City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 14, 2001

Chris Weiss, P.E.
C.L.Weiss Engineering
P.O. Box 987
Sandia Park, NM 87047

RE: HOPE CHRISTIAN SCHOOL ADDITION - PALOMAS CAMPUS, Soccor Field Revisions II (D18-D9). Revised DRAINAGE REPORT FOR BUILDING PERMIT APPROVAL. ENGINEER'S STAMP DATED MAY 24, 2001

Dear Mr.Weiss:

Based on the information provided on your June 1, 2001 submittal, the above referenced project is approved for Building Permit.

This revision was necessitated by a bust in the stated existing elevations at the soccor field.

Please furnish another copy of the corresponding Grading and Drainage Plan.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Prior to Certificate of Occupancy approval, an Engineer's Certification per the DPM will be required.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,

John P. Murray, P.E.
Hydrology

c: Terri Martin
File

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

May 1, 2001

Chris Weiss, P.E.
C.L.Weiss Engineering
P.O. Box 987
Sandia Park, NM 87047

RE: HOPE CHRISTIAN SCHOOL CAMPUS ADDITION (D18-D9). Revised GRADING AND DRAINAGE PLAN FOR BUILDING PERMIT APPROVAL. ENGINEER'S STAMP DATED APRIL 20, 2001 FOR PLAN AND APRIL 16, 2001 FOR REPORT..

Dear Mr.Weiss:

Based on the information provided on your April 25, 2001 submittal, the above referenced project is approved for Building Permit.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Prior to Certificate of Occupancy approval, an Engineer's Certification per the DPM will be required.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,

John P. Murray, P.E.
Hydrology

c: Terri Martin
File

City of Albuquerque

June 29, 2000

Chris Weiss, P.E.
C. L. Weiss Engineering
P. O. Box 97
Sandia Park, NM 87047

RE: GRADING & DRAINAGE PLAN FOR HOPE CHRISTIAN SCHOOL ADDITION (D-18/D09E) ENGINEERS STAMP DATED MAY 26, 2000 SUBMITTED FOR BUILDING PERMIT APPROVAL

Dear Mr. Weiss,

Based upon the information provided in your June 14, 2000, submittal, the project referred to above is approved for Building Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Prior to release of the Certificate of Occupancy, an Engineer Certification, per the DPM checklist, will be required.

If you have any questions, please call me at 924-3988.

Sincerely,

Stuart Reeder, P.E.

Stuart Reeder, P.E.
Hydrology Division

xc: Whitney Reierson
File

CITY OF
Albuquerque

July 24,1998

Chris Weiss
C.L. Weiss Engineering
P.O. Box 97
Sandia Park, New Mexico 87047

RE: DRAINAGE PLAN FOR HOPE CHRISTIAN SCHOOL ADDITION (D18-D9a)
ENGINEER'S STAMP DATED 6/26/98

Dear Mr. Weiss:

Based on the information provided on your June 26,1998 submittal, the above referenced site is approved for Building Permit.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Also, prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

If I can be of further assistance, please feel free to contact me at 924-3986.

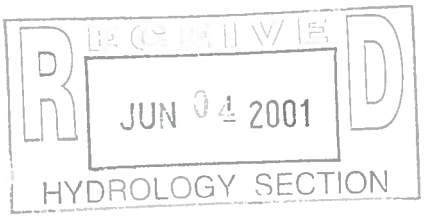
C: Andrew Garcia
File

Sincerely

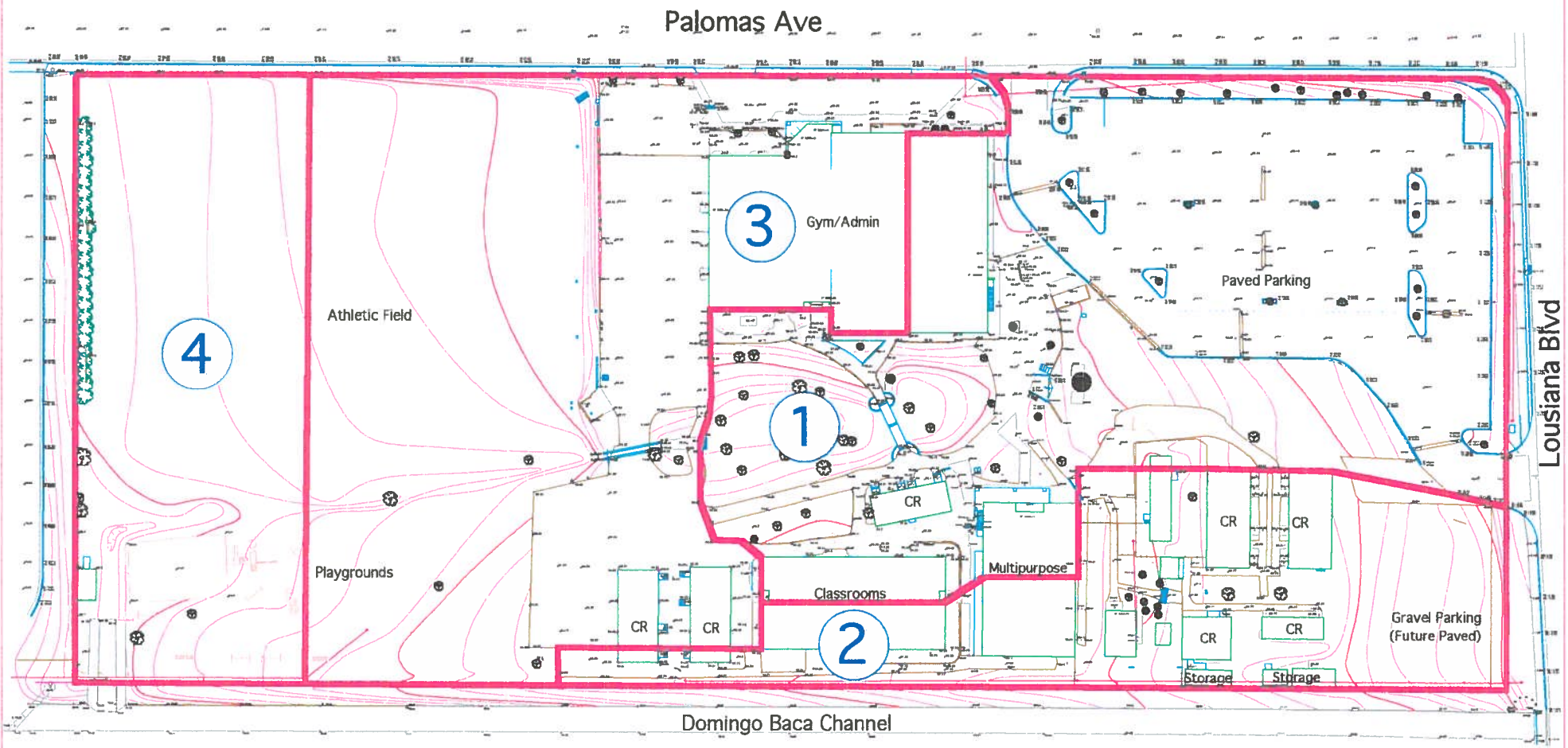
Bernie J. Montoya CE
Associate Engineer

Hope Christian School

Palomas Campus



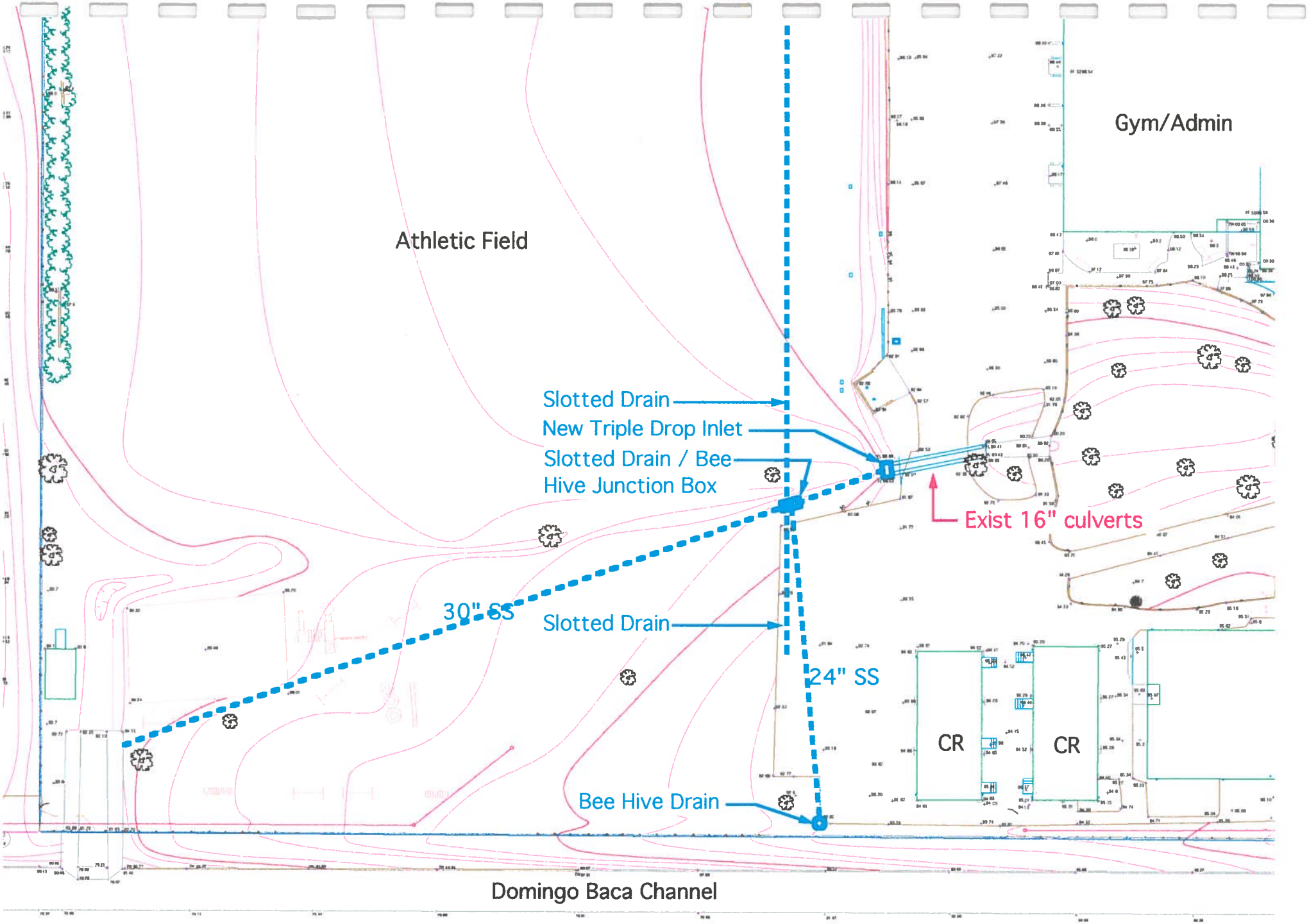
C.L. Weiss Engineering, Inc P.O. Box 97 Sandia Park, NM 87047
Tele/Fax - (505) 281-1800 E-Mail - clwnm@earthlink.net



Drainage Sub-basins

Revised 4 -01

North



Hope Soccer/SS Plan Rev. II

Hydrograph Plot

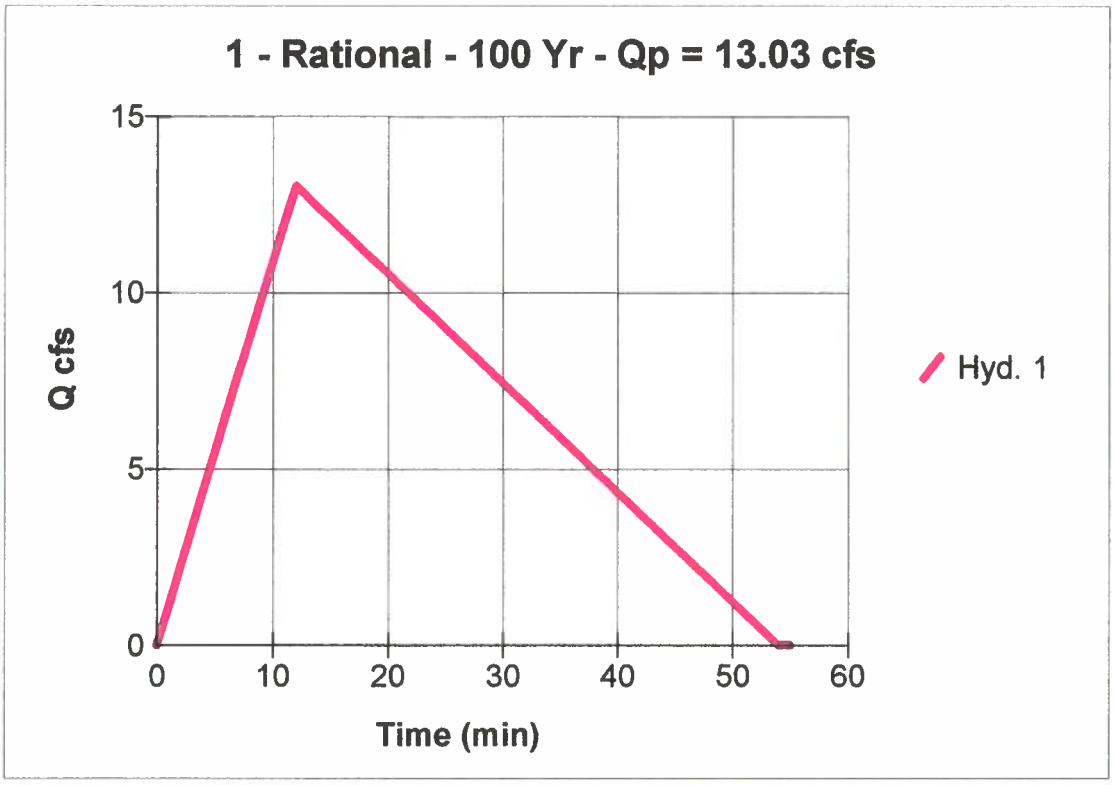
English

Hyd. No. 1

Sub-Basin 1

Hydrograph type	= Rational	Peak discharge	= 13.03 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 3.0 ac	Runoff coeff.	= 0.71
Intensity	= 6.12 in	Time of conc. (Tc)	= 12 min
I-D-F Curve	= Hope.IDF	Reced. limb factor	= 3.558

Total Volume = 21,387 cuft



Hydrograph Plot

English

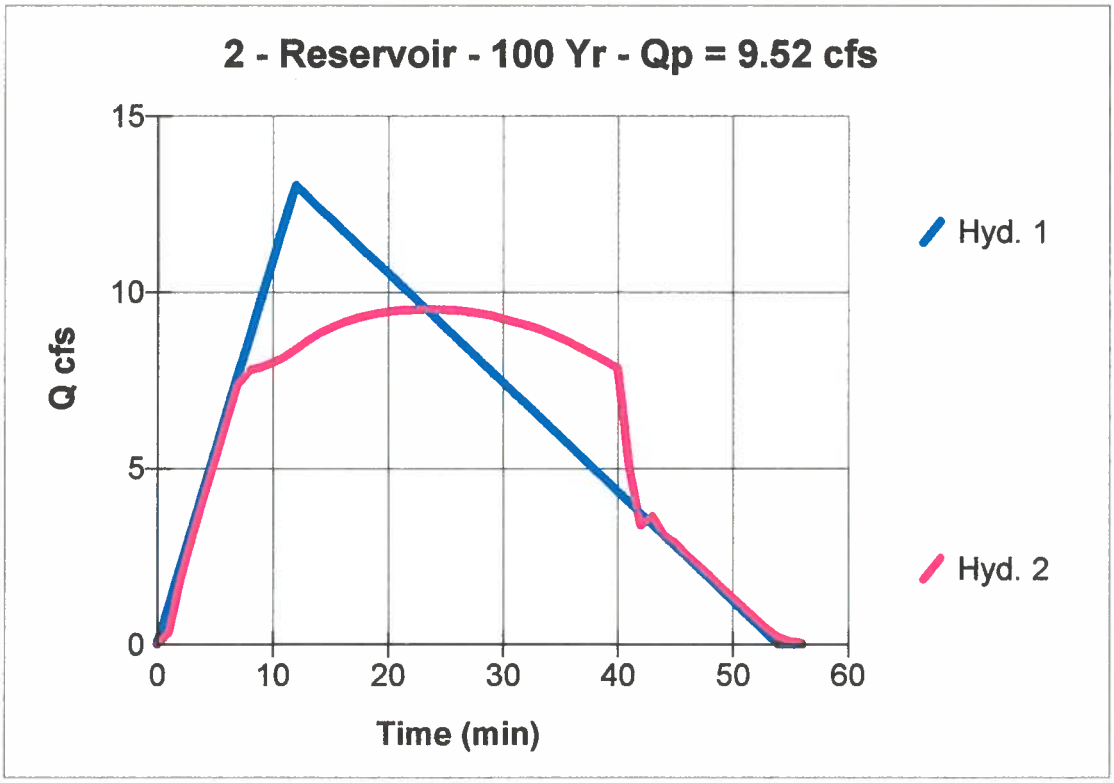
Hyd. No. 2

Detention Pond

Hydrograph type	= Reservoir	Peak discharge	= 9.52 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 1	Reservoir name	= Campus Open Spa
Max. Elevation	= 90.16 ft	Max. Storage	= 2,259 cuft

Storage Indication method used

Total Volume = 21,114 cuft



Reservoir Report

English

Reservoir No. 1 - Campus Open Space

Pond Data

Pond storage is based on known contour areas

Stage / Storage Table

Stage ft	Elevation ft	Contour area sqft	Incr. Storage cuft	Total storage cuft
0.00	89.00	10	0	0
1.00	90.00	246	128	128
2.00	91.00	26,304	13,275	13,403
3.00	92.00	58,028	42,166	55,569
4.00	93.00	96,354	77,191	132,760

Culvert / Orifice Structures

	[A]	[B]	[C]	[D]
Rise in	= 16.0	0.0	0.0	0.0
Span in	= 16.0	0.0	0.0	0.0
No. Barrels	= 2	0	0	0
Invert El. ft	= 89.00	0.00	0.00	0.00
Length ft	= 37.0	0.0	0.0	0.0
Slope %	= 1.62	0.00	0.00	0.00
N-Value	= .013	.000	.000	.000
Orif. Coeff.	= 0.60	0.00	0.00	0.00
Multi-Stage	= -----	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len ft	= 0.0	0.0	0.0	0.0
Crest El. ft	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Eqn. Exp.	= 0.00	0.00	0.00	0.00
Multi-Stage	= No	No	No	No

Tailwater Elevation = 1.00 ft

Note: All outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Discharge cfs
0.00	0	89.00	0.00	---	---	---	---	---	---	---	0.00
1.00	128	90.00	7.77	---	---	---	---	---	---	---	7.77
2.00	13,403	91.00	15.52	---	---	---	---	---	---	---	15.52
3.00	55,569	92.00	20.54	---	---	---	---	---	---	---	20.54
4.00	132,760	93.00	24.55	---	---	---	---	---	---	---	24.55

Hydrograph Plot

English

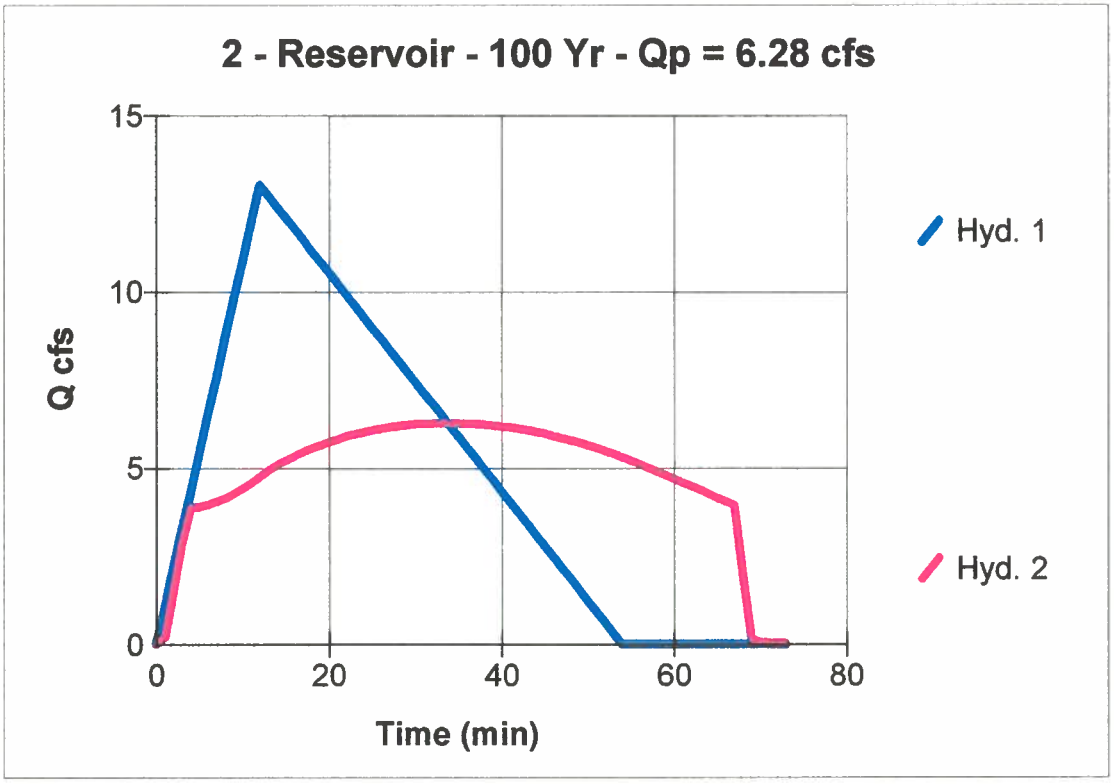
Hyd. No. 2

Det Pond w/ One pipe

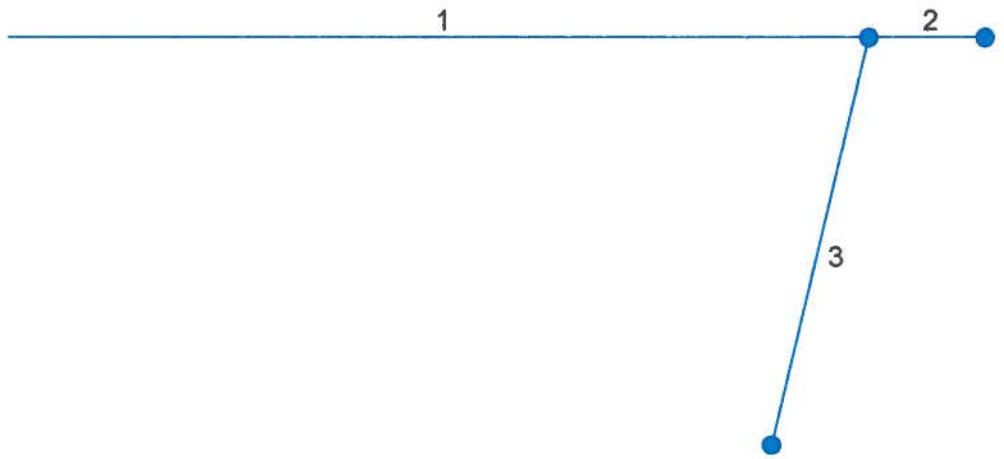
Hydrograph type	= Reservoir	Peak discharge	= 6.28 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 1	Reservoir name	= Campus Open Spa
Max. Elevation	= 90.54 ft	Max. Storage	= 7,291 cuft

Storage Indication method used.

Total Volume = 21,114 cuft



Hydraflow Plan View



Project file: Hope Palomas Rev2.stm	IDF file: Hope.IDF	No. Lines: 3	05-24-2001

Hydraflow Storm Sewer Tabulation

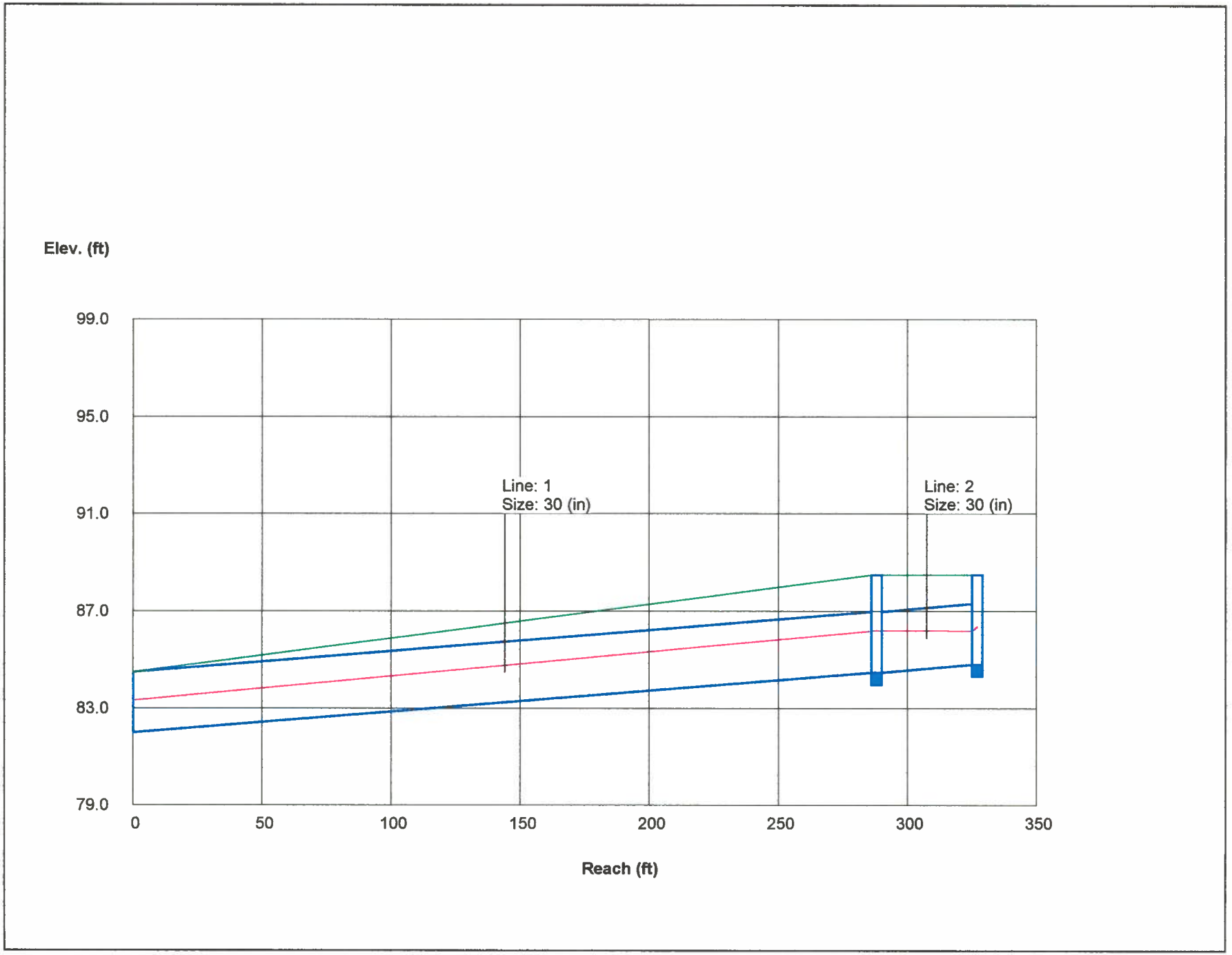
Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
1	End	288.0	0.00	0.00	0.00	0.00	0.00	0.0	0.7	0.0	26.40	49.47	8.70	30	0.86	84.48	82.00	86.20	83.32	84.50	88.50	Outlet Line
2	1	39.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	9.50	38.29	3.03	30	0.87	84.82	84.48	86.19	86.22	88.50	88.50	Triple Inlet
3	1	126.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	6.10	22.62	3.36	24	1.00	85.74	84.48	86.61	86.22	88.50	89.50	Bee Hive SS

Project File: Hope Palomas Rev2.stm | I-D-F File: Hope.IDF | Total number of lines: 3 | Run Date: 05-24-2001

NOTES: Intensity = 0.00 / (Tc + 0.00) ^ 0.00; Return period = 100 Yrs. ; Initial tailwater elevation = 83.32 (ft)

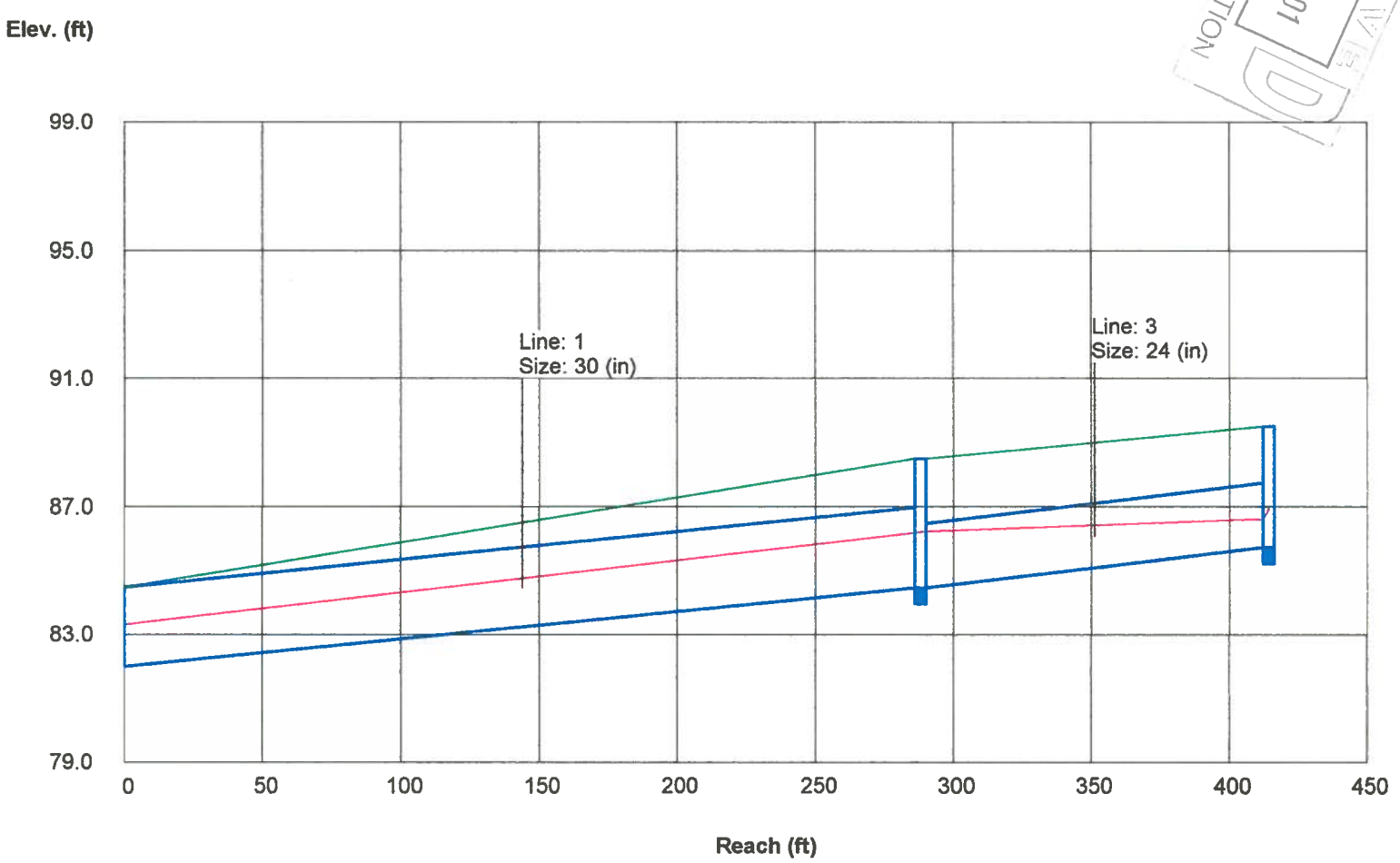
Storm Sewer Profile

Proj. file: Hope Palomas Rev2.stm



Storm Sewer Profile

Proj. file: Hope Palomas Rev2.stm



City of Albuquerque

July 28, 2000

Chris Weiss, P.E.
C.L.Weiss Engineering
P.O. Box 97
Sandia Park, NM 87047

Attn: Bryan Bobrick

RE: HOPE CHRISTIAN SCHOOL CAMPUS ADDITION (D18-D9). Revised GRADING AND DRAINAGE PLAN FOR BUILDING PERMIT APPROVAL. ENGINEER'S STAMP DATED JULY 17, 2000.

Dear Mr. Weiss:

Based on the information provided in your July 19, 2000 submittal, the above referenced project is approved forBuilding Permit. Please furnish the Zone Atlas and FIRM Panel numbers on Sheet C-2. Also, note that only the Inspector's signature now is required on the SO#19 Permit.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

A separate permit is required for construction within the City right-of-way. A copy of this approval letter must be on hand when applying for the excavation permit.

Prior to Certificate of Occupancy approval, an Engineer's Certification per the DPM will be required.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,

John P. Murray, P.E.
Hydrology

cv Pam Lujan
Whitney Reierson
File

City of Albuquerque

May 18, 2000

Chris Weiss, PE
C.L. Weiss Engineering, Inc.
PO Box 97
Sandia Park, NM 87047

Re: Hope Christian School Campus Additions Grading and Drainage Plan
Engineer's Stamp dated 5-3-00, (B18/D9)

Dear Mr. Weiss,

Based on your resubmittal dated 5-3-00, the above referenced plan is approved for Building Permit and SO#19 Permit.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

A separate permit is required for construction within City R/W. A copy of this approval letter must be on hand when applying for the excavation permit.

Also, prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

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

Sincerely,

Bradley L. Bingham

Bradley L. Bingham, PE
Hydrology Review Engineer

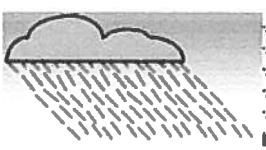
C: file

Hope Christian School

Palomas Campus

CHRISTOPHER L. WEISS
NEW MEXICO
6658
REGISTERED PROFESSIONAL ENGINEER

C.L. Weiss Engineering, Inc P.O. Box 97 Sandia Park, NM 87047
Tele/Fax - (505) 281-1800 E-Mail - clwnm@earthlink.net



Background

Palomas Campus

The Palomas Hope Christian School is a private facility located west of Louisiana Blvd., between Palomas Ave. and the Domingo Baca concrete channel. The purpose of this report is an update of the original drainage submittal to reflect proposed campus improvements, including an athletic field expansion, a music building addition, and paving an existing gravel parking area. These items reflect the overall land use patterns established by the original site plan prepared by Dekker-Perich Architects, dated 3-23-94. Additionally, this submittal provides current information regarding new classrooms and other campus changes which have been constructed in the interim period.

The site is isolated from any off-site drainage due the presence of the surrounding streets, with Louisiana Blvd. draining to an inlet connected to the Domingo Baca channel, and Palomas Ave. directing flows west past the campus.

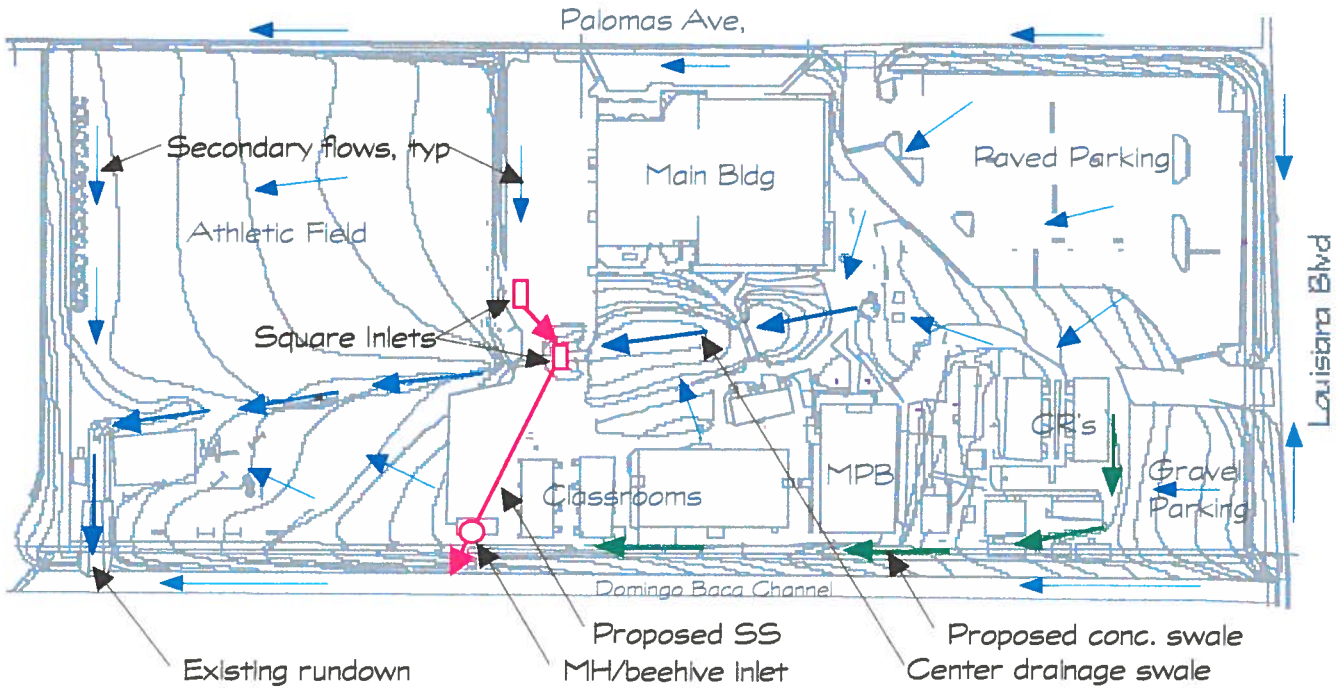
Internal flows are handled by a central drainage swale which provides the main flow path through the campus, with secondary routes collecting flows from the south and north sides. All flows converge at the SW corner of the site and drain over a concrete rundown into the Domingo Baca channel (see photos).

Flow patterns throughout the campus will remain unchanged, with the exception of two areas where drainage paths are in conflict with the proposed improvements. The first drainage improvement concerns flows crossing the athletic/playground area from the center drainage swale and the west parking area. Storm runoff from these sub-basins will be intercepted by a new SS system and routed directly into Domingo Baca channel. The inlets will be positioned to collect flows at the existing low points for each sub-basin, thus minimizing changes to the existing infrastructure.

The second proposed area of improvement is the south drainage route. Beginning at the east existing gravel parking lot, shown as a future paved area on the grading plan, drainage follows a western route to the east side of the Multipurpose Building, then north to the center campus swale. The proposed music building addition will create a conflict with this flow path. However, it is possible to redirect the drainage to the west along the south side of the proposed Multipurpose/Music Building. Swale improvements will consist of a concrete valley gutter to define the flow path and improve flow characteristics along the south side of the campus. The valley gutter section will extend from the east parking area, west to the new SS referenced above. Flows will be intercepted at a new drop inlet, eliminating surface drainage from this portion of the campus crossing the athletic field.

As a result of these improvements, the athletic field will be protected from upstream campus flows and flow patterns along the south side of campus will be improved.

Existing Campus Drainage



Reconstruction of the athletic field, with a regulation sized soccer field reorientated in a N-S direction, will block the existing surface flow patterns crossing the southern portion of the field. Surface flows from the center drainage swale and west parking area will be captured by new storm inlets located as shown above (red line).

Additional drainage improvements will be constructed along the south side of the campus. A concrete swale will direct those flows to a new inlet on the SS line located near the outlet into the Domingo Baca channel (green arrows).

The existing surface rundown located at the SW corner of the campus will remain to serve as a discharge point for drainage from the athletic field.

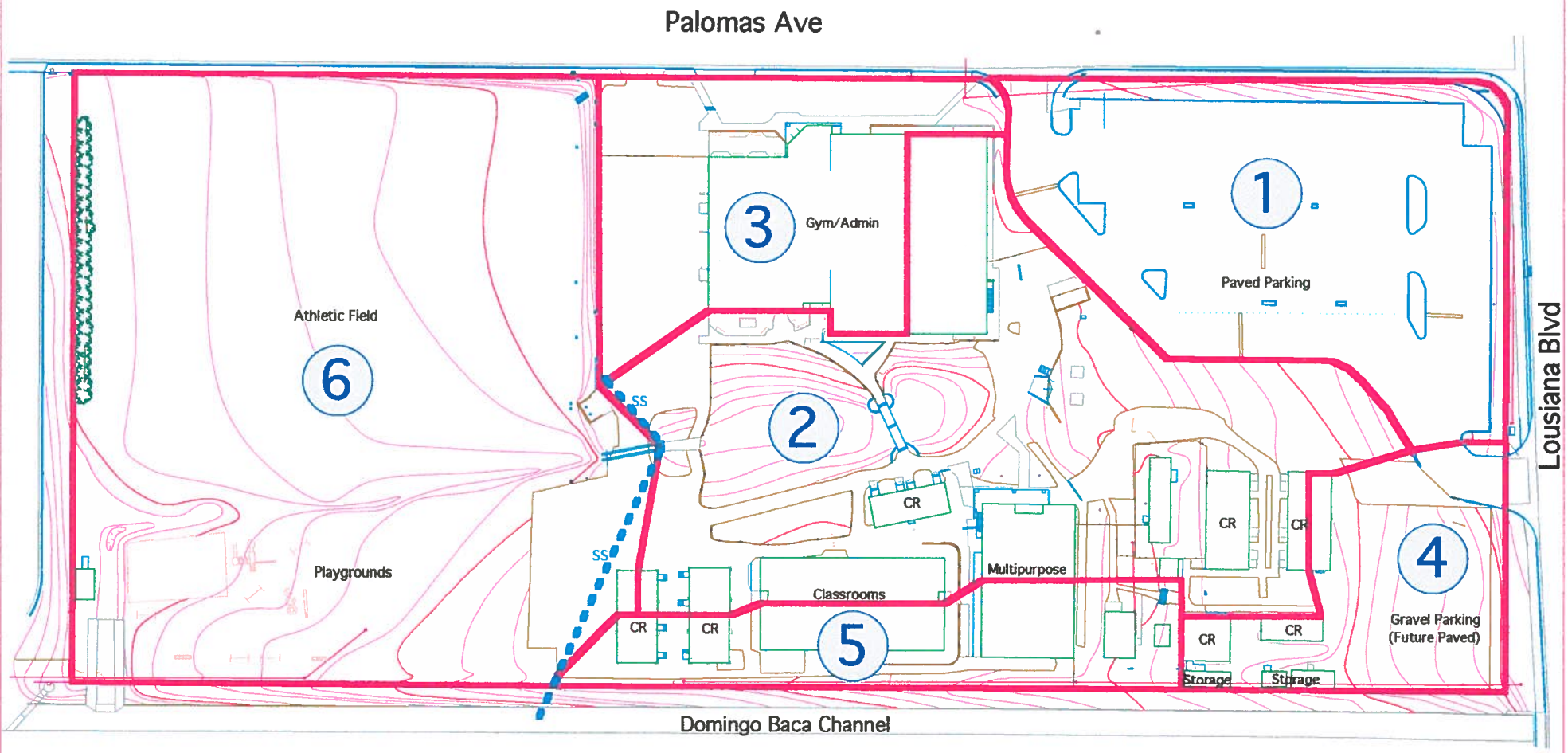
Drainage System Notes

The campus drainage improvements will include a SS pipe system, using either a COA Type "D" inlet with a Neenah steel square grate (Catg # R-3574-L), or a standard 6' dia MH with a Neenah round grate (Catg #R-2561). A triple inlet will be required for the center drainage swale, along with a single inlet to intercept runoff from the west parking area. A MH with a round beehive grate will be required at the outlet of the south drainage swale. The SS pipe will be an 12" dia PVC pipe between the first two inlets, a 24" dia PVC pipe for the second reach, with the remaining SS a 36" dia. RCP from the MH to the outlet into the Domingo Baca channel.

The south surface swale will be a 3' wide concrete valley gutter, following a route from the southeast parking area along the south side of the campus (see grading plan).

Calculations

The following calculations analyze the peak flows generated for the internal sub-basins, reflecting the proposed campus improvements. Storm sewer summary data and design profiles reflect the proposed SS drainage improvements.



Drainage Sub-basins

North

CALCULATIONS: HOPE SCHOOL - PALOMAS CAMPUS

Calculations are based on the Drainage Design Criteria for Bernalillo County Section 22.2, DPM, Vol 2, dated Jan. 1993 - Prep. Zone #3

SUB-BASIN 1 - East Parking Area

Area of sub-basin flows = 58017 SF = 1.6 Ac.

The following calculations are based on Treatment areas as shown in table to the right

Sub-basin Weighted Excess Precipitation (see formula above)

Weighted E = 2.27 in.

Sub-basin Volume of Runoff (see formula above)

V360 = 10996 CF

Sub-basin Peak Discharge Rate: (see formula above)

Qp = 6.5 cfs

TREATMENT	
A =	0%
B =	0%
C =	8%
D =	92%

SUB-BASIN 2 - Center Drainage Swale

Area of sub-basin flows = 91592 SF = 2.1 Ac.

The following calculations are based on Treatment areas as shown in table to the right

Sub-basin Weighted Excess Precipitation (see formula above)

Weighted E = 2.02 in.

Sub-basin Volume of Runoff (see formula above)

V360 = 15422 CF

Sub-basin Peak Discharge Rate: (see formula above)

Qp = 9.5 cfs

TREATMENT	
A =	0%
B =	5%
C =	25%
D =	70%

SUB-BASIN 3 - Admin Bldg / West Parking Area

Area of sub-basin flows = 35588 SF = 0.8 Ac.

The following calculations are based on Treatment areas as shown in table to the right

Sub-basin Weighted Excess Precipitation (see formula above)

Weighted E = 2.29 in.

Sub-basin Volume of Runoff (see formula above)

V360 = 6785 CF

Sub-basin Peak Discharge Rate: (see formula above)

Qp = 4.0 cfs

TREATMENT	
A =	0%
B =	5%
C =	0%
D =	95%

SUB-BASIN 4 - Southeast Parking Area

Area of sub-basin flows = 23402 SF = 0.5 Ac.

The following calculations are based on Treatment areas as shown in table to the right

Sub-basin Weighted Excess Precipitation (see formula above)

Weighted E = 2.04 in.

Sub-basin Volume of Runoff (see formula above)

V360 = 3976 CF

Sub-basin Peak Discharge Rate: (see formula above)

Qp = 2.4 cfs

TREATMENT	
A =	0%
B =	0%
C =	30%
D =	70%

SUB-BASIN 5 - South Drainage Swale

Area of sub-basin flows = 22941 SF = 0.5 Ac.

The following calculations are 3

Sub-basin Weighted Excess Precipitation (see formula above)

Weighted E = 2.00 in.

Sub-basin Volume of Runoff (see formula above)

V360 = 3827 CF

Sub-basin Peak Discharge Rate: (see formula above)

Qp = 2.4 cfs

TREATMENT	
A =	0%
B =	10%
C =	20%
D =	70%

SUB-BASIN 6 - Athletic Field

Area of sub-basin flows = 140675 SF = 3.2 Ac.

The following calculations are based on Treatment areas as shown in table to the right

Sub-basin Weighted Excess Precipitation (see formula above)

Weighted E = 1.06 in.

Sub-basin Volume of Runoff (see formula above)

V360 = 12473 CF

Sub-basin Peak Discharge Rate: (see formula above)

Qp = 9.2 cfs

TREATMENT	
A =	0%
B =	90%
C =	0%
D =	10%

SUMMARY

Developed Discharge Rate - Sub-Basin 1	=	6.5	CFS	Drain to Basin 2
Developed Discharge Rate - Sub-Basin 2	=	9.5	CFS	Drain to SS Inlet
Developed Discharge Rate - Sub-Basin 3	=	4.0	CFS	Drain to SS Inlet
Developed Discharge Rate - Sub-Basin 4	=	2.4	CFS	Drain to valley gutter
Developed Discharge Rate - Sub-Basin 5	=	2.4	CFS	Drain to SS Inlet
Developed Discharge Rate - Sub-Basin 6	=	9.2	CFS	Drain to existing rundown
		34.0	CFS	Drain to Domingo Baca Channel

Inlet Capacity - Sub-Basins 1 & 2

Q = C*A * (2*g*h) ^ 0.5

Where			
	Q =	11.1	cfs
	C =	0.6	
	A =	2.30	sq.ft.
	g =	32.2	ft/sec^2
	h =	1	ft

Note: Area (A) at left, is based on the open area of a Neenah single steel square grate (Catg # 3574 -L - vane inlet). Based on calculations shown, a single inlet with a head of 1' will accept 11.1 cfs. If the inlet becomes 50% clogged, the inlet will accept 5.5 cfs. Combined flows from Sub-Basins 1 & 2 of 16 cfs will require a triple inlet. Orient vanes in direction of flow.

Inlet Capacity - Sub-Basin 3

Q = C*A * (2*g*h) ^ 0.5

Where			
	Q =	7.8	cfs
	C =	0.6	
	A =	2.30	sq.ft.
	g =	32.2	ft/sec^2
	h =	0.5	ft

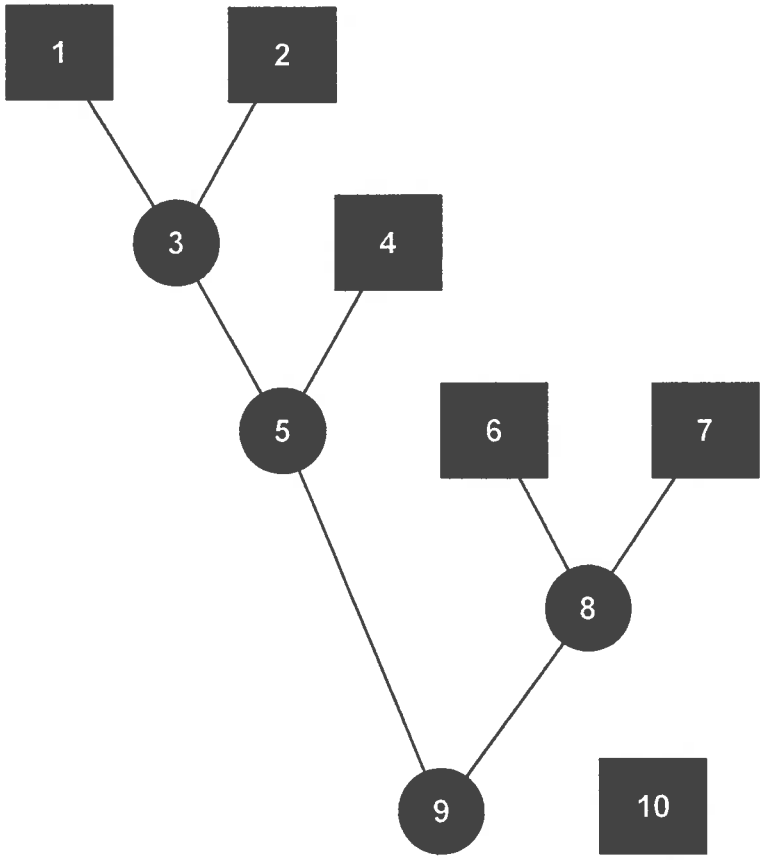
Note: Area (A) at left, is based on the open area of a Neenah single steel square grate (Catg # 3574 -L - vane inlet). Based on calculations shown, a single inlet with a head of 0.5' will accept 7.8 cfs. If the inlet becomes 50% clogged, the inlet will accept 3.9 cfs. Flows from Sub-Basin 3 of 4 cfs will require a single inlet. Orient vanes in direction of flow.

Inlet Capacity - Sub-Basins 4 & 5

Q = C*A * (2*g*h) ^ 0.5

Where			
	Q =	9.6	cfs
	C =	0.6	
	A =	2.00	sq.ft.
	g =	32.2	ft/sec^2
	h =	1	ft

Note: Area (A) at left, is based on the open area of a single Neenah steel round beehive grate (Catg # R-2561). Based on calculations shown, a single inlet with a head of 1.0' will accept 9.6 cfs. If the inlet becomes 50% clogged, the inlet will accept 4.8 cfs. Flows from Sub-Basins 4 & 5 of 4.8 cfs will require a single inlet.



Project: Hope Palomas.GPW	IDF: Hope.IDF	10 hyd's	03-30-2000

Hydrograph Plot

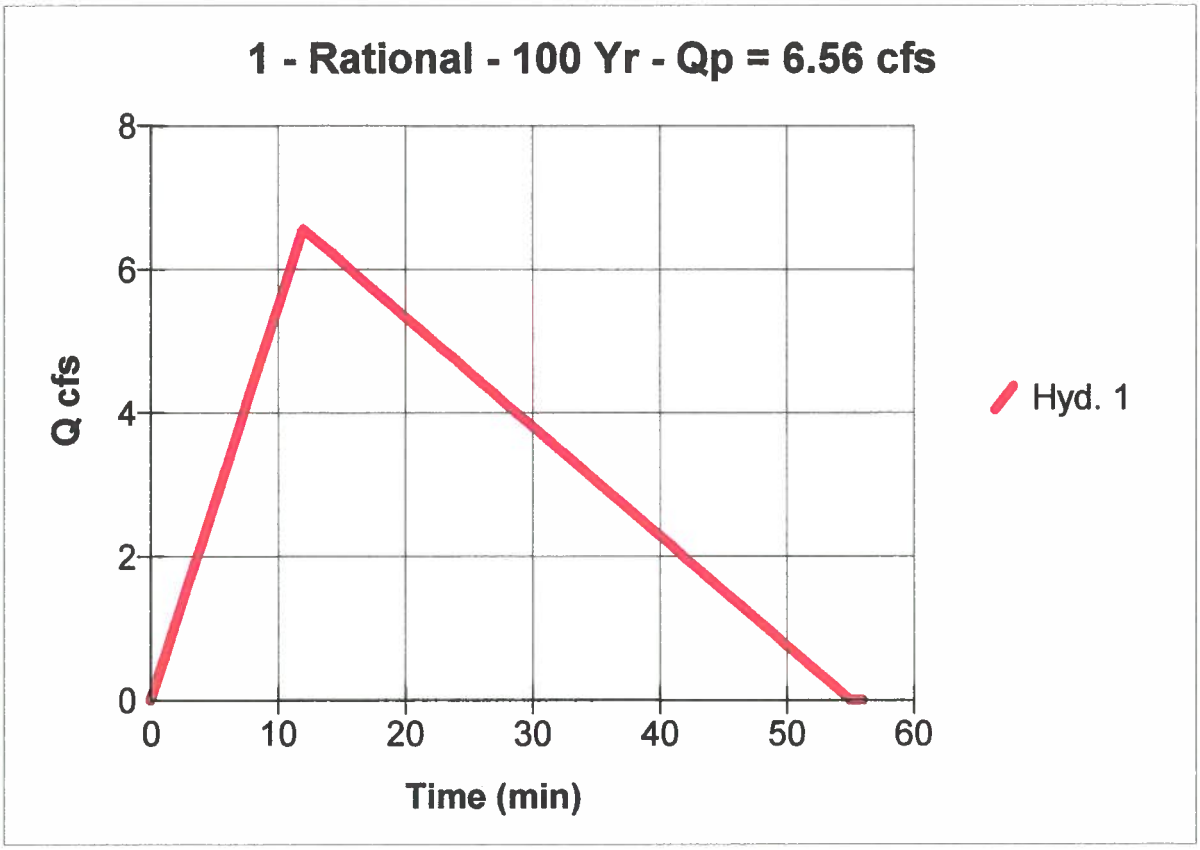
English

Hyd. No. 1

Sub-basin 1

Hydrograph type	= Rational	Peak discharge	= 6.56 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 1.6 ac	Runoff coeff.	= 0.67
Intensity	= 6.12 in	Time of conc. (Tc)	= 12 min
I-D-F Curve	= Hope.IDF	Reced. limb factor	= 3.657

Total Volume = 10,997 cuft



Hydrograph Plot

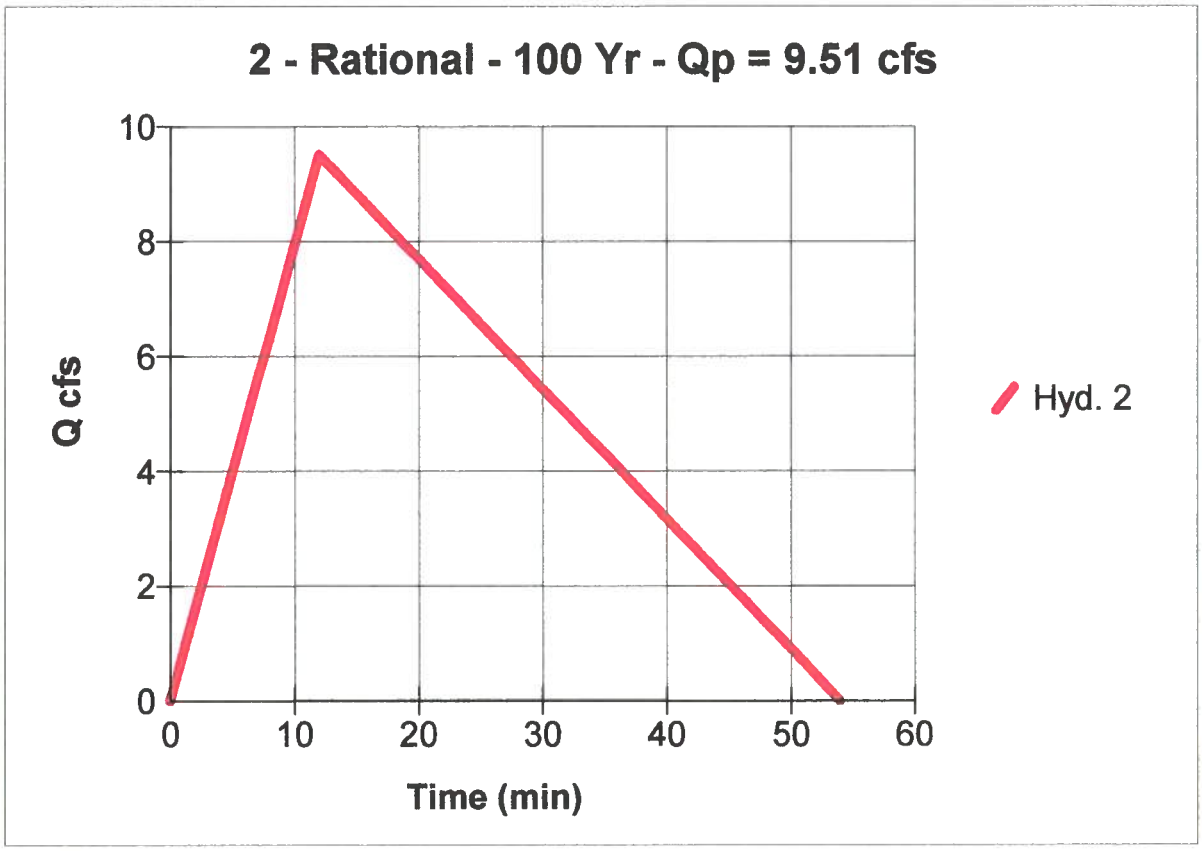
English

Hyd. No. 2

Sub-basin 2

Hydrograph type	= Rational	Peak discharge	= 9.51 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 2.1 ac	Runoff coeff.	= 0.74
Intensity	= 6.12 in	Time of conc. (Tc)	= 12 min
I-D-F Curve	= Hope.IDF	Reced. limb factor	= 3.505

Total Volume = 15,422 cuft



Hydrograph Plot

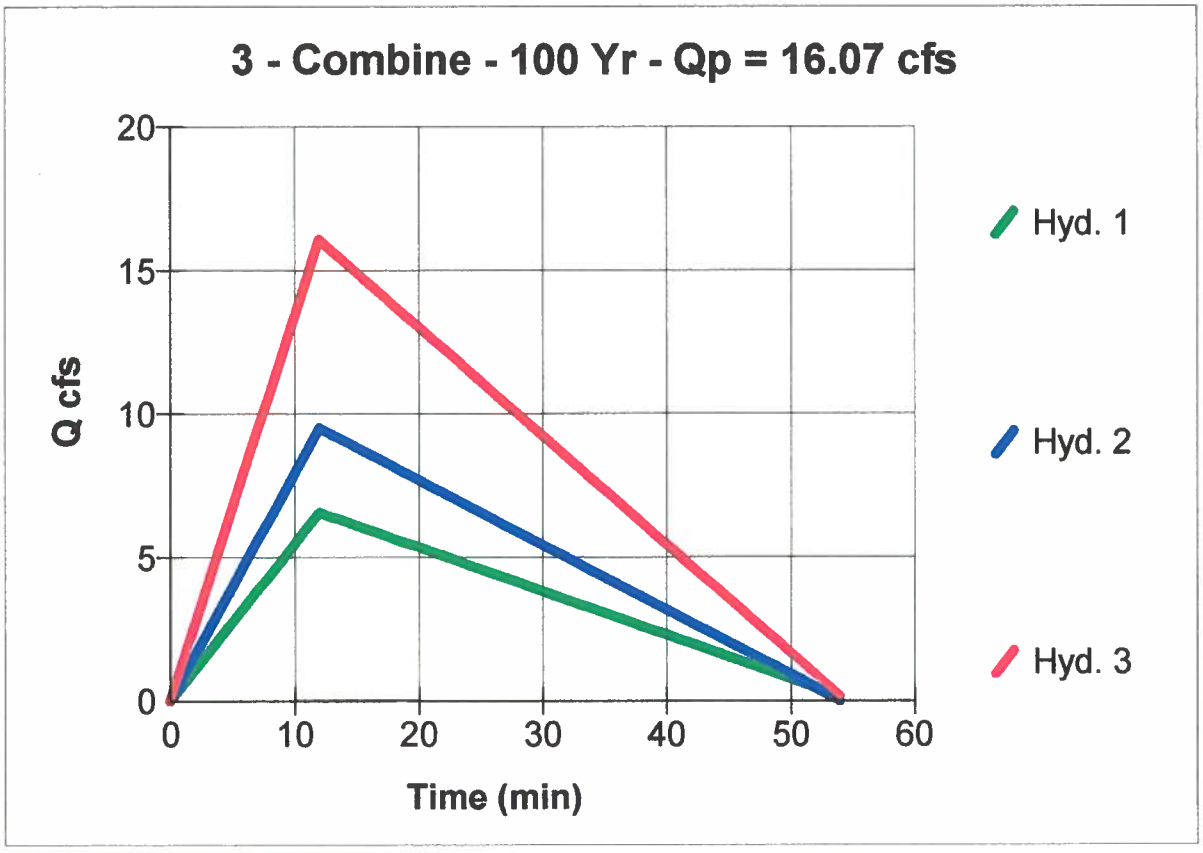
English

Hyd. No. 3

Basin 1 & 2

Hydrograph type	= Combine	Peak discharge	= 16.07 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
1st inflow hyd. No.	= 1	2nd inflow hyd. No.	= 2

Total Volume = 26,228 cuft



Hydrograph Plot

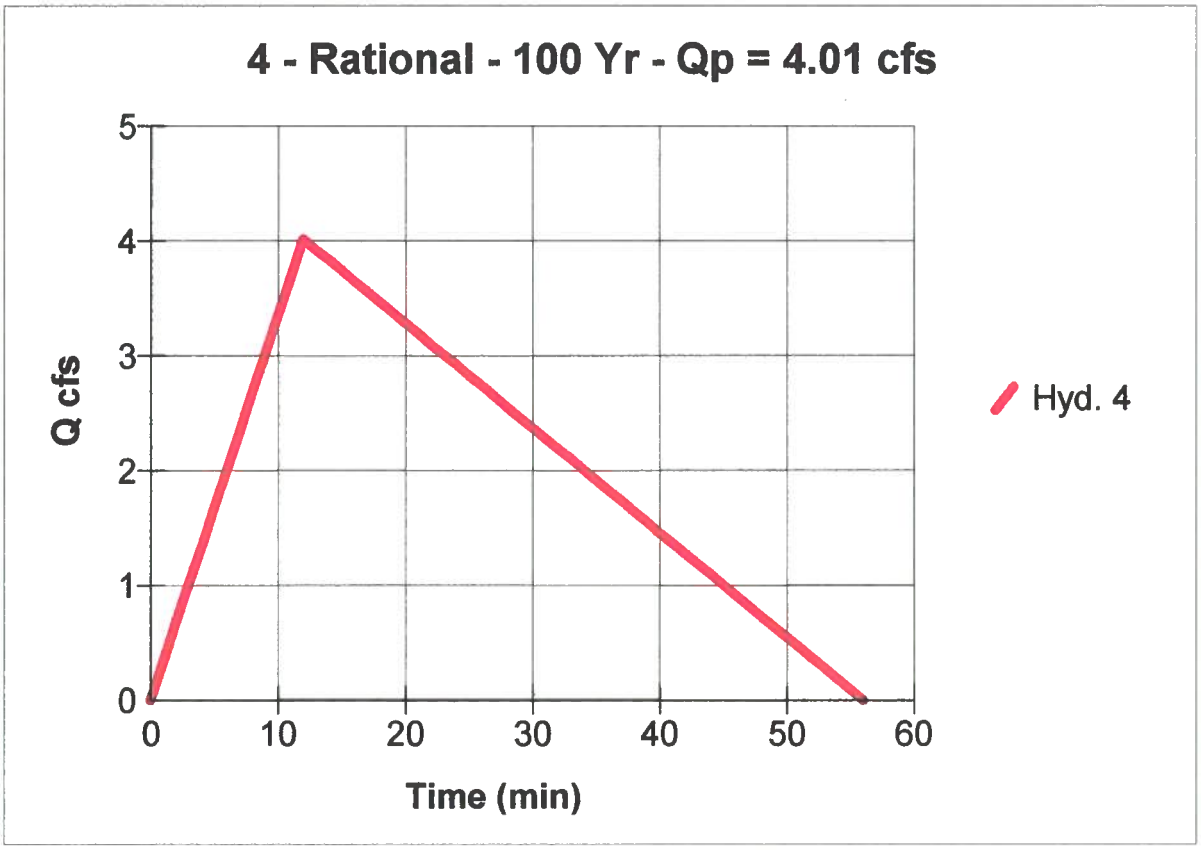
English

Hyd. No. 4

Sub-basin 3

Hydrograph type	= Rational	Peak discharge	= 4.01 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 0.8 ac	Runoff coeff.	= 0.82
Intensity	= 6.12 in	Time of conc. (Tc)	= 12 min
I-D-F Curve	= Hope.IDF	Reced. limb factor	= 3.696

Total Volume = 6,786 cuft



Hydrograph Plot

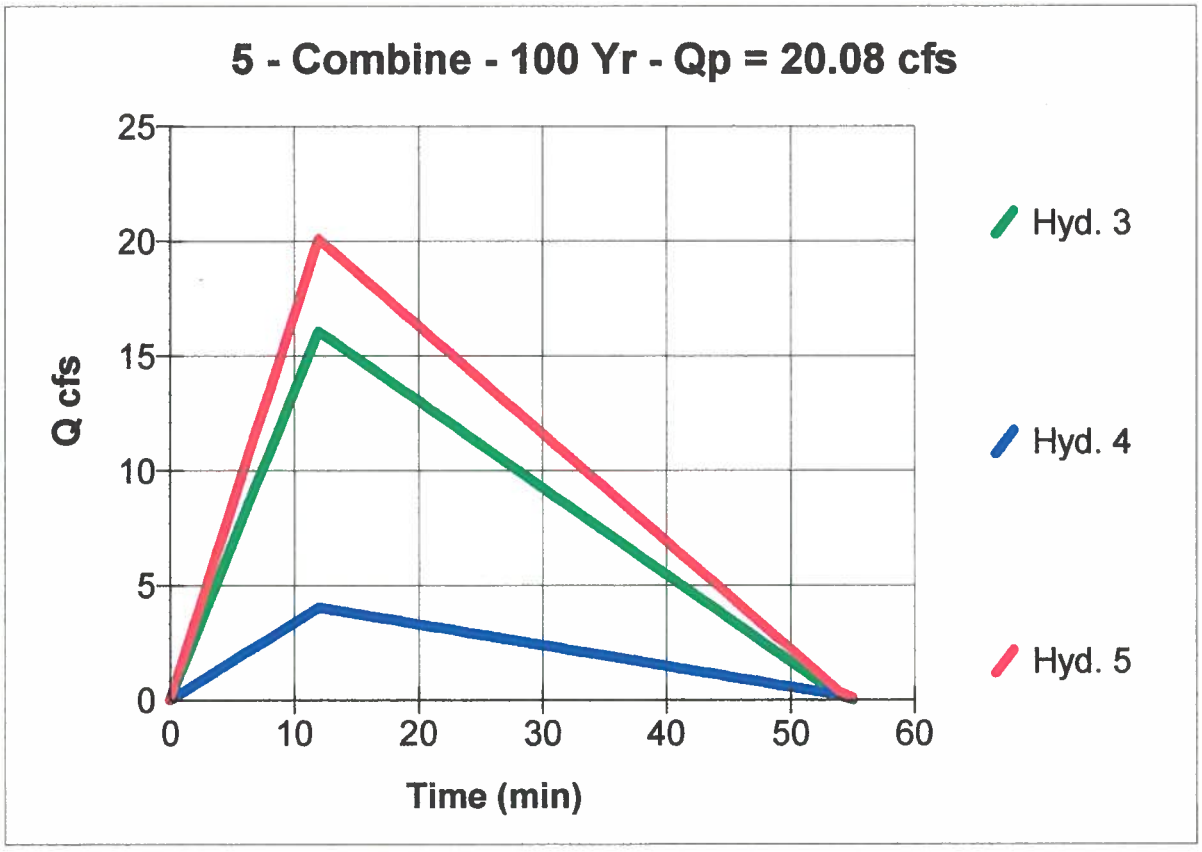
English

Hyd. No. 5

Basin 1 -3

Hydrograph type	= Combine	Peak discharge	= 20.08 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
1st inflow hyd. No.	= 3	2nd inflow hyd. No.	= 4

Total Volume = 32,972 cuft



Hydrograph Plot

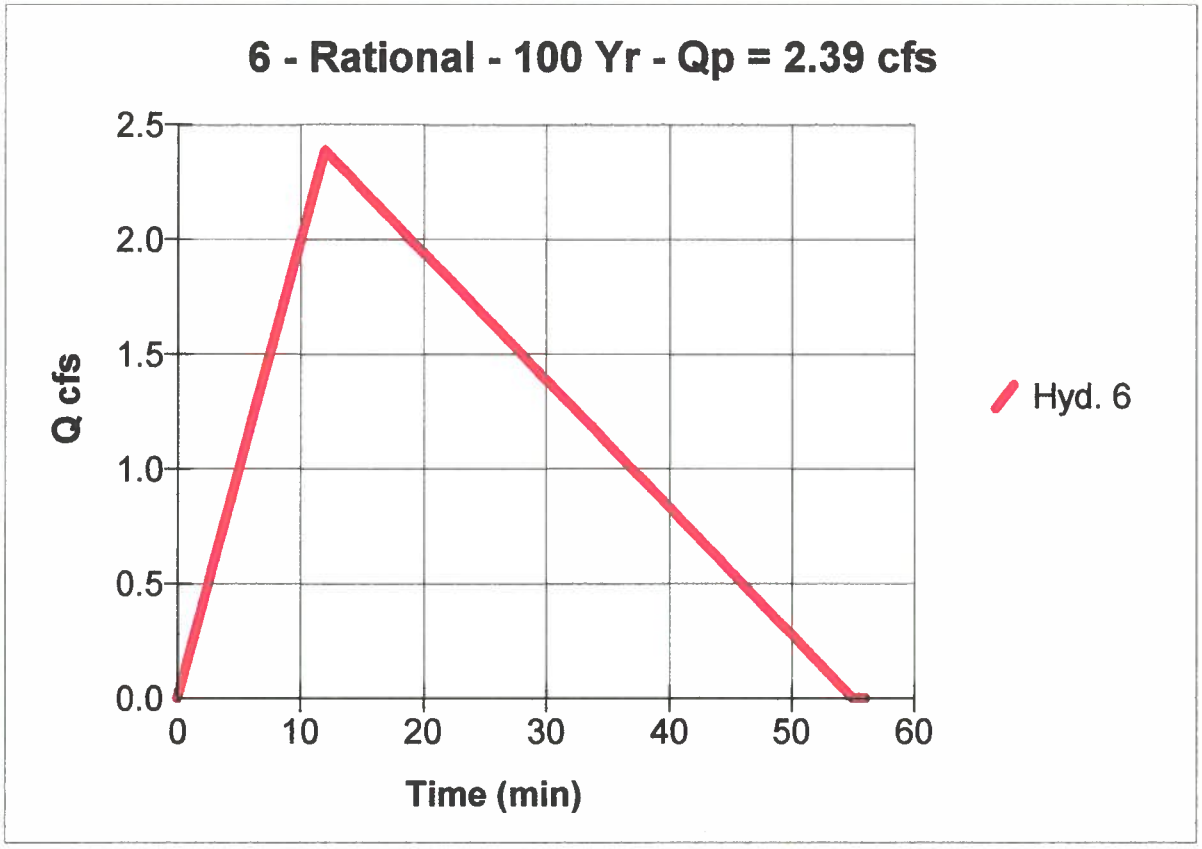
English

Hyd. No. 6

Sub-basin 4

Hydrograph type	= Rational	Peak discharge	= 2.39 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 0.5 ac	Runoff coeff.	= 0.78
Intensity	= 6.12 in	Time of conc. (Tc)	= 12 min
I-D-F Curve	= Hope.IDF	Reced. limb factor	= 3.6285

Total Volume = 3,976 cuft



Hydrograph Plot

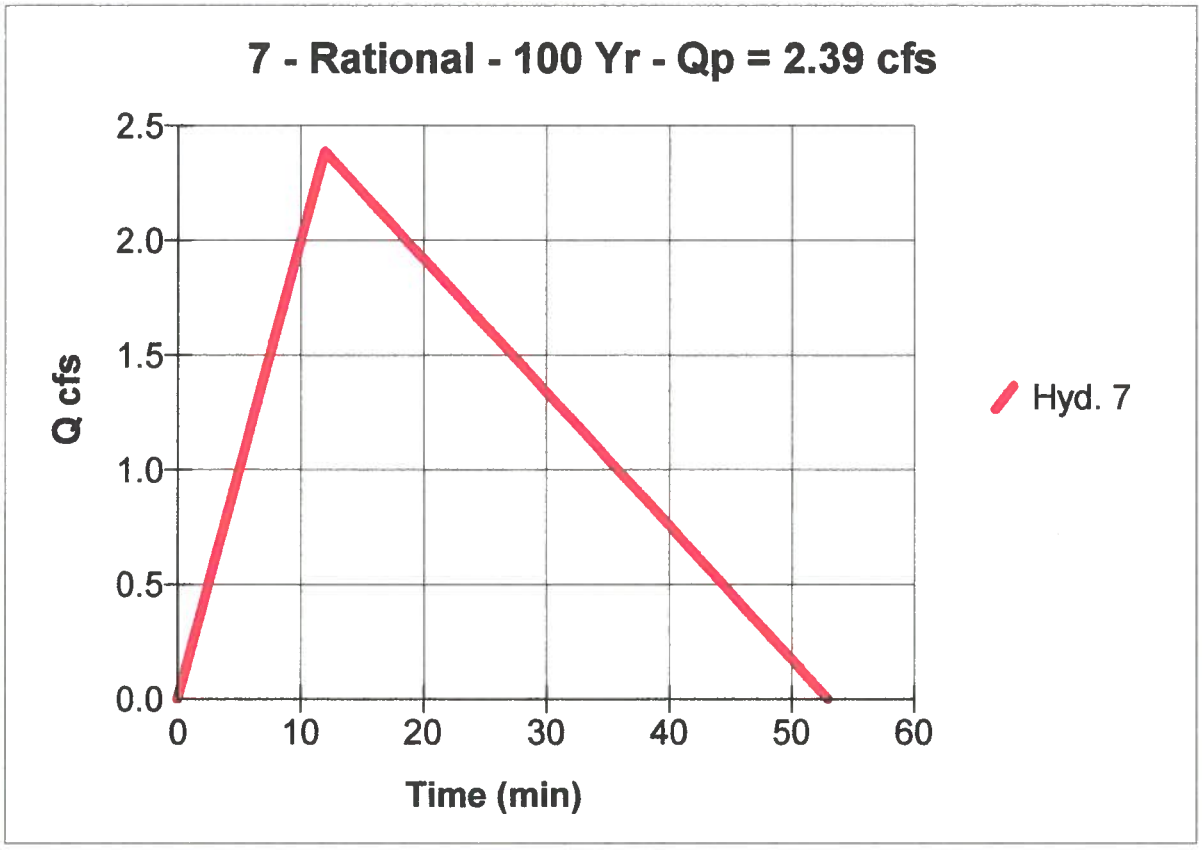
English

Hyd. No. 7

Sub-basin 5

Hydrograph type	= Rational	Peak discharge	= 2.39 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 0.5 ac	Runoff coeff.	= 0.78
Intensity	= 6.12 in	Time of conc. (Tc)	= 12 min
I-D-F Curve	= Hope.IDF	Reced. limb factor	= 3.454

Total Volume = 3,827 cuft



Hydrograph Plot

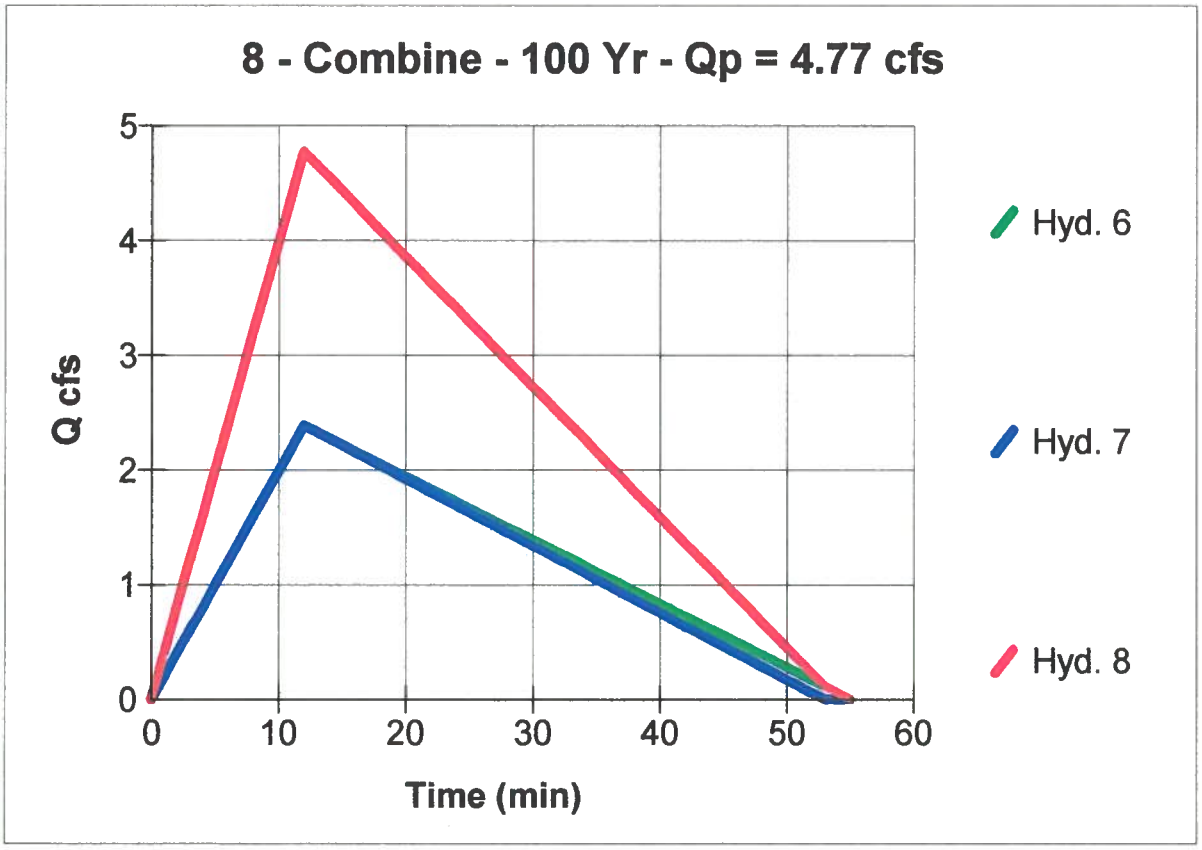
English

Hyd. No. 8

South Basins

Hydrograph type	= Combine	Peak discharge	= 4.77 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
1st inflow hyd. No.	= 6	2nd inflow hyd. No.	= 7

Total Volume = 7,732 cuft



Hydrograph Plot

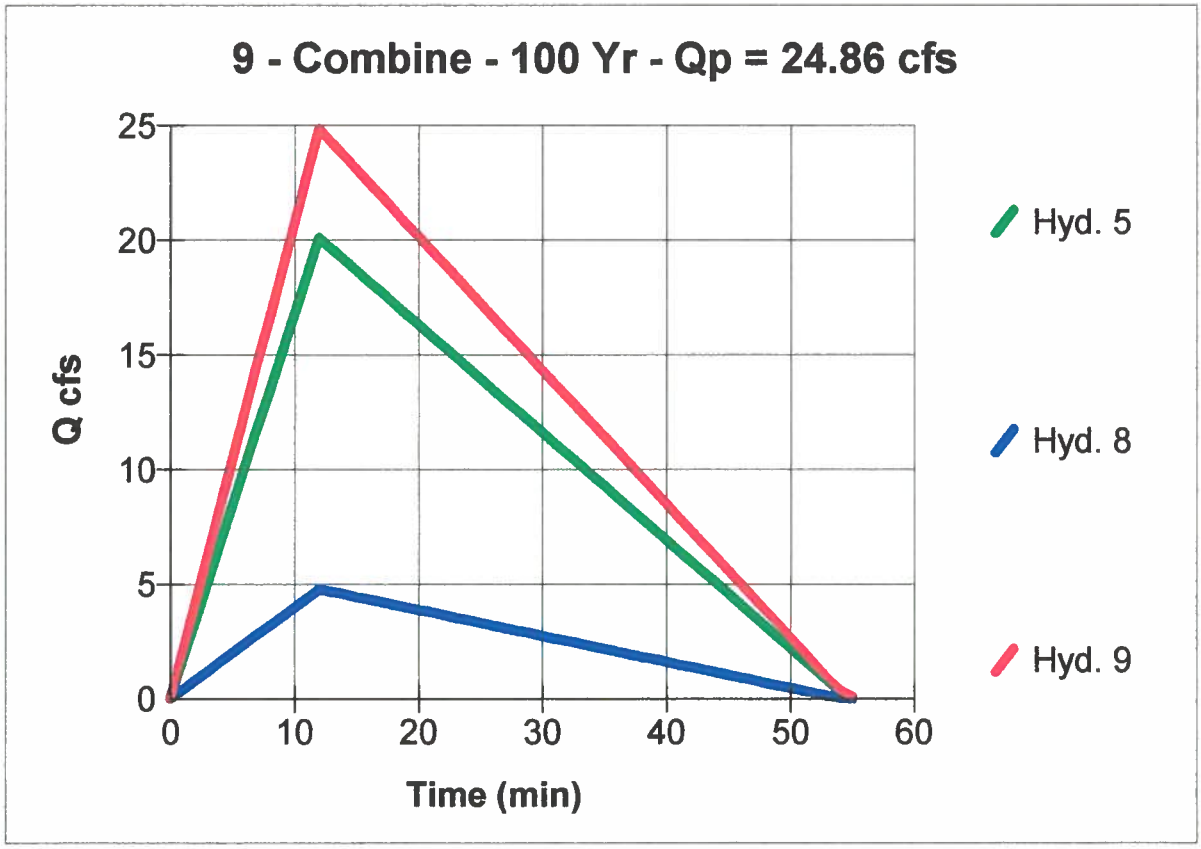
English

Hyd. No. 9

SS Outlet

Hydrograph type	= Combine	Peak discharge	= 24.86 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
1st inflow hyd. No.	= 5	2nd inflow hyd. No.	= 8

Total Volume = 40,704 cuft



Hydrograph Plot

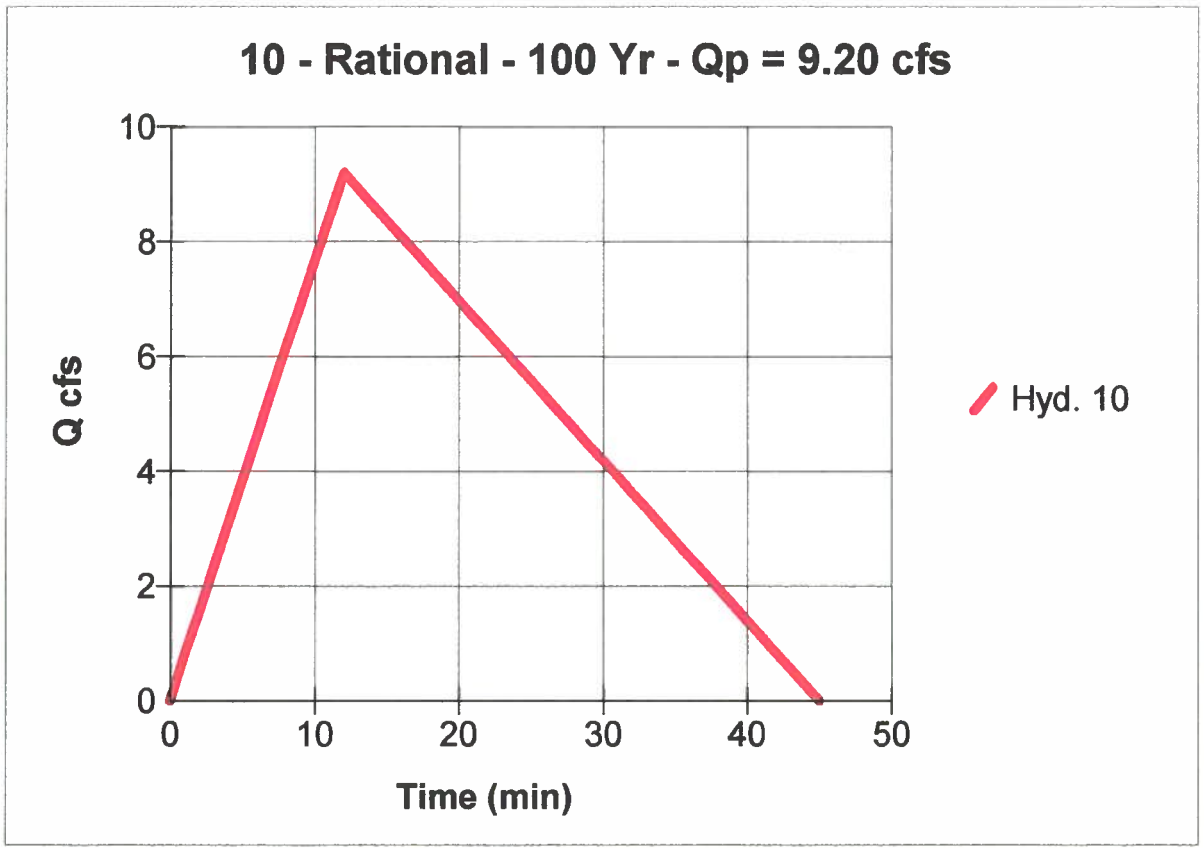
English

Hyd. No. 10

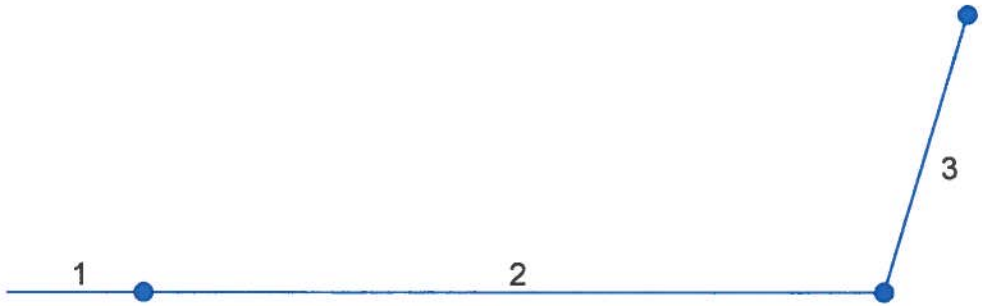
Athletic Field

Hydrograph type	= Rational	Peak discharge	= 9.20 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 3.2 ac	Runoff coeff.	= 0.47
Intensity	= 6.12 in	Time of conc. (Tc)	= 12 min
I-D-F Curve	= Hope.IDF	Reced. limb factor	= 2.7648

Total Volume = 12,473 cuft



Hydraflow Plan View



Project file: Hope Palomas.stm	IDF file: Hope.IDF	No. Lines: 3	03-31-2000

Hydraflow Summary Report

Line No.	Line ID	Flow rate (cfs)	Line size (in)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	Dns line No.
1	South Swale	24.80	36 c	30.0	83.00	84.80	6.000	83.82*	88.33*	0.01	End
2	Central Swale	20.00	24 c	164.0	84.80	86.40	0.976	88.34*	89.10*	0.11	1
3	West Parking	~~4.00~~ DWA OK	12 c	54.0	86.40	89.00	4.815	89.21	89.85	0.02	2

Project File: Hope Palomas.stm	I-D-F File: Hope.IDF	Total No. Lines: 3	Run Date: 03-31-2000

NOTES: c = circular; e = elliptical; b = box; Return period = 100 Yrs.; * Indicates surcharge condition.

Hydraflow Storm Sewer Tabulation

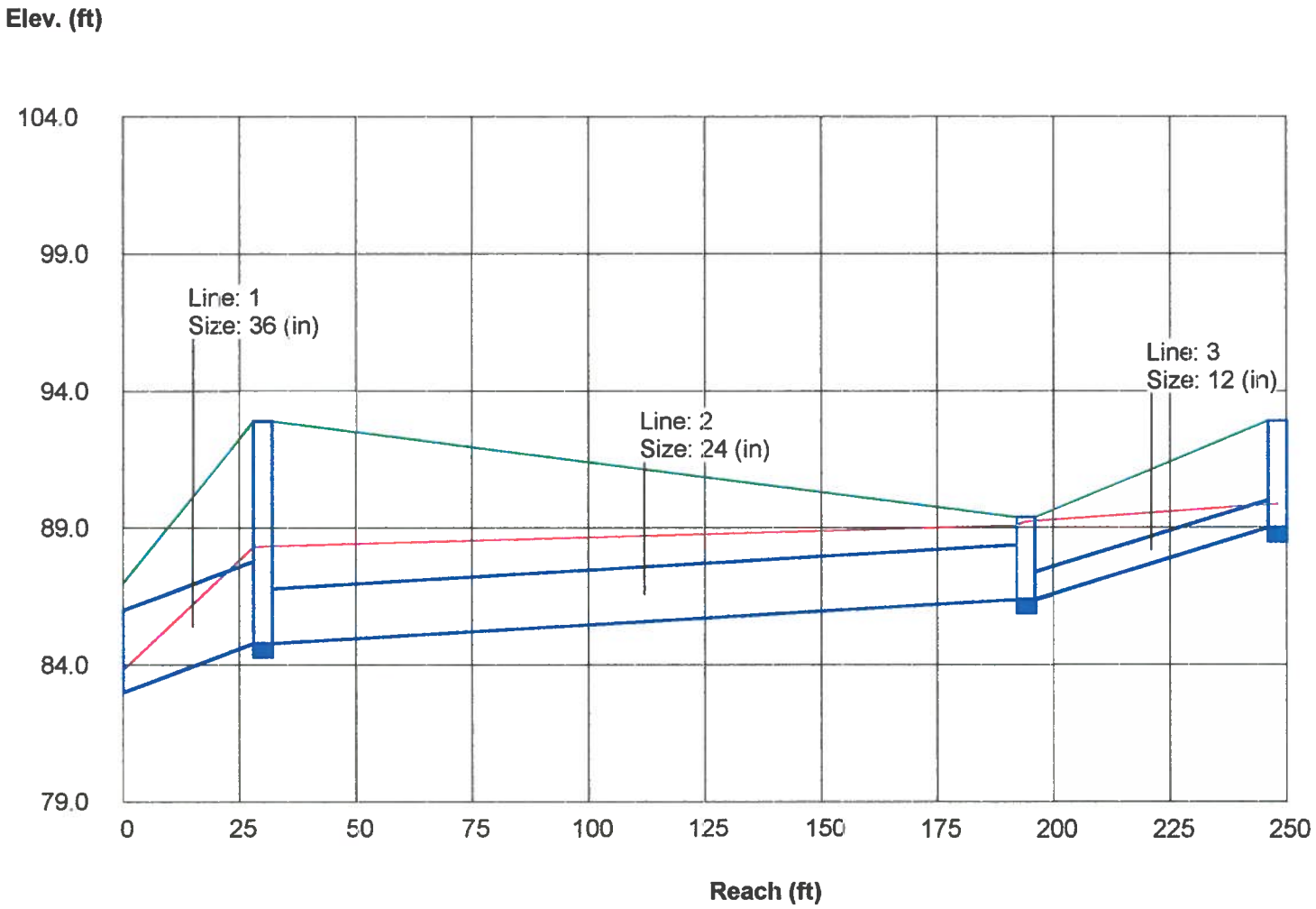
Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
1	End	30.0	0.00	0.00	0.00	0.00	0.00	0.0	1.2	0.0	24.80	163.4	9.68	36	6.00	84.80	83.00	88.33	83.82	87.00	92.90	South Swale
2	1	164.0	0.00	0.00	0.00	0.00	0.00	0.0	0.3	0.0	20.00	29.04	6.37	24	0.98	86.40	84.80	89.10	88.34	92.90	89.40	Central Swal
3	2	54.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.00	10.16	5.36	12	4.81	89.00	86.40	89.85	89.21	89.40	92.90	West Parking

Project File: Hope Palomas.stm | I-D-F File: Hope.IDF | Total number of lines: 3 | Run Date: 03-31-2000

NOTES: Intensity = 0.00 / (Tc + 0.00) ^ 0.00; Return period = 100 Yrs. ; Initial tailwater elevation = 83.82 (ft)

Storm Sewer Profile

Proj. file: Hope Palomas.stm



Summary of Results

General Notes:

- Sediment control geotextile fences should be used during the all phases of construction to control silting from all newly disturbed areas.

- SS inlets should be completely surrounded by silt fences at all times until site improvements are completed and the ground surface stabilized with pavement or other treatments. Wash-down from cement trucks should never be allowed to drain into the SS system.

- The designated square inlets use directional vane grates. The SS inlets should be positioned to provide proper orientation of the vanes to match the direction of flow to achieve maximum grate capacity.

- Pipe material designated as PVC reflects a generic product. Equivalent plastic products, such as PE pipe, can be used as long as the "n" value is 0.01.

- The SS pipe from the MH to the Domingo Baca channel connection must be reinforced concrete pipe, Class I RCP, per COA standards.

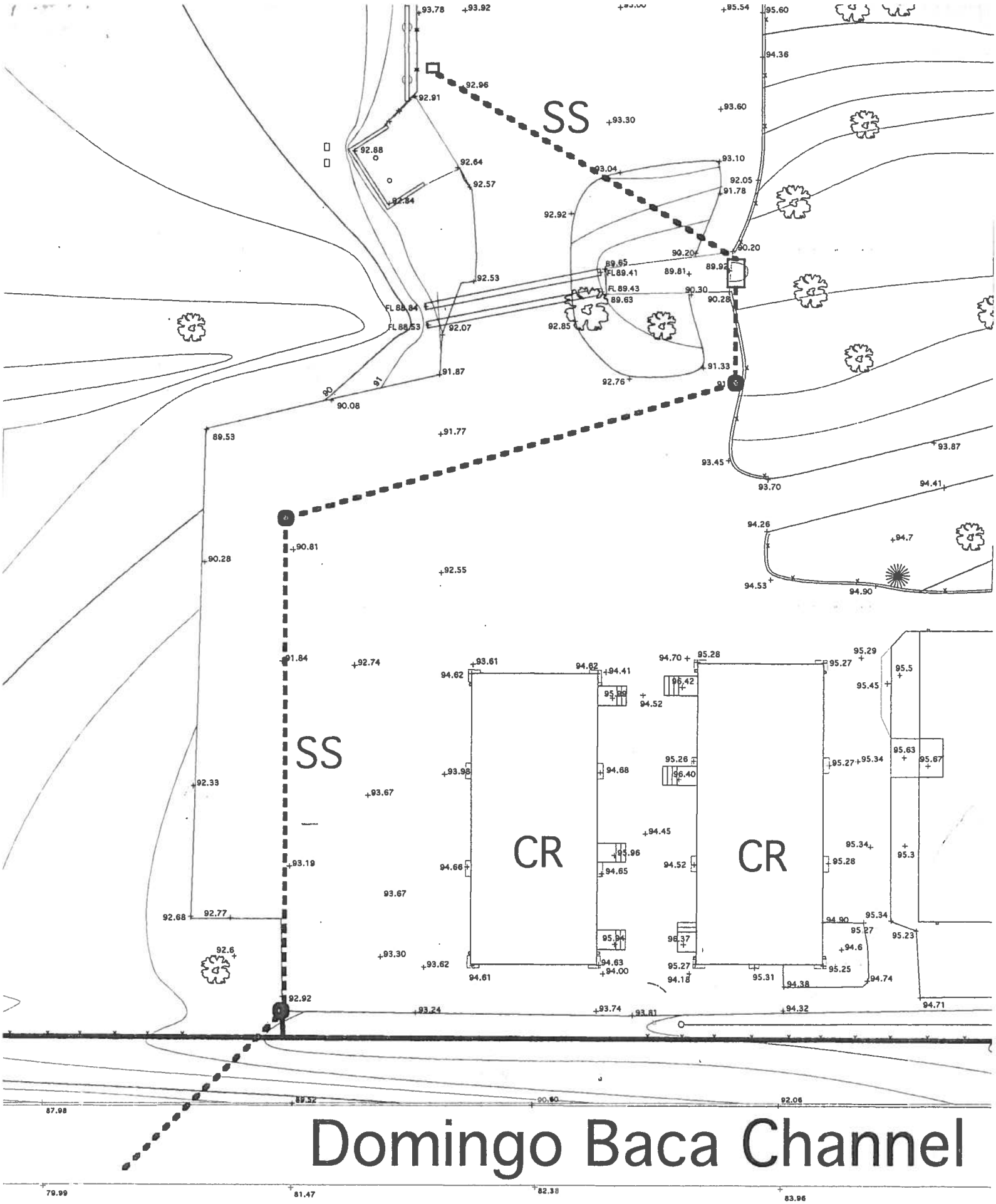
Drainage System Requirements

- An operating and maintenance schedule should be established for the SS pipe system and surface swales to insure long term reliability.
- Inspections and maintenance accessed through the inlets will insure that sediment and debris are not reducing the effective opening of the pipes.

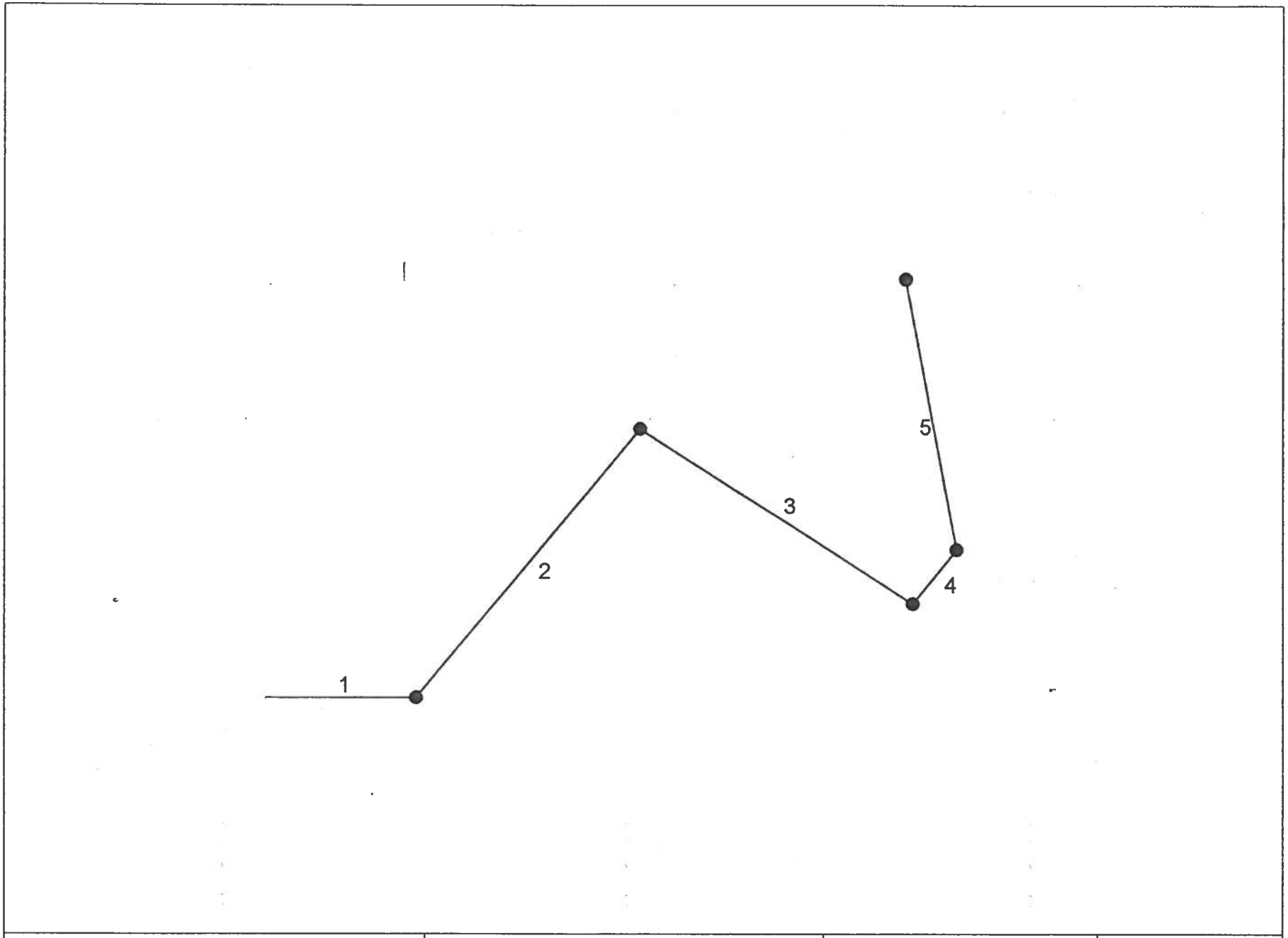
After Every Storm

- Conduct inspections of all inlets, outlets and surface drainage swales.
- Clear all inlet grates of any debris to insure maximum opening efficiency.
- Remove, flush or jet out any sediment or trash buildup in pipes or swales.
- Do not use surface swales for storage areas or obstruct the drainage path in any way.

Failure to maintain these drainage systems could result in uncontrolled flooding and damage to school facilities during a major storm event!


SS
SS
CR
CR
Domingo Baca Channel

Hydraflow Plan View



Project file: Hope Palomas Rev.stm	IDF file: Hope.IDF	No. Lines: 5	05-24-2000

Hydraflow Summary Report

Line No.	Line ID	Flow rate (cfs)	Line size (in)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	Dns line No.
1	South Swale	24.80	30 c	48.0	82.20	84.20	4.167	83.15*	87.09*	0.30	End
2	Line 2	20.00	24 c	100.0	84.20	85.20	1.000	87.39*	87.85*	0.03	1
3	Line 3	20.00	24 c	98.0	85.20	86.20	1.020	87.88*	88.33*	0.03	2
4	Center Swale	20.00	24 c	20.0	86.20	86.40	1.000	88.37*	88.46*	0.54	3
5	West Parking	4.00	12 c	73.0	86.40	89.00	3.562	88.99	89.85	0.49	4

Project File: Hope Palomas Rev.stm	I-D-F File: Hope.IDF	Total No. Lines: 5	Run Date: 05-24-2000

NOTES: c = circular; e = elliptical; b = box; Return period = 100 Yrs.; * Indicates surcharge condition.

Hydraflow Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
1	End	48.0	0.00	0.00	0.00	0.00	0.00	0.0	1.6	0.0	24.80	83.71	9.81	30	4.17	84.20	82.20	87.09	83.15	85.20	89.50	South Swale
2	1	100.0	0.00	0.00	0.00	0.00	0.00	0.0	1.1	0.0	20.00	29.40	6.37	24	1.00	85.20	84.20	87.85	87.39	89.50	90.80	Line 2
3	2	98.0	0.00	0.00	0.00	0.00	0.00	0.0	0.5	0.0	20.00	29.70	6.37	24	1.02	86.20	85.20	88.33	87.88	90.80	91.50	Line 3
4	3	20.0	0.00	0.00	0.00	0.00	0.00	0.0	0.4	0.0	20.00	29.40	6.37	24	1.00	86.40	86.20	88.46	88.37	91.50	89.90	Center Swale
5	4	73.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.00	8.74	5.36	12	3.56	89.00	86.40	89.85	88.99	89.90	92.20	West Parking

Project File: Hope Palomas Rev.stm | I-D-F File: Hope.IDF | Total number of lines: 5 | Run Date: 05-24-2000

NOTES: Intensity = 0.00 / (Tc + 0.00) ^ 0.00; Return period = 100 Yrs. ; Initial tailwater elevation = 83.15 (ft)

Storm Sewer Profile

Proj. file: Hope Palomas Rev.stm