

SUMMARY OF WORK

The work summary includes, but is not limited to, the following:

Base Bid

1. Removal of existing playground equipment
2. Removal of existing swings
3. Removal of mulch surface and edging
4. Preparation of crushed stone base material and geotextile fabric
5. Installation of underdrains
6. Installation of timber edging
7. Installation of Log & Boulder Edging
8. Loam, Seed and Mulch

Contractor required to coordinate 'Work by Others'.

Work by Others:

1. Equipment installation
2. Wood fiber safety surface installation

SPECIFICATIONS INDEX

PLAYGROUND SITE WORK
APRIL 2019

- 02 41 00 DEMOLITION
 - Removal of existing structures
- 31 00 00 SITE EARTHWORK
- 31 25 00 EROSION AND SEDIMENTATION CONTROL
- 32 30 00 SITE IMPROVEMENTS
 - Timber Edging
 - Log and Boulder Edging
- 32 91 19 SEEDING

SECTION 02 41 00

DEMOLITION

PART 1 GENERAL

1.1 DESCRIPTION

- A. Perform demolition as shown and specified. The work shall include and is not limited to:
 - 1. Removal of existing objects or improvements, whether indicated on Drawings or not, that would, in the opinion of the Owner, prevent or interfere with progress or completion of proposed work.
 - 2. Permits, fees and licenses shall be secured and paid for by Contractor, including disposal charges as required to ensure progress of work will proceed.
 - 3. Work shall comply with requirements of governing authorities in demolition of existing pavement, drainage structures and utilities as may be required.
 - 4. Demolition requires removal and disposal charges as required to ensure progress of work will proceed.
 - 5. Protecting existing site features including:
 - a. Drainage Structures
 - b. HC Ramp
 - c. Adjacent paved surfaces and grassed areas associated with the ball fields.
 - d. Stone dust path
 - e. Existing utilities

1.2 SUBMITTALS

- A. Shop Drawings and Schedule: Describe demolition, removal procedures, sequence and schedule.
- B. Closeout Submittals - Project Record Documents: Record actual locations of capped utilities.

1.3 PROJECT CONDITIONS

- A. Structures to be demolished will be discontinued in use and vacated prior to start of work.
- B. Owner assumes no responsibility for condition of structures to be demolished.
- C. Conditions existing at time of inspection for bidding purposes will be maintained by Owner in so far as practicable. Variations within structure may occur by Owner's removal and salvage operations prior to start of demolition work.

- D. Items of salvageable value to Contractor may be removed from structure as work progresses. Salvaged items must be transported from site as they are removed. Storage or sale of removed items on site will not be permitted.
- E. Explosives shall not be brought to site or used without written consent of authorities having jurisdiction. Such written consent will not relieve Contractor of total responsibility for injury to persons or for damage to property due to blasting operations. Rock or ledge blasting shall not be allowed.

1.4 PROTECTIONS

A. SUMMARY

1. Conduct operations to prevent damage to adjacent buildings, structures, other facilities, or injury to persons.
2. Promptly repair damages caused to adjacent facilities by demolition operations at no cost to Owner.
3. Maintain existing utilities indicated to remain, keep in service and protect against damage during demolition operations.
4. Make arrangements, before initiating demolition, for relocating, disconnection, rerouting, abandoning, or similar action as may be required relative to utilities and other underground piping, to permit work to proceed without delay.
5. Use water sprinkling and other suitable methods to limit dust and dirt rising and scattering in air to lowest practical level.
6. Comply with governing regulations pertaining to environmental protection.
7. Clean adjacent structures, streets and improvements of dust, dirt and debris caused by demolition operations. Return adjacent areas to condition existing prior to start of work.

PART 2 PRODUCTS

2.1 MATERIAL:

- A. Fill Material: Refer to Specifications Division 31 – Earthwork.

PART 3 EXECUTION

3.1 IMPLEMENTATION

- A. Permits - Perform all work in accordance with the demolition requirements of the applicable building code as adopted and, if applicable, amended by the authority having jurisdiction. Apply for, pay for and obtain required demolition permits.
- B. Preparation

1. Call local Public Works Department and local Utility Line Information service “Dig Safe” as per their notification requirements. Request underground utilities to be located and marked within and surrounding construction areas.
2. Provide, erect, and maintain temporary barriers and security devices as directed by the Owner or landscape architect.

C. Standards

1. Conduct operations with minimum interference to public or private accessways.
2. Maintain egress and access at all times. Do not close or obstruct roadways, sidewalks without permits.
3. Cease operations immediately when adjacent structures appear to be in danger. Notify authority having jurisdiction and Owner’s Representative.
4. Disconnect, remove and cap designated utilities to a location acceptable to authority having jurisdiction and utility company. Identify utilities at termination of demolition. Record termination or capped location on Record Documents.

3.2 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove from the site all debris, rubbish and other materials resulting from demolition.
- B. Demolition debris removed from the site shall be disposed of at an approved licensed recycling or disposal facility in accordance with state regulations. **Disposal location shall be reported to the Owner in writing prior to debris taken from the site.**
- C. No burning of any materials, debris or trash on-site will be allowed.
- D. Leave areas of work in clean condition.

...END OF SECTION 02 41 00

SECTION 31 00 00

SITE EARTHWORK

PART 1 GENERAL

1.1 DESCRIPTION

- A. Bidding requirements, conditions of the contract and pertinent portions of sections in Division One of these specifications, apply to the section as fully as though repeated herein.
- B. Work under this section includes:
 - 1. Removals - The Contractor shall perform all work necessary for clearing and grubbing and/or removal, backfill and disposal of all existing materials noted on the Drawings, as well as temporary structures installed for construction.
 - 2. Limit of Work - Take special care to keep all operations within the Limit of Work as shown on the Drawings. The Contractor shall take all necessary precautions to protect existing site elements to remain.
 - 3. Grade and Elevation
 - a. The Drawings indicate, in general, the alignment and finished grade elevations. The Owner's Authorized Representative or Landscape Architect, however, may make such adjustments in grades and alignment as are found necessary in order to avoid interference or to adapt piping to other special conditions encountered.
 - b. The Contractor shall establish the lines and grades in conformity with the Drawings and maintain by means of suitable stakes placed in the field.
 - 4. Protection of Existing Structures and Utilities
 - a. Barricade open excavations occurring as part of this work and post with warning signs. Backfilling or secured covering of excavations shall be required.
 - b. Provide necessary supports, bracing and covering to protect existing and new structures and utilities during all phases of excavation and backfill.
 - c. Notify appropriate owners before excavating adjacent to poles, cables, pipes, and other utilities.
 - d. Note that location of existing underground utilities on plans is approximate and may be incomplete. Responsibility for exact locations and protection of all utilities rest with the Contractor.

- e. Conflicts between existing and new utilities and/or structures to be built under this contract shall be reported to the Owner's Authorized Representative or Landscape Architect
5. Erosion and Sedimentation Control
- a. The General Contractor shall perform all work necessary to control erosion. Installation of erosion control structures prior to construction shall be performed in accordance with the Standards of the U.S. Department of Agriculture, Soil Conservation Service, "Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices" by the Cumberland County SWCD, State of Maine, and as shown on the Plans.
 - b. Weekly inspections, as well as routine inspections following rain falls, shall be conducted by the Contractor of all temporary and permanent erosion control devices until final acceptance of the project. Necessary repairs shall be made immediately to correct undermining or deterioration. Final acceptance shall include a site inspection to verify the stability of all disturbed areas and slopes. Until final inspection, all erosion and sedimentation control measures shall immediately be cleaned, and repaired by the Contractor after each storm event, as required. Disposal of all temporary erosion control devices shall be the responsibility of the Contractor. Removal of temporary erosion control devices shall not occur until a minimum 75% catch of vegetation occurs or permanent structural measures are in place.

1.2 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- 1. Tests for soil density and/or gradations as herein designated shall be taken at the option of the Landscape Architect. Costs of testing shall be paid by the Owner.
 - 2. Soil samples representative of the borrow source and suitable laboratory testing shall be furnished by the Contractor for each material listed in Section 2.1. Test results shall be submitted at least two (2) weeks prior to their proposed use or placement on the site. In the event a proposed material does not meet the specified gradation requirements, the material type shall not be placed on-site until an alternative borrow source is selected and the laboratory test results indicate the material meets the specified gradation requirements.

Note: Contractor shall provide testing for loam in accordance with Section 32-90-00.
 - 3. Compaction tests shall be determined on the basis of laboratory Proctor tests (ASTM D.1557, Modified Proctor).
 - 4. Field density tests not specified on a comparative basis shall be to the percent density specified in this Section for both earth excavation and

earth and granular type fills. Tests shall be in accordance with ASTM D.1556, ASTM D.2167, ASTM D.2922 OR ASTM D.3017.

1.3 QUALITY ASSURANCE

- A. Conform to all applicable town, county and state codes for excavation, earthwork and disposal of debris.
- B. Conform to all applicable standards of the various utility companies.
- C. References - Where M.D.O.T. appears it shall be taken to mean The State of Maine Department of Transportation Specifications, Highways and Bridges - (Latest Revision).
- D. Reference Standards

The following most current publications form part of this specification to the extent indicated by references thereto and shall be followed for all construction testing:

American Society for Testing and Materials (ASTM):

D 422	Method for Particle Size Analysis of Soils
D 698	Test for Moisture-Density Relations of Soils Using 5.5 lb. (2.5 kg) hammer and 12-inch (304.8mm) Drop (Standard Proctor)
D 1556	Test for Density of Soil in Place by the Sand Cone Method
D 1557	Test for Moisture-Density Relations of Soils Using 10-lb (4.5 Kg) hammer and 18-inch (457 mm) Drop (Modified Proctor)
D 1559	Test Method for Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus
D 2167	Test for Density of Soil in Place by the Rubber Balloon Method
D 2216	Laboratory Determination of Moisture Content of Soil
D 2487	Classification of Soils for Engineering Purposes
D 2922	Tests for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
D 3017	Test for Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
D 4318	Test for Plastic Limit, Liquid Limit, & Plasticity Index of Soils
C 25	Chemical Analysis of Limestone, Quicklime and Hydrated Lime
C 110	Physical Testing for Quicklime and Hydrated Lime, Wet Sieve Method
C 618	Specification for Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete

- E. Drawings do not purport to show above ground objects existing on site. Contractor shall visit site and acquaint himself with all observable conditions as they exist before submitting his Bid.

PART 2 PRODUCTS

2.1 MATERIAL

- A. Fill Materials: Backfill and ordinary fill materials shall be as follows:

1. Materials from excavation: Excavated material which can be readily spread and compacted, and consists of mineral soil, substantially free of organic materials, loam, wood, rubbish or other perishable substance may be used for common fill. Boulders (rocks over eight (8) inches) shall be removed from excavated material before using for fill.
 2. Aggregate Base, Crushed - M.D.O.T. 703.06, (a), Type A. (No rocks larger than two inches). - Compacted at 95% ASTM D-1557
 3. Aggregate Subbase Gravel - M.D.O.T. 703.06, (a), Type C, Size of stone no larger than six (6) inches. - Compacted at 95% ASTM D-1557.
 4. Aggregate Subbase Gravel, M.D.O.T. 703.06 (b) Type D (no stone larger than 4 inches – compacted at 95% ASTM D – 1557.
 5. Structural Fill - M.D.O.T. 703.06, (a), Type C. Size of stone no larger than six (6) inches, and further limited to a maximum particle size equal to three (3) inches within twelve (12) inches of slab grade. Compacted at 95% ASTM D-1557
 6. Aggregate for Foundation Backfill: M.D.O.T. 703.6 (a) Type B. Size of stone no larger than four (4) inches.
 7. Drainage Stone - M.D.O.T. 703.22, Type C. - Vibrated with hand vibrating plate.
 8. Native silty sand (Glacial till) found on-site can be re-used for subgrade preparation subject to approval of the Project Landscape Architect or Engineer and provided that the natural moisture content at the time of placement and compaction is at slightly below optimum moisture as determined by MPMDD. – Compacted at 95% ASTM D-1557.
- B. Suitable Backfill Material
1. Structural fill or natural material excavated during the course of construction, excluding debris, pieces of pavement, organic matter, topsoil, all wet or soft muck, peat, or clay, all excavated ledge material, and all rocks over six (6) inches in largest dimension, or any material which will not provide sufficient support or maintain the completed construction in a stable condition, all approved by the Owner's Authorized Representative or Landscape Architect. (**Exception:** may not be used to backfill foundation).
- C. Geotextile Materials
1. Acceptable Geotextiles and Geogrids:
 - a. Mirafi 600x
 - b. Phillips 66 Supac 6WS
 - c. Dupont Typar 3401 and 3601
 - d. Trevira S1114 and S1120
 - e. AMOCO 2006
 - f. Tensar SS-1 and SS-2
 - g. Exxon GTF-200 or 350
 - h. Conwed Stratagrid GB-5033
 - i. Miragrid 3xT

2. Filter/Drainage Geotextiles:
 - a. Mirafi 160N or equal

PART 3 EXECUTION

3.1 EXECUTION

- A. Earth Excavation - Removal and disposal of pavements and other obstructions visible on ground surface, underground structures and utilities indicated to be demolished and removed, any material indicated in the data on subsurface conditions, and other materials encountered that are not classified as rock excavation or unauthorized excavation.
- B. Rock Excavation - Removal and disposal of materials encountered that cannot be excavated without continuous and systematic drilling and blasting or continuous use of a ripper or other special equipment except such materials that are classed as earth excavation.
 1. Typical Materials: Boulders 2 cu. yd. or more in volume, solid rock, rock in ledges, and rock-hard cementitious aggregate deposits.
 2. Intermittent drilling performed to increase production and not necessary to permit excavation of material encountered will be classified as earth excavation.
- C. Unauthorized Excavation
 1. Removal of materials beyond indicated subgrade elevations or dimensions without specific direction of the Owner's Authorized Representative or Landscape Architect.
 2. Under footings or foundation bases, fill unauthorized excavation by filling with Structural Fill and compacting to 95 percent of ASTM D-1557 without altering top elevation.
- D. Topsoil Removal – Topsoil shall be stripped to its entire depth from area within the Limit of Work and reusable materials shall be temporarily removed from the site, screened, and returned to the site as needed. Stripped topsoil shall be free from clay, large stones, debris, and peat. Topsoil for reuse on site shall be screened and tested in accordance with Section 32 90 00 – Planting.
- E. General Excavation
 1. Grades, Dimensions - excavate where indicated and as necessary to obtain subgrades as shown on the Drawings and hereinafter specified. All excavation shall include the satisfactory removal of all materials of whatever substance encountered within the indicated limits. Where footing excavations are into Sandy Silt, trenches should be excavated using a smooth bucket to prevent subgrade disturbance. Soft and wet areas should be over excavated and replaced with crushed stone and/or Geotextile Fabric (Non-woven, minimum weight of 10 ounces per square yard). Only suitable materials shall be used or stockpiled for later use in backfill preparation. Disturbed subgrade material shall be removed prior

to pouring of footings and replaced with either compacted structural fill or thickened footing concrete. All footing subgrades shall be approved by the owner's representative prior to pouring concrete for footings.

2. The Contractor shall provide temporary drains, ditches and the necessary equipment, as required, to maintain the site of work and adjacent areas in a well drained condition. Keep all excavations free of both ground and surface water at all times. All water pumped or drained from the work shall be disposed of so as not to endanger public health, property or any portion of the work under construction or completed.
3. The Contractor shall provide shoring, sheeting and bracing as may be required to maintain excavations and trenches secure and safe from collapse and to protect adjacent structures.
4. Excavation shall not be made below specified subgrades except where rock or unstable material is encountered. If suitable bearing is not found at levels shown on the Drawings, the Landscape Architect or the Owner's Representative shall be notified in writing immediately so that adjustments or changes may be made. Material removed below specified subgrade without the approval of the Landscape Architect or Owner's Representative shall be replaced and compacted with an approved gravel at the Contractor's expense.
5. All work shall be carried out in a manner consistent with the regulations of such Federal, State and Local authorities as may have jurisdiction over such activities.

F. Excavation and Backfilling

1. Perform excavation as indicated for specified depths. During excavation, stockpile materials suitable for backfilling in an orderly manner far enough from bank of trench to avoid overloading, slides or cave-ins.
2. Remove excavated materials not required or not suitable for backfill or embankments and waste as specified. Any structures discovered during excavation(s) shall be disposed of as specified.
3. Prevent surface water from flowing into trenches or other excavations by temporary grading or other methods, as required. Remove accumulated water in trenches or other excavations by pumping or other acceptable methods.
4. Open cut excavation with trenching machine or backhoe. Where machines other than ladder or wheel-type trenching machines are used, do not use clods for backfill. Dispose of unsuitable material and provide other suitable material at no additional cost to Owner.

G. Drainage

1. The Contractor shall provide and maintain ample means and devices (including spare units kept ready for immediate use in case of breakdowns) with which to intercept and/or remove promptly and dispose of properly all water entering excavations. Such excavations shall be

kept dry until the structures and appurtenances to be built therein, have been completed to such extent that they will not be damaged.

H. Compaction

1. Compaction densities specified herein shall be the percentage of the maximum dry density obtainable at optimum moisture content as determined and controlled in accordance with ASTM D.1557. Field density tests shall be made in accordance with ASTM D.1556, D.2167 or D.2922. Each layer of backfill shall be moistened or dried as required, and shall be compacted to the required densities unless otherwise specified in the project specifications.
2. Fills placed under footings shall be compacted to not less than 95 percent of the ASTM D - 1557 maximum dry density.
3. Fills adjacent to building walls from the exterior face of the building and/or retaining walls to a point not less than 10'-0" from the exterior face of the wall shall be compacted to not less than 92 percent of the ASTM D. 698 maximum compaction dry densities as herein before specified.
4. Bedding material and trench sand non-pavement areas: 92%
5. Loam areas: 90%
6. All other areas: 85%
7. Methods and equipment proposed for compaction shall be subject to the prior acceptance by Owner's Authorized Representative or Landscape Architect. Compaction generally shall be done with vibrating equipment. Displacement of, or injury to the pipe and structure shall be avoided. Movement of in-place pipe or structures shall be at the Contractor's risk. Any pipe or structure damaged thereby shall be replaced or repaired as directed by the Owner's Authorized Representative or Landscape Architect and at the expense of the Contractor.

I. Filling and Subgrade Preparation

1. All materials shall be placed and compacted to conform to the lines, elevations and cross-sections indicated on the Drawings. Do not start fills until the area has been inspected and approved by the Owner's Authorized Representative or Landscape Architect.
2. Fill shall not be placed on a surface of frozen material, nor shall snow, ice, frozen earth or debris be incorporated in the fill. All materials shall be approved by the Owner's Authorized Representative or Landscape Architect before being placed.
3. Unless specifically stated otherwise on the Drawings, areas exposed by excavation, removal of structural foundations or stripping and on which subgrade preparations are to be performed, shall be compacted to a minimum of 95% of maximum dry density, in accordance with ASTM D 1557. Subgrades consisting of native sands or silty sands shall be compacted with a 15 ton highway roller. These areas shall then be proof-rolled to detect any areas of insufficient compaction. Proof-rolling shall be accomplished by making a minimum of two (2) complete passes

with a fully-loaded tandem-axle dump truck, or approved equivalent, in each of the two perpendicular directions. Areas of failure shall be excavated and re-compacted as stated above.

4. If sufficient suitable fill material is not available from excavations under this Contract, additional fill, suitable for use, shall be brought to the site from other sources. Subgrade fill in pavement areas shall consist of Gravel Borrow (M.D.O.T. 703.20) or Structural Fill (MeDOT 703.06 (a) Type C. Place in maximum 12 inch layers and compact to 92 percent of maximum density in accordance with ASTM D 1557. Each layer shall be free from ruts and shall meet compaction requirements before next layer is placed. Maintain layers with crown or other practical means of drainage.
5. Stones in fills shall be well distributed. Do not have stones over six (6) inches in diameter within twelve (12) inches of subgrade.

J. Finish Grading

1. Grade all areas where finish grade elevations or contours are indicated on Drawings, other than paved areas and buildings, including excavated areas, filled and transition areas, and landscaped areas. Graded areas shall be uniform and smooth, free from rock, debris, or irregular surface changes. Finished subgrade surface shall not be more than 0.10 feet above or below established finished subgrade elevation, and all ground surfaces shall vary uniformly between indicated elevations. Ditches and swales shall be graded to allow for proper drainage without ponding and in a manner that will minimize erosion potential. For topsoil application, refer to Section 32 90 00, Plantings.
2. Correct all settlement and eroded areas within one year after date of completion at no additional expense to Owner. Bring grades to proper elevation. Replant or replace any grass, shrubs, trees or other vegetation disturbed by construction using corrective measures.

3.2 INSPECTION

- A. If Owner elects to test, an independent testing laboratory selected and paid by the Owner shall be retained to perform construction testing on site. Field density test may be ordered for each foot of depth of backfill at an average of 200 feet along the trench.
- B. If compaction requirements are not complied with at any time during the construction process, remove and re-compact deficient areas until proper compaction is obtained at no additional expense to Owner.
- C. Field density test shall be required road construction, interval to be determined by Owner's Authorized Representative or Landscape Architect.
- D. The Contractor shall furnish all necessary samples for laboratory tests and shall provide assistance and cooperation during field tests. The Contractor shall plan his operations to allow adequate time for laboratory tests and to permit taking of field density tests during compaction.

- E. The independent testing laboratory shall prepare test reports that indicate test location, elevation data and test results. The Owner's Authorized Representative or Landscape Architect, and Contractor shall be provided with copies of reports within 72 hours of time test was performed. In the event that any test performed fails to meet these Specifications, the Owner's Representative and Contractor shall be notified immediately by the independent testing laboratory.
 - F. All costs related to retesting due to failures shall be paid for by the Contractor at no additional expense to the Owner. The Owner reserves the right to employ an independent testing laboratory and to direct any testing that is deemed necessary. Contractor shall provide free access to site for testing activities.
- 3.3 CLEAN-UP
- A. The Contractor shall remove all debris, construction equipment, and material from the areas to be loamed and seeded.

...END OF SECTION 31 00 00

SECTION 32 30 00

SITE IMPROVEMENTS

PART 1. GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

- A. The general provisions and documents of the Contract, including General and Special Conditions, apply to the work specified in this Section.
- B. Site Earthwork - Section 31 00 00
- C. Construction Drawings.

PART 2. PRODUCTS

2.1 BOULDERS

- A. Boulders shall be weathered, matching in color, appearance, shape and texture from the same source. Must be free of scars, gouges and other marks from mechanical sources. Selected boulders shall have at least one flat/semi flat side and be approved by Project Landscape Architect and Owner.

Min: 18"-24" tall x 2'-2.5' wide (diameter)

Max: 30"-36" tall x 30"x36" wide (diameter)

- B. Natural variations and markings which are characteristics of the stone and do not impair strength or appearance are acceptable. Provide only sound stone, free from defects detrimental to appearance and durability.

2.2 LOGS

- A. Logs shall be native hardwoods:
 - i. Preferred species: White Oak, Black Locust, Cedar
 - ii. Acceptable; Douglas Fir, Oak, Maple
- B. Log shall have diameters necessary to retain safety mulch as shown on detail 7/1. Some areas may require logs wider in dia. Logs shall be min 12" diameter.
- C. Log section lengths shall be 4' minimum.

2.3 TIMBER EDGING

- A. Timber edging shall be 6"x 6" pressure treated timbers

PART 3. EXECUTION

3.1 INSPECTION

- A. Examine substrate and installation conditions. Do not start work until unsatisfactory conditions are corrected.
- B. Do not build on frozen ground.

3.2 PREPARATION

- A. Establish lines, levels and approximate grades.

3.3 INSTALLATION

Boulder Edging

- A. Excavate material as necessary to set boulders min. 1/3 dia. into ground and on existing base material. Compact base material as necessary.
- B. Set boulders in accordance with plan and site details. Set boulders plumb, level and in alignment. Use care in moving to avoid scratching, chipping or gouging the surfaces. Adjust elevations of boulders by shimming as necessary.
- C. Backfill around boulder wall with excavated material and grade adjacent areas as shown on grading plan and site details.
- D. Finish grade and prepare adjacent surfacing as shown on plans.



Log Edging

- A. Excavate material as necessary to set logs min. 1/3 dia. into ground and on existing base material. Compact base material as necessary.
- B. Set logs in accordance with plan and site details. Set logs level. Adjacent logs and boulders should have minimum gaps at joints. Angle cut logs as necessary to ensure tight fit
- C. Backfill around boulder wall with excavated material and grade adjacent areas as shown on grading plan and site details.
- D. Finish grade and prepare adjacent surfacing as shown on plans.



END OF SECTION 32 30 00

SECTION 32 91 19

SEEDING

1 PART 1 GENERAL

1.1 DESCRIPTION

- A. Bidding requirements, conditions of the contract and pertinent portions of sections in Division One of these specifications, apply to the section as fully as though repeated herein.
- B. Work under this section shall include all labor, materials, services, equipment and accessories necessary to furnish and install turf in accordance with the specifications and applicable Drawings.
- C. Related work:
 - 1. Section 31 00 00, Site Earthwork.
 - 2. Section 32 91 00, Planting Preparation

1.2 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Tests specified in this Section shall be paid for by the Contractor. **Certifications required must be submitted to the Landscape Architect and or Owner's Representative for approval before use of materials on the site.**
- C.. The Contractor shall provide the Dealer's Guarantee Statement for grass seed mix.

1.3 QUALITY ASSURANCE

- A. Workmanship: Perform work in accordance with the best standards of practice for Landscape work and under the continual supervision of a competent foreman capable of interpreting the Drawings and Specifications.
- B. Any and all substitutions due to unavailability must be requested in writing prior to confirmation of ordering.
- C. Certificate of Acceptability: Inspection of the work covered by this Section to determine completion of the work involved will be made at the conclusion of the Maintenance Period upon written notice requesting such inspection submitted by the Landscape Contractor at least ten (10) days prior to the anticipated date. The condition of turf will be noted and determination made by the Landscape Architect whether maintenance shall continue.

1.4 GUARANTEE

- A. Turf shall be guaranteed for one (1) full year after certification of acceptability by the Landscape Architect and shall be alive and in satisfactory growth at the end of the guarantee period, except for damage resulting from causes beyond the responsibility of the Contractor. The Contractor shall provide the Owner with a written guarantee upon certification of acceptability. For plant material in question at the end of the guarantee,

the Landscape Architect, Owner and Contractor shall determine a reasonable extension of the guarantee period.

2 PART 2 PRODUCTS

2.1 MATERIALS:

- A. Topsoil - The Contractor shall furnish and place topsoil to give the specified depths. The Contractor shall furnish and place 18 inches of loam in all shrub beds, and 4 inches under all turf areas. Natural loam topsoil shall be of uniform quality, free from hard clods, still clay, hard pan sods, stones over $\frac{3}{4}$ inches and undesirable inorganic materials. The Owner and/or Landscape Architect reserves the right to reject on or after delivery any materials which do not, in his or her opinion, meet these Specifications.
- B. Additives:
1. Humus - Ground or shredded peat that has been stockpiled at least one year prior to use, or commercial bagged peat.
 2. Manure - Well-rotted unleached stable manure with no more than 25% straw, shavings, or sawdust content. A mixture of one (1) cubic yard of peat humus or peat moss and 100 lbs. of commercial dehydrated-bagged manure such as Bovung or Spurigon may be used.
 3. Mulch for Plants - Well-rotted **(black)** shredded pine bark as approved by the Landscape Architect.
 4. Lime - Commercial ground lime with no less than 85% total carbonates, 50% passing a 100 mesh sieve and 90% passing a 200 mesh sieve as approved by the Landscape Architect. Coarser material will be accepted provided that specific rates of application increased proportionately.
 5. Compost soil amendment – Compost shall be 'Surf N Turf Compost' manufactured at Benson Farm, L.L.C., 64 Plummer Road, Gorham, Maine 04038 (207) 892-6446. Compost shall conform to EPA Chapter 40 CFR 503 (pathogen, metals and vector attraction reduction) as well as applicable state regulations. Compost/manure shall be well-composted and free of unwanted weed seed.
- C. Grass Seed
1. Grass Seed mixtures shall be fresh, clean, new crop seed. Seed may be mixed by an approved method on the site, or may be mixed by the dealer. If the seed is mixed on the site, each variety shall be delivered in the original containers which shall bear the dealer's guaranteed statement of the composition of the mixture and the percentage of purity of each variety. The Dealer's Guarantee Statement shall be delivered to the Landscape Architect.
 2. Grass seed mixture for Lawn Areas shall be of the following types of seed:

Park Mix by Allen, Sterling & Lothrop or approved equal

35%	Kentucky Bluegrass 85/80
20%	Creeping Red Fescue
15%	Chewings Fescue
15%	Perennial Ryegrass
15%	Ryegrass

- D. Sod - Sod shall be well-established turf of even thickness consisting of a Bluegrass blend, 90% Bluegrass and 10% Fescue. Sod shall be as provided by Winding Brook Sod Farm, Lyman, Maine or approved equal.

3 PART 3 EXECUTION

3.1 INSTALLATION

A. Pre-Plant Weed Control

1. Maintain site weed free until final acceptance by Owner utilizing mechanical and manual methods.

B. Loaming and Seeding

1. Conduct planting operations under favorable weather conditions. Areas not required to be developed otherwise shall be seeded to turf.
2. Compost Manufactured Topsoil – The soil (source material) shall be free of lumps, plants, weeds, roots and other debris over 2 inches in any dimension and free of stones over inch in any dimension. The organic compost shall be uniformly incorporated into the loam source by rolling and tumbling, by a front-end loader or by processing in a mixing plant. The material shall be mixed sufficiently to produce a homogenous soil, free of lumps and clods. In addition to the requirements for the compost amendment, the Contractor shall provide documentation that the recommended rate of fertilizer, per the testing analysis, has been applied to lawn areas prior to seeding.
3. Prior to placing loam, scarify subgrade areas; remove all rocks over two (2) inches and debris; and set grade stakes as necessary. Place topsoil evenly over all areas to be loamed to a minimum thickness of six (6) inches. Hand rake to remove clods, lumps, brush, roots, and stones over ¾ inches in diameter. Hand roll to show depressions and uneven grades. Regrade as necessary to obtain smooth, even grades. Surplus topsoil shall become the property of the Contractor and shall be removed off the site.
4. Apply additives (lime, fertilizer, compost etc.) as per the recommendation of the testing lab. Apply additives and harrow into top two (2) inches of the seedbed.
5. Sow seed specified by use of a mechanical spreader at the rates specified. Rake lightly in; roll with 200 lb. roller and water with a fine spray. Avoid spreading of grass seed mix in all designated planting beds.
6. Following compaction, apply a one- (1) inch layer of straw to hasten germination.
7. Full even growth in all areas must be guaranteed. The maintenance period shall continue after seeding and until the lawns are certified acceptable by the Landscape Architect. A minimum uniform catch of turf meeting 80% shall be required.

8. Repair damage resulting from erosion, gullies, washouts or other similar causes if such damage occurs before certification of acceptability of turf and planting by the Landscape Architect.
9. Sod - After all grading has been completed, the soil shall be irrigated within 12-24 hours before laying the sod. Sod shall not be laid on soil that is dry and powdery.
10. The first row of sod shall be laid in a straight line with subsequent rows placed parallel to and tightly against each other. Lateral joints shall be staggered to promote a uniform growth and strength. Care shall be exercised to insure that the sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which cause air drying of the roots.
11. The Contractor shall water sod immediately after installation to prevent drying during progress of the work. It shall then be thoroughly irrigated to a depth sufficient that the underside of the new sod pad and soil immediately below the sod is thoroughly wet.
12. Rolling of the sod shall be required to properly join sod to the bed after the sod is installed and twenty-four (24) to forty-eight (48) hours after initial watering. The Contractor shall roll the required area with a roller which weights seventy-five (75) to one hundred (100) pounds per square foot of roller width. The completed sod surface shall be true to finish grades as shown on plans and even and firm at all points.
13. Watering
 - a. First and Second Week - The Contractor shall provide all labor and arrange for all watering necessary for establishment of the turf. In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first and second week and in sufficient quantities to maintain moist soil to a depth of at least four (4) inches. Watering should be done during the heat of the day to help prevent wilting.
 - b. Watering shall continue to be the responsibility of the Contractor until such time as the Owner or project Landscape Architect has certified acceptance of lawn areas.

3.2 MAINTENANCE

- A. General - Maintenance shall begin immediately after each portion of seed and each plant is planted and shall continue in accordance with the following:
 1. Lawns: The Contractor shall be responsible for establishing a uniform stand of the specified seed and until a Certification of Acceptability is received. No bare spots shall be allowed. After the seed has started, all areas and parts of areas that fail to show a uniform stand of grass, for any reason whatsoever, shall be seeded or sodded repeatedly until all areas are covered with a satisfactory growth of grass. The Contractor shall be responsible for the first two (2) mowings.

2. Protection: Planting areas and plants shall be protected against trespassing and damage of any kind. If any plants become damaged or injuries occur, they shall be treated or replaced as directed.
3. Damage: Damage resulting from erosion, gullies, washouts, or other causes shall be repaired by filling with topsoil, tamping, re-fertilizing, and sodding by the Contractor at his own expense if such damage occurs prior to certification of acceptability of turf and plantings by the Landscape Architect.
4. Responsibility: The Contractor's responsibility for maintenance shall cease at the time of certification of acceptability by the Landscape Architect. During the guarantee period, the Contractor shall be held responsible for making replacements, but no maintenance shall be required, other than spraying and dusting.

3.3 REPLACEMENT

- A. At the end of the guarantee period, inspection will be made by the Landscape Architect upon written notice requesting such inspection and shall submitted by the Contractor at least ten (10) days before the anticipated date. Replanting shall be done as soon as conditions permit, but during the normal planting season. Plant items in accordance with these specifications.

3.4 CLEANUP

- A. The Landscape Contractor shall remove all debris, construction equipment, excess fill, rocks, and other excess material caused by his work, from the site upon completion of his portion of the work.

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