CONDUIT AND WIRE SCHEDULE

WIRE & CABLE	FROM	TO	CONDUIT **																																
			I	II	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
3 No. 3/0 AWG	SERVICE POINT	SERVICE METER	●*	●*																																					
4 No. 4 AWG 1 No. 8 AWG	SERVICE METER	CONTROLLER																								1		1								1		1		1	
2 No. 4 AWG 1 No. 8 AWG	SERVICE METER	FLASHER CABINET														1	1	1								1		1								1		1			
1-25 COND. No. 14	CONTROLLER	POLE A											1							1	1																	1	1		
1-25 COND. No. 14 1-OPTICOM CABLE	CONTROLLER	POLE B											1	1																								1	1		
1-25 COND. No. 14 1-OPTICOM CABLE	CONTROLLER	POLE C								1																						1				1			1	1
1-25 COND. No. 14 1-OPTICOM CABLE	CONTROLLER	POLE D				1			1															1								1				1			1	1
2-No. 10 COND.	CONTROLLER	POLE A (INT. LIGHTING)											1							1	1																	1	1		
2-No. 10 COND.	CONTROLLER	POLE B (INT. LIGHTING)											1	1																								1	1		
2-No. 10 COND.	CONTROLLER	POLE C (INT. LIGHTING)								1																						1				1			1	1
2-No. 10 COND.	CONTROLLER	POLE D (INT. LIGHTING)				1			1															1								1				1			1	1
2-No. 8 COND.	CONTROLLER	POLE L (INT. LIGHTING)														1	1	1																				1	1		
1-OPTICOM CABLE	CONTROLLER	POLE L														1	1	1																				1	1		
LOOP LEAD-IN CABLE (#2)	CONTROLLER	DET PULLBOX FIRST ST											1							1	1																	1	1		
LOOP LEAD-IN CABLE (#4,#7)	CONTROLLER	DET PULLBOX FIRST ST						1	1														1									1				1			1	1
LOOP LEAD-IN CABLE (#6)	CONTROLLER	DET PULLBOX FIRST ST							1		1												1									1				1			1	1
LOOP LEAD-IN CABLE (#8,OLA)	CONTROLLER	DET PULLBOX FIRST ST										1																										1	1		
1-15 COND. No. 14	POLE A	POLE E																		1				1																
1-15 COND. No. 14	POLE B	POLE F												1					1																						
1-15 COND. No. 14	POLE D	POLE G				1	1																																	
1-15 COND. No. 14	CONTROLLER	POLE H																																1						1	
1-25 COND. No. 14 1-VID CABLE	CONTROLLER	POLE I																								1										1				1	
1-25 COND. No. 14	CONTROLLER	POLE J																									1	1								1		1		1	
1-25 COND. No. 14	CONTROLLER	POLE K																														1		1				1		1	
2-No. 10 COND.	CONTROLLER	POLE H (INT. LIGHTING)																																1						1	
2-No. 10 COND.	CONTROLLER	POLE I (INT. LIGHTING)																								1										1				1	
2-No. 10 COND.	CONTROLLER	POLE J (INT. LIGHTING)																									1	1								1		1		1	
2-No. 10 COND.	CONTROLLER	POLE K (INT. LIGHTING)																														1		1				1		1	
LOOP LEAD-IN CABLE (#2)	CONTROLLER	DET PULLBOX TRANSIT CNTR																																	1					1	
LOOP LEAD-IN CABLE (#4)	CONTROLLER	DET PULLBOX TRANSIT CNTR																														1	1				1			1	
1-No. 8 (GREEN)	CONTROLLER	TO POLES	–	–	1	2	1	–	2	1	–	–	4	2	1	1	1	1	2	2	–	1	1	2	1	–	1	1	1	1	1	–	4	1	–	2	4	1	5	11	3
PULL ROPE	(NUMBER AS SHOWN)		1	1	1	1	1	1	3	3	1	1	3	1	1	1	1	1	3	1	1	3	1	6	3	1	1	6	3	1	1	6	1	1	3	6	6	3	6	6	
No. OF CONDUITS – CONDUIT SIZE:			1-3"	1-3"	1-3"	1-3"	1-3"	1-3"	2-3", 1-2"	2-3", 1-2"(6)	1-3"	1-3"	2-3", 1-2"	1-3"	1-3"	1-3"	1-3"	1-3"	2-3", 1-2"	1-3"	1-3"	2-3", 1-2"	1-3"	4-3", 2-2"	2-3", 1-2"(6)	1-3"	1-3"	4-3", 2-2"	2-3", 1-2"(6)	1-3"	1-3"	1-2"(6)	4-3", 2-2"	1-3"	1-3"	2-3", 1-2"	4-3", 2-2"(6)	2-3", 1-2"	1-3"	4-3", 2-2"	4-3", 2-2"(6)	

* CONTRACTOR SHALL COORDINATE WITH NV ENERGY TO CONNECT PROPOSED SERVICE PEDESTAL TO SERVICE POINT.
** CONTRACTOR SHALL INSTALL A TRACER WIRE IN ALL NEW CONDUITS THAT ARE EMPTY (NO CONDUCTORS/CABLING)
(E) = EXISTING CABLE, CONDUCTORS OR CONDUITS

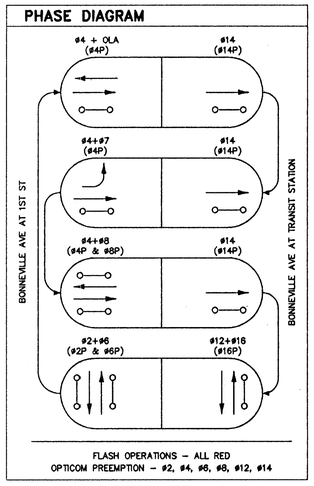
STREET NAME SIGN SCHEDULE [16]

POLE	ORDINAL	STREET NAME	SUFFIX	BLOCK*	DOUBLE SIDED	NEW/ EXISTING
(A)	S	1ST	ST	500	YES	NEW
(B)	E	BONNEVILLE	AVE	100	YES	NEW
(C)	S	1ST	ST	600	YES	NEW
(D)	E	BONNEVILLE	AVE	00	YES	NEW
(I)	E	BONNEVILLE	AVE	100	YES	NEW
(J)	S	TRANSIT STATION	ST	00	YES	NEW
(K)	E	BONNEVILLE	AVE	100	YES	NEW

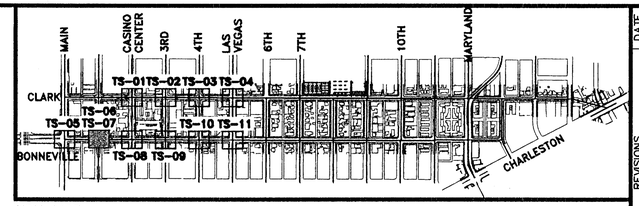
STREET NAME SIGN (SEE DETAIL CCAUSD 404.416, 404.417 AND CLV MODIFIED DETAIL ON SHEET TS-13)

* CONTRACTOR SHALL VERIFY BLOCK NUMBER BY CONTACTING CLV PLANNING DEPT. PRIOR TO FABRICATION OF SIGN.

PHASE DIAGRAM



FLASH OPERATIONS – ALL RED
OPTICOM PREEMPTION – #2, #4, #6, #8, #12, #14



KEY MAP
NTS

CONSTRUCTION NOTES (TS SHEETS ONLY)

1. EXISTING 200 AMP 120/240 VAC SERVICE PEDESTAL. SEE SERVICE PEDESTAL EQUIPMENT TABLE (SHEET T-12) FOR DETAILS.
2. NEW 200 AMP 120/240 VAC SERVICE PEDESTAL (SEE SHEET TS-13 FOR SERVICE PEDESTAL EQUIPMENT AND INSTALLATION DETAILS).
6. TYPE 200 VAULT MARKED "FIBER OPTIC" (SEE SL SHEETS FOR INTERCONNECT AND STREET LIGHTING DETAILS).
7. FURNISH AND INSTALL No. 3 1/2 PULL BOX MARKED "TRAFFIC SIGNAL" IN ACCORDANCE WITH CCAUSD No. 404.110, 404.140, AND 404.811.
8. FURNISH AND INSTALL No. 7 PULL BOX MARKED "TRAFFIC SIGNAL" IN ACCORDANCE WITH CCAUSD No. 404.130 AND 404.140.
9. FURNISH AND INSTALL TYPE 100 VAULT MARKED "TRAFFIC SIGNAL". SEE SPECIFICATIONS FOR DETAILS AND VENDOR CONTACT.
10. FURNISH AND INSTALL No. 5 PULL BOX MARKED "TRAFFIC SIGNAL" IN ACCORDANCE WITH CCAUSD No. 404.120 AND 404.140.
11. INTERCEPT EXISTING CONDUIT OR PULL BOX AND INSTALL NEW CONDUIT.
12. ALL VEHICLE SIGNAL INDICATIONS AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE SUPPLIED AND INSTALLED WITH LIGHT EMITTING DIODE (LED) SIGNAL MODULES.
13. FURNISH AND INSTALL 6'x6' MULTIPLE LOOP SYSTEM (SEE SHEET TS-13 FOR LOOP LAYOUT AND DETAILS).
14. FURNISH AND INSTALL 3M MODEL 721 OPTICOM SENSORS ON THE TRAFFIC SIGNAL HEAD(S) IDENTIFIED ON PLAN. RUN OPTICOM DETECTOR CABLE, 3M MODEL 138 FROM THE CONTROLLER TO TRAFFIC SIGNAL HEAD(S) INDICATED ON PLANS AS SHOWN IN THE CONDUIT AND WIRE SCHEDULE. WIRE CONTROLLER AND PROVIDE ONE (1) 3M MODEL 754 PHASE SELECTOR AND ONE (1) 760 3M OPTICOM PRE-EMPTION RACK IN CABINET.
15. FURNISH AND INSTALL 400 WATT HIGH PRESSURE SODIUM INTERSECTION LIGHTING WITH IES MC3 DISTRIBUTION COMPLETE WITH 120V MAGNETIC REGULATOR TYPE BALLAST (GARDCO CA22-1-3-400HPS-120-QR-RAL6012 MF PC OR APPROVED EQUAL) AND AREA LIGHTING RESEARCH ELECTRONIC PHOTOCELL (#2190VP3) AS INDICATED ON PLANS.
16. FURNISH AND INSTALL INTERNALLY-ILLUMINATED STREET NAME SIGN ON MAST ARM. SEE STREET NAME SIGN SCHEDULE (THIS SHEET).
17. FURNISH AND INSTALL INTERNALLY-ILLUMINATED "ONE WAY" SIGN ON MAST ARM. SEE "ONE WAY" SIGN DETAIL (SHEET TS-13) AND SIGN SCHEDULE (THIS SHEET) FOR DETAILS.
18. FURNISH AND INSTALL SIGN ON MAST ARM. SEE SIGN SCHEDULE (THIS SHEET) FOR SIGN DESIGNATION AND SIZE.
19. FURNISH AND INSTALL SIGN ON POLE. SEE SIGN SCHEDULE (THIS SHEET) FOR SIGN DESIGNATION AND SIZE.
20. PEDESTRIAN PUSH BUTTONS SHALL BE AUDIBLE/TACTILE TYPE.
21. PEDESTRIAN SIGNAL HEADS SHALL BE COUNTDOWN TYPE.
27. FURNISH AND INSTALL TRANSIT SIGNAL HEAD (SEE SHEET TS-12 FOR DETAIL). CONTRACTOR SHALL WIRE TRANSIT SIGNAL HEADS WITH EXCLUSIVE CONDUCTORS TO CONTROLLER. ALL INDICATIONS SHALL BE WHITE.
28. FURNISH AND INSTALL VIDEO IMAGE DETECTOR AND SYSTEM.
57. FURNISH AND INSTALL NEW SIGNAL HEAD WITH GREEN UP ARROW INDICATION (SEE SHEET TS-12 FOR DETAILS).
40. INSTALL TYPE 2070N OR M53 CONTROLLER IN TYPE VIII "R" CABINET (SEE CCAUSD No. 404.307) WITH EXHAUST FAN AND THERMOSTAT CONTROL AND INSTALL TYPE "J" FOUNDATION PER CCAUSD No. 404.213. CABINET TO BE SUPPLIED BY CONTRACTOR, AND APPROVED BY THE CITY OF LAS VEGAS. THE CONTRACTOR MUST FURNISH CONTROLLER. THESE MATERIALS MUST BE DELIVERED TO CLV TRAFFIC OPERATIONS AT LEAST 14 DAYS PRIOR TO EXPECTED TURN-ON DAY TO BE INSPECTED AND PROGRAMMED. ALL NECESSARY AMPLIFIER UNITS, MODULES, LIGHT CONTROL UNITS, SWITCHES, OPTICOM, FLASHERS, AREA WIDE COMPUTER CONTROL ETC. SHALL BE SUPPLIED BY THE CONTRACTOR AND INSTALLED IN CABINET TO ACTIVATE THIS PHASE OPERATION AS SHOWN. CONTRACTOR SHALL PREPARE AS-BUILT DRAWINGS UPON COMPLETION OF PROJECT DETAILING ANY CHANGES TO THE CONTROLLER OPERATION OR CABINET CONFIGURATION. CABINET SHALL BE ORIENTED SO MAINTENANCE PERSONNEL SHALL BE FACING TRAFFIC WHEN SERVICING OR AS DIRECTED BY THE FIELD ENGINEER. CONTRACTOR TO STAKE FOUNDATION LOCATION FOR APPROVAL BY RESIDENT ENGINEER PRIOR TO CONSTRUCTION.
45. FURNISH AND INSTALL WARNING FLASHER AND SIGN ASSEMBLY ON MAST ARM (SEE SIGNAL AHEAD WARNING FLASHER ON SHEET TS-13).
49. PULL LOOP WIRE INTO PULL BOX BUT DO NOT CONNECT TO LOOP LEAD-IN CABLE.
51. FURNISH AND INSTALL NEW RISER ON JOINT-USE WOOD POLE TO EXISTING TRANSFORMER IN ACCORDANCE WITH NV ENERGY REQUIREMENTS. COIL CONDUCTORS AT TOP OF RISER FOR NV ENERGY CONNECTION. SEE NV ENERGY DESIGN PLANS.
52. INSTALL NEW CONNECTION TO EXISTING NV ENERGY PAD-MOUNTED TRANSFORMER IN ACCORDANCE WITH NV ENERGY REQUIREMENTS. COIL CONDUCTORS FOR NV ENERGY CONNECTION. SEE NV ENERGY DESIGN PLANS.

SEE SHEET TS-06 FOR TRAFFIC SIGNAL LAYOUT.

TAND, INC.
AS-BUILT

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY TYPE AND LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTING SIGNAL POLE FOUNDATIONS.
2. CONTRACTOR SHALL INSTALL RED MARKING TAPE 18" BELOW GRADE, ABOVE ALL PROPOSED CONDUITS.
3. CONTRACTOR SHALL VERIFY ALL UTILITY CONFLICTS AND OBSTACLES PRIOR TO TRENCHING OR DIGGING.
4. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING IMPROVEMENTS, INCLUDING LANDSCAPING FROM DAMAGE. ALL IMPROVEMENTS OR STRUCTURES DAMAGED BY THE CONTRACTOR'S OPERATION SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE RESIDENT ENGINEER AT THE EXPENSE OF THE CONTRACTOR.
5. CONTRACTOR TO COORDINATE LOCATIONS OF PROPOSED PULL BOXES TO BE ADJACENT TO SIDEWALK JOINTS AND SCORING PATTERN LINES. SEE LANDSCAPE SHEETS (LA) FOR SIDEWALK SCORING PATTERN.
6. SEE SL SHEETS FOR SERVICE PEDESTAL, STREET LIGHTING AND INTERCONNECT DESIGN.
7. EXISTING TRAFFIC SIGNALS MUST REMAIN OPERATIONAL AT ALL TIMES. THE CONTRACTOR SHALL PROVIDE UNIFORMED TRAFFIC CONTROL OFFICERS AT ALL TIMES WHEN THE TRAFFIC SIGNAL CANNOT REMAIN OPERATIONAL UNLESS ANOTHER METHOD IS APPROVED BY THE CITY OF LAS VEGAS TRAFFIC ENGINEER.
8. AS PART OF THE TRAFFIC SIGNAL INSTALLATION THE CONTRACTOR SHALL REMOVE AND SALVAGE ALL EXISTING TRAFFIC SIGNAL EQUIPMENT (POLES, MAST ARMS, INTERSECTION LIGHTING, CONTROLLER CABINET, ETC.) AS IDENTIFIED ON THE PLANS. SUB-SURFACE AND SURFACE CONDITIONS SHALL BE REPAIRED OR REPLACED TO MATCH THE SURROUNDING AREA. ALL STREET LIGHT AND TRAFFIC SIGNAL EQUIPMENT THAT IS SALVAGED SHALL BE RETURNED TO THE CLV EAST SERVICE YARD. PROVIDE 24 HOUR NOTICE PRIOR TO DELIVERY. CALL 702-229-3661 TO SCHEDULE DELIVERY TIME. CONTRACTOR MUST HAVE A MEANS TO UNLOAD EQUIPMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EQUIPMENT AND MATERIALS INCURRED IN THIS PROCESS.
9. AS PART OF THE INTERNALLY ILLUMINATED ONE WAY SIGN INSTALLATION THE CONTRACTOR MAY BE REQUIRED TO RELOCATE OR ADJUST EXISTING MAST ARM MOUNTED SIGNING, SIGNAL HEAD TENONS OR OTHER EQUIPMENT. ALL ADJUSTMENTS SHALL BE APPROVED BY THE CITY OF LAS VEGAS TRAFFIC ENGINEER.
10. PULL BOX AND VAULT LOCATIONS AND CONDUIT ROUTING ARE SCHEMATIC FOR THE PURPOSE OF CLARITY AND MAY DIFFER FROM ACTUAL INSTALLATION. FINAL LOCATION SHALL BE DETERMINED IN THE FIELD BY THE RESIDENT ENGINEER.

POLE AND EQUIPMENT SCHEDULE

POLE*							SIGNALS				PEDESTRIAN PUSH BUTTON			EMERGENCY VEHICLE DETECTOR	REMARKS
			MAST ARM		LUMINAIRE		VEHICLE		PEDESTRIAN						
POLE	LOCATION STATION AND OFFSET	TYPE HEIGHT FOUND.	QUAD	LENGTH	QUAD	LENGTH	TYPE	QUAD	TYPE	QUAD	PHASE	ARROW	QUAD		
(A)	1ST STREET STA 10+57, 38'± LT ***	XX-A 30' L	3	55'	3	15'	(2) M-2 TENON TRANSIT	MA MA MA	–	–	– – –	– – –	– – –	–	12 15 16 18 27 57
(B)	1ST STREET STA 10+71, 38'± RT ***	XX 30' H	4	30'	4 3	15' 15'	M-2	MA	–	–	– –	– –	– –	(1) ONE-WAY	12 14 15 16 18
(C)	1ST STREET EXISTING	XX-A 30' (E)	1	60'	1	15'	(4) M-2 B-2T	MA 3	W-4T****	1 4	#4 #6	R L	1 4	(1) ONE-WAY	12 14 15 16 18 20 21
(D)	1ST STREET STA 09+38, 39'± LT ***	XX 30' H	2	30'	2 1	15' 15'	M-2	MA	–	–	– –	– –	– –	(1) ONE-WAY	12 14 15 16 18
(E)	1ST STREET STA 10+42, 38'± LT ***	1-A 10' C	–	–	–	–	A-4T	TOP	W-3T	4	#2 #8	L R	2 3	–	12 20 21
(F)	1ST STREET STA 10+53, 36'± RT ***	1-A 10' C	–	–	–	–	A-4T	TOP	W-3T	2	#6 #8	R L	4 3	–	12 20 21
(G)	1ST STREET STA 09+46, 33'± LT ***	1-A 10' C	–	–	–	–	A-2T	TOP	W-3T	3	#2 #4	R L	2 1	–	12 20 21
(H)	BONNEVILLE AVE STA 105+58, 38'± LT***	XX 30' H	–	–	3	15'	B-1T	1	–	–	– –	– –	– –	–	12 15 19
(I)	BONNEVILLE AVE STA 106+08, 32'± LT***	XX 30' H	4	20'	4	15'	M-2 B-1T	MA 2	W-OT	1	#6	L	2	–	12 15 16 19 20 21 28
(J)	BONNEVILLE AVE EXISTING	XX-A 30' (E)	1	55'	1	15'	(2) M-2 B-2T TENON	MA 3 MA	W-4T****	1	#4	R	1	–	12 15 16 18 19 20 21 37
(K)	BONNEVILLE AVE EXISTING	XX 30' (E)	2	30'	2	15'	M-2 B-1T	MA 4	W-OT	4	#4	L	1	–	12 15 16 17 19 20 21
(L)	CLARK RUE STA 11+85, 25'± LT***	XX 30' H	2	30'	2	15'	WARNING FLASHER**	MA	–	–	– –	– –	– –	(1) ONE-WAY	12 14 15 45

SEE CLARK COUNTY AREA UNIFORM STANDARD DRAWINGS (CCAUSD) FOR POLE, POLE FOUNDATION, SIGNAL MOUNTING HARDWARE AND OTHER DETAILS RELATED TO SIGNAL POLE INSTALLATION.

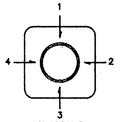
* ALL POLES, MAST ARMS, AND LUMINARIES SHALL CONFORM TO THE CITY OF LAS VEGAS CENTENNIAL STANDARDS.
** SEE SHEET TS-12 FOR SIGN ASSEMBLY DETAIL AND SHEET TS-13 FOR WARNING FLASHER DETAIL.
*** CONTRACTOR TO STAKE FOUNDATION LOCATIONS FOR APPROVAL BY RESIDENT ENGINEER PRIOR TO CONSTRUCTION. CONTRACTOR TO POTHOLE NEW FOUNDATION LOCATIONS PRIOR TO CONSTRUCTION TO IDENTIFY ALL SUBSURFACE CONFLICTS. IF CONFLICTS ARE IDENTIFIED THE CONTRACTOR SHALL WORK WITH THE RESIDENT ENGINEER TO DETERMINE AN ALTERNATE FOUNDATION LOCATION.
**** SEE SHEET TS-12 FOR PEDESTRIAN SIGNAL ASSEMBLY DETAIL.
PP – REFER TO CCAUSD No. 404.1201 FOR POLE PLATE PEDESTRIAN SIGNAL HEAD MOUNTING ASSEMBLY DETAIL.
(E) – EXISTING EQUIPMENT

SIGN SCHEDULE

CONSTRUCTION NOTE	18	19	18	18	18	17
SIGN ILLUSTRATION	SIGNAL				ONLY	ONE WAY
SIGN DESIGNATION DIMENSIONS	R3-10 (MOD) 30"x36"	R9-3A 24"x24"	R3-4 24"x24"	R3-18 30"x30"	R3-8 30"x30"	SPECIAL (LEFT) 72"x17.5"
POLE*	(A)	(H) (I) (J) (K)	(B) (C) (D)	(A) (J)	(A)	(K)

* (X) = EXISTING SIGN, (X) = NEW SIGN

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)



QUADRANT
ARM, SIGNAL, PED BUTTON
(TOP VIEW)

811 know what's below Call before you dig

SAFETY ALERT
Call Before You Overhead

Call before you UnderGround
1-702-432-5300

DATE: 6/21/10
REVISIONS
1 SHEET REPLACEMENT

Kimley-Horn and Associates, Inc.
Engineering, Planning, and Environmental Consultants
2580 E. Flamingo Road, Suite 210, Las Vegas, NV 89119
PH. (702) 734-2666 FAX (702) 735-4949
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SCALE (H): 1"=20' | SCALE (V): N/A | DATE: FEBRUARY 2010
DRAWN BY: AP | DESIGNED BY: AP/RC | CHECKED BY: RC/RF

DEPARTMENT OF PUBLIC WORKS
PROJECT: BONNEVILLE/CLARK ONEWAY COUPLET PHASE 1 IMPROVEMENT PLANS
SHEET: TRAFFIC SIGNAL BONNEVILLE AVE AND 1ST ST / TRANSIT CENTER

PROFESSIONAL ENGINEER STATE OF NEVADA
RANDY W. CARROLL
Exp. 12/31/10
CIVIL
No. 16131
6-21-10

SHEET NO. TS-07
SHEET 66 OF 91
DRAWING NO. 10775201

BID# 09.1730.37 REV 3

Jun 21, 2010 – 1:34pm – USER: peter.mayerhofer
\\LAVF01\Projects\LAV_PublicTrans\092256\019 Bonneville-Clark 2008\CADD\2560198-07_11.dwg

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