EXHIBIT
B 1/13

Site 1: Small Creek (MP 19.25)

Site 1: Overflow Area

Site 1: Sediment Accumulation

Site Description

- Approximate CDS Milepoint 9.2-9.3
- Sediment loads caused rerouting of stream away from existing bridge
- Rerouted water is overwhelming adjacent lowland and pond against highway embankment
- Overflow outlet for water is small diameter pipe, not adequate for current flow
- Outlet area assumed to be fresh water, not sea water

Proposed Work

- Immediate solution to rebuild stream bank to return flow under bridge (M&O doing this in 2014, but this project may need additional work)
- Design of overflow culvert may require berm to collect/guide water into culvert on inlet side

Survey Tasks

- Small Creek; a minimum of 100’ below bridge and 200’ above bridge
- Small Creek; a minimum of 200’ upstream
- This is a cataloged anadromous stream. The requested survey data assume that the overflow channel and culvert must meet fish passage criteria.
- Provide stream cross sections at about 50’ intervals from where the stream diverges from Small Creek to the inlet of the downstream Chiniak Hwy cross culvert. The requested points at each cross section are as follows. Please vary the cross section location as necessary to define an average stream condition near this location.
    i. Top left and right bank.
    ii. Toe of slope at the left and right bank.
    iii. Thalweg
- Chiniak Hwy cross culvert inlet and outlet inverts.
- Culvert diameters.
- Chiniak Hwy centerline at the cross culvert.
- Provide stream cross sections at about 50’ intervals from the outlet end of the proposed Chiniak Hwy cross culvert downstream to where the stream is affected by the tidal action. The requested points at each cross section are the same as upstream of this culvert.
- Dates the stream survey data were collected.

Environmental Related Tasks

- Ordinary high water/wetland delineation

EXHIBIT
B 2/13

Site 2&3: MP 25.5(Erosion)-25.75(Culvert at Sag)

Site 2: Erosion at MP 25.5

Site 2: Ditch on N side of road

Site Description

- Approximate CDS Milepoint 15.6-15.8 & 15.8-15.9
- Bluff erosion has undermined existing guardrail
- Threatening to undermine paved surface
- Jersey barriers placed in front of undermined guardrail
- Roofing tar used at base of barriers to prevent more erosion
- Existing ditches on North side of road have minimal depth
- At the sag curve there is erosion at the inlet and the outlet affecting the roadway embankment
- There is a large plunge pool at the outlet

Proposed Work

- To repair bluff, riprap and fill section provided by materials
- Consider shifting roadway ½ lane width (research ROW and impacts to do so)

Survey Tasks

- Survey of bluff needed for quantity generation of riprap (reflectorless survey okay). Approximately 100x100’ area.
- Culvert at sag inlet; a minimum of 100x50’
- Culvert at sag outlet; a minimum of 100x75’
    - Need depth of pool at outlet for quantities
- Beach profiles extending down through the littoral zone characterized by gravels (steeper upper beach roughly 10H:1V), down to mudflats.
- Cross sections at a minimum of 25’ intervals at bluff erosion.

Environmental Related Tasks

- Bluff erosion
    - Mean high water
    - High tide
    - Higher high tide
- Culvert
    - Ordinary high water
- Bottom of plunge pool for volumes

EXHIBIT
B 3/13

Site 4A: Old's River

Site 4A: Olds River Bend

Site Description

- Approximate CDS Milepoint 19.5-19.6
- Bend in river occurs against roadway embankment
- Shown significant movement over past few years
- Water velocity and direction has produced deep scour hole

Proposed Work

- Fill bank with riprap and cutting in riprap on eastern bank near overhead utility pole

Survey Tasks

- We need to know where the bottom of the river is for quantity
- Survey will need boat to measure the depth; a minimum of 240x75' area
- The location at the lowest streambed elevation from the bridge to about 500' upstream of the bridge as measured along the stream centerline.
- Provide five river cross sections at the locations shown on the attached image. The cross sections are roughly perpendicular to the river banks. The requested points at each cross section are as follows.
    i. About 25' behind the left bank.
    ii. The top of both banks adjacent the river.
    iii. The toe of both banks.
    iv. Streambed on about 20' intervals and significant break points.
    v. Lowest streambed elevation
    vi. Water surface near both the left and right bank.
    vii. The road edge of pavement.
    viii. Ordinary high water on the right bank.
- Top of right bank and the adjacent road edge of pavement where the two are the closest. This is expected to be between the third and fourth cross section upstream of the bridge.
- Lowest streambed elevation between each cross section.
- Outer limits of the steel frame structure near the right bank between about the second and third cross sections upstream of the bridge.
- Dates the stream survey data were collected.

Environmental Related Tasks

- Ordinary high water

EXHIBIT
B 4/13

Site 4A: Old's River

Attached Image

EXHIBIT
B 5/13

Site 4B: Kalsin Creek

Site Description

- Approximate CDS Milepoint 19.9-20.0
- Bend in river occurs against roadway embankment

Proposed Work

- Fill bank with riprap and cutting in riprap on eastern bank

Survey Tasks

- We need to know where the bottom of the river is for quantity
- Survey will need boat to measure the depth
- Minimum of 30x75’ area downstream
- Minimum of 75x200’ area upstream
- Gather information for protection near the bridge abutments. Request clarification prior to field work.
- The location at the lowest streambed elevation from the bridge is about 500’ upstream of the bridge as measured along the stream centerline.
- Provide five river cross sections at the locations. The cross sections are roughly perpendicular to the river banks. The requested points at each cross section are as follows.
    - i. About 25’ behind the left bank.
    - ii. The top of both banks adjacent the river.
    - iii. The toe of both banks.
    - iv. Streambed on about 20’ intervals and significant break points.
    - v. Lowest streambed elevation
    - vi. Water surface near both the left and right bank.
    - vii. The road edge of pavement.
    - viii. Ordinary high water on the right bank.
- Top of right bank and the adjacent road edge of pavement where the two are the closest. This is expected to be between the third and fourth cross section upstream of the bridge.
- Lowest streambed elevation between each cross section.
- Outer limits of the steel frame structure near the right bank between about the second and third cross sections upstream of the bank.
- Dates the stream survey data were collected.

Environmental Related Tasks

- Ordinary high water

EXHIBIT
B 6/13

Site 5: 3 Culverts at MP 33

Site 5: 3 culvert inlets

Site 5: 3 culvert outlets

Site Description

- Approximate CDS Milepoint 22.9-23.1
- 3 culverts are hydraulically inadequate, less than minimum cover, do not meet fish passage criteria and 2 of 3 have failed
- Ditch on inlet side is shallow

Proposed Work

- Ditch on inlet side will require ditch linear grading
- Replace culverts with one culvert and raise road 1.5’

Survey Tasks

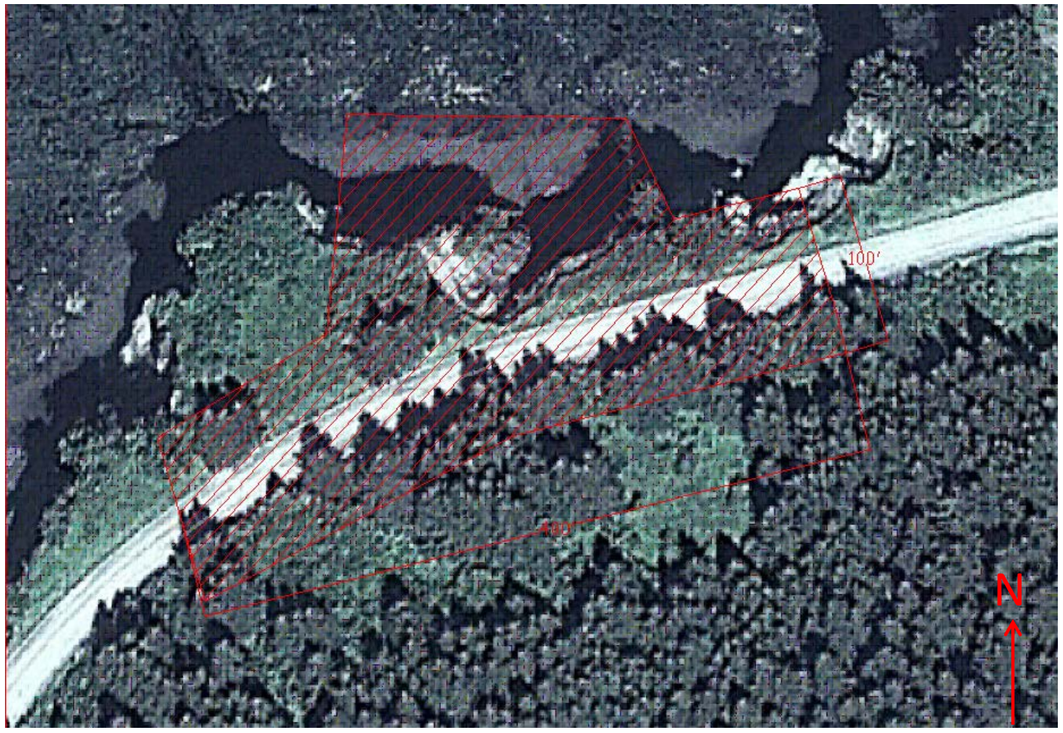
- In water work is required
- Roadway 300’ each side of site (minimum of 20’ beyond toe)
- This is a cataloged anadromous stream downstream of the road and an uncatalogued anadromous stream upstream of the road. Some of the requested data are needed to ensure the recommendations meets fish passage criteria.
- Provide stream cross sections at about 50’ intervals from the inlet of the three culverts upstream about 300’ and from the outlet of the three culverts downstream about 350’. Also, provide a cross section at the location downstream of the road where the stream turns to flow roughly perpendicular away from the road. The requested points at each cross section are as follows. Please vary the cross section location as necessary to define an average stream condition near this location.
    i. Top left and right bank.
    ii. Toe of slope at the left and right bank.
    iii. Thalweg.
- Inlet and outlet inverts for the three Chiniak Hwy cross culverts. If a survey point on the invert is not possible, provide a survey point on the culvert top.
- Diameter of each culvert.
- Chiniak Hwy centerline at the cross culverts.
- Dates the stream survey data were collected.

Environmental Related Tasks

- Ordinary high water

EXHIBIT
B 7/13

Site 6A: MP 38 Bluff Erosion



Site Description

- Approximate CDS Milepoint 28.0-28.3
- Bluff erosion
- Guardrail failing

Proposed Work

- Design to be decided.

Survey Tasks

Survey erosion area for quantity calculations

- Survey roadway about 200’ in each direction
- Reflectorless survey okay
- Beach profiles extending down through the littoral zone characterized by gravels (steeper upper beach roughly 10H:1V), down to mudflats.
- Cross sections at a minimum of 25’ intervals at bluff erosion.

Environmental Related Tasks

- Mean high water
- High tide
- Higher high tide

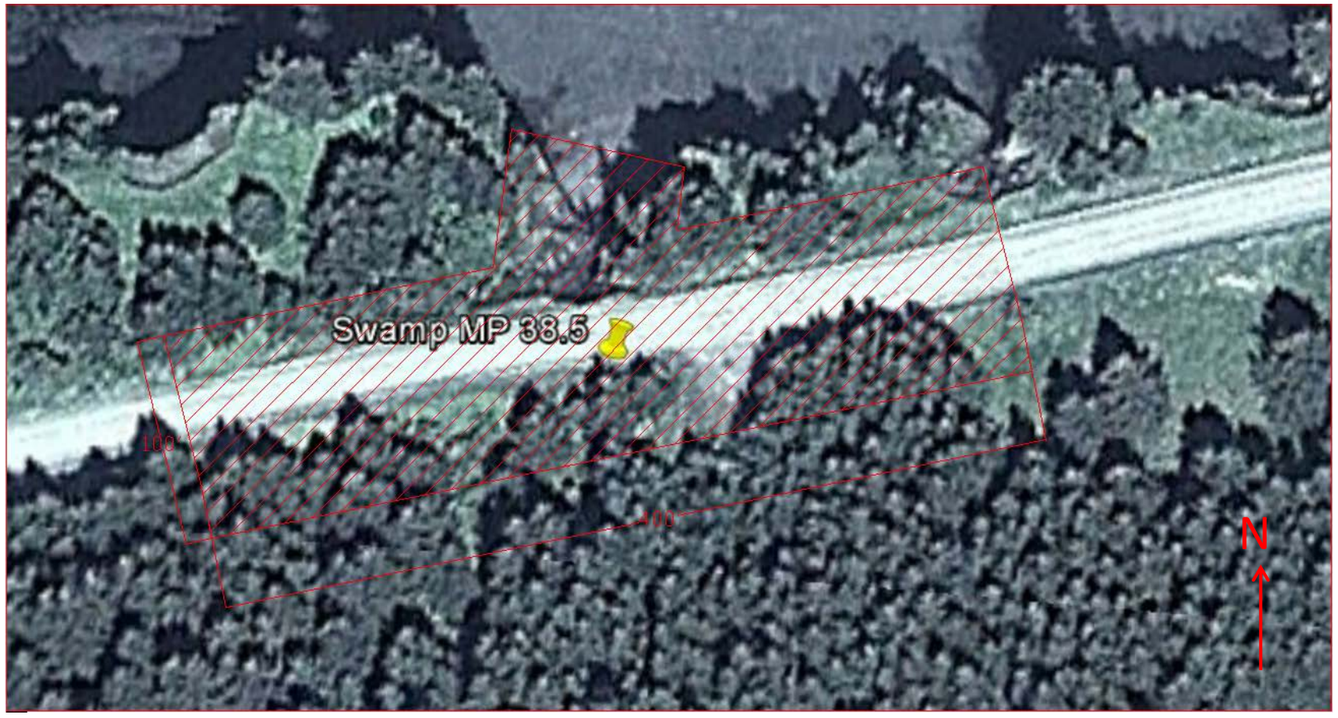
Site 6A: Guardrail Failing

Site 6A: Bluff Erosion

Site 6A: Guardrail Failing

EXHIBIT
B 8/13

Site 6B: Swamp MP 38.5



Site 6B: Erosion at MP 38.5

Site Description

- Approximate CDS Milepoint 28.3-28.5
- No pipes observed
- Evidence of erosion at the sag in vertical curve
- Erosion partly caused by ditch discharging onto bluff
- Bluff erosion is 5-10’ from guardrail

Proposed Work

- Install 2 culverts and ditch blocks to remove drainage
- Ensure improvements prohibit water flowing down existing unstable slope
- Permanent solution is difficult

Survey Tasks

- Survey erosion area for quantity calculations (about 100x100’)
- Survey roadway and ditch about 200’ in each direction on both sides of road and 75’ wide
- Reflectorless survey okay.
- Cross sections at a minimum of 25’ intervals at bluff erosion.

Environmental Related Tasks

- Mean high water
- High tide
- Higher high tide

EXHIBIT
B 9/13

Site 7: Twin Creeks (MP 40)

Site 7: Erosion at Twin Creeks (MP 40)

Site Description

- Approximate CDS Milepoint 29.9-30.0
- Erosion mostly occurring on East side of bridge, but erosion on both sides
- Appears water runoff parallels road and eroding embankment near back wall
- Bridge abutments appear fine

Proposed Work

- No recommendations

Survey Tasks

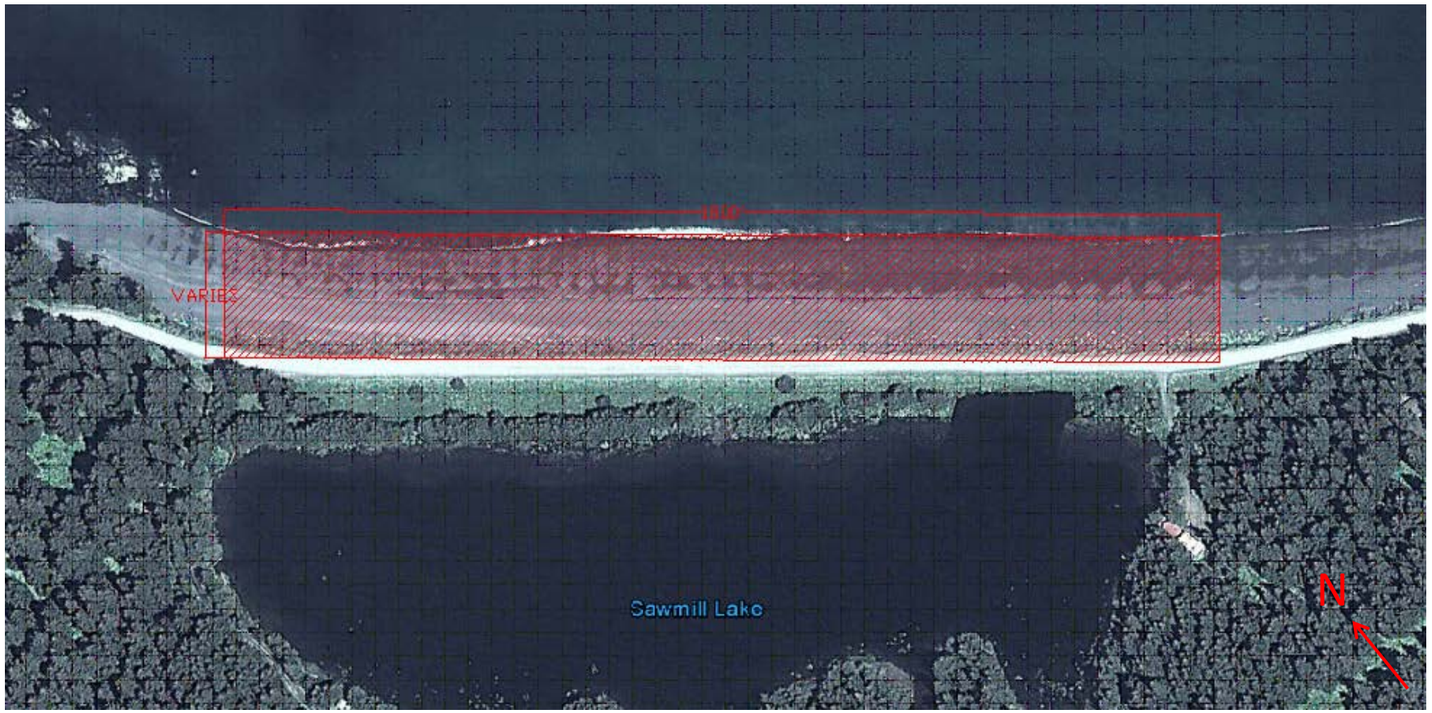
- Approximately 100’ downstream and 100’ upstream by 75’ wide.
- Gather information for protection near the bridge abutments. Request clarification prior to field work.

Environmental Related Tasks

- Ordinary high water

EXHIBIT
B 10/13

Site 8: Silver Beach/Sawmill Lake (MP 40.5)



Site 8: Erosion at Silver Beach/Sawmill Lake

Site Description

- Approximate CDS Milepoint 30.0-30.7
- Multiple spots along stretch where tidal erosion is a problem
- Overhead utilities on land side of road
- Most advanced spot is at end of guardrail section

Proposed Work

- No recommendations

Survey Tasks

- From roadway edge about 1800’ long
- Get slopes into about 20’ of the water.
- Add a time stamp on the edge of the water tie in tide.

Environmental Related Tasks

- Mean high water
- High tide
- Higher high tide

EXHIBIT
B 11/13

Site 9A: MP 41.8

Site 9A: MP 41.8

Site Description

- Approximate CDS Milepoint 31.8-31.9
- About 50’ wide at top
- Pipes protruding from the side of embankment
- Purpose and origin of pipes is unknown
    - May be from two turrets on land side near site, could not locate

Proposed Work

- Grout and abandon existing pipes to prevent additional erosion
- Fill saddle with riprap
- Ditch linear grade on road to help direct roadway water

Survey Tasks

- Reflectorless okay
- 300x120’ area
- Cross section approx. 75’ uphill from the slope failures and shown to the bottom of the slopes on the downhill side.
- Cross sections at a minimum of 25’ intervals at bluff erosion.
- Beach profiles extending down through the littoral zone characterized by gravels (steeper upper beach roughly 10H:1V), down to mudflats.
- Add a time stamp on the edge of the water tie in tide.

Environmental Related Tasks

- Mean high water
- High tide
- Higher high tide

EXHIBIT
B 12/13

Site 9B: MP 41.9

Site 9B: MP 41.9 Erosion

Site Description

- Approximate CDS Milepoint 31.9-32.0
- Near sign and bench at the back end of guardrail

Proposed Work

- Fill between rock knobs
- Bottom is tidally influenced

Survey Tasks

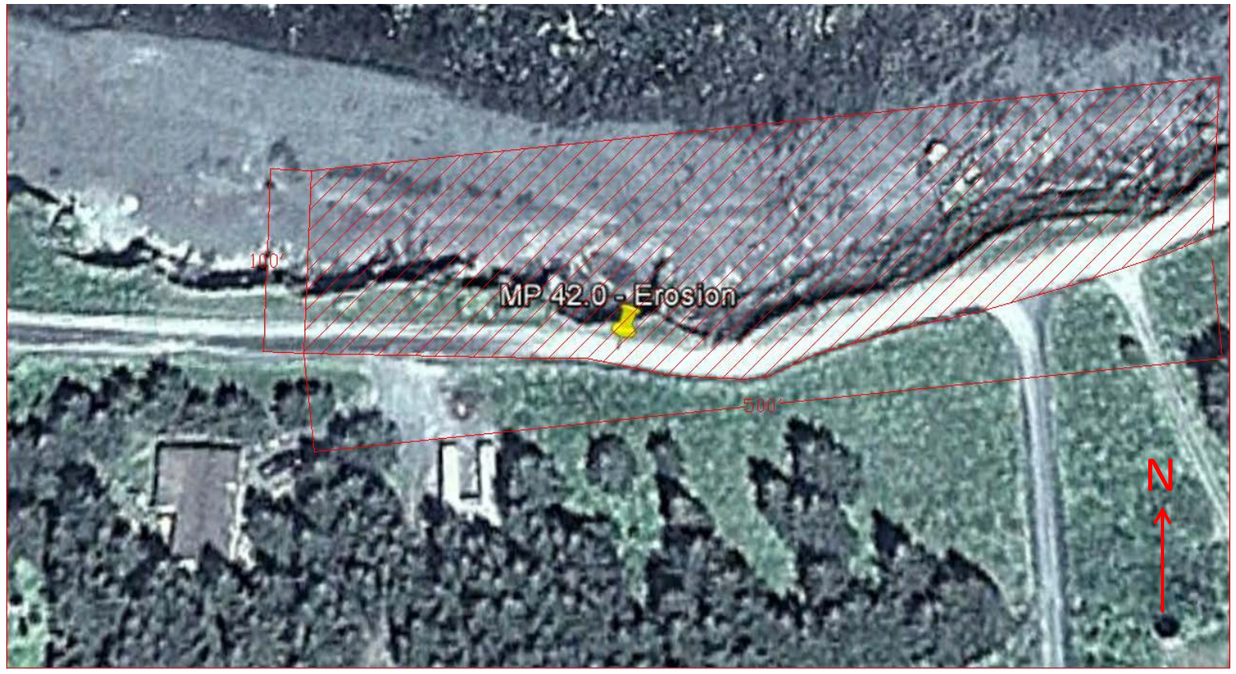
- May need to be done reflectorless
- 150x100’ area
- Cross section approx. 75’ uphill form the slope failures and down to the bottom of the slopes on the downhill side.
- Slopes into about 20’ of water
- Cross sections at a minimum of 25’ intervals at bluff erosion.
- Beach profiles extending down through the littoral zone characterized by gravels (steeper upper beach roughly 10H:1V), down to mudflats.
- Add a time stamp on the edge of the water tie in tide

Environmental Related Tasks

- Mean high water
- High tide
- Higher high tide

EXHIBIT
B 13/13

Site 9C: MP 42



Site 9C: MP 42 Erosion

Site Description

- Approximate CDS Milepoint 32.0-32.1
- Warning cones for erosion sites on roadway
- Road has been relocated once to current location
- Underground utilities are on land side
- Toe is not tidally influenced here

Proposed Work

- Fill in area with riprap to stabilize
- Extend guardrail

Survey Tasks

- Reflectorless survey okay
- Go 30’ beyond mean high water level at a minimum
- 500x100’ area
- Cross section approx. 75’ uphill from the slope failures and down to the bottom of the slopes on the downhill side.
- Cross sections at a minimum of 25’ intervals at bluff erosion.
- Beach profiles extending down through the littoral zone characterized by gravels (steeper upper beach roughly 10H:1V), down to mudflats.
- Add a time stamp on the edge of the water tie in tide

Environmental Related Tasks

- Mean high water
- High tide
- Higher high tide