Australian Government

REEF TRUST

Catchment Solutions

Reef Trust Phase IV
GULLY AND STREAM BANK EROSION CONTROL PROGRAM

Invite to Tender

Ten Mile Erosion Control Program

Mt. Fairview and Bannockburn Stations

July 2020 – Version 1

Contents

INVITE TO TENDER

This invite to tender is for the erosion remediation at the Mt. Fairview and adjacent Bannockburn property located in the Morinish locality, about 65 kilometers, North-West of Rockhampton.

The proposed Mt. Fairview property project area is on Lot 86 on RP900583 with the construction of three in channel grade control rock chutes which incorporates fish passage.

The proposed Bannockburn property project area is on Lot 85 on RP900583 with the construction of two rock chute structures, overland earthern bund flows and stick/timber raking for three upstream timber check dams to reduce flow velocities.

The Scope of Works generally includes but not limited to: site access and preparation, implementation and maintenance during construction, all required plans including safety management plan, and erosion and sediment control plan, site establishment, supply of all materials, labour, equipment and other resources, placement of geotextile and rock filter and beaching, topsoil removal and stockpiling, placement of topsoil, grading and maintenance of access tracks and creek crossings (including anabranch crossings), reinstate land profiles at all disturbed areas and disestablish of the site.

The detailed design drawings and associated documents has been completed by the designer, Neilly Group Engineering, which are attached to this the Invite to Tender.

Attached Documents

Mount Fairview Attachments
- Attachment A: 18060 Project Drawings Mt. Fairview
- Attachment B: 18060 Catchment Solutions RTIV Ten Mile Creek Technical Specifications
- Attachment C: 18060 Catchment Solutions RTIV Ten Mile Creek Detail Design V2

Bannockburn Attachments
- Attachment D: 20023 Project Drawings Bannockburn
- Attachment E: 20023 Bannockburn Station Reef Trust IV Fully Repair Addendum
- Attachment F: 20023 Technical specification Bannockburn Station RTIV Gully repair V3

Approvals
- Attachment G: AM10-N Decision with Conditions 2001-15087SDA
- Attachment H: Approval Plans 2001-15087 SDA

Works shall be undertaken during the dry season to reduce the risk of erosion on freshly exposed surfaces. The Ten Mile Creek Rehabilitation Project is planned to commence construction by October 2020. All works must be completed by the 1st December 2020 and comply with State Government approvals (attached to this Tender).

- Tenders must be lodged electronically by 5:00pm Monday, 31 August 2020 Queensland time.

THE PROPOSED SITE INSPECTION (2.00PM, 12TH AUGUST 2020) FOR THIS INVITATION TO TENDER IS MANDATORY FOR ALL TENDERERS IN ORDER TO GAIN SUFFICIENT INFORMATION TO PROVIDE A TENDER RESPONSE AND CARRY OUT THE REQUIRED WORKS.

INTRODUCTION

Property Descriptions

Mt. Fairview is situated within the Ten Mile creek catchment, on the western side of the Fitzroy River about 60 kilometers north-west of Rockhampton. Mt. Fairview is located in the Morinish locality, with the project areas on Lots 85 & 86 on RP900583. The property owner is Mary Dunn, and is managed by station manager, Alan Wogan. The property is located adjacent to the Bannockburn and Eight Mile properties.

Bannockburn is also situated on the western side of the Fitzroy River about 65 kilometers north-west of Rockhampton. The Bannockburn property is located in the Morinish locality, with the project areas on Lot 85 on RP900583. The property owners are Kevin and Catriona Pearce.

Figure 1 –Project Location- Mt. Fairview and Bannockburn Station

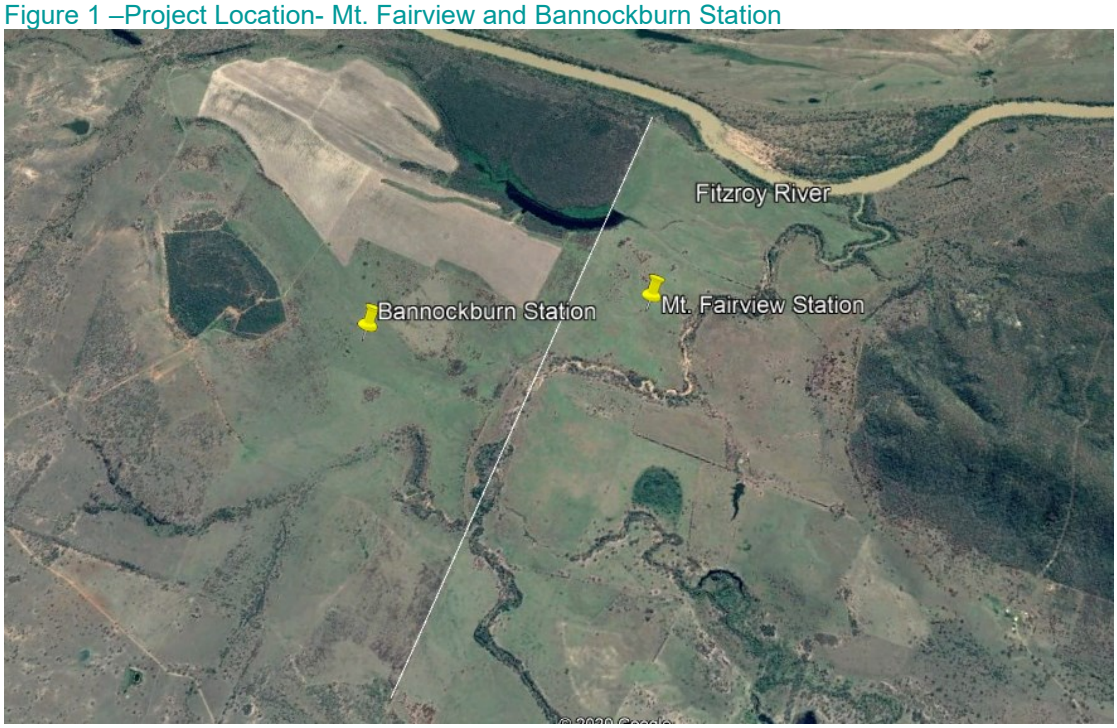
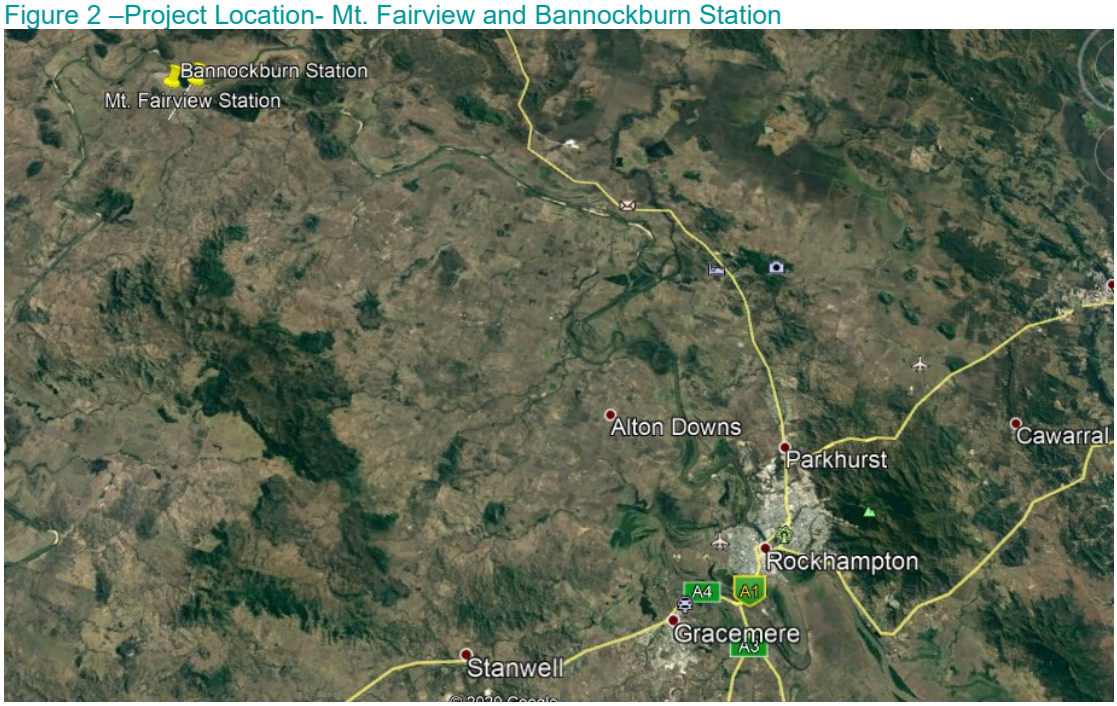


Figure 2 –Project Location- Mt. Fairview and Bannockburn Station



MT. FAIRVIEW STATION

Design

Three in channel grade control rock chutes with fish resting pools are to be constructed, with incorporated fish passage, at Mt. Fairview Station.

Each of the rock chutes have been designed with the following fish passage provisions:

- Longitudinal grade of no greater than 5%; and
- A resting pool incorporated approximately halfway along the rock chute face.

Figure 3 –Overview of proposed rock chute design- Mt. Fairview Station

Proposed Rock Chute 1 is located approximately 3.35km upstream of the confluence of Ten Mile Creek with the Fitzroy River. It is the most downstream location of the three proposed rock chutes and the rock chute has been positioned on a relatively straight section of Ten Mile Creek.

Proposed Rock Chute 2 is located approximately 4.4km upstream of the confluence of Ten Mile Creek with the Fitzroy River and approximately 1km upstream from the proposed crest of Rock Chute 1. It is the central location of the three proposed rock chutes.

Proposed Rock Chute 3 is located approximately 4.95km upstream of the confluence of Ten Mile Creek with the Fitzroy River and approximately 0.55km upstream from the proposed crest of Rock Chute 2. It is the most upstream location of the three proposed rock chutes. The rock chute is positioned immediately upstream of the track crossing of Ten Mile Creek, between the confluence of the Bannockburn Gully upstream and another small gully downstream. The chute has been positioned to provide maximum benefit to the Bannockburn Gully with the deepest infilling of sediment to occur closest to the chute crest, which will raise the bed of the confluence of Bannockburn Gully with Ten Mile Creek by up to 1m. The small gully on the southern bank of Ten Mile Creek is located downstream of the proposed rock chute such that it does not present a stability risk to the rock chute.

Figure 4 –Overview of proposed Rock Chute 1- Mt. Fairview Station

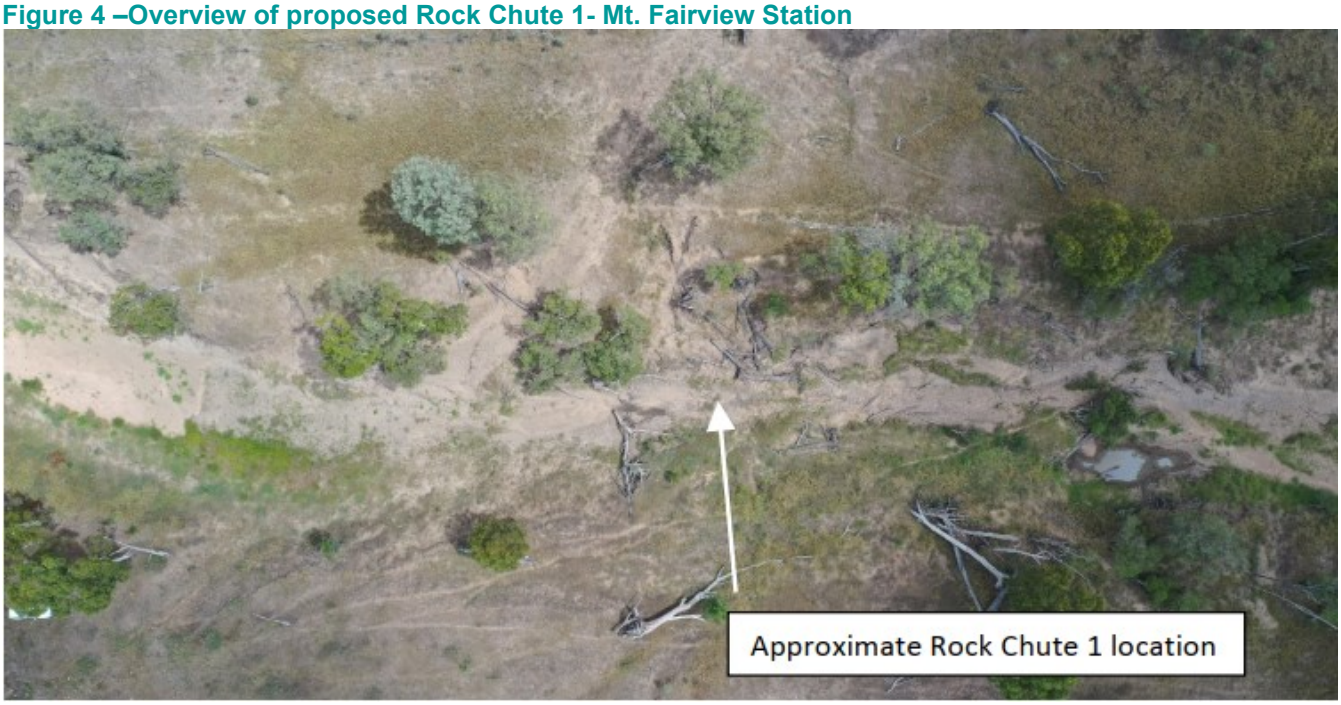


Figure 5 –Aerial drone photograph at Rock Chute 1 location looking upstream

Figure 6 – Overview of proposed Rock Chute 2- Mt. Fairview Station

Figure 7- Aerial drone photograph at Rock Chute 2 location looking downstream

Figure 8- Overview of proposed Rock Chute 3- Mt. Fairview Station

Figure 9- Aerial drone photograph at Rock Chute 3 location looking upstream

Drawings

The Drawings referred to in this Specification are those endorsed by the Designer (Neilly Group Engineering). The Drawings must not be varied without the written approval of the Designer. The Drawings for the in-channel grade control rock chutes at Mt. Fairview station are listed in Table 1.

Table 1. Rock Chute Spillway Drawings

Drawing Number	Revision	Drawing Title
18060-001	C1	OVERALL PLAN VIEW, SHEET LAYOUT & NOTES
18060-002	C1	ROCK CHUTE 1 - SETOUT
18060-003	C1	ROCK CHUTE 1 – LONGITUDINAL SECTION
18060-004	C1	ROCK CHUTE 2 - SETOUT
18060-005	C1	ROCK CHUTE 2 – LONGITUDINAL SECTION
18060-006	C1	ROCK CHUTE 3 - SETOUT
18060-007	C1	ROCK CHUTE 3 – LONGITUDINAL SECTION
18060-008	C1	TYPICAL SECTIONS
18060-009	C1	TYPICAL SECTIONS

Site preparation

Access Track

The contractor shall be responsible for upgrading and maintaining any existing tracks and cutting any new ones required to access the construction project sites within Mt. Fairview and Bannockburn Stations. The access tracks are to be maintained to ensure it remains trafficable should minor rain events (<10mm) occur during construction. It is expected that approximately 5-6km (total) of new and upgraded track, between both properties will need to be cut, with approximately 1km of that needed to be gravel lined. Access costs are to be incorporated into the schedule of quantities as a separate item.

Any temporary crossing of Ten Mile Creek must include a simple, rock lined bed level crossings to ensure it remains trafficable should minor rain events occur during construction.

Set-out

The Contractor is responsible for setting out alignments and levels from the Drawings and shall establish sufficient set-out pegs to ensure smooth changes in both vertical and horizontal alignment. Bench marks, survey pegs, level pegs or supplementary reference marks must not be adjusted or moved without written approval of the Catchment Solutions Representative. The contractor must transfer any pegs affected by the earthworks to side positions clear of operations and must note the extent of the movement in distance and level.

Clearing and grubbing

Clearing must be carried out in advance of any earthwork operations and is to include the removal of all foreign material and vegetation, except trees and plants required to be preserved as identified by the Catchment Solutions Representative, from within the boundaries of areas affected by earthworks or other areas to be cleared as designated on the Drawings. All stumps and roots must be grubbed to a depth of at least 150mm below the finished surface level or foundation level, whichever is the lowest elevation. Grub holes are to be backfilled and well compacted with approved select material. All foreign material and vegetation cleared except topsoil must be removed from the project site and is to be deposited at the appropriate disposal site.

Stripping and stockpiling of topsoil

All topsoil is to be stripped from areas to be excavated or filled and from other areas as shown on the Drawings. Topsoil is to be stored in approved stockpiles for use in re-instatement of the work by the Contractor. Stripping topsoil shall consist of the removal of topsoil to a minimum depth of 100mm below ground level.

Backfill

Holes or cavities that are found within the site after excavation to the design foundations shall be backfilled with materials similar to the adjacent ground, and such fill shall be compacted to a dry density similar to that of the surrounding material.

Construction of in-channel grade control rock chute

Excavation to foundation level

No excavation shall be commenced until the Contractor has undertaken a Dial Before You Dig (DBYD) search and obtained current underground location plans which provide an indication of the presence, location and depth of underground plant in the area of the works.

Excavation shall be carried out to the depths and dimensions shown on the Drawings, or to such greater depths and dimensions as will ensure sound, permanent foundations. All excavation carried out shall be approved by the Catchment Solutions Representative before any materials are placed on the excavated surfaces (**hold point**).

Excavations shall be conducted by machine and/or by hand as necessary to produce profiles to the accuracy required by this Specification and the Drawings. In carrying out excavation work, all reasonable precautions against mishap or accident, whether arising from insufficient strength of supports, bad workmanship, breakage of machinery or plant, inefficient caulking or packing of open joints or spaces, flood, or any other cause whatsoever shall be taken.

Excavated material

All materials cleared and excavated shall be removed from site and recycled appropriately or disposed of legally. If an appropriate area exists on the site, suitable material may be stockpiled and used for backfilling, provided that excess stockpiled material is disposed of when all backfilling is completed. Special care is to be taken to ensure that the proposed stockpile does not impact on any existing trees or structures.

Unsuitable material

Unsuitable material such as silt, mud, roots, organic matter, rubbish, areas of very soft clay or high moisture content and any other deleterious substances shall be disposed and replaced with select material.

The Contractor shall rework or replace any material that has become unsuitable because of inappropriate construction activities. Inappropriate construction activities include poor surface drainage, restricted or inoperative subsurface drains, contamination, excessive sized plant where the imposed local load exceeds the material strength, poorly maintained plant allowing leakage of oils and water onto the formation and leaving the surface open to wet weather allowing moisture ingress.

Fill

Fill shall be carried out to the depths and dimensions shown on the Drawings with select fill cut from the excavation. Prior to placing fill material, the Contractor shall prepare any areas upon which the fill is to be placed to be free of organic material. The surface shall be compacted to a dry density of not less than 95% maximum dry density at optimum moisture content (OMC) for the upper 150mm, in accordance with AS1289.

All fill material shall be free of organic material and shall be placed in uniform, near horizontal layers not exceeding 300mm in loose thickness. Each layer shall be moisture conditioned and compacted to not less than 95% maximum dry density at OMC in accordance with AS1289.

Each layer of fill material shall be thoroughly compacted before additional fill is added. Compaction of the fill material shall be carried out to moisture content appropriate to the compaction equipment being used.

Placement of geotextile

Bidim A44 or equivalent geotextile shall be placed within the perimeter of the apron and crest cutoff walls of the rock chutes as shown on the Drawings. Where a single width of geotextile is insufficient to provide full coverage, a minimum overlap of 500mm must be maintained where multiple widths of geotextile are required. The geotextile shall be placed to form a surface that is smooth, free of creases and depressions and shall be pinned into place. Geotextile shall be placed and approved by the Catchment Solutions Representative prior to the placement of granular filter material or rock beaching (**hold point**).

Placement of granular filter material

Granular filter material shall be placed following excavation to foundation level and subsequent placement of geotextile in the crest and apron cut-off walls. The granular filter material shall be placed and compacted by machine bucket in accordance with this Specification and to the thicknesses and locations as shown on the Drawings. Granular filter material shall be placed and then approved by the Catchment Solutions Representative prior to the placement of rock beaching (**hold point**).

Granular filter material specification

Granular filter material shall be hard and durable gravel and shall have a nominal size of D50 = 25mm. The granular filter material shall be approved by the Catchment Solutions Representative prior to placement.

Placement of rock beaching

Rock beaching shall be placed following excavation to foundation level and subsequent placement of geotextile and granular filter material. The rock beaching shall be placed in accordance with this Specification and to the thicknesses and locations as shown on the Drawings.

The Contractor shall use appropriate methods for handling and placement of rock that will:
- Avoid tearing of geotextile material.
- Avoid segregation of the rock size fractions

The rock shall be placed to form an interlocking blanket of rock with low void spaces. Voids in the blanket of rock shall be reworked as required by the Catchment Solutions Representative. Rock beaching shall be placed and then approved by the Catchment Solutions Representative prior to the placement of topsoil on the upper batters of the rock chutes.

Rock beaching material specification

The rock used to line the rock chutes must be durable, resistant to weathering and angular in shape. The D50 is used to describe the nominal rock size required for the rock chute spillway works, where D50 represents the nominal rock diameter, of which 50% of the rocks (by weight) are smaller. No rocks should be greater in diameter than twice the D50 and should be proportioned such that neither the breadth nor thickness of a single rock is less than one-third its length. The rock must also be well graded so that the rock can interlock with low void spaces. Poor grading of the rock will increase the potential for structural failure of the rock chute spillway works. The size specification is shown in Table 2. The rock must have a relative density greater than or equal to 2.40.

Table 2. Rock beaching size specification

Sieve size (mm)	Percentage finer (by weight)
1200	100
600	50
180	10

Placement of topsoil

Topsoil shall be placed following excavation to foundation level and subsequent placement of geotextile, granular filter material, rock beaching and adjacent excavation and filling to form the upper batters of the rock chutes. Topsoil shall be placed in accordance with this Specification and to the thicknesses and locations as shown on the Drawings. Topsoil shall be placed in loose layers of 100mm thickness, to the thickness as specified in the Drawings. The finished surface shall be left rough and free draining.

Site reinstatement

Upon the completion of works, the Contractor shall reinstate the works site and all other areas disturbed because of the works. This shall include:

- Disposal, or re-use where approved by the Catchment Solutions Representative, of all waste material resulting from the works.
- Filling or grading of disturbed areas to match adjacent undisturbed surface levels to ensure areas remain free draining.
- Top-soiling all disturbed areas not already specified in the Drawings to a minimum loose thickness of 100mm, seeding with a suitable native grass seed mix supplied by the contractor, left rough and free draining.
- Reinstating any access tracks to a condition similar or better to that prior to the commencement of works.
- Reinstating any fencing to the condition similar or better to that prior to the commencement of works.

Land profiles that are temporarily disturbed by the development works (other than those within the permanent development footprint) must be promptly restored to pre-work profiles.

Sequence of works and hold points

Staging of works shall be undertaken as follows for the in-channel grade control rock chutes:

1. Site preparation;
2. Construction of in-channel grade control rock chutes; and
3. Site reinstatement.

Hold points that require approval by the Catchment Solutions representative before proceeding.

Hold Point	Details	Inspection by
Foundation preparation	Foundation preparation in accordance with this Specification prior to the placement of geotextile, granular filter material or rock.	Catchment Solutions Representative
Placement of geotextile	Placement of geotextile in accordance with this Specification prior to the placement of granular filter material and rock	Catchment Solutions Representative
Placement of granular filter material	Placement of granular filter material in accordance with this Specification prior to the placement of rock	Catchment Solutions Representative

Table 3: Rock chute structure design summary

Characteristic	Units	Rock Chute 1	Rock Chute 2	Rock Chute 3
Critical design flow rate	m^3/s	15	15	15
Factor of safety	-	1.2	1.2	1.2
Upstream face length	m	3.75	2.5	2.5
Upstream face slope	m/m	1V:2.5H	1V:2.5H	1V:2.5H
Crest level	m AHD	18	19	20
Crest length	m	2	2	2
Chute length	m	26	26	26
Chute drop	m	1	1	1
Chute width	m	6	6	6
Pool top length	m	5	5	5
Pool depth	m	1	1	1
Pool top width	m	6	6	6
Upper batter slope where cut	m/m	1V:2.5H	1V:2.5H	1V:2.5H
Upper batter slope where fill	m/m	1V:20H	1V:20H	1V:20H
Apron level	m AHD	17	18	19
Apron length	m	5	5	5
Abutment protection vertical height	m	2	2	2
Abutment protection slope	m/m	1V:2.5H	1V:2.5H	1V:2.5H
Rock beaching size (D_{50})	mm	600	600	600
Chute rock thickness ($2xD_{50}$)	m	1.2	1.2	1.2
Granular filter material size (D_{50})	mm	25	25	25
Granular filter material thickness (D_{50})	mm	100	100	100

Table 4: Rock chute structure schedule of quantities

Item	Description	Units	Quantity
	Mobilisation/Demobilisation		
1.1	Site Mobilisation	Item	1
1.2	Site Demobilisation	Item	1
1.3	Additional: please stipulate	Item	

Item	Description	Units	Quantity
	In-channel rock chute 1		
2.1	Clear and grub rock chute footprint	m^2	1,008
2.2	Excavation to foundation level and finished surface of bank batters	m^3	958
2.3	Placement of fill to foundation level and upper batters adjacent to abutments	m^3	195
2.4	Supply of geotextile (length required, 4m wide roll)	m	28
2.5	Placement of geotextile in cut off walls	m	28
2.6	Supply of granular filter rock (D_{50} = 25mm, nom. 100mm thickness)	m^3	55
2.7	Placement of granular filter rock	m^3	55
2.8	Supply of rock for rock beaching (D_{50} = 600mm)	m^3	814
2.9	Placement of rock for rock beaching	m^3	814
2.10	Spread of topsoil over upper batters (nom. 150mm thickness)	m^3	64

Item	Description	Units	Quantity
	In-channel rock chute 2		
3.1	Clear and grub rock chute footprint	m^2	727
3.2	Excavation to foundation level and finished surface of bank batters	m^3	995
3.3	Placement of fill to foundation level and upper batters adjacent to abutments	m^3	131
3.4	Supply of geotextile (length required, 4m wide roll)	m	28
3.5	Placement of geotextile in cut off walls	m	28
3.6	Supply of granular filter rock (D_{50} = 25mm, nom. 100mm thickness)	m^3	53
3.7	Placement of granular filter rock	m^3	53
3.8	Supply of rock for rock beaching (D_{50} = 600mm)	m^3	789
3.9	Placement of rock for rock beaching	m^3	789
3.10	Spread of topsoil over upper batters (nom. 150mm thickness)	m^3	25

Item	Description	Units	Quantity
	In-channel rock chute 3		
4.1	Clear and grub rock chute footprint	m^2	1,008
4.2	Excavation to foundation level and finished surface of bank batters	m^3	1,039
4.3	Placement of fill to foundation level and upper batters adjacent to abutments	m^3	112
4.4	Supply of geotextile (length required, 4m wide roll)	m	28
4.5	Placement of geotextile in cut off walls	m	28
4.6	Supply of granular filter rock (D_{50} = 25mm, nom. 100mm thickness)	m^3	53
4.7	Placement of granular filter rock	m^3	53
4.8	Supply of rock for rock beaching (D_{50} = 600mm)	m^3	789
4.9	Placement of rock for rock beaching	m^3	789
4.10	Spread of topsoil over upper batters (nom. 150mm thickness)	m^3	1,008

Disposal of excess excavated material

Item	Description	Unit	Quantity
5.1	Clear and grub fill footprint	m^2	1,704
5.2	Topsoil strip (nom. 300mm) and cart to stockpile	m^3	511
5.3	Carting of excess fill and formation of landform, location to be determined on site	m^3	2,556
5.4	Spread of topsoil over fill landform (nom. 300mm)	m^3	511

BANNOCKBURN STATION

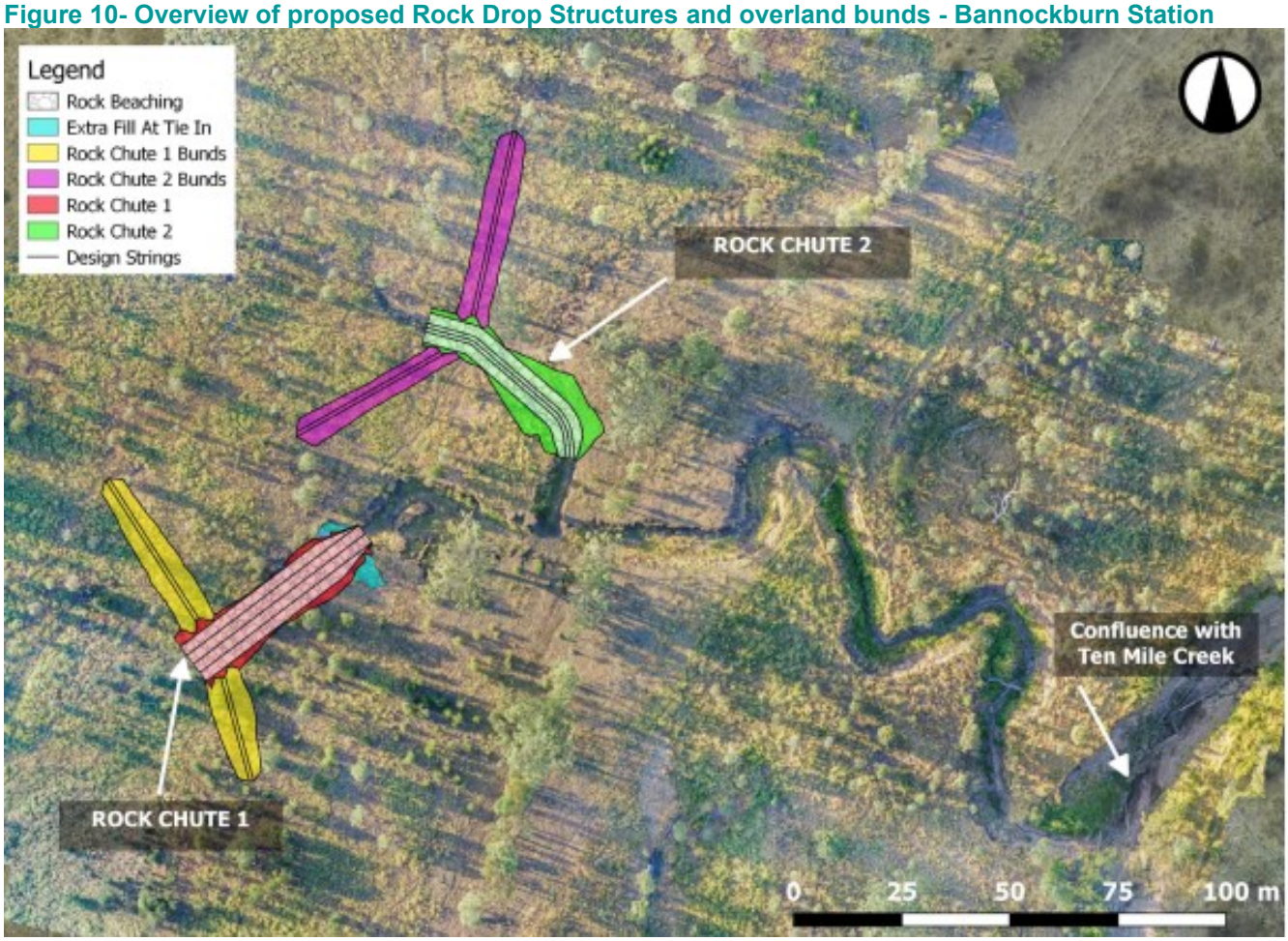
Design

Two rock chute drop structures, overland bund flows and three upgradient timber raked check dams are proposed to be constructed at the head of the lead erosion gullies at Bannockburn Station. The gully erosion consisted of a primary gully (Gully 1) with a smaller, secondary gully (Gully 2) confluencing with Gully 1.

Gully 1 is ~250m in length, with a head cut that is ~1m wide and 1.4m deep. The gully bed rapidly widens to ~2m immediately downstream of the head cut and several lateral inflows enter the gully channel from the south, which has caused the bed width of the gully to widen to 4m approximately 10m downstream of the head cut and widening further to ~6m upstream of the confluence of Gully 2. The gully channel widens to ~8m immediately downstream of the confluence with Gully 2. Up to this point the gully has an average depth of 2m, however it begins to deepen as the gully approaches the boundary fence to be ~3-4m deep. As the gully approaches the confluence with Ten Mile Creek, it reaches a depth of ~8m, with a base width of ~3- 4m. Throughout most of the gully channel, the banks are vertical to near vertical, with bank slopes flattening out to ~1V:1H at the downstream extents of the gully near the confluence with Ten Mile Creek.

Gully 2 is ~40m in length and confluences with Gully 1 ~45m downstream of the primary head cut on Gully 1. The head cut on gully 2 is ~1.3m wide and 1.6m deep. The gully channel expands to a bed width of 3.5m at the confluence with Gully 1 and the banks are vertical throughout with an average height of 2m. Rock chutes have been designed to the 5% AEP design flood event to remediate the head cuts on Gully 1 and Gully 2. A set of overland flow bunds has also been designed for each rock chute to direct flows to the crest of each rock chute to aid in preventing.

Figure 10- Overview of proposed Rock Drop Structures and overland bunds - Bannockburn Station



Drawings

The Drawings referred to in this Specification are those endorsed by the Designer (Neilly Group Engineering). The Drawings must not be varied without the written approval of the Designer. The Drawings are listed in Table 5.

Table 5. Rock Chute drop structure Drawings

Drawing Number	Revision	Drawing Title
20023-101	C1	Overall plan view
20023-102	C1	Rock chute 1 plan view, longitudinal section & setout
20023-103	C1	Rock chute 1 typical details
20023-104	C1	Rock chute 2 plan view, longitudinal section & setout
20023-105	C1	Rock chute 2 typical details

Site preparation

Access Track

The contractor shall be responsible for upgrading and maintaining any existing tracks and cutting any new ones required to access the construction project sites within Mt. Fairview and Bannockburn Stations. The access tracks are to be maintained to ensure it remains trafficable should minor rain events (<10mm) occur during construction. It is expected that approximately 5-6km (total) of new track, between both properties will need to be cut, with approximately 1km of that needed to be gravel lined. Access costs are to be incorporated into the schedule of quantities as a separate item.

Any temporary crossing of Ten Mile Creek must include a simple, rock lined bed level crossings to ensure it remains trafficable should minor rain events occur during construction.

Set-out

The Contractor is responsible for setting out alignments and levels from the Drawings and shall establish sufficient set-out pegs to ensure smooth changes in both vertical and horizontal alignment. Bench marks, survey pegs, level pegs or supplementary reference marks must not be adjusted or moved without written approval of the Catchment Solutions Representative. The contractor must transfer any pegs affected by the earthworks to side positions clear of operations and must note the extent of the movement in distance and level.

Clearing and grubbing

Clearing must be carried out in advance of any earthwork operations and is to include the removal of all foreign material and vegetation, except trees and plants required to be preserved as identified by the Catchment Solutions Representative, from within the boundaries of areas affected by earthworks or other areas to be cleared as designated on the Drawings.

All stumps and roots must be grubbed to a depth of at least 150mm below the finished surface level. Grub holes are to be backfilled and well compacted with approved material. All foreign material and vegetation cleared except topsoil must be removed from the site and is to be deposited at the appropriate disposal site.

Stripping and stockpiling of topsoil

All topsoil is to be stripped from areas to be excavated or filled and from other areas as shown on the Drawings. Topsoil is to be stored in approved stockpiles for use in re-instatement of the work by the Contractor. Stripping topsoil shall consist of the removal of topsoil to a depth of 100mm below ground level.

Backfill

Holes or cavities that are found within the site shall be backfilled with materials similar to the adjacent ground, and such fill shall be compacted to a dry density similar to that of the surrounding material.

Construction of rock chute drop structure

Excavation to foundation level

No excavation shall be commenced until the Contractor has undertaken a Dial Before You Dig (DBYD) search and obtained current underground location plans which provide an indication of the presence, location and depth of underground plant in the area of the works.

Excavation shall be carried out to the depths and dimensions shown on the Drawings, or to such greater depths and dimensions as will ensure sound, permanent foundations. All excavation carried out shall be approved by the Catchment Solutions Representative before any materials are placed on the excavated surfaces (**hold point**).

Excavations shall be conducted by machine as necessary to produce profiles to the accuracy required by this Specification and the Drawings. In carrying out excavation work, all reasonable precautions against mishap or accident, whether arising from insufficient strength of supports, bad workmanship, breakage of machinery or plant, inefficient caulking or packing of open joints or spaces, flood, or any other cause whatsoever shall be taken.

Excavated material

All materials cleared and excavated shall be removed from site and recycled appropriately or disposed of legally. If an appropriate area exists on the site, suitable material may be stockpiled and used for backfilling, provided that excess stockpiled material is disposed of when all backfilling is completed. Special care is to be taken to ensure that the proposed stockpile does not impact on any existing trees or structures.

Explosives

Explosives are not permitted.

Unsuitable material

Unsuitable material such as silt, mud, roots, organic matter, rubbish, areas of very soft clay or high moisture content and any other deleterious substances shall be disposed and replaced with select material.

The Contractor shall rework or replace any material that has become unsuitable because of inappropriate construction activities. Inappropriate construction activities include poor surface drainage, restricted or inoperative subsurface drains, contamination, excessive sized plant where the imposed local load exceeds the material strength, poorly maintained plant allowing leakage of oils and water onto the formation and leaving the surface open to wet weather allowing moisture ingress.

Placement of geotextile

Bidim A44 or equivalent geotextile shall be placed within the perimeter of the apron and crest cut-off walls of the rock chute drop structure as shown on the Drawings. Where a single width of geotextile is insufficient to provide full coverage, a minimum overlap of 500mm must be maintained where multiple widths of geotextile are required. The geotextile shall be placed to form a surface that is smooth, free of creases and depressions and shall be pinned into place. Geotextile shall be placed and then approved by the Catchment Solutions Representative prior to the placement of granular filter material or rock beaching (**hold point**).

Placement of granular filter material

Granular filter material shall be placed following excavation to foundation level and subsequent placement of geotextile in the crest and apron cut-off walls. The granular filter material shall be placed and compacted by machine bucket in accordance with this Specification and to the thicknesses and locations as shown on the Drawings. Granular filter material shall be placed and then approved by the Catchment Solutions Representative prior to the placement of rock beaching (**hold point**).

Granular filter material specification

Granular filter material shall be hard and durable gravel and shall be sized in accordance with Table 6. The granular filter material shall be approved by the Catchment Solutions Representative prior to placement.

Table 6. Granular filter material size specification

Sieve size (mm)	Percentage finer (by weight)
50	100
25	50
7.5	10

Placement of rock beaching

Rock beaching shall be placed following excavation to foundation level and subsequent placement of geotextile and granular filter material. The rock beaching shall be placed in accordance with this Specification and to the thicknesses and locations as shown on the Drawings.

The Contractor shall use appropriate methods for handling and placement of rock that will:

- Avoid tearing of geotextile material.
- Avoid segregation of the rock size fractions

The rock shall be placed to form an interlocking blanket of rock with low void spaces. Voids in the blanket of rock shall be reworked as required by the Catchment Solutions Representative. Rock beaching shall be placed and approved by the Catchment Solutions Representative prior to the placement of topsoil on the upper batters of the rock chute drop structure.

Rock beaching material specification

The rock used to line the rock chute drop structure must be durable, resistant to weathering and angular in shape. The D_{50} is used to describe the nominal rock size required for the rock chute drop structure works, where D_{50} represents the nominal rock diameter, of which 50% of the rocks (by weight) are smaller. No rocks should be greater in diameter than twice the D_{50} and should be proportioned such that neither the breadth nor thickness of a single rock is less than one-third its length. The rock must also be well graded so that the rock can interlock with low void spaces. Poor grading of the rock will increase the potential for structural failure of the rock chute drop structure works. The size specification is shown in Table 7. The rock must have a relative density greater than or equal to 2.40.

Table 7. Rock beaching size specification

Sieve size (mm)	Percentage finer (by weight)
1000	100
500	50
150	10

Construction of overland flow bunds

The overland flow bunds shall be formed to capture and direct overland flow to the crest of the rock chute drop structures. Embankments shall be formed from suitable material excavated from the adjacent rock chute drop structure footprints, with dimensions as shown on the Drawings. The fill material shall consist predominantly of clay where possible. The fill material shall be placed in near horizontal layers not exceeding 300mm in loose thickness and track rolled to achieve compaction prior to placement of subsequent layers.

Placement of topsoil

Topsoil shall be placed following excavation to foundation level and subsequent placement of geotextile, granular filter material and rock beaching. Topsoil shall be placed in accordance with this Specification and to the thicknesses and locations as shown on the Drawings.

Topsoil shall be placed in loose layers of 150mm thickness, to the thickness as specified in the Drawings. The finished surface shall be ripped to a minimum depth of 300mm along contour and shall be left rough and free draining.

Site reinstatement

Upon the completion of works, the Contractor shall reinstate the works site and all other areas disturbed because of the works. This shall include:

- Disposal, or re-use where approved by the Designer, of all waste material resulting from the works.
- Filling or grading of disturbed areas to match adjacent undisturbed surface levels to ensure areas remain free draining.
- Top-soiling all disturbed areas not already specified in the Drawings to a minimum loose thickness of 150mm, ripping to a minimum depth of 300mm along contour, left rough and free draining.
- Reinstating any access tracks to a condition similar to that prior to the commencement of works.
- Reinstating any fencing to a condition similar to that prior to the commencement of works.

Land profiles that are temporarily disturbed by the development works (other than those within the permanent development footprint) must be promptly restored to pre-work profiles.

Sequence of works and hold points

Staging of works shall be undertaken as follows:

1. Site preparation;
2. Construction of rock chute drop structures and overland flow bunds; and
3. Top-soiling of all designated and disturbed areas.

Hold Point	Details	Inspection by
Foundation preparation	Foundation preparation in accordance with this Specification prior to the placement of geotextile, granular filter material or rock.	Catchment Solutions Representative
Placement of geotextile	Placement of geotextile in accordance with this Specification prior to the placement of granular filter material and rock	Catchment Solutions Representative
Placement of granular filter material	Placement of granular filter material in accordance with this Specification prior to the placement of rock	Catchment Solutions Representative

Table 8: Rock chute drop structure design summary

Characteristic	Units	Rock Chute 1	Rock Chute 2
Design flow rate	m^3/s	18.9	2.7
Chute length	m	32	21
Chute drop	m	1.5	2.1
Chute width	m	5	2
Crest length	m	3	13
Apron length	m	15	19
Apron rise	m	0	0.7
Vertical height of abutment protection	m	1	1
Rock beaching size (D_{50})	mm	500	500

Table 9: Rock chute drop structure schedule of quantities

Material/Equipment	Units	Quantity
Gully 1 Rock Chute Drop Structure		
Clear and grub rock chute footprint	m^2	584
Topsoil strip (nom. 150mm thickness) and cart to stockpile	m^3	88
Excavation to foundation level	m^3	792
Supply of geotextile (length required, 4m wide roll)	m	44
Placement of geotextile	m	44
Supply of granular filter rock (D_{50} = 25mm)	m^3	50
Placement of granular filter rock	m^3	50
Supply of rock for rock beaching (D_{50} = 500mm)	m^3	474
Placement of rock for rock beaching	m^3	474
Placement of topsoil (nom. 150mm thickness)	m^3	17

Gully 1 Overland flow bunds		
Clear and grub bund footprint	m^2	502
Topsoil strip (nom. 150mm thickness) and cart to stockpile	m^3	75
Fill to design level	m^3	406
Placement of topsoil (nom. 150mm thickness)	m^3	79

Gully 1 Fill At Tie In Of Apron		
Clear and grub fill footprint	m^2	48
Topsoil strip (nom. 150mm thickness) and cart to stockpile	m^3	7
Fill to design level	m^3	84
Placement of topsoil (nom. 150mm thickness)	m^3	7

Gully 2 Rock Chute Drop Structure		
Clear and grub rock chute footprint	m^2	549
Topsoil strip (nom. 150mm thickness) and cart to stockpile	m^3	82
Excavation to foundation level	m^3	575
Supply of geotextile (length required, 4m wide roll)	m	34
Placement of geotextile	m	34
Supply of granular filter rock (D_{50} =25mm)	m^3	35
Placement of granular filter rock	m^3	35
Supply of rock for rock beaching (D_{50} = 500mm)	m^3	328
Placement of rock for rock beaching	m^3	328
Placement of topsoil (nom.150mm thickness)	m^3	36

Gully 2 Overland flow bunds		
Clear and grub bund footprint	m^2	548
Topsoil strip (nom. 150mm thickness) and cart to stockpile	m^3	82
Fill to design level	m^3	297
Placement of topsoil (nom. 150mm thickness)	m^3	86

Construction of timber raked check dams

Excavation and vehicular access

No excavation shall be undertaken for the construction of stick rake check dams. The works are to take place entirely above ground.

Placement of stick rake check dams

Each stick rake check dam shall be positioned as shown on the Drawings, perpendicular to the overland flow direction with the intention that the stick rake check dam provide a consistent obstruction to flow across the width of the overland flow path.

Materials

Stick rake check dams shall be constructed from sticks, logs and other timber debris obtained by using a dozer to stick rake adjacent areas to obtain a suitable volume of material. A nominal height of 0.5m above existing ground surface shall be achieved, provided there is sufficient material available.

Construction Process

The following steps are suggested for the process of constructing a stick rake check dam:

- Set out the alignment of the stick rake check dam
- Utilise a dozer to undertake stick raking of adjacent paddocks to obtain sufficient timber material to construct the stick rake check dam.
- Stockpile the timber material at suitable intervals along the alignment of the stick rake check dam to minimise double handling.
- Dozer push the timber material into a loose windrow with a nominal height of 0.5m, should sufficient material be obtained during the stick raking process. If insufficient timber material is present, the nominal height may be reduced by direction of the Designer. It is important to ensure that no breaks exist in the stick rake check dam, as any breaks will concentrate flow and encourage erosion.

Figure 11- Overview of proposed timber raked check dam - Bannockburn Station (approximate locations)

Site Access

The contractor shall be responsible for upgrading and maintaining any existing tracks and cutting any new ones required to access the construction project sites within Mt. Fairview and Bannockburn Stations. The access tracks are to be maintained to ensure it remains trafficable should minor rain events (<10mm) occur during construction. It is expected that approximately 5-6km (total) of new and upgraded track, between both properties will need to be cut, with approximately 1km of that needed to be gravel lined. Access costs are to be incorporated into the schedule of quantities as a separate item.

Any temporary crossing of Ten Mile Creek must include a simple, rock lined bed level crossings to ensure it remains trafficable should minor rain events occur during construction.

Any fencing required to be cut, must be reinstated to a condition similar to that prior to the commencement of works.

Figure 11: Proposed track access (demarcated in brownish orange colour)

Project Timing

Works shall be undertaken during the dry season to reduce the risk of erosion on freshly exposed surfaces.

The Ten Mile Creek Rehabilitation Project is planned to commence construction by October 2020, following receiving relevant State Government approvals.

Project Funding

The Gully and Stream Bank Erosion Control Program 2016-2022 is funded by the Australian Government and delivered through the Reef Trust Program.

Details

Tenders are invited by the Principal in relation to this Invitation to Tender and are to be submitted on the basis that they are subject to, and conform to, the following sections.

Section 2. Conditions of Tender;
Section 3. Tender Evaluation Process;
Section 4. Principal's Requirements;
Section 5. Conditions of Contract;

Unless the context otherwise requires or the contrary intention appears, terms defined in the Conditions of Tender have the same meaning when used in the Invitation to Tender.

Invitation to Tender number

FEER3115 – 10 Mile Gully and Stream Bank Erosion Control Program

For the provision of

The Principal wishes to appoint a suitably experienced, qualified and equipped Contractor to:

Undertake erosion remediation works at the Mt. Fairview Property, (Lots 85 & 86 on RP900583), Mount Fairview Road, Morinish QLD 4702 (near Rockhampton) and

Mt. Bannockburn (Lot 85 on RP900583), Ridgelands Road, Morinish QLD 4702 (near Rockhampton)

Principal

Catchment Solutions Pty Ltd
ABN: 89 158 982 186
85 Gordon Street Mackay Qld 4740

Document Release

Monday, 27 July 2020.

Tender site inspection

An Offer site inspection will be held on

Wednesday, 12 August 2020 at 2.00 pm Queensland time.

Location: Mount. Fairview Junction, Corner of Mount Fairview Road and Ridgelands Road, Morinish QLD 4702

The site inspection for this Invitation to Tender is **mandatory for all Tenderers** in order to gain sufficient information to carry out the required works.

NOTE: If you do not attend the site inspection you cannot submit a Tender.

Please email pjeston@catchmentsolutions.com.au to register

Please arrive at the nominated location at least 15 minutes prior to the scheduled commencement time for the Tender briefing/site inspection to allow sufficient time to complete pre-briefing registration activities.

The Tender site inspection is limited to a maximum of two attendees from each company.

The purpose of the Tender site inspection is to provide Tenderers with the opportunity to view the site and the ability to seek clarifications via questions on notice.

The Tender site inspection assumes that all attendees are familiar with the Invitation to Tender documents.

The Tender site inspection will comprise a presentation by the Principal in respect to the Supply and will provide instruction on the completion of the Invitation to Tender documents.

Clarifications will be answered in writing as an Addendum. Any information provided at, or following the Tender briefing/site inspection, is provided subject to the Conditions of Tender.

Minimum personal protective equipment required by the Tenderer for the Tender briefing/site inspection is:

Long sleeve shirt - high visibility (preferred), wide brimmed hat, sun protection (sun block), water and safety boots.

Cut-off date for clarifications

The Principal will not respond to any request for information or clarification received later than one week prior to the Tender Closing Date (5pm 31st August 2020).

Closing Date

Tenders must be lodged electronically by 5:00pm Monday, 31 August 2020 Queensland time.

Contact Officer

All requests for information for the Invitation Process must only be directed to the Principal's Contact Officer:

Name: Philip Jeston

Position Title: Project Coordinator

Email: pjeston@catchmentsolutions.com.au

Confidential Information

The information contained within the Invitation to Tender is deemed confidential:

Not Applicable

Tender validity period

Tenders must remain valid after the Closing Date for a minimum period of 120 days.

Nature of Price and Approved Expenses

The Invitation to Tender is for a Lump sum Contract

Lodgement of Tender

Tenders submitted in response to the Invitation to Tender will only be accepted by the Principal via the email (m.dowton@catchmentsolutions.com.au),(pjeston@catchmentsolutions.com.au) or in hard copy via mail (PO Box 815 Mackay Qld 4740).

Create one folder clearly labelled with the Tenderer's name.
Any additional documents should be saved in ONE separate file, (e.g. insurance certificates of currency, Certificate of Registration of a Company etc.) labelled as
Tenderers Name - Ref Docs.pdf
Maximum file size is **15MB** with the total submission not exceeding **100MB** and
Ensure prior to submitting, a Tender that it is free from viruses and has been checked with an up-to-date virus checking program.
Failure to comply with this requirement will result in the Tenderer's Tender being deemed a Non-Conforming Tender.

Deviations

Deviations will be considered only with the submission of a Conforming Offer.

Tender for parts

Submit a Tender in its entirety as separable portions / parts are not applicable in relation to this Invitation to Tender.

Tender Evaluation Process

Formation and content of legal relationship

In consideration of the Tenderer agreeing to be bound by the terms and conditions of this Invitation to Tender, the Principal agrees to permit the Tenderer to participate in the Invitation Process, subject to and in accordance with the terms of the Invitation to Tender.

The Tenderer agrees that the Principal's obligations in Clause 00 constitute valuable consideration for the Tenderer's agreement to be bound by the Invitation to Tender.

The Principal's obligations to the Tenderer in relation to this Invitation to Tender or the Invitation Process:

- are limited to those expressly set out in the Invitation to Tender; and
- exclude (to the maximum extent permitted by law) any obligations which may otherwise be implied or imposed on the Principal under contract, under law, in equity, by statute or otherwise.

The Principal may amend the Invitation to Tender or any aspect of the Invitation to Tender.

This Invitation to Tender applies to all acts and omissions by or on behalf of the Tenderer in relation to the Invitation Process before, on and after the date that it submits its Tender.

Except for those provisions of this Invitation to Tender that are stated to survive termination, or by implication survive termination, a Tenderer will be bound by this Invitation to Tender until the earlier of the date that:

- the Principal terminates the Invitation Process, except that, subject to the next two paragraphs, this Invitation to Tender will continue to apply to any other process that the Principal undertakes to engage a party to carry out some or all of the Supply, unless the Principal expressly agrees otherwise;
- the Principal notifies the Tenderer that the Principal has ceased considering the Tenderer's Tender or all of the Tenderer's Tenders if more than one Tender was submitted; and
- the Principal notifies the Tenderer, or publishes any notice to the public, to that effect.

The Tenderer acknowledges that:

- this Invitation to Tender does not constitute a Tender by the Principal to enter into the Contract or any agreement;
    - no contract exists or will come into force between the Principal and the Tenderer unless and until the Contract is formed in accordance with the Conditions of Tender; and
    - neither the Principal nor the Tenderer intend to create any legal relationship; and
- the Invitation to Tender sets out the entire agreement between the Principal and the Tenderer in respect of the Invitation Process.

Evaluation Process

The Evaluation Process will, subject to the Principal's rights under the Invitation to Tender, involve an assessment of each Tender received using the same evaluation methodology and the Evaluation Criteria.

The Principal reserves the right to shortlist Tenderers during the Evaluation Process. The Evaluation Process may at the sole and unfettered discretion of the Principal involve, at any stage during the Evaluation Process, a due diligence assessment of risk, including but not limited to legal entity, reference, past performance, financial, confidentiality, financial viability, Deviations and corporate checks, and discussions with Tenderers, demonstrations and site visits.

Tenders will be evaluated by an evaluation team consisting of two or more officers of the Principal and the Principal's Design Engineer (Consultant).

Evaluation methodology

Gate One: Mandatory

The initial gate comprising of mandatory criteria will allow the evaluation team to determine Tenders that do not conform to the mandatory requirements.

a) Non-conforming Tenders will not be evaluated further as part of the evaluation process for subsequent gates two and three

b) Incomplete Tenders may be, at the sole and unfettered discretion of the Principal, deemed non-conforming

c) Complete Tenders that meet the mandatory criteria will be advanced to Gate Two

Gate Two: Scoring Capability Criteria

Tenders are to be shortlisted based on a combination of capability and local business and industry factors to move to Gate Three as follows:

Local Content	10%
Understanding of Scope	20%
Capability criteria	30%
Price	40%
Total	100%

Local business and industry factors

Local Content - The Principal supports the development of local competitive business and industry by including a 10 per cent weighting in the scoring criteria apportioned on a sliding scale as follows:

Score	Description
10	Developing or established Rockhampton or Livingstone business
8	Branch office in Rockhampton or Livingstone areas that the directly employing a minimum of ten full time employees in Central Queensland area
7	Branch office in Rockhampton or Livingstone areas that the directly employing less than ten full time employees in Central Queensland area
5	Central Queensland business (includes Gladstone, Mackay and Emerald areas)
4	Queensland business
1	Interstate business
0	Overseas business

Evaluation Criteria

Mandatory Criteria

Evaluation Criteria	Description	Response required
Work Health and Safety (WHS)	Documented WHS Management System	Work Health and Safety
Environmental Management	Documented Environmental Management System	Environment
Quality Assurance (QA)	Documented QA Management System	Quality Assurance
Licences and Qualifications	Installation accreditation, RPEQ	Licences
Tender Site Inspection	Attendance at Tender Site Inspection	Tender Site Inspection registration

Scoring Capability Criteria

Evaluation Criteria	Description	Response required
Local Content		Local Content
Work Health and Safety	Degree of Compliance of System. Provide Safe Work Method Statements and WHS Management Plans for similar projects with high risk construction activities.	Work Health and Safety
Capability	Demonstrated capability of key Personnel and provide all plant and equipment required to complete the works. Provide current contractual commitments.	Capability of Key Personnel, Proposed Subcontractors. Plant and Equipment; Current Contractual commitments
Methodology	Give sufficient details to demonstrate a clear understanding of the complexities of the works and all the operations necessary to complete the works in accordance with the specification.	Methodology
Preliminary Program	Demonstrate a clear understanding of the works and show capability that the works will be completed within the required timeframes.	Preliminary Program
Technical Products	Demonstrate all technical information are in compliance with specification.	Technical Information
Experience	Detail recent relevant experience in delivering works for similar size and complexity.	Experience and Referees

Non-Scoring Due Diligence Criteria

Due Diligence Criteria	Description	Response to be completed and submitted
Insurances	An assessment of risk based on stipulated insurances	Risk and Insurances
Licences	An assessment of risk based on licence information submitted	Licences
References	An assessment of risk based on reference checks may be used to substantiate claims made	Experience and References
Deviations	An assessment of risk based on the number and types of deviations proposed	Deviations
Conflicts of Interest and fair dealing	An assessment of risk based on perceived or actual Conflict of Interests, confidentiality and fair dealing	Conflict of Interest Declaration and Confidentiality Agreement Declaration of Commission and Incentives, Moral Rights and Collusion

Value for Money Criteria

Evaluation Criteria	Description	Response required
Price	Value of Money – price compared to design budget estimate	Price Submission

Principal's Requirements

General

The Principal's Requirements have been included to allow Tenderers to respond to the Invitation to Tender.

It is the responsibility of the Tenderer to familiarise themselves with the Principal's Requirements.

Conditions of Contract

Conditions of Contract

The terms and conditions in the Contract Header and Conditions of Contract, will govern any Contract established as a result of the Invitation Process, unless otherwise specified in the Conditions of Tender.

The Principal reserves the right to issue an amended Contract Header and Conditions of Contract prior to entering into a Contract with the Successful Tenderer, as and when required.

It is the responsibility of the Tenderer to familiarise themselves with the current Contract Header and Conditions of Contract.