE DISTRICT IN WRITING A MINIMUM OF 20 DAYS BEFORE BEGINING CONSTRUCTION, AND SHALL NOT BEGIN CONSTRUCTION BEFORE OBTAINING AUTHORIZATION TO PROCEED.

THE CONTRACTOR SHALL CONSTRUCT THE FLOOD CONTROL IMPROVEMENTS SHOWN ON THE DRAWING IN CONFORMANCE WITH THE REQUIREMENTS OF THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT'S M.O.U. STANDARD SPECIFICATIONS, DATED SEPTEMBER 1984, AND DESIGN MANUAL STD. DRAWINGS, RECENT EDITION.

THE FOLLOWING ITEMS ARE TO BE INSPECTED AND MAINTAINED BY RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT.
48" RCP FROM STA. 29+67.12 TO STA. 43+54.66 AS SHOWN ON SHEETS 3-6
ALL MANHOLES AND OTHER STRUCTURES REQUIRED TO COMPLETE THE CONSTRUCTION OF THE ABOVE MENTIONED MAINLINE PIPE. EXCLUDING CATCH BASINS AND CONNECTOR PIPES.

NOTE: WORK CONTAINED WITHIN THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR GRADING PERMIT HAS BEEN ISSUED

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
ROMOLAND MOTTE FARMS STORM DRAIN



INDEX:

R.C.F.C.&W.C.D. STANDARD DRAWINGS

		SHEET NO.
MH 252	MANHOLE NO. 2	3-8
TS 303	TRANSITION STRUCTURE NO. 3	3-8

CONSTRUCTION NOTES & QUANTITIES:

QUANTITIES ARE FOR BONDING PURPOSES ONLY - CONTRACTOR TO BID PROJECT BASED ON HIS OWN "TAKE-OFF"

	No.	Description	R.C.F.C.	R.C.T.D.
*	1	INSTALL 19" x 30" OF LO-HED PIPE MANUFACTURED BY HYDRO CONDUIT PER DETAIL SHEET 7 OF 8		400 LF
*	2	INSTALL 24" R.C.P. - DLOAD PER PLAN		276 LF
*	3	INSTALL 36" R.C.P. - DLOAD PER PLAN		1,453 LF
*	4	CONSTRUCT MANHOLE PER DETAIL ON SHEET 7		1 EA
*	5	CONSTRUCT TRANSITION STRUCTURE PER DETAIL ON SHEET 7		1 EA
*	6	CONSTRUCT PIPE HEADWALL PER CAL TRANS STD DWG. D89		1 EA
	7	INSTALL 48" R.C.P. - DLOAD PER PLAN	2,320 LF	*70 LF
	8	CONSTRUCT MANHOLE NO. 2 PER R.C.F.C.&W.C.D. STD. DWG. NO. MH 252	3 EA	*4 EA
	8A	CONSTRUCT MANHOLE NO. 2 PER R.C.F.C.&W.C.D. STD. DWG. NO. MH 252 AND DETAIL "A"	3 EA	*2 EA
	9	CONSTRUCT 48" STAND PIPE WITH GRATE ASSEMBLE PER DETAIL ON SHEET 6	1 EA	
	9A	CONSTRUCT 48" STAND PIPE WITH GRATE ASSEMBLE PER DETAIL ON SHEET 8		*1 EA
	11	PLACE GROUTED NO.2 BACKING RIP RAP - 1 FOOT THICK FOR EMERGENCY OVERFLOW	2 EA	
	12	INSTALL MANHOLE FRAME AND COVER (PRESSURE TYPE) PER R.C.F.C.&W.C.D. ST. DWG. NO.256 (SEE DETAIL ON SHEET 2)	3 EA	*2 EA
	13	INSTALL STANDARD PRESSURE MANHOLE SHAFT PER R.C.F.C.&W.C.D. ST. DWG. NO.258 (SEE DETAIL ON SHEET 2)	3 EA	*2 EA
	14	PLACE NO.2 BACKING RIP RAP - 1 FOOT THICK PLACED OVER MIRAFI 700X FILTER FABRIC OR EQUIVALENT AND 8" OF CLASS 2 BASE	1,039 SF	
~~▣~~	~~15~~	~~CONSTRUCT 2'X4' RC BOX PER CAL TRANS STD. DWG. D80 (ALTERNATE OPTION FOR (1))~~		~~*344 LF~~
~~▣~~	~~16~~	~~CONSTRUCT MH NO. 3 PER R.C.F.C.& W.C.D. STD. DWG. NO. MH253 (ALTERNATE FOR NO. (4))~~		~~*1 EA~~
*	17	CONSTRUCT JUNCTION STRUCTURE No.2 PER R.C.F.C.& W.C.D. STD. DWG. NO. JS 227		*1 EA
**	18A	INSTALL BROOKS 36" x 36" CATCH BASIN 3636 CB MODIFY TO USE ALHAMBRA 36" X 36" COVER AND FRAME VANDAL PROOF IN 4 PLACES A2017		*1 EA
**	18B	INSTALL BROOKS 36" x 36" CATCH BASIN 3636 CB MODIFY TO USE ALHAMBRA 36" X 36"............ 1 EA GRATE AND FRAME ADA COMPLIANT, GALVANIZED, VANDAL PROOF TWO PLACES(LOCK DOWN)		
*	19	INSTALL 18" RCP CLASS IV (2000 D)............................ 49 LF		*10 LF
*	20	INSTALL TRASH RACK PER DETAIL ON SHEET 2		*1 EA
*	21	CONSTRUCT P.C.C. DIP SECTION PER COUNTY OF RIVERSIDE STD. NO. 307		*1 EA

~~▣ INDICATES POSSIBLE ALTERNATE OPTION. TO BE DETERMINED BY CONTRACTOR~~

* INDICATES ITEMS TO BE MAINTAINED BY THE RIVERSIDE COUNTY TRANSPORTATION DEPT. WITHIN RCTD R/W

** INDICATES ITEMS TO BE MAINTAINED BY THE ROMOLAND SCHOOL DISTRICT

BENCHMARK

1.1 MILES SOUTHWEST OF LAKE SKINNER DAM FROM THE INTERSECTION OF BOREL ROAD AND BOOTLEG ROAD, 118 FEET NORTH OF THE CENTERLINE OF BOOTLEG ROAD, 21 FEET EAST OF THE CENTERLINE OF BOREL RD. 8 FEET SOUTH OF A TELEPHONE RISER, A 3-1/4 INCH STANDARD MWDSC ALUMINUM DISK, SET FLUSH, IN TOP OF, AND IN THE CENTER OF A 3 FEET WIDE CATCH BASIN, 1 FEET EAST OF CURB FACE.

MWD DESIGNATION: SD 6 1
NAVD 88 ELEV. 1401.44

MONUMENT NOTE:

CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MONMENTATION AND/OR BENCHMARKS WHICH WILL BE DISTURBED OR DESTROYED BY CONSTRUCTION. SUCH POINTS SHALL BE REFERENCED AND REPLACED WITH APPROPRIATE MONUMENTATION BY A LICENSED LAND SURVEYOR OR A REGISTERED CIVIL ENGINEER AUTHORIZED TO PRACTICE LAND SURVEYING. A CORNER RECORD OF SURVEY, AS APPROPRIATE, SHALL BE FILLED BY THE LICENSED LAND SURVEYOR OR REGISTERED CIVIL ENGINEER AS REQUIRED BY THE LAND SURVEYOR'S ACT.

AS BUILT
APPROVED BY: [signature]
DATE 7/5/06

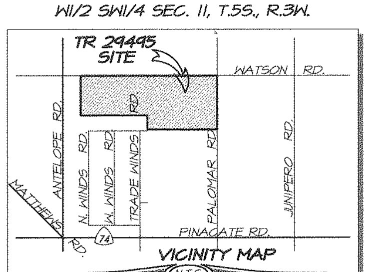
BASIS OF BEARING

THE CENTERLINE ANTELOPE ROAD AS SHOWN ON TRACT 4540, M.B. 74/62-63 RECORDS OF RIVERSIDE COUNTY, CALIFORNIA AND BEING N 00°21'19" W

INDEX OF SHEETS:

Underground Service Alert
Call: TOLL FREE
1-800
227-2600
TWO WORKING DAYS BEFORE YOU DIG

W1/2 SW1/4 SEC. 11, T.5S., R.3W.



VICINITY MAP (N.T.S.)

MDC
IP# 020004

Underground Service Alert
DIGALERT
Call: TOLL FREE
1-800
227-2600
TWO WORKING DAYS BEFORE YOU DIG

REGISTERED PROFESSIONAL ENGINEER KHALED A. OTHMAN NO. 33950 EXP. 06-30-06 CIVIL STATE OF CALIFORNIA

APPROVED BY: [signature] 12/16/03
KHALED A. OTHMAN DATE
R.C.E. No. 33950 EXP. DATE: 6/30/06
FOR TRANSPORTATION DEPT.

RECOMMENDED FOR APPROVAL BY: [signature]
WILLDAN
DATE: 12/15/03

PREPARED BY:
adkan ENGINEERS
6820 AIRPORT DRIVE, RIVERSIDE, CA 92504
TEL (909) 688-0241 • FAX: (909) 688-0599
[signature] 12-5-03
CHARISSA J.A. LEACH, R.C.E. 53390 DATE

ENGINEERS SEAL
REGISTERED PROFESSIONAL ENGINEER CHARISSA J.A. LEACH NO. 53390 EXP. 6-30-07 CIVIL STATE OF CALIFORNIA

BENCH MARK:
SEE SHEET 1

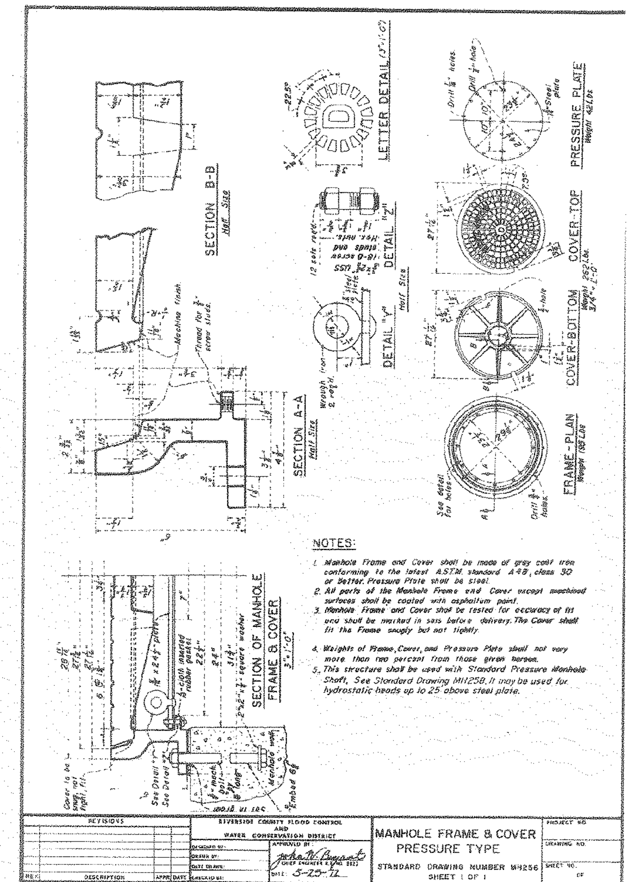
REF.	REVISIONS	APPR.	DATE
	AS BUILT	[initials]	6/16/06

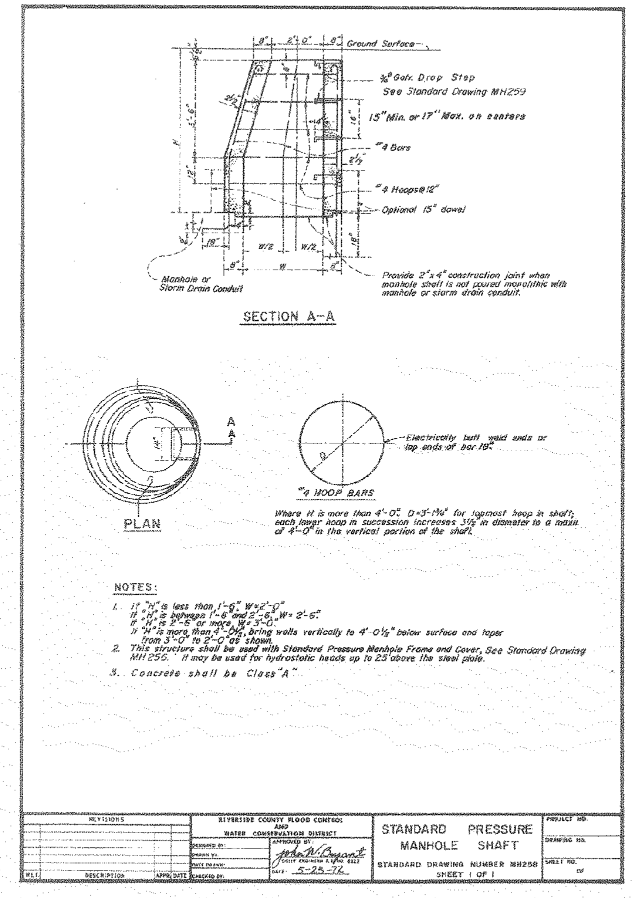
DESIGNED BY:
DRAWN BY:
DATE DRAWN:
CHECKED BY:

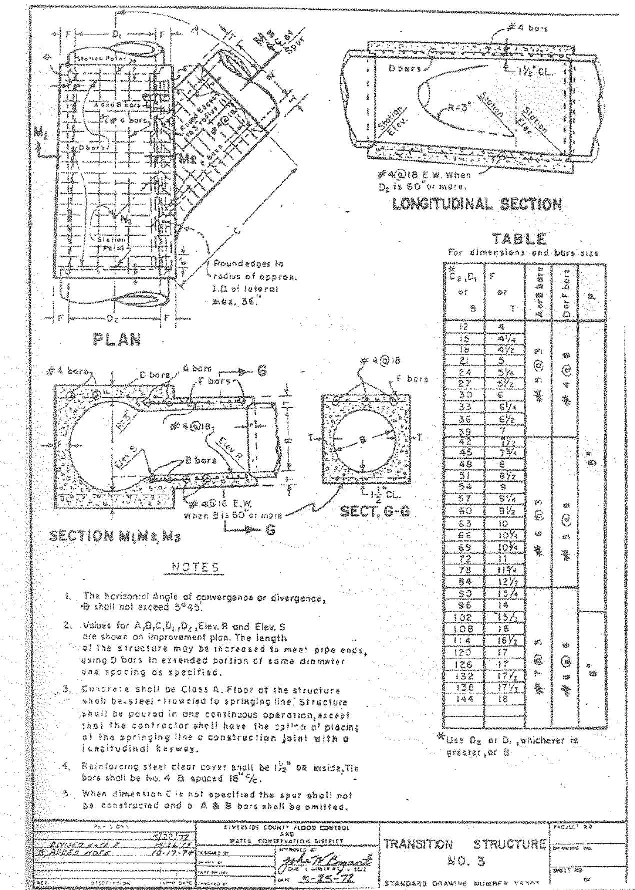
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
RECOMMENDED FOR APPROVAL BY: [signature]
PLANNING ENGINEER
DATE: 12-24-2003
APPROVED BY: [signature]
CHIEF ENGINEER
DATE: 12-24-03

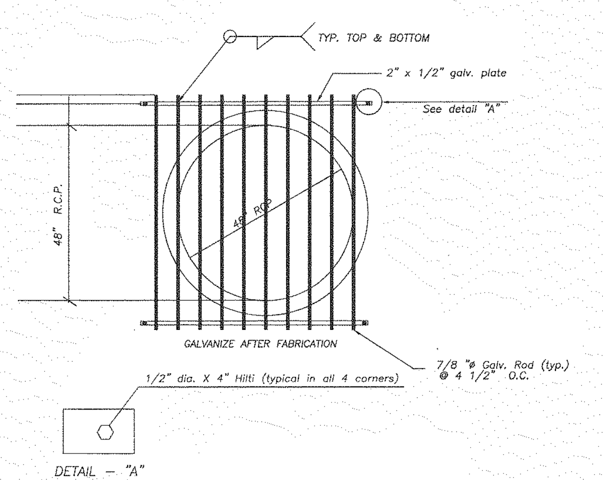
ROMOLAND-MOTTE FARMS STORM DRAIN
4TH STREET STORM DRAIN
TITLE SHEET
TRACT 29495-1

PROJECT NO. 4-0-0314
DRAWING NO. 4-799
SHEET NO. 1 OF 8



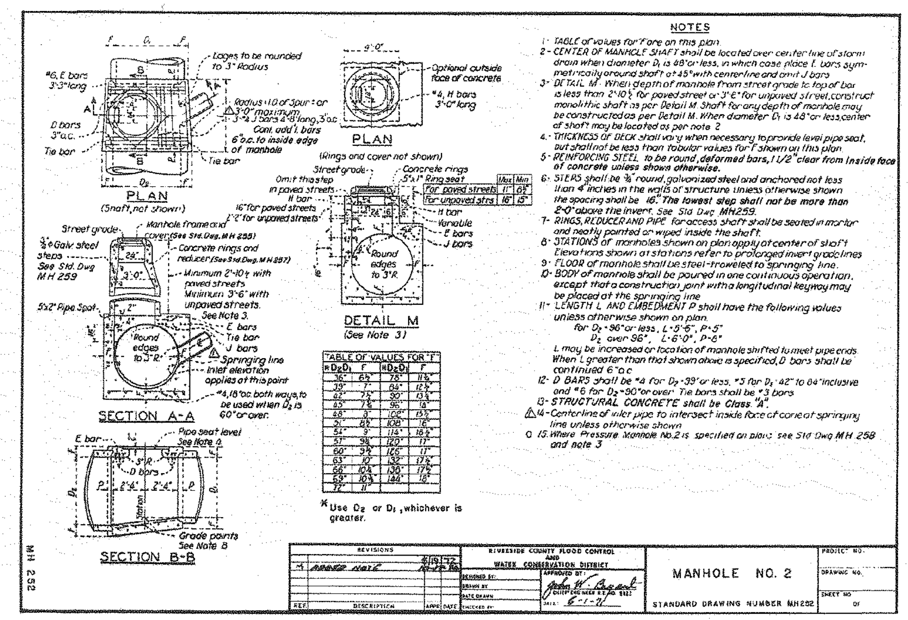






48" TRASH RACK DETAIL

STATION 19+38.14 - SHEET 3

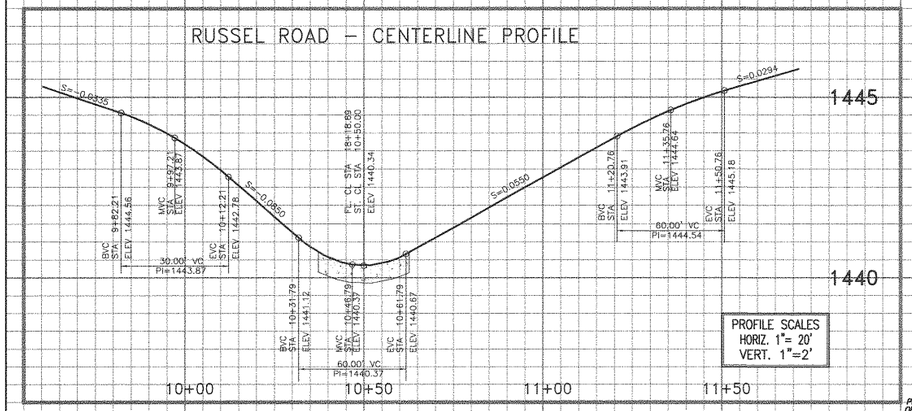


AS BUILT
APPROVED BY:
DATE 7/5/06

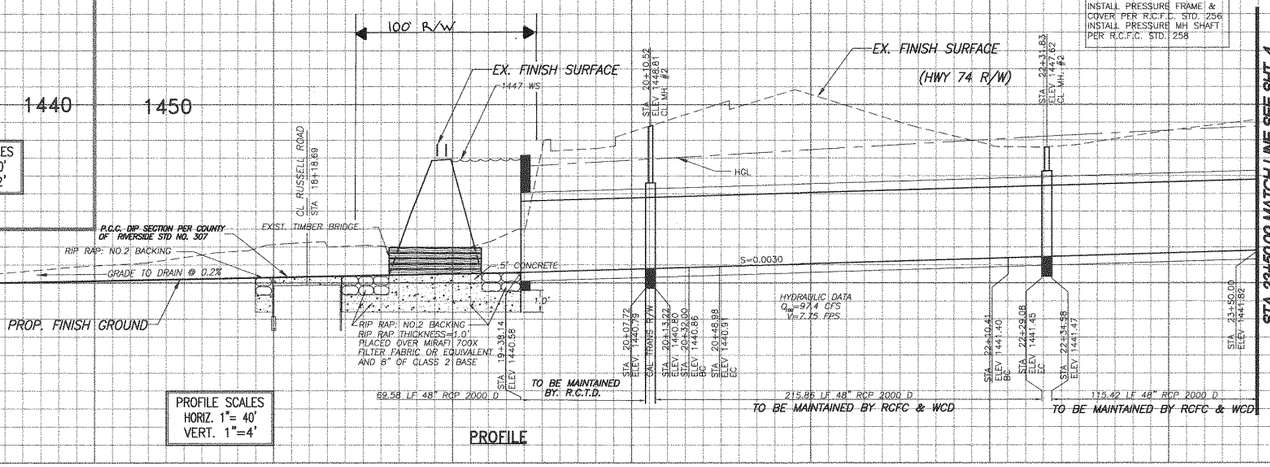
MDC
IP# 020004

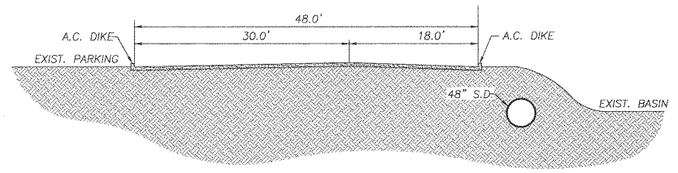
Underground Service Alert **DIGALERT** Call: TOLL FREE 1-800 227-2600 *TWO WORKING DAYS BEFORE YOU DIG*	REGISTERED PROFESSIONAL ENGINEER KHALED A. OTHMAN NO. 33950 EXP. 06-30-06 CIVIL STATE OF CALIFORNIA	APPROVED BY: KHALED A. OTHMAN DATE R.C.E. No. 33950 EXP. DATE: 6/30/06 FOR TRANSPORTATION DEPT.	RECOMMENDED FOR APPROVAL BY: WILLDAN DATE: 12/15/03	PREPARED BY: adkan ENGINEERS 6820 AIRPORT DRIVE, RIVERSIDE, CA 92504 TEL: (909) 688-0241 · FAX: (909) 688-0599 CHARISSA J.A. LEACH, R.C.E. 53390 DATE 12-5-03	ENGINEERS SEAL: REGISTERED PROFESSIONAL ENGINEER CHARISSA J.A. LEACH NO. 53390 EXP. 6-30-07 CIVIL STATE OF CALIFORNIA	BENCH MARK: SEE SHEET 1	REVISIONS: AS BUILT (REF. / REVISIONS / APPR. / DATE)	DESIGNED BY: DRAWN BY: DATE DRAWN: CHECKED BY:

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		ROMOLAND-MOTTE FARMS STORM DRAIN DETAIL SHEET TRACT 29495-1	PROJECT NO. 4-0-0314
RECOMMENDED FOR APPROVAL BY:	APPROVED BY:		DRAWING NO. 4-799
DATE: 12/23/03	DATE: 12-24-2003		SHEET NO. 2 OF 8

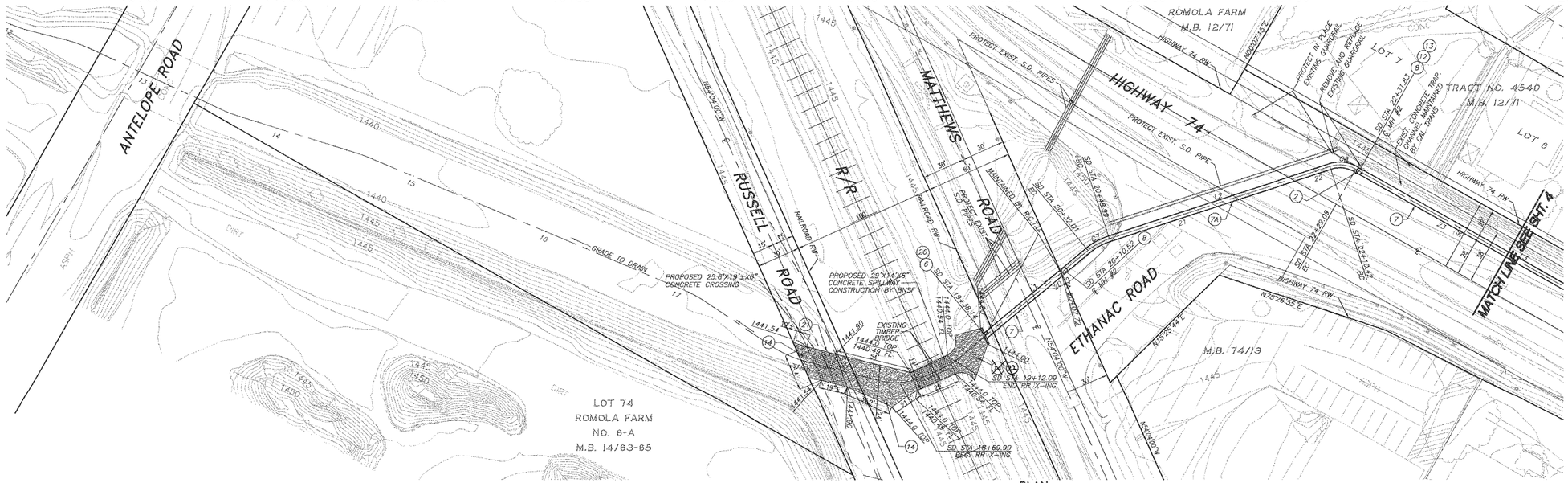


CONCRETE PROTECTION FOR EXISTING TIMBER BRIDGE TO BE CONSTRUCTED BY B.N.S.F. FORCES. CONCRETE SLAB UPSTREAM AND RIP-RAP DOWNSTREAM WITHIN R/R R/W ALSO TO BE CONSTRUCTED BY B.N.S.F. FORCES.
(NOT CONSTRUCTED AS OF MAR. 15, 2006)





ETHANAC ROAD
STATION 20+40
1"=10'



PLAN

CONSTRUCTION NOTES

(6) CONSTRUCT PIPE HEADWALL PER CAL TRANS STD. DWG. D89

(7) INSTALL 48" R.C.P. DLOAD PER PLAN

(7A) INSTALL 48" R.C.P. JACK PIPE STA. 20+48.99 TO STA. 22+10.42 **NOT INSTALLED WITH JACK AND BORE. OPEN TRENCH INSTALLATION.**

(8) CONSTRUCT MANHOLE NO. 2 PER R.C.F.C.&W.C.D. STD. DWG. NO. MH 252

(12) INSTALL MANHOLE FRAME AND COVER (PRESSURE TYPE)PER R.C.F.C.&W.C.D. ST. DWG. NO.256

(13) INSTALL STANDARD PRESSURE MANHOLE SHAFT PER R.C.F.C.&W.C.D. ST. DWG. NO.258

(14) PLACE NO.2 BACKING RIP RAP – 1 FOOT THICK PLACED OVER MIRAFI 700X FILTER FABRIC OR EQUIVALENT AND 8" OF CLASS 2 BASE

(20) INSTALL TRASH RACK PER DETAIL ON SHEET 2

(21) CONSTRUCT P.C.C. DIP SECTION PER COUNTY OF RIVERSIDE STD. NO. 307

(23) PLACE NO.2 BACKING RIP-RAP-6 INCH THICK PLACED OVER MIRAFI 700 X FILTER FABRICK OR EQUIVALENT AND 8" OF CLASS 2 BASE.

STORM DRAIN DATA TABLE

NUMBER	DIRECTION	DISTANCE
L1	N20°17'43"E	93.86'
L2	N41°54'57"E	161.43'
L3	N89°28'11"E	702.99'

NUMBER	Δ=	R='	L='	T='
C7	21°37'15"	45.00	16.98	8.59
C8	47°33'14"	22.50	18.67	9.91

AS BUILT
APPROVED BY:
DATE 7/5/06

40 0 40 80 120
Scale 1" = 40'

IP# 020004

Underground Service Alert
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TWO WORKING DAYS BEFORE YOU DIG

REGISTERED PROFESSIONAL ENGINEER KHALED A. OTHMAN NO. 33950 EXP. 06-30-08 CIVIL STATE OF CALIFORNIA

APPROVED BY: KHALED A. OTHMAN 12/16/03 DATE
R.C.E. No. 33950 EXP. DATE: 6/30/08
FOR TRANSPORTATION DEPT.

RECOMMENDED FOR APPROVAL BY: WILLDAN
DATE: 12/15/08

PREPARED BY: adkan ENGINEERS
6820 AIRPORT DRIVE, RIVERSIDE, CA 92504
TEL: (909) 688-0241 • FAX: (909) 688-0599
CHARISSA J.A. LEACH, R.C.E. 53390 12.5.03 DATE

ENGINEERS SEAL: REGISTERED PROFESSIONAL ENGINEER CHARISSA J.A. LEACH NO. 53390 EXP. 6-30-07 CIVIL STATE OF CALIFORNIA

BENCH MARK: SEE SHEET 1

REF.	REVISIONS	APPR.	DATE
	AS BUILT	GT	6/16/06

DESIGNED BY:
DRAWN BY:
DATE DRAWN:
CHECKED BY:

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

RECOMMENDED FOR APPROVAL BY: DATE: 12/23/03

APPROVED BY: DATE: 12-24-2003

ROMOLAND-MOTTE FARMS STORM DRAIN
PLAN & PROFILE
TRACT 29495-1

PROJECT NO. 4-0-0314
DRAWING NO. 4-799
SHEET NO. 3 OF 8

I:\Drawing\ASHBY\5706\29495-1\5706dr03.dwg Dec 04, 2003 - 2:15pm

CONSTRUCTION NOTES

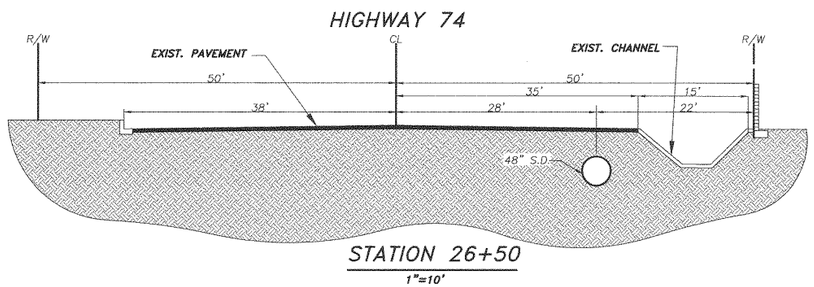
(7) INSTALL 48" R.C.P. – DLOAD PER PLAN

(8) CONSTRUCT MANHOLE NO. 2 PER R.C.F.C.&W.C.D. STD. DWG. NO. MH 252

(8A) CONSTRUCT MANHOLE NO. 2 PER R.C.F.C.&W.C.D. STD. DWG. NO. MH 252 AND DETAIL "A", THIS SHEET.

(12) INSTALL MANHOLE FRAME AND COVER (PRESSURE TYPE) PER R.C.F.C.&W.C.D. ST. DWG. NO.256 (SEE DETAIL ON SHT. 2)

(13) INSTALL STANDARD PRESSURE MANHOLE SHAFT PER R.C.F.C.&W.C.D. ST. DWG. NO.258 (SEE DETAIL ON SHT. 2)



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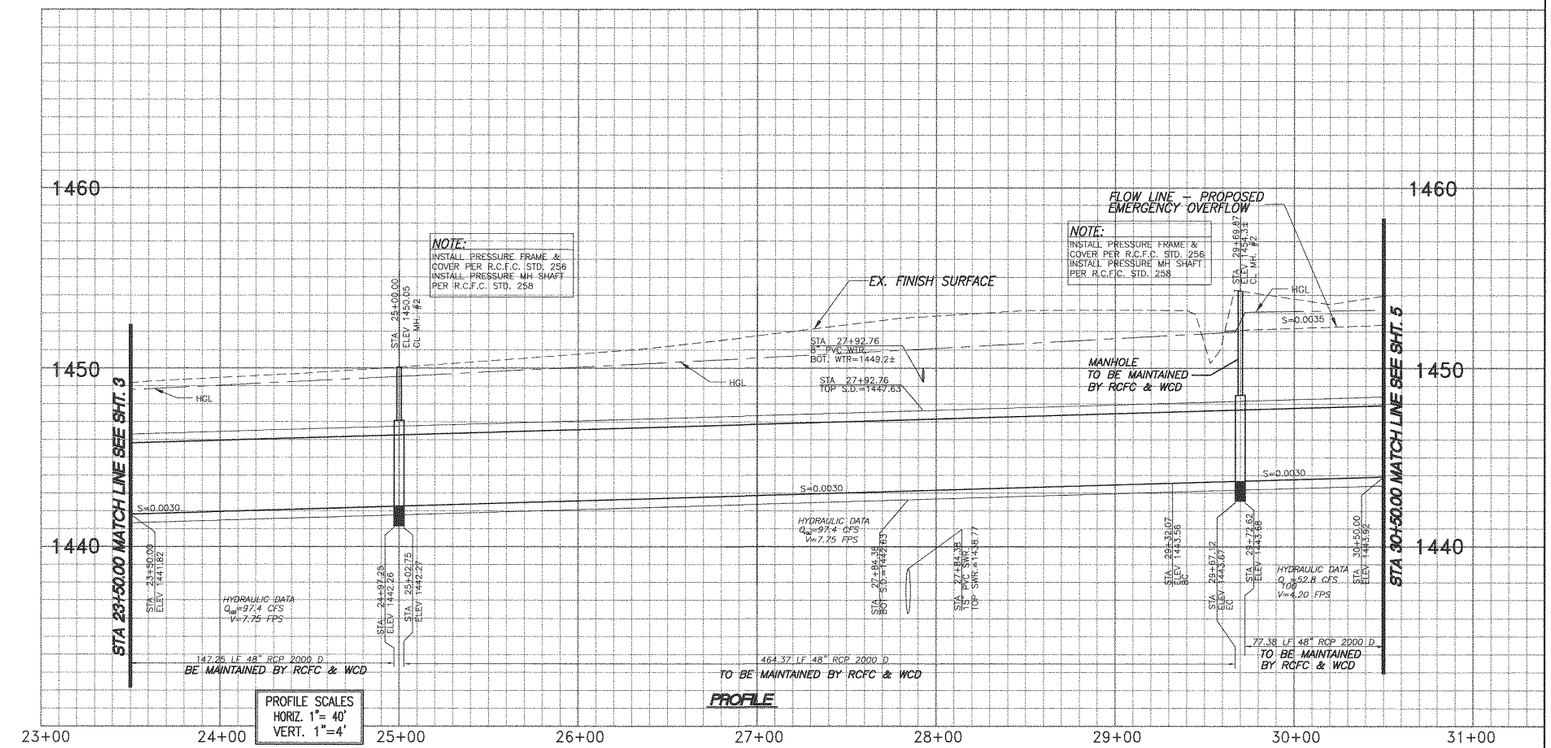
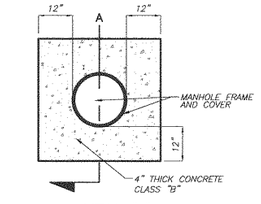
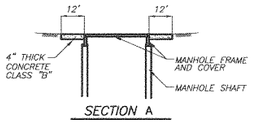


PROFILE SCALES
HORIZ. 1"= 40'
VERT. 1"=4'

PROFILE



DETAIL "A"
INSTALATION FOR MANHOLE LOCATED ON UNPAVED ROADS
N.T.S.

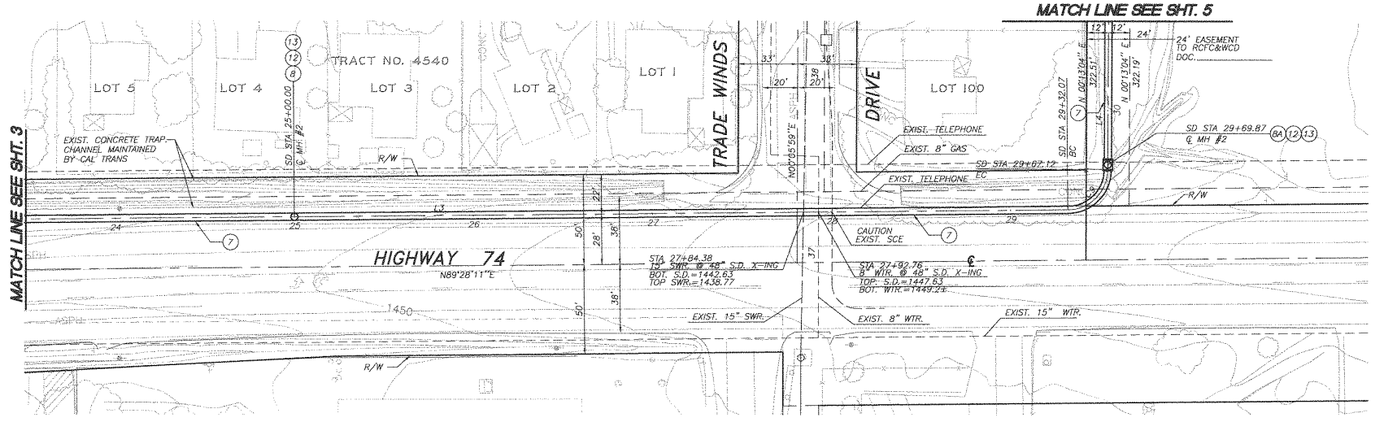


SECTION A

STORM DRAIN DATA TABLE

NUMBER	DIRECTION	DISTANCE
L3	N89°28'11"E	702.99'
L4	N00°13'04"E	302.14'

NUMBER	Δ=	R='	L='	T='
C9	89°15'07"	22.50	35.05	22.21



PLAN

40 0 40 80 120

Scale 1" = 40'

AS BUILT
APPROVED BY:
DATE 7/5/06

RECOMMENDED FOR APPROVED BY:

DATE:

IP# 020004 MDC

Underground Service Alert
DIGALERT
Call: TOLL FREE
1-800 227-2600
TWO WORKING DAYS BEFORE YOU DIG

REGISTERED PROFESSIONAL ENGINEER KHALED A. OTHMAN NO. 33950 EXP. 06-30-06 CIVIL STATE OF CALIFORNIA

APPROVED BY:
KHALED A. OTHMAN
DATE 12/16/03
R.C.E. No. 33950 EXP. DATE: 6/30/06
FOR TRANSPORTATION DEPT.

RECOMMENDED FOR APPROVAL BY:
DATE: 12/15/03

PREPARED BY:
adkan ENGINEERS
6820 AIRPORT DRIVE, RIVERSIDE, CA 92504
TEL: (909) 688-0241 · FAX: (909) 688-0599
CHARISSA J.A. LEACH, R.C.E. 53390
12.5.03 DATE

ENGINEERS SEAL
REGISTERED PROFESSIONAL ENGINEER CHARISSA J.A. LEACH NO. 53390 EXP. 6-30-07 CIVIL STATE OF CALIFORNIA

BENCH MARK:
SEE SHEET 1

REVISIONS			
REF.	REVISIONS	APPR.	DATE
	AS BUILT	CH	6/16/06

DESIGNED BY:
DRAWN BY:
DATE DRAWN:
CHECKED BY:

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

RECOMMENDED FOR APPROVAL BY:
DATE: 12/23/03

APPROVED BY:
DATE: 12-24-2003

ROMOLAND–MOTTE FARMS STORM DRAIN
PLAN & PROFILE
TRACT 29495-1

PROJECT NO. 4-0-0314
DRAWING NO. 4-799
SHEET NO. 4 OF 8

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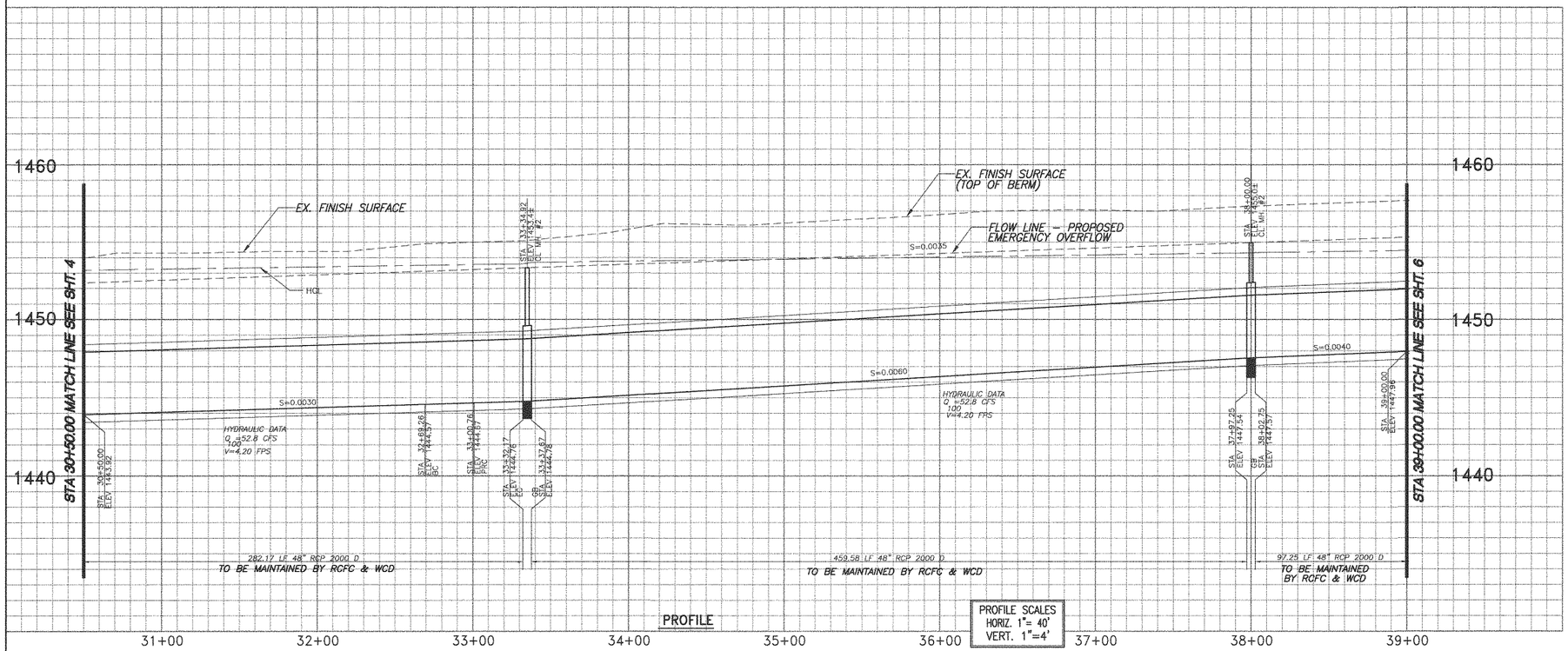
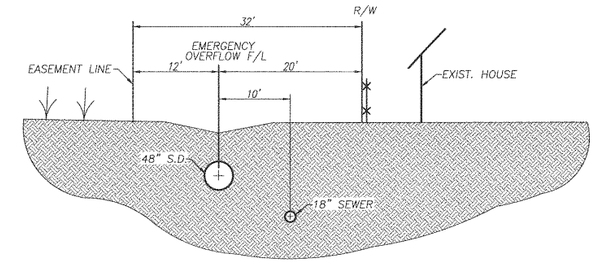


PROFILE

PROFILE SCALES
HORIZ. 1"= 40'
VERT. 1"=4'



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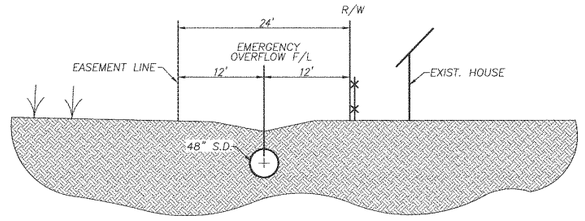

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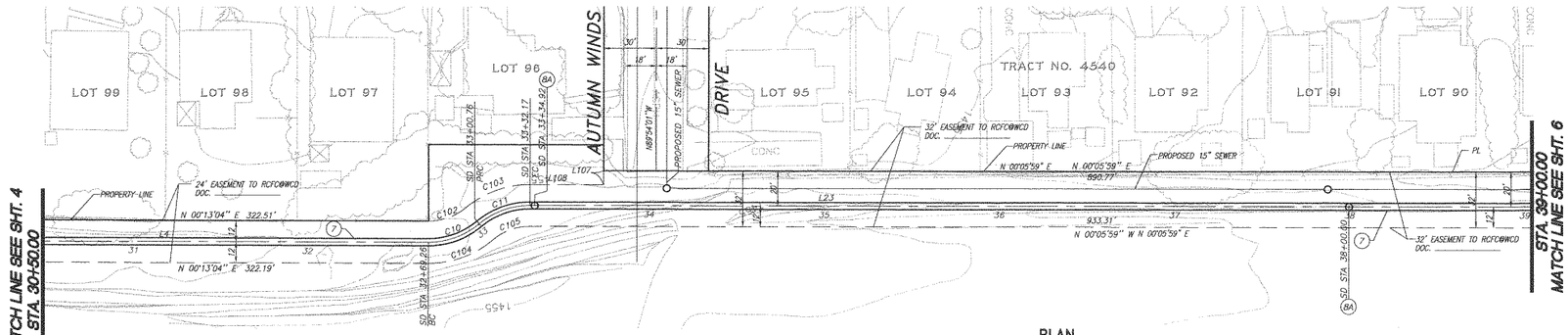
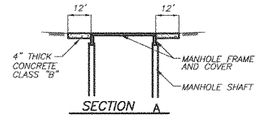
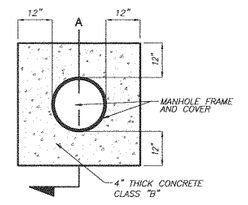


PLAN

40 0 40 80 120
Scale 1" = 40'

ROMOLAND – MOTTE FARMS
STORM DRAIN





DETAIL "A"
INSTALLATION FOR MANHOLE LOCATED ON UNPAVED ROADS
N.T.S.

CONSTRUCTION NOTES

(7) INSTALL 48" R.C.P. – DLOAD PER PLAN

(8A) CONSTRUCT MANHOLE NO. 2 PER R.C.F.C.&W.C.D. STD. DWG. NO. MH 252 AND DETAIL "A", THIS SHEET.

STORM DRAIN DATA TABLE

NUMBER	DIRECTION	DISTANCE
L4	N00°13'04"E	302.14'
L23	N00°05'59"E	565.08'
L107	N89°54'01"W	8.00'
L108	N00°05'59"E	42.09'

NUMBER	Δ=	R=	L=	T=
C10	40°06'45"	45.00	31.50	16.43
C11	39°59'39"	45.00	31.41	16.38
C102	40°06'45"	33.00	23.10	12.05
C103	39°59'39"	57.00	39.79	20.74
C104	40°06'45"	57.00	39.91	20.81
C105	39°59'39"	33.00	23.03	12.01

AS BUILT
APPROVED BY: [signature]
DATE 7/5/06

MDC
IP# 020004

Underground Service Alert
DIGALERT
Call: TOLL FREE
1-800 227-2600
TWO WORKING DAYS BEFORE YOU DIG

REGISTERED PROFESSIONAL ENGINEER KHALED A. OTHMAN NO. 33950 EXP. 06-30-08 CIVIL STATE OF CALIFORNIA

APPROVED BY: [signature] 12/16/08
KHALED A. OTHMAN DATE
R.C.E. No. 33950 EXP. DATE: 6/30/08
FOR TRANSPORTATION DEPT.

RECOMMENDED FOR APPROVAL BY: [signature]
GILLDAN
DATE: 12/15/08

PREPARED BY:
adkan ENGINEERS
6820 AIRPORT DRIVE, RIVERSIDE, CA 92504
TEL: (909) 688-0241 • FAX: (909) 688-0599
[signature] 12.5.03
CHARISSA J.A. LEACH, R.C.E. 53390 DATE

ENGINEERS SEAL
REGISTERED PROFESSIONAL ENGINEER CHARISSA J.A. LEACH NO. 53390 EXP. 6-30-07 CIVIL STATE OF CALIFORNIA

BENCH MARK:
SEE SHEET 1

REVISIONS			
AS BUILT			6/16/06
REF.	REVISIONS	APPR.	DATE

DESIGNED BY:
DRAWN BY:
DATE DRAWN:
CHECKED BY:

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

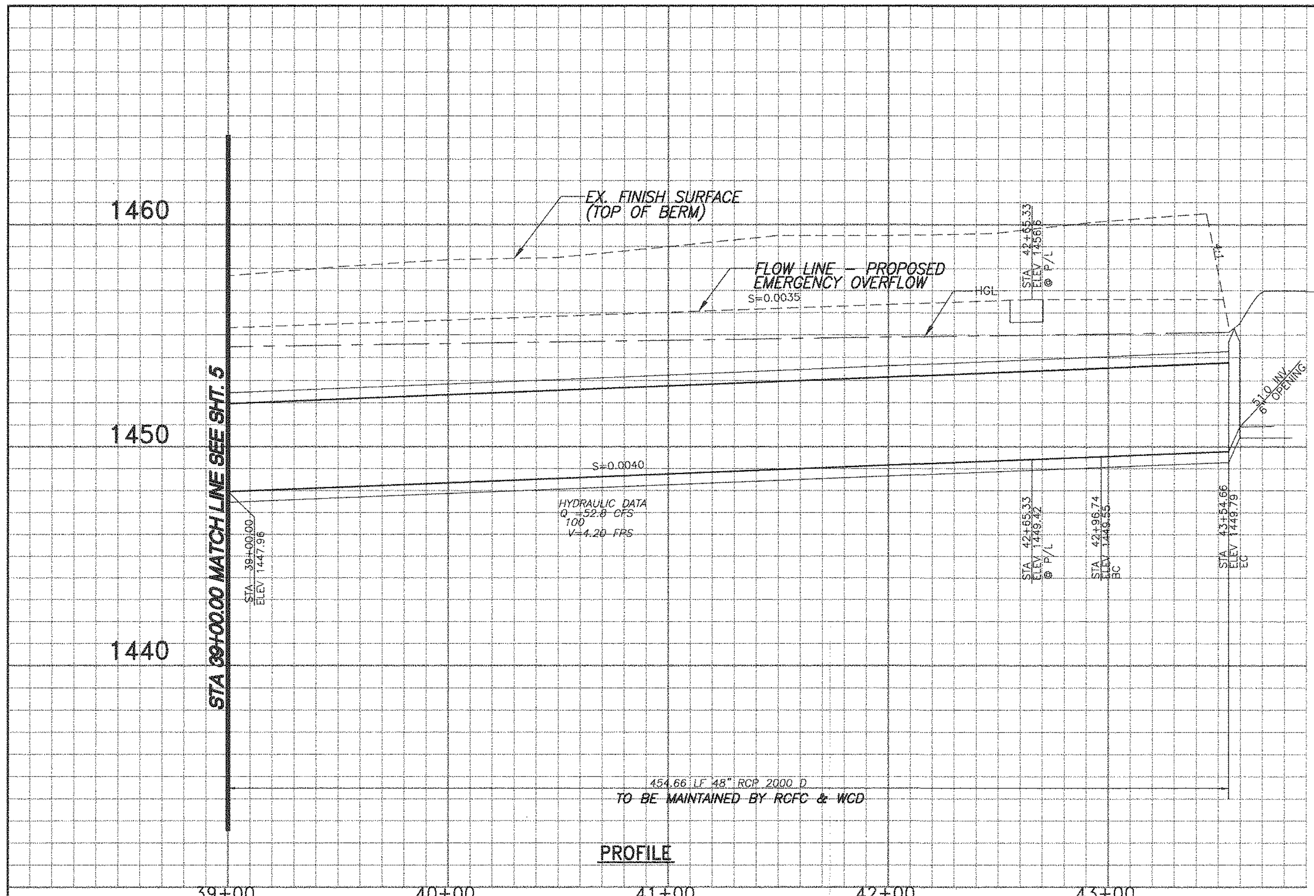
RECOMMENDED FOR APPROVAL BY: [signature]
DATE: 12/22/03

APPROVED BY: [signature]
DATE: 12-24-2003

ROMOLAND–MOTTE FARMS STORM DRAIN
PLAN & PROFILE
TRACT 29495-1

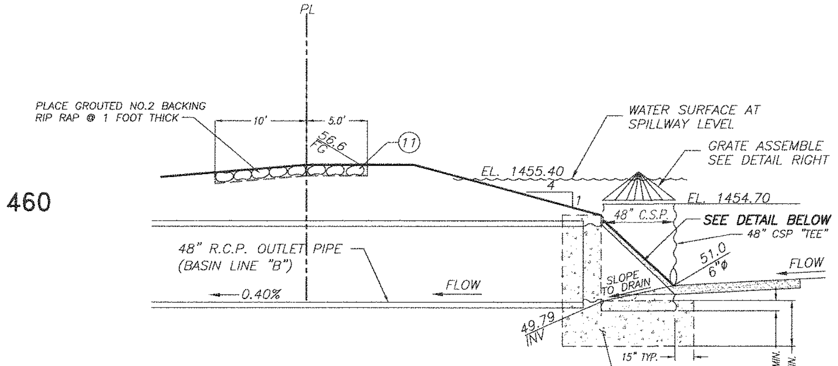
PROJECT NO. 4-0-0314
DRAWING NO. 4-799
SHEET NO. 5 OF 8

U:\Drawing\4-0-0314\29495-1\ST05sht05.dwg Dec 04, 2003 - 2:39pm

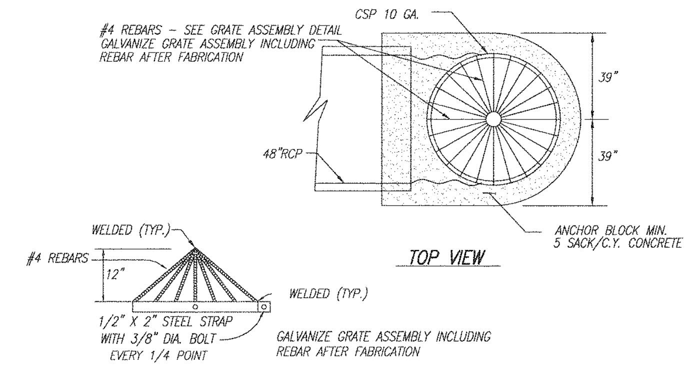


PROFILE

PROFILE SCALES
HORIZ. 1"= 40'
VERT. 1"=4'

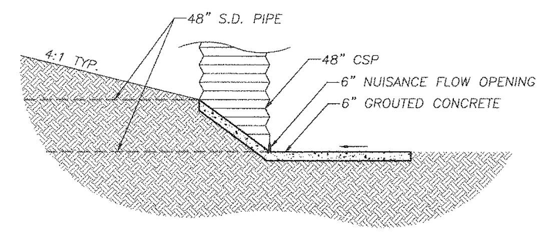


SECTION THROUGH EMBANKMENT
BASIN "B"
N.T.S.



TOP VIEW

GRATE ASSEMBLY



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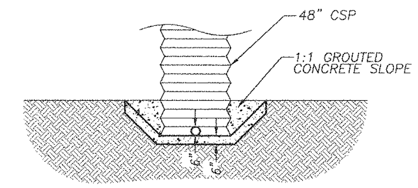
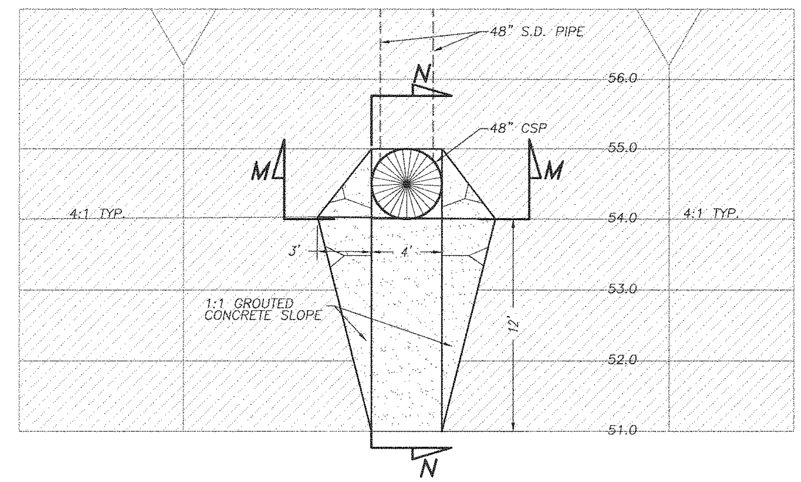
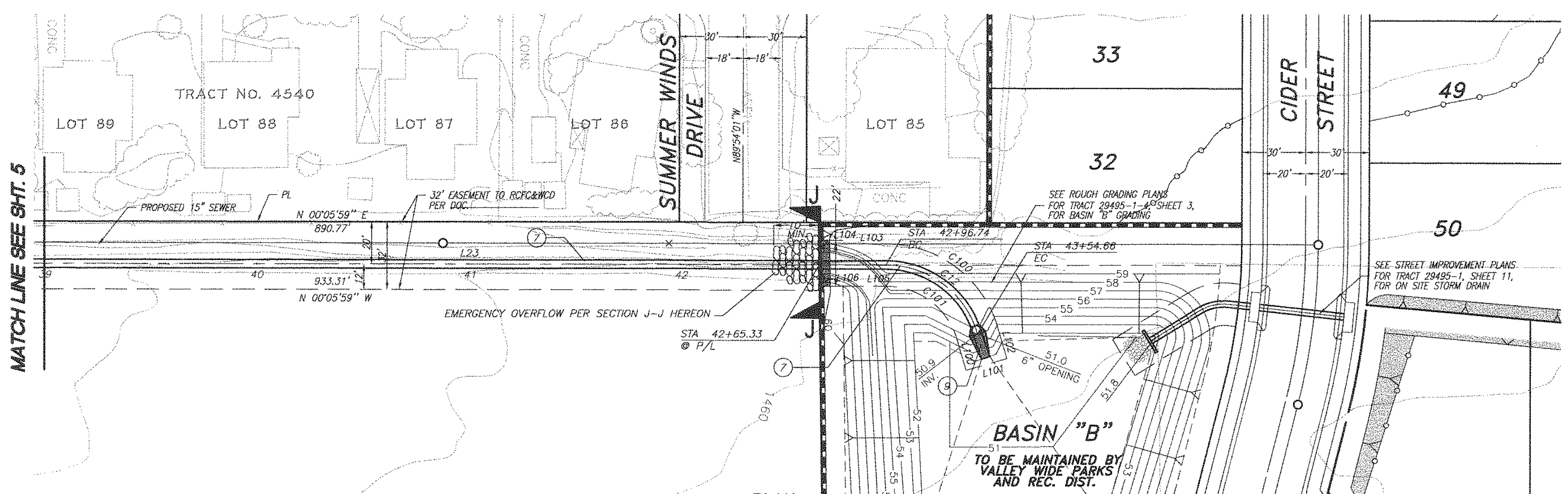


SECTION M–M



OUTLET DETAIL – BASIN "B"
N.T.S.

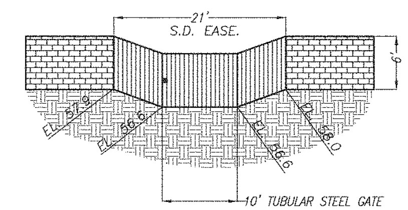


PLAN

STORM DRAIN DATA TABLE

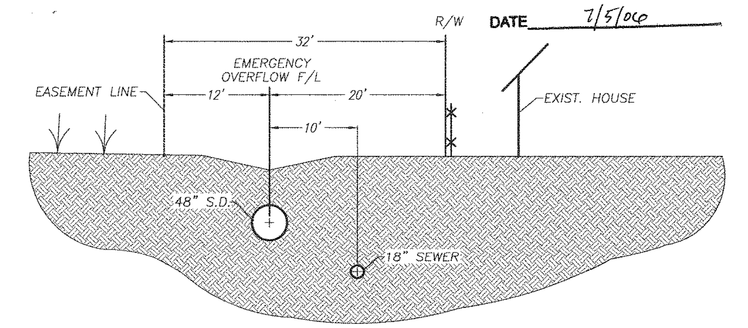
NUMBER	DIRECTION	DISTANCE
L23	N00°05'59"E	565.08'
L100	N73°50'26"E	15.00'
L101	N16°09'34"W	20.00'
L102	N73°50'26"E	15.00'
L103	N00°05'59"E	31.40'
L104	N88°29'57"E	10.00'
L105	N00°05'59"E	31.40'
L106	N85°18'29"E	2.00'

NUMBER	Δ=	R='	L='	T='
C12	73°44'27"	45.00	57.92	33.75
C100	73°44'27"	55.00	70.79	41.25
C101	73°44'27"	35.00	45.05	26.25



SECTION J–J
1"=10'

AS BUILT
APPROVED BY:
DATE 7/5/06



STATION 40+00
1"=10'

Underground Service Alert
Call: TOLL FREE
1–800
227–2600
TWO WORKING DAYS BEFORE YOU DIG

ROMOLAND – MOTTE FARMS STORM DRAIN

Scale 1" = 40'

CONSTRUCTION NOTES

7. INSTALL 48" R.C.P. – DLOAD PER PLAN
9. CONSTRUCT 48" STAND PIPE RISER WITH GRATE ASSEMBLE PER DETAIL ABOVE
11. PLACE GROUTED NO.2 BACKING RIP RAP – 1 FOOT THICK FOR EMERGENCY OVERFLOW

IP# 020004

Underground Service Alert
DIGALERT
Call: TOLL FREE
1-800
227-2600
TWO WORKING DAYS BEFORE YOU DIG

APPROVED BY: KHALED A. OTHMAN 12/16/03 DATE
R.C.E. No. 33950 EXP. DATE: 6/30/06
FOR TRANSPORTATION DEPT.

RECOMMENDED FOR APPROVAL BY: WILLDAN
DATE: 12/15/03

PREPARED BY:
adkan ENGINEERS
6820 AIRPORT DRIVE, RIVERSIDE, CA 92504
TEL (909) 688-0241 · FAX: (909) 688-0599
CHARISSA J.A. LEACH, R.C.E. 53390 12-5-03 DATE

BENCH MARK: SEE SHEET 1

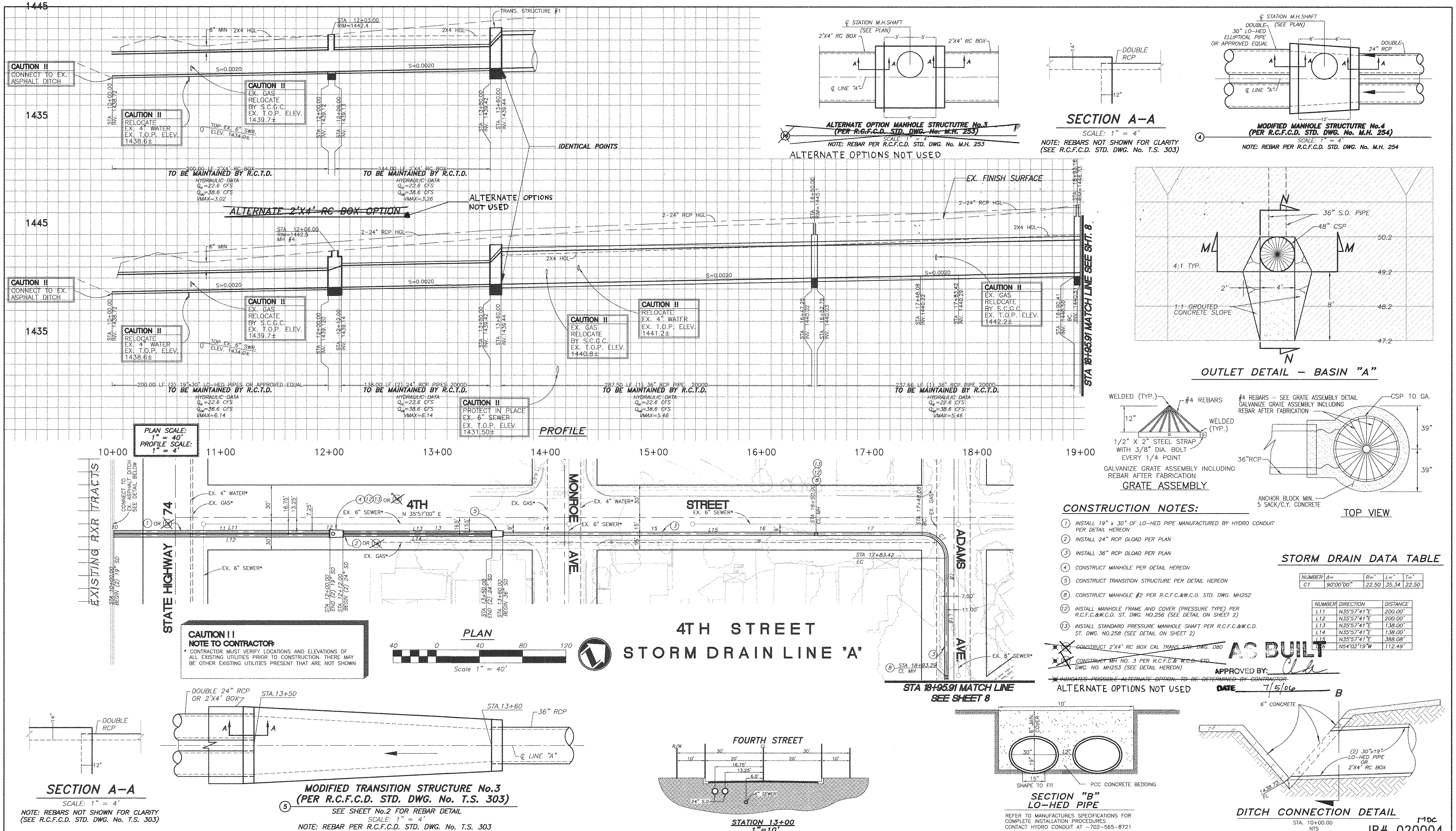
REVISIONS: AS BUILT — 6/16/06

DESIGNED BY:
DRAWN BY:
DATE DRAWN:
CHECKED BY:

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
RECOMMENDED FOR APPROVAL BY: DATE: 12/23/03
APPROVED BY: DATE: 12-24-2003

ROMOLAND–MOTTE FARMS STORM DRAIN
PLAN & PROFILE
TRACT 29495-1

PROJECT NO. 4-0-0314
DRAWING NO. 4-799
SHEET NO. 6 OF 8



CONSTRUCTION NOTES:

1. INSTALL 19" x 30" OF LO-HED PIPE MANUFACTURED BY HYDRO CONDUIT PER DETAIL HEREON
2. INSTALL 24" RCP DLOAD PER PLAN
3. INSTALL 36" RCP DLOAD PER PLAN
4. CONSTRUCT MANHOLE PER DETAIL HEREON
5. CONSTRUCT TRANSITION STRUCTURE PER DETAIL HEREON
8. CONSTRUCT MANHOLE #2 PER R.C.F.C.&W.C.D. STD. DWG. MH252
12. INSTALL MANHOLE FRAME AND COVER (PRESSURE TYPE) PER R.C.F.C.&W.C.D. ST. DWG. NO.256 (SEE DETAIL ON SHEET 2)
13. INSTALL STANDARD PRESSURE MANHOLE SHAFT PER R.C.F.C.&W.C.D. ST. DWG. NO.258 (SEE DETAIL ON SHEET 2)

~~CONSTRUCT 2'X4' RC BOX CAL TRANS STD. DWG. D80~~

~~CONSTRUCT MH NO. 3 PER R.C.F.C.& W.C.D. STD.~~ DWG. NO. MH253 (SEE DETAIL HEREON)

~~INDICATES POSSIBLE ALTERNATE OPTION. TO BE DETERMINED BY CONTRACTOR~~

ALTERNATE OPTIONS NOT USED

AS BUILT

APPROVED BY: [signature]

DATE 7/5/06

STORM DRAIN DATA TABLE

NUMBER	Δ=	R='	L='	T='
C1	90°00'00"	22.50	35.34	22.50

NUMBER	DIRECTION	DISTANCE
L11	N35°57'41"E	200.00'
L12	N35°57'41"E	200.00'
L13	N35°57'41"E	138.00'
L14	N35°57'41"E	138.00'
L15	N35°57'41"E	388.08'
L16	N54°02'19"W	112.49'

MDC

IP# 020004

Underground Service Alert
DIGALERT
Call: TOLL FREE
1-800
227-2600
TWO WORKING DAYS BEFORE YOU DIG

REGISTERED PROFESSIONAL ENGINEER KHALED A. OTHMAN NO. 33950 EXP. 06-30-06 CIVIL STATE OF CALIFORNIA

APPROVED BY: [signature] 12/16/03
KHALED A. OTHMAN DATE
R.C.E. No. 33950 EXP. DATE: 6/30/06
FOR TRANSPORTATION DEPT.

RECOMMENDED FOR APPROVAL BY: [signature]
WILLDAN
DATE: 12/15/03

PREPARED BY:
adkan ENGINEERS
6820 AIRPORT DRIVE, RIVERSIDE, CA 92504
TEL (909) 688-0241 · FAX: (909) 688-0599
[signature] 12.5.03
CHARISSA J.A. LEACH, R.C.E. 53390 DATE

ENGINEERS SEAL
REGISTERED PROFESSIONAL ENGINEER CHARISSA J.A. LEACH NO. 53390 EXP. 6-30-07 CIVIL STATE OF CALIFORNIA

BENCH MARK: SEE SHEET 1

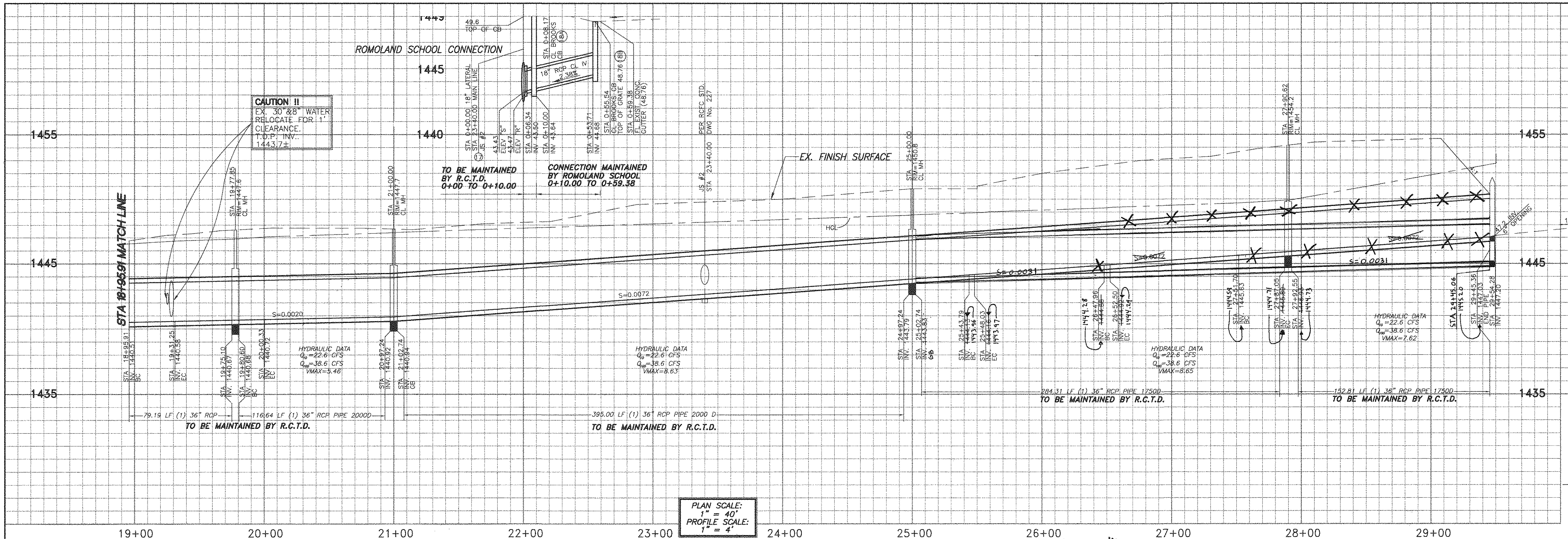
REF.	REVISIONS	APPR.	DATE
	AS BUILT	[initials]	6/16/06

DESIGNED BY:
DRAWN BY:
DATE DRAWN:
CHECKED BY:

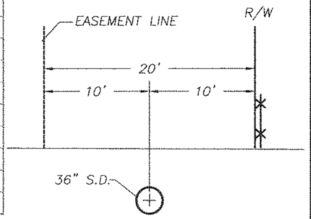
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
RECOMMENDED FOR APPROVAL BY: DATE:
APPROVED BY: DATE:

ROMOLAND-MOTTE FARMS STORM DRAIN
PLAN & PROFILE
TRACT 29495-1

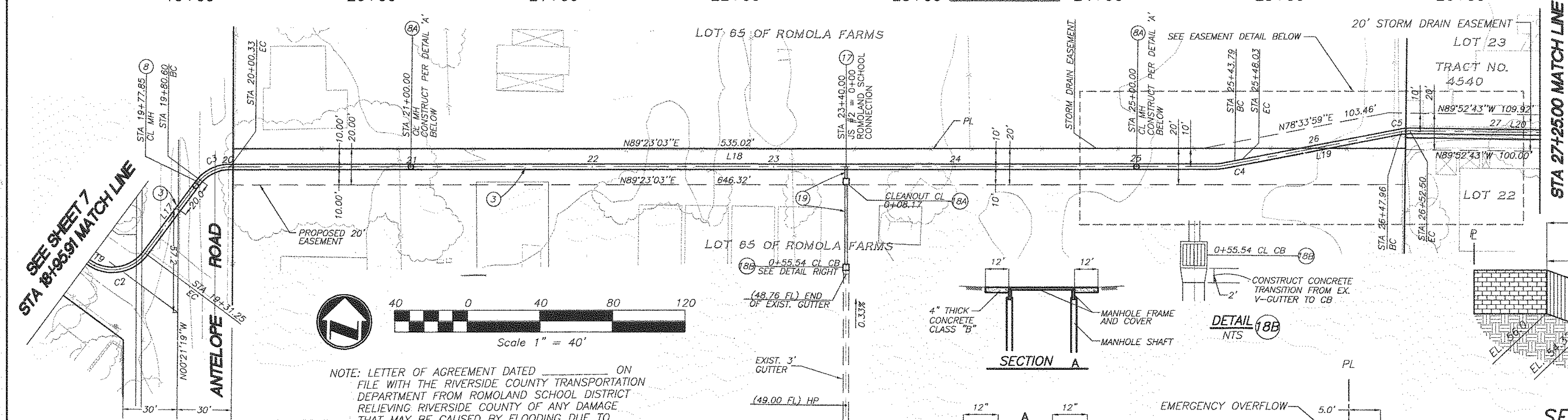
PROJECT NO. 4-0-0314
DRAWING NO. 4-799
SHEET NO. 7 OF 8



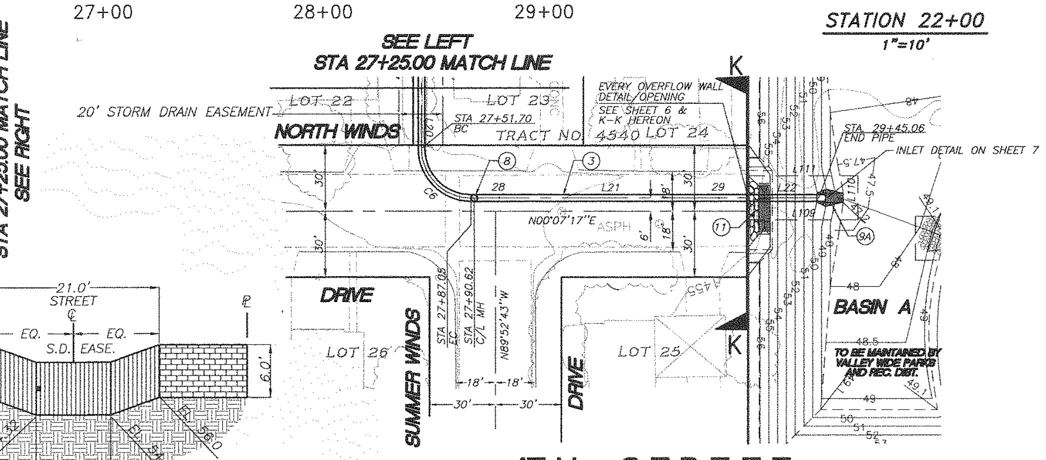
AS BUILT
APPROVED BY: [signature]
DATE 7/5/06



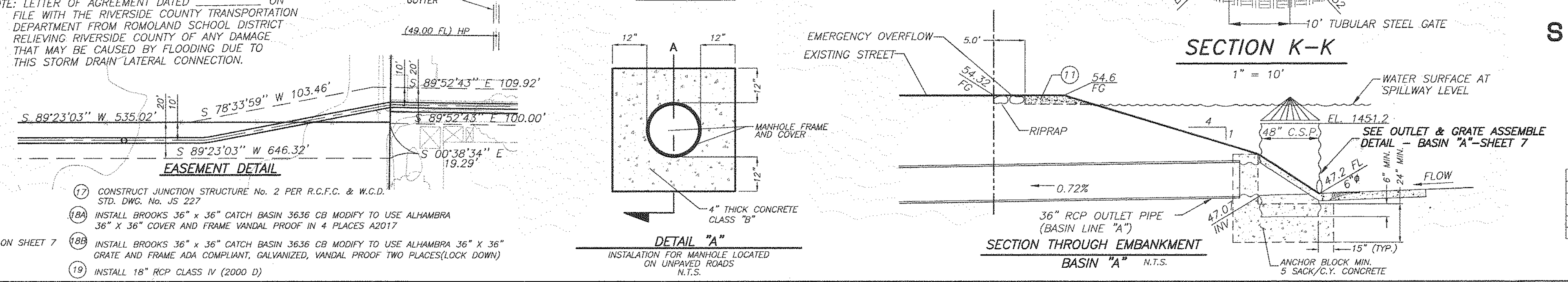
STATION 22+00
1"=10'



NOTE: LETTER OF AGREEMENT DATED __________ ON FILE WITH THE RIVERSIDE COUNTY TRANSPORTATION DEPARTMENT FROM ROMOLAND SCHOOL DISTRICT RELIEVING RIVERSIDE COUNTY OF ANY DAMAGE THAT MAY BE CAUSED BY FLOODING DUE TO THIS STORM DRAIN LATERAL CONNECTION.



4TH STREET STORM DRAIN LINE "A"



Scale 1" = 40'

CAUTION !!
NOTE TO CONTRACTOR:
* CONTRACTOR MUST VERIFY LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. THERE MAY BE OTHER EXISTING UTILITIES PRESENT THAT ARE NOT SHOWN

CONSTRUCTION NOTES:

- (3) INSTALL 36" RCP DLOAD PER PLAN
- (8) CONSTRUCT MANHOLE NO. 2 PER R.C.F.C.&W.C.D. STD. DWG. NO. MH 252
- (8A) CONSTRUCT MANHOLE NO. 2 PER R.C.F.C.&W.C.D. STD. DWG. NO. MH 252 AND DETAIL "A"
- (9A) CONSTRUCT INLET STRUCTURE WITH GRATE ASSEMBLE PER DETAIL ON SHEET 7
- (11) CONSTRUCT CONCRETE EMERGENCY OVERFLOW SPILLWAY PER DETAIL ON SHEET 5
- (17) CONSTRUCT JUNCTION STRUCTURE No. 2 PER R.C.F.C. & W.C.D. STD. DWG. No. JS 227
- (18A) INSTALL BROOKS 36" x 36" CATCH BASIN 3636 CB MODIFY TO USE ALHAMBRA 36" X 36" COVER AND FRAME VANDAL PROOF IN 4 PLACES A2017
- (18B) INSTALL BROOKS 36" x 36" CATCH BASIN 3636 CB MODIFY TO USE ALHAMBRA 36" X 36" GRATE AND FRAME ADA COMPLIANT, GALVANIZED, VANDAL PROOF TWO PLACES(LOCK DOWN)
- (19) INSTALL 18" RCP CLASS IV (2000 D)

STORM DRAIN DATA TABLE

NUMBER	Δ=	R='	L='	T='
C2	90°00'00"	22.50	35.34	22.50
C3	53°25'22"	22.50	20.98	11.32
C4	10°49'04"	22.50	4.25	2.13
C5	11°33'18"	22.50	4.54	2.28
C6	90°01'18"	22.50	35.35	22.51

NUMBER	DIRECTION	DISTANCE
L17	N35°57'41"E	48.10'
L18	N89°23'03"E	543.46'
L19	N78°33'59"E	99.93'
L20	N89°52'43"W	99.20'
L21	N00°05'59"E	126.21'
L22	N00°05'59"E	35.00'

MDC
IP# 020004

Underground Service Alert
DIGALERT
Call: TOLL FREE
1-800
227-2600
TWO WORKING DAYS BEFORE YOU DIG

REGISTERED PROFESSIONAL ENGINEER KHALED A. OTHMAN NO. 33950 EXP. 06-30-06 CIVIL STATE OF CALIFORNIA

APPROVED BY: [signature] 12/16/03
KHALED A. OTHMAN DATE
R.C.E. No. 33950 EXP. DATE: 6/30/06
FOR TRANSPORTATION DEPT.

RECOMMENDED FOR APPROVAL BY: [signature]
WILLDAN
DATE: 12/15/03

PREPARED BY:
adkan ENGINEERS
6820 AIRPORT DRIVE, RIVERSIDE, CA 92504
TEL: (909) 688-0241 · FAX: (909) 688-0599
CHARISSA J.A. LEACH, R.C.E. 53390 12·5·03 DATE

ENGINEERS SEAL: REGISTERED PROFESSIONAL ENGINEER CHARISSA J.A. LEACH NO. 53390 EXP. 6-30-07 CIVIL STATE OF CALIFORNIA

BENCH MARK: SEE SHEET 1

REF.	REVISIONS	APPR.	DATE
	AS BUILT	[initials]	6/16/06

DESIGNED BY:
DRAWN BY:
DATE DRAWN:
CHECKED BY:

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
RECOMMENDED FOR APPROVAL BY: __________ DATE: __________
APPROVED BY: __________ DATE: __________

ROMOLAND-MOTTE FARMS STORM DRAIN
PLAN & PROFILE
TRACT 29495-1

PROJECT NO. 4-0-0314
DRAWING NO. 4-799
SHEET NO. 8 OF 8