

CLIFFVIEW PARK SPECIFICATIONS

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CLEARING AND GRUBBING

1. GENERAL

1. RELATED DOCUMENTS

- A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

2. SUMMARY

- A. This Section includes requirements for stripping sod, and removing and disposing of vegetation and debris.

- B. Related Sections:
 - 1. Section "Earthwork"

3. DEFINITIONS

- A. The term "sod stripping" shall be used when the vegetative material to be removed is mowable and generally less than twelve-inches (12") tall.
- B. The term "tree removal" refers to individual woody plants with a caliper over four-inches (4"). Any removals shall be performed by a licensed tree Contractor approved by the Town.
- C. The term "clearing" refers to removing and disposing trees, brush, stumps, logs, grass, weeds, roots, decayed vegetable matter, poles, stubs, rubbish, refuse dumps, sawdust piles, and loose boulders of one cubic yard (1 yd³) or less existing outside of the construction limits, debris resting on or protruding through the ground surface, or appearing on the construction limits before final acceptance of the work. Clearing also includes removing and disposing of obstructions, such as fences, bridges, buildings, and other incidental structures within the construction limits and shown on the Site Demolition Plans.
- D. The term "grubbing" refers to removal from the area within the construction limits and proper disposal of all objectionable matter defined above under clearing, which is embedded in the underlying soil. Grubbing also includes removing and properly disposing of sidewalks, driveways, catch basins, drop inlets, manholes, curbing, retaining walls, utilities, foundations, paved floors, underground tanks, and portions of plants to be removed that are below grade, and other structures within the construction limits.
- E. Subsoil: All soil beneath the topsoil layer of the soil profile and typified by the lack of organic matter and soil organisms.
- F. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil and is the zone where plant roots grow, and ; reasonably free of subsoil, clay lumps, gravel, and other objects more than two-inches (2") in diameter; and free of subsoil and weeds, roots, toxic materials, or other non-soil materials.

- G. Plant-Protection Area: Area surrounding shrub beds or massings, or other vegetation or sensitive areas to be protected during construction, and indicated on Contract Drawings.
- H. Tree-Protection Area: Area surrounding individual trees or groups of trees to be protected during construction.
- I. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

4. MATERIAL OWNERSHIP

- A. All materials except for stripped topsoil and those materials indicated to remain or to be stockpiled, shall remain the property of the Town. All other materials shall be removed at the Contractor's expense.

5. PROJECT CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Project Manager.
 - 2. Provide alternate routes around closed or obstructed traffic ways if required by Project Manager.
- B. Improvements on Adjoining Property: Not allowed without prior approval from Project Manager. Work only within Work Limit Line as defined on drawings.
- C. Protection and Repair of Underground lines:
 - 1. Existing Public Utilities: Locate existing underground utilities within the limits of work per General Contract Conditions, Article 804 Protection of Municipal, Public Service or Public Utility Systems. Request utility locates seventy-two (72) hours in advance of any excavations by calling the Utility Notification Center of Colorado at 811. The contractor is responsible for providing written and graphical documentation from the utility owner. Take whatever precautions are necessary including potholing to verify location and depth to protect these underground lines from damage. Should unmarked or incorrectly marked utilities or other piping be encountered during excavation, notify the Project Manager immediately for direction. If damage does occur, all damage shall be repaired by the utility owner and all costs of such repair shall be paid by the contractor. Only written all clears will be acceptable, verbal all clears will not be accepted.
 - 2. Existing Private Utilities: Locate existing underground utilities within the limits of work per General Contract Conditions, Article 804 Protection of Municipal, Public Service or Public Utility Systems. The contractor is required to contact all private utility companies including the Town of Parker and Douglas County to locate all private utilities. The contractor is responsible for providing written and graphical documentation from the private utility owner. The request for locates shall be a minimum of seventy-two (72) prior to proceeding with any excavation. If, after such requests, private utilities are encountered and damaged by the contractor these shall be repaired at no cost to the Town. If the contractor damages staked or located private utilities, they shall be repaired by the utility owner and all costs of such repair shall be paid by the contractor. Only written all clears will be acceptable, verbal all clears will not be accepted.

- D. Do not commence site clearing operations until temporary erosion- and sedimentation-control and tree and or plant protection measures are in place.

2.PRODUCTS (Not Used)

3.EXECUTION

1. PROTECTION

- A. Protect existing site conditions from damage during construction.
 - 1. Restore existing conditions damaged by Contractor during the work of this Contract to their original condition, as acceptable by Project Manager.

2. CLEARING

- A. Remove brush and vegetation from areas designated to be cleared. As directed by Project Manager, trim low hanging, unsound, or unsightly branches on existing trees and shrubs designated to remain. All cuts shall be in accordance with Erie Forestry standards.

3. GRUBBING

- A. Remove all stumps, roots, and debris a minimum of twelve-inches (12") below finish grade in all areas as required. Use hand methods for grubbing inside drip line of trees to remain. Backfill and compact stump and root holes to a maximum of eighty five percent (85%) standard proctor in landscape areas and ninety five percent (95%) standard proctor under hardscape or as directed by the Project Manager.

4. TOPSOIL STRIPPING

- A. See Section "Earthwork".

5. SOD STRIPPING

- A. Strip sod in all areas to be re-graded to a depth of one-inch (1"), so that a relatively clean dirt surface remains.

6. TREE REMOVAL

- A. In all proposed landscaped areas, stumps and surface roots shall be ground to a minimum of twelve-inches (12") below finish grade. In proposed hardscape areas, all roots shall be removed entirely.

7. DISEASED TREE REMOVAL AND DISPOSAL

- A. The removal of diseased and infested trees includes the requirement of offsite burial of all parts of the trees immediately following removal. This includes logs, stumps, roots, branches and composted and un-composted chips. Under no circumstances should diseased or infected wood be left or taken for firewood, mulch or taken to a wood processing mill.

8. HERBICIDES
 - A. Read the label.
 - B. Use an aquatic approved formulation of triclopyr or glyphosate.
 - C. Use the highest allowable rate indicated in the label for cut-stump treatments.
 - D. Follow all requirements stated on the label.
 - E. Herbicide may only be applied by state licensed commercial applicators that are licensed to apply herbicide in the category that the application will be made in.
9. DISPOSAL
 - A. Haul and dispose of all removed materials, trash, debris and waste materials legally outside of the City's property.

END OF SECTION

CONCRETE SIDEWALKS

1.01 Scope of Work

Work done under this item shall consist of the construction of concrete sidewalk in accordance with these specifications. It shall consist of the removal of obstructions for excavating and filling, for fine grading and compaction of subgrade, and all backfilling necessary to complete the work, including the disposal of surplus material and cleaning up of the work.

A. MATERIALS

1. Concrete - Concrete shall contain cement, coarse aggregate, and fine aggregate with a minimum of 3,000 pounds compressive strength per square inch at 28 days.

2. Water- Water shall be clean and free from salt, oil, or organic substances.

B. CONSTRUCTION METHODS – SIDEWALK

1. Sub-grade Preparation - The sub-grade for sidewalks shall be formed by excavating to the required depth, and shaped to the proper cross section, and shall be thoroughly compacted by rolling or tamping before placing any concrete to 95 % compaction.

a. Where tree roots are encountered, they shall be removed to a depth of one foot for the full width of the walk.

b. All soft and spongy places shall be removed, and all depressions filled with suitable material which shall be thoroughly compacted in layers not exceeding six (6) inches in thickness.

2. Protection of Sub-grade -Ditches and drains shall be provided and maintained to satisfactorily drain the sub-grade. In no case shall sidewalk and driveway be placed on frozen or muddy sub-grade. Sub-grade shall be allowed to dry before placing sidewalk. If ruts are formed in the prepared sub-grade, the sub-grade shall be scarified and thoroughly compacted. If borrow material is required because of improper handling or drainage, the cost of such will be borne by the Contractor.

3. Dimensions

The minimum thickness of a sidewalk shall be four (4) inches.

All sidewalks as shown on the Plans are dimensioned.

4. Alignment and Grades

Sidewalk shall have no more than a 2% cross slope.

Sidewalks shall be constructed in conformance with the existing grades and grades indicated on the plans. Since the survey is not a current survey grades are proposed for the purpose of insuring that no section of the Sidewalk has a grade greater than a 1:20 slope.

5. Forms - Forms used in construction sidewalks shall be of wood or metal for full depth of the concrete, straight, free from warp, and sufficient strength. They shall be staked securely enough to resist the pressure of the concrete without springing.

6. Placing Concrete

No concrete shall be placed until the forms and sub-grade have been approved by the Owner. The concrete shall be placed thereon in one course to the required depth. The concrete shall be thoroughly spaded and rammed and struck off with a template to the required grade and cross section. Successive batches of concrete shall be deposited in a continuous operation until individual sections are completed.

7. Joints

Contraction joints shall be provided uniformly to separate the slab and shall be cut in a straight line to a depth equal to at least one-third (1/3) of the total slab thickness. The maximum distance between transverse expansion joints shall be twenty (20) feet.

8. Finishing

After the freshly poured concrete has been brought to the establishing grade, it shall be floated with a wooden float to produce a surface free from irregularities. The final surface shall be obtained by troweling with a steel trowel or hand float and brushing lightly with a light weight brush in a transverse direction so as to produce a uniform gritty surface of the proper texture. All edges and joints shall be rounded to one-fourth inch (1/4").

No more concrete shall be laid than can be properly finished during daylight.

9. Protection

Immediately after finishing operations have been completed, contractor shall install sufficient barricades, signs, and warning devices to protect the finished concrete.

10. Removal of Forms and Backfilling

After the concrete has set sufficiently, the forms shall removed and the spaces on both sides shall be backfilled with suitable earth, uniformly spread and compacted. The areas between the curb and sidewalk, and immediately back of the sidewalk, shall be left in a smooth, neat, and workmanlike condition.

11. Protection of Concrete

Immediately after the forms have been removed, traffic shall be excluded from crossing the concrete for a period of approximately fourteen days (14) days by erection and maintenance of suitable barricades. The Contractor shall be responsible for any damage resulting from traffic within the fourteen (14) day period and he shall remove and replace any concrete damage.

12. Removal of Defective Work

The Owner shall have the authority to and shall require the removal of any sidewalk or portion thereof laid under these specifications which does not conform to the requirements as set forth herein. Upon notification in writing by the Owner, the Contractor shall take immediate action to correct the faulty work at his own expense.

13. Cleaning Site

Prior to the acceptance of the work, all surplus and rejected material and unsightly objects such as stones, stumps, limbs, roots, concrete, etc., shall be removed from the site and not be considered complete until all cleaning up has been done and the site is of a neat appearance, with appropriate seeding, fertilizer, etc., completed.

END OF SECTION

EARTHWORK

1. GENERAL

1. RELATED DOCUMENTS

- A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Related Report Documentation
 - 1. Test Pit Exploration Cliffview Park Pavilion Macon-Bibb County, GA prepared by Preston Engineering 08/03/2023.

1.2 SUMMARY

- A. This Section includes the requirements for excavation, re-grading, stripping and stockpiling of topsoil, filling, moisture conditioning, backfilling, compaction, fine grading, hauling, and legal off-site disposal of spoil materials to meet the required lines and grade as specified to complete the work.
- B. Related Sections:
 - 1. Division "Clearing and Grubbing".
 - 2. Division "Topsoil".

3. DEFINITIONS

- A. Excavation: The removal of material encountered to subgrade or over-excavation and subsequent disposal or placement of materials removed.
- B. Unclassified Excavation: The term "unclassified excavation", as used herein, includes the excavation of all materials required for the work obtained within construction limits of project, including bedrock, surface boulders, wasted sections of concrete, asphalt or other debris including historic landfills that may be encountered. All excavation will be considered unclassified regardless of the nature of material encountered.
- C. Classified Excavation: The term "classified excavation", as used herein, defines the soil conditions that are expected to be encountered and makes provisions for measurement and payment of any rock encountered at an agreed upon unit price.
- D. Unauthorized Excavation: Inadvertent or purposely removing materials beyond indicated subgrade elevations or dimensions without specific direction of the Project Manager. Unauthorized excavation, as well as remedial work resulting from unauthorized excavation shall be at Contractor's expense.
- E. Unsuitable Materials: For the purposes of classified excavation, unsuitable material shall be defined as material below subgrade elevation that exhibits excessive pumping

or that does not meet density requirements due to unsatisfactory material as determined by geotechnical engineer and/or Project Manager.

- F. Subgrade: The undisturbed earth or the compacted soil layer immediately below proposed pavement and topping materials.
- G. Structure: Walls, foundations, slabs, pavement or other manmade stationary features occurring above or below ground surface.
- H. Structural Fill: The term “structural fill”, as used herein, includes soil materials used for general site filling under pavements or structures.
- I. Rough Grade: Cutting and filling the earth for preparation of finish grade. Elevation shall be within +/- one-tenth (.10') of a foot to the elevation indicated for that point.
- J. Finished Grade: Any surface which has been cut to or built to the elevation indicated for that point. Elevation shall be +/- five one-hundredths (.05') of a foot from required elevation.

1.4 SUBMITTALS

- A. Qualification Data: For qualified testing agency.
- B. Material Test Reports: For each on-site and borrow soil material proposed for fill and backfill as follows:
 - 1. Location of soil source.
 - 2. Classification according to ASTM D 2487.
 - 3. Laboratory compaction curve according to ASTM D 698.
- C. Provide a minimum of one (1) gallon sample of imported fill material for approval by the Project Manager.
- D. For imported fill materials, general or structural, the Contractor shall provide, at a minimum, a soils report indicating gradation tests, liquid limit, plasticity index and standard proctor density test and free of environmental contaminants. Depending on the use of the imported backfill materials the Project Manager may request that a soils analysis be performed to determine percent organic content of the soils, salt levels, and environmental contaminants of concern. Division 32 Section “Topsoil” for additional information.

1.5 QUALITY CONTROL

- E. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E 329 and ASTM D 3740 for testing indicated.
- F. Comply with requirements within project Geotechnical Report.

- G. Codes and Standards: Comply with all applicable local, state and Federal rules, regulations and ordinances concerning sloping of excavation, trenching and safety of workers, including the latest version of OSHA requirement.
- H. Testing Agency: Testing Agency to test the following, and as stated throughout this Section:
 - 1. Determine prior to placement of fill that site has been prepared in compliance with requirements.
 - 2. Determine that fill material and maximum lift thickness comply with requirements.
 - 3. Determine, at the required frequency, that in-place density of compacted fill complies with requirements.
- I. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable.
- J. Comply with applicable requirements of CABO/ANSI A117.1 for accessibility requirements related to walks, ramps, parking areas, drives, curb ramps, etc.

6. PROJECT CONDITIONS

- A. Protection and Repair of Underground lines:
 - 1. Existing Public Utilities: Locate existing underground utilities within the limits of work per General Contract Conditions. Request utility locates seventy-two (72) hours in advance of any excavations by calling the Utility Notification Center of Colorado at 811. The Contractor is responsible for providing written and graphical documentation from the utility owner. Take whatever precautions are necessary including potholing to verify location and depth to protect these underground lines from damage. Should unmarked or incorrectly marked utilities or other piping be encountered during excavation, notify the Project Manager immediately for direction. If damage does occur, all damage shall be repaired by the utility owner and all costs of such repair shall be paid by the Contractor. Only written all clears will be acceptable, verbal all clears will not be accepted.
 - 2. Existing Private Utilities: Locate existing underground utilities within the limits of work per General Contract Conditions. The Contractor is required to contact all private utility companies to locate all utilities. The Contractor is responsible for providing written and graphical documentation from the private utility owner. The request for locates shall be a minimum of seventy-two (72) hours prior to proceeding with any excavation. If, after such requests, private utilities are encountered and damaged by the Contractor these shall be repaired at no cost to the Town. If the Contractor damages staked or located private utilities, they shall be repaired by the utility owner and all costs of such repair shall be paid by the Contractor. Only written all clears will be acceptable, verbal all clears will not be accepted.
- B. Use of Explosives: Use of explosives is not permitted.

- C. Protection of Persons and Property: The Contractor is responsible for installing barricades and posting warning lights with all open excavations occurring as part of the work.
 - 1. Protect structures, utilities, walkways, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- D. Environmental Requirements: Blasting is not permitted. Employ jack hammering and other loud noises and methods sparingly; comply with all applicable noise abatement ordinances or regulations. Onsite burning is not allowed.
- E. Existing Benchmarks: Carefully preserve and maintain existing benchmarks, vertical/horizontal control, monuments, property line pipes and pins, and other reference points. If disturbed or destroyed, restore or replace at no additional cost to the City.
- F. Do not commence earth moving operations until temporary erosion- and sedimentation-control measures are in place.

7. GENERAL

- A. All earthwork operations shall be executed in a manner, which minimizes dust, noise, excessive accumulation of debris, danger to the public and interference with other construction. Only pneumatic-tired equipment shall be permitted over paved streets, walks and curb surfaces. Any damage to related site improvements shall be repaired at the expense of the Contractor prior to acceptance by the Town. Positive drainage shall be provided at all times throughout the earthwork operations.
- B. Earthwork operations shall be executed to provide subsoil compaction to a minimum 85 to 90 percent (85 to 90%) modified Proctor density at a + 3 percent (3%) of optimum moisture on areas to be eventually turfed or planted, and compaction to a minimum 95 percent (95%) modified Proctor density at + 2 percent (2%) of optimum moisture under all walks, trails, structures and other site improvements. Testing to demonstrate compliance with this specification shall be performed by a registered professional engineer practicing in the field of soils mechanics, per ASTM D 1557. All costs for tests shall be paid by the Contractor. The amount of testing shall be at the sole discretion of the Designated Town Authority.
- C. All walks and trails shall be graded to meet all current ADA standards and guidelines to include a minimum cross pitch in the appropriate direction of one quarter inch per foot (1/4" per foot) or two percent (2%), and centerline gradient shall not exceed one foot in twenty feet or five percent (5%) (per ADA recommendations). Concentrated drainage shall be designed to pass under walks and trails by culvert or standard approved walk chase. Culverts or walk chases should be designed for the two- (2) year to ten- (10) year event and coordinated with surrounding drainage facilities. The minimum allowed culvert size is eighteen (18) inches and flared end sections (F.E.S.) will be required. Low water trail crossings will not be allowed unless approved by the Town.

8. GUARANTEE

- A. Upon completion of earthwork operations, Contractor shall guarantee that in areas that have been excavated, no rock, concrete, vegetation, construction materials or other rubble shall lie within twenty-four inches (24") of the ground surface, nor within the path of any proposed planting, irrigation lines, utilities or foundations, or other site improvements. Contractor shall also guarantee against settlement for one full year after final acceptance of the project by the City. Any corrections required to meet this specification, including repair/replacement of seed, sod, pavements, or other site improvements shall be at the Contractor's expense.
- B. Completed grades shall be smoothly and uniformly sloped, properly compacted, and shall provide drainage away from site improvements. All banks or slopes constructed shall be maintained in a stable condition to prevent slips, washouts or erosion, by approved methods. All maintenance shall be at Contractor's expense until City acceptance (typical warranty period is two (1) year.) All finished grades to be within .2 feet (two tenths) of final design grade elevation.

PART 2 - PRODUCTS

1. SOIL MATERIALS

- A. General: All fill material, regardless of intended use category, must be clean and free from organic matter, roots, brush or other vegetation, trash, debris or other detrimental substances, and rocks or unbroken lumps larger than three-inches (3"). The Project Manager is to approve material prior to placement.
 - 1. The Contractor is responsible for furnishing load tickets and providing a daily log of cubic yards of soil materials imported or exported.
 - a. Structural Fill: Shall be Class 1 or Class 2 material composed of non-organic mineral aggregates and soil from excavations of existing soils obtained from on-site or imported fill, including granular or aggregate base course from removed pavements. Fill containing organic matter or any other deleterious substances, including overly wet soils, bedrock, or high swell content soils will not be accepted. If sufficient materials meeting the above requirements are not available from on-site sources, provide additional material obtained from off-site sources and approved by the testing and inspections agency, at no additional cost to the City. The soil must be compactable and pass, at minimum, a proof roll prior to being accepted for supporting paving materials.
 - b. On-Site Topsoil: The top four-inches (4") minimum of organic material in the excavation zone shall be stripped stockpiled prior to other earthwork operations. All stockpiled topsoil shall be reused on site.

2.2 ACCESSORIES

- a. Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, six-inches (6") wide and four (4) mils thick, continuously inscribed with a description of the utility.

- b. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of six-inches (6") wide and four (4) mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to thirty-inches (30") deep.
- c. Tape: Colored as follows:
 - i. Red: Electric.
 - ii. Yellow: Gas, oil, steam, and dangerous materials.
 - iii. Orange: Telephone and other communications.
 - iv. Blue: Water systems.
 - v. Green: Sewer systems.

3.EXECUTION

1. EXAMINATION

- A. Examine areas where the Work of this Section will be performed for compliance with requirements and conditions affecting installation and performance.
 - i. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within the work area.
 - ii. Proceed with installation only after unsatisfactory conditions have been corrected and approved by Project Manager.

2. GENERAL PROCEDURES

- A. Comply with all local, state and national erosion control requirements.
- B. Erosion Control shall be maintained during all phases of site excavation and site development and maintained throughout the construction period in order to protect adjacent properties, streets, and storm sewers from erosion and sediment runoff during the construction process. Do not commence excavation and grading work until erosion control measures are in place and have been inspected by the Project Manager. Contractor shall be responsible for maintaining erosion control measures throughout construction. Frequent monitoring, cleaning and other work required for proper operation shall be Contractor's responsibility. Contractor shall modify/replace all erosion control measures to fit field conditions following direction for corrective actions from Project Manager and or Wastewater Management Inspector.

3.3 FIELD QUALITY CONTROL

- A. Testing and inspections shall be coordinated and paid for by the Contractor.

- B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.
- C. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; re-compact and retest until specified compaction is obtained.

3.4 DEWATERING

- A. Wherever possible, prevent surface water and subsurface or groundwater from flowing into excavations and from flooding the project site and surrounding area.
- B. Contractor shall be required to dewater excavated areas by pumping, or otherwise control the water so that the project can be constructed in accordance with the plans. Any controlling of the water must be performed in such a manner that recently constructed portions of the project are not damaged. Repairs shall be at the Contractor's expense.
- C. Damage to adjacent property that results from the Contractor's alteration of any surface drainage, ground water flows or pumped water shall be repaired by the Contractor at no additional cost to the City.

5. GROUND SURFACE PREPARATION

A. Complete clearing and grubbing operations in accordance with Division 31 Section "Clearing and Grubbing". Where new material is to be placed on compacted subgrade, scarify ground surface until surface is free from ruts, hummocks or other uneven features, which would prevent uniform compaction and bond between old and new material.

B. Unsuitable Conditions:

- a. Inspection: Following stripping, examine exposed surface for unsuitable soil, areas of loose or soft soil, disturbed soils, or soft moist soils.
- b. Removal: Remove soil at areas of unsuitable conditions down to undisturbed acceptable soils.
- c. Replacement: Replace with specified fill material at specified compaction requirements.

3.6 STRIPPING AND STOCKPILING TOPSOIL

- A. Strip all topsoil from the excavation zone for new facilities (four-inches (4") in depth for all disturbed areas). Stockpile topsoil in locations indicated on the Drawings or as directed by the Project Manager.

- B. Placing topsoil, refer to Section "Topsoil".

3.7 EXCAVATION

- A. Stability of excavations: Comply with local codes, ordinances, and requirements of agencies having jurisdiction to include the latest revision to OSHA standards.
- B. Excavation for Structures: Conform to elevations and dimensions shown within a tolerance of +/- one-tenth (0.1') of a foot, and extending a sufficient distance to permit installation of services and other construction, and for inspection.
- C. Excavation for Pavements: Cut surface under pavements to comply with crosssections, elevations and grades as indicated within a tolerance of +/- one-tenth (0.1') of a foot.
- D. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.
 - 1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
 - 2. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:
 - a. Twenty-four inches (24") outside of concrete forms other than at footings.
 - b. Twelve-inches (12") outside of concrete forms at footings.
 - c. Six-inches (6") outside of minimum required dimensions of concrete cast against grade.
 - d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
 - e. Six-inches (6") beneath bottom of concrete slabs-on-grade.
 - f. Six-inches (6") beneath pipe in trenches, and the greater of twenty-four inches (24") wider than pipe or forty-two inches (42") wide.
- E. Classified Excavation: Excavate to subgrade elevations. Material to be excavated will be classified as earth and rock. Do not excavate rock until it has been classified and cross sectioned by the Project Manager and approved by the Project Manager. The Contract Sum will be adjusted for rock excavation according to unit prices included in the Contract Documents. Changes in the Contract Time may be authorized for rock excavation.
 - 1. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; together with soil, boulders, and other materials not classified as rock or unauthorized excavation.
 - a. Intermittent drilling; ram hammering; or ripping of material not classified as rock excavation is earth excavation.
 - 2. Rock excavation includes removal and disposal of rock. Remove rock to lines and subgrade elevations indicated to permit installation of permanent construction without exceeding the following dimensions:
 - a. Twenty-four inches (24") outside of concrete forms other than at footings.
 - b. Twelve-inches (12") outside of concrete forms at footings.
 - c. Six-inches (6") outside of minimum required dimensions of concrete cast against grade.

- d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
- e. Six-inches (6") beneath bottom of concrete slabs-on-grade.
- f. Six-inches (6") beneath pipe in trenches, and the greater of twenty-four inches (24") wider than pipe or forty-two inches (42") wide.

9. INSPECTION

- A. Subgrade and Rough Grade Inspection:
 - 1. Contractor shall notify Project Manager when excavations have reached required subgrade.
 - 2. If Project Manager determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
 - 3. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices.
 - 4. For concrete subgrade preparation, proof-roll subgrade in locations identified by the Project Manager with a pneumatic-tired and loaded ten (10-wheel), tandem-axle dump truck weighing not less than fifteen (15) tons to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
 - a. Completely proof-roll subgrade in one direction. Limit vehicle speed to three (3) mph.
 - b. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by the Project Manager, and replace with compacted backfill or fill as directed.
 - 5. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the Project Manager, without additional compensation.

3.10 SPECIAL CONDITIONS

- A. Cold Weather Protection: Protect excavation bottoms against freezing when atmospheric temperature is less than thirty five degrees (35°) F.
- B. Dust Control: Provide dust control to alleviate dust nuisance to the public, to adjacent properties and other work underway at the project site.
- C. Unanticipated Conditions: Notify the Project Manager immediately upon finding subsurface or other conditions which are not shown or which cannot be reasonably assumed from existing surveys. Secure Project Manager's instructions before proceeding with further work in such areas.
- D. Unsatisfactory Soils: Remove or otherwise correct unsanitary, sour, or otherwise unsatisfactory soil. Remove contaminated or unsuitable material from under paved areas.
- E. Additional Excavation: When excavation has reached required subgrade elevations, the Contractor shall contact the testing agency, which will make an observation of conditions. If unsuitable bearing materials are encountered at required subgrade elevations, carry excavations deeper and replace excavated material as directed by the testing agency.

3.11 FILL AND BACKFILL

- A. General: Place soil material in layers to required subgrade elevations, for each area classification listed below, using materials specified in this Section.
 - 1. Under grassed areas, use satisfactory, excavated or borrow material.
 - 2. Under walks and pavements, use satisfactory, excavated or borrow materials, or a combination to meet structural fill requirements.
- B. Backfill excavations as promptly as work permits, but not until completion of the following:
 - 1. Inspection, testing, approval, and recording locations of underground utilities have been performed and recorded.
 - 2. Removal of all trash and debris from excavation.

12. DRAINAGE AND PUMPING

- A. Maintain soil under foundations and slabs at natural moisture content.
- B. Provide and maintain slopes, crowns, and ditches in excavation to insure satisfactory surface drainage at all times. Provide temporary drainage facilities to prevent water from draining into excavations. When work is completed, restore temporary ditches or cuts to original grade or finish grade as indicated.
- C. Bailing or Pumping: Immediately pump or bail out water found in excavations, whether rain or seepage. Excavations shall be kept free from water at all times. Take measures and furnish equipment and labor necessary to control the flow, drainage, and accumulation of water as required to permit completion of the work under this Section to avoid damage to the work.

13. PLACEMENT AND COMPACTION

- A. Abide by requirements of project Geotechnical Report unless otherwise directed by Project Manager.
- B. Ground Surface Preparation: Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Ground surfaces that are steeper than four-to-one (4:1) (horizontal to vertical) shall be stripped of vegetation, scarified to a depth of six-inches (6") and create excavated benches to ensure that fill material will bond with the existing surface.
 - 1. Present remediation options to Project Manager for any soils that do not meet the specified standard proctor density to bring those soils into compliance with the specifications.
- C. Place backfill and fill materials in layers not more than eight-inches (8") in loose depth for material compacted by heavy compaction equipment, and not more than four-inches (4") in loose depth for material compacted by handoperated tampers, each layer to be compacted to meet requirements herein.
- D. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Compact each layer to required percentage of maximum dry density

or relative dry density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.

E. Compaction of Fill for Hardscape Areas:

1. Select fill material shall be placed and mixed in evenly spread layers. After each fill layer has been placed, it shall be uniformly compacted. Fill materials shall be placed such that the thickness of loose material does not exceed eight-inches (8") and the compacted lift thickness does not exceed six-inches (6").
2. Compaction shall be obtained by the use of sheepsfoot rollers, multiple-wheel pneumatic-tired rollers, or other equipment required to meet specifications. Granular fill shall be compacted using vibratory equipment or other equipment required to meet specifications. Compaction of each layer shall be continuous over the entire area. Compaction equipment shall make sufficient passes to ensure that the required density is obtained. Refer to Paragraph 3.12.1 herein for criteria.
3. Prior to placement of any base or surfacing materials, one hundred percent (100%) of the subgrade shall be proof rolled with a fully loaded tandem-axle truck.

F. Compaction of Landscape Slope Areas:

1. Fill slopes shall be compacted by means of sheepsfoot rollers or other suitable equipment. Compaction operations shall be continued until slopes are stable, compact to a density as specified in Paragraph 3.12.1. Permanent fill slopes shall not exceed four-to-one (4:1) (horizontal to vertical).
2. Where natural slopes are steeper than twenty percent (20%) in grade and the placement of fill is required, cut benches shall be provided at the rate of one bench for each five feet (5') in height (minimum of two benches). Benches shall be at least ten feet (10') in width. Fill shall be placed on completed benches as outlined within this specification.

G. Control soil and fill compaction, providing minimum percentage of density specified. Correct improperly compacted areas or lifts as directed if soil density tests indicate inadequate compaction.

H. Moisture Control: Control moisture content within 2% of optimum moisture as determined by ASTM D 698. Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade or layer of soil material. Apply water in minimum quantity as necessary to prevent free water from appearing on surface during or subsequent to compaction operations.

1. Moisture Content: The Contractor may be required to add moisture to the excavation materials in the stockpile area if it is not possible to obtain uniform moisture content by adding water on the fill surface. The Contractor may be required to rip or disc the fill soils to provide uniform moisture content through the soils.
2. The application of water to the embankment materials shall be made with any type of watering equipment which will give the desired results. Water jets from the spreader shall not be directed at the embankment with such force that fill materials are washed out.
3. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
4. Stockpile or spread soil material that has been removed because it is too wet to permit compaction. Assist drying by disking, harrowing, or pulverizing until moisture content is reduced to a satisfactory value.

- I. Density Tests: Field density tests shall be made by the Contractor per Division 01 Section "Contractor Quality Control" locations and depths selected by the Project Manager. Where sheepfoot rollers are used, the soil may be disturbed to a depth of several-inches. Density tests shall be taken in compacted material below the disturbed surface. When density tests indicate that the density or moisture content of any layer of fill or portion thereof is below that required, the particular layer or portion shall be reworked until the required density or moisture content has been achieved. Criteria for acceptance are as follows:
 1. Under pavements and structures: Intervals and quantities of tests required shall be established by the Project Manager. On-site or imported clay materials shall be compacted to at least ninety five percent (95%) of maximum standard Proctor dry density (ASTM D 698) at moisture content within two percent (2%) of optimum. Granular material, whether imported or developed on-site, shall be moisture conditioned to within two percent (2%) of optimum and compacted to at least 95% of maximum modified Proctor dry density (ASTM D 1557).
 2. Under landscape areas (top 12-inches): Eighty five percent (85%) of maximum standard Proctor dry density at moisture content within two percent (2%) of optimum (ASTM D 698).

3.13 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of existing trees or within Tree Protection Fencing. Refer to Division 01 Section "Tree Retention and Protection".

3.14 GRADING

- A. General: Uniformly grade areas within project limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations or contours are indicated or between such points and existing grades.
- B. Subgrade tolerances are as follows:
 1. Lawn, Seeded, and Unpaved Areas: Finish areas to receive topsoil to within not more than +/- one-tenth (0.10') of a foot above or below required subgrade elevations.
 2. Athletic Fields: Finish areas to receive topsoil to within not more than +/- five one-hundredths (.05') of a foot from required elevation.
 3. Pavements: Shape surface of areas under pavement to line, grade, and crosssection, with finish surface not more than two one-hundredths (0.02') of a foot above or below required subgrade elevation.
 4. Structures: Backfill within 3' of all structures and for full height of walls, shall be selected non swelling material, structural. Backfill material shall be relatively impervious, well graded and free from stones larger than 3". All backfill around structures shall be consolidated by mechanical tamping. The material shall be placed in 6" loose lifts and compacted as specified.
 5. Compaction of all concrete subgrade: 95% of standard proctor density at 2% optimum moisture.
- C. Under no circumstances shall variations from specified grade elevations create any ponding or retention of water on intermediate pavement levels, or finished surfaces.

15. PLACING STOCKPILED TOPSOIL

- A. Refer to Section "Topsoil".

3.16 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
 - 1. Scarify or remove and replace soil material to depth as directed by Project Manager; reshape and re-compact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
 - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work.

3.17 MAINTENANCE

- A. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape, and compact to required density prior to further construction.
- B. Settling: Where settling is measurable or observable at excavated areas during general project warranty period, remove surface (pavement, lawn, or other finish), add backfill material, compact, and replace surface treatment. Restore appearance, quality, and condition of surface or finish to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

18. DISPOSAL OF EXCESS AND WASTE MATERIALS

- A. Remove waste materials, including materials not allowed for fill, backfill or site grading as specified within, trash, contaminated materials, and debris, and legally dispose of it off City's property at Contractor's expense.
- B. Remove any excess fill material from the site, unless otherwise directed by the Project Manager. Soils rendered unfit to receive tree planting due to concrete water, mortar of lime water, fly ash, or concrete/asphalt rubble shall be removed from the site and disposed of properly.
- C. The Contractor shall conduct all site grading operations and other construction activities to minimize erosion of site soil materials. Contractor shall be responsible to maintain streets daily removing any spillage of dirt, rocks, or debris from equipment entering leaving the site.

END OF SECTION

ELECTRICAL

1. SCOPE OF WORK

- A. This section includes providing all electrical work needed for the Park which includes new 100 AMP electrical service in stainless steel lockable cabinet and (4) GFI receptacles at the pavilion. GFI receptacle locations are included on the plan.

1. PRODUCTS

- A. GFI receptacles approved for exterior applications with lockable while in use covers.

2. EXECUTION

- A. Handle and store the fixtures according to the manufacturer's recommendations.
- B. Coordinate with concrete contractor for the conduit needed through the structural slab of the pavilion.
- C. Installation of electrical line and equipment shall be completed as per state and local codes, the manufacturer's instructions, and in coordination with Macon-Bibb Facilities Department.

END OF SECTION

METAL FABRICATION

PART 1 GENERAL

1. RELATED DOCUMENTS

- A. The General Contract Conditions, Drawings and other Division - 1 Specification sections apply to Work of this section.

1.02 DESCRIPTION

- A. Work Included: Work consists of furnishing all labor, material and equipment necessary for completion of the following work.
 - 1. Guardrails, handrails, welds, washers, bolts, nuts, shims, and anchor bolts and anchor plates.
 - 2. Erecting, connecting, field welding, and adjusting for plumb and level.
 - 3. All other work normally related to the above or specified under this section.
- B. All other miscellaneous angles, channels, pipes/tubes and plates as indicated.
- C. Definitions:
 - 1. Metal Fabrications: Synonymous with miscellaneous metals.
 - 2. Architecturally Exposed Structural Steel: As used under this section, includes all metal fabrications exposed to view.

1.02 RELATED WORK

- A. Section - Painting

1.03 QUALITY ASSURANCE

- A. Welder Qualifications: Currently qualified according to AWS D1.1. AISC Specifications for Architecturally exposed Structural Steel.
- B. Hand Rail Fabrication: Demonstrated experience with at least five projects of comparable scope.
- C. Architectural metals shall be of the best commercial quality and their various forms shall be straight and true. All steel to be FY 36KSI, ASTM A36, all reinforced steel to be FY 60 KSI, and all tubes to be ASTM A 500, (grade b). There shall be no scratches, scars or creases, buckles, ripples or chatter marks. Finished surfaces must be smooth and true.
- D. Material shall be selected for surface flatness, smoothness and freedom from surface blemishes when exposed to view in the finished unit. Exposed-to-view surfaces which exhibit pitting, seam marks, roller marks, "oil canning", stains, discolorations or other imperfections on the finished units will not be acceptable.

1.04 REFERENCES

- A. ASTM A336 - Structural steel.
- B. ASTM A36 - Steel sections.
- C. ASTM A307 - Low carbon steel externally and internally threaded fasteners.
- D. ASTM A500 - Steel tubing cold form.
- E. AWS D1.1 - Structural welding code.
- F. Meet requirements of AISC Specifications for Architecturally Exposed Structural Steel, latest edition.

1.07 PRODUCT HANDLING AND STORAGE

- A. Deliver anchor bolts and other anchorage devices that are embedded in cast-in-place concrete or masonry construction to the project site in time to be installed before the start of cast-in-place concrete operations or masonry work.
- B. Provide setting drawings, templates, and directions for the installation of anchor bolts and other similar devices.
- C. Metals that are stored at the project site shall be above ground on platforms, skids, or other supports. Protect steel from corrosion. Store other materials in a weathertight and dry place until ready for use.
- D. Handle in such a manner so as to protect surfaces and to prevent damage to fabricated pieces, during storage, erection and during construction.
- E. Store packaged materials in their original, unbroken package or container. Materials shall be carefully handled and stored under cover in a manner to prevent deformation and damage to the materials and to shop finishes, and prevent rusting and the accumulation of foreign matter on the metal work.
- F. All such work shall be repaired and cleaned before erection.

PART 2 MATERIALS

2.01 GUARDRAILS AND HANDRAILS

- A. Guardrails and Handrails shall be fabricated from tubular steel for posts and rails and solid steel for pickets dipped in primer, unless otherwise noted.

2.02 ANCHOR STUD CONNECTORS

- A. Anchor stud connectors shall meet requirements of AWS D1.1 Structural Welding Code, latest edition.

2.03 BOLTS, NUTS AND WASHERS

- A. ASTM A307

2.04 WELDING MATERIALS

- A. AWS D1.1: type required for materials being welded. Welding for Rail Extensions shall utilize E80 series electrodes which have the same weathering characteristics as corrosion-resistant steel.

2.05 FABRICATIONS

- A. Shop fabrication and tolerances shall conform to requirements of AWS and AISC specifications and shall be equal to the best practice in modern sheet metal and structural steel shops.
- B. Verify dimensions on-site prior to shop fabrication.
- C. Fabricate items with joints tightly fitted and secured. Joints exposed to weather shall be formed to exclude water.
- D. Fit and shop assemble in largest practical sections, for delivery to site. Curved work shall be true to radii. Posts for handrail shall be vertical.
- E. Grind exposed welds flush and smooth with adjacent finished surface. Ease exposed edges to small uniform radius.
- F. Make exposed joints butt tight, flush, and hairline.
- G. Supply components required for anchorage of metal fabrications. Fabricate anchorage and related components of same material and finish as metal fabrication, except where specifically noted otherwise.
- H. Do all cutting, punching, drilling and tapping required for attachment of hardware and of work of other Sections where so indicated or where directions for same are given prior to, or with approval of shop drawings.
- I. Live loads shall be not less than the minimum required by code. Where specific live loads are not set forth in the codes applicable to this work, and are not given on the Drawings, designs shall be such as to support live loads without deflection of more than $L/360$ of length of any member and without permanent deformation, all with a safety factor of not less than $2\frac{1}{2}$ to 1.
- J. Zinc Electroplate: Components shall be zinc electroplated including all bolts, nuts, washers and other related ferrous metal items used herewith. Zinc electroplate shall comply with ASTM B633.

2.06 FINISH

- A. Clean surfaces of grease, concrete splatter, and foreign matter. Remove grease and soil with recommended solvents.
- B. Reference 09900 for finish and color.

PART 3 EXECUTION

3.01 INSPECTION

- A. Prior to start of erection the steel erector shall check the location of all proposed anchor bolts and disclose any discrepancy in the setting plan to the Owner's Representative.

2. COORDINATION

- A. Contractor shall coordinate installation of artistic components with Owner's Representative and Artist. Contractor shall provide connections for artistic inserts.

3.03 PREPARATION

- A. Field measurements: Take measurements on site as required for correct fabrication and installation. Fabricator shall be responsible for errors in fabrication and for correct fit of structural steel.
- B. The contractor assures that all components, specified or required to satisfactorily complete the installation are compatible with each other, with adjoining substrates, materials and work by other trades, and with the conditions of installation and expected use.
- C. Pre-assemble items in the shop to the greatest extent possible, so as to minimize field splicing and assembly of units at the project site. Disassemble units only to the extent necessary for shipping and handling limitations. Clearly mark units for re-assembly and coordinated installation.

3.03 INSTALLATION

- A. Perform all cutting, drilling, and fitting required for the installation of the metal items. Set the work accurately in location, alignment and elevation, plumb, level and true, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items that are to be built into concrete.
- B. Obtain Owner's Representative review prior to site cutting or making adjustments that are not part of scheduled work.
- C. Make provision for erection stresses by temporary bracing. Keep work in alignment.
- D. Replace items damaged in course of installation.
- E. Perform field welding in accordance with AWS D1.1.
- F. Do not cut finishes that cannot be completely restored in the field. Return items with such finishes to the shop for required alterations, followed by complete refinishing or provide new units at contractor's option.
- G. Joints shall be flush to conceal reinforcement, or welded where thickness of section permits. All welds shall be ground smooth and free of jagged edges or lumps.
- H. Contact surfaces of connected members shall be ground true. Parts shall be assembled so that joints will be tight and practically unnoticeable, without use of filling compound.
- I. Set all railings in sleeves with molten lead or non-shrink, non-metallic grout. Sulfur or gypsum-based products shall not be used for this purpose.
- J. Form tight joints with exposed connections accurately fitted with uniform reveals and spaces for sealants and joint fillers. All tube to tube welds shall be partial

penetration groove welds. Where cutting, welding and grinding are required for proper shop fitting and jointing of the work, restore finishes and replace.

- K. Install drilled-in inserts in accordance with Manufacturer's recommendations in accurately drilled holes of required diameter and depth. Where adhesive inserts are used, thoroughly clean hole of all debris and drill dust prior to installation of insert and adhesive bonder. Do not drill holes in concrete or masonry until material has achieved full design strength.
- L. After completion of specified finishes on work, coat concealed surfaces which will be in contact with concrete or footings with a heavy coat of bituminous paint to prevent corrosion and galvanic action. Do not extend coating onto exposed surfaces.
- M. After installation, grind and touch-up field welds, and scratched or damaged prime painted or galvanized surfaces. Use a primer consistent with shop coat. Use a primer recommended for galvanized surfaces. See section 09900-Painting.

1. FIELD QUALITY CONTROL

- A. Inspection by the Testing Agency shall include field Inspection: All welds 100% visual.

END OF SECTION

METAL ROOF PANELS, STANDING SEAM

GENERAL

SECTION INCLUDES

Snap lock standing seam metal roof panels Sheffield Metals SMI 1.75" Snaplock Standing Seam Roof system, or approved equal, installed over a 2X6 T&G roof deck with related metal trim and accessories.

DELIVERY, STORAGE, AND HANDLING

Protect products of metal panel system during shipping, handling, and storage to prevent staining, denting, deterioration of components or other damage. Protect panels and trim bundles during shipping.

Deliver, unload, store, and erect metal panel system and accessory items without misshaping panels or exposing panels to surface damage from weather or construction operations.

Store in accordance with Manufacturer's written instructions. Provide wood collars for stacking and handling in the field.

COORDINATION

Coordinate metal panel installation with rain drainage work, flashing, trim, and other adjoining work to provide a leak-proof, secure, and noncorrosive installation.

WARRANTY

Warranties to include 40 year paint finish warranty and a 25 year 6 month substrate warranty.

PRODUCTS

MANUFACTURER

Basis of Design Manufacturer: **Sheffield Metals International**, (800) 283-5262; specifications@sheffieldmetals.com; www.sheffieldmetals.com.

Provide basis of design product [or comparable product approved by Architect prior to bid].

Manufacturer/Source: Provide metal roof panel assembly and exposed sheet metal accessories from a single manufacturer meeting quality assurance requirements of this Section.

PERFORMANCE REQUIREMENTS

General: Provide metal roof panel system meeting performance requirements as determined by application of specified tests by a qualified testing facility on manufacturer's standard assemblies.

Solar Reflectance Index (SRI) for Roof Slope Greater than 2:12: Three-year aged SRI minimum 32 or initial SRI minimum 39, per ASTM E 1980.

Roofing System Design: Provide roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency in accordance with UL 580, or UL 1897, and to resist uplift pressures.

Wind Uplift Resistance: Comply with UL 580 for wind-uplift Class 90.

Wind Loads: Determine loads based on uniform pressure, importance factor, exposure category, and basic wind speed indicated on drawings per ASCE-7.

Hail Resistance: Provide metal roof panel assemblies listed as Class 4 hail resistant and tested in accordance with UL 2218.

Water Penetration Static Pressure, ASTM E 1646: No uncontrolled water penetration at a static pressure of 12 psf.

Wind Driven Rain Resistance: Provide metal roof panel assemblies tested in accordance with Testing Application Standard (TAS) 100-95: Test procedures for wind and wind driven rain resistance of discontinuous roof systems.

Fire Resistance: Class A Fire Rating in accordance with UL 790.

Thermal Movements: Allow for thermal movements from variations in both ambient and internal temperatures. Accommodate movement of support structure caused by thermal expansion and contraction. Allow for deflection and design for thermal stresses caused by temperature differences from one side of the panel to the other.

METAL ROOF PANELS

Snap Lock, Concealed Fastener, Standing Seam Metal Roof Panels: Metal roof panel consisting of formed metal sheet with standing ribs at panel edges, installed by lapping and interconnecting edges of adjacent panels, and attaching panels to supports using concealed clips and fasteners in a weathertight installation.

Basis of Design: **Sheffield Metals International, SMI 1.75" SnapLock Standing Seam Metal Roof Panel.**

Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792/A 792M, structural quality, Grade 50, pre-painted by the coil-coating process per ASTM A 755/A 755M. Thickness: [0.040 inch (1.02 mm)].

Metal Panel Surface: Smooth

Exterior Finish: [Two-coat fluoropolymer]

Color: As selected by Architect from manufacturer's full range of standard colors

Panel Seam Height: 1.75 inch (44.45 mm).

Panel Width: 18"

Pan Configuration: [Striated]

Joint Type: Snap lock.

METAL ROOF PANEL ACCESSORIES

Panel Clips for Steel Sheets: Manufacturer's standard single-piece galvanized steel clip, ASTM A 653/A 653M, G90 (Z180) hot-dip galvanized zinc coating, 18 ga. (1.27 mm) 1.875" height x 2.010" wide x 3.500" long.

Panel Fasteners: Self-tapping screws and other acceptable corrosion-resistant fasteners recommended by metal roof panel manufacturer for specified application. Where exposed fasteners cannot be avoided, supply fasteners with EPDM or neoprene gaskets, and heads matching color of metal panels by means of factory-applied coating.

Joint Sealers: Manufacturer's standard or recommended liquid and preformed sealers and tapes, and as follows:

Tape Sealers: Manufacturer's standard non-curing butyl tape, AAMA 809.2.

Concealed Joint Sealant: Non-curing butyl, AAMA 809.2.

UNDERLAYMENT MATERIALS

Self-Adhering, High-Temperature Multilayer Laminated Underlayment Sheet: ICC-ES AC188 compliant high tensile strength sheet, minimum 25 mils (0.63 mm) thick minimum, consisting of polypropylene membrane with a slip-resisting top surface suitable for contact with metal roofing, and adhesive layer with release-paper backing.

Basis of Design Product: Kirsch Building Products, SharkSkin Ultra SA.

UV Exposure Rating: 12 months.

Tensile Strength, ASTM D 226: 106 lbf/in (30.4 kN/m), cross-machine direction.

Self-Sealability, ASTM D 1970: Pass.

Flame Spread, ASTM E 84: Class A.

FABRICATION

General: Provide fabricated and finished metal panels and metal panel accessories meeting performance requirements, indicated profiles, finishes, and structural requirements.

On-Site Fabrication: Fabricate metal panels on-site using manufacturer-approved portable roll-forming equipment. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.

Form panels in continuous lengths for full length of detailed runs, except where otherwise indicated on approved shop drawings.

Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with roof panel manufacturer's recommended profiles, approved shop drawings, and Project drawings. Form from materials matching metal panel substrate and finish.

FINISHES

Finishes, General: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

Steel Panels and Accessories:

Fluoropolymer Two-Coat System: 0.2 – 0.3 mil primer with 0.7 - 0.8 mil 70 percent PVDF fluoropolymer color coat, AAMA 621.

Interior Finish: 0.5 mil total dry film thickness consisting of primer coat and wash coat of manufacturer's standard light-colored acrylic or polyester backer finish.

EXECUTION

EXAMINATION

Examine metal roof panel system substrate and supports with Installer present. Inspect for erection tolerances and other conditions affecting metal panel installation.

Inspect metal panel support substrate to determine if support components are installed as indicated on approved shop drawings. Confirm presence of acceptable supports at recommended spacing to match installation requirements of metal roof panels.

Panel Support Tolerances: Confirm that panel supports are within tolerances acceptable to metal roof panel system manufacturer.

Examine roughing-in for items penetrating metal panels to verify actual locations of penetrations properly located in relation to seam locations of metal panels.

Correct out-of-tolerance work and other deficient conditions prior to proceeding with metal panel system installation.

UNDERLAYMENT INSTALLATION

Sheet Underlayment: Comply with installation requirements of underlayment manufacturer. Apply over entire roof surface, wrinkle free, in shingle fashion to shed water. Cover underlayment within specified period.

METAL PANEL INSTALLATION

Standing Seam Metal Roof Panels: Install weathertight metal panel system in accordance with manufacturer's written instructions, approved shop drawings, and project drawings. Install metal roof panels in orientation, sizes, and locations indicated, assuring that the roof is square, straight, flat and in-plane. Anchor panels and other components securely in place. Provide for thermal and structural movement.

Attach panels to supports using clips, screws, fasteners, and sealants recommended by manufacturer and indicated on approved shop drawings.

Fasten metal panels to plywood deck with concealed panel clips and fasteners at each location indicated on approved shop drawings, with spacing and fasteners indicated.

Snap Lock Joint: Snap lock standing seams together so clip and metal roof panel are completely engaged.

Provide weatherproof jacks for pipe and conduit penetrating metal panels of types recommended by manufacturer.

Dissimilar Materials: Where elements of metal panel system will come into contact with dissimilar materials, treat faces and edges in contact with dissimilar materials as recommended by manufacturer.

ACCESSORY INSTALLATION

General: Install metal panel trim, flashing, and accessories using recommended fasteners and joint sealers, with positive anchorage to building, and with weather tight mounting. Coordinate installation with flashings and other components.

Install components required for a complete metal panel assembly, including trim, copings, flashings, sealants, closure strips, and similar items.

Comply with details of assemblies utilized to establish compliance with performance requirements and manufacturer's written installation instructions.

Provide concealed fasteners except where noted on approved shop drawings.

Set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently weather resistant.

Joint Sealers: Install joint sealers where indicated and where required for weathertight performance of metal panel assemblies, in accordance with manufacturer's written instructions.

Pipe Flashing: Form flashing around pipe penetration. Fasten and seal to metal roof panels as recommended by metal panel manufacturer.

Gutters: Join sections with riveted and soldered or lapped, riveted, and sealed joints. Attach gutters as indicated on approved shop drawings. Provide end closures and seal watertight with sealant. Provide for thermal expansion.

Downspouts: Join sections with telescoping joints. Provide fasteners designed to hold downspouts securely 1 inch (25 mm) away from walls; locate fasteners and terminate at bottom of downspout as indicated on approved shop drawings.

CLEANING AND PROTECTION

Remove temporary protective films immediately in accordance with metal roof panel manufacturer's instructions. Clean finished surfaces as recommended by metal roof panel manufacturer.

Replace damaged panels and accessories that cannot be repaired to the satisfaction of the Architect.

END OF SECTION

MORTAR AND GROUT

PART 1 GENERAL

1. Related Documents

- A. The General Contract Conditions, Drawings, and other Division-1 Specifications apply to Work of this Section.

1.2 Description

- A. Furnish all labor, materials and equipment and perform all operations necessary to install mortar and grout as required by stone walls and stone veneer columns, as shown in the construction plans and as specified herein.

1.3 Related Sections

- A. Section - Earthwork
- B.
- C. Section - Site Stone

1.4 Submittals / Shop Drawings

- A. Submit catalog data on grout proposed for use.
- B. Submit mix design for Masonry mortar.
- C. Submit sample from manufacturer for color selection by owner's representative.

1.5 Quality Assurance

- A. Contractor shall obtain mortar ingredients of uniform quality, from one manufacturer for each cementitious component and from one source and producer for each aggregate for the entire project.
- B. Contractor shall comply with the following standards, except where more stringent requirements are stated on the drawings or herein:
 - 1. American National Standards Institute, ANSI/NSB 211 (A41.1), "Building Code Requirements for Masonry"
 - 2. American Society for Testing Materials, ASTM.
 - 3. National Concrete Masonry Association, NCMA, "A Manual of Facts on Concrete Masonry."
 - 4. Uniform Building Code, UBC, Chapter 24 – Masonry.

1.6 Product Handling And Storage

- A. Deliver and store mortar materials to prevent inclusion of foreign material and damage by water. Deliver packaged material in original manufacturer's containers.

- B. Material showing evidence of water or other damage is subject to rejection.

1.7 Job Conditions

- A. Masonry work shall not be performed when the temperature is below 40 degrees F. except when approved by the Project Manager.
- B. In cold weather masonry, reinforcing steel and concrete upon which masonry is to be placed shall be kept free of frost, ice or other foreign substances.
- C. Hot Weather Protection During Installation: When air temperature exceeds 99 degrees F in the shade, protect freshly laid masonry from direct exposure to wind and sun.
- D. Moisture Protection During Installation: Where exposed to weather, the top of masonry walls shall be covered at the end of each days work using a waterproof material weighed down to insure its retaining in place. Maintain such protection until final capping of the wall.

PART 2 PRODUCTS

1. Materials

- A. Non – Shrink, Non-Metallic Grout or Dry-pack.
 - 1. Grout shall conform to ASTM C1107 Specification for Packaged Dry, Hydraulic-Cement Grout (Non-shrink) and CRD-C-621-80, Corps of Engineers Specification for Non-Shrink Grout. Provide grout specifically recommended by manufacturer for exterior applications of the types specified herein or indicated on the drawings.
 - 2. Provide grout which shows zero percent (0%) shrinkage and not more than 0.02% expansion after 28 days, as determined by CRD C-621.
- B. Masonry Mortar Mix and Reinforced Masonry Grout
 - 1. Portland Cement: Conform to ASTM C150, Type 1.
 - 2. Hydrated Lime: Conform to ASTM C207, Type S.
 - 3. Aggregates for Mortar: Conform to ASTM C144.
 - 4. Water: clean, potable, and free from deleterious amounts of acids, alkalis or organic material.
 - 5. Aggregates for Grout: Conform to ASTM C404.
 - 6. Additives: None permitted, except as specified herein.
 - 7. Comply with ASTM C270, Property Specifications, for mortar types required. Type S – average compressive strength at 28 days = 1800 psi.

PART 3 EXECUTION

3.1 Non-Shrink Grout

- A. Completely fill with grout in pockets and elsewhere as required and as shown on the drawings. Mix, install and cure grout according to manufacturer's recommendations.

3.2 Masonry Mortar And Grout

- A. Grout to be used in low-lift grouted elements may be job mixed. Conform to requirements listed below.
- B. Method of measuring materials shall be by either volume or weight and such that specified proportions can be controlled and accurately maintained. Measurement of sand by shovel is not allowable.
- C. Mix cementitious materials and aggregate for at least 3 minutes for mortar and five minutes for grout in a mechanical batch mixer, with the maximum amount of water to produce a workable consistency.
- D. Mortars that have stiffened because of evaporation of water from the mortar may be retempered by adding water as frequently as needed to restore required consistency, except that mortar not used within 2-1/2 hours after initial mixing shall be discarded.

3.3 Repair/ Protection

- A. During the construction and guarantee period, the contractor shall be responsible for the repair of any stone and wall deterioration or failure and any adjacent public or private property damages related to the malfunction of the walls. The Contractor shall repair such damages to the Project Manager's satisfaction at no additional cost to the District.
- B. All stone work in progress shall be protected at all times during construction by use of a suitable strong, impervious film fabric securely held in place.

3.4 Cleanup

- A. Concrete scum and grout stains on the pavers and walls shall be removed immediately. After the wall is constructed, it should not be saturated with water for curing or any other purposes. Where the atmosphere is dry, the wall shall have its surface dampened with a very light fog spray during a curing period for the mortar of three days. If cleaning and condition of surfaces is not satisfactory to the Project Manager, sandblasting may be required at the Contractor's expense. All joints shall be checked for tightness and uniformity of spacing.
- B. Upon completion of the work under this section, the Contractor shall remove all rubbish, waste and debris resulting from his operations off-site. Remove all equipment and implements of service and leave the entire work area in a neat, clean and acceptable condition.
- C. The contractor shall at all times keep the premises free from accumulation of waste materials and rubbish caused by his employees.
- D. At the conclusion of the masonry work; clean all masonry, remove scaffolding and equipment used in the work, and remove all debris, refuse and surplus masonry material, and remove them from the premises. Leave the area acceptably clean.

END OF SECTION

PAINING AND COATING

PART 1 - GENERAL

1. DESCRIPTION

A. This section includes materials and application of painting and coating systems for the following surfaces:

1. Exposed Metal

B. This section does not include coating steel tanks and reservoirs.

2. RELATED WORK SPECIFIED ELSEWHERE

A. Standard Drawings.

3. SUBMITTALS

A. Submit coating manufacturer's data sheets for the products to be applied. Data sheets shall show the following information:

1. Submit type of prime coat and finish coat for review and approval from architect

2. Submit color swatches.

PART 2 - MATERIALS

1. EXPOSED METAL COATING SYSTEMS

A. Exposed Metal, Exterior:

Service Conditions: For use on exterior metal railings.

Surface Preparation: SSPC SP-10.

Prime Coat: self priming Phenolic Alkyd. Products: Tnemec AK02 Universal primer or Architect approved equal.

Finish Coat: Acrylic polyurethane. Apply one or more coats to a total thickness of 5 mils. Products: Tnemec Series 73, 1075, or 1095, or Architect approved equal.

2. WOOD

All wood to receive the following coating in a single color selected by the architect from the manufacturers standard colors

First Coat: Benjamin Moore Arborcoat Exterior Oil Stain Semi Transparent C328 (229 g/L), MPI # 13, 33.

Second Coat: Benjamin Moore Arborcoat Exterior Oil Stain Semi Transparent C328 (229 g/L), MPI # 13, 33A

Wood: Seal knots, pitch streaks, and sap areas with sealer recommended by coating manufacturer; fill nail recesses and cracks with filler recommended by coating manufacturer; sand surfaces smooth.

Remove mill marks and ink stamped grade marks.

3. ABRASIVES FOR SURFACE PREPARATION

A. Abrasives used for preparation of iron and steel surfaces shall be one of the following:

1. 16 to 30 or 16 to 40 mesh silica sand or mineral grit.
2. 20 to 40 mesh garnet.
3. Crushed iron slag, 100% retained on No. 80 mesh.
4. SAE Grade G-40 or G-50 iron or steel grit.

PART 3 - EXECUTION

1. WEATHER CONDITIONS

- A. Do not paint in the rain, wind, snow, mist, and fog or when steel or metal surface temperatures are less than 5 degrees F above the dew point.
- B. Do not apply paint when the relative humidity is above 85% or the temperature is above 90 degrees F.
- C. Do not paint when temperature of metal to be painted is above 120 degrees F.
- D. Do not apply paints if air or surface temperature is below 40 degrees F or expected to be below 40 degrees F within 24 hours.
- E. Do not apply epoxy, acrylic latex, and polyurethane paints on an exterior or interior surface if air or surface temperature is below 60 degrees F or expected to drop below 60 degrees F in 24 hours.

2. SURFACE PREPARATION

- A. Remove oil and grease from metal surfaces in accordance with SSPC-SP 1. Use clean cloths and cleaning solvents and wipe dry with clean cloths. Do not leave a film or greasy residue on the cleaned surfaces before sandblasting.

- B. Remove weld spatter and weld slag from metal surfaces and grind smoothly rough welds, beads, peaked corners, and sharp edges in accordance with SSPC SP-2 and SSPC SP- 3. Grind 0.02 inch (minimum) off the weld caps on pipe weld seams. Grind outside sharp corners, such as the outside edges of flanges, to a minimum radius of ¼ inch.
- C. Neutralize welds with a chemical solvent that is compatible with the specified coating materials. Use clean cloths and chemical solvent. Wipe dry with clean cloths. Do not leave a residue on the cleaned surfaces.
- D. Do not abrasive blast or prepare more surface area than can be coated in one day. Remove all sharp edges, burrs, and weld spatter. Do not abrasive blast PVC, CPVC, or FRP piping or equipment. Do not abrasive blast epoxy, enamel coated, or fusion-bonded epoxy pipe that has already been factory coated, except to repair scratched or damaged coatings.
- E. Wherever the words "solvent cleaning," "hand tool cleaning," "wire brushing," or "blast cleaning" or similar words are used in these specifications or in paint manufacturer's specifications, they shall be understood to refer to the applicable SSPC (Society for Protective Coatings), surface preparation specifications.
- F. Dust blasting is defined as cleaning the surface through the use of very fine abrasives, such as siliceous or mineral abrasives, 80 to 100 mesh. Apply a fine etch to the metal surface to clean the surface of any contamination or oxide and to provide a surface profile for the coating.

3. PROCEDURES FOR ITEMS HAVING SHOP-APPLIED PRIME COATS

Handle shop-primed items with care during unloading, installation, and erection operations to minimize damage. Do not place or store shop-primed items on the ground or on top of other work unless ground or work is covered with a protective covering or tarpaulin. Place shop-primed items above the ground upon platforms, skids, or other supports.

5. FIELD TOUCH-UP OF SHOP-APPLIED PRIME COATS

- A. Remove oil and grease surface contaminants on metal surfaces in accordance with SSPC SP-1. Use clean rags wetted with a degreasing solution, rinse with clean water, and wipe dry.
- B. Remove dust, dirt, salts, moisture, chalking primers, or other surface contaminants that will affect the adhesion or durability of the coating system. Use a high-pressure water blaster or scrub surfaces with a broom or brush wetted with a solution of trisodium phosphate, detergent, and water. Before applying intermediate or finish coats to inorganic zinc primers, remove any soluble zinc salts that have formed by means of scrubbing with a stiff bristle brush. Rinse scrubbed surfaces with clean water.
- C. Remove loose or peeling primer and other surface contaminants not easily removed by the previous cleaning methods in accordance with SSPC SP-7. Take care that remaining primers are not damaged by the blast cleaning operation. Remaining primers shall be firmly bonded to the steel surfaces with blast cleaned edges feathered.

- D. Remove rust, scaling, or primer damaged by welding or during shipment, storage, and erection in accordance with SSPC SP-10. Take care that remaining primers are not damaged by the blast cleaning operation. Remaining primers shall be firmly bonded to the steel surfaces with blast cleaned edges feathered.
- E. Use repair procedures on damaged primer which protects adjacent primer. Blast cleaning may require the use of lower air pressure, smaller nozzles, and abrasive particle sizes, short blast nozzle distance from surface, shielding, and/or masking.
- F. After abrasive blast cleaning of damaged and defective areas, remove dust, blast particles, and other debris by dusting, sweeping, and vacuuming; then apply the specified touch-up coating.
- G. Surfaces that are shop primed with inorganic zinc primers shall receive a field touch-up of organic zinc primer to cover all scratches or abraded areas.
- H. Other surfaces that are shop primed shall receive a field touch-up of the same primer used in the original prime coat.

6. PAINTING SYSTEMS

- A. All materials of a specified painting system, including primer, intermediate, and finish coats, shall be produced by the same manufacturer. Thinners, cleaners, driers, and other additives shall be as recommended by the paint manufacturer for the particular coating system.
- B. Deliver paints to the jobsite in the original, unopened containers.

7. PAINT MIXING

Prepare multiple-component coatings using all of the contents of the container for each component as packaged by the paint manufacturer. Do not use partial batches. Do not use multiple-component coatings that have been mixed beyond their pot life. Provide small quantity kits for touchup painting and for painting other small areas. Mix only the components specified and furnished by the paint manufacturer. Do not intermix additional type components for reasons of color or otherwise, even within the same generic type of coating.

8. PROCEDURES FOR THE APPLICATION OF COATINGS

- A. Conform to the requirements of SSPC PA-1. Follow the recommendations of the coating manufacturer including the selection of spray equipment, brushes, rollers, cleaners, thinners, mixing, drying time, temperature and humidity of application, and safety precautions.
- B. Stir, strain, and keep coating materials at a uniform consistency during application. Apply each coating evenly, free of brush marks, sags, runs, holidays, and other evidence of poor workmanship. Use a different shade or tint on succeeding coating applications to indicate coverage where possible. Finished surfaces shall be free from defects or blemishes.
- C. Do not use thinners unless recommended by the coating manufacturer. If thinning is allowed, do not exceed the maximum allowable amount of thinner per gallon of

coating material. Stir coating materials at all times when adding thinner. Do not flood the coating material surface with thinner prior to mixing. Do not reduce coating materials more than is absolutely necessary to obtain the proper application characteristics and to obtain the specified dry-film thicknesses.

- D. Remove dust, blast particles, and other debris from blast cleaned surfaces by dusting, sweeping, and vacuuming. Allow ventilator fans to clean airborne dust to provide good visibility of working area prior to coating applications. Remove dust from coated surfaces by dusting, sweeping, and vacuuming prior to applying succeeding coats.
- E. Apply coating systems to the specified minimum dry-film thicknesses as measured from above the peaks of the surface profile.
- F. Apply primer immediately after blast cleaning and before any surface rusting occurs, or any dust, dirt, or any foreign matter has accumulated. Reclean surfaces by blast cleaning that have surface colored or become moist prior to coating application.
- G. Apply a brush coat of primer on welds, sharp edges, nuts, bolts, and irregular surfaces prior to the application of the primer and finish coat. The brush coat shall be done prior to and in conjunction with the spray coat application. Apply the spray coat over the brush coat.

10. PROTECTION OF SURFACES NOT TO BE PAINTED

Provide drop cloths to prevent paint materials from falling on or marring adjacent surfaces.

11. FINISH

- A. If the item has an improper finish color or insufficient film thickness, clean and topcoat the surface with the specified paint material to obtain the specified color and coverage. Hand or power-sand visible areas of chipped, peeled, or abraded paint, feathering the edges. Then prime and finish coat in accordance with the specifications. Work shall be free of runs, bridges, shiners, laps or other imperfections.

END OF SECTION

SITE FURNISHINGS

1.GENERAL

1. SUMMARY

- A. Section Includes: backed benches, waste receptacles, bike racks, pet waste stations, planter pots, ledge tables and chairs

2. QUALITY ASSURANCE

- A. Material and craftsmanship for site furnishings shall conform to recognized association standards.
- B. Contractor to submit color samples, technical data, and installation methods prior to any ordering and or installing of these items.
- C. Contractor to field locate each item and associated paving prior to any installation and/ or construction and shall have Owner's Representative's review.

3. SUBMITTALS

- A. If using products listed in contract documents and this section, submittals are not required. If proposing alternates submit product data for review and approval by landscape architect and Macon-Bibb Parks and Beautification dept.

2.PRODUCTS

1. PICNIC TABLES

- A. Park Master Picnic Table by by Belson, or Landscape Architect approved alternate. Contact (T) 1-800-323-5664
 - 1. Powdercoated steel tubing
 - 2. Color: black
 - 3. MCA pressure treated wood top
 - 4. 8' Length
 - 5. Install per manufacturers details and recommendations.
 - 6. Quantity Re: plans
- B. Park Master Picnic Table by Belson, or Landscape Architect approved alternate. Contact (T) 1-800-323-5664
 - 1. Powdercoated steel tubing
 - 2. Color: matte black
 - 3. MCA pressure treated wood top
 - 4. Universal access- 8' Length

5. Install per manufacturers detail and recommendations.
6. Quantity Re: plans

2. TRASH RECEPTACLES

- A. Township Trash Receptacle by Belson, or Landscape Architect approved alternate. Contact (T) 1-800-323-5664
 1. 32 Gallon, Dome top
 2. Powdercoated black frame and top
 3. White Oak slats
 4. Install per manufacturers details and recommendations.
 5. Quantity Re: plans

3. BENCHES

- A. Palisade Bench by Belson, or Landscape Architect approved alternate. Contact (T) 1-800-323-5664
 1. 72" length
 2. Powdercoated black frame
 3. White Oak slats
 4. Install per manufacturers details and recommendations.
 5. Quantity Re: plans

3.EXECUTION

1. INSTALLATION

- A. All site furniture shall be installed per Drawings and manufacturer's instructions.

END OF SECTION

SITE STONE

PART 1 -GENERAL

1.1 RELATED DOCUMENTS

- A. The General Contract Conditions, Drawings, and Division - 1 Specification sections, apply to Work of this section.

1. DESCRIPTION

- A. Work generally includes but is not limited to face stone on pavilion foundation and stone coping on pavilion slab. Also the stone walls and piers for the entrance sign.

1.3 RELATED SECTIONS

- A. Section– Mortar and Grout

1.4 QUALITY ASSURANCE

- A. Subcontractor's Qualifications: The firm executing the work under this section shall have five (5) years experience in work of similar scope and nature to that specified. The firm shall employ skilled labor with a working knowledge of stone masonry techniques. Journeyman or lead mason must have a minimum experience of 3 years. The Owner's Representative reserves the right to reject the Contractor's masonry personnel or stonework subcontractor based on these experiences and skill requirements. If rejected, the Contractor shall obtain personnel and/or a subcontractor having qualifications acceptable to the Owner's Representative. No adjustments in prices or completion time will be allowed due to changes in personnel or delays in obtaining satisfactory personnel or subcontractor
- B. Stone shall be sound, durable and free of visible defects, which will impair the strength, durability or appearance; or concentrations of material that will cause objectionable staining or weakening under normal environments of use.
- C. All stone shall be selected or approved by the Landscape Architect or Project Manager, and obtained from a single quarry having adequate capacity and facilities to meet the specified requirements; and by a firm equipped to process the material promptly and in accordance with the Specifications.
- D. Stone placement: Prior to placement of stone material contractor shall meet on site with the Landscape Architect to review placement and aesthetic approaches for the slab placement. The Contractor shall install a mockup of material, which may remain part of the work if approved by the Project Manager.
- E. Contractor shall obtain mortar ingredients of uniform quality, from one manufacturer for each cementitious component and from one source and producer for each aggregate for the entire project.

- F. Contractor shall comply with the following standards, except where more stringent requirements are stated on the drawings or herein:
1. American National Standards Institute, ANSI/NSB 211 (A41.1), "Building Code Requirements for Masonry"
 2. American Society for Testing Materials, ASTM.
 3. National Concrete Masonry Association, NCMA, "A Manual of Facts on Concrete Masonry."
 4. Uniform Building Code, UBC, Chapter 24 – Masonry.

1.5 SUBMITTALS:

The following shall be submitted for the Work in this Section:

1. Mock-Up for Stone Walls: Provide a field constructed sample installation of all dimensional stone cladding types. Each mock-up shall:
 - a) Provide a wall section of at least 10 linear feet
 - b) Locate where directed by Landscape Architect or Project Manager.
 - c) Represent workmanship of finish work using all materials, all patterns and joint treatment, indicated for project work.
 - d) Mock-up panel will be used to approve color blend, pattern and technique of laying. Additional mock-up panels will be required until a panel is approved.
 - e) Mock-up will be reviewed for acceptance by the Project Manager and the Landscape Architect.
 - f) Notify Landscape Architect prior to laying stone for mock-up.
 - g) Retain the project mock-up during construction as a standard for judging completed unit stone work. Do not move or destroy mock-up until work is complete.
 - h) Accepted and properly maintained sample installations may remain in completed work if approved in writing by Landscape Architect.
 - i) All work shall match accepted field mock-ups.
 - j) All submittals shall be accepted by the Landscape Architect or Project Manager in writing before Work commences.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Store masonry materials on platforms or pallets. Store mortar materials under cover in a dry location. Protect steel materials from moisture and keep free of loose scale and rust. Handle masonry materials carefully to avoid chipping, breakage, contact with soil or other contaminating material. Deliver cementitious materials in the manufacturer's unbroken, labeled containers. Care shall be taken in transportation and handling of stone, so as not to scratch or damage the stone, particularly the naturally weathered surfaces.

1.7 PROJECT CONDITIONS

- A. Hot Weather Conditions
Protect all masonry construction from direct exposure to wind and sun for 48 hours after installation when erected in an ambient air temperature of 99°F (37°C) in the shade with relative humidity less than 50%.
- B. Cold Weather Conditions
Masonry work shall not be preformed when temperature is below 40 degrees except when approved by project manager.

PART 2 - PRODUCTS

1. GENERAL

- A. Prior to the delivery of stone to the work site, samples shall be approved by landscape architect.
- B. Upon delivering the stone to the site, Owner's Representative will examine the stones and approve them prior to work progressing.
- C. Stone features shall incorporate a mix of shapes and sizes approved by the landscape architect. Stone shall appear naturally weathered; cut faces shall not be visible; and sharp edges shall not be exposed.
- D. Contractor shall notify the Project Manager at a minimum 48 hours in advance of stone placement.

3. MORTAR AND GROUT

- A. As specified in Section Mortar and Grout

PART 3- EXECUTION

1. GENERAL

- A. Set stone in accordance with drawings. Provide anchors, supports, fasteners and other attachments as shown or necessary to secure stonework in place. Adjust accessories for proper setting of stone. Completely fill slots for anchors, dowels, fasteners and supports with mortar during setting of stone.
- B. Execute stonework by skilled mechanics and employ skilled stone fitters at the site to do necessary field cutting as stone is set.

3.5 ADJUSTMENT, PROTECTION, AND CLEAN-UP

- A. Upon completion of work, remove from the premises all surplus materials, tools, equipment, rubbish, debris, and rejected stone resulting from the work.

- B. Remove and replace stone units that are broken, chipped, stained or otherwise damaged. Where directed, remove and replace units that do not match adjoining stonework. Provide new matching units; install as specified and point-up to eliminate evidence of replacement. Repair defective and unsatisfactory joints as required to provide a neat, uniform appearance.
- C. Clean stonework not less than six days after completion. Thoroughly clean and scrub completed wall with fiber brushes, using a mild alkaline abrasive cleaner that contains no caustic or harsh fillers. Do not use wire brushes or acid type cleaning agents. Begin at top and work down. Clean stone thoroughly, leaving no mortar stains or traces of cleaning compound.
- E. Protect the stonework from collapse, deterioration, discoloration or damage during subsequent construction and until acceptance of the work.

END OF SECTION

TOPSOIL

1. GENERAL

1. RELATED DOCUMENTS

- A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

2. SUMMARY

- A. This Section includes requirements for furnishing, stockpiling, and placing topsoil on a previously prepared subgrade.
- B. Related Sections:
 - 1. Section "Earthwork"
 - 2. Section "Soil Preparation".
 - 3. Section "Trees, Plants, and Groundcovers".

3. DEFINITIONS

- A. Duff Layer: The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.
- B. Finish Grade: Elevation of finished surface of planting soil.
- C. On-site Topsoil: Soil that is present at the top layer of the existing soil profile at the project site. In undisturbed areas, the surface soil is typically topsoil, but in disturbed areas such as urban environments, the surface soil can be subsoil.
- D. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- E. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- F. Planting Area: Areas to be planted.
- G. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
- H. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.
- I. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

- J. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.

4. QUALITY CONTROL

A. Existing On-Site Topsoil:

1. Existing, native surface topsoil formed under natural conditions with the duff layer retained during the excavation process. It should not be mixed with subsoil or subgrade soils and should be stockpiled on-site. Clean soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.
2. Topsoil shall not include any minerals or elements detrimental to plant growth, including noxious, perennial, biennial or annual weeds. No rocks, sticks, or clods greater than ¾" diameter will be accepted. No plastic, metal or other trash will be accepted.
3. Submit soil analysis report for stockpiled on-site topsoil from the State University Agricultural Extension Service or other approved soil testing laboratory. Report shall cover soil textural classification (percentages of sand, silt, and clay), pH, percentage organic matter, and soluble salts (electric conductivity in millimos/centimeter), and shall include additive recommendations.
4. A minimum of three (3) representative samples shall be taken from varied locations for each soil to be used or amended for planting purposes, with individual tests completed for each sample.
5. A map of the site illustrating the locations of each sample location is to be submitted to Project Manager for approval prior to collecting samples.
6. Follow instructions from soil testing laboratory when collecting samples.
7. Testing will be at the expense of the Contractor.

B. Imported Topsoil:

1. Submit source location for topsoil to be imported to site for approval by Project Manager.
2. Submit soil analysis report for topsoil imported to site, from the State University Agricultural Extension Service or other approved soil testing laboratory. Report shall cover soil textural classification (percentages of sand, silt, and clay), pH, percentage organic matter, and soluble salts (electric conductivity in millimos/centimeter), and shall include additive recommendations.
 - a. One 1-quart sample per five hundred (500) cubic yards of imported soil is required, with individual tests completed for each sample.
 - b. Follow instructions from soil testing laboratory when collecting samples.
3. Testing will be at the expense of the Contractor.
4. Submit a one (1) quart sample along with analysis results.

C. Manufactured Topsoil:

1. Submit source of manufactured topsoil to be imported to site for approval by Project Manager.
2. Submit soil analysis report for stockpiled on-site topsoil from the State University Agricultural Extension Service or other approved soil testing laboratory. Report shall cover soil textural classification (percentages of sand, silt, and clay), pH, percentage organic matter, and soluble salts (electric conductivity in millimos/centimeter).
 - a. Test is to be completed within sixty (60) days preceding delivery to site. Report shall cover soil textural classification (percentages of sand, silt, and

clay), pH, percentage organic matter, and soluble salts (electric conductivity in millimos/centimeter).

- b. Submit a one (1) quart sample along with analysis results.

5. DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver or place topsoil in a frozen, wet, or muddy condition.
- B. Protect stored and placed topsoil from vehicular traffic, equipment storage, material storage, or from contaminants or pollution sources. Topsoil that is compacted or tainted during construction is to be removed from site and disposed of at a licensed landfill at no additional cost to the Town.

2.PRODUCTS

1. ON-SITE TOPSOIL

- A. Topsoil previously stripped and stockpiled prior to earthwork operations. See Division 31 Section "Earthwork".

2. IMPORTED TOPSOIL

- A. All topsoil shall be a loam or sandy loam conforming to ASTM D 5268. At least ten (10) days prior to topsoil delivery, notify Project Manager of the source(s) from which topsoil is to be furnished. Topsoil shall be furnished by the Contractor and shall be a natural, friable soil representative of productive soils and shall meet the following conditions.
- B. It shall be obtained from the top six-inches (6") of well drained areas.
- C. Fertile, friable, loamy soil, reasonably free from subsoil, refuse, roots, heavy or stiff clay, stones larger than one-inch (1"), coarse sand, noxious seeds, sticks, brush, litter, and other deleterious substances; suitable for the germination of seeds and the support of vegetative growth. The pH value shall be between 6.0 and 8.0.
- D. Soil Texture:
 1. Sand: thirty percent (30%) – fifty percent (50%)
 2. Silt: thirty percent (30%) – fifty percent (50%)
 3. Clay: five percent (5%) – thirty percent (30%)
- E. Additives: As determined by soil fertility tests.
- F. Percent Organic Content:
 1. Turf grass shall be three percent (3%) maximum after amending or conditioning.
 2. Native grass shall be one percent (1%) maximum after amending or conditioning.
- G. Soluble Salts: Electric conductivity (EC) shall be less than two (2.0) mmhos/cm for turfgrass areas, dryland areas, and planting beds.

3.EXECUTION

1. EXAMINATION

- A. Examine areas where the Work of this Section will be performed for compliance with requirements and conditions affecting installation and performance.
 - 1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within the work area.
 - 2. Verify that final grades are completed in accordance with the Contract Drawings.
- B. Proceed with installation only after unsatisfactory conditions have been corrected and approved by Project Manager.

2. PLACING TOPSOIL

- A. Scarify compacted subgrade to a six-inch (6") depth to bond topsoil to subsoil. Place topsoil to a minimum depth of twelve-inches (12") after settlement. Topsoil shall be free from weeds, sod, and material larger than 1-inch (1"), toxic substances, litter or other deleterious material. Spread evenly and grade to elevations and slopes shown on Contract Drawings. Hand rake areas inaccessible to machine grading.
- B. Utilize salvaged topsoil as the top layer to the extent available. If sufficient on-site material is not available, the Contractor shall furnish and install imported topsoil in the manner described above. Topsoil shall mixed thoroughly with the salvaged topsoil prior to placement. Do not use salvaged topsoil on north and south turf lawns.
- C. Utilize manufactured topsoil as the top layer, placing over lightly scarified, moisture conditioned subgrade for north and south turf lawn area to match adjacent grade. Do not disturb subgrade layer when placing.

3. PROTECTION AND REPAIR

- A. Protect completed areas where topsoil has been spread from traffic which will compact the soil volume. Any areas that, as determined by Project Manager, become compacted due to Contractor's construction traffic shall be reconstructed to specified requirements and approved by Project Manager.

END OF SECTION