

RIVERSIDE SQUARE LIGHTING

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SECTION 01010

SUMMARY OF WORK

PART 1.00 - GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

A. The work under this Contract includes, but is not limited to the following:

1. Contractor shall perform design, permit and construction services to provide the City turn-key lighting at the following location and as shown on the attached plan:

Riverside Square - furnish and install, including all excavation and backfilling, for new lighting service pedestal cabinet, meter socket and bypass, load center, timeclock, photo cell and precast foundation, demolition of existing wood stanchioned power and reconnection to new lighting pedestal, underground conduit, wiring and handholes including all excavation for 2-inch schedule 40 PVC conduit, #10 THHN provided with separate circuits for lights and outlets, 4 handholes (Oldcastle enclosure irrigation type), 23 poles (15-feet tall) by Energy Light Inc., square steel, 4 inch width, 11 gauge dark bronze with base plate, anchor bolts, etc., foundations precast 48-inch by 18-inch square, 3 poles, 1 per area provided with GFCI exterior outlets and string lights (345-feet). City to assist with conduit installation under bike path by using trenchless technology.

The project shall include at least three circuits. One for the existing Christmas tree, one for the electric outlets and one for the string lights. The Christmas tree shall be controlled with the timer and the string lights shall be controlled with the photocell. The city will provide the UBICell smart lighting control to be provided by the City. Smart controller to be connected on a 7-pin adapter for the photo cell.

Contractor to obtain all permits, and call in all inspections and dig-safes.

Contractor shall backfill and compact all excavations and shall loam and seed all excavations.

2. The contractor shall apply for and obtain all local building permits and electrical permits. The assessed permit fee shall be for the State ADA fee which is \$1/\$1000. Local permit fees will be waived. The contractor is responsible for all permits issued by National Grid Electric and their associated fees as well as obtain a utility permit from RIDOT and pay associated fee if applicable for municipal projects.
3. The contractor shall be responsible for the installation of all light pole bases.

4. Contractor shall verify all conduit size and wire gauges shown on the plans for each location. Shop drawings for all materials, including but not limited to service boxes, pedestals, outlets, timers, etc. shall be submitted and approved as part of the permit package. All equipment shall be rated for outdoor use.
  5. Contractor shall be responsible for digging for all electrical conduit and equipment, backfilling with approved material, loam and seed. Digging shall minimize disturbance of the area. City will assist with trenchless technology to install conduit below the bike path.
  6. Contractor shall be responsible for all temporary construction fencing to keep the public safe from the work area.
  7. Contractor shall install erosion control measures where appropriate.
  8. Provide and maintain a safe pedestrian walking path in the general area of the existing walking path if applicable.
  9. Perform miscellaneous work and clean up as required to complete the project as listed in these contract documents.
  10. Attend weekly project status meetings with City Officials to discuss schedule and quantities.
- B. Clean up of the area after construction is considered part of the work covered under the lump sum cost. Unsatisfactory clean up shall be grounds for withholding payment for payment, as directed by the CITY.
- C. Related Requirements Specified Elsewhere:
1. Temporary Facilities and Controls - Section 01500.
- D. Contractor's Duties:
1. Except as specifically noted, provide and pay for:
    - a. Labor (Davis-Bacon wages), materials and equipment
    - b. Tools, construction equipment and machinery
    - c. Transportation, supervision and temporary construction
    - d. Water, heat and utilities required for construction
    - e. Other facilities and services necessary for proper execution and completion of work

2. CITY is exempt from sales taxes on products permanently incorporated in work.
  - a. Perform all administrative functions required by law in conjunction with use of the CITY's tax exempt blanket certificate.
  - b. Pay legally assessed penalties for improper use of exemption certificate.
3. Secure and pay for, as necessary for proper execution and completion of work, and as applicable at any time of receipt of bids:
  - a. National Grid Permits (RICRMC and RIDEM Permits Excluded)
  - b. Government Fees (local fees will be waived)
  - c. Licenses
4. Give required notices and provide the CITY with the DIGSAFE number for work under this contract.
5. Comply with Local, State and Federal codes, ordinances, rules, regulations, orders and other legal requirements of public authorities which bear on performance of work.
6. CONTRACTOR shall be responsible for compliance with all pertinent OSHA regulations.
7. Promptly submit written notice to CITY of observed variance of CONTRACT DOCUMENTS from legal requirements. It is not the CONTRACTOR's responsibility to make certain that drawings and specifications comply with codes and regulations.
  - a. Appropriate Modifications to Contract Documents will adjust changes.
  - b. CONTRACTOR shall assume responsibility for notifying CITY concerning work known to be contrary to such requirements.
8. Enforce strict discipline and good order among employees. Do not employ on work:
  - a. Unfit persons
  - b. Persons not skilled in assigned task.
9. No valve or other control on the City's water system shall be operated for any purpose by the CONTRACTOR. The Water Utility Division (435-7741) will operate all valves, hydrants, blow-offs and curb stops.

10. CONTRACTOR shall lay out all the contract work and be responsible for the accuracy of all lines, grades and measurements. The Contractor shall guarantee no ponding or puddling within the completed work zones.
11. CONTRACTOR is responsible for notifying DIGSAFE (1-888-DIG-SAFE) in accordance with State law prior to commencing any earthwork activities.
12. CONTRACTOR shall be prepared to attend a pre-construction meeting within ten (10) days after date of Notice to Proceed. The agenda of the pre-construction meeting shall include but not be limited to:
  - a. Presentation of project construction schedule and work sequencing
  - b. Project coordination and designation of responsible personnel
  - c. Use of subcontractors
  - d. Emergency telephone numbers
  - e. Procedures and processing of field decisions, submittals, change orders, applications for payment
  - f. Construction facilities, controls and equipment storage
  - g. Safety and traffic issues
  - h. Place, date and time for regular progress meetings.
13. CONTRACTOR shall be prepared to attend regular scheduled progress meetings. Progress meetings shall be held on weekly basis or as discussed and agreed upon at the pre-construction meeting. The agenda for the progress meetings shall include but not be limited to:
  - a. Review of work progress since previous meeting
  - b. Field observations, problems, conflicts
  - c. Work progress in relation to schedule. Revision of schedule if required
  - d. Review of quantities for completed work
  - e. Proposed changes to work, if any
  - f. Other issues.

1.02 - CONTRACT

- A. Construct work under lump sum contract.
- B. CONTRACTOR is to begin work within ten (10) days after the date of the NOTICE TO PROCEED and shall complete the work within 90 consecutive calendar days. The CITY has the right to extend this schedule as a result of ongoing utility work.
- C. The time for completion noted above has been developed on the assumption that work will continue during the winter months. Winter shutdown shall be defined as the period from November 1<sup>st</sup> through the following April 1<sup>st</sup>. The CONTRACTOR shall plan on working through the typical winter shutdown period unless otherwise directed by the CITY.
- D. The winter shutdown dates are subject to change depending upon weather conditions and for the work to meet the environmental conditions as specified in Section 02600 (1.01.C) and Section 02630 (1.01.C) of these Specifications.
- E. The CITY shall notify the CONTRACTOR in writing if there is a change in the winter shutdown period due to weather, environmental or other conditions which preclude the work from being executed in accordance with these Documents.

1.03 - CONSTRUCTION SCHEDULE AND SEQUENCE OF WORK

- A. The CONTRACTOR shall submit to the CITY for approval a detailed work sequence and schedule for the completion of all work associated with this contract. Approval of the work sequence and schedule is required prior to the start of any work associated with this contract. The proposed sequence and schedule must consider and address the safe pedestrian and vehicle passage through the project and vehicle and pedestrian access to the abutting properties and side streets. The CITY reserves the right to adjust the sequence and schedule at any time at no cost to the CITY.
- B. Construction by the CONTRACTOR shall be limited to the hours of 7:00 AM to 4:00 PM Monday through Friday. Work after 4:00 PM will only be allowed with prior approval by the Director of Public Works. No work shall take place on Saturdays, Sundays or on the following holidays:
  - 1. Memorial Day (Monday, May 29, 2023)
  - 2. Independence Day (Tuesday July 4, 2023)
  - 3. Victory Day (Monday, August 14, 2023)
  - 4. Labor Day (Monday, September 4, 2023)
  - 5. Columbus Day (Monday, October 9, 2023)
  - 6. Election Day (N/A)
  - 7. Veterans Day (Friday, November 10, 2023)
  - 8. Thanksgiving Day (Thursday, November 24, 2022)

9. Christmas Eve and Christmas Day (Friday Dec 23, Monday Dec 26, 2022)
10. New Year's Eve and New Year's Day (Friday Dec 30 2022 and Monday Jan 2, 2023)
11. Martin Luther King Jr Day (Monday Jan 16, 2023)
12. President's Day February (Monday February 20, 2023)

- C. CONTRACTOR shall be aware of any CITY, civic or church/funeral events. If a designated street is within the area of an event, work must be scheduled around the event so as not to impede vehicular or pedestrian traffic.

#### 1.04 - CONTRACTOR USE OF PREMISES

- A. Confine operations at site to areas permitted by:
1. Law
  2. Ordinances
  3. Permits
  4. Contract Documents
- B. Do not unreasonably encumber site with materials or equipment.
- C. Assume full responsibility for protection and safekeeping of products stored on premises.
- D. Move any stored products which interfere with operations of CITY and other Contractors.
- E. Obtain and pay for use of additional storage or work areas needed for operations.
- F. Remove all surplus material, temporary structures, and debris resulting from the work and put the site in a neat, orderly condition before final payment.
- G. Assume full responsibility to maintain roadway safe for vehicular and pedestrian traffic during construction.

END OF SECTION

SECTION 01150

MEASUREMENT AND PAYMENT

PART 1.00 - GENERAL

1.01 PAYMENT GENERAL

- A. Payment of the price set forth in the proposal is deemed to be full compensation for all mobilization and demobilization, materials, labor, tools, equipment and incidentals necessary to perform the work.
- B. It is the intention of these specifications and associated contract drawings to call attention to certain project features. Any related miscellaneous or incidental work not specified but obviously necessary to adequately complete the work, shall be included within the LUMP SUM Price.

1.02 LUMP SUM

A. Payment

Payment will be based on percent complete. The lump sum price is based upon the Contactor constructing the Riverside Square Lighting in accordance with the plans, specifications and section 01010 Summary of Work.

1.03 WORK BEYOND SCOPE OF CONTRACT

A. Measurement and Payment

1. Necessary work outside the scope of this contract shall be undertaken only after submittal and approval of a change order request. Payment for work completed as part of any change order shall conform to the following.
  - **LABOR** including foreman, not including superintendent, to include all insurance and fringe benefits such as social security, pension, unemployment, etc.
  - **COST OF MATERIALS** entering permanently into the work. All invoices must be submitted to the City.
  - **THE RENTAL COSTS** of all construction plant and equipment used in performing this work. Blue Book rates will be used.
  - **POWER AND CONSUMABLE SUPPLIES** for the operation of power equipment.



1.04 APPLICATION FOR PAYMENT

- A. CONTRACTOR shall submit an Application for Payment for completed work in accordance with Article 8, Payments to Contractor, on a monthly basis.
- B. Application for Payment may be submitted using standard AIA Original Document G702, or other agreed upon format.
- C. Application for Payment shall include an itemized breakdown of work completed in tabular form with the following information: Description of Work, Total Cost, Quantity for Payment this Application, Quantity Previously Paid, Quantity to Date, Amount this Application, Amount Previous Application, Amount Paid to Date, Percent Complete.
- D. Each Application for Payment shall be accompanied by a Work Summary Sheet detailing quantities installed at each location for the application period.
- E. Certified weekly payroll documents shall be included with the payment request.

END OF SECTION

SECTION 01500

TEMPORARY FACILITIES AND CONTROLS

PART 1.00 - GENERAL

1.01 DESCRIPTION

A. Related Work Described Elsewhere:

1. Summary of Work - Section 01010

1.02 TEMPORARY UTILITIES

A. Light, Electricity and Telephone:

Furnish and install all necessary temporary water piping and wiring required to facilitate performance and completion of the work and remove all such temporary piping and wiring upon completion of the work. Pay all costs for providing and removing temporary utilities.

B. Sanitary Facilities:

1. Furnish and install sanitary conveniences for the use of all persons employed on the work, properly screened from public observation. Provide facilities in sufficient numbers in such manner and at such points as shall be approved. The contents shall be removed and disposed of in a satisfactory manner as the occasion requires. The CONTRACTOR shall vigorously prohibit the committance of nuisances within, on, or about the work. Any employees found violating these provisions shall be discharged and not again employed on the work without the written consent of the CITY.
2. The CONTRACTOR shall supply sufficient drinking water from approved sources to all of his employees.
3. The sanitary conveniences specified above shall be the obligation and responsibility of the CONTRACTOR until the completion of the work. The facilities shall be made available to all subcontractors and their employees.

C. Water for Construction Purposes:

1. The express approval of the Water Utilities Superintendent shall be obtained before water is used. Waste of water by the CONTRACTOR shall be sufficient cause for withdrawing the privilege of use. Hydrants shall only be operated under the supervision of Water Utilities Division personnel.

All water used shall be metered and reported to the CITY for record keeping purposes.

### 1.03 GUARDRAIL AND BARRICADES

- A. All open excavations shall be adequately safeguarded by providing temporary barricades, caution and advanced warning signs, lights, and other means to prevent accidents to persons and damage to property. The CONTRACTOR shall, at their own expense, provide suitable and safe bridges and other crossings for accommodating travel by pedestrians and workmen.
- B. The CONTRACTOR shall take precautions to prevent injury to the public due to construction. All excavated material, equipment, or other obstacles which could be dangerous to the public shall be well lighted at night.
- C. The CONTRACTOR shall not open or excavate any street, way, or public or private place until contact has been made with all utilities to locate any existing underground gas, water, telephone, power or other installations.
- D. The CONTRACTOR shall supply orange construction fence around the perimeter of the work area.

### 1.04 PROTECTION OF WORK AND PROPERTY

- A. The CONTRACTOR shall be responsible for the preservation of all public and private property, and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act of, omission, neglect, or misconduct in the execution of the work on the part of the CONTRACTOR, the CONTRACTOR shall restore said damage, at their expense, to a condition similar or equal to that existing before the damage was done and at least meeting the Specifications contained herein.
- B. Along the location of this work all fences, mail boxes, walks, bushes, trees, shrubbery and other physical features shall be protected and restored in a thoroughly workmanlike manner. Fences and other features removed by the CONTRACTOR shall be replaced in their original location. All grass areas beyond the limits of construction which have been damaged by the CONTRACTOR shall be regraded and seeded.
- C. The protection, removal and replacement of existing physical features along the line of work shall be a part of the work under the contract, and all costs in connection therewith shall be included in the unit and/or lump sum prices established under the Items in the proposal.

1.05 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

- A. The CONTRACTOR shall assume responsibility for the protection of all buildings, structures and utilities, public or private, including poles, signs, services to buildings, water pipes, hydrants, sewers, drains and electric and telephone cables, whether or not they are shown on the drawings. The CONTRACTOR shall carefully support and protect all such structures and utilities from injury of any kind. Any damage resulting from the CONTRACTOR's operations shall be repaired by them at their expense.
- B. Protection and temporary removal and replacement of existing utilities and structures as described in this Section shall be a part of the work under this contract and all costs in connection therewith shall be included in the price established in the proposal.
- C. The CONTRACTOR, however, shall bear full responsibility for obtaining all locations of underground structures and utilities (including existing water services, drain lines and sewers). Services to buildings shall be maintained and any costs or charges resulting from damage thereto shall be paid for by the CONTRACTOR.
- D. If, in the opinion of the CITY, permanent relocation of the utility owned by the CITY is required, the CITY may direct the CONTRACTOR in writing, to perform the work. Work so ordered will be paid for at the Contract unit prices, if applicable, or as extra work under Article 41 of the General Conditions. If relocation of a privately owned utility is required, the CITY will notify the utility to perform the work as expeditiously as possible. The CONTRACTOR shall fully cooperate with the CITY and utility, and shall have no claim for delay due to such relocation. The CONTRACTOR shall notify public utility companies in writing at least 48 hours (excluding Saturdays, Sundays and legal holidays) before excavating in any public way.

1.06 MAINTENANCE OF FLOW

The CONTRACTOR shall at their own cost, provide for the flow of sewers, drains and water courses interrupted during the progress of the work, and shall immediately cart away and remove all offensive matter. The entire procedure of maintaining existing flow shall be fully discussed with the CITY well in advance of the interruption of the flow.

1.07 EROSION CONTROL

The CONTRACTOR shall take all necessary precautions to prevent and control erosion and to construct sediment basins, diversion ditches or such other construction to satisfactorily accommodate runoff from any area subject to erosion during the construction of this project. All such precautionary measures including but not necessarily limited to construction of sediment basins, diversion ditches, catch basin sediment traps/berms, beaches and berms or laying fiber matting on slopes until vegetation is established, shall be at no extra cost to the CITY.

1.08 DUST CONTROL

The CONTRACTOR shall take all necessary precautions at all times to prevent and control dust. In addition, daily dust control shall be performed as directed by the CITY to control dust at the close of workday operations. Specifically, all traveled ways shall be swept thoroughly, and calcium chloride spread to prevent dust from being a nuisance to the general public.

1.09 DETOURS

- A. Unless permission to close the street is received in writing from the proper authority, all excavated material shall be placed so that vehicular and pedestrian traffic may be maintained at all times. If the CONTRACTOR's operations cause traffic hazards, they shall repair the road surface, provide temporary ways, erect wheel guards or fences, or take other measures for safety satisfactory to the CITY.
- B. The local Fire Department and Police Department shall be notified in advance of any and all detours being implemented.
- C. Detours around construction shall be subject to the approval of the CITY. Where detours are permitted the CONTRACTOR shall provide all necessary barricades, signs and warning devices as required to divert the flow of traffic. While traffic is detoured the CONTRACTOR shall expedite construction operations and periods when traffic is being detoured shall be strictly controlled by the CITY.

END OF SECTION

SECTION 02200

EARTHWORK

PART 1.00 GENERAL

1.01 DESCRIPTION OF WORK

A. Work under this section includes, but is not necessarily limited to, the following:

1. Excavating and trenching.
2. Filling, backfilling, and compacting fill conforming to these specifications where applicable.
3. Rough grading to required tolerances.
4. Filling, as directed, excess cut under footings, foundations, and trenches.
5. The placing of earth for forming and shaping of embankments.
6. Sheeting and shoring where required and/or necessary.
7. Maintaining bench marks, monuments, and other reference points. Obtaining accurate placement of final grade. Replacement of any disturbed or destroyed site elements that must be removed due to the nature of the work, furnishing certification by a professional surveyor that all disturbed items have been accurately relocated.
8. Written notice of readiness of footing excavations, fill materials, fill areas, compacted fills, and items requiring review and/or inspection by the CITY.
9. Maintaining excavation and trenches free of water.
10. Excavating, stock piling and placing material suitable for filling and backfilling.
11. Removing from site all debris, unsuitable material and excess excavated material as specified and/or as directed by CITY.
12. Restoration to original grades and condition, properties damaged by any activity related to the work, taking adequate precautions to avoid settlement or cave-in of properties higher than site, silting, erosion, or other damage to properties lower than site.
13. Installing temporary barriers to deter unauthorized access to areas of excavation or other such work which could be hazardous for the duration of the contract.

PART 2.00 PRODUCTS

2.01 MATERIALS

A. Fill materials shall be reviewed, and shall conform to the following unless specifically indicated otherwise:

1. Fill, unless otherwise specified, shall be earth free of debris, cinders, combustibles, frost, ice, roots, sod, wood, cellulose, and organic materials. Up to 30 percent of fill material may be rock-like materials not more than 10" in length, evenly distributed in fill eighteen (18) inches below finished grade.
2. Upper 18 inches of fills under topsoil of lawn and planted areas shall be earth free of debris, cinders, frost, ice, sod, wood and roots of 1/4" in diameter. Up to ten (10) percent of fill materials may be rock-like materials not to exceed 4" in length.
3. Selected backfill shall be excavated materials, free-draining, clean, granular soil suitable for backfill. It shall not be frozen and shall be free from peat, vegetable or organic matter and any other debris and shall be readily compactible.
4. Bank run gravel shall be of a granular nature, the major portion of which may be sand, gravel, and other stone. It shall not be frozen and shall be free from peat, vegetable or organic matter and any other debris and shall be readily compactible. See trench backfill section for size requirements.
5. Fill under foundations and below bottom of concrete floors shall be clean, granular fill from stockpile or from off-site borrow area and shall consist of bank-run sandy gravel or gravely sand free of roots, sod, rubbish or other deleterious organic matter, fine silt, or clay.

- B. Crushed gravel base shall conform to the following gradation requirements:

<u>SIEVE SIZE</u>	<u>PERCENT FINER BY WEIGHT</u>
14"	100
4"	50 - 85
3/8"	45 - 80
No. 4	40 - 70
No. 40	0 - 45
No. 200	0 - 10

Crushed stone shall conform to the following gradation requirements:

<u>SIEVE SIZE</u>	<u>PERCENT FINER BY WEIGHT</u>
2 k"	100
2"	90 - 100
1 1/2"	30 - 55
1 -"	0 - 25
1"	0 - 5

- C. Grain-size distribution curve shall be furnished to CITY by a soil test lab Engineer for all materials supplied on this project.
- D. Areas from which fill material is obtained shall have been completely stripped of topsoil and underlying sandy silt material. No fill shall be brought to site or purchased until such material has been reviewed by CITY. Fill shall conform in quality to sample as provided by the CONTRACTOR which conforms to the gradation requirements set forth herein. Sample materials shall be submitted for review by CITY and maintained as representative for contract duration.
- E. Fill, outside of building toe of slope, shall be earth free of debris, cinders, combustibles, frost, ice, wood, roots, cellulose, and organic materials. Up to 40 percent of fill material may be rock-like materials not to exceed 0.02 cubic foot in volume, nor more than 3" in length.
- F. Class C bedding shall be screened, crushed stone meeting the requirements of ASTM Designation C 33-71A, Gradation 67.



PART 3.00 EXECUTION

3.01 GENERAL EXCAVATION REQUIREMENTS

- A. Where used herein "finished grade" refers to final grade at elevation indicated. Spot elevations govern contour elevations. Subgrade under lawn areas shall be maintained at 6" lower than "finished grade", unless indicated otherwise.
- B. The extent of excavation open at any one time shall be controlled by the conditions, but shall always be confined to the limits prescribed by the CITY.
- C. At least one lane of traffic shall be open at all times. The CONTRACTOR shall take the necessary care in the placement of excavated materials so as not to block the passage of vehicles or pedestrians where access maintenance is required.
- D. No excavated material shall be placed on lawns, driveways or other private property. All disturbed areas shall be restored to conditions as described herein at no additional cost to the CITY.
- E. The CONTRACTOR shall take all necessary measures to protect trees not to be removed from the site of the work against damage from machinery and from excavated material. Branches and roots shall not be cut unless permitted by the CITY.
- F. Trees, cultivated plants, shrubs and hedges which might be damaged by the CONTRACTOR's operations shall be protected or shall be transplanted, maintained, watered, and replanted. Trees to be saved shall be protected by the installation of 2 x 4's wrapped around the trunk to a height of at least six (6) feet with approximately 6-inch to 8-inch spacing, depending on trunk diameter and a snow fence installed at the drip line. If such trees, plants, shrubs or hedges are damaged to the degree that their growth or beauty is affected, they shall be replaced by the CONTRACTOR at their own expense. All surfaces which have been damaged by the CONTRACTOR's operations shall be restored to a condition at least equal to that in which they were found just prior to the start of construction.

Damaged trees shall be replaced at a cost of One Hundred Dollars (\$100.00) per caliper inch and maintained as specified herein.

- G. The restoration of existing property shall be done as promptly as practicable and not left to the end of the construction work.
- H. All existing pipes, poles, wires, curbing, property line markers, fences, walls, or other structures which, in the opinion of the CITY, must be preserved in place without relocation shall be carefully supported and protected by the CONTRACTOR. In the event of damage they shall be restored to their original condition by the CONTRACTOR at their own expense.

- I. The CONTRACTOR shall note that the proposed structures and/or the line of the sewers cross existing utilities in certain locations. These have been shown based on best available information, but not guaranteed as to completeness or accuracy. Notify DIGSAFE before starting earthwork.
- J. As excavation approaches existing utilities or other underground structures, digging with machinery shall cease and the excavation shall be done manually, as directed.
- K. Excavation and backfill operations adjacent to existing utilities, structures, and construction shall be done in such a manner as will prevent the loss of ground or caving in of excavation, the undermining, damage or disturbing of existing pipelines, utilities and structures or any completed construction of the project.  
  
Backfill shall be placed, compacted, and done in such a manner as to prevent future settlement and damage to the existing pipelines, utilities, structures, or construction. Existing pipelines, utilities, structures, new construction, or property damaged due to excavation, backfilling and settlement of the backfill, shall be the responsibility of the CONTRACTOR, and shall be corrected in a manner satisfactory to the CITY, at no additional expense to the CITY.
- L. Unsuitable excavated material shall systematically be separated and removed from suitable material to the satisfaction of the CITY.
- M. Unsuitable material shall be disposed of properly by the CONTRACTOR at no additional cost to the CITY.
- N. Surplus suitable material shall be the property of the CITY and stored on site as directed, or at the CITY's request, this material shall be removed from the site by the CONTRACTOR at no additional cost to the CITY.
- O. Boulders over 16" in length, if encountered, shall be removed from subgrade of cut areas.
- P. Remove obstructions to depth of 6" below new construction and 8" below subgrade in other areas.
- Q. Support banks of excavations, where necessary, to protect persons and property, using suitable combinations of shoring, sheet piling, bracing or other methods.
- R. If excavation goes beyond lines shown in details, CONTRACTOR shall use backfill conforming to materials specified herein and shall compact backfill to 95% or as otherwise directed by the CITY.
- S. Excavations shall be carried to design depths.
- T. If excavation is carried beyond line or below grade, except as directed, or subgrade is made unsatisfactory by act or neglect of CONTRACTOR, they shall remove such unsatisfactory material. No extra payment will be made for replacement with satisfactory fill, or additional concrete, or other method as directed.

- U. CONTRACTOR shall provide adequate dust control during earthwork operations. Public ways shall be cleaned daily if required by intensity of the work, traffic, and weather.
- V. CONTRACTOR shall provide and maintain temporary barricades and traffic controls as required.
- W. Contractor shall install and maintain all erosion control measures in accordance with the Rhode Island erosion control manual.

### 3.02 CUTTING PAVEMENT

- A. Excavations made on pavement shall be made in a careful manner so as to cause the least amount of damage to the pavement. Roadway pavement in state highways, local roads, sidewalks, and easement having Class 1 and Class 2 bituminous concrete pavement shall be saw cut prior to trench excavation. Pavement and/or cement concrete will be cut six (6) inches either side of the maximum allowable trench width. Any damage to the cut line due to the excavations, backfilling, or removal of temporary pavement shall be recut to neat lines at no additional cost to the CITY prior to replacement of the specified finished pavement. The width of pavement removed shall be kept as narrow as practicable. Existing pavement and base course disturbed or damaged beyond the payment lines indicated shall be replaced by the CONTRACTOR to match existing pavement and base course, at no additional cost to the CITY.
- B. CONTRACTOR shall remove and dispose of existing bituminous concrete pavement as is necessary to perform work of this contract as indicated.
- C. CONTRACTOR shall saw cut, remove and dispose of concrete and bituminous pavement as is necessary to perform the work of this contract. Removal of concrete and bituminous walks shall be performed in a neat manner at the nearest joint of the remaining walk pavement.
- D. Excavated pavement shall not be mixed with other excavated material which is to be used as backfill, and shall be removed immediately from the site of the work. This pavement may be reused as backfill so long as it is cold processed to a maximum dimension of two inches in any dimension and depth of processing is two to three times the depth of the existing bituminous concrete pavement and mixed to a homogeneous gradation.

### 3.03 ROCK EXCAVATION AND DISPOSAL

- A. Rock excavation shall mean removal and disposal of rock material as directed by CITY.
- B. It is not anticipated that rock shall be encountered. However, CONTRACTOR shall be paid for all rock encountered based on unit prices and items of rock (open/trench) stated elsewhere in this specification.
- C. All rock removal shall be in conformance with local and state authorities having jurisdiction over this work.
- D. Definition of "rock excavation" shall mean:
  - 1. Materials that cannot be removed without systematic drilling and blasting, such as rock material in ledges, or aggregate conglomerate deposits so firmly cemented as to possess the physical characteristics of solid rock.
  - 2. Concrete or masonry structures larger than one (1) cubic yard in volume, and not less than thirteen (13) inches in least dimension.
  - 3. Reinforced concrete larger than one (1) cubic yard in volume, with steel reinforcement.
  - 4. Boulders one (1) cubic yard or more in volume, sound rock material in ledges, bedded deposits and unstratified masses which cannot be removed without blasting.
- E. When, during excavation, material is encountered that CONTRACTOR may classify as rock excavation, such material shall be uncovered and CITY notified by CONTRACTOR. CONTRACTOR shall not proceed with excavation of this material until CITY has classified material as earth excavation or rock excavation. Failure on part of CONTRACTOR to uncover such material and notify CITY will cause forfeiture of CONTRACTOR's right of claim for payment of rock excavation.
- F. Blasted rock shall be removed from the site of the work and deposited in such areas as directed by the CITY or at locations selected by the CONTRACTOR with approval of the CITY.
- G. Soft or disintegrated rock or hardpan which can be removed with a hand pick or power operated excavating machines, or loose, previously blasted rock, will not be considered as rock excavation.
- H. Before blasting commences, the CONTRACTOR shall uncover all ledge to be removed. Elevations shall be taken by the CITY Engineering Division. After completing rock removal, elevations shall be taken again by the surveyor. Amounts of ledge removed will be agreed to by CONTRACTOR and CITY.
- I. CONTRACTOR shall develop cross sections to show and determine rock quantities for payment purposes. Cross sections shall be reviewed by the CITY.

- J. Prior to blasting, the CONTRACTOR shall obtain written permission and approval of method from local or other authorities having jurisdiction before proceeding with the work. Explosives shall be stored, handled and employed in accordance with state and local regulations or, in the absence of such, in accordance with the provisions of the Manual of Accident Prevention in Construction of the Associated General CONTRACTORS of America, Inc. In general, no blasting will be allowed within 100 feet of new construction or, in trenches, within 25 feet of laid utility piping. All blasting shall be well covered with heavy mats or timers chained together and the CONTRACTOR shall take great care to do no damage to existing buildings, foundations, and glazed areas. Any damage caused by the work of the CONTRACTOR shall be repaired to the full satisfaction of the CITY.
- K. Wherever rock is shattered below grade and is unfit for foundations, the shattered rock shall be removed and replaced as specified. No extra payment will be made for overbreak or backfill as required.

#### 3.04 STRUCTURE FILL, BACKFILL AND COMPACTED FILL

- A. Fill, backfill and compact fills as necessary to complete the work, with suitable power equipment in accordance with the following, unless specifically indicated otherwise:
- B. Do not start work until fill material, fill areas, and equipment to be used in performing the work have been reviewed by the CITY and foreign materials have been removed.
- C. Loosen existing soil for a depth of 2" just prior to filling.
- D. Surfaces of new subgrades shall be left clean.
- E. Prior to placing fill, existing surface (subgrade) shall have been prepared as specified. When at proper moisture content, surface shall be compacted by rubber-tired roller compactor or drum type vibrator. Maximum thickness of layers measured before compaction shall be 8" for 10 wheel truck or rubber-tired roller compactor and 8" for drum type vibrator, or as otherwise specified. No fill material shall be placed on frozen soil, nor shall snow, ice or frozen earth be brought in as fill. Fill material shall not be placed on material which has been affected by frost or moisture.
- F. No fill materials shall be placed and spread in area within which roller or 10 wheel truck is being operated for compaction. In large areas, fill material shall be placed and spread in layers prior to compaction which will permit orderly pattern for operating compaction equipment. Except as otherwise provided, surface of fill in reach being constructed shall be maintained approximately level.
- G. Placement of fill shall be done in a manner to prevent contamination of selected granular fill by less suitable material being hauled by, or placed adjacent to, building area.

- H. Acceptable on-site material and/or off-site borrow shall be placed in successive, even, horizontal layers to a depth no greater than 8" loose measure for fills within the building areas. Stones larger than 4" shall be removed prior to compaction of each lift. Areas around foundations, walls, or other restrictions which are inaccessible to roller-compactors, shall have granular fill placed in layers to a depth not than 6". Stones larger than 3" shall be removed prior to compaction.
- I. After each layer of fill has been spread, cleared of large stones, and inspected, lift shall be compacted by not less than 4 complete coverages with specified roller, to percent maximum dry density specified, as determined by laboratory tests in accordance with ASTM D 698-66, and field tests in accordance with ASTM D 1556-64.
1. Fill under structure foundations, 95 percent.
  2. Fill under lawn and planted areas, 90 percent.
  3. Fills under surfaced areas: Floors, areaways, gutter curbs, parking areas, walls, walks, terraces, steps, etc., 95 percent.
  4. Top 2' of fill under parking lots and roadways, 95 percent.
  5. Fills and backfills within 4' from outside of walls and fills not otherwise specified, 90 percent.
  6. In confined areas around piers, support posts and adjacent to building foundation walls, where fill cannot be compacted by equipment described above, compaction shall be performed by hand-operated power driven vibratory plate compactors of acceptable type, upon material spread in 8" layers as described above. Compaction shall attain the same relative density of 95 percent, as specified.
  7. Backfill or fill around pipes using hand tools to a point of 12" above pipe. Compact remainder of such fills using small tools such as power-driven tampers and vibrators, to suit fill materials.
  8. Keep power-driven, rider-operated spreading, compacting and other heavy equipment away from damaging in place structures, utilize temporary protection as required. Damaged structures, supports or other site improvements shall be reviewed by CITY, and manufacturer's representative. If warranties from manufacturer cannot be maintained due to damages sustained, the CONTRACTOR shall replace damaged material with new at no extra cost to the CITY.
  9. Where fill is placed around, or on, two sides of any structure, carry it up evenly. Avoid displacement or other damage to such structure.

### 3.05 COMPACTION EQUIPMENT

- A. CONTRACTOR shall use, for compaction of subgrade and fill in designated areas, equipment at number of coverages stipulated depending upon suitability of equipment for the work, as follows:
1. Rubber-tired roller-compactor, having 4 wheels equipped with pneumatic tires of such size and ply as can be maintained at pressures between 80 and 100 psi with 25,000 lb. wheel load during rolling operation.  
  
Roller-wheels shall be located abreast, and so designed that each wheel will carry approximately equal load in traversing over even ground. Spacing of wheels shall be such that distance between nearest edges of adjacent tires will not be greater than one-half width of one tire at operating pressure for 25,000 lb. wheel load.  
  
Roller shall have body suitable for ballast loading such that load per wheel may be varied, if so directed, between 10,000 lb. and 25,000 lb. roller shall be towed at speeds not exceeding 20 miles per hour.
  2. Acceptable drum type vibratory compactor operating at not less than 2,000 vibrations per minute.
- B. In any event, regardless of equipment used, compaction of soil shall meet the relative densities stated in this sections.

### 3.06 PROJECT CONDITIONS

- A. "Dig-Safe" Damage Prevention System: All Contractors or Subcontractors performing drilling, boring, augering, jetting, sheeting or pile installation, demolition, excavation or like work shall, prior to commencement of these activities, contact utility companies having responsibility for underground transmission systems for information relative to locations of existing underground utilities and/or appropriate dig-safe damage prevention and notification agency.
- B. "OSHA" requirements shall be met and adequate protection measures shall be provided to protect workers and pedestrians passing by the site. Streets adjacent to the property shall be fully protected throughout the operations.
- C. Shoring, sheeting, and bracing and/or prefabricated trenching boxes shall be provided to prevent caving, erosion or gulying sides of excavation.
- D. Provide for surface drainage and erosion control during the period of construction in a manner to avoid creating a nuisance to adjacent areas. Keep all excavations free of water during the entire progress of the work, regardless of the cause, source or nature of the water.

END OF SECTION

SECTION 02989

MISCELLANEOUS WORK AND CLEANING UP

PART 1.00 - GENERAL

1.01 DESCRIPTION

A. Work Included:

Furnish all labor, materials, equipment and incidentals required to do all miscellaneous work and cleaning up not otherwise specified. The work of this Section includes, but is not limited, to the following:

- Driveways shall be made accessible at the end of each work day. Any extra work required to accomplish this shall be included in this item.
2. Provide access for mail delivery on a daily basis.
3. Provide access for trash pickup. CITY shall provide pickup schedule so that work does not conflict with trash vehicles.
4. Restoration, repair or replacement of existing catch basins, sewer manholes, sewer and drainage pipe, water and sewer services encountered during construction.
5. Restoration of concrete walks, driveways, fences, walls, mailboxes, signs, etc., as required.
6. Installation of erosion control measures and continued maintenance for the duration of the Contract.
7. Restore grass areas with loam and seed.
8. Cleaning up the construction site.
9. Providing and setting up of temporary Fluorescent Traffic Cones (RIDOT Std. 26.1.0) and or Polyethylene Drums with markings around the work zones during construction operations and overnight.
10. Maintaining the safe passage of traffic in accordance with specified traffic control.
11. All water gate boxes shall be cleaned out using a vacuum and a key shall be placed on the valve nut in the presence of Water Utilities Supervisors to assure proper cleaning has taken place. Failure to do so will delay in final payment.
12. All other work incidental to completing the project.



PART 2.00 - PRODUCTS

None this Section

PART 3.00 - EXECUTION

3.01 CLEAN UP

- A. The Contractor shall remove all construction material, excess excavation, equipment or other debris remaining on the job as a result of construction operations and shall render the site of the work in a neat and orderly condition at least equal to that which existed prior to the start of construction.
  
- B. The Contractor shall remove all material from the water gate boxes with the use of an appropriate vacuum. The Contractor shall install a key on the valve nut in the presence of a Water Utilities Supervisor to assure the box has been cleaned appropriately. Failure to do so will result in delay of payment.

END OF SECTION