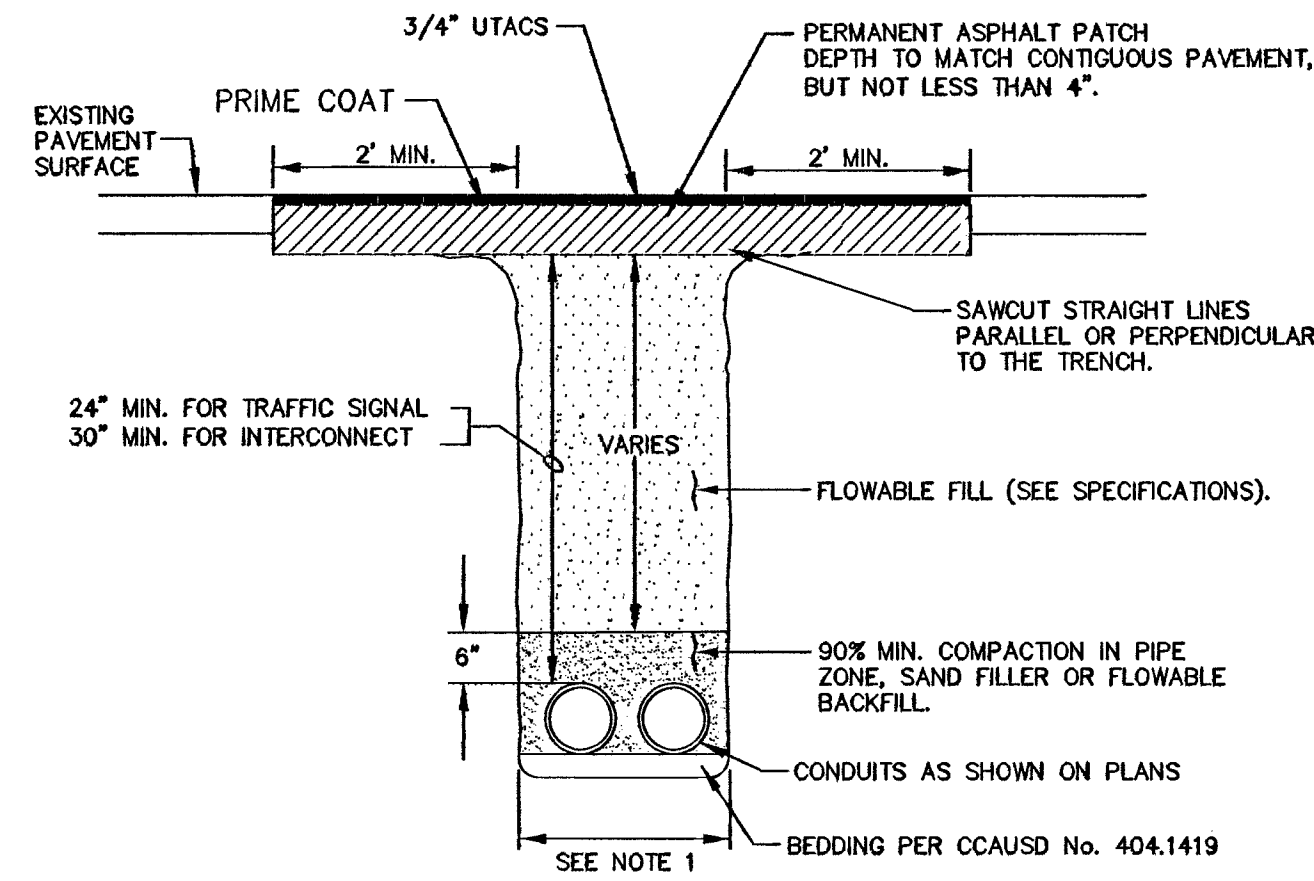


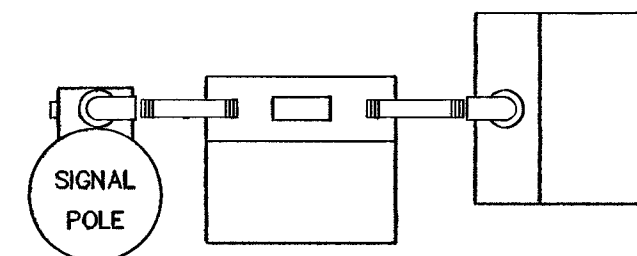
**CITY OF LAS VEGAS TRAFFIC SIGNAL NOTES**

- ALL WORK PERFORMED ON ANY TRAFFIC SIGNAL COMPONENT MUST BE UNDER THE DIRECT ON-SITE SUPERVISION OF AN IMSA CERTIFIED TECHNICIAN. THE LEVEL OF CERTIFICATION REQUIRED SHALL BE LEVEL II EFFECTIVE MARCH 30, 2001.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ALL EXISTING UTILITIES. THE LOCATIONS OF UNDERGROUND UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES TO VERIFY IN THE FIELD THE LOCATIONS OF THEIR INSTALLATIONS 72 HOURS PRIOR TO CONSTRUCTION.  
CALL-BEFORE-YOU-OVERHEAD 1-702-593-6111  
CALL-BEFORE-YOU-DIG 1-800-227-2600  
STREETLIGHTS (NEVA EVANS) 1-702-229-6331  
F.A.S.T. (JESUSE MARMOLEJO) 1-702-432-5300
- ALL TRAFFIC SIGNAL INSTALLATIONS SHALL CONFORM TO THE UNIFORM STANDARD DRAWINGS SPECIFICATIONS AND SPECIAL PROVISIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA, VOLUMES I AND II, ADOPTED BY THE REGIONAL TRANSPORTATION COMMISSION APRIL 8, 1992 WITH ALL SUBSEQUENT REVISIONS.
- SERVICE SHALL HAVE 1-60 AMP SINGLE POLE BREAKER FOR SIGNAL, AND 1-40 AMP SINGLE POLE BREAKERS FOR STREET LIGHTS. SERVICE SHALL BE 200 AMP PADMOUNT.
- LINE SIDE OF METER TO BE WIRED WITH THREE #3/0 AWG THW. LOAD SIDE SHALL BE WIRED WITH FOUR #4 AWG THW (2 BLACK, 2 WHITE) AND ONE #9 AWG THW (GREEN).
- LUMINAIRES ON ALL SIGNAL POLES SHALL BE 400 WATT HIGH PRESSURE SODIUM CUTOFF (G.E. M400A) WITH MC-11 DISTRIBUTION. EACH LUMINAIRE SHALL HAVE AN INDIVIDUAL 1000 WATT P.E. CONTROL. FOR LUMINAIRES THERE SHALL BE 2(TWO)-#4 AWG THW CONDUCTORS FROM THE SERVICE TO THE CABINET. IN THE CABINET, THE #4 AWG THW CONDUCTORS SHALL BRANCH OFF INTO #10 AWG THW CONDUCTORS INDIVIDUALLY FUSED WITH 10 AMP FUSES. THERE SHALL BE NO SPACES BETWEEN THE CABINET AND LUMINAIRE FIXTURES. LUMINAIRES SHALL CONFORM TO CITY OF LAS VEGAS DOWNTOWN CENTENNIAL PLAN.
- THE INTERNALLY ILLUMINATED STREET NAME SIGNS SHALL BE WIRED TO THE LUMINAIRE PHOTO CELL FOR CONTROL WITH #10 AWG THW COPPER STRANDED WIRE (TYPICAL). IN THE EVENT THERE IS NO LUMINAIRE ON THE TRAFFIC SIGNAL POLE, THE 1000 WATT P.E. CONTROL SHALL BE MOUNTED ON THE POLE CAP.
- CHECK CONDUIT AND CABLE SCHEDULE FOR CONDUIT, CABLE, AND WIRE SIZE. VERIFY ALL EXISTING CONDUIT RUNS.
- ALL PULLBOXES SHALL BE IN ACCORDANCE WITH UNIFORM STANDARD DRAWINGS NO. 404.110, NO. 404.120, NO. 404.130, AND NO. 404.140.
- TRAFFIC SIGNAL CABLE SHALL BE 15 OR 25 CONDUCTOR #14 AWG SOLID (TYPICAL) CABLE AND SHALL CONFORM TO IMSA SPEC. NO. 20-1.
- PEDESTRIAN PUSH BUTTONS SHALL BE AUDIBLE TACTILE "POLARA NAVIGATOR" TYPE (2 WIRE SYSTEM) IN ACCORDANCE WITH CITY OF LAS VEGAS SPECIAL PROVISIONS AND SECTION 623 OF THE CCA USS. PUSH BUTTON SIGNS SHALL BE R10-34 PER MUTCD, 2003 EDITION WITH FULL MOUNTING BRACKETS. ALL PUSH BUTTONS TO BE MOUNTED TO AVOID SIDEWALK. THE MAXIMUM HORIZONTAL REACH DISTANCE IS TO BE 24". SIDEWALK RAMPS WILL BE ACCORDING TO U.S.D. No. 235 (1-4) LATEST EDITION.
- THE ROUTING AND TERMINATION OF CONDUITS AND THE PLACING OF POLES AND CABINETS SHALL BE AS INDICATED ON THE PLANS. ALL CHANGES SHALL BE APPROVED BY THE ENGINEER.
- MAST ARM R10-12 SIGNS TO BE ADJACENT (NO GAP) TO THE M-5 SIGNAL HEAD.
- CITY OF LAS VEGAS TO PROVIDE XX-A POLE AND POLE MOUNTED TRAFFIC SIGNAL CABINET ASSEMBLY. CONTRACTOR SHALL FURNISH AND INSTALL POLE FOUNDATION, MAST ARMS AND ALL HARDWARE AS SHOWN ON PLANS. ALL NECESSARY AMPLIFIER UNITS, MODULES, LIGHT CONTROL UNITS, SWITCHES, OPTICOM, FLASHERS, AREA WIDE COMPUTER CONTROL, ETC. SHALL BE PROVIDED BY CONTRACTOR AND WIRED IN CABINET TO ACTIVATE THE PHASE OPERATION AS SHOWN. CABINET SHALL BE ORIENTED SO MAINTENANCE PERSONNEL SHALL BE FACING TRAFFIC WHEN SERVICING OR AS DIRECTED BY THE FIELD ENGINEER. ALL EQUIPMENT SHALL BE PER CITY OF LAS VEGAS DOWNTOWN CENTENNIAL PLAN AND AS SPECIFIED IN NOTE 17.
- THE CONTRACTOR SHALL SUPPLY A 2070N OR V53 CONTROLLER TO THE CITY OF LAS VEGAS TRAFFIC SIGNAL REPAIR SHOP, FOURTEEN DAYS PRIOR TO SIGNAL TURN-ON, FOR TESTING PURPOSES. THE CONTRACTOR SHALL DELIVER THE CONTROLLER TO, AND PICKUP THE CONTROLLER AT 2801 E. CHARLESTON BOULEVARD. CONTRACTOR SHALL NOTIFY THE TRAFFIC SIGNAL REPAIR SHOP (229-6075) SEVEN DAYS PRIOR TO PICKUP. ALL 2070N CONTROLLERS MUST BE COMPATIBLE WITH AND FUNCTION PROPERLY WITH OS9 1996 OPERATION SYSTEM; THE LATEST REVISION OF THE "NEXT PHASE INTERSECTION MANAGEMENT SOFTWARE" (SIEMENS) AND THE ICONS (SIEMENS) GENERAL SOFTWARE.
- CONTRACTOR SHALL POTHOLE SIGNAL POLE LOCATIONS PRIOR TO ORDERING OF POLES.
- SIGNAL POLES (BOTH WITH AND WITHOUT MAST ARMS), MAST ARMS AND LUMINAIRE ARMS SHALL BE STEEL POLES AND NOT GALVANIZED IN CONFORMANCE TO CITY OF LAS VEGAS SPECIAL PROVISIONS TO SECTION 623 T.02.09 OF THE CCA USS. THE POLES SHALL BE FACTORY PRIMED WITH AMERON AMERCOAT 370 AND FACTORY SPRAY PAINTED WITH AMERON AMERSHIELD PAINT OR APPROVED EQUAL. THE POLES SHALL BE PREPARED AND PAINTED PER MANUFACTURER'S SPECIFICATIONS. THE FOLLOWING ELEMENTS OF THE TRAFFIC SIGNAL SYSTEM SHALL BE COLORED RAL 6012 "BLACK GREEN" COLOR CONSISTENT WITH THE CITY OF LAS VEGAS DOWNTOWN CENTENNIAL PLAN: TRAFFIC SIGNAL POLE; TRAFFIC SIGNAL MAST ARM; TRAFFIC LUMINAIRE ARM; TRAFFIC SIGNAL LUMINAIRE HEAD (REFERENCE SUBSECTION 623 G.02.07 LUMINAIRE ON SIGNAL POLES). THE TRAFFIC SIGNAL MAST ARM SHALL BE FACTORY PRIMED WITH AMERON AMERCOAT 370 AND SHALL BE DELIVERED WITH NO TENONS MOUNTED ON THE MAST ARM. AFTER THE TRAFFIC SIGNAL POLE FOUNDATION IS CONSTRUCTED, THE TENONS SHALL BE FABRICATED IN THE FIELD AT THE LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. ALL WELDING SHALL CONFORM TO AWS D 2.0. SPECIFICATION FOR WELDED HIGHWAY AND RAILWAY BRIDGES; AND TO ANY ADDITIONAL REQUIREMENTS OF SECTION 623 T.02.09 OF THE SPECIFICATIONS. ALL WELDERS MUST BE CERTIFIED BY THE AMERICAN WELDING SOCIETY OR SIMILAR ORGANIZATION IN THE WELDING OF STEEL AND GALVANIZED STEEL. AFTER INSTALLATION OF THE TENONS, THE MAST ARM SHALL BE SHOP SPRAY PAINTED WITH AMERON AMERSHIELD TO MATCH THE TRAFFIC SIGNAL POLE.
- ALL VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL HAVE LIGHT EMITTING DIODE (LED) TYPE INDICATIONS, IN CONFORMANCE TO CITY OF LAS VEGAS SPECIAL PROVISIONS TO SECTION 623 OF THE CCA USS. ALL PEDESTRIAN SIGNAL FACES SHALL PROVIDE "WALKING PERSON", "HAND", AND "COUNTDOWN" MESSAGES AS PROVIDED BY DURALIGHT MODEL #JXM-300VE OR DIALIGHT MODEL #430-6479-801, OR APPROVED EQUAL.
- VIDEO DETECTION SYSTEMS WILL BE EITHER ITERIS EDGE 2 WITH EDGECONNECT PAK, (IP ADDRESSABLE); OR PEAK VIDEOTRAX IQ (WITH ETHERNET PORT). WHEN VIDEO DETECTION IS SPECIFIED ON THE TRAFFIC SIGNAL PLANS, ALL VIDEO DETECTION SYSTEMS WILL BE STAND ALONE SYSTEMS TO INCLUDE ALL NECESSARY EQUIPMENT TO PROGRAM THE VIDEO DETECTION SYSTEM. A PROGRAMMING "MOUSE", KEYPAD OR LAPTOP COMPUTER (IF REQUIRED FOR PROGRAMMING THE VIDEO DETECTION SYSTEM) AND APPROPRIATE SOFTWARE WILL BE SUPPLIED WITH EACH VIDEO SYSTEM. PERSONAL COMPUTERS (PCS) MAY NOT BE SUBSTITUTED FOR LAPTOPS. A VIDEO MONITOR (COLOR FLAT SCREEN OR CRT) 9" TO 13" WILL BE SUPPLIED WITH EACH VIDEO DETECTION SYSTEM. EACH VIDEO CAMERA WILL HAVE POWER AND VIDEO CABLE DIRECTLY FROM THE CABINET. COAXIAL CABLE WILL BE TYPE 8281 (SOLID CENTER CONDUCTOR). CAMERAS THAT USE A PREFABRICATED CABLE INTEGRATING POWER AND COAXIAL CABLE INTO A SINGLE WEATHERPROOF CONNECTOR ARE ACCEPTABLE. "BNC" ARE THE ONLY ACCEPTABLE TERMINATION OF COAXIAL CABLES. CAMERAS WILL BE MOUNTED PER MANUFACTURER'S RECOMMENDATIONS AND PER CLV TRAFFIC ENGINEER APPROVAL. EXTENSION BRACKETS (TYPE AB-0166-5-62 OR EQUIVALENT) WILL BE USED WHEN MOUNTING VIDEO CAMERAS ON MAST ARMS. A VIDEO FILTER (CX06-BNYC OR EQUIVALENT) WILL BE INSTALLED IN THE SIGNAL CABINET FOR EACH CAMERA VIDEO INPUT.
- LOOP DETECTORS SHALL BE PREFORMED LOOPS AS MANUFACTURED BY RENO A & E OR NEVER-FAIL LOOP SYSTEMS. TWO (2) CHANNEL RACK-MOUNTED DETECTOR AMPLIFIERS SHALL BE INSTALLED IN THE CONTROLLER CABINET WHICH ACCOMMODATE 24 SEPARATE CHANNELS. LOOP LEAD-IN CABLE SHALL BE 6-PAIR 18 AWG MULTIPLE CONDUCTOR CABLE AS SPECIFIED IN SECTION 623T.02.04 OF THE CLV SPECIAL PROVISIONS. ALL WIRING HARNESSSES, RACK POSITIONS, AND LOOP LEAD-IN CABLE SHALL BE CLEARLY MARKED AS TO THE APPROPRIATE PHASE AND LETTER DESIGNATION TO WHICH IT BELONGS AS SHOWN ON THE TRAFFIC SIGNAL PLANS. ALL LOOPS SHALL BE INSTALLED IN THE ROADWAY PRIOR TO PLACEMENT OF THE FINAL PAVEMENT LIFT. LOOPS SHALL BE LOCATED AS SHOWN ON THE TRAFFIC SIGNAL PLANS AND APPROVED BY THE CLV TRAFFIC ENGINEERING DIVISION PRIOR TO INSTALLATION. REFER TO SECTION 623T.02.04 OF THE CLV SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
- OPTICAL PREEMPTION UNITS WILL BE 3M (ENCODING CAPABLE), MODEL 754 PHASE SELECTOR INSTALLED IN A MODEL 760 CARD RACK; OPTICAL SENSORS WILL BE MODEL 721 AND WILL BE INTERFACED TO THE TRAFFIC SIGNAL CONTROLLER CABINET WITH M-138 CABLE.
- IF THE IMPROVEMENTS NECESSITATE THE OBLITERATION, TEMPORARY CONSTRUCTION, TEMPORARY REMOVAL, OR RELOCATION OF ANY EXISTING TRAFFIC PAVEMENT MARKING, SUCH PAVEMENT MARKING SHALL BE RESTORED OR REPLACED AT THE CONTRACTORS EXPENSE TO THE SATISFACTION OF THE CITY.
- INTERCONNECT CABLE SHALL BE AS SHOWN IN THE WIRE SCHEDULE.
- THE CONTRACTOR SHALL INSTALL CROSSWALKS, STOP BARS, STRIPING AND SIGNS AS IDENTIFIED ON THE PLANS.

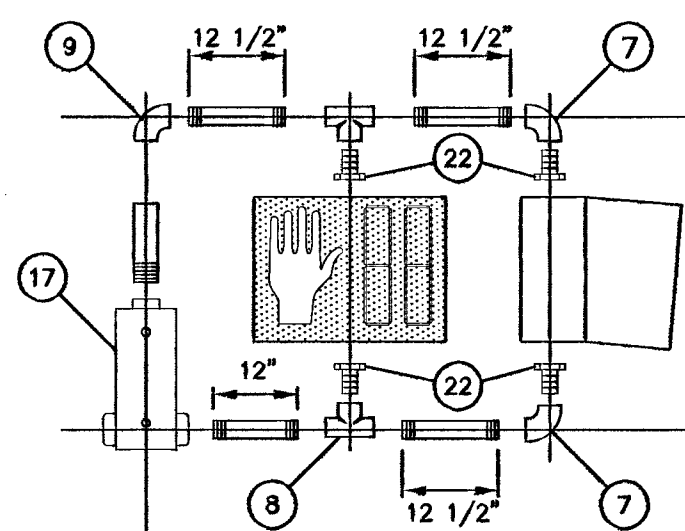
REVISION 1/28/10



**CONDUIT TRENCH IN PAVEMENT**  
N.T.S.



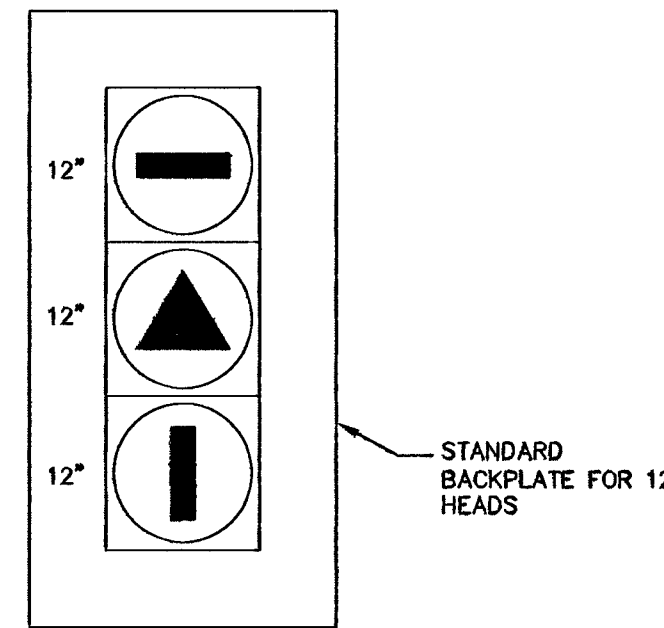
**TOP VIEW**



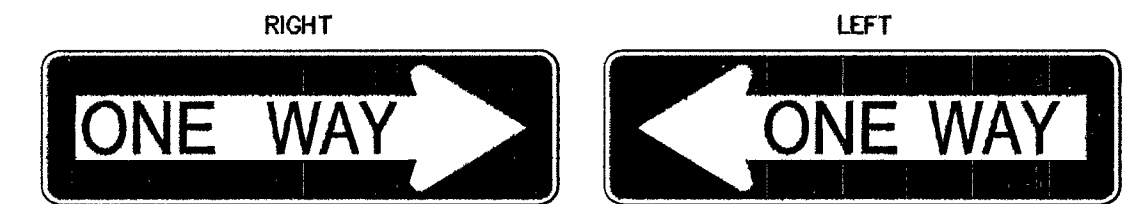
**W-4T**  
PEDESTRIAN SIGNAL ASSEMBLY  
N.T.S.



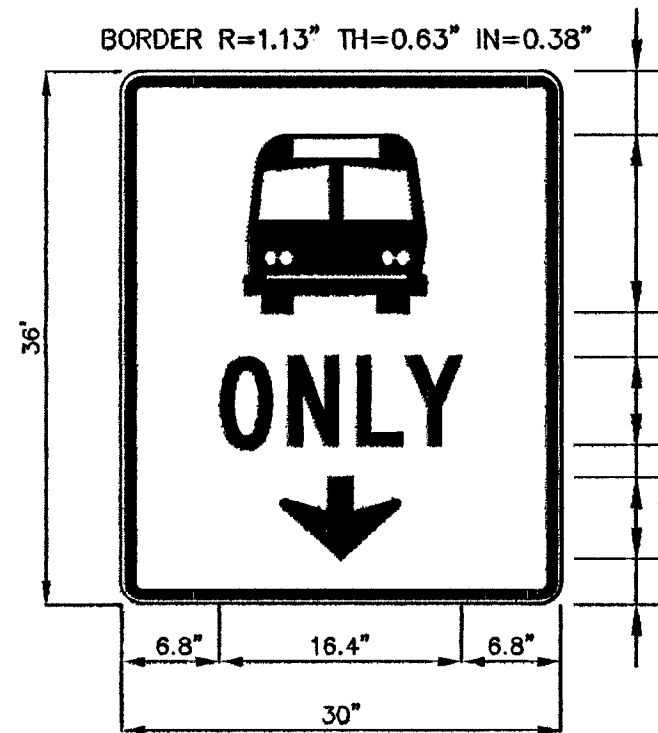
**STREET NAME SIGN DETAIL**  
CLV MODIFIED  
N.T.S.



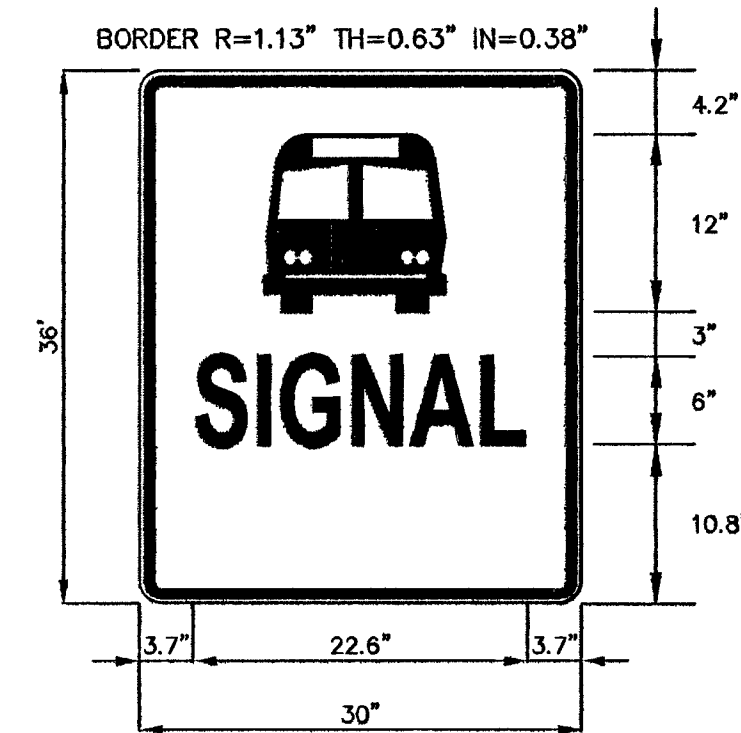
**BRT TRANSIT SIGNAL**  
N.T.S.



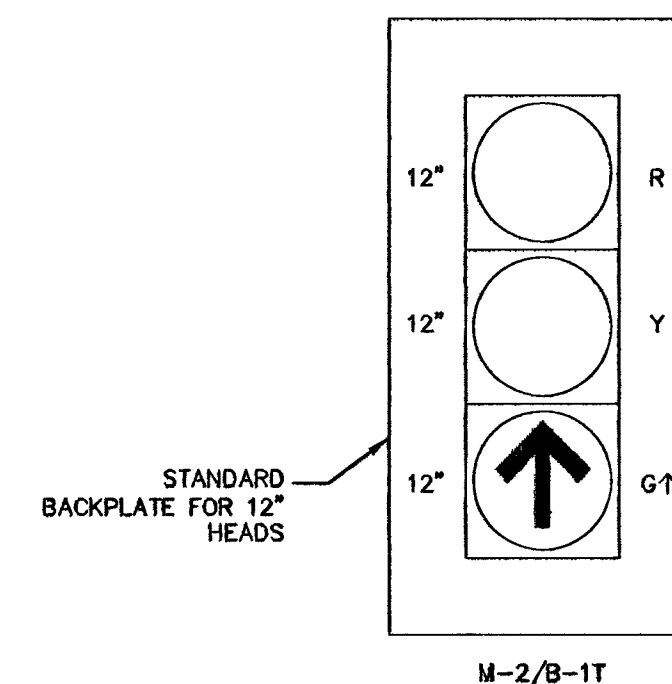
**INTERNALLY ILLUMINATED ONE WAY SIGN DETAIL**  
N.T.S.



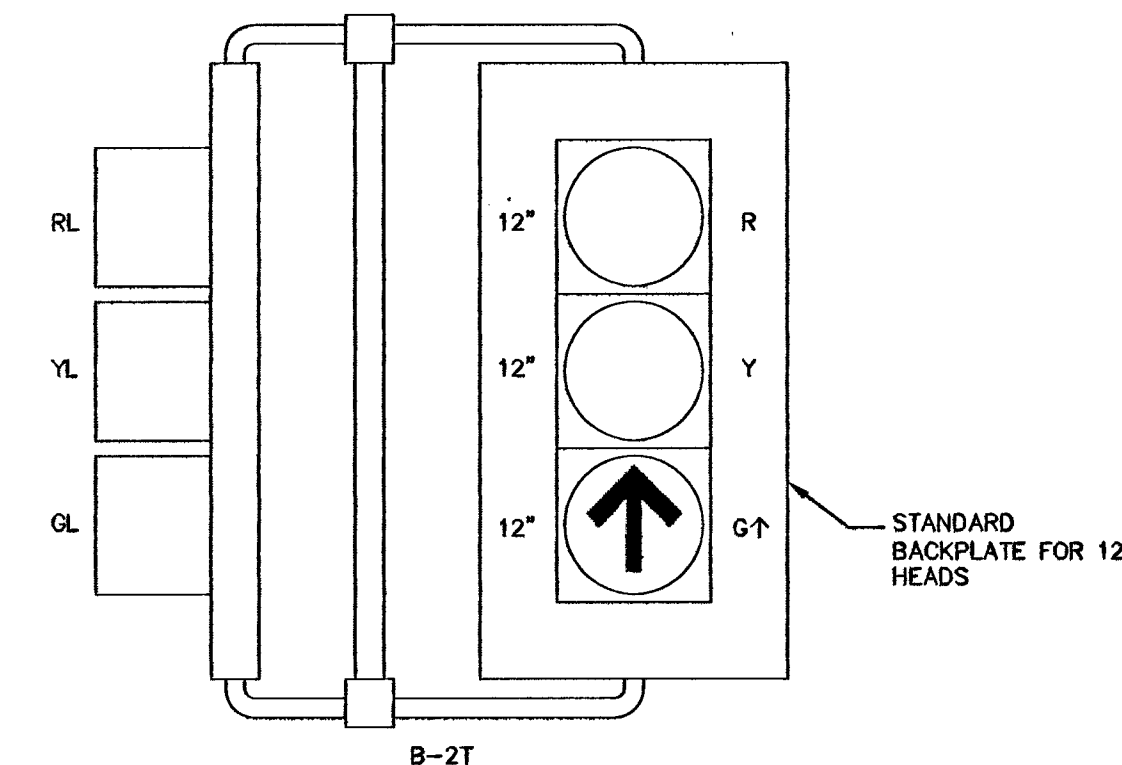
**BRT TRANSIT SIGN**  
N.T.S.



**BRT TRANSIT SIGN**  
N.T.S.



**MODIFIED M-2, B-1T, AND B-2T TRAFFIC SIGNALS**  
N.T.S.



Jun 21, 2010 2:02pm - USER peter.meyerhofer \\LAV\p01\Projects\LAU\_Public\Trans\02255\019 Bonneville-Clark 2008\CADD\2560101s-12-13.dwg

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DATE: 06/21/10  
REVISIONS: Sheet Replacement  
SCALE (H): 1"=20'  
SCALE (V): VALUE  
DRAWN BY: VALUE  
DESIGNED BY: VALUE  
CHECKED BY: VALUE  
DATE: FEBRUARY 2010  
DESIGNED BY: VALUE  
CHECKED BY: VALUE  
KIMLEY-HORN and Associates, Inc.  
Engineering, Planning, and Environmental Consultants  
2080 E. Flamingo Road, Suite 210, Las Vegas, NV 89119  
PH: (702) 736-4949  
FAX: (702) 736-4949

DEPARTMENT OF PUBLIC WORKS  
PROJECT: BONNEVILLE/CLARK ONEWAY COURLET PHASE 1 IMPROVEMENT PLANS  
SHEET: TS-12

APPROVED: RANDY W. CARROLL  
Exp. 12/31/10  
CIVIL  
Professional Seal No. 16131 (01/15/10)

SHEET NO. TS-12  
SHEET 71 OF 91  
DRAWING NO. 107V5201

811  
Call before you dig  
SAFETY ALERT  
Call before you Overhead  
1-702-227-2929

CALL BEFORE YOU UNDERGROUND  
1-702-432-5300  
RECALL AND AVOID SITES OF DISCONTINUED

BID# 09.1730.37