

**AGREEMENT BETWEEN  
CITY OF DULUTH  
AND  
CYCLISTS OF GITCHEE GUMEE SHORES, INCORPORATED**

THIS AGREEMENT ("Agreement") is entered into by and between CYCLISTS OF GITCHEE GUMEE SHORES, INCORPORATED, a Minnesota non-profit corporation ("COGGS"), and the CITY OF DULUTH, a municipal corporation created and existing under the laws of the State of Minnesota (the "City").

The parties acknowledge the following:

A. City is committed to providing recreational opportunities for the citizens of Duluth and enhancing the quality of the City's open spaces.

B. COGGS is a non-profit volunteer organization with the mission of building, maintaining, and advocating for mountain bike trails in the cities of Duluth, MN and Superior, WI.

C. City and COGGS have worked together to develop the Duluth Traverse Trail System, a multiuse mountain bike trail system that traverses the entire length of the City, through the Duluth Traverse Mini Master Plan dated April 14, 2017. A majority of the trail has been constructed with COGGS and the City working together to mobilize volunteers and to obtain grant and other types of funding.

D. City and COGGS are now planning for the additional development of the Duluth Traverse Trail System and wish to identify eight projects ("COGGS Projects") to be completed by COGGS in the summers of 2023 and 2024.

E. COGGS has represented itself as fully capable of completing the COGGS Projects and as qualified and willing to perform the COGGS Projects.

F. Volunteers assigned to work under this Agreement are volunteers of COGGS and are covered under the policies and procedures of COGGS in relation to volunteer organization and management. Volunteers are not employees or individual volunteers of the City.

NOW, THEREFORE, in consideration of the mutual covenants and conditions contained in this Agreement, the receipt and sufficiency of which is acknowledged, the parties agree as follows:

I. SCOPE OF THE AGREEMENT.

A. Services to be Performed.

COGGS will construct the COGGS Projects on the Project Areas as set forth in Exhibit A attached hereto and incorporated herein. In the event of a conflict between the terms and conditions of Exhibit A and this Agreement, the terms and conditions of this Agreement shall be deemed to be controlling. The COGGS Projects shall be completed by COGGS at no cost to City. While most of the COGGS Projects are located on City-owned property, some are located on property over which the City has or will have the necessary permits, an easement or other permission to use the property for the COGGS Projects.

Work on these COGGS Projects shall not be commenced until COGGS has received written notice to proceed on these COGGS Projects from City Parks Manager or designee (the "Manager").

B. Ownership of Improvements.

All improvements constructed shall be and remain the property of the City. COGGS shall be responsible for furnishing to City records, data and information as City may require, pertaining to matters covered by this Agreement. All materials, including records, data, and other information acquired, developed or documented under this Agreement shall become the property of City when prepared and shall be delivered to City upon completion or termination of this Agreement or at such earlier time as requested by City.

C. License.

Subject to the terms and conditions set forth in this Agreement, City grants to COGGS a non-exclusive license to enter the Project Areas for the limited purpose of completing COGGS Projects.

D. Project Areas.

1. COGGS acknowledges and understands that the Project Areas are open to the public, and the cooperation of all users and coordination of activities is required. This cooperation includes ingress and egress and use of amenities and related improvements. COGGS agrees that the Manager shall ultimately determine the appropriate use of the Project Areas and shall decide any disputes between COGGS and any other users of the Project Areas.

2. COGGS' use of the Project Areas shall in no way limit or restrict City's or the public's use of the Project Areas. City shall continue to enjoy unlimited access to the Project Areas during the term of this Agreement. In an active construction area, COGGS may temporarily close off a section a trail for public safety.

E. Communication.

COGGS will work in coordination with City's Parks Division on the COGGS Projects. The Manager will serve as the primary contact for City with respect to the COGGS Projects unless another individual is designated in writing by City. The COGGS' President will serve as the primary contact for COGGS.

II. TERM OF THE AGREEMENT.

Notwithstanding the date of execution of this Agreement, the term of this Agreement shall commence on May 1, 2023, and shall continue through November 30, 2024, unless the COGGS Projects are completed prior to November 30, 2024, or unless otherwise terminated earlier as provided for herein.

III. WORK REQUIREMENTS.

A. Conformance with Work Specifications.

All work shall be done in accordance with the Construction Specification dated January 18, 2019, (COGGS Projects #01-2019) and boardwalk, bridge, and erosion details, all attached hereto and incorporated herein as Exhibit B; and with the Trails Specification Matrix attached hereto and incorporated herein as Exhibit C. The Manager will monitor construction of COGGS Projects to ensure compliance with the above specifications and reserves the right to reject any work not conforming to the specifications.

B. Volunteer Work.

COGGS will provide and supervise volunteers in the construction of COGGS Projects. When utilizing volunteers COGGS shall:

1. Provide a trail steward or crew leader to supervise volunteers at all times when in the Project Areas and submit their name and contact information to the Manager.

2. Train and supervise volunteers in appropriate construction techniques.
3. Provide volunteers with the appropriate tools.

C. Operation of Chainsaws and Heavy Equipment.

COGGS personnel and volunteers must observe the following rules, procedures and guidelines when using chainsaws and heavy equipment:

1. Only individuals who COGGS has designated as “chainsaw operator” will be allowed to operate chainsaws in Project Areas. COGGS shall adhere to Occupational Safety and Health Administration (OSHA) requirements for working safely with chainsaws.
2. Only individuals who COGGS has designated as “machine operator” will be allowed to operate heavy equipment in Project Areas. COGGS shall adhere to Occupational Safety and Health Administration (OSHA) requirements associated with the use of wheel or track propelled heavy equipment.

IV. TERMINATION.

- A. Either party may terminate this Agreement with or without cause by providing at least fourteen (14) calendar days’ written notice.
- B. City may terminate this Agreement immediately on written notice to COGGS if City believes in good faith that health, welfare, or safety would be placed in immediate jeopardy by the continuation of this Agreement.

V. REPRESENTATIONS AND WARRANTIES.

- A. City makes no representation that the Project Areas are suitable for any particular purpose or specific uses and COGGS accepts the Project Areas in “as is” condition without representations or warranties of any kind.

- B. COGGS represents and warrants that it shall perform its duties in a professional and diligent manner in the best interests of City and in compliance with all applicable laws.
- C. COGGS represents and warrants that COGGS and all personnel working on the Projects including volunteers shall have sufficient training and experience to perform the duties set forth herein and are in good standing with all applicable licensing requirements.

#### VI. RESTORATION.

Except as explicitly permitted by this Agreement, COGGS shall not make any alterations or improvements to the Project Areas without the prior written consent of the Manager and then only upon the terms and conditions which may be imposed by City. COGGS agrees to pay to City upon demand the reasonable costs incurred by City to repair any damage done to the Project Areas by COGGS, its employees, servants, volunteers, agents, contractors, invitees, and licensees.

#### VII. HOLD HARMLESS.

COGGS shall defend, indemnify and hold City and its employees, officers, and agents harmless from and against any and all cost or expenses, claims or liabilities, including but not limited to, reasonable attorneys' fees and expenses in connection with any claims resulting from: (a) COGGS' breach of this Agreement; (b) COGGS' negligence or misconduct or that of its agents, volunteers or contractors in completing any portion of the COGGS Projects; (c) any claims arising in connection with COGGS' agents, volunteers or contractors; or (d) the use of any materials supplied by COGGS to City unless such material was modified by City and such modification is the cause of such claim. This section shall survive the termination of this Agreement for any reason.

#### VIII. INSURANCE.

- A. During the Term, COGGS shall procure and maintain continuously in force Public Liability Insurance written on an "occurrence" basis under a Comprehensive General Liability Form in limits of not less than One Million Five Hundred Thousand Dollars (\$1,500,000) aggregate per occurrence for personal bodily injury and death. City shall be named as additional insureds therein. COGGS' insurance policies shall cover:
  - 1. Public Liability, including premises and operations coverage.
  - 2. Independent contractors - protective contingent liability.

3. Personal injury.
4. Owned, non-owned and hired vehicles.
5. Contractual liability covering the indemnity obligations set forth herein.
6. COGGS volunteers

B. COGGS shall provide to City a Certificate of Insurance in form acceptable to the Duluth City Attorney's Office evidencing such insurance coverages. City does not represent or guarantee that these types or limits of coverage are adequate to protect COGGS' interests and liabilities. The form of the Certificate of Insurance shall (i) contain an unconditional requirement that the insurer notify City not less than 30 days prior to any cancellation, non-renewal or modification of the policy or coverages evidenced by said certificate; and (ii) provide that failure to give such notice to City will render any such change or changes in said policy or coverages ineffective as against City.

C. During the Term, COGGS shall also have workers' compensation insurance in accordance with applicable law.

#### IX. INDEPENDENT CONTRACTOR.

COGGS shall be responsible for all of its employee compensation in connection with the Projects, including but not limited to payroll and all other expenses. Nothing contained in this Agreement is intended or should be construed in any manner as creating or establishing the relationship of co-partners between the parties or as constituting COGGS, COGGS personnel, or COGGS volunteers as an agent, representative, or employee of City for any purpose or in any manner whatsoever.

COGGS and its employees shall not be considered employees of City and any and all claims that may or might arise under the Workers' Compensation Act of the State of Minnesota on behalf of COGGS' employees or agents while so engaged, shall in no way be the responsibility of City.

Furthermore, City shall not, in any way, be responsible to defend, indemnify or save harmless COGGS from liability or judgments arising out of the intentional or negligent acts or omissions of COGGS while performing the work specified by this Agreement.

#### X. ASSIGNMENT.

COGGS shall not in any way assign or transfer its rights or interests under this Agreement. With the prior written approval of the Manager, COGGS may hire contractors to work on the COGGS Projects. Any contractor hired by COGGS shall procure the required insurance coverages as described in Section VIII above and provide proof of

Coverage to City prior to conduction any work on the Project Areas. COGGS shall remain primarily responsible for all work performed by any contractor.

Notwithstanding the above, the City hereby approves the below as contractors: Brad Miller, Trail Logic, 228 99<sup>th</sup> Avenue West, Duluth, MN 55808  
Shawn O'Brien, Zenith Trail Contracting LLC, 1012 N 9th Ave E, Duluth, MN 55805  
Aaron Rogers, Rock Solid, PO Box 139, Copper Harbor, MI 49918  
Tim Wegner, Trail Source, 13282 Derryglenn Ct., Rosemount, MN 55068

#### XI. LAWS, RULES AND REGULATIONS.

A. COGGS agrees to conduct its activities related to the COGGS Projects in strict compliance with the United States Constitution and with the applicable laws, rules, and regulations of the United States, State of Minnesota, St. Louis County, City of Duluth, including, but not limited to, all laws, rules, and regulations relating to accessibility standards under the Americans with Disabilities Act. COGGS shall not unlawfully discriminate and shall comply with all applicable federal and state laws regarding non-discrimination.

B. COGGS agrees to procure, at COGGS' expense, all licenses necessary for carrying out its obligations under this Agreement and completing the COGGS Projects. City shall secure all permits necessary under this Agreement.

#### XII. RECORDS RETENTION.

COGGS agrees to maintain all books, records, documents, and other evidence pertaining to this Agreement for six (6) years after termination or expiration of this Agreement for any reason.

#### XIII. GOVERNMENT DATA PRACTICES.

COGGS must comply with the Minnesota Government Data Practices Act, Minnesota Statutes Chapter 13, as it applies to all data provided by City under this Agreement, and as it applies to all data created, collected, received, stored, used, maintained or disseminated by COGGS under this Agreement. The civil remedies of Minnesota Statutes Section 13.08 apply to the release of the data referred to in this clause by COGGS. If COGGS receives a request to release the data referred to in this clause, COGGS must immediately notify the Manager and consult with the Manager as to how COGGS should respond to the request. COGGS' response to the request must comply with applicable law.

#### XIV. WAIVER.

The waiver by City or COGGS of any breach of any term, covenant, or condition of this Agreement shall not be deemed to be a waiver of any subsequent breach of same

or any other term, covenant, or condition in this Agreement. Further, in order to be effective, any waiver must be in writing.

XV. SEVERABILITY.

COGGS and City agree that if any term or provision of this Agreement is declared by a court of competent jurisdiction to be illegal or in conflict with any law, then the validity of the remaining terms and provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if this Agreement did not contain the particular term or provision held to be invalid.

XVI. RECITALS INCORPORATED.

The recitals at the beginning of this Agreement are true and correct and are incorporated into this Agreement by reference.

XVII. NO THIRD PARTY RIGHTS.

This Agreement is to be construed and understood solely as an agreement between COGGS and City regarding the subject matter herein and shall not be deemed to create any rights in any other person or on any other matter. No person shall have the right to make a claim that they are a third party beneficiary of this Agreement or of any of the terms and conditions hereof, which may be waived at any time by mutual agreement between the parties.

XVIII. NOTICES.

Notices provided pursuant to this Agreement shall be sufficient if sent by regular United States mail, postage prepaid, addressed to:

COGGS  
Attn: Dave Antonson, Chair  
P.O. Box 161261  
Duluth, MN 55814

City  
Attn: Matt Andrews, Trails Coordinator  
Room 17 City Hall  
411 West First Street  
Duluth, MN 55802

or to such other persons or addresses as the parties may designate to each other in writing from time to time.



#### XIX. INCIDENT REPORT.

COGGS shall promptly notify City in writing of any incident of injury or loss or damage to the Project Areas or any of COGGS' employees, officers, agents, contractors, invitees or the public occurring in the Project Areas during the term of this Agreement. COGGS shall use the City's Incident/Injury Report Form attached as Exhibit D. A fillable Incident/Injury Report Form can also be found at <http://www.duluthmn.gov/media/342903/incident-injury-report-fillable.pdf> or alternatively, by going to the City of Duluth website under Human Resources/Policies & Forms/Policy & Procedures Forms/Incident/Injury Report Form, and e-mailed to [accidentreporting@duluthmn.gov](mailto:accidentreporting@duluthmn.gov).

#### XX. COMPLIANCE WITH AGREEMENT.

The rights of COGGS to work in the Project Areas are subject to COGGS' compliance with the undertakings, provisions, covenants, and conditions set forth in this Agreement.

#### XXI. APPLICABLE LAW.

This Agreement, together with all of its paragraphs, terms, and provisions, is made in the State of Minnesota and shall be construed and interpreted in accordance with the laws of the State of Minnesota. The appropriate venue and jurisdiction for any litigation hereunder shall be in a court located in St. Louis County, Minnesota.

#### XXII. AMENDMENTS.

All amendments to this Agreement shall be in writing and shall be executed in the same manner as this Agreement.

#### XXIII. AUTHORITY TO EXECUTE AGREEMENT.

The parties represent to each other that the execution of this Agreement has been duly and fully authorized by their respective governing bodies or boards, that the individuals who executed this Agreement on their behalf are fully authorized to do so, and that this Agreement when thus executed by said individuals will constitute and be the binding obligation and agreement of the parties in accordance with the terms and conditions of this Agreement.

XXIV. COUNTERPARTS.

This Agreement may be executed in two or more counterparts, each of which shall be deemed to be an original as against any party whose signature appears thereon, but all of which together shall constitute but one and the same instrument. Signatures to this Agreement transmitted by facsimile, by electronic mail in "portable document format" (".pdf"), or by any other electronic means which preserves the original graphic and pictorial appearance of the Agreement, shall have the same effect as physical delivery of the paper document bearing the original signature.

XXV. ENTIRE AGREEMENT.

This Agreement, including exhibits, constitutes the entire agreement between the parties and supersedes all prior written and oral agreements and negotiations between the parties relating to the subject matter hereof. This Agreement may be executed and delivered by a party by facsimile or PDF transmission, which transmission copy shall be considered an original and shall be binding and enforceable against such party.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the dates set forth below.

CITY OF DULUTH, MINNESOTA

By: \_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk

Dated: \_\_\_\_\_

COUNTERSIGNED:

\_\_\_\_\_  
City Auditor

CYCLISTS OF THE GITCHEE  
GUMEE SHORES, INC.

DocuSigned by:  
By: Dave Antonson  
283A5100C06D46D...  
Board Chair

Its: \_\_\_\_\_

Title: \_\_\_\_\_

25-May-2023  
Dated: \_\_\_\_\_

APPROVED AS TO FORM:

\_\_\_\_\_  
City Attorney

## EXHIBIT A

### COGGS PROJECTS 2023-2024

#### **Downer Park**

(a) Project to be volunteer built by COGGS volunteers.

(b) This trail is a “lollypop” trail that is about 1.5 miles in length starting at Vermilion Road. The stem of the lollypop is about ¼ mile with soil mostly dominated by loamy sands and with good compaction rates and will be constructed as a single-track green level beginner trail. The remainder of the 1¼ mile of trail is very steep extremely rocky terrain and will be constructed as single-track trail with a single to double-black diamond rating for advanced riders only. The first portion of the trail grouping coming off Vermilion is on Park Hill Cemetery property and an agreement is in place to use that property for trail recreation purposes. The remaining portion is all within Downer Park and tax-forfeit lands however there is a pinch point where the alignment comes close to Foresthill Cemetery property; the City of Duluth is currently in negotiations to acquire this property. Property lines will be marked in the field by the City prior to construction.

(c) Equipment expected to be used by volunteers includes; gas powered wheelbarrows, plate compactors, power tools such as skill saws and impact drivers, brush saws, weed whackers, and hand tools.

#### **Keene Creek Bike Park**

The site is ±2.2 acres and sits in Keene Creek Park a public green space managed by the City of Duluth. It has a single family neighborhood on the north and south side and a 4 lane county highway on the east side. The west side is flanked by a designated trout stream where a 50-foot setback from the edge of the “bank full mark” is required. A portion of the park is under an interstate viaduct with lighting and a water spigot for public use.

The site is on the paved transportation and recreational trail system called the Cross City Trail. It is within ¼ mile of the Duluth Traverse Spine Trail. The Duluth Traverse Spine trail is a multi-use beginner mountain bike trail spanning the entire City of Duluth connecting neighborhoods and people to green spaces and parks. There are also 2 parking lots, a dog park, playground, skate park, basketball courts and a porta-potty serving Keene Creek Park and its amenities

Some work will be supplemented by COGGS volunteers under supervision of experienced trail stewards and/or professional crew.

The project will stay entirely within the existing trail corridor and will consist of the following types of work:

- Capping and hardening of drains and heavy clay soils which dominate the area
- Lifting of trail in certain areas
- Ditching installed to manage surface flow of water
- Additional boardwalk where needed, optional blue-level features added within the existing corridor
- Addition of rider control measures (speed checks/pinch points) at each Superior Hiking Trail crossing

Equipment expected to be used by professional contractor includes: mini-excavators, gas powered wheel barrows, mini skid steers, plate compactors, chain saws, power tools such as skill saws and impact drivers, brush saws, weed whackers, and hand tools.

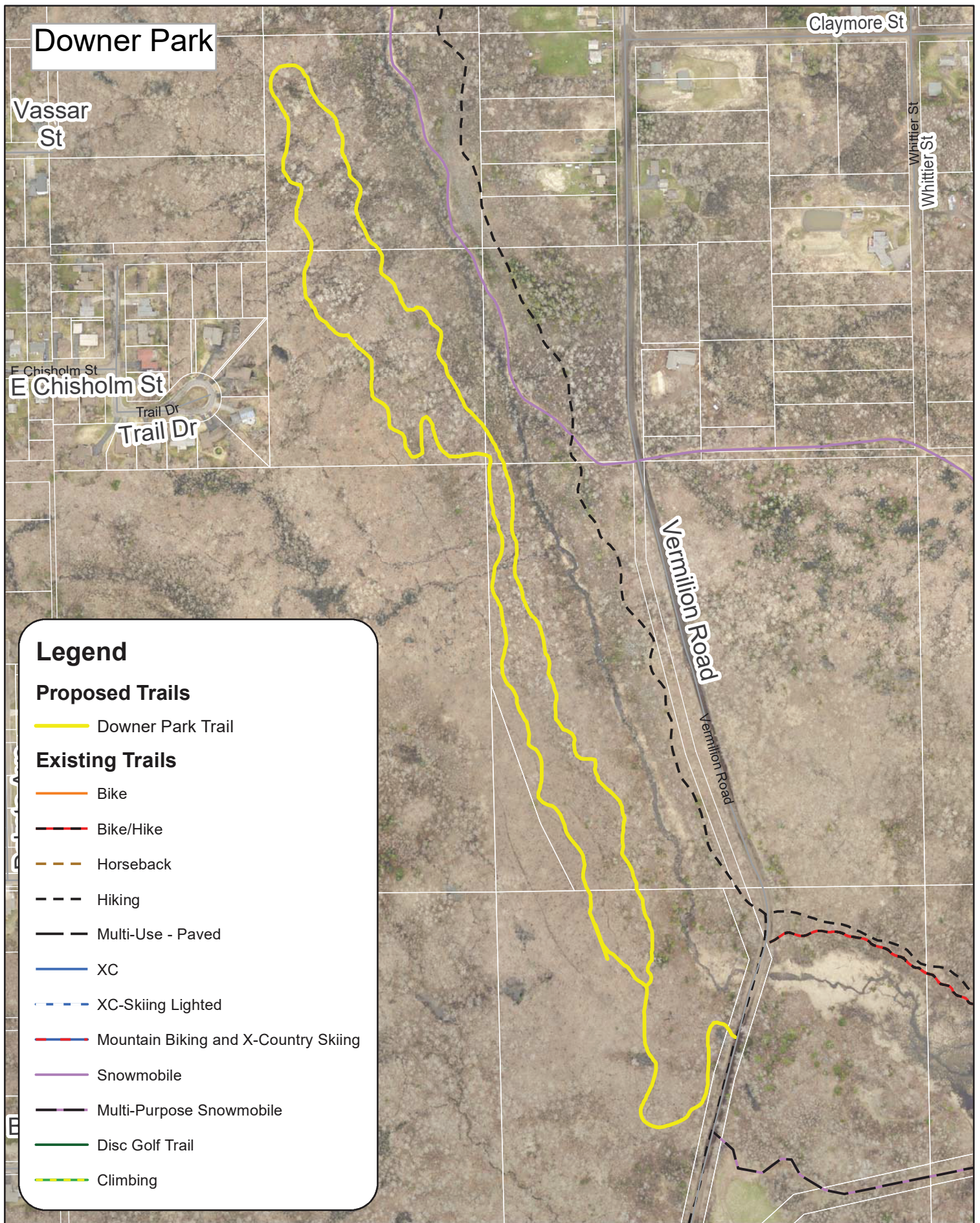
**Duluth Traverse- Forest Hill**

This ±0.7 mile segment of trail will be constructed to fill a gap in the Duluth Traverse Spine Trail from Vermillion Road to the Woodland Park neighborhood. The City of Duluth is currently in negotiations to acquire the property necessary to complete this trail alignment. Property lines, and trail alignment will be marked in the field by the City prior to construction. Final trail alignment will be designed utilizing established best management practices to avoid any wetland areas, and construction will follow the specifications detailed in Exhibit B.

**Hartley Park- Pines Skills Loop**

The current Pines trail consists of a mix of social trail, coggs built DT and Hartley volunteer built single track. The proposed project would create a kid/strider/beginner/ adaptive friendly loop. The project would also include the construction of 6-10 wooden features that would provide skills building opportunities for all users. See attached map for locations, and attached "TTF" specifications document for examples of features. This project would start to fill a gap in our current trail offerings by providing a true beginner loop, accessible to kids, adaptive cyclists and first time riders. This would be a great asset to the programs currently offered by the nature center.





0 230 460 920 Feet





## Downer Park Multi-Use Trail

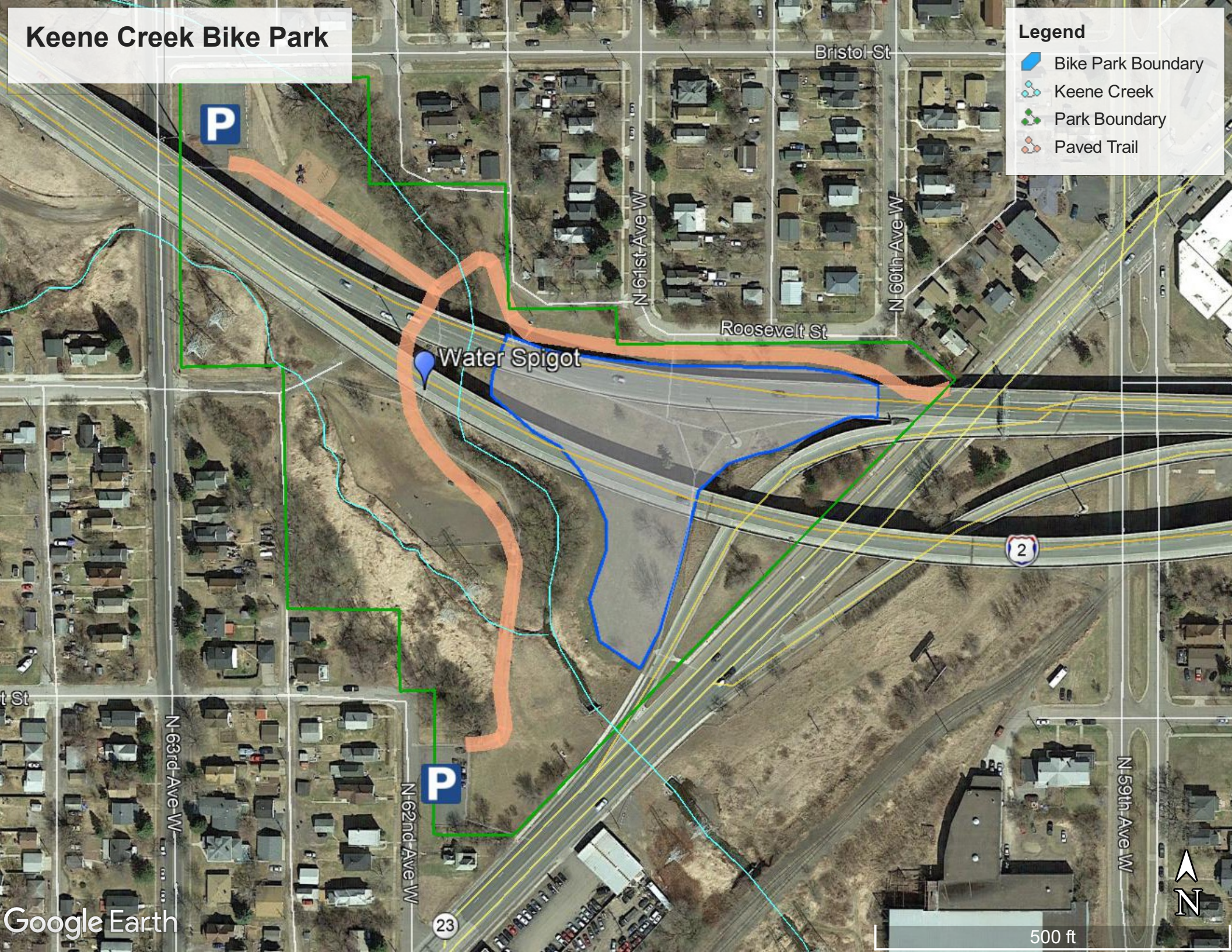




# Keene Creek Bike Park

## Legend

-  Bike Park Boundary
-  Keene Creek
-  Park Boundary
-  Paved Trail



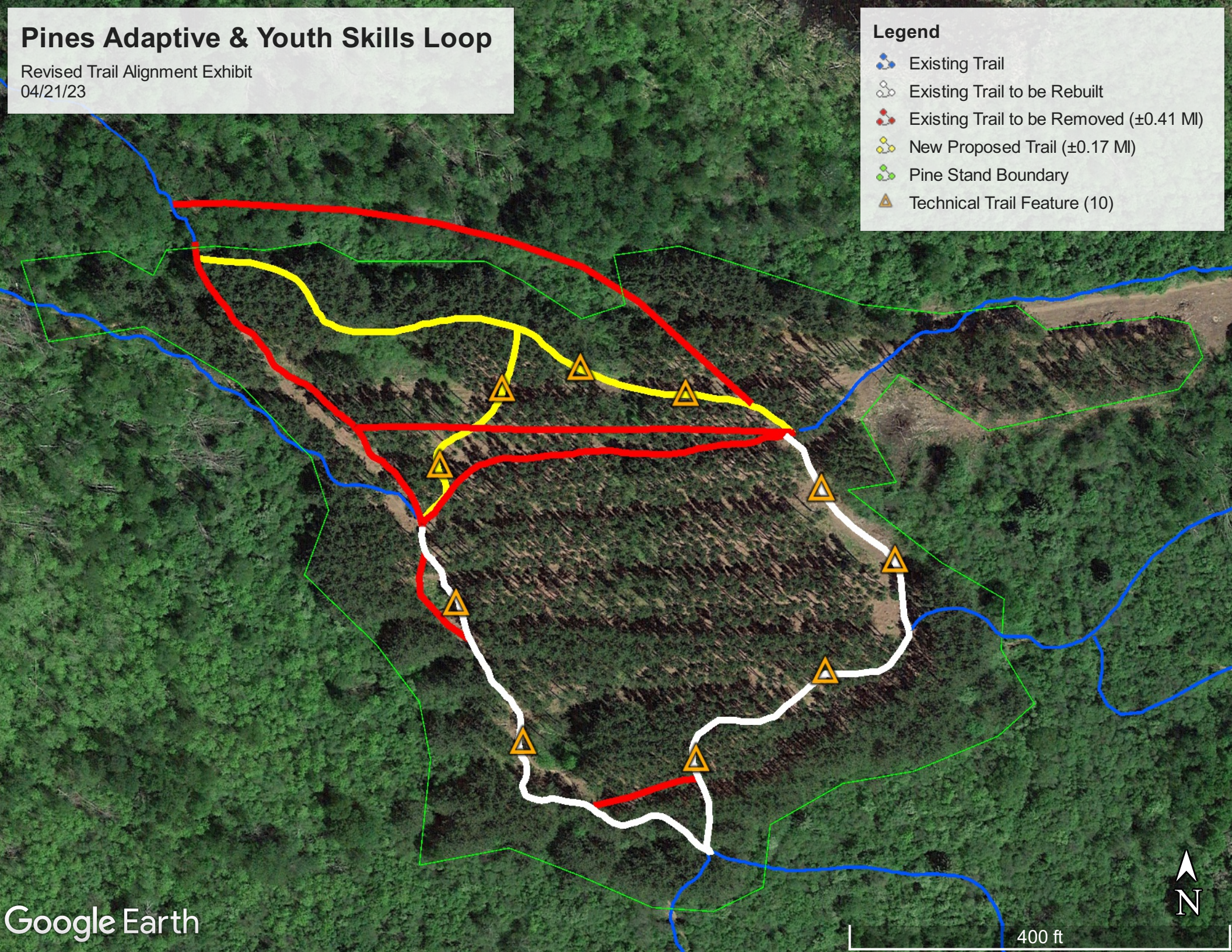


# Pines Adaptive & Youth Skills Loop

Revised Trail Alignment Exhibit  
04/21/23

## Legend

- Existing Trail
- Existing Trail to be Rebuilt
- Existing Trail to be Removed ( $\pm 0.41$  MI)
- New Proposed Trail ( $\pm 0.17$  MI)
- Pine Stand Boundary
- Technical Trail Feature (10)





# Exhibit B



## CONSTRUCTION SPECIFICATION

January 18, 2019

COGGS Project #: 01-2019

Duluth Traverse Trail System  
2019 Club Bid

### **COGGS**

*Cyclists of Gitchee Gume Shores*  
PO Box 161261  
Duluth, MN 55815  
United States



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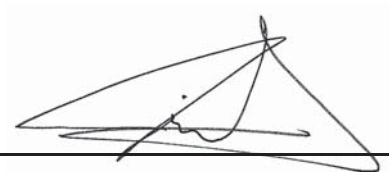
**1.0 Certification**

**DATE: JANUARY 18, 2019**

**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.**

**NAME**

**REGISTRATION NUMBER**

A handwritten signature in black ink, appearing to read 'James M. Shoberg', is written over a horizontal line. The signature is stylized with loops and a prominent 'S' shape.

**JAMES M. SHOBERG, LANDSCAPE ARCHITECT**

**45577**

## **SECTION 1: PROJECT DESCRIPTION AND SCOPE**

### **1.1 General Project Description**

The Cyclists of Gitchee Gumee Shores (herein referred to as “COGGS”) is seeking a contractor to provide an experienced trail crew to construct approximately ±3.0 miles of new mountain bike-specific natural surface singletrack trails on public lands in Duluth, MN. This is Phase 8 of a multi-year project that seeks to create upwards of 100 miles of singletrack. Duluth, MN is situated at the western most point of the Great Lakes on the north shore of Lake Superior.

The surrounding city park lands demand a high standard-of-care during construction activities due to steep topography, exposed bedrock and proximity to trout streams. Blasting is not an anticipated component of this bid however rock breaking will be encountered in this build. For more information about soil conditions visit the National Cooperative Soil Survey at <http://websoilsurvey.sc.egov.usda.gov/>

The contractor will be responsible for implementing and maintaining the Stormwater Pollution Prevention Plan (SWPPP) supplied by the COGGS.

The trail alignment corridor has been flagged by COGGS with approval from the City of Duluth (herein referred to as the “City”). The flag line represents the center line of a 50 foot wide corridor. As part of this project the contractor is responsible for final field alignment and design and must remain within 25 feet on either side of the corridor flag line. It is also the responsibility of the contractor to remain 50’ away from private property where possible as depicted in the plan. If there is a need to go outside the corridor or get closer than 50’ to a private property the contractor must receive written Club approval.

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 Mountain Bike-Specific Singletrack**

It cannot be more strongly emphasized that this project is for purpose-built mountain bike natural surface singletrack trail. Desired characteristics include: cambered trail surfaces, insloped turns, aggressively rolling terrain, incorporation of native rock features, and seamless transitions between trail types. Trail features and flow should *progress* as a user gets deeper into the system; larger, tighter, more narrow examples of similar elements moving from “green” (easier) to “blue” (more difficult) to “black” (most difficult) areas. Along segments intended for more skilled trail users, optional lines available only to more-skilled riders are highly desirable and encouraged.

In partnership with the Club, the contractor will be expected to maximize the potential of the landscape hosting the trail corridors. Creativity is encouraged. A portfolio of previous mountain bike-focused work will be heavily weighted in the selection process.

### **1.3 Project Scope**

To satisfy funding requirements for the project, the work outlined in this document shall be completed by November 1<sup>st</sup> 2019.

Overall, the project's scope of work includes up to approximately  $\pm 3.0$  gross miles of new trail construction including: berms, switchberms, technical trail feature (TTF) boardwalks, rock armoring and bridges. The Storm Water Pollution Prevention Plan (SWPPP) outlines general construction information and best management practices (BMPs) as they apply to the stormwater pollution prevention as it relates to trail project construction activities.

This project is funded by private funding from the local mountain bike club Cyclist of Gitchee Gumee Shores (COGGS).

### **1.4 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 Club, and the price fixed and agreed upon before such work is performed. The Club will not accept any overruns nor will it pay any quantities beyond those specified.

The Club 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 Club and the contractor, but must be agreed to in writing.

### **1.5 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 Club, and the discrepancies corrected before proceeding further. Bid tabulation sheets quantities take precedence over quantity discrepancies in the specifications or plans.

### **1.6 Project Location Descriptions**

There are many potential locations for staging and trail access. This project goes through the heart of Duluth with many nearby road and parking areas. Contractor is to provide a request in writing for staging and laydown areas prior to the start of construction.

## **SECTION 2: PROJECT DETAILS**

Below are brief project descriptions and important project details.

### **2.1 Quarry Park Connector – Project #1**

Starting in Quarry Park this segment is about ½ mile following the eastern rim of the quarry starting in the quarry infield and terminating at Skyline Parkway. The lower portion follows an existing walking trail that will need to be rebuilt and slopes reduced to make it more beginner for bikes. We want the contractor to build this trail as a two-way green flow trail as beginner as possible wherever possible. Overall the running slope is expected to exceed what we consider beginner and should be the only spec that exceeds beginner specifications.

The terrain is mostly moderate slopes with portions of outcropped bedrock. There are significant piles of overburden that will be built through and can be utilized as a borrow source in this segment. Wetland flanks the eastern edge while a private parcel sitting in the middle of the site that must be avoided. Property lines of this parcel will be flagged in the field to ensure avoidance.

Once above the quarry the terrain mellows out a little bit and is a mix of rock bands, jumbled rock piles, and loamy sandy soils. The tree canopy is thin and there is patchy underbrush.

### **2.2 Brewer Park Connector – Project #2**

Once above Skyline Parkway the terrain changes drastically. The first portion that parallels Skyline Parkway is dominated by high cliff bands, talus and scree slopes, large boulders and bedrock with some limited soils dispersed in between. The second portion that makes the connection up the hill is still very rocky but is not as steep and has more soils present to work with.

Overall this segment is about ½ mile in length and begins on Skyline Parkway terminating up the hill in Brewer Park tying into an existing trail. The portion that parallels Skyline Parkway is dominated by very steep side slopes and some moderate slopes. This build is to be constructed as a narrow advanced black diamond free-ride trail segment that is two-way but with a preferred direction of downhill. As an alternate we would like to have pricing to build this as a blue intermediate flow trail.

The contractor will work with the club to identify rock climbing/bouldering areas that are to be avoided by the trail. They will be marked in the field at the time of construction. Vegetation is sporadic with segments of brush and some larger trees.

### **2.3 Antenna Farm Phase II DT Spine – Project #3**

From east to west this segment is approximately ½ mile in length and connects Hilltop Park to Enger Park through a residential area. It is to be constructed as a two-way green level flow trail as much as possible and as the terrain allows. At any point if the contractor does not feel beginner trail is possible they must receive written approval from the Owner prior to construction of that element.

This segments begins in Hilltop Park on an existing trail before dumping out onto a gravel road. Through this stretch expect to find soils dominated by sandy loam and gravel based on nearby projects. The underbrush is dense through this segment before it dumps out to a gravel road.

The central segment is the next portion that stays entirely within a 66 foot wide unplatted right-of-way. Property lines will be marked in the field to ensure construction stays on public lands. There is a lot of outcropped bedrock through this portion including two large bellies of bedrock. The easterly most belly can be avoided but the central belly is unavoidable. We have included details for an optional wood crib wall construction technique that the contractor may use if they deem necessary to traverse this bedrock segment. Through the bedrock areas there is little to no vegetation and through the forested segment the vegetation is at times a dense thicket of underbrush dominated by invasives.

The westerly most segment jumps back into Enger Park and follows a low cliff band with a mix of soils and boulders. The vegetation is mostly open with some sparse underbrush before it connects back into the existing trail system.

## **2.4 UMD DT Spine Segment – Project #4**

This segment begins at Arrowhead Road and is approximately 1.0 mile in total length before it terminates on Brainerd Avenue. It is to be constructed as a two-way beginner green level flow trail. Half of this segment is within the boundary of the university Bagley Nature Center while the other half utilizes a narrow stretch of undeveloped land between a neighborhood and university parking lots and apartment buildings. Property lines will be marked in this segment as there is not much room to stray outside of the flagged corridor.

Based on site observations and nearby similar projects expect to find a mix of loamy sandy and gravelly soils. There is a segment thought the Bagley Nature area that has a high content of larger rock with a short portion of exposed bedrock. The site is densely forested throughout with variable underbrush conditions ranging from thick underbrush to open areas with little to no underbrush.

There are special considerations that must be abided by in this segment. Some vegetation will be marked in the field with tags that indicate the plant specimen is part of a research project. These specimens must not be disturbed and avoided during construction. There is a patch of invasive knotweed. The soil in the area of the knotweed cannot be disturbed or transported and a boardwalk must be built over the patch.

## **2.5 East Lester River Trail – Project #5**

Approximately ½ mile in length this project is located at the eastern most terminus of the Duluth Traverse System in Lester Park on the north end of Duluth. It is to be constructed as a two-way beginner green level flow trail. As an alternate we would like to have pricing to build this as a blue intermediate traditional singletrack trail. The trail itself begins at the parking lot just off Lester River Road as an existing limestone path. No work needs to be done to this limestone portion of the trail.

Your flag line begins where the limestone path ends a few hundred yards up river. From that point there is an existing informal footpath about 12"-18" in width. It is in very poor condition and was not purpose built nor does it follow sustainability best practices. We will not be using this corridor and rerouting much of the alignment as all new trail.



This site's terrain is dominated by moderate side slopes with several areas of extreme slopes pinched between the river and the road with no room to vary from the flag line. There are also several cliff band areas where the trail will cross on the bare bedrock or pass very closely to or just above. Based on past construction projects in the area expect to encounter soils dominated by heavy red clays with little to no stone or rock present.

## **SECTION 3: FINISHED TRAIL CONSTRUCTION AND MAINTENANCE GUIDELINES**

### **3.1 Trail Design**

Design of any new segments or reroutes must be guided by the sustainable trail principles published by accepted resources such as the current editions of the *Trail Solutions*; *IMBA's Guide to Building Sweet Singletrack*; *Managing Mountain Biking*; *IMBA's Guide to Providing Great Riding*; the USDA's *Trail Construction and Maintenance Notebook* and the *Minnesota Department of Natural Resources' Trail Planning, Design, and Development Guidelines*.

### **3.2 Bike-Specific Trail Flow**

All trails constructed as part of this project shall be natural surface singletrack trail that is purpose-built for mountain bicyclists, sometimes described as *flow trails*. A subset of the larger family of rolling contour trails, flow trails share the following basic characteristics:

- *Synergy with the landscape*: Making the most of what the natural terrain provides by using the trail to explore the topography and features (rocks, trees, waterways) present. Some describe a trail with good flow as one that has been revealed in the landscape, not so much as constructed.
- *Opposition to user forces*: Flow trails maximize the efficiencies afforded by using a bicycle, and are designed to counteract forces that direct a user off the trail. Bermed turns and cambered tread surfaces, for example, promote traction, safety, sustainability, and enjoyment.
- *Conservation of momentum*: The ideal trail avoids “flow killers” such as sharp turns, incongruent features, and disjointed climbs and descents. Instead, it utilizes undulations and cambered turns to reward smooth, deliberate riding and maximizes forward motion. A flow trail encourages a better understanding of the bicyclist/bicycle interface, allowing riders to reach that unique sensation of floating through the landscape.
- *Leading the user forward*: A sense of discovery, combined with a design that maximizes a rider's forward momentum, helps to draw the user forward. The trail is never repetitive or predictable, nor is it “awkward”, with variety and innovation combining to create an intuitive feel.

### **3.3 Trail Specifications**

The trail system is composed of a number of loops and segments design, constructed, and maintained to a defined trail specification as outlined in the “Trail Specification Matrix”. Making use of a range of different specifications results in a *complete* trail system when creating the overall trail system masterplan. This method appeals to a wider range of users, with different fitness, technical proficiency, or preferred modality. It is important that individual segments and loop maintain consistent specification over their length to ensure visitors have the experience they expect.

A project-specific “Trail Specification Matrix” is included along with the definition of project units.

### **3.4 Erosion and Sedimentation Control**

Management of erosion and sediment on this project is defined in the provided Storm Water Pollution Prevention Plan (SWPPP). All construction activities must conform to the requirements of the SWPPP. Any inconsistencies created by the construction specifications do not excuse the contractor violating the procedures and requirements laid out in the SWPPP.

No excavation or fill is permitted in wetlands. Wetlands will not be marked in the field. It is the responsibility of the contractor to consult with Club prior to doing any work within suspected wetlands areas.

### **3.5 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 24 hours must be completed trail to reduce the exposure of non-compacted tread to moisture. Any segments requiring delayed finishing must be approved in advance by the Club. Any disturbed areas not part of active tread must be stabilized within 24 hours of not being worked with native duff from within the trail corridor or erosion control blanket and seed as defined in the SWPPP. Wood chips created from the slash as a result of the trail corridor clearing are an acceptable mulch alternative to weed free straw.

### **3.6 Corridor Clearing**

Corridor clearing shall be confined to within four (4) feet of trail and backslope edges. Specific values are identified in the “Trail Specifications Matrix” included with the definition of project units.

### **3.7 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.

### **3.8 Tread**

All tread should be constructed as full bench whenever possible. If fill is required, it should be supported by a stone retaining wall or approved equal.

Specific tread widths are based on their difficulty rating and are specified in the “Trail Specifications Matrix” included along with the definition of project units. Narrower gateways through natural obstacles (trees, rock outcrops) are encouraged. Tread widths in areas of dynamic flow, jump landings, and insloped turns, for example, may be wider to accommodate the full range of riding experiences. Significant deviations from these examples require prior written approval from the Club.

### **3.9 Trees**

These trails are to be built with minimal impact to the over story trees and the surrounding forest. Only brush and small trees should be removed from the trail corridor. Trees larger than 6" DBH require permission from the Club 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.

### **3.10 Rocks**

Maximum size rock material to be left in trail is based on the difficulty rating and defined in the "Trail Specification Matrix". Specific values are enumerated in the "Trail Specifications Matrix" including definition of project units.

Rocks that are unearthed during grading shall be used as anchors or built into trail features and 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.

These requirements do not apply in areas where rocky tread is integral to the flow goals of a specific segment (e.g., technical rock gardens, slabs that provide jump or "kicker" opportunities). Exceptions also 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. Non-native rock may not be imported into a work area without approval of the Club.

### **3.11 Woody Material**

Woody material such as stumps, logs, roots and brush shall be removed from the trail tread. No stumps less than twelve inches (12") in diameter shall be left within four feet (4') of the trail tread. Wood chips created from the slash as a result of the trail corridor clearing may be dispersed at a depth no greater than 4" and 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.

### **3.12 Fall Zone Clearing**

Areas adjacent to dynamic trail segments where visitors have a greater potential to exit the immediate trail corridor will be cleared of impact focusers; butt-end branches, stumps, and rocks under six-inch (6") diameter.

### **3.13 Backslope**

Backslope of trail should be graded to three-to-one (3:1) slope or until it matches the existing slope. In areas where the backslope has the potential to become part of the active tread it must be finished to trail tread specifications.

### 3.14 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.

### 3.15 Spoils Stabilization

All excavated materials not used in the trail tread or other constructed trail features must be stabilized within 24 hours 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 must 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.

### 3.16 Turns

A turn is defined as a change-of-direction that turns more than 90 degrees across the local landscape. All turns are to be bike optimized insloped turns. Turns that exceed 12" of insloped tread height above the surrounding landscape are defined as constructed features. The bid worksheet identifies constructed turns as either insloped switchbacks also known as switchberms or an insloped bermed turn or berm. If conditions warrant, a traditional rolling crown switchback may be substituted for a switchberm with prior written approval from the Club. Insloped turns that are less than 12" in height above the surrounding landscape are included in the contractors unit bid price for all trail construction types.

Insloped and off camber tread necessary for trail flow that are less than a 90 degree change in direction are not turns and are included in the contractors unit bid price for all trail construction types.

Acceptable values for turn radius, camber and turnpad grade are identified in the trail specifications. Turns should be constructed to have good flow for wheeled trail users. All turns must include an entrance and exit rolling grade dip. Building through uneven grades, flat areas and undulations local to a specific turn is included in the contractor's unit bid price.

Turns that are less than 12" in insloped height are included in the contractors unit bid price for all trail types. Berms and switchberms that are over 12" in height are quantified in "Bid Worksheet B".

If it is determined in the field that additional turns or an alternative type of turn is necessary than what was specified in the plans, the contractor must request written approval from the Club prior to construction.

See 5.9 Berm (figure 10) and 5.10 Switchberm (figure 11) for unit turn types.

### 3.17 Brollers (Bermed Rollers)

A broller is defined as tilted tread surface that is insloped or off camber in excess of the standard tread out slope of 5%. Brollers do not result in a change of direction across the landscape and do not cross the fall line. Brollers are included in the unit bid price for all trail construction types and are not considered berms or turns.

### **3.18 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 with a significant landscape feature, boulder, or large tree or trees, to discourage short cutting.

In mountain bike-specific trails, grade reversals also double as flow elements, such as rollers, jumps, and pump/rhythm sections. In this context grade reversal shape, size, and placement should reflect the specifications for its location within the system. Specific details will be determined by the contractor in partnership with the Club.

### **3.19 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 retaining wall may be substituted for a fill slope with permission of the Club. 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. Raw soil faces that do not become tread must be mulched and seeded in the same fashion as spoils and satisfy the terms of the project SWPPP.

Examples of above-grade earthen structures include aggressive grade reversals ("rollers", "brollers", "jumps"), berms, switchberms and turn pads on insloped switchbacks.

### **3.20 Water Diversions**

All tread should be out-sloped at five percent (5%). 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.

### **3.21 Invasive Species**

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

Equipment is subject to inspection at the start and will be requested to be removed and replaced if found to have soils or seeds present from a sources not native to the location. This will be done at the expense to the contractor.

### **3.22 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 satisfy the terms of the project Stormwater Pollution Prevention Plan (SWPPP).

### **3.23 Environmental and Historic Preservation**

The corridors identified in the provided design have been vetted through an assessment process to ensure they respect sensitive environmental and historic areas. The construction shall avoid any disruption or dislocation of sensitive cultural resources found on the site unless expressly authorized in writing by the Club. 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 Club 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.

### **3.24 Signage and Wayfinding**

Installation of the map post is the responsibility of the contractor. The map and content itself and other signage is the responsibility of the Club and its partners. Signage and its installation will comply with all the requirements of the authorized governing unit. Construction documents, (figure 16) and maps will identify the signage requirements, locations, frequency, and physical design plus materials standards.

### **3.25 Mechanized Equipment Best Practices**

All track marks will be raked smooth. Affected area will be finished to have a *nature 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. If scarring occurs contractor is responsible to paint with colors that match the color and pattern of the damaged tree to prevent infection or further degradation of the tree.

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 Club. Any approved access route must be retired and reclaimed back to its original pre-existing condition upon project completion.



## **SECTION 4: 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 Club will establish their definition via a change order process and the contractor must request in writing additional units if the amount is not sufficient in the bid document prior to construction.

### **4.1 Trails Specifications (table 1)**

A “Trail Specifications Matrix” provides the foundation for the possible trail styles and a starting point for their defining characteristics. Contractor should always start here, whether composing their bid or designing/constructing trail elements. The Club understands that all trail, and especially bike-specific trail, is an art form strongly driven by local conditions and anticipates a collaborative effort between all parties involved.

Note that all types fit within the sustainable trail guidelines framework. While short specific grades may exceed typical suggested maximums, armoring is suggested in these cases. It is not acceptable to sacrifice “the half rule” or eliminate grade reversals to meet experience driven goals. When creating trails at these upper limits grade reversals are more important than ever.

A high-level summary of the various styles detailed in the matrix:

- *Traditional* – Typical shared-use natural surface singletrack as described in the standard trail texts. May include bike-specific elements, like in-sloped turns, berms, rollers, rollers, and jumps.
- *Bump and Pump* – Natural surface singletrack strongly influenced by pump tracks. Distinguishing feature is the high frequency of roller features. Proper shaping and spacing of rollers is critical, both to increase their utility as a method of propulsion and to match the intended speed and flow style of the segment. All turns are insloped. Tread surface is smoother than average. More difficult Bump and Pump segments may add smaller technical features and tread texture.
- *Jump* – A natural surface trail more focused on jump opportunities. Similar to Bump and Pump but with longer features less frequently placed. Tread is wider than average in recognition of the dynamic riding style likely on these segments. Corridor clearing limits are larger as well for similar reasons. Most Jump segments are directional.
- *Gravity* – An extremely technical downhill-specific trail. More difficult Gravity segments include mandatory drops in the tread. These segments may include structures to manufacture the desired experience when natural terrain is lacking. May include elements of Bump and Pump or Jump. Gravity trails are directional.

### **4.2 Trail Flagging**

In this project, the centerline of a 50' wide trail corridor has been flagged by COGGS. The plans and specifications are based on this trail corridor. Final trail design is the responsibility of the Contractor within this corridor.

Corridor is marked with blue hanging drop flags. Final trail design should be at least fifty feet (50') from property boundaries unless otherwise authorized by the Club or identified in the plans.



Contractor shall mark with flagging tape all trees over six inches (6") DBH that are to be removed. Final determination on removal lies with the Club.

The trail should have a grade reversal a minimum of every one-hundred feet (100'). Trail should follow a rolling contour alignment and abide by the Half Rule. Grades must match the trail type defined by the "Trail Specification Matrix" for a specific segment.

#### **4.3 Trail Construction (figures 1 - 4)**

Trail construction unit costs are a combination of trail specification and landscape type. For each project, the specification is constant. But as the landscape changes, different construction units apply, matching the local terrain. Trail construction unit types A, B, and C are identified in the plan set and on the bid worksheets.

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.

Creation of typical trail features as enumerated in the specifications (ex. Rollers and Brollers) are included in the trail construction units.

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. Note the global design attempts to match trail specifications to the landscape most suited for that type. In local landscapes where there is a mismatch, the contractor will be expected to modify the area to match the trail specification. An example is creating an easier "green" style trail through a locally rocky area. However, in this specific set of projects we are allowing "blue" construction through the rocky areas.

The trail corridor shall be cleared of all woody plants less than four inches (4") DBH. The extent of corridor clearing will meet the requirements for the specific trail type. Any stumps resulting from the clearing should be excavated and removed. Any woody debris not used in trail closure should be removed from sight of the trail or arranged to blend into the landscape.

Limb trimming will be done to open up the trail corridor as defined in specification for the specific segment. 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 packed earth or rock. Any stumps and/or roots should be excavated and removed from the trail tread. Backslope dimensions are derived from surrounding area such that they satisfy the earlier stated three-to-one (3:1) definition. Any stumps and/or roots in the backslope should be flush-cut. In areas where the backslope has the potential to become part of the active tread (ex. naturally formed in-slopes or berms) it must be finished to trail tread specifications.

The trail should contain frequent grade reversals. To encourage self-cleaning the grade of the drains at the bottom of the grade reversals must be at least fifteen percent (15%) and typically not greater than twenty-five percent (25%). If the drain grade exceeds twenty-five percent (25%) then installing Rock Rip-Rap (see Section 5 – Rock

Rip-Rap) may be requested by the Club in the bottom of the drain to prevent head-cutting. If grade reversals result in a fill slope, these slopes and the associated feature(s) will be finished to satisfy the above-grade earthen structure guidelines. Contractor is expected to create frequent grade reversal regardless of the local landscape, this is included in low sideslope Type A trail construction. This may require localized topography modification, borrow pits and raised tread when building through landscapes with low slope angles.

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 24 hours 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. Refer to the SWPPP for further details.

If borrow pits are created in the course of trail construction they will be finished to satisfy the requirements of the trail and its surroundings: slopes graded to the local angle of repose, stumps and roots trimmed, spoils stabilized and covered with forest duff. Borrow pit wall must be broken down to blend into the surrounding natural landscape slopes.

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

#### **4.4 Trail Types (figure 4.1)**

Trail types are broken into three categories:

- Type "A" (Low Sideslope Trail) 3%-15% Sideslope
- Type "B" (Medium Sideslope Trail) 16%-60% Sideslope
- Type "C" (High Sideslope Trail Trail) 61%+ Sideslope

Measurement and payment for trail construction types is based on the slope averages found in the field.

Grading through low spots, flatter areas, earthen piles, landslides, miscellaneous debris and fallen woody material is included in the contractor's unit bid price for each trail construction type. Builder is expected to create frequent grade reversals regardless of the local landscape. This may require localized topography modification including but not limited to raised tread, borrow pits and sumps when building through landscape with low slope angles such as "Type A Trail".

Contractor cannot invoice for both trail construction and constructed features of a given linear foot of trail.

#### **4.5 Armored Tread/Stone Pitching (figure 5)**

Width of armored tread should be at least 1.5 times the width of the local trail specification to permit users to find their line as the trail matures, and at least two (2) times in areas where more variation is likely (e.g., jump landings, insloped turns).

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.

#### **4.6 Armored Tread/Turf Block Pavers (figure 6)**

Turf block pavers are an alternate armoring technique to stone pitching where it is difficult to source appropriate native stone. As turf block pavers allow a more predictable tread surface, they are particularly appealing for "green"-style trails or for flow elements where excessive tread variance is not desired (e.g., high-speed insloped turns, some constructed jump elements).

Width of armored tread should be at least 1.5 times the width of the local trail specification to permit users to find their line as the trail matures, and at least two (2) times in areas where more variation is likely (e.g., jump landings, insloped turns). Turf blocks pavers must be installed as directed by manufacturer's recommendations. Final installation should be nominally at-grade with the surrounding landscape. Individual paver blocks should be completely supported to reduce the chance of breakage. Height variance and joint spacing should both be less than one-half inch (0.5"). Blocks should be laid in a pattern to minimize joint lines. Paver voids are filled with local materials compacted to reduce settling.

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.

#### **4.7 Rolling Grade Dip (figure 7)**

A rolling grade dip is a drainage feature added to existing trail. The minimum length of the drain portion shall be six feet (6') and the rise must be at least ten feet (10') long; the height differential between the bottom of the dip and the top of rise shall be approximately twelve inches (12") to twenty-four inches (24"). The sides of rise must have a fill slope of at least two-to-one (2:1) or the angle of repose of the local soil, whichever is greater.

To encourage self-cleaning the grade of the drains at the bottom of the grade reversals must be at least fifteen percent (15%) and typically not greater than twenty-five percent (25%). If the drain grade exceeds twenty-five percent (25%) then installing Rock Rip-Rap (see Section 5 – Rock Rip-Rap) in the bottom of the drain to prevent head-cutting may be requested by the Club. If grade reversals result in a fill slope, these slopes and the associated feature(s) will be finished to satisfy the above-grade earthen structure guidelines.

Rolling grade dips must be sited at least thirty feet (30') uphill from significant turns in order to reduce the effects of unweighting on higher speed users. Exceptions on these dimensions and requirements may be made on a site-by-site basis to accommodate terrain constraints. In certain locations the Club may determine that

smaller structures reinforced with large rocks that fit the character of the trail may be an acceptable substitute.

A rolling grade dip is billed as a “whole” unit.

#### **4.8 Terrace (figure 8)**

A terrace is a combination of landing, drain, retaining wall, and step useful for creating sustainable shared-use trail in steeper corridors than would be supported by the natural surface tread alone. Steps are used to accelerate the climb/descent while the use of landings between risers allows continued use by bicycles and equestrians. Terraces may be incorporated in new trail construction or applied as a corrective maintenance measure.

Step risers should be constructed out of stone; rot-resistant wood may be substituted with the approval of the Club. Maximum riser height is determined from the step height requirements of the trail segment. The riser shall be battered in the direction of uphill travel. A riser may be assembled from multiple stones with the understanding it must withstand the dynamic loading of climbing and descending users.

The landing must have a minimum length of at least 1.5 times the stride or wheelbase of the longest users. Each landing must contain a drain to the downhill side; it is not acceptable for a landing to drain over its riser. Drain differential must be at least six inches (6”). The fill required to create the landing is included in this unit.

The downhill edge of the landing must be supported by a retaining wall of stone; rot resistant wood may be substituted with the approval of the Club. The landing’s retaining wall must satisfy all the requirements of a stand-alone wall (see Section 5 – Rock Retaining Wall).

A terrace is billed per riser. For example, the figure shows parts of three (3) terraces

#### **4.9 Rock Retaining Wall (figure 9)**

A rock Crib Wall or Rock Retaining Wall is defined as a more than one row of stones stacked on top of each other 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 single 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.

#### 4.10 Insloped Bermed Turn (Berm) (figure 10)

A berm is defined as an insloped change-of-direction that turns more than 90 degrees across the local landscape *not requiring* the trail to cross the fall line and is over 12" in height above the surrounding landscape. Trail tread that uses an existing embankment to change direction is also not a berm and is included in all trail construction unit types.

Acceptable values for berm radius, camber and turnpad grade are identified in the "Trail Specifications Matrix". Berm radii should be consistent.

Fill structure for a berm will comply with composition, compaction, and fill slope requirements of an above-grade earthen structure.

For billing purposes, a berm is measured along the centerline of the tread by the linear foot at the point where the berm is over 12" in height above the bypass trail grade. This unit includes the construction of the bypass trail as well as the berm. Contractor cannot invoice for both trail construction and creating a berm over a given linear foot of trail. Locations and lengths of berms are identified in the plans.

#### 4.11 Insloped Switchback (Switchberm) (figure 11)

A switchberm is defined as an insloped change-of-direction that turns more than 90 degrees across the local landscape *requiring* the trail to cross the fall line and is over 12" in height above the surrounding landscape. The switchberm unit includes any walls, armoring, setup berm, and drainage features associated with the structure as well as the trail itself.

Switchberm units are broken into three different units based on the sideslope of the surrounding terrain: Type "A" for low sideslopes, Type "B" for medium sideslopes and Type "C" for high sideslopes.

Each switchberm or insloped switchback requires a grade reversal or rolling grade dip before and after; these shall not be counted as separate units for payment purposes. The dips for these drainage features should be a minimum of six feet (6') long. To encourage self-cleaning the grade of the drains at the bottom of the reversal/dip must be at least fifteen percent (15%) and typically not greater than twenty-five percent (25%). If the drain grade exceeds twenty-five percent (25%) then installing Rock Rip-Rap (see Section 5 – Rock Rip-Rap) in the bottom of the drain to prevent head-cutting may be requested by the Club. The uphill dip should be sited to minimize unweighting effects for higher speed users.

All switchberms or insloped switchbacks will be created with an insloped turnpad. Specifications for radius and cross slopes across the turn are defined in the "Trail Specifications Matrix" for the particular trail segment. Turning radii should be consistent. Turns with a running grade of twenty percent (20%) or greater in the apex should have a rock armored drain two feet (2') wide following the inside of the turn. Interior of legs shall be anchored by and filled with large rocks and/or woody debris to discourage shortcutting.

If required, the fill structure for the turnpad will comply with composition, compaction, and fill slope requirements of an above-grade earthen structure. Club may require that a retaining wall be employed in place of a fill slope. Any retaining structures will be constructed of stone and comply with all rock retaining wall specifications. If multiple switchbacks are required, they will be sited to minimize "stacking". Stacking is defined



as the placement of subsequent turns and associated drains and support structures in close proximity to the same fall line area of a hill or slope.

A switchberm is billed as a “whole” unit. The unit starts at the initiation of the uphill and completion of the downhill drainage structures. Quantities, type, and locations are identified in the plans.

#### **4.12 Rock Bench**

Rock bench construction is defined as trail tread construction through areas of exposed bedrock and slick rock where rock breaking and or blasting may be required. The rock found in Duluth is weathered at the surface and often fractured lending rock breaking a proven technique to get through these difficult areas. It is not anticipated that any blasting will be required as part of this project.

In order to save on construction costs construction through rocky areas a variation from the Green Trail specification to the Blue Traditional Trail Specification as enumerated in the “Trail specification Matrix” is allowed. However, effort must be made to keep the construction as close to the Green Specification as possible.

Rock bench construction is billed per the linear foot. If a bedrock area does not require any rock breaking or blasting to allow the passage of the trail no billable units will be applied to that portion of the trail.

#### **4.13 Technical Trail Features, Boardwalks, and Bridge (figure 12)**

Contractor is to provide typical shop drawings of the actual boardwalks planned to be constructed for approval by the Club for a given segment of TTF boardwalk based on the engineered construction documents found in the plan set.

TTFs and Boardwalks should have a playful and organic appearance to better match the natural environment. Recommendations include curved structures instead of straight lines or angles and trail deck that pitch, yaw, and vary in width.

Specific guidelines for TTFs and boardwalks are included in the plan set supplied for the project.

General guidelines include the following. Wooden structures must be designed and constructed with the assistance of an experienced professional. Acceptable materials for the riding/deck surface must be rough cut lumber and includes: Cedar, Tamarack, Black Locust, and Treated Pine. All other lumber used in the construction can be either rough cut or planed dimensional treated pine lumber. Treated lumber shall be treated in accordance with AWWA Standard C2/C9 with ACQ 0.4 LBS/CF Ret. And 0.6 LBS/CF Ret. for 6x6's and wood in contact with the ground. Unapproved treated lumber, creosote soaked railroad ties, or similar lumber cannot be used since these would introduce toxins into the natural environment.

All cuts and drilled holes shall be saturated with 2 coats of copper naphthenate in a 2% solution. Allow treatment to absorb into wood prior to applying second coat. Avoid applying treatment over water and be extra careful whenever applying this treatment over or near water to prevent contaminating the water. Follow the treatment manufacturer's recommendations.

Hardware shall be corrosion/rust resistant, such as triple dipped hot dip-hot dipped galvanized or stainless steel, intended for outdoor use, and matched to the material to insure long-term integrity. All hardware shall meet ASTM A307. All hardware that is hot

dipped galvanized shall meet ASTM A153. To maintain consistency though out the trail system all fastener heads shall be T25 hex heads. Nails are not an acceptable fastener and will be rejected.

Deck materials should be rough-cut or finished with a slip-prevention coating to maximize traction. Approaches and configuration of structures shall be adjusted to reduce the accumulation of organic material on deck surface. A fall zone sufficient to accommodate the likely trajectory of a trail user accidentally leaving the structure shall be cleared of all materials that could focus impact (e.g., stumps, sharp rocks, woody materials).

Pre-engineered TTFs are an acceptable alternative to custom construed wooden features. Deck material on pre-engineered TTF must match the acceptable deck materials as described in this specification section.

To reduce the amount of toxic chips introduced into the landscape, preparatory tasks (primary cutting and drilling, refinishing of cut edges of all treated lumber) shall occur offsite. At the project site, all final drilling, fitting, and retreating will be done in a "temporary workshop" area where a tarp or similar is used to capture chips and any spilled preservatives.

This unit includes design, materials, preparatory tasks, mobilizing materials into the project area, and installation.

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

#### **4.14 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. Individual stones should be gabion-class or equivalent. Rock Rip-Rap is included in the contractors unit bid price for trail construction or constructed feature.

#### **4.15 Coir Roll (Bio Log) Installation (figure 13)**

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. See project SWPPP for additional detail.

Rolls/Logs are placed parallel 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.

Erosion control prevention is billed on a per project basis as a lump sum.

#### **4.16 Causeway or Turnpike Trail Construction (figure 14)**

A causeway or turnpike is defined as an elevated trail tread utilizing mineral fill material confined by stable edge materials on both sides such as stone or rot resistant timber and is to be used when constructed through poorly drained areas. This application cannot be used in wetlands. Where suspected wetlands are present a boardwalk must be constructed to avoid disturbance.

A ditch can be dug parallel to and on both sides of the causeway to improve drainage. This variation is often called a turnpike. The material excavated from the ditches can be used to help fill the causeway if they are composed of mineral soil. The interior of the turnpike must be excavated down to mineral soil to create a firm and stable base for the fill material.

Causeway or turnpike trail tread construction is billed per the linear foot.

#### **4.17 Trail Closure or Trail Obliteration (figure 15)**

Compacted tread will be scarified to encourage regrowth of native seed stock. Small plants and other nearby growth will be transplanted into scarified treadway. Seed and mulch meeting the mix requirements of the SWPPP may be used in this application. Exposed soils will be covered with local leaf litter. Trail tread will be disguised with woody debris. If trail is incised, check dams will be placed at a minimum of every twenty feet (20') to capture sediment. If trail is actively eroding, grade reversals will be added to stem continued damage. Trail corridor will be erased via the placement of vertical debris. If length of trail to be closed is greater than one hundred (100) linear feet than vertical debris must extend a minimum of fifty feet (50') from each end or until visible sight line is diminished, whichever is greater.

For billing purposes, closure is measured along the centerline.

#### **4.18 Map Post Installation (figure 16)**

Install map post according to (figure 16). Treated lumber shall be treated in accordance with AWP Standard C2/C9 with ACQ 0.4 LBS/CF Ret. And 0.6 LBS/CF Ret. for 4x4 map posts and wood in contact with the ground. Unapproved treated lumber, creosote soaked railroad ties, or similar lumber cannot be used since these would introduce toxins into the natural environment. Map post locations to be marked in the field by the Club.

#### **4.19 Trail Capping (figure 17)**

Trail capping is for those locations where the underlying native mineral soils do not support usage under normal trail conditions. Typical soils found in these locations include fat clays and water saturated soils not in wetlands. These locations are to be identified at the time of construction in the field by the contractor. Any zones that are to be capped must be quantified by the contractor and submitted to the Club in writing for approval prior to capping. For bidding purposes, trail capping is measured by the linear foot (LIN FT).



#### **4.20 Wood Crib Wall Retaining Wall (figure 18)**

In this application the Wood Crib Wall or Wood Retaining Wall is to be anchored to exposed smooth unfractured bedrock. Any fractured stone is to be chipped away until a smooth clean surface is exposed. The bottom timber shall be cut to meet the contour of the bedrock. The stacked timbers are to be anchored to the bedrock with steel rods and epoxy suitable for rock to wood exteriors must be used. See (figure 18) for specific construction details.

Treated lumber shall be treated in accordance with AWWA Standard C2/C9 with ACQ 0.4 LBS/CF Ret. And 0.6 LBS/CF Ret. for 4x4 map posts and wood in contact with the ground. Unapproved treated lumber, creosote soaked railroad ties, or similar lumber cannot be used since these would introduce toxins into the natural environment.

This detail is to be only used when stone or other natural materials are unavailable or likely to fail. This construction technique is specifically designed to hold back soils and raise the low end of the tread to meet variations in the cross slope of the trail tread. This bid item includes the mineral backfill used on the side of the wall that is retaining soils to create the trail tread at a 3% to 5% cross slope.

For bidding purposes, wood retaining wall is bid by the linear foot (LIN FT), and is measured from the exposed top beam by the wall.

#### **4.21 Rock Armored Ford (figure 19)**

Grade reversals will be created in the trail tread prior to the crossing on each bank. Maximum grade on each approach is thirty percent (30%) for a maximum distance of fifty feet (50'). Armored tread surface will extend through the stream and up the banks until a grade of less than ten percent (10%) can be achieved. The armored tread will be flush with stream bottom to discourage failures from cavitation. Armoring will extend downstream one-half (1/2) the required maximum tread width of trail tread to discourage headcutting. For bidding purposes Rock Armored Fords are measured by the unit.

#### **4.22 Culverts**

Pipe culverts may be corrugated plastic pipe (CPP) only. Remove organics in ditch bottom for culvert to sit on solid ground. Place culvert ends flush with the ditch bottom. Place rocks around the culvert's upstream end to armor the bank against erosion.

Install culvert according to manufacturer's specifications, especially those relating to ground cover to prevent collapsing. Generally, the greater of ("half the pipe diameter" or "12 inches") is the minimum cover to ensure that a culvert will not collapse under load or float up over time and become exposed.

#### **4.23 Modifications**

Modifications to the specifications may be allowed, however, they must be made to the Club in writing.

4.24 Tables And Figures

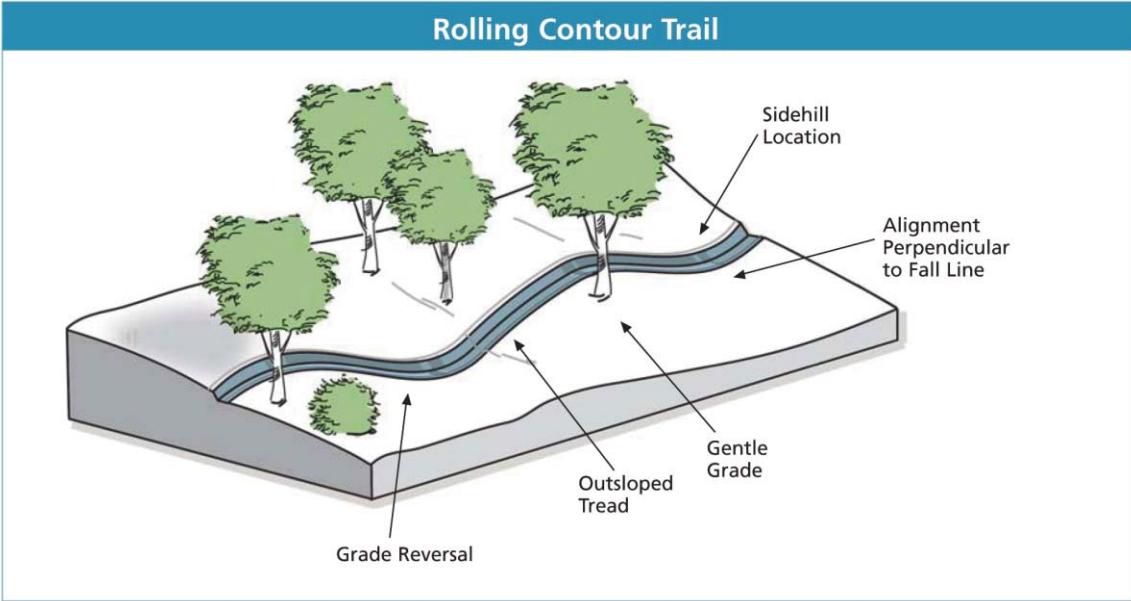


Figure 1: Rolling Contour Trail

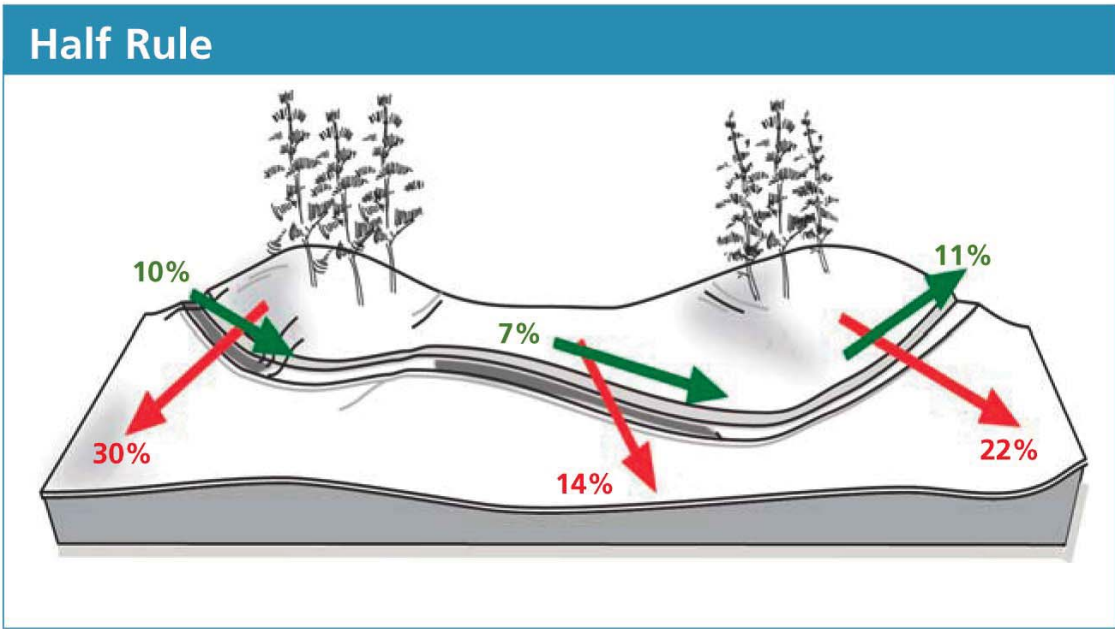
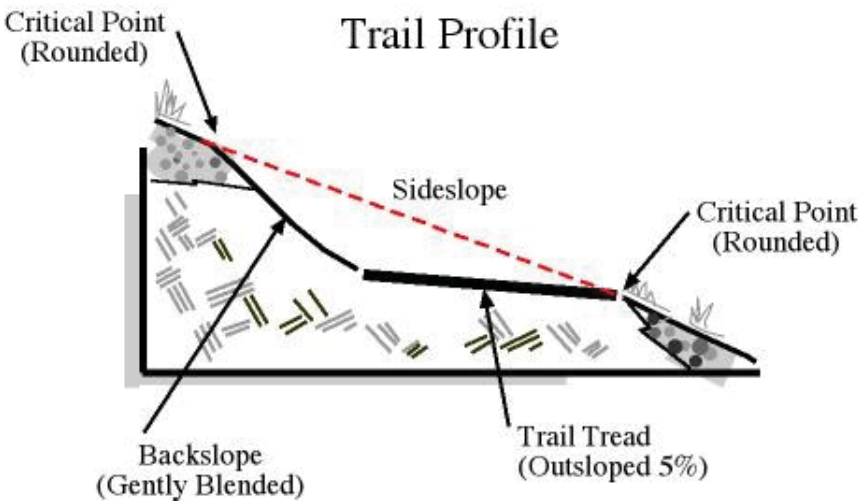
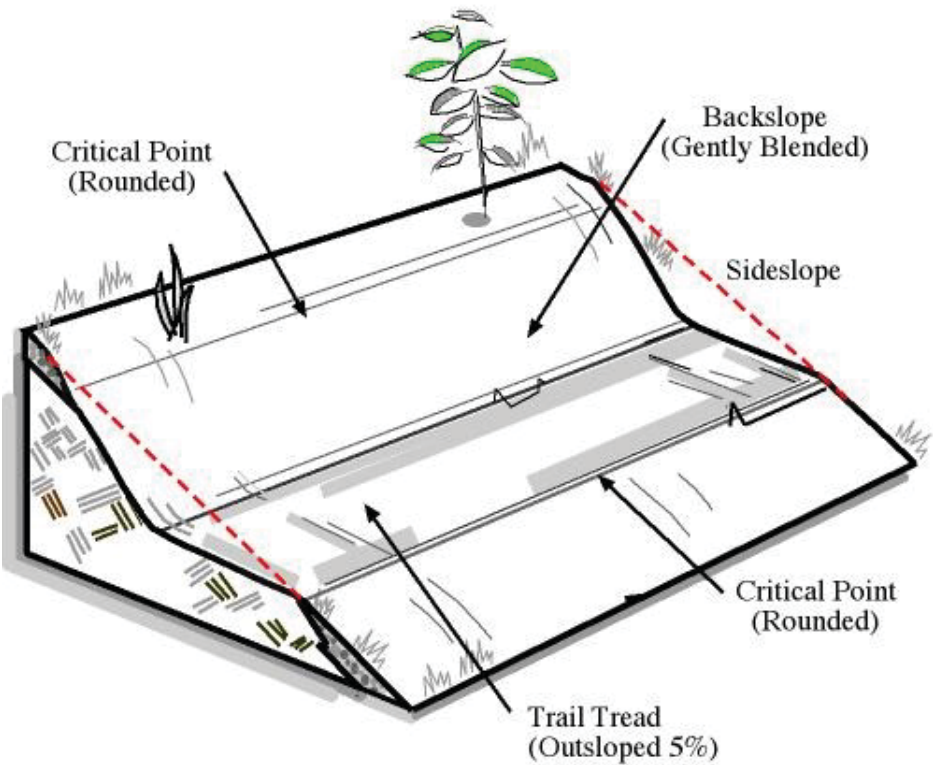


Figure 2: Illustration of “The Half Rule”

**Full Bench Trail**



**Figure 3: Full Bench Trail**

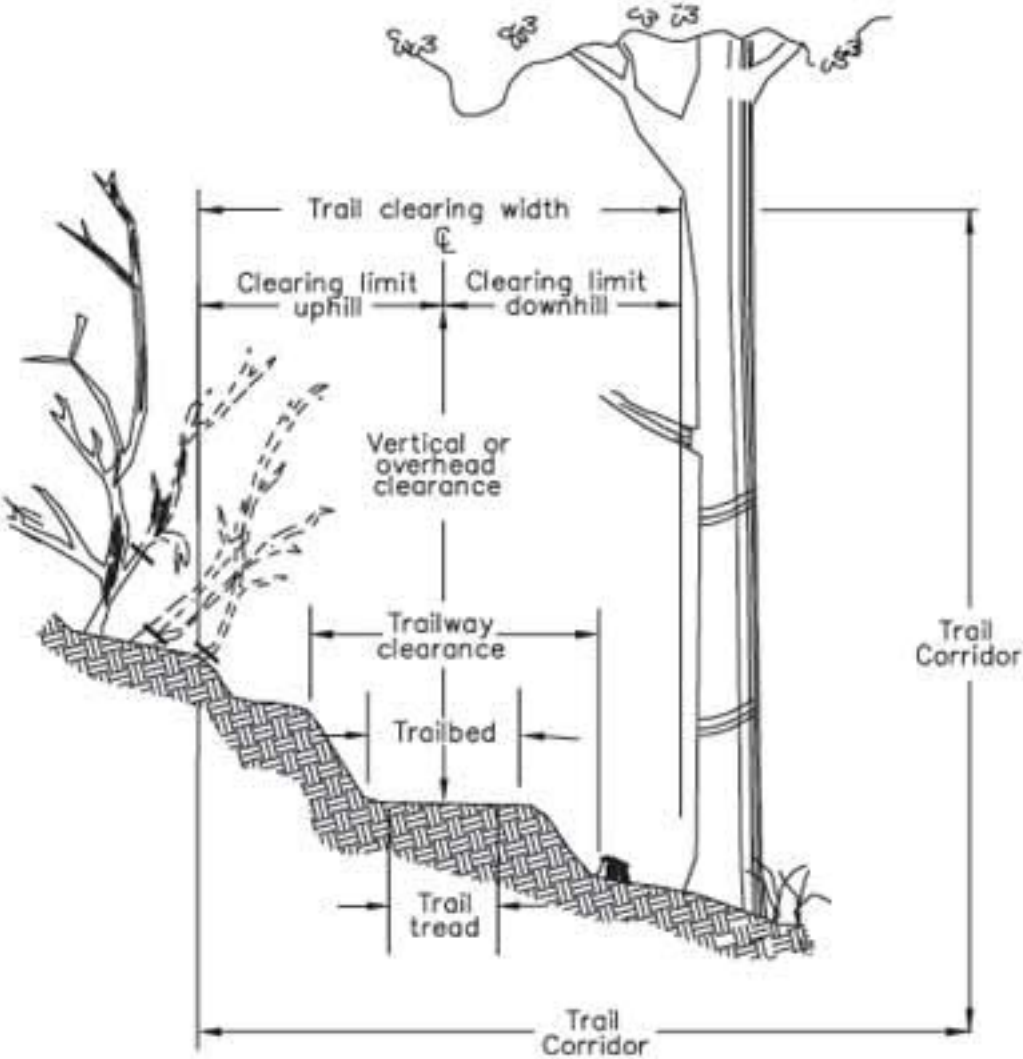
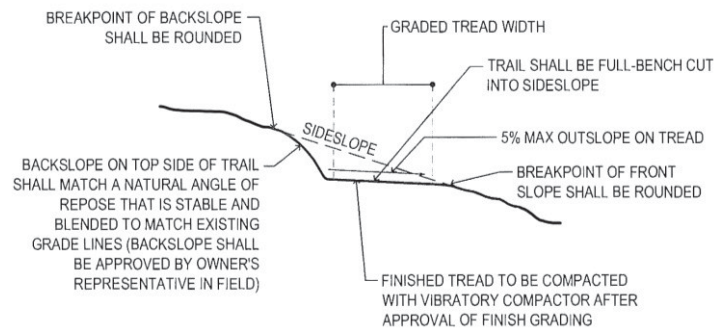
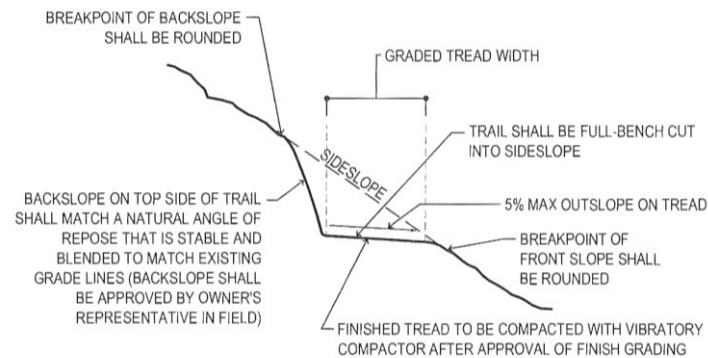


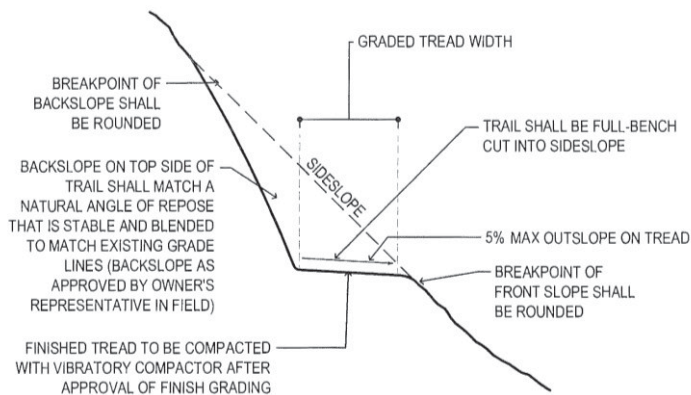
Figure 4: Clearing limits



Type A Type "A" (Low Sideslope Trail) 3%-15% Sideslope



Type "B" (Medium Sideslope Trail) 16%-60% Sideslope

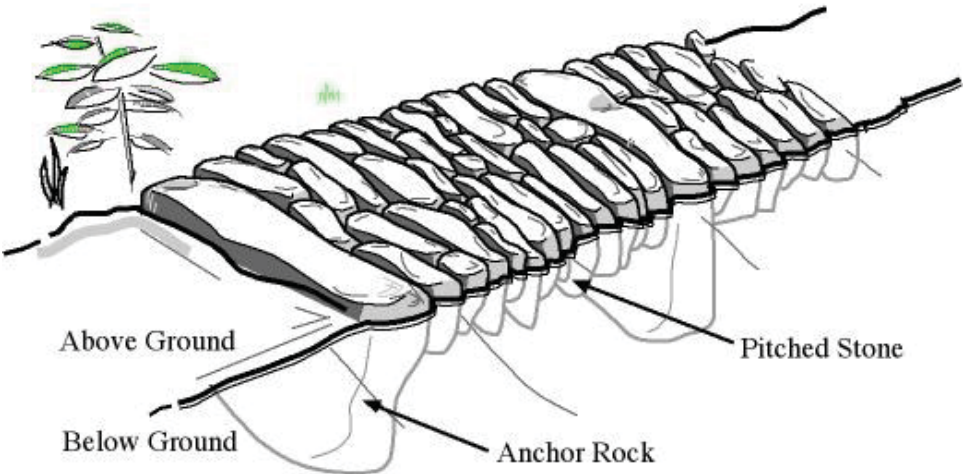


Type "C" (High Sideslope Trail Trail) 61%+ Sideslope

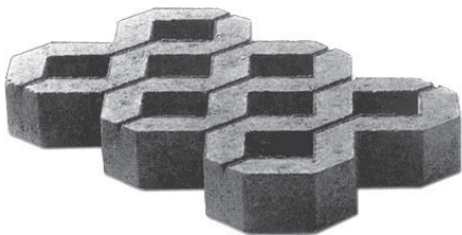
**Figure 4.1: Trail Types**



**Stone Pitching**

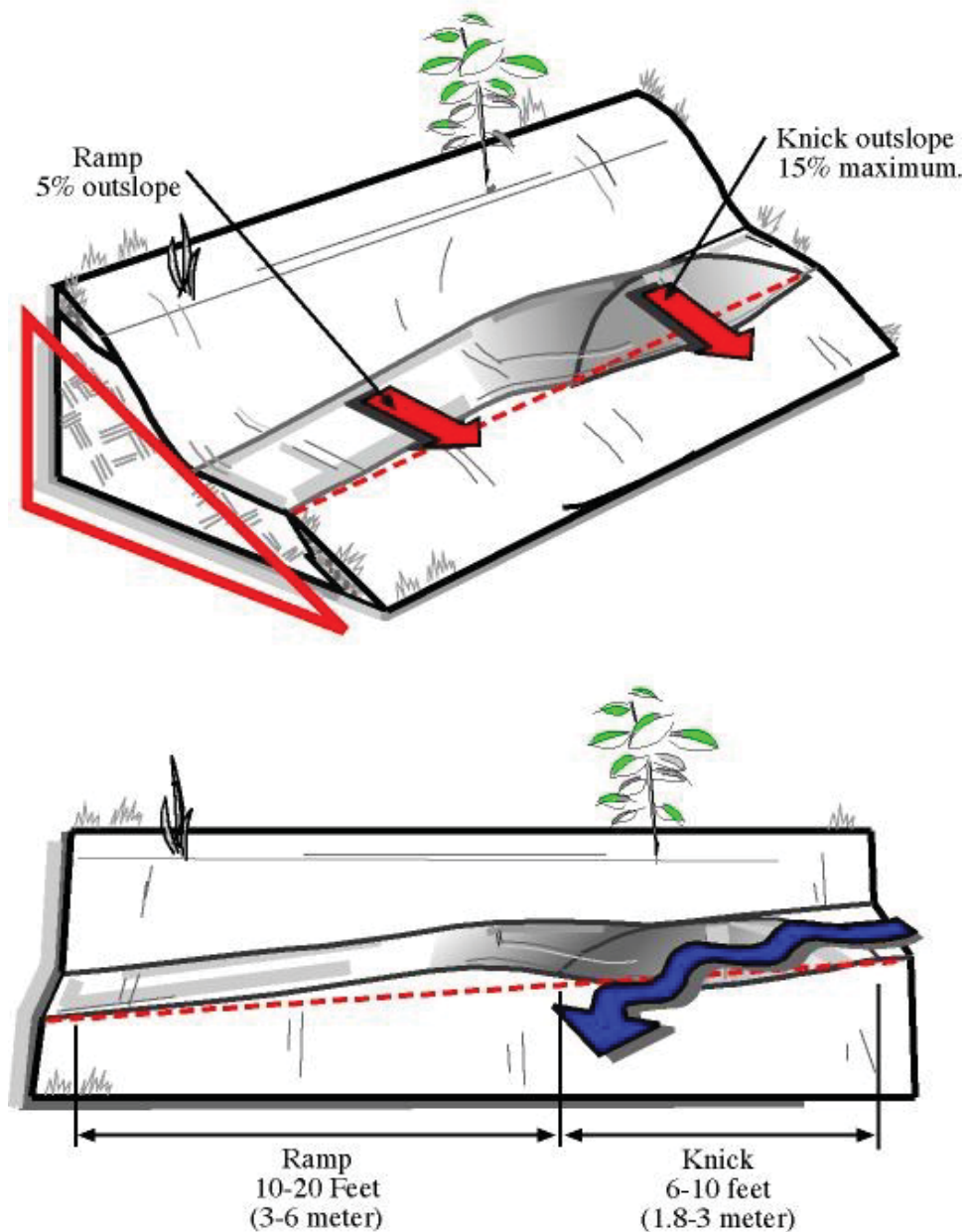


**Figure 5: Tread Rock Armoring**



**Figure 6: Turf Block Pavers**

**Rolling Grade Dip**



**Figure 7: Rolling Grade Dip**

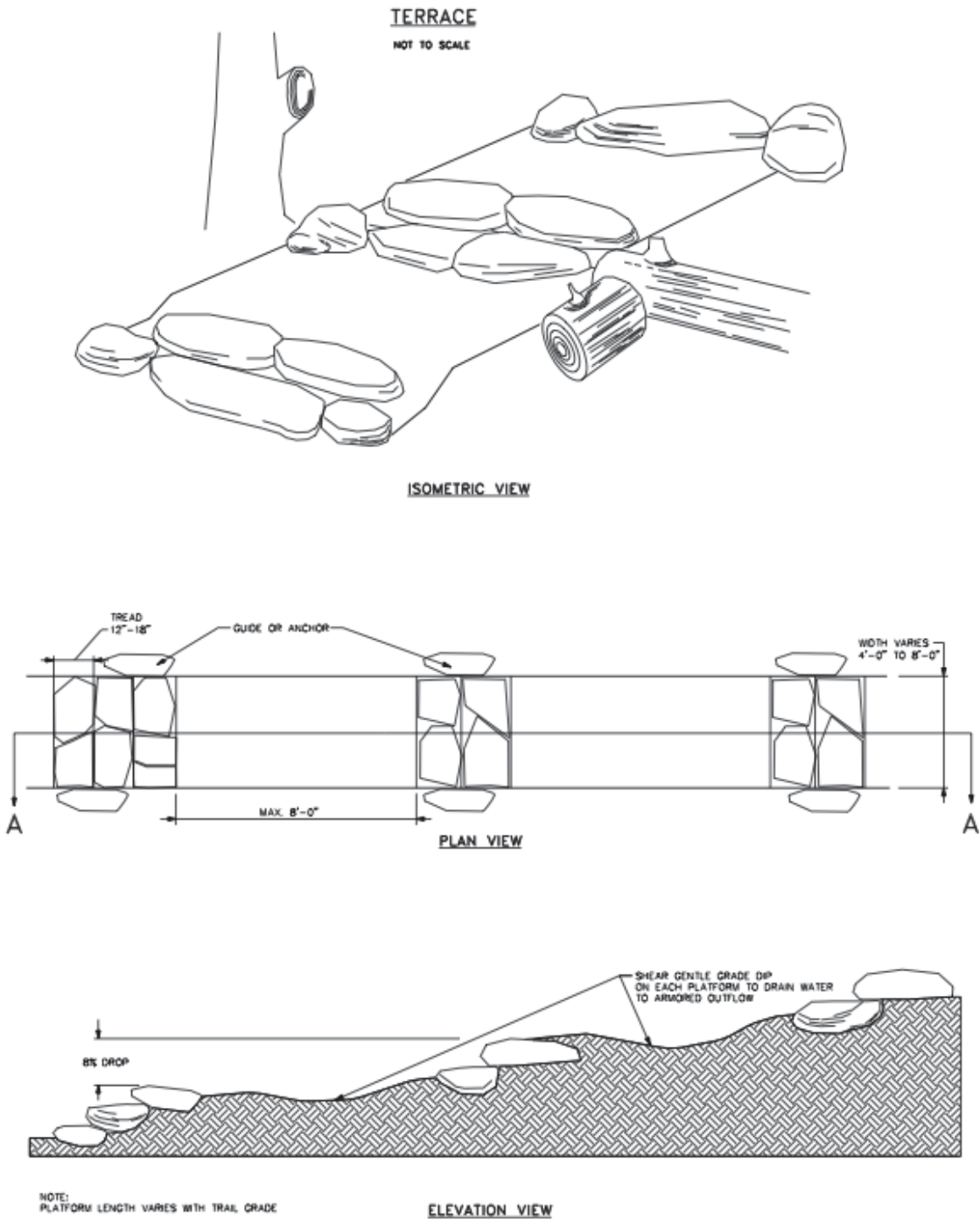


Figure 8: Terrace



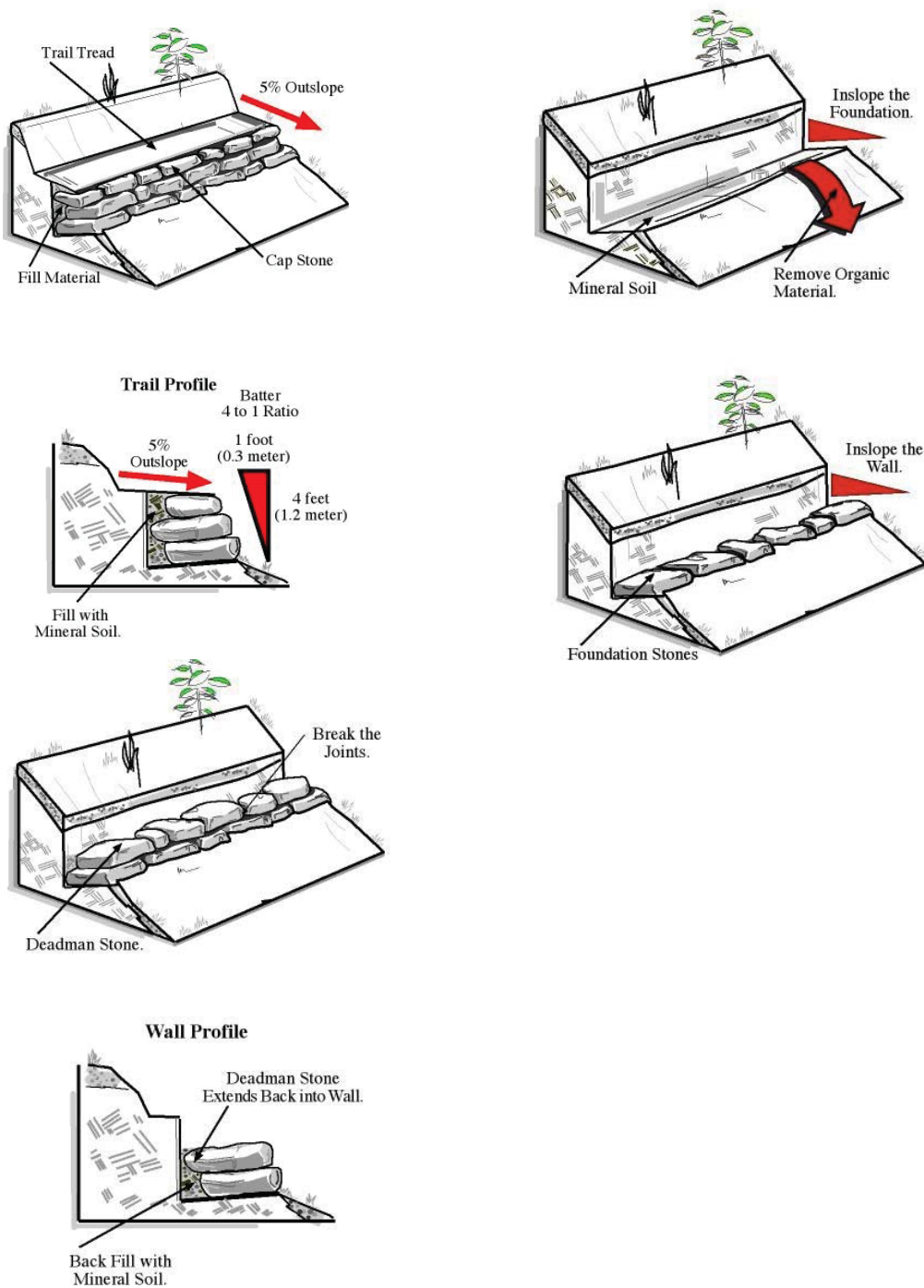


Figure 9: Rock Crib Wall

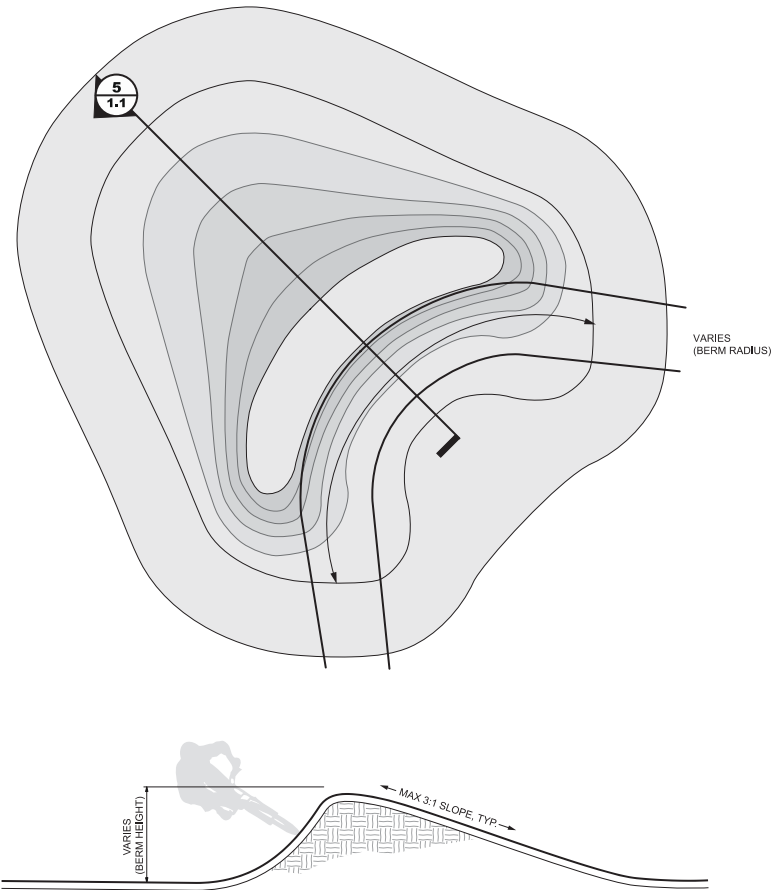


Figure 10: Berm

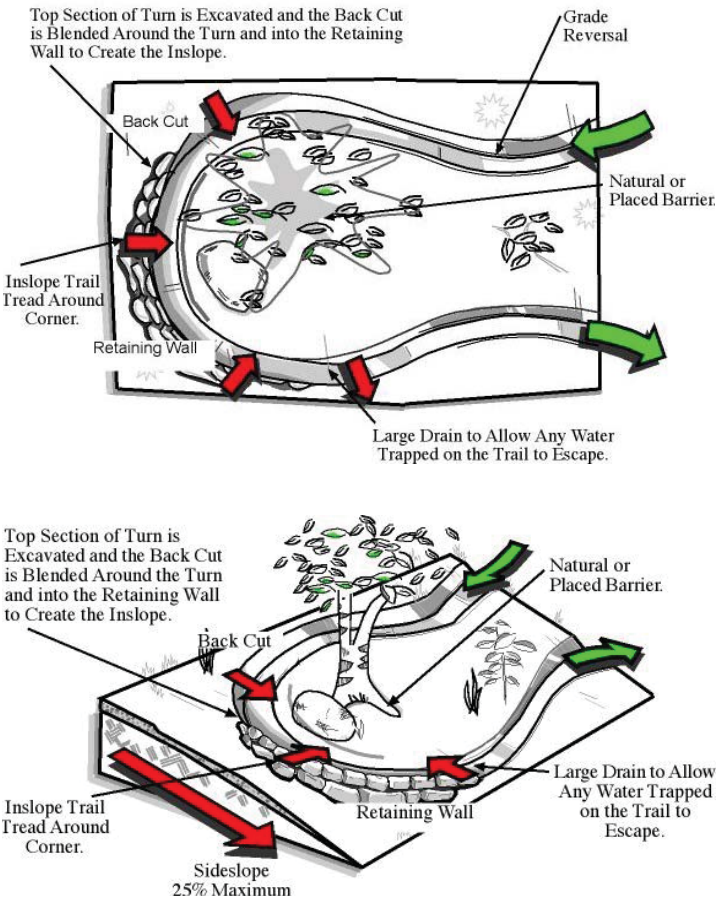


Figure 11: Insloped Switchback (Switchberm)





**Figure 12: Technical Trail Feature Boardwalk (TTF)**

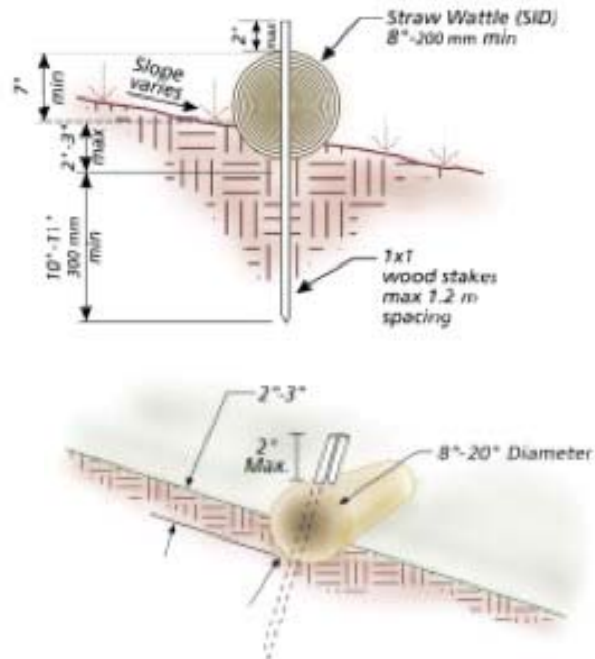


Figure 13: Coir Roll (Bio Log) Installation



Figure 14: Causeway or Turnpike Trail Construction

## Trail Closure and Reclamation

Ensure smooth transition  
from existing trail to new trail.

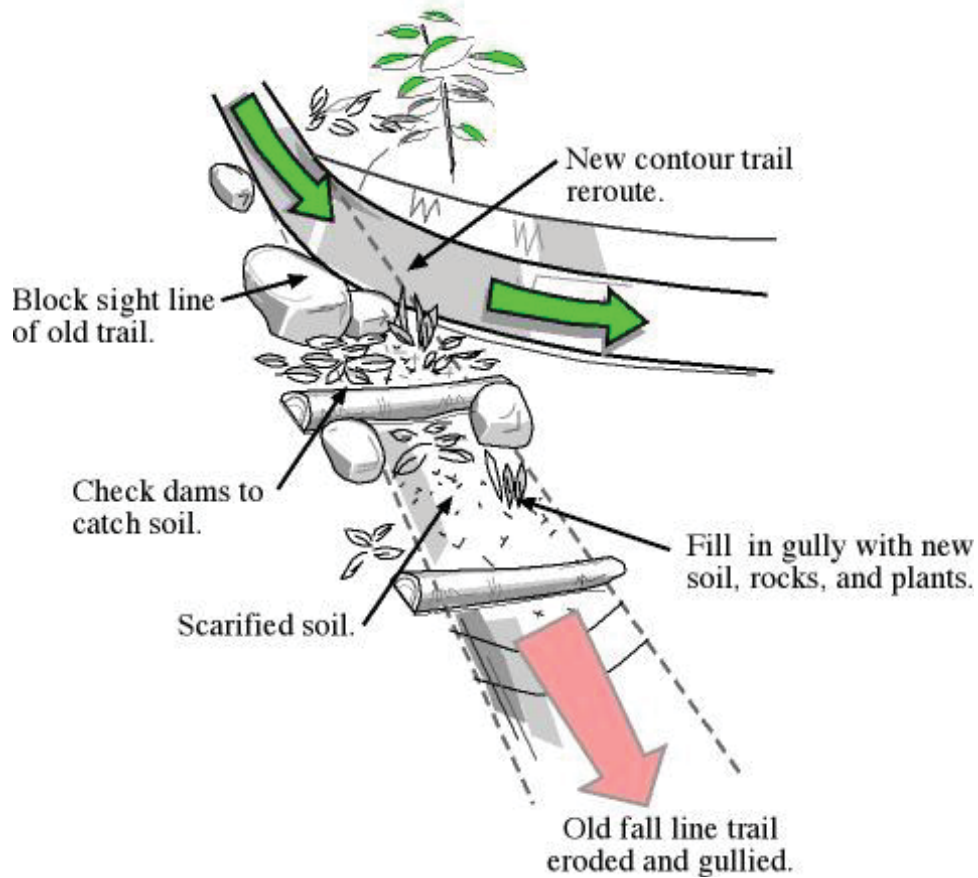


Figure 15: Trail Closure



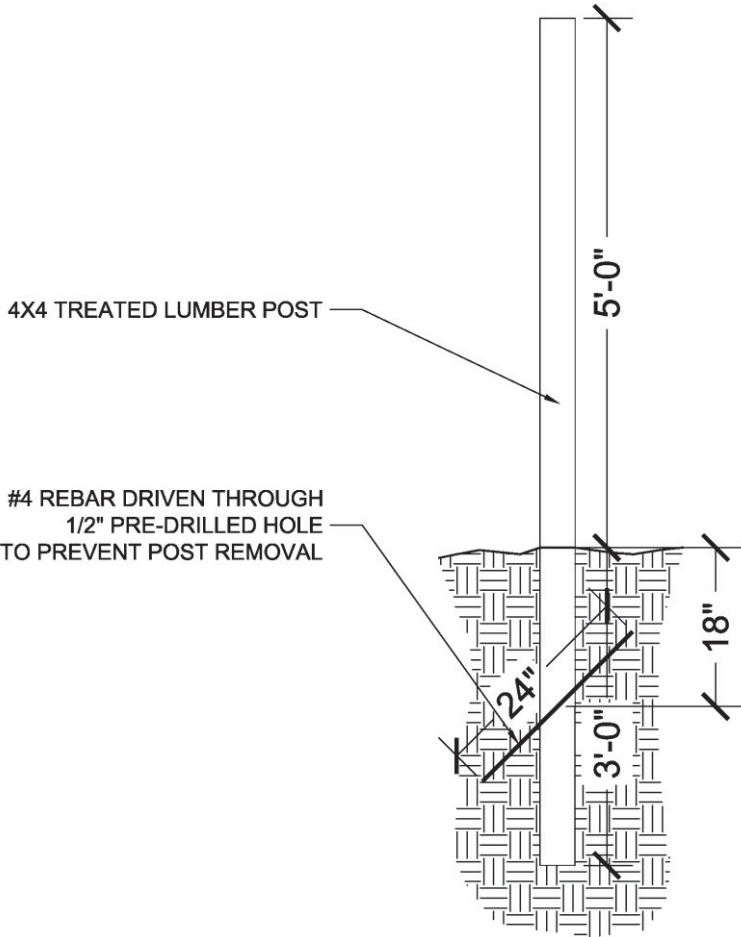


Figure 16: Map Post Installation (NTS)

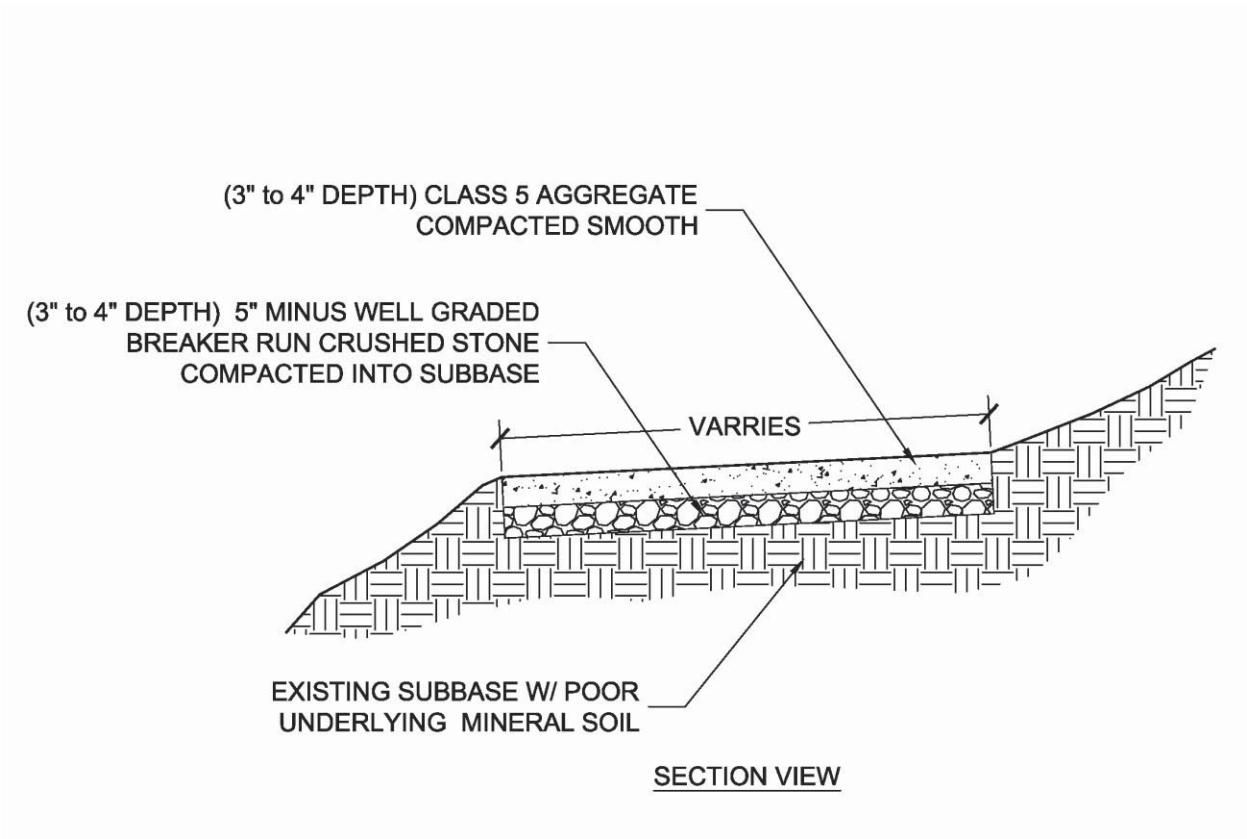


Figure 17: Trail Capping (NTS)

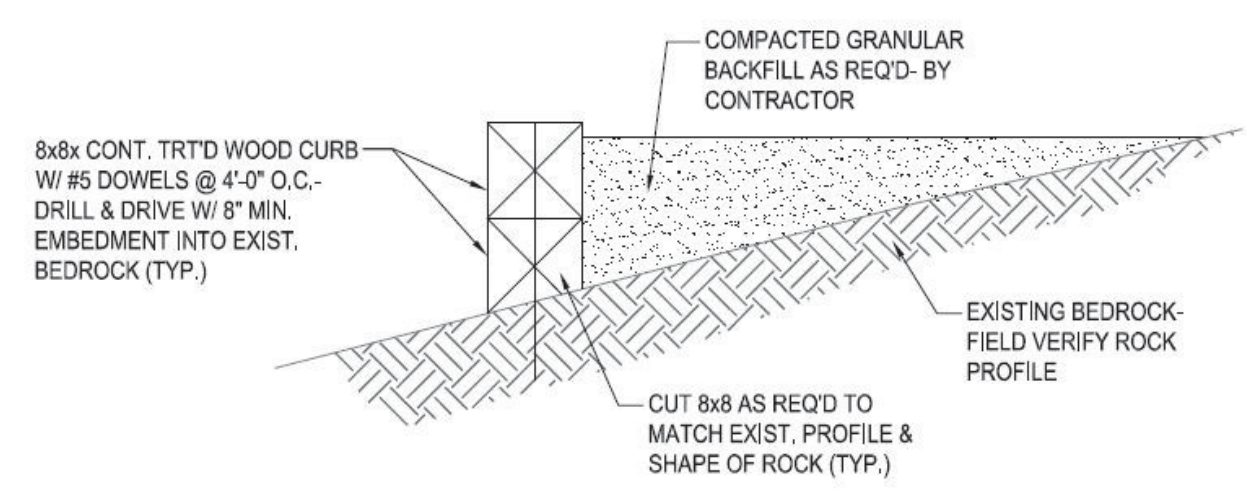


Figure 18: Wood Crib Wall (NTS)



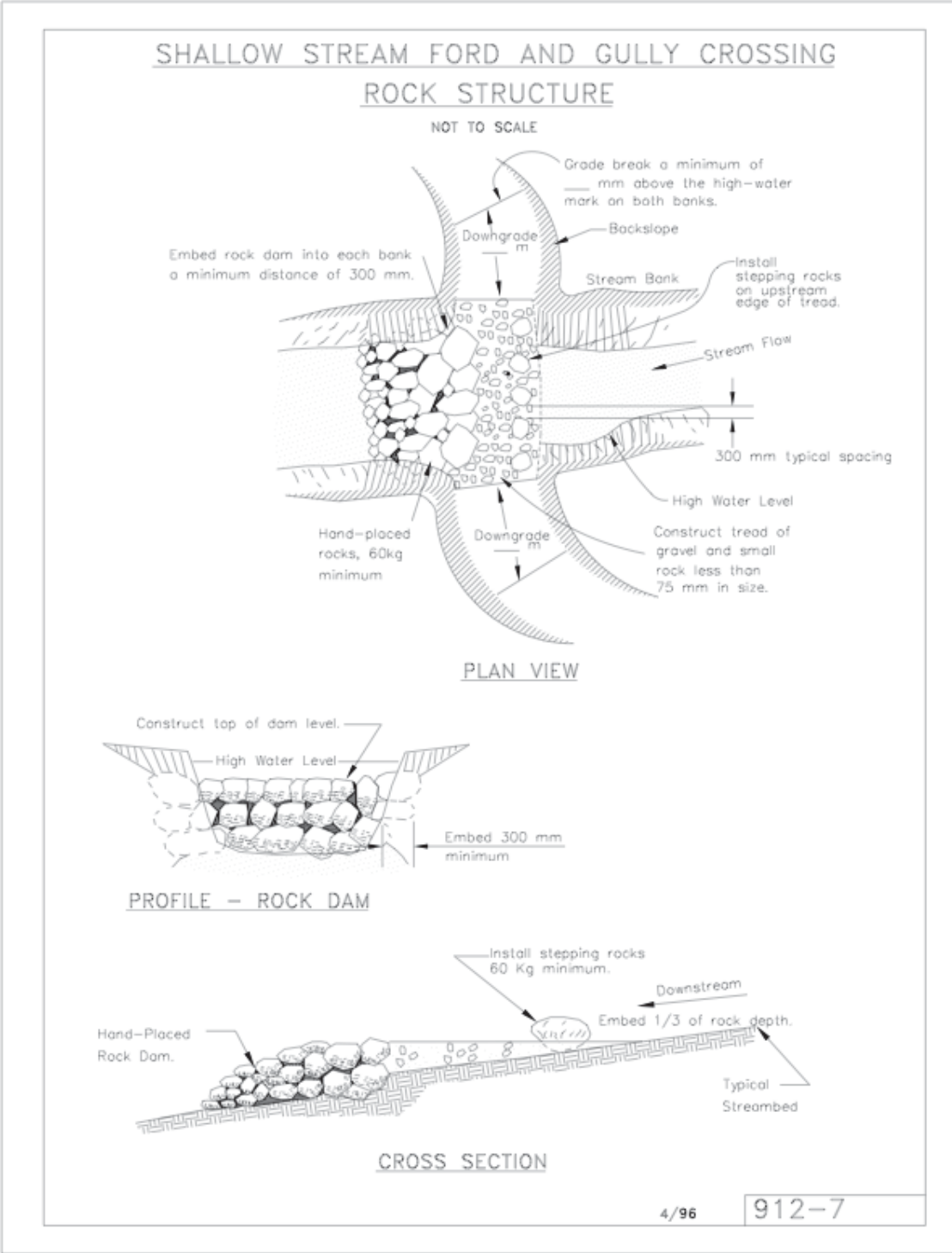


Figure 19: Shallow stream ford and gully crossing rock structure

## **SECTION 5: CONTRACTOR QUALIFICATIONS, REQUIREMENTS AND RESPONSIBILITIES**

### **5.1 Professional Association**

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

### **5.2 Mountain Bike-Optimized Experience**

The contractor shall have demonstrable experience in building sustainable mountain bike-optimized singletrack trail in a backcountry environment. Mountain bike-optimized singletrack is that which maximizes the fun and efficiency of the bicycling experience through the provision of trail features and macro and micro design techniques.

### **5.3 Insurance**

The contractor shall carry one and a half million dollars (\$1,500,000) in Commercial General/Umbrella Liability insurance and shall furnish a certificate listing the Club and its partner the City of Duluth as additional insureds. The certificate shall show the type, amount, class of operations covered, effective dates, and dates of expiration of policies.

### **5.4 Workman's Compensation**

The Club reserves the right to request proof of compliance with workmen's compensation laws.

### **5.5 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 Club.

### **5.6 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 Club and at no additional cost to the Club.

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

## **5.7 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.

## **5.8 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. It is the contractor's responsibility that PPE 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.

## **5.9 Timetable**

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

## **5.10 Meetings and Progress Reviews**

The contractor shall meet with the Club and designated City representative 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.

## **5.11 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.

## **5.12 Food and Water**

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

### **5.13 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.

### **5.14 Parking**

Construction personnel shall confine parking of private vehicles to within the area of the project limits or to those parking spaces available on public streets or pull off parking areas along skyline parkway and or public parking lots.

### **5.15 Public Safety**

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

### **5.16 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, cutting treated lumber away from wetlands or standing water, clean-up of spills and trash, and staying within the designated trail corridor of 50'.

### **5.17 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 Club and will be in place at the time of construction.

### **5.18 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.

Smoking is prohibited in City of Duluth public spaces and is not permitted at any of the project locations.

### **5.19 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.

## **5.20 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.

## **5.21 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.

## **5.22 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.

## **5.23 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. Tossing treated wood scraps into the surrounding landscape or placed under completed boardwalk or bridge segments is not permitted.

## **5.24 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 Club. It is anticipated that some type of access control will be necessary to control access to the trail that is under construction and is strongly encouraged. It will be up to the Contractor to determine the best access control prescription.

## **5.25 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 Club, and shall not unreasonably encumber the premises with project materials. Before any work is undertaken the contractor shall consult with the Club and secure from Club 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 Club 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.

### **5.26 Trail Rehabilitation**

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

### **5.27 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 Club.

### **5.28 Indemnity**

The contractor shall indemnify, save, and hold harmless the Club, City of Duluth,, 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.

### **5.29 Protection of Finished Construction**

Contractor shall assume the responsibility for the protection of all finished construction, until at which the Club accepts in writing the work as substantially complete. The Contractor shall repair and restore any and all damage of finished work to its original state if damage occurred prior to the club accepting the trail as substantially complete.

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

## **SECTION 6: REGULATIONS AND STANDARDS**

### **6.1 Jurisdictional Regulation**

The work shall comply with all laws, ordinances and regulations of all legally constituted authorities having jurisdiction over any part of this work. These requirements supplement the specifications and shall take precedence in case of conflict.

### **6.2 Davis-Bacon & Prevailing Wage**

Davis-Bacon and prevailing wage requirements "do not apply" in this contract.

### **6.3 Applicable Laws and Courts**

This solicitation and any resulting contract shall be governed in all respects by the laws of the State of Minnesota and any litigation with respect thereto shall be brought in the courts of the State.

### **6.4 Anti-Discrimination**

By submitting their bids, bidders certify to the State that they shall conform to the provisions of the Federal Civil Rights Act of 1964, as amended, and where applicable, the Americans With Disabilities Act.

During the performance of this contract, the contractor agrees as follows:

1. The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
2. The contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, will state that such contractor is an equal opportunity employer.
3. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting these requirements.

The contractor shall include the provisions of item 1 above in every subcontract or purchase order over ten thousand dollars (\$10,000) so that the provisions will be binding upon each subcontractor or vendor.

### **6.5 Ethics in Public Contracting**

By submitting their bids, bidders certify that their bids are made without collusion or fraud and that they have not offered or received any kickbacks or inducements from any other bidder, supplier, manufacturer or subcontractor in connection with their bid, and that they have not conferred on any person having official responsibility for this procurement transaction any payment, loan, subscription, advance, deposit of money,



services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.

## **SECTION 7: TIMELINE AND SCHEDULE**

### **7.1 Project Timeline**

The project schedule is as follows:

various	Site visit by request (non-mandatory)
January 18, 2019	Bid posting
February 07, 2019	Bid opening submission deadline (end of business day)
February 14-15, 2019	Anticipated award announcement
November 1, 2019	Work complete

### **7.2 Pre-Bid Conference and Site Visit**

Due to the importance of potential contractors having a clear understanding of the specifications and requirements of this solicitation, a non-mandatory pre-bid conference/site visit will be held by contractor request and on an as needed basis. All bidders shall bring a copy of the solicitation. Any changes resulting from this conference will be noted in a written amendment to the solicitation. Failure to attend will not relieve the contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Club. The Club assumes no responsibility for any conclusions or interpretations made by the contractor based on information made available at the conference. Nor does the Club assume responsibility for any understanding reached or representation made by any of its representatives or agents before the execution of this contract, unless that understanding is expressly stated in this contract.

Bidders are cautioned that in no event shall failure to familiarize themselves with requirements of this solicitation, or to resolve ambiguous or inconsistent terms or conditions of this solicitation or proposed contract, constitute grounds for a claim of any kind after contract award.

As the project area occupies a large footprint, it may not be possible to visit all the trail corridors during the pre-bid conference. That does not relieve the bidder of their responsibility to be aware of the conditions over the entire site. It is expected that a worthwhile review of these sites may require at least two days.

~~The pre-bid conference/site visit will be held at~~

-

Date: \_\_\_\_\_ XXXX

Time: \_\_\_\_\_ XXXX

Location: \_\_\_\_\_ XXXX

Bidders should wear clothing suitable for hiking in the upper Midwest. The pre-bid tour should be concluded by 6pm. Bidders should bring adequate food and water for a full day on the trail.



**7.3 Deadline for Requests for Clarifications/Questions**

All requests for clarification must be submitted in writing to Jim Shoberg via email to [jberg\\_21@hotmail.com](mailto:jberg_21@hotmail.com) and Adam Sundberg to [adamsundbergdc@gmail.com](mailto:adamsundbergdc@gmail.com)

**7.4 Responses to Requests for Clarifications Distributed**

Response(s) to written requests for clarification will be distributed to recipients of the bid package via email only.

**7.5 Bid Submission Deadline**

All bid submissions are due February 07, 2019 end of business day 5:00 pm Central Time.

**7.6 Anticipated Award Announcement**

The contract award announcement is anticipated to occur no later than February 14-15, 2019.

**7.7 Contract and Insurance Certificate**

The successful bidder will be required to execute a written contract with the Club within ten (14) days after notice of acceptance of his proposal. In the event the successful bidder fails or refuses to execute a formal contract as required within ten (14) days after notice of acceptance of his bid, the Letter of Acceptance of their proposal may be revoked, and all obligations of the Club in connection herewith will be canceled.

Before work commences, an insurance certificate will be provided to the Club that fulfills the contractor's responsibilities for insurance as detailed in this document.

**7.8 Work Complete**

All work shall be completed and approved by the Club before November 01, 2019.

## **SECTION 8: BID SUBMISSION PACKAGE**

### **8.1 Bid Submission**

Each bid must be submitted via email to with the title of the email clearly marked as "**DULUTH TRAVERSE 2019 COGGS BID**" and delivered to:

Jim Shoberg [jberg\\_21@hotmail.com](mailto:jberg_21@hotmail.com) &  
Adam Sundberg [adamsundbergdc@gmail.com](mailto:adamsundbergdc@gmail.com)

Each bid must be received prior to the deadline on the date set forth per the aforementioned schedule. Faxed bids will NOT be accepted.

It is the contractor's responsibility to verify the receipt of the email bid submission by the Club.

### **8.2 Submittal Checklist**

The bid package must contain each of the following. Incomplete bid packages may not be considered.

- Completed bid worksheets A and B (see section 13 and attachments A and B)
- A recommended project schedule and timetable.
- Three (3) references from previous mountain bike-specific trail construction projects.
- One (1) letter of recommendation from a previous client.
- A detailed list of work accomplished from past comparable or relevant projects. The list shall include a 1-3 paragraph description of the project, client name and contact information, and dates during which the work was executed.

## **SECTION 9: BASIS FOR AWARD, RIGHT OF REJECTION, AND CANCELLATION**

### **9.1 Basis for Award**

The Club reserves the rights to eliminate for consideration for award any or all offers at any time prior to the award of the contract; to negotiate with bidders in the competitive range; and to award the contract to the bidders, or combination of bidders, submitting the bid determined to represent the best values.

### **9.2 Right of Rejection**

The Club reserves the right to waive any informality in any bid, to reject any or all bids in whole or part, with or without cause, and/or to accept the proposal that in its judgment will be in the best interest of the citizens of Minnesota.

### **9.3 Qualifications and Experience**

The qualifications and experience of the contractor in completing similar work will be given equal weight to price of the bids in determining value of qualified bids. It is considered in the best interest of the Club to allow consideration of award to other than the lowest bidder or most qualified bidder.

#### **9.4 Additional Information**

The Club reserves the right to request that the bidder supply additional information prior to the award of the contract should such action be deemed in the Clubs best interest.

#### **9.5 Estimated Quantities**

For all specifications that contain more or less quantities, it shall be understood and agreed that quantities listed in the Project Details and Worksheet B are estimated only and may be increased or decreased in accordance with the actual normal requirements of the Club and that the Club in accepting any bid or portion thereof, contracts only and agrees to purchase only the services in such quantities as represent the actual requirements of the Club.

The Club reserves the right to change the quantities at its discretion and it is understood that this will have no effect on the price per unit quoted by the bidder.

#### **9.6 Partial Award**

The Club reserves the right to award a partial award of only some of the projects contained within the solicitation or to award separate projects to separate bidders. The projects contained within this solicitation are diverse in nature and it is possible that one contractor will not be the most suitable bidder for all the projects. It is recommended to bid on all the projects, but is not required. For this reason a one-time mobilization rate is requested as a separate line item. Upon award a contractor will be allowed to bill for one mobilization regardless of the number of sub-projects included in their contract.

#### **9.7 Right Of Cancellation**

In the event a contractor is awarded more than one project, and performs that project in a manner deemed unacceptable to the Club, in the Club's sole discretion, the Club reserves the right to issue a Notice of Cancellation of remaining projects. Upon the issuance of the Notice of Cancellation, the contractor shall have fifteen (15) days to cure the deficiencies in the prior project to the Club's satisfaction. If the contractor is unwilling or unable to cure such deficiencies, the Notice of Cancellation will become effective at the end of the fifteen (15) day period, and the award of the additional projects will be deemed cancelled. In the event of a cancellation under this paragraph, both the Club and the contractor agree that each shall bear their respective costs, and the contractor shall not be entitled to any payment for the remaining projects that are the subject of the Notice of Cancellation.

## **SECTION 10: COMMUNICATION AND REQUEST FOR CLARIFICATIONS**

### **10.1 Point of Contact**

Questions concerning this proposal shall be via email and directed to:

Jim Shoberg [jberg\\_21@hotmail.com](mailto:jberg_21@hotmail.com) &

Adam Sundberg [adamsundbergdc@gmail.com](mailto:adamsundbergdc@gmail.com)

Verbal responses to questions are not binding.

### **10.2 Request for Clarifications**

All requests for clarification shall be submitted via email to the project contact by Responses to all questions will be distributed via email to all respondents who requested a copy of the RFQ package.

### **10.3 Contact Protocol**

Bidders SHALL NOT make any contact or communications with any member of the Evaluation Committee, or any other agent, officer, or representative of the Club or associated partners in regards to this solicitation.

### **10.4 Email Communication**

Email communication is the primary method of receiving and responding to written requests for clarification. It is solely the bidders' responsibility to ensure that they have received all emails distributed and that any emails they have sent to the project contact have been received.

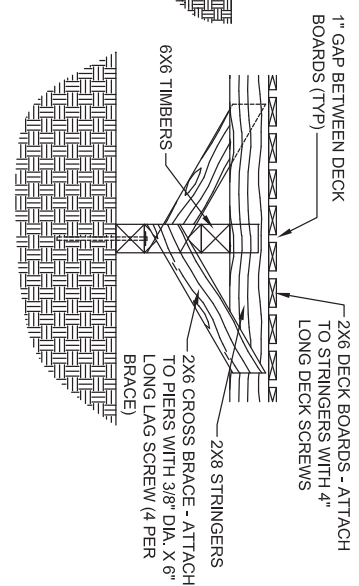
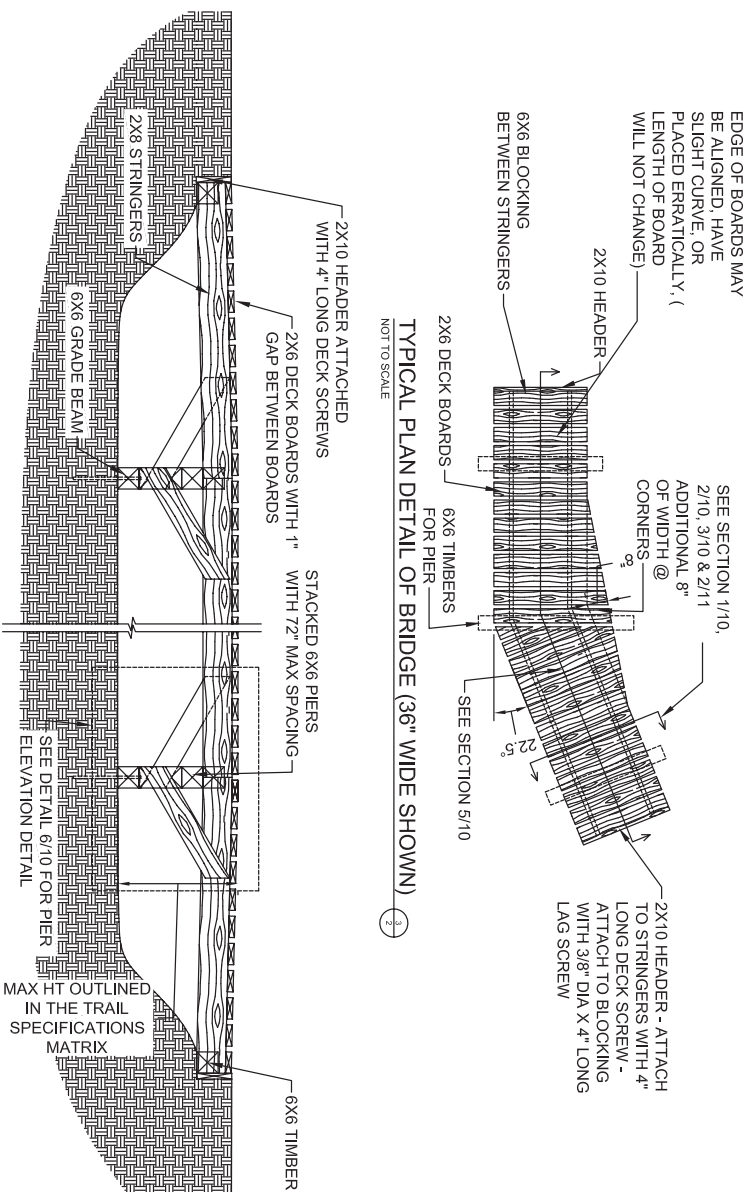
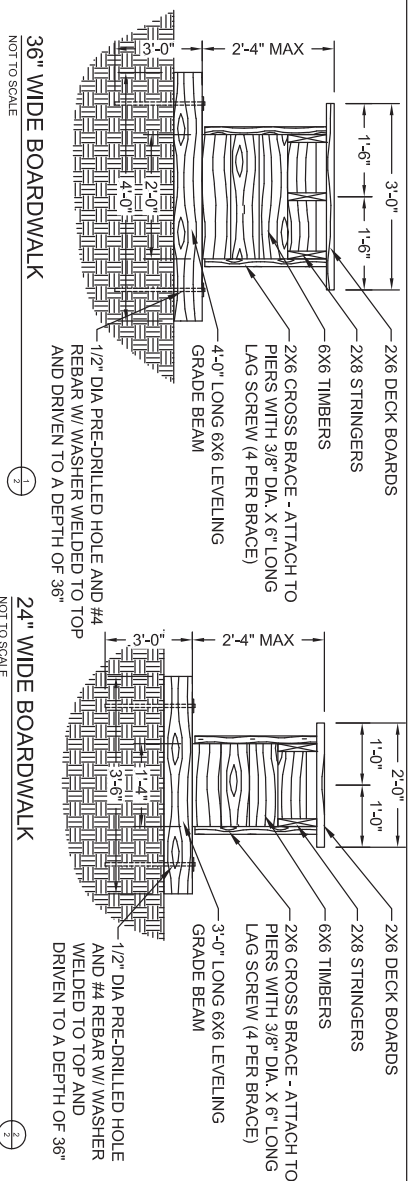
## SECTION 11: FINAL INSPECTION, SUBSTANTIAL COMPLETION, RETAINAGE, WARRANTY AND PAYMENT

Upon the substantial completion of the contract work, the Club 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.

Substantial completion is defined as the point at which the requirements of the construction documents have been met and the Club issues a letter of acceptance.

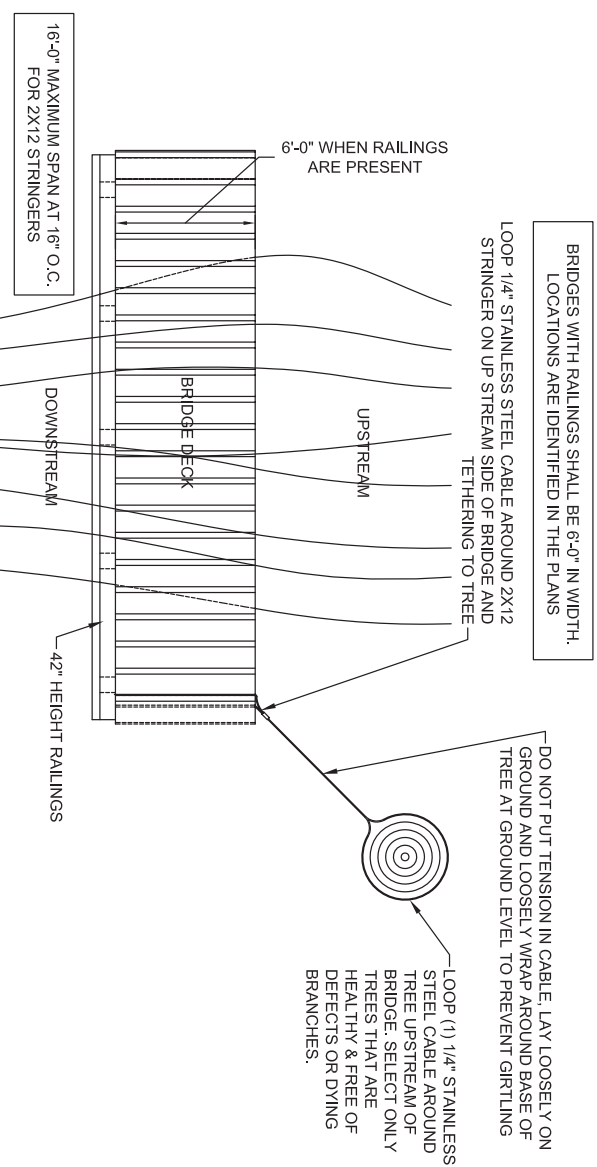
Final payment will be made upon substantial completion and approval of work per sub-project minus a 5% retainage. This retainage is held for a one year warranty period and starts on the date of substantial completion as outlined in the letter of acceptance.

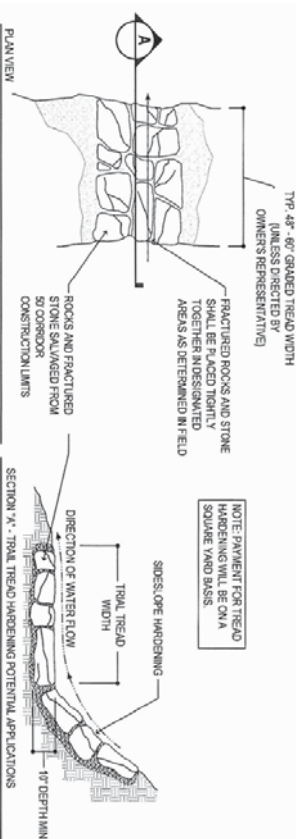




1. FINAL BOARDWALK FIELD DESIGN IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE BASED ON THE ENGINEERED CONSTRUCTION DOCUMENTS HEREIN AND IN THE SPECIFICATIONS.
2. CONTRACTOR IS TO PROVIDE A TYPICAL BOARDWALK AND BRIDGE SHOP DRAWING THAT IS PLANNED TO BE CONSTRUCTED IN THE FIELD FOR APPROVAL BY THE LANDSCAPE ARCHITECT.
3. LUMBER SHALL BE SIZED TO THE FULL DIMENSIONS SHOWN ON THE PLANS UNLESS NOTED OTHERWISE. ALL LUMBER SHALL BE A ROT-RESISTANT SPECIES OR TREATED ACCORDING TO THE OPTIONS MATERIALS IN THE SPECIFICATIONS.
4. ACCEPTABLE MATERIALS FOR THE DECK SPRING SURFACE MUST BE ROUGH CUT LUMBER AND INCLUDES: CEDAR, TIMBERAK AND TREATED PINE. ALL OTHER LUMBER USED IN THE CONSTRUCTION CAN BE EITHER ROUGH CUT OR DIMENSIONAL TREATED PINE LUMBER.
5. ROT-RESISTANT TREATMENTS OTHER THAN THOSE LISTED MUST BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO BIDDING.
6. LEVELING GRADE BEAMS SHALL BE SHIMMED AS NECESSARY TO MEET DESIRED PITCH OF STRUCTURE AND ANCHORED TO THE GROUND WITH A MINIMUM OF 36" LONG #5 REBAR DRIVEN THROUGH A PRE DRILLED HOLE IN THE TIMBER.
7. SELECT FASTENERS AND HARDWARE IN ACCORDANCE WITH THE SPECIFICATIONS
8. SIZES, LENGTHS AND EXTENT OF ALL BOARDWALKS, ROCK HARDENED TREAD, BRIDGES AND BEAMS TO BE FIELD FIT AT TIME OF CONSTRUCTION.
9. BOARDWALK & BRIDGE CONSTRUCTION LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE CONTRACTOR AND SUBMITTED TO THE OWNER FOR APPROVAL.
10. CUT BRUSH AND SLASH MUST BE DISPOSED IN AN UPLAND LOCATION AND MUST BE KEPT OUT OF STREAMS, GULLIES, SWALES, WET AREAS, AND LOW AREAS; SEE SPECIFICATIONS FOR DETAILS.
11. NO EXCAVATION OR FILL PERMITTED IN WET AREAS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONSULT WITH THE OWNER PRIOR TO DOING ANY WORK WITHIN SUSPECTED WET AREAS.

- TYPICAL ELEVATION DETAIL FOR BRIDGE (CREEK CROSSINGS)





**CONSTRUCTION NOTE:**

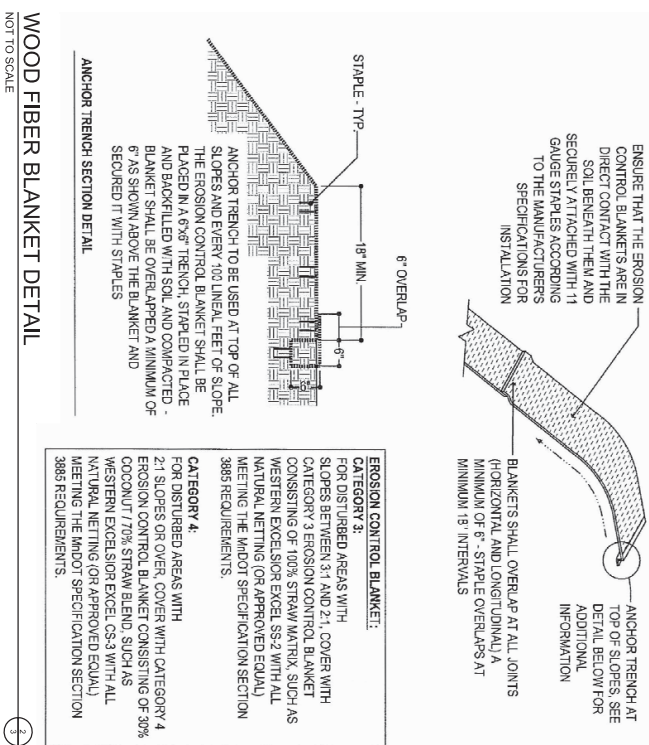
BACKFILL BEDDING MATERIAL SHALL BE 3'-6" OF 3/4" - CRUSHED ROCK. THE SAME CRUSHED ROCK CAN BE UTILIZED FOR FILL BETWEEN THE SET ROCKSTONE.

10" MINIMUM ROCKSTONE SET DEPTH.

SEAMS RUNNING IN THE DIRECTION OF TRAVEL SHALL BE MINIMIZED IN BOTH LENGTH AND WIDTH. SEAM WIDTH SHALL BE MINIMIZED AND SEAM STAGGERING SHALL BE USED WHERE POSSIBLE.

## TRAIL TREAD ROCK ARMORING AND SIDESLOPE ARMORING DETAIL

NOT TO SCALE



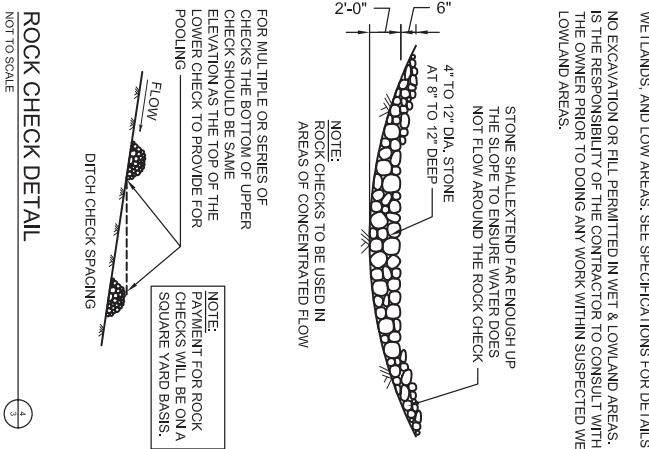
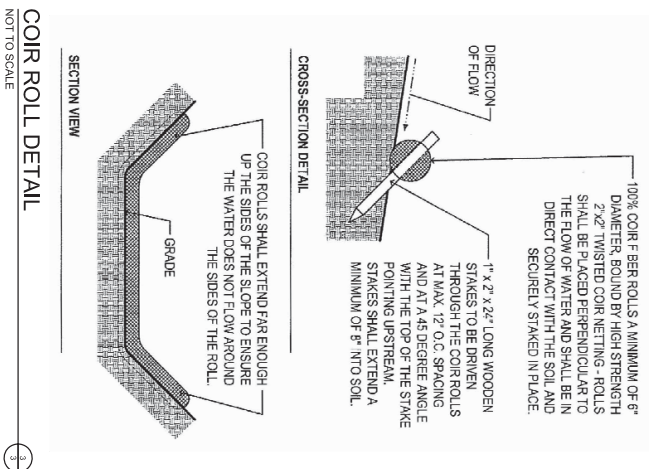
**EROSION CONTROL BLANKET:**

**CATEGORY 3:**

FOR DISTURBED AREAS WITH SLOPES BETWEEN 3:1 AND 2:1, COVER WITH CATEGORY 3 EROSION CONTROL BLANKET CONSISTING OF 100% STRAW MATRIX, SUCH AS WESTERN EXCEL SOR EXCEL SS2 WITH ALL NATURAL NETTING (OR APPROVED EQUAL) MEETING THE MDOT SPECIFICATION SECTION 3885 REQUIREMENTS.

**CATEGORY 4:**

FOR DISTURBED AREAS WITH 2:1 SLOPES OR OVER, COVER WITH CATEGORY 4 EROSION CONTROL BLANKET CONSISTING OF 30% COCOBUNT / 70% STRAW BLEND, SUCH AS WESTERN EXCEL SOR EXCEL CS3 WITH ALL NATURAL NETTING (OR APPROVED EQUAL) MEETING THE MDOT SPECIFICATION SECTION 3885 REQUIREMENTS.



## SWPPP NOTES:

1. ALL DISTURBED AREAS NOT PART OF ACTIVE TREAD TO BE STABILIZED WITHIN 7 DAYS OF NOT BEING WORKED. SEE (SWPPP) STORM WATER POLLUTION PREVENTION PLAN FOR DETAILS.
2. WHENEVER POSSIBLE USE NATIVE DUFF MATERIALS FOUND IN THE TRAIL CORRIDOR AS A MULCH FOR COVERING SOIL EXPOSED BY BACKSLOPE AND DOWNSLOPE CUTS. WOOD CHIPS MADE FROM WOODY MATERIAL CLEARED AS A RESULT OF THE CORRIDOR CLEARING ARE AN ACCEPTABLE ALTERNATIVE TO NATIVE DUFF MULCH.
3. FOR SLOPE ANGLES UNDER 3:1 USE TEMPORARY EROSION CONTROL SEED MIX AND FOR DISTURBED AREAS THAT ARE LACKING ADEQUATE NATIVE DUFF MATERIAL.
4. FOR SLOPE ANGLES 3:1 AND OVER USE PERMANENT EROSION CONTROL SEED MIX AND EROSION CONTROL BLANKET FOR LAND SLIDE AREAS AND AREAS OF HEAVY DISTURBANCE. THESE AREAS MUST BE APPROVED BY THE OWNER.
5. SEE SWPPP FOR SEED MIX DETAILS.
6. AFTER COMPLETION OF ALL GRADING, THE TRAIL TREAD SHALL BE MECHANICALLY COMPACTED TO ITS SPECIFIED WIDTH USING A VIBRATORY PLATE, SHEEP'S FOOT, OR OTHER APPROVED EQUAL COMPACTOR.
7. CUT BRUSH AND SLASH MUST BE DISPOSED IN AN UPLAND LOCATION AND MUST BE KEPT OUT OF STREAMS, GULLIES, SWALES, WETLANDS, AND LOW AREAS. SEE SPECIFICATIONS FOR DETAILS.
8. NO EXCAVATION OR FILL PERMITTED IN WET & LOWLAND AREAS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONSULT WITH THE OWNER PRIOR TO DOING ANY WORK WITHIN SUSPECTED WET & LOWLAND AREAS.

DATE: 03/08/16

DULUTH TRAVERSE TRAIL - PHASE IV

EROSION CONTROL DETAILS - EXHIBIT

SHEET 3/3

Trail Specifications Matrix  
Duluth Traverse Trail System

Version: 1.7 (01/18/19)

Label	Working title	Difficulty Rating	Symbol <sup>1</sup>	Use	Directional	Feature Frequency <sup>2</sup>	Constructed Tread Width <sup>3, 4</sup>	Ave Trail Grade per 100' <sup>5</sup>	Max Trail Grade: climbing <sup>5</sup>	Max Trail Grade: descending <sup>6</sup>	Min Turn Radius	Max Turnpad Grade <sup>7</sup>	Max Berm/Turn Camber <sup>8</sup>	Corridor Width (4' above tread)	Corridor Height Minimum	Boardwalk Width	Exposure (without railing)	Unavoidable Obstacles	Avoidable Obstacles (over 50% of tread or less)	Rollable Feature Height (Jumps, berms, etc.)	Roughasity (surface texture) <sup>9</sup>	Tread and trail features	Notes
Spec 1	Green Singletrack (Traditional bike optimized shared-use singletrack)	Easier	Green Circle	bike, foot	Two-Way	Low	48"	5%	20%	20%	10'	10%	15%	48"-72"	10'-12'	48"	less the 36"	less then 2"	less then 6"	12"	low	Firm trail surface. May include rock armored section.	
Spec 2	Blue Singletrack (Traditional bike-optimized singletrack)	More Difficult	Blue Square	bike, foot	Two-Way	Medium	36"	7%	25%	50% (armored over 25%)	8'	15%	30%	36"-72"	8'-12'	36"	less then 48"	less then 8"	less then 24"	24"	med	Modest rough tread is expected. May include steps and terraces.	May include features similar to those on easier "Bump and Pump" or "Jump" trails.
Spec 3	Black Singletrack (Traditional technical singletrack)	Most Difficult	Black Diamond	bike, foot	Preferred	High	18"	10%	50% (armored over 25%)	100% (armored over 25%)	6'	15%	50%	36"-48"	8'-12'	24"	no limit	less then 18"	less then 48"	36"	high, some very high	Significant unavoidable obstacles are expected. May include steps, stairs, rock gardens, loose rock, and significantly exposed sections.	Seek out rocky ridges. Selective machine work to create very organic appearing rock strewn tread. Most rock and tread work is aimed at sustainability rather than ease of passage. Trials-
Spec 4	Green Flow Trail (Bump Pump) Singletrack	Easier	Green Circle	bike, foot	Preferred	High	48"	3-5%	20%	30% (armor as function of flow)	15'	10%	30%	48"-72"	8'-10'	48"	less the 36"	less then 2"	less then 6"	12"	low	Firm trail surface. Rollers and berms. May include rock surfaced sections.	The Lester River Trail in Lester Park, Enger Park Trail and the Upper Cathedral Trail in Mission Creek are examples of this spectrum
Spec 5	Blue Flow Trail (Bump Pump) Singletrack	More Difficult	Blue Square	bike, foot	Preferred	High	36"	7-10%	30%	100% (armor as function of flow)	10'	15%	50%	36"-72"	10'-12'	36"	less then 60"	less then 2"	less then 24"	24"	low	Firm trail surface. Rollers, roller doubles, berms predominate. May include significant armored sections.	Demonstration trail at Spirit Mtn is an example of the upper end of this spectrum.
Spec 6	Black Flow Trail (Bump Pump) Singletrack	Most Difficult	Black Diamond	bike	One-Way	High	36"	10-12%	n/a	150% (armor as function of flow)	7'	25%	150%	36"-72"	10'-12'	36"	less then 120"	less then 8"	less then 48"	36"	med	Firm trail surface. Rollers, roller doubles, berms predominate. May also include steps, stairs, rock gardens and exposed	
Spec 7	Green Jump	Easier	Green Circle	bike	One-Way	Medium	48"+	3-5%	n/a	30% (armor as function of flow)	20'	10%	150%	48"-72"	10'-12'	60"	less the 36"	less then 2"	less then 6"	18"	low	Smooth continuously cambered trail surface. Easily rollable jumps.	A green jump trail could fit within a stacked-loop system. Blue and Black are likely best done at a resort.
Spec 8	Blue Jump	More Difficult	Orange Pill, medium	bike	One-Way	Low	48"+	7-10%	n/a	100% (armor as function of flow)	15'	15%	∞%	48"-72"	12'-15'	48"	less then 60"	less then 2"	less then 24"	30"	low	Smooth continuously cambered trail surface. May include significant armored sections. More complex jump	Complete berms, plan on extreme drainage solutions - sumps + culverts.
Spec 9	Black Jump	Most Difficult	Orange Pill, large	bike	One-Way	Low	48"+	10-12%	n/a	150% (armor as function of flow)	15'	25%	∞%	48"-72"	12'-15'	48"	less then 120"	less then 8"	less then 48"	48"	med	Firm trail surface. May include rock surfaced sections. Some jumps may not be rollable.	Complete berms, plan on extreme drainage solutions - sumps + culverts.
Spec 10	Green Gravity	Easier	Orange Pill, small	bike	One-way	Medium	48"	7-10%	n/a	100% (armor as function of flow)	20'	15%	150%	48"-72"	12'	60"	less the 36"	less then 18"	less then 24"	18"	high	Entry level downhill course. Will include rocks, steps, and terraces. Drops will be rollable.	For all DH types, potentially only at Spirit Mtn.
Spec 11	Blue Gravity	More Difficult	Orange Pill, medium	bike	One-way	Medium	36"	10-15%	n/a	∞% (mandatory drops	15'	25%	∞%	36"-72"	12'	48"	less then 60"	less then 48"	n/a	30"	very high	Intermediate level downhill course. Mandatory drops. Will include significant steps, stairs, rock gardens and exposed	
Spec 12	Black Gravity	Most Difficult	Orange Pill, large	bike	One-way	High	24"	15-20%	n/a	∞% (mandatory drops	15'	25%	∞%	36"-72"	12'	48"	less then 120"	less then 72"	n/a	48"	very high	Advanced level downhill course. Significant mandatory drops. Will include extreme terrain that has a high penalty	
Spec 13	Gateway trail	Easiest	White Circle	bike, foot, horse	Two-Way	low	48"+	3-5%	10%	15%	12'		10%		10'-12'	60"							Very front-country, likely connected to a recreation park. Typically under a mile.
Spec 14	Accessible trail	Easiest		bike, foot, horse	Two-Way	none	36" min	0-5%	8.3%	8.3%	5' dia space						30"	less than or equal to 1/4"	none		low, surface must be firm and stable	Full tread with obstacles, where possible, should be seperated by a minimum of 48"	ADA, ABA, AASTHO spec trail.
Spec 15	Adaptive trail	Varies		bike, foot	Two-Way	varies																	ADA, ABA, AASTHO spec trail.

Footnotes...

1. Oranoe Pill Symbol assumes trails inside controlled-access facilities, like a bike park or resort.

2. Feature Frequency is averaged over long distances. Per 100': "low" = 2-3 features, "med" = 3-5 features, "high" = 5-10 features.

3. Constructed tread width may narrow over short distances to 50% of spec. Examples include rock or tree gateways.

4. Tread width also applies to bridges and boardwalks. Check with local regulations for overriding guidelines on width or any other requirements (height restrictions, railings, etc.).

5 & 6. Max grades climbing and descending refer to extremelv short seoments. 10 feet or less.

7. Turnoad grade measures the rise/fall across the turnino surface at the base of any inslope.

8. Max camber is measured at the top of the inslope. More advanced berms will go to "vertical".

9. Roughasity attempts to capture average tread coarseness. Tread area with obstacles: "low" = less then 5%, "med" = less then 20%, "high" = over 20%, "very high" = over 50%.

General Notes

Sustainable trails guidelines provide the foundation for all design + construction decisions ("half rule", frequent grade reversals, max grades function of soils + use, etc.).

All trails should have a minimum grade and camber (in/outslope) of 3% to ensure a well-drained tread.



**EXHIBIT D****City of Duluth Incident/Injury Report**

**Supervisor to complete within 24 hours of incident/injury. If injury required treatment by a medical provider, attach medical documentation. Completed forms should be emailed to [accidentreporting@duluthmn.gov](mailto:accidentreporting@duluthmn.gov).**

Date of incident/injury:	<input type="checkbox"/> Employee <input type="checkbox"/> Non-Employee	Department/Division:
Choose one that best describes this claim: <input type="checkbox"/> Incident only, no medical care <input type="checkbox"/> Medical only, no lost time <input type="checkbox"/> Injury includes lost time		
Initial treatment sought:	<input type="checkbox"/> Hospital ER <input type="checkbox"/> Clinic <input type="checkbox"/> Refused to see MD / None	Doctor/clinic name, address, phone number:

Last name:	First name:	MI:	SSN:
Address:			
City:	State:	Zip code:	Phone:
Date of hire:	Occupation:	Date of birth:	
		Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female	

Did accident, injury, or incident occur on employer's premises? <input type="checkbox"/> Yes <input type="checkbox"/> No	Name and address of the place of the occurrence:
--	--

Time employee began work: _____ <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.	Time of accident, injury, or incident: _____ <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
Date employer notified of accident, injury, or incident: _____	Date employer notified of lost time: _____
First date of any lost time: _____	Return to work date: _____
RTW with restrictions: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

Describe the nature of the accident, injury, or incident. Be specific. Include body parts affected.
---

Describe the activities when the accident, injury, or incident occurred with details of how it happened.
--

What tools, equipment, machines, objects and/or substances were involved?
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Incident investigation conducted: <input type="checkbox"/> Yes <input type="checkbox"/> No	Date supervisor notified: _____	Date report completed: _____
Supervisor name: _____	Supervisor phone number: _____	

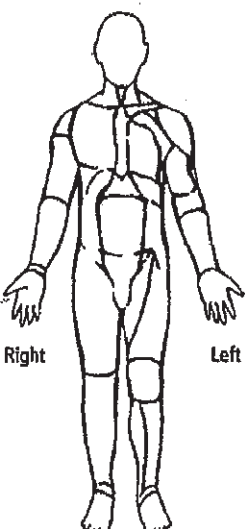
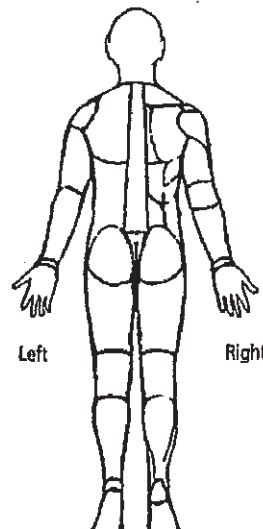
Names and phone numbers of witnesses:
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Incident was a result of: <input type="checkbox"/> safety violation <input type="checkbox"/> machine malfunction <input type="checkbox"/> product defect <input type="checkbox"/> motor vehicle accident <input type="checkbox"/> N/A
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Supervisor comments:
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What actions have been taken to prevent recurrence?
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## City of Duluth Incident/Injury Report

<b>CAUSE</b> <input type="checkbox"/> Slip and fall <input type="checkbox"/> Struck by equipment <input type="checkbox"/> Lifting or moving <input type="checkbox"/> Caught (in, on, or between) <input type="checkbox"/> Needle puncture <input type="checkbox"/> Object in eye ( <input type="checkbox"/> Right <input type="checkbox"/> Left) <input type="checkbox"/> Repetitive/overuse <input type="checkbox"/> Other (specify): _____	<b>MARK AREAS OF INJURY BELOW:</b> <small>Areas can be marked by typing an "X" in the text box wherever needed.</small> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <b>Front</b>              Right      Left         </div> <div style="text-align: center;"> <b>Back</b>              Left      Right         </div> </div>
<b>TYPE OF INJURY</b> <input type="checkbox"/> Scrape/bruise <input type="checkbox"/> Sprain/strain <input type="checkbox"/> Puncture wound <input type="checkbox"/> Cut/laceration <input type="checkbox"/> Concussion <input type="checkbox"/> Bite <input type="checkbox"/> Chemical burn/rash/breathing difficulties <input type="checkbox"/> No apparent injury <input type="checkbox"/> Other (specify): _____	

COMPLETE FOR VEHICLE, EQUIPMENT, OR PROPERTY DAMAGE					
<b>For vehicle accidents:</b> Attach sketch and additional information of how vehicle accident occurred. Include street names, direction of travel, locations of vehicles, objects and traffic control devices (↑ North)					
Incident Location: _____			Time of incident: _____ <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.		
Police called: <input type="checkbox"/> Yes <input type="checkbox"/> No		Police Traffic Accident Report ICR #: _____			
<b>City vehicle, property, or equipment involved</b>	Description: _____				
	Vehicle #: _____		Make/Model: _____		Year: _____
	Describe damage: _____				
<b>Non-city vehicle, property, or equipment involved</b>	Owner full name: _____			<input type="checkbox"/> Driver <input type="checkbox"/> Passenger <input type="checkbox"/> Other	
	Owner address: _____				
	Owner phone number: _____		Vehicle license #: _____		
	Make/Model: _____		Color: _____		Year: _____
	Describe damage: _____				
<b>Weather conditions:</b> <input type="checkbox"/> Clear <input type="checkbox"/> Wind <input type="checkbox"/> Rain <input type="checkbox"/> Cloudy <input type="checkbox"/> Fog <input type="checkbox"/> Sleet <input type="checkbox"/> Snow		<b>Roadway conditions:</b> <input type="checkbox"/> Dry <input type="checkbox"/> Mud <input type="checkbox"/> Wet <input type="checkbox"/> Paved <input type="checkbox"/> Snow <input type="checkbox"/> Unpaved <input type="checkbox"/> Ice		<b>Light conditions:</b> <input type="checkbox"/> Night <input type="checkbox"/> Day <input type="checkbox"/> Good <input type="checkbox"/> Poor	
Approximate temperature: _____ °F Estimated speed: _____ mph Vehicle: <input type="checkbox"/> Loaded <input type="checkbox"/> Empty What was load: _____ Drug and/or alcohol test? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A					

The Incident/Injury Form should be printed and signed by supervisor and employee. Completed forms can be scanned to [accidentreporting@duluthmn.gov](mailto:accidentreporting@duluthmn.gov).

Supervisor Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Employee Signature: \_\_\_\_\_

Date: \_\_\_\_\_