REQUEST FOR
LETTER OF MAP REVISION
FOR
PARADISE VILLAGE

CLARK COUNTY, NEVADA
Nevada

April 24, 2008

Prepared by:
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April 24, 2008
Job No. 07030-01

FEMA Depot
Attention: LOMR Depot
3601 Eisenhower Avenue
Alexandria, VA 22304-6425

Subject: Request for Letter of Map Revision for Paradise Village

Dear To Whom it May Concern:

Rome Consulting is pleased to provide one copy of the Request for Letter of Map Revision (LOMR) and As-Built information for the above-mentioned study. The project area is within the south half (S ½) of the southwest quarter (SW ¼) of Section 15, Township 21 South, Range 61 East, Mount Diablo Meridian, Clark County, Nevada. The site is located at the southwest corner of the intersection of Palos Verdes Street and Albert Avenue.

Rome Consulting is applying for a Letter of Map Revision from the Federal Emergency Management Agency (FEMA) on behalf of Lapour Partner's to revise FIRM 320003C2557E for Clark County, Nevada along the Flamingo Wash. Lapour Partner's had constructed a portion of the Flamingo Storm Drain Facility to convey the 100-year storm flows under Tony Bennett Way (Public Roadway).

This letter is to inform Clark County of the proposed decrease in the 1% annual chance water-surface elevations.

If you have any questions or comments, please do not hesitate to call this office.

Sincerely,

ROME CONSULTING

James M. Aquino
Principal

Cc: sfc

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3601 Eisenhower Avenue
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Subject: Request for Letter of Map Revision for Paradise Village

Dear To Whom It May Concern:

With this letter, Rome Consulting and behalf of our client, Lapour Partner's, we are requesting that FEMA review the enclosed documents in support of a LOMR for Community Panel Number 320003C 2557E, effective date September 27, 2002 in Clark County, Nevada. Our request is based on the approved Conditional Letter of Map Revision (CLOMR) issued by FEMA on November 10, 2006 (Case Number 06-09-BC85R) in which the 100-year flood is contained in the as-built Flamingo storm drain system designed with the infrastructure of Paradise Village.

This request for a letter of map revision (LOMR) is intended to provide as-built technical information to remove the flood zone and/or a final determination on revising the effective FIRM. The site comprises of approximately 6 acres of a hotel and/or condominium development. This report will identify any existing/proposed drainage facilities that contribute storm water runoff to the site during a 100-year, 6-hour storm event. This study has been conducted in accordance with the criteria set forth by the Clark County Regional Flood Control District's (CCRFCD) *Hydrologic Criteria and Drainage Design Manual* and Clark County Development Services.

LOCATION

The project area is within the south half (S ½) of the southwest quarter (SW ¼) of Section 15, Township 21 South, Range 61 East, Mount Diablo Meridian, Clark County, Nevada. The site is located at the southwest corner of the intersection of Palos Verdes Street and Albert Avenue. See Appendix A, *Vicinity Map*, Figure 1.

FEMA FLOOD PLAIN

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Community-Panel Number 320003C2557E, dated September 27, 2002 (Reference #5), shall be revised per this LOMR request. An annotated FIRM Map is provided in the Appendix to indicate that the site is to be removed within a FEMA Zone 'A'. A Zone 'A' is described by FEMA as areas subject to flooding by the 1% annual chance flood with no base flood elevations determined. If the LOMR is approved, the project site shall be within a Zone 'X' and described

by FEMA areas outside of the 0.2% annual chance floodplain. An annotated map depicting the FEMA flood zones in the vicinity of the site is included in the appendix for this LOMR request. Appendix C, Revised Annotated FIRM Map, (Figure 3- FIRM Map).

EXISTING SITE SURROUNDING DESCRITION

The north half of project site currently exists as n apartment complex and the south half is located on a commercial development. The Flamingo Wash traverses across the site in the east-west direction. The site consists of approximately 6 acres of rough graded, future commercial/hotel, and Tony Bennett Way in a moderate hydrologic condition. The general area slopes to the east at approximately 1 percent. The surrounding areas are primarily a patchwork of residential multi-family developments to the north and commercial developments to the south, east, and west. A site description map depicting the site boundaries and the surrounding area is located in the appendix of this report. See Appendix B, *Site Description Map,* Figure 2.

HYDRAULIC MODELS

A WSPG model was completed on the pre-construction of the Flamingo Wash Storm Drain System prepared by Alpha Engineering and for the CLOMR. In order to compare it to the current condition or post-condition, modification to the design plans were implemented after the approval of the CLOMR Case No. 06-09-BC85R. The transition structure downstream (dual 12-ft x 9-ft RCB (Precast system) to a five (5): 12-ft x 8-ft RCB) has changed and elongated from 25-ft to 100-ft per the requested of Clark County Regional Flood Control District review. Therefore, the designs plans and the post-WSPG model have been revised according to the Regional's criteria. The WSPG model (pv-flam9) is the as-built model or post condition for the current built facility along Tony Bennett Way. The as-built plans with structural of the transition are provided in Appendix H, As-Built Civil Improvement Plans. A plan conformity letter signed and sealed by Stephen F. Crevoiserat, P.E. is provided in the appendix for compliance of the structure being built per approved plans.

In addition, the as-built (post condition) WSPG model utilizes the flow from the *2002 CCRFCD Master Plan Update* (3923 cfs). The flows are contained within the constructed channel system; however, the existing culverts at Palos Verdes Street have the capacity of the existing flow as referenced from the *CCRFCD Master Plan Update.* The dual 12' x 9' RCBs has been constructed to convey the same flows. The as-built design meets CCRFCD criteria. The HGL is contained within the storm drain and will outlet on the east side of Palos Verde Street under pressure. The upstream and downstream cross-sections were compared to the pre (CLOMR) condition and post condition (as-built) cross-sections in order to determine the impact to the upstream and downstream properties. The following Table 1 on the next page is a comparison of the cross-sections:

TABLE 1
PRE-CONSTRUCTION VS POST-CONSTRUCTION STORMDRAIN

PRE SECTIONS	POST SECTION	PRE W.S.E (ft)	POST W.S.E. (ft)	CHANGE IN WSE	PRE VELOCITY (ft/s)	POST VELOCITY (ft/s)
4013.55	4013.55	2060.29	2060.29	0.0	28.29	28.29
3615.6*	3615.6*	2055.76	2055.76	0.0	27.15	27.15
1000	1000	2038.90	2038.90	0.0	4.78	4.78
950	950	2037.19	2037.19	0.0	10.71	10.71
900	900	2036.27	2036.27	0.0	12.32	12.32
850	850	2036.65	2036.65	0.0	9.98	9.98
800	800	2035.29	2035.29	0.0	12.71	12.71
610*	610*	2029.73	2029.73	0.0	17.65	17.65

*FIS Tie-in Sections

CONCLUSIONS

The as-built analysis of the storm drain did not have any differences in elevations or channel velocities. Therefore, the storm flows in the channel is contained below surface and will not impact Paradise Village or its surroundings. Rome Consulting is requesting a final determination on revising the effective FIRM (see Figure 3) map.

I hope this further completes you concerns in your review. If you need any additional information, please do not hesitate to call me at my office.

Sincerely,

ROME CONSULTING

James M. Aquino
Principal

Stephen F. Crevoiserat, P.E.
President

APPENDICES

Appendix A	**Vicinity Map**
Appendix B	**Site Description**
Appendix C	**Revised Annotated FIRM Map**
Appendix D	**Pre & Post Construction WSPGW Model**
Appendix E	**WSPGW Work Maps**
Appendix F	**FEMA Forms – MT2 Form 1, 2, 3**
Appendix G	**Approval Letters**
Appendix H	**As-Built Civil Improvement Plans**
Appendix I	**Data CD**

APPENDIX A

HEC-1 Vicinity Map

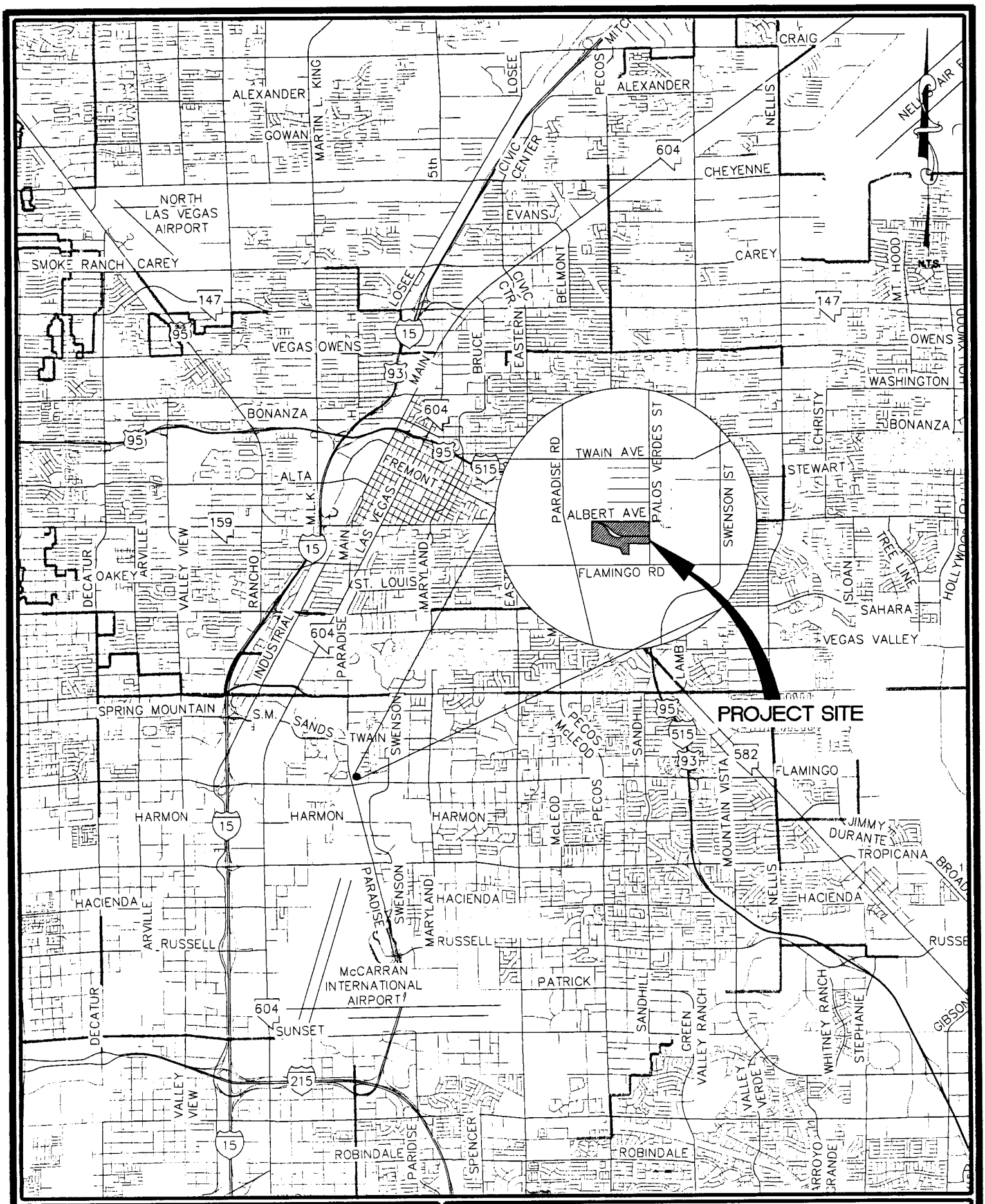

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FIGURE 1

VICINITY MAP

APPENDIX B

Site Description

N.T.S.

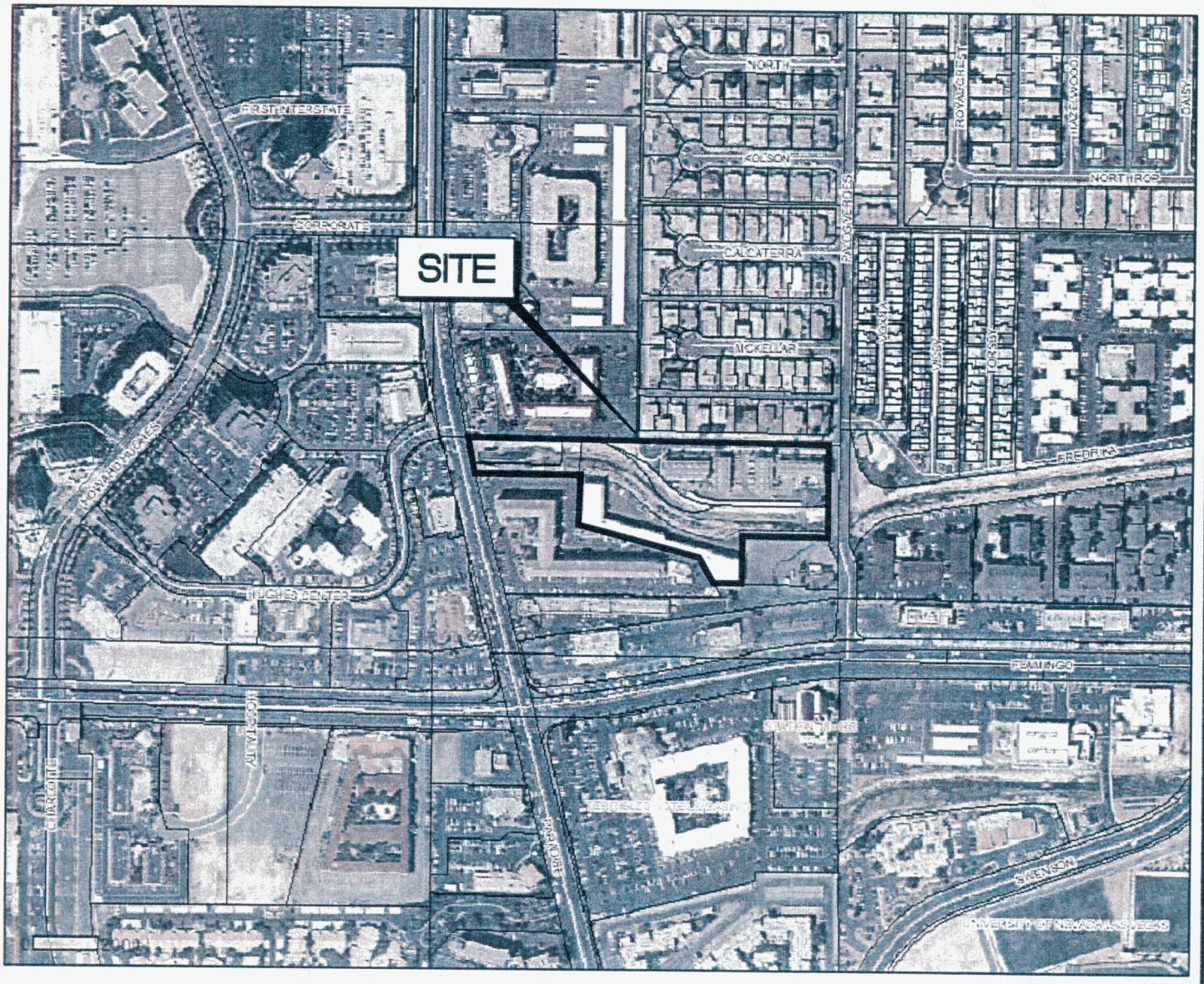

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FIGURE 2

SITE DESCRIPTION MAP

APPENDIX C

Revised Annotated FIRM Map

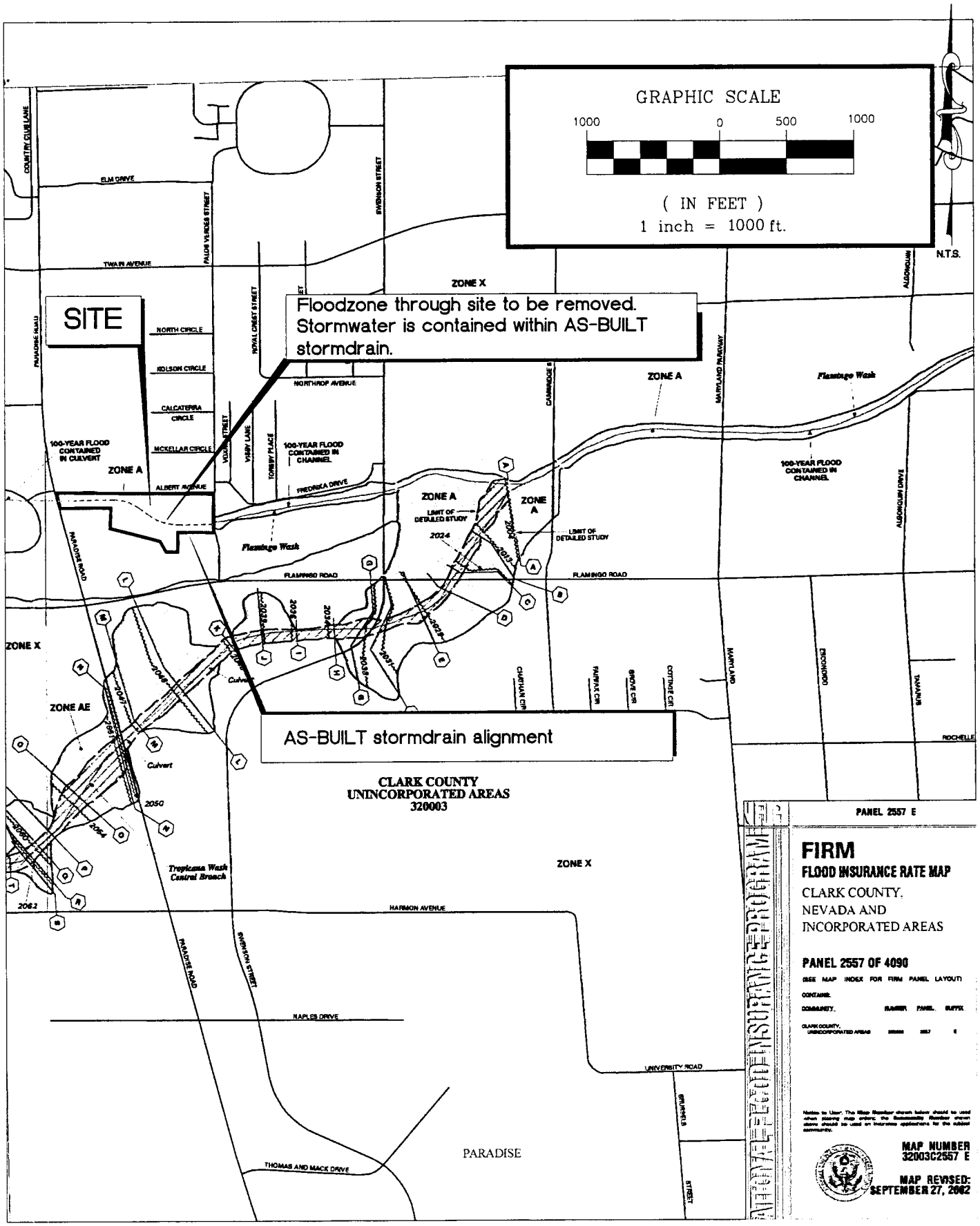

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FIGURE 3

FIRM MAP

APPENDIX D

PRE & POST CONSTRUCTION WSPGW Model

PRE-CONSTRUCTION
WSPG MODEL

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FILE: pv-flam7.WSW                    W S P G W  - EDIT LISTING - Version 14.06              Date: 6-23-2006  Time: 9: 8:17
                                 WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING                                PAGE    1
 CARD  SECT  CHN   NO OF  AVE PIER  HEIGHT I  BASE    ZL    ZR   INV   Y(1)  Y(2)  Y(3)  Y(4)  Y(5)  Y(6)  Y(7)  Y(8)  Y(9)  Y(10)
 CODE   NO   TYPE PIER/PIP WIDTH    DIAMETER  WIDTH              DROP

 CD      1    3      4     .750    8.000   63.000    .000   .000    .00
 CD      2    3      1     .750    9.000   25.000    .000   .000    .00
 CD      3    3      1     .750   10.000   31.000    .000   .000    .00
 CD      4    5      0        .000
 CD      5    5      0        .000
 CD      7    5      0        .000
 CD      8    5      0        .000
 CD     10    5      0        .000
 CD     11    5      0        .000
 CD     13    5      0        .000
 CD     14    5      0        .000
 CD     16    5      0        .000
FILE:                                 W S P G W  - EDIT LISTING - Version 14.06              Date: 6-23-2006  Time: 9: 8:17
                                 WATER SURFACE PROFILE - CROSS SECTION POINT LISTING                               PAGE    2
   CARD  SECT  NO OF    X(1) , Y(1)   X(2) , Y(2)   X(3) , Y(3)   X(4) , Y(4)   X(5) , Y(5)   X(6) , Y(6)   X(7) , Y(7)
   CODE   NO   POINTS   X(8) , Y(8)   X(9) , Y(9)   X(10) ,Y(10)  X(11) ,Y(11)  X(N) , Y(N)  X(N+1),Y(N+1)  X(35) ,Y(35)

   PTS     4     8       6.720  38.300   24.470  38.000   42.690  28.000   53.690  27.000   59.860  27.000   73.770  33.000   88.060  38.000
   PTS                 100.000  38.000
   PTS     5     7        .000  38.200   20.530  38.000   38.980  27.000   59.100  27.000   73.470  33.000   92.230  38.000  100.000  38.000
   PTS     7     6       6.270  38.980   16.320  38.980   42.050  28.000   57.950  28.000   86.650  38.000  100.000  38.410
   PTS     8     4        .000  38.260   15.000  28.440   81.000  28.780   92.000  38.250
   PTS    10    10      70.030  28.600  102.130  19.810  108.460  15.200  116.230  14.220  124.640  15.110  133.920  20.970  151.670  21.770
   PTS                 159.420  26.160  198.520  26.560  224.160  28.000
   PTS    11     7      41.150  35.990   71.730  34.450   93.650  25.500  114.500  24.370  128.040  25.430  161.500  34.300  227.240  34.850
   PTS    13     5        .000  65.550   69.160  64.450   77.380  54.670   98.840  55.160  100.060  64.450
   PTS    14     5      23.670  37.000   44.350  27.000   59.940  27.000   74.640  32.000   91.750  36.000
   PTS    16     4      69.930  70.400   79.290  59.850  100.180  60.010  107.000  71.400
                                                    W S P G W                                                        PAGE NO    1
                         WATER SURFACE PROFILE - TITLE CARD LISTING
HEADING LINE NO 1 IS -
                           PARADISE VALLEY
HEADING LINE NO 2 IS -
                           BOX CULVERT ANALYSIS (FLAMINGO WASH)
HEADING LINE NO 3 IS -

                                                    W S P G W                                                        PAGE NO    2
                         WATER SURFACE PROFILE - ELEMENT CARD LISTING
 ELEMENT NO   1 IS A SYSTEM OUTLET      *         *      *
                    U/S DATA   STATION    INVERT  SECT                                    W S ELEV
                                195.000   14.220   10                                        14.220
 ELEMENT NO   2 IS A TRANSITION         *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                       RADIUS   ANGLE
                                610.000   24.370   11              .030                       .000     .000
 ELEMENT NO   3 IS A TRANSITION         *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                       RADIUS   ANGLE
                                800.000   27.000   14              .030                       .000     .000
 ELEMENT NO   4 IS A TRANSITION         *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                       RADIUS   ANGLE
                                850.000   27.000    5              .030                       .000     .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
 ELEMENT NO   5 IS A TRANSITION         *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                       RADIUS   ANGLE
                                900.010   27.000    4              .030                       .000     .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
 ELEMENT NO   6 IS A TRANSITION         *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                       RADIUS   ANGLE
                                950.010   28.000    7              .030                       .000     .000
 ELEMENT NO   7 IS A TRANSITION         *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                       RADIUS   ANGLE
                               1000.000   28.440    8              .030                       .000     .000
 ELEMENT NO   8 IS A  WALL  EXIT                         *
                    U/S DATA   STATION    INVERT  SECT
                               1000.000   28.440    1
 ELEMENT NO   9 IS A REACH              *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                       RADIUS    ANGLE    ANG PT  MAN H
                               1290.620   29.300    1              .013                       .000     .000     .000     0
 ELEMENT NO  10 IS A TRANSITION         *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                       RADIUS   ANGLE
                               1310.410   29.370    2              .012                       .000     .000
 ELEMENT NO  11 IS A REACH              *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                       RADIUS    ANGLE    ANG PT  MAN H
                               1333.990   29.560    2              .013                       .000     .000     .000     0
 ELEMENT NO  12 IS A REACH              *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                       RADIUS    ANGLE    ANG PT  MAN H
                               1500.990   30.770    2              .013                    318.947   30.000     .000     0
 ELEMENT NO  13 IS A REACH              *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                       RADIUS    ANGLE    ANG PT  MAN H
                               1625.360   31.820    2              .013                       .000     .000     .000     0
                                                    W S P G W                                                        PAGE NO    3
                         WATER SURFACE PROFILE - ELEMENT CARD LISTING
 ELEMENT NO  14 IS A REACH              *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                       RADIUS    ANGLE    ANG PT  MAN H
                               1697.010   32.420    2              .013                    273.683   15.000     .000     0
 ELEMENT NO  15 IS A REACH              *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                       RADIUS    ANGLE    ANG PT  MAN H
                               1843.850   33.670    2              .013                       .000     .000     .000     0
 ELEMENT NO  16 IS A REACH              *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                       RADIUS    ANGLE    ANG PT  MAN H
                               1939.200   34.470    2              .013                    364.210   15.000     .000     0
 ELEMENT NO  17 IS A REACH              *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                       RADIUS    ANGLE    ANG PT  MAN H
                               2045.680   35.400    2              .012                       .000     .000     .000     0
 ELEMENT NO  18 IS A TRANSITION         *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                       RADIUS   ANGLE
                               2065.600   35.570    3              .012                       .000     .000
 ELEMENT NO  19 IS A REACH              *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                       RADIUS    ANGLE    ANG PT  MAN H
                               2215.600   36.800    3              .013                       .000     .000     .000     0
 ELEMENT NO  20 IS A REACH              *         *      *
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                    U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                               3615.600   50.980    3              .013                          .000     .000      .000     0
 ELEMENT NO  21 IS A TRANSITION          *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                          RADIUS   ANGLE
                               4013.550   54.670   13              .015                          .000     .000
WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS
 ELEMENT NO  22 IS A REACH               *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                               4415.160   59.850   16              .015                          .000     .000      .000     0
 ELEMENT NO  23 IS A SYSTEM HEADWORKS                    *                     *
                    U/S DATA   STATION    INVERT  SECT                                   W S ELEV
                               4415.160   59.850   16                                     65.470
```

PRE-CONSTRUCTION
WSPG MODEL

FILE: pv~flam7.WSW W S P G W - CIVILDESIGN Version 14.06 PAGE 1

Program Package Serial Number: 1754

WATER SURFACE PROFILE LISTING Date: 6-23-2006 Time: 9: 8:20

PARADISE VALLEY

BOX CULVERT ANALYSIS (FLAMINGO WASH)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT or I.D. / "N"	Base Wt / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
195.000	14.220	8.793	23.003	3923.00	14.84	3.42	26.42	.00	9.62	63.38		10		0 .0
TRANS STR	.0245					.0189	7.86	8.78	1.28		.030			IR-OPEN
610.000	24.370	5.362	29.732	3923.00	17.65	4.84	34.57	.00	6.89	60.99		11		0 .0
TRANS STR	.0138					.0158	3.00	5.36	1.63		.030			IR-OPEN
800.000	27.000	8.292	35.292	3923.00	12.71	2.51	37.80	.00	8.29	61.52		14		0 .0
TRANS STR	.0000					.0061	.30	8.29	1.00		.030			IR-OPEN
850.000	27.000	9.653	36.653	3923.00	9.98	1.55	38.20	.00	8.09	64.39		5		0 .0
TRANS STR	.0000					.0053	.26	9.65	.71		.030			IR-OPEN
900.010	27.000	9.271	36.271	3923.00	12.32	2.36	38.63	.00	8.93	55.50		4		0 .0
TRANS STR	.0200					.0057	.29	9.27	.91		.030			IR-OPEN
950.010	28.000	9.189	37.189	3923.00	10.71	1.78	38.97	.00	8.16	63.81		7		0 .0
TRANS STR	.0088					.0027	.14	9.19	.79		.030			IR-OPEN
1000.000	28.440	10.456	38.896	3923.00	4.78	.35	39.25	.00	4.80	91.99		8		0 .0
WALL EXIT														
1000.000	28.440	10.456	38.896	3923.00	8.17	1.04	39.93	.00	5.10	63.00	8.000	63.000	.00	4 .8
280.620	.0031					.0016	.45	10.46	.52	5.21	.013	.00	.00	BOX
1280.620	29.300	10.042	39.342	3923.00	8.17	1.04	40.38	.00	5.10	63.00	8.000	63.000	.00	4 .8
TRANS STR	.0023							10.04	.52		.013	.00	.00	BOX

PARADISE VALLEY
BOX CULVERT ANALYSIS (FLAMINGO WASH)

Station / L/Elem	Invert Elev / Cn Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1310.410	29.370	7.310	36.680	3923.00	22.13	7.60	44.28	.00	9.00	25.00	9.000	25.000	.00	1 .8
23.580	.0081					.0076	.18	7.31	1.46	7.14	.013	.00	.00	BOX
1333.990	29.560	7.321	36.881	3923.00	22.10	7.58	44.46	1.15	9.00	25.00	9.000	25.000	.00	1 .8
167.000	.0072					.0076	1.29	8.47	1.46	7.44	.013	.00	.00	BOX
1500.990	30.370	7.261	38.031	3923.00	22.28	7.71	45.74	.00	9.00	25.00	9.000	25.000	.00	1 .8
124.370	.0084					.0076	.94	7.26	1.48	7.32	.013	.00	.00	BOX
1625.360	31.820	7.360	39.180	3923.00	21.98	7.50	46.68	1.33	9.00	25.00	9.000	25.000	.00	1 .8
71.650	.0084					.0074	.53	8.69	1.45	7.04	.013	.00	.00	BOX
1697.010	32.420	7.432	39.852	3923.00	21.77	7.36	47.21	.00	9.00	25.00	9.000	25.000	.00	1 .8
146.940	.0085					.0070	1.02	7.43	1.43	6.99	.013	.00	.00	BOX
1843.950	33.670	7.689	41.359	3923.00	21.04	6.87	48.23	.92	9.00	25.00	9.000	25.000	.00	1 .8
95.350	.0084					.0064	.61	8.60	1.36	7.03	.013	.00	.00	BOX
1939.200	34.470	7.967	42.437	3923.00	20.31	6.40	48.84	.00	9.00	25.00	9.000	25.000	.00	1 .8
40.724	.0087					.0059	.24	7.97	1.29	6.92	.013	.00	.00	BOX
1979.924	34.826	8.181	43.007	3923.00	19.77	6.07	49.08	.00	9.00	25.00	9.000	25.000	.00	1 .8
44.963	.0087					.0053	.24	8.18	1.24	6.92	.013	.00	.00	BOX

---------- WARNING - Flow depth near top of box conduit ----------

PARADISE VALLEY
BOX CULVERT ANALYSIS (FLAMINGO WASH)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave.	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wtn Prs/Pip / Type Ch
2024.887	35.219	8.580	43.799	3923.00	18.85	5.52	49.32	.00	9.00	25.00	9.000	25.000	.00	1 .8
20.713	.0087					.0060	.12	8.58	1.15	6.92	.013	.00	.00	BOX
---------- WARNING - Flow depth near top of box conduit ----------														
2045.600	35.400	9.000	44.400	3923.00	17.97	5.02	49.42	.00	9.00	25.00	9.000	25.000	.00	1 .8
TRANS STR	.0085					.0030	.06	9.00	1.07		.013	.00	.00	BOX
2065.600	35.570	11.751	47.321	3923.00	12.97	2.61	49.93	.00	8.05	31.00	10.000	31.000	.00	1 .8
132.202	.0082					.0030	.39	11.75	.73	5.71	.013	.00	.00	BOX
2197.802	36.654	11.052	47.706	3923.00	12.97	2.61	50.32	.00	8.05	31.00	10.000	31.000	.00	1 .8
HYDRAULIC JUMP														
2197.802	36.654	5.283	41.937	3923.00	24.55	9.36	51.29	.00	8.05	31.00	10.000	31.000	.00	1 .8
17.798	.0082					.0102	.18	5.28	1.91	5.71	.013	.00	.00	BOX
2215.600	36.800	5.271	42.071	3923.00	24.60	9.40	51.47	.00	8.05	31.00	10.000	31.000	.00	1 .8
315.028	.0101					.0103	3.23	5.27	1.91	5.29	.013	.00	.00	BOX
2530.628	39.991	5.254	45.245	3923.00	24.68	9.46	54.71	.00	8.05	31.00	10.000	31.000	.00	1 .8
761.907	.0101					.0110	8.42	5.25	1.92	5.29	.013	.00	.00	BOX
3292.535	47.708	5.010	52.717	3923.00	25.89	10.41	63.12	.00	8.05	31.00	10.000	31.000	.00	1 .8
323.065	.0101					.0126	4.08	5.01	2.06	5.29	.013	.00	.00	BOX

PARADISE VALLEY
BOX CULVERT ANALYSIS (FLAMINGO WASH)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT or I.D. / "N"	Base Wt / X-Fall	ZL / ZR	No Wth Pts/Pip / Type Ch
3615.600	50.980	4.776	55.756	3923.00	27.15	11.45	67.20	.00	8.05	31.00	10.000	31.000	.00	1 .8
TRANS STR	.0093					.0167	6.63	4.78	2.22		.015	.00	.00	BOX
4013.550	54.670	5.619	60.289	3923.00	28.29	12.43	72.72	.00	9.26	29.14		16		0 .0
401.610	.0129					.0129	5.13	5.62	2.29	5.619	.015			IR-OPEN
4415.160	59.850	5.620	65.470	3923.00	28.29	12.43	77.90	.00	9.26	29.15		16		0 .0

PARADISE VALLEY

BOX CULVERT ANALYSIS (FLAMINGO WASH)

```
 195.00   .I          W C   E H                                                    .   TX
 271.73   .                                                                         .
 348.46   .                                                                         .
 425.19   .                                                                         .
 501.92   .                                                                         .
 578.65   .                                                                         .
 655.38   .              I        W C    EH                                        .   TX
 732.11   .
 808.84   .                   I            WH  E                                   .   TX
 885.57   .                   I           C  W H                                   .   TX
 962.30   .                   I            CW  HE                                  .   TX
1039.03   .                    I            C WHE                                  .   TX
1115.76   .                     IYYYYYYCYYYYYYHWE                                   .   WX
1192.49   .                     I       C   H   W E                                    R
1269.22   .                                                                         .
1345.95   .                      I       C    H  W E                                    TX
1422.68   .                      I           W H         E                          .   R
1499.41   .                       I          W SH        E                          .   R
1576.14   .                        I           W  H        E                         .   R
1652.87   .                          I           W H        E                        .   R
1729.60   .                           I           W H        E                       .   R
1806.33   .                                                                         .
1983.06   .                             I           W H        E                     .   R
1959.79   .                              I            WH        E                    .   R
2036.52   .                               I            WH       E                       R
2113.25   .                               I             WH       E                    .   R
2189.98   .                                I             H       E                    .   TX
2266.72   .                                I            C  H W    E                       R
2343.45                                     I           C  H W   E                    .   R
2420.18   .                                 I       W   C  H       E                  .   R
2496.91   .                                 I       W    C  H      E                  .   R
2573.64   .                                      I       W    C  H      E             .   R
2650.37   .                                                                         .
2727.10   .                                                                         .
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2803.83   .                                                                                  .
2880.56   .                                                                                  .
2957.29   .                                                                                  .
3034.02   .                                                                                  .
3110.75   .                                                                                  .
3187.48                                                                                      .
3264.21                                                                                      .
3340.94                                                I       W    C  H       E            .    R
3417.67   .                                                                                  .
3494.40                                                                                      .
3571.13   .                                                                                  .
3647.86   .                                                    I       W    C  H         E   .    TX
3724.59   .                                                                                  .
3801.32                                                                                      .
3878.05   .                                                                                  .
3954.78   .                                                                                  .
4031.51   .                                                         I        W     C H          E.    R
4108.24   .                                                                                  .
4184.97   .                                                                                  .
4261.70                                                                                      .
4338.43   .                                                                                  .
4415.16   .                                                                  I        W     C H          E.    R

          14.220    20.588    26.956    33.323    39.691    46.059    52.427    58.795    65.162    71.530    77.898
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N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

POST-CONSTRUCTION
WSPG MODEL

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FILE: pvflam11.WSW                    W S P G W  - EDIT LISTING - Version 14.06              Date: 4-13-2007  Time:10:50:57
                                 WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING                                PAGE    1
 CARD  SECT  CHN   NO OF  AVE PIER  HEIGHT 1  BASE    ZL    ZR   INV   Y(1)  Y(2)  Y(3)  Y(4)  Y(5)  Y(6)  Y(7)  Y(8)  Y(9)  Y(10)
 CODE   NO   TYPE PIER/PIP WIDTH    DIAMETER  WIDTH              DROP

 CD      1    3      4     .830    8.000   63.000   .000   .000    .00
 CD      2    3      1     .830    9.000   25.000   .000   .000    .00
 CD      3    3      1     .750   10.000   31.000   .000   .000    .00
 CD      6    3      3     .830    8.500   37.500   .000   .000    .00
 CD      9    3      3     .830    8.000   57.750   .000   .000    .00
 CD     12    3      0     .000    8.000   57.750   .000   .000    .00
 CD     17    2      0     .000    8.000   63.000                   .00
 CD     18    3      2     .830    8.500   36.670   .000   .000    .00
 CD      4    5      0       .000
 CD      5    5      0       .000
 CD      7    5      0       .000
 CD      8    5      0       .000
 CD     10    5      0       .000
 CD     11    5      0       .000
 CD     13    5      0       .000
 CD     14    5      0       .000
 CD     16    5      0       .000
 CD     19    6      2       .830                                    29.26  29.26
 CD     20    6      2       .830                                    29.26  29.26
 CD     21    6      2       .830                                    29.11  29.11
 CD     22    6      0       .000
 CD     23    6      4       .830                                    29.07  29.07  29.07  29.07
FILE:                                 W S P G W  - EDIT LISTING - Version 14.06              Date: 4-13-2007  Time:10:50:57
                                 WATER SURFACE PROFILE - CROSS SECTION POINT LISTING                               PAGE    2
   CARD  SECT  NO OF    X(1) , Y(1)    X(2) , Y(2)    X(3) , Y(3)    X(4) , Y(4)    X(5) , Y(5)    X(6) , Y(6)    X(7) , Y(7)
   CODE   NO   POINTS   X(8) , Y(8)    X(9) , Y(9)    X(10) ,Y(10)   X(11) ,Y(11)   X(N) , Y(N)   X(N+1),Y(N+1)  X(35) ,Y(35)

   PTS     4     8       6.720  38.300   24.470  38.000   42.690  28.000   53.690  27.000   59.960  27.000   73.770  33.000   88.060  38.000
   PTS                 100.000  38.000
   PTS     5     7        .000  38.200   20.530  38.000   38.980  27.000   59.100  27.000   73.470  33.000   92.230  38.000  100.000  38.000
   PTS     7     6       6.270  38.980   16.320  38.980   42.050  28.000   57.950  28.000   86.650  38.000  100.000  38.410
   PTS     8     4        .000  38.260   15.000  28.440   81.000  28.780   92.000  38.250
   PTS    10    10      70.030  28.600  102.130  19.810  108.460  15.200  116.230  14.220  124.640  15.110  133.920  20.970  151.670  21.770
   PTS                 159.420  26.160  198.520  26.560  224.160  28.000
   PTS    11     7      41.150  35.990   71.730  34.450   93.650  25.500  114.500  24.370  128.040  25.430  161.500  34.300  227.240  34.350
   PTS    13     5        .000  65.550   69.160  64.450   77.380  54.670   98.840  55.160  100.060  64.450
   PTS    14     5      23.670  37.000   44.350  27.000   59.940  27.000   74.640  32.000   91.750  36.000
   PTS    16     4      69.930  70.400   79.290  59.350  100.190  60.010  107.000  71.400
   PTS    19     8        .000  29.260   18.330  29.260   18.330  37.760   19.160  37.760   19.160  29.260   37.500  29.260   37.500  37.760
   PTS                    .000  37.760
   PTS    20     8        .000  29.260   18.330  29.260   18.330  37.760   19.160  37.760   19.160  29.260   37.500  29.260   37.500  37.760
   PTS                    .000  37.760
   PTS    21     8        .000  29.110   28.420  29.110   28.420  37.210   29.250  37.210   29.250  29.110   57.670  29.110   57.670  37.210
   PTS                    .000  37.210
   PTS    22    12        .000  29.110   11.250  29.110   11.250  37.210   12.080  37.210   12.080  29.110   45.660  29.110   45.660  37.210
   PTS                  46.500  37.210   46.500  29.110   57.750  29.110   57.750  37.210     .000  37.210
   PTS    23     8        .000  29.070   12.770  29.070   24.700  29.070   36.640  29.070   48.570  29.070   63.000  29.070   63.000  37.070
   PTS                    .000  37.070
                                                    W S P G W                                                        PAGE NO    1
                          WATER SURFACE PROFILE - TITLE CARD LISTING
HEADING LINE NO 1 IS -
                            PARADISE VALLEY
HEADING LINE NO 2 IS -
                            BOX CULVERT ANALYSIS (FLAMINGO WASH)
HEADING LINE NO 3 IS -
                            ADDED SECTIONS FOR CCRFCD REQUEST (ABBY)
                                                    W S P G W                                                        PAGE NO    2
                          WATER SURFACE PROFILE - ELEMENT CARD LISTING
 ELEMENT NO    1 IS A SYSTEM OUTLET      *          *      *                                    W S ELEV
                    U/S DATA   STATION    INVERT  SECT                                          14.220
                                195.000   14.220   10
 ELEMENT NO    2 IS A TRANSITION         *          *      *
                    U/S DATA   STATION    INVERT  SECT              N                           RADIUS   ANGLE
                                610.000   24.370   11              .030                            .000     .000
 ELEMENT NO    3 IS A TRANSITION         *          *      *
                    U/S DATA   STATION    INVERT  SECT              N                           RADIUS   ANGLE
                                800.000   27.000   14              .030                            .000     .000
 ELEMENT NO    4 IS A TRANSITION         *          *      *
                    U/S DATA   STATION    INVERT  SECT              N                           RADIUS   ANGLE
                                850.000   27.000    5              .030                            .000     .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
 ELEMENT NO    5 IS A TRANSITION         *          *      *
                    U/S DATA   STATION    INVERT  SECT              N                           RADIUS   ANGLE
                                900.010   27.000    4              .030                            .000     .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
 ELEMENT NO    6 IS A TRANSITION         *          *      *
                    U/S DATA   STATION    INVERT  SECT              N                           RADIUS   ANGLE
                                950.010   28.000    7              .030                            .000     .000
 ELEMENT NO    7 IS A TRANSITION         *          *      *
                    U/S DATA   STATION    INVERT  SECT              N                           RADIUS   ANGLE
                                999.998   28.440    8              .030                            .000     .000
WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS
 ELEMENT NO    8 IS A REACH              *          *      *
                    U/S DATA   STATION    INVERT  SECT              N                           RADIUS   ANGLE    ANG PT  MAN H
                               1000.000   28.440   17              .030                            .000     .000     .000     3
 ELEMENT NO    9 IS A BRIDGE EXIT                   *
                    U/S DATA   STATION    INVERT  SECT
                               1000.000   28.440    1
 ELEMENT NO   10 IS A REACH              *          *      *
                    U/S DATA   STATION    INVERT  SECT              N                           RADIUS   ANGLE    ANG PT  MAN H
                               1210.410   29.370    1              .013                            .000     .000     .000     3
 ELEMENT NO   11 IS A TRANSITION         *          *      *
                    U/S DATA   STATION    INVERT  SECT              N                           RADIUS   ANGLE
                               1223.160   29.110    9              .013                            .000     .000
 ELEMENT NO   12 IS A TRANSITION         *          *      *
                    U/S DATA   STATION    INVERT  SECT              N                           RADIUS   ANGLE
                               1224.160   29.110   12              .013                            .000     .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
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ELEMENT NO  13 IS A BRIDGE EXIT                          *
                U/S DATA   STATION    INVERT  SECT
                           1224.160   29.110    9
                                          W S P G W                                                          PAGE NO   3
                       WATER SURFACE PROFILE - ELEMENT CARD LISTING
ELEMENT NO  14 IS A TRANSITION          *         *         *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS   ANGLE
                           1274.240   29.260    6              .013                          .000     .000
ELEMENT NO  15 IS A BRIDGE ENTRANCE                      *
                U/S DATA   STATION    INVERT  SECT             FP
                           1274.240   29.260    6            1.000
ELEMENT NO  16 IS A TRANSITION          *         *         *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS   ANGLE
                           1310.410   29.370    2              .013                          .000     .000
ELEMENT NO  17 IS A REACH               *         *         *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           1333.990   29.560    2              .013                          .000     .000      .000     0
ELEMENT NO  18 IS A REACH               *         *         *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           1500.990   30.770    2              .013                         318.947   30.000     .000     0
ELEMENT NO  19 IS A REACH               *         *         *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           1641.110   32.090    2              .013                          .000     .000      .000     0
ELEMENT NO  20 IS A REACH               *         *         *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           1716.130   32.700    2              .013                         286.555   15.000     .000     0
ELEMENT NO  21 IS A REACH               *         *         *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           1829.530   33.690    2              .013                          .000     .000      .000     0
ELEMENT NO  22 IS A REACH               *         *         *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           1929.360   34.540    2              .013                         381.322   15.000     .000     0
ELEMENT NO  23 IS A REACH               *         *         *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           2046.040   35.400    2              .013                          .000     .000      .000     0
ELEMENT NO  24 IS A TRANSITION          *         *         *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS   ANGLE
                           2066.040   35.570    3              .013                          .000     .000
ELEMENT NO  25 IS A REACH               *         *         *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           2215.800   36.800    3              .013                          .000     .000      .000     0
ELEMENT NO  26 IS A REACH               *         *         *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           3615.600   50.980    3              .013                          .000     .000      .000     0
ELEMENT NO  27 IS A TRANSITION          *         *         *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS   ANGLE
                           4013.550   54.670   13              .015                          .000     .000
                                          W S P G W                                                          PAGE NO   4
                       WATER SURFACE PROFILE - ELEMENT CARD LISTING
WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS
ELEMENT NO  28 IS A REACH               *         *         *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           4415.160   59.850   16              .015                          .000     .000      .000     0
ELEMENT NO  29 IS A SYSTEM HEADWORKS                     *                        *
                U/S DATA   STATION    INVERT  SECT                                      W S ELEV
                           4415.160   59.850   16                                        65.470
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POST-CONSTRUCTION
WSPG MODEL

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FILE: pvflam11.WSW                    W S P G W - CIVILDESIGN Version 14.06                                    PAGE    1
                              Program Package Serial Number: 1754
                                          WATER SURFACE PROFILE LISTING                    Date: 4-13-2007  Time:10:51: 0
                        PARADISE VALLEY
                          BOX CULVERT ANALYSIS (FLAMINGO WASH)
                            ADDED SECTIONS FOR CCRFCD REQUEST (ABBY)
*****************************************************************************************************************************
         | Invert  | Depth  | Water  |   Q    | Vel    Vel  | Energy | Super |Critical|Flow Top|Height/|Base Wt|      |No Wth
 Station |  Elev   |  (FT)  |  Elev  |  (CFS) |(FPS)   Head | Grd.El.| Elev  | Depth  | Width  |Dia.-FT|or I.D.|  ZL  |Pts/Pip
         |         |        |        |        |        SF Ave|   HF   |SE Dpth|Froude N|Norm Dp |  "N"  | X-Fall|  ZR  |Type Ch
 L/Elem  |Ch Slope |        |        |        |        |      |        |       |        |        |       |       |      |
*********|*********|********|********|********|********|******|********|*******|********|********|*******|*******|******|*******
  195.000    14.220    8.783    23.003   3923.00   14.84    3.42    26.42     .00    9.62    63.38                10          0    .0
TRANS STR   .0245                                            .0189     7.86    8.79    1.28             .030                    IR-OPEN
  610.000    24.370    5.362    29.732   3923.00   17.65    4.84    34.57     .00    6.89    60.99                11          0    .0
TRANS STR   .0138                                            .0158     3.00    5.36    1.63             .030                    IR-OPEN
  800.000    27.000    8.292    35.292   3923.00   12.71    2.51    37.80     .00    8.29    61.52                14          0    .0
TRANS STR   .0000                                            .0061      .30    8.29    1.00             .030                    IR-OPEN
  850.000    27.000    9.653    36.653   3923.00    9.98    1.55    38.20     .00    9.09    64.39                 5          0    .0
TRANS STR   .0000                                            .0053       26    9.65     .71             .030                    IR-OPEN
  900.010    27.000    9.271    36.271   3923.00   12.32    2.36    38.63     .00    8.83    55.50                 4          0    .0
TRANS STR   .0200                                            .0057      .29    9.27     .91             .030                    IR-OPEN
  950.010    28.000    9.189    37.189   3923.00   10.71    1.78    38.97     .00    8.16    63.81                 7          0    .0
TRANS STR   .0086                                            .0027      .14    9.19     .79             .030                    IR-OPEN
 1000.000    28.440   10.456    38.896   3923.00    5.96     .55    39.45     .00    4.94    63.00    8.000   63.000   .00    0    .0
BRIDGE EXIT
 1000.000    28.440   10.456    38.896   3923.00    8.22    1.05    39.94     .00    5.12    63.00    8.000   63.000   .00    4    .8
  210.410     .0030                                           .0016      .34   10.46     .53    5.29     .013     .00    .00  BOX
 1210.410    29.070   10.166    39.236   3923.00    8.22    1.05    40.28     .00    5.12    63.00    8.000   63.000   .00    4    .8
TRANS STR   .0031                                            .0016      .02   10.17     .53             .013     .00    .00  BOX
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PARADISE VALLEY
BOX CULVERT ANALYSIS :FLAMINGO WASH:
ADDED SECTIONS FOR CCRFCD REQUEST (ABBY

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT or "N"	Base Wt or X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1223.160	29.110	10.060	39.170	3923.00	8.87	1.22	40.39	.00	5.39	57.75	8.000	57.750	.00	3 .8
TRANS STR	.0000					.0010	.00	10.06	.57		.013	.00	.00	BOX
1224.160	29.110	10.175	39.285	3923.00	8.49	1.12	40.40	.00	5.23	57.75	8.000	57.750	.00	3 .0
BRIDGE EXIT														
1224.160	29.110	10.175	39.295	3923.00	8.87	1.22	40.51	.00	5.39	57.75	8.000	57.750	.00	3 .8
TRANS STR	.0030							10.17	.57		.013	.00	.00	BOX
1274.240	29.260	4.903	34.163	3923.00	22.85	8.11	42.27	.00	7.31	37.50	8.500	37.500	.00	3 .8
BRIDGE ENTRANCE														
1274.240	29.260	4.085	33.345	3923.00	25.61	10.18	43.53	.00	6.98	37.50	8.500	37.500	.00	0 .0
TRANS STR	.0030					.0089	.32	4.09	2.23		.013	.00	.00	BOX
1310.410	29.370	7.287	36.657	3923.00	22.27	7.70	44.36	.00	9.00	25.00	9.000	25.000	.00	1 .8
23.580	.0081					.0077	.18	7.29	1.48	7.17	.013	.00	.00	BOX
1333.990	29.560	7.295	36.855	3923.00	22.25	7.69	44.54	1.17	9.00	25.00	9.000	25.000	.00	1 .8
167.000	.0072					.0078	1.30	8.46	1.48	7.47	.013	.00	.00	BOX
1500.990	30.770	7.212	37.982	3923.00	22.51	7.87	45.85	.00	9.00	25.00	9.000	25.000	.00	1 .8
140.120	.0094					.0076	1.07	7.21	1.50	6.75	.013	.00	.00	BOX
1641.110	32.080	7.446	39.536	3923.00	21.80	7.38	46.91	1.24	9.00	25.00	9.000	25.000	.00	1 .3
75.320	.0081					.0072	.54	8.69	1.43	7.14	.013	.00	.00	BOX

PARADISE VALLEY
BCX CULVERT ANALYSIS (FLAMINGO WASH)
ADDED SECTIONS FOR CCRFCD REQUEST (ABBY)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE	Critical Depth / Dpth	Flow Top Width / Froude N	Height/Dia.-FT. / Norm Dp	Base Wt or I.D. / "N"	ZL / X-Fall	ZR	No Wth Prs/Pip / Type Ch
1716.130	32.700	7.519	40.219	3923.00	21.59	7.24	47.45	.00	9.00	25.00	9.000	25.000	.00	.00	1 .8
113.400	.0097					.0068	.77	7.52	1.41	6.95	.013	.00	.00		BOX
1929.530	33.690	7.781	41.471	3923.00	20.86	6.76	48.23	.86	9.00	25.00	9.000	25.000	.00		1 .8
2.349	.0085					.0065	.02	8.64	1.34	7.02	.013	.00	.00		BOX
1931.879	33.710	7.787	41.497	3923.00	20.84	6.75	48.24	.86	9.00	25.00	9.000	25.000	.00		1 .8
97.481	.0085					.0061	.60	8.64	1.34	7.02	.013	.00	.00		BOX
1929.360	34.540	8.167	42.707	3923.00	19.87	6.13	48.84	.00	9.00	25.00	9.000	25.000	.00		1 .8
4.297	.0074					.0057	.02	8.17	1.25	7.42	.013	.00	.00		BOX
		---------- WARNING - Flow depth near top of box conduit ----------													
1933.657	34.572	8.181	42.753	3923.00	19.84	6.11	48.86	.00	9.00	25.00	9.000	25.000	.00		1 .8
79.098	.0074					.0054	.43	8.18	1.24	7.42	.013	.00	.00		BOX
		---------- WARNING - Flow depth near top of box conduit ----------													
2012.755	35.155	8.580	43.735	3923.00	18.92	5.56	49.29	.00	9.00	25.00	9.000	25.000	.00		1 .8
33.285	.0074					.0048	.16	8.58	1.16	7.42	.013	.00	.00		BOX
		---------- WARNING - Flow depth near top of box conduit ----------													

PARADISE VALLEY
BOX CULVERT ANALYSIS (FLAMINGO WASH)
ADDED SECTIONS FOR CCRFCD REQUEST (ABBY)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT or I.D. / "N"	Base Wt / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
2046.040	35.400	9.000	44.400	3923.00	18.03	5.05	49.45	.00	9.00	25.00	9.000	25.000	.00	1 .8
TRANS STR	.0085					.0030	.06	9.00	1.08		.013	.00	.00	BOX
---------- WARNING - Flow depth near top of box conduit ----------														
2066.040	35.570	11.765	47.335	3923.00	12.97	2.61	49.95	.00	8.05	31.00	10.000	31.000	.00	1 .8
134.125	.0082					.0030	.40	11.76	.73	5.70	.013	.00	.00	BOX
2200.166	36.672	11.058	47.729	3923.00	12.97	2.61	50.34	.00	8.05	31.00	10.000	31.000	.00	1 8
HYDRAULIC JUMP														
2200.166	36.672	5.282	41.953	3923.00	24.55	9.36	51.31	.00	8.05	31.00	10.000	31.000	.00	1 .8
15.635	.0082					.0102	.16	5.28	1.91	5.70	.013	.00	.00	BOX
2215.800	36.800	5.271	42.071	3923.00	24.60	9.40	51.47	.00	8.05	31.00	10.000	31.000	.00	1 .8
313.443	.0101					.0103	3.22	5.27	1.91	5.29	.013	.00	00	BOX
2529.243	39.975	5.254	45.229	3923.00	24.68	9.16	54.69	.00	8.05	31.00	10.000	31.000	.00	1 .8
763.106	.0101					.0110	8.43	5.25	1.92	5.29	.013	.00	.00	BOX
3292.348	47.705	5.010	52.715	3923.00	25.89	10.41	63.12	.00	8.05	31.00	10.000	31.000	.00	1 8
323.252	.0101					.0126	4.08	5.01	2.06	5.29	.013	.00	.00	BOX
3615.600	50.980	4.776	55.756	3923.00	27.15	11.45	67.20	.00	8.05	31.00	10.000	31.000	.00	1 .8
TRANS STR	.0093					.0167	6.62	4.78	2.22		.015	.00	00	BOX

Program Package Serial Number: 1754

WATER SURFACE PROFILE LISTING Date: 4-13-2007 Time:10:51: 0

PARADISE VALLEY
BOX CULVERT ANALYSIS (FLAMINGO WASH)
ADDED SECTIONS FOR CCRFCD REQUEST (ABBY)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wtn Prs/Pip Type Ch
4013.550	54.670	5.619	60.289	3923.00	28.29	12.43	72.72	.00	9.26	29.14		16		0 .0
401.610	.0129					.0129	5.18	5.62	2.29	5.619	.015			IR-OPEN
4415.160	59.850	5.620	65.470	3923.00	28.29	12.43	77.90	.00	9.26	29.15		16		0 .0

PARADISE VALLEY

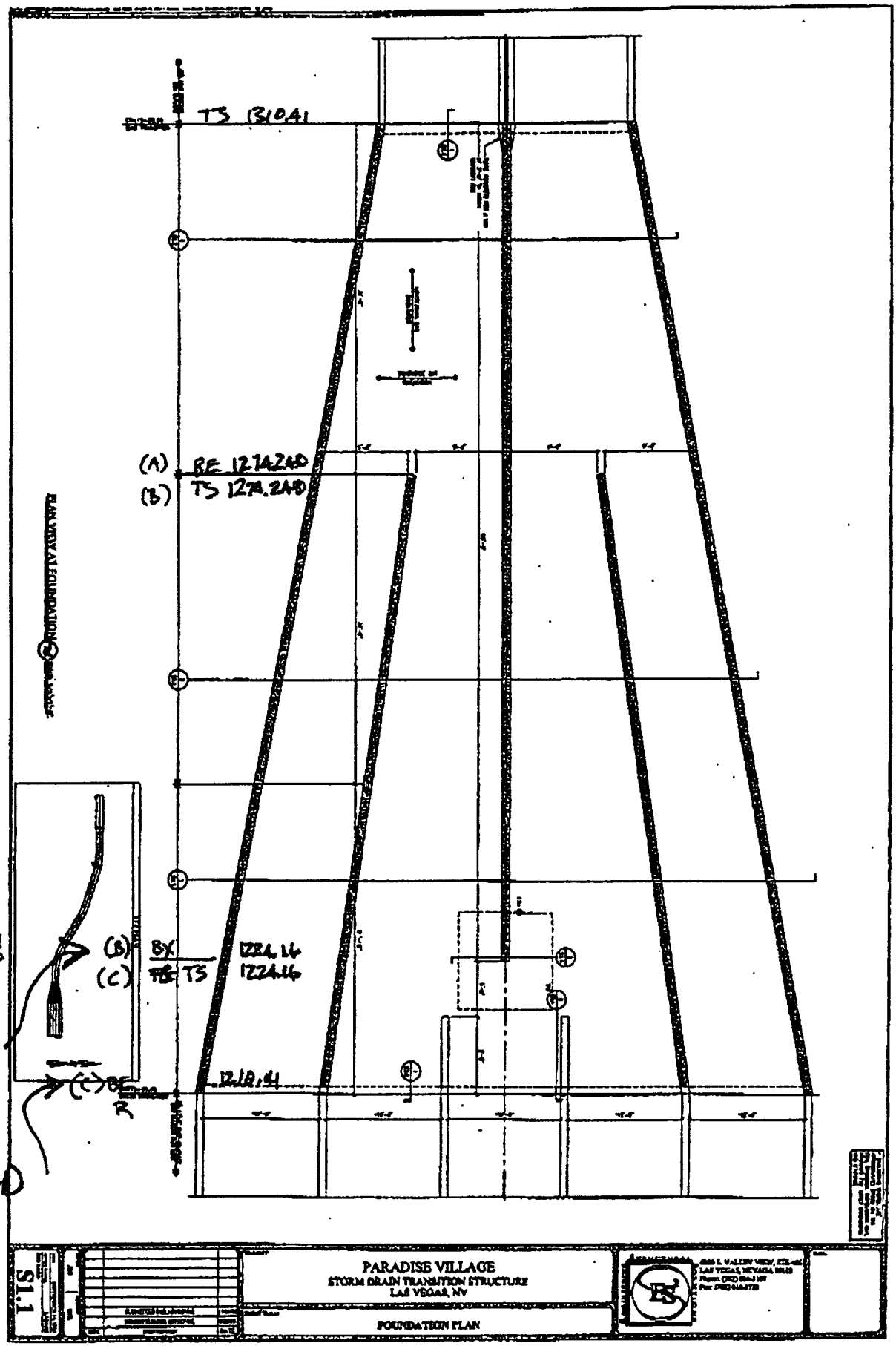
BOX CULVERT ANALYSIS (FLAMINGO WASH)

ADDED SECTIONS FOR CORFCD REQUEST (ABBY)

```
 195.00  .I          W C   E H                                          .  TX
 257.99  .                                                              .
 320.97  .                                                              .
 383.96  .                                                              .
 446.95  .                                                              .
 509.94  .                                                              .
 572.92  .                                                              .
 635.91  .             I        W C    EH                                 TX
 698.90  .                                                              .
 761.89  .                                                              .
 824.87  .                 I            WH  E                            .  TX
 887.86  .                 I           C  W H                            .  TX
 950.85                    I            CW  HE                           .  TX
1013.84  .                  I            C WHE                           .  TX
1076.82                     IBBBBBBBCBBBH   WE                           .  BX
1139.81  .                  I       C   H   W E                         .  R
1202.80  .
1265.79                     I       C   H   WE                           .  TX
1328.77                     I       C   H   W E                          .  TX
1391.76  .                  IBBBBBBBCBBBH   W E                          .  BX
1454.75                     I       C   H   W E                          .  TX
1517.74                     IBBBBBBBWBBBCH       E                       .  BE
1580.72                     I      W   C H         E                    .  TX
1643.71                     I           W H         E                      R
1706.70  .                   I          W BH        E                   .  R
1769.69  .                    I           W  H        E                  .  R
1832.67                          I          W BH        E                  R
1895.66                           I          W  H        E               .  R
1958.65  .                          I           W H        E             .  R
2021.64  .                          I           W H        E             .  R
2084.62  .                           I           W H       E             .  R
2147.61                              I           W H       E             .  R
2210.60  .                            I            WH       E             .  R
2273.59  .                             I            H       E             .  TX
```

```
2336.57  .                          I          C H W  E                                  .  R
2399.56  .                            I         C H W  E                                 .  R
2462.55  .                            I      W  C H     E                                 .  R
2525.54  .                            I      W   C H    E                                 .  R
2588.52                                   I      W   C H    E                             .  R
2651.51  .                                                                                .
2714.50  .                                                                                .
2777.49  .                                                                                .
2840.47  .                                                                                .
2903.46  .                                                                                .
2966.45  .                                                                                .
3029.44  .                                                                                .
3092.42                                                                                   .
3155.41  .                                                                                .
3218.40  .                                                                                .
3281.39  .                                                                                .
3344.37  .                                              I      W   C H      E             .  R
3407.36  .                                                                                .
3470.35  .                                                                                .
3533.34  .                                                                                .
3596.32  .                                                                                .
3659.31  .                                                 I      W   C H        E       .  TX
3722.30  .                                                                                .
3785.29                                                                                   .
3848.27  .                                                                                .
3911.26  .                                                                                .
3974.25  .                                                                                .
4037.24                                                        I      W    C H         E  .  R
4100.22                                                                                   .
4163.21  .                                                                                .
4226.20  .                                                                                .
4289.19                                                                                   .
4352.17                                                                                   .
4415.16  .                                                                 I      W    C H         E.  R
         14.220   20.588   26.956   33.323   39.691   46.059   52.427   58.795   65.162   71.530   77.898
```

N O T E S
1. GLOSSARY:
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION



NEW CARD BE

NEW STA 1 & 1 CARDS BX & TS)

NEW CARD

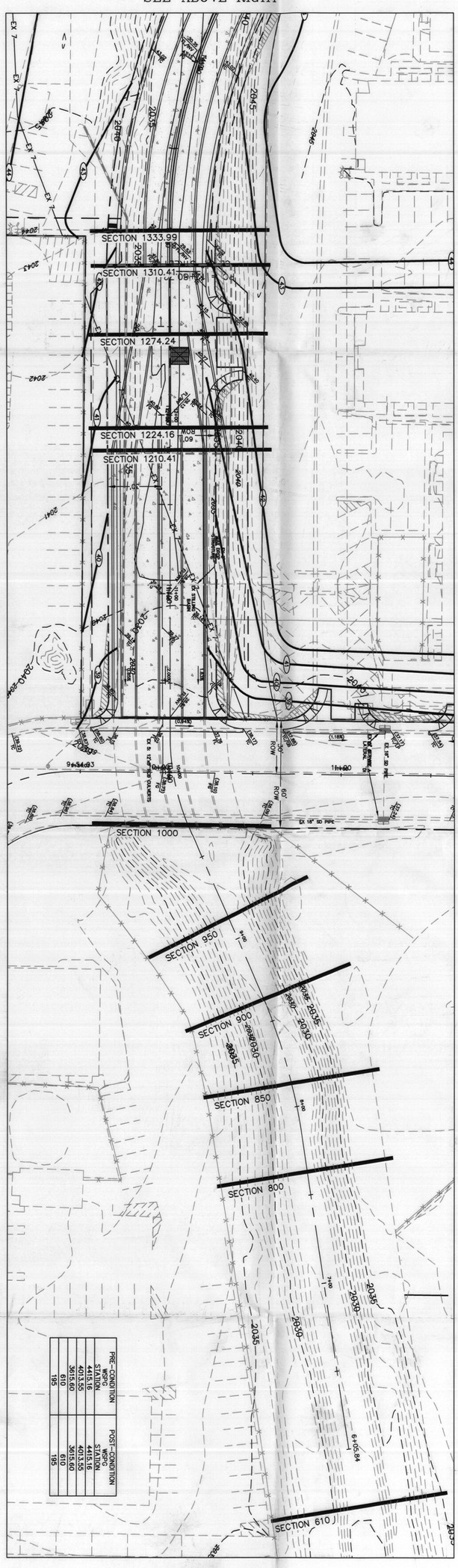
H = HEIGHT OF CHANNEL
E = ENERGY GRADE LINE
X = CURVES CROSSING OVER
B = BRIDGE ENTRANCE OR EXIT
Y = WALL ENTRANCE OR EXIT

2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

APPENDIX E

WSPGW Work Maps

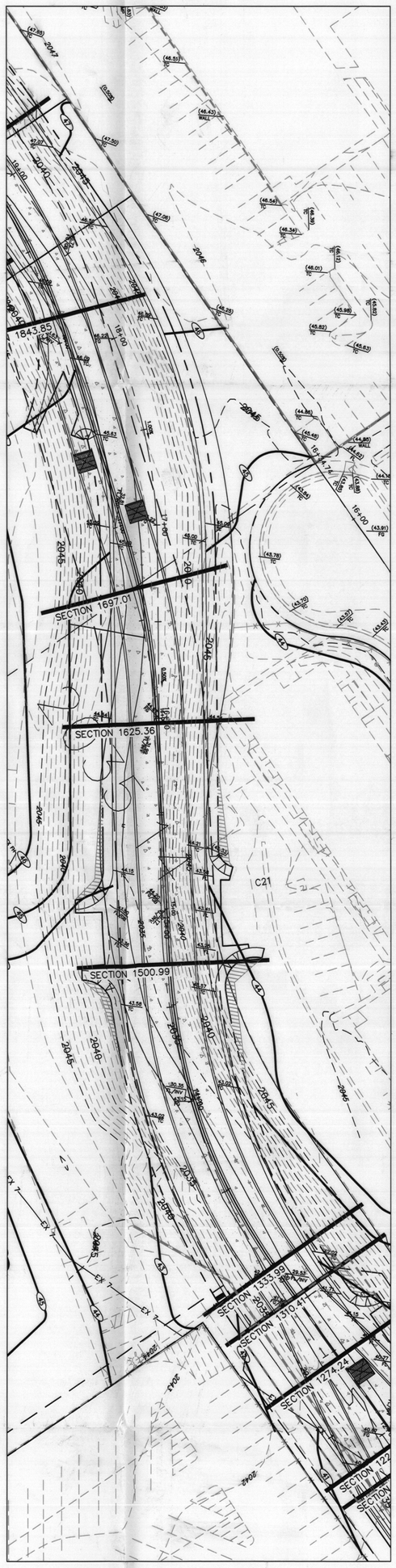
SEE ABOVE RIGHT



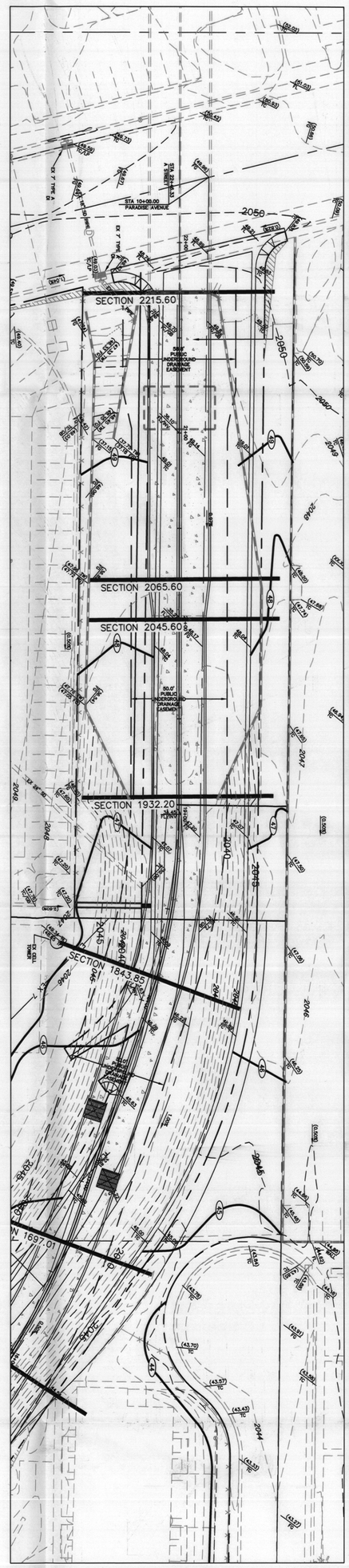
PRE-CONDITION	
STATION	
4415.16	
4013.55	
3615.60	
610	
195	

POST-CONDITION	
STATION	
4415.16	
4013.55	
3615.60	
610	
195	

SEE ABOVE RIGHT



SEE BELOW LEFT



SEE BELOW LEFT

GRAPHIC SCALE

(IN FEET)
1 inch = 30 ft.

30 0 15 30

DRAWN BY: JMA	04.18.08	SHEET	PARADISE VILLAGE
DESIGNED BY: JMA	04.18.08		
CHECKED BY: SFC	04.18.08	TITLE	AS-BUILT WSPG MODEL POST CONDITION
PROJECT NO: 07030-01	SCALE: 1"=30'		

SHEET 13 OF SHEETS DRAWING NO.

PROFESSIONAL ENGINEER STATE OF NEVADA STEPHEN FRANK CHUCKOVICH 13969 EXP. 12-31-08 CIVIL 4/18/08

LAPOUR
5525 S DECATUR BLVD., SUITE 101
LAS VEGAS, NV 89118
TEL: (702) 222-3022 FAX: (702) 222-0961

ROME CONSULTING
3550 W. CHEYENNE AVENUE, SUITE 110
NORTH LAS VEGAS, NEVADA 89032
Office: (702) 791-3900
Fax: (702) 631-3909

REV	DATE	BY	REVISION

APPENDIX F

FEMA Forms – MT2 Form 1, 2, 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

OVERVIEW & CONCURRENCE FORM

O.M.B No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1 hour per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, SW, Washington DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

A. REQUESTED RESPONSE FROM FEMA

This request is for a (check one):

☐ CLOMR: A letter from FEMA commenting on whether a proposed project, if built as proposed, would justify a map revision, or proposed hydrology changes (See 44 CFR Ch. 1, Parts 60, 65 & 72).

☒ LOMR: A letter from FEMA officially revising the current NFIP map to show the changes to floodplains, regulatory floodway or flood elevations. (See Parts 60 & 65 of the NFIP Regulations.)

B. OVERVIEW

1. The NFIP map panel(s) affected for all impacted communities is (are):

Community No.	Community Name	State	Map No.	Panel No.	Effective Date
Ex: 480301 480287	City of Katy Harris County	TX TX	480301 48201C	0005D 0220G	02/08/83 09/28/90
320003	Clark County, Unicorporated Areas	NV	32003	2557E	9/27/02

2. Flooding Source: Flamingo Wash

3. Project Name/Identifier: Paradise Village

4. FEMA zone designations affected: A (choices: A, AH, AO, A1-A30, A99, AE, AR, V, V1-V30, VE, B, C, D, X)

5. Basis for Request and Type of Revision:

a. The basis for this revision request is (check all that apply)

☐ Physical Change ☐ Improved Methodology/Data

☒ Regulatory Floodway Revision ☐ Other (Attach Description)

Note: A photograph and narrative description of the area of concern is not required, but is very helpful during review.

b. The area of revision encompasses the following types of flooding and structures (check all that apply)

Types of Flooding: ☒ Riverine ☐ Coastal ☐ Shallow Flooding (e.g., Zones AO and AH)

☐ Alluvial fan ☐ Lakes ☐ Other (Attach Description)

Structures: ☒ Channelization ☐ Levee/Floodwall ☐ Bridge/Culvert

☐ Dam ☐ Fill ☐ Other, Attach Description

C. REVIEW FEE

Has the review fee for the appropriate request category been included? ☒ Yes Fee amount: $4800

☐ No, Attach Explanation

Please see the FEMA Web site at http://www.fema.gov/plan/prevent/fhm/frm_fees.shtm **for Fee Amounts and Exemptions.**

D. SIGNATURE

All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Name: James Coleman	Company: Lapour Partners, Inc.	
Mailing Address: 5525 S. Decatur Blvd, Suite 10 Las Vegas	Daytime Telephone No.: (702) 222-3022	Fax No.: (702) 631-3909
	E-Mail Address: jcoleman@lapour.com	
Signature of Requester (required):		Date: 4/21/08

As the community official responsible for floodplain management, I hereby acknowledge that we have received and reviewed this Letter of Map Revision (LOMR) or conditional LOMR request. Based upon the community's review, we find the completed or proposed project meets or is designed to meet all of the community floodplain management requirements, including the requirement that no fill be placed in the regulatory floodway, and that all necessary Federal, State, and local permits have been, or in the case of a conditional LOMR, will be obtained. In addition, we have determined that the land and any existing or proposed structures to be removed from the SFHA are or will be reasonably safe from flooding as defined in 44CFR 65.2(c), and that we have available upon request by FEMA, all analyses and documentation used to make this determination.

Community Official's Name and Title:		Telephone No.:
Community Name: Clark County	Community Official's Signature (required):	Date:

CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR

This certification is to be signed and sealed by a licensed land surveyor, registered professional engineer, or architect authorized by law to certify elevation information. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Certifier's Name: Stephen F. Crevoiserat, P.E.	License No.: Nevada License 13689	Expiration Date: 12-31-08
Company Name: Rome Consulting	Telephone No.: (702) 791-3900	Fax No.: (702) 631-3909
Signature:		Date: 4/21/08

Ensure the forms that are appropriate to your revision request are included in your submittal.

Form Name and (Number)	Required if ...
☒ Riverine Hydrology and Hydraulics Form (Form 2)	New or revised discharges or water-surface elevations
☒ Riverine Structures Form (Form 3)	Channel is modified, addition/revision of bridge/culverts, addition/revision of levee/floodwall, addition/revision of dam
☐ Coastal Analysis Form (Form 4)	New or revised coastal elevations
☐ Coastal Structures Form (Form 5)	Addition/revision of coastal structure
☐ Alluvial Fan Flooding Form (Form 6)	Flood control measures on alluvial fans

Seal (Optional)

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B No. 3067-0148
Expires September 30, 2005

PAPERWORK REDUCTION ACT

Public reporting burden for this form is estimated to average 3 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, SW, Washington DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: Flamingo Wash
Note: Fill out one form for each flooding source studied

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparison of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model [TR-20, HEC-1, HEC-HMS etc.]
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters) and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/plan/prevent/fhm/en_modl.shtm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? ☐ Yes ☒ No If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.)	
			Effective	Proposed/Revised
Downstream Limit	WSPG Section 610	FIS 340	2029.23	2029.73
Upstream Limit	WSPG Section 3615.6	FIS 440	2055.67	2055.76

2. Hydraulic Method Used

Hydraulic Analysis WSPG [HEC-2 , HEC-RAS, Other (Attach description)]

Explanations for MT-2 Form 2

Section A.4

Approval letters from Clark County Development Services and Clark County Regional Flood Control District is provided and attached in the Appendix G, Approval Letters.

Secion A.5

Sediment Transport is generally not a factor in hydrological analysis and is generally the practice here in the Las Vegas Valley.

B. HYDRAULICS (CONTINUED)

3. Pre-Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS, to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/plan/prevent/fhm/frm_soft.shtm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☒ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name:	Floodway File Name:
Corrected Effective Model*	Natural File Name:	Floodway File Name:
Existing or Pre-Project Conditions Model	Natural File Name: pv-flam7	Floodway File Name: Flamingo Wash
Revised or Post-Project Conditions Model	Natural File Name: pv-flam11	Floodway File Name: Flamingo Wash
Other - (attach description)	Natural File Name:	Floodway File Name:

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) – for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/plan/prevent/fhm/en_modl.shtm.

C. MAPPING REQUIREMENTS

A **certified topographic map** must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM,** annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2%-annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) increase? ☐ Yes ☐ No

For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:
- The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
- The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

If Yes, the community must be able to certify that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets all of the standards of the local floodplain ordinances, and is reasonably safe from flooding in accordance with the NFIP regulations set forth at 44 CFR 60.3(a)(3), 65.5(a)(4), and 65.6(a)(14). Please see the MT-2 instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☒ No

If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP Regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☒ No

If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE STRUCTURES FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK REDUCTION ACT

Public reporting burden for this form is estimated to average 7 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, SW, Washington DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: Flamingo Wash
Note: Fill out one form for each flooding source studied

A. GENERAL

Complete the appropriate section(s) for each Structure listed below:

Channelization ..... complete Section B
Bridge/Culvert ..... complete Section C
Dam ..... complete Section D
Levee/Floodwall ..... complete Section E
Sediment Transport..... complete Section F (if required)

Description Of Structure

1. **Name of Structure: Flamingo Wash Storm Drain**

   Type (check one): ☒ Channelization ☐ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

   Location of Structure: Extending approximately 1200 east of Paradise Road

   Downstream Limit/Cross Section: WSPG Section 1000

   Upstream Limit/Cross Section: WSPG Section 2215.60

2. **Name of Structure:**

   Type (check one): ☐ Channelization ☐ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

   Location of Structure:

   Downstream Limit/Cross Section:

   Upstream Limit/Cross Section:

3. **Name of Structure:**

   Type (check one) ☐ Channelization ☐ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

   Location of Structure:

   Downstream Limit/Cross Section:

   Upstream Limit/Cross Section:

NOTE: For more structures, attach additional pages as needed.

B. CHANNELIZATION

Flooding Source: Flamingo Wash

Name of Structure: Flamingo Wash Storm Drain

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☐ Other (Describe):
- ☐ Drop structures
- ☒ Transitions in cross sectional geometry
- ☐ Energy dissipator

2. Drawing Checklist

Attach the plans of the channelization certified by a registered professional engineer, as described in the instructions.

3. Hydraulic Considerations

The channel was designed to carry 3923 (cfs) and/or the 100-year flood.

The design elevation in the channel is based on (check one):

☒ Subcritical flow ☐ Critical flow ☒ Supercritical flow ☐ Energy grade line

If there is the potential for a hydraulic jump at the following locations, check all that apply and attach an explanation of how the hydraulic jump is controlled without affecting the stability of the channel.

☐ Inlet to channel ☐ Outlet of channel ☐ At Drop Structures ☒ At Transitions
☐ Other locations (specify):

4. Sediment Transport Considerations

Was sediment transport considered? ☐ Yes ☒ No If Yes, then fill out Section F (Sediment Transport).
If No, then attach your explanation for why sediment transport was not considered.

C. BRIDGE/CULVERT

Flooding Source:

Name of Structure:

1. This revision reflects (check one):

- ☐ New bridge/culvert not modeled in the FIS
- ☐ Modified bridge/culvert previously modeled in the FIS
- ☐ New analysis of bridge/culvert previously modeled in the FIS

2. Hydraulic model used to analyze the structure (e.g., HEC-2 with special bridge routine, WSPRO, HY8):
If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structures. Attach justification.

3. Attach plans of the structures certified by a registered professional engineer. The plan detail and information should include the following (check the information that has been provided):

- ☐ Dimensions (height, width, span, radius, length)
- ☐ Shape (culverts only)
- ☐ Material
- ☐ Beveling or Rounding
- ☐ Wing Wall Angle
- ☐ Skew Angle
- ☐ Distances Between Cross Sections
- ☐ Erosion Protection
- ☐ Low Chord Elevations – Upstream and Downstream
- ☐ Top of Road Elevations – Upstream and Downstream
- ☐ Structure Invert Elevations – Upstream and Downstream
- ☐ Stream Invert Elevations – Upstream and Downstream
- ☐ Cross-Section Locations

4. Sediment Transport Considerations

Was sediment transport considered? ☐ Yes ☐ No If yes, then fill out Section F (Sediment Transport).
If No, then attach your explanation for why sediment transport was not considered.

Explanations for MT-2 Form 3

Section B.3

The hydraulic jump will occur upstream of the transition structures

Secion B.4

Sediment Transport is generally not a factor in hydrological analysis and is generally the practice here in the Las Vegas Valley.

APPENDIX G

Approval Letters

05-54297
LTR

P

REGIONAL FLOOD CONTROL DISTRICT

RECEIVED

MAY 18 2007

DEVELOPMENT SERVICES
CIVIL ENGINEERING

May 17, 2007

Mr. Layne Weber, P.E.
Department of Development Services
500 S. Grand Central Parkway
Las Vegas, NV 89155

DISTRICT CONCURRENCE: PARADISE VILLAGE
(HTE #05-54297) (RFCD No. 06-6967)

Dear Mr. Weber:

Clark County Regional Flood Control District (District) reviewed Technical Drainage Study dated December 12, 2005, Addendum No. 1 dated May 2, 2006, Addendum No. 2 dated June 29, 2006, Addendum No. 3 dated April 17, 2007, Supplement No. 1 dated July 12, 2006, Supplement No. 2 dated July 28, 2006, Supplement No. 3 dated November 14, 2006, Supplement No. 4 dated December 21, 2006 for above-mentioned project as submitted by ALPHA ENGINEERING CO. In addition, District is in receipt of the Conditional Letter of Acceptance from Department of Development Services dated May 4, 2007.

District concurs with acceptance of this Technical Drainage Study by Department of Development Services subject to the following condition:

> Per *Regional Flood Control District Policies and Procedures Manual, Section VIII. D. 13. Uniform Regulations for the Control of Drainage*, the Lead Entity shall provide As-Built plans or record drawings to the District after completion and final inspection of such privately installed flood control facilities that have a regional flood control significance.

District's review of this project was limited to issues of Regional Flood Control Significance as defined in *Uniform Regulations for the Control of Drainage*. As noted in study, site resides in a Special Flood Hazard Area (SFHA) designated as "Zone A" per the effective Flood Insurance Rate Map (FIRM). Therefore, consultant should be advised that this acceptance does not serve to amend the FIRM or remove the SFHA.

Please be aware that as additional information becomes available and/or restudies of Flood Insurance Studies are performed, information submitted by ALPHA ENGINEERING CO may be superseded. Compliance with regulatory elements and design standards specified in *Uniform Regulations for the Control of Drainage* does not imply a guarantee that properties will be free from flooding or flood damage.

The District, its officials, or employees assume no liability for information, data, or conclusions presented by consulting engineers. We, therefore, make no warranties, either expressed or implied, in conducting this review.

GALE WM. FRASER, II, P.E.
General Manager/Chief Engineer

BY: Abigail Mayrena, P.E.
Associate Engineer

Andrew R. Trelease, P.E., CFM
Principal Civil Engineer

AM:ART:ph

c: Philip D. Wakefield, P.E., ALPHA ENGINEERING CO

P:\Letters and Memos\Local Drainage\Land Development & Drainage\Concurrence Letters\2007\May07\21-61-15.ALP.doc

Department of Development Services
Civil Engineering Division

500 S Grand Central Pky 1st Fl • Box 551799 • Las Vegas NV 89155-1799
(702) 455-4600 • Fax (702) 388-2550

Phil Rosenquist, Director

January 11, 2007

05-54297

Alpha Engineering
50 South Jones Blvd., Suite 202
Las Vegas, NV 89107

RETURN DRAINAGE STUDY REDLINES WITH *ALL* FUTURE SUBMITTALS FOR THIS PROJECT

SUBJECT: WILLDAN/Clark County Development Services Dept. Plan Review Contract
Technical Drainage Study for Paradise Village **(5096)**
Study Dated: December 12, 2005
Addendum Dated: May 2, 2006
Second Addendum Dated: June 29, 2006
Supplemental Dated: July 12, 2006
Second Supplemental Dated: July 28, 2006
Third Supplemental Dated: November 29, 2006
Fourth Supplemental Dated: December 21, 2006
Location: North of Flamingo Road between Paradise Road and Palos Verdes Street
(Sec. 15, T. 21 S., R. 61 E.)
HTE# 05-54297

The Referenced **Technical Drainage Study** has been reviewed and is accepted as complying with the minimum improvement standards. As set forth in the subject drainage study, the following measures will be taken to mitigate flood hazards.

1. The site shall be graded with respect to drainage as shown on "Paradise Village Grading Plan," sheets G1, G2, G3, G4 D1, D2, PP1, PP2, PP3 and PP4, signed and sealed by Stephen F. Crevoiserat, P.E., on November 15, 2006.

   The storm drain transition structures and maintenance manholes shall be constructed as shown on "Paradise Village Structural Plans", sheets S0.1, S1.1, S1.2, S1.3, S2.2, S2.4 and S2.5, signed and sealed by Jason P. South, P.E., on November 14, 2006 and sheets S2.1 and S2.3, signed and sealed by Greg A. Meyer, P.E., on December 20, 2006;

2. The following drainage facilities shall be constructed:

a. Three (3) areas of **public underground drainage easement together with access thereto** as listed below:

   i. **Drainage easement** of varied width located on the south side of A Street between station 16+50 and station 18+50

   ii. 15-foot wide **drainage easement** located on the north side of A Street between station 12+75 and the westerly right-of-way of Palos Verde Street

   iii. 10-foot wide **drainage easement** located on the south side of A Street between station 12+75 and the westerly right-of-way of Palos Verde Street

b. A storm drain system within an **existing drainage easement / right-of-way** of various width to be publicly maintained, connecting to two (2) existing 15-foot x 10-foot RCB's under Paradise extending east and connecting to five (5) existing 12-foot x 8-foot RCB's under Palos Verde, consisting of approximately 150 lf of two (2) 15-foot x 10-foot RCB's, a 20-foot transition structure, 738 lf of two (2) 12-foot x 9-foot RCB's, a 100-foot transition structure, and 250 lf of five (5) 12-foot x 8-foot RCB's, with fourteen (14) 48-inch Type 1 manholes, and two (2) 10-foot x 10-foot maintenance box manholes, as shown on the above-mentioned grading plans

c. Approximately 5 lf of 24-inch RCP extending south from a 48-inch Type I manhole at station 21+99.47 as shown on sheets G1 and PP1

d. Approximately 7 lf of 24-inch RCP extending south from an existing 24-inch RCP at station 21+64.11 as shown on sheets G1 and PP1

e. Approximately 19 lf of 24-inch RCP extending northeast from an existing 24-inch storm drain connecting into the above-mentioned 12-foot x 9-foot RCB as shown on sheets G1 and PP4

f. An 8-foot wide concrete valley gutter on the east side of Paradise Road crossing the driveway entrance as shown on sheet G1

g. An 8-foot wide concrete valley gutter on the west side of Palos Verde crossing the driveway entrance

h. An onsite 2-foot wide concrete flume extending north from the northeast corner of APN#162-15-401-012, within a 5-foot wide drainage easement to be privately maintained, with a wrought iron fence and bollards at the inlet and sidewalk underdrain at the outlet as shown on sheet G1

i. A 30-foot long wrought iron fence and bollards on the south side of the site west of the above-mentioned 2-foot flume as shown on sheet G1

j. Onsite graded swales as shown on details D/D1, F/D1 and H/D1

3. A bond estimate must be submitted to Clark County Civil Engineering Division for the above-mentioned stormwater management facilities, except items 2(a) and 2(j);

4. Please provide the following statement on each sheet of the grading plan set near the lower right corner: Section 2 or Section 3 of the Clark County Building Office Operations Division Drainage Compliance Report must be completed by the engineer.

5. It is required for this project to enter into a License and Maintenance Agreement with the County for the maintenance of landscape within the drainage easement. Approval of this license and maintenance agreement must be complete before permits will be issued;

6. Vacate any excess public right-of-way / drainage easement before permits will be issued;

7. The subject site is located within Zone X and Zone A, as shown on FIRM Community Panel Number 32003C2557E, revised September 27, 2002, revised to reflect a LOMR dated September 1, 2005. Zone X is determined to be outside the 0.2% annual chance flood plain. Zone A is a special flood hazard area subject to inundation by the 1% annual chance flood event. No base flood elevations have been determined by FEMA;

8. Clark County Regional Flood Control District (CCRFCD) concurrence is required since the project impacts a Master Planned Facility and is within a FEMA designated special flood hazard area. As a condition of final approval, the applicant must submit a copy of the drainage study and any addenda to the CCRFCD. Permits will not be issued until concurrence is obtained from the CCRFCD;

9. Since the project proposes construction within a SFHA Zone A, the Engineer will need to notify FEMA of the proposed changes to the flood zone and obtain a CLOMR prior to the issuance of permits;

10. As a condition of approval, the bond for the proposed drainage improvements will not be released until the LOMR for the site is obtained;

11. Any improvements not depicted on the above mentioned grading plans will require an Update to this Technical Drainage Study. It should be noted that no building permits shall be issued until the LOMR for the site is obtained;

12. A legal description of the drainage easement to be publicly maintained, a copy of this drainage study approval letter must be submitted to the Clark County Department of Development Services, Civil Engineering Division, Right-of-Way/Mapping counter for review and approval. Upon approval of the legal description and submittal package, Civil Engineering will prepare the easement document for owner's signature. Upon receipt of the fully executed easement document, Civil Engineering will record this easement. **Note, this easement must be recorded prior to permit issuance**;

13. Mylars of the grading plan must be submitted to the Clark County Civil Engineering Division Plan Check for approval signatures prior to permit issuance;

14. Right-of-way dedication must be verified;

15. **As a condition of final approval, the drainage/grading plans submitted for this project require the following modifications prior to Civil Engineering Plan Check submittal:**

    a. The 5-foot drainage easement to be privately maintained, with the 2-foot wide concrete valley gutter must be labeled on sheet G1

    b. Revise the grading plans to reflect the 100-foot transition section

    c. Revise the structural plans to reflect the 100-foot transition section

    d. All the RCB's must be consistently labeled as 150 LF (2) 15' x 10' RCB, in lieu of 2: 150 LF 15' x 10' RCB

    e. The length of the 24-inch lateral pipe at station 21+99.47 on the plan view on sheet PP1 must be revised to 4.88-feet

    f. A detail of the 24-inch lateral at station 21+99.47 must be provided

    g. On sheet PP4, the size of the dual 12-foot x 9-foot RCB is incorrectly written on the profile

    h. Show the 48-inch Type I SDMH at station 11+95.00 on the plan view on sheet PP3

i. Increase the width of the drainage easement located on the south side of A Street between station 12+75 and the westerly right-of-way of Palos Verde Street to 10 feet

j. The grading plans must refer to a specific structural plan sheet

k. Detailed sections must show and label the proposed culverts and drainage easement where applicable

The County's review is solely based on the information submitted by the Engineer of Record. The County's review is strictly limited to compliance with minimum County Codes and Standards. The Engineer of Record is responsible for researching and addressing situations that may require designs above and beyond the minimum codes for issues of public safety and impacts to upstream, downstream and adjacent properties. The County assumes no liability for information data, designs or conclusions of the Engineer of Record;

DEPARTMENT OF DEVELOPMENT SERVICES

BY: _____

Jeffery J. Jensen, P.E
Senior Engineer
Civil Engineering Division

JJJ/pts

cc: Lapour Partners
Development File

Department of Development Services
Civil Engineering Division

500 S Grand Central Pky 1st Fl • PO Box 551799 • Las Vegas NV 89155-1799
(702) 455-4600 • Fax (702) 388-2550

Phil Rosenquist, Director

August 2, 2006

RECEIVED

05-54297
RETURN DRAINAGE STUDY REDLINES WITH ALL FUTURE SUBMITTALS FOR THIS PROJECT

Alpha Engineering Company
3321 N. buffalo Drive, Suite 200
Las Vegas, NV 89148

SUBJECT: WILLDAN/Clark County Development Services Dept. Plan Review Contract
Technical Drainage Study for Paradise Village **(5096)**
Study Dated: December 12, 2005
Addendum Dated: May 2, 2006
Second Addendum Dated: June 29, 2006
Supplemental Dated: July 12, 2006 and July 28, 2006
Location: North of Flamingo Road between Paradise Road and Palos Verde Street
(Sec. 15, T. 21 S., R. 61 E.)
HTE #05-54297

The referenced **Technical Drainage Study** has been reviewed and is accepted as complying with minimum improvement standards. As set forth in the subject drainage study, the following measures will be taken to mitigate flood hazards.

1. The site shall be graded with respect to drainage as shown on "Paradise Village Grading Plan," sheets G1, G2, G3, G4 D1, D2, PP1, PP2, PP3 and PP4, signed and sealed by Stephen F. Crevoiserat, P.E., on June 28, 2006.

   The storm drain transition structures and maintenance manholes shall be constructed as shown on "Paradise Village Structural Plans", sheets S0.1, S1.1, S1.2, S1.3, S2.1, and S2.4, signed and sealed by Greg A. Meyer, P.E., on June 28, 2006 and sheets S2.2 and S2.3, signed and sealed by Greg A. Meyer, P.E., on May 1, 2006;

2. The following drainage facilities shall be constructed:

   a. Three (3) areas of public underground drainage easement together with access thereto as listed below:

i. Drainage easement of varied width located on the south side of A Street between station 16+50 and station 18+50

ii. 15-foot wide drainage easement located on the north side of A Street between station 12+75 and the westerly right-of-way of Palos Verde Street

iii. 10-foot wide drainage easement located on the south side of A Street between station 12+75 and the westerly right-of-way of Palos Verde Street

b. A storm drain system within an existing drainage easement / right-of-way of various width to be publicly maintained, connecting to two (2) existing 15-foot x 10-foot RCB's under Paradise Road extending east and connecting to five (5) existing 12-foot x 8-foot RCB's under Palos Verde, consisting of approximately 150 lf of two (2) 15-foot x 10-foot RCB's, a 20-foot transition structure, 738 lf of two (2) 12-foot x 9-foot RCB's, a 25-foot transition structure, and 250 lf of five (5) 12-foot x 8-foot RCB's, with fourteen (14) 48-inch Type 1 manholes, and two (2) 8-foot x 8-foot maintenance box manholes, as shown on the above-mentioned grading plans

c. Approximately 5 lf of 24-inch RCP and a 48-inch Type I manhole extending south from an existing 24-inch RCP at station 21+99.47 as shown on sheets G1 and PP1

d. Approximately 7 lf of 24-inch RCP extending south from an existing 24-inch RCP at station 21+64.11 as shown on sheets G1 and PP1

e. Approximately 19 lf of 24-inch RCP extending northeast from an existing 24-inch storm drain connecting into the above-mentioned 12-foot x 9-foot RCB at station 18+48.74 as shown on sheets G1 and PP1

f. An 8-foot wide concrete valley gutter on the east side of Paradise Road crossing the driveway entrance as shown on sheet G1

g. An 8-foot wide concrete valley gutter on the west side of Palos Verde crossing the driveway entrance

h. An onsite 2-foot wide concrete flume extending north from the northeast corner of APN#162-15-401-012, within a 5-foot wide drainage easement to be privately maintained, with a wrought iron fence and bollards at the inlet and sidewalk underdrain at the outlet as shown on sheet G1

i. A 30-foot long wrought iron fence and bollards on the south side of the site west of the above-mentioned 2-foot flume as shown on sheet G1

j. Onsite graded swales as shown on details D/D1, F/D1 and H/D1

3. A bond estimate must be submitted to Clark County Civil Engineering Division for the above-mentioned stormwater management facilities, except items 2(a), 2(i) and 2(j);

4. Section 2 of the Clark County Building Office Operations Division Drainage Compliance Report must be completed by the engineer for the non-bonded facilities listed in Item 2 above;

5. It is required for this project to enter into a License and Maintenance Agreement with the County for the maintenance of landscape within the drainage easement. Approval of this license and maintenance agreement must be completed before permits will be issued;

6. Vacate any excess public right-of-way / drainage easement before permits will be issued;

7. The subject site is located within Zone X and Zone A, as shown on FIRM Community Panel Number 32003C2557E, revised September 27, 2002, revised to reflect a LOMR dated September 1, 2005. Zone X is determined to be outside the 0.2% annual chance flood plain. Zone A is a special flood hazard area subject to inundation by the 1% annual chance flood event. No base flood elevations have been determined by FEMA;

8. Clark County Regional Flood Control District (CCRFCD) concurrence is required since the project impacts a Master Planned Facility and is within a FEMA designated special flood hazard area. As a condition of final approval, the applicant must submit a copy of the drainage study and any addenda to the CCRFCD. Permits will not be issued until concurrence is obtained from the CCRFCD;

9. Since the project proposes construction within a SFHA Zone A, the Engineer will need to notify FEMA of the proposed changes to the flood zone and obtain a CLOMR prior to the issuance of permits;

10. As a condition of approval, the bond for the proposed drainage improvements will not be released until the LOMR for the site is obtained;

11. Any improvements not depicted on the above mentioned grading plans will require an Update to this Technical Drainage Study. It should be noted that no building permits shall be issued until the LOMR for the site is obtained

12. A legal description of the drainage easement to be publicly maintained, a copy of this drainage study approval letter must be submitted to the Clark County Department of Development Services, Civil Engineering Division, Right-of-Way/Mapping counter for review and approval. Upon approval of the legal description and submittal package, Civil Engineering will prepare the easement document for owner's signature. Upon receipt of the fully executed easement document, Civil Engineering will record this easement. **Note, this easement must be recorded prior to permit issuance;**

13. Mylars of the grading plan must be submitted to the Clark County Civil Engineering Division Plan Check for approval signatures prior to permit issuance;

14. Right-of-way dedication must be verified;

15. **As a condition of final approval, the drainage/grading plans submitted for this project require the following modifications prior to Civil Engineering Plan Check submittal:**

    a. The 5-foot drainage easement to be privately maintained, with the 2-foot wide concrete valley gutter must be labeled on sheet G1

    b. The length of the 24-inch lateral pipe at station 21+99.47 on the plan view must be revised to 4.88-feet to match sheet G1

    c. A detail of the 24-inch lateral at station 21+99.47 must be provided

    d. On sheet PP4, the size of the dual 12-foot x 9-foot RCB is incorrectly written on the profile

    e. Show the 48-inch Type I SDMH at station 11+95.00 on the plan view, or remove the manhole from the profile

    f. Increase the width of the drainage easement located on the south side of A Street between station 12+75 and the westerly right-of-way of Palos Verde Street to 10 feet

    g. All the RCB's must be consistently labeled with width x height

    h. The grading plans must refer to a specific structural plan sheet

i. Detailed sections must show and label the proposed culverts and drainage easement where applicable

j. Other red lined revisions

The County's review is solely based on the information submitted by the Engineer of Record. The County's review is strictly limited to compliance with minimum County Codes and Standards. The Engineer of Record is responsible for researching and addressing situations that may require designs above and beyond the minimum codes for issues of public safety and impacts to upstream, downstream and adjacent properties. The County assumes no liability for information data, designs or conclusions of the Engineer of Record;

DEPARTMENT OF DEVELOPMENT SERVICES

BY:

Jeffery Jensen, P.E.
Senior Engineer
Civil Engineering Division

JJJ/pts

cc: Lapour Partners
Development File

Federal Emergency Management Agency

Washington, D.C. 20472

NOV 10 2006

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

IN REPLY REFER TO:
Case No.: 06-09-BC85R

The Honorable Rory Reid
Chair, Clark County Board
of Commissioners
500 South Grand Central Parkway
Las Vegas, NV 89155

Community: Clark County, NV
Community No.: 320003

104

Dear Mr. Reid:

This responds to a request that the Department of Homeland Security's Federal Emergency Management Agency (FEMA) comment on the effects that a proposed project would have on the effective Flood Insurance Rate Map (FIRM) for Clark County, Nevada and Incorporated Areas, in accordance with Part 65 of the National Flood Insurance Program (NFIP) regulations. In a letter dated July 17, 2006, Mr. Philip D. Wakefield, P.E., Alpha Engineering, requested that FEMA evaluate the effects that the proposed construction of a storm drain along Flamingo Wash from just upstream of Palos Verdes Street to approximately 50 feet downstream of Paradise Road would have on the flood hazard information shown on the effective FIRM.

All data required to complete our review of this request for a Conditional Letter of Map Revision (CLOMR) were submitted with letters from Mr. Wakefield

We reviewed the submitted data and the data used to prepare the effective FIRM for your community and determined that the proposed project meets the minimum floodplain management criteria of the NFIP. The submitted existing conditions HEC-RAS hydraulic computer model, dated June 21, 2006, based on updated topographic information, was used as the base conditions model in our review of the proposed conditions model for this CLOMR request. We believe that, if the proposed project is constructed as shown on the plans entitled "Paradise Village," and as described in the submitted report entitled "Conditional Letter of Map Revision for Paradise Village," all prepared by Alpha Engineering, dated July 17, 2006, and the data listed below are received, a revision to the FIRM would be warranted.

As a result of the proposed storm drain, the width of the Special Flood Hazard Area (SFHA), the area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded (base flood), will decrease and be removed along Flamingo Wash from just upstream of Palos Verdes Street to approximately 50 feet downstream of Paradise Road. The maximum decrease in SFHA width, approximately 100 feet, will occur approximately 200 feet downstream of Paradise Road. The entire base flood will be contained in the proposed storm drain along Flamingo Wash from just upstream of Palos Verdes Street to approximately 50 feet downstream of Paradise Road.

Upon completion of the project, your community may submit the data listed below and request that we make a final determination on revising the effective FIRM.

- Detailed application and certification forms must be used for requesting final revisions to the maps. Therefore, when the map revision request for the area covered by this letter is submitted, Form 1, entitled "Overview & Concurrence Form," must be included. (A copy of this form is enclosed.)

- The detailed application and certification forms listed below may be required if as-built conditions differ from the preliminary plans. If required, please submit new forms (copies of which are enclosed) or annotated copies of the previously submitted forms showing the revised information.

  Form 2, entitled "Riverine Hydrology & Hydraulics Form"

  Form 3, entitled "Riverine Structures Form"

  Hydraulic analyses, for as-built conditions, of the base flood, together with a work map showing the revised floodplain boundaries, must be submitted with Form 2.

- Effective October 30, 2005, FEMA revised the fee schedule for reviewing and processing requests for conditional and final modifications to published flood information and maps. In accordance with this schedule, the current fee for this map revision request is $4,000 and must be received before we can begin processing the request. Please note, however, that the fee schedule is subject to change, and requesters are required to submit the fee in effect at the time of the submittal. Payment of this fee shall be made in the form of a check or money order, made payable in U.S. funds to the National Flood Insurance Program, or by credit card. The payment must be forwarded to the following address:

  Federal Emergency Management Agency
  Fee-Charge System Administrator
  P.O. Box 22787
  Alexandria, VA 22304

- As-built plans, certified by a registered professional engineer, of all proposed project elements

- Community acknowledgment of the map revision request

The basis of this CLOMR is, in whole or in part, a storm drain project. NFIP regulations, as cited in Paragraph 60.3(b)(7), require that communities assure that the flood-carrying capacity within the altered or relocated portion of any watercourse is maintained. This provision is incorporated into your community's existing floodplain management regulations. Consequently, the ultimate responsibility for maintenance of the storm drain rests with your community.

This CLOMR is based on minimum floodplain management criteria established under the NFIP. Your community is responsible for approving all floodplain development and for ensuring all necessary permits required by Federal or State law have been received. State, county, and community officials, based on

knowledge of local conditions and in the interest of safety, may set higher standards for construction in the SFHA. If the State, county, or community has adopted more restrictive or comprehensive floodplain management criteria, these criteria take precedence over the minimum NFIP criteria.

If you have any questions regarding floodplain management regulations for your community or the NFIP in general, please contact the Consultation Coordination Officer (CCO) for your community. Information on the CCO for your community may be obtained by calling the Director, Federal Insurance and Mitigation Division of FEMA in Oakland, California, at (510) 627-7175. If you have any questions regarding this CLOMR, please call our Map Assistance Center, toll free, at 1-877-FEMA MAP (1-877-336-2627).

Sincerely,

Kevin C. Long

Kevin C. Long, CFM, Project Engineer
Engineering Management Section
Mitigation Division

For: William R. Blanton Jr., CFM, Chief
Engineering Management Section
Mitigation Division

Enclosures

cc: Mr. Robert Thompson, P.E.
Principal Engineer
Civil Engineering Division
Clark County Department of Development Services

Mr. Dave Betley, P.E.
Senior Civil Engineer
Civil Engineering Division
Clark County Department of Development Services

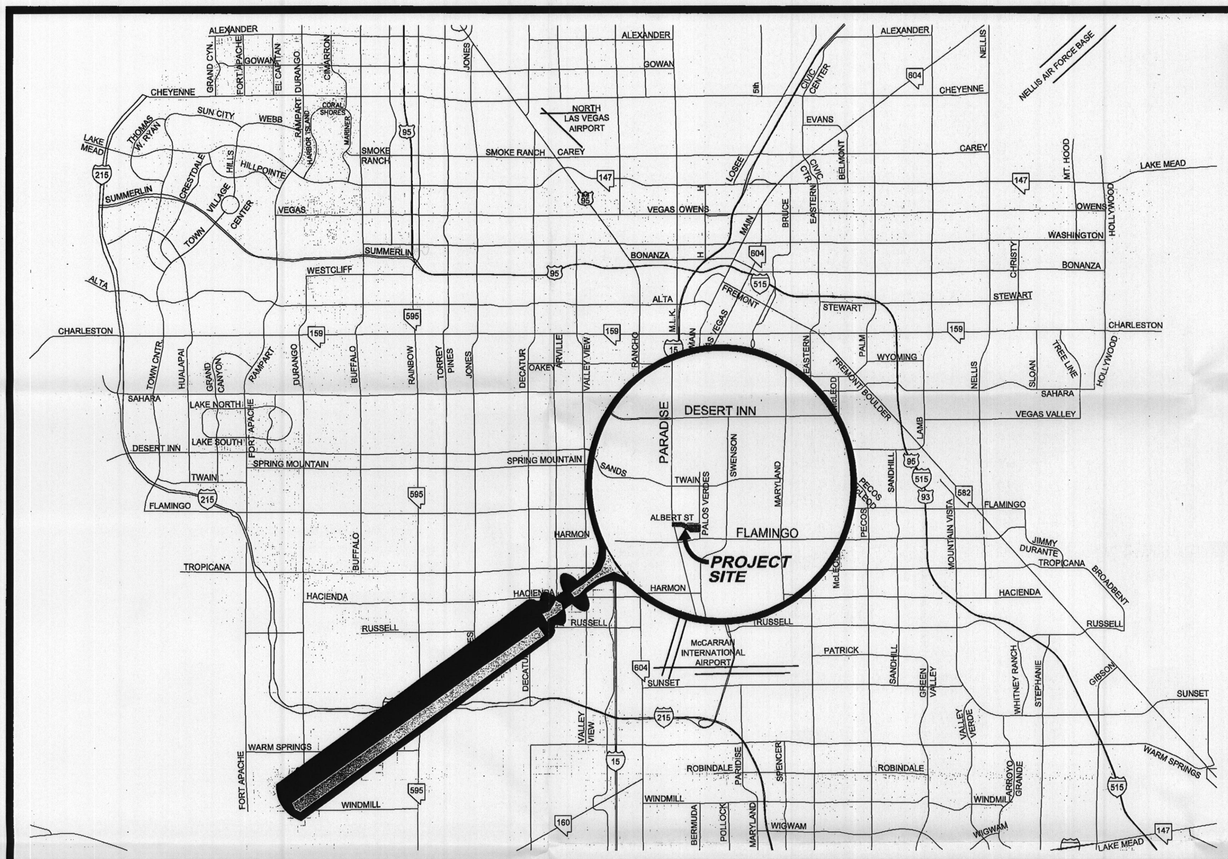
Mr. Kevin Eubanks, P.E., CFM
Assistant General Manager
Clark County Regional Flood Control District

Mr. Philip D. Wakefield, P.E.
Alpha Engineering

APPENDIX H

As-Built Civil Improvement Plans

IMPROVEMENT PLANS
FOR
PARADISE VILLAGE



PROJECT NAME: PARADISE VILLAGE

This project water plan complies with the Las Vegas Valley Water District's technical requirements. However, this water plan is

NOT APPROVED FOR CONSTRUCTION

at this time and this signature does not provide or imply a water commitment.

Mel Nelson — LVVWD — 8/29/07 — DATE

PROJ. # 114186 — ESN_052 — SHTS 1-3 & 8-19

Product of Alpha Engineering Co.

ESTIMATED QUANTITIES

ITEM DESCRIPTION	PUBLIC	PRIVATE
3-INCH ASPHALTIC CONCRETE PAVING	10,360 SY	-SY
TYPE I GRAVEL	991 CY	-CY
TYPE II GRAVEL	661 CY	-CY
EXCAVATION & EMBANKMENTS	6,500 CY	-CY
CURB & GUTTER 24"	2,340 LF	-LF
CONCRETE VALLEY GUTTER	1,410 SF	-SF
4-INCH CONCRETE SIDEWALK	11,700 SF	-SF
SIDEWALK UNDERDRAIN	1 EA	-EA
WATER SERVICE TO LOTS	2 EA	-EA
POWER SERVICE TO LOTS	2 EA	-EA
SURVEY MONUMENTS	8 EA	-EA
SIDEWALK RAMPS	4 EA	-EA
8-INCH SEWER C-900	148 LF	359 LF
60-INCH SEWER MANHOLES	1 EA	-EA
48-INCH SEWER MANHOLES	4 EA	-EA
2-INCH WATER MAIN	254 LF	-LF
6-INCH WATER MAIN	50 LF	-LF
8-INCH WATER MAIN	18 LF	-LF
10-INCH WATER MAIN	166 LF	-LF
12-INCH WATER MAIN	1,958 LF	-LF
24-INCH DIP WATER	80 LF	-LF
FIRE HYDRANT	1 EA	-EA
STREETLIGHT (STD. BASE)	7 EA	-EA
PULLBOX #3	2 EA	-EA
2-INCH STREETLIGHT CONDUIT	1,170 LF	-LF
SL 200 amp STREETLIGHT PEDESTAL	1 EA	-EA
STREET SIGNS	8 EA	-EA
24-INCH STORM DRAIN	32 LF	-LF
48-INCH SD MANHOLE (<6')	8 EA	-EA
48-INCH SD MANHOLE (>6')	1 EA	-EA
12' X 8' RCB	1,250 LF	-LF
12' X 9' RCB	1,526LF	-LF
19' X 10' RCB	300 LF	-LF

NOTE:
THIS QUANTITY ESTIMATE IS FOR BONDING PURPOSES ONLY.
CONTRACTOR TO DETERMINE INDEPENDENT ESTIMATIONS.

ABBREVIATIONS

AC	ASPHALTIC CONCRETE	LAT	LATERAL
ACP	ASBESTOS CEMENT PIPE	LF	LINEAL FEET
ADJ	ADJUST	LS	LANDSCAPE
AGG	AGGREGATE	LVVWD	LAS VEGAS VALLEY WATER DISTRICT
ALT	ALTERNATE		
AVE	AVENUE	MAX	MAXIMUM
BC	BACK OF CURB	MH	MANHOLE
BCR	BEGINNING OF CURB RETURN	MIN	MINIMUM
BDRY	BOUNDARY		
BEG	BEGIN	NG	NATURAL GRADE
BM	BENCHMARK	NO	NUMBER
BSW	BACK OF SIDEWALK	NDOT	NEVADA DEPARTMENT OF TRANSPORTATION
BVC	BEGINNING OF VERTICAL CURVE		
CATV	CABLE TV	OC	ON CENTER
C & G	CURB AND GUTTER	OD	OUTSIDE DIAMETER
CIP	CAST IRON PIPE	OHP	OVERHEAD POWER
CL	CENTERLINE		
CMP	CORRUGATED METAL PIPE	P	POWERLINE
CMU	CONCRETE MASONRY UNIT	PB	PULL BOX
CO	CLEAN OUT	PC	POINT OF CURVATURE
CONC	CONCRETE	PCC	POINT OF COMPOUND CURVE
CONST	CONSTRUCT		
CBC	CITY OF BOULDER CITY	PI	POINT OF INTERSECTION
CLV	CITY OF LAS VEGAS	PL	PROPERTY LINE
CNLV	CITY OF NORTH LAS VEGAS		
COH	CITY OF HENDERSON		
CC	CLARK COUNTY	PROP	PROPOSED
CCSD	CLARK COUNTY SANITATION DISTRICT	PT	POINT OF TANGENT
		PVC	POLY VINYL CHLORIDE PIPE
CCRFCD	CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT	PVI	POINT OF VERTICAL INTERSECTION
		PVMT	PAVEMENT
DC	DEPRESSED CURB		
DI	DROP INLET		
DIA	DIAMETER		
DIP	DUCTILE IRON PIPE	R	RADIUS
DMH	DROP MANHOLE	RCB	REINFORCED CONCRETE BOX
DOM	DOMESTIC	RCP	REINFORCED CONCRETE PIPE
DWY	DRIVEWAY	RD	ROAD
		RR	RAILROAD
E	ELECTRIC	RT	RIGHT
EAC	EDGE OF AC	ROW	RIGHT-OF-WAY
EC	END OF CURVE		
ECR	END OF CURB RETURN	SS	SANITARY SEWER
ECD	END DRIVEWAY	SD	STORM DRAIN
EL	ELEVATION	SHT	SHEET
EM	ELECTRIC METER	STA	STATION
EOP	EDGE OF PAVEMENT	ST	STREET
EVC	END OF VERTICAL CURVE	STD	STANDARD
EW	EACH WAY	SW	SIDEWALK
EX	EXISTING		
		T	TELEPHONE
FOC	FACE OF CURB	TC	TOP OF CURB
FF	FINISH FLOOR	TF	TOP OF FOOTING
FG	FINISH GRADE	TMH	TOP OF MANHOLE
FH	FIRE HYDRANT	TRANS	TRANSITION
FL	FLOW LINE	TS	TRAFFIC SIGNAL
FS	FINISHED SURFACE	TSC	TRAFFIC SIGNAL CONDUIT
		TW	TOP OF WALL
G	GAS	TYP	TYPICAL
GALV	GALVANIZED		
GB	GRADE BREAK	UG	UNDER GROUND
H	HIGH OR HEIGHT	VC	VERTICAL CURVE
HDPE	HIGH DENSITY POLYETHYLENE	VCP	VITRIFIED CLAY PIPE
HOR	HORIZONTAL	VERT	VERTICAL
HP	HIGH POINT	VG	VALLEY GUTTER
HPS	HIGH PRESSURE SODIUM		
		WL	WATER LINE
ID	INSIDE DIAMETER	WM	WATER METER
INV	INVERT	W/	WITH
IRR	IRRIGATION	W/O	WITHOUT

A.P.N. :
APN : 162-15-401-005, 006, 007, 008 AND 009

LEGAL DESCRIPTION
THE SOUTH HALF (S 1/2) OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 15, TOWNSHIP 21 SOUTH, RANGE 61 EAST, M.D.M., IN THE COUNTY OF CLARK, STATE OF NEVADA. APN NO. 162-15-401-005, 006, 007, 008 AND 009.

BASIS OF BEARING
THE BASIS OF BEARINGS FOR THIS SURVEY IS THE WEST LINE OF THE SOUTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SECTION 15, TOWNSHIP 21 SOUTH, RANGE 61 EAST, M.D.M. WHICH BEARS NORTH 00°04'12" EAST AS SHOWN IN THE OFFICE OF THE CLARK COUNTY, NEVADA RECORDER IN FILE 143 OF SURVEYS ON PAGE 22.

BENCHMARK
CLARK COUNTY BENCHMARK NUMBER 6C11 22NWS - RIVET AND SQUARE ALUMINUM PLATE IN TOP OF CURB, NORTHEAST CORNER OF PARADISE RD. AND FLAMINGO RD. NEAR THE PC OF PARADISE RD.

ELEVATION=624.806 METERS=2049.88 US SURVEY FEET (NAVD 88 DATUM)

DEVELOPER
LAPOUR PARTNERS
5525 SOUTH DECATUR BOULEVARD
LAS VEGAS, NEVADA 89118

TEL: (702) 222-3022
FAX: (702) 222-0961

ENGINEER
ALPHA ENGINEERING COMPANY
3321 N. Buffalo Dr., STE 200
LAS VEGAS, NEVADA 89129

TEL: (702) 877-1300
FAX: (702) 877-0300

CLARK COUNTY WATER RECLAMATION DISTRICT APPROVAL

7/27/07
CLARK COUNTY WATER RECLAMATION DISTRICT — DATE:

CCWRD PROJECT CONTROL NUMBER IS 5558.07.
SIGNATURE ON THESE PLANS SHALL NOT BE CONSTRUED TO BE A PERMIT FOR OR AN APPROVAL OF ANY VIOLATION OF CLARK COUNTY WATER RECLAMATION DISTRICT RULES, REGULATIONS, OR DESIGN AND CONSTRUCTION STANDARDS. THE APPROVAL OF THESE DRAWINGS DOES NOT GUARANTEE CAPACITY IN THE DISTRICT'S COLLECTION OR TREATMENT SYSTEM.

UTILITY APPROVALS

EDGARDO ESTANISLAO 7/9/07
SOUTHWEST GAS CORPORATION — DATE

Richard Nestlebush RICHARD NESTLEBUSH 7-6-07
EMBARQ — DATE

THE AFFIXED EMBARQ NEVADA APPROVAL DOES NOT ASSUME OR GUARANTEE LIABILITY FOR KNOWN OR UNKNOWN CONFLICTS WITH EXISTING OR PROPOSED IMPROVEMENTS. RESOLUTION OF ANY CONFLICT WILL BE ACCOMPLISHED PURSUANT TO LOCAL ORDINANCES, NEVADA REVISED STATUTES AND/OR PUBLIC UTILITY COMMISSION RULES AND REGULATIONS.

Jessica Martin 7-6-07
NEVADA POWER COMPANY — DATE

NEVADA POWER COMPANY ACKNOWLEDGES THAT WE HAVE RECEIVED YOUR PLANS AND WILL PROVIDE SERVICE TO ALL ELECTRICAL NEEDS ASSOCIATED WITH THIS PROJECT. NEVADA POWER COMPANY RESERVES THE RIGHT TO ADDRESS ANY EXISTING OR FUTURE CONFLICTS ONCE THE FINAL DESIGN IS COMPLETED. THE NEW SERVICE AND THE RESOLUTION OF ANY CONFLICTS WILL BE ACCOMPLISHED PURSUANT TO THE NEVADA PUBLIC UTILITY COMMISSION'S RULES AND REGULATIONS.

LAS VEGAS VALLEY WATER DISTRICT (PROJECT # 114186) — DATE
SHEETS (1-3, 8-19)

7-6-07
COX COMMUNICATIONS LAS VEGAS INC. — DATE

COUNTY APPROVALS

8/1/07
CLARK COUNTY FIRE DEPARTMENT — DATE

APPROVAL BY THE FIRE DEPARTMENT HAVING JURISDICTION IS REQUIRED PRIOR TO OBTAINING FINAL APPROVAL FROM THE L.V.V.W.D.

PRE-DEVELOPMENT MEETING WITH DEPARTMENT OF DEVELOPMENT SERVICES CIVIL ENGINEERING DIVISION, OFF-SITE INSPECTOR REQUIRED. CONTACT CIVIL ENGINEERING INSPECTOR AT 455-4610

INDEX OF SHEETS

AVOID OVERHEAD POWER LINE CONTACT. IT'S COSTLY.
Call before you OVERHEAD
1-702-227-2929
NEVADA POWER ENVIRONMENT AND SAFETY SERVICES DEPARTMENT

AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE ALERT (USA)

UTILITY DISCLAIMER NOTE
UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UNDERGROUND OR OVERHEAD UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION. CONTRACTOR TO NOTIFY ENGINEER OF ANY CHANGES OR DISCREPANCIES.

REV	DATE	BY	REVISION

LAPOUR PARTNERS
5525 S. DECATUR BLVD, STE 101
LAS VEGAS, NV 89118
PH: (702) 222-3022 FAX: (702) 222-0961

ALPHA ENGINEERING COMPANY
3321 N. Buffalo Drive, Suite 200
Las Vegas, Nevada 89129
Tel: (702) 877-1300 Fax: (702) 877-0300

SHEET: PARADISE VILLAGE OFFSITE PLANS
TITLE: COVER SHEET

DRAWN BY: MP — 04.23.07
DESIGNED BY: SFC — 04.23.07
CHECKED BY: GWS — 04.23.07
PROJECT NO: 0527708
SCALE: NTS

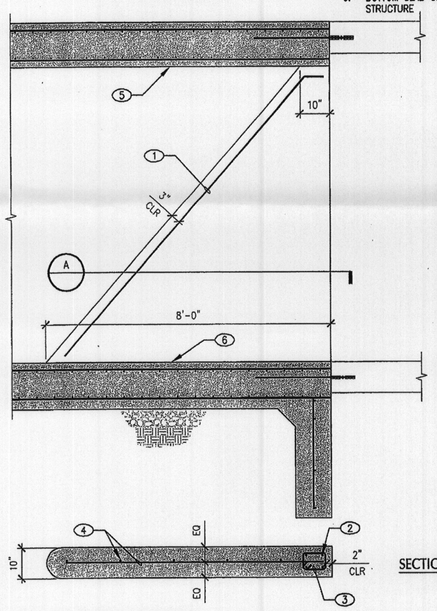
STATE OF NEVADA — REGISTERED PROFESSIONAL ENGINEER — GARY W. SHENDER — No. 9721 — 7-26-07

SHEET C1
1 OF 29 SHEETS

DRAWING NO.
HTE# 07-15692

KEYNOTES:

1. (1) #4 BAR IN ADDITION TO VERTS AND HORIZ BARS TO MATCH SLOPE
2. (4) #5 BARS, SPACED EVENLY. HOOK AT TOP AND BOTTOM, MIN LAP
3. PLACE (3) #3 TIES AT TOP AND BOTTOM W/ IN 9", THEN SPACE AT 10" O.C. THROUGHOUT.
4. #4 AT 12" O.C. EA WAY
5. TOP SLAB AT TRANSITION STRUCTURE
6. BOTTOM SLAB OF TRANSITION STRUCTURE

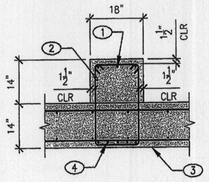


SECTION A

5 BULLNOSE WALL SECTION
NO SCALE

KEYNOTES:

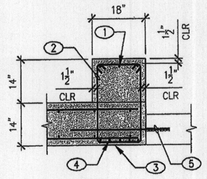
1. (3) #6 HORIZ, EVENLY SPACED
2. #4 TIES AT 4" O.C.
3. FOR REINF, SEE APPROPRIATE DETAIL
4. (5) #10 HORIZ, EVENLY SPACED



3 TURNED UP BEAM SECTION AT TOP SLAB
NO SCALE

KEYNOTES:

1. (3) #6 HORIZ, EVENLY SPACED
2. #4 TIES AT 11" O.C.
3. FOR REINF, SEE APPROPRIATE DETAIL
4. (5) #10 HORIZ, EVENLY SPACED
5. #4x36" LONG DOWEL AT 12" O.C. DRILL AND EPOXY W/ HILTY-HIT HY150 6" MIN EMBED

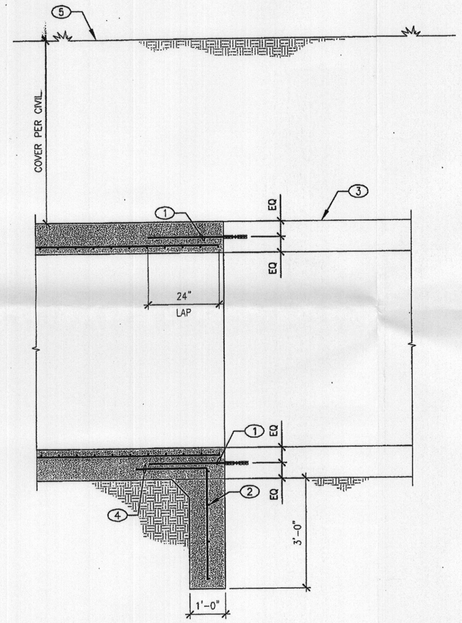


4 BEAM SECTION OVER RCB OPENING
NO SCALE

KEYNOTES:

1. #4x36" LONG DOWEL AT 12" O.C. DRILL AND EPOXY W/ HILTY-HIT HY150 6" MIN EMBED
2. #4 AT 12" O.C.
3. EXISTING RCB, SEE CIVIL
4. #4 AT 12" O.C.

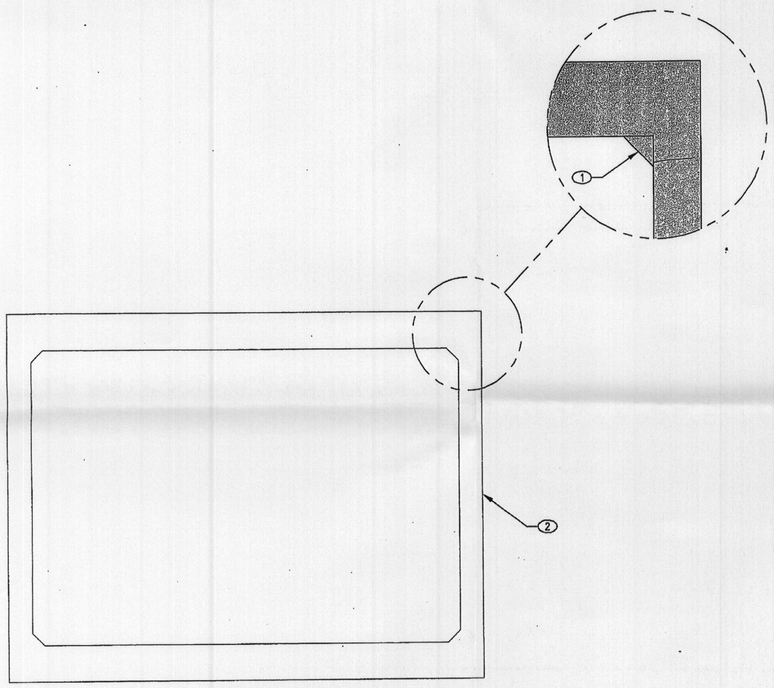
5. FINAL GRADE



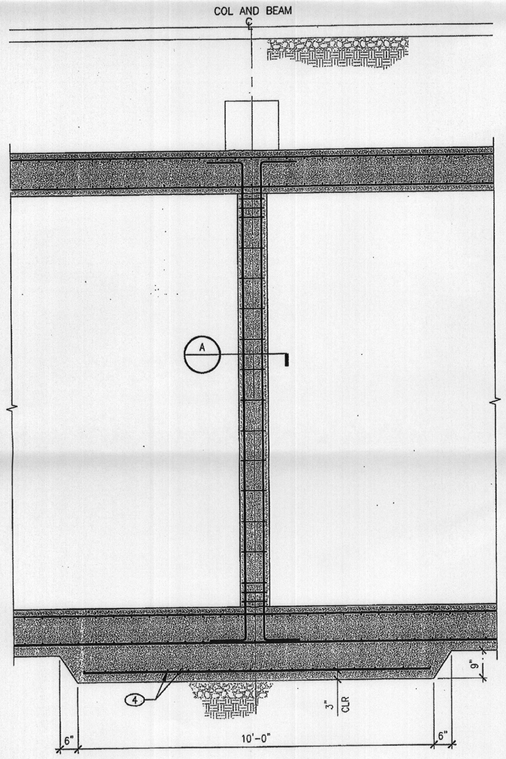
1 CONNECTION AT EXISTING RCB
NO SCALE

KEYNOTES:

1. FLARE CONCRETE LONGITUDNALLY 3'-0" TO MATCH ADJACENT RCB'S FILLET
2. RCB PER INDOT



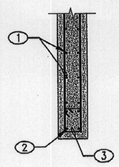
6 SECTION AT RCB CONNECTION
NO SCALE



2 SECTION AT END OF WALL
NO SCALE

KEYNOTES:

1. FOR REINF, SEE APPROPRIATE DETAIL
2. (4) #5 BARS EVENLY SPACED, W/ HOOK AT TOP AND BOTTOM
3. #3 TIES. PLACE (3) TIES IN TOP AND BOTTOM W/ IN 9", THEN AT 10" O.C.
4. #5 BARS AT 7" O.C. EA WAY THROUGH OUT



SECTION A

SEAL: REGISTERED PROFESSIONAL ENGINEER STATE OF NEVADA DOUGLAS E. MEYER Exp. 12/31/07 CIVIL STRUCTURAL No. 9219 Aug. 23, 2007

STRUCTURAL SOLUTIONS ENGINEERING
6380 S. VALLEY VIEW, STE 406
LAS VEGAS, NEVADA 89118
Phone: (702) 616-3107
Fax: (702) 616-3725

PROJECT:
PARADISE VILLAGE
STORM DRAIN TRANSITION STRUCTURE
LAS VEGAS, NV

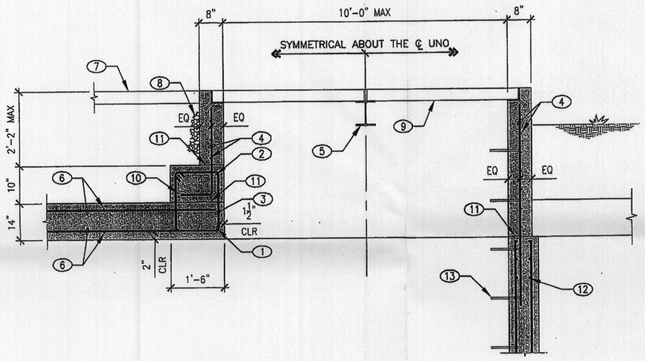
SHEET TITLE:
SECTIONS

REV.	DESCRIPTION	DATE
	SUBMITTED FOR APPROVAL	8/2/07
	SUBMITTED FOR APPROVAL	4/17/07
	SUBMITTED FOR APPROVAL	4/10/07
	SUBMITTED FOR APPROVAL	11/14/06

DRAWN: JDB
CHECKED: BHL

DATE: NOVEMBER 14, 2006
PROJECT NUMBER: LV06108
SHEET NUMBER: 28 OF 29

S2.4



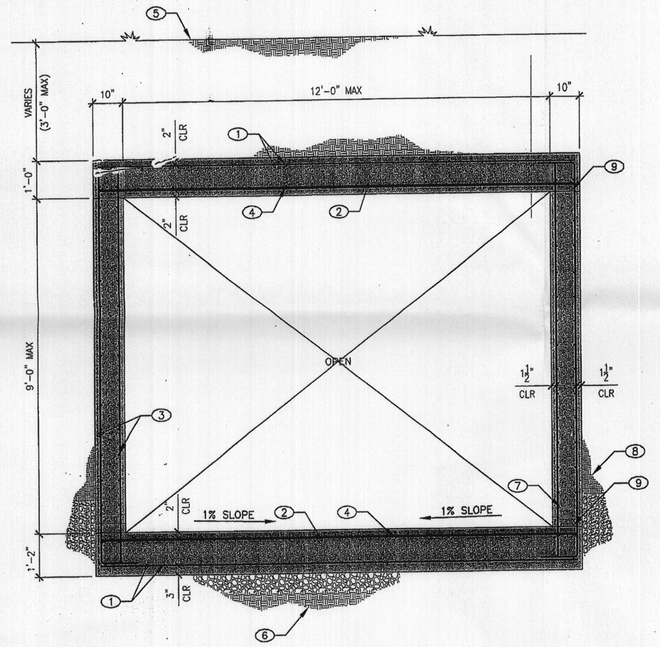
KEYNOTES:

1. (3) #6 BOTTOM BARS
2. (2) #5 TOP BARS
3. #4 STIRRUPS SPACE 6" FROM FACE OF SUPPORT, REMAINING AT 12" O.C.
4. #4 AT 12" O.C. VERT AND HORIZ BARS. LAP VERT BARS BELOW 24"
5. SUPPORT BEAM PER PLAN
6. RCB REINFORCING BARS. REFER TO DETAIL 2/S2.1
7. FINAL GRADE
8. BACKFILL MATERIAL AND PROCEDURES PER GSN
9. GRATING PER DETAIL 2 THIS SHEET.
10. #5 AT 8" O.C. HORIZ BARS
11. INTENTIONALLY ROUGHENED CONSTRUCTION JOINT AT CONTRACTOR'S OPTION
12. PROVIDE (3) #5 HORIZ E.F. AT 6" O.C. AT TOP OF 10" THICK WALL. EXTEND BARS 3'-6" MIN PAST EDGE OF MANHOLE OPENING.
13. ACCESS STEPS PER CLARK COUNTY UNIFORM STANDARD DRAWING NO. 410

NOTE:

A. FOR INFO SHOWN BUT NOT NOTED SEE DETAIL 2 THIS SHEET

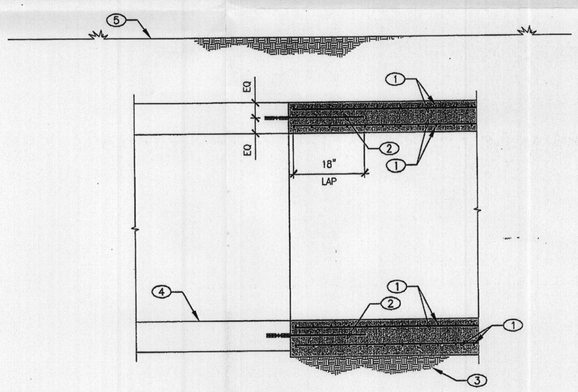
3 SECTION AT MANHOLE
NO SCALE



KEYNOTES:

1. #5 AT 18" O.C. EA WAY
2. #6 AT 6" O.C. TRANSVERSE
3. #5 AT 8" O.C. VERT AND #4 AT 18" O.C. HORIZ EA FACE, W/ STANDARD HOOK ON VERT BARS
4. #6 AT 11" O.C. LONGITUDINAL LAP LONGITUDINAL BAR 24"
5. FINAL GRADE
6. CONCRETE BOX BEDDING PER GSN
7. WEEP HOLE AND ROCK POCKET, SEE PLAN FOR SPACING AND TYPICAL DETAIL 2/S0.1
8. BACKFILL MATERIAL AND PROCEDURE PER GSN
9. ROUGHENED CONSTRUCTION JOINT

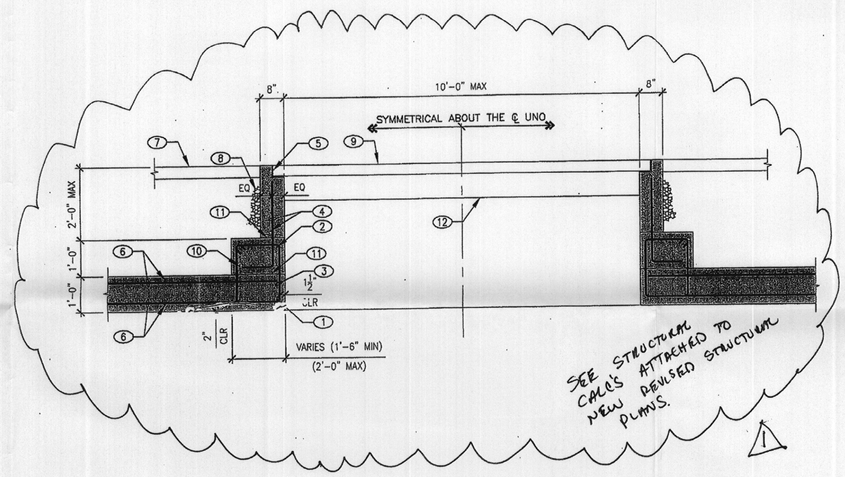
1 SECTION AT 12'-0"x9'-0" RCB
NO SCALE



KEYNOTES:

1. SEE APPLICABLE SECTION 1/S2.2 FOR REINF REQUIREMENTS
2. #4x24" LONG DOWEL AT 12" O.C. DRILL AND EPOXY USE HILTI HY150 OR EQUAL, PROVIDE 6" MIN OF EMBEDMENT
3. CONCRETE BOX BEDDING PER GSN
4. RCB, BY OTHERS
5. FINAL GRADE

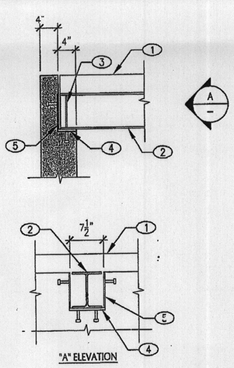
4 CAST-IN-PLACE TO PRECAST CONNECTION
NO SCALE



KEYNOTES:

1. (5) 20'-0" LONG #6 BOTTOM BARS. EQ SPACED TO REPLACE TYP REINF
2. (3) #5 TOP BARS
3. #4 STIRRUPS SPACE 6" FROM FACE OF SUPPORT, REMAINING AT 12" O.C.
4. #4 AT 12" O.C. VERT AND HORIZ BARS. PROVIDE STANDARD HOOK INTO BEAM BELOW ON VERTS
5. L4x4x1/4" PERIMETER ANGLE W/ 3/4"ø x4" HEADED STUDS AT 12" O.C.
6. RCB REINFORCING BARS. REFER TO DETAIL 1/S2.2
7. FINAL GRADE
8. BACKFILL MATERIAL AND PROCEDURES PER GSN
9. INSTALL (2) SECTIONS OF BAR GRATING W/ 2 1/2" DEEP BARS AND 1 3/16" BETWEEN BARS. DESIGN FOR 2000 PSF LIVE LOAD. CONTACT WWW.MCNICHOLS.COM
10. #5 AT 8" O.C. HORIZ BARS
11. INTENTIONALLY ROUGHENED CONSTRUCTION JOINT AT CONTRACTOR'S OPTION
12. SUPPORT BEAM BEYOND

2 SECTION AT ACCESS MANHOLE OPENING
NO SCALE

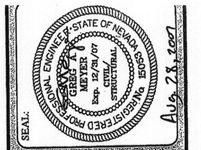


KEYNOTES:

1. GRATING BY OTHERS
2. REMOVABLE BEAM PER PLAN
3. 1/4" STIFFENER EA SIDE
4. 1/2" BEARING PLATE W/ (2) 1/2"ø x4" HEADED STUDS
5. 1/4" END AND SIDE PLATES W/ 1/2"ø HEADED STUDS

5 GRATING SUPPORT BEAM DETAIL
NO SCALE

SEAL:



STRUCTURAL ENGINEERING SOLUTIONS
6380 S. VALLEY VIEW, STE 406
LAS VEGAS, NEVADA 89118
Phone: (702) 616-3107
Fax: (702) 616-3725

PROJECT:
PARADISE VILLAGE
STORM DRAIN TRANSITION STRUCTURE
LAS VEGAS, NV

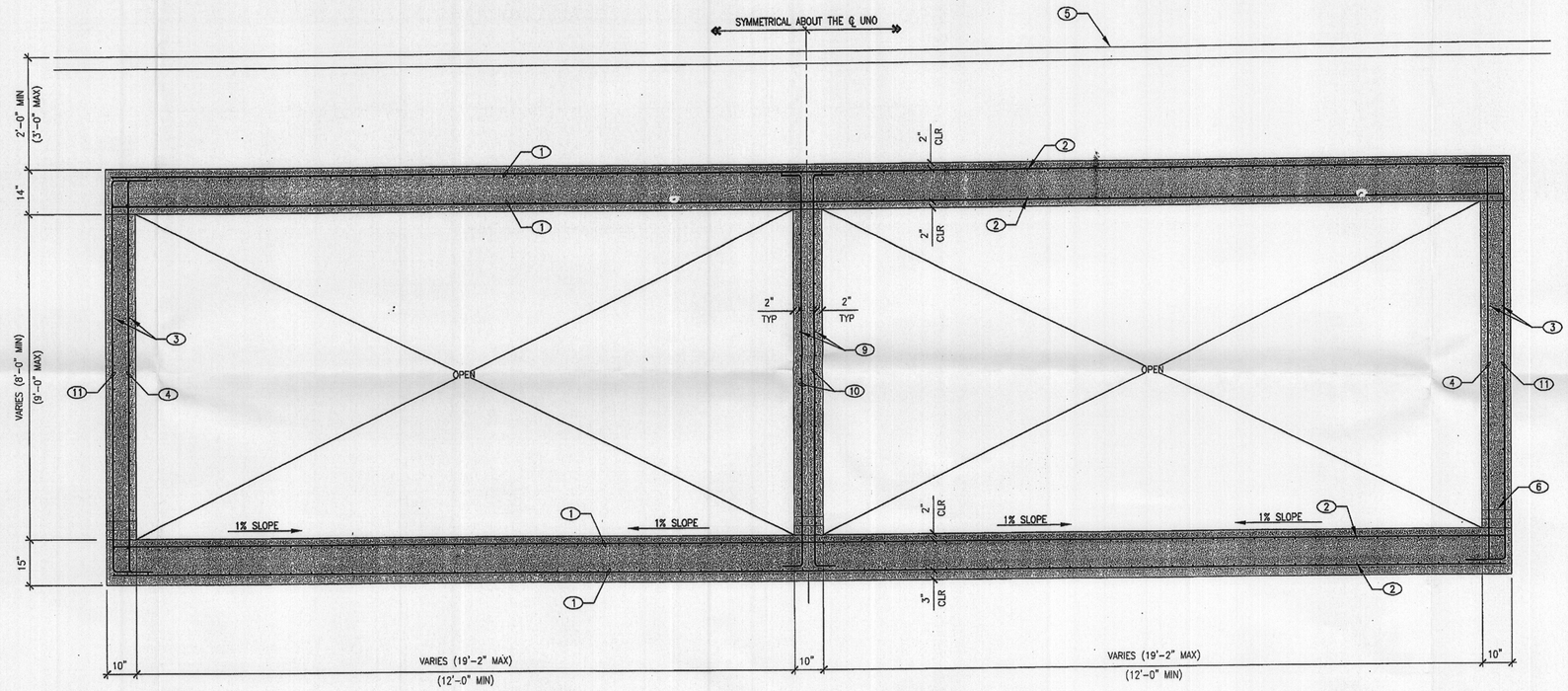
SHEET TITLE:
SECTIONS

REV.	DESCRIPTION	DATE
	SUBMITTED FOR APPROVAL	8/2/07
	SUBMITTED FOR APPROVAL	4/10/07
	SUBMITTED FOR APPROVAL	12/19/06
	SUBMITTED FOR APPROVAL	11/14/06

DRAWN: JDB
CHECKED: BHL

DATE: NOVEMBER 14, 2006
PROJECT NUMBER: LV06108
SHEET NUMBER: 27 OF 29

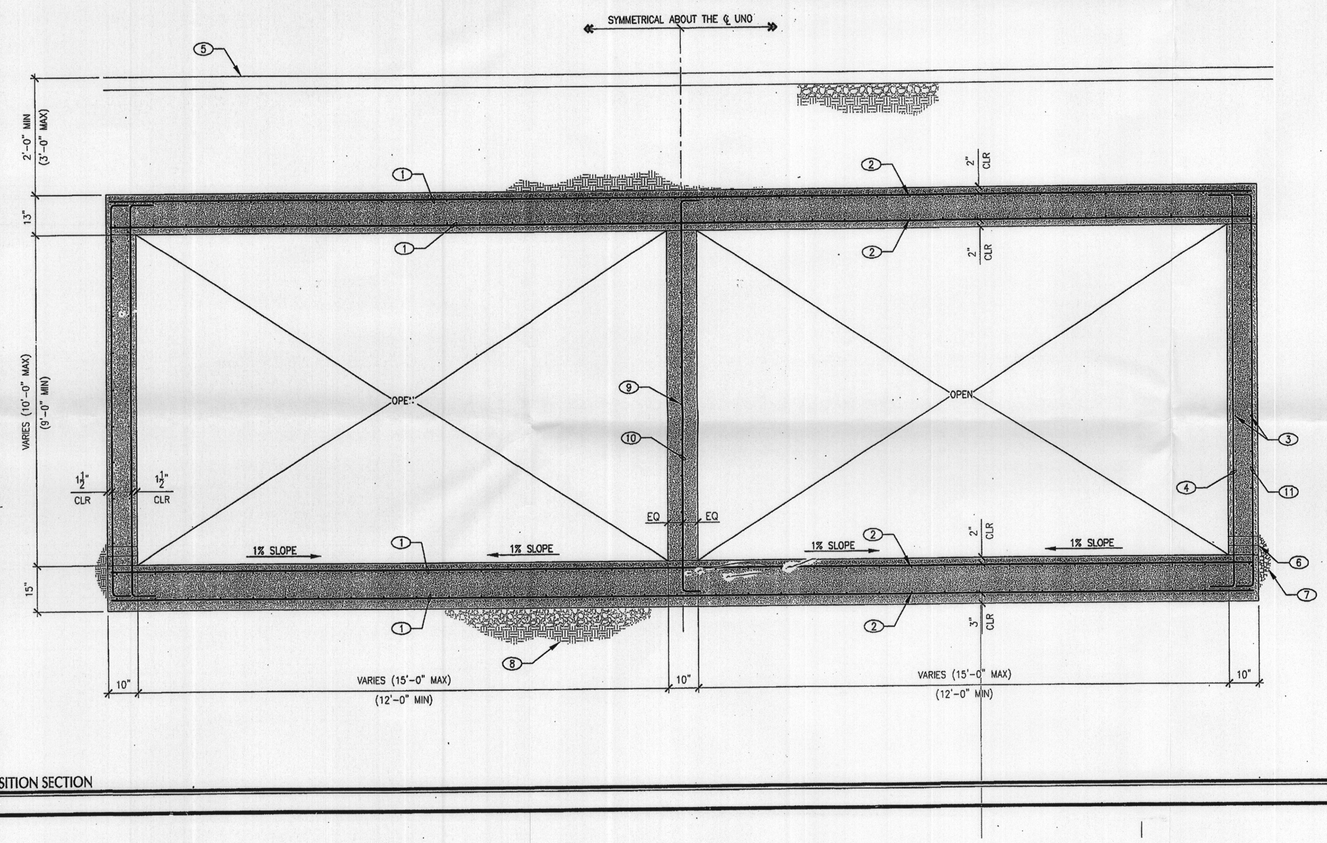
S2.3



1 TAPERED RCB TRANSITION SECTION
NO SCALE

KEYNOTES:

1. #6 TRANSVERSE AT 5" O.C.
2. #5 LONGITUDINALS AT 7" O.C.
3. #4 HORIZ AT 12" O.C. E.F.
4. #5 VERTS AT 7" O.C. W/ STANDARD HOOK T&B
5. FINISH GRADE
6. WEEP HOLE AND ROCK POCKET, SEE PLAN FOR SPACING PER TYPICAL DETAIL 2/S0.1
7. BACKFILL MATERIAL AND PROCEDURE PER GSN
8. CONCRETE BOX BEDDING PER GSN
9. #4 AT 12" O.C. HORIZ
10. #5 VERTS AT 9" O.C. VERT W/ W/ STANDARD HOOK T&B
11. #5 VERTS AT 18" O.C. W/ STANDARD HOOK T&B



2 TRANSITION SECTION
NO SCALE

KEYNOTES:

1. #6 TRANSVERSE AT 7" O.C. T&B
2. #6 LONGITUDINALS AT 13" O.C. T&B
3. #4 HORIZ AT 12" O.C. E.F.
4. #5 VERTS AT 7" O.C. W/ STANDARD HOOK T&B
5. FINISH GRADE
6. WEEP HOLE AND ROCK POCKET, SEE PLAN FOR SPACING PER TYPICAL DETAIL 2/S0.1
7. BACKFILL MATERIAL AND PROCEDURE PER GSN
8. CONCRETE BOX BEDDING PER GSN
9. #4 AT 12" O.C. HORIZ
10. #5 VERTS AT 12" O.C. VERT W/ W/ STANDARD HOOK T&B
11. #5 VERTS AT 14" O.C. W/ STANDARD HOOK T&B

SEAL:
REGISTERED PROFESSIONAL ENGINEER
STATE OF NEVADA
GREG A. MEYER
Exp. 12/31/07
STRUCTURAL
No. 9424
Aug 28 2007

STRUCTURAL ENGINEERING SOLUTIONS
6380 S. VALLEY VIEW, STE 406
LAS VEGAS, NEVADA 89118
Phone: (702) 616-3107
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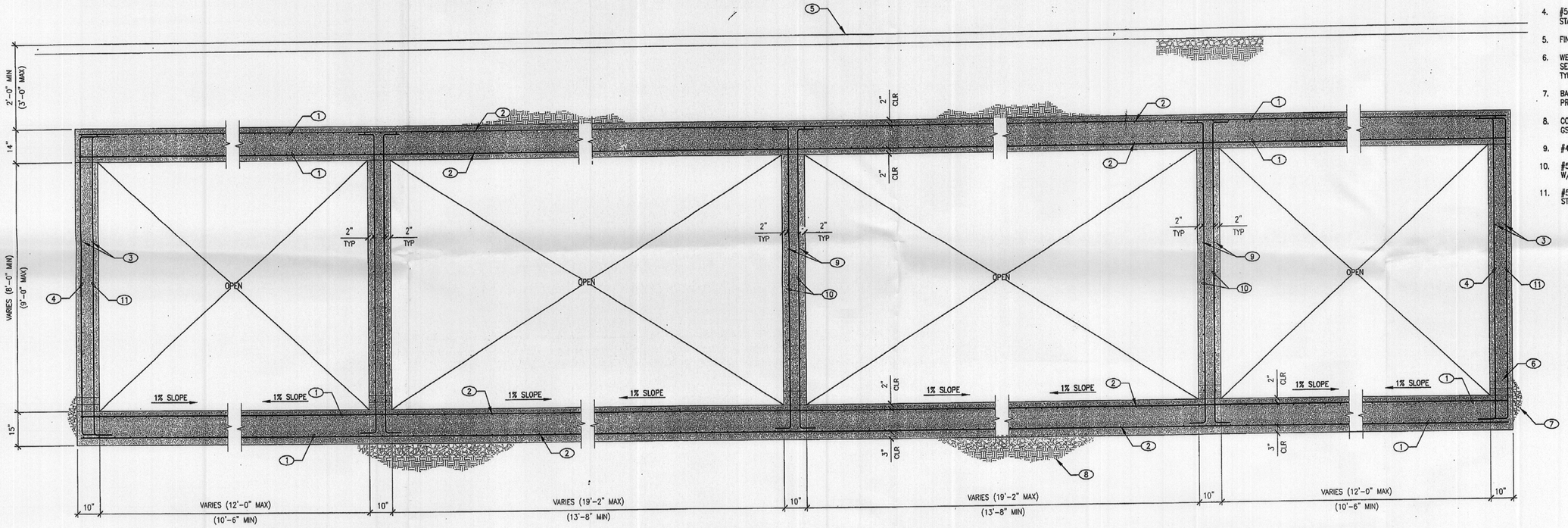
PROJECT:
PARADISE VILLAGE
STORM DRAIN TRANSITION STRUCTURE
LAS VEGAS, NV

SHEET TITLE:
SECTIONS

REV	DESCRIPTION	DATE
	SUBMITTED FOR APPROVAL	8/2/07
	SUBMITTED FOR APPROVAL	4/17/07
	SUBMITTED FOR APPROVAL	4/10/07
	SUBMITTED FOR APPROVAL	11/14/06

DRAWN: JDB
CHECKED: BHL
DATE: NOVEMBER 14, 2006
PROJECT NUMBER: LV06108
SHEET NUMBER: 26 OF 29

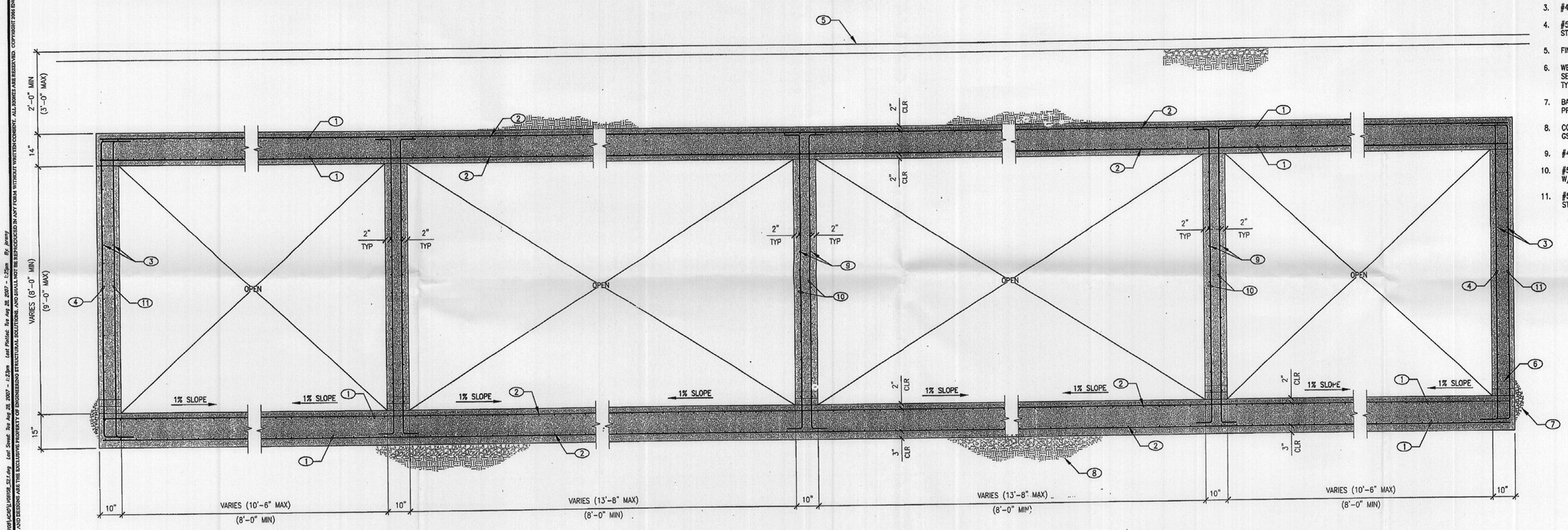
S2.2



1 TAPERED RCB TRANSITION SECTION
NO SCALE

KEYNOTES:

1. #6 TRANSVERSE AT 5" O.C.
2. #5 LONGITUDINALS AT 7" O.C.
3. #4 HORIZ AT 12" O.C. E.F.
4. #5 VERTS AT 9" O.C. W/ STANDARD HOOK T&B
5. FINISH GRADE
6. WEEP HOLE AND ROCK POCKET, SEE PLAN FOR SPACING PER TYPICAL DETAIL 2/S0.1
7. BACKFILL MATERIAL AND PROCEDURE PER GSN
8. CONCRETE BOX BEDDING PER GSN
9. #4 AT 12" O.C. HORIZ
10. #5 VERTS AT 9" O.C. VERT W/ W/ STANDARD HOOK T&B
11. #5 VERTS AT 18" O.C. W/ STANDARD HOOK T&B

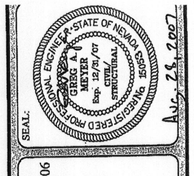


2 TAPERED RCB TRANSITION SECTION
NO SCALE

KEYNOTES:

1. #6 TRANSVERSE AT 9" O.C.
2. #5 LONGITUDINALS AT 7" O.C.
3. #4 HORIZ AT 12" O.C. E.F.
4. #5 VERTS AT 9" O.C. W/ STANDARD HOOK T&B
5. FINISH GRADE
6. WEEP HOLE AND ROCK POCKET, SEE PLAN FOR SPACING PER TYPICAL DETAIL 2/S0.1
7. BACKFILL MATERIAL AND PROCEDURE PER GSN
8. CONCRETE BOX BEDDING PER GSN
9. #4 AT 12" O.C. HORIZ
10. #5 VERTS AT 9" O.C. VERT W/ W/ STANDARD HOOK T&B
11. #5 VERTS AT 18" O.C. W/ STANDARD HOOK T&B

SEAL:



STRUCTURAL ENGINEERING SOLUTIONS
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LAS VEGAS, NEVADA 89118
Phone: (702) 616-3107
Fax: (702) 616-3725

PROJECT:

PARADISE VILLAGE
STORM DRAIN TRANSITION STRUCTURE
LAS VEGAS, NV

SHEET TITLE:

SECTIONS

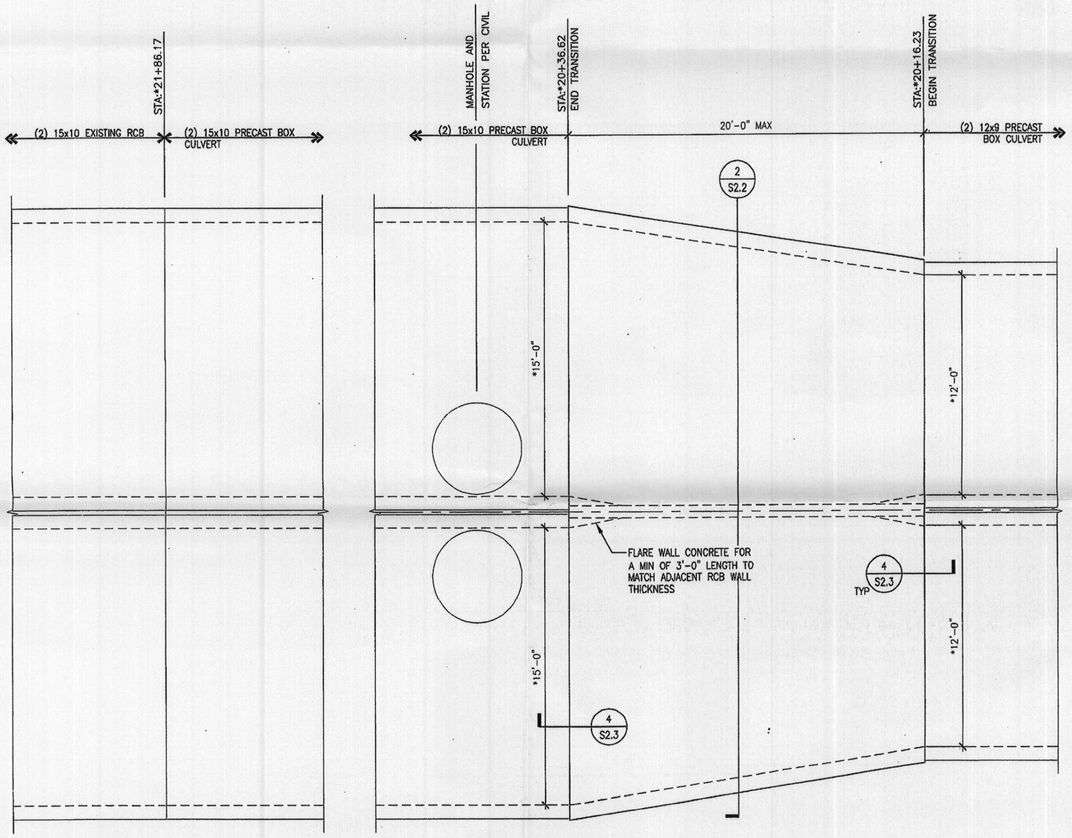
REV.	DESCRIPTION	DATE
	SUBMITTED FOR APPROVAL	8/2/07
	SUBMITTED FOR APPROVAL	12/19/06
	SUBMITTED FOR APPROVAL	11/14/06
	SUBMITTED FOR APPROVAL	6/28/06

DRAWN: JDB
CHECKED: BHL

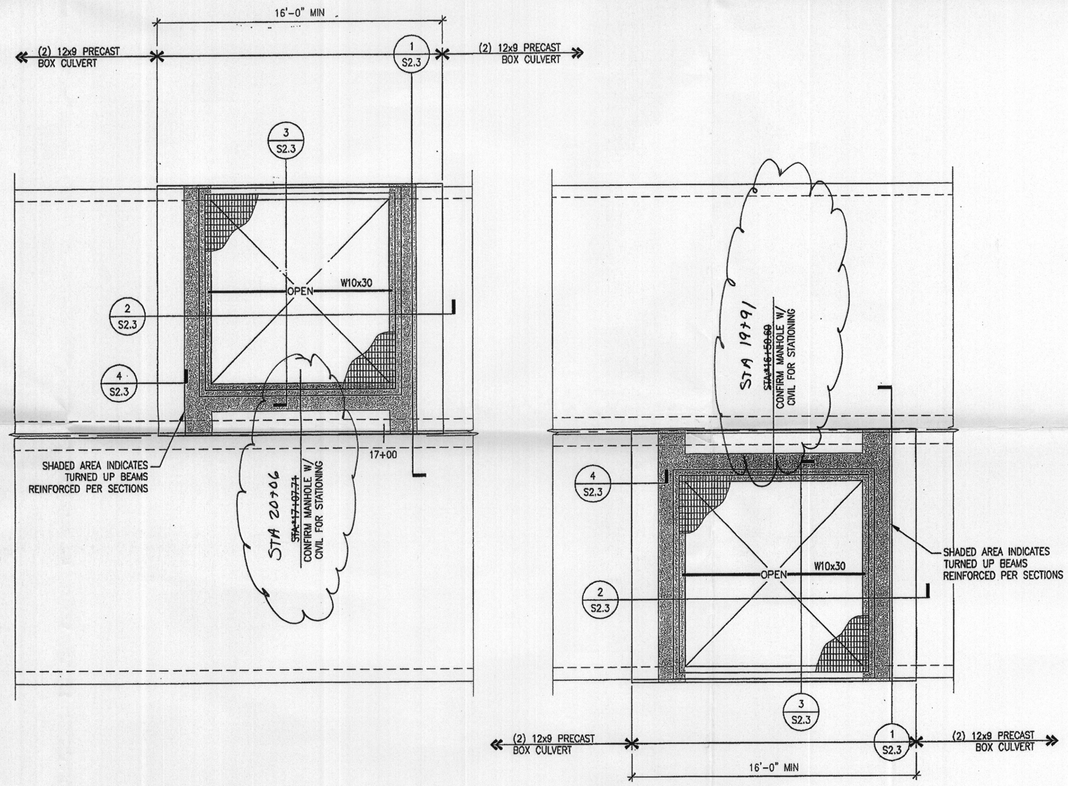
DATE: NOVEMBER 14, 2006
PROJECT NUMBER: LV06108
SHEET NUMBER: 25 OF 29

S2.1

* DIMENSIONS SHOWN ARE APPROXIMATED BASED ON THE CIVIL DRAWINGS. REFEERENCE CIVIL DRAWINGS FOR EXACT DIMENSIONS AND STATIONS.

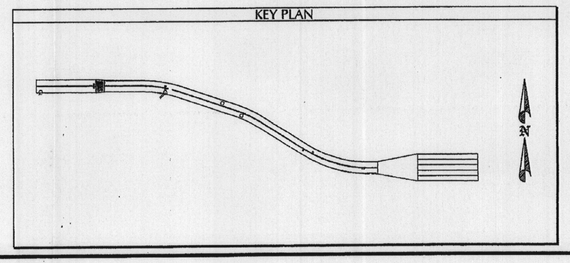


TRANSITION PLAN VIEW SCALE: 1/4"=1'-0"

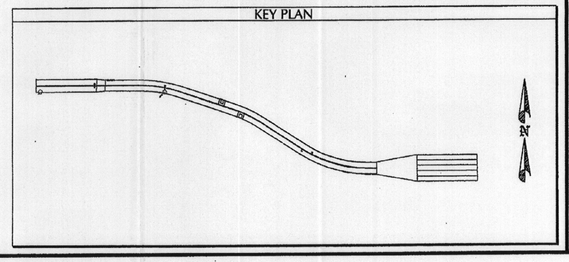


ACCESS MANHOLE PLAN VIEW SCALE: 1/4"=1'-0"

KEY PLAN



KEY PLAN



SEAL:

Aug 28 2007

STRUCTURAL SOLUTIONS ENGINEERING
6380 S. VALLEY VIEW, STE 406
LAS VEGAS, NEVADA 89118
Phone: (702) 616-3107
Fax: (702) 616-3725

PROJECT:

PARADISE VILLAGE
STORM DRAIN TRANSITION STRUCTURE
LAS VEGAS, NV

SHEET TITLE:

PLAN VIEWS

REV.	DESCRIPTION	DATE
	SUBMITTED FOR APPROVAL	8/2/07
	SUBMITTED FOR APPROVAL	6/20/07
	SUBMITTED FOR APPROVAL	4/17/07
	SUBMITTED FOR APPROVAL	4/10/07
	SUBMITTED FOR APPROVAL	11/14/06
	SUBMITTED FOR APPROVAL	6/28/06

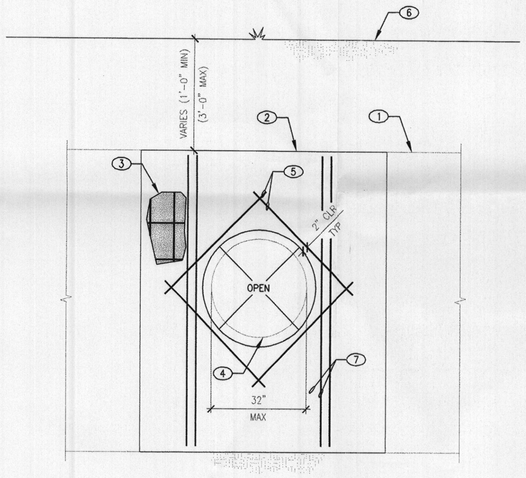
DRAWN: JDB
CHECKED: BHL

DATE: NOVEMBER 14, 2006
PROJECT NUMBER: LV06108
SHEET NUMBER: 24 OF 29

S1.3

KEYNOTES:

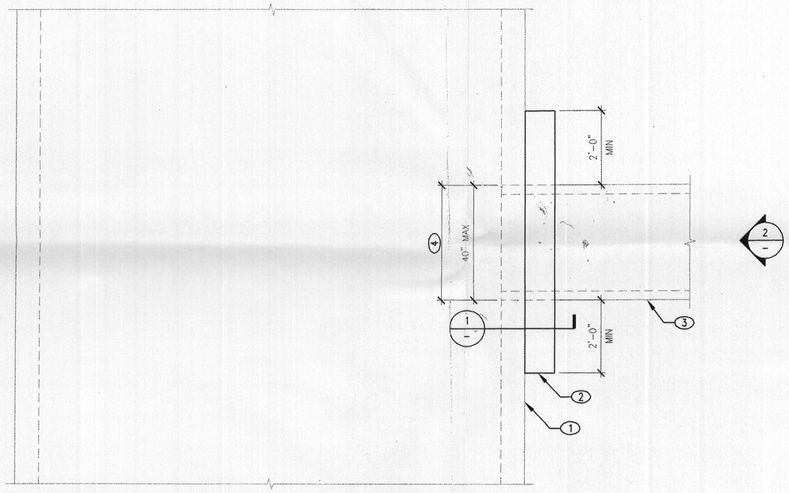
1. RCB PER CIVIL
2. NEW CONCRETE WALL
3. #4 AT 10" O.C. EA WAY CENTER IN WALL
4. RCP PER CIVIL
5. #4x4'-0" BARS
6. TOP OF LEVEL NATURAL GRADE OR COMPACTED SUBGRADE
7. ADD (2) #4 BARS ON EA SIDE OF OPENING. EXTEND FULL HT OF WALL



2 ELEVATION AT RCP TO RCB PENETRATION
NO SCALE

KEYNOTES:

1. RCB PER CIVIL
2. NEW CONCRETE WALL
3. RCP PER CIVIL
4. SAW CUT LIMITS



PLAN VIEW SCALE: 1/2"=1'-0"

KEYNOTES:

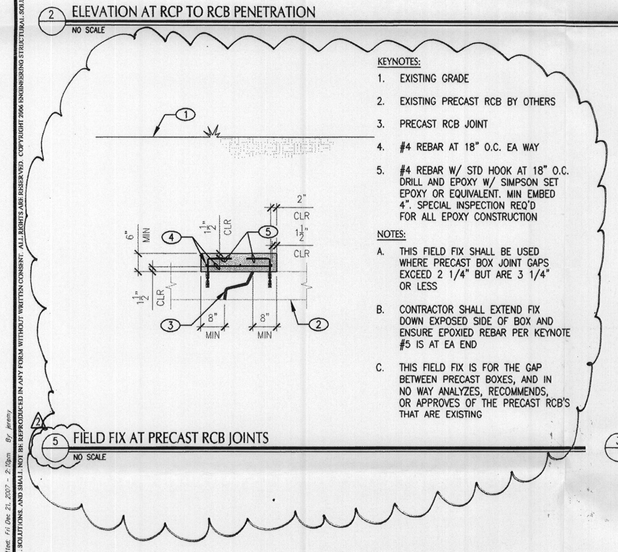
1. EXISTING GRADE
2. EXISTING PRECAST RCB BY OTHERS
3. PRECAST RCB JOINT
4. #4 REBAR AT 18" O.C. EA WAY
5. #4 REBAR W/ STD HOOK AT 18" O.C. DRILL AND EPOXY W/ SIMPSON SET EPOXY OR EQUIVALENT. MIN EMBED 4". SPECIAL INSPECTION REQ'D FOR ALL EPOXY CONSTRUCTION

NOTES:

A. THIS FIELD FIX SHALL BE USED WHERE PRECAST BOX JOINT GAPS EXCEED 2 1/4" BUT ARE 3 1/4" OR LESS

B. CONTRACTOR SHALL EXTEND FIX DOWN EXPOSED SIDE OF BOX AND ENSURE EPOXIED REBAR PER KEYNOTE #5 IS AT EA END

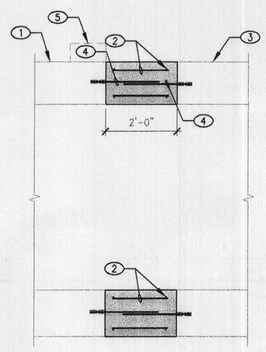
C. THIS FIELD FIX IS FOR THE GAP BETWEEN PRECAST BOXES, AND IN NO WAY ANALYZES, RECOMMENDS, OR APPROVES OF THE PRECAST RCB'S THAT ARE EXISTING



5 FIELD FIX AT PRECAST RCB JOINTS
NO SCALE

KEYNOTES:

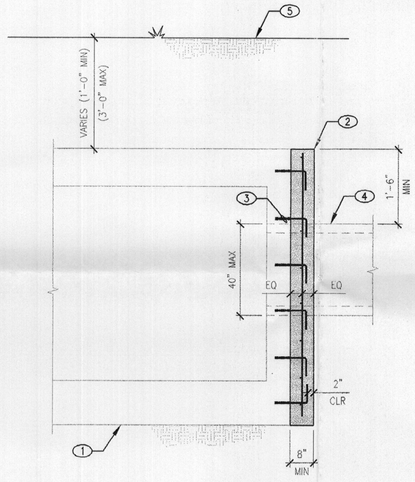
1. EXISTING RCB AND HEADWALL
2. REINFORCING AT CIP SECTION PER DETAIL 2/S2.2
3. NEW PRECAST RCB BY OTHERS
4. #4x23" REBAR DRILL AND EPOXY USING SIMPSON SET OR EQUIVALENT. 5" MIN EMBED. SPECIAL INSPECTION REQ'D FOR EPOXY CONSTRUCTION
5. SAWCUT AND REMOVE TOP OF EXISTING HEADWALL AS REQ'D. TRIM TOP OF BOX AS OCCURS. PROVIDE EPOXY SEALANT COATING ON SAWCUT FACE AT EA EXPOSED REBAR



3 SECTION
NO SCALE

KEYNOTES:

1. RCB PER CIVIL
2. NEW CONCRETE WALL
3. #4 BENT DOWEL AT 12" O.C. EA WAY W/ STANDARD HOOK. EMBED 5" MIN W/ SIMPSON SET EPOXY
4. RCP PER CIVIL
5. TOP OF LEVEL NATURAL GRADE OR COMPACTED SUBGRADE



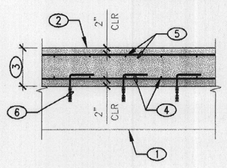
1 WALL SECTION
NO SCALE

KEYNOTES:

1. TOP SLAB OF EXISTING RCB
2. TOP OF NEW CONC GUTTER PER CIVIL PLANS
3. THICKNESS OF NEW CONC GUTTER AS REQ'D PER CIVIL. MIN 4" THICKNESS
4. #4 REBAR AT 12" O.C. EA WAY
5. IF THICKNESS OF NEW CONC GUTTER IS 10" OR GREATER, CONTRACTOR SHALL PLACE SECOND MAT OF REINFORCEMENT AS SHOWN W/ #4 REBAR AT 12" O.C. EA WAY
6. DRILL AND EPOXY #4 DOWELS W/ STD HOOK AT 18" O.C. EA WAY USING SIMPSON SET OR EQUIVAMLENT. MIN EMBED 5". SPECIAL INSPECTION REQ'D FOR EPOXY CONSTRUCTION

NOTES:

A. LOCATION OF CONC GUTTER PER CIVIL



4 CONNECTION OF CONC GUTTER TO EXISTING RCB
NO SCALE

FINAL

Willdan
Paradise Village Structural
M1E03-54297-5CD9

WILLDAN SERVING PUBLIC AGENCIES
RECEIVED FEB 20 2008 LAS VEGAS

SEAL: PROFESSIONAL ENGINEER REGISTERED PROFESSIONAL ENGINEER STATE OF NEVADA BRIAN HEISLER CIVIL/STRUCTURAL 12/21/07 December 21, 2007

STRUCTURAL SOLUTIONS ENGINEERING
6380 S. VALLEY VIEW, STE 406
LAS VEGAS, NEVADA 89118
Phone: (702) 616-3107
Fax: (702) 616-3725

TO: WILLDAN & ASSOC. FOR REVIEW
FROM: CLARK COUNTY DEV. SERVICES
ORIGINAL X ADDENDUM B
DATE 2-21-08

PROJECT: PARADISE VILLAGE
STORM DRAIN TRANSITION STRUCTURE
LAS VEGAS, NV

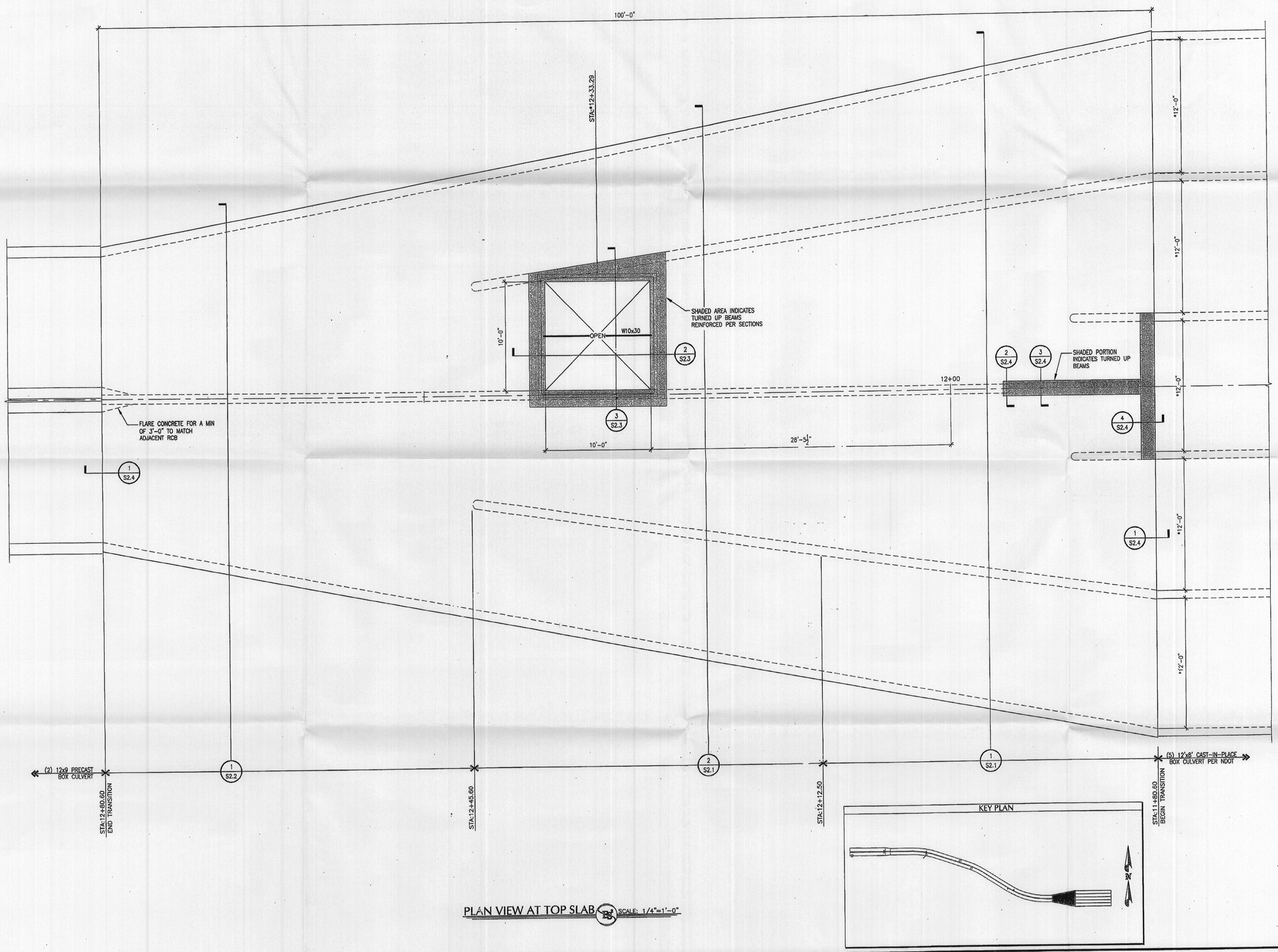
SHEET TITLE: LATERAL RCP CONNECTION AT EXISTING RCB

REV.	DESCRIPTION	DATE
3	FIELD FIX, RCB CONNECTIONS	12/21/07
2	FIELD ISSUE REVISIONS	10/23/07
1	SUBMITTED FOR APPROVAL	8/2/07
	SUBMITTED FOR APPROVAL	4/10/07
	SUBMITTED FOR APPROVAL	11/14/06
	SUBMITTED FOR APPROVAL	6/28/06

DRAWN: JDB CHECKED: BHL

DATE: NOVEMBER 14, 2006
PROJECT NUMBER: LV06108
SHEET NUMBER: 29 OF 29
S2.5

* DIMENSIONS SHOWN ARE APPROXIMATED BASED ON THE CIVIL DRAWINGS. REFEERENCE CIVIL DRAWINGS FOR EXACT DIMENSIONS AND STATIONS.



PLAN VIEW AT TOP SLAB (1/S2.2) SCALE: 1/4"=1'-0"

SEAL: PROFESSIONAL ENGINEER - STATE OF NEVADA GREG A. MEYER Exp. 12/31/07 STRUCTURAL

Aug. 28, 2007

STRUCTURAL ENGINEERING SOLUTIONS
6380 S. VALLEY VIEW, STE 406
LAS VEGAS, NEVADA 89118
Phone: (702) 616-3107
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PROJECT:

PARADISE VILLAGE
STORM DRAIN TRANSITION STRUCTURE
LAS VEGAS, NV

SHEET TITLE:

TOP SLAB PLAN

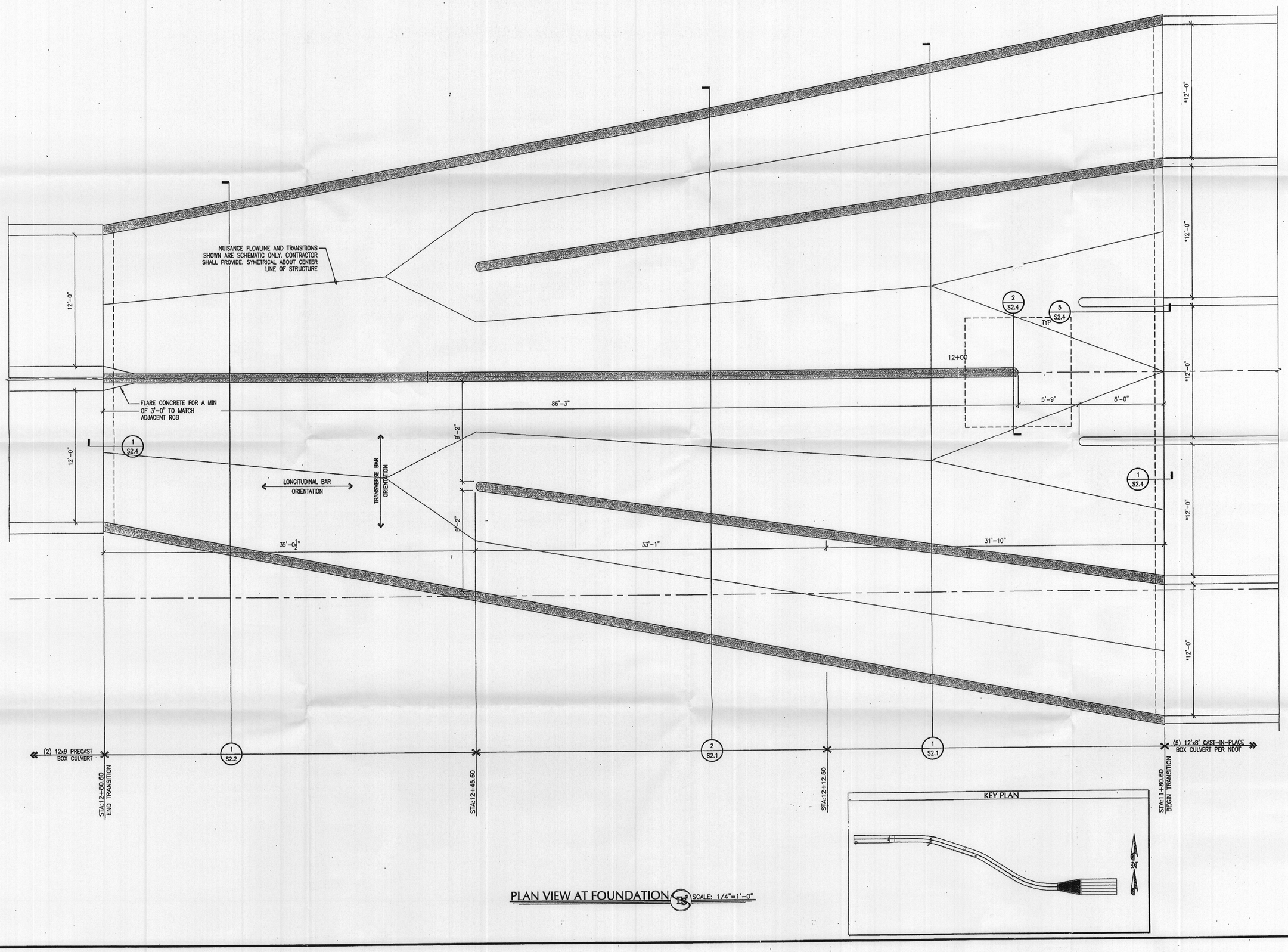
REV.	DESCRIPTION	DATE
	SUBMITTED FOR APPROVAL	8/2/07
	SUBMITTED FOR APPROVAL	6/20/07
	SUBMITTED FOR APPROVAL	4/17/07
	SUBMITTED FOR APPROVAL	4/10/07
	SUBMITTED FOR APPROVAL	11/14/06
	SUBMITTED FOR APPROVAL	6/28/06

DRAWN: JDB
CHECKED: BHL

DATE: NOVEMBER 14, 2006
PROJECT NUMBER: LV06108
SHEET NUMBER: 23 OF 29

S1.2

* DIMENSIONS SHOWN ARE APPROXIMATED BASED ON THE CIVIL DRAWINGS. REFEERENCE CIVIL DRAWINGS FOR EXACT DIMENSIONS AND STATIONS.



PLAN VIEW AT FOUNDATION SCALE: 1/4"=1'-0"

SEAL: REGISTERED PROFESSIONAL ENGINEER STATE OF NEVADA JOHN D. BOSTICK No. 12731 CIVIL/STRUCTURAL Aug. 28, 2007

STRUCTURAL SOLUTIONS ENGINEERING
6380 S. VALLEY VIEW, STE 406
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Phone: (702) 616-3107
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PROJECT:

PARADISE VILLAGE
STORM DRAIN TRANSITION STRUCTURE
LAS VEGAS, NV

SHEET TITLE:

FOUNDATION PLAN

REV.	DESCRIPTION	DATE
	SUBMITTED FOR APPROVAL	8/2/07
	SUBMITTED FOR APPROVAL	4/17/07
	SUBMITTED FOR APPROVAL	4/10/07
	SUBMITTED FOR APPROVAL	11/14/06
	SUBMITTED FOR APPROVAL	6/28/06

DRAWN: JDB CHECKED: BHL

DATE: NOVEMBER 14, 2006
PROJECT NUMBER: LV06108
SHEET NUMBER: 22 OF 29

S1.1

GENERAL STRUCTURAL NOTES

GENERAL REQUIREMENTS

1. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE STRUCTURAL ENGINEERS IN THIS OR SIMILAR LOCALITIES. THEY NECESSARILY ASSUME THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKMEN WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, IT IS UNDERSTOOD THAT THE CONTRACTOR WILL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR ALL MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
2. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DESIGN AND PROVIDE ADEQUATE SHORING, BRACING, FORM-WORK, ETC... AS REQUIRED FOR THE PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. CONSTRUCTION MATERIALS SHALL BE UNIFORMLY SPREAD OUT SUCH THAT DESIGN LIVE LOAD PER SQUARE FOOT AS STATED HEREIN IS NOT EXCEEDED. VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING SHORING AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE WITH THE LOCAL BUILDING DEPARTMENT. ALL WORK OR CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE BUILDING CODES, REGULATIONS AND SAFETY REQUIREMENTS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS, CONDITIONS AND ELEVATIONS WITH CIVIL DRAWINGS PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL INFORM THE CIVIL ENGINEER AND/OR STRUCTURAL ENGINEER IN WRITING OF ANY DISCREPANCIES OR OMISSIONS NOTED ON THE DRAWINGS. ANY SUCH DISCREPANCY, OMISSION, OR VARIATION NOT REPORTED BEFORE START OF CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. WHERE DISCREPANCIES OCCUR IN THESE DRAWINGS, NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS.
5. WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDA.
6. OPTIONS ARE FOR CONTRACTOR'S CONVENIENCE. IF ANY OPTION IS USED, THE CONTRACTOR SHALL USE THE LATEST EDITION AND/OR ADDENDA.
7. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR CIVIL AND ELECTRICAL REQUIREMENTS WITH APPROPRIATE TRADES, DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.
8. OWNER SHALL BE RESPONSIBLE FOR THE COSTS OF ALL INSPECTIONS WHETHER PERFORMED BY AN AGENCY, INDEPENDENT CONSULTANT OR STRUCTURAL ENGINEER ALL INSPECTIONS REQUIRED BY THE BUILDING CODES, LOCAL BUILDING DEPARTMENTS OR BY THESE PLANS SHALL BE PROVIDED BY AN INDEPENDENT INSPECTION COMPANY OR THE BUILDING DEPARTMENT. SITE VISITS BY THE ENGINEER DO NOT CONSTITUTE AN INSPECTION, UNLESS SPECIFICALLY CONTRACTED FOR.
9. SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL STRUCTURAL ITEMS. SHOP DRAWINGS ARE REVIEWED ONLY FOR GENERAL COMPLIANCE WITH THE STRUCTURAL DRAWINGS. REVIEW DOES NOT INDICATE THAT THE SHOP DRAWINGS ARE CORRECT OR COMPLETE. RESPONSIBILITY FOR CORRECTNESS SHALL REST WITH THE CONTRACTOR. ANY CHANGES, SUBSTITUTIONS, OR DEVIATIONS FROM CONTRACT DRAWINGS SHALL BE CLOUDED. ANY OF THE AFOREMENTIONED SHALL NOT BE CONSIDERED APPROVED AFTER ENGINEERS REVIEW UNLESS SPECIFICALLY NOTED ACCORDINGLY. THE SHOP DRAWINGS DO NOT SUPERSEDE OR REPLACE THE ORIGINAL CONTRACT DRAWINGS. ANY ENGINEERING PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW SHALL BEAR THE SEAL OF AN APPROPRIATELY REGISTERED ENGINEER. ES2 SHALL NOT BE RESPONSIBLE FOR THE ADEQUACY OF ENGINEERING DESIGNS PERFORMED BY THE OTHERS. ALLOW 5 WORKING DAYS FOR THE ENGINEER OF RECORD'S REVIEW. ONE COPY OF EACH SUBMITTAL WILL BE RETAINED BY THE ENGINEER OF RECORD.

DESIGN BASIS

1. PARADISE VILLAGE–STORM DRAIN TRANSITION STRUCTURES
2. CODE: AASHTO 1996 ed. STANDARD SPECIFICATIONS
3. DEAD LOAD: STRUCTURE SELF WEIGHT CONCRETE = 150 pcf
   VARYING COVER WITH A SOIL BACKFILL DENSITY = 120pcf
4. LIVE LOAD: HS20–44 LOADING

FOUNDATION

1. THE FOUNDATIONS FOR THE ABOVE REFERENCED PROJECT ARE DESIGNED WITH RECOMMENDATIONS FROM AMTI LLP. FILE# 05208 DATED NOVEMBER 2, 2005. ALL RECOMMENDATIONS LISTED WITH IN THE GEO TECH REPORT REGARDING SITE PREPARATION, GRADING, COMPACTION TESTS, INSPECTIONS ETC. SHALL BE FOLLOWED WITH STRICT ADHERENCE AND SHALL BE COMPLETED PRIOR TO CONSTRUCTION. SHOULD THE GEOTECHNICAL REPORT NOT RECOMMEND FOUNDATION PREPARATIONS THE FOLLOWING SPECIFICATIONS SHALL BE FOLLOWED: EXISTING SUB-BASE SHALL BE FREE OF COBBLES LARGER THAN A 12" SPHERE, AND SILT OR CLAY DEPOSITS.

CONCRETE

1. MIN. 28 DAY COMPRESSIVE STRENGTH, f'c, SHALL BE 4500 PSI.
2. CEMENT SHALL BE TYPE V AND MAX W/C RATIO SHALL BE 0.45
3. CONCRETE SHALL BE TESTED IN ACCORDANCE WITH ASTM C 42 SPECIFICATION.
4. ALL CONCRETE SHALL BE NORMAL WEIGHT USING HARDROCK AGGREGATES.
5. CONCRETE MIXES SHALL BE DESIGNED BY A CERTIFIED LABORATORY AND SUBMITTED W/ SHOPS TO ES2 FOR APPROVAL
6. ALL CONCRETE SHALL BE REGULAR WEIGHT OF 145 POUNDS PER CUBIC FOOT USING HARDROCK AGGREGATES CONFORMING TO TO ASTM C33. WATER SHALL BE CLEAN AND POTABLE.
7. CONCRETE FOR SLABS ON GRADE SHALL BE CONSOLIDATED USING SURFACE VIBRATION METHODS. ALL OTHER CONCRETE SHALL BE CONSOLIDATED USING INTERNAL VIBRATION METHODS. REMOVE ALL DEBRIS FROM FORMS BEFORE PLACING CONCRETE. CONCRETE SHALL NOT BE DROPPED THROUGH REINFORCING STEEL SO AS TO CAUSE SEGREGATION OF AGGREGATES. UNCONFINED FALL OF CONCRETE SHALL NOT EXCEED 5 FEET.
8. ALL ITEMS TO BE CAST IN CONCRETE SUCH AS REINFORCING, DOWELS, BOLTS, ANCHORS, SLEEVES, ETC., SHALL BE SECURELY POSITIONED PRIOR TO CONCRETE PLACEMENT.
9. · ADMIXTURES

   ONLY ADMIXTURES PERMITTED BY THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS' CONSTRUCTION OFF-SITE IMPROVEMENTS CLARK COUNTY SHALL BE ALLOWED.

   · CURING

   CURING ON THE OUTSIDE SURFACE AND INSIDE SURFACE AFTER FORM REMOVAL SHALL BE BY MEANS OF LIQUID MEMBRANE-FORMING COMPOUND MEETING THE REQUIREMENTS OF THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS' CONSTRUCTION OFF-SITE IMPROVEMENTS CLARK COUNTY.
10. SURFACES OF STEEL FORMS SHALL BE COATED W/ AN ICBO APPROVED FORM RELEASE OIL.

REINFORCING STEEL

1. REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615. REINFORCING SHALL BE GRADE 60 (FY = 60 KSI) DEFORMED BARS FOR ALL BARS #4 AND LARGER AND ALL BARS USED FOR CONCRETE WALLS. REINFORCING MAY BE GRADE 40 (FY = 40 KSI) DEFORMED BARS FOR ALL BARS #3 AND SMALLER UNLESS NOTED OTHERWISE ON PLANS OR DETAILS. ALL REINFORCING TO BE WELDED SHALL BE ASTM A706, GRADE 60 ALLOY WELDABLE STEEL.
2. ALL DIMENSIONS SHOWING THE LOCATION OF REINFORCING STEEL NOT NOTED AS "CLEAR" OR "CLR" ARE TO CENTER OF STEEL. MINIMUM COVER FOR NON-PRESTRESSED CONCRETE REINFORCING SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE ON PLANS OR DETAILS:

EXPOSURE CONDITION:	COVER:	TOLERANCES: (+/-)
FOOTINGS & SLABS ON GRADE:	3"	3/8"
WALLS & SLABS EXPOSED TO EARTH OR WEATHER:	1 1/2"	1/2"
#6 BAR OR LARGER:	2"	1/2"
INTERIOR SLABS:	1 1/2"	1/2"

3. LAP SPLICES OF REINFORCING STEEL IN CONCRETE BEAMS, SLABS AND FOOTINGS SHALL BE ACCORDING TO ACI 318-99 CPT 12 OR LAP SCHEDULE WHERE PRESENT, UNLESS NOTED OTHERWISE. STAGGER SPLICES A MINIMUM OF ONE LAP LENGTH. NO TACK WELDING OF REINFORCING BARS ALLOWED. LATEST ACI CODE AND DETAILING MANUAL APPLY. PROVIDE BENT CORNER BARS TO MATCH AND LAP WITH HORIZONTAL BARS AT ALL CORNERS AND INTERSECTIONS PER TYPICAL DETAILS. VERTICAL WALL BARS SHALL BE SPLICED AT OR NEAR FLOOR LINES. SPLICE BARS TOP BARS AT CENTER LINE OF SPAN AND BOTTOM BARS AT THE SUPPORT IN SPANDRELS, BEAMS, GRADE BEAMS, ETC..., UNLESS NOTED OTHERWISE.

REBAR LAP SCHEDULE	
BAR	LAP
#3	31"
#4	31"
#5	39"
#6	48"

4. ALL REINFORCING SHALL BE BENT COLD. BARS SHALL NOT BE UNBENT AND RE-BENT EXCEPT AS NOTED ON PLAN. FIELD BENDING OF REBAR SHALL NOT BE ALLOWED EXCEPT AS NOTED ON PLAN. BENDS AND HOOKS SHALL CONFORM TO ACI STANDARD 315-80.
5. WELDING OF REINFORCING BARS, METAL INSERTS, AND CONNECTIONS SHALL CONFORM WITH ACI 318 CHAPTER 12, AND SHALL BE MADE ONLY AT LOCATIONS SHOWN ON PLANS OR DETAILS. ALL REINFORCING SHALL BE BENT COLD. BARS SHALL NOT BE UN-BENT AND RE-BENT.
6. REINFORCING BAR SPACING SHOWN ON PLANS ARE MAXIMUM ON CENTERS. ALL BARS SHALL BE DETAILED AND PLACED PER CRSI SPECIFICATIONS AND HANDBOOK. DOWEL ALL VERTICAL REINFORCING TO FOUNDATION. SECURELY TIE ALL BARS IN LOCATION BEFORE PLACING CONCRETE.

INSPECTIONS

1. THE SPECIAL INSPECTORS SHALL PROVIDE INSPECTIONS DURING PLACEMENT OF BACKFILL, REINFORCEMENT, CONCRETE, AND EPOXY DOWELING. THE INSPECTOR SHALL SUBMIT A STATEMENT TO THE OWNER, AND ES2 INDICATING COMPLIANCE WITH THE PLANS AND SPECIFICATIONS.
2. SPECIAL INSPECTION OF THE FILL AROUND THE RCB AND/OR JUNCTION STRUCTURE SHALL BE PROVIDED AT A FREQUENCY AS NECESSARY TO ENSURE THAT PROPER FILL AND COMPACTION IS ACHIEVED. COMPACTION TESTS FOR EACH LIFT SHALL BE TAKEN PER EVERY 2500 SQUARE FEET PLACED AS A MINIMUM. THE SPECIAL INSPECTOR SHALL SUBMIT A COMPLIANCE REPORT TO THE OWNER, AND ES2 DOCUMENTING FILL TYPE AND PROCEDURES OF PLACEMENT.

DEFERRED SUBMITTALS

1. ALL ITEMS CONSIDERED IN THESE DESIGN DOCUMENTS AS BY OTHERS ARE NOTED AS DEFERRED SUBMITTALS. THE FOLLOWING WILL INCLUDE BUT NOT BE LIMITED TO:
   - CONCRETE MIX DESIGN
   - REINFORCING SHOP DRAWING
2. PRIOR TO SUBMITTAL OF DEFERRED ITEMS TO PLAN REVIEW, THEY SHALL BE SUBMITTED TO OUR OFFICE FOR REVIEW.

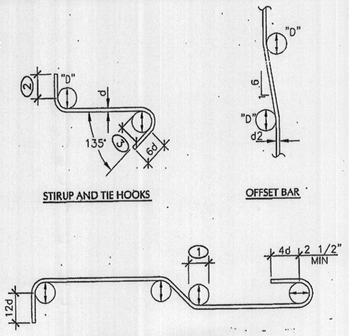
EPOXY ANCHORAGE

1. EPOXY GROUTED DOWELS SHALL BE INSTALLED USING:
   1. HILTI HIT HY-150 ADHESIVE ANCHOR SYSTEM (ICBO REPORT NO. 5193)
   2. SIMPSON STRONG-TIE SET ADHESIVE ANCHOR SYSTEM (ICBO NO. 5279).
   - INSTALL THE ABOVE SYSTEMS PER THE ICBO REPORT AND MGR'S RECOMMENDATIONS.
   - ALTERNATE EPOXY GROUT SYSTEMS WITH CURRENT ICBO APPROVAL MAY BE SUBMITTED BY THE CONTRACTOR FOR APPROVAL.

SHEET INDEX

STANDARD ABBREVIATIONS

ACI	AMERICAN CONCRETE INSTITUTE	FLR	FLOOR	PSI	POUNDS PER SQUARE INCH
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	FTG	FOOTING	REQ'D	REQUIRED
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	GSN	GENERAL STRUCTURAL NOTES	SIM	SIMILAR
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIAL	KSI	KIPS PER SQUARE INCH	T&B	TOP AND BOTTOM
℄	CENTER LINE	MFR	MANUFACTURER	TOF	TOP OF FOOTING
CLR	CLEAR	MAX	MAXIMUM	TOPC	TOP OF PILECAP
CONC	CONCRETE	MECH	MECHANICAL	TOW	TOP OF WALL
CONT	CONTINUOUS	MIN	MINIMUM	UBC	UNIFORM BUILDING CODE
DIA OR ø	DIAMETER	MISC	MISCELLANEOUS	UNO	UNLESS OTHERWISE NOTED
DWG	DRAWING	NTS	NOT TO SCALE	VERT	VERTICAL
EF	EACH FACE	OC	ON CENTER	W/	WITH
ELEV	ELEVATION	OPP	OPPOSITE	W/O	WITHOUT
EQ	EQUAL	PSF	POUNDS PER SQUARE FOOT	WT	WEIGHT



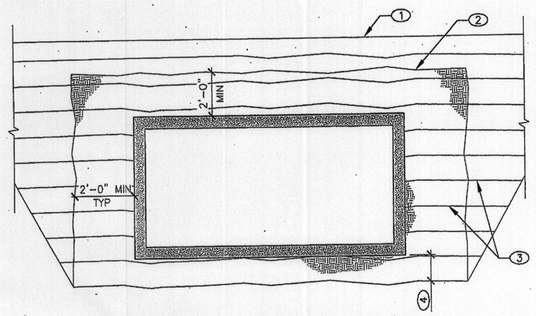
3 STANDARD REBAR BENDING DETAILS
NO SCALE

KEYNOTES:

1. D = 6d FOR #3 THRU #8
   D = 8d FOR #9, 10 AND 11
   D = 10d FOR #14 AND #18
2. 6"d" FOR #5 AND SMALLER
   12"d" FOR #6 THRU #8
3. MINIMUM FINISHED BEND DIA FOR STIRRUPS AND TIES ONLY
   4"d" OF #5 AND SMALLER
   6"d" FOR #6 THRU #8
   6"d" FOR #6 THRU #8

NOTES:

A. "d" = BAR DIA
B. ALL REINFORCEMENT SHALL BE BENT COLD UNLESS NOTED OTHERWISE ON PLANS OR DETAILS



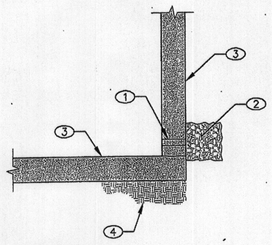
1 BACKFILL REQUIREMENTS (ELEVATION)
NO SCALE

KEYNOTES:

1. FINISHED GRADE
2. MIN LIMITS OF BACKFILL ZONE (GEOTECHNICAL ENGINEER MAY REQUIRE ADDITIONAL)
3. "OR FILL HEIGHT LESS THAN 2'-0" THE FINISH GRADE SHALL BE THE BOUNDARY LINE FOR THE BACKFILL ZONE. BACK FILLING OPERATIONS WITHIN THE BACKFILL ZONE SHALL BE PERFORMED PER THE GEOTECHNICAL REPORT.
4. SCARIFY 12" MIN AND COMPACT PER NOTE A

NOTES:

A. ALL BACKFILL FOR THE REFERENCED PROJECT SHALL CONSIST OF MATERIAL AS SPECIFIED IN THE REFERENCED GEOTECHNICAL REPORT. HOWEVER, SHOULD THE REPORT NOT RECOMMEND A MATERIAL TYPE THE FOLLOWING SPECIFICATION SHALL BE FOLLOWED. BACKFILL SHALL CONSIST OF WELL GRADED 3" MINUS GRANULAR MATERIAL WITH A MINIMUM OF 2'-0" COVER OVER THE BOX AND 2'-0" ON EACH SIDE OF THE ARCH OR STEM WALLS. EXISTING SUBASE SHALL BE SCARIFIED FOR 1'-0" DEPTH AND COMPACTED TO 95% OF DRY DENSITY AND 6" OF WELL GRADED 3" MINUS GRANULAR MATERIAL BE PLACED ON EXISTING COMPACTED SUBASE AND PROPERLY COMPACTED TO 95% OF DRY DENSITY. 8" OF WELL GRADED 3" MINUS GRANULAR MATERIAL GRATED TO 95% DRY DENSITY SHALL BE REQUIRED WHEN COBBLES 12" IN DIA ARE FOUND.
B. PLACEMENT OF THE FILL AT THE STEM WALLS AND OVER THE BOX MAY BEGIN WHEN THE CONCRETE STRENGTH HAS REACHED 3800 psi COMPRESSIVE STRENGTH AFTER A MIN OF TEN DAYS. FILL SHALL BE PLACED IN 8" MAXIMUM VERTICAL LIFTS AND COMPACTED TO 95% OF DRY DENSITY. LIFTS SHALL BE PLACED SYMMETRICALLY EACH SIDE ALONG THE FULL LENGTH OF RCB WITH A MAXIMUM BACKFILL LIFT HEIGHT DIFFERENTIAL OF 1'-0". MAXIMUM DRY DENSITY SHALL BE DETERMINED PER THE GEOTECHNICAL REPORT. BACKFILL SHALL BE COMPACTED PER GEOTECHNICAL REPORT.
C. NO EQUIPMENT WEIGHING MORE THAN A 3 YARD RUBBER TIRE LOADER (928 CATERPILLAR OR EQUIVALENT) SHALL BE ALLOWED TO PASS OVER THE STRUCTURE UNTIL THE SPECIFIED FILL IS IN PLACE. HEAVY EQUIPMENT SUCH AS SCRAPERS AND CRANES SHALL NOT BE ALLOWED TO PASS OVER THE STRUCTURE UNLESS SPECIFIC WRITTEN PERMISSION IS OBTAINED BY THE STRUCTURAL ENGINEER.



2 WEEP HOLE DRAIN REQUIREMENTS
NO SCALE

KEYNOTES:

1. 2"ø WEEP HOLE EACH SIDE OF BOX AT 6'-0" O.C.
2. (2) CUBIC FOOT OF FREE DRAIN MATERIAL WRAPPED IN FILTER FABRIC AT EACH WEEP HOLE
3. CONCRETE WALL
4. COMPACT BACKFILL, SEE GEOTECHNICAL REPORT

RECEIVED
SEP 12 2007
CLARK COUNTY
BUILDING & SAFETY DEPT.

SEAL: PROFESSIONAL ENGINEER STATE OF NEVADA BRIAN HOLLIS MEYER Exp. 12/31/07 No. 15079 STRUCTURAL

Aug. 23, 2007

STRUCTURAL SOLUTIONS ENGINEERING
6380 S. VALLEY VIEW, STE 406
LAS VEGAS, NEVADA 89118
Phone: (702) 616-3107
Fax: (702) 616-3725

PROJECT: PARADISE VILLAGE
STORM DRAIN TRANSITION STRUCTURE
LAS VEGAS, NV

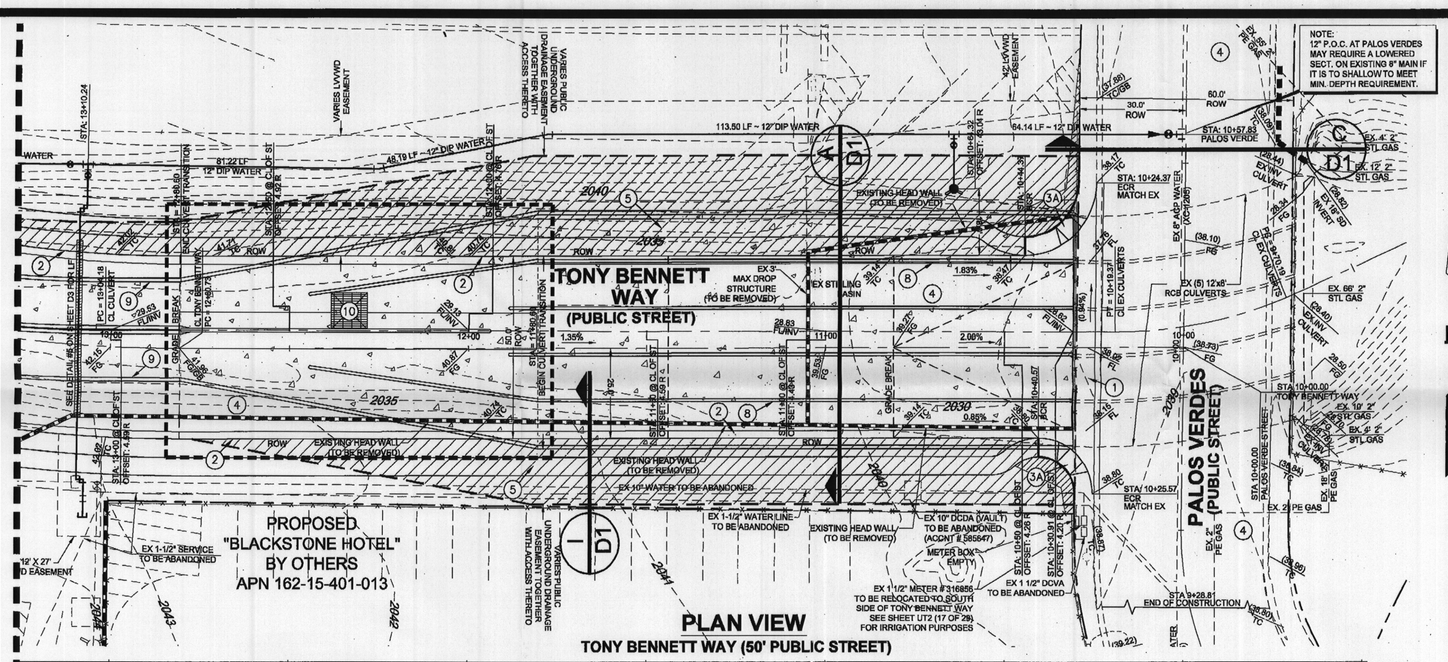
SHEET TITLE: GSN, STD ABBREVIATIONS, SHEET INDEX

REV.	DESCRIPTION	DATE
	SUBMITTED FOR APPROVAL	8/2/07
	SUBMITTED FOR APPROVAL	11/14/06
	SUBMITTED FOR APPROVAL	6/28/06

DRAWN: JDB CHECKED: BHL

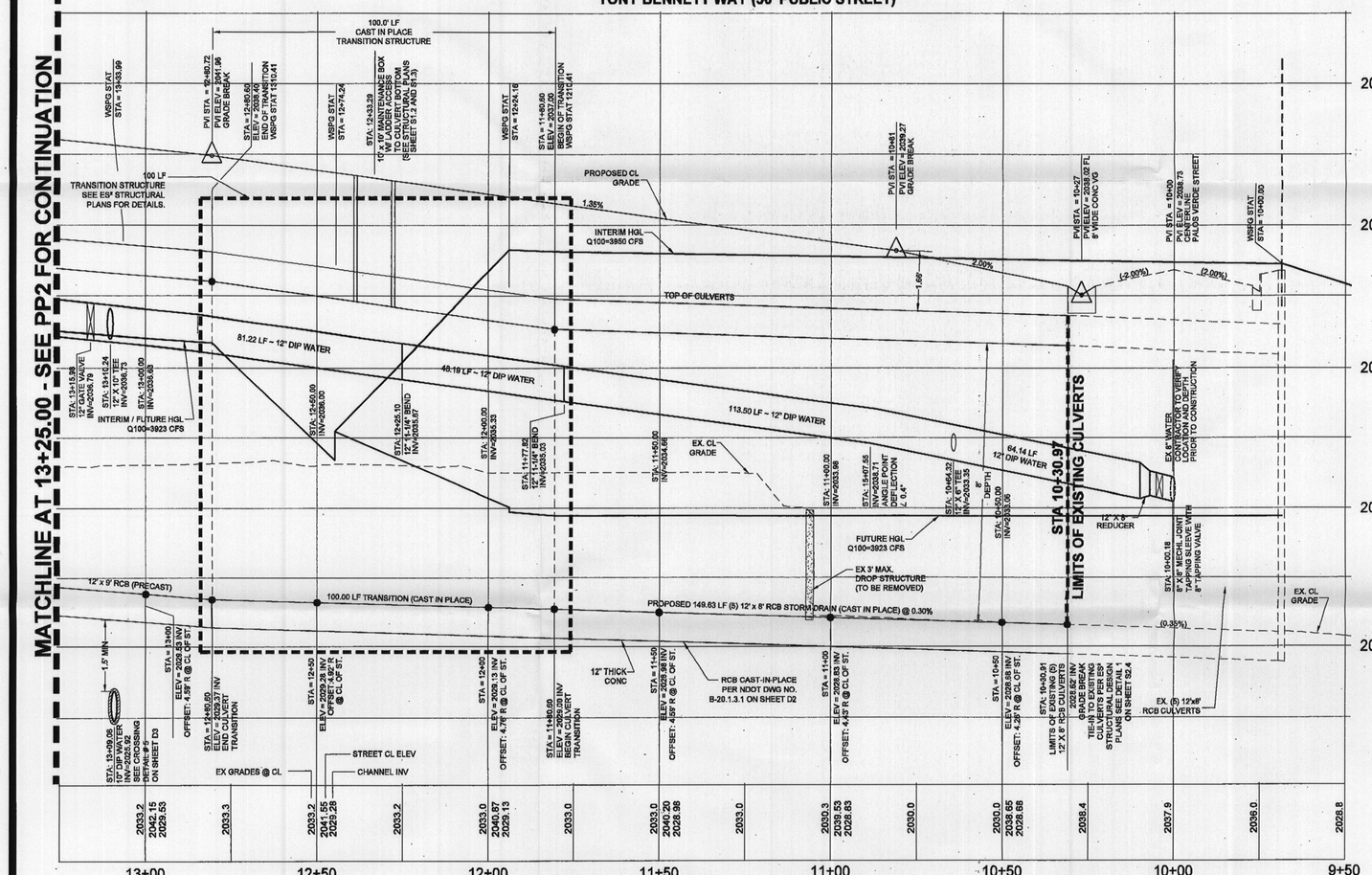
DATE: NOVEMBER 14, 2006
PROJECT NUMBER: LV06108
SHEET NUMBER: 21 OF 29

S0.1



PLAN VIEW

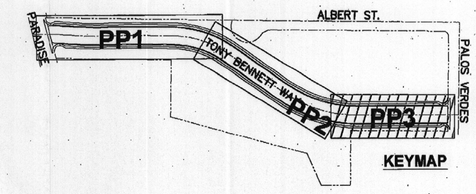
TONY BENNETT WAY (50' PUBLIC STREET)



PROFILE VIEW

TONY BENNETT WAY (50' PUBLIC STREET)

1"=2' VERTICAL
1"= 20' HORIZONTAL



KEYMAP

SIDEWALK RAMP

PER CCAUSD STD DWG NO 235

ID #	GRADE (%)	"A" (FT) MIN.	"B" (FT) MIN.
A	2 TO -2	8.0	8.0
B	-3.01 TO -4	4.5	12.0
C	-5 TO -4.01	4.5	15.0

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
1 inch = 20 ft.

CONSTRUCTION NOTES:

1. CONSTRUCT 8' WIDE CONCRETE VALLEY GUTTER PER C.C.A.U.S.D. NO. 228.
2. CONSTRUCT 24" "L" TYPE CURB & GUTTER PER C.C.A.U.S.D. NO. 216.
3. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT PER C.C.A.U.S.D. NO. 235, CASE 1.
4. CONSTRUCT 3" AC PAVEMENT ON 4" TYPE II OVER 6" TYPE I AGGREGATE BASE.
5. CONSTRUCT 5' CONCRETE SIDEWALK PER C.C.A.U.S.D. NO. 234.
6. INSTALL SIDEWALK UNDERDRAIN PER CC STD DWG # 235
7. CONSTRUCT 2: 15' x 10' PRECAST MONOLITHIC, IN PLACE REINFORCE CONCRETE BOX PER RINKERS MATERIAL.
8. CONSTRUCT 5: 12' X 8' CAST-IN-PLACE REINFORCE CONCRETE BOX (RCB) PER NDOT STD DWG NO. B-20.1.3.1 SEE DETAIL ON SHEET D2.
9. INSTALL DUAL 12' X 9' PRECAST MONOLITHIC, IN PLACE REINFORCE CONCRETE BOX (RCB) PER ASTM C1433 OR EQUIVALENT. SEE DETAIL ON SHEET D2.
10. INSTALL AN 10' X 10' STEEL LID TRAFFIC RATED STORM DRAIN MANHOLE WITH CONCRETE COLLARS PER ES# STRUCTURAL CALCULATIONS AND PLANS ON SHEET S1.2 AND S1.3. STEEL LID SHAL CONFORM WITH CLARK COUNTY TRAFFIC STANDARDS. DESIGN SHALL BE A PART OF THE SHOP DRAWINGS TO BE REVIEWED AND APPROVED PRIOR TO MANUFACTURING.

BASIS OF BEARING

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE WEST LINE OF THE SOUTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SECTION 15, TOWNSHIP 21 SOUTH, RANGE 61 EAST, M.D.M. WHICH BEARS NORTH 00°04'12" EAST AS SHOWN IN THE OFFICE OF THE CLARK COUNTY, NEVADA RECORDER IN FILE 149 OF SURVEYS ON PAGE 22.

BENCHMARK

CLARK COUNTY BENCHMARK NUMBER 6C11 22NWS - RIVET AND SQUARE ALUMINUM PLATE IN TOP OF CURB, NORTHEAST CORNER OF PARADISE RD. AND FLAMINGO RD. NEAR THE PC OF PARADISE RD.

ELEVATION=824.805 METERS=2049.88 US SURVEY FEET (NAVD 88 DATUM)

APPROVALS:

CLARK COUNTY
DEPARTMENT OF
DEVELOPMENT SERVICES

ACCEPTANCE OF PLANS FOR FILING

BY: Mary Hines 9-10-07

ACCEPTANCE OF THESE PLANS FOR FILING SHALL NOT BE CONSTRUED TO BE A PERMIT FOR OR AN APPROVAL OF ANY VIOLATION OF ANY OF THE PROVISIONS OF THE STATE OR COUNTY LAWS AND/OR SPECIFICATIONS. CLARK COUNTY SHALL BE HELD FREE FROM DAMAGES WHICH MAY RESULT FROM THE CONSTRUCTION OF THE IMPROVEMENTS FROM THE ENGINEERING DESIGN DEPICTED HEREIN.

NOTE: POWER POLES AND/OR OTHER EXISTING FACILITIES NOT IN PROPER LOCATION BASED ON PROPOSED IMPROVEMENTS SHOWNEREON WILL BE RELOCATED AT NO EXPENSE TO CLARK COUNTY.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT — DATE:
PROJECT # 114186 — ESN. 018 REV 08/01/04

LEGEND

DESCRIPTION:	CONTOUR LINES	EDGE OF PAVEMENT	"A" TYPE CURBS	"L" TYPE CURBS	WALLS	FENCES	AC PAVEMENT	SPOT ELEVATIONS	SIGNS	FIRE HYDRANTS	GATE VALVES	CLEAN OUTS	REDUCERS	UTILITY BOX OR VAULT	100w HPS STREETLIGHTS	150w HPS STREETLIGHTS	200w HPS STREETLIGHTS	250w HPS STREETLIGHTS
EXISTING:	2308							(00.00)										
PROPOSED:	22							00.00 TC										

MANHOLE DESCRIPTIONS
(T) = TELEPHONE
(E) = ELECTRICAL
(S) = SANITARY SEWER
(D) = STORM DRAIN

ROW LINE
PROPERTY LINE
CL OR SURVEY LINE
SCARP LINE
SAWCUT LINE
EASEMENT LINE
CONCRETE PVMT.
SEWER AND WATER SERVICE W/ PRV'S
BWV BACKWATER VALVE
ELECTRICAL PEDESTAL
PULL BOX AS SHOWN
POWER POLE

REV	DATE	BY	REVISION

LAPOUR PARTNERS
5525 SOUTH DECATUR BLVD, SUITE 101
LAS VEGAS, NV 89118
(702) 222-3022

ALPHA & ENGINEERING COMPANY
3321 N. Buffalo Drive, Suite 200
Las Vegas, Nevada 89129
Tel: (702) 877-1300 Fax: (702) 877-0300

SHEET: PARADISE VILLAGE OFFSITE PLANS

TITLE: PLAN & PROFILE TONY BENNETT WAY 3 OF 5

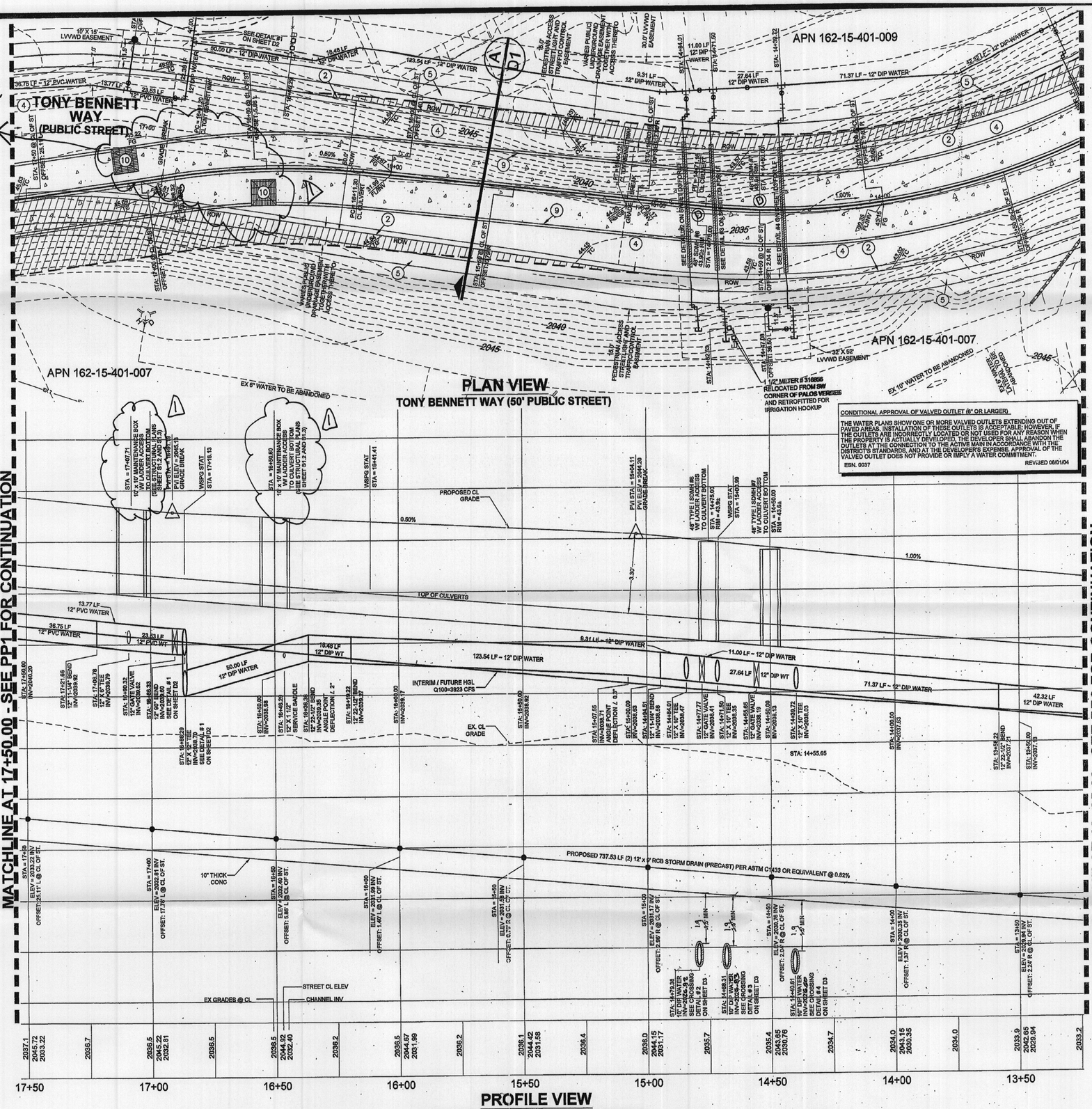
DRAWN BY:	DESIGNED BY:	CHECKED BY:	PROJECT NO:
MKA 04.23.07	SFC 04.23.07	GWS 04.23.07	0527708

SCALE: 1" = 20'

STATE OF NEVADA — DANNY C. STEWART — REGISTERED PROFESSIONAL ENGINEER — No. 9721

SHEET PP3
13 OF 29 SHEETS

DRAWING NO.
HTE# 07-15692



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TONY BENNETT WAY (50' PUBLIC STREET)

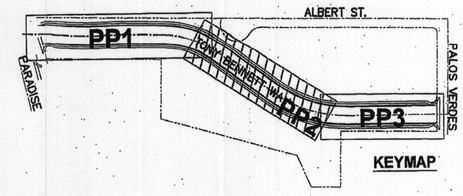
PROFILE VIEW
TONY BENNETT WAY (50' PUBLIC STREET)

1"=2' VERTICAL
1" = 20' HORIZONTAL

CONDITIONAL APPROVAL OF VALVED OUTLET (6" OR LARGER)

THE WATER PLANS SHOW ONE OR MORE VALVED OUTLETS EXTENDING OUT OF PAVED AREAS. INSTALLATION OF THESE OUTLETS IS ACCEPTABLE; HOWEVER, IF THE OUTLETS ARE INCORRECTLY LOCATED OR NOT USED FOR ANY REASON WHEN THE PROPERTY IS ACTUALLY DEVELOPED, THE DEVELOPER SHALL ABANDON THE OUTLETS AT THE CONNECTION TO THE ACTIVE MAIN IN ACCORDANCE WITH THE DISTRICT'S STANDARDS, AND AT THE DEVELOPER'S EXPENSE. APPROVAL OF THE VALVED OUTLET DOES NOT PROVIDE OR IMPLY A WATER COMMITMENT.

ESN. 0037 REVISED 06/01/04



N

SCALE: 1" = 20'

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PER CCA/USD STD DWG NO 235

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10. INSTALL AN 10' X 10' STEEL LID TRAFFIC RATED STORM DRAIN MANHOLE WITH CONCRETE COLLARS PER ESS STRUCTURAL CALCULATIONS AND PLANS ON SHEET S1.2 AND S1.3. STEEL LID SHAL CONFORM WITH CLARK COUNTY TRAFFIC STANDARDS. DESIGN SHALL BE A PART OF THE SHOP DRAWINGS TO BE REVIEWED AND APPROVED PRIOR TO MANUFACTURING.

BASIS OF BEARING

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE WEST LINE OF THE SOUTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SECTION 15, TOWNSHIP 21 SOUTH, RANGE 61 EAST, M.D.M. WHICH BEARS NORTH 00°04'12" EAST AS SHOWN IN THE OFFICE OF THE CLARK COUNTY, NE/ADA RECORDER IN FILE 143 OF SURVEYS ON PAGE 22.

BENCHMARK

CLARK COUNTY BENCHMARK NUMBER 6C11 22NWS - RIVET AND SQUARE ALUMINUM PLATE IN TOP OF CURB, NORTHEAST CORNER OF PARADISE RD. AND FLAMINGO RD. NEAR THE PC OF PARADISE RD.

ELEVATION=624.506 METERS=2049.88 US SURVEY FEET (NAVD 88 DATUM)

BOB 11/12/07

APPROVALS:

CLARK COUNTY DEPARTMENT OF DEVELOPMENT SERVICES

ACCEPTANCE OF PLANS FOR FILING

BY Mary Henry 9-10-09

ACCEPTANCE OF THESE PLANS FOR FILING SHALL NOT BE CONSTRUED TO BE A PERMIT FOR OR AN APPROVAL OF ANY VIOLATION OF ANY OF THE PROVISIONS OF THE STATE OR COUNTY LAWS AND/OR SPECIFICATIONS. CLARK COUNTY SHALL BE HELD FREE FROM DAMAGES WHICH MAY RESULT FROM THE CONSTRUCTION OF THE IMPROVEMENTS FROM THE ENGINEERING DESIGN DEPICTED HEREIN.

NOTE: POWER POLES AND/OR OTHER EXISTING FACILITIES NOT IN PROPER LOCATION BASED ON PROPOSED IMPROVEMENTS SHOWNEREON WILL BE RELOCATED AT NO EXPENSE TO CLARK COUNTY.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT — DATE 9-29-09

PROJECT # 114186 — ESN. 016 REV 05/01/04

REV	DATE	BY	REVISION
1	10/9/07		RELOCATE (2) 10'x10' PRECAST MAINTENANCE ACCESS LIDS WESTERLY APPROXIMATELY 40'.

LAPOUR PARTNERS
5525 SOUTH DECATUR BLVD, SUITE 101
LAS VEGAS, NV 89118
(702) 222-3022

ENGINEERING COMPANY
3321 N. Buffalo Drive, Suite 200
Las Vegas, Nevada 89129
Tel: (702) 877-1300 Fax: (702) 877-0300

ALPHA &

SHEET: PARADISE VILLAGE OFFSITE PLANS

TITLE: PLAN & PROFILE TONY BENNETT WAY 2 OF 5

DRAWN BY:	DESIGNED BY:	CHECKED BY:	PROJECT NO:	SCALE:
JMA 04.23.07	SFC 04.23.07	CWS 04.23.07	0527708	1" = 20'

STATE OF NEVADA — BRETT C. SCHULTZ — 12731 — REGISTERED PROFESSIONAL ENGINEER

SHEET PP2 12 OF 29 SHEETS

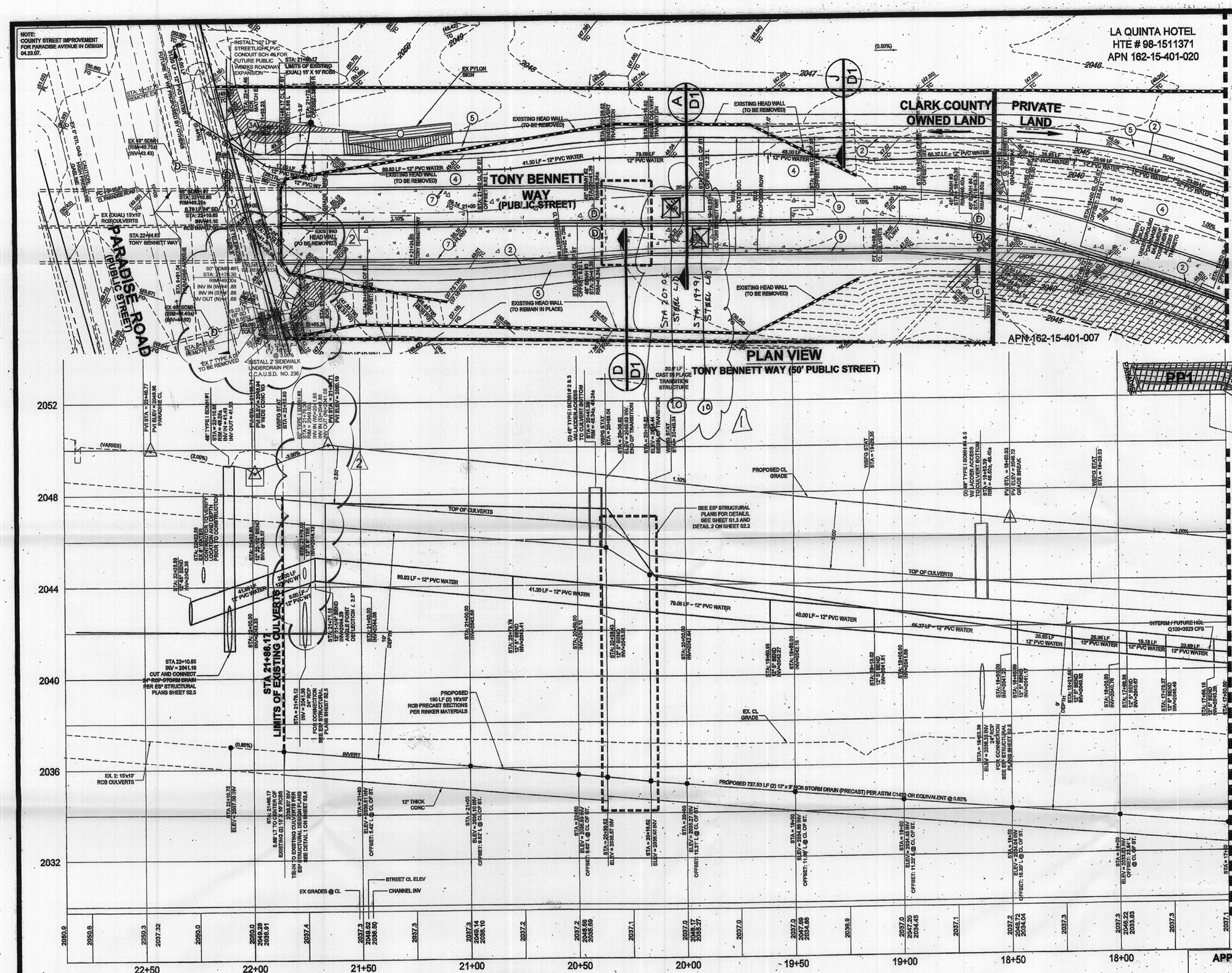
DRAWING NO. HTE# 07-15692

LEGEND

DESCRIPTION:	CONTOUR LINES	EDGE OF PAVEMENT	"A" TYPE CURBS	"L" TYPE CURBS	WALLS	FENCES	AC PAVEMENT	SPOT ELEVATIONS	SIGNS	FIRE HYDRANTS	GATE VALVES	CLEAN OUTS	REDUCERS	UTILITY BOX OR VAULT	100w HPS STREETLIGHTS	150w HPS STREETLIGHTS	200w HPS STREETLIGHTS	250w HPS STREETLIGHTS
EXISTING:	2308							(00.00)										
PROPOSED:	22							00.00										

MANHOLE DESCRIPTIONS: (T) = TELEPHONE; (E) = ELECTRICAL; (S) = SANITARY SEWER; (D) = STORM DRAIN

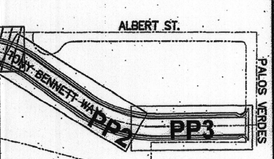
ROW LINE; PROPERTY LINE; CL OR SURVEY LINE; SCARP LINE; SAWCUT LINE; EASEMENT LINE; CONCRETE PVMT.; SEWER AND WATER SERVICE W/ PRV'S; BWV BACKWATER VALVE; ELECTRICAL PEDESTAL; PULL BOX AS SHOWN; POWER POLE



SIDEWALK RAMP

PER CCA/USD STD DWG NO 235

ID#	GRADE (%)	"A" (FT) MIN.	"B" (FT) MIN.
A	2 TO -2	8.0	8.0
B	-3.01 TO -4	4.5	12.0
C	-5 TO -4.01	4.5	15.0



KEYMAP

CONSTRUCTION NOTES:

1. CONSTRUCT 8' WIDE CONCRETE VALLEY GUTTER PER C.C.A.U.S.D. NO. 228.
2. CONSTRUCT 24" "L" TYPE CURB & GUTTER PER C.C.A.U.S.D. NO. 216.
3. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT PER C.C.A.U.S.D. NO. 235, CASE 1.
4. CONSTRUCT 3" AC PAVEMENT ON 4" TYPE II OVER 6" TYPE I AGGREGATE BASE.
5. CONSTRUCT 5' CONCRETE SIDEWALK PER C.C.A.U.S.D. NO. 234.
6. INSTALL SIDEWALK UNDERDRAIN PER CC STD DWG #~~228~~ 236
7. CONSTRUCT 2: 19' x 10' PRECAST MONOLITHIC, IN PLACE REINFORCE CONCRETE BOX PER RINKERS MATERIAL.
8. CONSTRUCT 5: 12' X 8' CAST-IN-PLACE REINFORCE CONCRETE BOX (RCB) PER NDOT STD DWG NO. B-20.1.3.1 SEE DETAIL ON SHEET D2.
9. INSTALL DUAL 12' X 9' PRECAST MONOLITHIC, IN PLACE REINFORCE CONCRETE 3"X (RCB) PER ASTM C1433 OR EQUIVALENT. SEE DETAIL ON SHEET D2.
10. INSTALL AN 19' X 10' STEEL LID TRAFFIC RATED STORM DRAIN MANHOLE WITH CONCRETE COLLARS PER ES* STRUCTURAL CALCULATIONS AND PLANS ON SHEET S1.2 AND S1.3. STEEL LID SHALL CONFORM WITH CLARK COUNTY TRAFFIC STANDARDS. DESIGN SHALL BE A PART OF THE SHOP DRAWINGS TO BE REVIEWED AND RECOMMENDED PRIOR TO MANUFACTURING.

APPROVALS:

CLARK COUNTY
DEPARTMENT OF
DEVELOPMENT SERVICES

ACCEPTANCE OF PLANS FOR FILING
BY [signature] 8-10-07

ACCEPTANCE OF THESE PLANS FOR FILING SHALL NOT BE CONSTRUED TO BE A PERMIT FOR OR AN APPROVAL OF ANY VIOLATION OF ANY OF THE PROVISIONS OF THE STATE OR COUNTY LAWS AND/OR SPECIFICATIONS. CLARK COUNTY SHALL BE HELD FREE FROM DAMAGES WHICH MAY RESULT FROM THE CONSTRUCTION OF THE IMPROVEMENTS FROM THE ENGINEERING DESIGN DEPICTED HEREIN.

NOTE: POWER POLES AND/OR OTHER EXISTING FACILITIES NOT IN PROPER LOCATION BASED ON PROPOSED IMPROVEMENTS SHOWNEREON WILL BE RELOCATED AT NO EXPENSE TO CLARK COUNTY.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT — DATE: 9-20-07
PROJECT # 114186 — ESN. 018 REV 06/01/04

BASIS OF BEARING

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE WEST LINE OF THE SOUTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SECTION 15, TOWNSHIP 21 SOUTH, RANGE 61 EAST, M.D.M. WHICH BEARS NORTH 00°04'12" EAST AS SHOWN IN THE OFFICE OF THE CLARK COUNTY, NEVADA RECORDER IN FILE 145 OF SURVEYS ON PAGE 22.

BENCHMARK

CLARK COUNTY BENCHMARK NUMBER 6C11 22NW5 - RIVET AND SQUARE ALUMINUM PLATE IN TOP OF CURB, NORTHEAST CORNER OF PARADISE RD. AND FLAMINGO RD., NEAR THE PC OF PARADISE RD.

ELEVATION=624.806 METERS=2049.88 US SURVEY FEET (NAVD 88 DATUM)

LEGEND

DESCRIPTION:	CONTOUR LINES	EDGE OF PAVEMENT	"A" TYPE CURBS	"L" TYPE CURBS	WALLS	FENCES	AC PAVEMENT	SPOT ELEVATIONS	SIGNS	FIRE HYDRANTS	GATE VALVES	CLEAN OUTS	REDUCERS	UTILITY BOX OR VAULT	100w HPS STREETLIGHTS	150w HPS STREETLIGHTS	200w HPS STREETLIGHTS	250w HPS STREETLIGHTS
EXISTING:	2308							00.00 TC										
PROPOSED:	22							00.00 TC										

MANHOLE DESCRIPTIONS
(T) = TELEPHONE
(E) = ELECTRICAL
(S) = SANITARY SEWER
(D) = STORM DRAIN

ROW LINE
PROPERTY LINE
CL OR SURVEY LINE
SCARP LINE
SAWCUT LINE
EASEMENT LINE
CONCRETE PVMT.
SEWER AND WATER SERVICE W/ FIRV'S
BACKWATER VALVE
ELECTRICAL PEDESTAL
PULL BOX AS SHOWN
POWER POLE

REV	DATE	BY	REVISION
1	7/23/08	SFC	MODIFY STORM DRAIN CONNECTION TO BOX CULVERT

EXCLUDE STEEL LIDS TO STA 20+00 & 19+91

PROFESSIONAL ENGINEER-STATE OF NEVADA — STEPHEN F. CROVOSEALA — EXP. 12/31/08 — CIVIL — No. 13689 — 3/11/08

LAPOUR PARTNERS
5525 SOUTH DECATUR BLVD, SUITE 101
LAS VEGAS, NV 89118
(702) 222-3022

ALPHA & ENGINEERING COMPANY
3320 N. Buffalo Drive, Suite 200
Las Vegas, Nevada 89129
Tel: (702) 877-1300 Fax: (702) 877-0300

SHEET: PARADISE VILLAGE OFFSITE PLANS

TITLE: PLAN & PROFILE TONY BENNETT WAY 1 OF 5

DRAWN BY:	DESIGNED BY:	CHECKED BY:	PROJECT NO:
JMA 04.23.07	SFC 04.23.07	CHS 04.23.07	05277D8

SCALE: 1" = 20'

PROFESSIONAL ENGINEER-STATE OF NEVADA — STEPHEN F. CROVOSEALA — EXP. 12/31/08 — CIVIL — No. 13689

SHEET PP1
11 OF 29 SHEETS

DRAWING NO. HTE# 07-15692

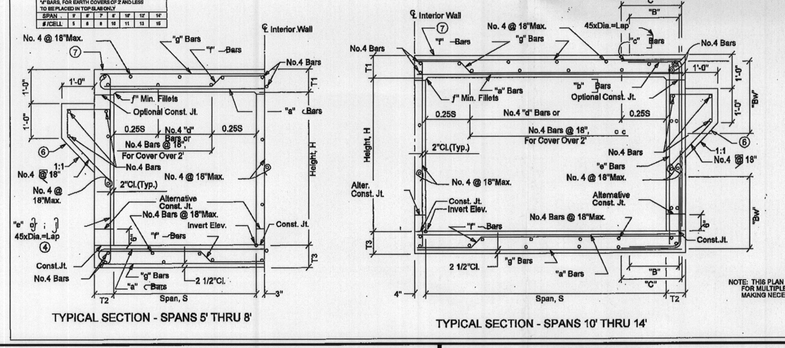
SPAN	FT.	5					6						7						8						9					
HEIGHT	FT.	5					6						7						8						9					
MINIMUM EARTH COVER	FT.	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20
CONC.	ROOF	T1	INCH	7	7.5	7	7.5	7	8	7	8	7	8	7	8.5	7	8.5	7	8.5	7	9	7	9	7	9	7	9.5	7	9.5	7	9.5
	EXTERIOR WALLS	T3	INCH	7	8	7	8	7	8.5	7	8.5	7	8.5	7	9	7	9	7	9	7	9.5	7	9.5	7	9.5	7	10	7	10	7	10
	INVERT		INCH	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12
	SPACING		INCH	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
REINFORCEMENT	"A"	BAR NO.		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
	"B"	BAR NO.		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
	"C" - OD	BAR NO.		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
CONCRETE			CY/LF	17.2	18.3	18.3	21.4	21.9	23.4	25.1	26.8	26.4	28.9	29.8	33.7	32.8	36.2	35.3	39.2	38.9	42.8	42.1	46.3	45.6	50.1	49.3	54.0	53.2	58.2	57.3	62.6
REINFORCEMENT			LBS/LF	152	121	124	137	148	161	168	183	183	176	209	196	227	203	247	209	267	216	287	222	306	229	324	236	343	243	364	250

SPAN	FT.	10						11						12						13						14					
HEIGHT	FT.	10						11						12						13						14					
MINIMUM EARTH COVER	FT.	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20
CONC.	ROOF	T1	INCH	7	9.5	7	9.5	7	10	7	10	7	10	7	10	7	10	7	10	7	10	7	10	7	10	7	10	7	10	7	10
	EXTERIOR WALLS	T3	INCH	7	10	7	10	7	10	7	10	7	10	7	10	7	10	7	10	7	10	7	10	7	10	7	10	7	10	7	10
	INVERT		INCH	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12
	SPACING		INCH	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
REINFORCEMENT	"A"	BAR NO.		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
	"B"	BAR NO.		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
	"C"	BAR NO.		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
	"D"	BAR NO.		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
	"E"	BAR NO.		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
	"F"	CHAMFER "B"	FT./BEV	1.0	3.7	1.0	3.7	1.0	3.7	2.0	3.4	3.5	2.8	3.0	3.7	3.1	3.7	3.1	3.7	3.2	3.7	3.3	3.7	3.3	3.7	3.4	3.7	3.4	3.7	3.4	3.7
		CHAMFER "A"	FT./BEV	3.8	3.7	3.8	3.7	3.8	3.7	4.0	4.1	4.1	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
	"G"	BAR NO.		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
	"H"	CHAMFER "B"	FT./BEV	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.3	4.0	4.0	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.3	4.0	4.0	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
		CHAMFER "A"	FT./BEV	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
	"I" - OD	BAR NO.		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
CONCRETE			CY/LF	59.0	61.8	61.0	65.0	67.7	69.8	67.7	69.8	69.7	69.8	75.0	78.0	76.3	78.0	76.3	78.0	78.1	86.2	83.8	86.2	85.1	86.2	92.7	95.1	94.0	95.1	93.7	95.1
REINFORCEMENT			LBS/LF	258	215	249	233	239	254	261	254	254	254	282	292	273	292	283	292	303	329	313	329	323	329	343	366	354	366	354	366

SPAN	FT.	14						15						16					
HEIGHT	FT.	14						15						16					
MINIMUM EARTH COVER	FT.	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20
CONC.	ROOF	T1	INCH	7	10	7	10	7	10	7	10	7	10	7	10	7	10	7	10
	EXTERIOR WALLS	T3	INCH	7	10	7	10	7	10	7	10	7	10	7	10	7	10	7	10
	INVERT		INCH	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12	11.5	12
	SPACING		INCH	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
REINFORCEMENT	"A"	BAR NO.		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
	"B"	BAR NO.		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
	"C"	BAR NO.		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
	"D"	BAR NO.		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
	"E"	BAR NO.		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
	"F"	CHAMFER "B"	FT./BEV	3.4	3.7	3.4	3.7	3.4	3.7	3.4	3.7	3.4	3.7	3.4	3.7	3.4	3.7	3.4	3.7
		CHAMFER "A"	FT./BEV	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
	"G"	BAR NO.		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
	"H"	CHAMFER "B"	FT./BEV	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
		CHAMFER "A"	FT./BEV	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
	"I" - OD	BAR NO.		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
CONCRETE			CY/LF	101.8	104.4	101.8	104.4	101.8	104.4	109.8	113.0	109.8	113.0	109.8	113.0	118.1	121.1	118.1	121.1
REINFORCEMENT			LBS/LF	382	310	410	315	393	320	427	340	432	370	451	360	461	370	1005	1110

"A" BARS, FOR EARTH COVERS OF 2 AND LESS TO BE PLACED IN TOP FLAMEWALF

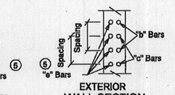
SPAN	5'	6'	7'	8'	10'	12'	14'
# OF BILL	1	4	4	10	11	13	15



TYPICAL SECTION - SPANS 5' THRU 8'

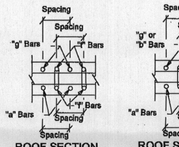
TYPICAL SECTION - SPANS 10' THRU 14'

NOTE: THIS PLAN SHEET MAY BE USED FOR MULTIPLE CELL CULVERTS BY MAKING NECESSARY ADJUSTMENTS.

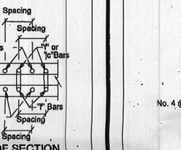


EXTERIOR WALL SECTION SPANS 5' THRU 8'

EXTERIOR WALL SECTION SPANS 10' THRU 14'



ROOF SECTION SPANS 5' THRU 8' INVERT SIMILAR



ROOF SECTION SPANS 10' THRU 14' INVERT SIMILAR

NOTES:

1. FOR BOXES WITH SPAN OR HEIGHT LESS THAN ANY OF THOSE SHOWN IN TABLE, USE NEXT GREATER SIZE BOX CONCRETE DIMENSIONS AND REINFORCEMENT, MAKE NECESSARY CHANGES IN BAR LENGTHS AND QUANTITIES.
2. FOR BOXES WITH SPAN OR HEIGHT OR COVER GREATER THAN THOSE SHOWN IN TABLES, A SPECIAL DESIGN IS REQUIRED.
3. QUANTITIES ARE APPROXIMATE AND FOR DESIGN PURPOSES ONLY.
4. IT IS PERMISSIBLE TO ELIMINATE THE 180° HOOKS ON EVERY OTHER "e" BAR.
5. "e" BARS ARE AT HALF SPACING.
6. PROVIDE PAVING NOTCH WHEN TOP IS EXPOSED AND WHERE P.C.C. PAVEMENT OR APPROACH SLAB IS USED. ADJUST THE QUANTITIES.
7. WHEN TOP IS EXPOSED, THE TOP SLAB CONCRETE SHALL BE "EA", f'c=4000 PSI, OR "A", f'c=4000 PSI, AS DETERMINED BY THE ENGINEER. IF "EA" CONCRETE IS TO BE USED, THE TOP SLAB REINFORCING STEEL SHALL HAVE AN EPOXY COATING.

NEVADA DEPARTMENT OF TRANSPORTATION

DOUBLE RCB CULVERTS

Signed Original On File	B-20.1.3	(SQ2)
CHIEF BRIDGE ENGINEER	ADOPTED 11/79	REVISION 7/04

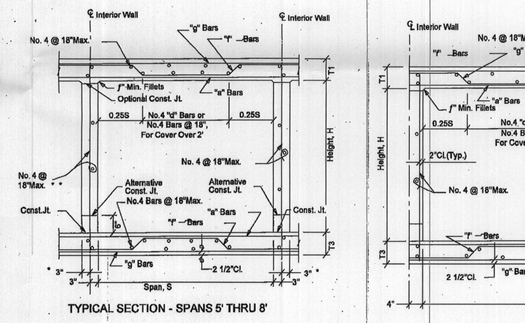
SPAN	FT.	5					6						7						8						9					
HEIGHT	FT.	5					6						7						8						9					
MINIMUM EARTH COVER	FT.	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20
CONC.	CONCRETE		CY/LF	7.8	8.6	8.4	9.1	8.9	9.6	9.1	11.3	9.6	12.8	10.1	12.3	10.6	12.8	10.9	14.3	11.4	14.8	11.9	15.3	12.4	15.8	13.2	16.3	13.8	17.4	13.3	17.9
REINFORCEMENT			LBS/LF	56	54	59	57	60	58	81	68	83	75	88	75	102	84	104	98	107	99	109	100	110	101	133	106	135	108	137	111

SPAN	FT.	10						11						12						13						14					
HEIGHT	FT.	10						11						12						13						14					
MINIMUM EARTH COVER	FT.	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20	10	20
CONC.	CONCRETE		CY/LF	18.0	24.2	18.7	24.9	19.3	25.6	20.0	26.2	20.7	28.9	21.3	27.6	22.5	28.2	23.1	28.9	23.8	30.8	24.4	34.5	25.1	35.1	25.8	35.8	26.4	36.5	27.1	37.1
REINFORCEMENT			LBS/LF	141	165	145	181	144	185	159	165	145	198	147	198	144	210	145	198	196	219	198	221	201	233	201	254	205	258	205	276

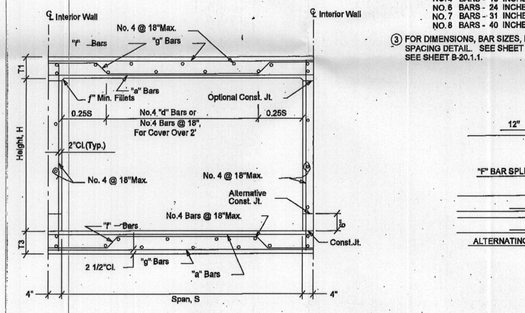
NOTES:

1. NOTES ON 1, 2, 3 & 7 OF SHEET B-20.1.3 SHALL APPLY.
2. WHEN THE ADDITION OF CELLS CAUSES THE LENGTHS OF THE "a", "f" AND "g" BARS TO EXCEED 60 FEET, THE BARS WILL REQUIRE SPLICING. SPLICES FOR THE "a" BARS SHALL BE CENTERED ABOUT THE CENTER LINE OF THE INTERIOR WALLS. SPLICES FOR THE "g" BARS SHALL BE CENTERED ABOUT THE CENTER OF THE CELLS. SPLICES FOR THE "f" BARS SHALL BE DONE AT THE 45 DEGREE LEG AND CONFORM TO THE SPLICE DETAIL SHOWN. SPLICE LOCATIONS SHALL BE ALTERNATED FROM BAR TO BAR. SEE DETAIL SHOWN. SPLICE LENGTHS FOR THE "a" AND "g" BARS SHALL BE AS FOLLOWS:

   NO. 4 BARS - 16 INCHES
   NO. 6 BARS - 24 INCHES
   NO. 7 BARS - 31 INCHES
   NO. 8 BARS - 40 INCHES
3. FOR DIMENSIONS, BAR SIZES, BAR SPACING, AND ROOF SECTION SPACING DETAIL. SEE SHEET B-20.1.3. FOR GENERAL NOTES, SEE SHEET B-20.1.1.



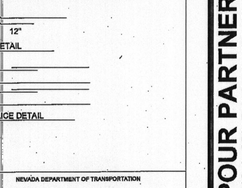
TYPICAL SECTION - SPANS 5' THRU 8'



TYPICAL SECTION - SPANS 10' THRU 14'

* - CONCRETE FOR THIS PORTION IS INCLUDED IN QUANTITIES OF ADJOINING CELLS.

** - REINFORCING STEEL INCLUDED IN PREVIOUS CELLS QUANTITIES.



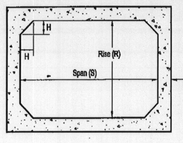
NEVADA DEPARTMENT OF TRANSPORTATION

ADDITIONAL CELLS TO BE USED WITH DOUBLE RCB CULVERTS TO PROVIDE FOR MULTIPLE CELL CULVERTS

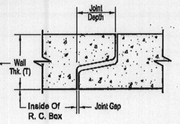
Signed Original On File	B-20.1.3.1	(SQ2)
CHIEF BRIDGE ENGINEER	ADOPTED 8/04	REVISION

Rinker MATERIALS — Hydro Conduit Division

Reinforced Concrete Box Culvert



Section thru Box Culvert



Section thru Box Joint

Rise (R) \ Span (S)	3	4	5	6	7	8	9	10	11	12
2	605	905								
3	705	1025	1425	1865	2410					
4		1155	1575	2060	2600	2800			4580	5700
5			1725	2235	2800	3000	3695	4375		
6				2410	3000	3200	3885	4625	5430	6300
7					3200	3400	4105	4875		
8						3600	4335	5125	5980	6900
9							4555	5375		
10								5625	6530	7500
11									6910	
12										8100
Wall (T)	4	5	6	7	8	8	9	10	11	12
Haunch (H)	7	7.8	7.8	7.8,12	8,12	8,12	12	12	12	12

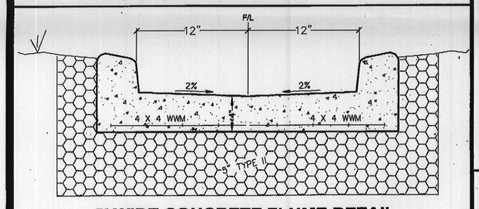
Standard Box Culvert Weights (lbs.) per Foot

Box dimensions may vary depending upon equipment availability.

Notes:

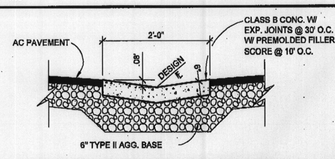
1. Produced to meet ASTM Specifications.
2. Contact A Hydro Conduit representative for further details not listed on this sheet.

Rinker 013



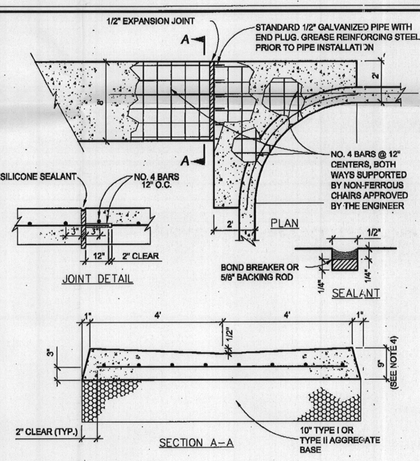
2' WIDE CONCRETE FLUME DETAIL

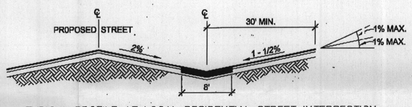
NTS



2' CONCRETE VALLEY GUTTER

NTS





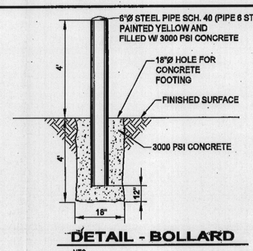
TYPICAL PROFILE AT LOCAL RESIDENTIAL STREET INTERSECTION

NOTES

1. ALL CONCRETE SHALL BE CLASS B.
2. FINISHED ASPHALT CONCRETE SURFACE TO BE FLUSH WITH CROSS GUTTER LIP.
3. CONSTRUCTION OF CROSS GUTTER IS NOT ALLOWED ACROSS MAJOR COLLECTOR OR ARTERIAL STREETS.
4. ADJACENT SPANDREL SHALL BE 9" THICK P.C.C.

8' CONCRETE VALLEY GUTTER DETAIL SECTION

PER CCAUSD STD DWG NO. 228 — NTS



DETAIL - BOLLARD

NTS

INSTALL WATER LINE IN STEEL CASING PER UDACS PLATES NO. 15 AND 16. MINIMUM 18-INCH CLEARANCE IS REQUIRED ABOVE THE TOP OF THE CASING. FROM THE UPPER BENDS THROUGHOUT THE LOWERED SECTION OF PIPE, DUCTILE IRON PIPE WITH RESTRAINED JOINTS IS REQUIRED. IN ADDITION, THRUST BLOCKS ARE TO BE INSTALLED AT THE UPPER BENDS.

ESN. 038 — REVISED 08/01/04

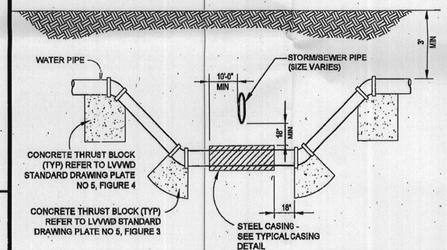
ANNULAR SPACE BETWEEN PIPE AND CASING SHALL BE FILLED WITH CLASS I CLSM.

ESN. 038A — REVISED 04/20/05

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT — DATE:

PROJECT # 114188 — ESN. 018 REV 09/01/04



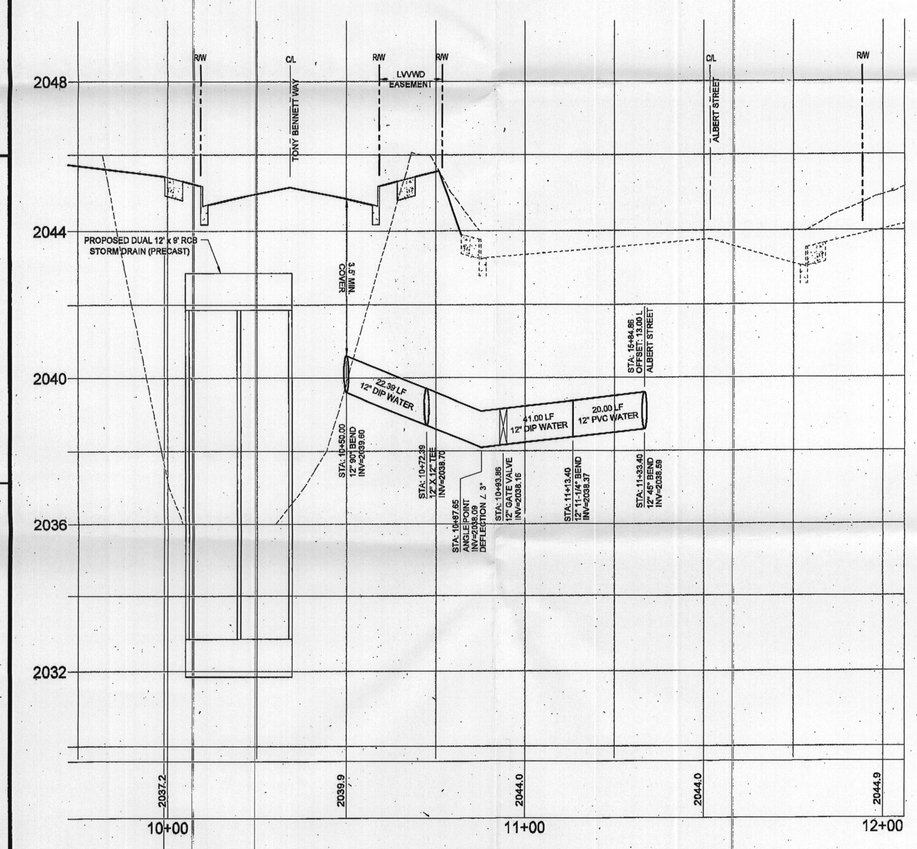
WHERE THE WATER LINE IS LESS THAN 18 INCHES OVER THE SEWER LINE, WHERE THE WATER LINE IS UNDER THE SEWER LINE, AND WHERE THE HORIZONTAL SEPARATION AS REQUIRED BY THE WATER SUPPLY REGULATIONS CANNOT BE MAINTAINED BECAUSE OF PHYSICAL OBSTRUCTIONS, THE WATER LINE SHALL BE PROTECTED BY CONSTRUCTION OF THE STORM/SEWER LINE AS FOLLOWS:

1. EXTRA HEAVY CAST IRON PIPE.
2. WATER SUPPLY QUALITY MATERIALS, OR
3. ENCASEMENT WITH FOUR INCHES, MINIMUM, OF CONCRETE OR SLEEVING WITH WATER SUPPLY QUALITY PIPE

EACH OF THESE PROVISIONS SHALL ALSO BE EXTENDED FOR OTHER THAN 90 DEGREE CROSSINGS TO THE POINT AT WHICH THE TEN FOOT SEPARATION BETWEEN THE WATER AND SEWER LINES IS ACHIEVED (10/SINE OF CROSSING ANGLE)

STORM DRAIN / WATER CROSSING DETAIL

NTS



DETAIL # 1
STORM DRAIN / WATER CROSSING DETAIL
12" DIP WATER @ STA: 16+86.33

1"=2' VERTICAL
1"= 20' HORIZONTAL

REV	DATE	BY	REVISION

LAPOUR PARTNERS
5525 S. DECATUR BLVD, STE 101
LAS VEGAS, NV 89118
PH: (702) 222-0961 FAX: (702) 222-0962

ALPHA & ENGINEERING COMPANY
3321 N. BUENA VISTA, STE 200
Las Vegas, Nevada 89129
Tel: (702) 877-1300 Fax: (702) 877-0300

SHEET: PARADISE VILLAGE OFFSITE PLANS

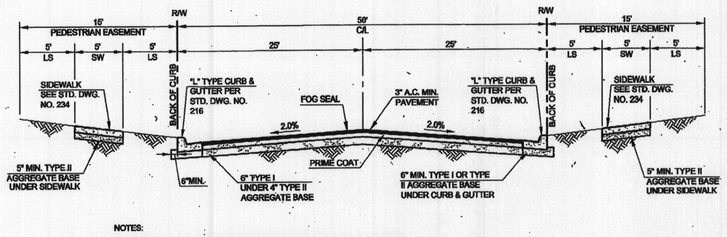
TITLE: DETAIL SHEET 2 OF 3

DRAWN BY: MP	04.23.07
DESIGNED BY: SFC	04.23.07
CHECKED BY: GWS	04.23.07
PROJECT NO: 0527708	SCALE: NTS

REGISTERED PROFESSIONAL ENGINEER — STATE OF NEVADA — GREGORY W. SMITH — No. 9721 — 12/31/08

SHEET D2 9 OF 29 SHEETS

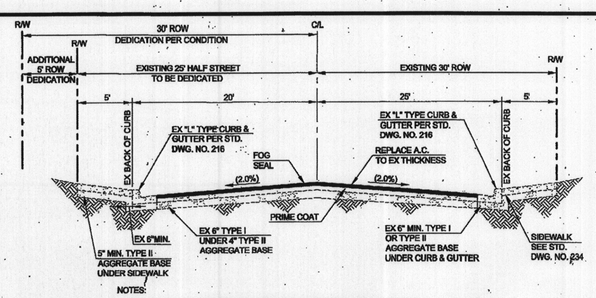
DRAWING NO. HTE# 07-15692



NOTES:

1. FINAL A.C. PAVEMENT SURFACE SHALL BE 1/2" ABOVE LIP OF GUTTER.
2. STRUCTURAL SECTION SHOWN IS BASED ON AN "R" VALUE OF 20. OTHER STRUCTURAL SECTIONS MAY BE APPROVED IF BASED ON ENGINEERING ANALYSIS BASED ON "R" OR "CBR" VALUES DETERMINED BY SOIL TESTING. IN NO CASE SHALL THE A.C. THICKNESS BE LESS THAN SHOWN.

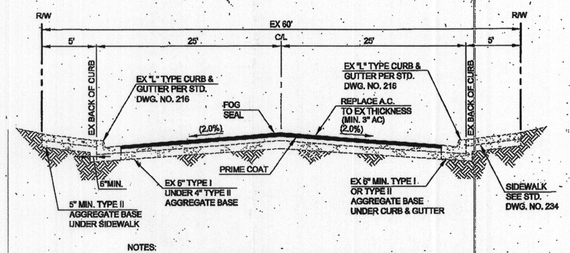
A/D1 TONY BENNETT WAY (50' PUBLIC STREET SECTION) TYPICAL
PER MODIFY VERSION OF C.C.A.U.S.D. NO. 205 WITH DETACHED SIDEWALK
NTS



NOTES:

1. FINAL A.C. PAVEMENT SURFACE SHALL BE 1/2" ABOVE LIP OF GUTTER.
2. STRUCTURAL SECTION SHOWN IS BASED ON AN "R" VALUE OF 20. OTHER STRUCTURAL SECTIONS MAY BE APPROVED IF BASED ON ENGINEERING ANALYSIS BASED ON "R" OR "CBR" VALUES DETERMINED BY SOIL TESTING. IN NO CASE SHALL THE A.C. THICKNESS BE LESS THAN SHOWN.

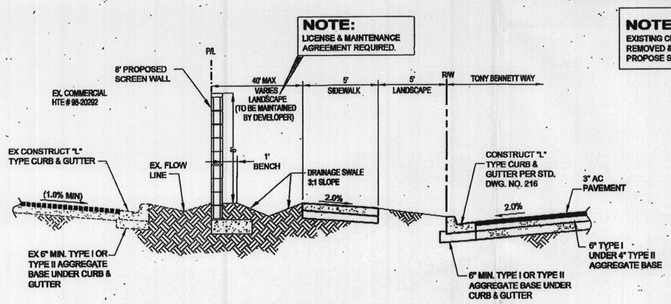
B/D1 ALBERT AVENUE (60' PUBLIC STREET SECTION) TYPICAL
NTS



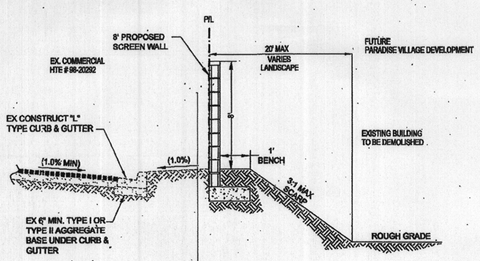
NOTES:

1. FINAL A.C. PAVEMENT SURFACE SHALL BE 1/2" ABOVE LIP OF GUTTER.
2. STRUCTURAL SECTION SHOWN IS BASED ON AN "R" VALUE OF 20. OTHER STRUCTURAL SECTIONS MAY BE APPROVED IF BASED ON ENGINEERING ANALYSIS BASED ON "R" OR "CBR" VALUES DETERMINED BY SOIL TESTING. IN NO CASE SHALL THE A.C. THICKNESS BE LESS THAN SHOWN.

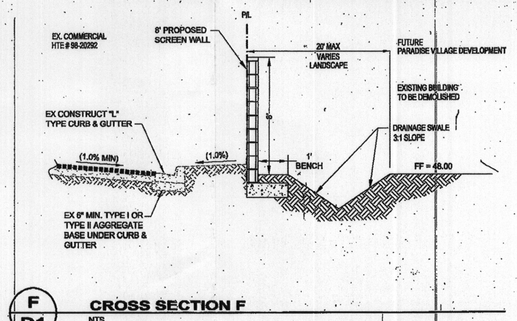
C/D1 PALOS VERDES STREET (60' PUBLIC STREET SECTION) TYPICAL
NTS



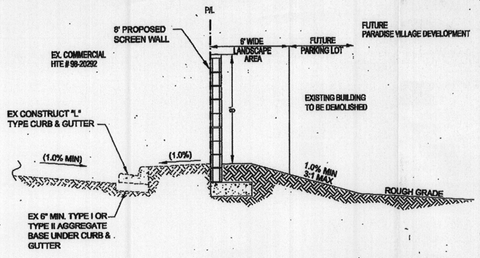
D/D1 CROSS SECTION D
NTS



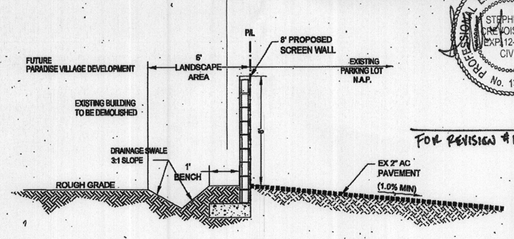
E/D1 CROSS SECTION E
NTS



F/D1 CROSS SECTION F
NTS



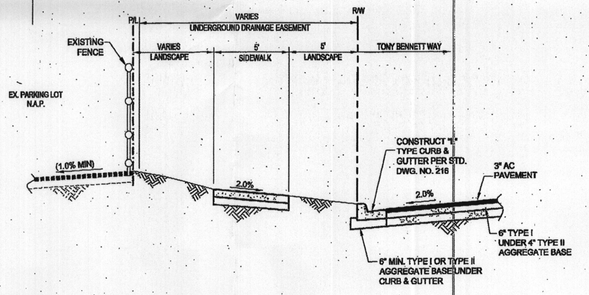
G/D1 CROSS SECTION G
NTS



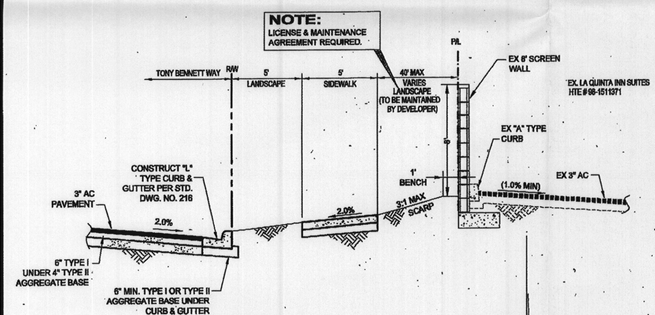
PROFESSIONAL ENGINEER - STATE OF NEVADA
STEPHENE. LACHOUSSAYE
EXP. 12-31-07
CIVIL
No. 13689
12/11/07

FOR REVISION #1 ONLY

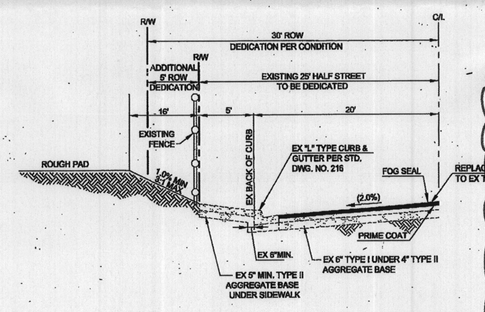
H/D1 CROSS SECTION H
NTS



I/D1 CROSS SECTION I
NTS



J/D1 CROSS SECTION J
NTS



K/D1 NORTH P/L SECTION (ALBERT STREET)
NTS

SECTION 01 33 00 - SUBMITTALS

01 33 00.1 - GENERAL: Concrete mortar shall consist of a mixture of Portland cement, sand and water. Concrete mortar shall be designed by a Nevada Registered Professional Engineer and shall be able to pump and place and retain.

(a) Concrete mortar shall be designed by Cross and Proportioning

Mix Design

Designation	
Cement	1 Part, Cementitious by Volume
Sand	3 Min. by Volume
Water	1 Min. by Volume
Cement	1 Part, Cementitious by Volume
Sand	3 Min. by Volume
Water	1 Min. by Volume
Cement	1 Part, Cementitious by Volume
Sand	3 Min. by Volume
Water	1 Min. by Volume

The quantity of water to be used in the proportions of mortar shall be only that required to produce a mixture that will be workable and retain its shape.

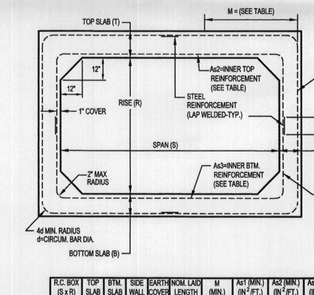
Mortar shall be used as soon as possible after mixing and shall show no visible signs of setting prior to use. Re-tempering of mortar is not permitted.

(b) Mortar shall be mixed in accordance with the requirements of Section 701.

(c) Sand - Sand shall conform to the requirements of Subsection 704.01.04, by proportioning the sand & cement by volume, the moisture content of the sand shall be taken into account and the sand shall be considered of known capacity.

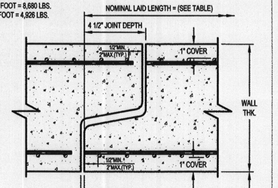
(d) Admixtures - No admixtures shall be used in mortar unless otherwise specified or approved by the Engineer.

NOTES:
1) DESIGN IS IN ACCORDANCE WITH ASTM C-1433-06 (TABLE 2), SECTION 7.2.
- FOR EARTH COVER (SEE TABLE) AND INTERSTATE LIVE LOAD.
2) MINIMUM CONCRETE STRENGTH = 5,000 psi.
3) 15'x10' BOX WEIGHT PER FOOT = 8,680 LBS.
12'x9' BOX WEIGHT PER FOOT = 4,928 LBS.



R.C. BOX (S x R)	TOP SLAB	BTM. SLAB	SIDE WALL	EARTH COVER	NOM. LAID LENGTH	M (MIN.)	As1 (MIN.) (IN^2/FT.)	As2 (MIN.) (IN^2/FT.)	As3 (MIN.) (IN^2/FT.)	As4 (MIN.) (IN^2/FT.)
15' x 10'	12"	12"	12"	2'-3'	8.06'	50"	0.48	0.74	0.62	0.29
12' x 9'	8"	8"	8"	2'-5'	8.06'	43"	0.56	0.85	0.72	0.19

NOTES:
1) DESIGN IS IN ACCORDANCE WITH ASTM C-1433-06 (TABLE 2), SECTION 7.2.
- FOR EARTH COVER (SEE TABLE) AND INTERSTATE LIVE LOAD.
2) MINIMUM CONCRETE STRENGTH = 5,000 psi.
3) 15'x10' BOX WEIGHT PER FOOT = 8,680 LBS.
12'x9' BOX WEIGHT PER FOOT = 4,928 LBS.



TYPICAL SECTION THRU BOX JOINT

Rinker MATERIALS

CONCRETE PIPE DIVISION

SCALE: N. T. S. DR. BY: M.RAMIREZ
DATE: SEPTEMBER 24, 2007 CK. BY: T. LOPEZ

R.C. BOX CULVERT JOINT & REINFORCEMENT DETAIL FOR 12' (S) x 9' (R) & 15' (S) x 10' (R) PER ASTM SPECIFICATION C-1433-06

PROJECT: PARADISE VILLAGE
LOCATION: LAS VEGAS, NEVADA

DRAWING NUMBER: B150-LV-0001 (SHEET 1 OF 4)

REV.	DESCRIPTION	BY:	DATE

REV	DATE	BY	REVISION
1	12/11/07	SFC	ADD BOX CULVERT DETAIL FOR 15'x10' CULVERT SECTION A5
			REQUESTED BY INSPECTOR. ADD MORTAR MIX SPECIFICATIONS.

LAPOUR PARTNERS
5525 S. DECATUR BLVD. STE 101
LAS VEGAS, NV 89118
PH: (702) 222-3022 FAX: (702) 222-0961

ALPHA & ENGINEERING COMPANY
3321 N. Buffalo Drive, Suite 200
Las Vegas, Nevada 89128
Tel: (702) 877-1500 fax: (702) 877-0300

SHEET: PARADISE VILLAGE OFFSITE PLANS

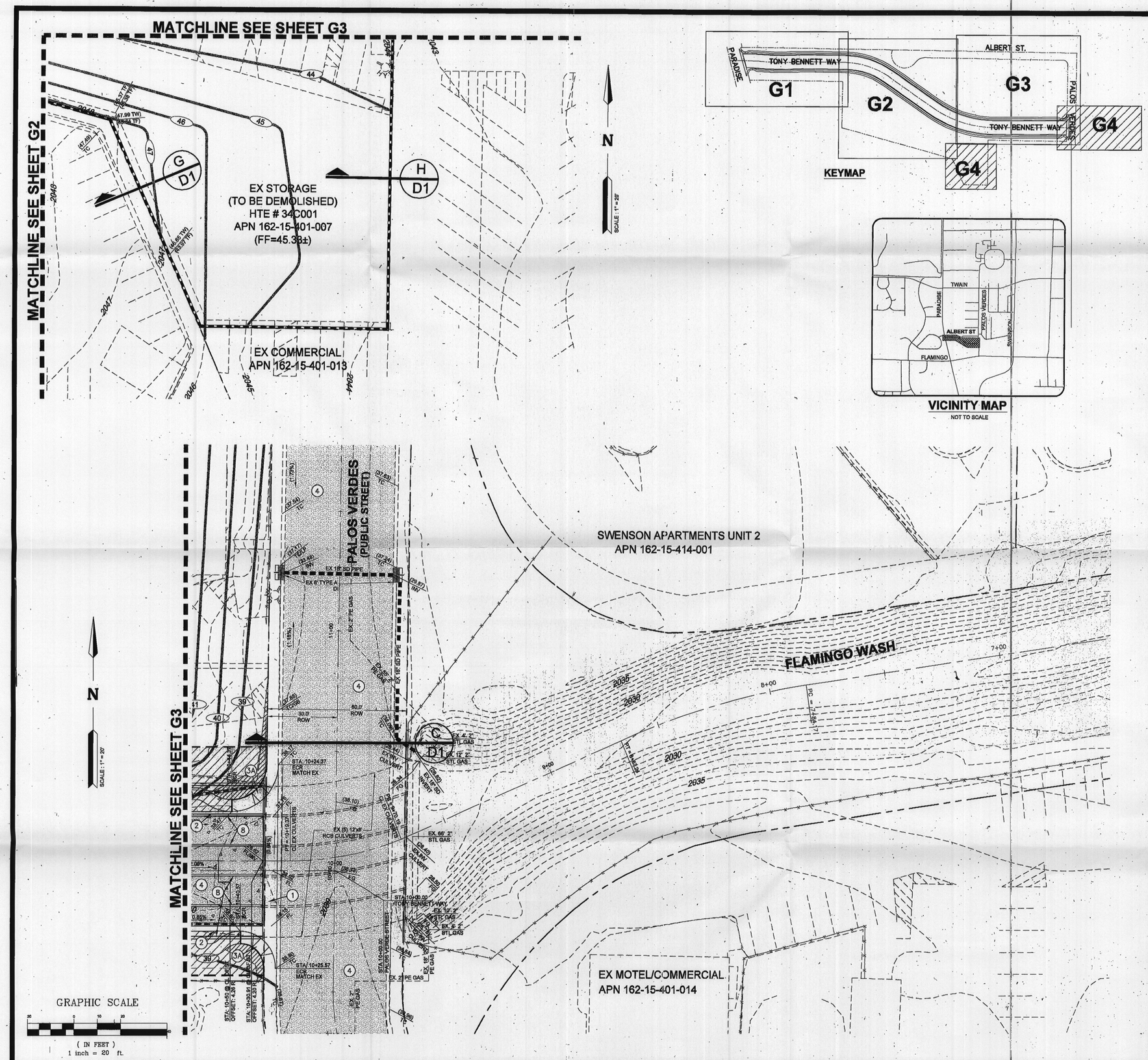
TITLE: DETAIL SHEET 1 OF 3

DRAWN BY: MP 04.23.07
DESIGNED BY: SFC 04.23.07
CHECKED BY: CWS 04.23.07
SCALE: NTS
PROJECT NO: 0527708

PROFESSIONAL ENGINEER - STATE OF NEVADA
SFC
EXP. 12-31-08
No. 9721

SHEET D1
8 OF 29 SHEETS

DRAWING NO.
HTE# 07-15692



KEYMAP

VICINITY MAP

NOT TO SCALE

SVZ NOTE:

NO STRUCTURE, VEGETATION, OR OBJECT OF ANY KIND IS PERMITTED OVER TWENTY-FOUR (24) INCHES IN HEIGHT (MEASURED FROM THE TOP OF THE ADJACENT CURB IF CURB EXISTS) WITHIN THE SIGHT VISIBILITY ZONES.

BASIS OF BEARING

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE WEST LINE OF THE SOUTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SECTION 15, TOWNSHIP 21 SOUTH, RANGE 61 EAST, M.D.M. WHICH BEARS NORTH 00°04'12" EAST AS SHOWN IN THE OFFICE OF THE CLARK COUNTY, NEVADA RECORDER IN FILE 143 OF SURVEYS ON PAGE 22.

LEGAL DESCRIPTION

THE SOUTH HALF (S 1/2) OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 15, TOWNSHIP 21 SOUTH, RANGE 61 EAST, M.D.M., IN THE COUNTY OF CLARK, STATE OF NEVADA. APN NO. 162-15-401-005, 006, 007, 008 AND 009.

BENCHMARK

CLARK COUNTY BENCHMARK NUMBER 6C11 22NW8 - RIVET AND SQUARE ALUMINUM PLATE IN TOP OF CURB, NORTHEAST CORNER OF PARADISE RD. AND FLAMINGO RD. NEAR THE PC OF PARADISE RD.

ELEVATION 624.808 METERS=2049.88 US SURVEY FEET (NAVD 88 DATUM)

CONSTRUCTION NOTES:

1. CONSTRUCT 8' WIDE CONCRETE VALLEY GUTTER PER C.C.A.U.S.D. NO. 228.
2. CONSTRUCT 24" "L" TYPE CURB & GUTTER PER C.C.A.U.S.D. NO. 216.
3. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT PER C.C.A.U.S.D. NO. 235, CASE 1.
4. CONSTRUCT 3" AC PAVEMENT ON 4" TYPE II OVER 6" TYPE I AGGREGATE BASE.
5. CONSTRUCT 5' CONCRETE SIDEWALK PER C.C.A.U.S.D. NO. 234.
6. INSTALL SIDEWALK UNDERDRAIN PER CC STD DWG # 235
7. CONSTRUCT 2: 15' x 10' PRECAST MONOLITHIC, IN PLACE REINFORCE CONCRETE BOX PER RINKERS MATERIAL.
8. CONSTRUCT 5: 12' X 8' CAST-IN-PLACE REINFORCE CONCRETE BOX (RCB) PER NDOT STD DWG NO. B-20.1.3.1 SEE DETAIL ON SHEET D2.
9. INSTALL DUAL 12' X 9' PRECAST MONOLITHIC, IN PLACE REINFORCE CONCRETE BOX (RCB) PER ASTM C1433 OR EQUIVALENT. SEE DETAIL ON SHEET D2.
10. INSTALL AN 10' X 10' STEEL LID TRAFFIC RATED STORM DRAIN MANHOLE WITH CONCRETE COLLARS PER ESI STRUCTURAL CALCULATIONS AND PLANS ON SHEET S1.2 AND S1.3. STEEL LID SHAL CONFORM WITH CLARK COUNTY TRAFFIC STANDARDS. DESIGN SHALL BE A PART OF THE SHOP DRAWINGS TO BE REVIEWED AND APPROVED PRIOR TO MANUFACTURING.

NOTE:

PORTION OF THE SITE IS LOCATED WITHIN A FEMA ZONE 'A' AND ZONE 'X'. A ZONE 'A' IS DESCRIBED BY FEMA AS AREAS SUBJECT TO FLOODING BY THE 1% ANNUAL CHANCE FLOOD WITH NO BASE FLOOD ELEVATIONS DETERMINED. A ZONE 'X' IS DESCRIBED BY FEMA AREAS OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.
SITE LIES WITH FIRM COMMUNITY PANEL NUMBER 32003C2557E
DATE 27, 2002

EARTHWORK QUANTITIES:

REGION	NET
SITE	18,713 CY CUT
	20,094 CY FILL
TOTAL	1,381 CY IMPORT

ASSUMPTIONS:
SHRINKAGE: NO
SUBSIDENCE: (X.X FEET)
INTERIOR PARKING: 2'9"TYPE II A
STREET: 3'10"TYPE II

SIDEWALK RAMP:

PER CCAUSD STD DWG NO 235

ID#	GRADE (%)	"A" (FT) MIN.	"B" (FT) MIN.
A	2 TO -2	8.0	8.0
B	3.01 TO -4	4.5	12.0
C	5 TO -4.01	4.5	15.0

DRAINAGE COMPLIANCE:

THIS PLAN COMPLIES WITH THE APPROVED DRAINAGE STUDY, ON FILE WITH CLARK COUNTY DEPT. OF PUBLIC WORKS. HTE# 05-54297.

BARRY C. BENDER P.E. #9721 — DATE 8-15-07

APPROVALS:

CLARK COUNTY
DEPARTMENT OF
DEVELOPMENT SERVICES

ACCEPTANCE OF PLANS FOR FILING
BY: Mary Lowe 9-10-7

ACCEPTANCE OF THESE PLANS FOR FILING SHALL NOT BE CONSTRUED TO BE A PERMIT FOR OR AN APPROVAL OF ANY VIOLATION OF ANY OF THE PROVISIONS OF THE STATE OR COUNTY LAWS AND/OR SPECIFICATIONS. CLARK COUNTY SHALL BE HELD FREE FROM DAMAGES WHICH MAY RESULT FROM THE CONSTRUCTION OF THE IMPROVEMENTS FROM THE ENGINEERING DESIGN DEPICTED HEREIN.

NOTE: POWER POLES AND/OR OTHER EXISTING FACILITIES NOT IN PROPER LOCATION BASED ON PROPOSED IMPROVEMENTS SHOWNHEREON WILL BE RELOCATED AT NO EXPENSE TO CLARK COUNTY.

GEOTECHNICAL REPORT:

ALL GRADING SHALL CONFORM TO THE SOILS REPORT, GEOTECHNICAL EXPLORATION REPORT BY:

AMT ACCLAIM MATERIAL TESTING & INSPECTION LLP

FILE NO.: 05208, DATED 11-2-05.

NOTE: COMPLETION OF SECTION II OR III OF DRAINAGE COMPLIANCE REPORT REQUIRED.

DISCLAIMER NOTE:

UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UNDERGROUND OR OVERHEAD UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION. CONTRACTOR TO NOTIFY ENGINEER OF ANY CHANGES OR DISCREPANCIES.

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CALL BEFORE YOU DO UNDERGROUND
1-702-455-7511
CLARK COUNTY TRAFFIC OPERATIONS
AND
1-702-432-5300
LAS VEGAS AREA COMPUTERIZED TRAFFIC SYSTEM

REV	DATE	BY	REVISION

LAPOUR PARTNERS
5525 SOUTH DECATUR BLVD, SUITE 101
LAS VEGAS, NV 89118
(702) 222-3022

ALPHA ENGINEERING COMPANY
3321 N. Buffalo Drive, Suite 200
Las Vegas, Nevada 89129
Tel: (702) 877-1300 Fax: (702) 877-0300

SHEET: PARADISE VILLAGE OFFSITE PLANS

TITLE: GRADING PLAN 4 OF 4

DRAWN BY: JMA	04.23.07	
DESIGNED BY: SFC	04.23.07	
CHECKED BY: SWS	04.23.07	
PROJECT NO: 05277708	SCALE: 1"= 20'	

STATE OF NEVADA — PROFESSIONAL ENGINEER — BARRY C. BENDER — ELECTRICAL — EX-9721

SHEET G4 OF 29 SHEETS

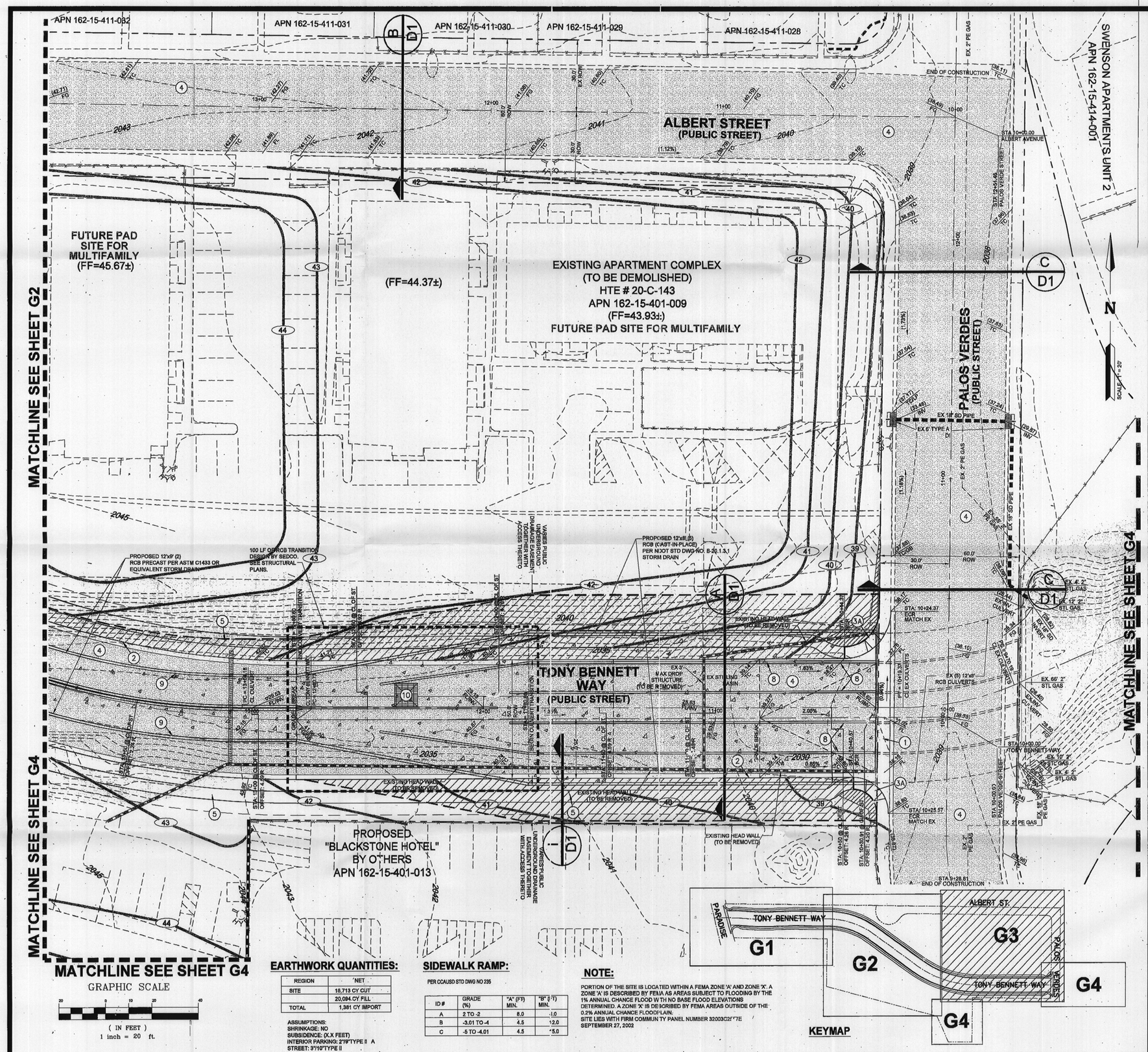
DRAWING NO. HTE# 07-15692

LEGEND

DESCRIPTION:	CONTOUR LINES	EDGE OF PAVEMENT	"A" TYPE CURBS	"L" TYPE CURBS	WALLS	FENCES	AC PAVEMENT	SPOT ELEVATIONS	SIGNS	FIRE HYDRANTS	GATE VALVES	CLEAN OUTS	REDUCERS	UTILITY BOX OR VAULT	100w HPS STREETLIGHTS	150w HPS STREETLIGHTS	200w HPS STREETLIGHTS	250w HPS STREETLIGHTS
EXISTING:	2308							(100.00) TC										
PROPOSED:	22							00.00 TG										

MANHOLE DESCRIPTIONS: (T) = TELEPHONE; (E) = ELECTRICAL; (S) = SANITARY SEWER; (D) = STORM DRAIN

ROW LINE; PROPERTY LINE; CL OR SURVEY LINE; SCARP LINE; SAWCUT LINE; EASEMENT LINE; CONCRETE PVMT.; SEWER AND WATER SERVICE W/ PRV'S; BWV BACKWATER VALVE; ELECTRICAL PEDESTAL; PULL BOX AS SHOWN; POWER POLE



MATCHLINE SEE SHEET G4

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
1 inch = 20 ft.

EARTHWORK QUANTITIES:

REGION	NET
SITE	18,713 CY CUT
	20,094 CY FILL
TOTAL	1,381 CY IMPORT

ASSUMPTIONS:
SHRINKAGE: NO
SUBSIDENCE: (X.X FEET)
INTERIOR PARKING: 2'/9"TYPE II A
STREET: 3'/10"TYPE II

SIDEWALK RAMP:

PER CCAUSD STD DWG NO 235

ID #	GRADE (%)	"A" (FT) MIN.	"B" (FT) MIN.
A	2 TO -2	8.0	1.0
B	-3.01 TO -4	4.5	12.0
C	-5 TO -4.01	4.5	5.0

NOTE:

PORTION OF THE SITE IS LOCATED WITHIN A FEMA ZONE 'A' AND ZONE 'X'. A ZONE 'A' IS DESCRIBED BY FEMA AS AREAS SUBJECT TO FLOODING BY THE 1% ANNUAL CHANCE FLOOD W TH NO BASE FLOOD ELEVATIONS DETERMINED. A ZONE 'X' IS DESCRIBED BY FEMA AREAS OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOOD PLAIN.
SITE LIES WITH FIRM COMMUN TY PANEL NUMBER 32003C2F 7E SEPTEMBER 27, 2002

SVZ NOTE:

NO STRUCTURE, VEGETATION, OR OBJECT OF ANY KIND IS PERMITTED OVER TWENTY-FOUR (24) INCHES IN HEIGHT (MEASURED FROM THE TOP OF THE ADJACENT CURB IF CURB EXISTS) WITHIN THE SIGHT VISIBILITY ZONES.

BASIS OF BEARING

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE WEST LINE OF THE SOUTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SECTION 15, TOWNSHIP 21 SOUTH, RANGE 61 EAST, M.D.M. WHICH BEARS NORTH 00°04'12" EAST AS SHOWN IN THE OFFICE OF THE CLARK COUNTY, NEVADA RECORDER IN FILE 143 OF SURVEYS ON PAGE 22.

LEGAL DESCRIPTION

THE SOUTH HALF (S 1/2) OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 15, TOWNSHIP 21 SOUTH, RANGE 61 EAST, M.D.M., IN THE COUNTY OF CLARK, STATE OF NEVADA. APN NO. 162-15-401-005 :006, 007, 008 AND 009.

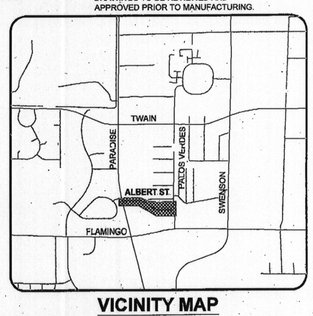
BENCHMARK

CLARK COUNTY BENCHMARK NUMBER 6C11 22NWS - RIVET AND SQUARE ALUMINUM PLATE IN TOP OF CURB, NORTHEAST CORNER OF PARADISE RD. AND FLAMINGO RD. NEAR THE PC OF PARADISE RD.

ELEVATION=624.808 METERS=2049.88 US SURVEY FEET (NAVD 88 DATUM)

CONSTRUCTION NOTES:

1. CONSTRUCT 8' WIDE CONCRETE VALLEY GUTTER PER C.C.A.U.S.D. NO. 228.
2. CONSTRUCT 24" "L" TYPE CURB & GUTTER PER C.C.A.U.S.D. NO. 216.
3. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT PER C.C.A.U.S.D. NO. 235, CASE 1.
4. CONSTRUCT 3" AC PAVEMENT ON 4" TYPE II OVER 6" TYPE I AGGREGATE BASE.
5. CONSTRUCT 5' CONCRETE SIDEWALK PER C.C.A.U.S.D. NO. 234.
6. INSTALL SIDEWALK UNDERDRAIN PER CC STD DWG # 235
7. CONSTRUCT 2: 15' x 10' PRECAST MONOLITHIC, IN PLACE REINFORCE CONCRETE BOX PER RINKERS MATERIAL.
8. CONSTRUCT 5: 12' X 8' CAST-IN-PLACE REINFORCE CONCRETE BOX (RCB) PER NDOT STD DWG NO. B-20.1.3.1 SEE DETAIL ON SHEET D2.
9. INSTALL DUAL 12' X 9' PRECAST MONOLITHIC, IN PLACE REINFORCE CONCRETE BOX (RCB) PER ASTM C1433 OR EQUIVALENT. SEE DETAIL ON SHEET D2.
10. INSTALL AN 10' X 10' STEEL LID TRAFFIC RATED STORM DRAIN MANHOLE. WITH CONCRETE COLLARS PER ES* STRUCTURAL CALCULATIONS AND PLANS ON SHEET S1.2 AND S1.3. STEEL LID SHAL CONFORM WITH CLARK COUNTY TRAFFIC STANDARDS. DESIGN SHALL BE A PART OF THE SHOP DRAWINGS TO BE REVIEWED AND APPROVED PRIOR TO MANUFACTURING.



VICINITY MAP

NOT TO SCALE

DRAINAGE COMPLIANCE:

THIS PLAN COMPLIES WITH THE APPROVED DRAINAGE STUDY, ON FILE WITH CLARK COUNTY DEPT. OF PUBLIC WORKS. HTE# 05-54297.

BARRY C. BENDER P.E. #9721 — DATE 8-15-07

APPROVALS:

CLARK COUNTY
DEPARTMENT OF
DEVELOPMENT SERVICES

ACCEPTANCE OF PLANS FOR FILING
BY Mark Flores 9-18-07

ACCEPTANCE OF THESE PLANS FOR FILING SHALL NOT BE CONSTRUED TO BE A PERMIT FOR OR AN APPROVAL OF ANY VIOLATION OF ANY OF THE PROVISIONS OF THE STATE OR COUNTY LAWS AND/OR SPECIFICATIONS. CLARK COUNTY SHALL BE HELD FREE FROM DAMAGES WHICH MAY RESULT FROM THE CONSTRUCTION OF THE IMPROVEMENTS FROM THE ENGINEERING DESIGN DEPICTED HEREIN.

NOTE: POWER POLES AND/OR OTHER EXISTING FACILITIES NOT IN PROPER LOCATION BASED ON PROPOSED IMPROVEMENTS SHOWNEREON WILL BE RELOCATED AT NO EXPENSE TO CLARK COUNTY.

GEOTECHNICAL REPORT:

ALL GRADING SHALL CONFORM TO THE SOILS REPORT, GEOTECHNICAL EXPLORATION REPORT BY:

AMTI ACCLAIM MATERIAL TESTING & INSPECTION LLP

FILE NO.: 05208, DATED 11-2-05.

NOTE: COMPLETION OF SECTION II OR III OF DRAINAGE COMPLIANCE REPORT REQUIRED.

DISCLAIMER NOTE:

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REV	DATE	BY	REVISION

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ALPHA & ENGINEERING COMPANY
3321 N. Buffalo Drive, Suite 200
Las Vegas, Nevada 89129
Tel: (702) 877-1300 Fax: (702) 877-0300

SHEET: PARADISE VILLAGE OFFSITE PLANS

TITLE: GRADING PLAN 3 OF 4

DRAWN BY: JMA	04.23.07	
DESIGNED BY: SFC	04.23.07	
CHECKED BY: CWS	04.23.07	
PROJECT NO: 05277008		SCALE: 1" = 20'

STATE OF NEVADA — CHRISTOPHER W. SEIDER — No. 9721 — PROFESSIONAL ENGINEER — 8/15/07

SHEET G3 OF 29 SHEETS

DRAWING NO. HTE# 07-15692

LEGEND

DESCRIPTION:	CONTOUR LINES	EDGE OF PAVEMENT	"A" TYPE CURBS	"L" TYPE CURBS	WALLS	FENCES	AC PAVEMENT	SPOT ELEVATIONS	SIGNS	FIRE HYDRANTS	GATE VALVES	CLEAN OUTS	REDUCERS	UTILITY BOX OR VAULT	100w HPS STREETLIGHTS	150w HPS STREETLIGHTS	200w HPS STREETLIGHTS	250w HPS STREETLIGHTS
EXISTING:	2308							(00.00) TC										
PROPOSED:	22							00.00 TG										

MANHOLE DESCRIPTIONS
(T) = TELEPHONE
(E) = ELECTRICAL
(S) = SANITARY SEWER
(D) = STORM DRAIN

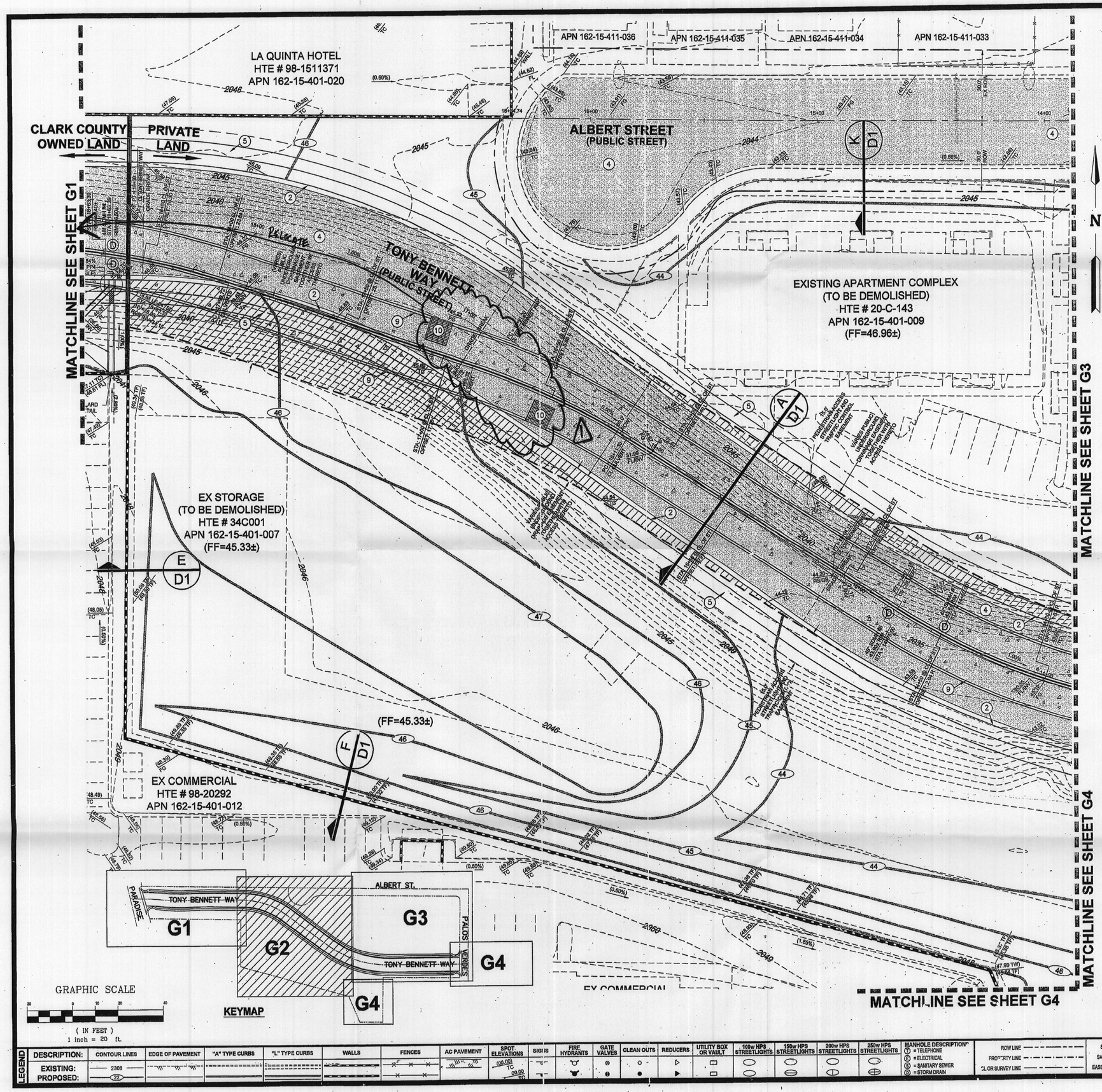
ROW LINE
PROPERTY LINE
CL OR SURVEY LINE

SCARP LINE
SAWCUT LINE
EASEMENT LINE

CONCRETE PVMT.

SEWER AND WATER SERVICE W/ PRV'S
BWV BACKWATER VALVE

ELECTRICAL PEDESTAL
PULL BOX AS SHOWN
POWER POLE



SVZ NOTE:

NO STRUCTURE, VEGETATION, OR OBJECT OF ANY KIND IS PERMITTED OVER TWENTY-FOUR (24) INCHES IN HEIGHT (MEASURED FROM THE TOP OF THE ADJACENT CURB IF CURB EXISTS) WITHIN THE SIGHT VISIBILITY ZONES.

BASIS OF BEARING

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE WEST LINE OF THE SOUTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SECTION 15, TOWNSHIP 21 SOUTH, RANGE 61 EAST, M.D.M. WHICH BEARS NORTH 00°04'12" EAST AS SHOWN IN THE OFFICE OF THE CLARK COUNTY, NEVADA RECORDER IN FILE 143 OF SURVEYS ON PAGE 22.

LEGAL DESCRIPTION

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BENCHMARK

CLARK COUNTY BENCHMARK NUMBER 6C11 22WS - RIVET AND SQUARE ALUMINUM PLATE IN TOP OF CURB, NORTHEAST CORNER OF PARADISE RD. AND FLAMINGO RD. NEAR THE PC OF PARADISE RD.

ELEVATION=624.806 METERS=2049.88 US SURVEY FEET (NAVD 88 DATUM)

CONSTRUCTION NOTES:

1. CONSTRUCT 8' WIDE CONCRETE VALLEY GUTTER PER C.C.A.U.S.D. NO. 228.
2. CONSTRUCT 24" "L" TYPE CURB & GUTTER PER C.C.A.U.S.D. NO. 216.
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4. CONSTRUCT 3" AC PAVEMENT ON 4" TYPE II OVER 6" TYPE I AGGREGATE BASE.
5. CONSTRUCT 5' CONCRETE SIDEWALK PER C.C.A.U.S.D. NO. 234.
6. INSTALL SIDEWALK UNDERDRAIN PER CC STD DWG # 235
7. CONSTRUCT 2: 15' x 10' PRECAST MONOLITHIC, IN PLACE REINFORCE CONCRETE BOX PER RINKERS MATERIAL.
8. CONSTRUCT 5: 12' X 8' CAST-IN-PLACE REINFORCE CONCRETE BOX (RCB) PER NDOT STD DWG NO. B-20.1.3.1 SEE DETAIL ON SHEET D2.
9. INSTALL DUAL 12' X 9' PRECAST MONOLITHIC, IN PLACE REINFORCE CONCRETE BOX (RCB) PER ASTM C1433 OR EQUIVALENT. SEE DETAIL ON SHEET D2.
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EARTHWORK QUANTITIES:

REGION	NET
SITE	18,713 CY CUT
	20,094 CY FILL
TOTAL	1,381 CY IMPORT

ASSUMPTIONS:
SHRINKAGE: NO
SUBSIDENCE: (X.X FEET)
INTERIOR PARKING: 2"/9"TYPE II
STREET: 3"/10"TYPE II

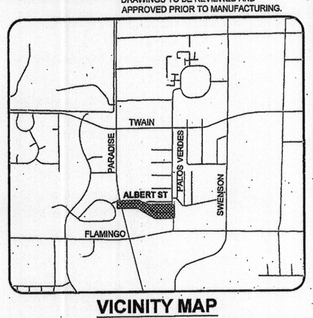
SIDEWALK RAMP DATA

PER CCAUSD STD DWG NO 235

ID #	GRADE (%)	"A" (FT) MIN.	"B" (FT) MIN.
A	2 TO -2	8.0	8.0
B	-3.01 TO -4	4.5	12.0
C	-5 TO -4.01	4.5	15.0

VICINITY MAP

NOT TO SCALE



NOTE:

PORTION OF THE SITE IS LOCATED WITHIN A FEMA ZONE 'A' AND ZONE 'X'. A ZONE 'A' IS DESCRIBED BY FEMA AS AREAS SUBJECT TO FLOODING BY THE 1% ANNUAL CHANCE FLOOD WITH NO BASE FLOOD ELEVATIONS DETERMINED. A ZONE 'X' IS DESCRIBED BY FEMA AREAS OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.
SITE LIES WITH FIRM COMMUNITY PANEL NUMBER 32003C2557E SEPTEMBER 27, 2002

APPROVALS:

CLARK COUNTY
DEPARTMENT OF
DEVELOPMENT SERVICES

ACCEPTANCE OF PLANS FOR FILING

BY Mary Shine 9-10-07

ACCEPTANCE OF THESE PLANS FOR FILING SHALL NOT BE CONSTRUED TO BE A PERMIT FOR OR AN APPROVAL OF ANY VIOLATION OF ANY OF THE PROVISIONS OF THE STATE OR COUNTY LAWS AND/OR SPECIFICATIONS. CLARK COUNTY SHALL BE HELD FREE FROM DAMAGES WHICH MAY RESULT FROM THE CONSTRUCTION OF THE IMPROVEMENTS FROM THE ENGINEERING DESIGN DEPICTED HEREIN.

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GEOTECHNICAL REPORT:

ALL GRADING SHALL CONFORM TO THE SOILS REPORT, GEOTECHNICAL EXPLORATION REPORT BY:

AMTI ACCLAIM MATERIAL TESTING & INSPECTION LLP

FILE NO.: 05208, DATED 11-2-05.

NOTE: COMPLETION OF SECTION II OR III OF DRAINAGE COMPLIANCE REPORT REQUIRED.

DRAINAGE COMPLIANCE:

THIS PLAN COMPLIES WITH THE APPROVED DRAINAGE STUDY, ON FILE WITH CLARK COUNTY DEPT. OF PUBLIC WORKS. HT# 05-54297.

8-15-07
BARRY C. BENDER P.E. #9721 DATE

DISCLAIMER NOTE:

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CALL BEFORE YOU DO UNDERGROUND
1-702-455-7511
CLARK COUNTY TRAFFIC OPERATIONS
AND
1-702-432-5300
LAS VEGAS AREA COMPUTERIZED TRAFFIC SYSTEM

REV	DATE	BY	REVISION
1	10/9/07		RELOCATE (2) 10' x 10' STEEL MANHOLE TO AVOID ACCESS LIDS FROM PROPOSED LOCATION WESTERLY 900 FEET.

LAPOUR PARTNERS
5525 SOUTH DECATUR BLVD, SUITE 101
LAS VEGAS, NV 89118
(702) 222-3022

ENGINEERING COMPANY
3321 N. Buffalo Dr. Suite 200
Las Vegas, Nevada 89129
Tel: (702) 877-1300 Fax: (702) 877-0300

ALPHA

SHEET: PARADISE VILLAGE OFFSITE PLANS

TITLE: GRADING PLAN 2 OF 4

DRAWN BY: JMA	04.23.07	
DESIGNED BY: SFC	04.23.07	
CHECKED BY: GWS	04.23.07	
PROJECT NO: 0527.008	SCALE: 1" = 20'	

STATE OF NEVADA
BARRY C. BENDER
No. 9721
PROFESSIONAL ENGINEER
8-15-07

SHEET G2
5 OF 29 SHEETS

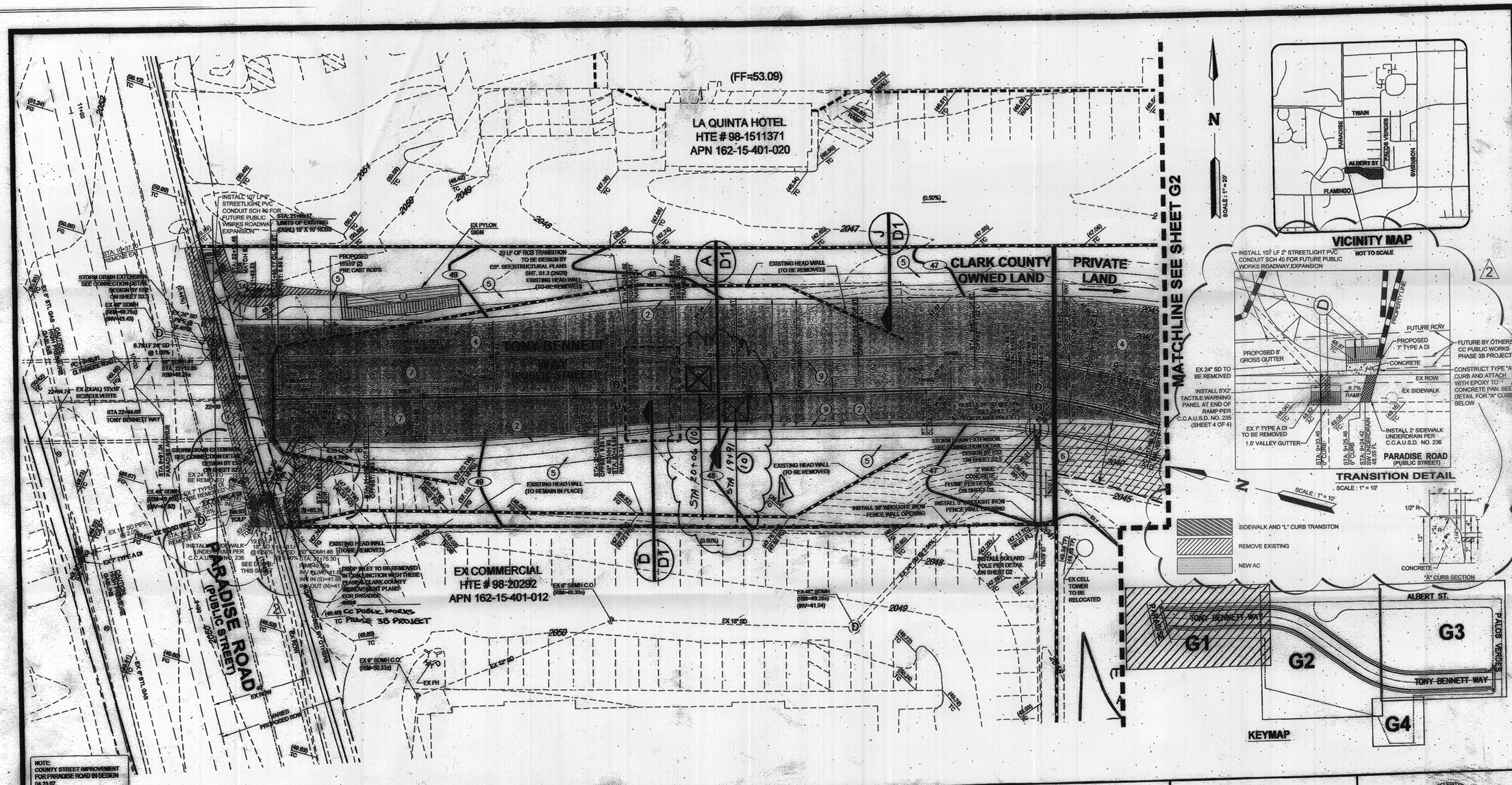
DRAWING NO. HT# 07-15692

LEGEND

DESCRIPTION:	CONTOUR LINES	EDGE OF PAVEMENT	"A" TYPE CURBS	"L" TYPE CURBS	WALLS	FENCES	AC PAVEMENT	SPOT ELEVATIONS	SIGNS	FIRE HYDRANTS	GATE VALVES	CLEAN OUTS	REDUCERS	UTILITY BOX OR VAULT	100w HPS STREETLIGHTS	150w HPS STREETLIGHTS	200w HPS STREETLIGHTS	250w HPS STREETLIGHTS
EXISTING:	2308							(00.00) TC										
PROPOSED:	22							00.00 TC										

MANHOLE DESCRIPTION:
T = TELEPHONE
E = ELECTRICAL
S = SANITARY SEWER
D = STORM DRAIN

ROW LINE
PROPERTY LINE
TOPO OR SURVEY LINE
SCARP LINE
SAWCUT LINE
EASEMENT LINE
CONCRETE PVMT.
SEWER AND WATER SERVICE W/ PRV'S
BACKWATER VALVE
ELECTRICAL PEDESTAL
PULL BOX AS SHOWN
POWER POLE



SVZ NOTE:

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LEGAL DESCRIPTION

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BENCHMARK

CLARK COUNTY BENCHMARK NUMBER 6C11 22NWS - RIVET AND SQUARE ALUMINUM PLATE IN TOP OF CURB, NORTHEAST CORNER OF PARADISE RD. AND FLAMINGO RD. NEAR THE PC OF PARADISE RD.

ELEVATION=624.905 METERS=2049.88 US SURVEY FEET (NAVD 88 DATUM)

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
1 inch = 20 ft.

EARTHWORK QUANTITIES:

REGION	NET
SITE	18,713 CY CUT
	20,094 CY FILL
TOTAL	1,381 CY IMPORT

ASSUMPTIONS:
SHRINKAGE: NO
SUBSIDENCE: (+ X FEET)
INTERIOR PARK NG: 2'/9"TYPE II A
STREET: 3'/10"TYPE II

SIDEWALK RAMP:

PER CCNUSD STD DWG NO 235

ID#	GRADE (%)	"A" (FT) MIN.	"B" (FT) MIN.
A	2 TO -2	8.0	8.0
B	-3.01 TO -1	4.5	12.0
C	-5 TO -4.01	4.5	15.0

CONSTRUCTION NOTES:

1. CONSTRUCT 9" WIDE CONCRETE VALLEY GUTTER PER C.C.A.U.S.D. NO. 228.
2. CONSTRUCT 24" "L" TYPE CURB & GUTTER PER C.C.A.U.S.D. NO. 218.
3. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT PER C.C.A.U.S.D. NO. 235, CASE 1.
4. CONSTRUCT 3" AC PAVEMENT ON 4" TYPE II OVER 6" TYPE I AGGREGATE BASE.
5. CONSTRUCT 5' CONCRETE SIDEWALK PER C.C.A.U.S.D. NO. 234.
6. INSTALL SIDEWALK UNDERDRAIN PER CC STD DWG # 235 236
7. CONSTRUCT 2: 15' x 10' PRECAST MONOLITHIC, IN PLACE REINFORCE CONCRETE BOX PER RINKER'S MATERIAL.
8. CONSTRUCT 5: 12' X 8' CAST-IN-PLACE REINFORCE CONCRETE BOX (RCB) PER NDOT STD DWG NO. B-20.1.3.1 SEE DETAIL ON SHEET D2.
9. INSTALL DUAL 12' X 9' PRECAST MONOLITHIC, IN PLACE REINFORCE CONCRETE BOX (RCB) PER ASTM C1433 OR EQUIVALENT. SEE DETAIL ON SHEET D2.
10. INSTALL AN 10' X 10' STEEL LID TRAFFIC RATED STORM DRAIN MANHOLE WITH CONCRETE COLLARS PER ESP STRUCTURAL CALCULATIONS AND PLANS ON SHEET S1.2 AND S1.3. STEEL LID SHAL CONFORM WITH CLARK COUNTY TRAFFIC STANDARDS. DESIGN SHALL BE A PART OF THE SHOP DRAWINGS TO BE REVIEWED AND APPROVED PRIOR TO MANUFACTURING.

NOTE:

PORTION OF THE SITE IS LOCATED WITHIN A FEMA ZONE 'A' AND ZONE 'X'. A ZONE 'A' IS DESCRIBED BY FEMA AS AREAS SUBJECT TO FLOODING BY THE 1% ANNUAL CHANCE FLOOD WITH NO BASE FLOOD ELEVATIONS DETERMINED. A ZONE 'X' IS DESCRIBED BY FEMA AREAS OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.
SITE LIES WITH FIRM COMMUNITY PANEL NUMBER 32003C2557E SEPTEMBER 27, 2002

NOTE: COMPLETION OF SECTION II OR III OF DRAINAGE COMPLIANCE REPORT REQUIRED.

GEOTECHNICAL REPORT:

ALL GRADING SHALL CONFORM TO THE SCALS REPORT, GEOTECHNICAL EXPLORATION REPORT BY:

AMTI ACCLAIM MATERIAL TESTING & INSPECTION LLP

FILE NO.: 05208, DATED 11-2-05.

3/21/08
11/12/07

APPROVALS:

CLARK COUNTY
DEPARTMENT OF
DEVELOPMENT SERVICES

ACCEPTANCE OF PLANS FOR FILING
BY 8-10-07
ACCEPTANCE OF THESE PLANS FOR FILING SHALL NOT BE CONSTRUED TO BE A PERMIT FOR OR AN APPROVAL OF ANY VIOLATION OF ANY OF THE PROVISIONS OF THE STATE OR COUNTY LAWS AND/OR SPECIFICATIONS. CLARK COUNTY SHALL BE HELD FREE FROM DAMAGES WHICH MAY RESULT FROM THE CONSTRUCTION OF THE IMPROVEMENTS FROM THE ENGINEERING DESIGN DEPICTED HEREIN.

NOTE: POWER POLES AND/OR OTHER EXISTING FACILITIES NOT IN PROPER LOCATION BASED ON PROPOSED IMPROVEMENTS SHOWN HEREON WILL BE RELOCATED AT NO EXPENSE TO CLARK COUNTY.

DRAINAGE COMPLIANCE:

THIS PLAN COMPLIES WITH THE APPROVED DRAINAGE STUDY, ON FILE WITH CLARK COUNTY DEPT. OF PUBLIC WORKS. HTE# 05-54257.

BARRY C. BENKER P.E. #9721 — DATE 8-15-07

PROFESSIONAL ENGINEER STATE OF NEVADA — STEVEN G. VICKERY — EXP. 12/31/08 — CIVIL — No. 13689 — 3/11/08

ONLY

DISCLAIMER NOTE:

UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UNDERGROUND OR OVERHEAD UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION. CONTRACTOR TO NOTIFY ENGINEER OF ANY CHANGES OR DISCREPANCIES.

Avoid overhead power line contact. It's costly.
Call before you Overhead
1-702-227-2929
NEVADA POWER COMPANY AND SOUTH CENTRAL COMPANY

Avoid digging underground utility lines. It's costly.
Call before you Dig
1-800-227-2600

AVOID HITTING UNDERGROUND TRAFFIC SIGNAL SYSTEMS AND STREET LIGHT SYSTEM CONDUITS IT'S COSTLY
Call before you UnderGround
CALL BEFORE YOU DO UNDERGROUND
1-702-455-7511
CLARK COUNTY TRAFFIC OPERATIONS
AND
1-702-432-6300
LAS VEGAS AREA COMPUTERIZED TRAFFIC SYSTEM

LEGEND

DESCRIPTION:	CONTOUR LINES	EDGE OF PAVEMENT	"A" TYPE CURBS	"L" TYPE CURBS	WALLS	FENCES	AC PAVEMENT	SPOT ELEVATIONS	SIGNS	FIRE HYDRANTS	GATE VALVES	CLEAN OUTS	REDUCERS	UTILITY BOX OR VAULT	100w HPS STREETLIGHTS	150w HPS STREETLIGHTS	200w HPS STREETLIGHTS	250w HPS STREETLIGHTS
EXISTING:	2300							(100.00) TC										
PROPOSED:	22							99.00 TC										

MANHOLE DESCRIPTIONS
T = TELEPHONE
E = ELECTRICAL
S = SANITARY SEWER
D = STORM DRAIN

ROW LINE
PROPERTY LINE
CL OR SURVEY LINE
SCARP LINE
SAWCUT LINE
EASEMENT LINE
CONCRETE PVMT.
SEWER AND WATER SERVICE W/ FRV'S
BACKWATER VALVE
ELECTRICAL PEDESTAL
PULL BOX AS SHOWN
POWER POLE

REV	DATE	BY	REVISION
1	10/4/07		RELOCATE (2) 15'x10' STEEL LIDS FROM PROPOSED COUNTY CULVERTS WESTERLY 400.
2	1/23/08	SFC	MODIFY STORM DRAIN CONNECTION TO BOX CULVERT

LAPOUR PARTNERS
5525 SOUTH DECATUR BLVD., SUITE 101
LAS VEGAS, NV 89118
(702) 222-3022

ENGINEERING COMPANY
3321 N. Buffalo Drive, Suite 200
Las Vegas, Nevada 89129
TEL: (702) 877-1300 FAX: (702) 877-0300

ALPHA &

SHEET: PARADISE VILLAGE OFFSITE PLANS

TITLE: GRADING PLAN 1 OF 4

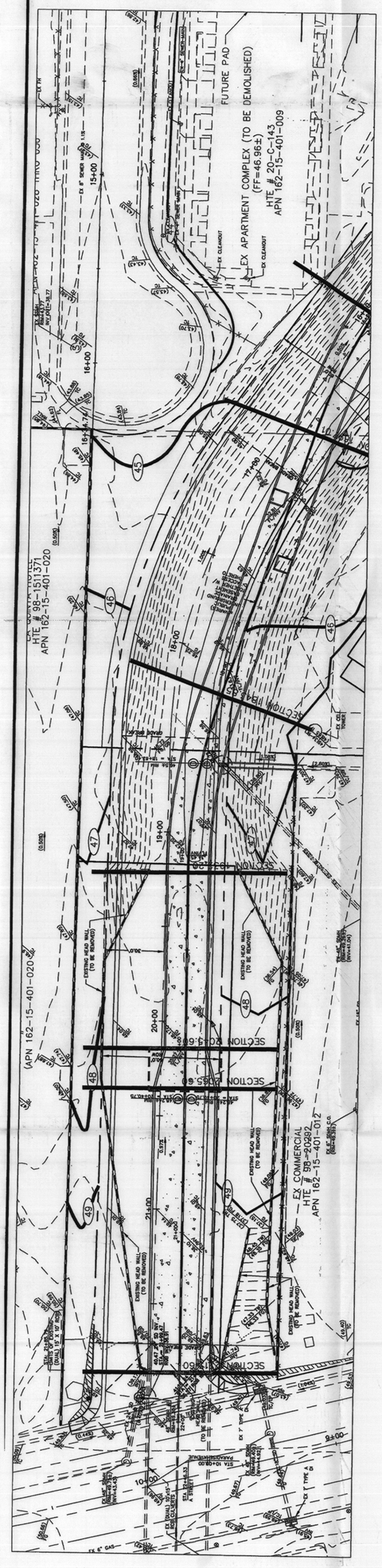
DRAWN BY: JMA	04.23.07
DESIGNED BY: SFC	04.23.07
CHECKED BY: GWS	04.23.07
PROJECT NO: 05277108	SCALE: 1" = 20'

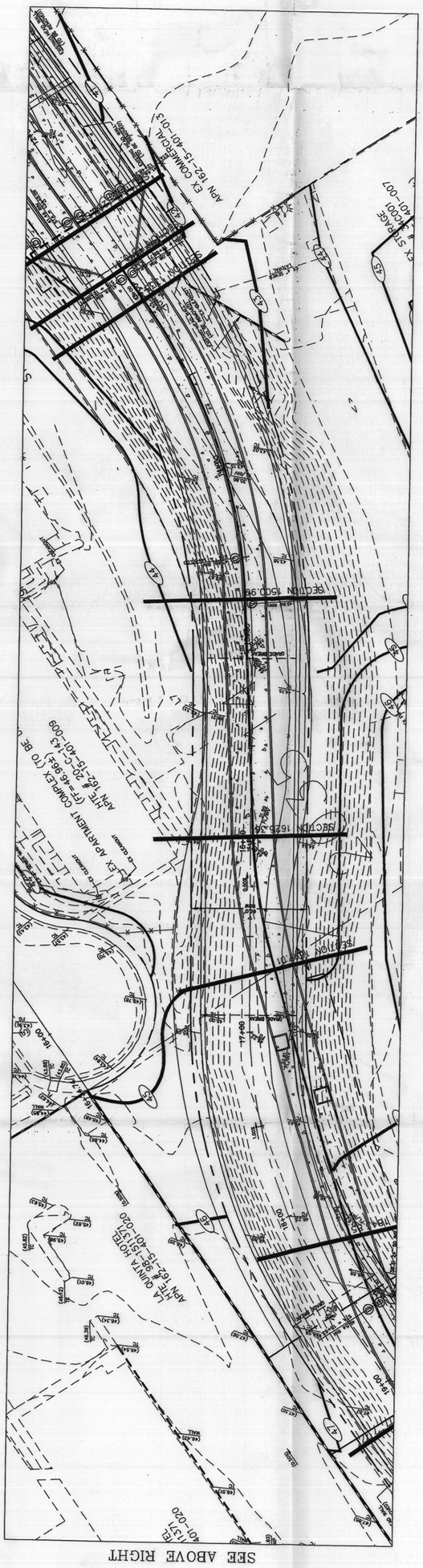
STATE OF NEVADA — PROFESSIONAL ENGINEER — BARRY C. BENKER — EXP. 6/30/09 — No. 9721

SHEET G1
4 OF 29 SHEETS
DRAWING NO. HTE# 07-15692

REDLINE REVISIONS

PROPOSED





THIS MAP HAS BEEN
REFERENCED FROM
THE APPROVED CLOMR
CASE NO. 06-09-BC85R

FIS RESTUDY SECTION	EXISTING HEC-RAS SECTION	PROPOSED WSPG SECTION
460	39	4415.16
450	38	4013.55
440	37	3615.60
340	5	610
330	4	195

LAPOUR PARTNERS
5525 S. DECATUR BLVD., SUITE 101
LAS VEGAS, NEVADA 89118
(702) 222-3022

ALPHA ENGINEERING COMPANY
3321 N.Buffalo Dr. Ste 200, Las Vegas, NV 89129
Telephone: (702) 877-1300

REV	DATE	BY	REVISION

SHEET
PARADISE VILLAGE

TITLE
PRE-CONDITION
~~PROPOSED~~ WSPG MODEL

DRAWN BY: 1 9
DESIGNED BY: 2 10
CHECKED BY: 3 11
PROJECT NO: 4
SCALE: 5

STEPHEN F. CREVOISERAT
EXP. 12-31-08
No. 13689
4/28/08

FIGURE
13
DRAWING NO.

05-54297 d/s

ROME CONSULTING

3350 W. Cheyenne Avenue, Suite 110
North Las Vegas • Nevada • 89032
Office: 791-3900 • Fax: 631-3909

April 30, 2008
Job No. 07030-03

FEMA
Attention: LOMR Depot
3601 Eisenhower Avenue, Suite 600
Alexandria, VA 22304-6425

Subject: Flamingo Storm Drain System Plan Conformity - Paradise Village Offsite Plans

To Whom It May Concern:

The proposed reinforced box culverts with transition structures for the above referenced project were built in substantial compliance with the approved plans for the Flamingo Wash. A site visit on April 14, 2008, confirmed that the 15' x 10' Reinforced Box Culvert (RCB), transition structure from a dual 15'x10' RCB to dual 12'x9', precast dual 12'x9' RCB, transition from dual 12'x9' RCB to a five (5): 12'x8' RCB (cast-in-place) were constructed per the approved plans of *Paradise Village Offsite Plans*, designed by Alpha Engineering. The upstream tie-in is an existing dual (2): 15' x 10' RCB culvert under Paradise Road crossing (Public Roadway), and the downstream tie-in is the existing five (5): 12'x8' RCB culverts under Palos Verde Road crossing (Public Road).

If you have any questions regarding this letter, please do not hesitate to call our office.

Sincerely,

ROME CONSULTING

PROFESSIONAL ENGINEER STATE OF NEVADA
STEPHEN F. CREVOISERAT
EXP. 12-31-08
CIVIL
No. 13689
4/30/08

James M. Aquino
Principal

Stephen F. Crevoiserat, P.E.
President

Cc: sfc

APPENDIX I

Data CD