

FOR INFORMATIONAL USE ONLY - DO NOT USE FOR BIDDING

**NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS
 BID SHEET FOR TRAFFIC SIGNAL EXPANSION PHASE 10
 CONTRACT: T62462-01G**

SCHEDULE OF PRICES						
ITEM NO.	ESTIMATED QUANTITIES	ITEMS WITH UNIT PRICES WRITTEN IN WORDS				
203.02	10 CY	UNCLASSIFIED EXCAVATION AND DISPOSAL FOR: _____				
203.06	20 CY	SELECT FILL FOR: _____				
206.03010010	14,455 LF	CONDUIT EXCAVATION AND BACKFILL - (RESTORING TOP SURFACES NOT INCLUDED) FOR: _____				
206.03100010	550 LF	TRAFFIC SIGNAL CONDUIT EXCAVATION AND BACKFILL FOR: _____				
206.05	16 EACH	TEST PIT EXCAVATION FOR: _____				
404.0981	705 TON	9.5 F1 TOP COURSE ASPHALT, 80 SERIES COMPACTION FOR: _____				
404.2589	4,396 TON	25 F9 BINDER COURSE ASPHALT, 80 SERIES COMPACTION FOR: _____				
407.0102	3,453 GAL	DILUTED TACK COAT FOR: _____				

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418.7603	16,161 LF	ASPHALT PAVEMENT JOINT ADHESIVE FOR: _____				
520.09000010	15,000 LF	SAW CUTTING ASPHALT CONCRETE FOR: _____				
560.70000008	15 SF	BRICK FACING FOR: _____				
608.0101	5 CY	CONCRETE SIDEWALKS AND DRIVEWAYS FOR: _____				
608.01050010	278 CY	CONCRETE SIDEWALKS - UNREINFORCED (GRADING INCLUDED) FOR: _____				
608.01050109	12 EACH	CURB RAMP CONFIGURATION TYPE 1 FOR: _____				
608.01050209	15 EACH	CURB RAMP CONFIGURATION TYPE 2 FOR: _____				
608.01050309	11 EACH	CURB RAMP CONFIGURATION TYPE 3 FOR: _____				

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ITEM NO.	ESTIMATED QUANTITIES	ITEMS WITH UNIT PRICES WRITTEN IN WORDS				
608.01050409	26 EACH	CURB RAMP CONFIGURATION TYPE 4 FOR: _____				
608.01050509	15 EACH	CURB RAMP CONFIGURATION TYPE 5 FOR: _____				
608.01050609	1 EACH	CURB RAMP CONFIGURATION TYPE 6 FOR: _____				
608.01050709	6 EACH	CURB RAMP CONFIGURATION TYPE 7 FOR: _____				
608.01050809	29 EACH	CURB RAMP CONFIGURATION TYPE 8 FOR: _____				
608.01050909	24 EACH	CURB RAMP CONFIGURATION TYPE 9 FOR: _____				
608.01051009	2 EACH	CURB RAMP CONFIGURATION TYPE 10 FOR: _____				
608.01051109	10 EACH	CURB RAMP CONFIGURATION TYPE 11 FOR: _____				

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608.01051409	2 EACH	CURB RAMP CONFIGURATION TYPE 14 FOR: _____				
608.02010015	1,080 CY	UNCLASSIFIED EXCAVATION AND DISPOSAL FOR SIDEWALKS, CURB RAMPS AND CURBS FOR: _____				
608.02020015	786 CY	OPTIONAL TYPE SUBBASE COURSE FOR SIDEWALKS, CURB RAMPS AND CURBS FOR: _____				
609.04010510	133 LF	CAST-IN-PLACE CONCRETE CURB (GRADING INCLUDED) TYPE VF6 FOR: _____				
610.1403	137 CY	TOPSOIL - LAWNS FOR: _____				
610.1602	557 SY	TURF ESTABLISHMENT - LAWNS FOR: _____				
610.19	20 MGAL	WATERING VEGETATION FOR: _____				
618.7810012	35 EACH	SECURITY BOLLARD FIXED, CAST IN PLACE, SHALLOW FOR: _____				

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ITEM NO.	ESTIMATED QUANTITIES	ITEMS WITH UNIT PRICES WRITTEN IN WORDS				
619.01	1 LS	BASIC WORK ZONE TRAFFIC CONTROL FOR: _____				
619.1611	696 INT/MO	MAINTAIN TRAFFIC SIGNAL EQUIPMENT, REQUIREMENT "A" FOR: _____				
625.01	1 LS	SURVEY OPERATIONS FOR: _____				
635.0103	72,966 LF	CLEANING AND PREPARATION OF PAVEMENT SURFACES - LINES FOR: _____				
635.0203	19 EACH	CLEANING AND PREPARATION OF PAVEMENT SURFACES - LETTERS FOR: _____				
635.0303	75 EACH	CLEANING AND PREPARATION OF PAVEMENT SURFACES - SYMBOLS FOR: _____				
645.5101	139 SF	GROUND-MOUNTED SIGN PANELS WITHOUT Z-BARS FOR: _____				
645.81	62 EACH	TYPE A SIGN POSTS FOR: _____				

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ITEM NO.	ESTIMATED QUANTITIES	ITEMS WITH UNIT PRICES WRITTEN IN WORDS				
645.85	7 EACH	POLE MOUNTED SIGN SUPPORT SYSTEM (BAND MOUNTED) FOR: _____				
647.31	41 EACH	RELOCATE SIGN PANEL, SIGN PANEL ASSEMBLY SIZE I (UNDER 30 SQUARE FEET) FOR: _____				
647.51	15 EACH	REMOVE AND DISPOSE SIGN PANEL, SIGN PANEL ASSEMBLY SIZE I (UNDER 30 SQUARE FEET) FOR: _____				
647.61	14 EACH	REMOVE & DISPOSE SIGNS, GROUND MOUNTED TYPE A SIGN SUPPORTS & FOUNDATIONS (UNDER 30 SQ FT) FOR: _____				
647.64	15 EACH	REMOVE AND DISPOSE HIGH CAPACITY TYPE A GROUND MOUNTED SIGN SUPPORT AND FOUNDATION FOR: _____				
662.60030008	8 EACH	ALTERING ELEVATION OF GAS VALVE BOXES FOR: _____				
662.62000010	3 EACH	RESETTING CASTINGS ON EXISTING UTILITY MANHOLES FOR: _____				
663.33	6 EACH	ADJUST EXISTING VALVE BOX ELEVATION FOR: _____				

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SCHEDULE OF PRICES						
ITEM NO.	ESTIMATED QUANTITIES	ITEMS WITH UNIT PRICES WRITTEN IN WORDS				
670.1206	5 EACH	6 FT ALUMINUM SINGLE MEMBER BRACKET ARM FOR: _____				
670.1208	1 EACH	8 FT ALUMINUM SINGLE MEMBER BRACKET ARM FOR: _____				
670.1210	2 EACH	10 FT ALUMINUM SINGLE MEMBER BRACKET ARM FOR: _____				
680.050200NA	5 EACH	FURNISH AND INSTALL VIDEO VEHICLE DETECTION EQUIPMENT FOR: _____				
680.110008NA	72 EACH	FURNISH AND INSTALL 8 FOOT SIGNAL POST FOR: _____				
680.110010NA	27 EACH	FURNISH AND INSTALL 10 FOOT SIGNAL POST FOR: _____				
680.130001NA	6 EACH	FURNISH AND INSTALL ELECTRICAL DISCONNECT / GENERATOR TRANSFER SWITCH FOR: _____				
680.321001NA	32 EACH	FURNISH & INSTALL MODEL 2070 LX LITE CONTROLLER UNIT FOR: _____				

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SCHEDULE OF PRICES						
ITEM NO.	ESTIMATED QUANTITIES	ITEMS WITH UNIT PRICES WRITTEN IN WORDS				
680.332002NA	5 EACH	FURNISH & INSTALL MODEL 332 CABINET WITH AUXILIARY OUTPUT FILE AND EQUIPMENT FOR: _____				
680.336002NA	27 EACH	FURNISH & INSTALL MODEL 336SX CABINET AND AUXILIARY EQUIPMENT FOR: _____				
680.5001	305 CY	POLE EXCAVATION AND CONCRETE FOUNDATION FOR: _____				
680.5002	7 EACH	CONCRETE BASE FOR CONTROLLER CABINET FOR: _____				
680.51000010	32 EACH	ALTER ELEVATION OF PULLBOXES FOR: _____				
680.51050010	126 EACH	PULLBOX, RECTANGULAR REINFORCED CONCRETE (26" X 18") FOR: _____				
680.51100010	62 EACH	CLEAN EXISTING PULLBOX FOR: _____				
680.51400010	9 EACH	CONCRETE FIBER OPTIC PULLBOX FOR: _____				

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ITEM NO.	ESTIMATED QUANTITIES	ITEMS WITH UNIT PRICES WRITTEN IN WORDS				
680.520102	369 LF	CONDUIT, METAL STEEL, ZINC COATED, 3/4" FOR: _____				
680.520104	1,827 LF	CONDUIT, METAL STEEL, ZINC COATED, 1 1/4" FOR: _____				
680.520106	904 LF	CONDUIT, METAL STEEL, ZINC COATED, 2" FOR: _____				
680.520108	11,432 LF	CONDUIT, METAL STEEL, ZINC COATED, 3" FOR: _____				
680.53010010	350 LF	CLEAN EXISTING CONDUIT FOR: _____				
680.54	8,655 LF	INDUCTANCE LOOP INSTALLATION FOR: _____				
680.7001	140 EACH	SINGLE SPAN WIRE ASSEMBLY FOR: _____				
680.7004	55,229 LF	MESSENGER ASSEMBLY FOR: _____				

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ITEM NO.	ESTIMATED QUANTITIES	ITEMS WITH UNIT PRICES WRITTEN IN WORDS				
680.700606	66 EACH	RISER ASSEMBLY, 2" DIAMETER FOR: _____				
680.72	23,642 LF	INDUCTANCE LOOP WIRE FOR: _____				
680.730214	44,279 LF	SIGNAL CABLE 2 CONDUCTORS, 14 AWG FOR: _____				
680.730314	32,291 LF	SIGNAL CABLE 3 CONDUCTORS, 14 AWG FOR: _____				
680.730514	1,067 LF	SIGNAL CABLE 5 CONDUCTORS, 14 AWG FOR: _____				
680.730714	15,510 LF	SIGNAL CABLE 7 CONDUCTORS, 14 AWG FOR: _____				
680.731014	8,336 LF	SIGNAL CABLE 10 CONDUCTORS, 14 AWG FOR: _____				
680.731514	9,426 LF	SIGNAL CABLE 15 CONDUCTORS, 14 AWG FOR: _____				

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ITEM NO.	ESTIMATED QUANTITIES	ITEMS WITH UNIT PRICES WRITTEN IN WORDS				
680.732014	426 LF	SIGNAL CABLE 20 CONDUCTORS, 14 AWG FOR: _____				
680.76610010	31 EACH	POWER SERVICE CONNECTION (NASSAU COUNTY) FOR: _____				
680.77000010	1 LS	MODIFY TRAFFIC SIGNAL EQUIPMENT FOR: _____				
680.79000010	1 LS	REMOVE TRAFFIC SIGNAL EQUIPMENT FOR: _____				
680.810101	323 EACH	TRAFFIC SIGNAL MODULE - 12 INCH, RED BALL, LED FOR: _____				
680.810102	11 EACH	TRAFFIC SIGNAL MODULE - 12 INCH, RED ARROW, LED FOR: _____				
680.810103	326 EACH	TRAFFIC SIGNAL MODULE - 12 INCH, YELLOW BALL, LED FOR: _____				
680.810104	35 EACH	TRAFFIC SIGNAL MODULE - 12 INCH, YELLOW ARROW, LED FOR: _____				

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ITEM NO.	ESTIMATED QUANTITIES	ITEMS WITH UNIT PRICES WRITTEN IN WORDS				
680.810105	321 EACH	TRAFFIC SIGNAL MODULE - 12 INCH, GREEN BALL, LED FOR: _____				
680.810106	40 EACH	TRAFFIC SIGNAL MODULE - 12 INCH, GREEN ARROW, LED FOR: _____				
680.810107	1,061 EACH	TRAFFIC SIGNAL SECTION - TYPE I, 12 INCH FOR: _____				
680.8111	132 EACH	TRAFFIC SIGNAL BRACKET ASSEMBLY - 1 WAY FOR: _____				
680.8112	46 EACH	TRAFFIC SIGNAL BRACKET ASSEMBLY - 2 WAY FOR: _____				
680.8113	27 EACH	TRAFFIC SIGNAL BRACKET ASSEMBLY - 3 WAY FOR: _____				
680.8114	11 EACH	TRAFFIC SIGNAL BRACKET ASSEMBLY - 4 WAY FOR: _____				
680.813108NA	192 EACH	LED PEDESTRIAN SIGNAL WITH COUNTDOWN TIMER ASSEMBLY 16" X 18" FOR: _____				

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ITEM NO.	ESTIMATED QUANTITIES	ITEMS WITH UNIT PRICES WRITTEN IN WORDS				
680.81422010	11 EACH	AUXILIARY POLE AND FOUNDATION FOR: _____				
680.8151	106 EACH	ACCESSIBLE PEDESTRIAN SIGNAL (APS) WITHOUT POST FOR: _____				
680.8152	43 EACH	ACCESSIBLE PEDESTRIAN SIGNAL (APS) WITH POST FOR: _____				
680.8199	4 EACH	BACKPLATES FOR TRAFFIC SIGNAL HEADS FOR: _____				
680.8204	40 EACH	OVERHEAD SIGN ASSEMBLY, TYPE D FOR: _____				
680.82162510	6 EACH	16 FT MAST ARM POLE WITH A 25 FT MAST ARM (NASSAU COUNTY) FOR: _____				
680.82163010	17 EACH	16 FT MAST ARM POLE WITH A 30 FT MAST ARM (NASSAU COUNTY) FOR: _____				
680.82163510	13 EACH	16 FT MAST ARM POLE WITH A 35 FT MAST ARM (NASSAU COUNTY) FOR: _____				

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ITEM NO.	ESTIMATED QUANTITIES	ITEMS WITH UNIT PRICES WRITTEN IN WORDS				
680.82164010	22 EACH	16 FT MAST ARM POLE WITH A 40 FT MAST ARM (NASSAU COUNTY) FOR: _____				
680.82164510	9 EACH	16 FT MAST ARM POLE WITH A 45 FT MAST ARM (NASSAU COUNTY) FOR: _____				
680.82165010	8 EACH	16 FT MAST ARM POLE WITH A 50 FT MAST ARM (NASSAU COUNTY) FOR: _____				
680.8225	30 EACH	PEDESTRIAN PUSHBUTTON AND SIGN - WITHOUT POST FOR: _____				
680.8226	13 EACH	PEDESTRIAN PUSHBUTTON AND SIGN - WITH POST FOR: _____				
680.84100210	1 EACH	NO TURN ON RED (NTOR) LED OVERHEAD SIGN 24" W x 30" H FOR: _____				
680.950208	4,175 LF	ELECTRIC SERVICE CABLE FOR: _____				
683.030300NA	13 EACH	HD CCTV TOP MOUNT IP CAMERA ASSEMBLY FOR: _____				

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ITEM NO.	ESTIMATED QUANTITIES	ITEMS WITH UNIT PRICES WRITTEN IN WORDS				
683.030600NA	7 EACH	HD CCTV DOME IP CAMERA ASSEMBLY FOR: _____				
683.060100NA	1 EACH	CCTV CAMERA CONTROL CABINET FOR: _____				
683.072012NA	9 EACH	FURNISH AND INSTALL 12 PORT RACK MOUNT FIBER PATCH PANEL FOR: _____				
683.072048NA	7 EACH	FURNISH AND INSTALL 48 PORT RACK MOUNT FIBER PATCH PANEL FOR: _____				
683.090100NA	39 EACH	8 PORT HARDENED 10/100 ETHERNET SWITCH WITH ON DUAL PURPOSE 10/100/1000 OR SFP PORT FOR: _____				
683.090600NA	40 EACH	10/100 MBPS OPTICAL ETHERNET CONVERTER, SHELF MOUNT FOR: _____				
683.091000NA	6 EACH	24 PORT HARDENED ETHERNET SFP SWITCH FOR: _____				
683.100100NA	4 EACH	COMMUNICATIONS HUB CABINET AND AUXILIARY EQUIPMENT FOR: _____				

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683.115100NA	13 EACH	WI-FI TRAVEL TIME READER FOR: _____				
683.200100NA	1 LS	ITS SUBSYSTEM INTEGRATION FOR: _____				
683.921024NA	48,136 LF	SINGLE MODE FIBER OPTIC TRUNK CABLE, 24 FIBERS FOR: _____				
683.921048NA	55,669 LF	SINGLE MODE FIBER OPTIC TRUNK CABLE, 48 FIBERS FOR: _____				
683.921072NA	13,123 LF	SINGLE MODE FIBER OPTIC TRUNK CABLE, 72 FIBERS FOR: _____				
683.921500NA	6,968 LF	FIBER OPTIC DROP CABLE FOR: _____				
685.072001NA	25,130 LF	HIGHLY REFLECTORIZED WHITE EPOXY PAVEMENT STRIPES – 20 MILS (TRIPLE DROP) FOR: _____				
685.072002NA	25 EACH	HIGHLY REFLECTORIZED WHITE EPOXY PAVEMENT LETTERS – 20 MILS (TRIPLE DROP) FOR: _____				

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ITEM NO.	ESTIMATED QUANTITIES	ITEMS WITH UNIT PRICES WRITTEN IN WORDS				
685.072003NA	68 EACH	HIGHLY REFLECTORIZED WHITE EPOXY PAVEMENT SYMBOLS – 20 MILS (TRIPLE DROP) FOR: _____				
685.072005NA	46,835 LF	HIGHLY REFLECTORIZED WHITE EPOXY PAVEMENT STRIPES (SPECIAL MARKINGS) – 20 MILS (TRIPLE DROP) FOR: _____				
685.072006NA	17,187 LF	HIGHLY REFLECTORIZED YELLOW EPOXY PAVEMENT STRIPES – 20 MILS (TRIPLE DROP) FOR: _____				
685.072007NA	330 EACH	HIGHLY REFLECTORIZED YELLOW EPOXY PAVEMENT STRIPES (CROSS HATCHING) – 20 MILS (TRIPLE DROP) FOR: _____				
685.072008NA	5 EACH	HIGHLY REFLECTORIZED WHITE EPOXY PAVEMENT YIELD LINE SYMBOLS – SMALL – 20 MILS (TRIPLE DROP) FOR: _____				
691.04000020	252,000 DC	TRAINING REQUIREMENTS FOR: _____				
697.03	935,000 DC	FIELD CHANGE PAYMENT FOR: _____				
698.04	100 DC	ASPHALT PRICE ADJUSTMENT FOR: _____				

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698.05	100 DC	FUEL PRICE ADJUSTMENT FOR: _____				
698.06	100 DC	STEEL/IRON PRICE ADJUSTMENT FOR: _____				
699.040001	1 LS	MOBILIZATION FOR: _____				
-	1 LS	Time and Material FOR: _____	100,000	00	100,000	00

SPECIAL PROVISIONS

1) Schedule

The contract shall be completed within twenty-four (24) months from the commencement of work date unless the County extends the original scope of work. In that event, the contract shall be extended to allow for the completion of additional work. The length of the extension shall be in proportion to the amount of work added. The length of the extension shall be the sole discretion of the County. The request for a time extension by the contractor shall also be submitted to NYSDOT Construction for their concurrence thirty days prior to the contract completion date.

2) Contractor Experience and Requirements

- a. The nature of the work involved in this contract requires the Contractor to possess prior satisfactory experience in the installation and maintenance of traffic signals. The proper operation of signals has critical public safety aspects.
- b. Prospective bidders (primary contractor) must have at least three (3) years of satisfactory experience in the actual installation and maintenance of considerable numbers and types of traffic signals and traffic control equipment.
- c. Prospective bidders must be trained and certified in the handling and the installation of the fiber optic cable, fiber optic splices, testing of fiber optic systems, and various other related items. The prospective bidder must be trained and certified by the fiber optic cable manufacturer, the manufacturer of the fiber optic splice enclosures, and the manufacturer of the fiber optic test equipment.

3) Maintenance of Traffic Signals

- a. All the traffic signals being improved, as part of this contract shall be maintained by the Contractor for the duration of the project.
- b. All signals will be transferred to Contractor maintenance on the commence work date and will remain until termination of the contract. During a walk-thru with County representatives, a video log must be performed by the contractor to document equipment condition at the time maintenance authority is transferred.
- c. The Contractor shall be responsible to repair or replace any traffic signal equipment installed, which is damaged by any means. The Engineer shall

approve repairs. Replacements shall meet all the contract specifications and requirements.

- d. The County will provide replacements for existing traffic signal equipment, which is to be retained under the provisions of the contract. Installations of the replacement equipment will be paid for under Time and Materials item.

4) Equipment Approval

All equipment furnished and/or installed by the Contractor shall be new and conform to the Traffic Signal Specifications and Standard Drawings (included in this contract document book) including painting. Catalog cuts and/or manufacturer name, model number, and description for all fiber optic related equipment, and all other furnished equipment, shall be submitted to the Signal Shop at 1194 Prospect Avenue, Westbury, NY 11590, Attention the Project Engineer-in-Charge for approval, prior to installation as requested by the Department.

5) Recourse

This contract does not imply that the low bidder, following the award of this contract, has the exclusive right or legal recourse to the County of Nassau for any other similar type contract, or any other traffic signal interconnect contract which includes the furnishing and installation of traffic signal interconnect, that may be awarded during the life of this contract.

6) Maintenance and Protection of Traffic

- a. Where work is being constructed on streets, sidewalks, easements or other locations normally used by the public, the Contractor shall conduct his work so as to minimize the interference with the safe and direct movement of pedestrian and vehicular travel. The Contractor shall provide all necessary construction signs, fencing, barricades, and lighting as required by the Commissioner. The material and its placement shall conform to the latest edition of the "National Manual of Uniform Traffic Control Devices with New York State Supplement" and directives of the County of Nassau. When directed by the Commissioner, the Contractor shall provide the safe means of crossing over trenches or obstacles within the work site either by bridging or other suitable structures.
- b. Accessibility to fire hydrants, police and fire call boxes, and provision for the ingress and egress of emergency vehicles including police, fire, and ambulance vehicles shall be required at all times.

- c. All work performed under this paragraph shall be at the Contractor's expense and at no additional cost to the County.
- d. No separate payments shall be made since all work for maintenance and protection of traffic shall be included in the unit prices bid for the various contract items.

7) Work Zone Traffic Control

- a. The Work Zone Traffic Control (WZTC) schemes should refer to NYSDOT Standard Specifications Section 619 and National Manual of Uniform Traffic Control Devices (MUTCD) with NYS Supplement. Standard sheets from Section 619 (nysdot.gov) can be used for guidance for shoulder and/or lane closures.
- b. All traffic control devices, signs and pavement markings shall be NYSDOT approved products and materials.
- c. Workers, pedestrians and motorists should be accommodated and protected at all times within the entire project limits.

8) Underground Facilities

Before doing any work over, under, or near underground facilities, all provisions of Industrial Code Rule #753 of Title 12, of the Official Compilation of Codes, Rules, and Regulations of the State of New York, effective February 5, 1997 shall be strictly enforced and complied with. In addition, the Contractor must notify NYSDOT INFORM for tone-out of underground INFORM equipment.

9) Cleanliness

Upon completion of the work at each location or work order, the Contractor shall remove all remaining materials and shall leave the area, which may have been affected by his operation, in a neat and orderly condition.

10) Hold Harmless

- a. The Hold Harmless and Indemnification Provisions of this contract are to include, but not limited to, any civil action for damage brought against the County which the basis of such action is an allegation of (1) a malfunctioning traffic control device and/or (2) a defectively maintained traffic control device.
- b. The obligation of the Contractor to hold harmless and indemnify the County is absolute and shall not be dependent on the Contractor having

has received any actual notice from the County of any malfunctioning and/or defectively maintained traffic control device.

11) Transportation of Removed Equipment

All equipment removed from field locations shall be returned to the Signal Shop at 1194 Prospect Avenue, Westbury in the same condition as when removed from operation. All work related to removing existing equipment, and returning the same to the Signal Operations Center shall be at the Contractors expense and at no additional cost to the County. The cost of any removal work shall be paid for under Item 680.79000010.

12) Additional Work – Extension of Contract

The County of Nassau reserves the right to extend the terms of this contract at the accepted bid prices for either furnishing only or furnishing and installing when the successful bidder is notified within ninety (90) days of the date of approval of the catalog cuts. The extension shall not exceed 50% of the total price bid.

13) Contract Administration and Inspection

The Department of Public Works Traffic Engineering Unit will be the administrator of this contract and shall approve all equipment to be supplied, verify and approve all claim vouchers, and be responsible for furnishing all necessary inspections to verify compliance with the contract.

14) Funding

This contract is funded under Capitol Project 62454 and is eligible for Federal Aid reimbursement. The contractor shall be responsible for completing and submitting all the required documentation associated with Federal Aid projects.

15) Payment

Payments of this contract will be made on a monthly basis for work completed during the preceding calendar month. No partial payments shall be made for material on hand and not installed.

**PIN 0761.25
SPECIAL NOTE
COORDINATION WITH THE UTILITY SCHEDULE**

The Nassau County Contractor must coordinate his schedule of operations with the various involved utility owners and shall verify contract document utility information. Utility adjustments, abandonments and relocations will be performed by either the Nassau County Contractor or by the various utility companies, as noted in the contract plans. These utility adjustments, abandonments and relocations are identified in the "Table of Utility Coordination", which can be found on the "MST-01, MST-03, MST-05, and MST-06" contract drawings. These utility adjustments and relocations/replacements are shown on the "Traffic Signal Plans" plans, which comprise the "TSP" contract drawings. These adjustments, abandonments and relocations/replacements are described below.

The Nassau County Contractor shall become familiar with all provisions of Section 107-07, "Protection of Underground Facilities" of the Standard Specifications. The Nassau County Contractor shall use the necessary precautions to prevent damage to pipes, conduits, and other underground facilities. All costs associated with verification of the location of underground facilities pursuant to 16 NYCRR 753 "Protection of Underground Facilities", as amended, shall be included in the prices bid for the respective contract items involved.

The Nassau County Contractor's attention is directed to Section 107-05 J, "Electrical Safety", of the Standard Specifications with regard to construction operations that could cause employees or the vehicles or equipment they are operating to come into contact with ("direct contact") or enter into dangerous proximity to ("indirect contact") energized electrical systems. Electrical systems shall be assumed to be energized high voltage until verified otherwise by the Utility. The Nassau County Contractor shall identify and reference all potential electrical hazards and document such actions to the Engineer as part of the Project Safety and Health Plan.

All utility company forces and/or their subcontractors shall conduct their operations to ensure the safety and convenience of travelers and abutting property owners as well as the safety of all workers on the contract. Travelers include, but may not be limited to motorists, motorcyclists, bicyclists and pedestrians. All utility company forces and/or their subcontractors shall maintain public access to intersecting roads, business establishments, adjacent property, bus stops and transportation facilities for vehicles, pedestrians, and bicyclists. Additionally, while performing their work, all utility company forces and/or their subcontractors shall provide and maintain accommodations for safe pedestrian passage on at least one side of the roadway at all times, unless other temporary pedestrian accommodations are approved by the Engineer.

1) PSEG Long Island/LIPA Overhead & Underground Utilities

Based upon PSEG electric facility maps, utility mark outs requested and field measurements; no overhead and/or underground electric conflicts are anticipated.

2) Verizon Communications Overhead & Underground Utilities

Based upon Verizon telephone service facility maps, utility mark outs requested and field measurements; no overhead and/or underground conflicts are anticipated.

3) Cablevision and Third Party

Based upon field measurements, existing Cablevision and other 3rd Party Provider, no overhead conflicts are anticipated.

**PIN 0761.25
SPECIAL NOTE
COORDINATION WITH THE UTILITY SCHEDULE**

4) National Grid Facilities

Based upon National Grid facility maps, utility mark outs requested and field measurements, no underground conflicts are anticipated. Any potential conflict noted on "Table of Utility Coordination" will have a test pit performed to confirm conflict. If a conflict is determined, pole will be relocated to avoid conflict.

National Grid-owned, valve box vertical adjustments required to accommodate the proposed ADA curb ramp installation finished grade are noted on the "Table of Utility Coordination in the contract drawings.". Contractor shall coordinate with National Grid to coordination these adjustments during construction. The valve boxes exist at various locations throughout the project.

The Contractor shall notify National Grid, in writing, two (2) weeks prior to the beginning of ADA curb ramp work to allow for National Grid's adjustment of gas valve boxes to proposed finished grade. The Contractor shall have a surveyor on hand to provide proposed finished grade elevations on each of the gas valve boxes to be adjusted by National Grid personnel.

If during construction National Grid decides to retain the services of the Nassau County Contractor to perform the adjustments instead of utilizing its own forces, the Nassau County Contractor shall be compensation for the work at a fee agreed upon between the two parties.

5) Water Works Facilities (New York American Water)

Within the project limits, the water supply and distribution facilities are owned and operated by New York American Water (NYAW).

In addition to all notifications and submittals required, as per the contract specifications, the Nassau County Contractor shall contact NYAW, in writing, two (2) weeks prior to any crossing conflict work, so that NYAW can arrange to have personnel present during the work. The contact information is provided below.

John Derienzo
New York American Water 60 Brooklyn Avenue
Merrick, NY 11566
(516) 632-2227

The Nassau County Contractor shall note that any work performed on NYAW facilities shall be performed by the owner forces or subcontractor approved by NYAW.

Valve box vertical adjustments required to accommodate the proposed ADA curb ramp installation finished grade are noted in the "Table of Utility Coordination" on the contract drawings. All physical water works adjustments will be performed by New York American Water during construction. The valve boxes exist at various locations throughout the project.

**PIN 0761.25
SPECIAL NOTE
COORDINATION WITH THE UTILITY SCHEDULE**

6) Overhead Electrical Facilities

During certain construction operations, such as (but not limited to) traffic signal pole installation, the equipment necessary for the Nassau County Contractor to perform these operations may be operating close (although no direct conflict exists) to overhead facilities including PSEG primary electrical transmission and distribution lines and secondary power lines. These existing facilities are to be retained and protected. If the contractor's operations require that equipment must encroach into minimum clearance envelopes when working in proximity to electric facilities, PSEG will have to de-energize the facility. The Nassau County Contractor shall perform all contract work in a skillful manner with due regard to the safety and health of the employees and of the public. The Nassau County Contractor shall become familiar with all overhead electrical facilities within the project limits, in addition to all overhead utilities.

The Nassau County Contractor shall notify PSEG a minimum of seventy-two (72) hours in advance of any proposed work in which construction equipment (cranes, excavators, etc.) will be operating within ten (10) feet of PSEG overhead facilities. This notice is to allow PSEG adequate time to plan to have representatives present during construction. PSEG will determine if there is a need to temporarily de-energize or furnish insulating components for their existing primary and secondary overhead facilities.

7) Underground Electrical Facilities

During certain construction operations, such as (but not limited to) traffic signal pole installation, the equipment necessary for the Nassau County Contractor to perform these operations may be operating close (although no direct conflict exists) to active and abandoned underground facilities including Verizon communications and/or PSE&G LI electrical systems. These existing facilities are to be retained and protected. The Nassau County Contractor shall perform all contract work in a skillful manner with due regard to the safety and health of the employees and of the public. The Nassau County Contractor shall become familiar with all underground communications and electrical facilities within the project limits, in addition to all underground utilities.

The Nassau County Contractor shall notify the utility companies a minimum of seventy-two (72) hours in advance of any proposed work in which construction equipment (cranes, excavators, etc.) will be operating within ten (10) feet of utility facilities. This notice is to allow utility companies adequate time to plan to have representatives present during construction. Utility companies will determine if there is a need to temporarily de-energize their existing facilities.

8) Overhead Communications Facilities

Verizon and Cablevision maintain overhead facilities within the project limits. During certain construction operations, such as (but not limited to) traffic signal pole installation, the equipment necessary for the Nassau County Contractor to perform these operations may be operating close (although no direct conflict exists) to these overhead facilities. These existing facilities are to be retained and protected. If the contractor's operations require that equipment operate in areas that conflict with the existing overhead facilities, Verizon and/or Cablevision will have to temporarily move the facility. The Nassau County Contractor shall perform all contract work in a skillful manner with due regard to the safety and health of the employees and of the public. The Nassau County

PIN 0761.25
SPECIAL NOTE
COORDINATION WITH THE UTILITY SCHEDULE

Contractor shall become familiar with all overhead communications facilities within the project limits, in addition to all overhead utilities.

The Nassau County Contractor shall notify Cablevision and Verizon a minimum of seventy-two (72) hours in advance of any proposed work in which construction equipment (cranes, excavators, etc.) will be operating within five (5) feet of their overhead facilities or if the contractor's work requires that the overhead facility be temporarily moved. This notice is to allow Verizon and Cablevision adequate time to plan to have representatives present during construction.

9) General

The above time periods do not apply to any corrective work to repair damage done by the Nassau County Contractor to existing utility facilities. Those repairs may require time beyond those mentioned above. Also, all time periods are exclusive of frost periods and may be further extended if other natural deterrents occur that the Engineer judges to justify such extension. Please note the provided time frames for PSEG Long Island/LIPA and Verizon utility relocation work do not consider weather events and/or equipment failures that can impact the PSEG Long Island/LIPA and Verizon grid and availability of the work forces.

In addition to the above listed utility relocations, others may become necessary during the construction phase as a result of more precise location data or other changes that might develop. These relocations/abandonments/new installations are to be performed by the utility companies coordinating with the Nassau County Contractor. These additions are not subject to the above-mentioned time frames and the actual time frame is to be determined by the Engineer considering the utility companies' scheduling.

All known existing public and private utility lines within or adjacent to the site of the work are shown in their approximate locations on the contract plans. The Nassau County Contractor is cautioned that these locations are not guaranteed, nor is there a guarantee that all such lines in existence have been shown on the plans.

All relocated facilities and new underground facilities are to be placed beyond the sheeting limits of contract work. Facilities within the sheeting limits, but not in direct conflict with the proposed work may remain in place as ordered by the Engineer and the Nassau County Contractor shall work around, support and protect such facilities during the construction.

The Nassau County Contractor is referred to the provisions of the General Specifications that govern his responsibility for the protection and support of all utilities facilities encountered during his work. The Nassau County Contractor shall conduct his operations as to prevent damage to such facilities. He shall make such explorations as may be necessary to determine the dimensions and locations of lines that may be subject to damage. Notification to the various owners of facilities shall be given in accordance with New York State Industrial Code 753.

The Nassau County Contractor shall make good any damage to those utilities caused by his operations. If the nature of the damage is such as to endanger the satisfactory operations of the utilities and the necessary repairs are not immediately made by the Nassau County Contractor, the work may be done by the respective owning companies and the cost thereof charged against the Nassau County Contractor.

**PIN 0761.25
SPECIAL NOTE
COORDINATION WITH THE UTILITY SCHEDULE**

Prior to the commencement of construction, the Nassau County Contractor shall meet with all the known public and private utility companies occupying the work site. The Nassau County Contractor shall, at this meeting, inform the utility companies of his schedule of operations and so coordinate his work with these companies.

In order for the utility companies to properly locate their new utility structures, the Nassau County Contractor shall provide line and grade stakeout of the new bridge substructures as well as roadways in the vicinity of the new utility structures locations. The Nassau County Contractor shall coordinate this stakeout so that it is available to the utility companies in a timely manner. The Nassau County Contractor will be responsible to maintain this stakeout once it has been made. The cost of this stakeout by the Nassau County Contractor shall be included in the price bid for Item 625.01, Survey and Stakeout.

PIN 0761.25
SPECIAL NOTE

PG BINDER AND MIX DESIGN LEVEL

Requirements of this note apply to all Section 404 Asphalt Pavement items in this contract.

PG BINDER

Use polymer or Terminal Blend Crumb Rubber modified **PG 64E-22** (Extreme) meeting the requirements of AASHTO M 332, *Standard Specification for Performance Graded Asphalt Binder using Multiple Stress Creep Recovery (MSCR)*, for the production of asphalt mixtures for this project. In addition, the binder grade must also meet the **elastomeric** properties as indicated by one of the following equations for %R_{3.2}:

1. For $J_{nr3.2} \geq 0.1$, $\%R_{3.2} > 29.371 * J_{nr3.2}^{-0.2633}$
2. For $J_{nr3.2} < 0.1$, $\%R_{3.2} > 55$

Where:

R_{3.2} is % recovery at 3.2 kPa

J_{nr 3.2} is the average non-recoverable creep compliance at 3.2 kPa

When terminal blend CRM PG binder is used, the following shall apply:

- Crumb rubber particles shall be finer than #30 sieve size.
- The CRM PG binder shall be storage-stable and homogeneous.
- The Dynamic Shear Rheometer (DSR) shall be set at 2-mm gap.
- The CRM PG binder shall be 99% free of particles retained on the 600 µm sieve as tested in accordance with Section 5.4 of M 332.

Use of poly-phosphoric acid (PPA) to modify the PG binder properties is prohibited for mixtures containing limestone, limestone as an aggregate blend component, limestone as a constituent in crushed gravel aggregate, or recycled asphalt pavement (RAP) that includes any limestone. This prohibition also applies to the use of PPA as a cross-linking agent for polymer modification.

MIX DESIGN

The mixture designs must be developed in accordance with the criteria specified in the asphalt pavement items that are appropriate for the Mixture Design Level of **75 Gyration**s.

Note: The PG binder for this project will be modified with polymer or CRM additives to meet the requirements stated above. Handling of the asphalt mixture shall be discussed at pre-construction and pre-paving meetings.

PIN 0761.25

SPECIAL NOTE

SURVEY WORK FOR SIDEWALKS AND CURB RAMPS

The Contractor shall be responsible for field verifying all elevations and dimensions to ensure that the final layout of sidewalks and curb ramps meet ADA requirements prior to placing concrete or placing asphalt or pavers. The survey works necessary to meet these requirements shall be included in the cost of item 625.01 – Survey Operations.

NO TEXT ON THIS PAGE

LIST OF NYSDOT SPECIAL SPECIFICATIONS

PIN 0761.25 –TRAFFIC SIGNAL EXPANSION PHASE 10

206.03010010	Conduit Excavation and Backfill – (Restoring Top Surfaces Not Included)
206.03100010	Traffic Signal Conduit Excavation and Backfill
520.09000010	Saw Cutting Asphalt Concrete
560.70000008	Brick Facing
608.01050009	Curb Ramp
608.01050010	Concrete Sidewalks – Unreinforced (Grading Included)
608.02010015	Unclassified Excavation and Disposal for Sidewalks, Curb Ramps and Curbs
608.02020015	Optional Type Subbase Course for Sidewalks, Curb Ramps and Curbs
609.04010510	Cast-in-place Concrete Curb (Grading Included) Type VF150
618.78100115	Security Bollard
662.60030008	Altering Elevation of Gas Valve Boxes
662.62000010	Resetting Casting on Existing Utility Manholes
680.050200NA	Video Vehicle Detection Equipment
680.110008NA	Furnish and Install 8 Foot Signal Post
680.110010NA	Furnish and Install 10 Foot Signal Post
680.130001NA	Furnish and Install Electrical Disconnect / Generator Transfer Switch
680.321001NA	Model 2070 LITE Controller
680.332002NA	Model 332 Cabinet with Auxiliary Output File and Equipment
680.336002NA	Model 336SX Cabinet and Auxiliary Equipment
680.51000010	Alter Elevation of Pullboxes
680.51050010	Rectangular Reinforced Concrete Pullbox (26 inches by 18 inches)
680.51100010	Clean Existing Pullbox
680.51400010	Concrete Fiber Optic Pullbox
680.53010010	Clean Existing Conduit
680.76610010	Power Service Connection (Nassau County)
680.77000010	Modify Traffic Signal Equipment
680.79000010	Remove Traffic Signal Equipment
680.813108NA	LED Pedestrian Signal with Countdown Timer Assembly 16" X 18"
680.81422010	Auxiliary Pole and Foundation
680.82XXYY10	Mast Arm Pole with Rotating Arm Length Up to 50 ft
680.84100210	No Turn on Red (NTOR) LED Overhead Sign 24" W x 30"
683.030300NA	HD CCTV Top Mount IP Camera Assembly
683.030600NA	HD CCTV Dome IP Camera Assembly
683.060100NA	CCTV Camera Control Cabinet
683.072012NA	12 Port Rack Mount Fiber Patch Panel

683.072048NA	48 Port Rack Mount Fiber Patch Panel
683.090100NA	8 Port Hardened 10/100 Ethernet Switch with One Dual Purpose 10/100/1000 OR SFP Port
683.090600NA	10/100 MBPS Optical Ethernet Converter, Shelf Mount
683.091000NA	24 Port Hardened Ethernet SFP Switch
683.100100NA	Communications Hub Cabinet and Auxiliary Equipment
683.115100NA	Wi-Fi Travel Time Reader
683.200100NA	ITS Subsystem Integration
683.921024NA	Single Mode Fiber Optic Trunk Cable, 24 Fibers
683.921048NA	Single Mode Fiber Optic Trunk Cable, 48 Fibers
683.921072NA	Single Mode Fiber Optic Trunk Cable, 72 Fibers
683.921500NA	Fiber Optic Drop Cable
685.0720XXNA	Highly Reflectorized Epoxy Pavement Markings, 20 Mils (Triple Drop)
691.04000020	Training Requirements

ITEM 206.03010010 - CONDUIT EXCAVATION AND BACKFILL - (RESTORING TOP SURFACES NOT INCLUDED)

The provisions of Section 206 pertaining to conduit excavation and backfill shall apply except as noted:

Subsection 206-5.04 shall not apply. The following shall apply; “The unit price bid per linear foot shall include the cost of all labor, materials and equipment necessary to excavate and backfill the trench. The cost of replacing pavement, shoulder and sidewalk courses, subcourses, curbs, drives, lawns and other top surfaces necessary to complete the work will be paid for under their respective items, or under various items of the Contract, as noted in the Contract Documents.”

The cost of any necessary saw cutting will be paid for under specific saw cutting items.

ITEM 206.03100010 - TRAFFIC SIGNAL CONDUIT EXCAVATION AND BACKFILL

DESCRIPTION. This work shall consist of the excavation and necessary backfill required for traffic signal conduits. All such excavation shall be unclassified excavation as defined in subsection 203-1.01.

The work shall include saw cutting any existing portland cement concrete and asphalt concrete top surfaces and the restoration of any pavement, shoulder, and sidewalk courses, subcourses, curbs, drives, lawns and other top surfaces.

MATERIALS. Materials for the restoration of top surfaces shall be as indicated in the plans and as approved by the Engineer.

CONSTRUCTION DETAILS. The requirements of subsection 206-3 shall apply with the following additions:

When the Contractor is required to excavate through portland cement concrete and asphalt concrete pavement, sidewalk, curb, or other top surfaces, he shall saw cut along neat lines as shown in the plans or as ordered by the Engineer. An approved power saw shall be used to saw cut to the depth specified in the plans or as directed by the Engineer.

The conduit excavation and backfill, and the restoration of top surface courses shall also conform to the applicable Notes and Details shown in the plans.

Any damage to existing pavement, sidewalk, curb, or other facilities caused by the Contractor's operations shall be repaired by the Contractor to the satisfaction of the Engineer.

METHOD OF MEASUREMENT. Subsection 206-4.03 shall apply.

BASIS OF PAYMENT. The unit price bid per linear foot shall include the cost of furnishing all labor, materials and equipment necessary to complete the work including excavation, backfill, saw cutting, and restoring any pavement, shoulder, and sidewalk courses, subcourses, curbs, drives, lawns and other top surfaces.

Any repairs to existing pavement, sidewalk, curb, or other facilities made necessary by the Contractor's operations shall be done to the satisfaction of the Engineer at no additional cost to the State.

ITEM 520.09000010 - SAW CUTTING ASPHALT CONCRETE

DESCRIPTION. This work shall consist of saw cutting existing asphalt concrete pavement or sidewalk at the locations indicated on the plans or where directed by the Engineer.

MATERIALS. All equipment proposed for this work shall be approved by the Engineer prior to actual use.

CONSTRUCTION DETAILS. Saw cutting shall be along a neat line as indicated on the plans or where directed by the Engineer. Saw cuts shall be made to the depth(s) indicated on the plans.

Any damage to material not indicated for removal, caused by the Contractor's operations shall be repaired by the Contractor. All repair shall be done in a manner satisfactory to the Engineer.

METHOD OF MEASUREMENT. This work will be measured by the number of linear feet of saw cutting done. No allowances will be made for saw cuts of different depths.

No saw cutting will be measured for payment under this item which the Contractor may choose to do for his own convenience.

BASIS OF PAYMENT. The unit price bid per linear foot of saw cutting shall include the cost of all labor, materials, and equipment necessary to complete the work.

Any repairs made necessary by the Contractor's operations shall be done to the satisfaction of the Engineer at no additional cost to the State.

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ITEM 560.70000008 - BRICK FACING

DESCRIPTION

Provide dovetail slots or channel anchors; clean the concrete surfaces; furnish brick, and mortar the brick in place to construct a brick facing wall with a running bond, unless shown differently on the plans or ordered by the Engineer.

MATERIALS

A. Brick - new, uniform in quality and Manufacturer appears on the NYSDOT 704-08 approved list. Submit samples for color range, size, texture and pattern for the Engineer's approval prior to use.

B. Anchoring Hardware, subject to approval of the Engineer:

Dovetail Slot (Installed In New Wall) or Channel (Attached To Existing Wall) - minimum 1/16" thick, Type 304 stainless steel meeting ASTM A240 (previously A167). Wire Ties and Anchors - Type 304 stainless steel meeting ASTM A580.

Sheet Metal Anchors and Ties - Type 304 stainless steel meeting ASTM A240 (previously A167).

Stainless Steel Connectors (Type 304 or 305 meeting ASTM A193)..... §715-16

C. Joint Material:

Premoulded Resilient Joint Filler..... §705-07

Caulking Compound for Structures..... §705-06

Expansion joint sealant (caulk) - match the color of the mortar, as approved by the Engineer.

D. Masonry Mortar, Type S §705-21

CONSTRUCTION DETAILS

Use a minimum of 2 fasteners per channel or dovetail slot, and a maximum fastener spacing of 12", to attach channels or slots to a wall.

Position the anchoring hardware as per the following maximum spacing, or as approved by the Engineer:

Dovetail slots or channels - 24" horizontally

Anchors - 12" vertically and 24" horizontally

Clean the concrete surfaces of all substances which will interfere with bonding. The cleaning methods will be subject to approval by the Engineer,

ITEM 560.70000008 - BRICK FACING

Follow the cleaning operations with compressed air jetting or vacuum cleaning to ensure removal of all loose particles. Remove all materials and debris resulting from surface preparation prior to proceeding with the mortar work.

To determine if bricks need wetting prior to use, perform the following test in the presence of the Engineer:

1. With a wax pencil, draw a 1" circle (use a quarter as a guide) on a face which will be in contact with mortar.
2. With a medicine dropper, rapidly place 20 drops of water inside the circle.
3. Note the time required for the water to be absorbed.
4. If the time exceeds 1½ minutes from the first drop of water, no wetting is needed.
5. If the time is less than 1½ minutes, wetting is required.

If wetting is deemed necessary by the Engineer, immerse the bricks in water for a few hours and use the next day when they are surface dry. Hand dipping of brick in water prior to use will not be allowed.

Install each new brick in mortar so as to form a full bed, with end and side joints in one operation in a neat, true to line and grade manner. Stagger the vertical joints a minimum 1/3 of a brick length. Secure the brick facing to the wall with stainless steel anchors placed in dovetail slots or channels. Completely fill the space between the brick facing and the wall with mortar, and finish the joints with a pointing tool that creates a joint shape that sheds water.

Position the brick facing joints to line up with existing wall joints, and construct weep extensions to pass through the brick facing, as approved by the Engineer.

Protect uncompleted work with waterproof coverings at the close of each day, when work ceases for any reason, and at any other time damage is likely. Use weighted, secure coverings that overhang the work by 24" or more on all sides, as approved by the Engineer.

Protect the completed masonry from drying and keep damp for a period of at least 3 days.

After completion of brick laying or other adjacent work likely to soil the masonry, thoroughly clean the masonry wall from joint to joint (construction joint to construction or expansion joint), or as determined by the Engineer. First, brush the dry wall with stiff fiber bristles to remove all loose contaminants likely to stain the wall. Then, thoroughly wet the wall and apply a masonry cleaner approved by the Engineer. Rewash and rinse the wall with clean water after application of the cleaner to remove all dirt, dust, mortar and stains. Always start the cleaning operation at the top and proceed downward.

Install the brick facing only when the ambient and all brick temperatures are 41° F or more. If these temperatures are expected to be less than 41° F, use heating or insulating procedures, approved by the Engineer, for at least the first 24 hours after installation. If the ambient air temperature exceeds 90° F, spread the mortar bed less than 5 feet ahead, and set the bricks within 1 minute.

ITEM 560.70000008 - BRICK FACING

METHOD OF MEASUREMENT

The Engineer will measure the work as the number of square feet of brick facing.

BASIS OF PAYMENT

Include the cost of furnishing all labor, materials and equipment necessary to complete the work in the unit bid price per square foot for constructing the brick facing. Progress payments will be made, at the unit bid price, for 75% of the quantity placed as approved by the Engineer. The balance will be paid after cleaning the brick facing.

ITEM 608.0105NN09 –CURB RAMP

DESCRIPTION

The work shall consist of constructing curb ramps, turning spaces, and associated curbing in accordance with the applicable Standard Sheets and Specifications, and in accordance with the Contract Documents.

The fifth and sixth number to the right of the decimal place (NN), in the item number, is a serialized number to match the different types of curb ramp configurations depicted in the US Customary Standard Sheets 608-01.

The work shall include demolition, saw cutting, disposal, fill, compaction, construction of the new curb ramps, turning spaces and associated curbing. Also included are detectable warning units (supplied and installed where required), repairs to affected asphalt and concrete (as necessary), topsoil, establishing turf (on disturbed areas), and finish work. All material and labor required to perform these tasks is included. Any required adjustments to utilities shall be performed under the specifications for that work.

MATERIAL

Materials required for this work shall comply with, but are not limited to, the following Sections: 402-2, 502-2, 503-2, 608-2, 609-2, and 610-2.

CONSTRUCTION DETAILS

The work shall be in conformance with the US Customary Standard Sheets 608-01 and 608-03. The work performed shall comply with, but is not limited to, the following Sections of the Standard Specifications: 401-3, 402-3, 502-3, 503-3, 608-3, 609-3, and 610-3.

Any existing utility facilities not indicated to be removed that are damaged by the Contractor's operations performing this work, shall be repaired by the Contractor, to the satisfaction of the Engineer, at no additional cost.

Survey Requirements

The contractor shall be responsible for field verifying all elevations, slopes, and dimensions to ensure that the final layout of sidewalks and curb ramps meet ADA requirements prior to pouring concrete or placing asphalt or pavers. A Contract Control Plan is not necessary for work limited to sidewalks and curb ramps.

METHOD OF MEASUREMENT

Payment will be made at the unit price bid for each type of curb ramp (as shown in the US Customary Standard Sheets 608-01), satisfactorily installed, in accordance with the Contract Documents.

BASIS OF PAYMENT

The unit price bid shall include the cost of furnishing all labor, material, and equipment necessary to satisfactorily complete the work, to the satisfaction of the Engineer. Excavation and disposal under curb ramps and subbase course under curb ramps will be paid for separately. Sidewalk

ITEM 608.0105NN09 –CURB RAMP

beyond the upper grade break or turning space, as shown in the US Customary Standard Sheets 608-01, will be paid for separately. Any required Survey shall be paid for separately under the lump sum price bid for survey operations. Any incidental asphalt and concrete materials shall be included in work and not paid separately.

Payment will be made under:

<u>Item Number</u>	<u>Description</u>	<u>Pay unit</u>
608.01050009	Curb Ramp as shown in project details	Each
608.01050109	Curb Ramp Configuration Type 1	Each
608.01050209	Curb Ramp Configuration Type 2	Each
608.01050309	Curb Ramp Configuration Type 3	Each
608.01050409	Curb Ramp Configuration Type 4	Each
608.01050509	Curb Ramp Configuration Type 5	Each
608.01050609	Curb Ramp Configuration Type 6	Each
608.01050709	Curb Ramp Configuration Type 7	Each
608.01050809	Curb Ramp Configuration Type 8	Each
608.01050909	Curb Ramp Configuration Type 9	Each
608.01051009	Curb Ramp Configuration Type 10	Each
608.01051109	Curb Ramp Configuration Type 11	Each
608.01051209	Curb Ramp Configuration Type 12	Each
608.01051309	Curb Ramp Configuration Type 13	Each
608.01051409	Curb Ramp Configuration Type 14	Each

ITEM 608.01050010 - CONCRETE SIDEWALKS - UNREINFORCED
(GRADING INCLUDED)

DESCRIPTION.

The work shall consist of the construction of portland cement concrete sidewalks and necessary grading as shown on the plans.

MATERIALS.

The following requirements of Sections 203 and 608 shall apply: 203-2.02A, 608-2, and 608-2.01.

CONSTRUCTION DETAILS.

The requirements of Subsection 203-3.12 shall apply to the placement of embankment.

The requirements of Subsection 608-3.01 shall apply except that all references to driveways and wire fabric for reinforcement shall be disregarded. The sidewalk shall be constructed without wire fabric for concrete reinforcement.

The location of the sidewalks shall be properly graded to conform with the sidewalk cross-section and line and grade. The graded area shall be firm and dry before placing the concrete and all organic or unsuitable materials, existing curbs, sidewalks, and driveways shall be removed.

METHOD OF MEASUREMENT.

Concrete sidewalks will be measured by the number of cubic yards of cement concrete computed from payment lines shown on the plans.

BASIS OF PAYMENT.

The unit price bid per cubic yard will include all excavation, embankment, preparation of subgrade, and all other materials, equipment, and labor necessary to complete the work as called for on the plans and to the satisfaction of the Engineer.

No separate payment will be made for excavation or embankment above, below, or within the volume of sidewalk placed.

Payment at the unit bid price will be made after the concrete sidewalks and curing application have been properly placed.

ITEM 608.02010015 - Unclassified Excavation and Disposal for Sidewalks, Curb Ramps and Curbs
ITEM 608.02020015 - Optional Type Subbase Course for Sidewalks, Curb Ramps and Curbs

All the provisions of *Unclassified Excavation and Disposal* under Section 203 shall apply.

All the provisions of *Subbase Course, Optional Type* under Section 304 shall apply.

Payment shall be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>PAY UNIT</u>
608.02010015	Unclassified Excavation and Disposal for Sidewalks, Curb Ramps and Curbs	Cubic Yards
608.02020015	Optional Type Subbase Course for Sidewalks, Curb Ramps and Curbs	Cubic Yards

ITEM 609.04010510 - CAST-IN-PLACE CONCRETE CURB (GRADING INCLUDED) TYPE VF150
ITEM 609.04020510 - CAST-IN-PLACE CONCRETE CURB (GRADING INCLUDED) TYPE VF150A
ITEM 609.04030510 - CAST-IN-PLACE CONCRETE CURB (GRADING INCLUDED) TYPE M150
ITEM 609.04040510 - CAST-IN-PLACE CONCRETE CURB (GRADING INCLUDED) TYPE M150A
ITEM 609.04050510 - CAST-IN-PLACE CONCRETE CURB (GRADING INCLUDED) TYPE M100
ITEM 609.04060510 - CAST-IN-PLACE CONCRETE CURB (GRADING INCLUDED) TYPE M100A
ITEM 609.04070510 - CAST-IN-PLACE CONCRETE CURB (GRADING INCLUDED) TYPE T100
ITEM 609.05010510 - CAST-IN-PLACE CONCRETE CURB AND GUTTER (GRADING INCLUDED)
TYPE VF150G
ITEM 609.05020510 - CAST-IN-PLACE CONCRETE CURB AND GUTTER (GRADING INCLUDED)
TYPE M100G

DESCRIPTION

The work shall consist of the construction of concrete curb or curb and gutter and necessary grading as shown on the plans or as specified by the Engineer.

MATERIALS

The requirements of Subsection 609-2 shall apply. The curb or curb and gutter shall conform to the dimensions shown on the standard sheets, except that the depth of the curb shall be as shown on the plans.

CONSTRUCTION DETAILS

The requirements of Subsections 609-3.01 and 609-3.04 shall apply.

The location of the concrete curb or curb and gutter shall be properly graded to conform to the curb line and grade. The graded area shall be firm and dry before placing concrete and all organic or unstable materials, existing curbs, sidewalks, and driveways shall be removed.

METHOD OF MEASUREMENT

Concrete curb or curb and gutter placed under these specifications will be measured by the number of linear feet, measured to the nearest foot. The measurement will be taken along the top front arris line of the curb or curb and gutter.

BASIS OF PAYMENT

The unit price bid per foot shall include all excavation, embankment, preparation of subgrade, curb anchors, and all other materials, equipment and labor necessary to complete the work as called for on the plans or as specified by the Engineer. The unit price bid shall also include: replacement of curb and curb and gutter that was produced out of tolerance; cleaning of curb, or curb and gutter found to be dirty prior to final acceptance; and repair or replacement of curb and curb and gutter damaged by the Contractor's operations.

No separate payment will be made for excavation or embankment above, below, or within the volume of curb placed

ITEM 618.78ABCN15 – SECURITY BOLLARD

DESCRIPTION

This work shall consist of furnishing and installing security bollards, with approved covering or finishes, and yellow, retro-reflective tape as shown on the contract documents and as directed by the Engineer.

Definitions:

Deep Foundation: Concrete foundation for bollard or bollard array that is greater than twenty-four inches (24”) deep.

Shallow Foundation: Concrete foundation for bollard or bollard array that is less than or equal to twenty- four inches (24”) deep.

Bollard Array: A group of two or more bollards pre-assembled to a metal “sled”. The assembly may or may not include reinforcing bar. The components are welded together to form a unit.

MATERIALS

The following sections of the standard specifications shall apply:

Structural Concrete	555-2
Precast Concrete – General	704-03
Galvanized Coatings and Repair Methods	719-01
Security Bollards	710-35

Cast-In-Place Foundation:

Foundation shall be per manufacturer’s installation instructions unless specifically indicated otherwise in the contract documents.

Concrete: Any concrete necessary for the installation of these bollards, or to restore the site, shall be either Class A concrete meeting the requirements of §501, or meet the requirements shown in the manufacturer’s installation instructions, whichever is higher strength.

Reinforcing Bar: Reinforcing bar shall be per manufacturer’s specification unless specifically indicated otherwise in the contract documents. Welded reinforcing bar that is part of a bollard or bollard assembly shall be visually inspected on site prior to acceptance.

Precast Foundation:

Only fixed or removable bollards shall be installed with precast foundations.

Precast foundation shall be produced in accordance with §704-03 and manufactured by a precast producer on the Approved List (Group 1) for QC/QA production.

Reinforcing Bar: Reinforcing bar shall be per manufacturer’s specification unless specifically indicated otherwise in the contract documents. Welded reinforcing bar that is part of a bollard or bollard assembly shall be visually inspected at the pre-casting facility prior to acceptance.

ITEM 618.78ABCN15 – SECURITY BOLLARD

Yellow, Retro-Reflective Tape:

Security bollards shall have yellow, retro-reflective tape that meets the material requirements described in §710-35.

CONSTRUCTION DETAILS

The manufacturer shall fabricate bollard arrays in a manner that satisfies the plan locations specified in the contract documents without compromising the performance of the system. This may require following a curved alignment for the bollards. It may also require increasing the size of an array and the number of bollards mounted on it in order to achieve the length of the line of the installations.

The manufacturer's written installation instructions shall be strictly adhered to unless the contract documents contain differing instructions specifically addressing the bollards. Any discrepancies or problems will be resolved by the Engineer.

Any concrete removal necessary for the installation of these bollards shall first be saw cut so as not to damage the existing concrete to remain. Prior to saw-cutting and/or excavation, the Contractor shall ensure that the affected area is free from obstacles, including, but not limited to, underground utilities. If utilities are known or discovered to be near the excavation, the Contractor shall take steps to ensure they are not damaged by his/her operations.

The Contractor shall ensure that the bollard(s) are oriented appropriately, with the "attack" side of the bollard facing toward the vehicular traffic. Refer to the manufacturer's installation instructions for additional information.

Any bollard covers or special finishes (e.g. powder coating, painting etc.) shall be one of the options specified in the contract documents.

Yellow, Retro-Reflective Tape:

Yellow, retro-reflective tape shall be:

- applied to the top and bottom of each security bollard (for single bollards or bollards in arrays), or if the bollard is covered, to each security bollard cover.
- located:
 - approximately 2" from the top of the bollard/bollard cover, AND
 - approximately 12" from the bottom of the bollard/bollard cover.
- applied to create a retro-reflective band around the bollard circumference that is approximately 6" in width. The 6" band width may be achieved by using a series of smaller width tapes (e.g. four 2" wide tape strips with spaces in between each individual strip of reflective tape). For ornamental security bollards or bollard covers, a 6" wide strip may not be achievable. The retro-reflective strip on ornamental security bollards shall be as wide as possible and be placed in a manner that does not detract from the security bollard's aesthetic.
- If the bollard material is wood or concrete, additional measures may be required to ensure the tape properly adheres. Refer to the contract documents for additional information.

ITEM 618.78ABCN15 – SECURITY BOLLARD

METHOD OF MEASUREMENT

This work will be measured as the number of each security bollard installed. Bollards supplied in arrays of two or more shall be paid individually (e.g., a 3-bollard array shall be paid as a quantity of three individual bollards).

BASIS OF PAYMENT

The unit price bid per each security bollard furnished and installed shall include the cost of any saw cutting, excavation, and material disposal, and furnishing all labor, materials, and equipment necessary to satisfactorily complete the work. The costs for site preparation and concrete foundation, including steel bar or mesh, shall be included in the cost of this payment item.

Payment will be made under.

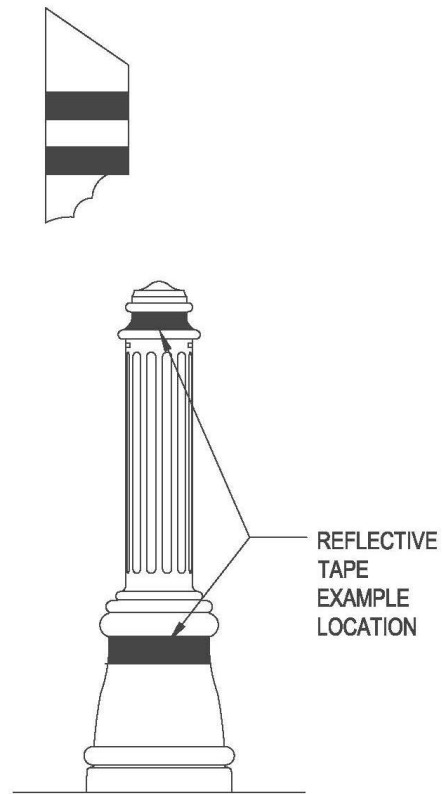
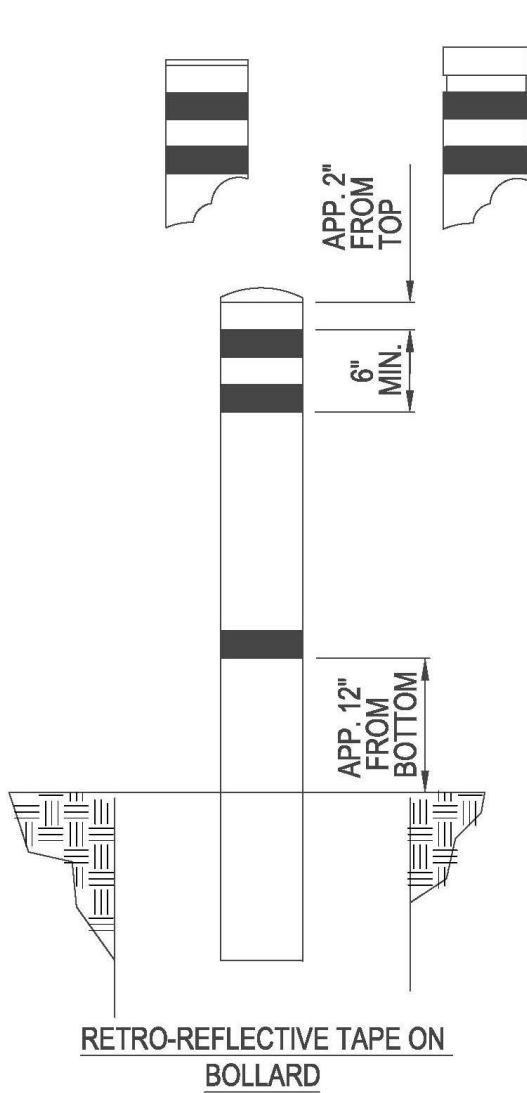
Item	Description	Pay Unit
618.78ABCN15	Security Bollard	Each

Where:

<u>A = Bollard Type</u>	<u>B = Footing Type</u>	<u>C = Foundation Depth</u>
1 = Fixed	0 = Cast-in-Place (CIP)	0 = Shallow
2 = Removable	1 = Precast	1 = Deep
3 = Retractable		

and N is an optional identifier for unique features of the bollards. If not used, the default value will be 0. If used the significance of the number will be as defined in the contract documents. Typical uses will be to specify different bollard covers in different locations within the project.

ITEM 618.78ABCN15 – SECURITY BOLLARD



NOTES:
FOR ORNAMENTAL BOLLARDS, WHEN THE 6" MIN WIDE STRIP MAY NOT BE ACHIEVABLE. THE REFLECTIVE TAPE STRIP SHALL BE AS WIDE AS POSSIBLE, AND SHALL BE APPLIED IN A MANNER THAT DOES NOT DISTRACT FROM THE BOLLARD'S AESTHETIC.

RETRO-REFLECTIVE TAPE ON DECORATIVE BOLLARD

ITEM 662.60030008 - ALTERING ELEVATION OF GAS VALVE BOXES

DESCRIPTION:

Under this item, the contractor shall alter the elevation of gas valve boxes to meet new grades as shown on the plans or as directed by the Engineer.

MATERIALS:

Concrete shall meet the requirements for Class A Concrete in Section 555 of the Standard Specifications.

CONSTRUCTION DETAILS:

Paved Areas:

Unless an alternate method is approved by the owner and directed by the Engineer, the following method shall be used:

The top section of the gas valve box shall be raised to meet the finished grade and supported on a concrete collar at least 6 inches in depth and at least 6 inches wider than the outer edges of the top section of the gas valve box casting. The existing pavement shall be cut and removed as needed in order to place the concrete collar. Cutting shall be done with tools or equipment acceptable to the Engineer and in such a manner as to avoid cracking the abutting portions of pavement. The concrete shall be allowed to cure for the required period before paving around the gas valve box.

Non-Paved Areas:

The method of raising the gas valve box shall be as approved by the owner and as directed by the Engineer.

METHOD OF MEASUREMENT:

The quantity to be paid for under this item will be the number of gas valve boxes altered.

BASIS OF PAYMENT:

The unit price bid per each shall include the cost of furnishing all labor, materials and equipment necessary to satisfactorily complete the work including any pavement cutting, excavation, backfill and pavement restoration. Any gas valve box castings or covers broken through carelessness on the part of the contractor shall be replaced at the contractor's expense.

**ITEM 662.62000010 - RESETTING CASTINGS ON EXISTING UTILITY
MANHOLES**

DESCRIPTION

This work shall consist of removing, storing, and resetting existing utility castings, complete with covers, and appurtenances, to grade on existing utility manholes.

MATERIALS

Masonry chimney materials shall meet the requirements of the following subsections of Section 700:

Precast Concrete Pavers	704-13
Masonry Mortar	705-21

Concrete shall be Class A meeting the requirements of Section 501.

CONSTRUCTION DETAILS

The existing castings, covers, and appurtenances shall be removed, stored if necessary, cleaned and reset to the line and grade as indicated in the Plans or as directed by the Engineer.

The existing masonry adjustment collar, or a portion of it, shall be removed where necessary for resetting of the existing casting. The existing castings shall be set to grade using precast concrete pavers and mortar and/or Class A concrete. The castings shall be set in a mortar bed on the existing structure. If an adjustment ring was removed from the structure, the casting shall be set at such grade that no adjustment ring is needed, and the adjustment ring shall become the property of the Contractor and shall be removed from the site of work.

Any pavement and shoulder courses, subcourses, curbs, sidewalks, lawns and other top surfaces removed or damaged during the work of removing the existing castings and setting the new castings, shall be replaced in kind, unless otherwise shown on the plans or directed by the Engineer. This shall include all sawcutting necessary for this removal.

METHOD OF MEASUREMENT

This work will be measured by the number of existing utility castings, complete with covers, reset to grade on existing utility manholes.

BASIS OF PAYMENT

The unit price bid for resetting each utility casting shall include the cost of furnishing all labor, materials and equipment necessary to complete the work.

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ITEM 662.62000010 - RESETTING CASTINGS ON EXISTING UTILITY
MANHOLES

Any castings, covers or appurtenances broken through carelessness on the part of the Contractor shall be replaced at the Contractor's expense.

The cost of pavement cutting, excavation, backfill, and pavement restoration will be paid for under their respective items.

ITEM 680.050200NA - VIDEO VEHICLE DETECTION EQUIPMENT

DESCRIPTION

This work shall consist of furnishing and installing a system that detects vehicles on a roadway by processing video images sent from a camera to an image processor with detector outputs that can be received by a 2070L series traffic signal controller within a 336S or 332 traffic signal control cabinet.

MATERIALS

1. Hardware

- 1.1. This specification shall include furnishing and installing (1) one fixed position closed circuit video camera as shown on the plans or as ordered by the engineer.
- 1.2. This includes any and all mounting hardware for attachment to a horizontal member such as a traffic signal mast arm or a light duty camera standoff cantilever arm, as well as the required video, power, and control cables routed back to the traffic signal control cabinet.
- 1.3. This specification shall include furnishing and installing (1) one video camera image processor capable of receiving images sent from the camera, decoding them, and using the camera images to determine the need for a vehicle detection call to be placed on the respective roadway approach. This item includes all wiring and configuration of the unit to make it functional. The IP shall be modular by design and housed in a standard input file for a 336S or 332 signal control cabinet. Each IP shall occupy no more than two file slots, with four (4) separate programmable outputs. All power shall come directly from the input rack.

2. Software

- 2.1. The system shall be capable of detecting vehicles in multiple lanes of traffic simultaneously. Detection zones shall be user-defined by utilizing a laptop connected directly to the image processor. The user must be able to define virtual vehicle detectors by placing lines and boxes on the video display on the laptop. Software must allow the user to re-define the parameters of the video detection at any time. Once saved, the image processor must be able to acknowledge the presence of a vehicle and send a call to the 2070L controller via the input file assignment.
- 2.2. The software must also allow real time streaming video to be introduced to an Ethernet network within the traffic signal controller cabinet. The image processor must be IP (internet protocol) addressable to allow for this streaming video output. The video output will be stripped of the lines and boxes necessary to make the video detection possible, and must not interfere with the functionality of the video detection system.

3. Functionality

- 3.1. Real time video detection
- 3.2. Image processor must be capable of processing the images from a video camera at a speed of 30 times per second.

ITEM 680.050200NA - VIDEO VEHICLE DETECTION EQUIPMENT

- 3.3. The system shall be capable of detecting the presence of vehicles in multiple vehicle detection zones simultaneously.
- 3.4. System shall be capable of stop line detection, presence detection, directional presence detection, and system sensors.
- 3.5. It shall be possible to set-up and view the image processor software by using a standard laptop computer and connecting via Ethernet, USB, or serial connection. No special video capture cards will be required.
- 3.6. All set-up parameters and settings shall be saved on the image processor card and shall be saved and automatically recovered in the event of a disconnect or a power fail.
- 3.7. The system shall have the ability to upload / download the set-up parameters directly to or from a laptop.

4. Vehicle Detection

- 4.1. The video detection system shall provide flexible detection zone placement anywhere and at any orientation within the combined field of view of the cameras. A single detector shall be able to replace multiple conventional detector loops connected in series.
- 4.2. Placement of detection zones shall be by means of a laptop computer operating in the Windows XP or higher operating environment, and a mouse or by using a simple keyboard and monitor. The monitor screen of a laptop computer shall show images of the detection zones superimposed on the video image of traffic. This configuration shall allow the display of detection superimposed on the video image of traffic directly on the laptop computer.
- 4.3. The detection zones shall be created by using the mouse or simple keyboard to draw detection zones on the laptop computer.
- 4.4. It shall be possible to use the mouse or other input device to edit previously defined detector configurations so as to fine-tune the detection zone placement. Once a detection configuration has been created, the computer system shall provide a graphic display of the new configuration the laptop computer.
- 4.5. It shall be possible to individually adjust sensitivity for each detection zone in the system.
- 4.6. When a vehicle is under a detection zone, the detection zone shall change in color or intensity on the laptop computer screen, thereby verifying proper operation of the detection system.
- 4.7. Overall performance of the video detection system shall be comparable to inductive loops.

Using standard camera optics and in the absence of occlusion, the system shall be able to detect vehicle presence with 98% accuracy under normal conditions (day & night) and 96% accuracy under adverse conditions (fog, rain, snow).

ITEM 680.050200NA - VIDEO VEHICLE DETECTION EQUIPMENT

5. Environmental

- 5.1. The system shall be designed to operate reliably in the adverse environment found in the typical roadside traffic controller cabinet. It shall meet the environmental requirements set forth for Type 2070L controllers. Operating temperature shall be from -31 F to +165 degrees F at 0% to 95% relative humidity, non-condensing.

6. Electrical

- 6.1. Serial communications to the modem shall be through an RS-232 serial port. This port can be used for communications to a modem, or laptop.
- 6.2. The Image Processor shall be equipped with a detector interface for at least 4 detector outputs. Output levels shall be compatible with the Type 2070L standards, for a standard model 336S or 332 cabinet.
- 6.3. The Image Processor shall be equipped with (1) one BNC composite video input.
- 6.4. The Image Processor shall be equipped with at least (1) one BNC composite video output.
- 6.5. The Image Processor shall have error detection, and shall provide a closed output in the event of camera failure or IP malfunction or loss of video due to inclement weather (fog/whiteout).
- 6.6. The Image Processor shall have the capability transmitting real time streaming MPEG-4 video. MPEG-4 video will be transmitted via Ethernet communications to the existing traffic signal network where it can be remotely decoded and displayed and/or stored.
- 6.7. The Image Processor shall have separate light emitting diodes that indicate power, video, serial communications, and detector actuations.

7. Camera

- 7.1. The video system shall use medium-resolution full color camera as the video source for real-time vehicle detection. Each camera shall provide at least 383-line resolution and at least a 510 x 492 pixel CCD sensing element that produces useable video at a scene luminance level of 0.15 lux. It shall have automatic gain, automatic iris, and absolute black reference controls. The limits of gain, iris, and sensitivity shall be adjustable to minimize blooming during nighttime hours.
- 7.2. The camera lens shall provide power zoom capability from .31 inches to 1.9 inches, or a fix focal length in the range from .15 inches to 2.95 inches, as specified by the manufacturer. The auto-iris capability of the lens shall operate reliably at -7 degrees F.
- 7.3. The camera and lens assembly shall be housed in an environmental NEMA-4 enclosure that is watertight and dust proof. The camera shall employ the use of a heater, not to consume more than 15-watts of power. Heater shall be attached to the faceplate of the enclosure to avoid ice and condensation in cold weather. The enclosure shall be light-colored and shall include a sun shield to minimize solar heating and glare.

ITEM 680.050200NA - VIDEO VEHICLE DETECTION EQUIPMENT

- 7.4. A video interface panel shall be mounted inside the traffic signal controller cabinet. The panel shall provide a terminal block for power connection and grounding, coaxial cable connection points, and a transient voltage suppressor for each image sensor.
- 7.5. The camera shall be connected to the IP in such a manner that the attenuation of the MPEG-4 video signal from the image sensor is not attenuated more than 3 db when measured at the IP. The connection between the cameras and the video interface panel shall be coaxial cable suited for outdoor installation and the cost shall be included in this item.

CONSTRUCTION DETAILS

8. Installation and Training

- 8.1. The manufacturer of the video detection system or their representative shall design the camera layout, placement and lens size, and shall supervise the installation and testing of the video and computer equipment. A factory certified representative from the supplier shall be on-site for a minimum of one (1) day.
- 8.2. Training shall be provided "As Needed" to personnel of the contracting agency and County personnel in the operation, setup, and maintenance of the video detection system. Two (2) operations manuals shall be provided for each unit installed.
- 8.3. The manufacturer shall provide 4 complete sets of maintenance manuals for the installed equipment. These manuals shall have complete set-up, maintenance, and troubleshooting procedures presented in an organized format.

METHOD OF MEASUREMENT

This work will be measured as the number of Video Vehicle Presence Detectors that are satisfactorily furnished and installed in accordance with the contract documents and as directed by the Engineer.

BASIS OF PAYMENT

The unit price bid to furnish and install Video Vehicle Detection Equipment shall include the cost of furnishing all labor, tools, materials, installation, hardware, software, mounting bracket, power, control and video cables, training, and technical support associated with providing fully functional and accepted Video Vehicle Presence Detectors. No payment will be made until the equipment has operated properly and satisfactorily for fifteen (15) days and the equipment is accepted.

ITEM 680.110004NA - FURNISH AND INSTALL 4 FOOT SIGNAL POST
ITEM 680.110008NA - FURNISH AND INSTALL 8 FOOT SIGNAL POST
ITEM 680.110010NA - FURNISH AND INSTALL 10 FOOT SIGNAL POST
ITEM 680.110012NA - FURNISH AND INSTALL 12 FOOT SIGNAL POST

DESCRIPTION

This work shall consist of furnishing and installing aluminum signal posts in accordance with the contract documents and as directed by the Engineer.

MATERIALS

1. Materials and Finish

1.1 The shaft shall be one piece seamless round aluminum tubing conforming to the Aluminum Association Alloy 6061-T6. The aluminum shaft shall have a satin brushed finish.

2.2 Screws, nuts, bolts, washers and miscellaneous hardware other than anchor bolts, shall be made of Stainless Steel Alloy No. 302.

1.3 Anchor bolts, nuts, and washers shall conform to the Standard Specifications for Low Carbon Steel Externally and Internally Threaded Standard Fasteners, latest edition AISI C 1035 special quality. Nuts, washers, base plate, and the anchor bolts shall be galvanized in accordance with ASTM 153. Bolts shall be galvanized after threading.

2. Design Requirements

2.1 The post shall be designed to support two thirty-five (35) pound traffic signal faces with backplates, each with a surface area of five (5) square feet and two (2) pedestrian signals, each with a surface area of 1.8 square feet. The post shall be designed to support these signal heads when subjected to a load from a hundred (100) mile per hour wind.

2.2 The base shall be fabricated from steel plate. The corners shall be rounded. A hole shall be cut in the center of the plate to receive a standard 4" diameter steel coupling. The coupling shall be fillet welded on the top and bottom of the plate. The base shall be of sufficient cross section to fully develop the ultimate strength of the post. The base shall be designed to fully transfer the load to the anchor bolts. The top of the installed 4" diameter pole coupling and the top of the anchor bolt nuts shall be a maximum of 4" above grade.

2.3 The base shall be fabricated to receive four (4) anchor bolts spaced ninety (90) degrees apart on a 12-3/4" diameter bolt circle, indicated on the Standard Traffic Drawings.

3. Specific Requirements

3.1 The posts shall be round. If welded longitudinally, the exposed weld shall be ground or rolled smooth and flush with the base metal. All welds shall be continuous. Transverse welds, other than fillet welds shall not be permitted.

ITEM 680.110004NA - FURNISH AND INSTALL 4 FOOT SIGNAL POST
ITEM 680.110008NA - FURNISH AND INSTALL 8 FOOT SIGNAL POST
ITEM 680.110010NA - FURNISH AND INSTALL 10 FOOT SIGNAL POST
ITEM 680.110012NA - FURNISH AND INSTALL 12 FOOT SIGNAL POST

3.2 A handhole with aluminum cover plate shall be provided. The longer dimension shall be vertical. The handhole shall be centered above the base plate, at a distance indicated on the Standard Drawings. The cover plate shall be secured by two (2) stainless steel “tamper proof” screws.

3.3 A grounding stud with a bronze lock washer and nut shall be mounted inside the shaft opposite the handhole for attaching the equipment grounding conductor.

3.4 Each post shall be provided with four (4) anchor bolts. Each anchor bolt shall be provided with a leveling nut and an “acorn type” top nut.

3.5 The size of each anchor bolt shall be as indicated on the Standard Traffic Drawings.

3.6 The top of the shaft shall be designed to receive a slip fitter.

3.7 When required, the aluminum shaft shall be furnished with a weatherproof spun aluminum pole cap, complete with three (3) stainless steel set screws for fastening to the top of the shaft.

3.8 The total height of the shaft and base shall be as specified.

3.9 All dimensions shall be as indicated on the Standard Traffic Drawings.

4. Certification and Drawings

4.1 The Contractor shall provide descriptions and drawings of the signal post for approval.

4.2 The manufacturer, when required, shall provide a certificate that the post meets the material requirements of this specification.

CONSTRUCTION DETAILS

5. Installation

5.1 The signal post shall be erected on a foundation installed under another item.

5.2 The handhole shall be located as ordered by the Engineer.

5.3 The post shall be properly plumbed by the use of the leveling nuts and secured in place by “acorn type” top nuts.

5.4 The signal post, conduit, and ground rod shall be interconnected by a bare solid copper equipment grounding conductor indicated on the Standard Traffic Drawings.

METHOD OF MEASUREMENT

This work will be measured as the number of signal posts satisfactorily furnished and installed.

ITEM 680.110004NA - FURNISH AND INSTALL 4 FOOT SIGNAL POST
ITEM 680.110008NA - FURNISH AND INSTALL 8 FOOT SIGNAL POST
ITEM 680.110010NA - FURNISH AND INSTALL 10 FOOT SIGNAL POST
ITEM 680.110012NA - FURNISH AND INSTALL 12 FOOT SIGNAL POST

BASIS OF PAYMENT

The unit price bid shall include the cost of furnishing all labor, materials, tools, transportation, handling, incidentals and equipment necessary to satisfactorily complete the work including the signal post, anchor bolts, acorn nuts, leveling nuts, pole cap (if required), bare copper equipment grounding conductor, ground rod.

**ITEM 680.130001NA – FURNISH AND INSTALL ELECTRICAL
DISCONNECT / GENERATOR TRANSFER SWITCH**

1. Description

Under this item, the Contractor shall furnish and install an exterior surface mounted electrical disconnect / generator transfer switch as shown in the contract documents or as directed by the Engineer.

2. Materials

a. General

The electrical disconnect / generator transfer switch shall allow for easy switching between utility power and generator power in the event of loss of utility power. Transfer switches may be used for traffic signal cabinets, HUB cabinets, or any other traffic control or ITS cabinets.

b. Housing Requirements

The electrical disconnect / generator transfer switch shall be housed in a sealed unit; and be surface mounted onto the exterior of the traffic cabinet so as not to interfere with the accessibility of the cabinet, its components, or any pedestrian right-of-way. The electrical disconnect / generator transfer switch housing door shall be lockable with a #2 Corbin lock, tamper proof, and weatherproof in a closed position. The electrical disconnect / generator transfer switch housing shall be constructed with heavy duty 12 gauge rust and corrosion proof aluminum and be 9”h x 6”w x 4.375”d. A 3/16-inch-thick ethylene propylene diene monomer (EPDM) closed-cell sponge rubber gasket shall be used to weatherproof the connection between the electrical disconnect / generator transfer switch housing and the traffic cabinet.

c. Electrical Disconnect / Generator Transfer Switch Requirements

The electrical disconnect / generator transfer switch shall be a 30 Amp model specifically designed for traffic signal applications and have a simple manually operated toggle type transfer switch to allow for easy switching between utility power and generator power in under 250 milliseconds to allow for the traffic controller cabinet to operate normally without interruption during the transfer to utility power. The electrical disconnect / generator transfer switch generator connection shall be one (1) male 30 Amp twist lock type flush mount connector, and one (1) male 20 Amp NEMA type flush mount connector. The electrical disconnect / generator transfer switch shall contain an LED indicator light that illuminates when in generator mode and utility power is restored, and automatically turns off when transferring to utility power is complete. A minimum of one #2 key shall be provided with each transfer switch provided.

**ITEM 680.130001NA – FURNISH AND INSTALL ELECTRICAL
DISCONNECT / GENERATOR TRANSFER SWITCH**

d. **Cable Requirements**

Each electrical disconnect / generator transfer switch shall be provided with sufficient 2c#8 service cable to allow for the connection from the local power feed to the electrical disconnect / generator transfer switch, and from the electrical disconnect / generator transfer switch to the terminal block located within the traffic cabinet.

Each electrical disconnect / generator transfer switch shall also be provided with two 12 foot generator cables:

Cable 1 – shall have a female 30 Amp twist lock connector on one end and a male 30 Amp twist lock connector on the other.

Cable 2 – shall have a female 30 Amp twist lock connector on one end and a male 20 Amp duplex plug on the other.

3. **Construction Details**

The electrical disconnect / generator transfer switch and housing shall be mounted to an exterior side of the traffic cabinet and not to any door. The electrical disconnect / generator transfer switch and housing shall be mounted to the traffic cabinet as shown on the plans, or the standard sheets or as ordered by the Engineer; so as not to interfere with the accessibility of the traffic cabinet, its components, or any pedestrian right-of-way. For post mounted traffic cabinets, the electrical disconnect / generator transfer switch and housing shall be mounted to the lower portion of the traffic cabinet. For ground mounted traffic cabinets, the electrical disconnect / generator transfer switch shall be mounted a minimum of four feet above the foundation to avoid flood and splash water. The electrical disconnect / generator transfer switch shall be wired from inside the existing traffic cabinet, and the connection between the transfer switch and cabinet shall be weatherproofed by a 3/16-inch-thick ethylene propylene diene monomer (EPDM) closed-cell sponge rubber gasket. Service cable shall be installed as shown on the plans, on the standard sheets, or as ordered by the Engineer. The Contractor must demonstrate proper operation of each installed electrical disconnect / generator transfer switch utilizing a separate electrical power generator or inverter.

4. **Method of Measurement**

This item will be measured for payment as the number of electrical disconnect / generator transfer switches furnished, installed, tested, and accepted by the Engineer-in-Charge.

**ITEM 680.130001NA – FURNISH AND INSTALL ELECTRICAL
DISCONNECT / GENERATOR TRANSFER SWITCH**

5. Basis of Payment

The unit price bid shall include the cost of all labor, materials, and equipment necessary to satisfactorily complete the work.

ITEM 680.321001NA - MODEL 2070 LITE CONTROLLER

DESCRIPTION

This work shall consist of furnishing and installing Model 2070 LITE (2070L) Controllers in accordance with the contract documents and as directed by the Engineer.

MATERIALS

1. Qualification

- 1.1 All components supplied under this specification shall be listed on the CalTrans Qualified Product List (QPL) that is in effect on the issue date of this invitation (see section 1.2 for 2070L controller qualification). Equipment that is not defined by the CalTrans "Transportation Electrical Equipment Specifications" (TEES) that is in effect on the issue date of this invitation is not covered by this requirement. For each piece of equipment that is covered by this requirement, the vendor shall submit a notarized certification the equipment is listed on the QPL that was in effect as of the date of issue of this invitation. Failure to provide this certification shall cause the bid to be rejected as unresponsive. If during the course of the contract, any piece of equipment ceases to be listed on the current QPL, the County may, at its option, require the vendor to provide a suitable replacement that is listed on the current QPL at no additional cost.
- 1.2 Model 2070L controllers furnished as part of this item specification must be listed on the Nassau County Qualified Products List (QPL) for 2070L Traffic Signal Controllers.

2. Requirements

- 2.1 All materials furnished, assembled, fabricated and installed shall be new, corrosion resistant and in strict accordance with the latest provisions set forth by the California Department of Transportation (CalTrans) Specifications.

The specifications for the Model 2070L Controller Unit will be as stated in the CalTrans document TEES, August 16, 2002 or latest revisions and all addenda thereof.

- 2.2 The Model 2070L Controller Unit shall be delivered in the following configuration:

- Unit Chassis
- Model 2070 – 1B CPU Card (LITE)
- Model 2070 – 2A Field I/O Card
- Model 2070 – 3B Front Panel Interface
- Model 2070 – 4A Power Supply
- Model 2070 – 7A 2070 RS-232 Card (EIA-232 Serial Port)

- 2.3 The Model 2070L Controller Units supplied to this specification shall have the chassis openings for any unused Motherboard connector covered with the appropriate cover plates so that the entire rear of the controller is closed.

ITEM 680.321001NA - MODEL 2070 LITE CONTROLLER

- 2.4 The Model 2070L Controller Units shall be supplied with 2X Wide Cover Plates installed over the chassis openings for connectors A1 and A2 so that the rear of the controller is completely enclosed.

CONSTRUCTION DETAILS

3. Installation

- 3.1 The Contractor shall install the Model 2070L Controller Unit and all related hardware in the Model 336S or 332 Cabinet at locations specified on the plans.
- 3.2 The County will provide the signal control software and the Contractor shall be required to program and test the Controller prior to installation in the field.
- 3.3 The Contractor shall program each Model 2070L Controller Unit with a unique internet protocol (IP) address provided by the County and recorded in each equipment cabinet.

4. Documentation Requirements

- 4.1 One (1) complete set of operations and maintenance manuals shall be placed in each field cabinet and one (1) complete set shall be delivered to Nassau County. The manuals shall, as a minimum, include the following:
- Complete and accurate schematic diagrams.
 - Complete installation procedures.
 - Complete parts list including names of vendors for parts not identified by universal part numbers such as JEDEC, RETMA, or EIA.
 - Pictorial of components layout on circuit board.
 - Complete maintenance and trouble-shooting procedures.
 - Complete stage-by-stage explanation of circuit theory and operation.

5. Testing Requirements

- 5.1 Design Approval Tests shall include all functional and environmental tests specified in the most current version of the CALTRANS TEES Specifications.

A complete Quality Control (QC)/ final test report for the 2070L shall be supplied with each unit. The test report shall indicate the name of the tester and shall be signed by a responsible manager. The QC procedure shall include the following:

- Acceptance of all supplied components.
- Physical and functional testing of all modules and items.
- A minimum 100-hour burn-in of all equipment

ITEM 680.321001NA - MODEL 2070 LITE CONTROLLER

METHOD OF MEASUREMENT

This work will be measured as the number of Model 2070 LITE Controllers satisfactorily furnished, installed, tested and made fully operational.

BASIS OF PAYMENT

The unit price bid shall include the cost of furnishing all labor, materials, tools and equipment necessary to satisfactorily complete the work. Payment for all documentation and testing specified herein shall be included under this contract item.

ITEM 680.332001NA - MODEL 332 CABINET AND AUXILIARY EQUIPMENT
ITEM 680.332002NA - MODEL 332 CABINET WITH AUXILIARY OUTPUT FILE AND
EQUIPMENT

DESCRIPTION

This work shall consist of furnishing and installing Model 332 Cabinet and Auxiliary Equipment in accordance with the contract documents and as directed by the Engineer.

MATERIALS

1. **Controller Requirements**

1.1 All components and plug-in modules supplied under this item shall conform to the New York State Transportation Management Equipment Specifications for peripheral equipment. Model 2070L controllers shall be on the latest Nassau County Qualified Products List and be approved by NCDPW. Model 2070L controllers will be paid under a separate item.

2. **Qualification**

2.1 All Model 332 components supplied under this specification shall be listed on the CalTrans Qualified Product List (QPL) that is in effect on the issue date of this invitation. In the case of the modified 332 Cabinet, the vendor's standard model shall be listed on the CalTrans QPL that is in effect on the issue date of this invitation. All auxiliary equipment shall be listed on the CalTrans QPL that is in effect on the issue date of this invitation. Equipment that is not defined by the CalTrans "Traffic Signal Control Equipment Specifications" (TSCES) or "Transportation Electrical Equipment Specifications" (TEES) that is in effect on the issue date of this invitation is not covered by this requirement. For each piece of equipment that is covered by this requirement, the vendor shall submit a notarized certification the equipment is listed on the QPL that was in effect as of the date of issue of this invitation. Failure to provide this certification shall cause the bid to be rejected as unresponsive. If during the course of the contract, any piece of equipment ceases to be listed on the current QPL, the County may, at its option, require the vendor to provide a suitable replacement that is listed on the current QPL at no additional cost.

3. **Requirements**

3.1 All materials furnished, assembled, fabricated and installed shall be new, corrosion resistant and in strict accordance with the latest provisions set forth by the California Department of Transportation (CalTrans) Specifications.

The specifications for the Model 332 Cabinet and auxiliary equipment shall conform to the requirements in CalTrans documents TSCES and TEES, and to all addenda thereto current on the issue date of this invitation.

3.2 This specification shall consist of a wired Model 332 Cabinet with all auxiliary equipment, and cable harnesses required to control the site specific project intersections

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and interface with the communications systems shown on the plans, as specified in these specifications, and as ordered by the Engineer. Model 2070L Controller Units shall not be furnished under this item.

3.3 As a minimum, this item shall include, but not be limited to, the following equipment:

Model 332 Cabinet, Plug-in Modules and Auxiliary Equipment

<u>Model No.</u>	<u>Quantity</u>	<u>Description</u>
332	1	Model 332 Cabinet
2010ECLip Kit	1	Enhanced Conflict Monitor Unit with Red Monitoring Kit
200	*	Solid State Switchpack
204	2	Solid State Flasher
222	*	Dual Loop Vehicle Detector Module
242	*	Dual Isolation Module (DC)
430	*	Flash Transfer Relays
-	12	Flash Program Plugs (8 red, 2 yellow, 2 white)
-	10	2w/4k bleeding resistors for unused outputs
-	1	Fiber Optic Distribution Panel

Model 332 Cabinet with "Auxiliary" Output File, Plug-in Modules & Auxiliary Equipment

<u>Model No.</u>	<u>Quantity</u>	<u>Description</u>
332A	1	Model 332 Cabinet with "Auxiliary" Output File
2010ECLip Kit	1	Enhanced Conflict Monitor Unit with Red Monitoring Kit
200	*	Solid State Switchpack
204	2	Solid State Flasher
222	*	Dual Loop Vehicle Detector Module

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242	*	Dual Isolation Module (DC)
430	*	Flash Transfer Relays
-	12	Flash Program Plugs (8 red, 2 yellow, 2 white)
-	10	2w/4k bleeding resistors for unused outputs
-	1	Fiber Optic Distribution Panel

* The contractor shall supply the appropriate quantity of the noted components in accordance with the signal design plans and cabinet wiring diagram.

3.4 Model 332 Cabinet

3.4.1 Dimensions

The cabinet shall be a Model 332 type with a height of 66", width of 24", and a depth of 30".

3.4.2 Traffic Signal Identification

The traffic signal number shall be painted on both sides of the cabinet as directed by the Engineer. It shall be painted in black with the letters 3" high in type "C" series.

3.4.3 Locks

The cabinet doors shall be equipped with a brass cylinder lock keyed for a Number Two Corbin Key, with a dust cover. Two (2) keys for each cabinet shall be furnished and provided in the cabinet drawer. Cabinet shall be equipped with a removable handle that shall be provided with the cabinet.

3.4.4 Finish

All surfaces of the cabinet shall be bare, unpainted aluminum.

3.4.5 Police Door

The cabinet shall be equipped with an auxiliary police access door. The police access door shall include a Signal ON/OFF switch, Flash/Auto switch, and an Auto/Manual switch with hardwired police cord. One (1) police master key shall be provided in the cabinet drawer.

3.4.6 Cabinet Light

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Fluorescent lamps shall be installed in the top of the front and rear of the cabinets. Switches shall be installed on the front and rear doors. Opening of either door shall illuminate both lights.

Each fluorescent lamp and switch shall be equipped with noise suppression devices. Activation of the fluorescent lamps and associated switches shall not cause any disruption of the Model 2070L Controller or any other electrical device in the cabinet. The vendor shall install sufficient RFI and surge suppression equipment to assure that operation of the fluorescent lamps will not disrupt the operation of other equipment in the cabinet.

Fluorescent lamps and associated ballast transformers shall be rated for high output in cold environments, providing high light output in ambient temperature of -13° F.

The cabinet lamp circuit shall be fused. The fuse holder shall be easily accessible from the front the cabinet. It shall not be necessary to reach into the cavity above the 2070L controller in order to access the fuse holder for the cabinet lamps.

3.4.7 Interconnect Terminal Block

Two twelve (12) position terminal blocks for interconnection shall be installed. The Contractor shall submit the proposed terminal block schematic and mounting location to the County for approval prior to installation in the cabinet. The cabinet shall be furnished with a plug-in Data/Signal 2 pair surge suppressor device, EDCO Model PC642 series, mounted on Socket PCB1B or approved equal. The voltage clamp value for the protector shall be selected to be appropriate for the communication equipment used in the cabinet.

3.4.8 Cabinet Drawer

An aluminum pullout drawer hinged at the top and having sliding tracts shall be provided in the cabinet. The drawer shall have the approximate dimensions of 1.75 inches in height, 13 inches deep and 16 inches wide and be capable of holding 40 pounds in weight when the drawer is extended. This drawer should be located between the Model 2070L Controller and the power distribution assembly. Provide a top for the storage compartment that has a non-slip plastic laminate attached, which covers a minimum of 90% of the surface area of the top.

3.4.9 Door Alarm

A door ajar alarm switch shall be installed on front and back doors. Each switch shall be of heavy duty, spring- loaded design with single pole normally closed contacts.

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Each switch circuit shall be closed whenever the corresponding door is open at an angle of 15 degrees or more. The switches shall be installed so that they will not restrict removal of the cabinet rack assembly in any way. The door ajar switches shall only be used to support the door ajar alarm function; they shall not be used to support any other function (such as cabinet illumination or conflict monitor interlocking).

Each switch shall be wired to 2 point barrier style terminal block on the input side of the cabinet. One point of the terminal block shall also be connected to pin C1-75 of the controller's C1 connector. The other point of the terminal strip shall be connected to controller logic ground.

3.4.10 Input File Slot 14

Input File Slot 14 shall be disabled by means of jumping Channel 1 Out (F) to Channel 1 In (D), and Channel 2 In (W) to Channel 2 Out (J). The front opening of Input File Slot 14 shall be covered with a faceplate constructed of the same material as the input file housing.

3.4.11 Cabinet Filters

The cabinets shall have vents on both the front and back doors and metal water deflection panels mounted inside the vents. A disposable paper filter element shall be provided in lieu of a metal filter.

3.4.12 Surge Protection

The cabinet shall be furnished with a plug-in RFI filter and surge protection device, EDCO MODEL SHA 1250, mounted on the cabinet service panel assembly on Socket BEAU S-5412 SB or approved equal.

3.5 Conflict Monitor

3.5.1 The conflict monitor shall meet the requirements of the CalTrans specifications, plus the additional requirements as specified below:

3.5.2 The conflict monitor shall provide a guaranteed minimum flash time on power-up, brownout restore, and short AC Line interrupts to allow the 2070L controller time to boot and set signal outputs.

3.5.3 The conflict monitor shall provide red monitoring and the Model 332 Cabinet shall be adapted for red signal monitoring. All required cables, wiring and equipment for red signal monitoring shall be included under this item.

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- 3.5.4 The conflict monitor display on the front panel shall clearly indicate the following tripped conditions: 24VDC Fail, Conflict, Watchdog Error, Switch or Dual Indication, Red Fail, and Yellow or Sequence Fail.
- 3.5.5 The conflict monitor shall have an Ethernet port installed on the front panel for communicating with a laptop computer, or for communications to a network switch. The conflict monitor shall be compatible with Siemens Se-PAC software. The software for communicating with the conflict monitor shall be provided.
- 3.5.6 The conflict monitor shall be capable of storing in non-volatile memory a minimum of 100 events. Each event shall be marked with the time and date of the event. These events consist of fault events, AC Line events, reset events, and configuration change events.
- 3.5.7 An Ethernet cable shall be provided with each conflict monitor furnished.
- 3.6 Model 200 Solid State Switchpack
 - 3.6.1 The Model 200 Solid State Switchpack shall conform to the requirements in the latest Transportation Management Equipment Specifications and be on the NYSDOT Qualified Products List on the issue date of this invitation.
- 3.7 Model 204 Flasher Unit
 - 3.7.1 The Model 204 Flasher Unit shall conform to the requirements in the latest Transportation Management Equipment Specifications and be on the NYSDOT Qualified Products List on the issue date of this invitation.
- 3.8 Model 222 Dual Channel Loop Vehicle Detector
 - 3.8.1 The Model 222 Dual Channel Loop Vehicle Detector shall conform to the requirements in the latest Transportation Management Equipment Specifications and be on the NYSDOT Qualified Products List on the issue date of this invitation.
- 3.9 Model 242 Dual DC Isolation Module
 - 3.9.1 The Model 242 Dual DC Isolation Module shall conform to the requirements in the latest Transportation Management Equipment Specifications and be on the NYSDOT Qualified Products List on the issue date of this invitation.
- 3.10 Model 430 Flash Transfer Relays
 - 3.10.1 The Model 430 Flash Transfer Relays shall conform to the requirements in the latest Transportation Management Equipment Specifications and be on the NYSDOT Qualified Products List on the issue date of this invitation.

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3.11 Fiber Optic Distribution Panel

- 3.11.1 Fiber optic distribution panels shall be provided in each cabinet specified for the termination and optical continuation of the fiber optic cables as required. The unit shall act as an interface between the fiber optic drop cable and the fiber optic patch cables located within the cabinet. In addition, the distribution panel shall facilitate the reassignment of the fibers within and testing of the optical fiber cable plant. The rack shall be configured in connector fields consisting of rack mounted bulkhead connectors. The fields shall contain a sufficient quantity of connectors to accommodate the maximum number of fibers entering the equipment cabinet. Each connector field shall consist of up to 12 type LC single mode connectors per row, with the connector fields clearly identified by function. The distribution panel shall be capable of mounting in the standard 19" rack assembly of the cabinet. The patch panel shall be provided with a minimum of twelve (12) LC style fiber optic bulkhead connectors.
- The distribution panel shall have sufficient room for slack fiber and shall have multiple entrances. All connections to active optical transmission equipment within the cabinet shall be via this panel.

3.12 Terminal Block for Communications Signal Conductors (Twisted Pair)

- 3.12.1 Communications cable pairs, including systems sensors and interconnect, shall have surge protectors installed between the cable pairs and the equipment they are wired to. The conductor leads and the surge protector leads shall be kept as short as possible with all conductor bends formed to the maximum possible radius. The protector units shall be located as near as possible to the entry point and as far as possible from any electrical equipment. The protector ground lead shall be made directly to the cabinet wall or ground plane.
- 3.12.2 The surge protectors shall contain both primary and secondary protection. The primary and secondary protectors may be packaged in the same housing, provided sufficient impedance is provided between the protector segment to allow proper operation. If the individual equipment input circuitry is provided with secondary protectors, the corresponding secondary protector need not be provided.
- 3.12.3 The primary and secondary protectors shall have the following characteristics:

Working Voltage:

The unit shall not introduce a series or shunt impedance to the signal path such that it interferes with the operation of the equipment.

Surge Voltage:

For the primary protector, the unit shall limit the surge voltage between the signal leads and ground to 300 volts or less while conducting a peak surge current of at least

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20,000 amperes. The surge current shall cause both signal leads to be grounded simultaneously under surge conditions and shall not allow a transient transverse signal to appear on the protected output signal conductors. The surge operation delay shall not exceed one micro-second.

For the secondary protector, the unit shall limit the surge voltage to a level that is less than the maximum specified operating voltage of the equipment being protected. This surge voltage shall occur when the primary protector is being subjected to its rated surge current.

Energy Rating:

For the primary protector, the unit shall be capable of dissipating 100 joules of surge energy without damage to itself.

For the secondary protector, the unit shall be capable of dissipating 20 joules of energy without being damaged.

CONSTRUCTION DETAILS

4. **Installation**

- 4.1 The Model 332 Cabinet shall be mounted on a foundation as prescribed by the plans or item sheet. The installation shall include the drilling of posts or poles and the fastening of supports. The Contractor shall supply all bolts, nuts, straps, condulets, nipples, lock washers, mounting plates, and other material required to secure the cabinet properly, and in accordance with the Traffic Signal Standard Drawings.
- 4.2 The Contractor shall make all field cable connections in the cabinet with approved insulated solderless lugs. All cabinet wiring shall be neat and firm.
- 4.3 The controller and cabinet assembly with auxiliary equipment shall be tested in the field with the prescribed timing schedules for forty-eight (48) trouble-free hours prior to on-line activation.

5. **Installation Details**

- 5.1 The Contractor shall install the Model 2070L Controller Unit and all related hardware in the Model 332 Cabinets at locations specified on the plans.
- 5.2 The County will provide the signal control software and the Contractor shall be required to program and test the Controller prior to installation in the field.
- 5.3 After all cables are installed and tested entering the cabinet, the Contractor shall seal all conduits using duct seal and/or steel wool to deter rodent entry in the cabinet.

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- 5.4 The cabinet doors shall be perpendicular and open away from the curb as specified on the plans. If the plans do not indicate this information, the Contractor shall confirm with the Engineer regarding the orientation of the cabinet.
- 5.5 All wiring connected to terminal blocks, flashers, relays, switches, radio interference suppressor, etc. shall be identified by use of insulated pre-printed tags over the wire including, but not limited to, signal control wires, loop detector lead-in, etc. The wire markers shall carry the legend in plain words with sufficient details so that a translating sheet will not be required.

Cabinets shall be wired to accept and implement all of the features of the specified equipment.

6. Documentation Requirements

- 6.1 One (1) complete set of operation and maintenance manuals shall be placed in each field cabinet and ten (10) complete sets shall be delivered to the County. The manuals shall, as a minimum, include the following:
 - 6.1.1 Complete cabinet and equipment layout drawings for all cabinet mounting configurations.
 - 6.1.2 Complete cabinet wiring and harness drawings.
 - 6.1.3 Complete installation procedures.
 - 6.1.4 Complete parts list including names of vendors for parts not identified by universal part numbers such as JEDEC, RETMA, or EIA.
 - 6.1.5 Pictorial of components layout on circuit board.
 - 6.1.6 Complete maintenance and trouble-shooting procedures.
 - 6.1.7 Complete stage-by-stage explanation of circuit theory and operation.
- 6.2 The cabinet wiring diagram provided by the manufacturer shall reflect the C1 wiring/pin assignment in accordance with the C1 pin/assignment of the Siemens Se-PAC program.
- 6.3 The cabinet/equipment layout and cabinet wiring diagram shall be submitted for review and approval prior to actual cabinet fabrication.

7. Testing Requirements

At a minimum the following cabinet tests shall be performed on all cabinets, with a designated representative from the County. Test procedures shall be submitted for approval prior testing.

- 7.1 48 hour hot and cold for cabinet and controller - documented and certified.
- 7.2 Run STEP (Self Test Evaluation Program) on controller - documented and certified.
- 7.3 Run 336 Cabinet tests on cabinet. - documented and certified. It should test the following:

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- 7.3.1 Input file wiring
- 7.3.2 Output file wiring
- 7.3.3 Timing of all possible conflict combinations
- 7.3.4 Watchdog error

- 7.4 Test proper brownout voltage calibration between conflict monitor and controller. Manufacturer to submit procedure for approval. Documentation and certification to be shipped with cabinet.

- 7.5 Perform conflict monitor unit (CMU) testing as follows:
 - 7.5.1 Test all channel to channel conflicts
 - 7.5.2 Test all voltage threshold levels
 - 7.5.3 Test all auxiliary functions (watchdog, 24 VDC, program card ajar, etc.)
 - 7.5.4 Test all enhanced (absence of red, sequence, etc.)
 - 7.5.5 A printed record of each test to be provided; in particular all threshold voltages shall be documented.

METHOD OF MEASUREMENT

This work will be measured as the number of Model 332 Cabinets and Auxiliary Equipment that are satisfactorily furnished and installed.

BASIS OF PAYMENT

The unit price bid to furnish and install Model 332 Cabinets and auxiliary equipment shall include the cost of furnishing all labor, materials, and equipment necessary to satisfactorily complete the work in accordance with the contract documents.

ITEM 680.336002NA - MODEL 336SX CABINET AND AUXILIARY EQUIPMENT
DESCRIPTION

This work shall consist of furnishing and installing a Model 336SX (Extra Stretch) Cabinet and Auxiliary Equipment in accordance with the contract documents and as directed by the Engineer.

MATERIALS

1. Controller Requirements

1.1 All components and plug-in modules supplied under this item shall conform to the New York State Transportation Management Equipment Specifications for peripheral equipment. Model 2070LX controllers shall be on the latest Nassau County Qualified Products List and be approved by NCDPW. Model 2070LX controllers will be paid under a separate item.

2. Qualification

1.1 All Model 336SX components supplied under this specification shall be listed on the CalTrans Qualified Product List (QPL) that is in effect on the issue date of this invitation. In the case of the modified 336SX Cabinet, the vendor's standard model shall be listed on the CalTrans QPL that is in effect on the issue date of this invitation. All auxiliary equipment shall be listed on the CalTrans QPL that is in effect on the issue date of this invitation. Equipment that is not defined by the CalTrans "Traffic Signal Control Equipment Specifications" (TSCES) or "Transportation Electrical Equipment Specifications" (TEES) that is in effect on the issue date of this invitation is not covered by this requirement. For each piece of equipment that is covered by this requirement, the vendor shall submit a notarized certification the equipment is listed on the QPL that was in effect as of the date of issue of this invitation. Failure to provide this certification shall cause the bid to be rejected as unresponsive. If during the course of the contract, any piece of equipment ceases to be listed on the current QPL, the County may, at its option, require the vendor to provide a suitable replacement that is listed on the current QPL at no additional cost.

3. Requirements

3.1 All materials furnished, assembled, fabricated and installed shall be new, corrosion resistant and in strict accordance with the latest provisions set forth by the California Department of Transportation (CalTrans) Specifications.

The specifications for the Model 336SX Cabinet and auxiliary equipment shall conform to the requirements in CalTrans documents TSCES and TEES, and to all addenda thereto current on the issue date of this invitation.

3.2 This specification shall consist of a wired Model 336SX Cabinet with all auxiliary equipment, and cable harnesses required to control the site-specific project intersections and interface with the communications systems shown on the plans, as specified in these specifications, and as ordered by the Engineer. Model 2070LX Controller Units shall not be furnished under this item.

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3.3 As a minimum, this item shall include, but not be limited to, the following equipment:

<u>Model No.</u>	<u>Quantity</u>	<u>Description</u>
336SX	1	Model 336 Extra Stretch Cabinet
2010 ECLip	1	Enhanced Conflict Monitor Unit with Red Monitoring Kit
200	*	Solid State Switchpack
204	2	Solid State Flasher
222	*	Dual Loop Vehicle Detector Module
242	*	Dual Isolation Module (DC)
430	*	Flash Transfer Relays
-	12	Flash Program Plugs (8 red, 2 yellow, 2 white)
-	10	2w/4k bleeding resistors for unused outputs
-	1	Mounting Bracket Assembly (Pole Mt. Only)
-	1	Aluminum Cover Plate for Cabinet Bottom (Pole Mt. Only)
-	1	Fiber Optic Distribution Panel
-	1	Exterior Surface Mount 30A Transfer Switch

* The contractor shall supply the appropriate quantity of the noted components in accordance with the signal design plans and cabinet wiring diagram.

3.4 Model 336SX Cabinet

3.4.1 Dimensions

The cabinet shall be a Model 336SX Extra Stretch type with a minimum height of 55”, width of 24”, and a depth of 22”.

The unoccupied rack space of the Model 336SX Cabinet shall be provided at the bottom of the cabinet.

3.4.2 Traffic Signal Identification

The traffic signal number shall be painted on both sides of the cabinet as directed by the Engineer. It shall be painted in black with the letters 3” high in type “C” series.

3.4.3 Locks

The cabinet doors and transfer switch access door shall be equipped with a brass cylinder lock keyed for a Number Two Corbin Key, with a dust cover. Two (2) keys

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for each cabinet shall be furnished and provided in the cabinet drawer. Cabinet shall be equipped with a removable handle that shall be provided with the cabinet.

3.4.4 Finish

All surfaces of the cabinet shall be bare, unpainted aluminum.

3.4.5 Police Door

The front door of the cabinet shall be equipped with an auxiliary police access door. The police access door shall include a Signal ON/OFF switch, Flash/Auto switch, and an Auto/Manual switch with hardwired police cord. One (1) police master key shall be provided in the cabinet drawer.

3.4.6 Cabinet Light

LED lamps shall be installed in the top of the front and rear of the cabinets. Switches shall be installed on the front and rear doors. Opening of either door shall illuminate both lights.

Each LED lamp and switch shall be equipped with noise suppression devices. Activation of the LED lamps and associated switches shall not cause any disruption of the Model 2070L Controller or any other electrical device in the cabinet. The vendor shall install sufficient RFI and surge suppression equipment to assure that operation of the LED lamps will not disrupt the operation of other equipment in the cabinet.

LED lamps and associated ballast transformers shall be rated for high output in cold environments, providing high light output in ambient temperature of -13° F.

The cabinet lamp circuit shall be fused. The fuse holder shall be easily accessible from the front the cabinet. It shall not be necessary to reach into the cavity above the 2070LX controller in order to access the fuse holder for the cabinet lamps.

3.4.7 Interconnect Terminal Block

Two twelve (12) position terminal blocks for interconnection shall be installed. The Contractor shall submit the proposed terminal block schematic and mounting location to the County for approval prior to installation in the cabinet. The cabinet shall be furnished with a plug-in Data/Signal 2 pair surge suppressor device, EDCO Model PC642 series, mounted on Socket PCB1B or approved equal. The voltage clamp value for the protector shall be selected to be appropriate for the communication equipment used in the cabinet.

3.4.8 Cabinet Drawer

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An aluminum pullout drawer hinged at the top and having sliding tracks shall be provided in the cabinet. The drawer shall have the approximate dimensions of 1.75 inches in height, 13 inches deep and 16 inches wide and be capable of holding 40 pounds in weight when the drawer is extended. This drawer should be located between the Model 2070LX Controller and the power distribution assembly. Provide a top for the storage compartment that has a non-slip plastic laminate attached, which covers a minimum of 90% of the surface area of the top.

3.4.9 Door Alarm

A door ajar alarm switch shall be installed on front and back doors. Each switch shall be of heavy duty, spring-loaded design with single pole normally closed contacts. Each switch circuit shall be closed whenever the corresponding door is open at an angle of 15 degrees or more. The switches shall be installed so that they will not restrict removal of the cabinet rack assembly in any way. The door ajar switches shall only be used to support the door ajar alarm function; they shall not be used to support any other function (such as cabinet illumination or conflict monitor interlocking).

Each switch shall be wired to 2 point barrier style terminal block on the input side of the cabinet. One point of the terminal block shall also be connected to pin C1-75 of the controller's C1 connector. The other point of the terminal strip shall be connected to controller logic ground.

3.4.10 Input File Slot 14

Input File Slot 14 shall be disabled by means of jumping Channel 1 Out (F) to Channel 1 In (D), and Channel 2 In (W) to Channel 2 Out (J). The front opening of Input File Slot 14 shall be covered with a faceplate constructed of the same material as the input file housing.

3.4.11 Cabinet Filters

The cabinets shall have vents on both the front and back doors and metal water deflection panels mounted inside the vents. A disposable paper filter element shall be provided in lieu of a metal filter.

3.4.12 Surge Protection

The cabinet shall be furnished with a plug-in RFI filter and surge protection device, EDCO MODEL SHA 1250, mounted on the cabinet service panel assembly on Socket BEAU S-5412 SB or approved equal.

3.5 Conflict Monitor

- 3.5.1 The conflict monitor shall meet the requirements of the CalTrans specifications, plus the additional requirements as specified below:

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- 3.5.2 The conflict monitor shall provide a guaranteed minimum flash time on power-up, brownout restore, and short AC Line interrupts to allow the 2070LX controller time to boot and set signal outputs.
- 3.5.3 The conflict monitor shall provide red monitoring and the Model 336SX Cabinet shall be adapted for red signal monitoring. All required cables, wiring and equipment for red signal monitoring shall be included under this item.
- 3.5.4 The conflict monitor display on the front panel shall clearly indicate the following tripped conditions: 24VDC Fail, Conflict, Watchdog Error, Switch or Dual Indication, Red Fail, and Yellow or Sequence Fail.
- 3.5.5 The conflict monitor shall have an Ethernet port installed on the front panel for communicating with a laptop computer, or for communications to a network switch. The conflict monitor shall be compatible with Siemens Se-PAC software. The software for communicating with the conflict monitor shall be provided.
- 3.5.6 The conflict monitor shall be capable of storing in non-volatile memory a minimum of 100 events. Each event shall be marked with the time and date of the event. These events consist of fault events, AC Line events, reset events, and configuration change events.
- 3.5.7 An Ethernet cable shall be provided with each conflict monitor furnished.
- 3.6 Model 200 Solid State Switchpack
 - 3.6.1 The Model 200 Solid State Switchpack shall conform to the requirements in the latest Transportation Management Equipment Specifications and be on the NYSDOT Qualified Products List on the issue date of this invitation.
- 3.7 Model 204 Flasher Unit
 - 3.7.1 The Model 204 Flasher Unit shall conform to the requirements in the latest Transportation Management Equipment Specifications and be on the NYSDOT Qualified Products List on the issue date of this invitation.
- 3.8 Model 222 Dual Channel Loop Vehicle Detector
 - 3.8.1 The Model 222 Dual Channel Loop Vehicle Detector shall conform to the requirements in the latest Transportation Management Equipment Specifications and be on the NYSDOT Qualified Products List on the issue date of this invitation.
- 3.9 Model 242 Dual DC Isolation Module
 - 3.9.1 The Model 242 Dual DC Isolation Module shall conform to the requirements in the latest Transportation Management Equipment Specifications and be on the NYSDOT Qualified Products List on the issue date of this invitation.

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3.10 Model 430 Flash Transfer Relays

- 3.10.1 The Model 430 Flash Transfer Relays shall conform to the requirements in the latest Transportation Management Equipment Specifications and be on the NYSDOT Qualified Products List on the issue date of this invitation.

3.11 Fiber Optic Distribution Panel

- 3.11.1 Fiber optic distribution panels shall be provided in each cabinet specified for the termination and optical continuation of the fiber optic cables as required. The unit shall act as an interface between the fiber optic drop cable and the fiber optic patch cables located within the cabinet. In addition, the distribution panel shall facilitate the reassignment of the fibers within and testing of the optical fiber cable plant. The rack shall be configured in connector fields consisting of rack mounted bulkhead connectors. The fields shall contain a sufficient quantity of connectors to accommodate the maximum number of fibers entering the equipment cabinet. Each connector field shall consist of up to 12 type LC single mode connectors per row, with the connector fields clearly identified by function. The distribution panel shall be capable of mounting in the standard 19" rack assembly of the cabinet. The distribution panel shall have sufficient room for slack fiber and shall have multiple entrances. All connections to active optical transmission equipment within the cabinet shall be via this panel.

3.12 Exterior Surface Mount 30A Transfer Switch

- 3.12.1 The transfer switch will allow for easy switching between utility power and generator power and shall be a sealed unit surface mounted on the exterior lower portion of the cabinet. Transfer switch door shall be lockable, tamper proof, and weather proof in the closed position. Transfer switch housing shall be constructed with heavy duty 12 gauge rust and corrosion proof aluminum. Transfer switch interlock prevents generator and power utility from feeding the circuit concurrently. Transfer switch shall be wired from inside the traffic cabinet. Transfer switch generator connection shall be a male 30 Amp twist lock type flush mount connector. An LED indicator light illuminates when in generator mode and utility power is restored. A simple switch allows the user to choose between utility power and generator power. Approximate dimensions – 9" Wide X 4.25" High.

CONSTRUCTION DETAILS

4. Installation

4.1 Mounting

4.1.1 Base Mount

When base mounted, the Model 336SX Cabinet shall be mounted on a foundation with an "M" base adapter as prescribed by the plans or item sheet. The Contractor shall supply all bolts, nuts, lockwashers, mounting plates, and other material required to

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secure the cabinet properly to the “M” Base Adapter and foundation in accordance with the Traffic Signal Standard Drawings.

4.1.2 The M Base Adaptor will be paid for under another Item when required.

4.1.3 Pole Mount

When pole mounted, the Model 336SX Cabinet shall be mounted on a pole as prescribed by the plans and as directed by the Engineer. Pole mounted cabinets shall be furnished with two (2) exterior pole mounting brackets and an aluminum plate to cover the opening on the bottom of the cabinet. The manufacturer shall reinforce the cabinet sidewalls/bracket mounting holes with metal plates of adequate size and strength, welded longitudinally across the inside depth of the cabinet. The cabinet shall provide sufficient resistance to flexing and shall withstand pole mounting without warping the cabinet when doors are opened or closed.

The installation shall include the drilling and welding of posts or poles and the fastening of supports. The Contractor shall supply all bolts, nuts, straps, condulets with screw on covers, nipples, lock washers, mounting plates, and other material required to secure the cabinet properly to the pole in accordance with the Traffic Signal Standard Drawings. The condulet shall be 3” or 4” in diameter as required and as directed by the Engineer.

4.2 The Contractor shall make all field cable connections in the cabinet with approved insulated solderless lugs. All cabinet wiring shall be neat and firm.

4.3 The controller and cabinet assembly with auxiliary equipment shall be tested in the field with the prescribed timing schedules for forty-eight (48) trouble-free hours prior to on-line activation.

5. Installation Details

5.1 The Contractor shall install the Model 2070LX Controller Unit and all related hardware in the Model 336SX Cabinets at locations specified on the plans.

5.2 The County will provide the signal control software and the Contractor shall be required to program and test the Controller prior to installation in the field.

5.3 After all cables entering the cabinet are installed and tested, the Contractor shall seal all conduits using duct seal and/or steel wool to deter rodent entry in the cabinet.

5.4 The cabinet doors shall be perpendicular and open away from the curb as specified on the plans. If the plans do not indicate this information, the Contractor shall confirm with the Engineer regarding the orientation of the cabinet.

5.5 All wiring connected to terminal blocks, flashers, relays, switches, radio interference suppressor, etc. shall be identified by use of insulated pre-printed tags over the wire

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including, but not limited to, signal control wires, loop detector lead-in, etc. The wire markers shall carry the legend in plain words with sufficient details so that a translating sheet will not be required.

Cabinets shall be wired to accept and implement all of the features of the specified equipment.

6. Documentation Requirements

- 6.1 One (1) complete set of operation and maintenance manuals shall be placed in each field cabinet and ten (10) complete sets shall be delivered to the County. The manuals shall, as a minimum, include the following:
 - 6.1.1 Complete cabinet and equipment layout drawings for all cabinet mounting configurations.
 - 6.1.2 Complete cabinet wiring and harness drawings.
 - 6.1.3 Complete installation procedures.
 - 6.1.4 Complete parts list including names of vendors for parts not identified by universal part numbers such as JEDEC, RETMA, or EIA.
 - 6.1.5 Pictorial of components layout on circuit board.
 - 6.1.6 Complete maintenance and trouble-shooting procedures.
 - 6.1.7 Complete stage-by-stage explanation of circuit theory and operation.
- 6.2 The cabinet wiring diagram provided by the manufacturer shall reflect the C1 wiring/pin assignment in accordance with the C1 pin/assignment of the Siemens Se-PAC program.
- 6.3 The cabinet/equipment layout and cabinet wiring diagram shall be submitted for review and approval prior to actual cabinet fabrication.

7. Testing Requirements

At a minimum the following cabinet tests shall be performed on all cabinets, with a designated representative from the County. Test procedures shall be submitted for approval prior testing.

- 7.1 48 hour hot and cold for cabinet and controller - documented and certified.
- 7.2 Run STEP (Self Test Evaluation Program) on controller - documented and certified.
- 7.3 Run 336SX Cabinet test on cabinet. - documented and certified. It should test the following:
 - 7.3.1 Input file wiring
 - 7.3.2 Output file wiring
 - 7.3.3 Timing of all possible conflict combinations
 - 7.3.4 Watchdog error
- 7.4 Test proper brownout voltage calibration between conflict monitor and controller. Manufacturer to submit procedure for approval. Documentation and certification to be shipped with cabinet.

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7.5 Perform conflict monitor unit (CMU) testing as follows:

- 7.5.1 Test all channel to channel conflicts
- 7.5.2 Test all voltage threshold levels
- 7.5.3 Test all auxiliary functions (watchdog, 24 VDC, program card ajar, etc.)
- 7.5.4 Test all enhanced (absence of red, sequence, etc.)
- 7.5.5 A printed record of each test to be provided; in particular all threshold voltages shall be documented.

METHOD OF MEASUREMENT

This work will be measured as the number of Model 336SX Cabinets and Auxiliary Equipment that are satisfactorily furnished and installed.

BASIS OF PAYMENT

The unit price bid to furnish and install a Model 336SX Cabinet and auxiliary equipment shall include the cost of furnishing all labor, materials, tools and equipment necessary to satisfactorily complete the work in accordance with the Contract Documents.

ITEM 680.51000010 - ALTER ELEVATION OF PULL BOXES

DESCRIPTION:

Under this item the Contractor shall alter the elevation of existing pull boxes in accordance with this specification, the details included in the contract plans, and the directions of the Engineer.

MATERIALS:

Existing pull box frames and covers shall be reused.

Concrete shall meet the material requirements for Portland Cement Concrete, Class A, as outlined under Section 501 of the Standard Specifications.

CONSTRUCTION DETAILS:

The Contractor shall exercise care in removing and reinstalling pull box frames and covers so as not to damage any part thereof. Any component parts damaged by the Contractor shall be repaired or replaced at the Contractor's expense to the satisfaction of the Engineer.

Pull box walls shall be reconstructed as shown on the contract plans.

METHOD OF MEASUREMENT:

This work will be measured as the number of pull boxes altered in accordance with the plans, specifications, and directions of the Engineer.

BASIS OF PAYMENT:

The unit price bid for this item shall include the cost of all labor, equipment, and materials necessary to complete the work.

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680.51050010- RECTANGULAR REINFORCED CONCRETE PULLBOX

(26 inches X 18 inches)

DESCRIPTION

Under this item the Contractor shall furnish and install a rectangular reinforced concrete pullbox in accordance with this specification and the directions of the Engineer.

MATERIALS

Subsections 680-2.01, 680-2.02, and 680-2.05 shall apply.

CONSTRUCTION DETAILS

The requirements of Subsections 680-3.01, 680-3.04, 680-3.06, 680-3.09 and 680-3.14 shall apply with the following modifications:

The pullbox cover text shall read "NYS TRAFFIC" on the first line and "SIGNALS" on the second line in place of the text "TRAFFIC SIGNALS" as shown on the State Standard Sheet titled "Precast Standard Rectangular Pullboxes, Frames and Covers."

METHOD OF MEASUREMENT

This work will be measured for payment as the number of rectangular reinforced concrete pullboxes installed in accordance with the contract documents to the satisfaction of the Engineer.

BASIS OF PAYMENT

Subsection 680-5.05 shall apply.

ITEM 680.51100010 - CLEAN EXISTING PULLBOX

DESCRIPTION:

The Contractor shall clean existing pullboxes as indicated on the plans or as directed by the Engineer.

MATERIALS:

Not applicable.

CONSTRUCTION DETAILS:

Existing pullboxes shall be cleaned to the base of its walls in a workmanlike manner and maintained clean as determined by the Engineer for the duration of the contract.

Existing pullboxes shall be dried by pumping, bailing, hauling or by any other method approved by the Engineer. Drying operations shall not cause soil erosion and shall be performed so as to avoid contamination of other new or existing facilities.

Material removed from the pullboxes shall be disposed of in accordance with provisions of Subsection 203-3.08, Disposal of Surplus Excavated Materials.

The Contractor shall execute care and protect all facilities within the pullboxes and the area adjacent to the work.

The Contractor shall replace in kind, any pullboxes or other facilities damaged by his operations at his own expense.

METHOD OF MEASUREMENT:

Cleaning existing pullboxes will be measured by the number of pullboxes actually cleaned and maintained in accordance with the Contract Documents and as directed by the Engineer.

BASIS OF PAYMENT:

The unit price bid to clean each existing pullbox shall include the cost of furnishing all labor, materials, and equipment necessary to satisfactorily complete the work. Payment will be made for only those existing pullboxes designated by the Engineer to be cleaned. Only one payment for each existing pullbox will be made regardless of the number of times it is cleaned. No payments will be made for pullboxes which are installed by the Contractor under this contract. No separate payments will be made for pullboxes damaged by the Contractor's operations.

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ITEM 680.51400010-CONCRETE FIBER OPTIC PULLBOX

DESCRIPTION:

Under this item, the contractor shall furnish and install concrete fiber optic pullboxes in accordance with this specification and as shown on the plans.

MATERIALS:

In addition to the requirements shown on the plans, the pullbox, frame and cover shall be in accordance with the minimum requirements specified in sub-section 680-2.02 and .05 of the Standard Specifications.

The minimum internal dimensions of the pullbox shall be 36 inches L x 36 inches W x 36 inches D. The pullbox, frame and cover shall have sufficient mechanical strength to withstand the impact of the repeated MS-23 vehicle live loads without damage. The cover of the pullbox shall have "NYSDOT - FIBER" embossed on it. At least two (2) Penta bolts shall be used to lock the cover in place.

CONSTRUCTION DETAILS:

The pullbox shall be installed in accordance with the details shown on the plans.

Subsections 680-3.01, .04, .06, .09, .12, .13 and .14 of the Standard Specifications shall apply to the work of this item.

The pullbox shall be constructed in conformance to this specification and as shown in the plans. Any holes for conduit and cable entry shall be carefully drilled or punched into the side of the pullbox. After insertion of conduits or cables, holes shall be tightly and thoroughly sealed to the satisfaction of the engineer.

Soil in the vicinity of the pullbox shall be vibrated and thoroughly compacted around the entire pullbox up to grade.

The top of the cover shall be set at grade. A concrete lock-in feature shall be provided around the top of the pullbox.

METHOD OF MEASUREMENT:

The item will be measured for payment as the number of each unit furnished and installed in accordance with the contract documents or as directed by the engineer.

BASIS OF PAYMENT:

The unit price bid for the concrete fiber optic pullbox shall include the cost of furnishing all equipment, materials, incidentals, labor, tools and documentation required to complete the work. All concrete, frames, covers, reinforcing steel, crushed stone or gravel, extensions, saw cutting, excavation, backfill and restoration of adjacent surfaces shall be included in the cost of this item.

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ITEM 680.53010010 - CLEAN EXISTING CONDUIT

DESCRIPTION –

The Contractor shall clean existing conduit at the locations indicated on the plans or as directed by the Engineer to make certain that the conduit is clear and satisfactory for the installation of cable. The work does not include cleaning of a conduit following repair in place or replacement of a defective conduit.

MATERIALS –

Not applicable.

CONSTRUCTION DETAILS –

All existing cable shall be removed and a steel mandrel with wire brush cleaner no less than 2 inches long and having a diameter no less than 70 percent of the inside diameter of the conduit shall be passed through the entire run of conduit from one end to the other between pullboxes and/or poles without binding. Conduits which will not allow the mandrel with brush to be pulled through will be repaired under other contract pay items. After the conduit has been cleaned, the Contractor shall furnish and install a No. 10 AWG galvanized steel drag wire or nylon or polypropylene rope with a tensile strength of at least 495 lbf in the conduit from one end to the other, leaving no less than 3 ft of slack at each end in each pullbox or base of pole. The galvanized wire shall be grounded to a suitable grounding device at each end of the conduit in accordance with Section 680-3.12.

METHOD OF MEASUREMENT –

This work will be measured for payment as the number of feet of existing conduit actually cleaned in accordance with the Contract Documents and as directed by the Engineer.

BASIS OF PAYMENT –

The unit price bid shall include the cost of furnishing all labor, materials and equipment required to satisfactorily complete the work.

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ITEM 680.76610010 - POWER SERVICE CONNECTION (NASSAU COUNTY)

DESCRIPTION

Under this item the Contractor shall furnish and install a power service connection.

MATERIALS

The power connection assembly shall be a fused insulated connector kit. The kit shall be adaptable for use with No. 14 through No. 4 AWG cable. The power connection shall be two piece.

The length of the power connection shall be 4 ¼ inch. The cable shall be attached to the power connection assembly with standard crimping tools. The jacket of the power connection shall be rubber. The fuse shall be sized to the existing load not to exceed the capacity or rating of the cables. The power connection shall be approved by the Department of Public Works, County of Nassau, prior to installation. The circuit shall be energized only after approval has been received from the electric utility company.

CONSTRUCTION DETAILS

The power connection shall be installed and located in accordance with the electric utility company requirements and shall be connected to the No. 8 AWG power conductor installed under another item.

The power connection shall be installed in a designated pull box or as ordered by the Engineer.

METHOD OF MEASUREMENT

This work will be measured as the number of power connections furnished and installed in accordance with the plans, specifications and orders of the Engineer.

BASIS OF PAYMENT

The unit price bid for this item shall include the cost of the fuse, the power connection assembly, all tools, labor, equipment and transportation necessary to complete the work.

ITEM 680.77000010 - MODIFY TRAFFIC SIGNAL EQUIPMENT
ITEM 680.79000010 - REMOVE TRAFFIC SIGNAL EQUIPMENT

DESCRIPTION.

This work shall consist of modifying existing traffic signal equipment and removing existing traffic signal equipment, in accordance with the plans, specifications, or directions of the Engineer.

MATERIALS.

When the existing system is to be modified, the existing material shall be reused in the revised system, removed, salvaged, or disposed of as shown on the plans, as specified in the special provisions, or as directed by the Engineer.

New material required shall conform to the requirements of Subsection 680-2 of the Standard Specifications.

CONSTRUCTION DETAILS.

Where shown on the Contract Plans or directed by the Engineer, existing traffic signal equipment shall be either modified or removed and disposed of as specified in the Contract Documents.

The requirements of Subsections 680-3.01, 680-3.03, 680-3.04, 680-3.06, 680-3.07, 680-3.08, 680-3.09, 680-3.10, 680-3.12, 680-3.14, 680-3.16, 680-3.22, 680-3.30, and 680-3.32, as applicable, shall apply.

Care shall be exercised in removing and salvaging electrical equipment so that it will remain in its original form and existing condition wherever possible. The Contractor will be required to replace, at his expense, any traffic signal equipment which is determined by the Engineer to have been damaged or destroyed by reason of the Contractor's operations.

Existing material required to be modified and found to be unsatisfactory by the Engineer shall be replaced by new material and the cost therefor will be paid for as extra work.

METHOD OF MEASUREMENT.

The items will be measured for payment on a lump sum basis for the work completed in accordance with the Contract Documents and as directed by the Engineer.

BASIS OF PAYMENT.

The lump sum price bid shall include the cost of furnishing all labor, materials, tools, equipment, safety requirements as determined by U.S. Department of Labor's Occupational Safety and Health Standards, and incidentals necessary to complete the work including excavation, backfill, concrete, and restoration of surfaces.

Monthly payments will be made in proportion to the amount of work done under each item as determined by the Engineer.

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**ITEM 680.813108NA LED PEDESTRIAN SIGNAL WITH COUNTDOWN TIMER ASSEMBLY,
16" X 18"**

DESCRIPTION

The work of this item shall consist of furnishing and installing LED Pedestrian Signal Assemblies with Countdown timers and mounting brackets in accordance with the contract documents and as directed by the Engineer.

MATERIALS

The pedestrian signal shall be a single unit housing for both the symbol messages and the countdown pedestrian signal display. It shall be designed to illuminate the alternate symbol message "WALKING PERSON"/"UPRAISED HAND," and "COUNTDOWN TIMER" in conformance with ITE standards.

The illumination shall be supplied by light emitting diodes (LEDs) in a uniform appearance. The LED Pedestrian Countdown Module shall be rated for a minimum useful life of 60 months and meet all parameters of this specification during this period.

Pedestrian Signal mounting brackets, attachments, and fittings shall be designed in accordance with AASHTO standard specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals.

Housing

The Pedestrian signal housing shall be a one piece corrosion resistant aluminum alloy die casting complete with integrally cast top, bottom, sides, and back, or polished sheet aluminum.

Four integrally cast hinge lugs, two at the top and two at the bottom, shall be provided for the operation of a swing-down door.

A mounting hole shall be provided in the top and bottom of the housing for connection to standard pipe fittings as indicated in the standard drawings. The mounting holes shall be reinforced with an integral casting.

The door frame shall be a one piece corrosion resistant aluminum alloy die casting, complete with cast hinge lugs and latch lugs.

Latching or unlatching of the door shall require no tools.

The housing shall be dust proof, weather proof, and corrosion resistant. The housing shall provide for easy access and replacement of all components.

Each signal shall be provided with a visor approximately 8 inches in depth.

LED Countdown Pedestrian Module

Basic Requirements:

The LED Countdown Pedestrian Module shall be a single, self-contained device (16" High x 18" Wide), not requiring on-site assembly for installation into existing traffic signal housings.

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16" X 18"**

The LED Countdown Pedestrian Module shall conform to the current version of the MUTCD Chapter 4E - Pedestrian Control Features for operation, shape, size and color.

The LED Countdown Pedestrian Module shall have a no glare lens and be UV treated for protection from the sun.

The standard colors, as defined in the MUTCD, for the LED Countdown Pedestrian Module shall be white for the "WALKING PERSON" and Portland orange for the "UPRAISED HAND" and "COUNTDOWN TIMER".

The LED Countdown Pedestrian Module shall consist of a double overlay message combining the graphic symbols of a "WALKING PERSON" and "UPRAISED HAND," and two seven segment digits for the "COUNTDOWN TIMER".

In the graphic symbols, the LEDs shall be arranged in a manner to form a solid icon symbol.

The countdown numbers shall be 9" in height.

The graphic symbols and the countdown numbers shall be located on a black opaque background.

The Portland Orange LED shall be of the latest ALLnGaP technology and the white LED shall be of the latest GaN technology.

The individual LED light source shall be interconnected so that a catastrophic failure of a single LED will result in a total loss of not more than 5% of the signal light output.

When not energized, the symbols and countdown timer shall be dark with no phantom image regardless of solar intensity or alignment.

Countdown Functionality

The LED Pedestrian Countdown Module shall be operationally compatible with currently used Model 2070L microcomputer controller and cabinet assemblies (solid state load switches, flashers, and conflict monitors).

The countdown timer section shall have a microprocessor capable of learning or recording the clearance timing when connected to a traffic controller.

When first connected, the module shall blank out the digital display during the initial countdown display "learning phase" while it records the countdown time using the Don't Walk signal indications.

This "learning phase" shall be two cycles or less.

The countdown timer module shall continuously monitor the traffic controller for any changes to the pedestrian phase time and reprogram itself automatically if needed.

The countdown timer display shall start only at the beginning of the pedestrian change interval.

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After the countdown timer displays zero, the display shall remain dark until the beginning of the next countdown.

The countdown timer shall be able to follow the controller through any NEMA defined operations.

The countdown timer display remains synchronized with the signal indications and always reaches zero at the end of the flashing hand.

The countdown module shall prevent any possible conflicts between the "WALKING PERSON"/"UPRAISED HAND" signal indications at the time display.

It shall be impossible for the display to countdown during a solid hand indicator.

The countdown display shall be located immediately adjacent to the associated hand icon.

Electrical Requirements

Power Consumption

Maximum power consumption for LED Pedestrian Countdown Module shall be in accordance with the following:

		HAND	PERSON	COUNTDOWN
Operating Voltage	@ 77 F	11 watts	8 watt	6 watts

The modules shall operate from a 60Hz +3Hz AC line over a voltage ranging from 80 V to 135 V. The fluctuations of line voltage shall have no visible effect on the luminous intensity of the LED modules.

Operating voltage of the modules shall be 120 VAC. All parameters shall be measured at this voltage.

Power Factor

The LED Pedestrian Countdown Module shall have a power factor of 0.90 or greater.

Total Harmonic Distortion

Total harmonic distortion (current and voltage) induced into an AC power line by a LED Pedestrian Countdown Module shall not exceed 20%.

Surge Suppression

The LED Pedestrian Countdown Module on-board circuitry shall include voltage surge protection to withstand high-repetition noise transients as stated in Section 2.1.8 of NEMA Standard TS-2, 2003.

The LED circuitry shall prevent perceptible flicker to the unaided eye over the voltage range specified above.

All wiring and terminal blocks shall meet the requirements of Section 13.02 of the ITE VTCSH standard.

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16" X 18"**

Compatibility

The LED Pedestrian Countdown Module shall be operationally compatible with currently used Model 2070L microcomputer controller and cabinet assemblies (solid state load switches, flashers, and conflict monitors).

When a current of 20mA (or less) is applied to the unit, the voltage read across the two leads shall be 15 VAC or less.

The modules and associated onboard circuitry shall meet Class A emission limits referred in Federal Communications Commission (FCC) Title 47, Sub Part B, Section 15 regulations concerning the emissions of electronic noise.

Each symbol/number shall reach 90% of their illumination (turn-on) within 75 msec. of the application of the nominal operating voltage. The module shall not be illuminated (turn-off) after 75 msec. of the removal of the nominal operating voltage.

Photometric Requirements

The minimum maintained luminous intensity values for the LED Countdown Pedestrian Module shall be in accordance with the ITE "Pedestrian Traffic Control Signal Indications – Part 2: Light Emitting Diode (LED)," latest edition throughout the useful life based on normal use in a traffic signal operation over the operating temperature range.

The measured chromaticity coordinates of the LED Countdown Pedestrian Module shall conform to the chromaticity requirements of ITE "Pedestrian Traffic Control Signal Indications – Part 2: Light Emitting Diode (LED)," latest edition throughout the useful life based on normal use in a traffic signal operation over the operating temperature range.

Environmental Requirements

The LED Countdown Pedestrian Module shall be rated for use in the operating temperature range of -40 F to +165 F. The modules shall meet all specifications throughout this range.

The LED Countdown Pedestrian Module shall be protected against dust and moisture intrusion per the requirements of NEMA Standard 250-1991 for Type 4 enclosures to protect all internal components.

Module Construction

The LED Countdown Pedestrian Module shall not require special tools for installation.

The circuit board and power supply shall be contained inside the module.

The assembly and manufacturing process for the LED Countdown Pedestrian Module shall be designed to assure all internal components are adequately supported to withstand mechanical shock and vibration from high winds and other sources.

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16" X 18"**

Module Identification

Each LED Countdown Pedestrian Module shall have the manufacturer's name, trademark, model number, serial number, date of manufacture, and lot number as identification permanently marked on the back of the module.

The following operating characteristics shall be permanently marked on the back of the module: rated voltage and rated power in Watts and volt-ampere.

Documentation Requirements

Each LED Countdown Pedestrian Module unit shall be provided with a complete and accurate installation wiring guide.

Complete name, address, and telephone number for the representative, manufacturer, or distributor for warranty repair.

Painting

The cast aluminum or sheet aluminum shall be painted with two coats of silver aluminum paint. The interior of the visor shall be finished with two coats of high quality, synthetic resin flat enamel paint, black in color, baked after application.

Drawings and Certifications

The Contractor shall provide descriptions and drawings of each type of pedestrian signal for approval

The Manufacturer shall provide a certified report that the pedestrian signal is in compliance with this specification.

Units or parts found damaged or imperfect when inspected after delivery and/or installation shall be replaced by the Contractor at his own expense, including all subsequent delivery, shipping, and reinstallation charges.

CONSTRUCTION DETAILS

Shop drawing and/or catalog cuts shall be submitted to the Engineer for approval. The Contractor is not to order materials until the shop drawings are approved.

The pedestrian signal shall be installed on steel, wood, or aluminum poles as indicated on the plans.

Post Top Mount

The lower supporting assembly of the pedestrian signal shall consist of an aluminum slipfitter assembly with an approved locking device. A close nipple with locknuts or equivalent shall be utilized to secure the slipfitter to the pedestrian signal. The top of the signal face shall be sealed with a threaded cap assembly

When two or more signals are installed on a pedestal an approved bracket assembly shall be utilized for the top and bottom of the signals and secured to the side of the post.

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16" X 18"**

The bracket shall have as many arms as the number of signal faces to be installed. A locking device shall firmly and positively hold the signal face in the required alignment shall be furnished and installed.

Shaft Mount

The upper and lower support assembly shall consist of two cast aluminum pole mounting brackets. The pole mounting brackets shall be cast with a threaded hub to receive a pipe and two guides for stainless steel bands.

The bracket shall be secured to the pole with stainless steel bands, steel conduit and elbows shall be used to secure the top and bottom of the pedestrian signal to the brackets. Steel lock nuts shall be installed on all conduits at the juncture of the conduit, bracket or elbow.

Locking devices, which shall firmly and positively hold the signal head in the required alignment, shall be furnished and installed.

The Pedestrian signal shall be installed and aligned in accordance with the plans or as ordered by the Engineer.

The electrical cable for the pedestrian signal shall be routed through the bracket assembly and conduit, and connected to the proper terminal block within the signal housing.

When the pedestrian signal is mounted on the side of a pole, the lower portion of the pedestrian signal support shall provide a vertical clearance as indicated on the Contract Documents. No portion of any pedestrian signal shall be closer than the clearance indicated in the Contract Documents.

METHOD OF MEASUREMENT

This work will be measured by the number of LED Pedestrian Signals with Countdown Timer assemblies that are furnished and installed as shown on the plans or as directed by the Engineer.

BASIS OF PAYMENT

The unit price bid to furnish and install each LED Pedestrian Signal with Countdown Timer Assembly shall include the cost of the 16" X 18" LED pedestrian signal and countdown module, the pedestrian signal housing, all necessary internal wiring, mounting hardware including all post top and shaft mount brackets, elbows, strapping, and all labor, incidental materials, tools, transportation, and equipment necessary to complete this work to produce a fully functional pedestrian display including all tests to the satisfaction of the Engineer.

ITEM 680.81422010 - AUXILIARY POLE AND FOUNDATION

DESCRIPTION

The Contractor shall furnish and install auxiliary steel poles as shown by the plans and as directed by the Engineer. Auxiliary poles are intended for use to provide overhead connections to and support pedestrian push buttons and/or other traffic control devices.

MATERIALS

Auxiliary pole and foundation shall meet all the materials requirements of section 680-2 with the same requirements as span wire traffic signal poles.

CONSTRUCTION DETAILS

Auxiliary pole and foundation shall meet the construction details of section 680-3. The auxiliary pole shall be raked so that it appears vertical when loads are applied.

BASIS OF ACCEPTANCE

Acceptance for auxiliary poles covered by this specification will be based on the following:

- Submission of fabrication details for each pole intended for a worst case configuration of the load as specified in the contract documents, approved, stamped and signed by a Professional Engineer licensed and registered to practice in New York State.
- Submission of the manufacturer's certificate of compliance with these specification requirements and the approved fabrication details.
- Appearance of the manufacturer's name on the Department's list of approved manufacturers.

METHOD OF MEASUREMENT

This work shall be measured for payment by the number of auxiliary poles furnished and installed in accordance with the contract documents and as directed by the Engineer.

BASIS OF PAYMENT

The unit price bid shall include the cost of furnishing all labor, materials and equipment necessary to satisfactorily complete the work.

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ITEM 680.82XXYY10 - MAST ARM POLE WITH ROTATING ARM LENGTH UP TO 50 FT

DESCRIPTION

Under these items, the Contractor shall furnish and install the combined mast arm poles and mast arms which will support traffic control signals and auxiliary equipment as shown on the Contract Documents or as ordered by the Engineer.

MATERIALS

The pole(s) shall meet the requirements of 724-03 Traffic Signal Poles except as modified below:

A. GENERAL

1. The mast arm pole and mast arm may be fabricated of pipe, tube, or cold-formed hot rolled steel conforming to one of the following alloys:

ASTM A53 Grade B
ASTM A252 Grade 2 or 3
ASTM A500 Grade B

All alloys used shall be subject to approval of the Engineer.

2. The yield of this pipe or tube shall be not less than 55 ksi.
3. The mast arm pole, mast arm, and base shall be hot-dipped galvanized in accordance with ASTM A123.
4. The anchor bolts, nuts, and washers shall conform to the standard specifications for low-carbon steel, "Externally and Internally Threaded Standard Fasteners," A.S.T.M. Designation A307, current edition AISI, C1035, special quality. The bolts, nuts, and washers shall be galvanized in accordance with ASTM A123. The bolts shall be galvanized after threading and assembly.
5. All other miscellaneous hardware shall be stainless steel.
6. Nut covers shall be cast aluminum.
7. All hardware shall be packaged for each pole furnished.

B. DESIGN REQUIREMENTS: GENERAL

1. In addition, all poles shall be designed to support at the free end of the mast arm a load of 463 lb. applied vertically downward and a load of 701 lb. applied perpendicular to the axis of the mast arm and the vertical force.
2. The mast arm pole and mast arm of the length designated shall be designed such that when assembled as a unit, the maximum horizontal deflection of the pole shall not exceed 3 inches at the top of the shaft in any direction. The manufacturer shall certify by a load test in each arm,

ITEM 680.82XXYY10 - MAST ARM POLE WITH ROTATING ARM LENGTH UP TO 50 FT

that the Maximum Vertical Deflection with an applied dead load of 190 lbs. to the free end of the mast arm (as measured in the installed position) shall be limited to the following:

Mast Arm Length (ft.)	Max. Vertical Arm Deflection (in.)
40 and below	6
45	9
50	12

The maximum horizontal (sideways) deflection of the free end of the mast arm, from the no load position, shall not exceed those indicated on the contract plans.

3. The dimension and roadway clearances shall be as indicated on the contract plans.
4. The assembled unit of mast arm and pole shall be so designed as to permit the arm to be rotated to any angle (0° - 360°) in a horizontal plane and to be secured in that position. This rotation capability shall be provided for at the top of the vertical shaft, where the arm is attached.

C. DESIGN REQUIREMENTS: MAST ARM POLES

1. The mast arm pole shall be designed under the load and design requirements set forth in Section B.
2. The cross section of the poles shall be symmetrical about its axis. The poles shall be round with a constant nominal diameter not exceeding those indicated on the details at the base. If longitudinally welded, the exposed weld shall be ground or rolled smooth and flush with the base metal. All such welds shall be continuous. All pipe or tubings shall be full lengths for poles, and arms. No splicing will be permitted.
3. The base shall be designed to fully develop the ultimate strength of the pole. The base may have a cross section similar to the pole; it may be round and shall be designed to fully transfer the load to the anchor bolts.
4. The base of each pole, shall be fabricated to receive anchor bolts spaced equally apart on a bolt circle, indicated on the details symmetrically about the axis of the pole.
5. Each anchor bolt shall be supplied with a leveling nut and a stop nut. Each anchor bolt shall be sized and threaded as indicated on the details. A flat steel plate shall be either welded with a fillet weld or threaded or bolted to the imbedded end.
6. Each pole shall be furnished with bolt cover plates for concealing the exposed ends of the anchor bolts and nuts. A means shall be provided to secure the bolt covers to the base.
7. Each pole shall be provided with a reinforced handhole, as indicated on the details. The removable cover shall be equipped with two (2) Allen keyed, stainless-steel bolts.
8. The pole shall be designed and fabricated to accommodate mast arms of 15, 20, 25, 30, 35, 40, 45, and 50 feet. The mast arms and pole shall be completely interchangeable.

ITEM 680.82XXYY10 - MAST ARM POLE WITH ROTATING ARM LENGTH UP TO 50 FT

9. A bronze grounding stud with bronze lock washer shall be installed inside the pole welded to the shaft opposite the handhole.

D. DESIGN REQUIREMENTS: MAST ARMS

1. The mast arm shall be designed for the load and design requirements set forth in Section B.
2. The mast arm shall be designed as a single member without spreader arms, tie rods, or truss members. The mast arm shall have the appearance of an upsweep curving arc.
3. The mast arm shall have a cross section similar to that of the mast arm pole, and be of constant diameter, with the ends tapered as shown on the Contract Drawings.
4. The rise of the mast arm from the pole end to the free end shall be as indicated on the details. This rise shall be accomplished by sloping the mast arm upward and curving it such that the middle ordinate distance between the curved mast arm and the chord shall not be less than 6 inches for any mast arm length. Radius of curvature as shown on the Contract Drawings.
5. The arm shall consist of a straight section and a constant radius curved section. These sections shall be dimensioned as indicated on the details. The curved arm shall meet the horizontal plane at the free end with an upward angle of three (3) degrees. The diameter of the arm shall not be greater than the diameter of the pole. Any difference between the diameters shall be made through a smooth appearing tapered reduction fitting at the point of joining. The length of taper shall be as indicated on the details.
6. The mast arm shall be provided with a standard pipe sized as indicated on the details to support standard traffic signal heads to be located at the end of the mast arm.
7. There shall be means provided for a weather tight entrance of electrical conductors from the traffic control devices to the mast arm. This entrance shall be located through the end of the mast arm pipe fitting. At the juncture of the mast arm and mast arm pole, a weather tight exit from the mast arm to the mast arm pole for electrical conductors shall be provided internally.

E. BASIS OF ACCEPTANCE

1. The Contractor shall provide descriptions and drawings of each type of mast arm pole for approval.
2. All testing for deflections, when required, shall be made on the mast arm pole and mast arm assembled as a unit. The deflection shall not exceed those specified on the details subject to the loads specified in Section B.2.
3. The manufacturer shall provide when required, a certified report from a certified independent test laboratory that the mast arm and pole have been tested and meet these specifications for deflections and materials. Additional field tests of a complete unit, pole with mast arm attached, may be required as determined by the Engineer.

ITEM 680.82XXYY10 - MAST ARM POLE WITH ROTATING ARM LENGTH UP TO 50 FT

F. GUARANTEE

1. All material and workmanship furnished under this specification, shall be guaranteed for a period of one year from the date of completion of this contract.
2. The Contractor shall be responsible for any defective parts, due to faulty material or workmanship, free from any expense to the State during the term of this guarantee, where such material is exposed to normal operation conditions.
3. Units or parts found damaged or imperfect when inspected after delivery, shall be replaced by the Contractor at his own expense, including all subsequent delivery and shipping charges.

CONSTRUCTION DETAILS

Subsections 680-3.01 to 680-3.12 and 680-3.32 shall apply.

The mast arm pole and mast arm shall be erected upon a foundation, installed under another item, with the handhole located in a direction as approved by the Engineer. The mast arm shall be aligned as shown on the plans or as ordered by the Engineer.

The mast arm pole shall be raked when the mast arm is under a full load as shown on the intersection drawing. The pole shall be raked to a vertical position.

The pole shall be grounded with a solid copper equipment grounding conductor.

All holes and openings shall be field drilled and tapped to insure the proper alignment of attachments and fittings.

All scraped or bruised areas on the mast arm pole or mast arm shall be re-galvanized in the field to the satisfaction of the Engineer.

METHOD OF MEASUREMENT

This work shall be measured by the number of mast arm poles with mast arm furnished and installed in accordance with the Contract Documents or as directed by the Engineer.

BASIS OF PAYMENT

Subsection 680-5.01 of the Standard Specifications shall apply.

The unit price bid for each pole shall include the necessary grounding system, anchor bolts, mast arms, pole assembly and erection, field galvanizing as required and the following items. Breakaway transformer bases, when specified, shall be included in the price bid for each pole.

- a. Anchor bolt covers if specified.
- b. Weather heads and couplings as required.

ITEM 680.82XXYY10 - MAST ARM POLE WITH ROTATING ARM LENGTH UP TO 50 FT

- c. Service bracket.
- d. Pole cap and mast arm end caps.
- e. Cabinet mounting fittings, plates, brackets as needed for the cabinet being installed.
- f. Reinforced couplings for wire entrances to cabinets.
- g. Galvanized eyebolt, nuts and washers for attaching span wire assembly.
- h. Galvanized pole clamps with eyes for attaching tether wires.

Payment will be made under:

Item No.	Item	Pay Unit
680.82XXYY10	Mast Arm Traffic Signal Pole	Each

XX = Mast Arm mounting Height in feet.

YY = Mast Arm length in whole feet.

ITEM 680.84100210 - NO TURN ON RED (NTOR) LED OVERHEAD SIGN 24" W x 30"

1.0 DESCRIPTION

The work shall consist of furnishing and installing a No Turn On Red (NTOR) LED sign in accordance with all applicable NYSDOT standard sheets and specifications and in accordance with the contract documents.

2.0 GENERAL REQUIREMENTS

The NTOR sign shall be installed overhead at the intersection, supported by either mast arm or span wire.

3.0 FUNCTIONAL REQUIREMENTS

The NTOR sign shall be powered by the traffic signal control cabinet at intersection.

4.0 MECHANICAL CONSTRUCTION REQUIREMENTS

- 4.1 The sign body shall be powder-coated or clear-coated natural aluminum construction.
- 4.2 Face material to be 1/4" impact resistant polycarbonate.
- 4.3 Back material to be 1/4" high density black polyethylene (HDPE).
- 4.4 LEDs to be double row configuration for sign characters.
- 4.5 Viewable size of LED sign shall be 24"W x 30"H.
- 4.6 Design of LED sign shall allow for replacement of LEDs.
- 4.7 12 VDC @ 4.4 Amps, approx. 53 Watts.

5.0 ENVIRONMENTAL OPERATIONS

The NTOR sign shall be capable of continuous operation over a temperature range of -30 degrees F to +165 degrees F (-34 degrees C to 74 degrees C).

6.0 CONSTRUCTION DETAILS

The NTOR sign shall be installed and constructed in accordance with the details specified on the standard sheets. The NTOR sign assembly shall be installed on either an existing mast arm, newly installed mast arm, or on a span wire as specified on the plans.

The orientation shall be convenient to vehicles intending to make a right turn.

7.0 METHOD OF MEASUREMENT

The NTOR LED sign will be measured for payment as the number of NTOR LED signs, as specified, that are satisfactorily installed.

ITEM 680.84100210 - NO TURN ON RED (NTOR) LED OVERHEAD SIGN 24" W x 30"

8.0 BASIS OF PAYMENT

The unit price bid for each NTOR LED sign shall include the cost of furnishing all labor, material, tools, and equipment required to complete the installation, and to make the unit fully operational.

ITEM 683.030300NA - HD CCTV TOP MOUNT IP CAMERA ASSEMBLY

DESCRIPTION

This work shall consist of furnishing and installing HD CCTV Top Mount IP Camera Assemblies in accordance with the contract documents and as directed by the Engineer.

MATERIALS

1. Product Description

- The camera system specified herein shall provide an integrated network IP camera positioning system (IPCPS) providing 720p/30 video with H.264/MJPEG compression and encoding for providing low bandwidth, low latency, high quality video images transported over standard ethernet infrastructures.
- The (IPCPS) shall integrate an HDTV standards 720p resolution @ 30 frames/sec day/night camera with integral 18x motorized zoom optics, an H.264/MJPEG ASIC based encoding engine and network communication circuitry, a wide dynamic range variable speed positioning drive, completely protected by an IP67/IP66 camera/positioner enclosure system.
- The H.264/MJPEG encoded video shall support 30 frames per second @ HDTV 720p resolution with support for uni-cast and multi-cast connections, using RTP/RTSP network layers.
- The (IPCPS) shall provide an integral web HTTP server allowing password protected administration/configuration capabilities along with full camera and positioning system control and viewing functions.
- The (IPCPS) camera manufacturer shall provide a software development kit (SDK) for allowing any 3rd party developers all necessary tools for integrating the (IPCPS) system into the users control system environment.
- The (IPCPS) shall provide hybrid capability delivering both ethernet and analog composite video and RS422 serial connections for external system connections and control.
- The (IPCPS) positioning drive system shall provide wide dynamic range speed capability of 0.1 to 80 degrees per second, with a 0.25 degree repeatability, 360 degree continuous pan rotation, and +90 to -90 degree tilt range as a minimum.
- The (IPCPS) shall include an advanced ID generation capability for indications of viewing direction, compass setting, azimuth/elevation position, location descriptors and user defined image/logo.
- The (IPCPS) shall be designed for use in harsh operational environments conforming to NEMA TS2 requirements for power, shock and vibration as well as IP66 and IP67 environmental standards.
- The (IPCPS) units shall be fully assembled, pressurized and tested at the original manufacturing facility and shipped as a complete unit, ready for installation and commissioning.

2. Quality Assurance

- Equipment: The HD CCTV Assembly shall have been satisfactorily used in projects of similar size and complexity for not less than two years.

ITEM 683.030300NA - HD CCTV TOP MOUNT IP CAMERA ASSEMBLY

3. Delivery, Storage and Handling

- Deliver materials in manufacturer's original, unopened, protective packaging.
- Store materials in a clean, dry space, protected from weather.
- Handle in a manner to prevent damage to finished surfaces.
- Where possible, maintain protective covering until installation is complete and remove such coverings as part of final clean up.
- Touch up damage to finishes to match adjacent surfaces, including recoating of galvanized or plated surfaces where damaged, cut, or drilled.

4. Product Specifications

The (IPCPS) shall meet or exceed the following design and performance specifications.

A. Camera Module

1. Image Sensor: Progressive Scan Ex-View ICX445AKA CCD
2. Image Size: Diagonal 6mm (1/3" type)
3. Image Resolution: 1280 horizontal; 720 vertical
4. Picture Elements (total) 1348 (H) x 976 (V)
5. Video Output: 16 Bit Digital YUV: 4.2.0
6. Day/Night Operation: Adjustable (Auto, Color and Mono Modes) via removable IR cut filter
7. Maximum Lens Aperture: f/1.6 (wide) to f/2.8 (tele)
8. Optical Zoom Range: 18X, 4.7mm to 84.6mm
9. Optical Zoom Speed: Two speeds, from approximately 3.5 seconds to 5 seconds full range
10. Horizontal Angle of View: Optical: 55.2° to 3.2
11. Minimum Focus Distance: 0.01m (w); 1.0m (t)
12. Auto Focus: Selectable Auto/Manual; Minimum Scene Illumination for Reliable Auto Focus shall be no more than 50% video output.
13. Manual Shutter: Selectable shutter speeds shall be from 1/30 to 1/10,000.
14. Auto Iris; Selectable auto/manual; Iris shall automatically adjust to compensate for changes in scene illumination to maintain constant video level output within sensitivity specifications.
15. Sensitivity: Scene Illumination; F1.6 @ 50% Video
 - a. 1.8 Lux (0.18 fc) @ 1/30 shutter, color mode
 - b. 0.1 Lux (0.01 fc) @ 1/30 shutter, mono mode

B. H.264/MJPEG Encoding Engine

The (IPCPS) system shall fully integrate within its positioning system enclosure the H.264/MJPEG encoding component with functions as specified below;

1. Video Encoding: H.264 (Main Profile/Level 3.1) and MJPEG standards
2. Video Streams: Two independently configurable streams; (2) H.264 streams or (1) H.264 and (1) MJPEG or (1) H.264 or MJPEG and 1 NTSC or PAL.

ITEM 683.030300NA - HD CCTV TOP MOUNT IP CAMERA ASSEMBLY

3. Video Stream Configuration Properties;
 - a. Stream Settings
 1. Video Stream 1: H.264
 2. Video Stream 2: H.264 or MJPEG
 - b. Image Resolution: 720p, D1, VGA, CIF
 - c. Streaming Mode: CBR or VBR. Image Settings: (GOP (M, N)),
Quality Value
 - d. Frame Rate: 30, 15, 7, 4, 2, 1
4. Data Rate: Adjustable from 64k to 8Mb/sec
5. Connection Types: Uni-cast, multi-unicast or multi-cast
6. IPCPS Video Latency: <150ms
7. Network Protocol Layers: RTP, RTSP, UDP, TCP, IP, HTTP, IGMPv2, ICMP, ARP as a minimum

C. Positioning Drive

1. Pan Movement; 360 degrees continuous rotation
2. Pan Speed; Variable from 0.1 to 80 degrees/second.
3. Pan Repeatability; +/- 0.25 degree precision
4. Pan Preset Speed; 180 degree movement < 2 Seconds
5. Tilt Movement; Minimum of +90 to -90 degrees
6. Tilt Speed; Variable from 0.1 to 40 degrees/second.
7. Tilt Repeatability; +/- 0.25 degree precision
8. Tilt Preset Speed; 180 degree movement < 2.5 Seconds
9. Positioning control shall allow variable pan/tilt speeds based on zoom position. This shall scale the maximum pan/tilt speed, while maintaining variable speed capability, throughout the zoom range of the camera.

D. Operational

1. Presets; Minimum of 64, with each preset consisting of a pan, tilt, zoom and focus coordinate and ID label.
 - a. ID Label: Provide 1 line of up to 24 ASCII characters on video for Preset ID description. When a preset position is recalled the corresponding preset ID shall be displayed. The preset ID shall remain displayed until a pan, tilt, zoom or another preset command is received.
2. Preset Tours; Minimum 8 tours required, each tour shall consist of up to 32 pre-programmed presets, with individual dwell time property per preset per tour.
 - a. Tours shall stop upon receipt of any pan/tilt positioning command.
 - b. Tour data shall be stored in non-volatile memory and shall not be lost if a power failure occurs.
3. Scalable Zoom; Variable speed pan/tilt ranges based off of zoom position. This adds the capability of limiting the maximum pan/tilt speed, while maintaining variable speed capability, throughout the zoom range of the camera.

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4. Updates: The (IPCPS) shall allow updates of firmware for new features via the ethernet network communication channel. An internal (IPCPS) web server shall be provided for performing this task.
5. The (IPCPS) system shall return to previous position and state of operation upon power loss and restoration.

E. On Screen Display

1. Location/Camera Site Message
 - a. Single Line of up to 128 alpha-numeric characters
 - b. Enable / Disable Mode
 - c. Selectable X-Y Position
2. Logo Display
 - a. Maximum logo size of up to 128x128 pixels
 - b. Shall be a 24-BPP Bitmap
 - c. Enable / Disable Mode
 - d. Selectable X/Y Position
 - e. Selectable Foreground Opacity Setting
3. Time/Date Display
 - a. Enable / Disable (ON/OFF)
 - b. Selectable X-Y Position
 - c. Date: DD/MM/YY or MM/DD/YY
 - d. Time Format: 24 Hour or AM/PM
4. Network Time Protocol (NTP) (CENTRAL TIME SERVER)
 - a. Enable / Disable NTP
 - b. NTP Server IP Address
5. Internal Temperature Display
 - a. Metrics (US or Europe (Ft or M; °F or °C)

F. Maintenance Functions

The camera system shall support maintenance features as defined below;

1. The camera system shall support querying of camera parameters via the Ethernet connection. The camera parameters shall consist of the following items
 - a. Serial number
 - b. Software revision
 - c. Assembly date
 - d. Camera Model Number

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2. Internal Temperature Monitoring and Reporting
3. Remote Software Upload/Updates via ethernet
4. Camera Device Auto Discovery of IP address
5. Camera System Auto Re-connect
6. Camera System Reset
7. Save and Restore camera system start-up configuration

G. IP Management

The (IPCPS) shall provide at minimum the following network configuration properties;

1. IP Configuration: DHCP or Static IP address entry
2. Net mask address entry
3. Gateway address entry
4. Domain name entry
5. DNS server entry

H. Power Input

The (IPCPS) system shall fully comply with and include independent laboratory test results confirming compliance with the following electrical operating conditions;

1. Power; <40 Watts (exclusive of PT Heater Option)
2. Operating Voltage; 89 to 135Vac +/-3hz. Shall comply with NEMA-TS2 para 2.1.2 and 2.1.3
3. The (IPCS) system shall NOT require any external to Camera System step-down power supply transformer/interface box for accepting the specified operating voltage. Products requiring this shall not acceptable.

I. Mechanical

1. Connectors; 18 Pin MS style PT06E-14-18S(SR) weatherproof non-corrosion type or equal
2. Weight; Maximum 18.5lbs
3. Dimensions; Maximum 6.7" D x 11.4" H x 13.30" W.
4. Construction; Powder Coated 6061 T6 aluminum; all internal and external parts corrosion protected, stainless steel fasteners. Faceplate shall be optically correct 0.230" thick glass.
5. Camera Mount; 6" Base plate with (4) 1/4-20 threaded holes 4.75 BC. Options for larger base plates with 7.00" BC shall be available.

J. Environmental

The (IPCPS) system shall fully comply with and include independent laboratory test results confirming compliance with the following environmental operating conditions;

1. Temperature; -29 F to 165 F tested across low and high voltage ranges per Nema-TS2 paragraphs 2.1.2 and 2.1.3.
2. Vibration; Per Nema-TS2 paragraphs 2.1.9, 2.2.3, 5-30Hz sweep @ 0.5g applied in each of 3 mutually perpendicular planes.
3. Shock; Per Nema-TS2 paragraphs 2.1.10, 2.2.4, 10g applied in each of 3 mutually perpendicular planes.

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4. Water Spray; Per IEC 60529+A1, 1999, Para 14.2.6, Solid water stream delivered thru 12.5mm nozzle @ 25 gallons/minute @ 9ft for 3 minutes
5. External Icing; Per Nema-TS2 250-2003, paragraphs 5.6
6. Corrosion Protection; Per Nema 250-2003, paragraphs 5.10
7. Humidity; 0-100% N.C per MIL-E-5400T, paragraphs 3.2.24.4
8. Standards; IP66, IP67, ASTM-B117 Marine

K. Certifications

1. Safety; CE (24Vac)
2. Emissions; FCC Class A

CONSTRUCTION DETAILS

This item will consist of furnishing and installing a HD Closed Circuit Television (CCTV) Top Mount IP Camera Assembly at locations shown on the plans or as directed by the Engineer. The HD CCTV Top Mount Camera Assembly (CCTV Assembly) shall be installed on poles as shown in plans. Poles shall be existing or provided under other contract items. All materials, labor, workmanship, equipment, testing, documentation, and incidental items required to install and test a complete and operational Furnish and Install CCTV Top Mount Camera Assembly shall be supplied including but not limited to the following:

HD CCTV Top Mount IP Camera Assembly

- Camera with optical and digital zooms, automatic iris and daylight and nightlight sensitivity.
- Environmental enclosure
- Pan-tilt unit with preset
- Pole Top Camera Mount
- Camera / pan-tilt interface cable.

7. Examination

- Inspect all System equipment and accessories prior to installation. Replace any damaged items.
- Ensure that the spaces where any electronic equipment is to be stored and/or installed is completely free from any foreign substances, such as concrete dust, water, or any other material that may otherwise be harmful to electronic equipment and connections. No allowances shall be made to the Contractor for equipment damage, or delays due to environmental/security damage.

8. Preparation

- The Contractor shall be responsible for field verification of dimensions and coordination of conduit entry and all other mounting conditions with the entity manufacturing the equipment.
- The entity manufacturing the equipment shall provide on-site technical supervision and assistance during installation and interconnection of the system equipment installed by the Contractor. Said supervision is to insure the safety of the proper installation and operation of the system equipment, prior to the installed system beginning the 30-day operational test.

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- An on-site inspection will be made by the Engineer after the system equipment has been delivered,. If any equipment has been damaged or for any reason does not comply with the requirements of this Section, the Contractor will be notified in writing, and shall be required to replace the equipment at his own cost and expense, even though the equipment has been previously inspected, tested, and approved for shipment. After such satisfactory replacement, the Contractor shall install the system.

9. Installation Details:

- The Contractor shall install the specified HD CCTV assembly at locations shown on the plans and as directed by the Engineer. The equipment shall be installed on a pole at locations shown in the Contract Documents and Specifications. Particular care shall be given to the interconnection of all the components and the cabling, especially cabling through the conduit in the pole.
- All incidental parts which are necessary to complete the installation, but are not specified herein or on the plans, shall be provided as necessary to provide a complete and properly operating system. The Contractor shall prepare a shop drawing that details the complete Camera assembly and all components to be supplied.
- Install all System equipment in accordance with the manufacturers written instructions in the locations shown on the Contract Drawings.
- All control power and data communications wire shall be wired and harnessed within the equipment enclosures to meet the NEC requirements and utilize standard industry practices.
- All wiring shall be clearly labeled with function and wire identification number corresponding to the manufacturer's wiring diagrams and/or approved Shop Drawings.
- Where external circuit connections are required, terminal blocks shall be provided and the manufacturer's drawings must clearly identify the interconnection requirements including wire type to be used.
- All wiring required to externally connect equipment lineups shall be installed by the electrical contractor.
- Contractor interconnection wiring requirements shall be clearly identified on the "AS-BUILT" system drawings.

10. Testing Requirements

The HD CCTV assembly shall be subjected to several levels of testing (post installation, and 30-day operational acceptance) as described in these Specifications. The Engineer reserves the right to inspect and/or factory test any completed assemblies prior to delivery of the material to the project site. Any deviation from these specifications that are identified during testing shall be corrected prior to shipment of the assembly to the project site.

A post installation test shall be performed for each completed Camera assembly. The test shall be conducted from the field equipment cabinet utilizing PC diagnostic to be supplied. The Contractor shall verify that the camera can be fully used and moved through the entire limit of Pan, Tilt, Zoom, and Focus.

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The test shall also verify capabilities that all cabinet alarms (door open, temperature, etc) are operable, controllable and the appropriate status can be read via the control port of the control receiver driver. In addition, with the use of a monitor the video signal shall be demonstrated to be according to specification.

30-day operational acceptance shall be performed for the completed Camera system. The test shall be conducted from the field equipment cabinet and central operations. The Contractor shall verify that the camera can be fully used and moved through the entire limit of Pan, Tilt, Zoom, and Focus. The test shall also verify capabilities that all cabinet alarms (door open, temperature, etc) are operable, controllable and the appropriate status can be read via the control port of the camera controller module. In addition, with the use of a monitor the video signal shall be demonstrated to be according to specification.

Post-Installation Tests

After installation, a post installation test of the equipment shall show compliance with this Section and the manufacturers specifications. The Contractor shall submit the proposed testing procedure to the Engineer for approval two weeks prior to proposed start of test. Said testing shall continue until the results surpass the test criteria and are satisfactory to the Engineer. The Contractor shall perform any repairs, construction, or modifications as required complying with this Section without additional cost to the County.

The Contractor shall completely check out, calibrate and test all connected hardware and software to insure that the system performs in accordance with the requirements of this Section, the manufacturers specifications and sequences of operation submitted. Correct any malfunctions as they occur, said malfunctions shall include, but not be limited to, equipment failure or failure of the system to comply with the requirements of this Section and to the manufacturers specifications.

The Contractor shall submit a test report detailing compliance with the requirements of post- installation testing.

After satisfactory completion of post installation testing and after construction is complete, a 30-day operational test shall commence on the entire CCTV surveillance system.

30-Day Operational Test

The 30-day operational test shall commence with the approval of the engineer after post installation testing of all components and the complete CCTV surveillance system is operational.

The Contractor shall submit the proposed testing procedure to the Engineer for approval two weeks prior to proposed start of test. Said testing shall continue until the results surpass the test criteria and are satisfactory to the Engineer. The Contractor shall perform any repairs, construction, or modifications as required complying with this Section without additional cost to the County.

Testing shall be performed to verify compliance with the requirements of this Section and the manufacturer's specifications and shall be performed in accordance with the approved testing plan. Correct any malfunctions as they occur, said malfunctions shall include, but not be limited to, equipment failure or failure of the System to comply with the requirements of this Section and to the manufacturers specifications.

Malfunctions shall stop the 30-day operational test for repair of the equipments. After corrections have

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been made, the 30-day operational test shall restart a new 30-day period and shall continue until the results are satisfactory to the Engineer for a period of 30 consecutive days.

Maintain a log during all operational testing. Include a narrative description of corrective measures required and items required or replaced.

11. Documentation Requirements

- Five (5) complete sets of operation and maintenance manuals shall be provided. The manuals shall include detail and complete information as follows:
 - Equipment operation
 - Installation procedures
 - Accurate schematic diagrams
 - Performance specification (functional, electrical, mechanical, and environmental)
 - Accurate troubleshooting, diagnostic and maintenance procedures
 - Parts list including names of vendors for parts not identified by universal part numbers such as JEDEC, RETMA, or EIA
 - Communications protocol
 - One copy of the final pole mounted cabinet-wiring diagram shall be placed in the cabinet and one reproducible and two copies delivered to the Engineer.
- Training Requirements
 - Prior to installation of any specified equipment, the Contractor's personnel shall have received training from the vendor/supplier on installation, operations, testing, maintenance, and repair procedures of all equipment.
 - In addition, training shall be provided for up to 10 individuals designated by the Engineer. The training shall include all material and manuals required for each individual. The training shall be as follows:
 - Engineering Training - A minimum of 8 hours of training for up to ten (10) engineering and operations personnel shall be provided. The training shall include both classroom and hands on CCTV equipment assembly operation and all equipment capabilities including interface to the TMC and the Video Switching and Control Equipment.

Maintenance Training - A minimum of 8 hours of training for ten (10) maintenance personnel shall be provided. The training shall include both classroom and hands on equipment operation and maintenance. It shall include the CCTV equipment theory of operation, operation instructions, circuit description, and troubleshooting, preventative maintenance, including interface to the TMC and Video Switching and Control Equipment for diagnostics

METHOD OF MEASUREMENT

This work will be measured as the number of HD CCTV Top Mount IP Camera Assemblies satisfactorily furnished and installed.

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BASIS OF PAYMENT

The unit bid shall include the cost of furnishing all labor, materials, tools and equipment necessary to satisfactorily complete the work including camera assemblies, camera enclosure, controller module, composite Video and camera control cable, integrations, testing, training, cable. All miscellaneous hardware required for the installation of the unit, including but not limited to coaxial cables, fiber optic jump cables, control and power cabling, connectors, terminations, and mounting hardware, between the video and communication equipment. Payment for all documentation, testing, and test equipment used for the testing of the HD CCTV Top Mount IP Camera Assembly shall be included in this item.

ITEM 683.030600NA – HD CCTV DOME IP CAMERA ASSEMBLY

DESCRIPTION

This work shall consist of furnishing and installing HD CCTV Dome IP Camera Assemblies in accordance with the contract documents and as directed by the Engineer.

MATERIALS

1. Product Description

- The dome camera system specified herein shall provide an integrated network IP dome positioning system (IPDPS) providing 720p/30 video with H.264/MJPEG compression and encoding for providing low bandwidth, low latency, high quality video images transported over standard Ethernet infrastructure.
- The (IPDPS) shall integrate an HDTV standards 720p resolution @ 30 frames/sec day/night camera with integral 18x motorized zoom optics, an H.264/MJPEG ASIC based encoding engine and network communication circuitry, a wide dynamic range variable speed positioning drive, completely protected by an IP67 sealed and pressurized dome enclosure system.
- The H.264/MJPEG encoded video shall support 30 frames per second @ HDTV 720p resolution with support for uni-cast and multi-cast connections, using RTP/RTSP network layers.
- The (IPDPS) shall provide an integral web HTTP server allowing password protected administration/configuration capabilities along with full camera and positioning system control and viewing functions.
- The (IPDPS) camera manufacturer shall provide a software development kit (SDK) for allowing any 3rd party developers all necessary tools for integrating the (IPDPS) system into the users control system environment.
- The (IPDPS) shall provide hybrid capability delivering both ethernet and analog composite video and RS422 serial connections for external system connections and control.
- The (IPDPS) positioning drive system shall provide wide dynamic range speed capability of 0.1 to 200 degrees per second, with a 0.1 degree repeatability, 360 degree continuous pan rotation, and +5 to -90 degree tilt range as a minimum.
- The (IPDPS) shall include an advanced ID generation capability for indications of viewing direction, compass setting, azimuth/elevation position, location descriptors and user defined image/logo.
- The (IPDPS) shall be designed for use in harsh operational environments conforming to NEMA TS2 requirements for power, shock and vibration as well as IP67 environmental standards.
- The (IPDPS) units shall be fully assembled, pressurized and tested at the original manufacturing facility and shipped as a complete unit, ready for installation and commissioning.

2. Quality Assurance

- Equipment: The HD CCTV Assembly shall have been satisfactorily used in projects of similar size and complexity for not less than two years.

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3. Delivery, Storage and Handling Quality Assurance

- Deliver materials in manufacturer's original, unopened, protective packaging.
- Store materials in a clean, dry space, protected from weather.
- Handle in a manner to prevent damage to finished surfaces.
- Where possible, maintain protective covering until installation is complete and remove such coverings as part of final clean up.
- Touch up damage to finishes to match adjacent surfaces, including recoating of galvanized or plated surfaces where damaged, cut, or drilled.

4. Product Specifications

The (IPDPS) shall meet or exceed the following design and performance specifications.

A. Camera Module

1. Image Sensor: Progressive Scan Ex-View ICX445AKA CCD
2. Image Size: Diagonal 6mm (1/3" type)
3. Image Resolution: 1280 horizontal; 720 vertical
4. Picture Elements (total) 1348 (H) x 976 (V)
5. Video Output: 16 Bit Digital YUV: 4.2.0
6. Day/Night Operation: Adjustable (Auto, Color and Mono Modes) via removable IR cut filter
7. Maximum Lens Aperture: f/1.6 (wide) to f/2.8 (tele)
8. Optical Zoom Range: 18X, 4.7mm to 84.6mm
9. Optical Zoom Speed: Two speeds, from approximately 3.5 seconds to 5 seconds full range
10. Horizontal Angle of View: Optical: 55.2° to 3.2
11. Minimum Focus Distance: 0.01m (w); 1.0m (t)
12. Auto Focus: Selectable Auto/Manual; Minimum Scene Illumination for Reliable Auto Focus shall be no more than 50% video output.
13. Manual Shutter: Selectable shutter speeds shall be from 1/30 to 1/10,000.
14. Auto Iris; Selectable auto/manual; Iris shall automatically adjust to compensate for changes in scene illumination to maintain constant video level output within sensitivity specifications.
15. Sensitivity: Scene Illumination; F1.6 @ 50% Video
 - a. 1.8 Lux (0.18 fc) @ 1/30 shutter, color mode
 - b. 0.02 Lux (0.002 fc) @ 1/4 shutter, mono mode

B. H.264/MJPEG Encoding Engine

The (IPDPS) system shall fully integrate within its positioning system enclosure the H.264/MJPEG encoding component with functions as specified below;

1. Video Encoding: H.264 (Main Profile/Level 3.1) and MJPEG standards
2. Video Streams: Two independently configurable streams; (2) H.264 streams or (1) H.264 and (1) MJPEG or (1) H.264 or MJPEG and 1 NTSC or PAL.

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3. Video Stream Configuration Properties;
 - a. Stream Settings
 - 1) Video Stream 1: H.264
 - 2) Video Stream 2: H.264 or MJPEG
 - b. Image Resolution: 720p, D1, VGA, CIF
 - c. Streaming Mode: CBR or VBR.
 - d. Image Settings: (GOP (M, N)), Quality Value
 - e. Frame Rate: 30, 15, 7, 4, 2, 1
4. Data Rate: Adjustable from 256k to 8Mb/sec
5. Connection Types: Uni-cast, multi-unicast or multi-cast
6. IPDPS video latency: <133ms
7. Network Protocol Layers: RTP, RTSP, UDP, TCP, IP, HTTP, IGMPv2, ICMP, ARP as a minimum

C. Positioning Drive

1. Pan Movement; 360 degrees continuous rotation
2. Pan Speed; Variable from 0.1 to 80 degrees/second.
3. Pan Repeatability; +/- 0.1 degree precision
4. Pan Preset Speed; 180 degree movement < 2 Seconds
5. Tilt Movement; Minimum of +5 to -90 degrees
6. Tilt Speed; Variable from 0.1 to 40 degrees/second.
7. Tilt Repeatability; +/- 0.1 degree precision
8. Tilt Preset Speed; 90 degree movement < 2 Seconds
9. Positioning control shall allow variable pan/tilt speeds based on zoom position. This shall scale the maximum pan/tilt speed, while maintaining variable speed capability, throughout the zoom range of the camera.

D. Camera/ pan-tilt interface cable (Composite Cable)

1. The Camera/ pan-tilt interface cable (Composite Cable) for composite Video, camera control and power shall be furnished by and meet the requirements of the camera manufacturer and be furnished at the lengths required for the installation. The cable shall be furnished and installed with factory-installed connectors to mate to the CCTV Assembly and to the camera controller, modem or switch in the camera cabinet. The Contractor shall verify the required cable length and connector type prior to furnishing.

E. Operational

1. Required camera control functions shall include the features and capabilities as a minimum to control the Day/night Mode, Shutter Speed, White balance, Maximum AGC Level, Wide Dynamic Range, Backlight Compensation, Focus; Auto or manual mode, Iris; Auto or manual mode, Zoom Lens Control, Pan/Tilt Positioning, etc.

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2. Presets; Minimum of 64, with each preset consisting of a pan, tilt, zoom and focus coordinate and ID label.
 - a. ID Label: Provide 1 line of up to 24 ASCII characters on video for Preset ID description. When a preset position is recalled the corresponding preset ID shall be displayed. The preset ID shall remain displayed until a pan, tilt, zoom or another preset command is received.
3. Preset Tours; Minimum 8 tours required, each tour shall consist of up to 32 pre-programmed presets, with individual dwell time property per preset per tour.
 - a. Tours shall stop upon receipt of any pan/tilt positioning command.
 - b. Tour data shall be stored in non-volatile memory and shall not be lost if a power failure occurs.
4. Scalable Zoom; Variable speed pan/tilt ranges based off of zoom position. This adds the capability of limiting the maximum pan/tilt speed, while maintaining variable speed capability, throughout the zoom range of the camera.
5. Updates: The (IPDPS) shall allow updates of firmware for new features via the ethernet network communication channel. An internal (IPDPS) web server shall be provided for performing this task.
6. The (IPDPS) system shall return to previous position and state of operation upon power loss and restoration.

F. On Screen Display

1. Camera ID
 - a. Two Lines of up to 24 alpha-numeric characters
 - b. Enable / Disable Mode
2. Logo Display
 - a. Maximum logo size of up to 128x128 pixels
 - b. Shall be a 24-BPP Bitmap
 - c. Enable / Disable Mode
 - d. Selectable X/Y Position
 - e. Selectable Foreground Opacity Setting
3. Time/Date Display
 - a. Enable / Disable (ON/OFF)
 - b. Selectable X-Y Position
 - c. Date: DD/MM/YY or MM/DD/YY
 - d. Time Format: 24 Hour or AM/PM
4. Network Time Protocol (NTP) (CENTRAL TIME SERVER)
 - a. Enable / Disable NTP

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- b. NTP Server IP Address
- 5. Internal Temperature Display
 - a. Metrics (US or Europe (Ft or M; °F or °C))

G. Maintenance Functions

The camera system shall support maintenance features as defined below;

- 1. The camera system shall support querying of camera parameters via the Ethernet connection. The camera parameters shall consist of the following items.
 - a. Serial number
 - b. Software revision
 - c. Assembly date
 - d. Camera Model Number
- 2. Internal Temperature Monitoring and Reporting
- 3. Remote Software Upload/Updates via ethernet
- 4. Camera Device Auto Discovery of IP address
- 5. Camera System Auto Re-connect
- 6. Camera System Reset
- 7. Save and Restore camera system start-up configuration

H. IP Management

The (IPDPS) shall provide at minimum the following network configuration properties;

- 1. IP Configuration: DHCP or Static IP address entry
- 2. Net mask address entry
- 3. Gateway address entry
- 4. Domain name entry
- 5. DNS server entry

I. Power Input

The (IPDPS) system shall fully comply with and include independent laboratory test results confirming compliance with the following electrical operating conditions;

- 1. Power; <40 Watts (exclusive of PT Heater Option)
- 2. Operating Voltage; 89 to 135Vac +/-3hz. Shall comply with NEMA-TS2 para 2.12 and 2.1.3
- 3. The (IPDPS) system shall NOT require any external to Camera System step-down power supply transformer/interface box for accepting the specified operating voltage. Products requiring this shall not acceptable.

J. Mechanical

- 1. Connectors; 18 Pin MS style PT06E-14-18S(SR) weatherproof non-corrosion

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- type or equal
2. Weight; Maximum 14.0lbs
 3. Dimensions; Maximum 11.05" D x 13.74" W.
 4. Construction; Powder Coated 6061 T6 aluminum; all internal and external parts corrosion protected, stainless steel fasteners. Faceplate shall be optically correct 0.230" thick glass.
 5. Camera Mount; 6" Base plate with (4) 1/4-20 threaded holes 4.75 BC. Options for larger base plates with 7.00" BC shall be available.

K. Environmental

The (IPDPS) system shall fully comply with and include independent laboratory test results confirming compliance with the following environmental operating conditions;

1. Temperature; -29 F to 165 F tested across low and high voltage ranges per NEMATS2 paragraphs 2.1.2 and 2.1.3.
2. Vibration; Per Nema-TS2 paragraphs 2.1.9, 2.2.3, 5-30Hz sweep @ 0.5g applied in each of 3 mutually perpendicular planes.
3. Shock; Per NEMA-TS2 paragraphs 2.1.10, 2.2.4, 10g applied in each of 3 mutually perpendicular planes.
4. Water Spray; Per IEC 60529+A1, 1999, Para 14.2.6, Solid water stream delivered thru 12.5mm nozzle @ 25 gallons/minute @ 9ft for 3 minutes
5. External Icing; Per NEMA-TS2 250-2003, paragraphs 5.6
6. Corrosion Protection; Per Nema 250-2003, paragraphs 5.10
7. Humidity; 0-100% N.C per MIL-E-5400T, paragraphs 3.2.24.4
8. Standards; IP67, ASTM-B117 Marine

L. Certifications

- 1 Safety; CE (24Vac)
- 2 Emissions; FCC Class A

CONSTRUCTION DETAILS

This item will consist of furnishing and installing a HD Closed Circuit Television (CCTV) Dome IP Camera Assembly at locations shown on the plans or as directed by the Engineer. The HD CCTV Dome Camera Assembly (CCTV Assembly) shall be installed on poles as shown in plans. Poles shall be existing or provided under other contract items. All materials, labor, workmanship, equipment, testing, documentation, and incidental items required to install and test a complete and operational Furnish and Install CCTV Dome Camera Assembly shall be supplied including but not limited to the following:

1. HD CCTV Dome IP Camera Assembly

- Camera with optical and digital zooms, automatic iris and daylight and nightlight sensitivity.
- Environmental enclosure
- Pan-tilt unit with preset
- Pole Top Camera Mount
- Camera / pan-tilt interface/ power cable (Composite cable) of the length required from the camera to the camera cabinet.

2. Examination

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- Inspect all System equipment and accessories prior to installation. Replace any damaged items.
- Ensure that the spaces where any electronic equipment is to be stored and/or installed is completely free from any foreign substances, such as concrete dust, water, or any other material that may otherwise be harmful to electronic equipment and connections. No allowances shall be made to the Contractor for equipment damage, or delays due to environmental/security damage.

3. Preparation

- The Contractor shall be responsible for field verification of dimensions and coordination of conduit entry and all other mounting conditions with the entity manufacturing the equipment.
- The entity manufacturing the equipment shall provide on-site technical supervision and assistance during installation and interconnection of the system equipment installed by the Contractor. Said supervision is to insure the safety of the proper installation and operation of the system equipment, prior to the installed system beginning the 30-day operational test.
- An on-site inspection will be made by the Engineer after the system equipment has been delivered. If any equipment has been damaged or for any reason does not comply with the requirements of this Section, the Contractor will be notified in writing, and shall be required to replace the equipment at his own cost and expense, even though the equipment has been previously inspected, tested, and approved for shipment. After such satisfactory replacement, the Contractor shall install the system.

4. Installation Details

- The Contractor shall install the specified HD CCTV assembly at locations shown on the plans and as directed by the Engineer. The equipment shall be installed on a pole at locations shown in the Contract Documents and Specifications. Particular care shall be given to the interconnection of all the components and the cabling, especially cabling through the conduit in the pole.
- All incidental parts which are necessary to complete the installation, but are not specified herein or on the plans, shall be provided as necessary to provide a complete and properly operating system. The Contractor shall prepare a shop drawing that details the complete Camera assembly and all components to be supplied.
- Install all System equipment in accordance with the manufacturer's written instructions in the locations shown on the Contract Drawings.
- All control power and data communications wire shall be wired and harnessed within the equipment enclosures to meet the NEC requirements and utilize standard industry practices.
- All wiring shall be clearly labeled with function and wire identification number corresponding to the manufacturer's wiring diagrams and/or approved Shop Drawings.
- Where external circuit connections are required, terminal blocks shall be provided and the manufacturer's drawings must clearly identify the interconnection requirements including

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wire type to be used.

- All wiring required to externally connect equipment lineups shall be installed by the electrical contractor.
- Contractor interconnection wiring requirements shall be clearly identified on the "AS-BUILT" system drawings.

5. Testing Requirements

The HD CCTV assembly shall be subjected to several levels of testing (post installation, and 30-day operational acceptance) as described in these Specifications. The Engineer reserves the right to inspect and/or factory test any completed assemblies prior to delivery of the material to the project site. Any deviation from these specifications that are identified during testing shall be corrected prior to shipment of the assembly to the project site.

A post installation test shall be performed for each completed Camera assembly. The test shall be conducted from the field equipment cabinet utilizing PC diagnostic to be supplied. The Contractor shall verify that the camera can be fully used and moved through the entire limit of Pan, Tilt, Zoom, and Focus. The test shall also verify capabilities that all cabinet alarms (door open, temperature, etc) are operable, controllable and the appropriate status can be read via the control port of the control receiver driver. In addition, with the use of a monitor the video signal shall be demonstrated to be according to specification.

30-day operational acceptance shall be performed for the completed Camera system. The test shall be conducted from the field equipment cabinet and central operations. The Contractor shall verify that the camera can be fully used and moved through the entire limit of Pan, Tilt, Zoom, and Focus. The test shall also verify capabilities that all cabinet alarms (door open, temperature, etc) are operable, controllable and the appropriate status can be read via the control port of the camera controller module. In addition, with the use of a monitor the video signal shall be demonstrated to be according to specification.

Post-Installation Tests

After installation, a post installation test of the equipment shall show compliance with this Section and the manufacturer's specifications. The Contractor shall submit the proposed testing procedure to the Engineer for approval two weeks prior to proposed start of test. Said testing shall continue until the results surpass the test criteria and are satisfactory to the Engineer. The Contractor shall perform any repairs, construction, or modifications as required complying with this Section without additional cost to the County.

The Contractor shall completely check out, calibrate and test all connected hardware and software to insure that the system performs in accordance with the requirements of this Section, the manufacturer's specifications and sequences of operation submitted. Correct any malfunctions as they occur, said malfunctions shall include, but not be limited to, equipment failure or failure of the system to comply with the requirements of this Section and to the manufacturer's specifications.

The Contractor shall submit a test report detailing compliance with the requirements of post- installation testing.

After satisfactory completion of post installation testing and after construction is complete, a 30-

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day operational test shall commence on the entire CCTV surveillance system.

30-Day Operational Test

The 30-day operational test shall commence with the approval of the engineer after post installation testing of all components and the complete CCTV surveillance system is operational.

The Contractor shall submit the proposed testing procedure to the Engineer for approval two weeks prior to proposed start of test. Said testing shall continue until the results surpass the test criteria and are satisfactory to the Engineer. The Contractor shall perform any repairs, construction, or modifications as required complying with this Section without additional cost to the County.

Testing shall be performed to verify compliance with the requirements of this Section and the manufacturer's specifications and shall be performed in accordance with the approved testing plan. Correct any malfunctions as they occur, said malfunctions shall include, but not be limited to, equipment failure or failure of the System to comply with the requirements of this Section and to the manufacturer's specifications.

Malfunctions shall stop the 30-day operational test for repair of the equipments. After corrections have been made, the 30-day operational test shall restart a new 30-day period and shall continue until the results are satisfactory to the Engineer for a period of 30 consecutive days.

Maintain a log during all operational testing. Include a narrative description of corrective measures required and items required or replaced.

6. Documentation Requirements

- Five (5) complete sets of operation and maintenance manuals shall be provided. The manuals shall include detail and complete information as follows:
- Equipment operation
- Installation procedures
- Accurate schematic diagrams
- Performance specification (functional, electrical, mechanical, and environmental)
- Accurate troubleshooting, diagnostic and maintenance procedures
- Parts list including names of vendors for parts not identified by universal part numbers such as JEDEC, RETMA, or EIA
- Communications protocol
- One copy of the final pole mounted cabinet-wiring diagram shall be placed in the cabinet and one reproducible and two copies delivered to the Engineer.

7. Training Requirements

- Prior to installation of any specified equipment, the Contractor's personnel shall have received training from the vendor/supplier on installation, operations, testing, maintenance, and repair procedures of all equipment.
- In addition, training shall be provided for up to 10 individuals designated by the Engineer. The training shall include all material and manuals required for each individual. The training shall be as follows:
- Engineering Training - A minimum of 8 hours of training for up to ten (10) engineering and

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operations personnel shall be provided. The training shall include both classroom and hands on CCTV equipment assembly operation and all equipment capabilities including interface to the TMC and the Video Switching and Control Equipment.

Maintenance Training - A minimum of 8 hours of training for ten (10) maintenance personnel shall be provided. The training shall include both classroom and hands on equipment operation and maintenance. It shall include the CCTV equipment theory of operation, operation instructions, circuit description, and troubleshooting, preventative maintenance, including interface to the TMC and Video Switching and Control Equipment for diagnostics

METHOD OF MEASUREMENT

This work will be measured as the number of HD CCTV Dome IP Camera Assemblies satisfactorily furnished and installed.

BASIS OF PAYMENT

The unit bid shall include the cost of furnishing all labor, materials, tools and equipment necessary to satisfactorily complete the work including camera assemblies, camera enclosure, controller module, composite Video and camera control/ power cable, integrations, testing, training, cable. All miscellaneous hardware required for the installation of the unit, including but not limited to coaxial cables, fiber optic jump cables, control and power cabling, connectors, terminations, and mounting hardware, between the video and communication equipment. Payment for all documentation, testing, and test equipment used for the testing of the HD CCTV Dome IP Camera Assembly shall be included in this item.

ITEM 683.060100NA - CCTV CAMERA CONTROL CABINET

DESCRIPTION

This work shall consist of furnishing and installing a Closed Circuit Television (CCTV) Camera Control Cabinet in accordance with the contract documents and as directed by the Engineer. The CCTV Camera Control Cabinet shall be installed on poles or overhead structures as shown in plans. Poles shall be provided under other contract items.

MATERIALS

1. References

The following is a listing of the publications referenced in this Section:

- Federal Communications Commission (FCC)
 - Title 47, Part 15, Class A - Radio frequency devices
- American Association of State Highway and Transportation Officials (AASHTO)
 - Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals
- Electronic Industries Association (EIA)
 - EIA-170 Electrical performance Standards - Monochrome Television Studio Facilities
 - EIA-232 Interface between Data Terminal Equipment and Data Circuit-Terminating Equipment Employing Serial Binary Data Interchange
 - EIA-250 Electrical Performance Standards for Television Relay Facilities
 - EIA-422 Electrical Characteristics of Balanced Voltage Digital Interface Circuits
- National Fire Protection Association
 - National Electrical Code (NEC)
- National Electric Manufacturers Association (NEMA)
 - Standard for Traffic Control Systems (Publication No. TS-1 & TS-2)
- Underwriter's Laboratories, Inc. (UL)
 - 1950 - Standard for Safety of Information Technology Equipment (ITE).

2. Design And Performance Requirements

- 2.1. Unless otherwise specified on the Contract Drawings or in this Section, the Closed Circuit Television CCTV Camera Control Cabinet, hereinafter referred to as the "CCTV cabinets," manufactured, supplied, and installed shall conform to the requirements of NFPA 70, all local codes, all other publications referenced in Article 1.2 herein.

ITEM 683.060100NA - CCTV CAMERA CONTROL CABINET

- 2.2. The electrical and electronic hardware, structural materials, and equipment housings, required for fully operational, integrated, real-time System shall operate on a twenty-four (24) hour per day, seven (7) day per week basis with high system reliability of 99.7 percent and shall conform to the requirements of this Section.
- 2.3. The CCTV cabinets shall be composed of all items of hardware necessary to transmit, and display CCTV video and control CCTV Assembly pan/tilt/zoom as specified herein and as shown on the Contract Drawings. In general, the CCTV cabinets shall consist of readily available, reliable and proven hardware, software, and firmware elements that fully comply with the requirements of this Section and the Contract Drawings. All of the Work of this Section shall be coordinated with the current operation of the facility.
- 2.4. CCTV cabinet hardware and application software shall be “off-the-shelf” products that are ready for installation requiring minimum custom hardware or software development. The CCTV cabinets shall be configured with off-the-shelf commercial products, which shall be available from multiple manufacturers and suppliers.

3. Quality Assurance

- 3.1. Equipment: CCTV cabinets shall have been satisfactorily used in projects of similar size and complexity for not less than two years.

4. Delivery, Storage, And Handling

- 4.1. Deliver materials in manufacturer's original, unopened, protective packaging.
- 4.2. Store materials in a clean, dry space, protected from weather.
- 4.3. Handle in a manner to prevent damage to finished surfaces.
- 4.4. Where possible, maintain protective covering until installation is complete and remove such coverings as part of final clean up.
- 4.5. Touch up damage to finishes to match adjacent surfaces, including recoating of galvanized or plated surfaces where damaged, cut, or drilled.

5. General

- 5.1. The Contractor shall provide a fully functional and operational CCTV camera control Cabinet for local control of video and pan/tilt/zoom functions with all cabling and terminations matched to support the selected components. The CCTV cabinet shall consist of the following major components:
 - Pole mounted aluminum cabinet
 - Power supply with breakers and power strip
 - Power, data and video surge protection
 - Heater and fan with thermostats

ITEM 683.060100NA - CCTV CAMERA CONTROL CABINET

- Local Camera Controller module
- Camera / control interface cables

5.2. The CCTV cabinet shall include video/camera control, fiber optic and Ethernet cables, harnesses, connectors and miscellaneous hardware required for a fully operational system. All equipment and components furnished shall be new, and be of the latest design and manufacture. All parts shall be of high quality workmanship, and no part or attachment shall be substituted or applied contrary to the manufacturers recommendations and standard practices. The design life of all components, operating 24 hours per day shall be ten- (10) years minimum.

6. Functional Requirement

- 6.1. The complete CCTV cabinet shall be capable of meeting the following functional requirements when the CCTV equipment is installed and mounted at each site.
- 6.2. The CCTV cabinet shall house and protect from the environment the CCTV and Communication equipment required at the site for seamless local and remote operation if the CCTV assembly.
- 6.3. The CCTV camera controller module shall accept camera, lens and pan-tilt control signals, from the CCTV Assembly, provide local control and interface with the fiber optic MPEG4 Ethernet encoder. The CCTV camera controller shall include pre-set capability, which shall allow the camera to be automatically commanded to a predefined position.
- 6.4. The CCTV camera controller module shall accept camera, lens and pan-tilt control signals, from the Traffic Management Center (TMC) via the Central Control/Remote camera server for remote control. The CCTV camera controller shall include pre-set capability, which shall allow the camera to be automatically commanded to a predefined position via the Central Control/Remote camera server.
- 6.5. The CCTV assembly camera, lens and pan-tilt control communication signals shall be compatible with the CCTV Camera Control System being installed at Nassau County Traffic Management Center.
- 6.6. Through the fiber optic MPEG4 Ethernet encoder in the CCTV cabinet, shall transmit camera control data, and NTSC encoded MPEG4 video and equipment status to the TMC. The status data shall include camera position and diagnostic data. The fiber optic MPEG4 Ethernet encoder shall be provided under another contract item.
- 6.7. The field CCTV equipment shall be compatible with the Central Control/Remote camera server equipment provided under another contract item.
- 6.8. ENVIRONMENTAL SPECIFICATIONS
 - Operating Temp: -22° F to +140° F
 - Storage Temp: -40° F to +150° F

ITEM 683.060100NA - CCTV CAMERA CONTROL CABINET

- Relative Humidity: 0% to 100% (non-condensing)
- Rated for wind loading up to 90MPH

7. Camera Control Cabinet

- 7.1. The Contractor shall furnish and install a pole mounted equipment cabinet at each CCTV site to house the camera control module used to locally control the cameras, pan-tilt, and zoom lens functions, the fiber optic transceiver, MPEG encoder Ethernet switch and the power distribution panel.
- 7.2. The cabinet shall meet the structural and environmental requirements for cabinets within NEMA TS-2. The nominal dimensions of the cabinet shall be 22” wide X 18” deep X 38” high. The cabinet shall be sized to accommodate the proposed equipment and cabling.
- 7.3. The Cabinet shall be fabricated from sheet aluminum, with a minimum thickness of 0.125 inches. Grinding, sanding or other appropriate means shall be used to affect a smooth surface. All non-aluminum parts shall be made of stainless steel.
- 7.4. The main door of all cabinets shall include substantially the full area of the front of the cabinet. All doors shall be reinforced on the inside in such a manner as to prevent warping.
- 7.5. A 1” x 1” stainless steel piano hinge shall be installed for the full length of the door and shall provide for the proper mounting and operation of the door. A gasket bead shall be installed on the inside of the door that together with the neoprene air-cored cabinet gasket shall form a weather-tight seal between the housing and the cabinet door.
- 7.6. The main door shall be equipped with a brass cylinder lock keyed for a Number Two Corbin Key, with a dust cover. An adjustable stainless steel striker plate shall be attached to the inside of the housing to insure positive locking. All cabinets shall be furnished with a three (3) point positive locking door and approved removable hex handle.
- 7.7. Mounting Hardware shall be furnished with Nassau County mounting channel, saddle washers, and other necessary hardware, as specified in Standard the Traffic Drawings, latest edition, to mount the cabinet on a pole.
- 7.8. Ventilation shall be furnished with a suitable rain tight top and bottom vent. The vents shall be designed to prohibit the entry of rain and insects.
- 7.9. Ventilation shall be furnished with a suitable rain tight top and bottom vent. The vents shall be designed to prohibit the entry of rain and insects.
 - The cabinet shall be equipped with a thermostatically controlled ventilation fan. The lower portion of the front door shall have a louver area of sufficient size to permit the free flow of air corresponding to the rated capacity of the associated cabinet fan. The vent shall be designed to prohibit the entry of rain, insects, and foreign objects. The louvers shall satisfy the NEMA rod entry test for 3R ventilated enclosures. Filters shall be provided on all louvers, and shall be securely bracketed to the door. The fan and cabinet

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ventilation louvers shall be located with respect to each other so as to direct the bulk of the air flow throughout the entire cabinet and in particular over the field equipment units as approved by the Engineer. The fan shall have a minimum rating of 125 cubic feet per minute. The thermostat shall be adjustable from 90 degrees F. to 120 degrees F.

- 7.10. Heating - All cabinets shall be provided with a cabinet heater located near the bottom of the cabinet. A thermostat shall be provided to turn the heater on and off and shall be set to turn on at 35 ± 5 degrees F and turn off at 45 ± 5 degrees F. The heater shall be rated at 150 Watts. The switched output of the thermostat shall have a metal oxide varistor (MOV) or an approved equivalent surge suppressor of appropriate rating. The surge suppressor shall be connected to the cabinet ground bus.
- 7.11. Fluorescent light: The cabinet shall be equipped with a florescent lamp assembly. The lamp shall be equipped with a 15-watt bulb and the fixture should be at least 18 inches long. The lamp shall have an override switch and should normally activate whenever the associated door is open. The fixture shall be equipped with a cold weather ballast.
- 7.12. Cabinet Finish - All surfaces of the cabinets shall be unpainted.
- 7.13. Keys - Two keys for each cabinet lock shall be furnished.
- 7.14. Handles – one removable hex handle shall be provided for each cabinet
- 7.15. Interior Equipment - All cabinets shall contain a mounting table, sliding ways or other suitable support for equipment. Each cabinet shall contain no less than the following equipment.
- 7.16. Rack - one 19-inch rack 8 inches high shall be furnished in each cabinet.
- 7.17. Shelf - one shelf the width of the cabinet with 8 inches of vertical space shall be furnished in each cabinet.
- Cabinets shall be provided with an area within the lower center portion of the left, rear, and right walls for accessories and cable entrances. A 2" or 3" diameter threaded aluminum conduit shall be installed in the field as a raceway for the field wiring.
 - The Cabinet shall be equipped with shelves for mounting approved equipment. Shelf mounted equipment shall be mounted flat on the shelf. The shelves shall meet the following requirements:
- 7.18. Full width of the cabinet
- 7.19. Attach to the cabinet
- 7.20. Support a minimum of 55 pounds.
- Three (3) copies of the cabinet wiring diagram shall be supplied with each cabinet.

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8. Electrical Requirements

- 8.1. Circuit breakers shall be installed in each cabinet. The main circuit breaker shall protect the cabinet and rated at 30A, 130 VAC, or as required and approved. Secondary breakers shall be provided to protect the convenience outlet and equipment. The circuit breakers shall be approved and listed by the Underwriters Laboratories. The operating mechanism shall be enclosed, trip free from operating handle on overload and trip indicating. Contacts shall be silver alloy enclosed in an arc-quenching chamber. Properly rated equipment circuit breaker(s) shall be provided for the equipment complement shown on the plans. Circuit breakers shall be unaffected by ambient temperature range, relative humidity, applied power, shock and vibration range specified in NEMA TS1. Breakers shall have a minimum interrupt capacity of 5000A. Thermal magnetic breakers are not acceptable.
- Circuit #1 shall terminate in a GFI duplex receptacle. This circuit shall be protected by a 15 amp circuit breaker.
 - Circuit #2 shall have a 15 amp circuit breaker and terminate in a single duplex grounded receptacle, a 10 position power strip shall be connected to the output of the duplex receptacle and shall be utilized to power the electronic equipment in the cabinet.
 - Circuit #3 shall have a 15 amp circuit breaker and shall be connected to the internal cabinet lighting, heater and ventilation fan.
- 8.2. A ground buss having a minimum of nine (9) connections shall be provided and grounded to the cabinet. The ground buss shall be fastened directly to the left cabinet well. All equipment grounds shall run directly and independently to the ground buss.
- 8.3. The CCTV field equipment shall meet all of its requirements when the input power is 115 VAC, 60 Hz. The field CCTV Cabinet shall require a maximum of 1000 Watts.
- 8.4. Surge Protection - The Contractor shall furnish and install surge protection equipment at each CCTV Cabinet installation.
- Data Surge Suppressor - General characteristics (typical):
 - Typical application: RS-422.
 - Surge: 36 kA.
 - Turn-on at 10 mA: +2.8/-0.6 V dc.
 - Resistance: 1 Ohm.
 - Capacitance: 30 pF.
 - Energy: 310 ft-lbs
 - Let-through: less than +10/-1 Vp (peak open circuit voltage at max current).
 - -3dB (600 Ohms) BW: 95Mhz
 - Temperature: -40 degrees F to 185 degrees F Storage/Operating 122 degrees F.
 - Video Surge Suppressor - General characteristics (typical):

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- Typical application: VLF/HF receive only, LAN, closed circuit video.
 - Surge: 18 kA IEC 1000-4-5 8/20 ms waveform 80 ft-lbs.
 - Turn-on Time: 4 ns for 2 kV/ns.
 - VSWR: less than or equal to 1.1 to 1 over frequency range.
 - Insertion Loss: less than or equal to 0.3 dB over frequency range.
 - User Current: 2.0A dc continuous.
 - Vibration: 1G up to 100Hz.
 - Temperature: -50 degrees F to 185 degrees F Storage/Operating 113 degrees F.
- Power surge protection - The cabinet shall be equipped with a suitable radio interference suppressor installed at the circuit breaker. Provide two stage power line surge protector that allows the connection of a radio interference filter (to prevent disruption in the event of a power surge) in the circuit between the stages. The suppressor shall provide a minimum attenuation of 50 db from 200 kilocycles to 75 megacycles. The suppressor shall be hermetically sealed in a substantial metal case, filled with a suitable insulation compound and shall be approved by UL and EIA.

9. Camera Controller Module

- 9.1. The local camera controller module shall be capable of remote and local control. This controller receiver-driver shall be connected to the door alarm and/or temperature contact closures that exist in the cabinet.
- 9.2. The controller shall decode the digital signals from the Traffic Management Center via Central Control/Remote camera server and video control equipment and then transform them to appropriate drive signals for the camera, pan-tilt, and lens mechanisms. The camera controller module shall provide, as a minimum, control and drive circuits for the following camera positioning system functions:
- Control Pan Positioning via three position momentary toggle switch (Left-Stop-Right)
 - Control Tilt Positioning via three position momentary toggle switch (Up-Stop-Down)
 - Control Zoom In/Out Positions via three position momentary toggle switch (Tele-Stop-Wide)
 - Control Focus Setting Automatic/Manual Focus Control Via momentary pushbutton (Auto Focus /Manual override)
 - Control Manual Focus Setting: Near/Far positions
 - Via three position toggle Switch (Near-Stop-Far)
 - Control Iris Setting Automatic/Manual Iris Control
 - Via momentary pushbutton (Auto Iris /Manual Override)
 - Control manual Iris over-ride Open/Close positions
 - Via three position toggle Switch (Open-Stop-Close)
 - Remote/Local Switch
 - Provides transfer of control between local and remote locations.

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- 9.3. Receiver-Driver Address: Each unit shall have a unique 8-bit address which can be changed through switch settings and the ability to recognize and control up to 64 addresses (drop numbers).
- 9.4. Power Supplies: All power supply required for operating the camera, pan-tilt, and lens movement shall be included in the receiver-driver.
- 9.5. Control Panel: A control panel with one momentary switch for each of the camera, pan-tilt, and lens functions described above shall be provided to locally control the camera, pan-tilt and lens motions. The control panel shall be mounted inside the cabinet where the controller is housed.
- 9.6. Communications Interface: The communications interface shall support bi-directional communications at rates that shall include 9.6 kbits/sec. The communications signals, data exchange protocol and timing shall be EIA-232/422 and shall be compatible with the fiber optic transceiver and the TMC and Video Switching Control equipment provided under another contract item. All required connectors and cable harnesses shall be provided to connect the receiver-driver to the fiber optic transceiver.
- 9.7. Operating Voltage: 89VAC to 135VAC, 120VAC Nominal 50/60 Hz. (± 3.0 Hz) National Electrical Manufacturers Association (NEMA) standard TS-2 (1998) for traffic control system.
- 9.8. Connectors: The receiver-driver shall be placed into a NEMA 3R enclosure to be supplied as part of other bid items in the contract. Composite cabling shall be provided to connect camera assembly components via the traffic signal pole or on structural support to the receiver-driver, video transmitter and power supply to be installed in pole/structure mounted field equipment cabinets, as indicated on the plans. Standard connectors compatible with communications and interface equipment/cables shall be provided. Compatible connectors must be supplied on both ends of the assembly to connect all of the components of the CCTV assembly.
- 9.9. Diagnostic Test
 - Local diagnostic functions test pan, tilt, zoom, focus, iris, and auxiliary operations via dip switch settings located within the receiver-driver unit or via diagnostic software through a PC. For PC diagnostics software shall be supplied which shall allow all command and monitoring functions via the control receiver-driver to be viewed or exercised. A cable shall be provided which shall allow a standard 9-PIN PC RS232 port to be connected directly to the command port of the control receiver driver. The PC diagnostic software must operate under Windows 98 or later with a minimum of 32 MB of memory.

10. Electrical Requirements

10.1. Power Requirements

- The CCTV field equipment shall meet all of its requirements when the input power is 115 VAC, 60 Hz. The field CCTV site equipment shall require a maximum of 1000 Watts.

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11. Mechanical Requirements

- 11.1. Connectors and Harness B the video input and output connections shall be BNC type. Connecting harnesses of appropriate lengths terminated with matching connectors shall be provided for interconnection with all the field equipment (including what is required between the pole and field cabinet equipment).

12. Examination

- 12.1. Inspect all System equipment and accessories prior to installation. Replace any damaged items.
- 12.2. Ensure that the spaces where any electronic equipment is to be stored and/or installed is completely free from any foreign substances, such as concrete dust, water, or any other material that may otherwise be harmful to electronic equipment and connections. No allowances shall be made to the Contractor for equipment damage, or delays due to environmental/security damage.

13. Preparation

- 13.1. The Contractor shall be responsible for field verification of dimensions and coordination of conduit entry and all other mounting conditions with the entity manufacturing the equipment.
- 13.2. The entity manufacturing the equipment shall provide on- site technical supervision and assistance during installation and interconnection of the system equipment installed by the Contractor. Said supervision is to insure the safety of the proper installation and operation of the system equipment, prior to the installed system beginning the 30-day operational test.
- 13.3. An on-site inspection will be made by the Engineer after the system equipment has been delivered,. If any equipment has been damaged or for any reason does not comply with the requirements of this Section, the Contractor will be notified in writing, and shall be required to replace the equipment at his own cost and expense, even though the equipment has been previously inspected, tested, and approved for shipment. After such satisfactory replacement, the Contractor shall install the system.

CONSTRUCTION DETAILS

The Contractor shall install the specified CCTV assembly at locations shown on the plans and as directed by the Engineer. The equipment shall be installed on traffic signal span pole or sign structure pole extension at locations shown in the Contract Documents and Specifications. Poles shall be provided under other contract items. Particular care shall be given to the interconnection of all the components and the cabling, especially cabling through the conduit in the traffic signal span pole.

All incidental parts which are necessary to complete the installation, but are not specified herein or on the plans, shall be provided as necessary to provide a complete and properly operating system. The Contractor shall prepare a shop drawing which details the complete Camera assembly and all components to be supplied.

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All materials, labor, workmanship, equipment, testing, documentation, and incidental items required to install and test a complete and operational CCTV Camera Control Cabinet shall be supplied including but not limited to the following:

- CCTV Camera Control Cabinet
- Pole mounted aluminum cabinet
- Power supply with breakers and powerstrip
- Power, data and video surge protection
- Heater and fan with thermostats
- Local Camera Controller module
- Camera video/ control, fiber optic and Ethernet interface cables

14. Installation

- 14.1. Install all System equipment in accordance with the manufacturers written instructions in the locations shown on the Contract Drawings.
- 14.2. All control power and data communications wire shall be wired and harnessed within the equipment enclosures to meet the NEC requirements and utilize standard industry practices.
- 14.3. All wiring shall be clearly labeled with function and wire identification number corresponding to the manufacturer's wiring diagrams and/or approved Shop Drawings.
- 14.4. Where external circuit connections are required, terminal blocks shall be provided and the manufacturer's drawings must clearly identify the interconnection requirements including wire type to be used.
- 14.5. All wiring required to externally connect equipment lineups shall be installed by the electrical contractor.
- 14.6. Contractor interconnection wiring requirements shall be clearly identified on the "AS-BUILT" system drawings.

15. Testing Requirements

- 15.1. The CCTV cabinet shall be subjected to several levels of testing (post installation, and 30-day operational acceptance) as described in these Specifications. The Engineer reserves the right to inspect and/or factory test any completed cabinet prior to delivery of the material to the project site. Any deviation from these specifications that are identified during testing shall be corrected prior to shipment of the cabinet to the project site.
- 15.2. A post installation test shall be performed for each completed Camera cabinet. The test shall be conducted from the cabinet utilizing PC diagnostic to be supplied. The Contractor shall verify that the camera can be fully used and moved through the entire limit of Pan, Tilt, Zoom, and Focus. The test shall also verify capabilities that all cabinet alarms (door open, temperature, etc) are operable, controllable and the appropriate status can be read via the

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control port of the control receiver driver. In addition, with the use of a monitor the video signal shall be demonstrated to be according to specification.

- 15.3. 30-day operational acceptance shall be performed for the completed Camera system. The test shall be conducted from the field equipment cabinet and central operations. The Contractor shall verify that the camera can be fully used and moved through the entire limit of Pan, Tilt, Zoom, and Focus. The test shall also verify capabilities that all cabinet alarms (door open, temperature, etc) are operable, controllable and the appropriate status can be read via the control port of the camera controller module. In addition, with the use of a monitor the video signal shall be demonstrated to be according to specification.

16. Post-Installation Tests

- 16.1. After installation, a post installation test of the equipment shall show compliance with this Section and the manufacturer's specifications. The Contractor shall submit the proposed testing procedure to the Engineer for approval two weeks prior to proposed start of test. Said testing shall continue until the results surpass the test criteria and are satisfactory to the Engineer. The Contractor shall perform any repairs, construction, or modifications as required complying with this Section without additional cost to the County.
- 16.2. The Contractor shall completely check out, calibrate and test all connected hardware and software to insure that the system performs in accordance with the requirements of this Section, the manufacturers specifications and sequences of operation submitted. Correct any malfunctions as they occur, said malfunctions shall include, but not be limited to, equipment failure or failure of the system to comply with the requirements of this Section and to the manufacturers specifications.
- 16.3. The Contractor shall submit a test report detailing compliance with the requirements of post-installation testing.
- 16.4. After satisfactory completion of post installation testing and after construction is complete, a 30-day operational test shall commence on the entire CCTV surveillance system.

17. 30-Day Operational Test

- 17.1. The 30-day operational test shall commence with the approval of the engineer after post installation testing of all components and the complete CCTV surveillance system is operational.
- 17.2. The Contractor shall submit the proposed testing procedure to the Engineer for approval two weeks prior to proposed start of test. Said testing shall continue until the results surpass the test criteria and are satisfactory to the Engineer. The Contractor shall perform any repairs, construction, or modifications as required complying with this Section without additional cost to the County.
- 17.3. Testing shall be performed to verify compliance with the requirements of this Section and the manufacturer's specifications and shall be performed in accordance with the approved testing

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plan. Correct any malfunctions as they occur, said malfunctions shall include, but not be limited to, equipment failure or failure of the System to comply with the requirements of this Section and to the manufacturer's specifications.

17.4. Malfunctions shall stop the 30-day operational test for repair of the equipments. After corrections have been made, the 30-day operational test shall restart a new 30-day period and shall continue until the results are satisfactory to the Engineer for a period of 30 consecutive days.

17.5. Maintain a log during all operational testing. Include a narrative description of corrective measures required and items required or replaced.

18. Documentation Requirements

18.1. Five (5) complete sets of operation and maintenance manuals shall be provided. The manuals shall include detail and complete information as follows:

- Equipment operation
- Installation procedures
- Accurate schematic diagrams
- Performance specification (functional, electrical, mechanical, and environmental)
- Accurate troubleshooting, diagnostic and maintenance procedures
- Parts list including names of vendors for parts not identified by universal part numbers such as JEDEC, RETMA, or EIA
- Communications protocol

18.2. One copy of the final pole mounted cabinet-wiring diagram shall be placed in the cabinet and one reproducible and two copies delivered to the Engineer.

19. Training Requirements

19.1. Prior to installation of any specified equipment, the Contractor's personnel shall have received training from the vendor/supplier on installation, operations, testing, maintenance, and repair procedures of all equipment.

19.2. In addition, training shall be provided for up to 10 individuals designated by the Engineer. The training shall include all material and manuals required for each individual. The training shall be as follows:

- Engineering Training
- A minimum of 8 hours of training for up to ten (10) engineering and operations personnel shall be provided. The training shall include both classroom and hands on CCTV cabinet operation and all equipment capabilities including interface to the TMC and the control Equipment.
- Maintenance Training

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- A minimum of 8 hours of training for ten (10) maintenance personnel shall be provided. The training shall include both classroom and hands on equipment operation and maintenance. It shall include the CCTV equipment theory of operation, operation instructions, circuit description, and troubleshooting, preventative maintenance, including interface to the TMC and video control equipment for diagnostics and adjustments.

METHOD OF MEASUREMENT

The work will be measured as the number of CCTV Camera Control Cabinets satisfactorily furnished and installed, tested, made fully operational, and accepted.

BASIS OF PAYMENT

The unit price bid for furnishing and Installing CCTV Camera Control Cabinets shall include the cost of furnishing all equipment, labor, materials, documentation, integrations, testing, training, cable, and tools and equipment necessary to satisfactorily complete the work as detailed in the contract documents. All miscellaneous hardware required for the installation of the unit, including but not limited to coaxial cables, fiber optic jump cables, control and power cabling, connectors, terminations, and mounting hardware, between the video and communication equipment. Payment for all documentation, testing, and test equipment used for the testing of the CCTV Camera Control Cabinet shall be included in this item.

ITEM 683.072012NA - 12 PORT RACK MOUNT FIBER PATCH PANEL
ITEM 683.072024NA - 24 PORT RACK MOUNT FIBER PATCH PANEL
ITEM 683.072048NA - 48 PORT RACK MOUNT FIBER PATCH PANEL
ITEM 683.072072NA - 72 PORT RACK MOUNT FIBER PATCH PANEL
ITEM 683.072144NA - 144 PORT RACK MOUNT FIBER PATCH PANEL
ITEM 683.072288NA - 288 PORT RACK MOUNT FIBER PATCH PANEL

DESCRIPTION

This work shall consist of furnishing and installing 12, 24, 48, 72, 144 or 288 Port Rack Mount Fiber Patch Panels and all accessories in accordance with the contract documents and as directed by the Engineer.

MATERIALS

1. Basic Requirements

1.1. The basic fiber optic patch panel shall be used in traffic signal control cabinets or termination cabinets to protect fiber optic cable splices. The patch panel shall be constructed of 16 gauge steel capable of withstanding severe conditions of moisture, vibration, impact; cable stress, flexing, and temperature extremes.

1.2. The patch panel shall be constructed to mount in a standard 19 inch rack and shall be constructed of 16 gauge steel with a powder coat finish and shall be on sliding rails for easy access from the front or the rear.

1.3. Patch panel shall come from the manufacturer with LC style fiber optic connectors capable of receiving single mode fiber optic cable.

1.4. No special tools shall be required for installation of the patch panel. The patch panel shall make use of standard hardware.

1.5. Contractor shall be responsible to clearly mark or display the cable descriptions on the front of the patch panel.

1.6. The patch panel shall be accessible from the front or rear without disruption of fibers.

1.7. The patch panel shall include hardware and accessories to protect the fiber optic cable from being pulled or pinched between other equipment mounted above or below.

1.8. The patch panel, including the patch panel enclosure shall have dimensions that are no larger than;

- 12 Port - 1.9 inches high x 17 inches wide (not including rack mount hardware) x 12 inches deep.
- 24 Port – 1.9 inches high x 17 inches wide (not including rack mount hardware) x 12 inches deep.

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ITEM 683.072048NA - 48 PORT RACK MOUNT FIBER PATCH PANEL
ITEM 683.072072NA - 72 PORT RACK MOUNT FIBER PATCH PANEL
ITEM 683.072144NA - 144 PORT RACK MOUNT FIBER PATCH PANEL
ITEM 683.072288NA - 288 PORT RACK MOUNT FIBER PATCH PANEL

- 48 Port – 3.5 inches high x 17 inches wide (not including rack mount hardware) x 12 inches deep.
- 72 Port – 5.3 inches high x 17 inches wide (not including rack mount hardware) x 12 inches deep.
- 144 Port – 7.0 inches high x 17 inches wide (not including rack mount hardware) x 12 inches deep.
- 288 Port – 14.0 inches high x 17 inches wide (not including rack mount hardware) x 12 inches deep.

1.9. Once installed, access to the front and rear of the patch panel must be easily accomplished without the use of tools. A quarter turn device or thumbwheel type screw device will be acceptable.

1.10. Fiber optic break out cable shall be run up the back of the cabinet and neatly inserted into the patch panel where the fiber is to be terminated on the LC connectors provided by the manufacturer.

1.11. Dust covers shall be provided for all connectors not being utilized

CONSTRUCTION DETAILS

Patch panels shall be installed in strict accordance with manufacturer's instructions.

Patch panels shall be installed in traffic signal control cabinets as indicated on the contract plans and as directed by the Engineer.

METHOD OF MEASUREMENT

This work will be measured as the number of complete Rack Mount Fiber Patch Panels and panel enclosures satisfactorily furnished and installed.

BASIS OF PAYMENT

The unit price bid to furnish and install a Rack Mount Patch Panel shall include the cost of furnishing all labor, materials, tools and equipment necessary to satisfactorily install the patch panel, all necessary hardware, accessories, patch cables, and other incidentals necessary to satisfactorily complete the work.

ITEM 683.090100NA – 8 PORT HARDENED 10/100 ETHERNET SWITCH WITH ONE DUAL PURPOSE 10/100/1000 OR SFP PORT

DESCRIPTION

This work shall consist of furnishing and installing An 8 Port Hardened 10/100 Ethernet Switch with one Dual Purpose 10/100/1000 or SFP Port in accordance with the contract documents and as directed by the Engineer.

MATERIALS

1. Requirements

1.1. All materials furnished, assembled, fabricated and installed shall be new, corrosion resistant and in strict accordance with the requirements set forth in this specification.

1.2. This specification shall consist of an Ethernet Switch, as specified in these specifications. The switch shall provide Ethernet connectivity from the field cabinets to the NCDPW Traffic Management Center or any other designated locations as specified by the Engineer.

The Ethernet Switch shall be fully-compatible with all of the software management functions of the existing central switch and Cisco Works, the existing Traffic Management Center Network Management Software.

The Ethernet Switch must be registered and licensed to Nassau County Department of Public Works, Traffic Management Center..

1.3. The switch shall have (8) 10/100 baseTX (RJ-45) Ports, and (1) Dual Purpose 10/100/1000 or SFP Port.

2. Dimensions

2.1. The Ethernet Switch shall be rack-mountable in a standard 19 inch rack in accordance with EIA-310D and shall not exceed external dimensions of 1.73” (H) x 10.6” (W) x 6.4” (D).

2.2. The Ethernet Switch shall comply with the following standards:

- 2.2.1. RMON I and II standards
- 2.2.2. SNMPv1, v2c, and v3
- 2.2.3. IEEE 802.1d Spanning Tree Protocol
- 2.2.4. IEEE 802.1p CoS classification
- 2.2.5. IEEE 802.1q VLAN
- 2.2.6. IEEE 802.1w Rapid Convergence Spanning Tree Protocol
- 2.2.7. IEEE 802.1x Port Access Authentication
- 2.2.8. IEEE 802.3ad Link Aggregation Control Protocol (LACP)
- 2.2.9. IEEE 802.3af PoE
- 2.2.10. IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports
- 2.2.11. IEEE 802.3 10BASE-T
- 2.2.12. IEEE 802.3u 100BASE-T/TX
- 2.2.13. IEEE 802.3ab 1000BASE-T
- 2.2.14. IEEE 802.3z 1000BASE-X

3. Regulatory Agency Approvals

ITEM 683.090100NA – 8 PORT HARDENED 10/100 ETHERNET SWITCH WITH ONE DUAL PURPOSE 10/100/1000 OR SFP PORT

- 3.1.1. Safety certifications: UL 1950/CSA 22.2 No. 950
- 3.1.2. IEC 950-EN 60950
- 3.1.3. AS/NZS 3260, TS001
- 3.1.4. CE Marking

4. Electromagnetic Emissions Certifications

- 4.1.1. FCC Part 15 Class A
- 4.1.2. EN 55022: 1998 Class A (CISPR22 Class A)
- 4.1.3. EN 55024: 1998 (CISPR24)
- 4.1.4. VCCI Class A
- 4.1.5. AS/NZS 3548 Class A
- 4.1.6. CE Marking
- 4.1.7. CNS 13438
- 4.1.8. BSMI Class A
- 4.1.9. MIC

5. Environmentally Hardened

- 5.1. The Contractor shall provide an Ethernet Switch that is environmentally hardened and capable of operating in the following conditions: temperatures ranging from 32° F to 113° F, relative humidity from 10 to 85% (noncondensing) and altitudes up to 10,000 feet.

6. Power

- 6.1. The Ethernet Switch shall contain an internal power supply that shall support input voltages between 100 and 240 VAC. The supplied AC power cord shall be used to connect the AC power conductor to an AC duplex outlet within the cabinet. If the Ethernet Switch is installed at location where an AC duplex outlet is not readily available, the Contractor shall coordinate with the Engineer in order to modify the AC power cord, or provide other power cabling that the Contractor shall utilize, in order to make appropriate connections to the available AC power.

The Ethernet Switch shall permit input voltages ranging from 100 through 127 Volts AC (RMS) at 60 Hz, or permit voltages from 200 through 240 Volts AC (RMS) at 50 Hz. The Ethernet Switch shall have a DC input voltage of +12 V at 13 amps.

7. Communications Aspects and Switching Attributes

The Ethernet Switch shall provide acceptable levels of Quality of Service (QoS) and provide switching capabilities appropriate for interfacing with the equipment within the field cabinet. In specific:

- 7.1.1. The Ethernet Switch shall support the metering/policing of incoming packets to restrict incoming traffic flows to a certain rate: The Ethernet Switches shall support four (4) egress queues per port to enable differentiated management of up to four (4) types of traffic. The Ethernet Switch shall support a minimum of 128 aggregate or individual ingress policers and 8 aggregate ingress policers on each Gigabit Ethernet port.
- 7.1.2. The Ethernet switch shall support auto-sensing on each non-GBIC port to detect the

ITEM 683.090100NA – 8 PORT HARDENED 10/100 ETHERNET SWITCH WITH ONE DUAL PURPOSE 10/100/1000 OR SFP PORT

speed of the attached device and automatically configures the port to 10, 100 or 1000 Mbps operation, easing the deployment of the switch in mixed 10, 100, 1000 BASE-T environments.

- 7.1.3. The Ethernet Switch shall be equipped with multifunction LED's per port for port status, half-duplex or full-duplex, 10BASE-T/100/BASE-T/1000BASE-T. LED's for system redundant power supply and bandwidth usage shall also be available.
- 7.1.4. The Ethernet Switch shall support SNMP protocol and telnet for remote monitoring and troubleshooting. The Ethernet Switch shall support Remote Monitoring (RMON) software agent for RMON groups, where data history, statistics, alarms, events can be collected for traffic management, monitoring and analysis.
- 7.1.5. The Ethernet Switch shall support Switched Port Analyzer (SPAN) port to monitor the traffic going through a single or multiple ports.
- 7.1.6. The Ethernet Switch shall support Remote Switched Port Analyzer (RSPAN), where the network administrator can monitor the port switch traffic from any other switch in the same network.
- 7.1.7. The Ethernet Switch shall support Network Timing Protocol (NTP) to provide an accurate and consistent time stamp on all switches within the network.
- 7.1.8. The Ethernet Switch shall support Trivial File Transfer Protocol (TFTP) for software upgrade and configuration deployment.
- 7.1.9. The Ethernet Switch shall support filtering of incoming traffic based on the following:
 - Layer2, Source Media Access Controller (MAC) Address, Destination MAC address
 - Layer3, Source IP Address, Destination IP address
 - Layer4, TCP source or destination port number, UDP source or destination port number.
- 7.1.10. The Ethernet Switch shall support the 802.x1 standard that allows users to be authenticated, regardless of which LAN port is being accessed. The Ethernet Switch shall support 802.x1 with VLAN assignment in order to permit dynamic VLAN assignment for a specific user, regardless of where the user is connected. In addition, the Ethernet Switch shall support time-based ACL's in order to allow the implementation of security settings during specific periods of the day, or days of the week.
- 7.1.11. The Ethernet Switch shall support IGMP Filtering providing multicast authentication by filtering out non-subscribers and limits the number of concurrent multicast streams available per port.
- 7.1.12. The Ethernet Switch shall support Intrusion Detection System (IDS) to allow the IDS to take action when an intruder is detected.
- 7.1.13. The Ethernet Switch shall support Secure Socket Shell (SSH), Kerberos, and

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SNMPv3 providing network security by encrypting administrator traffic during Telnet and SNMP sessions.

- 7.1.14. The Ethernet Switch shall support 802.x1 with port security authentication using access lists. In addition, the Ethernet Switch shall support MAC address notification allowing the administrator to be notified of new users as they are added or removed from the network.
- 7.1.15. The Ethernet Switch shall support QoS classification of incoming packets for QoS flows based on Layer 2–4 fields: Layer 2 fields (or a combination) for classifying incoming packets to define QoS flows: source MAC address, destination MAC address, and 16-bit Ethertype. Layer 3 and 4 fields (or a combination) for classifying incoming packets to define QoS flows: source IP address, destination IP address, TCP source or destination port number, and UDP source or destination port number.
- 7.1.16. The Ethernet Switch shall offer the ability to limit data flows based on MAC source/destination address, IP source/destination address, TCP/UDP port numbers, or any combination of these fields. The switch shall also offer the ability to manage data flows asynchronously upstream and downstream from the end station or on the uplink.
- 7.1.17. The Ethernet Switch shall support Layer3 routing including Multiplayer Switching (MLS) for inter-VLAN routing. In addition, the Ethernet Switch shall support local proxy ARP working in conjunction with private VLAN edge to minimize broadcasts and maximize available bandwidth.
- 7.1.18. The Ethernet Switch shall support Spanning-Tree protocol on both the RJ45 ports and the SFP Port in order to provide path redundancy while preventing undesirable loops in the network
- 7.1.19. The Ethernet Switch shall support Port Aggregation Protocol (PAgP) in order to automate the creation of Fast EtherChannel or EtherChannel groups, thus enabling linking to another switch, router, or server.
- 7.1.20. The Ethernet Switch shall support multicast VLAN Registration (MVR) as required for the deployment of multicast traffic across an Ethernet network. The MVR allows a subscriber on a port to subscribe and unsubscribe to a multicast stream on the network-wide multicast VLAN.
- 7.1.21. The Ethernet Switch shall support the Internet Group Management Protocol (IGMP). IGMP is utilized in order to permit the Ethernet Switch to receive all IGMP conversation between hosts and routers. When the Ethernet Switch detects an “IGMP join” request from a host for a given multicast group, the
- 7.1.22. The Ethernet switch shall provide full IPv4 dynamic routing.
- 7.1.23. Ethernet switch is to add the host’s port number to the group destination address (GDA) list for that group. When the Ethernet Switch detects an “IGMP leave” request, it is to remove the host’s port from the content-addressable memory (CAM) table entry.

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- 7.1.24. The Ethernet Switch shall support distance Vector Multicast Routing Protocol (DVMRP) tunneling for interconnecting two multicast-enabled networks across nonmulticast networks.
- 7.1.25. The Ethernet Switch shall support IP multicast routing to enable the network to receive the multicast feed requested and for switches not participating in the multicast to be pruned support for The Protocol Independent Multicast (PIM) sparse mode (PIMSM), PIM dense mode (PIM-DM), and PIM sparse-dense mode.
- 7.1.26. The Ethernet Switch shall support high-performance IP routing, supporting fallback bridging for forwarding of non-IP traffic between two or more VLAN's.
- 7.1.27. The Ethernet Switch shall support switch port Auto-recovery (or "errDisable") automatically attempts to re-enable a link that becomes disabled due to a network error.
- 7.1.28. The Ethernet switch shall support bandwidth aggregation per port, per destination and origin, using the MAC or IP addresses. It also shall aggregate the bandwidth per-port for multicast and unicast to control and prevent faulty end stations to degrade the overall system performance The Ethernet Switch is to be capable of sharing a minimum of 64 MB DRAM and 16 MB Flash memory among all ports.
- 7.1.29. The Ethernet Switch shall support a minimum of 12000 configurable MAC addresses.
- 7.1.30. The Ethernet Switch shall be compatible with Cisco Works management software
- 7.1.31. The Ethernet Switch must utilize Cisco Discovery Protocol.

8. Cables and Connectors

- 8.1. The Ethernet Switch shall utilize the following cables and connectors:
 - 8.1.1. 10BASE-T ports: RJ-45 connectors; two pair Category 3, 4, 5e, 6 or 7 unshielded q twisted pair UTP cabling.
 - 8.1.2. 100BASE-T ports: RJ-45 connectors; two pair Category 5e, 6 or 7 unshielded q twisted pair UTP cabling.
 - 8.1.3. 1000BASE-T ports: RJ-45 connectors; two-pair Category 5e, 6 or 7 UTP cabling.
 - 8.1.4. SFP Gigabit Ports: Single mode fiber optic cable with ST connectors
 - 8.1.5. Management console port: 8-pin RJ-45 connector, RJ-45-to-RJ-45 rollover cable with RJ-45-to-DB9 adapter for PC connections; for terminal connections, RJ- 45-to-DB25 female data-terminal-equipment (DTE) adapter.
 - 8.1.6. Each Ethernet switch provided shall include Two (2) 10/100 Ethernet LX Single Mode Fiber SFP Modules capable of transmitting data over a distance of 6.2 miles. In the event that the Ethernet switches require an SFP Module that will transmit in excess of 6.2 miles, an SFP module with a longer transmit capacity will be substituted at no additional charge. SFP modules provided must be compatible with

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the existing Cisco switches and network software in the County Traffic management Center.

CONSTRUCTION DETAILS

9. Installation

- 9.1. The Contractor shall furnish and install the Ethernet Switches at the designated locations as specified by the Engineer. The Contractor shall install the switches in full compliance with the manufacturer's recommendations.
- 9.2. The Contractor shall mount the rack-mountable Ethernet onto the rack within the equipment cabinet, at each location.
- 9.3. The Contractor shall be responsible to integrate the Ethernet Switch with the other devices within the cabinet that communicate utilizing Ethernet Protocol.
- 9.4. The Contractor shall reserve two (2) Ethernet Ports on the Ethernet Switch for connecting the NCDPW maintenance computers.
- 9.5. The physical layout of the Ethernet Switch and its cables, in relation to the other equipment within the cabinet shall be acceptable to the Engineer.
- 9.6. The Contractor shall maintain all furnished equipment and software in good working condition and shall provide replacement, at no additional cost to the County, due to breakdown, damage, or theft within ten (10) working days.

10. Documentation

- 10.1. Three (3) advanced copies of equipment manuals furnished by the manufacturer shall be submitted to the Engineer for review at least ten (10) days prior to the scheduled start of the 30 day operational test. The manuals shall include the following:
 - 10.1.1. Complete installation and operation procedures
 - 10.1.2. Complete performance specifications (functional, electrical, mechanical and environmental) of the unit
 - 10.1.3. Complete schematic diagrams
 - 10.1.4. Complete maintenance and troubleshooting procedures

11. 30 Day Operational Test

- 11.1. The 30 day operational test shall commence with the approval of the engineer after all the communications equipment in a zone or local fiber ring has been installed and operational.

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- 11.2. The contractor shall submit the proposed testing procedure to the engineer for approval two weeks prior to the proposed test start date.
- 11.3. The contractor shall perform any repairs, construction or modifications as required in order to comply with the acceptance test at no additional cost to the County.
- 11.4. Any malfunctions that occur shall stop the 30 day test. Upon completion of the necessary repairs, a new 30 day test period shall commence.
- 11.5. The contractor shall be responsible to maintain a log during the test period documenting any repairs or modifications made during the test period.

METHOD OF MEASUREMENT

This work will be measured as the number of 8 Port Hardened Ethernet Switches satisfactorily furnished and installed in accordance with the plans and as specified herein.

BASIS OF PAYMENT

The unit price bid shall include the cost of furnishing, installing, and integrating the Ethernet Switch with all equipment, software and cabling within the equipment cabinet and with existing switches and network software in the County Traffic management Center.

ITEM 683.090600NA - 10/100 MBPS OPTICAL ETHERNET CONVERTER, SHELF MOUNT
ITEM 683.090700NA - 10/100 MBPS OPTICAL ETHERNET CONVERTER, RACK MOUNT
ITEM 683.090800NA - 1000 MBPS OPTICAL ETHERNET CONVERTER, RACK MOUNT

DESCRIPTION

This work shall consist of furnishing and installing Optical Ethernet Converters of the type designated in the contract documents and as directed by the Engineer.

MATERIALS

1. Requirements

1.1. All materials furnished, assembled, fabricated and installed shall be new, corrosion resistant and in strict accordance with the provisions set forth in this specification.

1.2. This specification shall consist of:

- 10/100 Mbps Optical Ethernet Converters used to transmit and receive Ethernet data over fiber between the communication hubs and the field control equipment.
- 10/100/1000 Mbps Optical Ethernet Converters used to transmit and receive Ethernet data over fiber between the communication hubs and NCDPW Traffic Management Center equipment.
- Shelf-mount Optical Ethernet Converters shall be installed in the field at traffic signal equipment cabinets and rack-mount Optical Ethernet Converters shall be installed in the field at hub cabinets as designated on the plans or as ordered by the Engineer.
- One (1) 10/100 Ethernet LX Single Mode fiber SFP Module with LC connector shall be furnished with each 10/100 Mbps unit provided.
- Two (2) 10/100/1000 Ethernet LX Single Mode fiber SFP Modules with LC connectors capable of transmitting over a distance of 10 km shall be furnished with each 1000 mbps unit provided. In the event that the 1000 Mbps units require an SFP Module that will transmit in excess of 6.2 miles, an SFP module with a longer transmit capacity will be substituted at no additional charge.
- All SFP Modules furnished and installed shall be compatible with the existing Cisco switches and network software in the County Traffic management Center.

1.3. The equipment furnished as part of these items shall meet the following requirements:

- Be from the same manufacturer
- Not require manual adjustment
- Transmit Ethernet 10/100 Mbps (10/100 Mbps units) and 10/100/1000mbps (1000Mbps units) data over two (2) single mode fibers that exist or are furnished as part of this contract.

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1.4. Optical:

- Optical port 100 BASE -FX (10/100 Mbps units)
- Optical port: 1000 BASE-FX (1000 Mbps units)
- Fiber type: Single mode
- Optical transmitter: Laser
- Optical Wavelength: 1310nm
- Link loss budget range: minimum 0 to 15 dB (10/100 Mbps units)
- Link loss budget range: minimum 0 to 10 dB (1000 Mbps units)
- Dynamic range 0 to 15 dB w/o external attenuators (10/100 Mbps units)
- Dynamic range 0 to 10 dB w/o external attenuators (1000 Mbps units)
- Connector: LC
- A loss of optical link contact closure shall be provided for remote alarm sensing

1.5. Data:

- Data rate 10/100 Mbps Auto-sensing (10/100 Mbps units)
- Data rate 10/100/1000 Mbps Auto-sensing (1000 Mbps units)
- BER $< 10^{-9}$
- Data Interface: Ethernet (IEEE 802.3)
- Ethernet connector: RJ-45

1.6. Indicators:

- Led indicators shall be provided to indicate the following:
 - Data transmit/ receive status
 - Power-on

1.7. Environmental:

- The Optical Ethernet Converters shall meet the environmental requirements for operating and storage ambient Temperature, Mechanical Shock, Vibration, Humidity with Condensation, High-Line/Low-Line Voltage Conditions, and Transient Voltage Protection of NEMA TS-1/TS-2 and the CALTRANS specification for Traffic Signal Control Equipment.

1.8. Electrical Requirements:

- Voltage 115 -120 VAC. An adapter may be used to provide the required power to the stand-alone data transceivers. A power supply shall be contained in the rack.
- Current: 200 mA max (10/100 Mbps units)
- Current: 600 mA max (1000 Mbps units)

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- Re-settable circuit breakers or fuses shall be provided to protect the equipment. The protection may be provided either as part of the cabinet wiring or on the equipment.
- All equipment shall be hot swappable.

1.9. Mechanical:

- Shelf-Mount
 - The shelf-mount Ethernet converters shall be suitable for mounting on a shelf or attached to a wall/ rack cage rail of the cabinet and shall have the following maximum dimensions: 7" x 6" x 1".
- Rack Mount
 - The rack shall be fully wired to accommodate a minimum of ten (10) Ethernet Converters. All power to the converters shall be distributed through the rack.
 - The slots shall be assigned in accordance with the plans or as directed by the Engineer. The rack shall comply with EIA 19 mounting spacing.
 - The maximum dimensions of the rack shall be as follows: 19" wide x 7" high by 5.25" deep.

CONSTRUCTION DETAILS

The Contractor shall install the shelf and rack mounted Optical Ethernet Converters in the equipment cabinets designated on the plans. The converters shall be connected to the fiber optic cable through the fiber optic patch panel furnished as part of the cabinet items and fiber optic patch cables.

2. Documentation Requirements:

2.1. Manuals

- Six (6) advance copies of equipment manuals furnished by the manufacturer shall be submitted to the Engineer for review at least ten-days prior to the scheduled start of the first Operational Stand-Alone Test. The Engineer will verify the manufacturer's equipment manual as part of the test and integration process. The equipment manual incorporating the Engineer's corrections and comments shall be integrated by the Contractor into the operations and maintenance manual. The manuals shall, as a minimum, include the following:
 - Complete and accurate schematic diagrams
 - Complete installation and operation procedures
 - Complete performance specifications (functional, electrical, mechanical and environmental) of the unit.

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- Complete list of replaceable parts including names of vendors for parts not identified by universal part numbers such as JEDEC/ RETMA or EIA.
- Complete maintenance and troubleshooting procedures.

3. Stand Alone Test

- 3.1. After installation of the equipment in the field and prior to integration of the equipment into the system, the Contractor shall perform a 30 day operational test in the field for each of the optical Ethernet converters installed.
- 3.2. The test shall demonstrate as a minimum the ability of the converter to transmit and receive Ethernet data between the field equipment and hubs or the hubs and central as appropriate. As part of the operational test the optical transmit and receive levels shall be recorded for each converter.
- 3.3. If the Stand Alone Test fails, the equipment shall be repaired or replaced and the test shall be rerun for that site. If a component has been modified as a result of a failure, that component shall be replaced in all like units and the test shall be rerun for each unit.

METHOD OF MEASUREMENT

This work will be measured as the number of Optical Ethernet Converters satisfactorily furnished, installed, made fully operational, and tested in accordance with the contract documents, specifications, and as directed by the Engineer.

BASIS OF PAYMENT

The unit price bid to furnish and install an Optical Ethernet Converter shall include the cost of furnishing all labor, materials, tools, documentation, testing, 19 inch rack equipment, Ethernet and fiber optic cables and equipment necessary to satisfactorily complete the work in accordance with the Contract Documents.

ITEM 683.091000NA - 24 PORT HARDENED ETHERNET SFP SWITCH
ITEM 683.091100NA - 48 PORT HARDENED ETHERNET SFP SWITCH

DESCRIPTION

This work shall consist of furnishing and installing a 24 or 48 port hardened Ethernet SFP Switch in accordance with the contract documents and as directed by the Engineer.

MATERIALS

1. Requirements

- 1.1. All materials furnished, assembled, fabricated, and installed shall be new, corrosion resistant and in strict accordance with the requirements set forth in this specification.
- 1.2. This specification shall consist of an Ethernet SFP Switch, as specified in these specifications, and as ordered by the Engineer. The switch shall provide Ethernet connectivity from the field cabinets to the NCDPW Traffic Management Center or any other designated locations as specified by the Engineer.

The Ethernet SFP Switch shall be fully compatible with all of the software management functions of the existing central switch and Cisco Works, the existing Traffic Management Center Network Management Software.

The Ethernet SFP switch must be registered and licensed to the Nassau County Department of Public Works Traffic Management Center.

- 1.3. The 24 port switch shall have twenty four (24) Gigabit SFP Ethernet Ports, and two (2) 1/10 Gigabit Ethernet SFP+ Ports.
- 1.4. The 48 port switch shall have forty eight (48) 1/10 Gigabit SFP+ Ports.

2. Dimensions

- 2.1. The Ethernet SFP Switch shall be rack-mountable in a standard 19 inch rack in accordance with EIA-310D and shall not exceed external dimensions of 1.73" (H) x 17.5" (W) x 9.9" (D).

3. The Ethernet SFP Switch shall comply with the following standards:

- 3.1. RMON I and II standards
- 3.2. SNMPv1, v2c, and v3
- 3.3. IEEE 802.1d Spanning Tree Protocol
- 3.4. IEEE 802.1p CoS classification
- 3.5. IEEE 802.1q VLAN
- 3.6. IEEE 802.1w Rapid Convergence Spanning Tree Protocol
- 3.7. IEEE 802.1x Port Access Authentication
- 3.8. IEEE 802.3ad Link Aggregation Control Protocol (LACP)

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- 3.9. IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T port
- 3.10. IEEE 802.3 10BASE-T specification
- 3.11. IEEE 802.3u 100BASE-T/TX
- 3.12. IEEE 802.3ab 1000BASE-T
- 3.13. IEEE 802.3z 1000BASE-X

4. Regulatory Agency Approvals

- 4.1. Safety certifications: UL 1950/CSA 22.2 No. 950
- 4.2. IEC 950-EN 60950
- 4.3. AS/NZS 3260, TS001
- 4.4. CE Marking

5. Electromagnetic Emissions Certifications

- 5.1. FCC Part 15 Class A
- 5.2. EN 55022: 1998 Class A (CISPR22 Class A)
- 5.3. EN 55024: 1998 (CISPR24)
- 5.4. VCCI Class A
- 5.5. AS/NZS 3548 Class A
- 5.6. CE Marking
- 5.7. CNS 13438
- 5.8. BSMI Class A
- 5.9. MIC

6. Environmentally Hardened

- 6.1. The Contractor shall provide an Ethernet SFP Switch that is environmentally hardened and capable of operating in the following conditions: temperatures ranging from 32° F to 113° F, relative humidity from 10 to 85% (noncondensing) and altitudes up to 10,000 feet.

7. Power

- 7.1. The Ethernet SFP Switch shall contain an internal power supply that shall support input voltages between 100 and 240 VAC. The supplied AC power cord shall be used to connect the AC power conductor to an AC duplex outlet within the cabinet. If the Ethernet Switch is installed at location where an AC duplex outlet is not readily available, the Contractor shall coordinate with the Engineer in order to modify the AC power cord or provide other power cabling that the Contractor shall utilize, in order to make appropriate connections to the available AC power.

The Ethernet SFP Switch shall permit input voltages ranging from 100 through 127 Volts AC (RMS) at 60 Hz, or permit voltages from 200 through 240 Volts AC (RMS) at 50 Hz. The Ethernet Switch shall have a DC input voltage of +12 V at 13 amps.

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8. Communications Aspects and Switching Attributes

8.1. The Ethernet SFP Switch shall provide acceptable levels of Quality of Service (QoS) and provide switching capabilities appropriate for interfacing with the equipment within the field cabinet. In specific:

- The Ethernet SFP Switch shall support the metering/policing of incoming packets to restrict incoming traffic flows to a certain rate: The Ethernet Switches shall support four (4) egress queues per port to enable differentiated management of up to four (4) types of traffic. The Ethernet SFP Switch shall support a minimum of 128 aggregate or individual ingress policers and 8 aggregate ingress policers on each Gigabit Ethernet port.
- The Ethernet SFP Switch shall be equipped with multifunction LED's per port for port status, half-duplex or full-duplex, 10BASE-T/100BASE-T/1000BASE-T. LED's for system redundant power supply and bandwidth usage shall also be available.
- The Ethernet SFP Switch shall support SNMP protocol and SSH for remote monitoring and troubleshooting. The Ethernet SFP Switch shall support Remote Monitoring (RMON) software agent for RMON groups, where data history, statistics, alarms, events can be collected for traffic management, monitoring, and analysis.
- The Ethernet SFP Switch shall support Switched Port Analyzer (SPAN) port to monitor the traffic going through a single or multiple ports.
- The Ethernet SFP Switch shall support Remote Switched Port Analyzer (RSPAN), where the network administrator can monitor the port switch traffic from any other switch in the same network.
- The Ethernet SFP Switch shall support Network Timing Protocol (NTP) to provide an accurate and consistent time stamp on all switches within the network.
- The Ethernet SFP Switch shall support Trivial File Transfer Protocol (TFTP) for software upgrade and configuration deployment.
- The Ethernet SFP Switch shall support filtering of incoming traffic based on the following:
 - Layer2, Source Media Access Controller (MAC) Address, Destination MAC address
 - Layer3, Source IP Address, Destination IP address
 - Layer4, TCP source or destination port number, UDP source or destination port number.
- The Ethernet SFP Switch shall support the 802.1x standard that allows users to be authenticated, regardless of which LAN port is being accessed. The Ethernet SFP Switch shall support 802.1x with VLAN assignment in order to permit dynamic VLAN

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assignment of a specific user, regardless of where the user is connected. In addition, the Ethernet SFP Switch shall support time-based ACL's in order to allow the implementation of security settings during specific periods of the day, or days of the week.

- The Ethernet SFP Switch shall support IGMP Filtering providing multicast authentication by filtering out non-subscribers and limits the number of concurrent multicast streams available per port.
- The Ethernet SFP Switch shall support Intrusion Detection System (IDS) to allow the IDS to take action when an intruder is detected.
- The Ethernet SFP Switch shall support Secure Socket Shell (SSH), Kerberos, and SNMPv3 providing network security by encrypting administrator traffic during Telnet and SNMP sessions.
- The Ethernet SFP Switch shall support 802.1x with port security authentication using access lists. In addition, the Ethernet SFP Switch shall support MAC address notification allowing the administrator to be notified of new users as they are added or removed from the network.
- The Ethernet SFP Switch shall support QoS classification of incoming packets for QoS flows based on Layer 2-4 fields: Layer 2 fields (or a combination) for classifying incoming packets to define QoS flows: source MAC address, destination MAC address, and 16-bit Ethertype. Layer 3 and 4 fields (or a combination) for classifying incoming packets to define QoS flows: source IP address, destination IP address, TCP source or destination port number, and UDP source or destination port number.
- The Ethernet SFP Switch shall offer the ability to limit data flows based on MAC source/destination address, IP source/destination address, TCP/UDP port numbers, or any combination of these fields. The switch shall also offer the ability to manage data flows asynchronously upstream and downstream from the end station or on the uplink.
- The Ethernet SFP Switch shall support Layer3 routing including Multiplayer Switching (MLS) for inter-VLAN routing. In addition, the Ethernet Switch shall support local proxy ARP working in conjunction with private VLAN edge to minimize broadcasts and maximize available bandwidth.
- The Ethernet SFP Switch shall support Spanning-Tree protocol in order to provide path redundancy while preventing undesirable loops in the network
- The Ethernet SFP Switch shall support Port Aggregation Protocol (PAgP) in order to automate the creation of Fast EtherChannel or EtherChannel groups, thus enabling linking to another switch, router, or server.

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- The Ethernet SFP Switch shall support multicast VLAN Registration (MVR) as required for the deployment of multicast traffic across an Ethernet network. The MVR allows a subscriber on a port to subscribe and unsubscribe to a multicast stream on the network-wide multicast VLAN.
- The Ethernet SFP Switch shall support the Internet Group Management Protocol (IGMP). IGMP is utilized in order to permit the Ethernet Switch to receive all IGMP conversation between hosts and routers. When the Ethernet SFP Switch detects an “IGMP join” request from a host for a given multicast group, the switch is to add the host’s port number to the group destination address (GDA) list for that group. When the Ethernet Switch detects an “IGMP leave” request, it is to remove the host’s port from the content-addressable memory (CAM) table entry.
- The Ethernet SFP Switch shall provide full IPv4 dynamic routing, including the following advanced IP unicast routing protocols, Open Shortest Path First (OSPF), Enhanced Interior Gateway Routing Protocol (EIGRP), Border Gateway Protocol Version 4 (BGPv4), and Intermediate System-to-Intermediate System Version 4 (IS-ISv4) for load balancing and constructing scalable networks.
- The Ethernet SFP Switch shall support distance Vector Multicast Routing Protocol (DVMRP) tunneling for interconnecting two multicast-enabled networks across nonmulticast networks.
- The Ethernet SFP Switch shall support full IP multicast routing to enable the network to receive the multicast feed requested and for switches not participating in the multicast to be pruned support for The Protocol Independent Multicast (PIM) sparse mode (PIMSM), PIM dense mode (PIM-DM), and PIM sparse-dense mode.
- The Ethernet SFP Switch shall support high-performance IP routing, supporting fallback bridging for forwarding of non-IP traffic between two or more VLAN’s.
- The Ethernet SFP Switch shall support switch port Auto-recovery (or "errDisable") automatically attempts to re-enable a link that becomes disabled due to a network error.
- The Ethernet SFP switch shall support bandwidth aggregation per port, per destination and origin, using the MAC or IP addresses. It also shall aggregate the bandwidth per-port for multicast and unicast to control and prevent faulty end stations to degrade the overall system performance The Ethernet SFP Switch is to be capable of sharing a minimum of 4 GB DRAM and 2 GB Flash memory among all ports.
- The Ethernet SFP Switch shall support a minimum of 30000 configurable MAC addresses and 20000 IPv4 routes.
- The Ethernet SFP Switch shall be compatible with CiscoWorks management software.

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- The Ethernet Switch must utilize Cisco Discovery Protocol (CDP).

9. Cables and Connectors

9.1. The Ethernet SFP Switch shall utilize the following cables and connectors:

- SFP Gigabit Ports: Single mode fiber optic cable with LC connectors
- SFP+ 10 Gigabit Ports: Single mode fiber optic cable with LC connectors
- Management console port: 8-pin RJ-45 connector, RJ-45-to-RJ-45 rollover cable with RJ-45-to-DB9 adapter for PC connections; for terminal connections, RJ-45-to-DB25 female data-terminal-equipment (DTE) adapter. The IR829/809 Mini-USB Console Cable may be used in place of legacy connectors such as RJ-45-to-DB9.
- The 24 port Ethernet SFP Switch provided shall include twenty-four (24) 10/100/1000 Ethernet LX Single Mode Fiber SFP Modules and two (2) 1/10 SFP-10G-LR Single Mode Fiber SFP modules capable of transmitting data over a distance of 6.2 miles. In the event that the Ethernet switch requires an SFP Module that will transmit in excess of 6.2 miles, an SFP module with a longer transmit capacity will be substituted at no additional charge. SFP modules provided must be compatible with the Ethernet switch.
- The 48 port Ethernet SFP Switch provided will include forty-four (44) 10/100/1000 Ethernet LX Single Mode Fiber SFP Modules and four (4) 1/10 SFP-10G-LR Single Mode Fiber SFP modules capable of transmitting data over a distance of 6.2 miles. In the event that the Ethernet switch requires an SFP Module that will transmit in excess of 6.2 miles, an SFP module with a longer transmit capacity will be substituted at no additional charge. SFP modules provided must be compatible with the Ethernet switch.

CONSTRUCTION DETAILS

The Contractor shall furnish and install the Ethernet SFP Switches at the designated locations as specified by the Engineer. The Contractor shall install the switches in full compliance with the manufacturer's recommendations.

The Contractor shall mount the rack-mountable Ethernet SFP switch onto the rack within the equipment cabinet, at each location.

The Contractor shall be responsible to integrate the Ethernet SFP Switch with the other devices within the cabinet that communicate utilizing Ethernet Protocol.

The Contractor shall reserve two (2) SFP ports on the Ethernet SFP Switch for connecting the NCDPW maintenance computers.

The physical layout of the Ethernet SFP Switch and its cables, in relation to the other equipment within the cabinet shall be acceptable to the Engineer.

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ITEM 683.091100NA - 48 PORT HARDENED ETHERNET SFP SWITCH

The Contractor shall maintain all furnished equipment and software in good working condition and shall provide replacement, at no additional cost to the state, due to breakdown, damage, or theft within ten (10) working days.

1. Documentation

1.1. Three (3) advanced copies of equipment manuals furnished by the manufacturer shall be submitted to the Engineer for review at least ten (10) days prior to the scheduled start of the 30 day operational test. The manuals shall include the following:

- Complete installation and operation procedures
- Complete performance specifications (functional, electrical, mechanical and environmental) of the unit
- Complete schematic diagrams
- Complete maintenance and troubleshooting procedures

2. 30 Day Operational Test

- 2.1. The 30 day operational test shall commence with the approval of the engineer after all the communications equipment in a zone or local fiber ring has been installed and operational.
- 2.2. The contractor shall submit the proposed testing procedure to the engineer for approval two weeks prior to the proposed test start date.
- 2.3. The contractor shall perform any repairs, construction, or modifications as required in order to comply with the acceptance test at no additional cost to the County.
- 2.4. Any malfunctions that occur shall stop the 30 day test. Upon completion of the necessary repairs, a new 30 day test period shall commence.
- 2.5. The contractor shall be responsible to maintain a log during the test period documenting any repairs or modifications made during the test period.

METHOD OF MEASUREMENT

This work will be measured as the number of Ethernet Switches satisfactorily furnished and installed in accordance with the plans and as specified herein.

BASIS OF PAYMENT

The unit price bid for the Ethernet Switch will include the cost of furnishing, installing, integrating and testing the Ethernet Switch with all equipment and software, and cabling within the equipment cabinet to satisfactorily complete the work.

ITEM 683.100100NA - COMMUNICATIONS HUB CABINET AND AUXILIARY EQUIPMENT

DESCRIPTION

This work shall consist of furnishing and installing Model 332 Style Cabinet and Auxiliary Communications Equipment in accordance with the contract documents and as directed by the Engineer.

MATERIALS

1. Qualification

1.1 All Model 332 components supplied under this specification shall be listed on the CalTrans Qualified Product List (QPL) that is in effect on the issue date of this invitation. In the case of the modified 332 Cabinet, the vendor's standard model shall be listed on the CalTrans QPL that is in effect on the issue date of this invitation. Equipment that is not defined by the CalTrans "Traffic Signal Control Equipment Specifications" (TSCES) or "Transportation Electrical Equipment Specifications" (TEES) that is in effect on the issue date of this invitation is not covered by this requirement. For each piece of equipment that is covered by this requirement, the vendor shall submit a notarized certification the equipment is listed on the QPL that was in effect as of the date of issue of this invitation. Failure to provide this certification shall cause the bid to be rejected as unresponsive. If during the course of the contract, any piece of equipment ceases to be listed on the current QPL, the County may, at its option, require the vendor to provide a suitable replacement that is listed on the current QPL at no additional cost.

2. Requirements

2.1 All materials furnished, assembled, fabricated and installed shall be new, corrosion resistant and in strict accordance with the latest provisions set forth by the California Department of Transportation (CalTrans) Specifications.

The specifications for the Model 332 Cabinet and auxiliary communications equipment shall conform to the requirements in CalTrans documents TSCES and TEES, and to all addenda thereto current on the issue date of this invitation.

2.2 This specification shall consist of a Model 332 Cabinet with all auxiliary equipment, and cabling to interface with the communications systems shown on the plans, as specified in these specifications, and as ordered by the Engineer.

2.3 As a minimum, this item shall include, but not be limited to, the following equipment:

ITEM 683.100100NA - COMMUNICATIONS HUB CABINET AND AUXILIARY EQUIPMENT

Model 332 Cabinet and Auxiliary Equipment

<u>Model No.</u>	<u>Quantity</u>	<u>Description</u>
332	1	Model 332 Cabinet
-	1	Environmentally Hardened 1200VA UPS
-	2	Exhaust Fans
-	2	Adjustable Shelves
-	1	Heater Assembly
SHA-1250	1	Cabinet Surge Protector
-	2	15A Power Strips
-	1	Environmental Monitor

2.4 Model 332 Cabinet

2.4.1 Dimensions

The cabinet shall be a Model 332 type with a height of 66”, width of 24”, and a depth of 30”.

2.4.2 Rack Assembly

The cabinet shall have a standard EIA 19 inch removable, self-standing rack assembly. The rack shall be capable of mounting communications equipment in a standard mounting screw configuration. Screw mounting holes shall be pre-threaded and labeled using the “RU” rack height identification system.

The cabinet shall be supplied with 50 spare Philips head mounting screws to match the pre-threaded holes in the 19 inch rack.

2.4.3 Locks

The cabinet doors shall be equipped with a brass cylinder lock keyed for a Number Two Corbin Key, with a dust cover. Two (2) keys for each cabinet

ITEM 683.100100NA - COMMUNICATIONS HUB CABINET AND AUXILIARY EQUIPMENT

shall be furnished and provided in the cabinet drawer. Cabinet shall be equipped with a removable handle that shall be provided with the cabinet.

2.4.4 Adjustable Shelves

Cabinet shall be provided with 2 rack mountable shelves. These shelves shall be mounted on both the front and rear 19 inch rack rails using standard Philips head screws.

2.4.5 Finish

All surfaces of the cabinet shall be bare, unpainted aluminum.

2.4.6 Cabinet Light

Fluorescent lamps shall be installed in the top of the front and rear of the cabinets. Switches shall be installed on the front and rear doors. Opening of either door shall illuminate both lights.

Each fluorescent lamp and switch shall be equipped with noise suppression devices. Activation of the fluorescent lamps and associated switches shall not cause any disruption of any other electrical device in the cabinet. The vendor shall install sufficient RFI and surge suppression equipment to assure that operation of the fluorescent lamps will not disrupt the operation of other equipment in the cabinet.

Fluorescent lamps and associated ballast transformers shall be rated for high output in cold environments, providing high light output in ambient temperature of -13° F.

The cabinet lamp circuit shall be fused. The fuse holder shall be easily accessible from the front the cabinet

2.4.7 Interconnect Terminal Block

Two twelve (12) position terminal blocks for interconnection shall be installed in the lower 12 inches of the cabinet. The Contractor shall submit the proposed terminal block schematic and mounting location to the County for approval prior to installation in the cabinet. Each position of the 12 position terminals shall be installed with lightning/surge suppressors that are compatible with digital (DSL) type Ethernet communications. Surge

ITEM 683.100100NA - COMMUNICATIONS HUB CABINET AND AUXILIARY EQUIPMENT

suppressors shall not interfere with the communications to or from Ethernet over copper modems (Actelis) utilized by Nassau County.

2.4.8 Cabinet Drawer

An aluminum pullout drawer hinged at the top and having sliding tracts shall be provided in the cabinet. The drawer shall have the approximate dimensions of 1.75 inches in height, 13 inches deep and 16 inches wide and be capable of holding 40 pounds in weight when the drawer is extended. This drawer should be located approximately 48 inches from the bottom of the cabinet. Provide a top for the storage compartment that has a non-slip plastic laminate attached, which covers a minimum of 90% of the surface area of the top.

2.4.9 Door Alarm

A door ajar alarm switch shall be installed on front and back doors. Each switch shall be of heavy duty, spring-loaded design with single pole normally closed contacts. Each switch circuit shall be closed whenever the corresponding door is open at an angle of 15 degrees or more. The switches shall be installed so that they will not restrict removal of the cabinet rack assembly in any way. The door ajar switches shall only be used to support the door ajar alarm function; they shall not be used to support any other function (such as cabinet illumination or conflict monitor interlocking).

Each switch shall be wired to terminal block located on the lower portion of the cabinet on the side wall. Terminal block shall be labeled as "Door Alarm".

2.4.10 Sun Shields

The cabinet shall be provided with sun shields on the top, both sides, and both doors to reduce the cabinets ambient temperature. The shields shall be in the form of 1/8 inch aluminum sheets installed utilizing 1 inch spacers, mounted with tamper proof hardware to the cabinets. The areas listed above shall be covered except for the handle and lock location.

2.4.11 Ventilation

The cabinet shall contain (2) two thermostat controlled fans capable of moving a minimum of 300 cubic feet per minute. Fans shall be mounted on the interior ceiling of the cabinet. Thermostat shall be mounted in the upper portion of the cabinet in a position that makes it easy to adjust.

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2.4.12 Heating

The cabinet shall be provided with a cabinet heater located near the bottom of the cabinet. A thermostat shall be provided to activate the heater and shall be set to turn the heater on at 40 degrees F, and off at 55 degrees F. The heater shall be rated at 250 Watts.

2.4.13 Cabinet Filters

The cabinets shall have vents on both the front and back doors and metal water deflection panels mounted inside the vents. A disposable paper filter element shall be provided in lieu of a metal filter.

2.4.14 Electrical

Electrical circuit breakers, GFCI and Standard NEMA outlets, Ground Bars, and all electrical equipment shall be approved and listed by Underwriters Laboratories. All electrical equipment shall be mounted on the side wall of the cabinet, and shall be located in the bottom 12 inches of the cabinet as to not interfere with communications and electronic equipment mounted above.

Two (2) 110 Volt 15 Amp power strips shall be provided with the cabinet. Power strips shall be capable of being mounted on the cabinet sidewall or on a rack mount panel and shall be capable of receiving plugs from 6 devices.

2.4.15 Surge Protection

The cabinet shall be furnished with a plug-in RFI filter and surge protection device, EDCO MODEL SHA 1250, mounted on the cabinet service panel assembly on Socket BEAU S-5412 SB or approved equal. All Surge protection equipment shall be mounted in the lower 12 inches of the cabinet on the side wall.

2.5 Rack Mount Uninterruptable Power Supply (UPS)

2.5.1 A 19 inch rack mountable 1,200 Volt Amp UPS shall be provided. The UPS shall be environmentally hardened and rated for outdoor use. UPS shall be capable of operating the equipment in the HUB cabinet for a minimum of 20 minutes. UPS shall be provided with a 110 Volt 15 AMP NEMA plug for easy connection within the cabinet. UPS shall have at least (5) 110 Volt 15 AMP receptacles for communications equipment. UPS shall come with a 10/100 Mbps Ethernet network port and network software that will allow remote access, control, and the ability to send alarms from the UPS.

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2.6 Environmental Monitor

2.6.1 Cabinet shall come with a rack mounted network environmental monitoring device. The monitor shall connect with 10/100 Mbps Ethernet communications utilizing central monitoring software that must be provided as part of this specification. This environmental monitoring device shall come complete with two contact closure user programmable alarm inputs and shall monitor the following environmental parameters:

- Cabinet Temperature
- Cabinet Humidity
- Exterior Temperature
- Exterior Humidity
- Local Power Status
- Cabinet Door Ajar Alarm

2.7 Terminal Block for Communications Signal Conductors (Twisted Pair)

2.7.1 Communications cable terminal blocks for interconnect, shall have surge protectors installed between the cable pairs and the equipment they are wired to. The conductor leads and the surge protector leads shall be kept as short as possible with all conductor bends formed to the maximum possible radius. The protector units shall be located as near as possible to the entry point and as far as possible from any electrical equipment. The protector ground lead shall be made directly to the cabinet wall or ground plane.

2.7.2 The surge protectors shall contain both primary and secondary protection. The primary and secondary protectors may be packaged in the same housing, provided sufficient impedance is provided between the protector segment to allow proper operation. If the individual equipment input circuitry is provided with secondary protectors, the corresponding secondary protector need not be provided.

2.7.3 The primary and secondary protectors shall have the following characteristics:

Working Voltage:

The unit shall not introduce a series or shunt impedance to the signal path such that it interferes with the operation of the equipment.

Surge Voltage:

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For the primary protector, the unit shall limit the surge voltage between the signal leads and ground to 300 volts or less while conducting a peak surge current of at least 20,000 amperes. The surge current shall cause both signal leads to be grounded simultaneously under surge conditions and shall not allow a transient transverse signal to appear on the protected output signal conductors. The surge operation delay shall not exceed one micro-second.

For the secondary protector, the unit shall limit the surge voltage to a level that is less than the maximum specified operating voltage of the equipment being protected. This surge voltage shall occur when the primary protector is being subjected to its rated surge current.

Energy Rating:

For the primary protector, the unit shall be capable of dissipating 100 joules of surge energy without damage to itself.

For the secondary protector, the unit shall be capable of dissipating 20 joules of energy without being damaged.

CONSTRUCTION DETAILS

3. Installation

- 3.1 The Model 332 Cabinet shall be mounted on a foundation as prescribed by the plans or item sheet. The installation shall include the drilling of posts or poles and the fastening of supports. The Contractor shall supply all bolts, nuts, straps, condulets, nipples, lock washers, mounting plates, and other material required to secure the cabinet properly, and in accordance with the Traffic Signal Standard Drawings.
- 3.2 The Contractor shall make all field cable connections in the cabinet with approved insulated solderless lugs. All cabinet wiring shall be neat and firm.

4. Installation Details

- 4.1 The Contractor shall install the Ethernet switch(s), fiber optic patch panels, and all related hardware in the Model 332 Cabinets at locations specified on the plans.
- 4.2 After all cables are installed and tested, the Contractor shall seal all conduits using duct seal and/or steel wool to deter rodent entry in the cabinet.

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- 4.3 The cabinet doors shall be perpendicular and open away from the curb as specified on the plans. If the plans do not indicate this information, the Contractor shall confirm with the Engineer regarding the orientation of the cabinet.
- 4.4 All wiring connected to terminal blocks, relays, switches, radio interference suppressor, etc. shall be identified by use of insulated pre-printed tags over the wire including, but not limited to, communications cables, etc. The wire markers shall carry the legend in plain words with sufficient details so that a translating sheet will not be required.

Cabinets shall be wired to accept and implement all of the features of the specified equipment.

5. Documentation Requirements

- 5.1 One (1) complete set of operation and maintenance manuals shall be placed in each field cabinet and five (5) complete sets shall be delivered to the County. The manuals shall, as a minimum, include the following:
 - 5.1.1 Complete cabinet and equipment layout drawings for all cabinet mounting configurations.
 - 5.1.2 Complete cabinet wiring and harness drawings.
 - 5.1.3 Complete installation procedures.
 - 5.1.4 Complete parts list including names of vendors for parts not identified by universal part numbers such as JEDEC, RETMA, or EIA.
 - 5.1.5 Pictorial of components layout on circuit board.
 - 5.1.6 Complete maintenance and trouble-shooting procedures.
 - 5.1.7 Complete stage-by-stage explanation of circuit theory and operation.

- 5.2 The cabinet/equipment layout and cabinet wiring diagram shall be submitted for review and approval prior to actual cabinet fabrication.

6. Testing Requirements

At a minimum the following cabinet tests shall be performed on all cabinets, with a designated representative from the County. Test procedures shall be submitted for approval prior testing.

- 6.1 48 hour hot and cold for cabinet - documented and certified.

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EQUIPMENT**

- 6.2 Test proper brownout voltage calibration between conflict monitor and controller. Manufacturer to submit procedure for approval. Documentation and certification to be shipped with cabinet.
- 6.3 Test the proper operation and duration of the UPS when LIPA power is terminated.

METHOD OF MEASUREMENT

This work will be measured as the number of Communications HUB Cabinets and Auxiliary Equipment that are satisfactorily furnished and installed.

BASIS OF PAYMENT

The unit price bid to furnish and install Communications HUB Cabinet and auxiliary equipment shall include the cost of furnishing all labor, materials, electrical cables, communications (fiber/copper) patch cables, and equipment necessary to satisfactorily complete the work in accordance with the contract documents.

ITEM 683.115100NA – WI-FI TRAVEL TIME READER

DESCRIPTION:

This work shall consist of furnishing and installing long range, wide angle Wi-Fi detectors capable of measuring vehicle travel flows by measuring Wi-Fi MAC (Media Access Control) addresses. The system will be used to measure and collect high quality travel times, in real-time, from the traffic stream by matching MAC addresses at two or more locations across a network.

MATERIALS:

The Wi-Fi receiver shall consist of the following equipment furnished as part of this item:

1. Wi-Fi Radio receiver, Antenna with cable and all mounting hardware
2. MAC Address Controller Unit with all required interface cabling and software

The receivers will typically be installed on traffic signal span poles, mast arms, control cabinets or as shown on the plans. The antenna/radio shall sense MAC addresses and signal strength from Wi-Fi devices in the configured detection zone. The MAC Address Controller unit shall be powered from and installed into the input card file in a traffic signal control cabinet. MAC Address Controller Unit shall forward the MAC addresses to the existing Nassau County Traffic Management Foundation control server. This will allow Foundation to generate travel times and other performance statistics using the data from multiple Wi-Fi receivers across the County's traffic communications network. The MAC Address Controller will be connected directly to the Ethernet switch in the traffic signal control cabinet.

Wi-Fi field equipment must transmit raw, un-encrypted MAC address information back to the Nassau County Traffic Management Center over the County's existing Ethernet based traffic communications network. This will be completed through TCP/IP socket connections initiated from the TMC servers. Configurable MAC address store and forward ability with a buffer of at least 15 minutes for use during communication outages will be provided. Wi-Fi equipment installed must either have direct communications with the County's existing Foundation management system, or with a central server that will communicate with the field Wi-Fi devices and then with the County's existing Foundation system. NTCIP or the latest National Standard communications protocol must be utilized when communicating across the Nassau Traffic network. If direct communications with the County's existing Foundation servers is not feasible, then a primary and backup server must be provided and installed at the Nassau County Traffic Management Center. This server will communicate directly with the field Wi-Fi readers, and the existing Foundation servers to provide MAC address data, communication statistics and device configuration interfaces. The server must be provided with software that will manage Wi-Fi reader maintenance, operations and communications status providing both GUI and Foundation interfaces. Whether communicating directly with the Foundation servers, or using another server, the Foundation Server must receive raw, unencrypted MAC address information including signal strength and multiple reads per address when obtained in the field in order for the system

ITEM 683.115100NA – WI-FI TRAVEL TIME READER

to work.

Any servers, hardware or software provided as part of this specification must include a royalty-free, perpetual license for use by Nassau County. No off site hardware will be permitted and no annual or continual operational fees or licenses will be paid. Any server hardware, as well as the operating systems installed on it, must be standard to the IT industry and commonly available to the County. This will be a closed loop system with all the necessary software and hardware within Nassau County.

All material furnished, assembled, fabricated or installed shall be new, corrosion resistant and in strict accordance with all the details shown in the Contract Documents and in this Special Specification.

The radio, antenna and controller unit shall meet the following minimum system requirements:

Protocols

- IEEE 802.11 g
- IEEE 802.11 b

Frequency Band

- 2400 to 2483.5 MHz (ISM Unlicensed Band)
- A minimum of 10 frequency channels
- Channel Bandwidth – 20 MHz (11 g), 22 MHz (11 b)

Data Rate

- Selectable from 54 to 1 Mbps auto fall back

Antenna Gain

- 9 dBi

Antenna Type

- Omni-directional

Receive Sensitivity

- -87 dBm at 54 Mbps
- -93 dBm at 11 Mbps

ITEM 683.115100NA – WI-FI TRAVEL TIME READER

Interfaces (Minimum)

- 10/100Base-T network access via RJ45
- (2) USB 2.0
- TCP/IP 10/100Base-T Ethernet for local configuration IP

Connectivity

- HTTP, PPP, PPTP, SSH

Input Voltage

- 22-26 VDC, 9-15 VDC

Power Consumption

- 2.4 W typical

Antenna Dimensions

- 20" L x 1" D
- 2.5 lbs – with all required mounting hardware

Operating Temperature

- -29°F to +165°F

CONSTRUCTION DETAILS:

The Contractor shall install the Wi-Fi Travel Time Receivers at locations designated on the plans and perform the initial programming and set up of the Wi-Fi reader. Any required control or configuration software shall be provided under this item. The equipment required to connect the Wi-Fi readers to the existing Nassau County Traffic communications network or to a separate communications network will be included under separate contract items.

The Contractor shall submit his proposed antenna mounting scheme to the Engineer for approval prior to installation. In general, the antenna shall be mounted to the specified signal pole, mast arm or cabinet at a height recommended by the Engineer for optimal sensing. The antenna cable shall be routed into the existing signal controller cabinet, HUB or auxiliary cabinet in accordance with the installation detail plans.

ITEM 683.115100NA – WI-FI TRAVEL TIME READER

Documentation Requirements

Six (6) advance copies of equipment manuals furnished by the manufacturer shall be submitted to the Engineer for review at least ten-days prior to the scheduled start of the first Operational Stand-Alone Test. The Engineer will verify the manufacturer's equipment manual as part of the test and integration process. The equipment manual incorporating the Engineer's corrections and comments shall be integrated by the Contractor into the operations and maintenance manual as described in the General Requirements. The manuals shall, as a minimum, include the following:

- a. Complete and accurate schematic diagrams
- b. Complete installation and operation procedures
- c. Complete performance specifications (functional, electrical, mechanical and environmental) of the unit.
- d. Complete list of replaceable parts including names of vendors for parts not identified by universal part numbers such as JEDEC/ RETMA or EIA.
- e. Complete maintenance and troubleshooting procedures.
- f. Complete documentation of all software interfaces including those used for transmitting MAC address data, maintenance information and device configuration.
- g. Testing Requirements

After installation of the equipment in the field and prior to integration of the equipment into the system, the Contractor shall perform an Operational Test in the field for each of the Wi-Fi Travel Time Receivers installed. The test shall demonstrate as a minimum the ability of the receiver to sense MAC addresses at each field location as designated on the plans under conditions of (1), a range of vehicle speeds from stationary to 20% above the posted speed, and (2), various vehicle densities typical of the installed location. Once integrated with the County's existing Foundation system, a 30-day operational test will be performed. The test must demonstrate continued and un-uninterrupted transfer of MAC address info from field equipment to the Traffic Management Center.

ITEM 683.115100NA – WI-FI TRAVEL TIME READER

If the Operational Test fails, the equipment shall be repaired and the test shall be rerun for that site. If a component has been modified as a result of a failure, that component shall be replaced in all like units and the test shall be rerun for each unit.

METHOD OF MEASUREMENT:

The Wi-Fi Travel Time Receivers will be measured for payment as the number of each specified in the Contract Documents satisfactorily installed.

BASIS OF PAYMENT:

The unit price bid for each Ethernet Switch shall include the cost of furnishing all labor, materials and tools and equipment necessary to complete the work and to make the Wi-Fi Travel Time Receiver fully operational and tested. Payment for the antenna, antenna cable, conduit between the antenna and the controller cabinet and all required mounting hardware and materials shall be included under this item.

Payment for all documentation, control software, testing and test equipment shall be included under this item.

ITEM 683.200100NA – ITS SUBSYSTEM INTEGRATION

DESCRIPTION

This work shall consist of furnishing Integration in accordance with the contract documents and as directed by the Engineer. Under this item, the Contractor shall integrate the new and relocated field equipment furnished and installed under this project with the existing Nassau County Traffic Management Center (TMC) central system. The project systems consists of the existing traffic signal system, CCTV system and monitoring equipment, and fiber optic network communication system and shall be alter in accordance with the contract documents and as ordered by the Engineer.

The existing Nassau County ITS subsystems operate as follows:

Traffic Signal subsystem

The field controllers installed under this project will be 2070 Lite controllers as defined in the California Department of Transportation (CALTRANS) 2002 Transportation Electrical Equipment Specifications (TEES), or latest revisions. These controllers shall be integrated into the existing traffic signal central system. The Contractor shall provide all hardware and software components required to integrate the new 2070 Lite controllers. The Contractor will be responsible for all database additions and revisions as required.

Communication Subsystem

The fiber optic communication system furnished and installed under this project shall be integrated with the existing Nassau County communication network. The first system is the new Nassau County Mineola to Westbury 288 strand fiber optic backbone communication and the second is the Old Country Road ITS 144 strand fiber optic backbone and local 48 strand fiber optic distribution fiber optic system. The Contractor shall provide all new hardware, splicing and modify any existing hardware required to integrate the new system with the existing communication system.

CCTV Subsystem

The CCTV equipment and associated communication equipment furnished, relocated and installed under this project shall be integrated with the existing Central CCTV Camera server and monitoring equipment installed at the Nassau County Westbury Office TMC. The Contractor shall modify any existing CCTV central hardware and provide any CCTV central server software required to integrate the new or relocated CCTV's with the existing central equipment. The Contractor shall incorporate any new or updated CCTV protocols into the existing CCTV camera controller and provide all camera control server and video monitoring database modifications required to integrate the new CCTV's. The Contractor will be responsible for all database additions and revisions as required.

ITEM 683.200100NA – ITS SUBSYSTEM INTEGRATION

MATERIALS:

The Contractor shall furnish and install all signal and communications cable assemblies required to connect between the Transportation Management Center (TMC) and Ethernet switches, patch panels, media converters, computer equipment, the existing Central traffic signal, CCTV Camera Controller and monitoring equipment. All wires and cables shall meet the requirements of the applicable special specifications in the contract documents.

The Contractor shall update the software configuration, data base in the Traffic signal, CCTV servers, TMC Workstation Computers and any other applicable equipment for all new equipment implementation under this contract.

The Contractor shall furnish and install two (2) - 19 inch wide by six foot high equipment racks in each of the Nassau County Mineola office IT room and the Nassau County Westbury TMC IT room (total of four (4) racks). The new racks shall house the proposed fiber optic, patch panels and Ethernet equipment.

CONSTRUCTION DETAILS:

The Contractor shall be responsible for the central software, firmware and hardware modifications and additions to implement the field and central equipment furnished and installed under this contract. The Contractor shall have qualified staff meeting the following requirements:

- A minimum of five years experience in the design, development and operation of fiber optic network, traffic control systems and CCTV surveillance systems.
- A minimum of five years experience in the design, development and installation of fiber optic cable systems.
- Familiar with Microsoft operating system, and TCP/IP protocol in an Ethernet network system.

The Contractor shall submit to the Engineer the proof of the above qualifications prior to start of any work.

The Contractor shall minimize any disruption in office to office communications between the two Nassau County offices as described in the General Notes.

The Contractor shall complete the equipment integration and system operation tests of the new fiber optic communications subsystem with no disruptions to the Nassau County operations.

ITEM 683.200100NA – ITS SUBSYSTEM INTEGRATION

The Contractor shall be responsible for ensuring simultaneous integrated operation of the new equipment and the existing Nassau County equipment.

Existing system manuals and software documentation are available, for examination, at the Nassau County Westbury office TMC

The Contractor shall submit, for the approval of the Engineer, a detailed implementation plan prior to beginning work.

Attend Bi-Weekly Integration Meetings with the Engineer

The Contractor will perform final system integration services for this project. This work shall include the activation and control of all devices to be included in the project. In addition, this contractor shall also review the shop drawings for the project and perform the test programs described in this specification.

To accommodate the proposed installation schedule, the forum for supplying these support services shall be through integration meetings at which representatives of the contractor, and the suppliers may attend, and by request of the contractor or Engineer. These meetings may be held at the Nassau County project office. The primary purpose of these meetings is to assist the contractor in preparing the shop drawings for the complex items requiring integration of sub-assemblies. In addition, shop drawings and test program submittals shall be reviewed and discussed at these sessions. The contractor retains the responsibility for developing the shop drawings and receiving approval of the Engineer prior to fabrication and installation of any bid item. The meetings shall also serve as a forum for project management at which issues can be discussed and resolved between the parties. The Engineer may waive the meetings, if project progress is satisfactory or if none of the parties require it.

As a minimum the contractor's project manager shall attend all integration meetings held. In addition technical support personnel shall attend as required including representatives of suppliers and subcontractors who are involved in issues requiring resolution at the integration meetings shall attend.

Prepare Shop Drawings Required for Bid Items

Most bid items for this project include shop drawing submittal requirements. In that many of the bid items interrelate with each other, shop drawings submittals shall be submitted for the following:

- Traffic Signal Controller Equipment and Cabinet
- Hub Cabinets
- Fiber Optic Cable and Enclosure

ITEM 683.200100NA – ITS SUBSYSTEM INTEGRATION

- Hub and Communications Equipment
- CCTV Field Equipment Cabinet
- CCTV Assembly
- Video Image Detection System Processor and Sensor Assembly
- System detection system

Items to be installed in cabinets shall be submitted and approved with shop drawing and layout of equipment to be installed, when packages are being evaluated. All other shop drawings for the remaining bid items shall be submitted and will be approved individually.

All of the items for installation of a device type e.g. CCTV Assembly must be submitted at the same time. Individual components of a package will not be approved until all items in the package are acceptable.

In addition to the shop drawings specified with the individual bid items the contractor shall prepare an integration and installation schedule and work plan for the project which shall be subject to the approval of the Engineer. The contractor schedule should be developed to meet the installation schedule included in the plans. At the same time the contractor shall submit a pulling scheme and equipment for the fiber optic cable to be installed.

System Test and Integration

The Contractor shall submit test procedures to the Engineer for approval before conducting any tests. All tests shall be conducted as described in the specifications and general notes found elsewhere in the contract documents. At a minimum the Contractor shall conduct a subsystem tests as described in the specifications and a 30 Day Final Acceptance Test. The 30 Day Final Acceptance Test shall at a minimum demonstrate daily the functions and communications to each traffic signal controller, VIDS, system detection and CCTV assembly.

Upon final completion of the work specified herein, the overall traffic signal central control system the CCTV system and communication system shall undergo a 30 Day Final Acceptance Test.

Documentation

The Contractor shall provide five (5) copies of all hardware and software/firmware implementations and modifications made under this contract. Documentation on any manufacturer supplied or public domain programs used in the modifications shall be included in the documentation.

ITEM 683.200100NA – ITS SUBSYSTEM INTEGRATION

The Contractor shall submit shop drawings that show and document all proposed modifications and additions to the existing traffic signal, fiber optic communication, and CCTV subsystems for approval by the engineer.

Training

Subsequent to delivery of the documentation and installation of the equipment, the contractor and/or manufacturer's representatives shall conduct a training course for all equipment supplied for the project. The manufacturer's representative must be fully knowledgeable concerning the material and now it is being utilized on the project. At a minimum the following items shall be included in the training:

- Fiber optic cabling and splicing maintenance and operation
- 2070 Lite controller maintenance and operation
- VIDs maintenance and operation
- Wireless detection sensor maintenance and operation
- Ethernet communication maintenance and operation
- CCTV maintenance and operation

The training course shall be for a minimum of 40 hours. No more than 7 hours training shall be scheduled for a given day. The training course shall be attended by no more than 5 personnel, in any given session. The training course shall be held at a facility to be provided by the Engineer. The contractor is responsible for supplying all audio visuals and test equipment, which may be required.

The training course shall center on the operation and maintenance of all system equipment. The training shall also include use of all of the test equipment to be supplied as part of the system support material. Concentration shall be on setting up the configurations of all assemblies and diagnosing failures. Use of all manufacturer supplied software programs shall be covered in the sessions. Component level maintenance down to the circuit board level is not required for these sessions. However, the training courses should provide information on how to "replace" failed components with spare equipment.

The contractor shall submit a syllabus of the training course, which specifies what topics are to be covered during each day. The Engineer shall be provided a minimum of one week's notice prior to the scheduling of any training courses. The Engineer must approve the syllabus at least one week prior to starting any training courses. The Engineer reserves the rights to modify the training schedule as appropriate so as to obtain the appropriate number of hours on all of the system components.

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Training shall have been completed prior to the end of system acceptance and can be scheduled during the 30-day observation period in the system acceptance test period. The training must be completed prior to the end of the system acceptance test.

METHOD OF MEASUREMENT

Payment for Central Software and Hardware Integration will be made on a lump sum basis.

BASIS OF PAYMENT

The lump sum price bid shall include the cost of furnishing all equipment, materials, labor, integration, testing, tools, training, source code and documentation to complete the work. Payment shall be made upon successful completion of the 30 Day Final Acceptance Test. Progress payments will be made in the following percentages of the bid price for each item after each milestone is reached.

Approval of Shop Drawings	-	10%
Completion of Communication Trunk Integrity Tests	-	15%
Completion of Central Operations Tests for Remaining Components	-	25%
Completion of Training Program	-	25%
Completion of System Acceptance	-	25%

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DESCRIPTION:

This work shall consist of the furnishing and installation of fiber optic cables, passive components and miscellaneous equipment required for a complete cable plant in accordance with the contract documents and as directed by the Engineer.

MATERIALS:

Equipment to be installed as part of these bid items include the following:

1. Single Mode Fiber Optic Cable
2. Fiber Optic Cable Connectors and Splices
3. Fiber Optic Splice Trays
4. Fiber Optic Splice Cases
5. Fiber Optic Breakout Kits

Other passive components that are required to form a complete communication system include (1) terminators and (2) moisture and water sealants and cable caps for below grade applications. The components supplied shall be commercially available components whose specifications indicate state-of-the-art capability for the application.

1. Single-mode Fiber Optic Trunk Cable

The single-mode fiber optic cable shall incorporate a water swellable tape and be of a loose buffer tube cable design as specified herein. The fiber optic cable shall be all dielectric suitable for conduit and aerial installation in an outside cable plant environment and for indoor cabling environments when installed in accordance with the current NEC and local building code requirements. All cable shall consist of the number of fibers specified in the contract documents.

The cable shall meet the requirements of the United States Department of Agriculture Rural Utility Service (RUS) 7 CFR1755.900 and the requirements of ANSI/ICEA Standard for Fiber Optic Outside Plant Communications Cable, ANSI/ICEA S-87-640-1999 at a minimum, and shall be new, unused and

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of current design and manufacture. The cable manufacturer shall have a minimum of three years experience in manufacturing fiber optic cable of similar design.

Optical Requirements

The fiber shall meet the requirements of EIA/TIA-492CAAA "Detail Specification for Class Iva Dispersion-Unshifted Single-Mode Optical Fibers".

Attenuation: The nominal attenuation shall not exceed 0.4 dB/km at a wavelength of 1310 nm and 0.3 dB/km at a wavelength of 1550 nm. Fiber attenuation shall be uniform with no discontinuities greater than 0.1 dB. The attenuation at 1383 ± 3 nm shall not exceed 2.1 dB/km. The attenuation measurements shall be in accordance with EIA/TIA Standards FOTP-20, 59, 61 and 78. The average change in attenuation at extreme operational temperatures (-40° F to 158° F) shall not exceed 0.05 dB/km at 1550 nm. The magnitude of the maximum attenuation change of each individual fiber shall not be greater than 0.15 dB/km at 1550 nm. The change in attenuation measurements shall in accordance with EIA/TIA Standard FOTP-3.

Cutoff Wavelength: Not to exceed 1250 nm. Mode-Field Diameter:

$9.30 \pm 0.50 \mu\text{m}$ at 1310 nm.

$10.50 \pm 1.00 \mu\text{m}$ at 1550 nm.

Zero Dispersion Wavelength: $1312 \text{ nm} \pm 10 \text{ nm}$.

Zero Dispersion Slope: Not to exceed $0.092 \text{ ps}/(\text{nm}^2 \times \text{km})$. Polarization Mode Dispersion: Not to exceed $0.5 \text{ ps}/(\text{km})^{1/2}$

Dispersion: Less than $3.5 \text{ ps}/(\text{nm} \times \text{km})$ for 1285 nm through 1330 nm and less than $18 \text{ ps}/(\text{nm} \times \text{km})$ at 1550 nm as measured in accordance with EIA/TIA Standard FOTP-169.

Mechanical Requirements

Fibers

All optical fibers shall be Corning glass fibers or approved equivalent. All fibers within a given cable shall be from the same manufacturer, and shall contain no factory splices. Each fiber shall conform to the following minimum requirements:

- Typical Core Diameter: $8.3 \mu\text{m}$ (0.327mil)
- Cladding Diameter: $25.0 \pm 1.0 \mu\text{m}$ (1 mil to 0.04mil)

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- Core-to-Cladding Offset: Not to exceed 0.5 μm (0.02 mil)
- Cladding Non-Circularity: Not to exceed 1.0 % Color Coating

Each fiber shall have a color coating applied to it by the manufacturer. The coating shall not affect the optical characteristics of the fiber. The basic color configuration shall be as follows, in accordance with EIA/TIA-598-A:

- | | | | |
|-----------|----------|----------|------------|
| 1. Blue | 4. Brown | 7.Red | 10. Violet |
| 2. Orange | 5. Slate | 8.Black | 11. Rose |
| 3. Green | 6. White | 9.Yellow | 12. Aqua |

The nominal colored fiber diameter shall be 250 μm . (10 mil). Primary Coating

Each fiber shall have a dual layered, UV acrylate coating applied to it by the manufacturer. The coating shall be mechanically strippable without damaging the fiber. The coating diameter shall be 245+10 μm (10 mil \pm 0.4 mil).

Central Strength Member: The strength member shall consist of a dielectric, glass-reinforced plastic rod. Buffering

All fibers shall be enclosed in non-conductive loose buffer tubes. Each buffer tube shall contain up to twelve (12) fibers. The Contractor shall submit the fiber count per buffer tube and the buffer tube count configuration to the Engineer for approval. The fiber shall not adhere to the inside of the buffer tube. Each buffer tube containing fibers shall be color coded in a similar scheme as the fiber color. The basic color configuration shall be as follows, in accordance with EIA/TIA-598-A:

- | | | | |
|-----------|----------|-----------|------------|
| 1. Blue | 4. Brown | 7. Red | 10. Violet |
| 2. Orange | 5. Slate | 8. Black | 11. Rose |
| 3. Green | 6. White | 9. Yellow | 12. Aqua |

In basic color configuration is repeated with the inclusion of a black tracer for buffer tubes 13 through 24.

In buffer tubes containing multiple fibers, the colors shall be stable during temperature cycling and not subject to fading or smearing onto each other or into the gel filling material. Colors shall not cause fibers to stick together. Buffer tubes shall be of dual-layer construction.

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The buffer tubes shall be filled with a non-hygroscopic gel to prevent water and moisture penetration. The gel shall contain anti-oxidant additives, and the gel shall be readily removable with conventional solvents. The gel shall be non-toxic and dermatologically safe to exposed skin. It shall be chemically and mechanically compatible with all cable components, non-nutritive to fungus, non-hygroscopic and electrically non-conductive.

Filler Rods: Filler rods shall be used to fill all unused buffer tubes, or shall be used instead of unused buffer tubes. The filler rod shall be a solid polyethylene material and shall be natural in color. The filler rods shall maintain the concentricity of the cable cross section where required.

Stranding: The buffer tubes shall be stranded around the central strength member using the reverse oscillation (S-Z) stranding process. Water swellable yarns shall be applied longitudinally along the central member during stranding.

Water Swellable Tape: A water swellable tape shall be applied longitudinally over the stranded tubes/fillers. The water swellable tape shall be non-nutritive to fungus, electrically non-conductive and homogenous. It shall also be free from dirt and foreign matter.

Tensile Strength Provisions: Aramid yarn shall be helically stranded evenly around the cable core to provide tensile strength. The yarn shall enable the cable to withstand a maximum pulling force of 607 lbs during installation and 200 lbs long term installed without changing the characteristics of the optical fibers. Each length of cable shall have sufficient strength to be installed in continuous lengths as specified on the plans.

Outer Jacket: A medium density polyethylene (or approved equal) outer jacket shall be applied over the entire cable assembly. The outer jacket shall have a minimum nominal jacket thickness of 1/16 inch. The polyethylene shall contain carbon black and shall not promote the growth of fungus. Jacketing material shall be applied directly over the strength members and the water swellable tape. The outer jacket shall contain no metallic elements and shall be of a consistent thickness.

The MDPE jacketed material shall be as defined in ASTM D1248, Type II, Class C and Grades J4, E7 and E8. The jacket shall be marked in contrasting color at 2 feet intervals with the following information: NYSDOT - INFORM FIBER OPTIC CABLE - XXX - YYYY where XXX shall equal the number of optical fibers in the cable and YYYY shall be the month and year that the cable was manufactured. The height of the markings shall be approximately 3/32 inch.

In addition, the outer jacket shall have sequential meter markings as approved by the Engineer. The actual length of the cable shall be within -0% +1% of the length markings.

Ripcord: The cable shall contain a ripcord under the sheath to facilitate cable preparation.

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Bend Radius: The cable shall be capable of withstanding a minimum bending radius of ten (10) times its outer diameter during operation and fifteen (15) times its outer diameter during installation without changing the characteristics of the optical fibers.

Diameter: The outer diameter of the cable shall be less than 19/32 inch for cables containing 72 fibers or less and 13/16 for cables containing between 72 fibers and 288 fibers.

Other Requirements

Manufacturer's Certification: The cable manufacturer shall certify that each reel of cable furnished, meets or exceeds the following specifications:

Fluid Penetration: When a one meter static head of water or equivalent continuous pressure is applied at one end of a one meter length of filled cable for one hour, no water shall leak through the open cable end. The water penetration testing shall be performed in accordance with EIA/TIA Standard FOTP-82.

Filling Compound Flow: When tested in accordance with EIA/TIA Standard FOTP-81, the cable shall exhibit no flow (drip or leak) of filling or flooding compound at 158° F.

Compressive Strength: When tested in accordance with EIA/TIA Standard FOTP-41, the cable shall withstand a minimum compressive load of 126 lb/inch applied uniformly over the length of the sample and applied at the rate of 0.1 inch per minute. The load shall be maintained for a period of 1 minute and then decreased to 63 lb/in. The 63lb/in load shall be maintained for a period of 10 minutes. Attenuation measurements shall be performed before release of the 63 lb/in load. The change in attenuation shall not exceed 0.15 dB at 885lb/in.

Tensile Loading and Bending: When tested in accordance with EIA/TIA Standard FOTP-33, using a maximum mandrel and sheave diameter of 22 inch, the cable shall withstand a rated tensile load of 600 lbs and a residual load of 30% of the rated installation load. The axial fiber strain shall be $\leq 20\%$ of the fiber proof level after completion of 10 minutes of conditioning and while the cable is under the residual load. The change in attenuation at residual load and after load removal shall not exceed 0.15 dB at 1550 nm.

Impact Resistance: When tested in accordance with EIA/TIA Standard FOTP-25 except that the number of cycles shall be two at three locations along a one meter cable length and the impact energy shall be at

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least 3.24lb/ ft (in accordance with ICEA S-87-640), the change in attenuation shall not exceed 0.15 dB at 1550 nm.

Cable Flex: When tested in accordance with EIA/TIA Standard FOTP-104, the cable shall withstand 25 mechanical flexing cycles around a sheave diameter not greater than 20 times the cable diameter. The fibers shall not experience an attenuation change greater than 0.15 dB at 1550 nm. The cable jacket shall exhibit no cracking or splitting when observed under 5X magnification.

Temperature Cycling: When tested in accordance with EIA/TIA Standard FOTP-3, the change in attenuation at extreme temperatures (-40°F to +158° F) shall not exceed 0.15 dB/km at 1550 nm.

Low or High Temperature Bending: When tested in accordance with EIA/TIA Standard FOTP-37, the cable shall withstand four full turns around a mandrel of # 20 times the cable diameter for four hours at test temperatures of -22°F and +140°F. Neither the inner nor outer surfaces of the jacket shall exhibit visible cracks, splits, tears or other openings. The fibers shall not exhibit a change in attenuation greater than 0.30 dB/km at 1550 nm.

Cable Twist: When tested in accordance with EIA/TIA Standard FOTP-85, a length of cable no longer than 6½ft shall withstand 10 cycles of mechanical twisting. The fibers shall not experience an attenuation change greater than 0.1 dB at 1550 nm. The cable jacket shall exhibit no cracking or splitting when observed under 5X magnification.

2. Fiber Optic Drop Cable

Fiber optic drop cables shall be installed in conduit, between the mainline fiber optic backbone cable and equipment cabinets patch panels as shown on the plans. They shall be spliced to the appropriate fiber within approved splice cases in pullboxes adjacent to equipment cabinets as specified.

Optical Requirements: The fiber optic drop cables shall have identical optical characteristics as the single-mode fiber optic trunk cable specified above.

Material Requirements

The drop cable shall have the identical physical configuration as the single-mode fiber optic trunk cable specified above. The fiber optic drop cable shall contain twelve (12) or more fibers. The number of fibers per drop cable shall be selected to allow for a minimum of 50% spare for the drop location.

The drop cable shall be able to withstand a minimum of 100 lbs of pulling force during installation.

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The Contractor shall submit the drop cable buffer tube count configuration and fiber count per buffer tube to the engineer for approval.

The individual fibers in each drop cable shall be unterminated on one end and have a factory installed ST connector on the other end. The unterminated end shall be fusion spliced to the appropriate mainline fiber in a splice case and the terminated end shall interface with the cabinet distribution rack specified under a separate contract item. The manufacturer shall factory test the cable assembly with connectors and provide results to the Engineer for approval prior to field installation.

The drop cable shall be of sufficient length to be installed as shown on the plans, with a minimum of 10 ft of slack provided on either end.

The Contractor shall follow the drop cable manufacturer's recommendation in the installation of the drop cables, including the individual breakout fibers.

3. Fiber Optic Connectors:

Fiber optic connectors shall be factory installed. Field installation of connectors shall only be permitted with the express consent of the Engineer and will be considered on a case by case basis. The connectors shall meet the following requirements:

- Type ST twist lock (bayonet).
- Uses ceramic ferrules
- Fiber secured within the ferrule with epoxy, as specified by the connector or epoxy manufacturer.
- Operating temperature: -4°F to +158°F
- Insertion loss: 0.5 dB maximum
- Return loss: 55 dB minimum

4. Splice Cases

The Contractor shall furnish and install fiber optic splice cases in locations where splices require protection. The typical location where they will be required is in pullboxes where the fiber optic trunk cable will be spliced to fiber optic drop cables. The splice cases shall meet the following minimum requirements:

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- The case shall be constructed of a rigid, high strength plastic material. The case shall be waterproof with the appropriate gaskets and protection to provide moisture integrity. When installed, the case shall be capable of withstanding severe conditions of moisture, vibration, impact, cable stress and temperature extremes.
- The case shall be capable of holding the type of splice trays specified herein, for fusion and ribbon splices. The case shall have the capability of holding trays from various manufacturers. The basic case shall have the capacity to hold three (3) splice trays with 24 splices per tray.
- The basic case shall have the input/output capacity for 6 cables.
- The case shall be re-enterable without disturbing the fibers or the fiber splices. No special tools shall be required for installation of maintenance of the case. All hardware and miscellaneous parts shall be standard industry equipment.
- The splice case shall be mountable to standard U-shaped sign channels using stainless steel hardware, or manufacturer approved hardware. Mounting shall be as shown on the details.
- Nominal dimensions of the basic case shall be 22 inch long by 9 inch wide by 9 inch high. The basic case shall weigh 20 lbs maximum.
- The splice case shall have a termination block to terminate the central strength members of the fiber optic cables.
- The case shall be able to accommodate the total cables and number of cable trays and number of splices equal to or greater than the fiber count of the largest cable within the splice case or as called for in the plans.

5. Splice Trays

The Contractor shall furnish and install fiber optic splice trays to organize and store splices within splice cases. The trays shall be compatible with the fiber optic splices and splice cases specified herein and shall meet the following minimum requirements:

- The tray shall have the capacity for 24 splices. It shall be compatible with the fusion splices specified herein but shall also be adaptable to hold mechanical splices.
- The tray shall accommodate up to 8 loose tube buffers. No cable ties are to be used. The loose tube buffers shall be secured with a tube guide or channel snap.
- The tray shall accommodate both 250 micron and 900 micron fiber.

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- Slack fiber within the tray shall be placed in an oval shape along an inside wall of the tray.
- The fiber optic splice trays shall be stackable within the splice case. Any tray within a stack shall be accessible without disassembly of any of the other trays.
- The nominal dimensions of the splice tray shall be 16 inch long by 4 ½ inch wide by ½ inch high.

6. Fiber Optic Breakout Kits

The fiber optic breakout kits contain all the tools and materials necessary to complete the installation of the fiber optic backbone and drop cables. It shall include, as a minimum, the following equipment:

- Pulling eyes with protective covering for the installation of preterminated fiber optic drop cable.
- Fiber optic installer test equipment, fusion splicers, test cables, connector adapters, inspection tools, attenuators, tracers, continuity checkers, consumables and all ancillary equipment.

Quality Assurance Provision

All optical fibers shall be proof tested by the fiber manufacturer at a minimum load of 100 ksi.

All optical fibers shall be attenuation tested. The attenuation of each fiber shall be provided to the Engineer with each reel of cable furnished.

The fiber optic cable shall conform to the following requirements:

Environmental Requirements

The cable shall function within specifications over the following temperature ranges:

- Shipping/Storage: -58°F to 158°F
- Installation: -22°F to 158°F
- Operation: -40°F to 158°F

CONSTRUCTION DETAILS:

All fiber optic cable will be installed in innerduct placed in steel conduit, steel conduit, lashed to or messenger cable, or overlashed to existing cables as indicated in these contract documents or otherwise

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directed by the Engineer. All fibers in the fiber optic cable shall be spliced and/or terminated in designated field cabinets or pullboxes only.

Prior to the installation of the fiber optic cable the Contractor shall submit his proposed cable plant design to the Engineer for approval. No cable shall be installed until the proposed cable plant design submission is approved by the Engineer. The cable plant design shall include the following:

- Catalog cuts and shop drawings for all cable, connectors, splice equipment, splice enclosures, splice trays and cable installation and test equipment.
- Preliminary locations of all proposed splices.
- Proposed pullbox locations where hand assists or intermediate assist winches will be required during installation.
- Proof of the experience requirements as defined in this special specification.
- Cable manufacturer's recommended cable installation techniques, both in conduit and overlashed to messenger or existing cable, such that the optical and mechanical properties of the cables are not degraded at the time of installation. The proposed recommendations shall include the following:
 - Cable manufacture's approved pulling lubricant for use on the cable and method of application.
 - No other lubricants will be permitted.
 - Installation set-up including size and types of rollers, feeder guides, tension gauge make and model number, attachment of pulling jig to jacket and direction of pull.
 - Method to overlash the cables to existing cables including spacing of drip loops, lashing material, slack cable storage.
 - Maximum pulling tensions, which shall specify both pulling from the cable's conductors and for pulling from the cable's outer jacket.
 - Minimum bend radii, which shall specify a radius both loaded and unloaded.
 - Method to install multiple cables.

The cable plant design shall be submitted at the Milestone specified in the Special Note of the Contract Documents.

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Experience Requirements

Personnel involved in the installation, splicing and testing of the fiber optic cable shall meet the following requirements:

- A minimum of seven (7) years experience in the installation of fiber optic cables, including fusion splicing, terminating and testing single mode fibers.
- Five (5) installed systems where fiber optic cables are installed in outdoor conduits and aerial plants and the systems are in continuous satisfactory operation for at least two (2) years. The Contractor shall submit as proof, photographs or other supporting documents, and the names, addresses and telephone numbers of the operating personnel who can be contacted regarding the fiber optic systems.
- One (1) fiber optic cable system (which may be one of the five in the preceding paragraph) which the Contractor can arrange for inspection and demonstration to INFORM representatives and the Engineer. Test records for the system including cable and splice loss shall be furnished for examination by the Engineer. A system splice enclosure and a patch panel selected at random by the Engineer shall be opened by the Contractor for inspection of workmanship. All inspection activities shall be approved in writing by the system owner prior to actual field inspection.
- Splicers shall have been trained and certified by the manufacturer of the fiber splice material to be used, in fiber optic splicing procedures. Proof of this training must be submitted to the Engineer for approval.
- Installers shall have been trained and certified by the manufacturer of the fiber optic cable to be used, in fiber optic cable installation and handling procedures. Proof of this training must be submitted to the Engineer for approval.
- Personnel involved in testing shall have been trained and certified by the manufacturer of the fiber optic cable test equipment to be used, in fiber optic cable testing procedures. Proof of this training must be submitted to the Engineer for approval.

Slack Cable Storage

Slack cable shall be stored underground on approved racks in fiber optic pullboxes, at grade in equipment cabinets, and overhead on pairs of approved cable snowshoes. Quantity of slack cable to be stored shall be as indicated in the contract documents and as approved by the Engineer.

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Splicing Requirements

All optical fibers shall be spliced to provide continuous runs. Splices shall be allowed only at locations designated in the approved cable plant layout or as approved by the Engineer. All splices shall be performed in a controlled, clean environment such as a Contractor designated splicing truck/or van.

The splices shall meet the following requirements:

- a. All splices shall use the fusion technique. Fusion splicing equipment shall be provided by the Contractor and shall be cleaned, calibrated and specifically adjusted to the fiber and environmental conditions at the start of each shift. Splice enclosures, tools and procedures, shall be approved by the cable manufacturer as being compatible with the cable type being delivered.
- b. Only buffered tubes containing fibers to be spliced shall be opened. The other tubes shall be neatly looped and stored in the enclosure.
- c. Each spliced fiber shall be packaged in a protective sleeving or housing. Bare fibers shall be completely re-coated with a protective RTV, gel or similar substance, prior to application of the sleeve or housing, so as to protect the fiber from scoring, dirt or microbending.
- d. Rack mounted organizer trays shall be used to hold the spliced fibers, with each fiber neatly secured to the tray.
- e. Splice loss shall not exceed a mean of 0.1 dB per link. A link is defined as the fiber optic path between two active components. No splice loss shall exceed 0.15 dB. If a splice is measured to exceed 0.15 dB during the splicing process, it shall be remade until its loss falls below 0.15 dB or the Engineer waives the 0.15 dB requirement. Each attempt shall be recorded for purposes of acceptance. If the mean exceeds 0.1 dB in any link, splices in the link shall be remade until the mean loss does not exceed 0.1 dB
- f. All splice losses shall be recorded in tabular form and submitted to the Engineer in paper and electronic formats for approval. If an optical time domain reflectometer (OTDR) is used to record splice loss, chart recordings of the "signature" shall be submitted with the splice data with a record of all OTDR settings and the OTDR locations written on the trace.

Installation

Fiber optic cable shall be installed in accordance with the approved manufacturer's recommendations. In addition the following requirements shall be met:

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- a. The number of pullboxes and their locations shall be as shown on the Contract Documents. The Contractor may be required to install the cable one pullbox at a time. The direction of the cable pull shall be determined by the Contractor and shall require the approval of the Engineer.
- b. A minimum of 30 ft of cable slack, or as approved by the Engineer, shall be provided in pullboxes containing splices or otherwise designated on the Contract Documents or as directed by the Engineer. Additional slack, as indicated on the approved cable installation plan, may be provided for closure preparation and splicing.
- c. No fiber optic cable shall be pulled through more than one 90 degree bend unless so indicated on the approved Contract Documents or specifically approved by the Engineer.
- d. The cable shall not be pulled over edges or corners, over or around obstructions, or through unnecessary curves or bends.
- e. The cable shall be looped in and out of cabinets and pull boxes to provide adequate slack and the least amount of stress on the fibers. The Contractor shall ensure that the cable is not damaged during storage or installation.
- f. Fiber optic cable ends shall be kept sealed at all times during installation, using a method recommended by the cable manufacturer and approved by the Engineer. The cable end shall remain sealed until the Contractor terminates the fiber cables. Cables that are not immediately terminated shall have a minimum of 6 ½ ft of slack.
- g. When using lubricants, the Contractor shall adhere to the cable manufacturer's requirements for the proper amount, application tools and method, and removal of the lubricant from the exposed cable.
- h. Optical fiber cable shall be installed in continuous lengths without intermediate splices throughout the project except where splices are indicated on the Contract Documents or approved by the Engineer. Splices shall only be in reenterable splice enclosures mounted in pullboxes, junction boxes and underground vaults.
- i. The fiber optic drop cable shall be spliced to either the backbone or distribution cable at the locations indicated in the Contract Documents or as directed by the Engineer.
- j. The maximum pulling tensions and minimum bending radii shall not be violated at any time during installation. The Contractor shall consult with the Engineer concerning existing conduit, pull boxes, and risers, which could force the violation of the minimum bending radius for the fiber optic cable. The Contractor shall obtain approval from the Engineer if modifications to these existing facilities are required. Violation of these parameters shall be cause for rejection of the installed cable.

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k. Prior to any installation of cable, the Contractor shall clean existing conduit in accordance with the requirements of these special provisions.

l. Prior to overlashing cable, the Contractor shall inspect the existing aerial cable plant and report any deficiencies that may hinder the proper installation of the new cable to the Engineer who will determine, what, if any, action should be taken.

m. Slack cable and innerduct where pulled through a pullbox shall be racked to the pullbox wall.

Splicing Requirements

a. All optical fibers shall be spliced to provide continuous runs.

b. Prior to splicing the Contractor shall test each fiber of the installed cable for continuity, anomalies (events above 0.3 dB) and attenuation using an Optical Time Domain Reflectometer (OTDR) at wavelengths of 1310 nm and 1550 nm.

c. Only the fibers designated for splicing shall be spliced. All other fibers shall be routed through the splice enclosure with at least 1 ft of slack left within the enclosure. Only buffer tubes containing fibers to be spliced shall be opened.

d. Splices shall be made only at locations designated in the approved cable plant layout or as approved by the Engineer.

e. Where two backbone cables are routed in the same duct bank, both cables shall not be spliced in the same pull box.

Termination Requirements

The connector loss for complete connection to the terminal equipment shall not exceed a mean of 0.5 dB. No connector losses above 1.0 dB shall be permitted.

Unused optical fibers shall be properly protected with sealed end caps.

Documentation Requirements

Ten (10) complete sets of operation and maintenance manuals shall be provided. The manuals shall, as a minimum, include the following:

- Complete and accurate as-built schematic diagrams showing the fiber optic cable plant and locations of all splices.

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- Complete performance data of the cable plant showing the losses at each splice joint and each terminal connector.
- Installation, splicing, terminating and testing procedures.
- Complete parts list including names of vendors.
- Complete maintenance and trouble-shooting procedures.
- One (1) month prior to installation, ten (10) copies of the Contractors Installation Practices shall be submitted for approval. This shall include practices, list of installation equipment, and splicing and test equipment. Field quality control procedures shall be detailed as well as procedures for corrective action.

Testing Requirements

The following tests shall be conducted. All tests shall be conducted in accordance with approved test procedures. The Contractor shall submit test procedures and forms in paper and electronic formats for approval to the Engineer.

Existing Fiber Cable Verification Test: Prior to splicing fibers installed under this contract to existing fibers (where designated in the plans), the Contractor shall verify the loss characteristics of the existing fiber. Any anomalies shall be reported to the Engineer.

Pre-Installation Tests

The fiber optic cable shall be inspected and tested at the site storage area prior to installation.

Proper fiber cladding and fiber tube colors shall be verified by visual inspection. Any difference discovered from approved fiber optic cable plant layout or approved catalogue cut sheets for the cable shall be grounds for rejection of the cable.

Each optical fiber in the cable shall be tested from one end with an OTDR compatible with wavelength and fiber type. Testing shall check for continuity, length, anomalies, and approximate attenuation at both 1310nm and 1550nm wavelengths. Each measurement shall be recorded with color, location and type of fiber measure. In the event that a meaningful measurement cannot be made from one end, it shall be performed from the opposite end of that fiber.

Post-Installation Tests

Pre-splice and Post-splice testing shall be performed as follows:

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Pre-Splice Testing

After installation and prior to splicing or terminating each optical fiber in the cable shall be tested again for the loss characteristics at both 1310nm and 1550nm wavelengths. Both directions of operation of the fiber shall be tested.

Post-splice Testing

After each splice and connector installation, each optical fiber span including all black/spare fibers shall undergo the following tests after installation of all connectors and splices. A span is defined as a continuous length of fiber including all splices and connectors:

- Using an OTDR test each span at 1310 nm and 1550 for fiber attenuation, continuity, length, and anomalies. Each optical fiber shall meet the following acceptance criteria:
 - Attenuation: Not to exceed 0.4 dB/km + 0.1 dB/splice + 0.5 dB/connector. The number of splices and cable attenuation shall be based upon the approved cable plant layout.
 - Anomalies: No event shall exceed 0.3 dB. If any event is detected that value, the contractor shall repair or replace that section of cable.
 - Using an optical source and a power meter measure the attenuation from both ends. The measured attenuation shall be meet the criteria defined for the attenuation using the OTDR.

All cable that fails to meet the aforementioned requirements shall be replaced.

The Contractor shall submit to the Engineer a tabulated list of fibers and the actual end-to-end measured values from the above tests and all traces and loss length printouts.

Each fiber shall be listed according to the color code and span. This test data shall be the basis of acceptance for the fiber.

For optical fibers spliced to existing fibers this test shall be repeated between the control center and the field termination after the new and existing fibers have been spliced together. If a fiber fails to meet the loss characteristics for the spliced section fiber, the Contractor shall determine whether the excessive loss is the result of an anomaly in the new section of fiber, splice or existing section of fiber. The Contractor will not be responsible for repairing the existing fiber. The Contractor shall, however, be responsible for the new section of fiber and the splice between the two sections.

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METHOD OF MEASUREMENT:

The fiber optic cable will be measured for payment as the number of linear feet of each size actually furnished and installed in accordance with the contract documents.

BASIS OF PAYMENT:

The unit price bid per foot for Single Mode Fiber Optic Trunk Cable and Fiber Optic Drop Cable shall include the cost of furnishing all labor, material, tools and equipment and testing of the fiber optic cable to complete the work. The cost of furnishing and installing all passive components shall be incidental to and included in the pay item for fiber optic cable. All splicing, including set-up and individual terminations and connectors shall also be included in the pay item for fiber optic cable. All cable racks, snowshoes and other miscellaneous hardware necessary for slack cable storage shall also be included in the pay item for fiber optic cable.

Progress payment will be made as follows:

- Sixty percent of the bid price of the completed cable plant will be paid upon completion of installation and satisfactory completion of the post-installation tests.
- Twenty-five percent of the bid price will be paid upon satisfactory completion of all subsystem tests as described in the Special Provisions.
- Fifteen percent of the bid price will be paid upon satisfactory completion of Final System Acceptance.

ITEM 685.0720XXNA – HIGHLY REFLECTORIZED EPOXY PAVEMENT MARKINGS, 20 MILS (TRIPLE DROP)

DESCRIPTION:

Under this work the contractor shall furnish and apply highly reflectORIZED epoxy pavement markings in accordance with these specifications, the Contract Documents, the MUTCD with the NYS Supplement, or as ordered by the Engineer.

Items for Special Markings include stop bars and crosswalks.

Yield line symbols are isosceles triangles with height equaling 1.5 times the base dimension:

- A small yield line symbol shall have a base dimension of one foot.
- A large yield line symbol shall have a base dimension of two feet.
- Yield line symbols are to be installed with the Apex of the triangle oriented towards oncoming traffic.

The epoxy marking material shall be hot-applied by spray methods onto bituminous and portland cement concrete pavement surfaces at the thickness and width shown on the Contract Documents. The triple drop system shall consist of a combination of highly reflective composite optics, defined as a structural center core surrounded by high index microcrystalline ceramic beads, wet/night visibility beads, and standard glass beads. The cured epoxy marking shall be an adherent, highly reflectORIZED stripe that will provide wet night retro-reflectivity.

MATERIALS REQUIREMENTS:

White and Yellow Epoxy ReflectORIZED Pavement Markings 727-03
Glass Beads for Pavement Markings 727-05

Microcrystalline Ceramic Beads. The Microcrystalline Ceramic Beads must meet the following requirements:

- Composed of highly reflective particles having a structural center core surrounded by high refractive index microcrystalline ceramic beads and designed to be applied to epoxy pavement marking paint.
- Refractive index of 2.30 minimum when tested using the liquid oil immersion method.
- Either white or yellow tinted as required.
- Appearance in Table 1, below or approved equal.

Product Name	Manufacturer Location
3M Series 70E-White	3M Traffic Control
3M Series 71E-Yellow	Materials Division Brownwood, TX

Packaging and Shipment. Shipped and packaged in accordance with commercially accepted standards. Clearly display the name of the product, the name and address of the manufacturer, the quantity of material, the date of manufacture, and the date of expiration or the shelf life, on each container or on the shipping invoice.

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Basis of Approval. Approvals will be based upon independent lab analysis and field testing in accordance to this specification and Department directives. The Contractor shall submit independent lab analysis to Director of Materials and arrange for field testing through the General Engineering Section of the Materials Bureau. If the product passes the requirements of this specification, it will be added to the Department's Approved List.

Basis of Acceptance. Epoxy Paint and Glass Beads for Pavement markings will be accepted on the basis of the appearance of the product on the Department's Approved List. Wet-Night Reflective Elements will be accepted based on manufacturer's certification that the product meets the requirements of this specification.

EPOXY PAINT APPLICATION EQUIPMENT

In general, a mobile applicator shall be a truck mounted, self-contained pavement marking machine, specifically designed to apply epoxy resin materials and reflective glass spheres in continuous line patterns. The applying equipment shall be maneuverable to the extent that straight lines can be followed and normal curves can be made in a true arc. In addition, the truck mounted unit shall be provided with accessories to allow for the marking of cross hatching and other special patterns as directed by the Engineer.

At any time throughout the duration of the project, the Contractor shall provide free access to his epoxy applying equipment for inspection by the Engineer or his authorized representative.

The Engineer may approve the use of a portable applicator in lieu of mobile truck mounted accessories for use in applying special markings only, provided such equipment can demonstrate satisfactory application of reflectorized epoxy markings in accordance with these specifications.

Mobile applying equipment shall be capable of installing up to 19 miles of epoxy reflectorized pavement markings in an eight hour day and shall include the following features:

1. Individual tanks for the storage of Part A and Part B of the epoxy resin.
2. Individual tanks for the storage of Standard Glass beads, Wet-Night Visibility Spheres, and Microcrystalline Ceramic Beads. Each tank shall have a minimum capacity of 3000 lbs.
3. Heating equipment of sufficient capacity to maintain the individual epoxy resin components at the manufacturer's recommended temperature for spray application.
4. Individual dispensers for the simultaneous application of Standard Glass Beads, Wet-Night Visibility Spheres, and Microcrystalline Ceramic Beads.
5. Metering devices or pressure gauges on the proportioning pumps, positioned to be readily visible to the Engineer.
6. All necessary spray equipment, mixers, compressors, and other appurtenances for

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(TRIPLE DROP)**

the placement of epoxy reflectorized pavement markings in a simultaneous sequence of operations as described in the Construction Details of this specification.

CONSTRUCTION DETAILS

General

Before any pavement marking work is begun, contractor shall submit a schedule of operations for the approval of the Engineer.

At least five (5) days prior to the start of work, the Contractor shall provide the Engineer with the manufacturer's written instructions for:

- Applying epoxy paint with Microcrystalline Ceramic Beads including but not be limited to, material mixing ratios and application temperatures

The Contractor shall provide and retain an on site manufacturer's representative to provide guidance regarding construction methods, and oversight of Microcrystalline Ceramic Beads application. The services of the manufacturer's representative shall be retained by the Contractor until the release by the Engineer.

When pavement markings operations are carried out under traffic, the Contractor shall provide all necessary flags, markers, signs, etc. in accordance with the MUTCD to maintain and protect traffic, and to protect marking operations and the markings until thoroughly set as per manufacturer's procedures.

Epoxy Paint Application

Pavement markings shall be applied in the general direction of traffic. Applications against the direction of traffic flow shall not be allowed.

Atmospheric Conditions. Epoxy pavement markings shall only be applied during conditions of dry weather and on thoroughly dry pavement surfaces. At the time of installation, the pavement surface temperature shall be a minimum of 50°F and the ambient temperature shall be a minimum of 50°F and rising. The Engineer shall be the sole determiner as to when atmospheric conditions and pavement surface conditions are such to produce satisfactory results.

Surface Preparation. The Contractor shall clean all surfaces by air blasting to remove all loose residues. Include power brooming or manual brooming, if necessary, to remove all loose residue. Make sure all pavement surfaces are free of oil, dirt, dust, grease, salt, and similar foreign materials at the time of application. The cost of cleaning these contaminants shall be included in the bid price of this item. If water blasting is used, allow the surface to thoroughly dry to the satisfaction of the Engineer, before application of any epoxy paint.

Application of Epoxy Reflectorized Pavement Markings

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Epoxy reflectorized pavement markings shall be applied at the width, thickness, and pattern designated in the Contract Documents.

New PCC Surfaces: Do not apply permanent epoxy pavement markings on new PCC surfaces until at least 30 days after placement, or such time as determined by the Engineer, to allow adequate cure of the PCC.

New Asphalt Surfaces: Do not apply permanent epoxy pavement markings on new asphalt pavement surfaces until at least 14 days after placement.

Marking operations shall not begin until applicable surface preparation work is completed and approved by the Engineer, and the atmospheric conditions are acceptable to the Engineer.

Pavement markings shall be applied by the following simultaneous operation:

1. The pavement surface is air-blasted to remove dirt and residues.
2. The epoxy resin, mixed and heated in accordance with the manufacturer's recommendations, is uniformly hot-sprayed onto the pavement surface at the minimum specified thickness. Epoxy paint shall be applied at the wet film thickness specified in the contract documents.
3. Standard Glass Beads, Wet-Night Visibility Spheres, and Microcrystalline Ceramic Beads are injected into or dropped onto the liquid epoxy marking. The first drop shall be Microcrystalline Ceramic Beads at a rate per manufacturer's recommendation; the second drop shall be Wet-Night Visibility Spheres at a rate of 5 pounds per gallon; and the third drop shall be Standard Glass Beads at a rate of 8 pounds per gallon.
4. The Contractor shall be responsible for removing, to the satisfaction of the Engineer, all tracking marks, spilled epoxy, and epoxy markings applied in unauthorized areas.

Defective Epoxy Pavement Markings

Repair defective markings, as determined by the Engineer and at no additional cost to the County, as follows:

1. Repair Method for insufficient film thickness; insufficient line width; and inadequate Standard Glass Bead, Wet-Night Visibility Sphere, and Microcrystalline Ceramic Bead coverage and/or retention:

Prepare the surface of the defective epoxy marking by grinding or blast cleaning. No other cleaning methods will be allowed. Surface preparation shall be performed to the extent that a substantial amount of the reflective glass spheres are removed and a roughened epoxy marking surface remains as determined by the Engineer.

Remove loose particles and foreign debris by brooming or blasting with compressed air

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just prior to reapplication of markings in accordance with this specification.

2. Repair Method for uncured or discolored epoxy and/or insufficient bond to pavement surface or existing durable marking:

Uncured epoxy shall be defined as applied material that fails to cure (dry) in accordance with the requirements of §727-03 Epoxy Paint or applied material that fails to cure (dry) within a reasonable time period under actual field conditions, as defined by the Engineer.

Discoloration shall be defined as localized areas or patches of brown, grayish or black colored epoxy marking material. These areas often occur in a cyclic pattern and often are not visible until several days or weeks after markings are applied.

The defective epoxy marking shall be completely removed and cleaned to the underlying pavement surface in accordance with the requirements of Section 635 - Cleaning and Preparation of Pavement Surfaces, at the Contractor's expense.

The extent of removal shall be the defective area plus any adjacent epoxy pavement marking material extending one meter in any direction.

After surface preparation work is complete, repair shall be made by reapplying epoxy over the cleaned pavement surface in accordance with the requirements of this specification.

Other defects not noted above, but determined by the Engineer to need repair, shall be repaired or replaced as directed by and to the satisfaction of the Engineer. All work in conjunction with the repair or replacement of defective epoxy reflectORIZED pavement markings shall be performed by the Contractor at no additional cost to the County.

METHOD OF MEASUREMENT

Pavement striping (regular lines, cross hatching and special markings) will be measured in feet along the centerline of the pavement stripe and will be based on a 4 inch wide stripe. Measurement for striping with a width greater than the basic 4 inches, as shown on the plans or directed by the Engineer, will be made by the following method:

$$\frac{\text{Plan Width of Striping (inches) X Feet}}{4 \text{ inches}}$$

This includes stripes 6 inches and wider, such as hatch lines, crosswalk bars and stop bars.

Letters and symbols will be measured by each unit applied. A unit will consist of one letter or one symbol. Example: "SCHOOL" would be paid as six units. Double and triple headed arrows will be measured as a single unit, but the "X" in railroad grade crossing markings (M.U.T.C.D. figure 8B-7) will be measured by linear feet of 4-inch stripe.

BASIS OF PAYMENT

**ITEM 685.0720XXNA – HIGHLY REFLECTORIZED EPOXY PAVEMENT MARKINGS, 20 MILS
(TRIPLE DROP)**

The unit bid price, shall include all labor, materials, and equipment to complete the work including the cost of cleaning and waste disposal associated with the preparation, installation and application of epoxy paint with standard glass beads and Microcrystalline Ceramic Beads. The cost for maintaining and protecting traffic during the marking operations shall be included in the price bid.

No payment will be made for the repair or replacement of defective epoxy reflectorized pavement markings.

<u>PAY ITEM NO.</u>	<u>DESCRIPTION</u>	<u>PAY UNIT</u>
685.072001NA	Highly Reflectorized White Epoxy Pavement Stripes – 20 mils (Triple Drop)	Foot
685.072002NA	Highly Reflectorized White Epoxy Pavement Letters – 20 mils (Triple Drop)	Each
685.072003NA	Highly Reflectorized White Epoxy Pavement Symbols – 20 mils (Triple Drop)	Each
685.072004NA	Highly Reflectorized White Epoxy Cross Hatching -20 mils (Triple Drop)	Foot
685.072005NA	Highly Reflectorized White Epoxy Pavement Stripes (Special Markings) 20 mils (Triple Drop)	Foot
685.072006NA	Highly Reflectorized Yellow Epoxy Pavement Stripes – 20 mils (Triple Drop)	Foot
685.072007NA	Highly Reflectorized Yellow Epoxy Pavement Stripes (Cross Hatching) 20 mils (Triple Drop)	Foot
685.072008NA	Highly Reflectorized White Epoxy Pavement Yield Line Symbols - Small - 20 mils (Triple Drop)	Each
685.072009NA	Highly Reflectorized White Epoxy Pavement Yield Line Symbols - Large - 20 mils (Triple Drop)	Each

ITEM 691.04000020 – TRAINING REQUIREMENTS

DESCRIPTION

This work shall consist of the meaningful and effective training of apprentices/trainees leading to their qualification as an entry level trade worker, professional support worker, or journeyworker in trades for the highway construction industry.

MATERIALS

None Specified.

CONSTRUCTION DETAILS

An Apprentice is defined as an individual who is enrolled in an apprenticeship training program that is registered with the NYS Department of Labor (NYSDOL). A Trainee is defined as an individual who is enrolled in an On-the-Job Training (OJT) program that is sponsored by the NYS Department of Transportation (NYSDOT) and approved by the Federal Highway Administration (FHWA).

At minimum, the number of apprentices/trainees identified in Chart A shall be utilized. If the minimum number is not met, good faith efforts (GFEs), to meet the required number consistently throughout the duration of the contract, must be documented.

Chart A	
Contract Bid Amount	Minimum # of Apprentices/Trainees
<\$5M	No Requirement unless specified in contract documents
\$5M to < \$10M	2
\$10M < \$30M	3
\$30M < \$100M	4
≥ \$100M	1 per \$25M of Contract Bid Amount (e.g., 9 for a \$240M bid amt)

The required minimum number of apprentice/trainees shall be sustained whenever meaningful training opportunities exist throughout the duration of the contract.

The minimum number of apprentices/trainees may be exceeded if there will be sufficient work to provide meaningful training opportunities.

Selection Criteria

Apprentices/Trainees shall be enrolled in either a NYSDOL registered apprenticeship training program or a NYSDOT OJT program approved by FHWA. The program must be for a trade or profession that is in support of the highway construction industry.

- Good faith efforts shall be made to employ the apprentices/trainees across multiple trades while taking into consideration which trades will have maximum opportunity for work.

ITEM 691.04000020 – TRAINING REQUIREMENTS

- Required journeyworker/apprentice ratios outlined in the prevailing wage rate schedule, the Contractor's workforce needs, and availability of candidates within a reasonable area of recruitment.
- Training in the general laborer/construction worker classification may be permitted when such training is significant and meaningful and documented with an approved training plan.
- Training is permissible for direct support professional positions such as office engineers, estimators, timekeepers, etc., where the training is documented in an approved training plan.

Prior to engaging in the recruitment of new apprentices/trainees, good faith efforts shall be made to employ apprentices/trainees who are at a variety of different stages in their training programs (first year, third year, etc.).

- Persons who have successfully completed an apprentice or trainee program providing journeyworker status in the same trade or work classification as will be used for training under this contract are ineligible candidates. Similarly, persons who have been gainfully employed as a journeyworker in the proposed trade by virtue of informal on-the-job training or otherwise are ineligible candidates.

The apprentices/trainees are not required to be directly employed by a prime contractor. (e.g., they can work for a subcontractor).

Documentation shall be maintained that verifies efforts made to ascertain if candidates met traineeship or apprentice criteria, such as proof of criteria-related questions on employee application forms and proof of past work experience verifications. The Contractor shall maintain records of these findings and provide them upon request.

Affirmative Action Targets

Good faith efforts (GFEs) shall be made to recruit and hire affirmative action (AA) targets, which are defined as women or individuals from minority groups who have experienced long term under-representation in the skilled trades as journeyworkers, or disadvantaged individuals. A disadvantaged individual is defined as a person who is either (a) a member of a family that receives public assistance, or (b) a member of a family whose income during the previous six (6) months, on an annualized basis, was such that the family qualified for public assistance, or whose income was at or below either the poverty level or 70% of the Lower Living Standard Income (LLSI) level for the person's county of residence This includes conducting systematic and direct recruitment through public and private sources likely to yield minority, women or disadvantaged apprentices/trainees.

Training Coordinator

For the duration of the contract, a training coordinator shall be designated by the Contractor and act as the contact person for training related communications. The training coordinator should be someone that has regular dealings and familiarity with the actual training direction and guidance being provided.

Training Programs

Apprentice training programs must be approved by the NYSDOL and Trainee training programs

ITEM 691.04000020 – TRAINING REQUIREMENTS

must be approved by NYSDOT. The approval process for new training programs can take time (30+ days), and approval is not guaranteed. Good faith efforts shall be made to have all training programs approved prior to start of construction.

Apprentices/trainees shall be provided a copy of their training program. Upon completion of a training program, the apprentice/trainee shall be provided a certificate of completion which identifies the training elements completed and the number of hours completed.

Training program information is available from NYSDOL Office of Apprenticeship Training Programs (ATCO@labor.state.ny.gov) and NYSDOT Office of Diversity & Opportunity (civilrights@dot.ny.gov)

Training Plans

Prior to the start of construction, a conceptual plan shall be submitted which outlines how the training requirements will be achieved on the contract. The plan shall identify anticipated contract work suitable for apprentices/trainees, any timeline/scheduling issues, anticipated sources for apprentices/trainees, steps taken to date to comply with the training requirements, and procedures for development of individual training plans for each apprentice/trainee.

Formalized training plans for each apprentice/trainee shall be submitted within fourteen (14) calendar days of the start of construction. All coordination with the Department/Project Sponsor regarding the training plan should be completed at this time. Written requests for submission at a later date will be considered based on provided justifications. The training plans may be adjusted throughout the duration of the contract as necessary.

The approved number of hours of anticipated qualifying training in each training plan is expected to be achieved by contract completion. Adjustments throughout the duration of the contract shall be made as necessary to best achieve the number of planned training hours stated in the training plans.

Individual training plans shall include:

- Name of the apprentice/trainee, trade, starting level (i.e., year of apprenticeship or training program).
- Apprentice/trainee projected start date, projected end date, and the reason for ending the training (e.g., training program completed, no remaining training opportunities, contract completion, etc.).
- An outline of the training program requirements the candidate has already completed and the requirements which the candidate still has left to complete. Provide the associated number of hours for each requirement. List classroom and on-site training requirements separately.
- Total number of on-site (non-classroom) hours left to complete the training program.
- Projection of the hours and elements of the remaining training program requirements which the candidate will be able to accomplish on the contract.
- A cost estimate for compensation which shows how the amount was calculated.
- Any known outside factors that might affect the training plan, such as if the apprentice/trainee will be working on other contracts or there may be time constraints of

ITEM 691.04000020 – TRAINING REQUIREMENTS

the apprentice (ex., planned future reassignment, leaving to attend school, moving/relocating, etc.).

- For each apprentice:
 - NYSDOL Form AT 14 (blue book) or acceptable equivalent.
 - NYSDOL Form AT 401 – *Apprenticeship Agreement/Documentation Form*.

Cost Estimate

A cost estimate for the anticipated training shall be submitted within 90 calendar days of the start of construction regardless of whether any training plans are allowed to be submitted at a later date.

Monthly Training Progress Report

For each apprentice/trainee, Form AAP 26 - *Monthly Training Progress Report* shall be submitted monthly whenever there are apprentices/trainees employed. In addition, for each apprentice/trainee, a summary of hours required to complete the various work elements of the training program, hours completed this period, and hours completed to date shall be submitted monthly. This summary shall be provided in sufficient detail to allow for assessment of whether the reported hours qualify for reimbursement.

Apprentices/trainees shall be reported on Form AAP 35 *Workforce and Training Utilization Schedule*.

Qualifying Training

Only training hours verified and approved of by the Engineer (or Project Sponsor) will be considered as qualifying training. Off-site training or training performed at other work sites does not qualify for compensation. Classroom training hours do not qualify for compensation.

Periodic Reporting / End of Service

Periodically copies of the training program and NYSDOL Form AT 14 (blue book) for apprentices/trainees may be required to be provided for auditing purposes and verification of training. It shall be reported whenever an apprentice or trainee ceases to be employed on a contract, and if an apprentice completes a trainee program a copy of their NYSDOL Form AT 14 (blue book) shall be provided.

Waiver Request

A waiver request may be submitted at any point in the process after contract letting. A request for a waiver of all or a portion of the requirements may be submitted.

The waiver request should include a detailed justification for the request, documentation of efforts made to solicit trainees and or apprentices, and contact person information (name, telephone number, E-mail address). Justifications that may warrant consideration include: no meaningful construction training opportunities will exist, lack of available apprentices/trainees, or lack of available work for apprentices or trainees.

If a waiver is granted for elimination of all apprentice/trainee requirements, all associated deliverables (e.g., training plans, cost estimate, monthly reports) are no longer required. If a waiver is granted for a reduction or an alteration to the requirements, any necessary revisions to training plans shall be provided within 3 workdays of the approved waiver.

ITEM 691.04000020 – TRAINING REQUIREMENTS

Notification is required to be given in a timely manner if, during the duration of the contract, the conditions upon which a waiver was granted have changed. Granted waivers are revokable and may be re-evaluated throughout the duration of the contract to assess need for modification.

Training Duration

An apprentice/trainee shall begin training as soon as feasible in trade related work and remain on the contract for at least as long as training opportunities exist in the trade, until completion of the training program, or until completion of the contract.

Maximum opportunity shall be provided to the apprentices/trainees for completion of their training program. Progress towards completion of work elements shall be monitored. When a work element of the training program is completed, apprentices/trainees shall be moved to other work processes or another training element to the extent that training opportunities exist. Should no such training opportunities exist, the apprentices/trainees may continue to be assigned to work related to the completed work element.

Apprentices/trainees who complete their training programs are expected to be retain as a journeyworker provided there is relevant contract work remaining. Continued work as a journeyworker does not qualify for reimbursement under this pay item.

Termination

An apprentice/trainee may be terminated at any time during training for: excessive absenteeism; lack of punctuality; breach of a “zero tolerance” policy for drug and substance use; and continued failure to perform work safely. However, termination shall not occur without:

- Documented counseling by the Training Coordinator about the reason(s) for termination
- Documented efforts by the Training Coordinator to resolve the problem
- Documented notification to the Engineer and Regional Compliance Specialist about the problem
- Written notification of intent to terminate to the Engineer and the Regional Compliance Specialist stating the reason(s) therefore
- An opportunity for confirmation of compliance with these pre-requisites.

METHOD OF MEASUREMENT

This work will be measured on a Dollars-Cents basis. The fixed amount shown in the proposal is not to be altered in any manner by the bidder. Should the bidder alter the amount shown, the altered figure will be disregarded, and the original price will be used to determine the total amount bid.

BASIS OF PAYMENT

Monthly reimbursement will be made based on the following calculation:

= (0.35) x (Base Journeyworker Prevailing Wage Rate) x (Hours of Qualifying Training Accomplished)

No adjustments to the base rate shall be allowed, such as for: fringes/supplemental benefits, premium rates (overtime, holiday, etc.), worker’s compensation insurance, FICA, state or federal

ITEM 691.04000020 – TRAINING REQUIREMENTS

unemployment insurance, commercial general liability (CGL) insurance, etc. When determining compensation, use the prevailing wage rate that was current at the time the training was provided.

Qualified training time will include only verified training properly completed and accounted for, including only those hours the apprentices/trainees received on-site training in the work elements included in their approved apprenticeship/OJT programs.

During any time period that it is deemed that satisfactory good faith efforts were not made to fulfill the training requirements and corresponding equal employment opportunity (EEO) goals in accordance with 102-11 *Equal Employment Opportunity Requirements* no reimbursements under this pay item will be made for any training provided during that time period

Regardless of the amount approved for the pay item, reimbursement will be made only for the number qualifying hours of training accomplished.

Requests for reimbursement beyond the fixed dollar amount for this work must be agreed to in advance.

NO TEXT ON THIS PAGE

APPENDIX 12-1

CONSTRUCTION CONTRACT REQUIREMENTS

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CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY, AND VOLUNTARY EXCLUSION (FHWA Section 1273 X)

A. The prospective bidder certifies to the best of its knowledge and belief that they and their Principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

2. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for a commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property;

3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with the commission of any of the offenses enumerated in paragraph (A)(2) of this certification; and

4. Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

B. Where the Bidder is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING (FHWA 1273 Section XI)

A. The prospective bidder certifies, by signing and submitting this bid or proposal, to the best of his/her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress, in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than federally appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress, in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying" in accordance with its instructions.

B. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U. S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

C. The prospective bidder also agrees by submitting his/her bid or proposal that he/she shall require that the language of this certification be included in all lower tier subcontracts which exceed \$100,000 and that such subrecipients shall certify and disclose accordingly.

THESE MUST BE INCLUDED IN ALL FEDERAL AID CONTRACTS AND MUST BE INCLUDED IN EACH BID PROPOSAL.

FALSE CLAIMS CERTIFICATION (31 USC §3729, NYS Finance Law Article 13)

Under the Federal False Claims Act, 31 U.S. Code §3729, any person or entity who knowingly presents, or causes to be presented to the Federal Government, a false or fraudulent claim for payment or approval is liable to the United States Government for a civil penalty of not less than \$5,000 and not more than \$10,000, plus three times the amount of damages the Government sustains.

Under the New York State False Claims Act, NYS Finance Law Article 13, any person or entity who knowingly presents or causes to be presented to the State of New York or Local Governments within the State of New York, a false or fraudulent claim for payment or approval is liable to the Government for a civil penalty of not less than \$6,000 and not more than \$12,000, plus three times the amount of damages the Government sustains.

“Knowingly” is defined as (1) actual knowledge; (2) acting in deliberate ignorance of the truth or falsity of information; or (3) acting in reckless disregard of the truth or falsity of information. No proof of specific intent to defraud is required.

The Contractor to whom the above-identified contract is to be awarded does hereby certify to the New York State Department of Transportation that it understands the prohibitions under the Federal and New York State False Claims acts and that it has not and will not submit or cause to be submitted any fraudulent claims in the submission of this bid or in connection with the above-identified contract. The Contractor further certifies that it understands retaliatory actions against employees and officers who initiate a *qui tam* (public) action on behalf of the government or cooperate in the investigation of a false claim are prohibited and are subject to an assessment of damages and penalties under the provisions of the Federal and New York State False Claims Acts.

THIS MUST BE INCLUDED IN ALL FEDERAL AID CONTRACTS AND MUST BE INCLUDED IN EACH BID PROPOSAL.

**NON-COLLUSIVE BIDDING CERTIFICATION
(NYS Finance Law §139-d and General Municipal Law §103-d)**

1. By submission of this bid:

(a) Each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief:

- (1) The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor.
- (2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and
- (3) No attempt has been made or will be made by the bidder to induce any other person, partnership, or corporation to submit or not to submit a bid for the purpose of restricting competition.

(b) A bid shall not be considered for award, nor shall any award be made where (a)(1)(2) and (3) above have not been complied with; provided, however, that if in any case, the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons, therefore. Where (a)(1)(2) and (3) above have not been complied with, the bid shall not be considered for award, nor shall any award be made unless the head of the purchasing unit of the state, public department, or agency to which the bid is made, or his designee, determines that such disclosure was not made for the purpose of restricting competition.

The fact that the bidder (a) has published price lists, rates, or tariffs covering items being procured, (b) has informed prospective customers of proposed or pending publication of new or revised pricelists for such items, or (c) has sold the same items to other customers at the same prices being bid, does not constitute, without more, a disclosure within the meaning of subparagraph one (a).

2. Any bid hereafter made to the state or any public department, agency, or official thereof by a corporate bidder for work or services performed or to be performed or goods sold or to be sold, where competitive bidding is required by statute, rule, or regulation, and where such bid contains the certification referred to in subdivision one of this section, shall be deemed to have been authorized by the board of directors of the bidder and such authorization shall be deemed to have included the signing and submission of the bid and the inclusion therein of the certificate as to non-collusion as the act and deed of the corporation."

**STATE NON-COLLUSIVE BIDDING CERTIFICATIONS MUST BE INCLUDED IN EVERY BID
PROPOSAL REGARDLESS OF WHETHER NYSDOT SPECIFICATIONS OR LOCAL
SPECIFICATIONS ARE USED.**

NON-COLLUSIVE BIDDING CERTIFICATION (2 CFR 1200)

"By submission of this bid, the Bidder does hereby tender to the Owner this sworn statement pursuant to Section 1128 of Title 23, U. S. Code-Highways and does hereby certify, in conformance with said Section 112 of Title 23, U. S. Code-Highways that the said Contractor has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the above contract."

The signatory to the proposal, being duly sworn, certifies that, EXCEPT AS NOTED BELOW, his/her company and any person associated therewith in the capacity of owner, partner, director, officer, or major stockholder (of five percent or more ownership):

1. Is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal agency,
2. Has not been suspended, debarred, voluntarily excluded, or determined ineligible by any Federal agency within the past three years,
3. Does not have a proposed debarment pending; and
4. Has not been indicted, convicted, or had a civil judgment rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past three years.

EXCEPTIONS: The Contractor should list any relevant information, attaching additional sheets to the proposal if necessary. (Exceptions will not necessarily result in disapproval but will be considered in determining responsibility. For any exception noted, the Contractor should indicate to whom it applies, the initiating agency, and the dates of actions. Providing false information may result in criminal prosecution or administrative sanctions).

FEDERAL NON-COLLUSIVE BIDDING CERTIFICATION MUST BE INCLUDED IN EVERY BID PROPOSAL REGARDLESS OF WHETHER NYSDOT SPECIFICATIONS OR LOCAL SPECIFICATIONS ARE USED.

**REPORTING VIOLATIONS OF NON-COLLUSIVE BIDDING PROCEDURES,
MISCONDUCT OR OTHER PROHIBITED CONTRACT ACTIVITIES**

**US DEPARTMENT OF TRANSPORTATION
OFFICE OF INSPECTOR GENERAL - FRAUD, WASTE & ABUSE HOTLINE**

The U.S. Department of Transportation (USDOT) Office of Inspector General (OIG) maintains a Hotline for receiving allegations of fraud, waste, abuse, or mismanagement in USDOT programs or operations. Persons with knowledge of bid collusion (i.e., contractors, suppliers, work persons, etc.), or other questionable contract-related practices (inadequate materials, poor workmanship, theft of materials, etc.), are encouraged to report such activities by calling the Hotline at 1-800-424-9071, emailing hotline@oig.dot.gov, or writing to the USDOT Inspector General, 1200 New Jersey Ave SE, West Bldg. 7th Floor, Washington, DC 20590. Allegations may be reported 24 hours a day, seven days a week by DOT employees, contractors, or the general public.

NEW YORK STATE OFFICE OF THE INSPECTOR GENERAL HOTLINE

The New York State Office of the Inspector General maintains a Hotline for receiving allegations of governmental misconduct. Reports of New York State governmental misconduct may be made in strict confidence to the Toll-Free 24-hour Statewide HOTLINE at 1-800-DO RIGHT (1-800-367-4448), the online complaint form at www.ig.ny.gov or in writing to the New York State Office of the Inspector General, Empire State Plaza, Agency Building 2 - 16th Floor, Albany, New York 12223.

**THIS PAGE MUST BE INCLUDED IN ALL FEDERAL AID CONTRACTS AND MUST BE INCLUDED
IN EACH BID PROPOSAL.**

GOALS FOR EQUAL EMPLOYMENT OPPORTUNITY (EEO) PARTICIPATION

The Contractor shall follow the requirements of NYSDOT Standard Specification §102-11 *Equal Employment Opportunity Requirements*. The goals for minority and female participation, expressed in percentage terms for the Contractor’s aggregate workforce in each trade on all construction work in the covered area, which is the county or counties in which the work is located, are as follows:

GOALS FOR PARTICIPATION OF MINORITIES					
COUNTY	%	COUNTY	%	COUNTY	%
Albany	3.2	Herkimer	2.1	Richmond	Table
Allegany	6.3	Jefferson	2.5	Rockland	22.6
Broome	1.1	Kings	Table	St. Lawrence	2.5
Bronx	Table	Lewis	2.5	Saratoga	3.2
Cattaraugus	6.3	Livingston	5.3	Schenectady	3.2
Cayuga	2.5	Madison	3.8	Schoharie	2.6
Chautauqua	6.3	Monroe	5.3	Schuyler	1.2
Chemung	2.2	Montgomery	3.2	Seneca	5.9
Chenango	1.2	Nassau	5.8	Steuben	1.2
Clinton	2.6	New York	Table	Suffolk	5.8
Columbia	2.6	Niagara	7.7	Sullivan	17.0
Cortland	2.5	Oneida	2.1	Tioga	1.1
Delaware	1.2	Onondaga	3.8	Tompkins	1.2
Dutchess	6.4	Ontario	5.3	Ulster	17.0
Erie	7.7	Orange	17.0	Warren	2.6
Essex	2.6	Orleans	5.3	Washington	2.6
Franklin	2.5	Oswego	3.8	Wayne	5.3
Fulton	2.6	Otsego	1.2	Westchester	22.6
Genesee	5.9	Putnam	22.6	Wyoming	6.3
Greene	2.6	Queens	Table	Yates	5.9
Hamilton	2.6	Rensselaer	3.2		

(45 FR 65976 – 10/3/1980)

GOALS FOR PARTICIPATION OF MINORITIES BRONX, KINGS, NEW YORK, QUEENS, AND RICHMOND COUNTIES			
Electricians	9.0 to 10.2	Bricklayers	13.4 to 15.5
Carpenters	27.6 to 32.0	Asbestos workers	22.8 to 28.0
Steam fitters	12.2 to 13.5	Roofers	6.3 to 7.5
Metal lathers	24.6 to 25.6	Iron workers (ornamental)	22.4 to 23.0
Painters	26.0 to 28.6	Cement masons	23.0 to 27.0
Operating engineers	25.6 to 26.0	Glaziers	16.0 to 20.0
Plumbers	12.0 to 14.5	Plasterers	15.8 to 18.0
Iron workers (structural)	25.9 to 32.0	Teamsters	22.0 to 22.5
Elevator constructors	5.5 to 6.5	Boilermakers	13.0 to 15.5
		All others	16.4 to 17.5

(43 FR 14888 – 4/7/1978)

GOAL FOR PARTICIPATION OF WOMEN

The goal for the participation of women is 6.9%.

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted). If the Contractor performs construction work outside of New York State, it shall apply the goals established for the covered area where the work is actually performed.

**REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Non-segregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
- XI. Certification Regarding Use of Contract Funds for Lobbying
- XII. Use of United States-Flag Vessels:

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e). The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally

classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S.

Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (see 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

- a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).
- b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO

program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

- a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.
- b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.
- c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.
- d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
- e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and

women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

- a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
- b. The contractor will periodically evaluate the spread of wages paid within each classification

to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals

(even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities:

The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:

The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

- a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.
- b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurances Required:

DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this

contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (1) Withholding monthly progress payments;
- (2) Assessing sanctions;
- (3) Liquidated damages; and/or
- (4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

11. Records and Reports:

The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

- (1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;
- (2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and
- (3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the

contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than \$10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on

a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act ([29 CFR part 3](#))), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act ([40 U.S.C. 3141\(2\)\(B\)](#)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred

during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided*, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH-1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in [29 CFR part 1](#), a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

- (i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;
- (ii) The classification is used in the area by the construction industry; and
- (iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

- (i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (ii) The classification is used in the area by the construction industry; and
- (iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to DBAconformance@dol.gov. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to DBAconformance@dol.gov, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an

authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

d. *Fringe benefits not expressed as an hourly rate.* Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided*, That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in § 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprourement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901–3907](#).

3. Records and certified payrolls (29 CFR 5.5)

a. Basic record requirements (1) Length of record retention. All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) Information required. Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) Additional records relating to fringe benefits. Whenever the Secretary of Labor has found under paragraph 1.e. of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been

communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

(4) Additional records relating to apprenticeship. Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. Certified payroll requirements (1) Frequency and method of submission. The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) Information required. The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (e.g., the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH–347 or in any other format desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division website at

<https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347/.pdf> or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in [29 CFR part 3](#); and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) *Use of Optional Form WH-347.* The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 will satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(3) of this section.

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original

handwritten signature or a legally valid electronic signature.

(6) *Falsification.* The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 3729.

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access (1) Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension

of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under [29 CFR part 6](#) any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices (1) Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they

perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeymen on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in

the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and [29 CFR part 30](#).

c. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeyworkers shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of

lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility. a. By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, [18 U.S.C. 1001](#).

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist,

harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#); or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#).

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchpersons and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any

violation of the clause set forth in paragraph 1. of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1. of this section. * \$31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of

whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its procurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901](#)–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate,

threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring

leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the

contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29

CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be

performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of \$150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may

direct as a means of enforcing such requirements. 2 CFR 200.327.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1. Instructions for Certification – First Tier Participants:

- a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.
- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.
- c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.
- d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier

participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

- e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).
- f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.
- g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 180.300.
- h. A participant in a covered transaction may rely upon a certification of a prospective

participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;.

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

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3. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly

enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

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4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that

all such recipients shall certify and disclose accordingly.

directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on

which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

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APPENDIX 12-1A

CONSTRUCTION CONTRACT REQUIREMENTS FILLABLE FORMS

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**ALL FORMS MUST BE INCLUDED IN ALL FEDERAL AID CONTRACTS AND MUST BE INCLUDED
IN EACH BID PROPOSAL.**

**NON-COLLUSIVE BIDDING CERTIFICATION
BIDDER INFORMATION**

Bidder to provide information listed below:

Bidder Address:

Street or P. O. Box No.

City

State

ZIP

Federal Identification No.:

Name of Contact Person:

Phone # of Contact Person:

If Bidder is a Corporation:

President's Name & Address:

Secretary's Name & Address:

Treasurer's Name & Address:

If Bidder is a Partnership:

Partner's Name & Address:

Partner's Name & Address:

If Bidder is a Sole Proprietorship:

Owner's Name & Address:

THIS PAGE MUST BE INCLUDED IN ALL FEDERAL AID CONTRACTS AND MUST BE INCLUDED IN EACH BID PROPOSAL.

Offerer Disclosure of Prior Non-Responsibility Determinations

Name of Individual of Entity Seeking to Enter into the Procurement Contract:

Address:

Name and Title of Person Submitting this Form:

Contract Procurement Number:

Date:

1. Has any Governmental Entity made a finding of non-responsibility regarding the individual or entity seeking to enter into the Procurement Contract in the previous four years?

NO YES

If yes, please answer the next questions:

2. Was the basis for the finding of non-responsibility due to a violation of State Finance Law § 139-j?

NO YES

3. Was the basis for the finding of non-responsibility due to the intentional provision of false or incomplete information to a Governmental Entity?

NO YES

4. If you answered yes to any of the above questions, please provide details regarding the finding of non-responsibility below.

Governmental Entity:

Date of Finding of Non-Responsibility:

Basis of Finding of Non-Responsibility:

(Add additional pages as necessary.)

5. Has any Governmental Entity or other governmental agency terminated or withheld a Procurement Contract with the above-named individual or entity due to the intentional provision of false or incomplete information?

NO YES

6. If yes, please provide details below.

Governmental Entity:

Date of Termination or Withholding of Contract:

Basis of Termination or Withholding:

(Add additional pages as necessary.)

Offerer certifies that all information provided to the Governmental Entity with respect to State Finance Law §139-k is complete, true and accurate.

By: _____ Date:

Signature

Name:

Title:

COMBINED CERTIFICATION FORM

BY EXECUTING THIS DOCUMENT, THE CONTRACTOR AGREES TO:

1. Perform all work listed in accordance with the Contract Documents including all amendments, at the prices bid; subject to the Changed Conditions provisions if applicable,
2. Accompany this proposal with a bid bond, certified check or bank cashier's check for the specified amount of deposit required,
3. All the terms and conditions of the non-collusive bidding certifications required by §139-d of the State Finance Law and 2 CFR Part 1200,
4. Certify, under penalty of perjury, as to the current history regarding suspensions, debarments, voluntary exclusions, determinations of ineligibility, indictments, convictions or civil judgments required by FHWA Form 1273 Required Contract Provisions Federal-Aid Construction Contracts-Section X "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion",
5. Certify that no Federal appropriated funds have been paid or will be paid, to any person for lobbying a Federal official or employee, or disclosure was made in accordance with 31 USC 1352 required by FHWA Form 1273 Required Contract Provisions Federal-Aid Construction Contracts-Section XI "Certification Regarding Use of Contract Funds for Lobbying",
6. Attest that its performance of the services outlined in this proposal does not and will not create a conflict of interest with nor position the firm to breach any other contract currently in force with the State of New York,
7. Certify that it understands the prohibitions under the Federal False Claims Act (31 USC §3729) and the New York State False Claims Act (NYS Finance Law Article 13),
8. Certify that all information provided to the Department with respect to the requirements contained in the Procurement Lobbying Law (State Finance Laws §139-j and §139-k) is complete, true and accurate,
9. Affirm, under penalty of perjury, that all the responses provided to the Department with respect to its submitted Form CCA-2 New York State Vendor Responsibility Questionnaire For-Profit Construction, are complete, true, and accurate, and further affirms and acknowledges that it must remain a responsible Contractor throughout the duration of the contract, in accordance with §105-05 Vendor Responsibility,
10. Provide commitments to meet the established DBE goal(s) prior to award or demonstrate good faith efforts to do so,
11. By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that the bidder has and has implemented a written policy addressing sexual harassment prevention in the workplace and provides annual sexual harassment prevention training to all of its employees. Such policy shall, at a minimum, meet the requirements of Section 201-g of the New York State Labor Law.

12. Certify to all other clauses required by this proposal and contained herein.

Dated _____, 20

Legal Name of person, firm or corporation

By _____
Signature (Title)

(Acknowledgment by Individual Contractor)

STATE OF NEW YORK _____)
COUNTY OF _____) SS:

On this _____ day of _____, 20_____, before me personally came _____, to me known and known to me to be described in and who executed the foregoing instrument, and that he/she acknowledged that he/she executed the same.

Notary Public

(Acknowledgment by Individual Contractor, If a Corporation)

STATE OF NEW YORK _____)
COUNTY OF _____) SS:

On this _____ day of _____, 20_____, before me personally came _____, to me known and known to me to be the person who executed the above instrument, who being duly sworn by me, did depose and say that he/she resides at _____, and that he/she is the _____ of the _____ the corporation described in and which executed the above instrument, and that he/she signed his/her name thereto on behalf of said Corporation by order of the Board of Directors of said Corporation.

Notary Public

(Acknowledgment of Co-Partnership Contractor)

STATE OF NEW YORK _____)
COUNTY OF _____) SS:

On this _____ day of _____, 20_____, before me personally came _____, to me known and known to me to be the person described in and who executed the above instrument, who, being duly sworn by me, did for himself/herself depose and say that he/she is a member of the firm of _____, consisting of himself/herself and _____, and that he/she executed the foregoing instrument in the firm name of _____ and that he/she had authority to sign same, and did duly acknowledge to me that he/she executed same as the act and deed of said firm of _____ for the uses and purposes mentioned herein.

Notary Public

CHAPTER 12, APPENDIX 12-2

ADDITIONAL CONSTRUCTION CONTRACT REQUIREMENTS

**[FOR LOCALLY ADMINISTERED FEDERAL AID CONSTRUCTION PROJECTS
WHICH DO NOT
USE NYSDOT STANDARD SPECIFICATIONS]**

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NOTE: References to actions undertaken by the following: “Commissioner, Office of the State Comptroller, Department, Regional Director, Regional Construction Engineer, Deputy Chief Engineer Construction (DCEC) or State,” unless used in the context of reference to specific state law or regulations will be performed by the project sponsor or their designee.

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LABOR AND EMPLOYMENT

The provisions of NYS Labor Law, as amended, shall be applicable. On contracts financed with Federal Aid, any provisions of NYS Labor Law that are in conflict with mandatory Federal-Aid construction contract compliance requirements, as contained in **23 CFR 635.117** are superseded. Any provisions of NYS Labor Law that are not in conflict with mandatory Federal-Aid construction contract compliance requirements, or the Davis-Bacon Act, but are more restrictive, shall apply.

The Contractor shall directly employ those members of its own organization. Employee leasing and other similar arrangements under which workers are employed by another organization are not permitted.

No procedures or requirement shall be imposed by any state which will operate to discriminate against the employment of labor from any other state, possession or territory of the United States, in the construction of a Federal-Aid project. The selection of labor to be employed by the Contractor on any Federal-Aid project shall be of its choosing.

The Contractor shall not use convict labor unless performed by convicts who are on parole, supervised release, or probation for construction, maintenance or any other purpose at the site or within the contract limits from the time of contract award until contract final acceptance by the Department.

A. Wages. The Department will identify in the contract proposal whether the NYS Department of Labor (NYSDOL) has determined the work under the contract to be prevailing wage eligible, and if so, the Department will provide the Prevailing Rate Case (PRC) number. The PRC number is found on NYSDOL Form PW-200. The Contractor shall ensure that workers are paid the appropriate wages and supplemental (fringe) benefits. If the contract is prevailing wage eligible, all on-site work shall be paid prevailing wages. When both State and Federal prevailing wages apply, the Contractor shall pay the higher of the combination of the wages and supplemental (fringe) benefits.

The Contractor shall obtain periodic wage rate schedule updates from the NYSDOL. Wage rate amendments and supplements are available on the NYSDOL web site at <https://www.labor.ny.gov/workerprotection/publicwork/PWContents.shtm>. All changes or clarification of labor classification(s) and applicability of prevailing wage rates shall be obtained in writing from the Office of the Director, NYSDOL Bureau of Public Work. The Contractor shall include the cost of changes in prevailing wages and supplemental (fringe) benefits, over the contract duration, in the contract bid prices.

B. Overtime Dispensation. All bidders, in submitting their bids, should base their bids and work progression on the assumption that Overtime Dispensation pursuant to Article 8 of the New York State Labor Law, for any workers, laborers, and mechanics to work more than 8 hours in any one calendar day or more than 5 days in any one week will not be granted for any operation for the contract duration. Regardless of approval or disapproval of overtime by the NYSDOL, no adjustment will be made in any bid prices.

Subsequent to award, where the contract proposal has imposed specific scheduling and/or phasing requirements or where it is determined by the Department to be in the best interest of the public, the Department may process, for approval by the NYSDOL, requests for overtime dispensation on certain specific operations.

The Contractor shall submit requests for overtime dispensation to the Department on Form PW-30, Application for Dispensation for Hours, which will be provided by the Engineer upon request. The Department will favorably review applications for overtime dispensation submitted by the Contractor associated with contracts subject to (A+B) Bidding, Incentive/Disincentive (I/D) or Lane Rental work, but the application should not request more than 60 hours per week.

The 60 hours per week may be either six 10-hour days or five 12-hour days. Overtime dispensations will be supported by the Department to advance Department goals and priorities, subject to specific circumstances and conditions associated with each contract.

The Department cannot guarantee that the NYSDOL will grant dispensation from restrictions pursuant to the provisions of Article 8 of the State Labor Law, however, with the Department's certification, it is anticipated that they will act favorably, provided that the Contractor is in compliance with Labor Law requirements at the time of application.

C. Payrolls. The Contractor shall provide the Engineer with weekly certified payrolls from each firm engaged in work during the preceding weekly payroll period performed by prevailing wage eligible workers.

Certified payrolls shall contain for each employee, name, race, gender, home address, an individually identifying number (e.g., the last 4 digits of the employee's social security number), work class, hours worked, wage rate, supplemental (fringe) benefits paid or provided, payroll taxes, withholdings and actual wages paid. Certified payrolls shall not include full social security numbers of employees. Certified payrolls shall be submitted on Form HC-231 for Federal-Aid contracts and Non-Federal-Aid contracts. At the Contractor's option, other payroll formats which supply the required data and certifications may be used. Each certified payroll submitted shall be accompanied by a Statement of Compliance signed by the Contractor. If the firm does not maintain a place of business in New York State and the amount of the contract exceeds \$25,000, payroll records and certifications shall be kept on the worksite.

Contractors and subcontractors shall maintain the full social security number and current address of each covered worker and shall provide them upon request to NYSDOL or USDOL for purposes of an investigation or audit of compliance with prevailing wage requirements. Contractors may require subcontractors to provide addresses and social security numbers to the Contractor for its own records, without weekly submission to the Department.

D. Training. An apprentice is defined as an individual who is enrolled in an apprenticeship training program that is registered with the NYS Department of Labor. A list of approved programs is available from the NYS Department of Labor at <https://www.labor.ny.gov/apprenticeship/appindex.shtm>.

A trainee is defined as an individual who is enrolled in an On-the-Job Training (OJT) program that is approved by the Federal Highway Administration (FHWA).

Several sources to obtain training for apprentices/trainees are available. These include:

- A NYSDOT-approved apprenticeship program sponsored by a union or a temporary project level agreement with a union which has a NYSDOL approved apprenticeship program.
- A NYSDOL-approved apprenticeship program sponsored by a contractor.
- A NYSDOL-approved apprenticeship program sponsored by a contractor signatory with an apprenticeship sponsor consortium for certain services.
- An FHWA-approved OJT program (where applicable).

Approved OJT Programs are currently limited to apprentice able occupations as determined by NYSDOL or USDOL.

Training under Training Special Provisions, if required, will be shown in the contract documents. In order to fulfill training requirements required under Training Special Provisions and/or *Equal Employment Opportunity Requirements*, training should begin as early as possible during a construction contract. The Department recommends that all bidders have an approved apprenticeship or OJT program prior to bidding.

The Contractor shall furnish the apprentice/trainee a copy of the program to be followed in providing the training. The Contractor shall provide each apprentice/trainee with a certification

showing the type and length of training satisfactorily completed.

When training is required under *Training Special Provisions* and/or *Equal Employment Opportunity Requirements*, the Contractor shall designate to the Engineer, at the preconstruction meeting, a person (or persons) from its existing workforce as the Trainer and Training Coordinator for any apprentices/ trainees.

The Trainer shall:

1. Be located on the contract site generally on a daily basis; and
2. Be responsible for the day to day supervision and training of persons on the contract; and
3. Be responsible for the preparation and submission of a monthly training progress report, after consultation with designated apprentices/trainees.

The Training Coordinator shall:

1. Be knowledgeable about the contract and the Apprenticeship/OJT programs to be used; and
2. Be responsible for ensuring on-the-job orientation of apprentices/trainees; and
3. Be responsible for ensuring meaningful and effective training for the duration of training.

PURCHASE CONTRACTS WHICH DO NOT INVOLVE INSTALLATION OR LABOR DO NOT REQUIRE WAGE RATES

GOALS FOR EQUAL EMPLOYMENT OPPORTUNITY (EEO) PARTICIPATION

The Contractor shall follow *Equal Employment Opportunity Requirements*. The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, which is the county or counties in which the work is located, are as follows:

GOALS FOR PARTICIPATION OF MINORITIES					
COUNTY	%	COUNTY	%	COUNTY	%
Albany	3.2	Herkimer	2.1	Richmond	Table
Allegany	6.3	Jefferson	2.5	Rockland	22.6
Broome	1.1	Kings	Table	St. Lawrence	2.5
Bronx	Table	Lewis	2.5	Saratoga	3.2
Cattaraugus	6.3	Livingston	5.3	Schenectady	3.2
Cayuga	2.5	Madison	3.8	Schoharie	2.6
Chautauqua	6.3	Monroe	5.3	Schuyler	1.2
Chemung	2.2	Montgomery	3.2	Seneca	5.9
Chenango	1.2	Nassau	5.8	Steuben	1.2
Clinton	2.6	New York	Table	Suffolk	5.8
Columbia	2.6	Niagara	7.7	Sullivan	17.0
Cortland	2.5	Oneida	2.1	Tioga	1.1
Delaware	1.2	Onondaga	3.8	Tompkins	1.2
Dutchess	6.4	Ontario	5.3	Ulster	17.0
Erie	7.7	Orange	17.0	Warren	2.6
Essex	2.6	Orleans	5.3	Washington	2.6
Franklin	2.5	Oswego	3.8	Wayne	5.3
Fulton	2.6	Otsego	1.2	Westchester	22.6
Genesee	5.9	Putnam	22.6	Wyoming	6.3
Greene	2.6	Queens	Table	Yates	5.9
Hamilton	2.6	Rensselaer	3.2		

(45 FR 65976 – 10/3/1980)

GOALS FOR PARTICIPATION OF MINORITIES BRONX, KINGS, NEW YORK, QUEENS AND RICHMOND COUNTIES			
Electricians	9.0 to 10.2	Bricklayers	13.4 to 15.5
Carpenters	27.6 to 32.0	Asbestos workers	22.8 to 28.0
Steam fitters	12.2 to 13.5	Roofers	6.3 to 7.5
Metal lathers	24.6 to 25.6	Iron workers (ornamental)	22.4 to 23.0
Painters	26.0 to 28.6	Cement masons	23.0 to 27.0
Operating engineers	25.6 to 26.0	Glaziers	16.0 to 20.0
Plumbers	12.0 to 14.5	Plasterers	15.8 to 18.0
Iron workers (structural)	25.9 to 32.0	Teamsters	22.0 to 22.5
Elevator constructors	5.5 to 6.5	Boilermakers	13.0 to 15.5
		All others	16.4 to 17.5

(43 FR 14888 – 4/7/1978)

GOAL FOR PARTICIPATION OF WOMEN

The goal for the participation of women is 6.9%.

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted). If the Contractor performs construction work outside of New York State, it shall apply the goals established for the covered area where the work is actually performed.

DISADVANTAGED BUSINESS ENTERPRISE (DBE) PARTICIPATION

The Department seeks to:

- To ensure nondiscrimination in award and administration of DOT-assisted contracts in the NYSDOT's highway, transit, and airport financial assistance programs,
- To create a level playing field on which DBEs can compete fairly for DOT-assisted contracts,
- To ensure that the Department's DBE Program is narrowly tailored in accordance with applicable law,
- To ensure that only firms that fully meet the Department's DBE Program eligibility standards are permitted to participate as DBEs,
- To help remove barriers to the participation of DBEs in USDOT-assisted contracts,
- To promote the use of DBEs in all types of federally assisted contracts and procurement activities conducted by recipients,
- To assist in the development of firms that can compete successfully in the marketplace outside the DBE program; and
- To provide appropriate flexibility to recipients of Federal financial assistance in establishing and providing opportunities for DBEs.

The parties to this contract shall take all necessary and reasonable steps in accordance with the laws, rules and regulations cited in this subsection to promote the objectives outlined above. The Contractor shall comply with the applicable laws, rules and regulations and the DBE Program Assurances stated below.

The Contractor or Subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR 26 in the award and administration of Federal-Aid contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the Department deems appropriate, which may include, but is not limited to: (1) withholding contract payments; (2) assessing sanctions; (3) liquidated damages; and/or (4) disqualifying the Contractor from future bidding as non-responsible. The Contractor shall not use the requirements of these specifications to discriminate against any qualified company or group of companies. These requirements shall be made a part of all subcontracts and agreements entered into as a result of this contract.

A. Disadvantaged Business Enterprise (DBE) Program. The Federal statutory authority for the DBE Program is contained in the Intermodal Surface Transportation Efficiency Act of 1991 (Public Law 102-240); the Transportation Equity Act of the 21st Century (TEA-21) Public Law 105-178; the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) Public Law 109-59; the Moving Ahead for Progress in the 21st (MAP-21), (Public Law 112-141); and the Fixing America's Surface Transportation (FAST) Act (Public Law 114-94). New York State has enacted Section 85 of the Highway Law and Section 428 of the Transportation Law. Regulations have been promulgated under 49 CFR 21, 49 CFR 26 and 17 NYCRR §35.

B. DBE Goal. Federal-aid contracts have a single DBE goal. The Department will monitor the Contractor's commitments towards the DBE goal and attainments in accordance with 49 CFR 26.

1. **Established Goal.** The contract participation goal for DBEs is established by geographic location and work type. The goal is stated in the proposal and remains in effect throughout the life of the contract. In executing the contract or bid documents the Bidder declares that it subscribes to the participation goal and shall meet the goal or demonstrate that it could not meet them despite its best efforts. Failure to provide commitments to meet the established goal for the contract or failure to meet the good faith efforts may be grounds for rejection of the bid as non-responsive.

2. **Zero Percent Goal.** If a zero goal for participation by DBEs is established, the Contractor shall promote the objectives of the DBE Program by providing opportunities for DBEs to participate in these areas, with such participation to be credited towards the race-neutral component of the Department's DBE Program.

C. DBE Eligibility. Only those DBE firms that are certified under the New York State Unified Certification Program are eligible under the DBE Program. Only the work, services or products provided by the DBE Firms under NAICS code(s) which the DBE is certified for, at the time the DBE enters into a contract with the Contractor, can be credited towards the contract goal. Program participants must rely on, and not depart from, the plain meaning of NAICS code descriptions in determining the scope of a firm's certification. DBE certification is not an endorsement of the quality or performance of the business but simply an acknowledgment of the firm's status as a DBE. A directory of certified firms is available on the NYS Unified Certification Program website at <https://nysucp.newnycontracts.com/>.

D. Counting DBE Participation Towards the DBE Goal. The value of the work performed by a DBE, including that of a DBE prime contractor, with its own equipment, with its own forces, and under its own supervision will be counted toward the goal, provided the participation is a commercially useful function (CUF). A DBE Prime Contractor shall continue to provide opportunities for participation by other DBEs in all types of contracts and procurement activities. Work performed by DBEs on the contract will be counted as set forth below. If the Department determines that some or all of a DBE's work does not constitute a commercially useful function in accordance with federal regulations, only the portion of the work considered to be a commercially useful function will be credited toward the goal.

The participation of a firm that is certified as an MBE cannot be counted toward a WBE goal, and the participation of a firm that is certified as a WBE cannot be counted toward an MBE goal. The participation of a firm that is certified as both an MBE and a WBE will only be counted toward one goal for each contract pay item performed by the firm in its entirety and cannot be divided between the two goals. The participation of a firm that maintains more than one certification may only be counted toward one goal (i.e., MBE, WBE, or SDVOB) for each contract pay item in the contract. A joint venture between a DBE/MBE/WBE/SDVOB and a non-DBE/MBE/WBE/SDVOB is allowed however only work performed independently by the DBE/MBE/WBE/SDVOB, not the Joint Venture, will be counted toward the DBE/MBE/WBE/SDVOB goal(s) based on the total dollar value of the clearly defined portion of the work that the DBE/MBE/WBE/SDVOB performs with its own forces. The joint venture agreement is subject to approval by the Department, a copy of which is to be furnished by the Contractor before execution of the contract. For purposes of Commercially Useful Function (CUF) review, the DBE/MBE/WBE/SDVOB must comply with the provisions of §102-12E. *Commercially Useful Function.*

The Bidder is responsible to verify the information provided by the DBE and ensure that the counting of the DBE's participation is accurate. Any shortfall caused by errors in counting are the responsibility of the Bidder.

1. *Subcontractors.* A Subcontractor is any individual, firm, or corporation to whom the Contractor, with written consent of the Department, sublets any part of the contract.

100% of the value of the work performed by a DBE Subcontractor will be counted toward the DBE goal, including the cost of materials and supplies purchased by the DBE, except the cost of supplies or equipment rented or leased from the Contractor or its affiliates will not be counted.

2. *Manufacturers/Fabricators.* A Manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles or equipment required under the contract and of the general character described by the specifications. A Fabricator is a firm that assembles, constructs, or otherwise substantially alters materials or supplies into assemblies, components, or finished items for inclusion into the work prior to resale.

100% of the cost of the materials or supplies from a DBE Manufacturer or Fabricator will be counted toward the DBE goal. Manufacturers or Fabricators may provide materials to the Contractor or a Subcontractor working on the contract for installation. When a DBE makes minor modifications to the materials, supplies, articles, or equipment, the DBE is not a Manufacturer. Minor modifications are additional changes to a manufactured product that are small in scope and add minimal value to the final product.

3. *Material Suppliers.* A Material Supplier, also known as a regular dealer, is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which materials, supplies, articles or equipment of the general character described in the specifications required for the performance of the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. A Material Supplier is an established, regular business that engages in, as its principal business, and under its own name, the purchase and sale or lease of the products in question.

A DBE supplier performs a commercially useful function as a regular dealer and receives credit for 60 percent of the cost of materials or supplies (including transportation cost) when all, or at least 51 percent of, the items under a purchase order or subcontract are provided from the DBE's inventory, and when necessary, any minor quantities delivered from and by other sources are of the general character as those provided from the DBE's inventory.

Equipment rental or leasing is considered to be a type of material supply activity and is credited at 60%. Material Suppliers may provide materials to the Contractor or a Subcontractor working on the contract for installation. Credit determination awarded to a firm for the provision of materials and supplies (i.e., whether the firm is acting as a material supplier or broker) will be determined on a contract-by-contract basis. If it is determined that the material supplier is acting as a broker, the participation will be credited accordingly.

A Material Supplier who deals in bulk items such as petroleum products, steel, cement, gravel, stone, or asphalt, and items that are not typically stocked due to their unique characteristics (e.g., limited shelf life or items ordered to specification), need not own, operate nor maintain a store, warehouse, or other establishment, if it owns and operates distribution equipment for the products. This can be accomplished by either maintaining stock of the product or through delivery of the materials, to the job site or Contractor's designated location, by using the Material Supplier's own trucks. Any supplementing of Material Suppliers' own distribution equipment shall be by a long-term lease agreement and not on an ad hoc or contract-by-contract basis. To be considered valid, the long-term lease shall include the lessor's name, list of trucks to be leased by

vehicle identification number (VIN), and the agreed upon amount of the cost and method of payment. Third party haulers do not qualify as a long-term lease. The operator shall be an employee of the DBE. It shall be the responsibility of the DBE to provide the operator's fuel, maintenance and insurance for all leased trucks.

4. *Distributor.* A DBE Distributer is an established business that engages in the regular sale or lease of the items specified by the contract. A DBE Distributor assumes responsibility for the items it purchases once they leave the point of origin (e.g., a Manufacturer's facility), making it liable for loss or damage not covered by the carrier's insurance.

If the materials or supplies are purchased from a DBE Distributor that neither maintains sufficient inventory nor uses its own distribution equipment for the products in question, 40% of the cost of materials or supplies (including transportation costs) will be credited.

A DBE Distributor performs a CUF when it demonstrates ownership of the items in question and assumes all risk for loss or damage during transportation, evidenced by the terms of the purchase order or a bill of lading (BOL) from a third party, indicating Free on Board (FOB) at the point of origin or similar terms that transfer responsibility of the items in question to the DBE Distributor. Where a Distributor "drop ships" materials without assuming risk or does not operate in accordance with its distributorship agreement, credit is limited to fees or commissions.

5. *Brokers/Manufacturer's Representatives.* A Broker/Manufacturer's Representative is a firm that arranges or expedites transactions for materials.

100% of the expenditures for fees or commissions charged for assistance in the procurement of, or fees for transportation charges for the delivery of, materials or supplies provided by a DBE Broker/Manufacturer's Representative will be counted toward the DBE goal, provided they are determined by the Department to be reasonable and not excessive as compared with fees customarily allowed for similar services. The cost of the materials and supplies themselves will not be counted. A Broker/Manufacturer's Representative may arrange or expedite transactions for materials to the Contractor or Subcontractor working on the contract.

6. *Services.* A Service is a firm that provides an economic benefit, such as professional, technical, consultant, or managerial service, or provides bonds or insurance specifically required for the performance of the contract.

100% of the expenditure for fees charged by a DBE Service will be counted toward the DBE goal, provided the fee is reasonable and not excessive as compared with fees customarily allowed for similar services.

7. *Trucking Firms.* A DBE trucking firm shall own and operate at least one fully licensed, insured, and operational truck used on the contract and shall be responsible for the management and supervision of the trucking operation, and the arrangement cannot be contrived solely for the purpose of meeting the DBE goal. The DBE trucking firm shall control the day-to-day DBE trucking operations and shall be responsible for: (1) negotiating and executing rental/leasing agreements; (2) controlling the work force; (3) coordinating the daily trucking needs with the Contractor or Subcontractor; and (4) scheduling and dispatching trucks.

100% of the value of the trucking operations the DBE provides on the contract using trucks it owns or leases on a long-term basis that are registered, insured, and operated by the DBE using drivers it employs, will be counted toward the DBE goal. A lease shall

indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks shall display the name and identification number of the DBE.

E. Commercially Useful Function. A DBE's participation will only be counted toward meeting the DBE contract goal when it performs a commercially useful function. To be considered as performing a commercially useful function, a DBE shall be responsible for the execution of a distinct element of work on a contract and carry out its responsibilities by actually performing, managing, and supervising the work involved in accordance with normal industry practice. This applies to all work performed by a DBE including Subcontractors, Manufacturers / Fabricators, Material Suppliers, Brokers / Manufacturer's Representatives, Services and Trucking Firms regardless of whether the DBE's participation is intended to count towards the goal(s). With respect to supplying materials to be used on the contract, the DBE shall assume the responsibility for negotiating price, determining quality and quantity, ordering the material, and paying for the materials.

Regardless of whether an arrangement between the Contractor and the DBE represents standard industry practice, if the arrangement erodes the ownership, control or independence of the DBE or in any other way does not meet the commercially useful function requirement, the Contractor will receive no credit toward the goal. If the reduction in credit results in the DBE participation to fall below the Contractor's commitment, the Contractor shall make every effort to find another DBE to make up the shortfall to meet their commitments, in accordance with the federal regulations.

A DBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction or contract through which funds are passed in order to obtain the appearance of DBE participation. The arrangement cannot be contrived solely for the purpose of meeting the DBE goal. The Contractor shall not seek credit toward the goal through any arrangements or actions of others where the Contractor knows or should have known based upon evidence and circumstances present, that a DBE is not performing a commercially useful function.

1. *Work Force.* The DBE shall employ a work force (including administrative and clerical), separate and apart from that employed by the Contractor, other Subcontractors on the contract, or their affiliates. The DBE must use its workforce to perform or exercise responsibility for its portion of the contract. This does not preclude the employment by the DBE of an individual that has been previously employed by another firm involved in the contract, provided that the DBE can demonstrate it maintains an employer-employee relationship with the employee by being responsible for hiring, firing, training, assigning, and otherwise controlling the on-the-job activities of the employees, as well as ultimate responsibility for wage and tax obligations related to the employee. The routine transfer of work crews from another employer to the DBE will not be allowed.

2. *Supervision.* All work performed by the DBE shall be controlled and supervised by the DBE without duplication of supervisory personnel from the Contractor, other Subcontractors on the contract, or their affiliates. This does not preclude routine communication between the supervisory personnel of the DBE and other supervisors necessary to coordinate the contract work.

3. *Materials.* DBE Subcontractors shall negotiate price, determine quality and quantity, order, install (where applicable) and pay for the materials(s) required to perform the work when material supply is included in their scope of work.

4. *Equipment.* DBE Subcontractors may supplement their equipment by renting or leasing additional equipment in accordance with customary industry practice provided the equipment is not rented/leased from the Prime Contractor or its affiliate, except as noted below. Before supplementing their equipment, the DBE must first own and operate at least one operational business-critical piece of equipment capable of independently providing a service under the contract. There may be rare instances in which a DBE may use a Prime Contractor's equipment, supplies, etc. to a limited degree (e.g., the DBE's backhoe breaks down and the DBE uses the Prime Contractor's backhoe for the rest of the day; use of a crane; etc.). Such limited use must be approved by the Department. Consequently, if a charge for the use of a Prime Contractor's equipment (distinct from the DBE's labor in operating the equipment) is part of the cost of the DBE's contract, it would be subtracted from the DBE credit allowed for the contract. Should back charges result in DBE participation falling below the goal(s), the Contractor shall be required to backfill.

F. Submission of Proposal. In submitting a proposal, a Bidder declares that it shall make commitments to those qualified DBEs whose participation the Bidder submits to meet the contract goal.

All Bidders shall submit a complete DBE Participation Package with their bid proposal. The DBE Participation Package shall include a summary of the confirmed DBE commitments (i.e., AAP 14LL); DBE confirmation on Department provided forms (i.e., AAP 20, AAP 22, and AAP23) for each DBE firm for the type and amount of work shown in the summary of commitments; and sufficient good faith effort documentation (if required). Confirmed DBE commitments are commitments where the proposed DBE participation is firm, the work is clearly defined, the correct NAICS codes have been identified, the DBE firm is certified to perform the work, and the proposed commitments have been verified by the DBE firm. The Bidder's summary of commitments shall include DBE name, DBE address, work category, and commitment amount.

In addition, per 49 CFR 26.11, all Bidders shall submit with their bid proposal a Bidder's List (i.e., CONR 80LL Bidder's List) which contains information for all Subcontractors, both DBEs and non-DBEs, who provided quotes on the contract. The Bidder's List shall include the Subcontractor's name and work code applicable to each scope of work the Subcontractor sought to perform in its quote. Failure to submit the required Bidders List information may result in rejection of the bid.

G. DBE Participation Package. For Federal-Aid contracts, all Bidders shall submit a complete DBE Participation Package to the Department with their proposal. The DBE Participation Package shall include confirmed DBE commitments; DBE confirmation, on Department provided forms (i.e., AAP 20, AAP 22, and AAP23), for each DBE firm for the kind and amount of work shown in the Bidder's commitments; and good faith effort documentation (if required). No additions, substitutions or deductions to the DBE commitments identified at time of letting will be considered as part of the DBE Participation Package.

A commitment to a DBE is expressed as a dollar amount agreed to by both the Bidder and the DBE for the performance of identified work, services or products. Commitments are for quantities of contract pay items, or associated to contract pay items for work, services or

products that are not measured in the same manner as the contract pay item. Commitments for less than the full scope of the contract pay item shall be indicated as such in the DBE Participation Package.

For each DBE Subcontractor, the Bidder shall indicate, in the DBE confirmation form (i.e., AAP 20 *DBE Subcontractor / Work Service / Professional Service Commitments / Confirmation*), the contract pay item number(s) of the work to be performed.

For each DBE Manufacturer, Fabricator, Material Supplier (including equipment rental without operator), Distributor, or Broker, the Bidder shall be responsible for the collection, review and submission of a fully executed DBE confirmation form (i.e., AAP 22 *DBE Material Commitments / Confirmation*) affirming that the responses received in the questionnaire, by its proposed DBE, indicate the performance of a commercially useful function, will be consistent with the preliminary counting of such participation toward the contract goal. A separate AAP 22 must be submitted for each separate and distinct contract pay item number(s) of the materials, supplies, articles, or equipment to be manufactured, fabricated, supplied, or otherwise provided. If the material, supplies, articles, equipment or service does not correspond to a specific contract pay item, the Bidder shall use a contract pay item(s) to which the activity relates.

For each DBE Service, the Bidder shall indicate, in the DBE confirmation form (i.e., AAP 20 *DBE Subcontractor / Work Service / Professional Service Commitments / Confirmation*), the contract pay item number(s) of the service to be provided. If the Service does not correspond to a specific Department contract pay item, the Bidder shall use a contract pay item(s) to which the activity relates.

For each DBE Trucking Firm, the Bidder shall indicate, in the DBE confirmation form (i.e., AAP 23 *DBE Trucking Commitments / Confirmation*), the contract pay item number(s) for which the trucking operations are to be performed. If the trucking operation does not correspond to a specific contract pay item, the Bidder shall use a contract pay item(s) to which the activity relates. The Bidder shall indicate the type of trucking operation to be performed, the number of trucks owned/leased, the number of trucks working on-site or off-site, rate per hour/ton/load/etc., duration or amount, and total dollar value of the proposed DBE commitment. The Bidder shall provide copies of all lease agreements utilized by the DBE Trucking Firm.

If the Bidder meets or exceeds the established DBE goal(s) for the contract with commitments to certified DBEs, it is not necessary for the Bidder to submit documentation of good faith efforts. However, if after review by the Department, a Bidder's commitments fall below goal, no additional time will be given to submit good faith efforts.

If the contract goal(s) is not met in full, then the Bidder shall provide documentation of its good faith efforts with their proposal, in accordance with §102-12H. *Good Faith Efforts* that demonstrate that the Bidder attempted but could not meet the goal(s).

If the Low Bidder fails to submit a complete DBE Participation Package (i.e., DBE commitments, DBE confirmation, and/or GFE) at time of letting they may be deemed non-responsive by the Department.

For tracking and oversight purposes, after the Low Bidder's commitments and/or good faith efforts have been accepted by the Department, the Low Bidder will be notified by email to input their DBE Participation Package, as submitted with their proposal, in EBO within 5 calendar days. On Design Bid Build Best Value contracts, notification will be sent upon designation. For those items of work where a DBE Subcontractor is performing less than 100% of a contract pay item, the Bidder shall explain, in writing, the scope of work to be performed by the DBE and shall indicate those items as such in EBO (i.e., split item).

Once the Low Bidder has completed all entries in EBO, they shall notify the Construction Pre-Award Unit at construction.civilrights@dot.ny.gov. Once the Low Bidder has received notification by the Department that their entries have been accepted, each DBE shall acknowledge the commitment in EBO within 10 calendar days.

The Contractor shall execute subcontracts, agreements, or purchase orders, as appropriate, with each DBE for the type and amount of work identified in the approved AAP19 *DBE/MBE/WBE/SDVOB Schedule of Participation*, no later than 10 days after contract award.

H. Good Faith Efforts. If the Low Bidder fails to meet the DBE contract goal, the Department will evaluate the good faith efforts the Bidder made to obtain DBE participation to determine if the efforts are sufficient to recommend award of the contract. Efforts to obtain DBE participation that are merely pro forma are not good faith efforts, nor are efforts that, even if they are sincerely motivated, given all relevant circumstances, could not reasonably be expected to produce a level of DBE participation sufficient to meet the goal.

If the Bidder has not met the DBE goal, it shall submit sufficient documentation that substantiates good faith efforts. Such documentation shall include, at a minimum, the AAP10 *DBE/MBE/WBE/SDVOB Solicitation Log*, all forms of solicitation inquiries that were returned as undeliverable, quotations submitted by DBEs that were not selected for participation, quotations submitted by non-DBEs that were selected for comparison, and an explanation for the Bidder's action in each case.

In order to evaluate the Bidder's good faith efforts, the Department will consider the quality, quantity, and intensity of the different kinds of efforts that the Bidder has made.

Below is a list of the types of actions which the Department will consider as part of the Bidder's good faith efforts to obtain DBE participation. It is not intended to be a mandatory checklist, nor is it intended to be exhaustive or exclusive. Other factors or types of efforts may be relevant in appropriate cases.

1. Securing participation by certified DBE firms for work that they are listed to perform that is in the contract. Only DBEs certified by the NYS Unified Certification Program (NYSUCP) shall be used to fulfill the established goal on Federal-Aid contracts.
2. For all work, soliciting, at a minimum, certified DBEs within 100 miles of the contract location.
3. The Bidder shall conduct market research to identify small business contractors and suppliers and solicit, through all reasonable and available means, the interest of all certified DBEs that have the capability to perform the work of the contract. This may include attendance at pre-bid and business matchmaking meetings and events; advertising and/or written notices; posting of notices of sources sought and/or requests for proposals, written notices or emails to all certified D/M/WBEs listed in the appropriate directory of certified firms that specialize in the areas of work desired and which are located in the area or surrounding area.

The Bidder shall solicit this interest as early in the bidding process as practicable, to allow the DBEs to respond to the solicitation and submit a timely offer. The Bidder shall determine with certainty if the DBEs are interested by taking appropriate steps, including following up the initial solicitation with at least one additional solicitation via a different media. The Bidder shall keep records of efforts to solicit and negotiate with DBEs as evidence of good faith efforts, using the *Solicitation Log* as a continuing record.

4. Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goal will be achieved. This includes, where appropriate, either breaking down operations or combining like or related operations into logistically and economically feasible units to facilitate DBE participation, even when the Contractor might prefer to perform these work items with its own forces. This may include, where possible, establishing flexible time frames for performance and delivery schedules in a manner that encourages and facilitates DBE participation.

5. Providing interested DBEs with adequate information on where and how to obtain the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation with their timely offer.

6.
 - a. *Negotiating in good faith with interested DBEs.* It is the Bidder's responsibility to make a portion of the work available to DBE Subcontractors and material suppliers and to select those portions of the work or material needs consistent with the available DBE Subcontractors and material suppliers, to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform the work.

 - b. *Additional Costs.* The fact that there may be some additional costs involved in finding and using DBEs is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. The ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the Bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBEs if the Department determines the price difference to be excessive or unreasonable.

7.
 - a. *Not rejecting DBEs as unqualified.* The Bidder shall not reject DBEs as unqualified without sound reasons based on a thorough investigation of their capabilities. The Bidder's standing within its industry, membership in specific groups, organizations or associations, and political or social affiliations (for example union vs. non-union status) are not legitimate causes for rejection or non-solicitation of proposals in the Bidder's efforts to meet the contract goal. Rejection of the DBE because its quotation for the work was not the lowest received is not considered good faith effort. Nothing in this paragraph shall be construed to require the Bidder to accept unreasonable quotes in order to satisfy contract goals.

 - b. *Replacement Prices.* A prime contractor's inability to find a replacement DBE at the original price is not sufficient to support a finding that good faith efforts have been made to replace the original DBE. The fact that the contractor has the ability and/or desire to perform the contract work with its own forces does not relieve the contractor of the obligation to make good faith efforts to find a replacement DBE, and it is not a sound basis for rejecting a prospective replacement DBE's reasonable quote.

8. Making efforts to assist interested DBEs in obtaining bonding, lines of credit or insurance as required by the Department or the Bidder.

9. Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance.

10. Where available, effectively using the services of available minority/women focused media, trade associations, and contractor groups; local, state, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.

11. Stating future commitments to use DBEs after contract award is not considered to be responsive to the contract solicitation requirements or to constitute good faith efforts.

A Bidder shall also submit a detailed explanation identifying any circumstances unique to the contract that were deterrents to meeting the goal(s) (e.g., night work, small quantities over multiple locations, specialized work, etc.); detailed rationale as to why a specific scope of work is not considered to be a subcontract item and therefore was not solicited; and a detailed explanation for any scope of work deemed “self-performing” without the intent to split the work.

I. Pre-Award Approval. In order to award a contract to a Bidder that has failed to meet the DBE contract goal(s), the Department must determine that the Bidder's good faith efforts were those that a Bidder actively and aggressively seeking to meet the goal(s) would make given all relevant circumstances.

If the Department determines that the Low Bidder has failed to meet the goal and good faith effort requirements, the Department may issue a finding of non-responsiveness. Before awarding the contract to a subsequent bidder, the Department will provide the Low Bidder an opportunity for administrative reconsideration by an official who did not take part in the original determination.

J. Administrative Reconsideration. If the Low Bidder is deemed non-responsive due to failure to meet the civil rights requirements, and believes they have good cause, they shall have 5 calendar days from notification to request an Administrative Reconsideration. The Low Bidder will have the opportunity to provide argument and written documentation of good faith efforts made prior to letting, and to meet in person with the Department's reconsideration official upon notification concerning the issue of whether it met the goal or made adequate good faith efforts to do so. The Department will send the Low Bidder a written decision on reconsideration, explaining the basis for finding that the Low Bidder did or did not meet the goal or make adequate good faith efforts to do so.

K. Bidder's Failure to Comply with DBE Program Requirements. The Department's acceptance of the Low Bidder's proposal is conditioned upon the Low Bidder's fulfillment of the DBE participation requirements. Failure by the Low Bidder to submit a complete DBE participation package may be grounds for rejection of the proposal as non-responsive and the deposit may be subject to forfeiture.

CHANGED CONDITION CLAUSES

DIFFERING SITE CONDITIONS. 23 CFR 635.109(a)(1)

During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the contract or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the contract, are encountered at the site, the party discovering such conditions shall promptly notify the other party of the specific differing site conditions before the site is further disturbed and before the affected work is performed.

Upon written notification, the Engineer will investigate the site conditions, and if it is determined that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the contract, an adjustment, excluding anticipated profits, will be made and the contract modified in writing accordingly. The Engineer will notify the Contractor of the determination as to whether an adjustment to the contract is warranted.

No contract adjustment which results in a benefit to the Contractor will be allowed unless the Contractor has provided the required written notice.

SUSPENSIONS OF WORK DIRECTED BY THE ENGINEER. 23 CFR 635.109(a)(2)

If the performance of all or any portion of the work is suspended or delayed by the Engineer in writing for an unreasonable period of time (not originally anticipated, not customary, or not inherent to the construction industry) and the Contractor believes that it is due additional compensation and/or contract time is due as a result of such suspension or delay, the Contractor shall submit to the Engineer in writing a request for adjustment within 7 calendar days of receipt of the notice to resume work. The request shall set forth the reasons and support for such adjustment.

Upon receipt, the Engineer will evaluate the Contractor's request. If the Engineer agrees that the cost and/or time required for the performance of the contract has increased as a result of such suspension and the suspension was caused by circumstances beyond the control of and not the fault of the Contractor, its Suppliers or subcontractors at any approved tier, and not caused by weather, the Engineer will make an adjustment (excluding profit) and modify the contract in writing accordingly. The Contractor will be notified of the Engineer's determination whether an adjustment to the contract is warranted. No contract adjustment will be allowed under this clause to the extent that performance would have been suspended or delayed by any other cause, or for which an adjustment is provided or excluded under any other term or condition of this contract. No contract adjustment will be allowed unless the Contractor has provided the required written request for adjustment within the time prescribed.

SIGNIFICANT CHANGES IN THE CHARACTER OF WORK. 23 CFR 635.109(a)(3)

The Engineer reserves the right to make, in writing, at any time during the work, such changes in quantities and such alterations in the work as are necessary to satisfactorily complete the project. Such changes in quantities and alterations shall not invalidate the contract nor release the Surety, and the Contractor agrees to perform the work as altered.

If the alterations or changes in quantities significantly change the character of work under the contract, whether such alterations or changes are in themselves significant changes in the character of work, or by affecting other work cause such other work to become significantly different in character, an adjustment, excluding anticipated profits, will be made to the contract. The basis for the adjustment shall be agreed upon prior to the performance of the work. If a basis cannot be agreed upon, then an adjustment will be made by the Department, either for or against the Contractor, in such amount as determined to be fair and equitable.

If the alterations or changes in quantities do not significantly change the character of the work to be performed under the contract, the altered work will be paid for as provided elsewhere in the contract.

The term "significant change" shall be construed to apply only to the following circumstances: when the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction; or when a Major Item of work, as defined elsewhere in the contract, is increased in excess of 125 percent, or decreased below 75 percent of the original contract quantity. Any allowance for a change in unit price shall apply only to that portion of work in excess of 125 percent of the original contract item quantity, or in the case of a decrease below 75 percent, to the actual amount of work performed.

REQUIRED IN ALL FEDERAL AID CONSTRUCTION CONTRACTS.

DISPUTED WORK AND DISPUTE RESOLUTION

The term "dispute" shall mean a disagreement between the Contractor and the Department concerning a matter of contract performance or contract compensation. Dispute resolution may involve adjustments in compensation, adjustment of contract pay-items, the addition of new contract pay-items to the contract, and/or extension of time for performance. The Contractor shall continue the work during the pendency of the dispute.

It is the goal of the Department to resolve disputes that may arise under the contract in a timely, just and fair manner consistent with the terms of the contract. The dispute resolution process may be undertaken at any time from the contract award to the issuance of the final payment by the Office of the State Comptroller. The dispute resolution process recognizes and will take into consideration the risks and controls inherent in construction which the Contractor or the Department have agreed to assume pursuant to the terms of the contract. The Contractor is encouraged, when initiating a dispute, to provide information concerning measures that may be taken to mitigate the damages.

Disputes of any nature shall be made in strict accordance with the contract provisions, including the notice and recordkeeping provisions. The Department reserves the right to modify specifications or delete portions of the work being disputed in order to mitigate damages.

A. Disputed Work. If the Contractor is of the opinion that any work directed by the Engineer to be completed as contract work is extra work and not contract work, or that any order of the Engineer exceeds the requirements of the provisions of the contract, the Contractor shall provide the Department written notice and maintain records. After submitting the required notice, the Contractor shall complete its dispute submission in accordance with Section E. *Required Content of Dispute Submission.*

1. Determined to Be Contract Work. If the Department determines that the disputed work is contract work and not extra work, or that the direction given to the Contractor and protested was proper, the Department will direct the Contractor to continue the disputed work and the Contractor shall promptly comply. The Contractor's right to further pursue a dispute for extra compensation or damages will not be affected in any way by the Contractor complying with the directions of the Department to proceed with the work, provided the Contractor continues to keep and submit daily records to document all labor, material and equipment used for disputed work in accordance with *Extra Work and Time Related Compensation. Section C.1. Daily Summary to the Engineer.*

2. Determined to Be Extra Work. If the Department, determines that the disputed work is extra work and not contract work, or that a direction given to the Contractor and protested was not proper, then a contract adjustment will be made. Compensation will be made for such work in accordance with *Extra Work and Time Related Compensation.* The Contractor shall continue to maintain force account records until receipt of the change order approved by the Office of the State Comptroller. Documented, additional, actual and reasonable costs incurred by the Contractor pursuant to following a written order to perform work (that was subsequently contained in a change order which was disapproved) will be considered reimbursable. Eligibility for additional compensation shall cease upon notification of the disapproval of a change order.

B. Time Related Disputes. The term "time related dispute" shall mean any dispute arising from any event which affects the scheduled time of performance. This paragraph is intended to cover all such events which include major deductions or increases to quantities of work, suspension of work and cancellation of contract, and termination, as well as actions, forces or

factors, such as "delay", "disruption", or "interference."

If the Contractor believes that it is or will be entitled to additional compensation for time related disputes, whether due to delay, extra work, disputed work, breach of contract, or other causes, the Contractor shall comply with the notice and recordkeeping provisions. The Department will have no liability and no adjustment will be made for any damages which accrued more than 15 calendar days prior to the filing of written notice with the Engineer. The primary tool used to evaluate the time of performance is the Contractor's progress schedule. Department approval of a schedule or a revised schedule does not entitle the Contractor to a time extension or any time related damages. Compensation will be made for such work in accordance with *Extra Work and Time Related Compensation* Section D. *Time Related Dispute Compensation*.

C. Acceleration Disputes. The Contractor may not dispute costs associated with acceleration of the work unless the Department has given prior express written direction to the Contractor to accelerate its effort. The Contractor shall always have the basic obligation to complete the work in the time frames set forth in the contract. Lack of express written direction on the part of the Department shall never be construed as approval.

If the Contractor does accelerate its work efforts pursuant to written direction from the Department, compensation will be made in accordance with *Extra Work and Time Related Compensation* Section E. *Acceleration Compensation*. The Department, in determining whether any compensation is warranted, will evaluate the facts and circumstances which led to the acceleration to determine whether they were in the Contractor's control.**D. Non-Compliance Disputes.** The term "non-compliance dispute" shall mean any dispute arising from any event which affects the Contractor's ability to comply with the general provisions of the contract. This includes, but is not limited to, liquidated damages associated with the Contractor's failure to comply with the civil rights requirements including Commercially Useful Function; Good Faith Efforts; Substitutions and Terminations.

If the Contractor is of the opinion that any order or action of the Engineer exceeds the requirements of the provisions of the contract, the Contractor shall provide the Department written notice and maintain records in accordance with §104-06 *Notice and Recordkeeping*. If the Department determines that remedies imposed on the Contractor for non-compliance were not proper, then a contract adjustment will be made.

E. Review Time Periods for Disputes. After providing written notice, the Contractor shall, as soon as the information is available or ascertainable, provide the Engineer with a summary of its dispute contentions in accordance with Section F. *Required Content of Dispute Submission*, in sufficient detail so that the Engineer may make a determination. The Engineer will make an initial response, in writing, within 21 calendar days after the Contractor provides the dispute submission.

If a dispute is not resolved by the Engineer to the satisfaction of the Contractor, within 10 workdays of receipt of the Engineer's written decision or the Engineer fails to reply within 21 calendar days, the Contractor shall notify the Regional Director, in writing, with a copy to the Engineer, of its contentions relative to the dispute.

If the dispute is not resolved by the Regional Director to the satisfaction of the Contractor, within 15 calendar days of receipt of the Regional Director's written decision or the Regional Director fails to reply within 30 calendar days, the Contractor shall notify the Commissioner, in writing, with copies to the Engineer and the Regional Director, of its contentions relative to the dispute, indicating the substance of previous communication on the issue with the Engineer and the Regional Director and its rebuttal of their previous findings.

1. Disputes to the Commissioner Up to \$50,000. For all disputes to the Commissioner of \$50,000 or less, the Department will respond in writing within 45 calendar days of receipt of the dispute. If any additional documentation supporting the dispute or relating to the subject matter of the dispute is required, the Contractor shall provide such information within 30 calendar days of the request unless another time period is agreed to. The Department's written response to the additionally documented dispute will be submitted to the Contractor within 15 calendar days after receipt of said additional documentation or within a period no greater than that taken by the Contractor in producing said additional documentation, whichever is greater. If the Contractor disputes the Department's written response, or the Department fails to respond within the time prescribed, the Contractor may so notify the Department in writing within 15 calendar days of receipt of the Department's response, or within 15 calendar days of the Department's failure to respond. Upon the Contractor's request, the Department shall schedule a meeting or conference. By agreement between the Department and the Contractor, such time periods may be modified.

2. Disputes to the Commissioner Over \$50,000 to \$250,000. For all disputes to the Commissioner over \$50,000 and less than or equal to \$250,000, the Department will respond in writing within 60 calendar days of receipt of the dispute. If any additional documentation supporting the dispute or relating to the subject matter of the dispute is required, the Contractor shall provide such information within 30 calendar days of the request unless another time period is agreed to. The Department's written response to the additionally documented dispute will be submitted to the Contractor within 30 calendar days after receipt of said additional documentation, or within a period no greater than that taken by the Contractor in producing said additional documentation, whichever is greater. If the Contractor disputes the Department's written response, or the Department fails to respond within the time prescribed, the Contractor may so notify the Department in writing within 15 calendar days of receipt of the Department's response, or within 15 calendar days of the Department's failure to respond. Upon the Contractor's request, the Department will schedule a meeting or conference and notify the Contractor within 30 calendar days of the scheduled date. By agreement between the Department and the Contractor, such time periods may be modified.

3. Disputes to the Commissioner over \$250,000 or of Undetermined Value. For disputes to the Commissioner over \$250,000 or that have an undetermined value, the Department will respond in writing within 90 calendar days of receipt of the dispute. If any additional documentation supporting the dispute, or relating to the subject matter of the dispute, is required, the Contractor shall provide such information within 30 calendar days unless another time period is agreed to. The Department's written response to the additionally documented dispute will be submitted to the Contractor within 60 calendar days after receipt of the said additional documentation, or within a period no greater than that taken by the Contractor in producing said additional documentation, whichever is greater. If the Contractor disputes the Department's written response, or the Department fails to respond within the time prescribed, the Contractor may so notify the Department in writing within 30 calendar days after the receipt of the Department's response, or within 30 calendar days of the Department's failure to respond. Upon the Contractor's request, the Department will schedule a meeting or conference and notify the Contractor within 30 calendar days of the scheduled date. By agreement between the Department and the Contractor, such times periods may be modified.

F. Required Content of Dispute Submission. All disputes shall be submitted in writing to the Engineer and shall be in sufficient detail to enable the Engineer to ascertain the basis and the

amount of each dispute. If requested and as a minimum, the following information shall be provided when such information is ascertainable by the Contractor:

1. General.

- a. The date on which actions resulting in the dispute occurred or conditions resulting in the dispute became evident.
- b. A copy of the notice of dispute for the specific dispute by the Contractor.
- c. To the extent known, the name, function, and activity of each Department official, or employee or agent, involved in, or knowledgeable about facts that gave rise to such dispute.
- d. The name, function, and activity of each Contractor or Subcontractor official, or employee, involved in, or knowledgeable about facts that gave rise to such dispute.
- e. The identification of any pertinent documents, and the substance of any material communication relating to such dispute.
- f. A statement as to whether the additional compensation or extension of time if requested is based on the provisions of the contract or is an alleged breach of contract.
- g. If an extension of time is also requested, the specific days for which it is sought and the basis for such request as determined by an analysis of the construction progress schedule.

2. Time Related Dispute Submissions.

- a. A description of the operations that were delayed, the reasons for the delay, how they were delayed, including the report of all scheduling experts or other consultants, if any.
- b. The documented process of establishing, maintaining and updating the progress schedule, showing when the delay occurred and how it affected the schedule, in accordance with the Progress Schedule or a CPM specification, if applicable.
- c. The amount of additional compensation sought in accordance with Extra Work and Time Related Compensation Section D. *Time Related Dispute Compensation*.

3. Acceleration Dispute and Disputed Work Submissions.

- a. A detailed factual statement of the dispute providing all necessary dates, locations and items of work affected by the dispute.
- b. The specific provisions of the contract which support the dispute and a statement of the reasons why such provisions support the dispute.
- c. The amount of additional compensation sought, and a breakdown of that amount shall conform to the requirements of *Extra Work and Time Related Compensation* Section B. *Force Account Work* except for acceleration disputes which shall conform to the requirements and categories specified in *Extra Work and Time Related Compensation*-Section D. *Time Related Dispute Compensation*.

G. Required Certification of Disputes Over \$50,000. When submitting any dispute over \$50,000, the Contractor shall certify in writing, under oath and in accordance with the formalities required by the contract, as to the following:

- 1. That supporting data is accurate and complete to the Contractor's best knowledge and belief,
- 2. That the amount of the dispute is based on sound engineering principles, is supported by sound mathematical and cost accounting principles and the dispute itself is in accordance with the terms of the contract, and accurately reflects what the Contractor in good faith believes to be the Department's liability; and,

3. That the dispute and the amount of the dispute is in full compliance with the Federal False Claims Act, 31 U.S. Code Section 3729, and New York State False Claims Act, NYS Finance Law Article XIII; and that the Contractor acknowledges that if determined to be in violation of these acts by a court of proper competent jurisdiction, such violating Contractor shall be subject to liability for a civil penalty, plus up to three times the damage the State sustains by such violation.

4. The certification shall be executed by:

- a. The Contractor, if the Contractor is an individual; or,
- b. A senior company official in charge at the Contractor's plant or location involved or an officer or general partner of the Contractor having overall responsibility for the conduct of the Contractor's affairs, if the Contractor is not an individual.

H. Auditing of Records. A Contractor who has filed a dispute, or Subcontractor, Manufacturer, Fabricator or Material Supplier on whose behalf a dispute has been filed, shall have the following records available for audit at any time following the filing of such dispute, and shall cooperate with the auditors, whether or not such dispute is part of a suit pending in the courts of this State. The audit may be performed by employees of the Department or by an independent auditor appointed by the Department and may begin on 15-day notice to the Contractor, Subcontractor, Manufacturer, Fabricator or Material Supplier as is appropriate. The Contractor, Subcontractor, Manufacturer, Fabricator or Material Supplier shall cooperate with the auditors. The Department will maintain the audit, its backup, reports, schedules and conclusions as confidential material. Failure to maintain and retain sufficient records shall constitute a waiver of that portion of such dispute that cannot be verified and shall bar recovery thereunder. In the event the Contractor fails to substantially furnish the required reports and accounting records, such failure shall constitute a waiver of the dispute for payment other than for payment at contract unit prices for the work performed. The Contractor will be allowed to review the audit findings and will be allowed 30 calendar days to respond to any items disallowed by the audit.

Without limiting the generality of the foregoing, the auditors shall have available to them and the Contractor agrees to provide access to and true copies of the original, in whatever format the records are created/maintained, of the following documents:

1. All documents related to the preparation of the Contractor's bid including the final calculations on which the bid was based.
2. All documents which relate to each and every dispute together with all documents which support the amount of damages as to each dispute.
3. Daily time sheets, superintendent diaries or log sheets and foreperson's daily reports.
4. Union agreements and reports, if any.
5. Insurance policies, welfare and benefits records or plans for union and non-union personnel.
6. Payroll register, individual employee earnings records and payroll tax returns.
7. Material invoices, purchase orders, and all material and supply acquisition contracts.
8. Material cost distribution work sheet.
9. Equipment records (list of company equipment, rates, depreciation schedules, daily equipment reports or logs, fueling logs or records, equipment lease purchase agreements, and equipment purchase invoices).
10. Depreciation records on all company equipment whether such records are maintained by the company involved, its accountant, or others.
11. If a source other than depreciation records is used to develop costs for the Contractor's

internal purposes in establishing the actual cost of owning and operating equipment, all such other source documents.

12. Vendor rental agreements, subcontractor invoices, agreements and back charge records.

13. Subcontractor payment certificates.

14. Canceled checks (payroll and vendors).

15. Job cost ledger or report and job payroll ledger.

16. General ledger, general journal (if used), and all subsidiary ledgers and journals together with all supporting documentation pertinent to entries made in these ledgers and journals.

17. Cash receipts, cash disbursements journal, purchase journal, petty cash journal and supporting vouchers.

18. Audited and unaudited financial statements for all years during operations on this contract.

19. Documents which reflect the Contractor's actual overhead during the years contract work was performed.

20. Work sheets used to prepare the dispute establishing the cost components for items of the dispute including, but not limited to, labor, benefits and insurance, materials, equipment, subcontractors, and all documents which establish the time periods, individuals involved, the hours and the rates for the individuals.

I. Contract Closeout Process. A dispute, or a portion thereof, that has been previously submitted to the Department which remains unresolved to the satisfaction of the Contractor, may be submitted for Department review in connection with the closeout process. The records made, and recommendations or actions of a facilitator, a Dispute Review Board, or any other dispute resolution method, shall be off the record, non-binding, confidential, and may not be used in any future litigation.

1. Contract Closeout Meeting. If requested by the Contractor, the Department will schedule a contract closeout meeting with the Office of Construction in Albany. The contract closeout meeting process involves meeting(s) with the Contractor and its representatives and Department personnel to amicably resolve all remaining disputes of the Contract. In lieu of pursuing the closeout meeting process, the Contractor may elect to utilize the Gatekeeper process.

2. Claims. If any dispute, or portion thereof, remains unresolved following the meeting(s) or conference(s) and the payment of the final agreement, the Contractor may file a claim in the New York State Court of Claims in accordance with law and the provisions of the Contract.

EXTRA WORK AND TIME RELATED COMPENSATION.

The Contractor will be compensated for extra work by agreed price in accordance with Section A. *Agreed Price Work*, or by force account in accordance with Section B. *Force Account Work*.

A. *Agreed Price Work.* Agreed prices for new items of work or materials in accordance with one of the methods outlined below may be accepted by the Engineer and incorporated into a change order as the Department may deem them to be just and fair and beneficial to the State. An agreed price may be offered by the Contractor and accepted by the Engineer for a defined quantity of additional work. The Contractor shall provide an agreed price proposal generally not later than 7 calendar days prior to beginning the work. If a price has not been agreed to, in writing, prior to starting the work, the Contractor shall keep and submit daily records to document all labor, material and equipment used to complete the work in accordance with Section C.1. *Daily Summary*. A change order containing an agreed price not supported by one of the following may be subsequently rejected by the Department or the Office of the State Comptroller.

1. *Original/Adjusted Contract Bid Price.* The original contract bid price, or the original contract bid price adjusted for documented increase or decrease in labor cost, material cost, equipment rate, mobilization, and/or site conditions.

2. *Weighted Average Price.* The statewide or regional weighted average price (WAP) for a contract pay item for minimum of 3 contracts of similar type, quantity, and/or location of work over a one to two-year period; as shown in the Pay Item Catalog (PIC). The Engineer may adjust the WAP for documented increase or decrease in labor, materials, equipment, mobilization, and/or site conditions.

3. *Average of 3 Lowest Bidders.* The average bid price for a contract pay item by the 3 lowest responsible bidders on the contract, including the Contractor, presented in the Tabulation of Bids. If less than 3 responsible bids were received, this option shall not be used.

4. *Price Analysis.* A price analysis shall be based on an estimated breakdown of charges listed in Section B. *Force Account Work*, using the labor, equipment and other rates available when the agreed price is developed by the Contractor. The analysis shall be based on crew composition, material prices, equipment production and overall production rates that are reasonable in comparison with contract bid price work. Price analyses shall be submitted in a format acceptable to the Department. Price Analysis forms are available from the Department's website at www.dot.ny.gov/main/business-center/contractors/construction-division/forms.

The Contractor will be reimbursed for labor in accordance with Section B.1.a *Labor*. The Contractor will be reimbursed for each class of labor, not individual workers, at the prevailing wage rate for that trade and classification.

The Contractor will be reimbursed for materials in accordance with Section B.1.b *Materials*.

The Contractor will be reimbursed for equipment in accordance with Section B.1.c *Equipment*. Equipment rates shall be used with no rate adjustment factor and no regional adjustment factor. An appropriate type and size of equipment similar to that available on the contract site, if present, shall be used.

The Contractor will be reimbursed for required insurances in accordance with Section B.1.d *Insurance*.

The Contractor will be reimbursed for overhead at 10% of items Section B.1.a. *Labor*, Section B.1.b. *Materials* and Section B.1.c. *Equipment*.

The Contractor will be reimbursed for profit at 10% of items Section B.1.a. *Labor*, Section B.1.b. *Materials* and Section B.1.c. *Equipment*.

Due to the cost and effort associated with development, a price analysis should generally be reserved for extra work under an individual contract pay item or a single price analysis, of more than \$5,000.

B. Force Account Work. Where there are no applicable unit prices for extra work and agreed prices cannot be readily established or substantiated, the Contractor will be reimbursed by Force Account for the actual, reasonable and verifiable cost of the items listed below. The Contractor shall maintain and submit force account records in accordance with Section C. *Force Account Report*.

1. Contractor Costs. At the preconstruction meeting, the Contractor should provide the Engineer documentation supporting its insurance rates for the current period and provide updates within 30 days after the renewal date, to assist in timely preparation and review of force account reports. All rates will be those in effect at the time the work is performed.

a. *Labor.* Necessary labor costs include wages, supplemental (fringe) benefits, FICA, Medicare, Federal Unemployment Tax (FUTA), State Unemployment Insurance (SUI), paid holidays, paid sick leave, and other such reasonable charges that are paid by the Contractor pursuant to existing written agreements with its employees and/or labor organizations. Labor shall be recorded in hours to the nearest half hour.

(1) *Wages and Fringe Benefits.* The Contractor will be reimbursed for each worker separately at the actual payroll rate; an average rate based on different workers will not be accepted. The wage rate for an individual worker may be up to 150% of the prevailing wage and 100% of the supplemental (fringe) benefits, provided the Contractor documents through certified payrolls that the worker has and continues to be paid more than the prevailing wage for contract work. The Contractor shall obtain the approval of the Engineer for wage rates for individual workers over 110% of the prevailing wage prior to that individual starting work.

There are no prevailing wage rates for foremen/forewomen. Foremen/forewomen are typically paid at a higher rate than the trades they supervise, due to additional responsibilities. The reimbursement for foremen/forewomen will be based on previous certified payrolls or other payroll records for that individual, if available, provided crew composition and overall production rates are reasonable.

If the Contractor is obligated by a labor agreement to pay a full day's pay for an individual in a required labor classification and cannot find other work on that day for that individual, the Contractor will be reimbursed for a full day's pay for that individual.

Professional or technical personnel specifically required or agreed to by the Department, in writing, to be present for specific critical work operations will be reimbursed as a direct labor cost. The reimbursement for these professional or technical personnel will be based on previous payrolls for that individual, as

certified by the employer, or by comparison to costs for similarly qualified personnel.

No reimbursement will be made for travel, lodging, bonuses, or other similar payments made to workers.

(2) *Standard Markups.* The Contractor will be reimbursed for FICA, Medicare, Federal Unemployment Tax (FUTA), State Unemployment Insurance (SUI), paid holidays, and paid sick leave using the Standard Labor Markup Rate, on all wages, not including supplemental (fringe) benefits. The Standard Labor Markup Rate, initially 15.2%, may be modified by the Department via Official Issuance.

The Contractor will be reimbursed for FICA and Medicare using the Standard Fringe Markup Rate on all supplemental (fringe) benefits paid in a payroll check or in cash to the employee. The Standard Fringe Markup Rate, initially 7.65%, may be modified by the Department via Official Issuance.

b. *Materials.* Materials are necessary products incorporated in the temporary or permanent work. The Contractor will be reimbursed for the costs of materials, including transportation to the site and sales taxes for materials not permanently incorporated into the work. Material transportation may be accounted for as part of the material unit price, a material unit price for transportation, a fee for transportation, or equipment and operator charges. Contractor or Subcontractor costs for transportation of materials shall be accounted for as labor and equipment in accordance with Section B.1.a. Labor and Section B.1.c. Equipment respectively. Because force account work has no associated pay lines/limits, materials will be measured as actual quantities delivered and incorporated, including any required overlap, and appropriate allowances for waste and/or disposal due to construction operations and/or installation practices.

The Contractor will be reimbursed, including sales taxes when applicable, for expendable materials such as oxygen, acetylene, propane, welding rods, form lumber, form oil, grinding wheels, saw blades, hammer and drill bits, drill steel, and tooth-bits consumed in progressing the work. Other small tools and tool/equipment supplies used or consumed in progressing the work are considered to be included in overhead and no separate reimbursement will be made.

Material acquired by direct purchase shall be documented by bills or acceptable invoices. All prices on used material incorporated in either temporary or permanent work shall be billed at a fair value, less than the original cost when new. A reasonable salvage credit will be determined by the Engineer in coordination with the Contractor for substantial salvageable material recovered.

c. *Equipment.* Equipment, other than small tools, used by the Contractor shall be of suitable size and suitable capacity required for the work to be performed. If the Contractor elects to use equipment of a higher rate than the equipment suitable for the work, payment will be made at the rate applicable to the suitable equipment. The equipment actually used and the suitable equipment upon which the rate is based will be recorded as a part of the Force Account Report. Usage will be recorded in hours to the nearest half hour to align with the recorded labor associated with the work. The Engineer will verify the suitability of the equipment. If there is a differential in the rate of pay of the operator of oversize or higher rate equipment, the rate paid for the operator will likewise be related to the suitable equipment.

(1) *Mobilization Costs.* If the Contractor does not have a needed type or piece of equipment on the contract site or the equipment is not available to perform the extra work, the Contractor will be reimbursed for the reasonable cost of mobilization to and demobilization away from the work site. Mobilization and demobilization include the cost of transporting equipment; 50% of the hourly ownership rate of transported equipment during transportation, including loading, unloading, assembly, and disassembly; and fees for any required regulatory permits. Costs for demobilization away from the work site will not be paid if the equipment is kept on the site and performs additional contract bid price work.

(2) *Ownership Costs.* The Contractor will be reimbursed for its costs for providing equipment at the rates listed in the Cost Recovery software produced by Equipment Watch (hereafter referred to as Cost Recovery). The hourly ownership rates will reimburse the Contractor for all non-operating costs of providing equipment, including depreciation on the original purchase, costs of major overhaul repairs, facilities capital, normal risk insurance, property taxes, storage, licenses, security, record keeping, and mechanic's supervision.

The hourly ownership rate will be the Cost Recovery monthly rate divided by 176, multiplied by the rate adjustment factor for the equipment model year and then multiplied by the regional adjustment factor. If the Contractor has a piece of equipment remanufactured, rebuilt, or significantly altered, the rate adjustment factor may be modified, as documented by Equipment Watch.

For equipment required to be present and operating, the Contractor will be reimbursed for the product of the hours of actual use, multiplied by the hourly ownership rate.

For equipment required to be present; dedicated exclusively to the force account, not available for mobilization elsewhere, and not used on contract bid price work that day; the Contractor will be reimbursed for the product of the remaining non-operating hours in the shift, multiplied by 50% of the hourly ownership rate.

Equipment that is not required to be present will not be eligible for reimbursement of non-operating hours. If the Engineer directs or agrees that equipment mobilized for the operation is no longer required to be present, the Contractor may demobilize the equipment. If the equipment is demobilized, and subsequently determined to be required to be present, the Contractor will be reimbursed for remobilization.

For equipment without an operator that is designed to operate on a continuous long-term basis, such as a pump, portable variable message sign (PVMS), or temporary traffic signal, the Contractor will be reimbursed for a maximum of 176 hours a month.

Equipment with an hourly ownership rate of less than \$2 or a current purchase price of less than \$500 will be considered as small tools and equipment and will not be directly reimbursed.

(3) *Operating Costs.* The hourly operating rate includes preventative and field maintenance, fuel, lubricants, and other operating expenses as outlined in Cost Recovery, not including consumables or the operator's wages. The Contractor will be reimbursed for the product of the number of hours of actual use multiplied by the hourly operating rate. No reimbursement for operating costs will be made for equipment that is not operating.

(4) *No Established Rate.* If rates are not established in Cost Recovery for a piece of equipment, the Contractor shall contact the Cost Recovery publisher, Equipment Watch to establish rates. If Equipment Watch will not establish rates, the Department, in coordination with the Contractor, may establish rates for ownership costs and operating costs for that piece of equipment consistent with its cost and expected life.

(5) *Maximum Ownership Costs.* The maximum amount reimbursed for ownership costs of equipment, is limited, on a contract basis, to the original purchase price as listed in the Equipment Watch Retail Rental software. The Contractor shall not exchange equipment for a similar item for the purpose of extending the maximum ownership cost. Exchange of equipment for an engineering or mechanical reason shall be approved by the Engineer, or the maximum ownership cost will be limited to that reimbursed for the original piece of equipment. If the ownership cost is limited by the original purchase price, the Contractor will continue to be reimbursed for the operating cost for hours of actual use.

(6) *Backup Equipment.* The Contractor will be reimbursed at 50% of the hourly ownership rate for redundant/backup equipment specifically required, or agreed to by the Department in writing, to be present for specific critical work operations.

(7) *Owner/Operator Equipment.* Equipment Owner/Operators utilized by the Contractor in the performance of work shall be accounted for as a service charge in accordance with Section B.3. *Service Charges.*

d. *Insurance.* The Contractor will be reimbursed for Workers Compensation, Commercial General Liability (CGL), Umbrella or Excess Liability, Special Protective and Highway Liability, Professional Liability/Errors and Omissions, Railroad Protective Liability, Marine Protection and Indemnity, and Pollution Liability insurances at the rate paid by the Contractor, in accordance with the method procured from its insurer(s).

(1) Contractors or Subcontractors that pay insurances based on a percentage of payroll will be reimbursed that percentage of the portion of item Section B.1.a. *Labor* specified in the Contractor's insurance policy.

(2) Contractors or Subcontractors that pay insurances based on of a percentage of gross sales will be reimbursed that percentage of the total of items in Section B.1.a. *Labor*, Section B.1.b. *Materials*, Section B.1.c. *Equipment*, Section B.1.e. *Overhead* and Section B.1.f. *Profit*.

(3) *Workers Compensation Insurance.* The Workers Compensation insurance rate will be the statutory loss cost rate established by the NYS Workers Compensation Insurance Rating Board, with the insurer's approved lost cost multiplier, all assessments and credits, and an experience modifier of 1.00, subject to the Construction Employment Payroll Limitation (CEPL) Program limits where applicable. The Contractor shall submit an insurance policy declaration/rate page from its insurer to validate the Workers Compensation insurance rate.

Where the Longshore and Harbor Workers' Compensation Act, Jones Act, Federal Employees Liability Act or other legal requirements impose additional liability on the Contractor, additional differentials will be added to the Worker's Compensation insurance rate.

For Contractors that obtain Workers Compensation insurance through a pooled fund or similar arrangement, the Contractor shall supply documentation from the Contractor's insurance carrier detailing the rate and basis for application.

The Contractor will be reimbursed for Workers Compensation insurance based on the Workers Compensation insurance rate described above, multiplied by gross wages, not including the premium portion of overtime nor supplemental (fringe) benefits, except when supplemental benefits are paid directly to the employee, up to the CEPL wage limit, where applicable.

e. *Overhead.* The Contractor will be reimbursed for overhead at 10% of items Section B.1.a. *Labor*, Section B.1.b. *Materials* and Section B.1.c. *Equipment*. Overhead will be defined to include the following:

(1) Additional costs for bond(s), Disability Benefits and Commercial Automobile insurance;

(2) All salary, benefits and expenses of executive officers, supervising officers/employees, superintendents, project engineers, office engineers, CPM Schedulers, clerical or administrative employees, and other project level staff, but not including working forepersons; including payroll taxes, unemployment insurance, workers compensation insurance, and charges that are paid by the Contractor to or on behalf of those employees pursuant to written agreement with its employee(s) and/or labor organizations;

(3) Small tools and small tool/equipment supplies, including shovels, picks, axes, saws, bars, sledges, lanterns, etc.;

(4) Contractor's field office rental, utility charges, potable water, sanitation, cleaning, computers, CADD equipment, office equipment, office supplies, reproduction costs, etc.;

(5) Administrative or other efforts required to maintain records and produce force account reports.

f. *Profit.* The Contractor will be reimbursed for profit at 10% of items Section B.1.a. *Labor*, Section B.1.b. *Materials* and Section B.1.c. *Equipment*.

2. Subcontractor Costs. When the work is performed by a Subcontractor, the Contractor will be reimbursed the actual, reasonable and verifiable cost of such subcontracted work as outlined above in Section B.1. *Contractor Costs*, plus an additional 5% for subcontract administration, and the Contractor's costs for insurance in accordance with Section B.1.d *Insurance*.

Specialty Subcontractors are Subcontractors that are experts in a unique trade or are trained to perform very specialized work (i.e., pipe jacking, soil nail walls, fiber wrapping, pile installation, etc.) Only when the Deputy Chief Engineer (Construction) has given advanced approval of projected actual costs, the Department will reimburse the actual, reasonable and verifiable costs for tolls, mileage, lodging, and meals for Specialty Subcontractors required to

perform the work when such costs are deemed necessary due to the Specialty Subcontractor's considerable distance from the location of the work and consideration of alternative Specialty Subcontractors. The reimbursement amount will be the lesser of: (1) the advanced approved actual costs; (2) actual incurred charges; or (3) the current maximum per diem and mileage rates for the contract location within New York State as posted on www.gsa.gov. Specialty Subcontractors shall maintain all records of costs and provide them to the Department upon request. Any extra or unapproved expense to include personal travel or other non-NYSDOT business travel in the official transportation ticket shall be borne by the traveler. This shall include costs as a result of indirect-route or interrupted travel.

3. Service Charges. When work is performed by, and a fee is paid to a professional service, a work service, or an equipment owner/operator, the Contractor will be reimbursed the actual cost of the service fee plus 5% for service administration. This 5% will be applied only once to the service fee regardless of the firm making direct payments.

The rate for equipment with an operator shall not exceed the total of the Blue Book ownership rate, the Blue Book operating rate, and the wages for an appropriate operator. For specialized equipment or circumstances, the wages for an appropriate operator may be up to 150% of the prevailing wage rate.

C. Force Account Report. Payment for force account work will be made based on the following reports. Reports shall be submitted in a format acceptable to the Department. Force Account MURK forms are available from the Department's website at www.dot.ny.gov/main/business-center/contractors/construction-division/forms.

If the Engineer or his/her representative disagrees with the accuracy, applicability, or reasonableness of any portion of a Contractor's submission, he/she will promptly notify the Contractor.

1. Daily Summary. The Contractor shall deliver a daily summary of force account work to the Engineer in a format acceptable to the Department, not later than close of business on the workday following that for which the work is reported. The daily summary shall be dated and signed by the Contractor's authorized representative.

The Engineer's signature indicates that the record, as modified, is contemporaneous and accurate, but does not indicate concurrence with any dispute. The Engineer will annotate the record as necessary, sign and date, and provide a copy to the Contractor.

The summary shall contain:

- a. The contract number, other contract information, and the Contractor name/information.
- b. A brief description of the work performed and the work location for that day.
- c. A list of personnel by name, including the hours worked, and labor classification.
- d. A list of materials used to indicate the quantity and nature. The cost shall be documented later by proper receipts.
- e. A list of equipment used to indicate the number of hours used and the type, manufacturer, model, model year, size of equipment, and any required attachments.

2. Labor Summary. If there is an approved Force Account Estimate, in order to receive progress payments, the Contractor shall deliver to the Engineer a summary of labor used on the work. The Contractor shall provide the Weekly Summary of Force Account Labor using forms provided by the Department, and shall include the first and last name, labor classification, regular and premium hourly rates of pay, supplemental (fringe) benefit hourly rates, regular and premium hours worked, supplemental (fringe) benefit

amounts paid in cash, workers compensation percentage rates and limits, and/or other items necessary to calculate the amount due to the Contractor. Progress payments on the force account will not be made until the Contractor provides required documentation to the Engineer.

3. Force Account Report Submission. On completion of the specific force account work, the Contractor shall deliver to the Engineer a Force Account Report, wherein all labor, materials, equipment, and other charges are shown and totaled using forms provided by the Department. The Force Account Report shall be dated and signed by the Contractor's authorized representative. When the Contractor and the Engineer agree on the Force Account Report, the Engineer will prepare and submit a change order containing the Force Account Report to the Regional Construction Engineer for approval.

4. Force Account Review. The Regional Construction Engineer, or designee, will review the Force Account Report and make any notations, remarks or comments on this form that may assist in final payments. The emphasis of this review will be on labor rates, markups, workers compensation limits, material costs, equipment rates, insurance rates, and overall documentation. The Regional Construction Engineer will forward the change order to the Deputy Chief Engineer, Construction (DCEC). The DCEC, after review and approval, will forward the change order to the Office of the State Comptroller (OSC) for review and filing. Only after filing by OSC may the Engineer begin to process contract payments based on the change order, as the work is completed.

D. Time Related Compensation. The Contractor will only be eligible for extra compensation for expenses or costs which are identified as compensable. In the event any legal action is instituted against the State by the Contractor due to any such dispute for additional compensation, whether due to time related dispute, delay, acceleration, breach of contract, or otherwise, the State's liability will be limited to those items which are specifically identified as compensable under Section D.1. *Recoverable Contractor Costs*. Nothing in this subsection is intended to create any liability of the State not existing at common law or pursuant to the terms of this contract or to prevent the Contractor from filing a claim in the New York State Court of Claims. The remedies contained herein are exclusive.

1. Recoverable Contractor Costs. Only the following elements will be recoverable by the Contractor as "time related compensation" provided they are actual, reasonable and verifiable. Any such adjustment will be made via change order. Escalated costs will include unanticipated higher or lower costs attributable, with appropriate credits, to the performance of work or portions of work in an extended time period due to extenuating circumstances beyond the control of the Contractor.

a. *Extra work.* The Contractor will be reimbursed for extra work required due to a time related dispute in accordance with Section B. *Force Account Work*, less any appropriate credit.

b. *Labor.* The Contractor will be reimbursed for documented escalated labor costs determined in accordance with Section B.1.a. *Labor*.

c. *Materials.* The Contractor will be reimbursed for documented escalated material costs determined in accordance with Section B.1.b. *Materials*.

d. *Equipment.* The Contractor will be reimbursed for documented escalated equipment costs less appropriate credits, determined in accordance with Section

- B.1.c. *Equipment*. The costs for idle equipment will be 50% of the ownership rate set forth in Section B.1.c. *Equipment*. Idle time shall not exceed 8 hours per day, 40 hours per week, or the annual usage hours established in the Equipment Watch Cost Recovery software. The Contractor will be reimbursed for backup equipment costs, in accordance with Section B.1.c.(6) *Backup Equipment*. Equipment with an hourly ownership rate of less than \$2 or a current purchase price of less than \$500 will be considered as small tools and equipment and will not be directly reimbursed. No operating costs will be paid for idle equipment.
- e. *Insurance*. The Contractor will be reimbursed for documented additional or escalated insurance costs during the extended period.
- f. *Extended Contract Site Supervision and Management*. The Contractor will be reimbursed for documented additional or escalated contract site overhead costs during the extended period, including those for superintendents, project engineers, office engineers, CPM schedulers, clerical and other project level staff, but not including working forepersons. Allowable costs will include salary, Standard Labor Markup on salary, benefits not included in the Standard Labor Markup, and workers compensation insurance.
- g. *Extended Contractor's Field Office Costs*. The Contractor will be reimbursed for fees paid to service provider(s) during the extended period, for required Contractor's field office rental, utility charges, potable water, sanitation, cleaning, etc.
- h. *Bond Costs*. The Contractor will be reimbursed for documented additional or escalated bond costs during the extended period.
- i. *Home Office Overhead*. The Contractor will be reimbursed for home office overhead at 10% of items Section D.1.b. *Labor* and Section D.1.c. *Materials*. The Contractor will be reimbursed for home office overhead at 10% of documented escalated equipment costs under Section D.1.d. *Equipment*. No home office overhead will be paid for idle equipment.
- j. *Profit*. The Contractor will be reimbursed for profit at 10% of items Section D.1.b. *Labor* and Section D.1.c. *Materials*, except when Suspensions of Work Ordered by the Engineer applies, no profit will be allowed. The Contractor will be reimbursed for profit at 10% of documented escalated equipment costs under Section D.1.d. *Equipment*. No profit will be paid for idle equipment.
- 2. Recoverable Subcontractor Costs.** When costs are recoverable by a Subcontractor as "time related compensation," the Contractor will be reimbursed the actual, reasonable and verifiable subcontractor costs as outlined above in Section D.1., an additional 5% of those costs for subcontract administration, and costs for Contractor insurances in accordance with Section D.1.e. *Insurance*.
- 3. Non-Recoverable Costs.** In any dispute for time related compensation, the Department will have no liability for the following items and the Contractor shall make no claim for the following items:
- a. Home office overhead in excess of that provided in Section D.1.i. *Home Office Overhead*;

- b. Profit, in excess of that provided in Section D.1.j. *Profit*;
- c. Loss of anticipated or unanticipated profit;
- d. Labor inefficiencies and loss of productivity;
- e. Consequential damages, including but not limited to interest on monies in dispute, including interest, which is paid on such monies, loss of bonding capacity, bidding opportunities, or interest on investment, or any resultant insolvency;
- f. Indirect costs or expenses of any nature;
- g. Direct or indirect costs attributable to performance of work where the Contractor, because of situations or conditions within its control, has not progressed the work in a satisfactory manner.
- h. Attorney fees and dispute or claims preparation expenses.

E. Acceleration Compensation. The Contractor will be reimbursed for additional costs associated with acceleration directed by the Department in writing.

1. Recoverable Contractor Costs. The following elements will be recoverable by the Contractor as compensation for acceleration, provided they are actual, reasonable and verifiable. Recoverable costs include costs attributable, with appropriate credits, to the performance of work or portions of work during the original contract period, but at an accelerated rate, attributable to the Department's directed acceleration.

- a. *Labor.* The Contractor will be reimbursed for additional labor costs, primarily the premium portion of overtime;
- b. *Materials.* The Contractor will be reimbursed for additional material costs, primarily costs for accelerated production and delivery costs or additional fabrication costs associated with a revised delivery schedule;
- c. *Equipment.* The Contractor will be reimbursed for additional equipment costs, primarily costs for mobilization and demobilization of additional equipment required;
- d. *Insurance.* The Contractor will be reimbursed for additional insurance costs, including Commercial General Liability (CGL), Umbrella or Excess Liability, Special Protective and Highway Liability, Professional Liability/Errors and Omissions, Railroad Protective Liability, Marine Protection and Indemnity, and Pollution Liability insurances required, at the rate paid by the Contractor, in accordance with the method procured from its insurer(s).
 - (1) Contractors or Subcontractors that pay insurances based on a percentage of payroll will be paid that percentage of the portion of item Section E.1.a. *Labor* specified in the Contractor's insurance policy.
 - (2) Contractors or Subcontractors that pay insurances based on a percentage of gross sales will be paid that percentage of the total of items in Section E.1.a. *Labor*, Section E.1.b. *Materials*, Section E.1.c. *Equipment*, Section E.1.e. *Overhead*, and Section E.1.f. *Profit*.
- e. *Overhead.* The Contractor will be reimbursed for overhead at 10% of items Section E.1.a. *Labor*, Section E.1.b. *Materials* and Section E.1.c. *Equipment*.

f. *Profit*. The Contractor will be reimbursed for profit at 10% of items Section E.1.a. *Labor*, Section E.1.b. *Materials* and Section E.1.c. *Equipment*.

2. *Recoverable Subcontractor Costs*. When costs are recoverable by a Subcontractor as acceleration compensation, the Contractor will be reimbursed the actual, reasonable and verifiable subcontractor costs as outlined in Section E.1. *Recoverable Contractor Costs*, an additional 5% of those costs for subcontract administration, and the Contractor's costs for insurance in accordance with Section E.1.d *Insurance*.

REQUIRED IN ALL FEDERAL AID CONTRACTS.

CIVIL RIGHTS MONITORING AND REPORTING

The approved civil rights reporting software is *Equitable Business Opportunity Solution* (EBO). The EBO software is a web-based system provided to the Contractor at no cost. The Contractor shall use the approved civil rights reporting software on all contracts. The Contractor shall enter complete and accurate electronic data for each month, not later than the 15th of the following month, using EBO. Data shall be current through the end of the last full payroll week for that month, or as otherwise approved by the Engineer to coordinate with contract payment submittals.

A. Civil Rights Officer(s). The Contractor shall designate a Corporate Civil Rights Officer, a Corporate DBE Representative, and a contract site Equal Employment Opportunity (EEO) Representative; and each Subcontractor shall designate a Corporate Civil Rights Officer, and a contract site Equal Employment Opportunity (EEO) Representative in the approved civil rights reporting software. The designated individuals shall have the responsibility to and shall be capable of effectively administering and promoting an active program of equal employment opportunity and who shall be assigned adequate authority and responsibility to do so. A single individual may fulfill multiple roles. The Contractor shall update the civil rights reporting software within 10 calendar days of any changes in these roles.

B. Workforce Participation Plan. At the pre-construction meeting, the Contractor shall submit an AAP 35 *Workforce Participation Plan* covering the Contractor's workforce and the workforce of its Subcontractors with subcontracts over \$10,000, together and coordinated with the contract progress schedule, that addresses the Equal Employment Opportunity goals.

The Contractor shall not start work until the Department has reviewed and accepted the *Workforce Participation Plan*. The Contractor shall submit a revised plan when a significant work force build-up or reduction will substantially affect goal attainment, or when a revised schedule is requested by the Department. Such revised *Workforce Participation Plan* must be agreed upon by the Department or the original will remain in effect.

C. Equal Employment Opportunity (EEO) Monitoring and Reporting. The Contractor's compliance with the EEO Requirements will be based on its Employment Utilization, affirmative action steps and its good faith efforts to meet the goals.

The Department, in evaluating the Contractor's good faith efforts to meet the EEO goal(s), will first analyze the Contractor's goal attainment on an individual contract. If the Contractor is not meeting the goal(s) for a single trade or contract, the Department will analyze, progressively, the Contractor's goal attainment on all contracts held by the Contractor within the county, the Region, and/or the State. This method of analysis shall be applied primarily but not solely to contracts with small population numbers. Other factors to be considered include, but are not limited to, the location of the contracts, the relative proximity of the contracts to each other, and the nature of the work.

1. Employee Utilization Data. The Contractor shall submit employee utilization data for its workforce and for each Subcontractor with a subcontract exceeding \$10,000 to the Department on a monthly basis, not later than the 15th of the following month. Data shall be submitted showing the total hours for each payroll week, separately through the end of the last full payroll week for that month. A payroll week only partially in a month shall be submitted for the next month. Payroll weeks are determined based on the firm's established payroll end date. Data shall include employee name, gender, ethnicity, and hours worked by trade(s) and classification. Employment utilization percentages are determined using data from the start of work up to and including the month being reported. For the purpose of

determining utilization percentages, the hours of female and minority employment are tabulated separately, and attainment percentages are calculated separately.

2. Federal-Aid Highway Construction Contractors Annual EEO Report. The Contractor shall submit all required employee utilization data to produce a Form FHWA 1391 *Federal-Aid Highway Construction Contractors Annual EEO Report* to the Department annually not later than August 15th, reflecting the work force during all or any part of the last payroll period worked in July, for all ongoing Federal-Aid contracts. The data shall indicate the number of minority men, minority women, non-minority men, and non-minority women employees currently engaged in each trade.

3. Monthly Training Progress Report. When training is required, the Contractor shall submit a monthly training progress report to the Engineer not later than the 15th of each month. In addition to each Monthly Training Progress Report, the Contractor shall provide the Engineer a summary of hours required to complete the various work elements of the training program, hours completed this period, and hours completed to date. This summary shall be provided in sufficient detail to allow the Engineer to determine whether the hours in the previous period are qualified hours under this pay item.

4. Contractor Compliance with EEO Requirements. If the Contractor fails to meet the EEO goal(s) for minorities or women, or demonstrate good faith efforts, the Department may require training of minorities and women to satisfy the employment goals. If the Contractor fails to meet the EEO goal(s), to demonstrate good faith efforts, or is in noncompliance with the nondiscrimination clauses, the Department may suspend additional contract payments, the Contractor may be directed to attend a hearing before the Contract Review Unit, or the Department may follow any other lawful procedure upon due notice in writing to the Contractor, including cancellation, termination, or suspension in whole or in part.

The Contractor may also be referred to the U.S. Department of Labor, Office of Federal Contract Compliance Programs (OFCCP), which has the sole authority to determine compliance with Executive Order 11246 and its implementing regulations. OFCCP may declare the Contractor ineligible for further Federal-Aid contracts in accordance with procedures authorized in Executive Order 11246, and such other sanctions may be imposed, and remedies invoked as provided in Executive Order 11246, or by rule, regulation, or order of the U.S. Secretary of Labor, or as otherwise provided by law.

D. DBE Monitoring and Reporting. The Contractor shall utilize the DBEs committed to at pre-award to perform the work or supply materials for which each is listed. The Engineer will monitor the work to ensure that the identified DBEs perform the work as identified in the Contractor's commitments. Attainments will be measured based on payments made to DBEs.

If the Contractor has not executed a subcontract with a DBE before the DBE is notified of removal of its eligibility by the certifying agency due solely to its having exceeded the size standard, the Contractor may not make commitments to use the firm on the contract as a DBE, and attainments will not be credited toward the contract goal.

If the Contractor has executed a subcontract with a DBE before the DBE is notified of removal of its eligibility by the certifying agency due solely to its having exceeded the size standard, the Contractor may continue to use the DBE on the contract in accordance with the executed subcontract, and attainments will be credited toward the contract goal. Any new or extra work performed by the ineligible DBE not covered under the scope of the original executed subcontract will not be credited toward the contract goal. However, if the DBE/MBE/WBE/SDVOB is decertified because they were acquired by or merged with another firm that is not certified (i.e., Non-DBE/MBE/WBE/SDVOB), the portion of work that was

performed after the firm was decertified will not count towards the goal, even if the Contractor has executed a subcontract with the decertified firm. If the loss of credit towards the goal affects the Prime Contractor's ability to meet the overall contract goal, the Contractor shall make up for the shortfall or provide sufficient Good Faith Effort documentation.

When a contract is awarded with DBE commitment(s) that is less than the contract goal(s), the Contractor shall continue good faith efforts. The Contractor shall periodically review items that are available for DBE participation, typically before the beginning of a new construction season and when significant new items of work are added to the contract and conduct additional DBE solicitation.

If a Contractor, in order to meet the DBE contract goal or other DBE program requirements, uses or attempts to use, on the basis of false, fraudulent or deceitful statements or representations or under circumstances indicating a serious lack of business integrity or honesty, a DBE that does meet the eligibility criteria of 49 CFR Subpart D, the U.S. Department of Transportation may initiate suspension or debarment proceedings against that firm under 2 CFR Parts 180 and 1200.

1. Report of Payments to Subcontractors and DBEs. The Contractor shall enter payment data into EBO for all Subcontractors and for all DBEs that are due a payment or have received a payment, within 14 days of receipt of payment from the Department, in order to measure DBE goal attainment and to monitor Contractor compliance.

The Subcontractor or DBE shall acknowledge receipt of payment not later than 7 calendar days after receipt. The date of receipt is: (1) the date the payment was made by electronic transfer to an account identified and agreed to by both parties; (2) the date the envelope containing the payment was date stamped by the U.S. Postal Service; or (3) the date the payment was physically provided to a previously authorized representative of the Subcontractor or DBE, either by the Contractor or by a delivery service.

The Contractor shall enter the final payment to each Subcontractor or DBE and designate it as such when the final payment is made, or as a separate \$0.00 entry indicating final payment has been made, prior to contract final acceptance, excepting those payments due from work contained in a change order(s) that have not been approved. The Subcontractor or DBE shall acknowledge receipt of final payment not later than 7 calendar days after receipt or by notification by the Contractor that a separate \$0.00 entry indicating final payment was entered in the civil rights reporting software.

2. Monitoring Commercially Useful Function (CUF) by DBEs. The Contractor shall monitor the work of the DBEs to ensure each performs a Commercially Useful Function and can be properly counted towards the Contractor's DBE commitments.

The Department will review the work, services or products provided by each DBE to verify the performance of a Commercially Useful Function. To determine whether a DBE has performed a Commercially Useful Function, the Department may also examine similar transactions, particularly those in which DBEs do not participate.

If the Department determines that some or all of a DBEs work does not constitute a commercially useful function only the portion of the work considered to be a commercially useful function will be credited toward the goal(s).

Upon request, each DBE Subcontractor shall provide additional documentation to the Engineer for the purposes of monitoring Commercially Useful Function. Such documentation may include, but not be limited to: confirmation that the workforce provided meets the requirements; a copy of purchase order(s) for all material incorporated into the work; and a copy of a rental agreement for all non-owned equipment used to perform the work to the Engineer.

Upon request, the Contractor shall provide a copy of a purchase order(s) for all material, supplies, articles, or equipment provided by a DBE Manufacturer, Fabricator, or Material Supplier and a copy of a purchase order(s) that details the work product(s) provided from each DBE Professional Service to the Engineer.

A DBE may present evidence to rebut a determination by the Department that the DBE is not performing a commercially useful function. For DBEs, commercially useful function determinations by the Department are subject to review by the Federal Highway Administration (FHWA) but the determination may not be administratively appealed to USDOT.

3. Revisions to DBE Participation. The Contractor shall obtain Department approval for substantial revisions, as defined below, in DBE participation prior to implementing any proposed change through submission of Form AAP16 *Request to Modify DBE/MBE/WBE/SDVOB Participation*. Once approval is granted by the Department, the Contractor shall submit a revised AAP19 *DBE Schedule of Participation* using the Department approved civil rights reporting software. Unless approval for the revision is granted, Contractor will not be entitled to any payment for work or material committed to a DBE unless it is performed or supplied by the approved DBE.

If the reduction of the DBE's work or the removal of the DBE, including for reasons of commercially useful function violations, causes the DBE participation to fall below the goal(s), the Contractor shall make good faith efforts to find another DBE to substitute for the original DBE to perform at least the remaining amount of work as the DBE that was terminated, to the extent needed to meet the contract goal(s).

Upon request, the Contractor shall provide documentation of good faith efforts within 7 days, which may be extended for an additional 7 days if necessary, at the request of the Contractor. The Department will provide a written determination to the Contractor stating whether or not good faith efforts have been demonstrated.

A DBE may be substituted if the work committed to the DBE is deleted or reduced by the Department and enough work remains to substitute an equal commitment amount to the affected DBE. If not enough work remains, the Department may relieve the Contractor from attaining that portion of the commitments.

The following modifications will be considered a substantial revision in DBE participation:

- Adding, removing or substituting a DBE.
- Adding new item(s) of work to a DBE within a core (3 digit) contract pay-item number not currently approved.
- Reducing the dollar value of or eliminating the DBE's item(s) of work or a portion of the work.
- Changes in participation due to major differences between estimated quantities and actual work performed.

The following modifications will not be considered a substantial revision in DBE participation:

- Increasing the dollar value of an item(s) of work or adding new item(s) of work within the same core (3 digit) contract pay-item number to a DBE.
- Substituting similar dollar values of work within a currently approved core (3 digit) contract pay-item number.
- Changes in participation due to minor differences between estimated quantities and actual work performed.

In accordance with 49 CFR 26.53(f)(1), the Contractor shall not terminate a DBE listed on the approved DBE Participation Plan without the prior written consent of the

Department. This includes, but is not limited to, instances in which a contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm.

The Department will consent only if the Prime Contractor has good cause to terminate the DBE firm. Good cause includes, at a minimum, one the following circumstances:

- The listed DBE fails or refuses to execute a written contract:
- The listed DBE fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the Contractor:
- The listed DBE fails or refuses to meet the Contractor's reasonable, nondiscriminatory bond requirements:
- The listed DBE becomes bankrupt, insolvent, or exhibits credit unworthiness:
- The listed DBE is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1200 or applicable state law;
- The Department has determined that the listed DBE is not a responsible contractor,
- The listed DBE voluntarily withdraws from the project and provides to the Department written notice of its withdrawal;
- The listed DBE is ineligible to receive credit for the type of work required;
- A DBE owner dies or becomes disabled with the result that the firm is unable to complete its work on the contract;
- Other documented good cause that you determine compels the termination of the DBE. Provided, that good cause does not exist if the Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE was engaged or so that the Contractor can substitute another DBE or non-DBE contractor after contract award.

Before submitting its request to terminate and/or substitute a DBE to the Department, the Contractor shall give notice in writing to the DBE subcontractor, with a copy to the Engineer, of its intent to request to terminate and/or substitute, and the reason for the request.

The Contractor shall give the DBE five days to respond to the notice and advise the Department and the Contractor of the reasons, if any, why the DBE objects to the proposed termination of its subcontract and why the Department should not approve the Contractor's action. If required in a particular case as a matter of public necessity (e.g., safety), the Department may approve a response period shorter than five days.

Failure of a Contractor to obtain Department approval prior to reduction, termination or substitution of a DBE may be deemed a breach of contract subject to appropriate actions such as, but not limited to, a responsibility review, withholding contract payments, and/or loss of credit towards the DBE goals.

4. Contractor's Compliance with DBE Program Requirements. If the Contractor fails to meet the DBE participation commitment(s), to exert a good faith effort, or otherwise fails to comply with the DBE Program requirements, the Department will take appropriate actions. Such actions may include, but not be limited to: suspension of contract payments; direction to the Contractor to attend a hearing before the Department's Contract Review Unit; or any

other lawful procedure upon due notice in writing to the Contractor, including cancellation, termination, or suspension in whole or in part of the contract agreement.

Where the Department determines that the Contractor is not in compliance with the requirements of the contract and the Contractor refuses to comply with such requirements, or if the Contractor is found to have willfully and intentionally failed to comply with the DBE participation goal, the Contractor will be obligated to pay to the Department Liquidated Damages.

Such Liquidated Damages for failure to meet the DBE requirements shall be calculated as an amount equaling the difference between the amount committed to the DBEs by the Contractor at award and the amount actually paid to the DBEs for work performed or materials supplied under the Contract, not including any amount for work deleted by the Department or work which a DBE declined or failed to reasonably perform.

If a determination has been made which requires the payment of Liquidated Damages and such identified sums have not been withheld by the Department, the Contractor shall pay such Liquidated Damages to the Department within sixty (60) days after they are assessed.

The Contractor may also be referred to the USDOT for possible suspension or debarment as provided in 49 CFR 26 and such other sanctions as may be imposed and remedies invoked as provided under the authority of 49 CFR 26, or by rule, regulation, or order of the Commissioner or as otherwise provided by law.

E. Compliance Reviews. The Department conducts annual civil rights contract compliance reviews of selected Federal-Aid contracts in accordance with 23 CFR 230.409. A compliance review consists of a thorough review of all civil rights contract requirements, including Nondiscrimination in Labor/Employment, EEO, Training, and DBE requirements. A Contractor will typically not be selected for more than one compliance review per year statewide. Based on contract monitoring and/or the results of compliance review(s), the Department may conduct a review of some or all ongoing contracts with a single Contractor, regardless of funding source.

REQUIRED IN ALL FEDERAL AID CONTRACTS.

MATERIAL ACCEPTANCE RECORDS.

Whenever any specification provides for Approved List, Material Certification or Manufacturer's Certifications as a Basis of Acceptance, the Department reserves the right to sample and/or test any material prior to incorporation in the work. Approved List shall mean the list which is current on the date of incorporation of material into the work. The Contractor may request reimbursement from the Department for additional costs for materials that were purchased after contract award and prior to the product being removed from the Approved list but are removed from the Approved list after contract award.

Some specifications reference a Manufacturer's Certification or a Material Certification as evidence of acceptability of specific materials or products. A Manufacturer's Certification can only be properly executed by the Manufacturer or Producer of the material or product. When manufactured products are subsequently modified by another party such as a Fabricator or provided by a Material Supplier other than the Manufacturer, an additional Material Certification from each party that modifies or takes ownership of the product prior to the installation of the material shall be provided in addition to all of the previous certifications.

A. Material Certification. When products are supplied by a Manufacturer, Producer, Fabricator, or Material Supplier, a Material Certification that includes the essential components outlined below shall be provided to the Engineer.

1. Identification of Manufacturer or Producer. Name of the company and address of its manufacturing or producing facility.

2. Identification of Material or Product. Generic name of the material or product and the corresponding Section 700 Materials and Manufacturing material code.

3. Identification of Shipment. Sufficient detail to describe the quantity contained in the shipment, the contract number and a date of shipment. A Material Supplier's Certification shall clearly indicate that the shipment is all or a portion of the quantity detailed on the accompanying Manufacturer's Certification.

4. Statement of Conformance. The certification shall definitively state that the material contained in the shipment meets the requirements of a specific Department specification or a specific specification or standard of another agency (i.e., ASTM, AASHTO, AWWA, etc.).

If the material in the shipment contains steel and/or iron, the certification shall definitively state that the material is or is not of domestic origin. Acceptable statement is: "Conforms (or Does not conform) to the requirements of 23 CFR 635.410 Buy America Requirements."

If the product supplied has been altered subsequent to the certification by the manufacturer, the Material Certification shall definitively state that the material or product contained in the shipment meets the requirements of an identified contract specification.

5. Certification Execution. The certification shall be signed by a person authorized to legally bind the company, as indicated by statement or title/position. Notarization of the signature is not required.

REQUIRED IN ALL FEDERAL AID CONSTRUCTION CONTRACTS.

BUY AMERICA REQUIREMENTS

In accordance with 23 USC 313, 23 CFR 635.410, and the Build America Buy America (BABA) Act in Title IX of the Bipartisan Infrastructure Law's (BIL), permanently incorporated predominantly steel and/or iron materials, manufactured products, and construction materials shall be domestically produced.

A. Control of Materials.

To qualify as domestic, all manufacturing processes, including melting, manufacturing, fabricating, grinding, drilling, welding, finishing, and coating of any product containing steel and/or iron materials, must have been performed in the United States. A domestic product is a manufactured steel and/or iron material/product and/or construction material that was produced in one of the 50 States, the District of Columbia, or in the territories and possessions of the United States. Raw materials used in the steel and/or iron materials may be imported. Raw materials are materials such as raw iron ore, and waste products which are used in the manufacturing process to produce the steel and/or iron material/product. The FHWA has granted a nationwide waiver for pig iron and processed, pelletized, and reduced iron ore. Waste products include scrap (i.e., steel no longer useful in its present form from old automobiles, machinery, pipe, railroad rail, steel trimmings from mills or product manufacturing). Extracting, crushing, and handling the raw materials which are customary to prepare them for transporting are exempt from Buy America. The use of foreign source steel billets or iron ingots are not acceptable under Buy America. All items, regardless of origin, shall comply with their individual specification requirements and with the requirements stated elsewhere in this subsection. The Contractor shall ensure the domestic steel and/or iron materials are supplied in conformance with the above referenced laws.

The Buy America provisions only applies to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies brought to the construction site and removed at or before the completion of the infrastructure project, such as temporary scaffolding. In addition, it does not apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project but are not an integral part of or permanently affixed to the structure.

Federal-Aid Contracts

For Federal-Aid contracts, all iron and steel, manufactured products, and construction materials incorporated into the contract shall be produced/manufactured in the United States as follows:

- a. All iron and steel used in the project shall be produced in the United States. This means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.
- b. All manufactured products used in the project shall be produced in the United States. This means the manufactured product was manufactured in the United States, and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product. Manufactured products mean articles, materials, or supplies that have been: (i) processed into a specific form or shape; or (ii) combined with other articles, materials, or supplies to create a product with different properties than the individual articles, materials, or supplies.
- c. All construction materials shall be manufactured in the United States. This means that all manufacturing processes for the construction material occurred in the United States. Construction materials includes an article, material, or supply that is or

consists primarily of:

- **Non-ferrous metals:** All manufacturing processes means initial smelting or melting through final shaping, coating and assembly occurred in United States;
- **Plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables):** All manufactured processes, from initial combination of constituent plastic or polymer-based inputs, or, where applicable, constituent composite materials, until the item is in its final form, occurred in the United States;
- Glass (including optic glass): All manufacturing processes, from initial batching and melting of raw materials through annealing, cooling, and cutting, occurred in the United States;
- *Fiber optic cable (including drop cable):* All manufacturing processes, from the ribboning (if applicable), through buffering, fiber stranding and jacketing, occurred in the United States. All manufacturing processes also include the standards for glass and optical fiber, but not for nonferrous metals, plastic and polymer-based products, or any others;
- *Optical fiber:* All manufacturing processes, from initial preform fabrication stage through the completion of the draw, occurred in the United States;
- *Lumber:* All manufacturing processes, from initial debarking through treatment and planing, occurred in the United States;
- *Engineered wood:* All manufacturing processes, from initial combination of constituent materials until the wood product is in its final form, occurred in the United States; or
- *Drywall:* All manufacturing processes, from initial blending of mined or synthetic gypsum plaster and additives through cutting and drying of sandwiched panels, occurred in the United States.

Minor additions of articles, materials, supplies or binding agents to a construction material do not change the categorization of the construction material. Items that consist of two or more of the listed materials that have been combined together through a manufacturing process, and items that include at least one of the listed materials combined with a material that is not listed through a manufacturing process, should be treated as manufactured products, rather than construction materials.

Construction materials do not include an item of primary iron or steel; a manufactured product; or Section 709179(c) materials. 709179(c) materials include cement or cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives).

An article, material, or supply should be classified into only one of the following categories: (1) iron or steel; (2) a manufactured product; (3) a construction material; or (4) Section 70917(c) materials. An article, material, or supply should not be considered to fall into multiple categories. In some cases, an article, material, or supply may not fall under any of the categories listed. The classification of an article, material, or supply falling into one of the four categories must be made based on its status at the time it is brought to the work site for incorporation into the project.

For Federal-Aid Contracts, FHWA allows the Contractor to permanently incorporate in the construction of the contract a minimal amount of foreign steel and/or iron materials, if the

combined cost of such materials does not exceed one-tenth of one percent (0.1%) of the total contract cost or \$2,500, whichever is greater. The combined cost of foreign steel and/or iron materials will be the value of the materials as they are delivered to the contract, documented by invoice or bill of sale to the Contractor.

For Federal-Aid Contracts, USDOT's Waiver of Buy America Requirements for De Minimis Costs and Small Grants allows the Contractor to permanently incorporate in the construction of a contract (under a single financial assistance award) a minimal amount of foreign manufactured products and construction materials, if the total value of the non-compliant products/materials is no more than the lesser of \$1,000,000 or 5% of total applicable costs for the project. This does not apply to iron and steel subject to the requirements of 23 U.S.C. 313 on financial assistance administered by FHWA. The de minimis threshold in 23 CFR 635.410(b)(4), and stated above, continues to apply for steel and iron. The "total applicable costs for the project" are defined as the cost of materials (i.e., steel/iron, manufactured products, and construction materials) used in the project that are subject to Buy America, including materials that are within the scope of an existing waiver. Based on USDOT's waiver, if the total amount of federal financial assistance applied to the project, through awards or subawards, is below \$500,000, then Buy America does not apply.

B. Waivers.

Federal-Aid Contracts.

The Contractor may request a waiver if it can be demonstrated that:

- a. Applying a Buy America preference would be inconsistent with the public interest (a "public interest waiver");
- b. Types of iron, steel, manufactured products, or construction materials are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality (a "nonavailability waiver"); or
- c. The inclusion of iron, steel, manufactured products, or construction materials produced in the United States will increase the cost of the overall project by more than 25 percent (an "unreasonable cost waiver").

The Contractor shall submit a waiver request to the Engineer which includes a detailed justification for the use of goods, products, or materials mined, produced, or manufactured outside the United States and including copies of all documentation verifying the unavailability of the material or product.

The Department will submit approved waiver requests to the FHWA for review. The Contractor shall investigate and respond to any public comments made to the FHWA Office of Program Administration, indicating that a domestic supplier can provide the material for which a waiver has been requested. Final approval of the Buy America Waiver request will be made by the Administrator, Federal Highway Administration. The waiver will be effective when it is posted in the Federal Register.

C. Certifications.

A Manufacturer's Certification is required to certify that the material/product is of domestic origin. Acceptable statements are: "Conforms (or Does not conform) to the requirements of NYSDOT Standard Specifications §106-11 *Buy America*" (acceptable for steel/iron, manufactured products and construction materials) or "Conforms (or Does not conform) to the requirements of 23 CFR 635.410 *Buy America Requirements*" (acceptable for steel/iron and manufactured products only) or "Conforms (or Does not conform) to the requirements of the Build America, Buy America Act" (acceptable for construction materials only). Certifications shall comply with *Material Acceptance Records*.

REQUIRED IN ALL FEDERAL AID CONTRACTS.

USE OF UNITED STATES-FLAG VESSELS

In accordance with the Cargo Preference Act and 46 CFR 381, the requirements below apply to material, equipment, or commodities that are acquired for a specific Federal-aid construction contract and transported on ocean vessels (or transported across the Great Lakes). The requirements are not applicable to goods or materials that come into inventories independent of a specific Federal-aid construction contract.

A. The Contractor shall utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to the contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

B. The Contractor shall furnish within 20 days following the date of loading for shipments originating within the United States, or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in Paragraph A to both the Contracting Officer (through the prime Contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

C. The Contractor shall insert the substance of the provisions of this section in all subcontracts issued pursuant to the contract.

REQUIRED IN ALL FEDERAL AID CONTRACTS.

Federal DBE Commitment and GFE Bid Requirements

Letting Date:

Proposer Name

Address:

PIN
 Contract #
 DBE Goal % as Stated in the Advertisement

We hereby submit a DBE commitment of % for the above-referenced project.

Identified below are the commitment(s) to certified* DBE's for this contract:

<u>DBE Name:</u>	<u>Work Category*</u>	<u>Description of Work</u>	<u>DBE Credit % (A)</u>	<u>Commitment (B)</u>	<u>DBE Credit (AxB)</u>
Example Company: Drainage R Us Address: 2543 Lexington Street, Troy, NY 12180	Construction	Closed Drainage Installation	100	\$1,120,000	\$1,120,000
Address: <input type="text"/>					
Address: <input type="text"/>					
Address: <input type="text"/>					
Address: <input type="text"/>					
Address: <input type="text"/>					
Address: <input type="text"/>					

*Only submit DBE(s) that you have verified are certified to perform/supply the identified commitments. **Total Commitment:**

You are required to have firm commitments at the time of Letting. Within 5 calendar days of notification as apparent Low Bidder, you shall enter exactly (as shown) all of the DBE commitments identified here, into Equitable Business Opportunity Solution (EBO), NYSDOT's civil rights reporting software. No substitutions or reductions in commitments will be allowed without prior approval by the Sponsor, in accordance with NYSDOT Standard Specification §105-21.D.3.

NOTE: Bids may be submitted below the DBE Goal. If you do not meet the DBE Goal and are identified as apparent Low Bidder, you will be required to submit a Good Faith Effort package to the Sponsor, within 5 calendar days of notification.

<u>*Key:</u>	<u>Work Categories:</u>	<u>DBE Credit %</u>
	Construction	100
	Fabricator	100
	Manufacturer	100
	Material Supplier	60
	Professional Service	100
	Trucking Firm	100

Submitted By:

Enter Proposers Contact Information

Name:

Title:

Company Federal Tax ID XX-XXXXXXX

New York State
Department of Transportation
Local Projects Manual

Chapter 13
Civil Rights Requirements



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Acronyms

ADA	Americans with Disabilities Act	MBE	Minority Business Enterprise
ADP	Advance Detail Plans	M/WBE	Minority and Woman Business Enterprise
A&E	Architectural & Engineering	NYSDOL	New York State Department of Labor
CAM	Construction Administration Manual	NYSUCP	New York State Unified Certification Program
CFR	Code of Federal Regulations	NYSDOT	New York State Department of Transportation
DBE	Disadvantaged Business Enterprise	ODO	New York State Department of Transportation Office of Diversity and Opportunity
EBO	Equitable Business Opportunities	PEO	Presidential Executive Order
EEO	Equal Employment Opportunity	RLO	Responsible Local Official
EI	Engineering Instruction	RLPL	Regional Local Project Liaison
FHWA	Federal Highway Administration	SDVOB	Service-Disabled Veteran-Owned Business
GFE	Good Faith Effort	USDOJ	United States Department of Justice
HDM	Highway Design Manual	USDOL	United States Department of Labor
LEP	Limited English Proficiency	USDOT	United States Department of Transportation
LPM	Local Projects Manual	WBE	Woman- Business Enterprise

NOTE

This chapter has associated appendices and forms at: <https://www.dot.ny.gov/plafap>

The links for the words **highlighted** throughout this chapter (except LPM chapter references) can be found at the end of this chapter in **Section 13.15 References**.

13.1 INTRODUCTION

This chapter provides an overview of federal and state Civil Rights laws, rules, regulations, and presidential and gubernatorial executive orders for locally administered transportation projects. The New York State Department of Transportation (NYSDOT) policy ensures equal opportunity and prevents discrimination in all its activities. NYSDOT and project sponsors (denoted as “Sponsor[s]” hereafter) share this compliance responsibility in meeting federal and state Civil Rights law requirements on locally administered transportation projects. Various chapters within the Local Projects Manual (LPM), as well as NYSDOT’s Standard Specifications, NYSDOT’s Manual of Uniform Recordkeeping (MURK) Part 1A Construction Administration Manual (CAM), and the Highway Design Manual (HDM) provide additional Civil Rights functional guidance.

13.2 TITLE VI OF THE CIVIL RIGHTS ACT OF 1964

Title VI of the Civil Rights Act of 1964 and related nondiscrimination statutes require recipients¹, including the NYSDOT, of federal financial assistance to ensure that no one is excluded from participation in, denied the benefits of, or subjected to discrimination based on race, color, or national origin in any federally assisted program and activity.

Per **23 CFR 200.9**², Sponsors that receive Federal Highway Administration (FHWA) funds through NYSDOT must have a Title VI Program subject to review and approval by NYSDOT. The Title VI Program’s purpose is to prohibit discrimination and ensure nondiscrimination through policies, procedures, benefits and services, and regular program reviews. In addition, the Title VI Program requires Sponsors to specify how they will implement their Title VI responsibilities.

NYSDOT is required to perform formal annual compliance reviews of Sponsors receiving federal funds. Sponsors will be required to document their Title VI compliance through a NYSDOT audit review that includes an evaluation of how they administer their overall Title VI Program throughout all program areas.

Sponsors must summarize their efforts regarding how they monitor nondiscrimination in programs and activities that impact the public. The program areas include, but are not limited to:

- Planning
- Environment
- Project Development (Design)
- Right-of-Way

¹ The term recipient is used to refer to an entity or entities that directly receive federal financial assistance from the United States Department of Transportation (USDOT) through the Federal Highway Administration (FHWA).

² The term subrecipient is used to refer to an entity or entities that indirectly receive federal financial assistance from the USDOT through the FHWA. For consistency throughout this Manual, the term Sponsor(s) will be used to refer to subrecipient(s).

- Construction
- Maintenance
- Traffic Safety
- Research
- On-the-Job Training Programs

Sponsors have the option of:

- Adopting by a resolution [Appendices 13-1 through 13-4](#) of a [Title VI Plan](#) and applicable procedures, or
- Developing their own Title VI Plan with approval from [NYSDOT's Office of Diversity and Opportunity \(ODO\)](#).

Title VI prohibits discrimination on the basis of race, color, and national origin in programs and activities receiving federal financial assistance.

13.2.1 Sponsor's Title VI Requirements

A Sponsor's Title VI Plan must have policies and procedures in place to ensure Title VI compliance. These policies include:

- Title VI Assurances (signed and dated),
- Nondiscrimination Policy Statement (signed and dated),
- Title VI Plan (signed and dated) that includes Limited English Proficiency (LEP) Plan,
- Americans with Disabilities Act (ADA) Transition Plan,
- Monitoring/Review Process, Data Collection, and Analysis of participants,
- Designated Title VI Coordinator and an outline of their responsibilities,
- Complaint Form, with applicable processes, procedures, and issue resolution process,
- Public Involvement Plan that includes Public Dissemination of Title VI Information, and
- Schedule of Title VI Training (with recorded dates and target audience).

The Sponsor's overall Title VI Plan ([Appendices 13-1 through 13-4](#)) must include all of the above areas. Each area must be addressed in its entirety.

Fillable forms for all required policies and procedures can be found on NYSDOT website.

13.2.1.1 Sponsor's Title VI Assurance

The Sponsor's Responsible Local Official (RLO) or designee must have a signed and dated Title VI Assurance in place. The Sponsor must ensure that all programs, policies, procedures, activities, services, and facilities are implemented and operated in a nondiscriminatory manner. Title VI Assurance is a shared responsibility for all involved in delivering federal and state-funded projects.

13.2.1.2 Sponsor's Nondiscrimination Policy Statement

The Sponsor must maintain a current Title VI/Nondiscrimination Policy Statement. The Statement must inform the public of the Sponsor's commitment to nondiscrimination in all programs and activities to the effect that no person shall on the grounds of race, color, national origin, sex, age, disability, or low-income status, or limited-English proficiency be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination or retaliation under any program or activity administered by the Sponsor or the Sponsor's contractors/subcontractors whether it is federally assisted or not. The policy statement must be signed and dated by the RLO or designee. The Statement must include the following provisions:

- A commitment to the nondiscrimination provisions of Title VI,
- Disseminate Title VI information to the general public and publish where appropriate,
- Ensure Title VI provisions are in all contracts and subcontracts with subcontractors,
- Participate in training offered on Title VI and other nondiscrimination requirements,
- Extend subcontracting opportunities to Disadvantaged Business Enterprises (DBEs),
- Maintain current and accurate records that demonstrate and document Title VI compliance, including collecting racial and ethnic data on persons impacted,
- Appoint a Title VI/Nondiscrimination Coordinator with direct access to the RLO, and
- Develop a complaint process and take affirmative action to correct any deficiencies within a reasonable time.

13.2.1.3 Sponsor's Title VI Plan

Sponsors must develop and maintain a Title VI Plan that documents procedures for complying with Title VI Program requirements. Sponsors may use the Sample Title VI Template ([Appendix 13-1 through 13-4](#)) or develop their own. Sponsors that develop their template must submit the plan for approval to NYSDOT. The Sponsor must have procedures to review their processes and collect and analyze data.

13.2.1.4 Monitoring and Review Process

Sponsors must develop procedures for identifying and addressing potential discrimination or discriminatory practices within their departments/agencies. The Title VI Plan must include procedures on how the Sponsor's departments/agencies are monitored and reviewed for Title VI

compliance and outline procedures to eliminate and address discrimination and resolve deficiencies when non-compliance occurs. In addition, Sponsors administering federal and state aid contracts must monitor prime contractors, subcontractors, consultants, and sub-consultants for Title VI compliance.

13.2.1.5 Data Collection and Analysis

Sponsors must develop procedures for collecting statistical data (race, color, national origin, and sex) of participants in and beneficiaries of the Sponsor's programs. Collecting data helps New York State identify and prioritize problem areas and evaluate policies and programs' effectiveness to ensure nondiscrimination. The Title VI Plan must describe how the Sponsor plans to collect Title VI-related data on an ongoing basis.

13.3 LIMITED ENGLISH PROFICIENCY (LEP)

Presidential Executive Order 13166 "Improving Access to Services for Persons with Limited English Proficiency" contains two significant components. The first component is designed to improve enforcement and implementation of Title VI obligation to prohibit discrimination based on national origin. The obligation based on national origin includes prohibiting recipients (NYSDOT) and sub-recipients (Sponsors) of federal financial assistance from discriminating against individuals for whom English is not their first language by failing to provide meaningful access to services, programs, and activities for individuals who have LEP.

The second component requires all federal agencies to meet the same standards as federal financial assistance recipients and Sponsors in providing meaningful access for LEP individuals to federally funded programs. Sponsors and the federal government, based on available resources, must provide materials in other languages or interpreters at meetings when individuals have LEP.

Sponsors should consider the following measures to implement LEP strategies:

- Written translation of the Sponsor's vital documents,
- Language Implementation Plan,
- Bilingual staff for translation,
- Language needs assessments or efforts which consider:
- The number or proportion of LEP persons in the eligible service population,
- The frequency in which LEP individuals encounter the Sponsor's programs or activities, and
- The Program's importance, activity, or services provided by the Sponsor.

Outreach materials, including public meetings/hearings and announcements, must be available in languages the affected population understands. Public meetings and hearings should be held at both geographically and structurally accessible facilities. Efforts should be made to schedule public meetings and hearings that do not conflict with the impacted communities' work schedules

and should be held in facilities easily accessible by public transportation. Public meetings and hearing announcements should indicate that accommodations, to the extent possible, will be provided for individuals with disabilities and populations with LEP. If requested, spoken and sign language interpreters and alternately formatted materials should be provided at no cost.

Outreach materials, including public meeting/hearing announcements, must be available in languages the affected population understands.

13.4 ENVIRONMENTAL JUSTICE

Presidential Executive Order (EO) No. 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” directs each federal agency to identify and address, as appropriate, disproportionately high, and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States. **Title 23 CFR 450** requires States and Metropolitan Planning Organizations to seek out and consider the needs of those traditionally underserved by existing transportation systems, including, but not limited to, low-income and minority households. There are three fundamental environmental justice principles:

1. To avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic impacts, on minority populations and low-income populations.
2. To ensure all potentially affected communities’ full and fair participation in the transportation decision-making process.
3. To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations.

13.5 THE REHABILITATION ACT OF 1973 AND THE AMERICANS WITH DISABILITIES ACT (ADA)

As amended, Section 504 of the Rehabilitation Act of 1973 prohibits discrimination based on disability in any federally assisted program or activity. **Section 504**, codified in **49 CFR Part 27**, prohibits discrimination based on an individual’s disability in transportation-funded programs, activities, and services receiving or benefiting from federal financial assistance from the USDOT via FHWA.

The Americans with Disabilities Act (ADA, 1990) is a broader civil rights statute that prohibits discrimination against people with disabilities in all areas of public life regardless of funding source. **Title II, 28 CFR Part 35** of the ADA pertains explicitly to state and local governments.

Sponsors must implement the following as part of their oversight responsibilities:

- Ensure that all departments are informed of their responsibilities to provide accessibility in their activities, programs, services, and facilities (i.e., department's public rights-of-way).
- Have a designated 504/ADA Coordinator responsible for coordinating Section 504/ADA compliance with all departments.
- Ensure the Sponsor and its sub-recipients apply appropriate accessibility standards to their transportation facilities as defined in NYSDOT's HDM.
- Ensure all complaints filed under Section 504 and/or the ADA are processed following established complaint procedures.
- Ensure that information in electronic format is accessible to people with disabilities.
- Provide public notice of the Sponsor's ADA provisions.
- Conduct self-evaluations.
- Ensure their ADA Transition Plan is in place and updated, as noted in their ADA Transition Plan. See [Section 13.5.3: ADA Transition Plan](#).

The Sponsor must have a Designated ADA Coordinator .

13.5.1 Nondiscrimination

[Title 49 CFR 27.7](#) requires a Sponsor's programs or activities that receive federal financial assistance when providing aid, benefits, services, activities, and public facilities to be accessible to persons with disabilities. The ADA requires public facilities and programs to be accessible regardless of the funding source. The Act also requires effective communication with persons with disabilities when Sponsors respond to their requests. Communication venues and media (public meetings, announcements, and publicity) must all be accessible. During project development, any public meetings or outreach shall comply with Title 49 requirements.

Regardless of where the funding comes from, all public facilities and programs must be accessible, per the ADA.

13.5.2 Self-Evaluation

[Title 28 CFR 35.105](#) is the U.S. Department of Justice (USDOJ) Title II regulation that requires public entities, even if they do not receive federal funds, to evaluate their current policies, practices, programs, services, and activities and to make the self-evaluation available for public comment. In addition, the ADA Transition Plan Checklist, which can be found in [Appendix 13-2](#), maybe used for self-evaluations.

[Title 49 CFR 27.11](#) requires recipients (NYSDOT) and subrecipients (Sponsors) to conduct self-evaluations of policies, programs, practices, services, and activities for compliance with the ADA.

Self-evaluations are critical to improving your agency's processes.

13.5.3 ADA Transition Plan

Title 28 CFR 35.150(d)(1) requires “a public entity that employs 50 or more persons” to prepare an ADA Transition Plan identifying non-compliant pedestrian routes and facilities in the municipal Sponsor’s public right-of-way. ADA Transition Plans shall include a plan and schedule for corrective action. Failure to create and maintain an ADA Transition Plan may result in an entity’s ineligibility to receive federal funds.

If a public entity employs fewer than 50 persons, the entity needs to only conduct self-evaluations (see **Section 13.5.2**).

The ADA Transition Plan should include detailed information about the condition of the Sponsor’s pedestrian-accessible route network, a list of the physical barriers that limit accessibility to its programs, activities, or pedestrian facilities, and the schedule to correct any non-compliance; this should include identifying the party responsible for implementing the corrective action to ensure all Sponsor facilities are accessible to individuals with disabilities. The Sponsor shall provide an opportunity for interested persons or organizations to participate in the development of the transition plan and a copy of the plan shall be made available for public inspection. For more information, refer to **28 CFR 35.150(d)(1), (3)(i-iv)**.

The ADA Transition Plan Checklist (found in **Appendix 13-2**), the ADA Transition Plan (found in **Appendix 13-3**), and the ADA Proposed Work Plan and Schedule (found in **Appendix 13-4**, which are fillable forms) were developed to assist Sponsors in implementing their ADA Transition Plans. In addition, Sponsors are strongly encouraged to use the ADA Transition Plan Checklist located in Appendix 13-2 as a guide when preparing their own ADA Transition Plan.

NYSDOT has its own **ADA Transition Plan**, which includes an inventory of sidewalks and curb ramps alongside state-owned transportation infrastructure and a rating for accessibility of each. NYSDOT continues to update this inventory as it completes capital work at these locations and periodically refreshes the statewide list.

NYSDOT may construct sidewalks, curbs, and curb ramps alongside State highways located in Villages (**NYS Highway Law, Article 3, Section 46**), Towns (**NYS Highway Law Section 140**), and Cities (**NYS Highway Law, Article 12-B, Section 349-c**); however, under the statutory provisions granting NYSDOT such authority, respective Villages, Towns, and Cities are responsible for repairing and maintaining sidewalks, curbs, and curb ramps in their respective municipality. Maintenance includes both preventive and corrective maintenance. For further information, consult the applicable Highway Law Sections provided below.

When NYSDOT alters a State highway that provides pedestrian access, NYSDOT must design and construct the State highway in such a manner that a barrier to the usability of the streets by a protected class (individuals with disabilities) is not created or retained. See **28 CFR 35.150**,

35.151(b), 35.151(i). If NYSDOT does not alter the State highway, it remains the municipality's legal responsibility to comply with applicable ADA accessibility requirements.

A Sponsor's ADA Transition Plan shall include a list of locations with physical barriers that limit the accessibility of programs, activities, or services within its jurisdiction, including those identified alongside State highways. However, to ensure a clear understanding of anticipated and upcoming NYSDOT capital work, municipalities should discuss the State inventory and NYSDOT plans with the Regional Local Project Liaison (RLPL).

The Sponsor's completed ADA Transition Plan must be made available for public comment. For more information regarding ADA Transition Plans, contact the RLPL.

13.5.4 Design and Construction

Sponsors must comply with ADA accessibility standards for all facilities they construct, maintain, monitor, or upgrade. Compliance applies to all projects classified as new construction, reconstruction, rehabilitation, resurfacing, or repair, as well as any work undertaken by the Sponsor's forces. Therefore, access to existing and proposed pedestrian facilities in a public right-of-way must be provided. The applicability of design and construction standards is in **Chapter 9** of this manual.

The USDOJ and the FHWA clarified in the **2013 DOJ/DOT Joint Technical Assistance Informal Guidance Document** that "pavement alteration" activities require a Sponsor to address curb ramp compliance and distinguish between "pavement maintenance" activities that do not require such compliance. This guidance further clarifies this requirement stating that whenever a "pavement alteration" is made to a street, roadway, or highway, curb ramps must be provided at locations where curbs or other barriers restrict access to sidewalks or other pedestrian walkways. Examples of "pavement alterations" include:

- additions of new asphalt layers,
- in-place recycling,
- micro-surfacing/thin lift,
- mill and fill overlays,
- open-graded surface courses,
- cape seals,
- resurfacing,
- new construction,
- rehabilitation, and
- reconstruction.

Curb ramps and detectable warnings must be installed before or during the "pavement alteration" project.

Examples of “pavement maintenance” include:

- crack filling and sealing,
- surface sealing,
- chip seals,
- slurry seals,
- fog seals,
- scrub seals,
- joint crack seals,
- dowel bar retrofits,
- spot locations of high-friction surface treatments,
- diamond grinding, or
- pavement patching.

Structural changes to existing conditions must be clearly documented that they meet ADA standards.

See [NYS DOT HDM Chapters 2, 7, and 18](#) and the [DOJ/DOT Joint Technical Assistance Informal Question and Answer Supplemental](#) for additional guidance.

13.6 EQUAL EMPLOYMENT OPPORTUNITY (EEO)

The [Federal Aid Highway Act of 1968 \(23 USC 140\(a\) and 23 CFR 230\)](#) ensures nondiscrimination in employment based on race, color, religion, sex, or national origin on any federally aided projects. Sponsors are required to include EEO provisions in all their federal aid construction contracts by physically including Form FHWA 1273, [Required Contract Provisions Federal Aid Construction Contract](#) in the contract proposal. EEO requirements are included in [Appendix 12-1, Chapter 14, and Chapter 15](#).

Sponsors must identify employment goals for each specific contract; see [Chapter 12](#). These goals are included in [Appendix 12-1](#), which is included in the contract proposal. Contractors are required to submit workforce data to Sponsors during the performance of their construction contracts. Employees and work hours must be entered weekly in NYSDOT’s civil rights reporting software [Equitable Business Opportunity \(EBO\)](#). Sponsors must review EBO and compare the EEO Workforce Utilization Report to the certified payroll system. EEO goals and attainments are also monitored by both the RLPL and Sponsor. When the EEO goals are not met, the Contractor must provide Good Faith Effort (GFE) documentation to the Sponsor. GFE are action-oriented steps taken to show that all concrete, tangible, result-oriented efforts were exhausted through all reasonable means to comply with affirmative action hiring of the contract EEO goals.

Minority and female workforce participation goals must be maintained on a month-to-month basis or GFE needs to be provided.

13.7 APPRENTICESHIP AND TRAINING PROGRAMS

Training is a Civil Rights activity that may address the under-utilization of minorities, females, and economically-disadvantaged persons in highway construction and engineering contracts. The Sponsor must include **Item 691 Training and Apprenticeship Requirements** if the construction cost is estimated above \$5 million. If the construction cost is below \$5 million and there is an opportunity for training, the 691 Training items can be included.

An apprenticeship training program must be registered with the **NYS Department of Labor (NYS DOL)** and approved by NYSDOT. Only FHWA-approved On-the-Job Training programs or **NYS DOL/U.S. Department of Labor (USDOL)** registered apprenticeship programs may be used to fulfill training requirements. The review process and approval process are extensive; therefore, appropriate time should be allocated for the approval process. Sponsors should coordinate training program activities with their RLPL.

The training item can be waived if all parties agree that the project has no meaningful and effective training.

Per EI 21-014, training requirements may be waived. If the construction cost is below \$5 million, the Sponsor may submit a waiver request, which must be documented in the PS&E submission.

13.8 DISADVANTAGED BUSINESS ENTERPRISE (DBE) PARTICIPATION

Title 49 CFR 26.45 requires NYSDOT to submit a programmatic **DBE Plan** to the USDOT. Therefore, Sponsors must use NYSDOT's approved DBE Plan.

Only firms certified through the New York State Unified Certification Program (NYSUCP) as DBEs may be used to accomplish DBE participation goals set on federal aid contracts. The **NYSUCP DBE Directory** is the sole resource for identifying DBEs. Firms not certified as DBEs may apply for certification online with any of the four Certifying Partners listed on the Directory's home page. NYSDOT's DBE Certification Unit assists with **DBE Certification**. NYSDOT does not pre-qualify nor recommend firms for participation.

DBE firms must be certified at the time of project award.

13.8.1 DBE Contract Requirements / Establishing DBE Goals

13.8.1.1 Consultant and Professional Services

13.8.1.1.1 Architectural & Engineering (A&E) Consultant Contracts

All federally aided A&E consultant contracts must encourage DBE participation. The RLO's Project Manager or designee shall monitor DBE participation as the project progresses. The prime consultant shall report attainment data to the Sponsor each time a payment request is submitted using EBO. For more information about consultant selection procedures, see [LPM Chapter 6](#).

13.8.1.1.2 Non-Architectural & Engineering (Non-A&E) Consultant Contracts

For non-A&E contracts such as real estate, legal, accounting, auditing, and public relations, the Sponsor, in coordination with the RLPL and NYSDOT's Office of Diversity and Opportunity (ODO), will determine the DBE goal during the final stages of drafting the Request for Proposals. This goal is based on the value of the contract, the type of work involved that could be subcontracted, and the availability of DBE to accomplish the work. Payment data shall be reported by the prime consultant to the Sponsor, utilizing the EBO system each time a payment is made.

13.8.1.2 Construction Contracts

The Sponsor or their designee will ensure that the construction contract includes participation goals in accordance with NYSDOT's current [DBE Program Plan](#). The DBE Program Plan is approved by FHWA and establishes contract goals by geographic location and project work type. To set the DBE goal, use the following documents:

- Table of Construction Contract Groups,
- Multi-Regional (Market Area) Map,
- Baseline DBE Goal Selection Chart, and
- The assessment portion of the Construction Contract DBE Goal Assessment Form.

These forms and instructions can be found on [NYSDOT's Civil Rights website](#).

13.8.2 DBE Goal Assessment Process

The Sponsor may request a modification of the DBE goal. To implement a modification to the DBE goal to either increase, reduce, or be exempt during final design, the Sponsor is required to complete the DBE Goal Assessment Form. For example, increases might be appropriate for those projects with additional opportunities for DBE participation due to the project's variety of operations or magnitude. Conversely, a reduction or exemption could be sought for projects with no significant DBE participation opportunities, perhaps due to being specialized in nature with few pay items. The Sponsor must submit the [DBE Goal Assessment Form](#) to the RLPL before contract document review and approval, but preferably after authorization of Detailed Design. Refer to [HDM Chapter 21](#), "Contract Plans, Specifications, and Estimates," or [NYSDOT's Civil Rights website](#).

Approved revisions to the DBE goal must be included in the project's advertisement, contract proposal, and contract (see [LPM Chapter 14](#) for guidance).

A DBE goal assessment must be performed at ADP to ensure the goals are appropriate to the project.

13.8.3 DBE Goal and Good Faith Efforts (GFE) Documentation

The Sponsor or their designee must set the goal, monitor, and report on a contract's DBE participation. If the goal is not met, the Sponsor must collect documentation of good faith efforts demonstrated by the contractor. Further details on setting DBE goals can be found in [LPM Chapter 12](#); details on GFE documentation can be found in [LPM Chapter 14](#) and [LPM Chapter 15](#) and [NYSDOT's MURK Part 1A CAM Section 102-12](#).

Sponsors must work with NYSDOT staff to ensure data and process quality throughout the project delivery and construction processes. In addition, NYSDOT requires civil rights reporting through the EBO software to monitor construction contract payments, DBE goals, DBE commitments, and DBE attainments. Further details on EBO can be found in [LPM Chapter 14](#).

GFE must show concrete, tangible, result-oriented efforts were taken to meet the goal.

13.8.4 NYS Executive Order 162 Ensuring Pay Equity

[NYS EO 162](#), "Ensuring Pay Equity by State Contractors" issued in January 2017, is intended to help assure State laws are being complied with by requiring contractors and consultants to provide documentation demonstrating whether women are being paid the same salaries as men for work being performed. Refer to [Standard Specifications §107-16](#) and [LPM Chapter 15](#) for more information.

This reporting requirement applies to every individual who is paid in conjunction with the contract.

13.9 PROMPT PAYMENT

The Sponsor is responsible for ensuring all consultants and contractors comply with the prompt payment contract requirements in [49 CFR 26.29](#). These requirements must be included in the Sponsor's contract specifications. In addition, the Sponsor is responsible for quality control monitoring of prompt payments using EBO, with the RLPL providing quality assurance monitoring and enforcement.

While [49 CFR 26.29](#) requires payment to subcontractors within thirty (30) days, New York State and General Municipal Laws are more stringent. Specifically, [NYS Finance Law Article 9, Section 139-f\(2\)](#), and [NYS General Municipal Law, Article 5-A, Section 106-b\(2\)](#) require prime consultants and contractors to pay their subconsultants/contractors and their various vendors within seven (7) calendar days of receipt of payment from the public owner. Refer to [Standard Specifications 109-07](#) and [LPM Chapter 15](#) for more information.

The Sponsor may withhold future payment to the Contractor, per their Contract, until prompt payment issues are resolved by the Contractor.

13.10 FEDERAL REPORTING REQUIREMENTS

Consultants and contractors must submit data to Sponsors using NYSDOT's Civil Rights reporting software, EBO. Sponsors are required to ensure that consultants and contractors submit timely, accurate, and complete data. It enables NYSDOT to submit to the FHWA timely, accurate, and complete federal reports that include all federally aided contracts in New York State. A Sponsor's failure to ensure timely, accurate, and complete reporting of Civil Rights data may result in a loss or delay of federal aid. All data must be entered before final project acceptance by the Sponsor.

13.11 CONTRACT COMPLIANCE REVIEWS

Sponsors must conduct Civil Rights monitoring on all construction contracts. In addition, the Sponsor may be directed to perform a comprehensive construction contract compliance review per [23 CFR 230 Subpart D](#). The procedure and forms for the construction contract compliance review process are in [NYSDOT's MURK Part 1A CAM Section 98](#).

NYSDOT's ODO annually completes a compliance review of Sponsors who were recipients of federal aid. The ODO analysts will contact the Sponsor via telephone and follow up with a letter. In addition, the appropriate RLPL will be provided with additional information on the review. Compliance Reviews not only cover a specific project but evaluate the Sponsor's internal compliance processes and procedures.

13.12 FINAL REPORTS—CONTRACT CLOSE-OUT

Sponsors must ensure that all required Civil Rights data for federally funded and state-funded projects are in EBO before the State-Local Agreement's close-out. Failure to provide timely, accurate, and complete data may jeopardize reimbursement and future aid.

13.13 CIVIL RIGHTS REQUIREMENTS ON STATE-FUNDED (NON-FEDERAL AID) PROJECTS

13.13.1 Minority and Women-Owned Business Enterprises (M/WBE) Program and Service-Disabled Veteran-Owned Business (SDVOB) Program

The requirements of [New York State Executive Law Article 15-A, Article 3 of the Veteran Services Law](#), and the regulations promulgated under [5 NYCRR 140-145](#) and [9 NYCRR 252.2](#) apply to all state-funded projects. Sponsors shall comply with these laws, rules, regulations, gubernatorial executive orders, and the [M/WBE](#) and [SDVOB Program](#) requirements.

All contracts entered into by the Sponsor in furtherance of state-issued, non-federally aided funds must be assessed to determine appropriate M/WBE/SDVOB goals derived from NYSDOT's Agency M/WBE and SDVOB Goal Plans. For detailed information on goal setting, Goal

Assessment, Good Faith Effort Documentation, and Goal Waiver Requests for M/WBE see [Appendix 13-5](#); for SDVOB, see [Appendix 13-6](#); and for GFE, see [Appendix 13-7](#).

13.14 NON-COMPLIANCE WITH CIVIL RIGHTS REQUIREMENTS

By signing the State-Local Agreement, the Sponsor becomes contractually obligated to ensure all federal and state Civil Rights laws, rules, regulations, and federal and state executive orders are adhered to in contracts with its consultants and contractors. Failure by the Sponsor to carry out its responsibilities under and comply with federal and state civil rights requirements may result in a loss of federal or state aid.

13.15 REFERENCES, CHAPTER 13.0 CIVIL RIGHTS REQUIREMENTS

TITLE	LINK
FEDERAL LAWS & REGULATIONS	
23 USC § 140(a) , Nondiscrimination	https://www.govinfo.gov/content/pkg/USCODE-1995-title23/html/USCODE-1995-title23-chap1-sec140.htm
42 USC § 2000d , Title VI of the Civil Rights Act	https://www.govinfo.gov/content/pkg/USCODE-2008-title42/pdf/USCODE-2008-title42-chap21-subchapV.pdf
23 CFR § 200.9 , State Highway Agency Responsibilities	https://www.govinfo.gov/content/pkg/CFR-2008-title23-vol1/xml/CFR-2008-title23-vol1-sec200-9.xml
23 CFR § 230 , External Federal Highway Programs	https://www.govinfo.gov/content/pkg/CFR-1999-title23-vol1/xml/CFR-1999-title23-vol1-part230.xml
23 CFR § 230.111 , Implementation of Special Requirements for the Provision of On-the-Job Training	https://www.govinfo.gov/content/pkg/CFR-2011-title23-vol1/xml/CFR-2011-title23-vol1-sec230-111.xml
23 CFR § 450 , Planning Assistance and Standards	https://www.govinfo.gov/content/pkg/CFR-2004-title23-vol1/xml/CFR-2004-title23-vol1-part450.xml
28 CFR § 35.105 , Self-evaluation	https://www.govinfo.gov/content/pkg/CFR-2011-title28-vol1/xml/CFR-2011-title28-vol1-sec35-105.xml
28 CFR § 35.150(d)(1) , Transition Plan	https://www.govinfo.gov/content/pkg/CFR-2010-title28-vol1/xml/CFR-2010-title28-vol1-sec35-150.xml
28 CFR § 35.151 , New Construction & Alterations	https://www.govinfo.gov/content/pkg/CFR-2010-title28-vol1/xml/CFR-2010-title28-vol1-sec35-151.xml
49 CFR § 26 , Disadvantaged Business Enterprises (DBE)	https://www.govinfo.gov/content/pkg/CFR-2011-title49-vol1/xml/CFR-2011-title49-vol1-part26.xml
49 CFR § 26.29 , What prompt payment mechanisms must recipients have?	https://www.govinfo.gov/content/pkg/CFR-1999-title49-vol1/xml/CFR-1999-title49-vol1-sec26-29.xml
49 CFR § 26.45 , How do recipients set overall goals?	https://www.govinfo.gov/content/pkg/CFR-2009-title49-vol1/xml/CFR-2009-title49-vol1-sec26-45.xml
49 CFR § 27.7 , Discrimination Prohibited	https://www.govinfo.gov/content/pkg/CFR-2011-title49-vol1/xml/CFR-2011-title49-vol1-sec27-7.xml
49 CFR § 27.11 , Remedial and Voluntary Actions and Compliance Planning	https://www.govinfo.gov/content/pkg/CFR-1998-title49-vol1/xml/CFR-1998-title49-vol1-sec27-11.xml

TITLE	LINK
Title VI of the Civil Rights Act of 1964	https://www.fhwa.dot.gov/civilrights/programs/title_vi
FEDERAL LAWS & REGULATIONS	
The Federal Aid Highway Act of 1968	https://www.govinfo.gov/content/pkg/STATUTE-82/pdf/STATUTE-82-Pg815.pdf
Section 504 of the 1973 Rehabilitation Act	https://www.dol.gov/agencies/oasam/centers-offices/civil-rights-center/statutes/section-504-rehabilitation-act-of-1973
Americans with Disabilities Act of 1990 (ADA)	https://www.ada.gov/ada_intro.htm
Presidential Executive Order (EO) 12898	https://www.epa.gov/laws-regulations/summary-executive-order-12898-federal-actions-address-environmental-justice
Presidential Executive Order (EO) 13166	https://www.justice.gov/crt/executive-order-13166
STATE LAWS & REGULATIONS	
5 NYCRR 140-145, M/WBE Program	https://cdn.esd.ny.gov/MWBE/Data/01282015_OFFICIAL_COMPILATION_OF_MWBE_REGS.pdf
9 NYCRR 252.2, SDVOB Program	https://govt.westlaw.com/nycrr/Document/le8529745221211e4a6bf0000845b8d3e?listSource=Search&contextData=%28sc.Search%29&list=NYREGULATION_PUBLICVIEW&rank=5&transitionType=Default
Veteran services Law Article 3, SDVOB	https://law.justia.com/codes/new-york/2022/vet/article-3/
NYS Executive Law Article 17-B, SDVOB Program	https://portal.nyserda.ny.gov/servlet/servlet.FileDownload?file=00Pt0000004FykREAS
NYS Executive Order 162, Ensuring Pay Equity	https://www.governor.ny.gov/sites/default/files/atoms/files/EO_162.pdf
NYS Highway Law, Article 3, § 46, State Highways in Villages	https://www.nysenate.gov/legislation/laws/HAY/46
NYS Highway Law, Article 3 § 140, State Highways in Towns	https://codes.findlaw.com/ny/highway-law/hay-sect-140.html
NYS Highway Law, Article 12-B, § 349-C, State Highways in Cities	https://www.nysenate.gov/legislation/laws/HAY/349-C
NYS Finance Law, Article 9, § 139-f(2), Payment on Public Work Projects	Legislation NY State Senate (nysenate.gov)

TITLE	LINK
NYS General Municipal Law, Article 5-A, Section 106-b, Payment on Public Works Projects	https://www.nysenate.gov/legislation/laws/GMU/106-B
NYSDOT POLICIES, PROCEDURES, & GUIDANCE	
ADA Transition Plan	https://www.dot.ny.gov/programs/adamanagement/ada-transition-plan
DBE Certification Program	https://www.dot.ny.gov/main/business-center/civil-rights/general-info/dbe-certification
NYSDOT Contract Administration Manual, Section 98	https://www.dot.ny.gov/main/business-center/contractors/construction-division/forms-manuals-computer-applications-general-information/murk_1a
NYSDOT Standard Specifications	https://www.dot.ny.gov/main/business-center/engineering/specifications/busi-e-standards-usc/usc-repository/2022_1_specs_usc_vol1.pdf
NYSDOT Highway Design Manual, Chapter 21	https://www.dot.ny.gov/divisions/engineering/design/dqab/hdm/chapter-21
NYSDOT DBE Plan	https://www.dot.ny.gov/main/business-center/civil-rights2/civil-rights-repository/Tab/DBE%20Program%20Plan%202019%20Final%20%20121719.pdf
NYSDOT's M/WBE Plan	https://www.dot.ny.gov/main/business-center/civil-rights/mwbe-program
NYSDOT's SDVOB Plan	https://www.dot.ny.gov/main/business-center/civil-rights/sdvob-program
NYSDOT Title VI Plan	https://www.dot.ny.gov/main/business-center/civil-rights/title-vi-ej
NYSDOT Engineering Instruction, EI 21-014	https://www.dot.ny.gov/portal/pls/portal/mexis_app.pa_ei_eb_admin_app.show_pdf?id=13988
Title VI Nondiscrimination Plan	https://www.dot.ny.gov/main/business-center/civil-rights/title-vi-ej
ADDITIONAL RESOURCES	
DOJ/DOT Joint Technical Assistance Informal Question and Answer Supplemental	https://www.ada.gov/doj-fhwa-ta-supplement-2015.html
The NYSUCP DBE Directory	https://nysucp.newnycontracts.com/

APPROVAL TO SUBCONTRACT

Contract No. 0	County(ies) 0	PIN 0	Project Sponsor 0	Date Submitted January 0, 1900
CONTRACTOR INFORMATION				
Name 0	Federal ID No. 0			
Address 1 0	Address 2 0			
City 0	State 0	Zip 00000	Telephone No. -	
SUBCONTRACTOR INFORMATION				
Name 0	Federal ID No. 0			
Address 1 0	Address 2 0			
City 0	State 0	Zip 00000	Telephone No. -	
Estimated Beginning Date		1/0/00	Estimated Completion Date	
			1/0/00	
<p>The Prime Contractor shall inform the Sponsor's Engineer-in-Charge (EIC) of the dates when the Subcontractor starts and completes all work under the subcontract. When the work performed by the Subcontractor is included in an estimate for payment, labor affidavits, copies of payrolls, etc., are to be submitted in the same manner and numbers as required of the Prime Contractor. This approval may be rescinded at any time in the progress of the work if work of the Subcontractor is determined unsatisfactory.</p> <p>No work may be assigned by the Subcontractor to a second tier Subcontractor. No work may be performed by a Subcontractor other than that specifically approved by the Sponsor. The signators below agree that violations of the foregoing may result in no payment by the Sponsor for the related work.</p> <p>No work shall be started by the Subcontractor prior to filing the required insurances. The Contractor and Subcontractor hereby certify that the subcontract is in writing, and contains all the pertinent provisions of the prime contract in regard to Federal and State Laws and Regulations.</p>				
Contractor Signature		Date	Subcontractor Signature	
Item No.	Name	< Less Than 100%	\$ Specialty	\$ Non-Specialty
0		0	\$0.00	\$0.00
0		0	\$0.00	\$0.00
0		0	\$0.00	\$0.00
0		0	\$0.00	\$0.00
0		0	\$0.00	\$0.00
0		0	\$0.00	\$0.00
0		0	\$0.00	\$0.00
0		0	\$0.00	\$0.00
Totals			\$0.00	\$0.00
<p>The Subcontractor named above is authorized to perform work on the above noted contract for the items listed herein; however, a subcontract shall be of no force or effect until approved below.</p>				
BELOW FOR PROJECT SPONSOR USE ONLY				
Original Total Contract Price (Less Specialty Items)		% Original Total Contract Price Approved This Date	Approval #	
% Original Total Contract Price Previously Approved		% Original Total Contract Price Approved To Date		
Approved For Sponsor By (Name)		Date Approved		

**THE CONR 89LL
SHOULD BE SUBMITTED
FOR ALL THE
SUBCONTRACTORS
APPROVED FOR WORK
ON THE CONTRACT IN
TIME FOR THE PRE-
CONSTRUCTION
MEETING**

SUBMITTAL BY LOW BIDDER

THE FOLLOWING QUESTIONNAIRE MUST BE COMPLETED, SUBMITTED TO ALBANY, AND SUBMITTED TO NASSAU COUNTY PRIOR TO CONTRACT AWARD. ANY INCOMPLETE SECTIONS WILL RESULT IN THE DOCUMENT BEING RETURNED AND MAY DELAY THE CONTRACT AWARD. REGARDLESS OF THE STATUS OF THE CCA-2 QUESTIONNAIRE FROM THE LOWEST BIDDER WITH THE NY STATE CONTRACT MANAGEMENT BUREAU, PROVIDE A COPY OF ATTACHMENT(S) A AND B TO NYSDOT REGIONAL LOCAL PROJECTS CONSTRUCTION MONITOR FOR THEIR REVIEW AND THE FILES AS PART OF THE CONTRACT AWARD PACKAGE.

You have selected the For-Profit Construction questionnaire, commonly known as the “CCA-2,” which may be printed and completed in this format or, **for your convenience, may be completed online using the [New York State VendRep System](#).**

COMPLETION & CERTIFICATION

The person(s) completing the questionnaire must be knowledgeable about the vendor’s business and operations. An owner or owner’s official representative authorized to legally bind the Reporting Entity, must certify the truth of the questionnaire answers.

NEW YORK STATE VENDOR IDENTIFICATION NUMBER (VENDOR ID)

The Vendor ID is a ten-digit identifier issued by New York State when the vendor is registered on the Statewide Vendor File. This number must now be included on the questionnaire. If the business entity has not obtained a Vendor ID, contact the IT Service Desk at ITServiceDesk@osc.state.ny.us or call 866-370-4672.

DEFINITIONS

All underlined terms are defined in the “New York State Vendor Responsibility Definitions List,” found at <http://www.osc.state.ny.us/vendrep/documents/questionnaire/definitions.pdf>. These terms may not have their ordinary, common, or traditional meanings. Each vendor must read the respective definitions for any and all underlined terms. By submitting this questionnaire, the vendor agrees to be bound by the terms as defined in the "New York State Vendor Responsibility Definitions List" existing at the time of certification.

RESPONSES

Every question must be answered fully. Each response must provide **all** relevant information to appropriately explain the answer. If you have concerns as to the legal requirements behind your answers, please seek clarification from your counsel. However, information regarding a determination or finding made in error which was subsequently corrected or overturned, and/or was withdrawn by the issuing government entity, is not required to be identified. Individuals and Sole Proprietors may use a Social Security Number but are encouraged to obtain and use a federal Employer Identification Number (EIN).

BUSINESS ENTITY INFORMATION

<u>Legal Business Name</u>		<u>EIN</u> _____		
Address of the <u>Principal Place of Business</u> (street, city, state, zip code) NO P.O. Boxes		<u>New York State Vendor Identification Number</u>		
		Telephone ext.	Fax	
		Website (include all)		
Authorized Contact for this Questionnaire				
Name		Telephone ext.	Fax	
Title		Email		
Additional <u>Business Entity</u> Identities: If applicable, list any other <u>DBA</u> , <u>Trade Name</u> , <u>Former Name</u> , Other Identity, or <u>EIN</u> used in the last five (5) years, the state or county where filed and the status (active or inactive).				
Type	Name	EIN	State or County where filed	Status

I. BUSINESS CHARACTERISTICS

1.0 Business Entity Type – Check appropriate box and provide additional information:

a) <input type="checkbox"/> <u>Corporation</u> (including <u>PC</u>)	Date of Incorporation
b) <input type="checkbox"/> <u>Limited Liability Company (LLC or PLLC)</u>	Date Organized
c) <input type="checkbox"/> <u>Limited Liability Partnership</u>	Date of Registration
d) <input type="checkbox"/> <u>Limited Partnership</u>	Date Established
e) <input type="checkbox"/> <u>General Partnership</u>	Date Established County (if formed in NYS)
f) <input type="checkbox"/> <u>Sole Proprietor</u>	How many years in business?
g) <input type="checkbox"/> Other	Date Established
If Other, explain:	
1.0 Was the <u>Business Entity</u> formed in New York State? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If “No,” indicate jurisdiction where the <u>Business Entity</u> was formed:	

I. BUSINESS CHARACTERISTICS

<input type="checkbox"/> United States	State	
<input type="checkbox"/> Other	Country	

1.2 Is the Legal Business Entity publicly traded? Yes No

If “Yes,” provide the CIK code or Ticker Symbol:

1.3 Is the Business Entity currently registered to do business in New York State? Yes No
Note: Select “Not Required” if the Business Entity is a Sole Proprietor or General Partnership Not Required

If “No,” explain why the Business Entity is not required to be registered to do business in New York State:

1.4 Is the responding Business Entity a Joint Venture? Note: If the submitting Business Entity is a Joint Venture, also submit a separate questionnaire for each Business Entity comprising the Joint Venture. Yes No

1.5 If the Business Entity’s Principal Place of Business is not in New York State, does the Business Entity maintain an office in New York State? Yes No
(Select “N/A” if Principal Place of Business is in New York State.) N/A

If “Yes,” provide the address and telephone number for one office located in New York State.

1.6 Is the Business Entity a New York State certified Minority-Owned Business Enterprise, Women-Owned Business Enterprise, Service-Disabled Veteran-Owned Business, New York State Small Business, or federally certified Disadvantaged Business Enterprise? Yes No

If “Yes,” check all that apply:

- New York State certified Minority-Owned Business Enterprise (MBE)
- New York State certified Women-Owned Business Enterprise (WBE)
- New York State certified Service-Disabled Veteran-Owned Business (SDVOB)
- New York State Small Business
- Federally certified Disadvantaged Business Enterprise (DBE)

1.7 Identify **each person** or Business Entity that is or has been within the past five (5) years, a Business Entity Official, or a Principal Owner of 5.0% or more of the Reporting Entity’s shares; or one of the five largest shareholders, if applicable. *(Attach additional pages if necessary.)*

Joint Ventures: Provide information for all firms involved.

Each Business Entity identified as a Principal Owner must also submit a Vendor Responsibility Questionnaire. (Add additional sheets if necessary.) For each person, include name, title, date of birth, percentage of ownership, and employment status. For each Business Entity that is a Principal Owner, include name, address, EIN, and percentage of ownership.

If there is no person or Business Entity that owns 5% or more of the Reporting Entity, check here:

Name (For each person, include a middle initial)	Title	Date of Birth	Percentage of ownership (Enter 0%, if not applicable)	Employment status with the firm

I. BUSINESS CHARACTERISTICS

				<input type="checkbox"/> Current <input type="checkbox"/> Former <input type="checkbox"/> N/A
				<input type="checkbox"/> Current <input type="checkbox"/> Former <input type="checkbox"/> N/A
				<input type="checkbox"/> Current <input type="checkbox"/> Former <input type="checkbox"/> N/A
				<input type="checkbox"/> Current <input type="checkbox"/> Former <input type="checkbox"/> N/A
Name of <u>Each Business Entity</u> owning 5% or more of <u>Reporting Entity</u>	Address	EIN	Percentage Ownership	

II. AFFILIATE and JOINT VENTURE RELATIONSHIPS

2.0 Are there any other construction-related firms in which, now or in the past five years, the submitting Business Entity or any of the individuals or business entities listed in question 1.7 either owned or owns 5.0% or more of the shares of, or was or is one of the five largest shareholders or a director, officer, partner, or proprietor of said other firm? Yes No

If yes, identify below and if there is more than one, *attach additional pages with required information.*

Firm/Company Name	Firm/Company EIN (If available)	Firm/Company's Primary Business Activity

Firm/Company Address

Explain relationship with the firm and indicate percent of ownership, if applicable (enter N/A, if not applicable):

Are there any shareholders, directors, officers, owners, partners or proprietors that the submitting Business Entity has in common with the disclosed firm(s)? Yes No

Individual's Name <i>(Include middle initial)</i>	Position/Title with Firm/Company

II. AFFILIATE and JOINT VENTURE RELATIONSHIPS

2.1 Does the <u>Business Entity</u> have any <u>construction-related affiliates</u> not identified in the response to question 2.0 above? If yes, identify below and if there is more than one, <i>attach additional pages with the required information.</i>		<input type="checkbox"/> Yes <input type="checkbox"/> No
Affiliate Name	Affiliate EIN (If available)	Affiliate's Primary Business Activity
Affiliate Address		
Explain relationship with the affiliate and indicate percent of ownership, if applicable (<i>enter N/A, if not applicable</i>):		
Are there any shareholders, directors, officers, owners, partners or proprietors that the submitting Business Entity has in common with the disclosed affiliate(s)?		<input type="checkbox"/> Yes <input type="checkbox"/> No
Individual's Name (<i>Include middle initial</i>)	Position/Title with Firm/Company	
2.2 Has the <u>Business Entity</u> participated in any <u>construction-related Joint Ventures</u> within the past three (3) years? If yes, identify below and if there is more than one, <i>attach additional pages with the required information.</i>		<input type="checkbox"/> Yes <input type="checkbox"/> No
Joint Venture Name	Joint Venture EIN (If available)	Identify parties to the Joint Venture

III. CONTRACT HISTORY

3.0 Has the <u>Business Entity</u> completed any <u>construction</u> contracts?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p><i>If "Yes," list the ten most recent <u>construction</u> contracts the <u>Business Entity</u> has completed for <u>government</u> clients using Attachment A – Completed Construction Contracts, found at www.osc.state.ny.us/vendrep/documents/questionnaire/ac3294s.doc.</i></p> <p><i>At the <u>Business Entity</u>'s option, it may include <u>construction</u> contracts completed for private clients. If less than ten, include most recent subcontracts on projects up to that number.</i></p>	
3.1 Does the <u>Business Entity</u> currently have uncompleted <u>construction</u> contracts?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p><i>If "Yes," list all current uncompleted <u>construction</u> contracts for <u>government</u> clients by using Attachment B – Uncompleted Construction Contracts, found at www.osc.state.ny.us/vendrep/documents/questionnaire/ac3295s.doc.</i></p> <p><i>Note: Ongoing projects must be included. At the <u>Business Entity</u>'s option, it may include <u>construction</u> contracts uncompleted for private clients.</i></p>	

IV. INTEGRITY – CONTRACT BIDDING
Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:

4.0 Been <u>suspended</u> or <u>debarred</u> from any <u>government contracting process</u> or been <u>disqualified</u> on any government procurement?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4.1 Been subject to a denial or revocation of a government prequalification?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4.2 Had any bid rejected by a <u>government entity</u> for lack of qualifications, responsibility or because of the submission of an informal, non-responsive or incomplete bid?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4.3 Had a proposed subcontract rejected by a <u>government entity</u> for lack of qualifications, responsibility or because of the submission of an informal, non-responsive or incomplete bid?	<input type="checkbox"/> Yes <input type="checkbox"/> No

IV. INTEGRITY – CONTRACT BIDDING***Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:***

4.4 Had a bid rejected on a <u>government contract</u> for failure to make <u>good faith efforts</u> on any <u>Minority-Owned Business Enterprise, Women-Owned Business Enterprise, Service-Disabled Veteran-Owned Business or Disadvantaged Business Enterprise</u> goal or <u>statutory affirmative action requirements</u> on a previously held contract?	<input type="checkbox"/> Yes <input type="checkbox"/> No
--	--

4.5 Agreed to a voluntary exclusion from bidding/contracting with a <u>government entity</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No
--	--

4.6 Requested or been permitted to withdraw a bid submitted to a <u>government entity</u> or made any claim of an error on a bid submitted to a <u>government entity</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No
--	--

For each “Yes,” provide an explanation of the issue(s), the Business Entity, affiliate, predecessor company or entity involved, the relationship to the submitting Business Entity, the government entity involved, project(s), relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer(s) below or attach additional sheets with numbered responses to explain each “YES” response.

V. INTEGRITY – CONTRACT AWARD***Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:***

5.0 Defaulted on or been <u>suspended</u> , cancelled or <u>terminated for cause</u> on any contract?	<input type="checkbox"/> Yes <input type="checkbox"/> No
---	--

5.1 Been subject to an <u>administrative proceeding</u> or civil action, including arbitration, seeking specific performance or restitution (except any disputed work proceeding) in connection with any <u>government contract</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No
---	--

5.2 Entered into a formal monitoring agreement, integrity agreement, consent decree, or stipulation, settlement as specified by, or agreed to with, any <u>government entity</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No
--	--

5.3 Had its surety called upon to complete any contract whether government or private sector?	<input type="checkbox"/> Yes <input type="checkbox"/> No
---	--

5.4 Forfeited all or part of a standby letter of credit in connection with any <u>government contract</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No
---	--

For each “Yes,” provide an explanation of the issue(s), the Business Entity, affiliate, predecessor company or entity involved, the relationship to the submitting Business Entity, the government entity/owners involved, project(s), contract number(s), relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer(s) below or attach additional sheets with numbered responses to explain each “YES” response.

VI. CERTIFICATIONS/LICENSES***Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:***

6.0 Had a revocation or <u>suspension</u> of any business or professional permit and/or license?	<input type="checkbox"/> Yes <input type="checkbox"/> No
--	--

6.1 Had a denial, decertification, revocation or forfeiture of New York State certification of <u>Minority-Owned Business Enterprise, Women-Owned Business Enterprise, Service-Disabled Veteran-Owned Business</u> or a federal certification of <u>Disadvantaged Business Enterprise</u> status, for other than a change of ownership?	<input type="checkbox"/> Yes <input type="checkbox"/> No
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For each “Yes,” provide an explanation of the issue(s), the Business Entity affiliate, predecessor company or entity involved, the relationship to the submitting Business Entity, the government entity involved, relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer(s) below or attach additional sheets with numbered responses to explain each “YES” response.

VII. LEGAL PROCEEDINGS/GOVERNMENT INVESTIGATIONS

Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:

7.0 Been the subject of a criminal <u>investigation</u> , whether open or closed, or an indictment for any business-related conduct constituting a crime under local, state or <u>federal</u> law?	<input type="checkbox"/> Yes <input type="checkbox"/> No
7.1 Been the subject of: (i.) An indictment, grant of immunity, <u>judgment</u> or conviction (including entering into a plea bargain) for conduct constituting a crime; or (ii.) Any criminal <u>investigation</u> , felony indictment or conviction concerning the formation of, or any business association with, an allegedly false or fraudulent <u>Minority-Owned Business Enterprise</u> , <u>Women-Owned Business Enterprise</u> , <u>Service-Disabled Veteran-Owned Business</u> , or a <u>Disadvantaged Business Enterprise</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No
7.2 Received any <u>OSHA</u> citation, which resulted in a final determination classified as <u>serious</u> or <u>willful</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No
7.3 Had a <u>government entity</u> find a willful prevailing wage or supplemental payment violation?	<input type="checkbox"/> Yes <input type="checkbox"/> No
7.4 Had a New York State Labor Law violation deemed willful?	<input type="checkbox"/> Yes <input type="checkbox"/> No
7.5 Entered into a consent order, monitoring agreement or other type of oversight with the New York State Department of Environmental Conservation, or a <u>federal</u> , state or local government enforcement entity involving a violation of <u>federal</u> , state or local environmental laws?	<input type="checkbox"/> Yes <input type="checkbox"/> No
7.6 Other than previously disclosed, been the subject of any <u>citations</u> , notices or violation orders; a pending administrative hearing, proceeding or determination of a violation of: <ul style="list-style-type: none"> • <u>Federal</u>, state or local health laws, rules or regulations; • <u>Federal</u>, state or local environmental laws, rules or regulations; • Unemployment insurance or workers compensation coverage or <u>claim</u> requirements; • Any labor law or regulation, which was deemed willful; • Employee Retirement Income Security Act (ERISA); • <u>Federal</u>, state or local human rights laws; • <u>Federal</u>, state or local security laws; • <u>Federal</u>, state, or local tax laws? 	<input type="checkbox"/> Yes <input type="checkbox"/> No

For each "Yes," provide an explanation of the issue(s), the Business Entity, affiliate, predecessor company or entity involved, the relationship to the submitting Business Entity, the government entity involved, relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer(s) below or attach additional sheets with numbered responses to explain each "YES" response.

Note: Information regarding a determination or finding made in error, which was subsequently corrected or overturned, and/or was withdrawn by the issuing government entity, is not required.

VIII. LEADERSHIP INTEGRITY

If the Business Entity is a Joint Venture Entity, answer “N/A - Not Applicable” to questions in this section.

Within the past five (5) years has any individual previously identified or any individual currently or formerly having the authority to sign, execute or approve bids, proposals, contracts or supporting documentation on behalf of the Business Entity with any government entity been:

8.0 <u>Sanctioned</u> relative to any business or professional permit and/or license?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
8.1 <u>Suspended, debarred or disqualified</u> from any <u>government contracting process</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
8.2 The subject of a criminal <u>investigation</u> , whether open or closed, or an indictment for any business-related conduct constituting a crime under local, state or <u>federal</u> law?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
8.3 Charged with a misdemeanor or felony, indicted, granted immunity, convicted of a crime or subject to a judgment for: (i.) Any business-related activity, including but not limited to theft, fraud, coercion, extortion, bribe or bribe-receiving, giving or accepting unlawful gratuities, immigration or tax fraud, racketeering, mail fraud, wire fraud, price-fixing or collusive bidding; or (ii.) Any crime, whether or not business-related, the underlying conduct of which related to truthfulness, including but not limited to the filing of false documents or false sworn statements, perjury or larceny	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

For each “Yes,” provide an explanation of the issue(s), the individual involved, the relationship to the submitting Business Entity, the government entity involved, relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer(s) below or attach additional sheets with numbered responses to explain each “YES” response.

IX. FINANCIAL AND ORGANIZATIONAL CAPACITY

9.0 Within the past five (5) years, has the <u>Business Entity</u> or any <u>affiliate</u> received any <u>formal unsatisfactory performance assessment(s)</u> from any <u>government entity</u> on any contract?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>If “Yes,” provide an explanation of the issue(s), the <u>Business Entity</u> or affiliate involved, the relationship to the submitting <u>Business Entity</u>, the <u>government entity</u> involved, relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses to explain the “Yes” response.</i>	
9.1 Within the past five (5) years, has the <u>Business Entity</u> or any <u>affiliate</u> had any <u>liquidated damages</u> assessed over \$25,000 for any reason, including failure to meet <u>Minority-Owned Business Enterprise, Women-Owned Business Enterprise, Service-Disabled Veteran-Owned Business, or Disadvantaged Business Enterprise goals</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No

If “Yes,” provide an explanation of the issue(s), the name of the Business Entity or affiliate involved, the relationship to the submitting Business Entity, relevant dates, the contracting party involved, the amount assessed and the current status of the issue(s), and the balance of the assessment not yet paid. Provide answer below or attach additional sheets with numbered responses.

9.2 Within the past five (5) years, has the <u>Business Entity</u> or any <u>affiliate</u> had any <u>liens, claims or judgments</u> over \$25,000 filed against the <u>Business Entity</u> which remain undischarged or were unsatisfied for more than 90 days? (Note: Including but not limited to tax warrants or liens. Do not include UCC filings.)	<input type="checkbox"/> Yes <input type="checkbox"/> No
--	--

IX. FINANCIAL AND ORGANIZATIONAL CAPACITY

If “Yes,” provide an explanation of the issue(s), the name of the Business Entity or affiliate involved, the relationship to the submitting Business Entity, relevant dates, the Lien holder or Claimants’ name(s), the amount of the lien(s), the current status of the issue(s), and the balance of the lien, claim or judgment not yet paid. Provide answer below or attach additional sheets with numbered responses.

9.3 In the last seven (7) years, has the Business Entity or any affiliate, or official initiated or been the subject of any bankruptcy proceedings, whether or not closed, or is any bankruptcy proceeding pending? Yes No

If “Yes,” provide the name of the Business Entity, affiliate or official involved, the relationship to the submitting Business Entity, the bankruptcy chapter number, the court name and the docket number. Indicate the current status of the proceedings as “Initiated,” “Pending” or “Closed.” Provide answer below or attach additional sheets with numbered responses to explain the YES response.

9.4 What is the Business Entity’s Bonding Capacity?

a. Single Project b. Aggregate (All Projects)

9.5 List Business Entity’s Gross Sales for the previous three (3) Fiscal Years:

1st Year (Indicate year) Gross Sales	2nd Year (Indicate year) Gross Sales	3rd Year (Indicate year) Gross Sales
--	--	--

9.6 List Business Entity’s Average Backlog for the previous three (3) fiscal years:
(Estimated total value of uncompleted work on outstanding contracts)

1st Year (Indicate year) Amount	2nd Year (Indicate year) Amount	3rd Year (Indicate year) Amount
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9.7 Attach Business Entity’s most recent annual financial statement and accompanying notes or complete Attachment C – Financial Information, found at www.osc.state.ny.us/vendrep/documents/questionnaire/ac3296s.xls.
(This information must be attached.)

X. FREEDOM OF INFORMATION LAW (FOIL)

10.0 Indicate whether any information provided herein is believed to be exempt from disclosure under the Freedom of Information Law (FOIL). Yes No
Note: A determination of whether such information is exempt from FOIL will be made at the time of any request for disclosure under FOIL. Attach additional pages if necessary.

If “Yes,” indicate the question number(s) and explain the basis for the claim.

Authorizee

XI. AUTHORIZED CONTACT FOR THIS QUESTIONNAIRE

Name	Telephone	Fax
	ext.	
Title	Email	

Certification

The undersigned: (1) recognizes that this questionnaire is submitted for the express purpose of assisting New York State government entities (including the Office of the State Comptroller (OSC)) in making responsibility determinations regarding award or approval of a contract or subcontract and that such government entities will rely on information disclosed in the questionnaire in making responsibility determinations; (2) acknowledges that the New York State government entities and OSC may, in their discretion, by means which they may choose, verify the truth and accuracy of all statements made herein; and (3) acknowledges that intentional submission of false or misleading information may result in criminal penalties under State and/or federal law, as well as a finding of non-responsibility, contract suspension or contract termination.

It being acknowledged and agreed that all responses included in this questionnaire are to the knowledge, information and belief of the Business Entity, the undersigned certifies under penalties of perjury that they:

The undersigned certifies that he/she:

- are knowledgeable about the submitting Business Entity's business and operations;
- have legal authority to bind the Business Entity;
- have read and understand all of the questions contained in the questionnaire, including all definitions;
- have not altered the content of the questionnaire in any manner;
- have reviewed and/or supplied full and complete responses to each question;
- have provided true, accurate and complete responses, including all attachments, if applicable;
- understand that New York State government entities will rely on the information disclosed in the questionnaire when entering into a contract with the Business Entity; and
- are under an obligation to update the information provided herein to include any material changes to the Business Entity's responses at the time of bid/proposal submission through the contract award notification, and may be required to update the information at the request of the New York State government entities or OSC prior to the award and/or approval of a contract, or during the term of the contract.

Signature of Owner/Official _____

Printed Name of Signatory _____

Title _____

Name of Business _____

Address _____

City, State, Zip _____

Date _____

**NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT A – COMPLETED CONSTRUCTION CONTRACTS**

NYS Vendor ID:

Vendor Name:

Question 3.0: List the ten most recent construction contracts the Business Entity has completed. If less than ten, include most recent subcontracts on projects up to that number:						
1.	Agency/Owner		Award Date	Amount	Date Completed	
	Contact Person	Telephone No.	Designer Architect and /or Design Engineer			
2.	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable	EIN of JV, if applicable		
	Agency/Owner		Award Date	Amount	Date Completed	
3.	Contact Person	Telephone No.	Designer Architect and /or Design Engineer			
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable	EIN of JV, if applicable		
4.	Agency/Owner		Award Date	Amount	Date Completed	
	Contact Person	Telephone No.	Designer Architect and /or Design Engineer			
5.	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable	EIN of JV, if applicable		
	Agency/Owner		Award Date	Amount	Date Completed	
6.	Contact Person	Telephone No.	Designer Architect and /or Design Engineer			
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable	EIN of JV, if applicable		
7.	Agency/Owner		Award Date	Amount	Date Completed	
	Contact Person	Telephone No.	Designer Architect and /or Design Engineer			
8.	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable	EIN of JV, if applicable		
	Agency/Owner		Award Date	Amount	Date Completed	
9.	Contact Person	Telephone No.	Designer Architect and /or Design Engineer			
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable	EIN of JV, if applicable		

**NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT A – COMPLETED CONSTRUCTION CONTRACTS**

NYS Vendor ID:

Vendor Name:

Question 3.0: List the ten most recent construction contracts the Business Entity has completed. If less than ten, include most recent subcontracts on projects up to that number:						
6.	Agency/Owner		Award Date	Amount	Date Completed	
	Contact Person	Telephone No.	Designer Architect and /or Design Engineer			
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable		EIN of JV, if applicable	
7.	Agency/Owner		Award Date	Amount	Date Completed	
	Contact Person	Telephone No.	Designer Architect and /or Design Engineer			
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable		EIN of JV, if applicable	
8.	Agency/Owner		Award Date	Amount	Date Completed	
	Contact Person	Telephone No.	Designer Architect and /or Design Engineer			
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable		EIN of JV, if applicable	
9.	Agency/Owner		Award Date	Amount	Date Completed	
	Contact Person	Telephone No.	Designer Architect and /or Design Engineer			
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable		EIN of JV, if applicable	
10.	Agency/Owner		Award Date	Amount	Date Completed	
	Contact Person	Telephone No.	Designer Architect and /or Design Engineer			
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable		EIN of JV, if applicable	

**NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT B – UNCOMPLETED CONSTRUCTION CONTRACTS**

NYS Vendor ID:

Vendor Name:

Question 3.1: List all current uncompleted construction contracts:						
1.	Agency/Owner	Designer Architect and /or Design Engineer		Award Date	Completion Date	
	Contact Person	Telephone No.				
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable	EIN of JV, if applicable		
		Total Contract Amount	Amount Sublet to others	Uncompleted Amount		
2.	Agency/Owner	Designer Architect and /or Design Engineer		Award Date	Completion Date	
	Contact Person	Telephone No.				
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable	EIN of JV, if applicable		
		Total Contract Amount	Amount Sublet to others	Uncompleted Amount		
3.	Agency/Owner	Designer Architect and /or Design Engineer		Award Date	Completion Date	
	Contact Person	Telephone No.				
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable	EIN of JV, if applicable		
		Total Contract Amount	Amount Sublet to others	Uncompleted Amount		
4.	Agency/Owner	Designer Architect and /or Design Engineer		Award Date	Completion Date	
	Contact Person	Telephone No.				
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable	EIN of JV, if applicable		
		Total Contract Amount	Amount Sublet to others	Uncompleted Amount		

**NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT B – UNCOMPLETED CONSTRUCTION CONTRACTS**

NYS Vendor ID:

Vendor Name:

Question 3.1: List all current uncompleted construction contracts:									
5.	Agency/Owner			Designer Architect and /or Design Engineer		Award Date	Completion Date		
	Contact Person	Telephone No.							
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable		EIN of JV, if applicable				
			Total Contract Amount	Amount Sublet to others		Uncompleted Amount			
6.	Agency/Owner			Designer Architect and /or Design Engineer		Award Date	Completion Date		
	Contact Person	Telephone No.							
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable		EIN of JV, if applicable				
			Total Contract Amount	Amount Sublet to others		Uncompleted Amount			
7.	Agency/Owner			Designer Architect and /or Design Engineer		Award Date	Completion Date		
	Contact Person	Telephone No.							
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable		EIN of JV, if applicable				
			Total Contract Amount	Amount Sublet to others		Uncompleted Amount			
8.	Agency/Owner			Designer Architect and /or Design Engineer		Award Date	Completion Date		
	Contact Person	Telephone No.							
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable		EIN of JV, if applicable				
			Total Contract Amount	Amount Sublet to others		Uncompleted Amount			

**NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT B – UNCOMPLETED CONSTRUCTION CONTRACTS**

Vendor Name:

NYS Vendor ID:

Question 3.1: List all current uncompleted construction contracts:						
9.	Agency/Owner			Award Date	Completion Date	
	Contact Person	Telephone No.	Designer Architect and /or Design Engineer			
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable		EIN of JV, if applicable	
		Total Contract Amount	Amount Sublet to others	Uncompleted Amount		
10.	Agency/Owner			Award Date	Completion Date	
	Contact Person	Telephone No.	Designer Architect and /or Design Engineer			
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable		EIN of JV, if applicable	
		Total Contract Amount	Amount Sublet to others	Uncompleted Amount		

Grand Total All Uncompleted Contracts	\$0.00
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**NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT C - FINANCIAL INFORMATION**

NYS Vendor ID: _____

As of Date: _____

ASSETS

Current Assets

1. Cash		\$	-	

2. Accounts receivable - less allowance for doubtful accounts	\$	-		

Retainers included in accounts receivable	\$	-		

Claims included in accounts receivable not yet approved or in litigation	\$	-		

Total Accounts Receivable		\$	-	

3. Notes receivable - due within one year		\$	-	

4. Inventory - materials		\$	-	

5. Contract costs in excess of billings on uncompleted contracts		\$	-	

6. Accrued income receivable				
Interest	\$	-		

Other (list) _____	\$	-		

_____	\$	-		

Total Accrued Income Receivable		\$	-	

7. Deposits				
Bid and Plan _____	\$	-		

Other (list) _____	\$	-		

_____	\$	-		

Total Deposits		\$	-	

8. Prepaid Expenses				
Income Taxes	\$	-		

Insurance	\$	-		

Other (list) _____	\$	-		

_____	\$	-		

Total Prepaid Expenses		\$	-	

9. Other Current Assets				
Other (list) _____	\$	-		

_____	\$	-		

Total Other Current Assets		\$	-	

10. Total Current Assets				\$

11. Investments				
Listed securities-present market value	\$	-		

Unlisted securities-present value	\$	-		

Total Investments				\$

**NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT C - FINANCIAL INFORMATION**

NYS Vendor ID: _____

12. Fixed Assets			
Land	\$	-	
Building and improvements	\$	-	
Leasehold improvements	\$	-	
Machinery and equipment	\$	-	
Automotive equipment	\$	-	
Office furniture and fixtures	\$	-	
Other (list) _____	\$	-	
	\$	-	
Total			\$ -
Less: Accumulated depreciation			\$ -
Total Fixed Assets - Net			\$ -
13. Other Assets			
Loans receivable			
Officers	\$	-	
Employees	\$	-	
Shareholders	\$	-	
Cash surrender value of officers' life insurance	\$	-	
Organization expense – net of amortization	\$	-	
Notes receivable - due after one year	\$	-	
Other (list) _____	\$	-	
	\$	-	
Total Other Assets			\$ -
14. TOTAL ASSETS			\$ -

**NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT C - FINANCIAL INFORMATION**

NYS Vendor ID: _____

LIABILITIES

Current Liabilities

15. Accounts payable		\$	-
16 a. Loans from shareholders - due within one year		\$	-
16 b. Other Loans - due within one year		\$	-
17. Notes payable - due within one year		\$	-
18. Mortgage payable - due within one year		\$	-
19. Other payables - due within one year			
Other (list) _____	\$		-
	\$		-
Total Other Payables - due within one year		\$	-
20. Billings in excess of costs and estimated earnings		\$	-
21. Accrued expenses payable			
Salaries and wages	\$		-
Payroll taxes	\$		-
Employees' benefits	\$		-
Insurance	\$		-
Other	\$		-
Total Accrued Expenses Payable		\$	-
22. Dividends payable		\$	-
23. Income taxes payable			
State	\$		-
Federal	\$		-
Other	\$		-
Total Income Taxes Payable		\$	-
24. Total current liabilities		\$	-
25. Deferred income taxes payable			
State	\$		-
Federal	\$		-
Other	\$		-
Total Deferred Income Taxes		\$	-
26. Long Term Liabilities			
Loans from shareholders - due after one year	\$		-
Other Loans - due within one year			
Principle	\$		-
Interest	\$		-
Notes payable - due after one year	\$		-
Mortgage - due after one year	\$		-
Other payables - due after one year	\$		-
Other (list) _____	\$		-
	\$		-
Total Long Term Liabilities		\$	-

**NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT C - FINANCIAL INFORMATION**

NYS Vendor ID: _____

27. Other Liabilities			
Other (list) _____	\$	-	
_____	\$	-	
Total Other Liabilities			\$ _____ -
28. TOTAL LIABILITIES			\$ _____ -

NET WORTH

29. Net Worth (if proprietorship or partnership)			\$ _____ -
30. Stockholders' Equity			
Common stock issued and outstanding	\$	-	
Preferred stock issued and outstanding	\$	-	
Retained earnings	\$	-	
Total	\$	-	
Less: Treasury stock	\$	-	
31. TOTAL STOCKHOLDERS' EQUITY			\$ _____ -
32. TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY			\$ _____ -

NO TEXT ON THIS PAGE

**New York State
Department of Transportation
Local Projects Manual**

**Chapter 14
Advertisement, Contract Letting,
and Award**



**Department of
Transportation**

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ACRONYMS

CCA-2	New York State Uniform Contracting Questionnaire	LPB	Local Programs Bureau
CMP	Construction Management Plan	M/WBE	Minority/Woman-Owned Business Enterprise
DBE	Disadvantaged Business Enterprises	NYSCR	New York State Contract Reporter
EBO	Equal Business Opportunity	PS&E	Plans, Specifications, and Estimates
EEO	Equal Employment Opportunity	RLPL	Regional Local Project Liaison
FHWA	Federal Highway Administration	UCP	New York State Unified Certification Program
GFE	Good Faith Effort	SDVOB	Service-Disabled Veteran-Owned Business

NOTE

This chapter has associated appendices and forms at: <https://www.dot.ny.gov/plafap>

The links for the words **highlighted** throughout this chapter (except LPM chapter links) can be found at the end of this chapter, in **Section 14.9 References, Chapter 9, Advertisement, Contract Letting, and Award.**

14.1 INTRODUCTION

This chapter describes the various phases of the contracting process including solicitation of bidders (advertising), bid opening, bid analysis to identify the lowest bidder, and contract award and documentation for locally administered transportation construction contracts. The Sponsor must have an approved Construction Management Plan (CMP) prior to contract award, appropriately revised to reflect project staffing and be signed by the NYSDOT Regional Local Project Liaison (RLPL), or appropriate designee (see [LPM Chapter 12, Section 12.2.2](#) and [Appendix 12-3](#)).

The following federal regulations apply to ALL projects:

- Advertising for bids and proposals ([23 CFR 635.112](#)),
- Method of Construction ([23 CFR 635.104](#)),
- Participation by Disadvantaged Business Enterprises (DBE) in US Department of Transportation Financial Assistance Programs ([49 CFR 26](#)); and
- Equal Employment Opportunity (EEO) on Federal and Federal-Aid Construction Contracts (Including Supportive Services) ([23 CFR 230](#)).

When a discrepancy exists between federal, state, and municipal laws, rules and regulations, federal law prevails; with the exception when State and municipal laws, rules, and regulations may be stricter and therefore have precedence.

14.2 ADVERTISING

Advertising for all federal aid construction contracts must meet federal requirements and foster widespread competitive bidding. When the contract bid documents, including Plans, Specifications, and Estimate of quantities (PS&E), have been assembled, and approved by the RLPL and the Sponsor receives Federal Authorization to Proceed from the RLPL, the Sponsor is required to advertise the contract for bidding in accordance with [23 CFR 635.112](#). The Sponsor could forfeit federal reimbursement if the advertisement of a contract takes place before receiving a Notification to Proceed.

New York State requires the publication of the solicitation of bids for a construction contract to be advertised in [The New York State Contract Reporter](#) (NYSCR) for at least three weeks (15 business days) before the opening of the bids. Additionally, the Sponsor is encouraged to place additional advertisements in other appropriate publications (e.g., local newspapers, trade journals). The use of several forms of advertising publications will help avoid a single bidder, as well as give more opportunities to fulfill both DBE and EEO requirements. Advertising costs should be charged to the construction phase. A Construction Advertisement Checklist and a sample Notice to Bidder – Advertisement to Bid indicates the information to be included in an advertisement (see [Appendix 14-7](#) and [Appendix 14-8](#)).

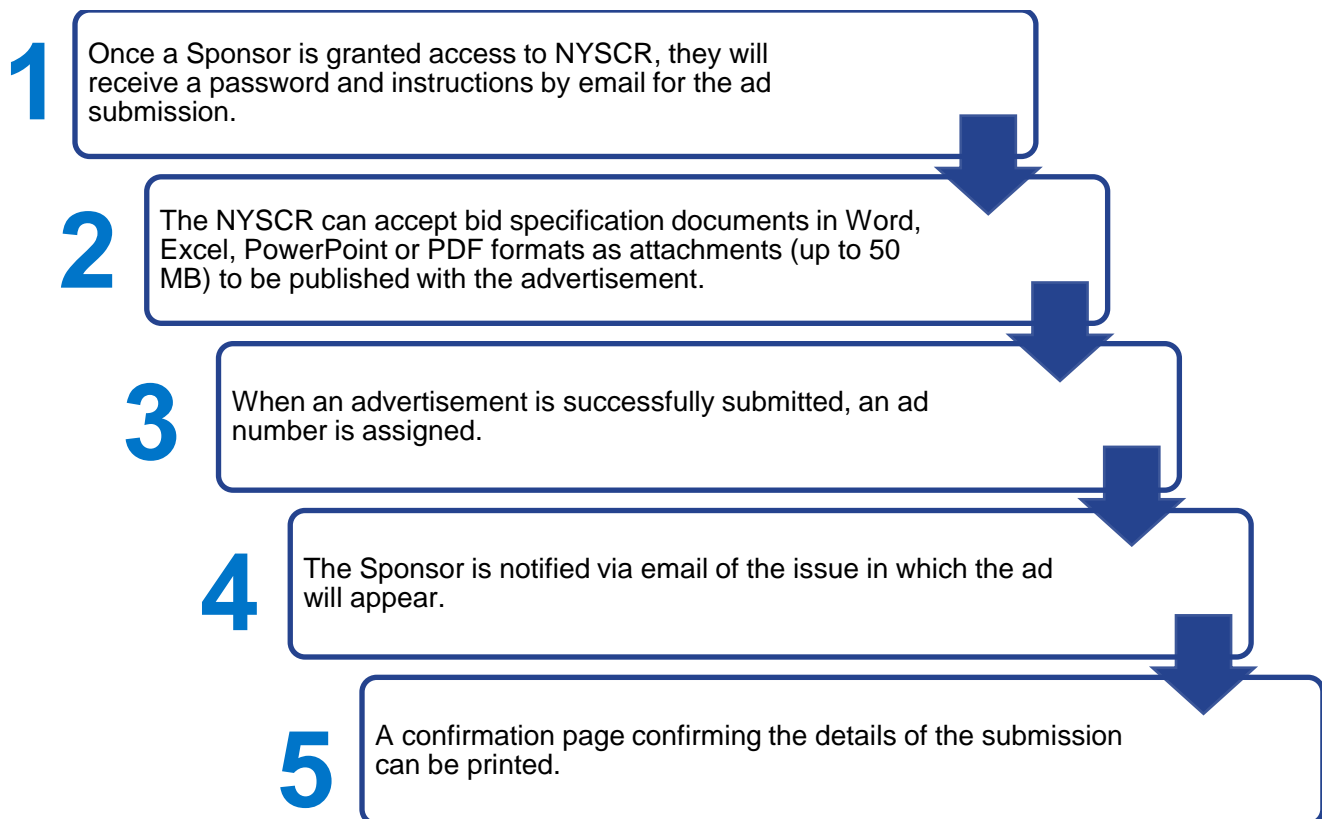
Construction contracts must be advertised in the New York State Contract Reporter.

The advertisement must identify the EEO goals for women and minorities in every contract regardless of fund source. The advertisement must identify DBE contract goals (federal funds), if applicable. If a 0% DBE goal is established, NYSDOT strongly encourages the use of DBE contractors wherever possible. If the contract is state-funded (non-federal funds) the advertisement must identify Minority/Women-Owned Business Enterprise (M/WBE) and Service-Disabled Veteran-Owned Business (SDVOB) goals.

14.2.1 New York State Contract Reporter (NYSCR)

The NYSCR is an exclusively online publication requiring electronic submission of advertising content. To comply with federal requirements, all contracts with New York State (including locally administered federal aid transportation projects) for the procurement of goods and services must be published in the NYSCR. There is no fee for advertising or for viewing ads on the site. Sponsors must be registered before submitting advertisements and may do so from the [NYSCR registration website](#).

Figure 14-1: Sponsor's New York State Contract Reporter Registration Steps



Additionally, the NYSCR can capture and provide in an Excel format, a list of registered users who viewed, bookmarked, opened bid documents, or opted to receive bid update notifications for the advertisement, including their contact information. All information exchanges with the NYSCR (email confirmations, downloaded spreadsheets, screen captures of advertisements, etc.) should be printed and kept in the project file.

The NYSCR is published on weekdays and new solicitations appear every morning. Any advertisement submitted successfully to the NYSCR on a given day appears the following business day. Advertisements submitted Friday, Saturday or Sunday appear on Monday, if it is not a legal holiday.

The earliest bid due date allowed in the ad insertion form shall be 15 business days (Monday-Friday) after the advertisement is published. The insertion, publication, and earliest due dates can be calculated by using the Publication Calculator Tool on the NYSCR's website. If an earlier bid due date becomes necessary, the Sponsor must get approval from the RLPL, with help from the NYSCR, which can be sought through the NYSCR Contact Us page, link provided in [Section 14.9 Reference](#) or by calling Empire State Development, Procurement Assistance Services/NYSCR at (518) 292-5266.

Contracts to be awarded on a sole source or single source basis must have prior approval from the Main Office Local Programs Bureau (LPB). If approved, they will also need to be advertised.

Sole source is a situation in which only one contractor can supply the goods or services.

Single source is when two or more contractors can supply the goods or services, but one is selected over the others because of distinguishable expertise, previous experience with similar contracts, etc.

14.2.2 Instructions to Bidders Regarding Proposed DBE Participation

[NYSDOT Standard Specification §102-12](#) indicates that the bidder shall submit a complete DBE Participation Package with its proposal which includes DBE commitments (i.e., DBE name, address, work category, and commitment amount); DBE confirmation on Department forms (i.e., AAP 20, AAP 22, or AAP 23 depending on Work Category) for each DBE commitment; and good faith effort (if DBE commitments do not meet the goal). In addition, bidders shall submit completed Appendix 12-11 CONR80LL Bidder's List with their bid. To assist the Sponsor with collecting this information, see [Appendix 12-10 \(formerly Appendix 14-9\), Summary of Federal DBE Commitments and Bid Requirements \(AAP14LL\)](#) .

14.3 AMENDMENTS

An amendment is a formal modification of a proposed contract, issued after the advertisement publication date, and prior to the opening of bids. The Sponsor shall have a process in place to ensure all plan holders and NYSDOT receive amendments when issued.

The Sponsor shall have a process in place to ensure all plan holders and NYSDOT receive amendments when issued.

The following should be considered when a Sponsor is contemplating amending a contract:

- If significant changes to the scope or scale are necessary, the Sponsor should seek advice from the RLPL (changes may require FHWA approval if the project is on the NHS or a Project of Division Interest). If the changes are not allowed or appropriate to be incorporated by amendment the Sponsor should cancel the advertisement, redesign the project, and then re-let the project.
- An amendment should be issued when the following errors are discovered:
 - Any contract pay-item quantity change of $\pm 20\%$ in Engineer's Estimate.
 - Any contract pay-item quantity change, multiplied by the estimated unit price (or change in a lump sum item), which alters the total engineer's estimate by more than $\pm 1\%$.
 - DBE or MBE/WBE/SDVOB goal(s) incorrectly stated in the contract.
 - EEO goals incorrectly stated in the contract.

14.4 BID LETTING AND BID ANALYSIS

Per **23 CFR 635.113(a)**:

"All bids received in accordance with the terms of the advertisement shall be publicly opened and announced either item by item or by total amount. If any bid received is not read aloud, the name of the bidder and the reason for not reading the bid aloud shall be publicly announced at the letting."

If the proposal includes alternate bidding procedures, the contract budget and alternate bidding award procedures must be declared before opening bids and the announcement of the apparent low bidder (see **LPM Section 12.5.9**). After all bid totals have been read aloud, the apparent low bidder is announced, and all bidders are informed that award is pending a complete bid analysis including mathematical verification, affirmation that the low bidder is responsible, and acceptance of the DBE/MBE/WBE/SDVOB Participation Package. The bid analysis shall be concluded, and contract award shall be made within 45 days as noted in **New York State Finance Law Section 140** and **NYS General Municipal Law Section 105**. If the award is not completed within 45 days, the contractor may withdraw their bid from consideration.

Bids must be publicly opened and read aloud.

Negotiation with any bidder (i.e., adjusting quantities, changing unit prices, adding, and subtracting work, etc.) before contract award is prohibited per [23 CFR 635.113\(a\)](#).

The Sponsor should use [Appendix 14-6, After Letting Checklist](#), as a resource for the necessary steps and documentation from Letting to Award.

14.4.1 Bidder Responsibility

For all federal aid contracts, determination of whether or not a business entity is a “responsible bidder” is made using the guidelines established by [9 NYCRR 4.170](#) whereby a contractor/vendor may be deemed “not responsible.”

The following must be verified as part of the bidder responsibility review by the Sponsor:

- For all contracts, the [New York State Uniform Contracting Questionnaire \(CCA-2\)](#) is used in the qualification of an entity as a “responsible bidder.”
 1. The NYSDOT Contract Management Bureau is responsible for reviewing and approving the CCA-2 questionnaire. After the low bidder is determined, the Sponsor should contact the RLPL as soon as possible to see if a CCA-2 is on file for the bidder. If not, a questionnaire shall be completed by the low bidder and submitted to the Contract Management Bureau as instructed. A link to the CCA-2 questionnaire is on [NYSDOT’s website](#). Similar checks must be conducted on subcontractors (see [LPM Chapter 15](#)). RLPLs should access the [AASHTOWare Project Preconstruction database](#) to confirm that a vendor (contractor and subcontractors) has an approved CCA-2 on file.
 2. The United States General Services Administration’s System for Award Management (SAM) [Debarred, Suspended, or Voluntarily Excluded Firms Ineligible for Federal Aid](#).
 3. NYS Department of Labor’s monthly [List of Employers Ineligible to Bid on or be Awarded any Public Work Contract](#).
 4. NYS Department of State’s [Corporation/Business Entity Database](#) to ensure that Corporations, Professional Corporations, Limited Liability Companies, and Limited Liability Partnerships have the proper authority to conduct business in New York State.
 - The Sponsor should print out the result of their search of the above databases and keep it in the project files. Acknowledgment of certification is noted in the “Bid Opening, Verification, and Sponsor Recommendation” letter ([Appendix 14-1](#)) to be provided with the Award Package as noted in [Section 14.7](#).
 5. Office of Safety and Health Administration (OSHA) website for [safety violations for a given firm](#).

6. In the event, there is an OSHA violation against the low bidder, it should not be an automatic disqualification. Provide a discussion indicating the violation, if it has been addressed or is being addressed as a statement to be provided with the Award Package as noted in Section 14.7.
7. **NYS Department of Labor Contract Registry** website for Certificate of Registration for all Contractors.

14.4.2 Bid Analysis

The Sponsor must conduct a bid analysis to ensure that the apparent low bid is responsible and reasonable and that the contract award will best promote the public interest. The preparation of a Tabulation of Bids (see [Appendix 14-4](#)) should be completed to include all bidders. A bid analysis generally consists of a comparative review between the Engineer's Estimate and the apparent low bidder's bid to determine if item quantities and prices are accurate and if assumptions made during the estimate process were valid. Information relative to the other bidders in the Tabulation of Bids is of value during the bid analysis if significant variations become apparent between the apparent low bid and the Engineer's Estimate.

The following steps must be performed for each contract as part of the bid analysis:

1. Review the bid items that are 25% over or under the Engineer's Estimate and look for potential errors.

A significant difference between the Engineer's Estimate and the total contract or item bid price by the apparent low bidder may indicate issues with commodity prices or regional work volume in the construction market. The distribution of bidders may indicate market conditions and competition relative to an individual project. A low total contract bid price by a bidder relative to other bidders closer to the Engineer's Estimate may suggest a misinterpretation of the bid documents by the Low Bidder; or simply that the Low Bidder has limited work and is bidding work closer to cost.

2. Evaluate items with high bid costs to determine if there is an omission or error in the plans or specifications. If something unusual is found, review the quantity to determine if there is a possibility there is an error in the quantity or in the unit price used in the Engineer's Estimate. If the item appears to be in question, contact the Project Designer/Engineer of Record.

Evaluate high bid items where the quantity is relatively small, the item may be a low productivity item and may, therefore, cost more than a typical weighted average or estimated price. The item should be compared with the other bidder's prices and if it still seems unusual, further analysis is necessary.

Note circumstances where quantity changes could affect the ranking of the bidders if corrections/changes are made to the quantities. If post-award changes are anticipated

that would change the ranking of the bidders, it should be recommended that all bids be rejected.

3. Evaluate bids with significant variations from the Engineer's Estimate, among the bidders, or noted in Step 1, review the items having the largest dollar amount differential for jobs with overall bids 15% higher or lower than the Engineer's Estimate. Include in the review, the analysis of the B portion of an A+B Contract when the difference is more than 50%. For contracts with multiple B time periods, evaluate any B time period that is more than 50% below the Engineer's Estimate.

Determine if any bid prices are obviously unbalanced to the potential detriment of the Sponsor and contract execution. (For example, if the obviously unbalanced bid prices are all for items which will occur at the beginning of the contract, and the Contractor defaulted, the Sponsor may be in a difficult position to recover payments made.) Base the analysis on verification of quantities, discussions with the apparent low bidder about whether the general location of the contract is convenient for the apparent low bidder and whether the apparent low bidder will ultimately yield the lowest cost.

Any discussion with the apparent low bidder during procurement is subject to [New York State Procurement Guidelines](#), as stated in [Article 11 of New York State Finance Law](#). Negotiations with contractors, during the period following the opening of bids and before the award of the contract, shall not be permitted per [23 CFR 635.113\(a\)](#). Discussions should be factual without discussion of the other bids or the Sponsor's contract award intentions. Contacting the apparent low bidder should not be a routine practice. If the low bidder cannot justify the unbalanced item(s), the contract should be considered for rejection. It may be very difficult to justify the removal of the low bidder with a recommendation to award to the second bidder if items are not significantly unbalanced. Once an award recommendation is reached, detailed justification must be provided to the RLPL. Though the bid may not be desirable, it may be acceptable.

When the Sponsor has some objection to the apparent low bidder or needs more time to evaluate qualifications of the apparent low bidder, the RLPL must be notified as soon as possible of the objection with a summary of the justifiable reasons. The RLPL will then notify the NYSDOT MO-Local Programs Bureau via email at: MO-LocalProgramsBureau@dot.ny.gov. If the Sponsor has concerns with an apparent low bidder, documentation supporting the concerns should be provided to NYSDOT.

14.4.3 Reasonableness Justification

When the apparent low bid is more than 15% higher or lower than the Engineers Estimate a reasonable justification is to be included in the bid analysis. Where the bid is 15% higher, the justification should focus on notable differences between the low bid and Engineer's Estimate for specific items and should discuss the apparent reasons such differences exist and any inherent risks. Where lower, the justification should focus on the experience of the apparent low bidder and its ability to complete the contract according to 9 NYCRR 4.170. If it is determined that

changes to the Engineer's Estimate would be appropriate based on bid analysis findings, provide descriptions of the revisions to prices for each item that is revised and a revised total of the Engineer's Estimate. All revision descriptions must include dollar amounts and not general statements.

A reasonableness justification shall include all of the following:

1. Consider the structural assessment review performed by the structural designer, if applicable. Justify if the determination does not coincide with the "recommendation to award" by the structural designer.
2. Determine whether the contract can be divided into smaller segments or stages of construction, combined with work in a larger contract, or if there are changes in the contract requirements that can be made to reduce the cost of work or produce more competition.
3. Determine whether a contract is essential and whether the delay resulting from canceling and re-letting would not be in the best public interest. Contracts considered essential include, but are not necessarily limited to safety contracts, which are to correct hazardous conditions to the traveling public, emergency repairs or replacement of damaged facilities.
4. Determine whether a timely award is required to complete staged construction, order materials, coordinate with and to allow other contracts (including other governmental and private contracts) to proceed, meet commitments made by the Sponsor, or to complete a facility in its entirety.
5. Determine if a delay would result in a substantial impact on the contract completion date or extend the contract beyond the contract completion date, over the winter and into the next construction season, thereby increasing the contract cost.
6. Determine whether the general location of the contract is saturated with similar types of construction contracts, thus tending to reduce competition.
7. Determine whether a shortage of construction labor, equipment or specialty capability and experience exists in the contract area, resulting in a general increase in bid prices.
8. Make a recommendation as to whether to award the contract.

14.4.4 Single Bid Analysis

For all contracts where only one bid has been received, the Sponsor should ascertain the potential for increased bidding if the contract were rebid, by examining the list of plan buyers for other potential bidders. Potential bidders should be contacted for their reasons for not bidding. Based on such discussion, determine whether revisions to the contract requirements could result in lower bids through increased competition or clarification of ambiguities. The Sponsor should determine whether the contract is essential and the potential for increased bidding if the contract were to be rebid. The Sponsor will provide the RLPL with the analysis and their determination on how they plan to proceed. The RLPL will review the analysis and provide the Sponsor with an

acknowledgment and what steps are necessary. If the Sponsor has proposed to rebid the project, then the RLPL must be advised and concur with the process. The Sponsor will need to provide modified contract bid documents as outlined in LPM Chapter 12 before receiving authorization to re-advertise the project. If the Sponsor has proposed to not rebid based on their analysis and concurrence with the RLPL, the Sponsor will proceed with the award process.

14.4.5 Rejection of All Bids

It may be necessary to reject all bids. Reasons to reject all bids are:

- Inadequate competition due to a limited number of bidders,
- High bids due to unclear requirements,
- Bids where additional costs could not be justified; or
- Other circumstances such as permits not being received.

A written discussion provided to the RLPL should include reasons why the Sponsor believes that they will receive better bids if the contract is re-let, or what changes will be made to secure more competitive bid prices, such as the bidding environment or time of the year when the job will be let. If after consultation and written concurrence with NYSDOT, all bids are rejected by the Sponsor, the Sponsor must notify all bidders.

14.4.6 Bidder Error

Occasionally a bidder will inadvertently err so severely that it is not reasonable to expect contract fulfillment. **General Municipal Law 103(11)** “Advertising for bids; letting of contracts; criminal conspiracies” sets forth requirements to excuse a bidder for an error in bidding and to proceed to the next lowest responsible bidder:

Bid mistake, public projects. (a) In all contracts governed by this section, where a unilateral error or mistake is discovered in a bid, such bid may be withdrawn after a showing of the following: (1) the mistake is known or made known to the awarding officer, board or agency prior to the awarding of the contract or within three days after the opening of the bid, whichever period is shorter; and (2) the price bid was based on an error of such magnitude that enforcement would be unconscionable; and (3) the bid was submitted in good faith and the bidder submits credible evidence that the mistake was a clerical error as opposed to a judgment error; and (4) the error in the bid is actually due to an unintentional and substantial arithmetic error or an unintentional omission of a substantial quantity of work, labor, material, goods or services made directly in the compilation of the bid, which unintentional arithmetic error or unintentional omission can be clearly shown by objective evidence drawn from inspection of the original work paper, documents or materials used in the preparation of the bid sought to be withdrawn; and (5) it is possible to place the public agency, board, officer or subdivision in status quo ante. (b) Unless otherwise required by law, the sole remedy for a bid mistake in accordance with this section shall be withdrawal of that bid and the return of the bid bond or other security, if any, to the bidder.

Thereafter, the awarding officer, board or agency may, in its discretion, award the contract to the next lowest responsible bidder or rebid the contract. Any amendment to or reformation of a bid or a contract to rectify such an error or mistake therein is strictly prohibited.

14.4.7 Move to Second Bidder

On occasion, the Sponsor will proceed to the second bidder. These occasions are:

- Bidder Error as noted in [Section 14.4.6](#).
- Verified documentation determining that the apparent low bidder is not a 'responsible bidder'.
- Documented justification of objection to the apparent low bidder by Sponsor.
- Failure of the apparent low bidder to provide adequate documentation to a Good Faith Effort per Standard Specification §102-12.
- Failure of the apparent low bidder to provide adequate justification to a significantly unbalanced bid proposal.
- Failure of the apparent low bidder to be registered with NYS Department of Labor prior to submitting a bid.
- Failure of the apparent low bidder to submit the required Bidder's List (i.e., information regarding Subcontractors who provided quotes prior to letting), [Appendix 12-11](#), with their bid.
- The apparent Low Bidder has been deemed non-responsive due to failure to submit a complete DBE/MBE/WBE/SDVOB Participation Package and/or sufficient Good Faith Efforts.

If the Sponsor moves to the apparent second low bidder, the Sponsor must provide the justification to the RLPL. Once the RLPL has concurred, the Sponsor will complete the bidder responsibility and analysis ([Sections 14.4.1](#) through [14.4.1.3](#)) for the second bidder. Documentation concurring with the move to the second bidder should be provided with the Award package.

14.5 PRE-AWARD CIVIL RIGHTS RESPONSIBILITIES

The Sponsor must monitor and report on the contract's DBE/MBE/WBE/SDVOB participation. There are three distinct stages of DBE/MBE/WBE/SDVOB participation: goals, commitments, and attainments. Goals are established prior to letting in the contract documents as a percentage of the contract bid price. After contract letting, the goal is expressed as a dollar amount. During the bid process, the bidder provided their DBE Participation Package (i.e., [Appendix 12-10, Form AAP 14LL Summary of Federal DBE Commitments and Bid Requirements](#), DBE confirmations (i.e., AAP 20, AAP 22, or AAP 23 depending on work category) and good faith

efforts (if required). For MBE/WBE/SDVOB, the bidder submits their complete MBE/WBE/SDVOB Participation Package within 10 days after letting. After the contract award, attainment is measured after completion of the work in dollars paid to certified DBE/MBE/WBE/SDVOBs.

To comply with Civil Rights requirements, NYSDOT utilizes the Civil Rights monitoring and reporting software, Equitable Business Opportunity Solutions (EBO). It is the Sponsor's responsibility during pre-award to confirm that the apparent low bidder has committed to meeting the DBE/MBE/WBE/SDVOB participation goal(s) or has demonstrated good faith efforts to do so. If the apparent low bidder has not met the goal, a review of good faith efforts (GFE) and concurrence from the RLPL and NYSDOT's Main Office Local Programs Bureau is required. If the apparent low bidder fails to provide sufficient DBE commitments to meet the goal and/or provide sufficient GFE with their bid or fails to provide sufficient MBE/WBE/SDVOB commitments and/or good faith efforts, the Sponsor can deem them non-responsive. If the low bidder is deemed non-responsive, and believes they have good cause, they have the option to request an Administrative Reconsideration within 5 calendar days of the determination. If an Administrative Reconsideration deems the bidder as non-responsive, the Sponsor can move to the second low bidder. The implementation of a Sponsor's Administrative Reconsideration process is required under 49 CFR 26.53(d).

Sponsor is responsible for confirming apparent low bidder's commitment to DBE participation goal.

When a bidder requests an Administrative Reconsideration, the following steps should be taken:

1. The bidder will request in writing an Administrative Reconsideration within 5 calendar days of the determination of being non-responsive.
2. The bidder will meet in person with the Sponsor's reconsideration official concerning the issue of whether the bidder met the goal or made adequate good faith efforts to do so.
3. The decision on reconsideration must be made by an official who did not take part in the original determination that the bidder failed to meet the goal or make adequate good faith efforts to do so.
4. The bidder will be given the opportunity to provide argument or written documentation of Good Faith Efforts made prior to the letting.
5. The Sponsor will send a written decision on reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so at the time of letting.

Sponsors should note that in accordance with [NYSDOT Standard Specifications §105-21 Civil Rights Monitoring and Reporting](#), the Contractor must submit timely, accurate and complete data using EBO.

14.5.1 Participation Package

Review of the low bidder's DBE Participation Package is required during pre-award once the low bidder has been identified. Prior to verification of the bids, the Sponsor will conduct a preliminary review of the apparent low bidder's DBE Participation for completeness. The Sponsor will ensure that DBE confirmations (i.e., AAP 20, AAP 22, or AAP 23 depending on work category) were received for each DBE shown on [Appendix 12-10, Form AAP 14LL Summary of Federal DBE Commitments and Bid Requirements](#), and that the information is complete (i.e., scope of work, \$ amounts, and signatures). If the DBE Commitments do not meet the goal, the Sponsor will verify that the bidder submitted good faith efforts. If the apparent low bidder's DBE Participation Package is incomplete, their bid will be rejected as informal and the second low bidder's DBE Participation Package will be reviewed for completeness. Once the apparent low bidder's DBE Participation Package has been deemed complete, the bids can be verified.

For 100% State funded contracts, after verification of bids, the Sponsor shall notify the low bidder to submit their MBE/WBE/SDVOB Participation Package with a deadline of 10 calendar days after letting.

The following information must be reviewed by the Sponsor to determine whether the low bidder was responsive in the submittal of their DBE/MBE/WBE/SDVOB Participation Package with their bid:

- All proposed DBEs shown in the low bidder's commitments are listed in the [New York State Unified Certification Program \(UCP\) Directory](#); all M/WBEs are listed in the directory of certified firms on the [Empire State Development](#) website; and all SDVOBs are listed in the directory of certified firms on the [NYS Office of General Services](#) website.
- All proposed DBE/MBE/WBE/SDVOBs are listed in the directories to perform the work that they are being proposed to perform (NOTE: The NAICS codes and/or "Certified Business Description" should be reviewed against the proposed work. Do not use the NYSDOT Work codes as not all certifying agencies use NYSDOT work codes.)
- All proposed DBE/MBE/WBE/SDVOB participation is identified with the correct work type such as construction, material supplier, professional services, etc.
- A completed [AAP 20 DBE Subcontractor / Professional Service / Work Service Commitments/Confirmation](#) form was submitted with the bid for each proposed DBE Subcontractor, Professional Service, and Work Service as part of the DBE Participation Package; this form can be found at [NYSDOT's Office of Construction – Forms](#).
- A completed [AAP 22 DBE Material Commitments/Confirmation](#) form was submitted with the bid for each proposed DBE Manufacturer, Fabricator, Material Supplier, Distributor, and Broker as part of the DBE Participation Package; this form can be found at [NYSDOT's Office of Construction – Forms](#). The Sponsor shall verify the appropriate work category (and associated credit), as shown on the AAP 14LL, is correct based on the responses to questions on the AAP 22.

- A completed [AAP 23 DBE Trucking Commitment Information](#) form was submitted with the bid for each proposed DBE Trucking Firm as part of the DBE participation Package; this form can be found at [NYSDOT's Office of Construction - Forms](#). The Sponsor shall ensure that **no** truck brokering or multi-tier trucking is being proposed.

14.5.2 Good Faith Efforts (GFE)

If the apparent low bidder does not have sufficient DBE/MBE/WBE/SDVOB commitments to meet the DBE/MBE/WBE/SDVOB goal(s), the Sponsor will evaluate the good faith efforts the low bidder made to obtain DBE/MBE/WBE/SDVOB participation to determine if the efforts are sufficient enough to recommend award of the contract.

The Sponsor shall reference NYSDOT Standard Specifications §102-12H. *Good Faith Efforts* and good faith effort guides at [NYSDOT's Office of Construction - Forms](#) to determine if the good faith efforts are sufficient.

The GFE supporting documentation includes, but is not limited to, the following:

- [Form AAP 10 DBE/MBE/WBE/SDVOB Solicitation Log](#).
- Copies of correspondence, faxes, and e-mails sent to prospective DBE/MBE/WBE/SDVOBs.
- Copies of advertisements (e.g., newspaper ads).
- Copies of quotes from non-selected DBE/MBE/WBE/SDVOBs as well as quotes from the selected non-DBE/MBE/WBE/SDVOBs.

At a minimum, the Sponsor should perform the following analysis for GFE and provide a summary when transmitting to the RLPL:

- Check the DBE/MBE/WBE/SDVOB certification status of each firm contacted.
- If the firm cannot be found in the Directory, confirm the certification status with the certifying agency responsible for the firm. Never accept copies, faxes, or scans of certification letters.

Compare the work in the contract against:

- Work for which DBE/MBE/WBE/SDVOBs were solicited.
- Work that the DBE/MBE/WBE/SDVOBs are listed to perform.
- Compare the location of each DBE/MBE/WBE/SDVOB firm to ensure an exhaustive search was performed for each item, within an appropriate radius of the project in accordance with [NYSDOT Standard Specification §102-12H. Good Faith Efforts](#).

- Identify available participation opportunities and compare them against the type of work solicited.
- Ensure all types of DBE/MBE/WBE/SDVOB firms were solicited including, material supply, manufacturing, fabrication, professional services, etc.
- Cross-reference letters, faxes, [AAP 10](#), etc.

Compare the DBE's price against:

- Engineer's Estimate
- Bid price
- Weighted Average Item Price Report data

Where does the DBE's price fall in comparison to all the above:

- Contact a sample of the firms listed on the AAP 10 to verify solicitation effort stated in the solicitation log and other documents:
 - When contacted.
 - By whom.
 - By what method(s).
 - How many times.
 - For what work.
 - Was quote/bid submitted.
 - Were plans provided/made available – how and when?
- Low bidder's follow-through.
- Compare all efforts against [Appendix A, Standard Clauses for NYS Contracts](#) to [49 CFR 26](#).

The Sponsor should discuss any document deficiencies with the apparent low bidder. If the Sponsor is satisfied, the documentation is provided to the RLPL for concurrence with the Office of Civil Rights.

If the Sponsor determines that the low bidder did not conduct adequate GFE, it should present its recommendation with this analysis and supporting documentation to its management as well as to the RLPL in a narrative which should include:

- State the specific non-compliance actions.
- Cite the specification and regulation for each non-compliance action or class of actions.

- Provide calculations of the amount achieved toward the DBE/MBE/WBE/SDVOB goal and the difference.
- Provide an analysis of the feasibility of the DBE/MBE/WBE/SDVOB goal. For Federally funded contracts, compare the DBE commitments made by the other bidders.
- Provide a timeline or chronology of events.
- Calculations of the difference between the first and second low bidders.
- Any other relevant information.

Once the Sponsor determines that the GFE is adequate, they will forward the GFE documentation to the RLPL for concurrence by NYSDOT's Main Office of Diversity and Opportunity. Once NYSDOT's review is complete, the Sponsor shall notify the low bidder that their DBE/MBE/WBE/SDVOB Participation Plan has been accepted and to input their DBE/MBE/WBE/SDVOB commitments (exactly as shown in their bid) into EBO and the Sponsor can proceed with its award process.

The Sponsor shall not award the project to the apparent low bidder until concurrence is received from NYSDOT of both the GFE and Award Package. Notice to Proceed issued by the Sponsor to the apparent low bidder prior to NYSDOT issuing Authorization to Proceed without NYSDOT review and concurrence may result in a loss of federal aid.

The Sponsor shall not award the project until concurrence is received from NYSDOT of both the GFE and Award Package.

The Sponsor must follow its administrative process and document its steps and actions. If it is determined that the low bidder did not conduct adequate GFE, the Sponsor may deem the low bidder as non-responsive. The low bidder has the option to request an Administrative Reconsideration. If the Administrative Reconsideration process determines the low bidder to be non-responsive, the Sponsor can request concurrence from the RLPL to award to the second low bidder who has successfully met the DBE goal or has submitted sufficient GFE.

The DBE/MBE/WBE/SDVOB goal is in effect for the duration of the contract. If the DBE/MBE/WBE/SDVOB goal is not met at the time of award and was awarded based on an approved GFE prior to advertisement, then the Sponsor must ensure Good Faith Efforts are made throughout the life of the contract. The contractor shall periodically review items that are available for DBE/MBE/WBE/SDVOB participation, typically before the beginning of a new construction season and when significant new items of work are added to the contract and conduct additional DBE/MBE/WBE/SDVOB solicitation and document those efforts. The Sponsor will continue collecting the additional GFE documentation from the contractor throughout the duration of the contract, or until the DBE/MBE/WBE/SDVOB goal is met.

The DBE/MBE/WBE/SDVOB Attainment Report from EBO shall be submitted with the Sponsor's request(s) for reimbursement. See [LPM Chapter 5](#) for reimbursement instructions.

14.5.3 Equitable Business Opportunity (EBO)

Project entry into EBO is required during pre-award once the low bidder has been identified and their DBE Participation Package has been deemed acceptable. The following steps are to be completed before the submittal of the Award Package to the RLPL and before award of the contract:

1. After the identification of the apparent low bidder and acceptance of their DBE/MBE/WBE/SDVOB Participation Package, the Sponsor will immediately submit the “Contract Template” (contract’s items, quantities, low bid prices, and apparent low bidder information) to the RLPL, utilizing the **FA DBE EBO Template Construction** and confirm the correct Units of Measure for a seamless upload into the Civil Rights reporting software, EBO.
2. The RLPL will perform a Quality Assurance review on the Contract Template to determine if the header information has been completed and that the units of measure being used are correct. If there are errors, the RLPL will return the template to the Sponsor for correction. The RLPL will submit the completed Contract Template via email to localprograms.ebo@dot.ny.gov for upload into EBO.
3. Main Office Local Programs Bureau will notify the RLPL who will then notify the Sponsor that the Template has been successfully loaded into EBO.
4. The Sponsor will notify the apparent low bidder that the contract has been initialized in EBO.
5. The low bidder must enter their DBE commitments (exactly as shown in their bid) into EBO within five (5) calendar days from notification that their DBE Participation Package has been deemed acceptable by the Sponsor. For Non-Federal-Aid contracts, within 10 calendar days from letting, the Low Bidder shall submit a complete MBE/WBE/SDVOB Participation Package into EBO.
6. The Sponsor and RLPL must review the pre-award participation data in EBO to confirm that the information has been input correctly. Once confirmed, each DBE/MBE/WBE/SDVOB shall acknowledge the commitment in EBO within 10 calendar (10) days.
7. The Sponsor must notify the RLPL when the DBE/MBE/WBE/SDVOBs have completed the commitment in EBO.
8. The Sponsor will provide to the RLPL a copy of the Award Notice to the Contractor and the RLPL will notify the Local Programs EBO mailbox the Award date.

14.6 BRIDGE CONSTRUCTION UNIT COST DATA (IF APPLICABLE)

Annually, all states are required to submit to Federal Highway Administration (FHWA) bridge construction unit costs for all new and replacement bridges constructed using any federal funds. The FHWA requirement does not pertain to bridge rehabilitations, superstructure replacements, or pedestrian bridges.

The Sponsor must provide to the RLPL an itemized bridge share of the construction costs (as submitted by the successful bidder). A separate itemized share is required for each bridge, and only bridge items shall be included. The Engineer's Estimate and other bidder's unit costs should not be included. This data must be provided to NYSDOT when the contract is awarded.

The Bridge Construction Unit Cost Datasheet (see [Appendix 14-2](#) for a sample) must be provided to the RLPL, who forwards them to NYSDOT's Main Office. The collected data is provided to FHWA for their program analysis.

14.7 AWARD PACKAGE

NYSDOT delegated oversight authority by FHWA, is responsible for the construction of all Federal-aid projects. When the project is not on the National Highway System or State Highway System, NYSDOT is not relieved of overall project responsibility, thus the Sponsor must submit a Contract Award Package to the RLPL requesting a Concurrence in Award letter.

The following items are to be included in the Contract Award Package (see [Appendix 14-3](#) for the Contract Award Checklist):

- Proof of Advertising which consists of the ad from the Contract Reporter, local newspaper, and copies of any other advertisements placed, whether in hard copy or electronic media. (see [LPM Section 14.2 Advertising](#)).
- Copy of all amendments issued:
 - Amendments distribution records showing that all amendments were sent to all plan buyers.
 - A record showing receipt of amendments by plan holders/bidders.
- Copy of bid bond and/or bid deposit.
- Bid Opening, Verification, and Sponsor Recommendation Letter (see [Appendix 14-1](#)) and attachments.
- Description from the Sponsor concerning how it intends to inspect and provide quality assurance and quality control, as noted in the approved CMP.
- Bid analysis completed by Sponsor (see [Section 14.4.2](#)).

- Completed CONR80LL Bidder's List ([See Appendix 12-11](#))
- Certification of apparent low bidder responsibility (see [Section 14.4.1 Bidder Responsibility](#)).
- Copy of the confirmation of an approved CCA-2 New York State Uniform Contracting Questionnaire.
- Signed Disclosure of Lobbying Activities Forms (see [Appendix 12-1.7](#)).
- Signed Non-Collusive Bidding Certification (see [Appendix 12-1.14](#)).
- Copy of Certificate of Insurances – Workers Compensation and Disability Benefits (see [LPM Chapter 12.3.8](#)).
- Copy of notarized and signed proposal of the verified apparent low bidder.
- Documentation demonstrating that the low bidder met their responsibility for Equal Employment Opportunity (EEO) participation ([AAP 33](#) from EBO).
- DBE participation documented on AAP 14LL ([Appendix 12-10](#)) – EBO utilized, and DBEs have acknowledged work. The Concurrence of proposed DBE/MBE/WBE/SDVOB participation by the RLPL prior to award.
- GFE documentation, if the DBE goal appears - the Sponsor cannot award the contract until NYSDOT's Office of Diversity and Opportunity concurs with the GFE.
- DBE/MBE/WBE/SDVOB Material Supplier Commitment Information ([AAP 22](#)) if DBE/MBE/WBE/SDVOB material suppliers are utilized.
- DBE/MBE/WBE/SDVOB Trucking Commitment Information ([AAP 23](#)), if DBE/MBE/WBE/SDVOB trucking firms are utilized.
- Identification of Affirmative Action Representatives in EBO (not required for suppliers)
- Documentation demonstrating that the low bidder met their responsibility for DBE/MBE/WBE/SDVOB participation when goals were established. See [NYSDOT Contract Administration Manual \(CAM\) §102-12](#) and [LPM Chapter 13 Civil Rights Requirements](#).
- Bridge Construction Unit Cost Data (required for all projects with new or replacement bridges, (see [Appendix 14-2](#)).

Sponsors must submit the Award Package for review prior to the award of the contract in order for the RLPL to conduct their review. RLPL will review and issue a Concurrence in Award letter when all questions and comments have been addressed.

14.8 CONTRACT AWARD

Federal aid contracts shall be awarded only based on the lowest responsive bid submitted by a bidder meeting the criteria of responsibility established by NYSDOT, in accordance with

“Licensing and qualification of contractors per [23 CFR 635.114\(a\)](#). If the award is not completed within 45 days, the contractor may withdraw their bid from consideration as noted in [140 of the State Finance Law](#) and [Section 105 NYS General Municipal Law](#).

Contracts are awarded based on the lowest responsible bidder.

The Sponsor must certify in writing that all items in the award documentation package have been addressed and request a Concurrence in Award letter from the RLPL. In support of the Sponsor’s request, the Sponsor must summarize the results of their bid analysis and highlight any irregularities that may have been identified using the Tabulation of Bids (see [Appendix 14-5](#)). The summary must include the bid tabulations of the project, showing bid item details for at least the low three acceptable bids and the total amounts of all other acceptable bids. After receiving the Concurrence in Award letter from the RLPL, the Sponsor may award the contract, provide notification of the award and a copy of the signed executed contract that includes the Faithful Performance Bond and the Labor and Material Bond to the RLPL, and schedule a Pre-Construction Kick-off meeting to which the RLPL needs to attend.

For projects on the NHS System, Sponsors must contact the RLPL for additional requirements. See [PDM Chapter 4, Table 4-3](#). Concurrence in the award is a prerequisite to federal participation in construction costs and, unless specifically stated otherwise, constitutes authority to proceed with construction [23 CFR 635.114\(b\)](#). The Concurrence in Award Letter must be retained as part of the project record by both the Sponsor and the RLPL.

14.9 REFERENCES, CHAPTER 14 ADVERTISEMENT, CONTRACT LETTING, AND AWARD

TITLE	LINK
FEDERAL LAWS & REGULATIONS	
23 CFR § 230, External Programs	https://www.govinfo.gov/content/pkg/CFR-2011-title23-vol1/xml/CFR-2011-title23-vol1-part230.xml
23 CFR § 635.104, Method of Construction	https://www.govinfo.gov/content/pkg/CFR-2011-title23-vol1/xml/CFR-2011-title23-vol1-sec635-104.xml
23 CFR § 635.112, Advertising for Bids and Proposals	https://www.govinfo.gov/content/pkg/CFR-2011-title23-vol1/xml/CFR-2011-title23-vol1-sec635-112.xml
23 CFR § 635.113(a), Bid Opening and Bid Tabulations	https://www.govinfo.gov/content/pkg/CFR-2011-title23-vol1/xml/CFR-2011-title23-vol1-sec635-113.xml
23 CFR § 635.114(a) and (b), Award of Concurrence	23 CFR 635.114(a)(b)
49 CFR § 26, Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs	https://www.govinfo.gov/content/pkg/CFR-2011-title49-vol1/xml/CFR-2011-title49-vol1-part26.xml
STATE AND GENERAL MUNICIPAL LAWS & REGULATIONS	
9 New York State Code, Rules, and Regulations (NYCRR) § 4.170, Executive Order No. 170, Establishing Uniform Guidelines for Determining the Responsibility of Bidders	https://govt.westlaw.com/nycrr/Document/I4efcdfd1cd1711dda432a117e6e0f345?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default)&bhcp=1
New York State Finance Law, Chapter 56, Article 9 § 140, Disposition of Deposit Accompanying Bid	https://www.nysenate.gov/legislation/laws/STF/140
New York State Finance Law, Chapter 56, Article 11, State Purchasing	https://www.nysenate.gov/legislation/laws/STF/A11
New York State General Municipal Law, Chapter 24, Article 5-A § 103, Advertising for Bids and Offers; Letting of Contracts; Criminal Conspiracies	https://www.nysenate.gov/legislation/laws/GMU/103

New York State General Municipal Law, Chapter 24, Article 5-A § 103-11, Advertising for Bids and Offers; Letting of Contracts; Criminal Conspiracies	https://www.nysenate.gov/legislation/laws/GMU/103
New York State General Municipal Law, Chapter 24, Article 5-A § 105, Disposition of Deposit Accompanying Bid	https://www.nysenate.gov/legislation/laws/GMU/105
New York State Office of General Services, New York State Procurement Guidelines	https://ogs.ny.gov/system/files/documents/2024/12/nys-procurement-guidelines.pdf
NYSDOT POLICIES, PROCEDURES, & GUIDANCE	
NYSDOT, Contract Administration Manual (CAM) § 102-12, DBE/MBE/WBE/SDVOB Participation	https://www.dot.ny.gov/main/business-center/contractors/construction-division/construction-repository/CAM_Sect102-12.pdf
NYSDOT, Doing Business with NYSDOT>Construction Contractors	https://www.dot.ny.gov/bids-and-lettings/construction-contractors/general-info
NYSDOT, Federal Aid EBO Template (DBE)	https://www.dot.ny.gov/divisions/operating/opdm/local-programs-bureau/locally-administered-federal-aid-projects/civil-rights
NYSDOT, Local Project Manual (LPM), Chapter 5, Accounting and Reimbursement Procedures	https://www.dot.ny.gov/portal/page/portal/plafap/view-document?id=1402
NYSDOT, Local Project Manual (LPM), Chapter 12, Construction Contract Requirements	https://www.dot.ny.gov/portal/page/portal/plafap/view-document?id=1435
NYSDOT, Local Project Manual (LPM), Chapter 13, Civil Rights Requirements	https://www.dot.ny.gov/portal/page/portal/plafap/view-document?id=1423
NYSDOT, Local Project Manual (LPM), Chapter 15, Administer Construction Contracts	https://www.dot.ny.gov/portal/page/portal/plafap/view-document?id=1415
NYSDOT, Office of Construction, Forms. (Forms AAP 10, AAP 14, AAP 20, AAP 22, AAP 23, AAP 33 can be found here)	https://www.dot.ny.gov/main/business-center/contractors/construction-division/forms-manuals-computer-applications-general-information/civil-rights
NYSDOT, Project Development Manual (PDM), Chapter 4, Exhibit 4-2, Project Design Phases	https://www.dot.ny.gov/divisions/engineering/design/dqab/pdm

NYSDOT, Standard Specifications, § 102-12, D/M/WBE Participation	https://www.dot.ny.gov/main/business-center/engineering/specifications/busi-e-standards-usc
NYSDOT, Standard Specifications, § 105-21, Civil Rights Monitoring and Reporting	https://www.dot.ny.gov/main/business-center/engineering/specifications/busi-e-standards-usc
NYSDOT, Weighted Average Item Price Report Data	https://www.dot.ny.gov/divisions/engineering/design/dqab/waipr

ADDITIONAL RESOURCES

AASHTOWare Project Preconstruction	https://www.aashtowareproject.org/apr-precon
New York State Empire State Development Search Directory	https://ny.newnycontracts.com/FrontEnd/searchcertifiedirectory.asp
New York State Comptroller, For Profit Construction Questionnaire (CCA-2)	https://www.osc.state.ny.us/state-vendors/vendrep/profit-construction-questionnaire-cca-2
New York State Contract Reporter (NYSCR)	https://www.nyscr.ny.gov/
Registration Website	https://www.nyscr.ny.gov/register.cfm
Contact Us Page	https://www.nyscr.ny.gov/contactUs.cfm
New York State Department of Labor, Debarment List	https://apps.labor.ny.gov/EDList/searchPage.do
New York State Department of Labor, Contractor/Subcontractor Registry	https://dol.ny.gov/public-work-contractor-and-subcontractor-registry-dashboard
New York State Department of State, Existing Corporations and Businesses	https://dos.ny.gov/existing-corporations-and-businesses
New York State Empire State Development (ESD), Procurement Assistance Program, Contact Us	https://esd.ny.gov/procurement-assistance-program
New York State Office of General Services (Service-Disabled Veteran's Business) Search	https://sdves.ogs.ny.gov/business-search
United States Department of Labor, Occupational Safety and Health Administration, Establishment Search (safety violation search)	https://www.osha.gov/ords/imis/establishment.html

**United States Department of Labor,
Office of Federal Contract Compliance
Programs, OFCCP Debarred Companies:
List of Debarred, Suspended, or Voluntarily
Excluded Firms Ineligible for Federal Aid**

<https://sam.gov/content/entity-information>

**New York State Unified Certification
Program (UCP) Directory**

<https://nysucp.newnycontracts.com/>

Commercially Useful Function (CUF) Monitoring Report

Project Information

Region Contract No.: Prime Contractor:

DBE/MBE/WBE/SDVOB Firm's Work Category: DBE/MBE/WBE/SDVOB Firm Name:

Who is completing form?

DBE/MBE/WBE/SDVOB Firm's Information - Work

Complete Table A for the DBE/MBE/WBE/SDVOB Firm's Work Category selected above:

Check this box to see guidance for this Section.

Core Work Code	Briefly describe observations of Work/Materials/Equipment

Required Documents - save to Site Manager

Select most recent approval date for each document

AAP-20 Trucking Plan Supplier Questionnaire

DBE/MBE/WBE/SDVOB Firm's Information - Workforce and Supervision

Please answer the following questions as a part of the CUF assessment. Because the choice of DBE/MBE/WBE/SDVOB Firm's Work Category above determines what questions are required for this assessment, you may not be required to answer all questions. For Questions 1 and 2, Payrolls are for on-site work only. Questions that do not apply to the DBE/MBE/WBE/SDVOB Firm's Work Category selected will automatically default to "NA".

Check this box to see additional guidance for this Section.

1. Does the Payroll reflect the number of workers, drivers, or trades (as applicable) shown on the DWR?
2. Did any workers appear on the Prime's or other sub-contractor's payroll on this contract?
3. Did the workers, drivers, or trades (as applicable) work for the Prime or other subcontractor (Vendor) on this contract?
4. Did the supervisor manage the day-to-day operations for only the DBE/MBE/WBE/SDVOB Firm?
5. Did the supervisor work for the Prime or other subcontractor (Vendor) on this contract?

Comments/Field Notes Section

DBE/MBE/WBE/SDVOB Firm's Information - Work Products, Materials, and Equipment

Please answer the following questions as a part of the CUF assessment. Because the choice of DBE/MBE/WBE/SDVOB firm's work category above determines what questions are required for this assessment, you may not be required to answer all questions. Questions that do not apply will automatically default to "NA". Check this box to see additional guidance for this Section.

6. Were the Plans and Reports prepared by the DBE/MBE/WBE/SDVOB firm on this contract?

7. Select the statement that best describes the equipment used by the DBE/MBE/WBE/SDVOB firm on this contract:

8. Select the statement that best describes the delivery of materials on this contract:

For Question 9: To select more than one choice, use the shift/click or control/click function to select from the list.

9. Regarding the DBE/MBE/WBE/SDVOB firm's materials and equipment, select from the list all that apply:

For each selection, attach relevant documentation.

Notes:

CUF Assessment

Date of CUF review:

Check this box to see additional guidance for this Section.

Based upon an appropriate review of the contract records as well as periodic observations of the DBE/MBE/WBE/SDVOB Firm named above on the contract site, in accordance with the provisions of [CFR 49 Part 26 Section 55 \(c\)\(1\)](#), the [NYS DOT Specifications and Standards](#); and the Contract Administration Manual (CAM) Section 102-12, it is found that: (Check One)

Nothing calls into question that the DBE/MBE/WBE/SDVOB named above has performed a Commercially Useful Function (CUF) on this Contract.

There are indicators that the DBE/MBE/WBE/SDVOB named above has not performed a Commercially Useful Function (CUF) on this Contract as evidenced by the following:

Brief Explanation of Finding:

Actions Taken: (e.g. notified Compliance Officer)

Name(s) & Title(s) of Person(s) who performed the assessment:

Date

Once completed, submit the form to the Compliance Officer assigned to the contract.

Commercially Useful Function (CUF) Sub-Contractors & Trucking Firms

Project D#/PIN:	<input type="text"/>	Project Name:	<input type="text"/>	Region:	<input type="text"/>
Prime Contractor:	<input type="text"/>	DBE/MBE/WBE/SDVOB Contractor:	<input type="text"/>		
DBE/MBE/WBE/SDVOB Contract Goal \$:	<input type="text"/>	DBE/MBE/WBE/SDVOB Contract Goal %:	<input type="text"/>		
Pre-Award Commitment to this Contractor:	<input type="text"/>	Pmts to date; to this DMWBE/SDVOB:	<input type="text"/>		
Certified Company Owner:	<input type="text"/>	Certified Company Rep Name:	<input type="text"/>		
Date of Field CUF Review:	<input type="text"/>	Certified Company Rep Title:	<input type="text"/>		

DBE/MBE/WBE/SDVOB is Performing as: Prime Contractor Subcontractor Trucker/Hauler

Subcontractor Only (type of arrangement): Furnish and Install Labor Only

Documents Required for this Section: AAP20 (Subcontractors) AAP23 (Trucking)

Provide a brief description of the DBE/MBE/WBE/SDVOB's scope of work for the approved subcontract:

The following two questions pertain to DBE/MBE/WBE/SDVOB participation submitted (under commitment) to meet a contract goal:

- Are the descriptions of work in the DBE/MBE/WBE/SDVOB's subcontract and the Prime's DBE/MBE/WBE/SDVOB commitment consistent?

YES NO (If "NO," how was this resolved?) N/A

- Has there been any changes in project scope that would affect the DBE/MBE/WBE/SDVOB's commitment?

YES (If "YES," describe changes in scope, impacts, and actions to resolve) NO N/A

Management

YES NO N/A

- 1. Does the DBE/MBE/WBE/SDVOB's Supervisor/Foreman direct and schedule all work activities, including material deliveries, without assistance from the prime or upper-tier subcontractor? YES NO N/A
- 2. Is the person who signs the DBE/MBE/WBE/SDVOB's certified payrolls an employee of the DBE/MBE/WBE/SDVOB and not the prime or upper-tier subcontractor ? YES NO N/A

Comments Required for all "NO" or "N/A" Responses:

Performance

YES NO N/A

- 1. Did the Prime make adjustments in counting where the DBE/MBE/WBE/SDVOB itself subcontracted any portion of its work to a non-DBE/MBE/WBE/SDVOB? YES NO N/A
- 2. Did the DBE/MBE/WBE/SDVOB perform its subcontract with its own workforce? YES NO N/A

Comments Required for all "NO" or "N/A" Responses:

Workforce

YES NO N/A

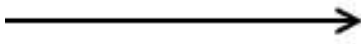
- 1. Do DBE/MBE/WBE/SDVOB employee names only appear on the DBE/MBE/WBE/SDVOB's payrolls and not the payrolls of the prime or other contractor employed on the project? YES NO N/A
- 2. Based on the review of at least one certified payroll, is the number of DBE/MBE/WBE/SDVOB personnel documented in the project work report/diary consistent with the number of personnel on the DBE/MBE/WBE/SDVOB's payroll(s)? YES NO N/A
- 3. Based on Wage Rate/Employee Interviews, is the DBE/MBE/WBE/SDVOB the only contractor providing pay and other compensation (i.e. benefit plans) to its personnel? YES NO N/A
- 4. Are the DBE/MBE/WBE/SDVOB's employees working on a distinct element of work, independently without assistance of other participating contractors? YES NO N/A

Comments Required for all "NO" or "N/A" Responses:

Documents required for this section: Certified Payroll Wage Rate Interviews (30% for total Sub Workforce)

Equipment

YES NO N/A

1. For equipment used in the performance of work, were ownership documents verified?(i.e. registrations, leases, or rental agreements) YES NO N/A
2. Was all equipment used by the DBE/MBE/WBE/SDVOB owned by the DBE/MBE/WBE/SDVOB, or leased/rented from a company other than the prime or upper-tier subcontractor? YES NO N/A
- a. If ; "NO," provide the value of equipment borrowed or leased from the prime or an upper-tier subcontractor: OR 
3. Provide information about equipment leased or borrowed by the DBE/MBE/WBE/SDVOB:
4. Is all equipment being operated by DBE/MBE/WBE/SDVOB employees and under the direct supervision of the DBE/MBE/WBE/SDVOB? YES NO N/A

Comments Required for all "NO" or "N/A" Responses:Documents required for this section: Ownership Documents**Materials** (This section applies to "Furnish and Install" work only)

YES NO N/A

1. Were the items delivered to the Project Site ? YES NO N/A
2. Was the DBE/MBE/WBE/SDVOB on-site to receive delivery of its materials? YES NO N/A
3. Did the DBE/MBE/WBE/SDVOB purchase materials from source other than the prime or one of its affiliates? (If "NO" DBE/MBE/WBE/SDVOB credit is disallowed) YES NO N/A
4. According to the material invoice, were materials billed to the DBE/MBE/WBE/SDVOB or DBE/MBE/WBE/SDVOB Owner/representative? (Attach Invoice) YES NO N/A
5. Was proof of payment obtained. (Attach document such as electronic funds transfer, copy of check, signed payment certification, etc.) YES NO N/A
6. If a joint check was used, did it go through the proper approval process, and did the DBE/MBE/WBE/SDVOB present it to the manufacturer/supplier? YES NO N/A

Comments Required for all "NO" or "N/A" Responses:Documents required for this section: BOL Deliver Photos/Video Invoice Proof of Payment

- 1. Briefly describe the on-site controls used to identify DBE/MBE/WBE/SDVOB and non-DBE/MBE/WBE/SDVOB haulers and to track the value of participation, i.e. number of trips, quantities, etc. (Attach supporting documents, such as haul tickets, vehicle logs, trucking worksheets, etc.)

[Redacted]

- 2. The NYSDOTs approved DBE/MWE/WBE/SDVOB Program does not allow hauling credit for 2nd tier trucking. Is at least one truck owned by the DBE/MWE/WBE/SDVOB? (Registrations for Owned Trucks Required)
- 3. Were trucks leased by the DBE/MWE/WBE/SDVOB verified to be operated by DBE/MWE/WBE/SDVOB drivers? (Lease Agreements Required)
- 4. Were all trucks owned/leased operated by DBE/MWE/WBE/SDVOB's owner and/or the employees of the DBE/MWE/WBE/SDVOB?
- 5. To verify DBE/MWE/WBE/SDVOB credit was applied properly to the contract was Invoicing collected by NYSDOT from prime to verify charges and payments for trucking on the project to original AAP20 & AAP23?

Comments Required for all "NO" Responses:

[Redacted]

- Documents required for this section:
- Hauling tickets, vehicle logs, etc (items to show proof of participation)
 - Payrolls Invoicing for each payment in EBO
 - Registrations Lease Agreement (if applies)

CUF Determination

Digital Signature of Primary Field Reviewer: [Redacted]

Digital Signature of Primary Field Office Reviewer: [Redacted]

Based upon an appropriate review of the contract records as well as periodic observations of the DBE/MWE/WBE/SDVOB Firm named above on the contract site, in accordance with the provisions of CFR 49 Part 26 Section 55 (c)(1), the NYS DOT Specifications and Standards; and the Contract Administration Manual (CAM) Section 105, it is found that: (Check One)

- Nothing calls into question that the DBE/MWE/WBE/SDVOB named above has performed a Commercially Useful Function (CUF) on this Contract.
- There are indicators that the DBE/MWE/WBE/SDVOB named above has not performed a Commercially Useful Function (CUF) on this Contract as evidenced by the following: [Redacted]

Brief Explanation of Findings (required): [Redacted]

Actions taken (required if CUF was not performed): [Redacted]

[Redacted]

Printed Name & Title of Compliance Reviewer
NCDPW - Traffic Signal Expansion Phase 10

[Redacted]

Digital Signature of Compliance Representative
Subcontractor & Trucking CUF_V.2025.5
Contract No. T62452-01G, PIN 0761.25

Commercially Useful Function (CUF) Services

Section I- Project and Payment Data

Project D#/PIN: Project Name: Region:

Prime Contractor: DBE/MBE/WBE/SDVOB Service Provider:

DBE/MBE/WBE/SDVOB Contract Goal \$: DBE/MBE/WBE/SDVOB Contract Goal %:

Pre-Award Commitment to this Service: Payments to this Service to Date \$:

Service Company Owner: Service Representative Name:

Date of CUF Review: Service Representative Title:

DBE/MBE/WBE/SDVOB is Performing as:

Documents Required for this Section:

AAP20

Provide a brief description of the DBE/MBE/WBE/SDVOB's approved Service for this contract:

The following two questions pertain to DBE/MBE/WBE/SDVOB participation submitted (under commitment) to meet a contract goal:

➤ Are the descriptions of work in the DBE/MBE/WBE/SDVOB's contract and the Prime's DBE/MBE/WBE/SDVOB commitment consistent?

YES NO (If "NO," how was this resolved?) N/A

➤ Has there been any changes in project scope that would affect the DBE/MBE/WBE/SDVOB's commitment?

YES (If "YES," describe changes in scope, impacts, and actions to resolve) NO N/A

Supervision and Management

YES NO N/A

1. Was all work on-site directed by the DBE/MBE/WBE/SDVOB's supervisory personnel ? (e.g. DBE/MBE/WBE/SDVOB directs its own employees and controls all elements of work; approving signatures/initials on work products, title blocks and other relevant documents were those of DBE/MBE/WBE/SDVOB supervisory personnel)
2. Do workflows indicate that the designated DBE/MBE/WBE/SDVOB Project Manager/Supervisor is directing all work?
3. If the DBE/MBE/WBE/SDVOB project team or its representative is co-located in the prime's field office, is it evident that the DBE/MBE/WBE/SDVOB has sufficient on-site expertise and control that allows it to manage its work independently?

Comments Required for all "NO" or "N/A" Responses:**Performance & Workforce**

YES NO N/A

1. Did the Prime make adjustments in counting credit allowed where the DBE/MBE/WBE/SDVOB outsourced any portion of its work to a non-DBE/MBE/WBE/SDVOB? (*IE equipment rentals, or other allowable expenses per CUF regulations*)
2. If a site visit was conducted (Field Visit or Service Provider Facility), were the personnel observed performing work consistent with the DBE/MBE/WBE/SDVOB's agreement with the Prime?
3. With respect to professional services, are document authors and signers of certifications, stamps, seals, title blocks, etc. consistent with the DBE/MBE/WBE/SDVOB's affirmed listing of qualified project personnel?
4. Based on Wage Rate/Employee Interviews, is the DBE/MBE/WBE/SDVOB the only service provider that is compensating the personnel performing the work?

Comments Required for all "NO" or "N/A" Responses:**Optional Documents for this Section:**
 Payrolls Wage Rate Interviews Employee Interviews

1. Did the DBE/MBE/WBE/SDVOB use its own equipment to perform the work specified in its contract/ agreement? (Total stations, computer hardware, plotters, computer automated design software, personal protective equipment, tools, and other equipment required to perform or produce the work.) If "Yes" move to question 3. YES NO N/A

a. If; "No", Provide information about equipment leased or borrowed by the DBE/MBE/WBE/SDVOB

2. For equipment not owned by the DBE/MBE/WBE/SDVOB, did the DBE/MBE/WBE/SDVOB lease it from a company other than the prime? YES NO

a. If;"NO," provide the value of equipment borrowed or leased from the prime, other contractor:

b. Did the prime increase DBE/MBE/WBE/SDVOB participation to replace the value of equipment borrowed or leased by the service provider, as indicated in "2a" above? YES NO

3. Is all equipment being operated by DBE/MBE/WBE/SDVOB employees and under the direct supervision of the the DBE/MBE/WBE/SDVOB? YES NO

Comments Required for all "NO" or "N/A" Responses:

Documents required for this section: Ownership Documents Invoices & Proof of Payment (non-owned equipment)

CUF Determination

Digital Signature of Primary Field Reviewer:

Digital Signature of Primary Field Office Reviewer:

Based upon an appropriate review of the contract records as well as periodic observations of the DBE/MBE/WBE/SDVOB Firm named above on the contract site, in accordance with the provisions of CFR 49 Part 26 Section 55 (c)(1), the NYS DOT Specifications and Standards; and the Contract Administration Manual (CAM) Section 105, it is found that: (Check One)

Nothing calls into question that the DBE/MBE/WBE/SDVOB named above has performed a Commercially Useful Function (CUF) on this Contract.

There are indicators that the DBE/MBE/WBE/SDVOB named above has not performed a Commercially Useful Function (CUF) on this Contract as evidenced by the following:

Brief Explanation of Findings (required):

Actions taken (required if CUF was not performed):

Printed Name & Title of Reviewer

Digital Signature of Compliance Representative

Commercially Useful Function (CUF)

Clear Form

Distributors (DBE Program ONLY)

Project D#/PIN:	<input type="text"/>	Project Name	<input type="text"/>	Region	<input type="text"/>
Prime Contractor	<input type="text"/>		DBE Company	<input type="text"/>	
DBE Project Goal \$	<input type="text"/>	DBE Project Goal %	<input type="text"/>		
Pre-Award Commitment to this DBE	<input type="text"/>		Payments to Date to this DBE	<input type="text"/>	
Company Owner	<input type="text"/>		DBE Representative Name	<input type="text"/>	
Date of CUF Review	<input type="text"/>		Representative Title	<input type="text"/>	

DBE Participation Submitted As:

Describe & attach a list of products and quantities to be distributed by the DBE under the prime's commitment, purchase order, or the DBE contract:

Documents Required for CUF:

- AAP20
- AAP22
- Purchase Order between Prime & Distributor
- Invoicing for Items purchased by Distributor
- Shipping Documents/Agreements
- Material Certifications as Applicable

Optional Documents for Distributor Submission:

- Photos at Delivery
- Registration Photos from Delivery Vehicles
- License Plate Photo of Delivery Vehicle
-
-

Document Comments (optional):

Verification of Distributor CUF

YES NO

- 1. Is the DBE an established business the engages in the regular sale or lease of the items on contract? YES NO
- 2. Was the procurement consistent with answers submitted with the AAP22? YES NO
- 3. Are the materials provided consistent with items listed on approved AAP20E and AAP22? YES NO
- 4. Is there evidence the DBE was responsible for negotiating price and ordering the material with the manufacturer. YES NO
- 5. Is there evidence the DBE paid for the materials themselves using their own funds? YES NO
- 6. Did the distributor have terms on their purchase order or bill of lading from their third party that transferred responsibility, including risk for loss or damage to the distributor at the point of origin (e.g. manufacturer's facility)? YES NO
- 7. Were the materials supplied by the distributor shipped by a third-party carrier as opposed to the manufacturer or other reseller they had the purchase order with? YES NO
 - a. If Yes, did the shipping documents reasonably indicate that the DBE coordinated the shipping and pay the costs of shipment? YES NO
 - b. If No, identify who delivered the materials. YES NO

Comments Required for all "NO" Responses:

CUF Determination

Digital Signature of Primary Field Reviewer:

Digital Signature of Primary Field Office Reviewer:

Based upon an appropriate review of the contract records as well as periodic observations of the DBE Firm named above on the contract site, in accordance with the provisions of [CFR 49 Part 26 Section 55 \(c\)\(1\)](#), the [NYS DOT Specifications and Standards](#); and the [Contract Administration Manual \(CAM\) Section 105](#), it is found that: (Check One)

- Nothing calls into question that the DBE named above has performed a Commercially Useful Function (CUF) on this Contract.
- There are indicators that the DBE named above has not performed a Commercially Useful Function (CUF) on this Contract as evidenced by the following:

Brief Explanation of Findings (required):

Actions taken (required if CUF was not performed):

Printed Name & Title of Reviewer

Digital Signature of Compliance Representative

Commercially Useful Function (CUF) Review

Brokers, Manufacturer/Fabricator/ & Regular Dealers

Project D#/PIN: Project Name: Region:

Prime Contractor: DBE/MBE/WBE/SDVOB Company:

DBE/MBE/WBE/SDVOB Contract Goal \$: DBE/MBE/WBE/SDVOB Contract Goal %:

Pre-Award Commitment (if applicable): Payments to Date \$:

DBE/MBE/WBE/SDVOB Company Owner:

DBE/MBE/WBE/SDVOB Representative:

DBE/MBE/WBE/SDVOB Representative Title:

Date of CUF Review:

DBE/MBE/WBE/SDVOB Participation Submitted as:

Describe & attach a list of products and quantities to be sold or leased by the DBE/MBE/WBE/SDVOB under the prime's commitment, purchase order, or the DBE/MBE/WBE/SDVOB's contract:

Documents Required for CUF AAP20 AAP22

Broker	YES	NO
1. Was the DBE/MBE/WBE/SDVOB's role limited to that of a packager, broker, manufacturers' representative, or other person whose role is solely to arrange or expedite this transaction?	<input type="checkbox"/>	<input type="checkbox"/>
2. Will the DBE/MBE/WBE/SDVOB's role be limited to providing assistance in the lease of, or fees for transportation charges for the delivery of, equipment owned by a third party?	<input type="checkbox"/>	<input type="checkbox"/>

Comments Required for "NO" Responses:

Documents Required for Broker Submission:

Invoices Proof of Payments

Manufacturers / Fabricators (Count 100% of the cost of materials/supplies/articles produced)

YES NO

- 1. Were the actual products provided by the DBE/MBE/WBE/SDVOB in the same (type and quantity) as those described in the prime's commitment, purchase order, or the DBE/MBE/WBE/SDVOB's contract?
 - a. If "NO" reevaluate eligible DBE/MBE/WBE/SDVOB participation before proceeding. Document in Comments section below.

- 2. Do shipping documents, material certifications, or other information indicate that the final products were manufactured / fabricated (blended, modified, etc.) at a facility maintained or operated by the DBE/MBE/WBE/SDVOB?
 - a. If "YES" count 100% of the materials/supplies/articles purchased by prime.
 - b. If "NO" DBE/MBE/WBE/SDVOB is not acting as a manufacturer / fabricator.
 - i. Count only fees and commissions; provide comments below in comments.

Comments Required for "NO" Responses:

Documents Required for Manufacturers / Fabricators Submission:

- Purchase Order Invoicing for Items Manufactured or Fabricated
- Shipping Documents Material Certifications

Additional Photo Documents for Manufacturers / Fabricators Submission:

- Photos at Delivery Registration Photos from Delivery Vehicles
- License Plate Photo of Delivery Vehicle Photos of In-Vehicle Insurances

Regular Dealers (Count 60% of the cost of materials/or supplies purchased/leased)

YES NO N/A

- 1. Did the Regular Dealer pay for items themselves? YES NO N/A
- 2. Were the actual products provided by the DBE/MBE/WBE/SDVOB the same (type and quantity) as those described in the prime's commitment, purchase order, or the DBE/MBE/WBE/SDVOB's subcontract?
a. If "NO" reevaluate eligible DBE/MBE/WBE/SDVOB participation before proceeding. YES NO N/A
- 3. Does the DBE/MBE/WBE/SDVOB have an establishment where the products, or those of the general character described by the specifications and required under the contract, are kept and regularly sold/ leased?
a. If "YES" proceed to Question 4. YES NO N/A
b. If "NO" skip to Question 6.
- 4. Did all products come from the DBE/MBE/WBE/SDVOB's establishment or did the DBE/MBE/WBE/SDVOB have physical possession of the products prior to delivery? (Attach delivery/shipping documents that show the product origin and name of delivery agent/company or operator's name and employer.)
a. If "YES" skip to Question 8. YES NO N/A
b. If "NO" proceed to Question 5.
- 5. Did the majority of products come from the DBE/MBE/WBE/SDVOB's establishment or did the DBE/MBE/WBE/SDVOB have physical possession of the majority of products prior to delivery?
a. If "YES" make counting adjustments as appropriate and skip to Question 8. YES NO N/A
b. If "NO" DBE/MBE/WBE/SDVOB's primary role is not that of a regular dealer; count fees and commissions as appropriate, provide comments below, and proceed to CUF Determination section.
- 6. Are the products considered bulk items or specialty items not typically stocked?
a. If "Yes" proceed to Question 7. YES NO N/A
b. If "NO" DBE/MBE/WBE/SDVOB is not acting as a regular dealer; count only fees and commissions, provide comments below, and proceed to CUF Determination section.
- 7. Did the DBE/MBE/WBE/SDVOB own (or have a long-term lease) and operate the distribution equipment used to deliver the products? (Attach delivery/shipping documents that indicate vehicle ownership and operator's name/employer). YES NO N/A
a. If "YES" proceed to Question 8.
b. If "NO" DBE/MBE/WBE/SDVOB is not acting as a regular dealer; count only fees and commissions, provide comments below, and proceed to CUF Determination section.
- 8. Did the DBE/MBE/WBE/SDVOB own the products sold or leased? (Attach documents reviewed: inventory records, payment records, material ownership certification, etc.) YES NO N/A
a. If "YES" DBE/MBE/WBE/SDVOB is a regular dealer; count 60%of the total value of materials sold or leased.
b. If "NO" DBE/MBE/WBE/SDVOB is not a regular dealer; count fees and commissions, provide comments below, and proceed to CUF Determination section.

Comments Required for "NO" Responses:

Regular Dealers (Count 60% of the cost of materials/or supplies purchased/leased); Continued

Documents Required for Regular Dealers Submission:

Inventory records, Payment records, Material ownership certification

Purchase Order Shipping Documents

Additional Photo Documents for Regular Dealers Submission:

Photos at Delivery Photos of Registrations on Delivery Vehicles

Photo of Delivery Vehicle's License Plate

CUF Determination

Digital Signature of Primary Field Reviewer:

Digital Signature of Primary Field Office Reviewer:

Based upon an appropriate review of the contract records as well as periodic observations of the DBE/MBE/WBE/SDVOB Firm named above on the contract site, in accordance with the provisions of CFR 49 Part 26 Section 55 (c)(1), the NYS DOT Specifications and Standards; and the Contract Administration Manual (CAM) Section 105, it is found that: (Check One):

Nothing calls into question that the DBE/MBE/WBE/SDVOB named above has performed a Commercially Useful Function (CUF) on this Contract.

There are indicators that the DBE/MBE/WBE/SDVOB named above has not performed a Commercially Useful Function (CUF) on this Contract as evidenced by the following

Brief Explanation of Findings (required):

Actions taken (required if CUF was not performed):

Name & Title of Reviewer

Digital Signature of Compliance Representative