



North Dakota Department of Transportation

Grant Levi, P.E.
Director

Jack Dalrymple
Governor

November 5, 2015

ADDENDUM 1 – JOB 44

TO: All prospective bidders on project NHU-1-810(025)002 and NHU-1-804(045)076, Job No. 44, scheduled for the November 13, 2015 bid opening.

The following plan revisions shall be made:

Plan Revisions:

See attached summary from Clint Knutson, PE; Ulteig Engineering, dated October 28, 2015 for an explanation.

This addendum is to be incorporated into the bidder's proposal for this project.

A handwritten signature in black ink, appearing to read "Cal J. Gendreau".

For
CAL J. GENDREAU – CONSTRUCTION SERVICES ENGINEER
80:dch
Enclosure



October 28th, 2015

**ADDENDUM 1
JOB NO. 44**

TO: All prospective bidders and suppliers on Projects NHU-1-810(025)002 PCN 20589 and NHU-1-804(045)076 PCN 20590, Job No.44 in Burleigh County, Schedule for the November 13th, 2015 bid opening.

The following plan revisions shall be made:

Plan Revisions:

SECTION NO. 6, SHEET NO. 3-5: Replace sheets 3,4 & 5 with attached. Notes 772-P04, 772-P08, 772-P14, and 772-P18 have been revised.

This addendum is to be incorporated into the bidder's proposal for this project.

Sincerely,

A handwritten signature in blue ink, appearing to read "Clint Knutson".

Clint Knutson, PE
Senior Engineer

NOTES

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10/28/15	ND	NHU-1-810(025)002	6	3
		NHU-1-804(045)076		

772-P02 PULL BOXES: Install polymer concrete pull boxes constructed in accordance with the standard drawing D-770-3. Mark pull box covers as "traffic signal" or "street lights" respectively. Seal all conduits.

772-P03 SIGNAL EQUIPMENT:

- A. Install heads with two point mounting brackets
- B. Install galvanized steel pedestal adapters/collars.
- C. Install polycarbonate vehicle and pedestrian heads.
- D. Install louvered aluminum backplates.
- E. Install aluminum visors.
- F. Install clear lenses on emergency vehicle detectors.

772-P04 MASTER CONTROLLER AND NEMA TS-2 TRAFFIC CONTROLLER: Install NEMA Standard TS-2 Type 1 volume density controllers. Install system software to operate on a personal computer compatible with the newest version of Windows. This note applies if new controllers or master controllers are installed. It does not apply if existing controllers or master controllers can operate the flashing yellow systems without replacement. *

772-P05 TRAFFIC SIGNAL CABINET: Install Type P (59"X 44" X 27") cabinet at the East Main Avenue and Bismarck Expressway intersection. Seal all conduits entering the cabinet. Equip controller with emergency vehicle pre-emption in all directions. Equip controllers to handle pedestrian actuation. Provide a soil mound for this cabinet, walking pad and foundation to sit on with the walking pad being the same elevation as the top of the nearest asphalt road surface. Topsoil cannot be used for embankment and install with minimum compaction of 85% of the ND T-180 proctor. Include all costs in the price bid for "Traffic Control System".

772-P06 CONFLICT MONITOR TESTING: Complete a controller conflict monitor test within one week after flashing yellow arrow heads are operational.

772-P07 CONDUIT: Provide two spare 2" Schedule 40 PVC conduits in each concrete foundation.

772-P08 EMERGENCY VEHICLE DETECTION EQUIPMENT: Provide EVP equipment compatible with controllers and preemption equipment in use in the City of Bismarck's existing signal system.

Provide phase selector that is a four-channel, dual priority, multimode, encoded signal device designed for use with both infrared system emitters and GPS radio/GPS intersection units. Provide an Ethernet port on the front panel. *

772-P09 TRAFFIC SIGNAL HEAD CONDUCTORS: There are extra conductors in existing cables available going to pole terminal blocks from controller for additional lines required for new heads. There may not be extra conductors available on the cables within the poles. These quantities are not included on the on the quantity summary sheets. Include additional or replacement conductors in the price bid for the respective "Revise Traffic Signal System – Site xx".

772-P10 CONTROLLER CABINET WIRING DIAGRAM: In addition to the labeling requirements of Section 772, label the following in the cabinet wiring diagram. Provide AutoCAD copy to the City of Bismarck.

- A. The camera number (i.e., D2-1) from the plan shall be labeled on the detector panel drawing adjacent to the point of termination.
- B. The field wire terminals for the vehicle/pedestrian head control cables shall be labeled with the phase number and direction (i.e., O2, SB).
- C. The field wire terminals for the opticom cable shall be labeled with the preemption number (i.e., P.E. #1).
- D. The field wire terminal for the preemption indicator lamps shall be labeled with the preemption number and direction (i.e., P.E. #1, NB).
- E. The field wire terminals for the pedestrian push-button cables shall be labeled with the phase number (i.e., O8 PED).
- F. The Contractor shall provide a final cabinet schematic on a cd (compact disc) in AutoCAD format delivered to the City Engineer's office.

772-P11 PEDESTRIAN PUSH BUTTON: Install Advisor Advanced Accessible Pedestrian Station (AAPS) push buttons. Install at sites 1,2,3,4,10,11,13, and 14.

772-P12 SIGNAL SURFACE FINISH: Provide signal bases, poles, and mast arms with galvanized finish and not painted.

* = revised 10/28/2015

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772-P13 LABEL AND LACE ALL FIELD CABLES: Provide plastic labels printed on a label machine. The labels shall be approved by the Project Engineer. Labels shall be readable without moving the cables. Install field cables labeled and laced with the cable designations: labeling and lacing is not a separate pay item, include costs in the price bid for the respective "Revise Traffic Signal System – Site xx" or "Traffic Signal System".

YPE	LABEL	LABEL LOCATION
Communication Cable	Comm./address of other end	Within 12" of conduit
Pedestrian push button	Phase/location (i.e., NW,SW.etc.)	Within 6" of terminals
Camera Coaxial cable	Detection zone (i.e., D2-1, D2-2, etc.)	Within 6" of terminals
Control cable	Cable number & location (i.e., NW, SW, etc.)	Within 12" of conduit
Opticom cable	Pre-empt number/location (i.e., NW, SW, etc.)	Within 6" of terminal

Install cabling and equipment necessary as recommended by the manufacturer to make the system fully operational.

772-P14 TRAFFIC SIGNAL TIMING: Download timings for all intersections before work begins. Provide a copy to the Engineer and the City of Bismarck at that time. Install saved timings in new or revised controllers. Coordinate a time to work with the City of Bismarck and NDDOT to adjust offsets as needed, once they are operational and before the initial inspection. Adjustments to include phone support from supplier with contractor representative to key in adjustments. *

772-P15 TRAFFIC SIGNAL SYSTEM: Include all costs of the installation of a complete new signal system at East Main Avenue and Bismarck Expressway at Site 9 as shown in Section 150 sheets titled "Traffic Signal System – Site 9"

772-P16 TRAFFIC SIGNAL FOUNDATIONS: Install the traffic signal foundations at the intersection of East Main Avenue with the foundation exposed above the required bury depth from the existing slope to a height 6" below the nearest asphalt surface elevation on the roadway. The exposed part of the foundation is to be the same diameter as the buried foundation minimum diameter. The exposed part of the base is to have smooth surface with no honeycombing. Apply a rubbed surface finish for aesthetic appearance.

772-P17 TRAFFIC SIGNAL STANDARD BASES: Install transformer bases on all new traffic I standards.

772-P18 REVISE TRAFFIC SIGNAL SYSTEM – SITE 1-8 and 10-15: Include all labor and materials required to complete the revisions to the signal system intersections including section 109 items as defined below. Include costs for signal revisions, new items, controller revision/replacement, and controller cabinet upgrade/replacement, in the price for bid for each intersection by the each to be included in the following pay items.

Pay item "**Revise Traffic Signal System**" to include the following
 Revise Traffic Signal System – Site 6 = Bismarck Expy & S 26th St
 Revise Traffic Signal System – Site 13 = University Drive & S 12th St
 Revise Traffic Signal System – Site 14 = University Drive & E Wachter Ave
Total by each intersection = 3

Pay item "**Revise Traffic Signal System-Site 1**" to include the following
 Revise Traffic Signal System – Site 1 = Bismarck Expy & S 3rd St
 Revise Traffic Signal System – Site 7 = Bismarck Expy & Burlington Dr
 Revise Traffic Signal System – Site 8 = Bismarck Expy & Yegen Rd
 Revise Traffic Signal System – Site 10 = Bismarck Expy & E Rosser Ave
 Revise Traffic Signal System – Site 11 = Bismarck Expy & E Divide Ave
 Revise Traffic Signal System – Site 12 = University Drive & Airport Rd
 Revise Traffic Signal System – Site 15 = University Drive & E Denver Ave
Total by each intersection = 7

Pay item "**Revise Traffic Signal System-Site 2**" to include the following
 Revise Traffic Signal System – Site 2 = Bismarck Expy & S 7th St
Total by each intersection = 1

Pay item "**Revise Traffic Signal System-Site 3**" to include the following
 Revise Traffic Signal System – Site 3 = Bismarck Expy & S 9th St
 Revise Traffic Signal System – Site 4 = Bismarck Expy & S 12th St
 Revise Traffic Signal System – Site 5 = Bismarck Expy & Airport Rd
Total by each intersection = 3

Include the cost to revise or replace the controller and/or any hardware or wiring within the controller cabinets in the price bid for the respective "Revise Traffic Signal Systems". Revised or replaced controllers must communicate with any interconnected or coordinated signals. If upgrade is required at connected systems, include costs to revise the adjoining system in the respective "Revise Traffic Signal System – Site xx".

*=revised 10/28/2015

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Include the costs for revising the master in the costs for revising the respective intersection.

The existing controller brands are as follows:

Site 1 – Bismarck Expressway & South 3 rd Street	Peek
Site 2 – Bismarck Expressway & South 7 th Street	Peek
Site 3 – Bismarck Expressway & South 9 th Street	Peek + Master
Site 4 – Bismarck Expressway & South 12 th Street	Peek
Site 5 – Bismarck Expressway & Airport Road	Peek
Site 6 – Bismarck Expressway & South 26 th Street	Peek
Site 7 – Bismarck Expressway & Burlington Drive	Peek
Site 8 – Bismarck Expressway & Yegen Road	Econolite
Site 9 – Bismarck Expressway & East Main Avenue	Econolite
Site 10 – Bismarck Expressway & East Rosser Avenue	Econolite
Site 11 – Bismarck Expressway & East Divide Avenue	Econolite
Site 12 – University Drive & Airport Road	Econolite
Site 13 – University Drive & South 12 th Street	Econolite + Master
Site 14 – University Drive & East Wachter Avenue	Econolite
Site 15 – University Drive & East Denver Avenue	Econolite

The following are groups of intersections that are currently interconnected of and off the project and will continue to be interconnected:

Group 1: West Denver Ave/South Washington St, Bismarck Expy/South Washington St, Bismarck Expy/South 3rd St, Bismarck Expy/South 7th St, South 7th St/East Arbor Ave, Bismarck Expy/South 9th St, South 9th St/East Arbor Ave, Bismarck Expy/South 12th St, Bismarck Expy/Airport Road, Bismarck Expy/South 26th St, and Bismarck Expy/Burlington Dr.

Group 2: Bismarck Expy/East Main Ave, Bismarck Expy/East Rosser Ave, Bismarck Expy/East Divide Ave South (Revere Dr), Bismarck Expy/East Divide Ave North (Miriam Ave), Bismarck Expy/I-94 South Ramps, Bismarck Expy/I-94 North Ramps, Centennial Rd/Trenton Dr, and Centennial Rd/East Century Ave.

Group 3: University Dr/East Denver Ave, University Dr/East Wachter Ave, University Dr/South 12th St, and University Dr/Airport Rd. *

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