



CONSTRUCTION SPECIFICATIONS

April 7th, 2016

City of Duluth Project Numbers:

- Congdon Park Trail Repairs _____
- Chester Park Trail Repairs _____
- Hartley Park Trail Improvements _____
- Hartley Road Trail Improvements _____

City of Duluth Bid Numbers:

- Congdon Park _____
- Chester Park _____
- Hartley Park Trail Improvements _____
- Hartley Gazebo Point Trail _____
- Construction (Bid Alt #1) _____
- Hartley Road Trail Improvements _____

CITY OF DULUTH

Parks & Recreation Division

411 West First Street

Ground Floor City Hall

Duluth, Minnesota 55802

(218)730-4300

Table of Contents

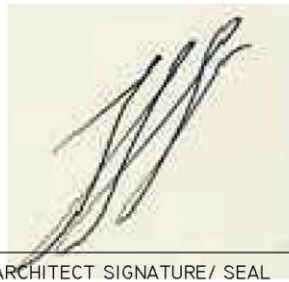
1.0 CERTIFICATION	4
SECTION 1: PROJECT DESCRIPTION AND SCOPE	5
1.1 GENERAL PROJECT DESCRIPTION.....	5
1.2 PROJECT SCOPE	5
1.3 ADDITIONS AND DELETIONS	5
1.4 DISCREPANCIES	5
1.5 Contractor Coordination.....	5
1.6 Product Submittals.....	5
SECTION 2: PROJECT LOCATION	6
2.1 PROJECT LOCATION DESCRIPTIONS.....	6
SECTION 3: PROJECT DETAILS.....	7
3.1 CONGDON PARK BRIDGE ABUTMENT REPAIR	7
3.2 CONGDON PARK, CHESTER PARK, HARTLEY PARK TRAIL REPAIRS	7
SECTION 4: FINISHED TRAIL MATERIALS, CONSTRUCTION AND MAINTENANCE	
GUIDELINES	7
4.1 TRAIL DESIGN	7
4.2 TRAIL SPECIFICATIONS AND MATERIALS	8
4.3 EROSION AND SEDIMENTATION CONTROL	9
4.4 TRAIL CONSTRUCTION BEST PRACTICES	9
4.5 CORRIDOR CLEARING	10
4.6 DEBRIS	10
4.7 TREAD	10
4.8 TREES	10
4.9 ROCKS.....	10
4.10 WOODY MATERIAL.....	11
4.11 BACKSLOPE.....	11
4.12 TRAIL, FINISHED CONDITION	11
4.13 SPOILS STABILIZATION	11
4.14 GRADE REVERSALS.....	11
4.15 ABOVE-GRADE EARTHEN STRUCTURES	12
4.16 WATER DIVERSIONS	12
4.17 INVASIVE SPECIES.....	12
4.18 FILTER STRIPS.....	12
4.19 ENVIRONMENTAL AND HISTORIC PRESERVATION.....	12
4.20 MECHANIZED EQUIPMENT BEST PRACTICES.....	13
SECTION 5: UNIT DEFINITIONS AND DETAIL DRAWINGS.....	14
5.1 TRAIL FLAGGING	14
5.2 TRAIL CONSTRUCTION (FIGURES 1 - 4)	14
5.3 ARMORED TREAD/STONE PITCHING (FIGURE 5).....	14
5.4 ROCK RETAINING WALL (FIGURE 9)	15
5.5 RECONSTRUCT TREAD.....	15
5.6 ROCK RIP-RAP	15

5.7 COIR ROLL (BIO LOG) INSTALLATION (FIGURE 13)	16
5.8 MODIFICATIONS.....	16
5.9 TABLES AND FIGURES	17-21
SECTION 6: CONTRACTOR QUALIFICATIONS, REQUIREMENTS AND RESPONSIBILITIES	22
6.1 PROFESSIONAL ASSOCIATION	22
6.2 TOOLS.....	22
6.3 MECHANIZED EQUIPMENT BEST PRACTICES	22
6.4 BACKCOUNTRY PROTOCOL	23
6.5 PERSONAL PROTECTIVE EQUIPMENT	23
6.6 TIMETABLE.....	23
6.7 MEETINGS AND PROGRESS REVIEWS.....	23
6.8 WHAT CONTRACTOR PROVIDES	23
6.9 FOOD AND WATER.....	23
6.10 TOILET FACILITIES	24
6.11 PARKING.....	24
6.12 PUBLIC SAFETY	24
6.13 ENVIRONMENTAL FOOTPRINT	24
6.14 FEES FOR LICENSES, PERMITS, AND INSURANCE	24
6.15 EMPLOYEE/SUBCONTRACTOR CONDUCT.....	24
6.16 EMPLOYEE COMPETENCE.....	24
6.17 COMPLIANCE WITH MODERN PRACTICES	25
6.18 CONDITION OF MATERIALS AND EQUIPMENT	25
6.19 DISPOSAL OF MATERIALS AND SUPPLIES NOT APPROVED	25
6.20 DISPOSAL OF MATERIALS AND SUPPLIES NOT USED	25
6.21 ACCESS CONTROL	25
6.22 USE OF PREMISES – STORAGE	25
6.23 TRAIL REHABILITATION	26
6.24 USE OF SUBCONTRACTORS.....	26
6.25 INDEMNITY	26
6.26 PROTECTION OF FINISHED CONSTRUCTION.....	26
SECTION 7: FINAL INSPECTION, SUBSTANTIAL COMPLETION, RETAINAGE, WARRANTY AND PAYMENT	27

1.0 Certification

DATE: APRIL 7, 2016

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.



LANDSCAPE ARCHITECT SIGNATURE/ SEAL



SIGNATURE

LUKE W. SYDOW, LANDSCAPE ARCHITECT

REGISTRATION NUMBER 25866

**SAS+ASSOCIATES SUITE 350
219 W. FIRST STREET
DULUTH, MN 55802**

SECTION 1: PROJECT DESCRIPTION AND SCOPE

1.1 General Project Description

The City of Duluth, Minnesota (herein referred to as "Owner") is seeking a contractor to provide an experienced trail crew to repair flood-damaged hiking trails and bridges in Congdon, Chester and Hartley Parks located in Duluth, MN. This is a Federally-funded FEMA project.

The surrounding city park lands demand a high standard of care during construction activities due to steep topography, exposed bedrock and proximity to surface waters.

The contractor will be responsible for implementing and maintaining the Best Management Practices for Erosion and Sediment Control at all times throughout the entire length of the project.

The work will be confined to the existing trail corridors and areas needed for construction.

The area is front country, with many areas of mobile phone coverage, and is located less than one hour from emergency medical service.

1.2 Project Scope

To satisfy funding requirements for the project, the work outlined in this document shall be completed by July 1st 2016, with all submittals to the City for this project completed by July 3th, 2016.

This project is funded by a grant from the Federal Emergency Management Agency with support from the City of Duluth.

1.3 Additions and Deletions

No extras or additional work outside of the construction documents will be allowed or paid for unless such extras or additional work are ordered in writing by the Owner, and the price fixed and agreed upon before such work is performed. The Owner will not accept any overruns nor will it pay any quantities beyond those specified without prior authorization being granted.

The Owner shall have the right, without invalidating the contract, to make additions to, or deductions from, the work defined in this document, and in case such deductions or additions are made, an equitable adjustment of the addition to or deduction in cost shall be made between the Owner and the contractor, but must be agreed to in writing.

1.4 Discrepancies

Should the contractor discover discrepancies in this document, the plans or specification, the matter shall at once be brought to the attention of the Owner, and the discrepancies corrected before proceeding further. Bid tabulation sheets

quantities take precedence over quantity discrepancies in the specifications or plans.

1.5 Contractor Coordination

The Contractor shall make all reasonable effort to coordinate their work activities with relevant municipal construction projects in the area so that work under this contract is completed prior to the contract completion date. Coordinate work with the engineering and public works departments from the City of Duluth, St. Louis County and MnDOT, MnDNR as needed

1.6 Product Submittals

Contractor shall submit samples to owner and landscape architect of trail surfacing materials (limestone, both Class V and Crusher Fines) for approval. Submitted material must be representative of material to be installed. Sample size shall be 0.25 cu ft.

SECTION 2: PROJECT LOCATION

2.1 Project Location Descriptions

See each project construction document set for project locations.

SECTION 3: PROJECT DETAILS

Below are brief project descriptions and important project details. The contractor is responsible for furnishing and installing material or providing additional labor not outlined herein as may be necessary for a complete and finished product. Additional work must be approved in writing by Owner prior to install. Additional work will be paid on a unit-cost basis.

3.1 Congdon Park Bridge Abutment Repair (FEMA 303B 1-3)

Description: Due to the June 2012 flood, multiple concrete hiking trail bridge abutments were undermined and one was displaced. This portion of the project involves restoring and reinforcing all undermined abutments, and straightening one displaced abutment. Fabrication and installation of 2 metal pipe railing sections is required.

3.2 Congdon Park, Chester Park, Hartley Park Trail Repair

Description: Due to the June 2012 flood, multi-use trail sections in these 3 parks were damaged or washed away. This portion of the project involves the repair of the damaged trail surfaces, filling washouts, and placing a new crusher fine trail surface, setting wooden timber water bars, culverts, fencing, seeding and erosion control.

3.3 Hartley Road Trail

Description: Widen existing dirt and gravel surface trail to full 10' in width. This work includes culvert and boardwalk installation.

SECTION 4: FINISHED TRAIL CONSTRUCTION AND MAINTENANCE GUIDELINES

4.1 Trail Design

Design of any repair, new segments or reroutes must be guided by the sustainable trail principles published by accepted resources such as the USDA's *Trail Construction and Maintenance Notebook* and the *Minnesota Department of Natural Resources' Trail Planning, Design, and Development Guidelines*.

4.2 Trail Specifications and Materials

Description: Trails shall be repaired per the project drawings and documents. Where not specified, trail tread shall be 4'-0" wide. In case of any ambiguity, bring to the attention of the Owner or Landscape Architect for clarification.

Materials:

Trail Fill and Base – Material used for fill beneath culverts, rock armoring and walls, beneath trail surfacing material, etc., shall be Class 5 aggregate conforming to MnDOT Specifications.

Trail Surfacing Material – Within Chester Park, Limestone 3/8" minus crusher fines shall be used for final trail surface. Recycled concrete is not an acceptable material. Crusher fines conforming to the following particle size distribution shall be used –

Sieve Size % Passing

Particle Size		% of Passing
3/8"	--	100%
#4	--	90 – 100%
#8	--	55 – 80%
#16	--	40 – 70%
#30	--	25 – 50%
#200	--	6 – 15%

Trail surfaces in Congdon and Hartley Parks shall be class V limestone.

Seeding:

Seed mix and application shall conform with the MnDOT
Seeding Manual, 2014 Edition

Temporary Seed Mix:

MN-DOT seed mix #21-113

Permanent Seed Mix

MN-DOT seed mix #36-311

Erosion Control Blanket:

Conform with MnDOT Category 3 or 4 Erosion Control
Blanket. See plans for location.

4.3 Erosion and Sedimentation Control

Management of erosion and sediment on this project must follow Best Management Practices.

No excavation or fill is permitted in wetlands, streams, or along stream banks. Care must be taken to prevent any and all sediment from entering any wetland or waterway. Wetlands and stream banks will not be marked in the field. It is the responsibility of the contractor to consult with Owner prior to doing any work within suspected wetlands areas or along streams. The Owner will be responsible for identifying suspected wetlands.

4.4 Trail Construction Best Practices

To satisfy erosion and sediment control requirements, trail must be finished as the project advances. Any roughed-in corridors not being worked for 7 days must be sustainable and readily drain to reduce the exposure of non-compacted soil to moisture. Any segments requiring delayed finishing must be approved in advance by the Owner. Any disturbed areas not part of active tread must be stabilized within 7 days of not being worked with native duff from within the trail corridor or erosion control blanket and seed as defined in the specifications. Wood chips created from the slash as a result of the trail corridor clearing are an acceptable mulch alternative to weed free straw.

4.5 Corridor Clearing

Corridor clearing shall be confined to within two (2) feet of trail and backslope edges.

4.6 Debris

Cut and scatter all branches, roots and brush to a maximum height of eighteen inches (18") above grade. No debris shall be left within ten feet (10') of trail. Butt-ends of any sawed limbs must face away from trail. Cut brush and slash must be disposed of in an upland location and must be kept out of streams, gullies, swales, low areas, and suspected wetlands.

4.7 Tread

All tread should be constructed as full bench whenever possible. If fill is required, it should be supported by a stone retaining wall sufficient to support the anticipated uses.

4.8 Trees

The trails and bridges are to be repaired with minimal impact to the over story trees and the surrounding forest. Only brush and small trees should be removed from the trail corridor. On City property trees larger than 4" DBH require permission from the Owner before they are removed. Removal of healthy trees approaching this size should be avoided and only done when there is not a better option. Dead, dying, and rotted trees can be removed to open up the trail corridor as necessary for grading or if they present a clear hazard to trail builders or trail users. Care must be taken to avoid damage to the trees that are to remain on site.

4.9 Rocks

Rocks that are unearthed during grading shall be built into trail features or stabilized not more than five feet (5') away from the trail-edge. It is not permitted to allow rocks to roll down the slope. The trail will be routed around or over rocks and fractured stones that cannot be moved with the approved equipment.

Exceptions apply in boulder fields or where only a portion of the tread is obstructed. All rock embedded in the trail surface should be stable. When used in structures, care will be taken to match rock to the immediate surroundings; grain patterns, lichen growth, etc. Excess tool marks on rocks shall be avoided as much as possible. Rocks for retaining walls shall be gathered from on-site. Care must be taken to minimize impacts to vegetation and soil surface when moving rocks. Non-native rock may not be imported into a work area without approval of Owner.

Contractor shall not move, remove, displace or damage any stone or stone's surface that is used in existing or currently unused trails not part of this contract.

4.10 Woody Material

Woody material such as stumps, logs, roots and brush shall be removed from the trail tread. Wood chips created from the slash as a result of the trail corridor clearing are an acceptable mulch alternative to weed free straw. Contractor may ONLY chip woody material that was created as a result of the corridor clearing.

4.11 Backslope

Backslope of trail should be blended into existing adjacent slope and stabilized. Exposed slopes shall receive seed and erosion control blanket. Backslopes shall not exceed 2:1 slope without review and approval by the Owner.

4.12 Trail, Finished Condition

Hand finish and grading of trail tread, backslope, down slope spoils, and drainage features shall leave a surface that matches the texture of the surrounding forest floor while enabling water to drain off the trail.

4.13 Spoils Stabilization

All excavated materials not used in the trail tread or other constructed trail features must be stabilized within seven (7) days of not being worked. Spoils should be distributed in a thin layer adjacent to the trail tread not more than 4" in depth. Care should be taken to avoid placing spoils in drainages, swales or wetlands. When possible, spoils should be mulched with native materials to discourage erosion while native seed stocks reestablish. In areas without adequate native duff mulch, wood chip mulch may be substituted along with the approved seed mix per the attached seed mix exhibit. In certain circumstances, installation of formal erosion control measures may be required. Estimated quantities of the necessary erosion control measures are enumerated in the bid worksheets and will be paid out per the unit bid price. Any erosion control measures that are in excess of the estimated quantities must be approved by the Owner prior to installation.

4.14 Grade Reversals

A designed grade reversal or constructed rolling grade dip should occur at least every one hundred feet (100') and preferably more frequently. Any grade reversal must be strongly anchored to discourage short cutting.

4.15 Above-Grade Earthen Structures

Any portion of trail rising above the grade of its surroundings must be composed of mineral soil. If soil is scarce, a rock core may be used so long as it provides less than fifty percent (50%) of the total volume of the structure. Use of organic materials, duff, woody materials, etc., is absolutely prohibited.

Fill structures must have a fill slope of at least the angle of repose of the local soil. A rock retaining wall may be substituted for a fill slope with permission of the Owner. Fill structures must be completely stabilized and compacted in no greater than six-inch (6") lifts. Acceptable techniques include track-packing or compaction via a dedicated tamping unit. Hand tamping is not acceptable.

4.16 Water Diversions

All tread should be out-sloped at three percent (3%) maximum. When not possible or desirable due to purpose-built in-sloping, resource concerns, or obstructions, water can be directed down the trail for up to fifty feet (50') before a water diversion location.

4.17 Invasive Species

To reduce the spread of invasive plant species all hand tools and mechanized equipment should be free of invasive seeds and clean of any dirt and mud prior to entering a project site. When transferring materials between distinct locations within the project site all tools and equipment must again be cleaned to discourage transport of invasives to the local landscape.

4.18 Filter Strips

Filter strips are vegetated areas downslope of the trail corridor intended to treat sheet flows coming off the tread. Filter strips function by slowing down flow velocities, filtering out sediments, and providing an opportunity for infiltration into the underlying soils. Properly mulched spoils may be designated as part of the filter strip. Filter strips shall not be used as regular travel-ways for equipment and materials. Areas with inadequate filter strip capacity above waterways may require installation of formal erosion control measures to satisfy erosion and sediment control plan requirements.

At all times, filter strip characteristics must be maintained.

4.19 Environmental and Historic Preservation

The construction shall avoid any disruption or dislocation of sensitive cultural resources found on the site unless expressly authorized in writing by the Owner. Stones used in existing trails not part of this contract as steps, walls, markers, edges, etc., may NOT be removed and used within this project. Any known sensitive cultural areas will be communicated to the contractor in writing before construction begins. In the event that previously unidentified historical artifacts

are found during the construction process, trail construction must be immediately suspended in that area until it can be evaluated and a determination made on how to proceed. The Owner will need to make final determination on how to proceed around sensitive cultural resources after consulting with appropriate archeologist personnel. The trail may be rerouted around the sensitive area or special accommodations may be made such as boardwalk. The decision on how to proceed will depend on the type and sensitivity of the resource and the distance separating it from the planned trail.

4.20 Mechanized Equipment Best Practices

All track marks will be raked smooth. Affected area will be finished to have a *natural shape*, e.g., spoils piles rounded, smoothed and cleared of significant brush, blade edges blended. A spill kit suitable for five gallons of fluid will be onsite and within 500 feet of mechanized equipment whenever equipment is being operated. Scarring of trees is to be avoided.

Machine service and fueling is not permitted within 500 feet of a wetland or drainage.

Machine access is restricted to the trail corridor. Separate access routes may only be created and used with prior written permission of the Owner. Any approved access route must be retired and reclaimed back to its original condition upon project completion.

SECTION 5: UNIT DEFINITIONS AND DETAIL DRAWINGS

Any accompanying figures are for illustrative purposes only and do not relieve contractor of the need to satisfy written requirements. All units may not be used in all projects. Additional units may be required. In this case, the Owner will establish their definition via a change order process.

5.1 Trail Flagging

Contractor shall mark with flagging tape all trees over four inches (4") DBH that are to be removed. Final determination on removal lies with the Owner.

5.2 Trail Construction (figures 1, 2)

Measurement and payment for trail construction is based on landscape averages as depicted in the plan set. Grading through localized uneven grades, flat areas and undulations is included in the contractor's unit bid price for all trail unit construction types.

Each linear foot unit shall satisfy the enumerated guidelines for the specification associated with the specific segment. Trail width guidelines apply to active tread only; backslope and any fill slopes are not included. Tread variance will satisfy the guidelines for its location in the system.

Limb trimming will be done to open up the trail corridor as defined in specifications. Limb trimming and pruning shall be completed using approved trimming techniques that comply with the guidelines for tree care operations from the American National Standards Institute (ANSI) contained in the ANSI A300 Pruning Standards and ANSI Z133.1-2000.

The trail tread shall consist of compacted limestone crusher fines. Any stumps and/or roots should be excavated and removed from the trail tread. Any stumps and/or roots in the backslope should be flush-cut.

Any downslope spoils must be distributed such that no berm is present. When distributing, care shall be taken to match the local terrain. Spoils must be stabilized within seven (7) days of not being worked with a covering of forest duff. In areas with insufficient duff, sterile wood chips may be substituted for forest materials. Excess soil shall not be distributed into drainages, wetlands or adjacent to streams.

For billing purposes, trail construction is measured along the centerline of the tread.

5.3 Armored Tread/Stone Pitching (figure 3)

Stone pitching must extend at least ten inches (10") deep with a minimum of two-thirds (2/3) of the rock buried below the surface of the surrounding grade. Stones should be stable and aligned perpendicular to the direction of travel. Each end of a pitched section shall be supported by larger "bookend" stones embedded in the ground. Stones used for armoring should be two inches (2") to

twenty-four inches (24") thick and twelve inches (12") to forty-eight inches (48") wide. Voids shall be filled with compacted native soil, crushed rock, and/or crusher fines. Additional guide stones may be necessary along the edges of the trail if the final surface of the trail appears more rugged than the adjacent landscape.

For billing purposes, armoring is measured along the centerline of the tread. This unit includes the construction of the trail as well as armoring. Contractor cannot invoice for both trail construction and armoring of a given linear foot of trail.

5.4 Rock Retaining Wall (figure 4)

A rock Crib Wall or Rock Retaining Wall is defined as a row of stones stacked greater than 12" in height specifically designed to hold back soils and raise the tread to meet variations in the running grade of the trail tread. A row of stones placed at the downslope of a tread in order to create a full bench are not considered a retaining/crib wall and are included in the contractors unit price for that specific trail construction type. The bidding unit of a rock retaining wall is square-feet, calculated from the exposed vertical face, Square Face Foot (SQ FF). Rock retaining walls should be stable and battered (inclined back into the slope) a minimum of fifteen percent (15%) from vertical. All walls should have rubble backfill of at least six inches (6") in depth behind the wall to allow for drainage and to prevent damage from frost heaves. The base of the wall should be placed on firm compacted mineral soil or rock outcroppings. Any small stones used to "chink" larger stones in place should be placed in the back of the wall. The top of the wall shall not be counted in the width of the trail tread. The top layer of stones shall be installed in a manner to avoid being accidentally dislodged by trail users. Deadmen (stones that extend from the wall into the slope) should be used to ensure integrity. There should be one deadman for every five square face foot (5 SQ FF) of wall.

5.5 Reconstruct Tread

Any tread reconstruction should match the new trail construction listed above. For billing purposes, reconstructed tread is measured along the centerline.

5.6 Rock Rip-Rap

Rock Rip-Rap is a six inch (6") deep layer of placed stone intended to stabilize slopes with concentrated storm flow. Typically this technique will be used to protect drains of rolling grade dips and drainage channels below an armored crossing or inlet or outlet of culverts. Individual stones should be gabion-class or equivalent. Rock Rip-Rap is measured by the cubic yard.

5.7 Coir Roll (Bio Log) Installation (figure 5)

Coir Rolls or Bio Logs are formal erosion control measures. They are installed in areas where the existing vegetative filter strip is inadequate to prevent sediment from reaching adjacent water courses.

Rolls/Logs are placed perpendicular to trail and/or anticipated concentrated flows, set in a minor indentation excavated approximately two inches (2") deep. They are held in place with one inch-by-one inch (1"x1") or one inch-by-two inch (1"x2") wooden bio degradable stakes driven through the center of the roll/log at least six inches (6") into the ground, stopping about two inches (2") above the roll/log. Use five (5) stakes twenty inches (20") to twenty-four (24") long in the typical roll/log. Set the roll/log with foot-tamped backfill on the uphill side to prevent water from flowing underneath.

This unit includes mobilizing rolls/logs into the project area and installation.

5.8 Modifications

Modifications to the specifications may be allowed, however, proposed changes must be made in writing to the owner, and any specification changes must be approved in writing by the owner. Any changes in the field resulting in increased costs to the owner will not be paid for without written authorization from the owner.

5.9 Tables And Figures

Full Bench Trail

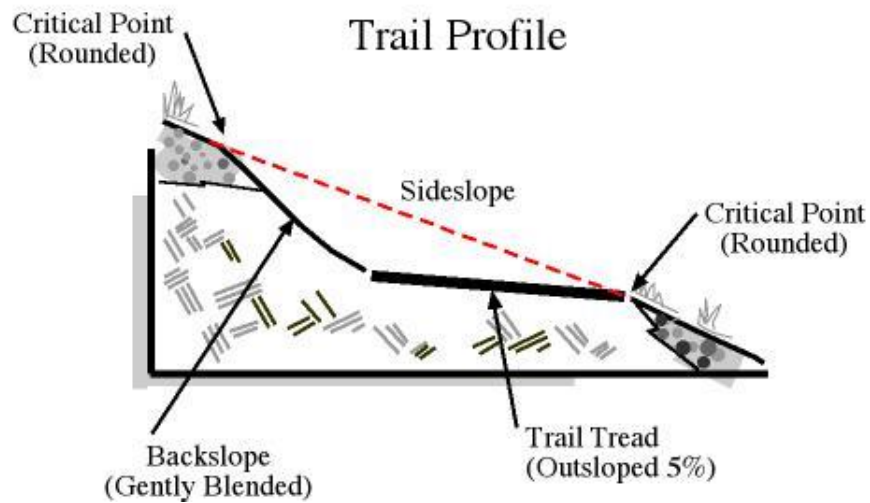
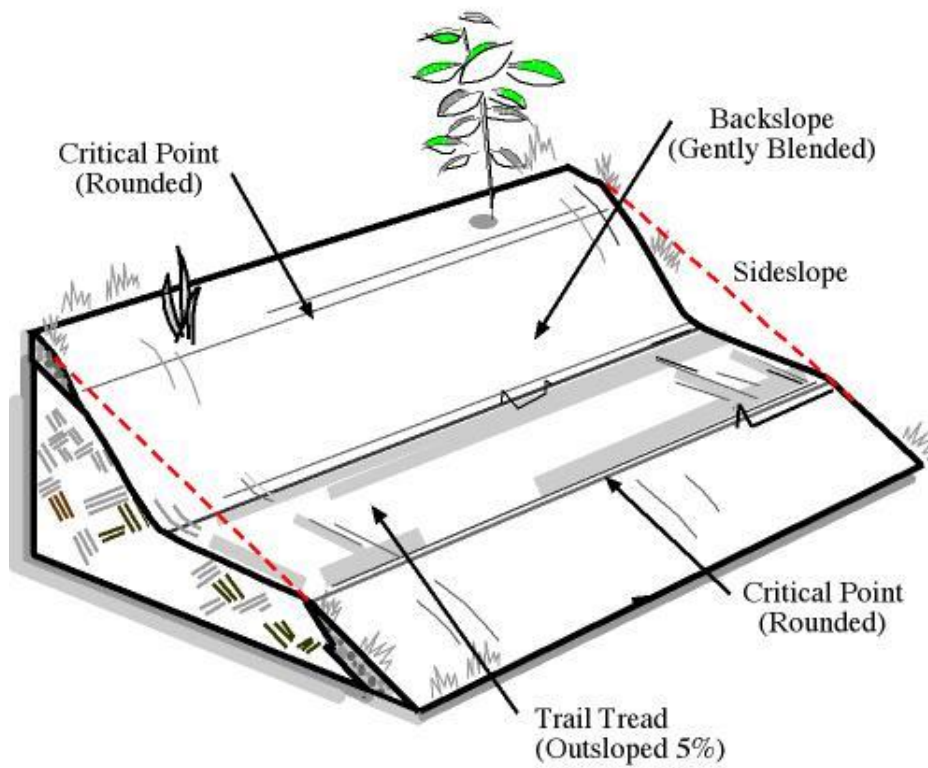


Figure 1: Full Bench Trail

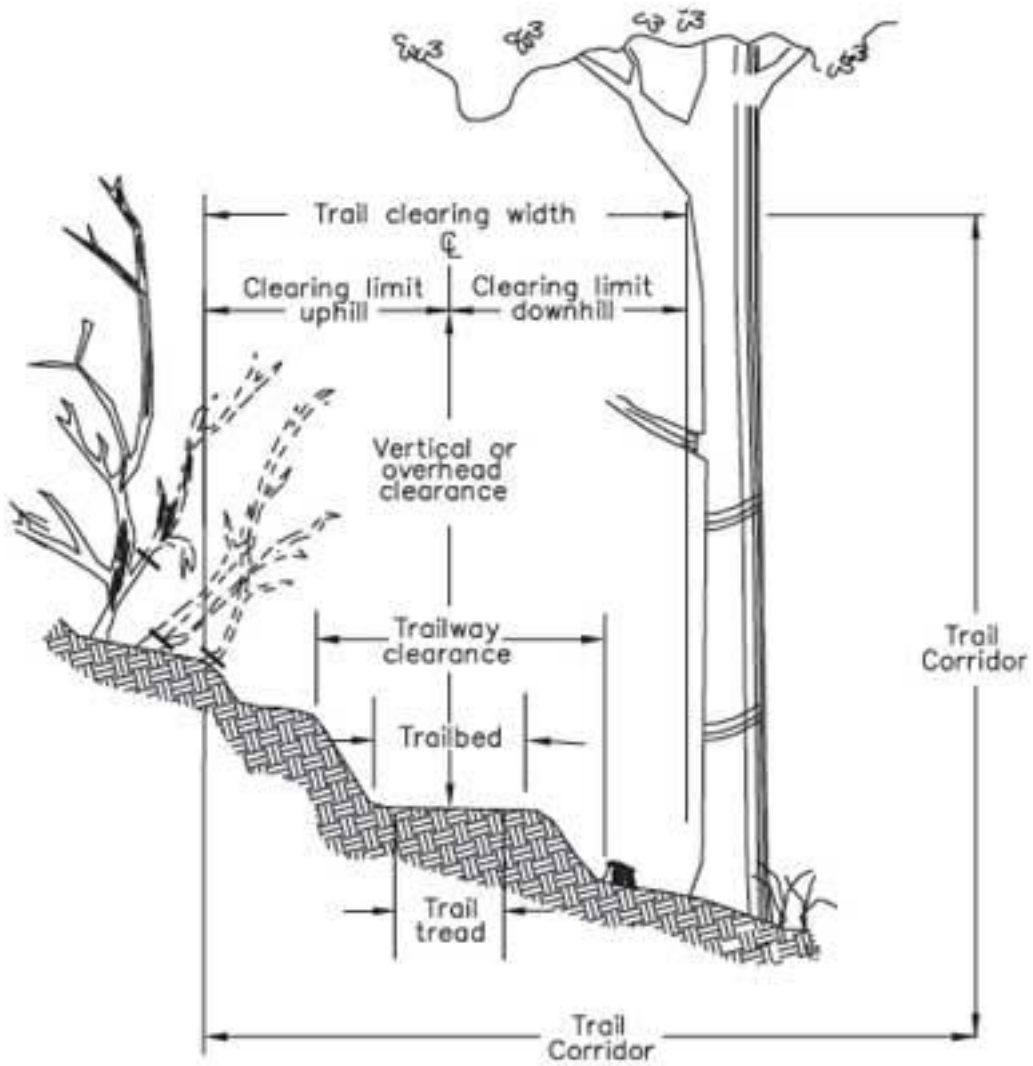


Figure 2: Clearing limits

Stone Pitching

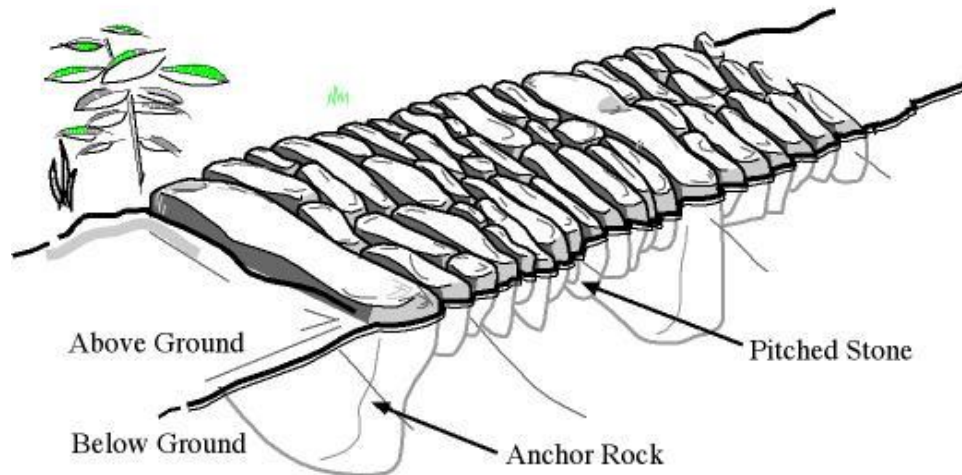


Figure 3: Tread Rock Armoring

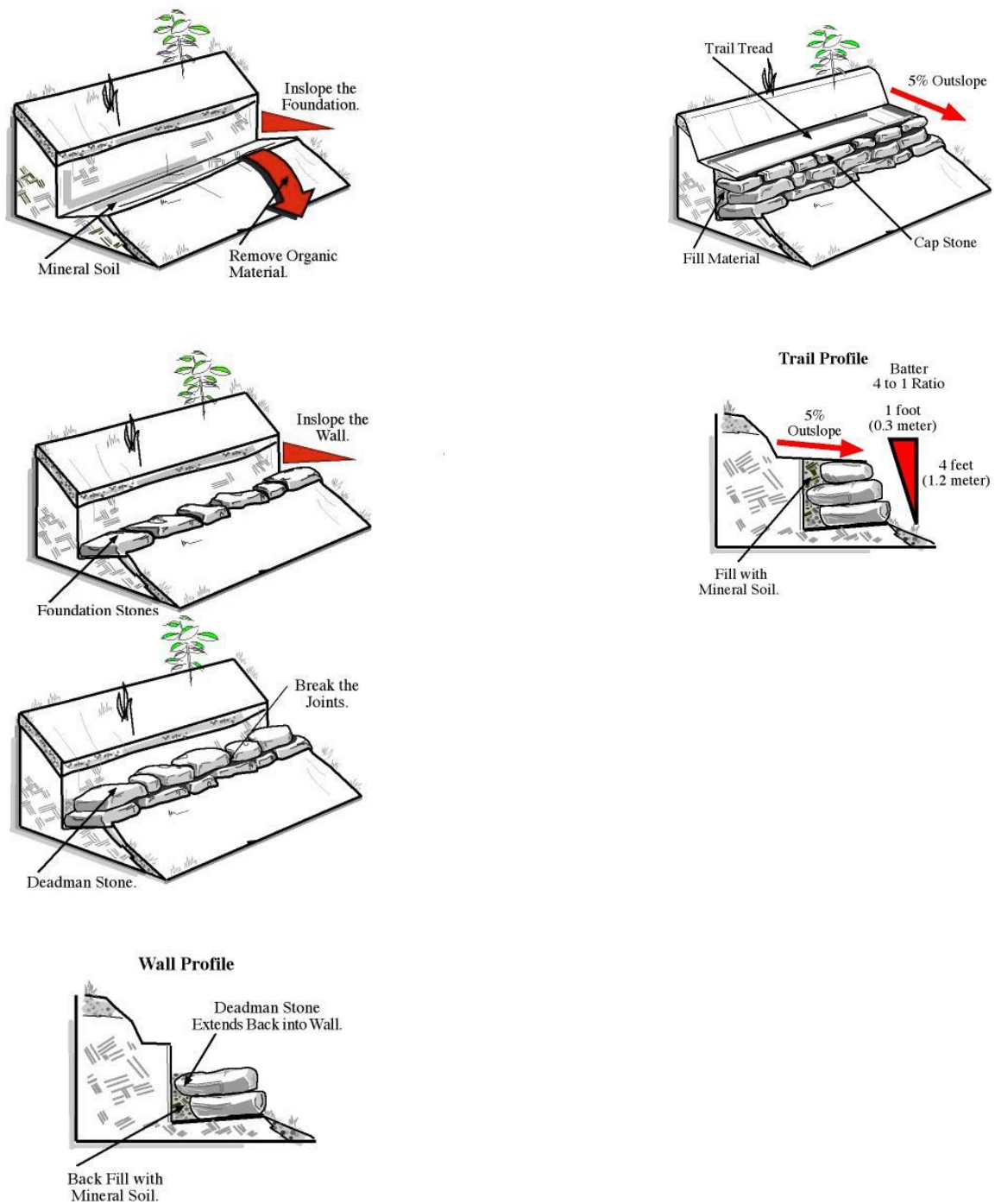


Figure 4: Rock Crib Wall

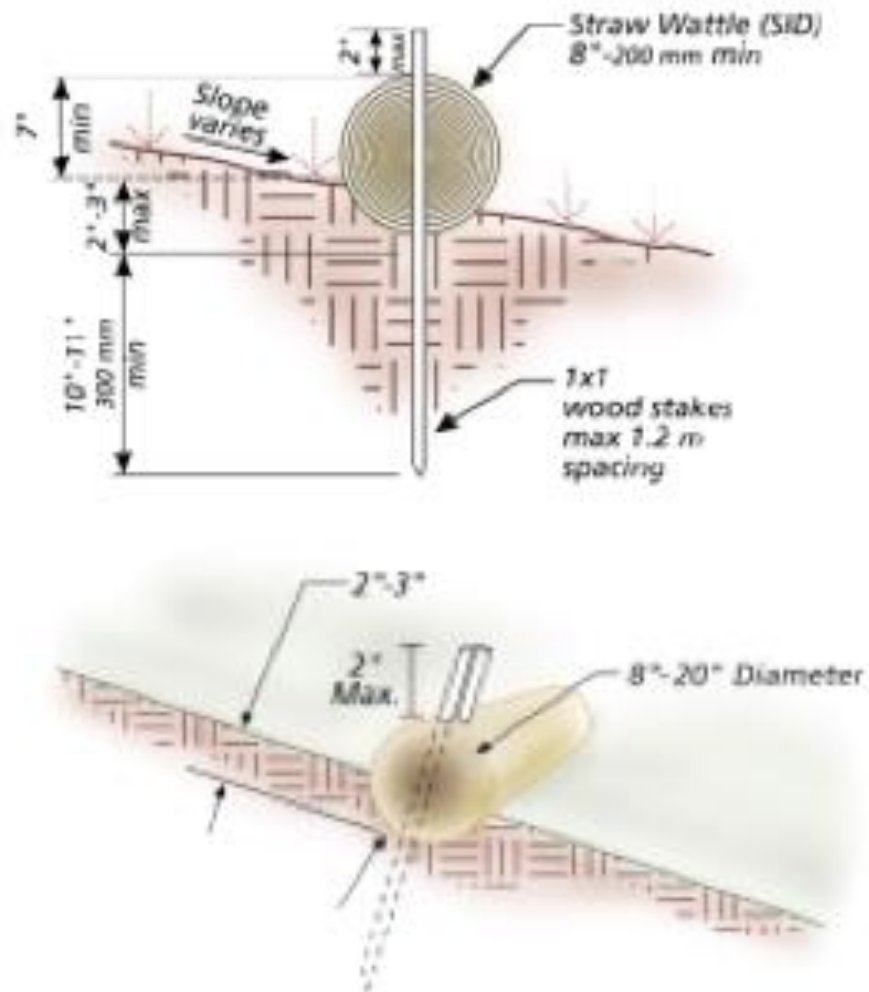


Figure 5: Coir Roll (Bio Log) Installation

SECTION 6: CONTRACTOR QUALIFICATIONS, REQUIREMENTS AND RESPONSIBILITIES

6.1 Professional Association

The contractor shall be a Professional Trail Builders Association (PTBA) member in good standing. Equivalent professional experience and ability, as determined by the Owner, is acceptable.

6.2 Tools

The contractor shall perform the required work using hand tools and/or small mechanized equipment that is a maximum of fifty inches (50") in width. Equipment with adjustable width tracks should be able to reduce track width to less than fifty inches (50"). Some sites may not be suitable for equipment this large and other sites may not be suitable for any mechanized equipment regardless of size due to terrain constraints. Permanent modification of trail outside the scope of work to accommodate equipment access (e.g., widening of an existing trail) is not desirable and must be specifically approved by in advance by the Owner.

6.3 Mechanized Equipment Best Practices

Using mechanized equipment equipped with tracks is strongly recommended. On project work, tracks are required for heavy equipment (greater than 500 lbs. gross weight).

All equipment will be clean and free of debris before introduced to work site. Equipment is subject to inspection at the start and during the project.

All mechanized equipment shall be in good mechanical condition, free of any fluid leaks and be equipped with spark arrestors if applicable.

Each machine will be equipped with a readily accessible fully charged fire extinguisher. Heavy equipment must have two extinguishers. Mounting locations should be chosen such that at least one fire extinguisher is accessible in the event of a rollover.

A spill kit with appropriate capacity must be mounted on the machine or available within 500 feet whenever equipment is operating.

Any equipment that does not meet these criteria shall be shut down until in compliance. If not correctable it will be removed from the project site at the request of the Owner and at no additional cost to the Owner.

As part of their bid package, the contractor will be asked to supply the expected list of mechanized equipment required to complete the project.

6.4 Backcountry Protocol

The Contractor's crew shall be familiar with backcountry operation and safety protocols as well as be familiar and adept at "leave no trace" practices.

When operating mechanized equipment, at least two workers will be in close proximity to provide assistance in the event of an emergency. Each worker will have a cell phone or radio with them that can be used to summon emergency service personnel. At least one GPS type device should be on hand at each worksite to help give location information to emergency dispatch personnel.

6.5 Personal Protective Equipment

It is the responsibility of the contractor to ensure that all employees working on the project equipped with and are using as appropriate the proper Personnel Protective Equipment (PPE) for the work being done. Helmets, eye protection, hearing protection, protective gloves, steel-toed boots, sunscreen, and protective clothing are considered some of the basic PPE. Face shields, breath protection, insect repellent, knee pads, shin guards and chaps are some of the other PPE that should be deployed where appropriate for the work being performed. The contractor must have at least one OSHA-compliant First Aid Kit readily available at each worksite.

6.6 Timetable

As part of their bid package, the Contractor will provide an approximate timetable and schedule detailing how all project work will be met.

6.7 Meetings and Progress Reviews

The contractor shall meet with the Owner at the beginning of each work week or as otherwise agreed upon by both parties to: review progress, check completed trail and trail features against the construction documents for completeness, tabulate completed work for payment and project expectations for the upcoming week.

6.8 What Contractor Provides

The Contractor shall provide the necessary supervision, equipment, materials, and tools to perform specified trail maintenance and trail construction on identified trails and sites, including fuel for any mechanized equipment/tools and any and all personal protection and safety equipment required.

6.9 Food and Water

The Contractor shall be responsible for providing food and water for self and staff.

6.10 Toilet Facilities

The contractor will be responsible for providing worksite sanitary facilities (ex. Porta-potties) for project staff or make alternate arrangements as appropriate for work areas where restroom facilities are not readily accessible.

The use of Porta-potties will be dependent on the location of the worksite relative to vehicle accessibility and concerns about potential vandalism in remote locations.

6.11 Parking

Construction personnel shall confine parking of private vehicles to those parking spaces available on public streets or public parking lots.

6.12 Public Safety

The Contractor shall ensure that reasonable precautions are taken to protect the public at all times where work is being performed.

6.13 Environmental Footprint

Contractor will be expected to institute practices to minimize the environmental footprint of construction activities. Examples are minimizing the running time of idle mechanized equipment, running equipment on bio-fuels such as bio-diesel, or buying carbon credits to offset carbon dioxide emission from the fossil fuels consumed.

6.14 Fees for Licenses, Permits, and Insurance

All costs for required licenses and insurance shall be borne by the contractor. Permits necessary for land access and environmental permits are the responsibility of the Owner and are in place.

6.15 Employee/Subcontractor Conduct

All of the contractor's employees and subcontractors shall conduct themselves in a proper manner at all times. Intoxication or any unsafe behavior by the contractor's employees while performing duties related to this contract is strictly prohibited. The contractor will be required to remove from the site any individual whose continued employment or retainer is deemed to be contrary to the public interest or inconsistent with the best interests of this trail construction project, and will not use such individual to perform services under this contract.

6.16 Employee Competence

The contractor may be required to immediately remove from the worksite any employee or subcontractor of the contractor who is incompetent or who endangers persons or property or whose physical or mental condition is such that

it would impair the employee's ability to satisfactorily perform the work. Notification to the contractor shall be made by voice promptly and confirmed in writing as soon as possible. No such removal shall reduce the contractor's obligation to perform all work required under this contract.

6.17 Compliance with Modern Practices

All work shall be performed and completed in a thoroughly skillful, efficient and professional manner in accordance with best modern practices, regardless of any omissions from the attached specifications and/or drawings.

6.18 Condition of Materials and Equipment

All materials and equipment incorporated into the trail shall be new or otherwise in good working order and shall comply with the applicable standard in every case where such a standard has been established for the particular type of material in question.

6.19 Disposal of Materials and Supplies Not Approved

Materials, supplies, etc., that have been delivered to the job but do not comply with specifications and have not been approved, upon notification, the contractor shall immediately remove from the premises any such condemned material, supplies, etc., and replace them with material, supplies, etc., in full accordance with the specifications.

6.20 Disposal of Materials and Supplies Not Used

Materials, supplies, etc., have been delivered to the job but are not used shall be removed from the site and properly disposed by the contractor.

6.21 Access Control

The contractor is prohibited from installing gates, cables, chains, fences, and other types of barricades to limit access to the project site without prior written permission from the Owner. It is anticipated that some type of access control will be necessary to control access to the trail that is under construction. It will be up to the Contractor to determine the best access control prescription.

6.22 Use of Premises – Storage

Contractor shall confine its apparatus, storage of materials, and operation of its employees/subcontractors to limits indicated by law, ordinance, permits, and/or directions of the Owner, and shall not unreasonably encumber the premises with project materials. Before any work is undertaken the contractor shall consult with the Owner and secure from Owner the use of such space as may be available for the storage of materials and/or equipment. Contractor will

be held responsible for any damage done in connection with the use of this location for storage.

The Owner or Owner is not responsible for any damages that may occur to the contractor's equipment during storage whether it is from natural causes or caused by man from such unlawful acts as theft, vandalism, and arson. The contractor is responsible for providing their own property insurance. The contractor is responsible for providing their own storage and transportation equipment such as trailers, tarps, locks, or other security devices.

6.23 Trail Rehabilitation

The Contractor shall rehabilitate sections of trail that will be closed as a result of trail realignment. Any travel-ways created as a result of construction and/or ingress/egress will be restored to their original condition.

6.24 Use of Subcontractors

The Contractor shall be able to use subcontractors to complete the work provided the subcontractors meet all qualifications and satisfy all conditions defined in this RFQ. Contractor is responsible for all actions of their subcontractor.

Subcontractor staff must be described in the bid submission. Use of subcontractors not described in the bid submission will only be allowed with written permission from the Owner.

6.25 Indemnity

The contractor shall indemnify, save, and hold harmless the Owner, the land owner, and their employees and agents, against any and all claims, damages, liability and court awards including costs, expenses, and attorney fees and related costs, incurred as a result of any act or omission by the contractor, or their employees, agents, subcontractors, or assignees pursuant to the terms of this contract.

6.26 Protection of Finished Construction

Contractor shall assume the responsibility for the protection of all finished construction under his Contract and shall repair and restore any and all damage of finished work to its original state.

Where responsibility can be established for damage to finished construction, the cost for repair or replacement shall be charged to the party responsible.

**SECTION 7: FINAL INSPECTION, SUBSTANTIAL COMPLETION,
RETAINAGE, WARRANTY AND PAYMENT**

1. Upon the substantial completion of the contract work, the Owner shall accompany the contractor on an inspection of the work to create a final punch list. All defects found in the work that do not meet the intent of the construction documents will be corrected before payment will be authorized.
2. Substantial completion is defined as the point at which the requirements of the construction documents have been met and the Owner issues a letter of acceptance.
3. Final payment will be made upon substantial completion and approval of work per sub-project minus a 5% retainage. This retainage is held for a one-year warranty period and starts on the date of substantial completion.
4. Contractor shall provide separate invoices and load tickets for each of the 14 projects. Identify quantities used on each project for any unit-quantity cost adjustments necessary.
5. All invoices must be submitted by July 3rd, 2016.