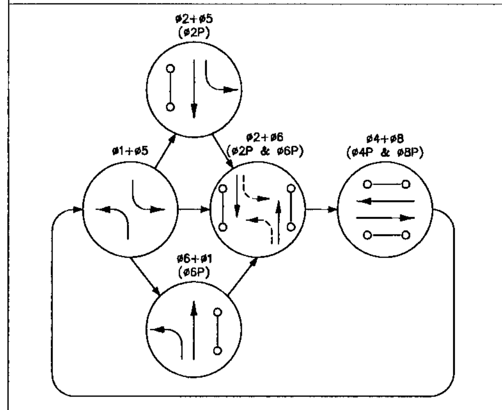
PHASE DIAGRAM

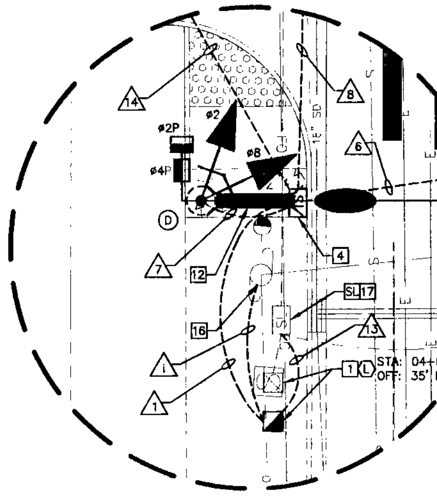


FLASH OPERATIONS – ALL RED
OPTICOM PREEMPTION – ø1, ø2, ø5, ø6, ø8

STREET NAME SIGN SCHEDULE [12]

POLE	ORDINAL	STREET NAME	SUFFIX	BLOCK	DOUBLE SIDED	NEW/ EXISTING
(A)	S	MAIN	ST	600	YES	NEW
(B)	E	GARCES	AVE	00	YES	NEW
(C)	S	MAIN	ST	600	YES	NEW
(D)	E	PRIVATE	DR	00	YES	NEW

STREET NAME SIGN (SEE DETAIL CCAUSD 404.416, 404.417 AND CLV MODIFIED DETAIL ON SHEET TS-02)



DETAIL "A"
SCALE: 1"=10'

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.
6. SEE SHEET SL-01 FOR STREET LIGHTING AND INTERCONNECT DESIGN.
7. AS PART OF THE TRAFFIC SIGNAL INSTALLATION, 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.
8. 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.

Mar 23, 2010 – 12:01pm – USER peter.meyerhofer
\\LAVFP01\Projects\LAV_PublicTrans\092256\019 Bonneville-Clark 2008\CADD\Main-Garces\MG256019ts-01rev1.dwg

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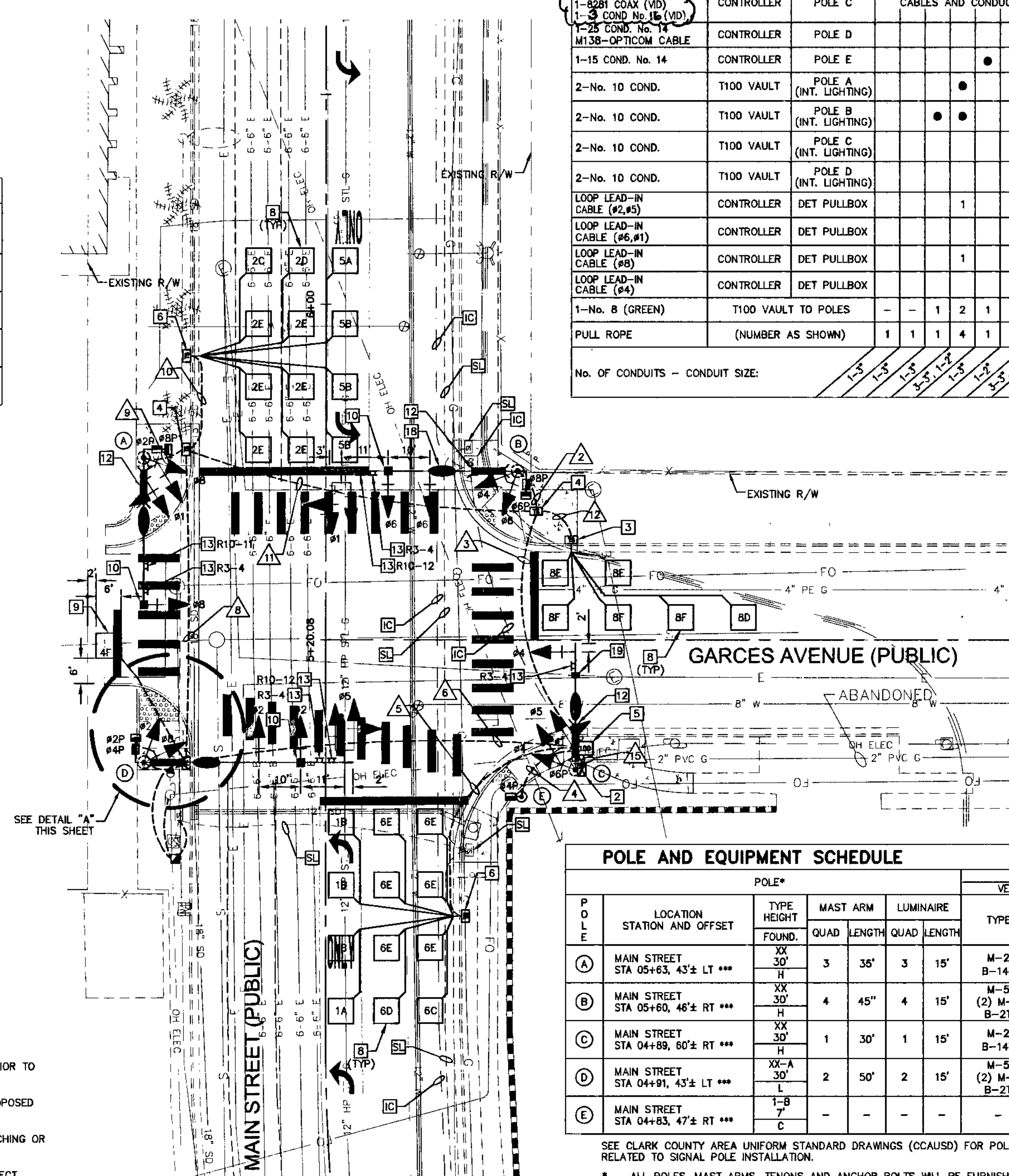
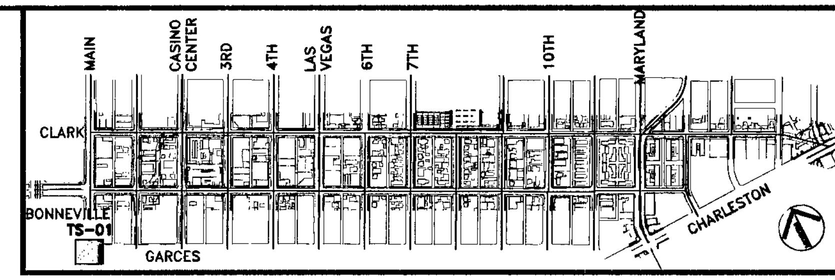


CONDUIT AND WIRE SCHEDULE

WIRE & CABLE	FROM	TO	j	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
3 No. 3/0 AWG	SERVICE POINT	SERVICE METER	●															
2 No. 4 AWG 1 No. 8 AWG	SERVICE METER	SL PULL BOX														●		
2 No. 4 AWG 1 No. 8 AWG	SERVICE METER	CONTROLLER		●					●									●
2 No. 4 AWG 1 No. 8 AWG	SERVICE METER	T100 VAULT (INT. LIGHTING)		●					●									
1-25 COND. No. 14 M138-OPTICOM CABLE	CONTROLLER	POLE A				●						●		●				●
1-25 COND. No. 14 M138-OPTICOM CABLE	CONTROLLER	POLE B			●	●												●
1-25 COND. No. 14 1-8281 COAX (VID) 1-3 COND No. 16 (VID)	CONTROLLER	POLE C	CABLES AND CONDUCTORS INSTALLED IN POLE															
1-25 COND. No. 14 M138-OPTICOM CABLE	CONTROLLER	POLE D							●	●								●
1-15 COND. No. 14	CONTROLLER	POLE E					●											●
2-No. 10 COND.	T100 VAULT	POLE A (INT. LIGHTING)				●						●		●				
2-No. 10 COND.	T100 VAULT	POLE B (INT. LIGHTING)			●	●												
2-No. 10 COND.	T100 VAULT	POLE C (INT. LIGHTING)																●
2-No. 10 COND.	T100 VAULT	POLE D (INT. LIGHTING)							●	●								
LOOP LEAD-IN CABLE (ø2,ø5)	CONTROLLER	DET PULLBOX				1							1	1				1
LOOP LEAD-IN CABLE (ø6,ø1)	CONTROLLER	DET PULLBOX						1										1
LOOP LEAD-IN CABLE (ø8)	CONTROLLER	DET PULLBOX				1									1			1
LOOP LEAD-IN CABLE (ø4)	CONTROLLER	DET PULLBOX							1								1	1
1-No. 8 (GREEN)	T100 VAULT TO POLES		–	–	1	2	1	–	1	1	–	1	–	1	–	–	–	–
PULL ROPE	(NUMBER AS SHOWN)		1	1	1	4	1	1	4	1	3	1	1	3	1	1	1	1
No. OF CONDUITS – CONDUIT SIZE:			1-3"	1-3"	1-3"	3-3", 1-2"	1-3"	1-2"	3-3", 1-2"	1-3"	2-3", 1-2"	1-3"	1-2"	2-3", 1-2"	1-2"	1-2"	1-2"	1-3"



KEY MAP
NTS

CONSTRUCTION NOTES

[1] REMOVE EXISTING SERVICE PEDESTAL AND REINSTALL, COMPLETE AND OPERATIONAL, ONTO NEW CONCRETE FOUNDATION. SEE SERVICE PEDESTAL EQUIPMENT TABLE (THIS SHEET) FOR DETAILS.

[2] INSTALL CLV PROVIDED XX-A POLE AND POLE MOUNTED TRAFFIC SIGNAL CABINET ASSEMBLY AND EQUIPMENT. CONTRACTOR SHALL FURNISH AND INSTALL POLE FOUNDATION AND ALL NECESSARY HARDWARE AS SHOWN ON PLANS. ALL NECESSARY AMPLIFIER UNITS, MODULES, LIGHT CONTROL UNITS, SWITCHES, OPTICOM, FLASHERS, AREA WIDE COMPUTER CONTROL, ETC. SHALL BE WIRED IN CABINET BY CONTRACTOR TO ACTIVATE THE 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 RESIDENT ENGINEER.

[3] FURNISH AND INSTALL No. 3 1/2 PULL BOX MARKED "TRAFFIC SIGNAL" IN ACCORDANCE WITH CCAUSD No. 404.110, 404.140, AND 404.811.

[4] FURNISH AND INSTALL No. 7 PULL BOX MARKED "TRAFFIC SIGNAL" IN ACCORDANCE WITH CCAUSD No. 404.130 AND 404.140.

[5] FURNISH AND INSTALL TYPE 100 VAULT MARKED "TRAFFIC SIGNAL".

[6] FURNISH AND INSTALL No. 5 PULL BOX MARKED "TRAFFIC SIGNAL" IN ACCORDANCE WITH CCAUSD No. 404.120 AND 404.140.

[7] ALL VEHICLE SIGNAL INDICATIONS AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE FURNISHED BY THE CONTRACTOR AND INSTALLED WITH LIGHT EMITTING DIODE (LED) SIGNAL MODULES.

[8] FURNISH AND INSTALL 6'x6' PRE-FORMED MULTIPLE LOOP SYSTEM (SEE SHEET TS-02 FOR LOOP LAYOUT AND DETAILS).

[9] FURNISH AND INSTALL 6'x6' PRE-FORMED LOOP ON DRIVEWAY APPROACH. SEE PLAN (THIS SHEET) FOR LOOP LAYOUT AND SHEET TS-02 FOR INSTALLATION DETAILS.

[10] INSTALL CLV PROVIDED 3M MODEL 721 OPTICOM SENSORS ON THE TRAFFIC SIGNAL HEAD(S) IDENTIFIED ON PLAN. RUN OPTICOM DETECTOR CABLE, 3M MODEL 138, PROVIDED BY THE CONTRACTOR, FROM THE CONTROLLER TO TRAFFIC SIGNAL HEAD(S) INDICATED ON PLANS AS SHOWN IN THE CONDUIT AND WIRE SCHEDULE. WIRE CONTROLLER AND 3M MODEL 754 PHASE SELECTOR.

[11] 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-OC-RAL6012 MF PC OR APPROVED EQUAL) AND AREA LIGHTING RESEARCH ELECTRONIC PHOTOCELL (#2190VP3) AS INDICATED ON PLANS.

[12] INSTALL CLV PROVIDED INTERNALLY-ILLUMINATED STREET NAME SIGN ON MAST ARM. SEE STREET NAME SIGN SCHEDULE (THIS SHEET).

[13] FURNISH AND INSTALL SIGN ON MAST ARM. SEE SIGN SCHEDULE (THIS SHEET) FOR SIGN DESIGNATION AND SIZE.

[14] PEDESTRIAN PUSH BUTTONS SHALL BE AUDIBLE/TACTILE TYPE.

[15] PEDESTRIAN SIGNAL HEADS SHALL BE COUNTDOWN TYPE.

[16] INSTALL NEW RISER ONTO EXISTING WOOD POLE. REMOVE OLD RISER AND CONDUCTORS AFTER SERVICE PEDESTAL HAS BEEN RELOCATED AND ENERGIZED. REMOVE RISER CONDUIT A MINIMUM OF 6" BELOW SIDEWALK AND RECONSTRUCT SIDEWALK TO MATCH EXISTING.

[17] INTERCEPT EXISTING PULL BOX AND INSTALL NEW CONDUIT.

[18] INSTALL STRAIGHT LUMINAIRE ARM FOR INTERSECTION LIGHTING.

[19] INSTALL CLV PROVIDED VIDEO IMAGE DETECTOR. INSTALL VIDEO IMAGE DETECTOR USING A 72" EXTENSION AND BRACKET FURNISHED BY CONTRACTOR.

[SL] SEE SHEET SL-01 AND SL-02 FOR STREET LIGHT EQUIPMENT AND DETAILS.

[IC] SEE SHEET SL-01 AND SL-02 FOR INTERCONNECT EQUIPMENT AND DETAILS.

NOTE:

THE CITY OF LAS VEGAS (CLV) WILL FURNISH THE FOLLOWING EQUIPMENT FOR THE GARCES AVE / MAIN STREET TRAFFIC SIGNAL: TRAFFIC SIGNAL POLES, ANCHOR BOLTS, MAST ARMS, TENONS, CONTROLLER CABINET, CONTROLLER CABINET STAND, CONTROLLER AND CABINET EQUIPMENT INCLUDING OPTICOM PREEMPTION EQUIPMENT, 754 PHASE SELECTOR AND 721 ANTENNAS, AUDIBLE TACTILE PEDESTRIAN PUSH BUTTONS, VIDEO DETECTION UNIT, AND INTERNALLY ILLUMINATED STREET NAME SIGNS. THE TRAFFIC SIGNAL POLES AND MAST ARMS WILL BE HOT-DIP GALVANIZED STEEL. ALL CABLING AND CONDUCTORS NECESSARY TO INSTALL AND MAKE SAID EQUIPMENT OPERATIONAL SHALL BE PROVIDED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING PICK UP OF SAID EQUIPMENT AND MATERIALS FROM THE CLV YARD, AND ALL SUBSEQUENT TRANSPORTATION THERETO.

MATERIALS AND EQUIPMENT FURNISHED BY CLV WILL NOT BE PAINTED. THE CONTRACTOR SHALL PAINT ALL REQUIRED EQUIPMENT/MATERIALS AS SPECIFIED IN SECTION 623 OF THE SPECIAL PROVISIONS.

POLE AND EQUIPMENT SCHEDULE

POLE	LOCATION STATION AND OFFSET	TYPE / HEIGHT / FOUND.	MAST ARM QUAD	MAST ARM LENGTH	LUMINAIRE QUAD	LUMINAIRE LENGTH	VEHICLE SIGNAL TYPE	VEHICLE SIGNAL QUAD	PEDESTRIAN SIGNAL TYPE	PEDESTRIAN SIGNAL QUAD	PUSH BUTTON PHASE	PUSH BUTTON QUAD	PUSH BUTTON ARROW	EMERGENCY VEHICLE DETECTOR	REMARKS
(A)	MAIN STREET STA 05+63, 43'± LT ***	XX / 30' / H	3	35'	3	15'	M-2 B-14T	MA 2	W-4T**	1	ø2 ø8	2 3	L R	ONE-WAY	[7][10][11][12][13][14][15]
(B)	MAIN STREET STA 05+60, 46'± RT ***	XX / 30' / H	4	45"	4	15'	M-5 (2) M-2 B-2T	MA MA 2	W-4T**	2	ø6 ø8	4 3	R L	ONE-WAY	[7][10][11][12][13][14][15][18]
(C)	MAIN STREET STA 04+89, 60'± RT ***	XX / 30' / H	1	30'	1	15'	M-2 B-14T	MA 4	PP	1	–	–	–	–	[2][7][11][12][13][14][15]
(D)	MAIN STREET STA 04+91, 43'± LT ***	XX-A / 30' / L	2	50'	2	15'	M-5 (2) M-2 B-2T	MA MA 4	W-4T**	4	ø2 ø4	1 2	L R	ONE-WAY	[7][10][11][12][13][14][15][19]
(E)	MAIN STREET STA 04+83, 47'± RT ***	1-B / 7' / C	–	–	–	–	–	–	W-1T	TOP	ø4	1	R	–	[7][14][15]

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, TENONS AND ANCHOR BOLTS WILL BE FURNISHED BY THE CITY OF LAS VEGAS.

** SEE SHEET TS-02 FOR PEDESTRIAN SIGNAL ASSEMBLY 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.

PP – REFER TO CCAUSD No. 404.1201 FOR POLE PLATE PEDESTRIAN SIGNAL HEAD MOUNTING ASSEMBLY DETAIL.

SIGN SCHEDULE

CONSTRUCTION NOTE	[13]	[13]	[13]
SIGN ILLUSTRATION	(no U-turn symbol)	LEFT TURN YIELD ON GREEN	NO TURN ON RED
SIGN DESIGNATION DIMENSIONS	R3-4 24"x24"	R10-12 30"x36"	R10-11 30"x36"
POLE*	(A) (B) (C) (D)	(B) (D)	(A)

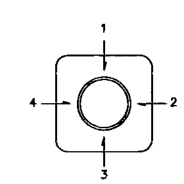
* (X) = EXISTING SIGN, (X) = NEW SIGN

SERVICE PEDESTAL EQUIPMENT

SERVICE TYPE	USE**	INTERSECTION LOCATION	PEDESTAL PLAN ID	EXISTING (E) OR NEW (N)	MAIN BREAKER (AMP)	60A, 240V, 2P CKT BKR (ST LIGHTING)	60A, 240V, 2P CONTACTOR(S) (ST LIGHTING)	BY-PASS SWITCH (CONTACTOR)	15A, 120V, 1P CKT BKR (PE CONTROL)	60A, 120V, 10 CKT BKR (TRAFFIC SIGNAL)	40A, 120V, 1P CKT BKR (INT LIGHTING)
PEDESTAL	TS/SL	MAIN ST. & GARCES AVE. (SW CORNER) ADDR: 650 MAIN STREET	(L)	EXISTING*	200 (EXISTING)	2 (EXISTING)	2 (EXISTING)	2 (EXISTING)	1 (EXISTING)	1 (NEW – ADD)	1 (NEW – ADD)

* CONTRACTOR SHALL REMOVE AND RELOCATE 200 AMP 120/240 VAC SERVICE PEDESTAL ONTO NEW CONCRETE FOUNDATION PER CCAUSD No. 404.214. ADD NEW EQUIPMENT TO PEDESTAL AS SHOWN IN TABLE. PROVIDE 1-#4 AWG 7 STRAND BARE COPPER GROUNDING CONDUCTOR TO EARTH. CONTACT NEVADA POWER FOR SERVICE DISCONNECTION AND RECONNECTION FOR PEDESTAL RELOCATION. CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT FOR SERVICE CONNECTION PER NEVADA POWER SPECIFICATIONS, INCLUDING NEW RISER AND CONDUCTORS UP TO TRANSFORMER. FOR THE SERVICE CONNECTION BETWEEN THE TRANSFORMER AND THE SERVICE PEDESTAL, THE CONDUCTORS SHALL BE AS SHOWN IN THE CONDUIT AND WIRE SCHEDULE (THIS SHEET).

** TS=TRAFFIC SIGNAL, SL=STREET LIGHT



QUADRANT
ARM, SIGNAL, PED BUTTON
(TOP VIEW)

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)

811 know what's below Call before you dig 1-702-227-2929

SAFETY ALERT Call Before You Overhead

Call before you UnderGround 1-702-432-5300

REVISIONS | DATE
⚠ REVISED WIRE SCHEDULE | 4/21/10

SCALE (H): 1":20' | SCALE (V): N/A | DATE: JANUARY 2010
DRAWN BY: AP | DESIGNED BY: AP/RC | CHECKED BY: RC/RF

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CITY OF LAS VEGAS NEVADA

DEPARTMENT OF PUBLIC WORKS

PROJECT: MAIN STREET AND GARCES AVENUE INTERSECTION IMPROVEMENT PLANS

SHEET: TRAFFIC SIGNAL INSTALLATION

PROFESSIONAL ENGINEER STATE OF NEVADA — RANDY W. CARROLL, Exp. 12/31/10, CIVIL, No. 16131, 3-23-10

SHEET NO. TS-01
SHEET 11 OF 12
DRAWING NO. 107V5305

BID# 10.1730.18