

## **CET 350 – OVERHEAD ACCOMMODATION PROTECTION OF OVERHEAD FACILITIES, POLES AND APPURTENANCES**

### **A. Description**

The Contractor shall provide all supervision, labor, materials, tools, equipment and incidentals required to perform its work in the presence of overhead utilities, including, but not limited to, electric facilities (primary, secondary and service connections), telephone facilities, cable television facilities, fiber optic communications facilities, utility poles and equipment on the poles and related appurtenances. These utilities are subsequently referred to in this specification as "overhead facilities". Tree pruning and removal work under CET 352 and CET 353 as well as utility pole supports under CET 351 are not included in this specification.

### **B. Materials** – N/A

### **C. Method of Construction**

The Contractor shall inspect the site prior to bidding and shall utilize sketches CET-350A-1, CET-350B-1, CET-350C-1 to evaluate the potential impact, if any, of overhead facilities upon performance of the work. The Contractor shall employ a method of operation, including use of appropriate equipment and tools that will enable him to maintain adequate clearances from the overhead facilities during all phases of construction. The Contractor is responsible for performing the work in accordance with all applicable Federal, New York State and Local regulations. The Contractor and/or his agents shall be solely responsible for damages to any overhead lines and appurtenances due to failure to comply with applicable rules, procedures, and practices.

### **D. Method of Measurement**

The quantity to be measured for payment shall be a lump sum measurement to complete the work in the presence of overhead facilities.

### **E. Price to Cover**

The price shall be a lump sum for all supervision, labor, materials, tools, equipment and incidentals required to perform the work in the presence of overhead utilities and to maintain adequate clearance from the overhead facilities during all phases of construction. The price includes, but is not limited, to modification of any methods of operation, use of appropriate equipment, maintenance of traffic, extended performance, loss of productivity, protective measures, delays, change in sequencing and scheduling, and any other costs that may be incurred by the Contractor.

Partial payments shall be made in proportion to the percentage (%) of contract completion as determined by the facility operator.

**F. Reference Drawings**

CET-350A-1

CET-350B-1

CET-350C-1

## **CET 351 - UTILITY POLE SUPPORTS**

### **A. Description**

This section describes the temporary supports for utility poles at locations directed by the facility operator(s), in order to maintain such poles in their existing upright position without disturbing attached wires and equipment. The Contractor shall provide all labor, material, equipment, insurance, and incidentals required to construct, install and maintain an effective support system that will meet the stated objective.

### **B. Materials** – N/A

### **C. Method of Construction**

Where directed by the utility representative, the Contractor shall furnish, install and remove utility pole supports and maintain utility poles as shown on Sketch CET-351. Alternate methods proposed by the Contractor will be permitted if approved by the facility operator.

### **D. Method of Measurement**

The quantity of utility pole supports to be measured for payment shall be the number of utility poles supported. The Contractor will be paid only once for each utility pole supported and maintained no matter how many different construction operations have an impact on the pole.

### **E. Price to Cover**

The price shall cover the cost of all labor, material, equipment, insurance, and incidentals necessary to furnish, install, maintain and remove utility pole supports to completely support, maintain, protect, and accommodate the integrity of utility poles without disruption of service to customers. The price bid shall also include all additional impact cost associated with working around utility pole supports, poles and appurtenances.

Separate payment will be made for the protection of Overhead Facilities under the Item "Overhead Accommodation" (CET-350).

### **F. References**

1. Sketch CET-351
2. CET-350

## **CET 352E/352T - Special Care Operations for Tree Removal**

### **A. Description**

Under this Section, the Contractor shall be required to modify work methods of tree removal in order to maintain, protect and accommodate the integrity of overhead electric (CET352E) and telephone (CET 352T) utility lines where existing, as directed by the utility operator(s).

### **B. Materials** – N/A

### **C. Method of Operation**

The Contractor shall exercise extreme caution when removing trees where their sway during removal might cause damage to overhead electric and telephone utility lines, as determined by the utility operator(s). Exercising extreme caution shall mean the careful clearing of branches over, under and around overhead electric and telephone utility lines prior to removal of trees and the topping of trees as may be necessary to avoid damage to utility lines.

All equipment, methods, and maintenance and protection provisions shall require full authorization by the utility operator(s). The Contractor is warned that overhead utility lines are electrified and require equipment used in their vicinity to be isolated from the ground.

### **D. Method of Measurement**

The quantity of "Special Care Operations for Tree Removal" to be measured for payment shall be the number of trees actually removed during the Contract in accordance with these specifications.

### **E. Price to Cover**

The prices for "Special Care Operations for Tree Removal Work" shall be a unit price for all tree size groups, equal to the incremental cost difference of all labor, materials, equipment, insurance, and incidentals required to maintaining, protecting, and accommodating the integrity of existing overhead utilities during the performance of tree removal operations (under Contract Item 8.16) where the felling of said tree may cause damage to existing overhead utility lines as determined by the utility operator(s); all in accordance with the plans, the specifications and the directions of the utility operator(s).

Payment for all work specified herein shall be made separately by each utility that is affected by the tree removal and shall be on a one-time basis only.

## **CET 353E/353T - Special Care Operations for Tree Pruning**

### **A. Description**

Under this Section, the Contractor shall be required to modify work methods of tree pruning in order to maintain, protect and accommodate the integrity of overhead electric (CET353E) and telephone (CET353T) utility lines where existing, as directed by the utility operator.

### **B. Materials** – N/A

### **C. Method of Operation**

The Contractor shall exercise extreme caution when pruning trees where the sway of branches during pruning might cause damage to overhead electric and telephone utility lines, as determined by the utility operator. Exercising extreme caution shall mean the careful pruning of branches over, under and around overhead electric and telephone utility lines so as not to cause damage to existing utility lines.

All equipment, methods, and maintenance and protection provisions shall require full authorization by the utility operator(s). The Contractor is warned that overhead utility lines are electrified and require equipment used in their vicinity to be isolated from the ground.

### **D. Method of Measurement**

The quantity of "Special Care Operations for Tree Pruning" to be measured for payment shall be the number of trees actually pruned during the Contract in accordance with these specifications.

### **E. Price to Cover**

The contract prices bid for "Special Care Operations for Tree Pruning" shall be a unit price for all tree size groups, equal to the incremental cost difference of all labor, materials, equipment, and incidentals required to maintaining, protecting, and accommodating the integrity of existing overhead utilities during the performance of tree pruning operations (under Contract Item 8.81) where the pruning of said trees may cause damage to existing overhead utility lines as determined by the utility operator(s); all in accordance with the plans, the specifications and the directions of the facility operator.

Payment for all work specified herein shall be made separately by each utility that is affected by the tree pruning and shall be on a one-time basis only.

## **CET 400 - TEST PITS FOR UTILITY FACILITIES**

### **A. Description**

Under this section, the contractor shall furnish all labor, materials, equipment, insurance and incidentals necessary to excavate, sheet and maintain test pits at locations approved by the facility operator. Test pits shall be dug in order to ascertain exact locations, cover, and invert elevations, configurations, clearances, alignment and operating status of existing utility facilities. The contractor shall inspect jointly with the facility operator, utility facilities and other structures uncovered, take all relevant measurements and elevations as directed by the facility operator(s). Tests to determine operating status of utility facilities shall be performed by facility operator. The pits shall be covered with steel plates during non-working hours, and uncovered, as required, until the inspection work is completed. Testing of utility facilities may require a maximum of 4 hours. Then, the pits shall be backfilled with clean fill, and resurfaced with temporary pavement. All traffic shall be maintained and all safety measures as stipulated shall be complied with.

### **B. Materials** – N/A

### **C. Methods of Construction**

1. Excavation – Existing pavement to be removed shall be neatly cut along lines of removal with a saw or other approved equipment which leaves a neat straight joint line along the juncture with subsequently replaced pavement. Excavation in the vicinity of utilities and other structures shall be performed using hand tools. Use of hand operated pneumatic and electric jackhammers will be permitted only for breaking pavement and removal of masonry, concrete and boulders, or as otherwise directed by the facility operator. All materials excavated from test pits shall be properly disposed of away from site by the contractor. Test pits shall be excavated at locations as directed by the facility operator. All test pits shall be excavated to a depth and size necessary to locate the existing facilities. All facilities that are encountered during the excavation of the test pit shall be supported and protected in a manner suitable to the facility operator. Sheeting shall be used when depth of excavation exceeds five feet. The sheeting required should be furnished and installed in full compliance with the State of New York and Federal Safety Codes requirements and as specified in contract, whichever is more stringent.

Care shall be taken that no existing utility facilities or other structures are broken or damaged. All broken or damaged facilities shall be reported immediately to facility operator who shall decide whether such facilities shall be repaired or replaced by company forces or by City contractor. Contractor shall excavate all material encountered, including large masses of concrete, cemented masonry and boulders, as directed by the facility operator. Any type of excavation protection used, shall satisfy the following:

- Industrial Code Rule 753.
- Prevent injury to workers and the public, and avoid damage to existing utility facilities and structures, and to pavements and their foundations, from caving or sliding banks within the excavation.

Should it become necessary, as determined by the facility operator, to enlarge any test pit in any dimension after sheeting has been placed, the contractor shall remove portions of the sheeting, as necessary, enlarge the test pits as directed, and replace the sheeting without additional compensation for this work other than for the additional volume of material excavated.

2. Maintenance of Test Pits - Excavated test pits shall be maintained free of debris and kept dry by the contractor in order to permit the inspection and measurements and to determine the locations of facilities. In order to accomplish this, contractor shall, upon completion of excavation and placement of sheeting (if depth greater than five feet), furnish and install adequate steel plates and posting over the excavated pits and shall temporarily remove all equipment debris and workers, and relocate barricades in order to open the full width of street to traffic during non-working hours. The contractor shall then, at no additional cost, relocate such barricades barrels, cones and other warning devices and remove steel plates, as and when directed by the facility operator to facilitate the inspection of exposed facilities. When work is being performed and the pits are not covered with steel plates, the contractor shall provide complete and safe access to the test pits as may be required, and he shall provide construction barricades and maintain traffic at all times as shown or as directed by the facility operator. Upon completion of test pit inspection by the facility operator, the pit shall be backfilled by the contractor in accordance with Contract requirements and all backfill material shall conform to contract specifications for such purpose.

3. Pavement and Sidewalk Restoration - After backfilling is completed, the contractor shall construct a temporary pavement consisting of six inches (6") thick asphaltic concrete mixture in roadway areas or a two inches (2") thick asphaltic concrete mixture in sidewalk areas in order to maintain existing pedestrian and vehicular traffic. This temporary pavement shall be maintained until permanent replacement as specified in contract.

#### **D. Method of Measurement**

The quantity to be measured for payment shall be the number of cubic yards of material removed from within the limits of the pit dimensions as directed by the facility operator. The volume occupied by existing pipes or other structures remaining within the maximum payment lines will not be deducted from the total volume measured except, where the cross sectional area of these facilities exceeds four (4) square feet. As determined by the facility operator(s), the quantity measured for payment may be proportionated among the facility operator(s) involved in total volume excavated.

#### **E. Price to Cover**

The contract price bid per cubic yards for test pits shall cover all additional costs of labor, material, equipment, insurance and incidentals required to excavate test pits, including removal and disposal of excavated materials, sheeting, steel plating, backfill and compaction all in accordance with the specifications and at the direction of the facility operator. The price shall also cover the cost of providing temporary pavements and sidewalks. The price shall also include the cost of providing safe access to the excavation by facility operator for the performance of certain test to determine operating status of utility facilities prior to City work. The price shall also include the necessary support and protection of all utility facilities crossing, paralleling and /or encroaching the test pit excavation.

#### **F. References**

1. NYS Industrial Code Rule 753

## **CET 401 - TRENCH EXCAVATION FOR ADJUSTMENT OF UTILITY FACILITIES**

### **A. Description**

Under this section, the Contractor shall provide all labor, materials, equipment, insurance and incidentals required to excavate by hand to locate and expose subsurface utilities encountered during construction in preparation for horizontal and vertical movement (covered by other Sections), and to support and maintain and protect the integrity of utility facilities including but not limited to:

1. Conduits;
2. Conductor(s) and/or cable(s);
3. Concrete Encased Conduit Bank(s);
4. Steel Pipe(s)

The trench to be excavated shall be determined by the size of the utility and the extent of adjustment required to avoid interferences as detailed on Sketch CET 402 A during all phases of contract work. The work shall be performed in accordance with the specifications, and at the directions of the facility operator(s).

### **B. Materials**

All materials used to support and maintain and protect shall be similar to those indicated on Sketches CET 100 A and 100 A-1 and shall be supplied by Contractor and be approved by the facility operator(s).

### **C. Methods of Construction**

The Contractor shall cut, break and remove various thickness of surface and base pavement, excavate by hand to expose, support and protect all utility facilities within the trench and then furnish and tamp backfill after work has been completed by the parties indicated under other Sections. The facility operator(s) shall identify the locations of all utilities within the contract area as required by New York State Industrial Code Rule 753. As provided by the Rule the Contractor shall use hand excavation methods (pick and shovel or hand held power tools) directly below the pavement base to expose the utility. Upon exposing the affected utilities sufficiently to determine relationships and/or clearances at the sole discretion of the facility operator(s), the Contractor shall be permitted to proceed with a combination of hand and machine excavation sufficiently to wingback all interferences of cable and conduit. The trench shall be adjusted so as to provide a nominal cover of 24" over the highest conduit. The width of the trench shall be as directed by the facility operator. The bottom of the trench shall be graded smooth and tamped to minimize initial settlement and to avoid "point" support of conduits. All stones projecting into the trench bottom shall be removed, and the voids backfilled before conduits are placed. Where streets are not to final grade, the cover shall be measured from the final grade, or the existing grade, whichever provides the deeper trench.



#### **D. Method of Measurement**

The Contractor shall be paid per cubic yard (C.Y.) of trench actually excavated to the limits directed as detailed in Sketch CET 402 A and to the satisfaction of the facility operator(s). When two or more utility facilities requiring horizontal or vertical adjustment with different owners are in the same trench, the facility operators shall jointly determine the percentage of ownership of the trench.

#### **E. Price to Cover**

The price for excavation shall include the cost of all labor, materials, equipment, insurance, and incidentals necessary to completely expose, support and protect and maintain the integrity of the facilities without disruption of service to the customers and in accordance with the Contract Documents, associated maintenance of traffic, and traffic plates and sheeting that may be required, cut, break and remove various thickness of surface and base pavement, excavate by hand to expose existing structures, furnish, place and tamp backfill after required vertical and/or horizontal adjustments have been completed under other Sections. Any required removing, trucking, storing, and disposing of material shall be deemed included in the unit price. The price shall also include the cost of providing temporary pavement restoration. Permanent pavement restoration shall be paid under other items. The price shall also include the cost of locating and supporting and protecting all utilities encountered including slings and beams installed for utility support when required.

## **CET 401A - SPECIAL CARE PAVEMENT EXCAVATION FOR ADJUSTMENT OF UTILITY FACILITIES CONNECTED TO THE BASE PAVEMENT**

### **A. Description**

Under this section, the Contractor shall provide all labor, materials, equipment, and incidentals required to carefully excavate pavement to locate, expose, maintain and protect subsurface utilities within or connected to the pavement structure prior to roadway reconstruction or trench excavation. This work shall be performed to separate existing ducts and or cables to remain from the existing pavement. The facilities include, but are not limited to:

1. Conduits
2. Cables
3. Concrete encased or partially encased conduit banks or cables
4. Steel Pipes

located both beneath and within the existing pavement, base and/or sub base. The work shall be performed at the direction of the facility operator.

### **B. Material** – N/A

### **C. Methods of Operation/Construction**

Once the clearances have been verified by available records, Code 53 and/or information obtained from test pits, or any combination thereof, to the sole satisfaction of the facility operator, the Contractor shall exercise extreme caution, by utilizing appropriate methods of operation/construction; by employing specialized construction equipment and special operations and sequencing, within the area designated for protection and accommodation of utility facilities as shown on the plans or where the aforementioned utility structure is connected to or within the pavement structure, or as otherwise directed by the facility operator. The work shall incorporate the removal of temporary and existing pavement, base material, and a portion of the duct encasement. Trench width shall be no less than 1' 6" to either side of the duct centerline alignment, all as determined by the facility operator. Pavement connecting the duct or cable shall be removed using hand operated tools using whatever methods necessary to protect the facility from damage, regardless of the pavement composition. Only excavators working off or from adjacent undisturbed pavement may assist the operation of moving the hand excavated material from the trench area. All equipment and methods and maintenance and protection provisions shall require approval by the facility operator.

### **D. Method of Measurement**

The quantity of Special Care Excavation for Adjustment of Utility Facilities to be measured for payment shall be the number of cubic yards of (C.Y.) of Trench excavated. Modifications to work methods required adjacent to any existing structure/curb shall not be measured for payment and are deemed to be included in the price bid for this item.

#### **E. Price to Cover**

The contract price bid per cubic yard (C.Y.) for Special Care Excavation for Adjustment of Utility Facilities, shall include the cost of all labor, materials, time, equipment, and incidentals required for excavation and disposal of pavement, base and a portion of the duct encasement material, hand excavation, backfill and compaction, all together with necessary incidentals, in accordance with the directions of the facility operator. The price shall also cover the cost of providing temporary pavements and sidewalks. The price bid shall further include the cost of maintaining, protecting, and accommodating the integrity of utility facilities during the work within the areas designated on the plans or as directed by the facility operator.

Payment for all work herein specified shall be made on a one-time basis only; no payment for work herein specified shall be made for the same conduit or cable more than one time. No payments will be made under this item if the Contractor excavates beyond the limits specified in the contract, unless directed by the facility operator. In addition, work under this item may be paid in combination with other utility or facility accommodation items under other contract items.

#### **F. References**

1. NYS Industrial Code Rule 753
2. Sketch CET 401AC

## **CET 401AC - SPECIAL CARE PAVEMENT EXCAVATION FOR ADJUSTMENT OF CABLE TV FACILITIES CONNECTED TO THE BASE PAVEMENT**

### **A. Description**

Under this section, the Contractor shall provide all labor, materials, equipment, and incidentals required to carefully excavate pavement to locate, expose, maintain and protect subsurface cable TV facilities within or connected to the pavement structure prior to roadway reconstruction or trench excavation. This work shall be performed to separate existing ducts and or cables to remain from the existing pavement. The facilities include, but are not limited to:

1. Conduits;
2. Cables;
3. Concrete encased or partially encased conduit banks or cables;
4. Steel Pipes;

located both beneath and within the existing pavement, base and/or subbase. The work shall be performed in accordance with the plans, specifications and at the directions of the facility operator.

### **B. Material** – N/A

### **C. Methods of Operation/Construction**

Once the clearances have been verified by available records, Code 53 and/or information obtained from test pits (excavated under other contract items), or any combination thereof, to the sole satisfaction of the facility operator, the Contractor shall exercise extreme caution, by utilizing appropriate methods of operation/construction, by employing specialized construction equipment and special operations and sequencing, within the area designated for protection and accommodation of utility facilities as shown on the plans or where the aforementioned utility structure is connected to or within the pavement structure, or as otherwise directed by the facility operator. The work shall incorporate the removal of temporary and existing pavement, base material, and the duct encasement in a manner commensurate with CET 401AC sketches. Trench width shall be no less than 1'6" to either side of the duct centerline alignment, all as determined by the facility operator. Where two or more parallel ducts are less than five feet apart, the interspaced pavement and 1'6" to the outside of them shall be removed under this item. The outside limits of excavation shall be saw cut to the full depth of the pavement unless approved otherwise by the facility operator. Pavement connecting the duct or cable shall be removed using hand-operated/hand held tools using whatever methods necessary to protect the facility from damage, regardless of the pavement composition. Hand operated/hand held tools shall include jackhammers, chisels and sledgehammers. Only machine excavators and backhoes working off or from adjacent undisturbed pavement may assist the operation of moving the hand-excavated material from the trench area. All equipment and methods and maintenance and protection provisions shall require full authorization by the facility operator.

### **D. Method of Measurement**

The quantity of Special Care Excavation for Adjustment of Cable TV Facilities to be measured for payment shall be the number of cubic yards of (C.Y.) of trench excavated. Modifications to work methods required adjacent to any existing structure/curb shall not be measured for payment and are deemed to be included in the price bid for this item.

#### **E. Price to Cover**

The contract price bid per cubic yard (C.Y.) for Special Care Excavation for Adjustment of Cable TV Facilities, shall include the cost of all labor, materials, time, equipment, and incidentals required for excavation and disposal of pavement, base and a portion of the duct encasement material, to include hand excavation, machine excavation, backfill, compaction, saw cutting, chiseling, chipping, jack hammering, maintenance and protection of traffic, temporary pavement, lighting, insurance and all necessary incidentals, in accordance with the plans, the specifications and as directed by the facility operator. The price bid shall further include the cost of maintaining, protecting, and accommodating the integrity of utility facilities during the work within the areas designated on the plans or as directed by the facility operator. Adjustment of the ducts after this work is complete is to be paid under other contract items, as applicable.

Payment for all work herein specified shall be made on a one-time basis only; no payment for work herein specified shall be made for the same conduit or cable more than one time. No payments will be made under this item if the Contractor excavates beyond the limits specified in the contract, unless directed by the facility operator. In addition, work under this item may be paid in combination with other utility or facility accommodation items under other contract items.

#### **F. References**

1. NYS Industrial Code Rule 753

## **CET 402 - HORIZONTAL AND VERTICAL ADJUSTMENT OF UTILITY FACILITIES**

### **A. Description**

Under this section, the Contractor shall provide all labor, materials, equipment, insurance and incidentals required to adjust and support and protect and maintain and accommodate the integrity of utility facilities including but not limited to:

1. Conduit(s);
2. Conductors and/or Cables;
3. Concrete Encased Conduit Banks

The work shall be performed in accordance with the specifications, the attached Sketch # CET 402 A and at the directions of the facility operator(s).

### **B. Materials**

All materials used to adjust and support and protect and maintain and accommodate the integrity of utility facilities shall be similar to those indicated on the standard Sketches CET 100 A & 100 A-1 and shall be supplied by the Contractor and be approved by the facility operator(s).

Materials used for replacing conduit(s) removed under this item shall be supplied by the facility operator(s) and installed by the Contractor and shall include but not be limited to the following:

1. Bends
2. Split and Solid Conduit(s)
3. Couplings and Adapters
4. Straps or plastic ties

Materials supplied by the facility operator shall be delivered to the contractor's designated storage area. Contractor shall comply with Sections 2 and 3 of the General provisions.

### **C. Methods of Construction**

Methods of construction shall include but not be limited to the following:

#### **1 Removal and Support**

- a. Break with hand held power tools, remove and dispose of plain or reinforced concrete encasement (excluding concrete conduit(s)).
- b. Break with hand held power tools, remove and dispose of conduit(s) enclosures and conduit that contain conductor(s) and/or cable(s).
- c. Support and protect conductor(s) and/or cable(s) as shown in Sketch 100A-1.

#### **2 Adjust or Move Conductor(s) and/or cable(s) and support**

- a. Cable shall be relocated horizontally and/or vertically as directed by the facility operator and in accordance with Sketch # CET 402 A.
- b. Support and protect conductors and/or cables as shown on Sketch 100 A-1.

### 3 Replacement, Encasement, Protection and Support

- a. Replace vacant and loaded conduit(s) with solid and/or split conduit(s) and adapters.
  - 1) Vacant Conduit - Repairs to conduits shall not be permitted. All damaged or impaired lengths of conduit(s) shall be removed and replaced with new conduit(s).
  - 2) Loaded Conduit - Replacement of conduits which are removed from around existing conductors and/or cable(s) shall be accomplished with precast concrete conduit field split or split plastic. When a concrete conduit is field split for installation around existing conductor(s) and/or cable(s), either singly or in banks of conduit, it shall be secured with clamps or straps. Where split and solid plastic conduit is used, the conduit(s) shall be spaced 1½ inches from each other and the conduit bank shall be encased in 3200 PSI concrete to two (2) inches outside the limits of the plastic conduit. Encasement shall overlap a minimum of two (2) feet beyond the adapter. The concrete conduits, which are double male end types, shall be joined with a force fit plastic coupling. The plastic coupling, when used for split concrete conduit, shall be cut and wrapped around the ends. Plastic conduit shall be joined with plastic couplings.
  - 3) Adapting - Joining new precast concrete conduit and plastic conduit to existing conduits of other diameters or material shall be done using single or multiple adapters (supplied by facility operator(s)).
- b. If due to subsurface conditions, the cover is less than 20" from finished grade, the duct shall be protected with steel plates furnished by the facility operator(s) and measured for payment under Item CET-403.
- c. Support and protect cable(s) and/or conductor(s) and conduit(s).
- d. Encase plastic conduit with concrete.

#### **D. Method of Measurement**

The quantity to be measured for breaking out conduits, removing concrete, moving, protecting and supporting conductors and replacing conduits with split and solid conduit, shall be paid for by the linear foot (L.F.) of each conduit. A linear foot of conduit shall be defined as one (1) single conduit measured along its longitudinal axis that has been broken out or moved from its original location either horizontally and/or vertically, and measured in its final location between the limits shown on Sketch CET 402A. Where multiple separate conduits exist within a single enclosed unit similar to Murray or multiple tile conduits, each separate conduit within the enclosed unit shall be measured for payment under this item. All conduits removed and not restored shall be covered for payment under the appropriate bid items for Removal of Abandoned Masonry for Utility Facilities and/or Removal of Abandoned Utility Conduits.

Each type of utility adjustment shall be paid for separately, the types of utility adjustments are defined as follows:

- CET-402.1 Existing Concrete Encased Conduits Placed in Final Position without Concrete Encasement. (L.F.)
- CET-402.1A Existing Concrete Encased Conduits Placed in Final Position with Concrete Encasement. (L.F.)
- CET-402.2 Existing Non-Concrete Encased Conduits Placed in Final Position without Concrete Encasement. (L.F.)
- CET-402.2A Existing Non-Concrete Encased Conduits Placed in Final Position with Concrete Encasement. (L.F.)

#### **E. Price to Cover**

The Contract price per linear foot (L.F.) of conduit shall cover the cost of all labor, material, equipment, insurance, and incidentals necessary to shift, adjust, support, protect, maintain and accommodate the integrity of utilities without disruption of service to the customers and in accordance with contract documents. The price bid shall also include the cost of: breaking out, removal and disposal of plain or reinforced concrete encasement and conduits, replacement with field split, split and solid conduits, adapters, clamps, straps and couplings supplied by facility operator(s); furnish and install concrete encasement, supports, slings and beams for utility support; changes of sheeting method and/or configuration when required and where necessary to accommodate the utilities during all phases of contract work; any impact associated with maintenance and protection of traffic; and removal of sheeting around the utilities, and all else necessary and required to complete the work.

#### **F. References**

1. Sketches CET 100A and 100A-1
2. Sketch CET 402A
3. CET 403



## **CET 403 - PLACING STEEL PROTECTION PLATES FOR UTILITY FACILITIES**

### **A. Description**

Under this Section, the Contractor shall place permanent Steel protection plates supplied by the facility operator(s) over utility facilities where directed by the facility operator(s).

### **B. Materials**

Materials shall be supplied and delivered by the facility operator(s) at the job site or Construction Yard as directed by the Contractor.

### **C. Method of Construction**

Steel protection plates shall be placed in accordance with the attached facility operator(s) Standard Sketch # CET 403 A.

### **D. Method of Measurement**

The quantity for payment shall be the area of permanent steel plating protection installed and measured in Square Feet (S.F.).

### **E. Price to Cover**

The price shall cover the cost of all labor, material, equipment, insurance, and incidentals necessary to complete the work.

### **F. References**

1. Sketch CET 403A

## **CET 404 - PIER AND PLATE METHOD OF PROTECTION FOR DUCTILE IRON WATER MAINS AND OTHER SHALLOW FACILITIES**

### **A. Description**

Under this section the Contractor shall provide all labor, materials, equipment, insurance and incidentals required to protect ductile iron water mains that are installed with a cover of 24 inches or less crossing over various utility facilities. This section shall also apply for other facilities with shallow cover where protection plates are not sufficient and pier and plate method is required. The work shall be performed in accordance with the contract plans, specifications and at the direction of the facility operator(s), upon approval from the Resident Engineer.

### **B. Materials**

The Contractor shall supply all material (concrete, beams, plates, etc.) necessary to provide the pier and plate method of protection as shown on BWS Standard Drawing No. 46464-Z.

### **C. Method of Construction**

The Contractor shall provide pier and plate protection in accordance with BWS Standard Drawing No. 46464-Z. The Contractor shall support, maintain and accommodate the water main and all other utility facilities during the installation of the pier and plating components. The Contractor shall be solely and totally responsible for disturbances and/or any damages to such facilities.

### **D. Method of Measurement**

The quantity to be measured for payment shall be the additional amount of square foot (S.F.) of steel plate required to be installed to protect ductile iron water mains crossing over utility facilities with a cover of 24 inches or less, or for other shallow facilities where the pier and plate method may be required, as directed by the Facility Operator upon approval from the Resident Engineer.

### **E. Price to Cover**

The price shall cover the cost of all supervision, labor, material, equipment, and incidentals necessary to construct the specified method of protection. The work shall also cover the cost to cut, break and remove additional pavement, additional excavation, sheeting, maintenance of traffic, traffic plates, and to furnish and install additional backfill and pavement restoration. This item does not include the costs for special care excavation around utilities that are covered under separate items.

### **F. References**

1. BWS Standard Drawing No. 46464-Z

## **CET 500 - REMOVAL OF ABANDONED UTILITY CONDUITS (NON-CONCRETE ENCASED)**

### **A. Description**

Under this section, the Contractor shall provide all labor, materials, equipment, insurance and incidentals required to remove all abandoned conduit(s), including but not limited to:

1. Conduit(s) (non-concrete encased)

The work shall include the breaking, removal and disposal of conduits (all types excluding steel pipes) and including backfill with clean earth.

### **B. Materials**

All materials including but not limited to clean backfill shall be supplied by Contractor and approved by the facility operator(s).

### **C. Methods of Construction**

The facility operator(s) shall identify the locations of utilities that are abandoned within the contract area that are to be removed under this item. The authorized field representative of the facility operator shall certify in a timely manner acceptable to the which facilities are abandoned. The Contractor shall remove and properly dispose of all conduit(s) material encountered.

### **D. Method of Measurement**

The quantity to be measured for payment shall be the linear footage (L.F.) of total number of conduit(s) removed.

### **E. Price to Cover**

The price shall cover the cost of all labor, material, equipment, insurance and incidentals necessary to remove the abandoned conduit(s). The price shall also include the cost of removal and disposal of conduit(s); backfilling with clean earth approved by the facility operator(s); sealing the existing abandoned conduit(s) openings; and all other items necessary to perform all work incidentals thereto.

## **CET 500.1 - REMOVAL OF ABANDONED PVC CABLE TELEVISION DUCT BANKS ATTACHED TO THE PAVEMENT BASE, CONCRETE ENCASED**

### **A. Description**

Under this section, the Contractor shall provide all labor, materials, equipment, and incidentals required to remove all abandoned conduit(s), including but not limited to:

1. Concrete encased duct structure attached to the base pavement;

The work shall include the breaking, removal and disposal of PVC conduits, abandoned coaxial and fiber optic cable, and including backfill with clean earth and compaction.

### **B. Materials**

All materials including but not limited to clean backfill shall be supplied by Contractor and approved by the Resident Engineer in consultation with the facility operator(s).

### **C. Methods of Construction**

The facility operator(s) shall identify the locations of utilities that are abandoned within the contract area that are to be removed under this item. The authorized field representative of the facility operator shall certify in a timely manner acceptable to the Resident Engineer which facilities are abandoned. The Contractor shall remove and properly dispose of all conduit(s), concrete encasement and cable material encountered. A diagram of a typical duct bank is contained in CET Sketch 500.1.

### **D. Method of Measurement**

The quantity to be measured for payment shall be the linear footage (L.F.) of total number of duct bank removed, up to and including 2 - 1 ¼" PVC ducts contained therein, and as per typical configuration of ducts and encasement as shown on CET Sketch 500.1.

#### **E. Price to Cover**

The price shall cover the incremental cost of all labor, material, equipment and incidentals necessary to remove the abandoned duct bank(s), as necessary and in the course work under other contract items. The price shall also include the cost of removal and disposal of conduit(s); backfilling with clean earth approved by the Resident Engineer in consultation with the facility operator(s); insurance; sealing the existing abandoned conduit(s) openings, as necessary; clean earth fill; compaction, and all other items necessary to perform all work incidental thereto.

## **CET 501 - REMOVAL OF ABANDONED MASONRY FOR UTILITY FACILITIES**

### **A. Description**

Under this Section the Contractor shall provide all labor, materials, equipment, insurance and incidentals required to remove all abandoned plain or reinforced concrete and/or masonry including but not limited to:

1. Abandoned Utility Manholes and Service Boxes;
2. Concrete (Fully or Partially Encased) Conduit Banks

The work shall include the breaking, removal and disposal of plain or reinforced masonry, and including backfill with clean earth.

### **B. Materials**

Clean backfill to fill voids shall be supplied by the Contractor and approved by the facility operator(s).

### **C. Methods of Construction**

The facility operator(s) shall identify the locations of utilities abandoned within the trench area that are to be removed under this item. The authorized field representative of the Facility Operator shall certify in a timely manner which facilities are abandoned. The contractor shall remove and properly dispose of all material encountered.

### **D. Method of Measurement**

The quantity to be measured for payment shall be the actual volume of plain or reinforced concrete and/or masonry removed measured in Cubic Yards (C.Y.). No deduction will be made for conduit(s) openings in concrete encased conduit lines.

### **E. Price to Cover**

The price shall cover the cost of all labor, material, equipment, and incidentals necessary to remove the abandoned masonry and/or concrete without disruption of service to the customers and in accordance with contract documents. The price bid shall also include the cost: of removal and disposal of all materials, backfilling with clean earth, sealing the existing abandoned conduit openings in manholes if required; and all other items necessary to perform all work incidental thereto.

## **CET 501.1 - REMOVAL OF ABANDONED CABLE TELEVISION SIDEWALK PULL BOXES**

### **A. Description**

Under this Section the Contractor shall provide all labor, materials, equipment and incidentals required to remove all abandoned cable television pull boxes including but not limited to:

1. Abandoned pull box boxes, frames and covers;
2. Sealing the existing abandoned conduit openings, as necessary;

The work shall include the breaking of sidewalk, temporary restoration of pavement (as necessary), removal and disposal of the pull box and related hardware, and including backfill with clean earth and compaction.

### **B. Materials**

Clean backfill to fill voids shall be supplied by the Contractor and approved by the Resident Engineer in consultation with the facility operator(s).

### **C. Methods of Construction**

The facility operator(s) shall identify the locations of pull boxes abandoned within the contract limits that are to be removed under this item. The authorized field representative of the Facility Operator shall certify in a timely manner acceptable to the Resident Engineer which facilities are abandoned. The contractor shall remove and properly dispose of all material encountered. A diagram of a typical cable television pull box is contained in CET Sketch 501.1.

### **D. Method of Measurement**

The quantity to be measured for payment shall be the number of pull boxes each (EA) to be removed and disposed of.

**E. Price to Cover**

The price shall cover the incremental cost of all labor, material, equipment, and incidentals necessary to remove the abandoned pull box and/or surrounding sidewalk and in accordance with contract documents, as necessary and in the course work under other contract items. The price bid shall also include the cost: of removal and disposal of all materials, backfilling with clean earth approved by the Resident Engineer in consultation with the facility operator(s) sealing the existing abandoned conduit openings in manholes if required; and all other items necessary to perform all work incidental thereto.



## **CET 501.2 - ADJUSTMENT OF CABLE TELEVISION SIDEWALK PULL BOXES**

### **A. Description**

Under this Section the Contractor shall provide all labor, materials, equipment and incidentals required to adjust cable television pull boxes including but not limited to:

1. Adjustment of existing modular, one-piece pull boxes, frames and covers, located in the sidewalk;
2. Maintenance of existing active cables and facilities, as per the Facility Operator.

The work shall include the breaking of sidewalk; maintenance and protection of traffic; excavation; support and maintenance of the existing pull box, cables and related hardware during excavation; vertical adjustment of the entire box to proposed grades; reconnection of attached ducts; furnish and install any incidental industry-standard hardware, material or couplings; disposal of any incidental debris or hardware; backfill with clean earth and compaction; temporary restoration of pavement (as necessary). Adjustment and realignment of attached ducts shall be paid under separate CET items 401, 402 and 403.

### **B. Materials**

Clean backfill and any incidental hardware or material shall be supplied by the Contractor and approved by the Facility Operator.

### **C. Methods of Construction**

The facility operator shall identify the locations of pull boxes to be relocated within the contract limits under this item. The authorized field representative of the Facility Operator shall certify in a timely manner acceptable to the Resident Engineer, which facilities are to be relocated. The contractor shall remove and properly dispose of all extraneous material encountered. A diagram of typical cable television pull boxes are contained in CET Sketch 501.1.

**D. Method of Measurement**

The quantity to be measured for payment shall be the number of pull boxes each (EA) to be relocated.

**E. Price to Cover**

The price shall cover the incremental cost of all labor, material, equipment, and incidentals necessary to adjust the pull box and restore surrounding pavement or sidewalk without disruption of service to the customers and in accordance with contract documents, as necessary and in the course work under other contract items. The price bid shall also include the cost of: insurance; adjusting the location of the pull box; excavation; maintenance and protection of traffic; maintenance and support of the box and related facilities and cables; removal and disposal of all materials, backfilling with clean earth approved by the Resident Engineer in consultation with the facility operator(s); and all other items necessary to perform all work incidental thereto.

## **CET 600 - INSTALL CONDUIT IN UNPAVED AREA**

### **A. Description**

Under this Section, the Contractor shall provide all labor, materials, equipment, insurance and incidentals required to install conduit in an unpaved area for the purpose of installing the facility operator's utilities. For the purpose of this item, "Unpaved Area" shall be defined as an area where sidewalk or roadway pavement has been removed/excavated as part of this contract under other contract item(s).

### **B. Materials**

The Contractor shall supply all material (Mortar, Brick, etc.) to make repairs to opening(s) as approved by the facility operator. All conduit including sleeves, couplings, pulling lines, etc. shall be supplied to the Contractors requested location by the facility operator for work under this item.

### **C. Method of Construction**

The Contractor shall excavate a trench, as shown on Sketches CET 600.1-A and CET 600.2-A to install conduit in an unpaved area from designated facility operator service points and/or structures to City-owned boxes, street light and traffic light foundations, install said conduit, 'rod, mandrel and wire' the new conduits (install pulling lines), and backfill and compact with the existing trench materials removed, in accordance with the contract plans and specifications. When conduit pipes are to be connected to existing underground ducts, manholes, or boxes, the Contractor, using hand-held tools only, shall cut existing conduit, to pick-up existing underground conduits with new conduits, make openings into manholes or boxes, install/connect the conduit, and make repairs to seal the openings in the structure. The work shall be performed in accordance with the contract plans, specifications, and at the directions of the facility operator.

### **D. Method of Measurement**

The quantity to be measured for payment shall be the number of linear feet (LF) of conduit trench:

1. 600.1 - Install 1 ea. 2", 4" or 5" Conduit (all types) in unpaved area.
2. 600.2 - Install 2 ea. 2", 4" or 5" Conduits (all types) in unpaved area.
3. 600.3 - Install 4 ea. 4" or 5" Conduits (all types) in unpaved area.
4. 600.4 - Install 6 ea. 4" or 5" Conduits (all types) in unpaved area.
5. 600.5 - Install 8 ea. 4" or 5" Conduits (all types) in unpaved area.

### **E. Price to Cover**

The unit price per linear foot of Conduit trench shall cover the cost of all labor, materials, equipment, insurance and incidentals necessary to unload, store, handle, excavate, install, backfill, compact, rod, mandrel, wire and perform any other associated work required to install the conduit completely in place. Where conduits are to be connected to ducts, manholes or boxes, the cost of cutting and/or breaking into the ducts, manholes or boxes, installing and sealing the conduit; and making

repairs to the openings in the structure shall be considered as included in the unit price bid for the installation of the conduit. No additional payment will be made if the Contractor elects to perform this work prior to roadway and/or sidewalk being removed under other contract items.

**F. References**

1. Sketches CET 600.1A and CET 600.2A

## **CET 601 - INSTALL CONDUIT IN PAVED AREA**

### **A. Description**

Under this Section, the Contractor shall provide all labor, materials, equipment, insurance, and incidentals required to install conduit in a paved area for the purpose of installing the facility operator's utilities. For the purpose of this item, "Paved Area" shall be defined as an area where the sidewalk or roadway pavement has not been removed/excavated as part of this contract under other contract item(s).

### **B. Materials**

The Contractor shall supply all material (Mortar, Brick, etc.) to make repairs to opening(s) as approved by the facility operator. All conduit including sleeves, couplings, pulling lines, etc. shall be supplied to the Contractors requested location by the facility operator for work under this item.

### **C. Method of Construction**

The Contractor shall saw cut and/or break and remove existing asphalt and concrete, excavate a trench, as shown on Sketches CET 601.1-A and CET 601.2-A to install conduit in a paved area from designated facility operator service points and/or structures to other facility structures, City-owned boxes, street light and traffic light foundations. The Contractor shall install the specified conduit, rod, and mandrel and wire the new conduits (install pulling lines), and backfill and compact with the existing trench materials and provide temporary and/or permanent restoration in accordance with the contract plans and specifications. When conduit pipes are to be connected to existing underground ducts, manholes, or boxes, the Contractor, using hand-held tools only, shall cut existing conduit, to pick-up existing underground conduits with new conduits, make openings into manholes or boxes, install/connect the conduit, and make repairs to seal the openings in the structure.

The work shall be performed in accordance with the contract plans, specifications, and at the directions of the facility operator.

### **D. Methods of Measurement**

The quantity to be measured for payment shall be the number of linear feet (LF) of conduit trench:

1. 601.1 - Install 1 ea. 2", 4" or 5" Conduit (all types) in paved area.
2. 601.2 - Install 2 ea. 2", 4" or 5" Conduits (all types) in paved area.
3. 601.3 - Install 4 ea. 4" or 5" Conduits (all types) in paved area.
4. 601.4 - Install 6 ea. 4" or 5" Conduits (all types) in paved area.
5. 601.5 - Install 8 ea. 4" or 5" Conduits (all types) in paved area.

### **E. Price to Cover**

The unit price per linear foot of Conduit trench in paved area shall cover the cost of all labor, materials, equipment, insurance and incidentals necessary to unload, store, handle, excavate, install, backfill, compact, rod, rope, and perform any other

associated work required to install the conduit completely in place. Where conduits are to be connected to ducts, manholes or boxes, the cost of cutting and/or breaking into the ducts, manholes or boxes, installing and sealing the conduit; and making repairs to the openings in the structure shall be considered as included in the unit price bid for the installation of the conduit. The price shall also include the cost of temporary and/or permanent pavements and sidewalk restoration necessary to meet the contract requirements.

**F. References**

Sketches CET 601.1-A and CET 601.2-A

## **CET 636 E - ADJUSTMENT OF UTILITY HARDWARE**

This section describes the work of adjusting existing utility manholes, street hardware including vaults, etc., and valve boxes to the proposed grade by either building up or lowering the installation and resetting the castings, as and where directed by the facility operator.

### **A. Description**

Building up or lowering the installation and resetting the castings shall consist of removing the existing frame and cover, building up or decreasing the existing installation, replacing the frame and/or cover if damaged, as determined by the facility operator, with a new frame and/or cover furnished by the facility operator, and setting the frame and cover to the new elevation.

### **B. Materials**

Materials used shall comply with the Standards of the facility operator having jurisdiction over the installations. Where high-early strength concrete is required by the Resident Engineer to be placed adjacent to utility installations then the requirement for mortar shall be quick setting mortar capable of obtaining a minimum compressive strength of 1,500 psi in two (2) hours, and the requirement for concrete shall be high-early strength complying with current N.Y. State Department of Transportation, Standard Specifications for Class F concrete.

New castings of the various sizes required and deemed by the facility operator to be replaced shall be furnished by the facility operator to the Contractor. The Contractor shall be required to inform the Utility in advance of the need for the castings. Materials supplied by the facility operator shall be delivered to the contractor's designated storage area. Contractor shall comply with Sections 2 and 3 of the General Provisions.

### **C. Methods of Construction**

The Contractor shall breakout and dispose of sidewalk, curb, pavement and/or pavement base around existing casting, excavate as required to remove casting and install existing or replacement casting, remove casting, protect opening, reinstall existing casting or install new casting to the proposed grades, backfill, grade and compact fill around casting, install base concrete and or sidewalk pavement and curb, tack coat around frame, install and remove temporary pavement around casting where directed by the facility operator; and install and compact asphalt binder and wearing course or other permanent pavement around casting and perform all work in accordance with the contract plans and the specifications.

Setting or resetting the castings shall be done with bricks plus mortar and/or by raising or lowering adjustable castings according to the standards of the utility owner having jurisdiction over the installation. Work shall be done in a workmanlike manner. Any damage resulting from the Contractor's operations to the existing installation which is to remain shall be satisfactorily corrected at the Contractor's own expense, as directed by the facility operator. Castings, which are deemed

unacceptable for resetting, shall become the property of the Contractor and shall be removed and disposed of by him away from the site.

No traffic shall be allowed on adjusted utility hardware until permitted by the facility operator.

#### **D. Method of Measurement**

The quantity to be measured for payment shall be the number of utility hardware units (EA) in each size group actually adjusted as specified under each item. The size of each utility hardware unit, measured in width, shall be defined as either the diameter of circular covers, the major axis of elliptical covers, or the larger length or width of rectangular covers.

1. Item 636 EA - Adjustment of Utility Hardware  
(Under 7" Width)
2. Item 636 EB - Adjustment of Utility Hardware  
(7" to under 14" Width)
3. Item 636 EC - Adjustment of Utility Hardware  
(14" to under 30" Width)
4. Item 636 ED - Adjustment of Utility Hardware  
(30" to under 34" Width)
5. Item 636 EE - Adjustment of Utility Hardware  
(34" to under 41" Width)
6. Item 636 EG - Adjustment of Utility Hardware  
(41" to under 75" Width)
7. Item 636 EH - Adjustment of Utility Hardware  
(75" to under 125" Width)
8. Item 636 EI - Adjustment of Utility Hardware  
(125" to under 170" Width)

#### **E. Price to Cover**

The price for regrading utility hardware shall be the unit price per each and shall cover the cost of furnishing all labor, materials, plant, equipment, maintenance and protection of traffic, and incidentals required to remove existing frames and covers; build up the existing installations with brick and mortar, or lower the existing installations by removing bricks and mortar; replace damaged frames and/or covers with frames and/or covers furnished by others; break out pavement and/or pavement base; protect existing opening and installation; set the frames and covers to new elevations; grade and compact fill; install base concrete; tack coat frame; install, remove, and dispose temporary pavement; install and compact asphalt binder and wearing course or other permanent pavement; repair minor structural damage to existing installations prior to resetting frames; unloading of furnished castings at the Contractor's yard and transporting castings from the Contractor's yard to the job site as required; and complete the work in accordance with the plans, the specifications, and the directions of the facility operator.

#### **A. References**

1. NYS DOT Standard Specs for Class F. Concrete



## **CET 636 M - MODIFICATION OF WORK METHODS TO ACCOMMODATE UTILITY HARDWARE DURING PAVEMENT MILLING AND RESURFACING OPERATIONS**

### **A. Description**

Under this section, the Contractor shall provide all labor, materials, equipment, insurance, and incidentals required to maintain, protect, and accommodate the integrity of utility hardware during pavement milling and resurfacing operations. Hardware includes castings, frames, and covers on utility structures, valve box cover castings, concrete collars around steam castings, and all other hardware protecting utility facilities.

### **B. Materials – N/A**

### **C. Method of Construction**

Removal of existing pavement around utility hardware shall be performed by the Contractor with extreme caution by utilizing appropriate methods of operation, by employing specialized construction equipment, and by special operations and sequencing.

The Contractor shall not mill existing pavement within 12" of the perimeter of utility hardware. Removal of pavement within 12" of the perimeter of utility hardware shall be by cutting with pavement breakers or other methods as proposed by the Contractor. All methods shall be presented to the facility operator by the Contractor prior to the start of construction and shall be approved by the facility operator.

During removal of existing pavement and for the duration of project, the Contractor shall protect utility hardware from damage by the Contractor's operations and traffic. Contractor shall also provide all necessary protection to pedestrians to prevent injury to pedestrians when crossing utility hardware during the project. Utility street hardware damaged by the Contractor or others during the project shall be replaced by the Contractor at Contractor's expense.

The Contractor shall not place any paving materials over utility hardware during the project.

### **D. Method of Measurement**

The quantity to be measured for payment shall be the number of utility hardware units (ea) in each size group actually adjusted as specified under each item. The size of each hardware unit, measured in width, shall be defined as either the diameter of circular covers, the major axis of elliptical covers, or the larger length or width of rectangular covers.

1. Item 636 MA – Modification of Work Methods to Accommodate Utility Hardware  
(Under 7" Width)
2. Item 636 MB – Modification of Work Methods to Accommodate Utility Hardware  
(7" to under 14" Width)

3. Item 636 MC – Modification of Work Methods to Accommodate Utility Hardware (14" to under 30" Width)
4. Item 636 MD – Modification of Work Methods to Accommodate Utility Hardware (30" to under 34" Width)
5. Item 636 ME – Modification of Work Methods to Accommodate Utility Hardware (34" to under 41" Width)
6. Item 636 MG – Modification of Work Methods to Accommodate Utility Hardware (41" to under 75" Width)
7. Item 636 MH – Modification of Work Methods to Accommodate Utility Hardware (75" to under 125" Width)
8. Item 636 MI – Modification of Work Methods to Accommodate Utility Hardware (125" to under 170" Width)
9. Item 636 SMB – Modification of Work Methods to Accommodate Utility Steam Hardware (Under and including 8" Width)
10. Item 636 SMC – Modification of Work Methods to Accommodate Utility Steam Hardware (Above 8" to 34" Width)

**A. Price to Cover**

The price to modify work methods to accommodate Utility Hardware during pavement milling and resurfacing operations shall include the cost of all incremental labor, materials, time, equipment, insurance and incidentals required for removal and disposal of existing pavement, installation and compaction of base and wearing course materials, installation and compaction and removal of temporary asphalt concrete mixture, tack coating; in accordance with the plans, the specifications and the directions of the facility operator. The price to cover shall further include the cost of maintaining, protecting, and accommodating the integrity of utility street hardware during the project and during the performance of milling and resurfacing and the incremental additional work and effort made necessary to protect pedestrians from injury when crossing utility hardware during the project. The price to cover shall further include additional areas of modification of work methods beyond 12" of the perimeter of the utility street hardware due to the milling equipment and the location of other utility hardware, city street hardware, utility poles, street lights, traffic signals, curbs, sidewalks, medians, guide rails, pavement stops, cobblestones, and pavers. The price to cover for Items 636 SMB and 636 SMC shall also include modification of work methods due to existing concrete collars surrounding these castings.

Payment for all work herein specified shall be made on a one-time basis only; no payment for work herein specified shall be made for the same area more than one time. Adjustment to utility hardware shall be paid for under the appropriate 636E item.

**F. References**

1. CET 636E

## **CET 636 RM - REBUILDING AND MODIFICATIONS TO UTILITY STRUCTURES**

This section describes the work of performing the rebuilding of utility structures by rebuilding the existing structures using methods approved by the facility operator. This section also describes the work of performing modifications to utility structures to accommodate changes in roadway or sidewalk grades that cannot be accomplished by adjustment of frames and covers, as described by Section 636 E, in the judgment of the facility operator. The existing structures shall be modified using methods approved by the facility operator.

### **A. Description**

Rebuilding and or modifications of utility structures, which include boxes, manholes, vaults and valve boxes; shall be as directed by the facility operator and for structures with a monolithic roof shall include:

- Removing the existing frame and cover, followed by
- Demolition of all or a portion of the walls, floor, and monolithic roof, followed by
- Rebuilding of all or a portion of the floor, followed by
- Rebuilding:
  - A portion of the walls or
  - A portion of the walls plus a vertical extension or
  - All of the walls or
  - All of the walls plus a vertical extension, followed by
- Rebuilding all or a portion of the monolithic roof or replacement with a non-monolithic roof.

Rebuilding and or modifications of utility structures, which include boxes, manholes, vaults and valve boxes; shall be as directed by the facility operator and for structures with a non-monolithic roof shall include:

- Removing the existing frame, cover, and roof slab, followed by
- Demolition of all or a portion of the walls and floor, followed by
- Rebuilding:
  - A portion of the walls or
  - A portion of the walls plus a vertical extension or
  - All of the walls or
  - All of the walls plus a vertical extension, followed by
- Installation of the existing roof slab or a new non-monolithic roof slab.

### **B. Materials**

All materials used shall comply with the standards of the facility operator. The Contractor shall obtain pre-cast roofs that are available from a facility operator's vendor from that vendor.

### **C. Method of Construction**

All work shall comply with the specifications, plans, and standards of the facility operator.

The Contractor shall perform the necessary rebuilding of the floor, walls, and roof of the existing utility structure as directed by the facility operator. New roof slabs shall be monolithic or non-monolithic as directed by the facility operator. New non-monolithic roofs shall be removable and cast on site or pre-cast as directed by the facility operator. No traffic shall be allowed on modified structures until permitted by the facility operator.

The Contractor shall perform the necessary modifications to the walls and roof of the existing utility structure to accommodate changes in roadway or sidewalk grades that cannot be accomplished by the adjustment of frames and covers as directed by the facility operator. New roof slabs shall monolithic or non-monolithic as directed by the facility operator. New non-monolithic roofs shall be removable and cast on site or pre-cast as directed by the facility operator. No traffic shall be allowed on modified structures until permitted by the facility operator.

Adjusting existing or new frames and covers shall be as described in CET 636E.

All work shall be done in a workmanlike manner and any damage resulting from the Contractor's operations shall be satisfactorily corrected as directed by the facility operator and at the Contractor's expense.

### **D. Method of Measurement**

The quantity to be measured for payment shall be the number of cubic yards (CY) of concrete, pre-cast concrete, brick, and mortar in place to the nearest hundredth of a cubic yard. No deductions will be made for the spaces occupied by steel reinforcement.

### **E. Price to Cover**

The contract price bid under this item shall be a unit price per cubic yard (CY) of concrete, pre-cast concrete, brick, and mortar placed in the utility structure. The unit price shall cover the cost of all labor, materials, plant, equipment, insurance, maintenance and protection of traffic and incidentals required to rebuild or modify privately owned utility structures, including all pavement breaking, pavement removal and disposal, excavation, haul away, and disposal, furnish and install and compact backfill, sheeting and bracing, removing of frames and covers. The price shall also include demolition of the private utility structure, haul away and disposal of demolished materials, formwork, installation of concrete, bricks, mortar, steel reinforcement, structural steel beams, furnish and install pre-cast roofs, removal and installation of interior hardware, support and protection of all utility facilities within the excavation and structure, and the furnishing of samples, as required. All work shall comply with the plans, specifications, standards, and directions of the facility operator. Resetting of new or existing street hardware shall be paid under CET 636E.

### **F. References**

1. CET 636E

## **CET 636 RS - STRUCTURAL REPAIR TO UTILITY STRUCTURES**

This section describes the work of performing the necessary repairs to utility structures by repairing the existing structures using methods approved by the facility operator.

### **A. Description**

Repairs of utility structures, which include boxes, manholes, vaults and valve boxes, shall consist of removing the existing frame and cover followed by repairing the existing walls, floors, and roof as directed by the facility operator. Repairs shall include removing and repairing spalled and loose concrete, removing and replacing or resetting loose bricks, and repairing of damaged surfaces in the area where the chimney or street hardware frame rests on the privately owned utility structure, and similar repairs as directed by the facility operator.

### **B. Materials**

All materials used shall comply with the standards of the facility operator.

### **C. Methods of Construction**

All work shall comply with the specifications, plans, and standards of the facility operator. The Contractor shall perform the necessary repairs to the floor, walls and roof of the existing utility structure as directed by the facility operator. No traffic shall be allowed on repaired structures until permitted by the facility operator.

Adjusting existing or new frames and covers shall be as described in CET 636E.

All work shall be done in a workmanlike manner and any damage resulting from the Contractor's operations shall be satisfactorily corrected as directed by the facility operator and at the Contractor's expense.

### **D. Method of Measurement**

The quantity to be measured for payment shall be the number of cubic yards (CY) of concrete and brick and mortar in place to the nearest hundredth of a cubic yard. No deductions will be made for the spaces occupied by steel reinforcement.

### **E. Price to Cover**

The contract price bid under this item shall be a unit price per cubic yard (CY) of concrete, brick, and mortar placed in the utility structure. The unit price shall cover the cost of all labor, materials, plant, equipment, insurance, maintenance and protection of traffic, and incidentals required to repair utility structures including all pavement breaking, pavement removal and disposal, excavation, haul away, and disposal, furnish and install and compact backfill, necessary to remove the frame and cover. The price shall also include removal of all damaged, spalled and loose concrete, bricks, and mortar, formwork, installation of concrete, bricks, and mortar, support and protection of all utility facilities within the structure, and the furnishing of samples, as required. All work shall comply with the plans, specifications, standards

and directions of the facility operator. Resetting of new or existing street hardware shall be paid under Section 636E.

**F. References**

1. CET 636E