Traffic Signal General Notes

General Traffic Signal Notes

1. Contractor shall reference the latest RTC Uniform Standard Specifications & Drawings for Construction. Locations of Underground utilities shown on the drawings were obtained by a search of available records. Neither the Owner nor the Engineer assumes any responsibility for utilities or structures not show or not in the location shown on the drawings. The contractor's responsibility regarding utilities shall be as requires under section 105.06 of the Uniform standard Specifications for Public Works' Construction Off –Site Improvements. Clark County Area, Nevada, Latest Edition. The Contractor shall notify all Utility Companies at least 2 working days prior to commencing construction

Call Before You Dig	1-800-227-2600
North Las Vegas Public Works	1-702- 633-1200
North Las Vegas Traffic Engineer	1-702- 633-1224
NV Energy	1-702- 402-5555

2. All construction signage barricading and traffic delineation shall conform to Nevada Work Zone Traffic Control Handbook latest edition and to the Manual on Uniform Traffic Control Devices (MUTCD), latest edition. All barricades shall have retro-reflective sheeting compliant with Uniform Standard Specification 716.

3. Contractor shall install 1-60A 1 pole circuit breaker for traffic signal and 4-30A 1-pole circuit breakers for intersection lights in new 200 AMP service pedestal located on the same corner as the traffic signal cabinet in accordance with Clark County Uniform Standard Drawing 730, Clark County Uniform Standard Specifications, Special Provisions, and as indicated on the plans. The line side of meter is to be wired with Nevada Energy owned service wire (neutral to be identified with white). The load side of the meter is to be wired with three (3) #6 AWG THW (1 black, 1 white, and 1 green) for traffic signal. The contractor shall coordinate installations with NV Energy, City of North Las Vegas Traffic Operations, and City of North Las Vegas Construction Services.

4. Intersection lights will be fed directly from 200 amp service to each corner with no splices (3- #10 THW, Black, White, Green). Each intersection fixture will have (3 - # 10 THW Black, White, Green) running from the fixture to a splice point in the bottom hand hole with the hot leg fused into a single, in-line waterproof fuse holder.

5. Conduit routing shown on the civil plans is schematic for the purpose of clarity and may differ from actual installation. Contractor shall check the conduit and cable run schedule for conduit, cable, and wire size, and verify all existing conduit runs are usable.

6. Contractor is responsible for obtaining survey of property lines to ensure that new traffic signal structures are installed within public right-of-way or easements.

7. Contractor shall provide a Naztec Model 980 ATC Signal Controller or approved equal in accordance with Clark County Uniform Standards Specifications, Special Provisions and as indicated on the plans and as directed by the City of North Las Vegas City Traffic Engineer. Contractor to provide license of Apogee actuated signal controller software (latest version) to RTC/FAST. MMU shall be an EDI Model 16ELIP or approved equal. Controller shall be installed in a new contractor- furnished type VIII "R" Cabinet (16 position load bay with exhaust fan and thermostat control) on a contractor-furnished type "J" foundation per Clark County Area Uniform Standard Drawings No. 803 and 725. Cabinets shall be anodized aluminum and include

inside: modules, switches, opticom cards, flashers, load switches, and 48 channels of detection in two separate, shelf-mounted racks stacked on top of each other. All loop amplifiers will be EDI LM 602 (card) or approved equal. Cabinets shall conform to the City of North Las Vegas' latest specification. Contractor shall prepare as-built drawings upon completion of the project detailing any changes to the controller operation. A Manufacturer's representative shall be present for the signal turn-on, and shall give 14 day advance notice to Traffic Operations

8. The signal shall be equipped with emergency vehicle preemption incorporating four (4) Opticom Model 722 directional detectors, one (1) 764 card and Model 138 cable. Emergency vehicle preemption shall be installed over the first through lane in each direction.

9. The controller, cabinet, and cabinet components shall be delivered to North Las Vegas Traffic Operations, 2829 Ft Sumter Drive for testing prior to installation in the field. Call 702-633-1264 or 702-239-2123 three business days (72 hours) in advance. Contractor shall pick up controller and cabinet following testing.

10. Contractor shall supply a layer 2 field- hardened Ethernet switch for each traffic signal controller cabinet to RTC-FAST per Clark County Area Uniform Standard Specification (USS) 684.

11. Intersection luminaires shall be light emitting diode (LED) - Holophane ATB260BLEDE10MVOLTR3 or approved equal with 7 pin receptacle and photocell.

12. Install 5 each 6'x6' loops cut presence loop detectors ø1, ø3, ø5 & ø7. Loop detectors shall be centered in the lane or as called out in the plans. Locate the front of the presence loops two (2) feet beyond the stop line. All new Loop installations shall be meggar tested or tested for continuity prior to activation. Loop detector sealant used shall be hot-melt, rubberized asphalt per Section 623T.02.04(c) of the Clark County Uniform Standard Specifications.

13. Install CCTV Camera per Clark County Area Uniform Standard Drawing No. 766.

14. The intersection shall be equipped with Iteris Edge II NEXT video detection system with Ethernet and card rack 175 Watt EDI power supply–or approved equal. The system shall be installed according to manufacturer's specifications. Cameras will be mounted per the manufacturer's recommendation and per the City of North Las Vegas' Traffic Engineer approval. "BNC" connectors are the only acceptable termination of coaxial cables.

15. Pull boxes are No. 7 unless otherwise noted. All pull boxes shall be in accordance with Clark County Uniform Standard Drawings 705 and 707.

16. The contractor shall be responsible for grounding the complete traffic signal electrical system including all existing poles, cabinets, service pedestals, pull boxes and electrical devices in accordance with the National Electrical Code and the Clark County Uniform Standard Drawings. Grounding wire shall be bonded to existing metal pull box covers using an exothermal welding process acceptable to the engineer per Clark County Uniform Standard Drawing 709. Metal pull box lids are NOT allowed for new installations.

17. All empty conduits shall have 200 lb rated pull string installed and # 8 AWG green tracer wire. One (1) # 8 THW Green conductor shall be run from the controller to all poles and pull boxes as a bonding ground.

18. All IMSA cable shall be stranded and conform to 19-1 or 20-1 specifications. Traffic signal cable shall be IMSA 25 conductor #14 AWG cable (typical) unless otherwise noted. Wiring from the junction box to each three (3) section signal head shall be IMSA 5 conductor #14 AWG. Wiring from the junction box to each four (4) section signal head shall be IMSA 5 conductor #14 AWG and 7 conductor #14 for each five (5) section head.

19. All pedestrian push button signs shall be R10-3e (9" x 12"). All push buttons shall be the latest "Polara Navigator" pedestrian button (2 wire) with 1 Central Control Unit for intersection or approved equal, pressure sensitive/LED and meet Americans with Disability Act (ADA) guidelines. The maximum horizontal reach distance is 10".

20. Contractor shall install illuminated street name signs (SNS) per Clark County Standard Drawing 818.1 sheets 1 to 3 & 818.S1 (sheet 3 of 5 & sheet 4 of 5) on signal shaft and block number signs on poles in accordance with City of North Las Vegas standards. Block number signs shall be added to sign face . See street and block sign detail for legends and block numbers. The contractor shall verify block numbers with the City of North Las Vegas prior to fabrication. Illuminated street name signs shall be wired with a red “switch leg” spliced at photocell receptacle controlling intersection fixture and ran down signal shaft and spliced in handhole making the sign accessible for maintenance.

21. All vehicle and pedestrian signal displays (R-Y-G-W-DW) shall be light emitting diode (LED) per City of North Las Vegas standards and specifications. Pedestrian indications shall have countdown timing displays per MUTCD.

22. Traffic signal turn-on shall not occur during weekends, Fridays, or City observed holidays. Contact City of North Las Vegas Traffic Operations (702-633-1264 or 702-239-2123) three business days (72 hours) prior to turn on.

23. Trench construction for conduit installations shall be in accordance with Clark County Standard Drawing 733. Earth saw excavation is an acceptable alternative to conventional trenching methods.

24. Prior to completion of new traffic signal installation, intersections shall be operated under stop sign control or under uniformed officer control. At the time the intersection is turned on, the contractor shall remove all stop signs and return to the City of North Las Vegas Traffic Operations, 2829 Ft Sumter Drive or other specified location. Remove sign post and anchor and patch hole in with concrete.

25. Existing conductors not required for signal or lighting operations shall be removed by the contractor prior to acceptance.

26. Existing traffic signal and/or lighting equipment removed and not relocated shall be salvaged by the contractor and delivered to North Las Vegas Traffic Engineering, 2829 Ft Sumter Drive, or other location by appointment only. Please contact Traffic Operations at 702-633-1264.

27. If required to remove and salvage existing street light pole assembly, remove foundation 18-inches below grade, intercept existing conduit and wiring into a 3 1/2 pull box marked "street light" with non-conductive lid while maintaining existing street light circuit.

28. Contractor shall insure that the traffic signal poles are plumb after the installation of mast arms and traffic signal heads.

29. The contractor shall be responsible to restore any damage or modification to landscape/irrigation to pre-construction condition (modified landscape shall be paid for as part of traffic signal lump sum).

30. 240 volt street light conduits and fiber optic conduits shall be separate from traffic signal and intersection lighting conduits. Each shall have separate pull boxes.

31. The contractor shall be responsible for locating and protecting all underground and aerial utilities and construction likely to be affected by the work. The location of underground utilities, as shown on the plans, is approximate only. Any damage to existing utilities shall be the responsibility of the contractor and shall be repaired promptly in a manner satisfactory to the utility owner at the contractor's expense.

32. Installation of all traffic signal components shall be supervised by a Certified IMSA Level 2 Traffic Signal Electrician and Clark County Journeyman Electrician. The Contractor performing the work shall hold a valid State of Nevada C-2 Electrical Contractor's License.

33. As-built drawings must be provided to the City of North Las Vegas' Traffic Operations Division prior to traffic signal turn on.

34. ALL new and empty existing (Fiber / ITS) conduit shall have a 72 strand fiber cable installed with a # 8 Green wire.

35. New and/ or relocated signal heads and tenons shall be welded in the field to ensure accurate placement.

36. ALL signage and road markings shall be installed prior to turn-on of intersection.

37. All signage and road markings shall be selected from the City of North Las Vegas' (APL) Approved Products List.

38. Contractor is responsible for the post and pretest of ALL fiber optic cable installed.