



# Nimbus Engineers

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(702) 689-8630 • Fax (702) 689-8614

December 11, 1995

Kris Klein  
Engineering Department  
Washoe County Public Works  
1001 E. Ninth Street  
Reno, NV 89512

RE: Addendum to Hydrologic and Hydraulic Analysis of Wedge Meadows  
Subdivision (Nimbus Job No. 9311)

Dear Ms. Klein:

This addendum is an addition to the Hydrologic and Hydraulic Analysis of Wedge Meadows Subdivision dated October 1995 and revised November 1995. No part of the revised report is to be replaced.

At the request of Washoe County, Nimbus has evaluated the effect on the Wedge Meadows Subdivision of 3000 cfs in Whites Creek Branch 1 arriving at La Guardia Lane. It is the opinion of Nimbus Engineers that it will have no effect on the development and that any portion of the flow arriving at the development will be contained within the curbed section of the proposed streets. The following is the method of analysis used in making this determination.

A rating curve was established for the existing double 8'X 5' RCB under La Guardia Lane, the existing dip section in La Guardia over the RCB and the La Guardia street section from record plans received from the County. A control elevation was established in the dip section such that the sum of the individual flow from each rating curve equals 3000 cfs. The RCB has the capacity to carry 964 cfs. At elevation 4632.98 the dip section in the road has the capacity to carry 1948 cfs and the La Guardia street section flowing to the east will contain 88 cfs.

The next step was to review the records plans and conduct a field review to determine how much of the 88 cfs arrives at Wedge Meadows by flowing down La Guardia Lane. For several hundred feet west of Valley Springs Road the existing ground north of La Guardia is lower than the top of curb and there is no parkway

Return to Washoe County Engineering

Rec 12/12/95

behind the curb. The longitudinal slope of La Guardia through this reach is 3.78%. The top of curb capacity of the street at this slope is 44 cfs. The difference weirs over the curb and sheet flows northerly to Zolezzi Lane leaving 44 cfs in La Guardia approaching Valley Springs Road.

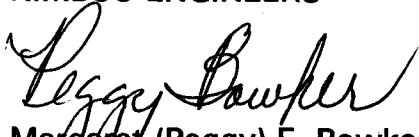
Valley Springs Road is crowned through the intersection at La Guardia Lane. The centerline profile of La Guardia begins at the flowline of Valley Springs which is 0.4 ft below its crown. The profile grade of Valley Springs through the intersection is 0.7%. The curb and gutter on La Guardia ends at the end of returns just before Valley Springs. There are drainage ditches on both sides of Valley Springs which cross La Guardia in culverts. There is no curb and gutter on either side of La Guardia east of Valley Springs. The existing ground on the north side of La Guardia east of Valley Springs is substantially lower than the edge of pavement.

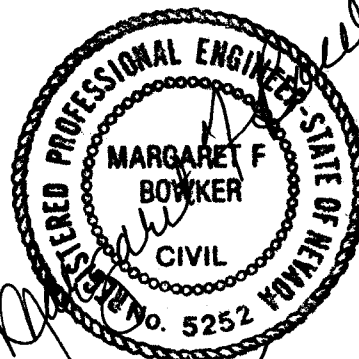
The flow on the northerly side of La Guardia will turn north on Valley Springs and end up in the west side ditch leaving 22 cfs on the south side. The flow on the south side arrives at the intersection of Valley Springs and can flow in as many as four directions. As the -2.0% cross slope on La Guardia is warped to meet the -0.7% grade on Valley Springs, a portion of the flow can sheet across the centerline of La Guardia and continue northerly in the west side ditch along Valley Springs or sheet flow across the intersection to the northeast and end up on the existing property east of Valley Springs and north of La Guardia. A portion can flow into the west side ditch of Valley Springs on the south side of La Guardia which will be carried through the culvert to the north side and a portion can sheet across the intersection to the side ditch on the south side of La Guardia. This is the only flow that could get to Wedge Meadows.

The amount of flow reaching the development will be substantially less than 22 cfs and can be contained within the proposed street section and will not have a significant impact on the development. Nimbus recommends that lots 4 and 5 in Unit 1 be raised one foot above the adjacent curb.

The results of this analysis provide the information necessary to determine the extent that the 3000 cfs from Whites Creek Branch 1 will have on the Wedge Meadows Subdivision. If you have any questions or concerns, please call.

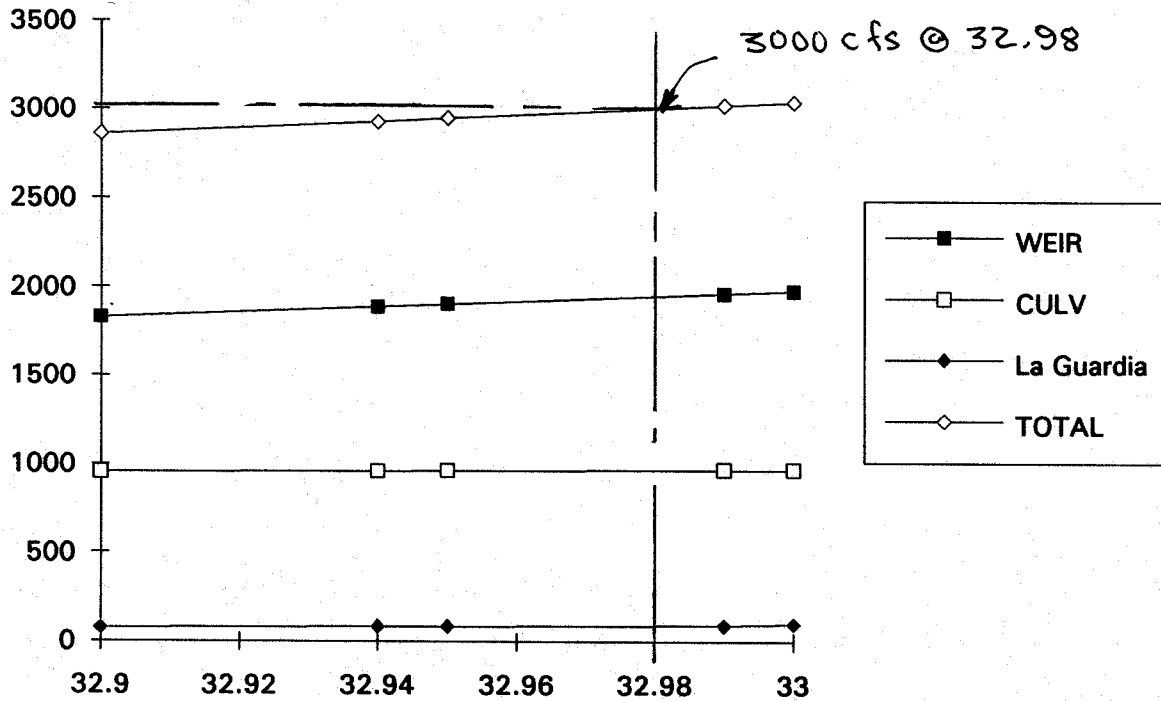
Sincerely,  
NIMBUS ENGINEERS

  
Margaret (Peggy) F. Bowker, P.E.  
President



12/12/95

Project - Wedge - Job No. 9311				
Calculate flow down La Guardia from 3000 cfs flowing in Whitescreek Branch 1				
Water Elev	WEIR FLOW	CULV FLOW	La Guardia FLOW	TOTAL FLOW
32.81			60	
32.82		950		
32.9	1829.2	956.7	75	2860.9
32.94	1888.6	960	81.6	2930.2
32.95	1903.5	964.2	83.3	2951
32.99	1963.9	967.5	90	3021.4
33	1979	965.5	96.7	3041.2
33.06		970		
For total flow of 3000 cfs Use 88.0 cfs flow down La Guardia At elev 32.98				
Water Elev	WEIR FLOW	CULV FLOW	La Guardia FLOW	TOTAL FLOW
32.9	1829.2	956.7	75	2860.9
32.94	1888.6	960	81.6	2930.2
32.95	1903.5	964.2	83.3	2951
32.99	1963.9	967.5	90	3021.4
33	1979	965.5	96.7	3041.2



**BOX CULVERT ANALYSIS  
COMPUTATION OF CULVERT PERFORMANCE CURVE**

December 4, 1995

La Guardia crossing of whitescreek br 1  
compute weir flow accross La Guardia

Box Culvert from Record Plans dated Sept 1981

=====

**PROGRAM INPUT DATA:**

DESCRIPTION	VALUE
-----	-----
Culvert Span (Width of Opening) (feet).....	8.00
Culvert Rise (Height of Opening) (feet).....	5.00
FHWA Chart Number (8,9,10,11,12 or 13).....	11
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0120
Entrance Loss Coefficient of Culvert Opening.....	0.20
Culvert Length (feet).....	70.0
Culvert Slope (feet per foot).....	0.0070

=====

**PROGRAM RESULTS:**

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
-----	-----	-----	-----	-----	-----	-----	-----
475.0	0.00	9.32	7.39	3.71	4.78	3.71	16.02
480.0	0.00	9.44	7.47	3.73	4.82	3.73	16.07
485.0	0.00	9.56	7.55	3.76	4.85	3.76	16.11

=====

BOX CULVERT ANALYSIS COMPUTER PROGRAM Version 1.6 Copyright (c) 1986  
Dodson & Associates, Inc., 7015 W. Tidwell, #107, Houston, TX 77092  
(713) 895-8322. All Rights Reserved.

Dbl 8x5 ∴ Double Flows Calculated

Project \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Sheet No. \_\_\_\_\_ of \_\_\_\_\_  
 Calculated by \_\_\_\_\_ Date \_\_\_\_\_

**WEIR FLOW COMPUTATIONS**

**LOCATION/DESCRIPTION:**

Profile Grade of La Guardia  
Dip Section @ Whites Creek Branch 1

**CROSS SECTION PARAMETERS:**

FILENAME: LAGUARD.SEC

No. of Cross Section Points: 12 Bed Slope: 0.00500 Max Elev.: 32.33  
 Bank Stations.....Left: 686.7 Right.....: 950.0 Min Elev.: 30.40  
 Encroachment Stations..Left: Right.....: Weir Coef: 2.900

**CROSS SECTION POINTS - Elevations & Stations in feet:**

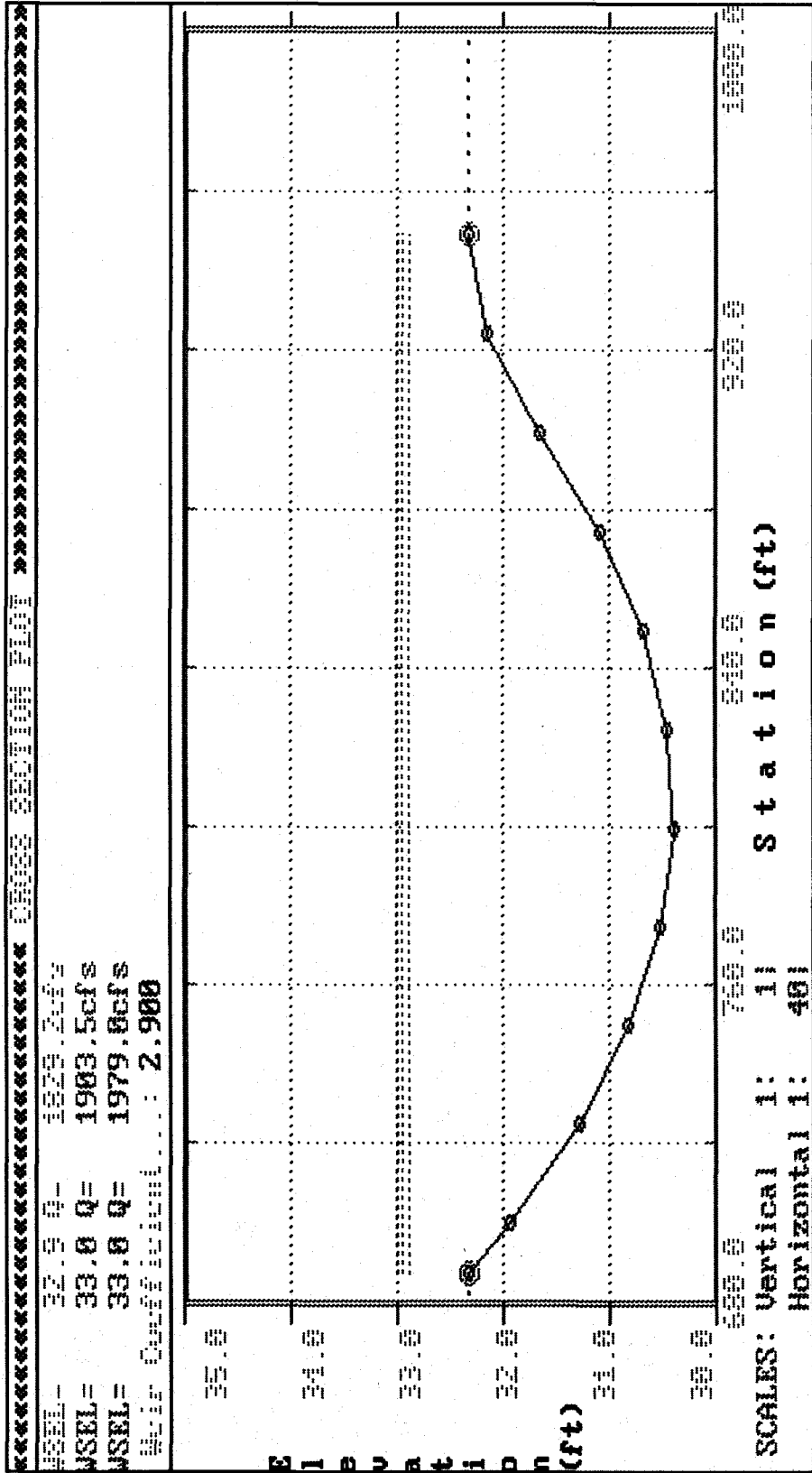
No.	Elev.	Sta. No.	Elev.	Sta. No.	Elev.	Sta.		
1)	32.33	686.70	2)	31.94	700.00	3)	31.29	725.00
4)	30.82	750.00	5)	30.52	775.00	6)	30.40	800.00
7)	30.45	825.00	8)	30.68	850.00	9)	31.09	875.00
10)	31.66	900.00	11)	32.16	925.00	12)	32.32	950.00

**COMPUTED PARAMETERS:**

WSEL(ft)	Q(cfs)	H:max(ft)	H:ave(ft)	TW(ft)	A(sf)
32.95	1903.5	2.55	1.78	263.3	468.3
32.96	1918.5	2.56	1.79	263.3	471.0
32.97	1933.6	2.57	1.80	263.3	473.6
32.98	1948.7	2.58	1.81	263.3	476.2
32.99	1963.8	2.59	1.82	263.3	478.9
33.00	1979.0	2.60	1.83	263.3	481.5

**NOTES:**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



Project Wedge  
 Project No. 5311  
 Sheet No. \_\_\_\_\_ of \_\_\_\_\_  
 Calculated by AMG Date 12/95

UNIFORM FLOW COMPUTATIONS

LOCATION/DESCRIPTION:

CROSS SECTION PARAMETERS:

FILENAME: LAGUARST.SEC

No. of Cross Section Points: 7 Bed Slope: 0.03800 Max Elev.: 0.50  
 Bank Stations.....Left: 0.0 Right....: 36.0 Min Elev.: 0.00  
 Encroachment Stations..Left: Right....:  
 Manning-n Values.....LOB: 0.015 CHANNEL...: 0.015 ROB.....: 0.015

CROSS SECTION POINTS - Elevations & Stations in feet:

No.	Elev.	Sta. No.	Elev.	Sta. No.	Elev.	Sta.		
1)	0.50	0.00	2)	0.00	0.20	3)	0.17	2.00
4)	0.50	18.00	5)	0.17	34.00	6)	0.00	35.80
7)	0.50	36.00						

COMPUTED PARAMETERS:

WSEL(ft)	Q(cfs)	V(fps)	Fr	No. ne	ALPHA	TW(ft)	A(sf)	WP(ft)	CRWS(ft)
0.50	43.5	6.3	2.55	0.015	1.0	36.0	6.9	36.7	0.66

NOTES:

Capacity of La Guardia upstream  
 of Valley View





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\* HEC-2 WATER SURFACE PROFILES \*  
\* \*  
\* Version 4.6.0; February 1991 \*  
\* \*  
\* RUN DATE 04DEC95 TIME 09:11:42 \*  
\*\*\*\*\*

\*\*\*\*\*  
\* U.S. ARMY CORPS OF ENGINEERS \*  
\* HYDROLOGIC ENGINEERING CENTER \*  
\* 609 SECOND STREET, SUITE D \*  
\* DAVIS, CALIFORNIA 95616-4687 \*  
\* (916) 756-1104 \*  
\*\*\*\*\*

```
X   X XXXXXXX XXXX      XXXX
X   X X      X   X      X   X
X   X X      X           X
XXXXXXXX XXXX  X           XXXX
X   X X      X           X
X   X X      X   X      X
X   X XXXXXXX XXXX      XXXXXXX
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THIS RUN EXECUTED 04DEC95 09:11:42

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HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

\*\*\*\*\*

T1 LA GUARDIA LANE FLOW AWAY FROM BRANCH 1  
 T2 VARY FLOW TO ESTABLISH RATING CURVE  
 T3 La Guardia Lane Profile from Record Plans dated Sept. 1981

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	2	0	0	-1	0	0	0	35	0

J2	NPROF	IPLT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	1	0	-1							

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

150	38	43	13	14	15	26	1	53	54
4	25								

QT	3	60	75	90						
NC	.035	.035	.015	.1	.3					
X1	980	11	14.3	50.7	0	0	0			
GR	35.25	0	32.25	6	32.08	14.3	31.58	14.5	31.75	16.5
GR	32.08	32.5	31.75	48.5	31.58	50.5	32.08	50.7	32.25	59
GR	35.25	65								

X1	970				10	10	10			.14
X1	960				10	10	10			.08
X1	950				10	10	10			.03
X1	940				10	10	10			-.03

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XLN	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

\*PROF 1

CCHV= .100 CEHV= .300

\*SECNO 980.000

3720 CRITICAL DEPTH ASSUMED

980.000	.74	32.32	32.32	35.00	32.52	.20	.00	.00	32.08
60.0	1.1	57.9	1.1	1.3	15.9	1.3	.0	.0	32.08
.00	.80	3.63	.80	.035	.015	.035	.000	31.58	5.85
.004149	0.	0.	0.	0	20	0	.00	53.30	59.15

\*SECNO 970.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

970.000	.75	32.47	32.47	.00	32.66	.20	.04	.00	32.22
60.0	1.1	57.8	1.1	1.3	16.0	1.3	.0	.0	32.22
.00	.80	3.61	.80	.035	.015	.035	.000	31.72	5.85
.004062	10.	10.	10.	20	5	0	.00	53.31	59.15

\*SECNO 960.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

960.000	.75	32.55	32.55	.00	32.74	.20	.04	.00	32.30
60.0	1.1	57.9	1.1	1.3	16.0	1.3	.0	.0	32.30
.00	.80	3.62	.80	.035	.015	.035	.000	31.80	5.85
.004092	10.	10.	10.	20	5	0	.00	53.30	59.15

\*SECNO 950.000

950.000	.77	32.60	32.58	.00	32.78	.18	.04	.00	32.33
60.0	1.2	57.6	1.2	1.5	16.6	1.5	.0	.0	32.33
.00	.80	3.48	.80	.035	.015	.035	.000	31.83	5.82
.003607	10.	10.	10.	2	5	0	.00	53.37	59.18

\*SECNO 940.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.74

SECNO	DEPTH	CWSEL	CRIS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XLN	XNCH	XNR	WTN	ELNIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
940.000	.92	32.72	.00	.00	32.81	.09	.02	.01	32.30
60.0	2.1	55.9	2.1	2.9	22.7	2.9	.0	.0	32.30
.00	.70	2.47	.70	.035	.015	.035	.000	31.80	5.48
.001195	10.	10.	10.	2	0	0	.00	54.04	59.52

T1 LA GUARDIA LANE FLOW AWAY FROM BRANCH 1  
T2 VARY FLOW TO ESTABLISH RATING CURVE  
T3 La Guardia Lane Profile from Record Plans dated Sept. 1981

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	3	0	0	-1	0	0	0	35	0
J2	NPROF	IPLT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2	0	-1							

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XLN	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

\*PROF 2

CCHV= .100 CEHV= .300

\*SECNO 980.000

3720 CRITICAL DEPTH ASSUMED

980.000	.81	32.39	32.39	35.00	32.61	.23	.00	.00	32.08
75.0	1.8	71.3	1.8	1.9	18.2	1.9	.0	.0	32.08
.00	.98	3.91	.98	.035	.015	.035	.000	31.58	5.72
.004020	0.	0.	0.	0	16	0	.00	53.55	59.28

\*SECNO 970.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

970.000	.81	32.53	32.53	.00	32.75	.22	.04	.00	32.22
75.0	1.8	71.3	1.8	1.9	18.3	1.9	.0	.0	32.22
.00	.98	3.89	.98	.035	.015	.035	.000	31.72	5.72
.003941	10.	10.	10.	20	5	0	.00	53.56	59.28

\*SECNO 960.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

960.000	.81	32.61	32.61	.00	32.83	.22	.04	.00	32.30
75.0	1.8	71.3	1.8	1.9	18.3	1.9	.0	.0	32.30
.00	.98	3.90	.98	.035	.015	.035	.000	31.80	5.72
.003968	10.	10.	10.	20	5	0	.00	53.56	59.28

\*SECNO 950.000

950.000	.83	32.66	32.64	.00	32.87	.22	.04	.00	32.33
75.0	1.9	71.2	1.9	2.0	18.7	2.0	.0	.0	32.33
.00	.97	3.82	.97	.035	.015	.035	.000	31.83	5.70
.003709	10.	10.	10.	0	5	0	.00	53.60	59.30

\*SECNO 940.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.67

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XLN	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
940.000	.99	32.79	.00	.00	32.90	.11	.02	.01	32.30
75.0	2.9	69.2	2.9	3.5	25.0	3.5	.0	.0	32.30
.00	.84	2.77	.84	.035	.015	.035	.000	31.80	5.35
.001323	10.	10.	10.	3	0	0	.00	54.29	59.65

T1 LA GUARDIA LANE FLOW AWAY FROM BRANCH 1  
T2 VARY FLOW TO ESTABLISH RATING CURVE  
T3 La Guardia Lane Profile from Record Plans dated Sept. 1981

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	4	0	0	-1	0	0	0	35	0
J2	NPROF	IPLT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	15	0	-1							



SECNO	DEPTH	CWSEL	CRIS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

\*PROF 3

CCHV= .100 CEHV= .300

\*SECNO 980.000

3720 CRITICAL DEPTH ASSUMED

980.000	.87	32.45	32.45	35.00	32.70	.25	.00	.00	32.08
90.0	2.7	84.6	2.7	2.4	20.6	2.4	.0	.0	32.08
.00	1.12	4.11	1.12	.035	.015	.035	.000	31.58	5.60
.003788	0.	0.	0.	0	10	0	.00	53.81	59.40

\*SECNO 970.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

970.000	.87	32.59	32.59	.00	32.84	.25	.04	.00	32.22
90.0	2.7	84.7	2.7	2.4	20.4	2.4	.0	.0	32.22
.00	1.12	4.15	1.12	.035	.015	.035	.000	31.72	5.61
.003902	10.	10.	10.	20	5	0	.00	53.79	59.39

\*SECNO 960.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

960.000	.87	32.67	32.67	.00	32.92	.25	.04	.00	32.30
90.0	2.7	84.6	2.7	2.4	20.5	2.4	.0	.0	32.30
.00	1.12	4.14	1.12	.035	.015	.035	.000	31.80	5.60
.003862	10.	10.	10.	20	5	0	.00	53.79	59.40

\*SECNO 950.000

950.000	.89	32.72	32.70	.00	32.96	.24	.04	.00	32.33
90.0	2.7	84.5	2.7	2.5	20.8	2.5	.0	.0	32.33
.00	1.11	4.07	1.11	.035	.015	.035	.000	31.83	5.59
.003660	10.	10.	10.	0	5	0	.00	53.83	59.41

\*SECNO 940.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.63

SECNO	DEPTH	CWSEL	CRIS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XLN	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
940.000	1.06	32.86	.00	.00	32.99	.13	.02	.01	32.30
90.0	3.8	82.3	3.8	4.1	27.4	4.1	.0	.0	32.30
.00	.94	3.00	.94	.035	.015	.035	.000	31.80	5.22
.001378	10.	10.	10.	3	0	0	.00	54.56	59.78

THIS RUN EXECUTED 04DEC95 09:11:43

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HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

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NOTE- ASTERISK (\*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

La Guardia Lane Profile

SUMMARY PRINTOUT

	SECNO	Q	QLOB	QCH	QROB	VCH	CWSEL	SSTA	ENDST	TOPWID	AREA
*	980.000	60.00	1.06	57.87	1.06	3.63	32.32	5.85	59.15	53.30	18.59
*	980.000	75.00	1.83	71.35	1.83	3.91	32.39	5.72	59.28	53.55	21.97
*	980.000	90.00	2.70	84.60	2.70	4.11	32.45	5.60	59.40	53.81	25.40
*	970.000	60.00	1.08	57.84	1.08	3.61	32.47	5.85	59.15	53.31	18.73
*	970.000	75.00	1.85	71.31	1.85	3.89	32.53	5.72	59.28	53.56	22.12
*	970.000	90.00	2.67	84.67	2.67	4.15	32.59	5.61	59.39	53.79	25.15
*	960.000	60.00	1.07	57.85	1.07	3.62	32.55	5.85	59.15	53.30	18.68
*	960.000	75.00	1.84	71.32	1.84	3.90	32.61	5.72	59.28	53.56	22.07
*	960.000	90.00	2.68	84.64	2.68	4.14	32.67	5.60	59.40	53.79	25.23
	950.000	60.00	1.18	57.64	1.18	3.48	32.60	5.82	59.18	53.37	19.53
	950.000	75.00	1.91	71.18	1.91	3.82	32.66	5.70	59.30	53.60	22.59
	950.000	90.00	2.74	84.52	2.74	4.07	32.72	5.59	59.41	53.83	25.70
*	940.000	60.00	2.06	55.88	2.06	2.47	32.72	5.48	59.52	54.04	28.51
*	940.000	75.00	2.92	69.16	2.92	2.77	32.79	5.35	59.65	54.29	31.97
*	940.000	90.00	3.85	82.31	3.85	3.00	32.86	5.22	59.78	54.56	35.57

## La Guardia Lane Profile

## SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	980.000	.00	.00	.00	31.58	60.00	32.32	32.32	32.52	41.49	3.63	18.59	9.32
*	980.000	.00	.00	.00	31.58	75.00	32.39	32.39	32.61	40.20	3.91	21.97	11.83
*	980.000	.00	.00	.00	31.58	90.00	32.45	32.45	32.70	37.88	4.11	25.40	14.62
*	970.000	10.00	.00	.00	31.72	60.00	32.47	32.47	32.66	40.62	3.61	18.73	9.41
*	970.000	10.00	.00	.00	31.72	75.00	32.53	32.53	32.75	39.41	3.89	22.12	11.95
*	970.000	10.00	.00	.00	31.72	90.00	32.59	32.59	32.84	39.02	4.15	25.15	14.41
*	960.000	10.00	.00	.00	31.80	60.00	32.55	32.55	32.74	40.92	3.62	18.68	9.38
*	960.000	10.00	.00	.00	31.80	75.00	32.61	32.61	32.83	39.68	3.90	22.07	11.91
*	960.000	10.00	.00	.00	31.80	90.00	32.67	32.67	32.92	38.62	4.14	25.23	14.48
	950.000	10.00	.00	.00	31.83	60.00	32.60	32.58	32.78	36.07	3.48	19.53	9.99
	950.000	10.00	.00	.00	31.83	75.00	32.66	32.64	32.87	37.09	3.82	22.59	12.31
	950.000	10.00	.00	.00	31.83	90.00	32.72	32.70	32.96	36.60	4.07	25.70	14.88
*	940.000	10.00	.00	.00	31.80	60.00	32.72	.00	32.81	11.95	2.47	28.51	17.36
*	940.000	10.00	.00	.00	31.80	75.00	32.79	.00	32.90	13.23	2.77	31.97	20.62
*	940.000	10.00	.00	.00	31.80	90.00	32.86	.00	32.99	13.78	3.00	35.57	24.25

La Guardia Lane Profile

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	980.000	60.00	32.32	.00	.00	-2.68	53.30	.00
*	980.000	75.00	32.39	.06	.00	-2.61	53.55	.00
*	980.000	90.00	32.45	.06	.00	-2.55	53.81	.00
*	970.000	60.00	32.47	.00	.14	.00	53.31	10.00
*	970.000	75.00	32.53	.06	.14	.00	53.56	10.00
*	970.000	90.00	32.59	.06	.14	.00	53.79	10.00
*	960.000	60.00	32.55	.00	.08	.00	53.30	10.00
*	960.000	75.00	32.61	.06	.08	.00	53.56	10.00
*	960.000	90.00	32.67	.06	.08	.00	53.79	10.00
	950.000	60.00	32.60	.00	.06	.00	53.37	10.00
	950.000	75.00	32.66	.06	.05	.00	53.60	10.00
	950.000	90.00	32.72	.06	.05	.00	53.83	10.00
*	940.000	60.00	32.72	.00	.12	.00	54.04	10.00
*	940.000	75.00	32.79	.07	.14	.00	54.29	10.00
*	940.000	90.00	32.86	.07	.15	.00	54.56	10.00

## SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO=	980.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	980.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	980.000	PROFILE=	3	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	970.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	970.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	970.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	970.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	970.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	970.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	970.000	PROFILE=	3	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	970.000	PROFILE=	3	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	970.000	PROFILE=	3	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	960.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	960.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	960.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	960.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	960.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	960.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	960.000	PROFILE=	3	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	960.000	PROFILE=	3	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	960.000	PROFILE=	3	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	940.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	940.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	940.000	PROFILE=	3	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

NO.	DESCRIPTION	DATE	BY
1	Remove DRAE & Change LOTS	12/11/95	JJA
2	Revised LOTS	12/11/95	JJA
3	App. App'd Top. Field	12/11/95	JJA



SCALE: 1" = 100'  
 CONTOUR INTERVAL = 2'  
 BASIS OF TOPOGRAPHY:  
 GREAT BASIN AERIAL SERVICES  
 JOB NO. 101056

- LEGEND**
- Existing Well Locations
  - Fire Hydrant
  - Storm Drain w/ Manhole
  - Catch Basin
  - Hazard Markers
  - Required Leach Line Locations
  - Water Service Location
  - V Ditch w/ Flow Line
  - Finish Grade Contour
  - Street Light Location
  - Division Boxes
  - 30' Building Setback Line
  - Recommended Building Foots w/ minimum Finish Grade
  - Block Letters
  - Earth Quake Fault Area
  - Approximate 100 Year Flood Area Boundary (Wine Mfg. Corp. Report, Southwest Rainfall Storms)
  - Typical Dike (See Detail Sheet)
  - Boundary of Fill Area
  - Approved Leach Line Locations
  - Repair Disposal Field (Required Location)
  - Repair Disposal Field (Approved Location)
  - F5 Front Slope
  - B5 Back Slope

- GENERAL NOTES:**
1. All fill slopes are 4:1 unless shown otherwise.
  2. Additional cutting and/or filling may be necessary for driveways and drainage.
  3. Maximum cut slope is 2:1.
  4. All graded areas shall be seeded with crested wheat (15 lbs/AC).
  5. All construction shall be in accordance with the Standard Specifications for Public Works Construction, 1978 Edition.
  6. The Contractor shall notify the Engineer of any discrepancies between the information shown on these drawings and the conditions existing in the field.
  7. The contractor shall coordinate all construction activities including structural utilities and equipment to eliminate conflicts between the activities of all subcontractors.
  8. Construction easements may be necessary along adjacent properties.
  9. Stripped material shall be removed from the site or placed in non structural areas.
  10. Additional irrigation ditches and diversion boxes not shown may be required to perpetuate existing irrigation.
  11. All septic systems shall be constructed in accordance with the Washoe County Board of Health Regulations.
  12. All construction shall be done in a manner that is satisfactory to the Washoe County Board of Health Regulation Sec. 02A.020 regarding dust control.
  13. All grading shall provide positive drainage.

SPARKS, NEVADA  
 LAS VEGAS, NEVADA  
 SEATTLE, WASHINGTON  
**SEA**  
 ENGINEERS/PLANNERS

NEVADA

GRADING PLAN  
 WHITES CREEK ESTATES UNIT NO. 1  
 POR. NW 1/4-SEC. 20, T.18N., R.02E., M.D.M.

WASHOE COUNTY

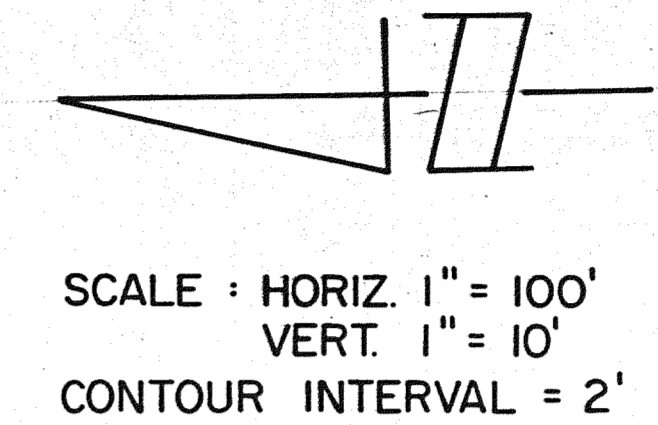
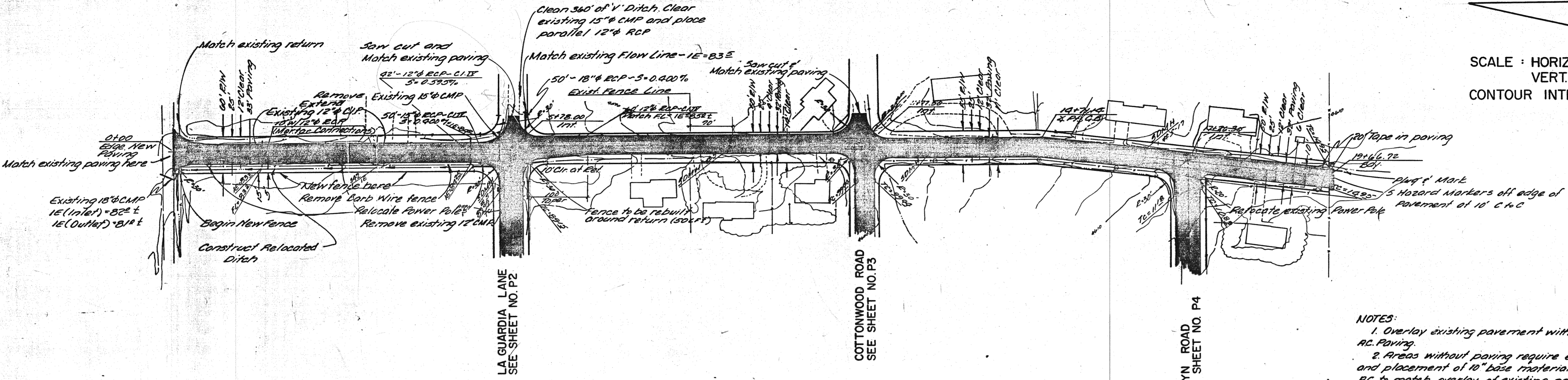
JOB NO. 462-005-811
DESIGNED R.J.A.
DRAWN IEM 1130/V.W.
COMP.
CHECKED JJA
DATE SEPT. 1981
SHEET NO.
<b>GI</b>
OF 11 SHEETS

Rec 12/12/95 Nimbus 12/11/95 Letter Addendum to Hydrologic and Hydraulic Analysis of Leach Meadows

WHITES CREEK ESTATES UNIT NO. 2

UNDEVELOPED

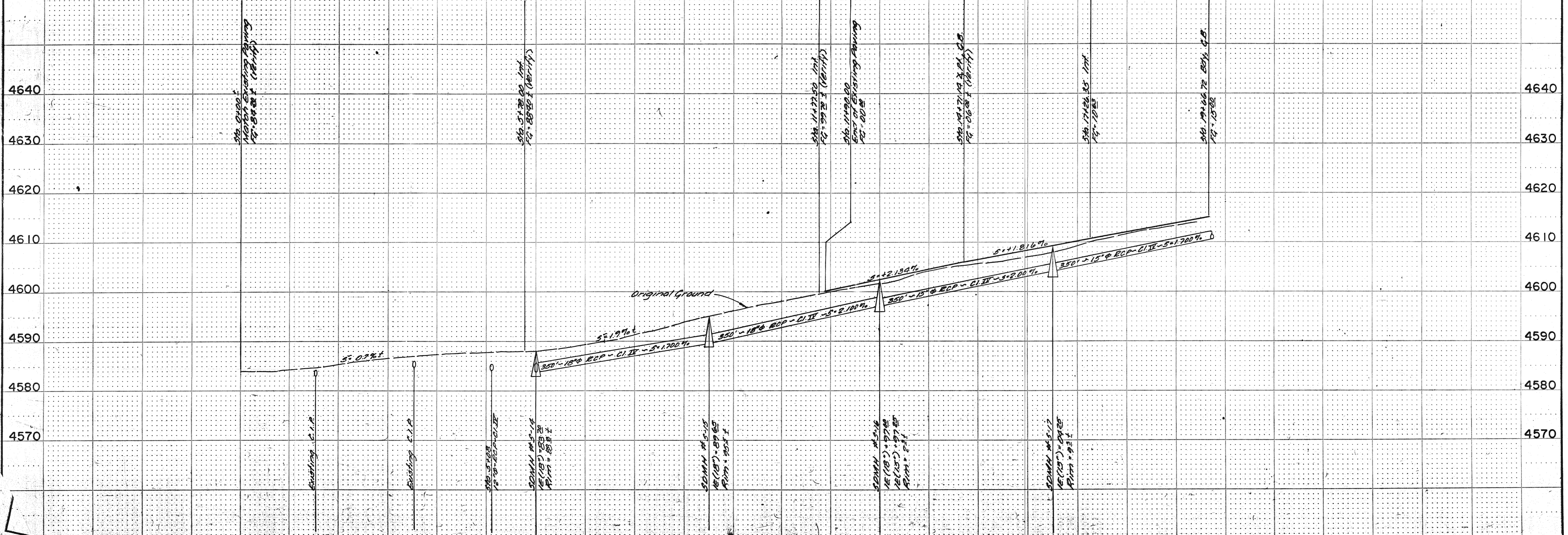
NOTE:  
Install 3-12" Waterman Model C-2  
Distributing Gates grouted in place  
on irrigation crossing.  
(Sta. 1+53±, 3+54±, 5+12±)



NOTES:  
1. Overlay existing pavement with 2 1/2" AC Paving.  
2. Areas without paving require excavation and placement of 10" base material and 2 1/2" AC to match overlay of existing pavement.  
3. Match all existing driveways. All finish grades of driveways shall be verified before any construction begins.  
4. Home owners shall be notified before any construction begins.

**VALLEY SPRINGS ROAD**

0+00      2+00      4+00      6+00      8+00      10+00      12+00      14+00      16+00      18+00      20+00



REVISIONS			
NO.	DESCRIPTION/DATE	BY	

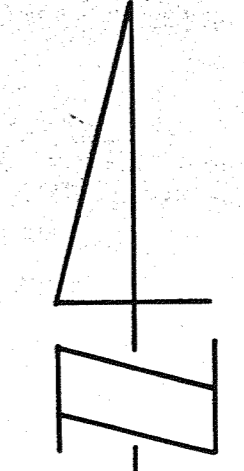
SPARKS, NEVADA  
LAS VEGAS, NEVADA  
SEATTLE, WASHINGTON  
incorporated  
**S&P**  
ENGINEERS/PLANNERS

STREET IMPROVEMENTS  
VALLEY SPRINGS ROAD  
WHITES CREEK ESTATES UNIT NO. 1  
POR. NW 1/4 SEC. 20, T. 18 N., R. 20 E., M.D.M.

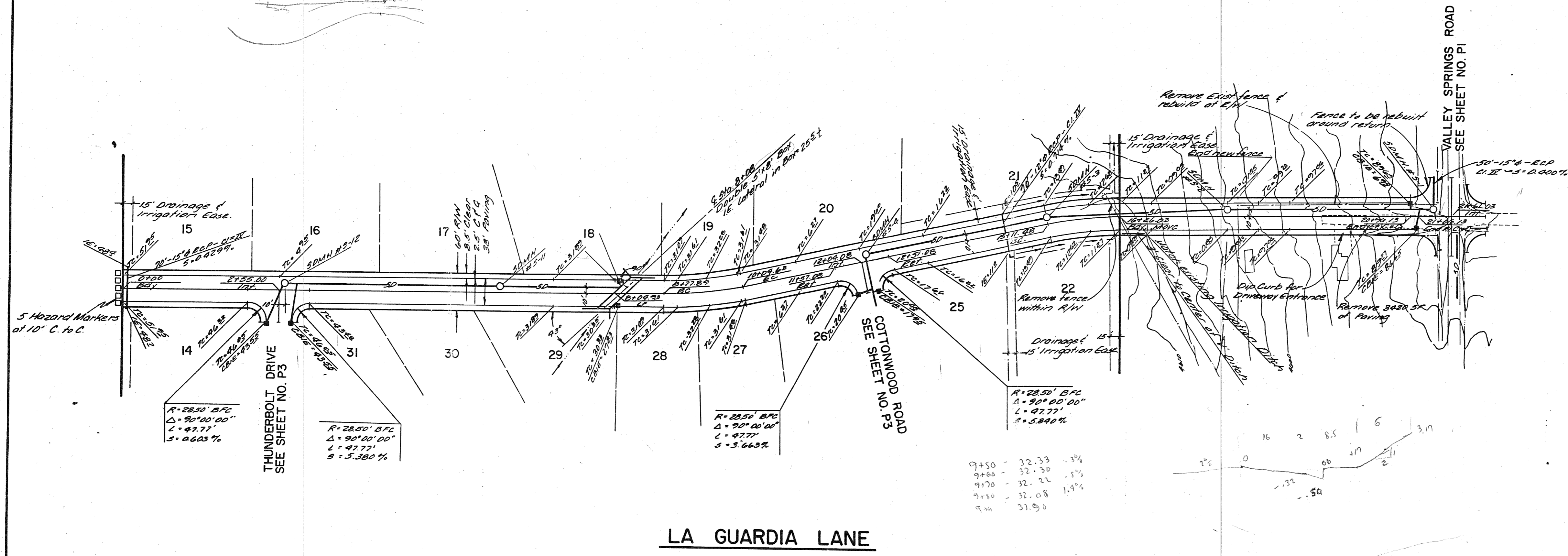
WASHOE COUNTY  
JOB NO. 462-005-811  
DESIGNED R.J.A.  
DRAWN V.W.  
CHECKED J.A.  
DATE SEPT. 1981



REVISIONS			
NO.	DESCRIPTION/DATE	BY	CHK
1	Adjusted Profile	WJ	WJ



SCALE: HORIZ. 1" = 100'  
 VERT. 1" = 10'  
 CONTOUR INTERVAL = 2'

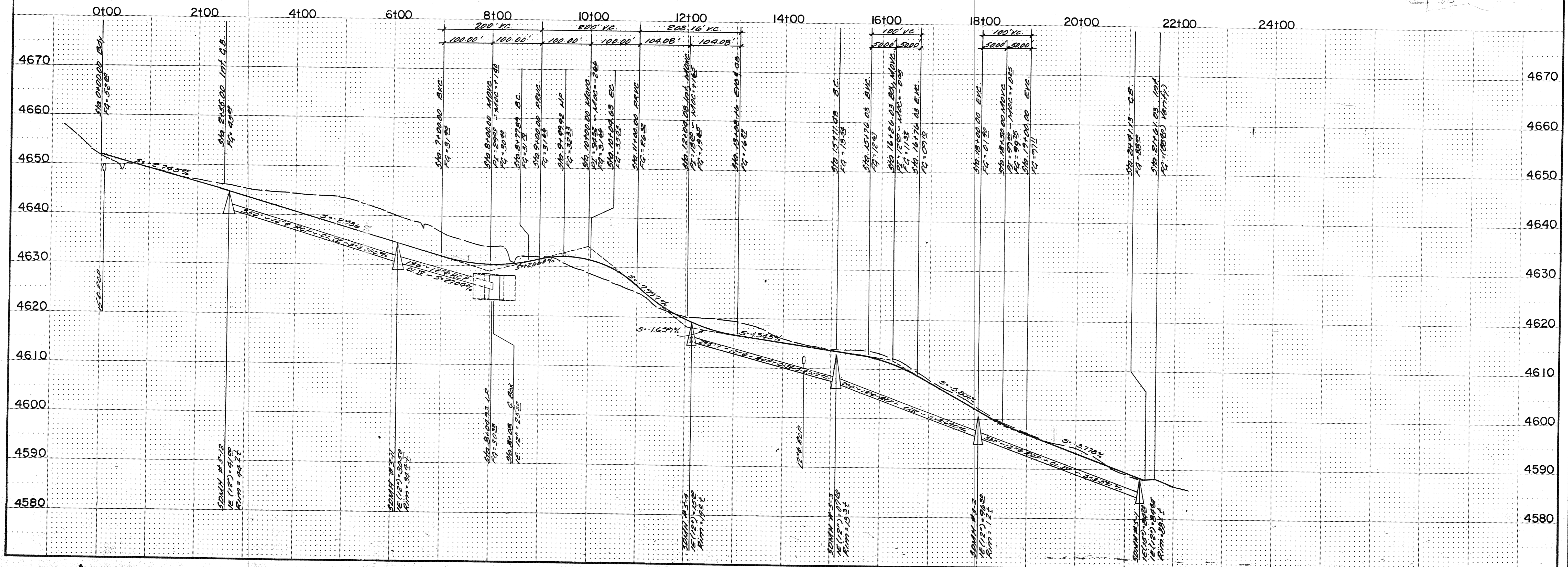


9+50	32.33	-3%
9+60	32.30	-1%
9+70	32.22	-1%
9+80	32.08	1.4%
9+90	31.90	

9+50	35.25
0	35.84
6	32.50
14.5	32.33
16.5	34.83
32.5	32.00
32.5	32.33
48.5	32.00
50.5	34.83
52.5	32.33
59.0	32.50
65.6	35.50

50	32.74
100	33.05
150	33.29
200	33.51
250	33.71



STREET IMPROVEMENTS  
 LA GUARDIA LANE  
 WHITES CREEK ESTATES UNIT NO. 1  
 FOR NW 1/4 SEC. 20, T.18N., R.20E., M.D.M.

WASHOE COUNTY  
 NEVADA  
 INCORPORATED  
 ENGINEERS/PLANNERS  
 SPARKS, NEVADA  
 LAS VEGAS, NEVADA  
 SEATTLE, WASHINGTON

JOB NO. 462-005-811  
 DESIGNED R.J.A.  
 DRAWN V.W.  
 COMP.  
 CHECKED T/A  
 DATE SEPT. 1981  
**P2**  
 OF 11 SHEETS