

APPENDIX O

FACIES MAPS FOR THE UARP PROJECT AREA SITES

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UARP:

Rubicon Dam Reach Site (RD-G1)

Loon Lake Dam Reach Upper Site (LL-G1)

Loon Lake Dam Reach Middle Site (LL-G2)

Loon Lake Dam Reach Lower Site (LL-G3)

Gerle Creek Dam Reach Site (GC-G1)

Robbs Peak Dam Reach Site (RPD-G1)

Ice House Dam Reach Upper Site (IH-G1)

Ice House Dam Reach Lower Site (IH-G2)

Junction Dam Reach Site (JD-G1)

Camino Dam Reach Site (CD-G1)

S. F. American Reach Site (SFAR-G1)

Slab Creek Dam Reach Site (SC-G1)

Rubicon Dam Reach Site (RD-G1)

The Rubicon Dam Reach Site is located in an "S" shaped meander. The channel is clear of debris, and lateral bars form the channel margins. At the upstream end of the site, cobble/gravel facies form a riffle, while bedrock forms the first outside river-right bend located just below the upper cross-section. The inside bend at the upper cross-section is a vegetated (small trees and shrubs) cobble/gravel bar with a high-flow channel behind it. Moving downstream, a pool has formed on the river-left outside bend with the start of a vegetated cobble/gravel bar on the inside river-right bend. At the middle cross-section, a second cobble/gravel riffle starts and continues to the end of the reach. The river-right bar continues to the lower cross-section, where a smaller vegetated (small trees and shrubs) cobble/gravel bar has formed on river-right. River banks and mid-channel gravel bars are well vegetated. Bank vegetation on river left consists of large trees with brushy under story, while vegetation on the right bank is composed of mainly small trees and shrubs on the cobble/gravel bars.

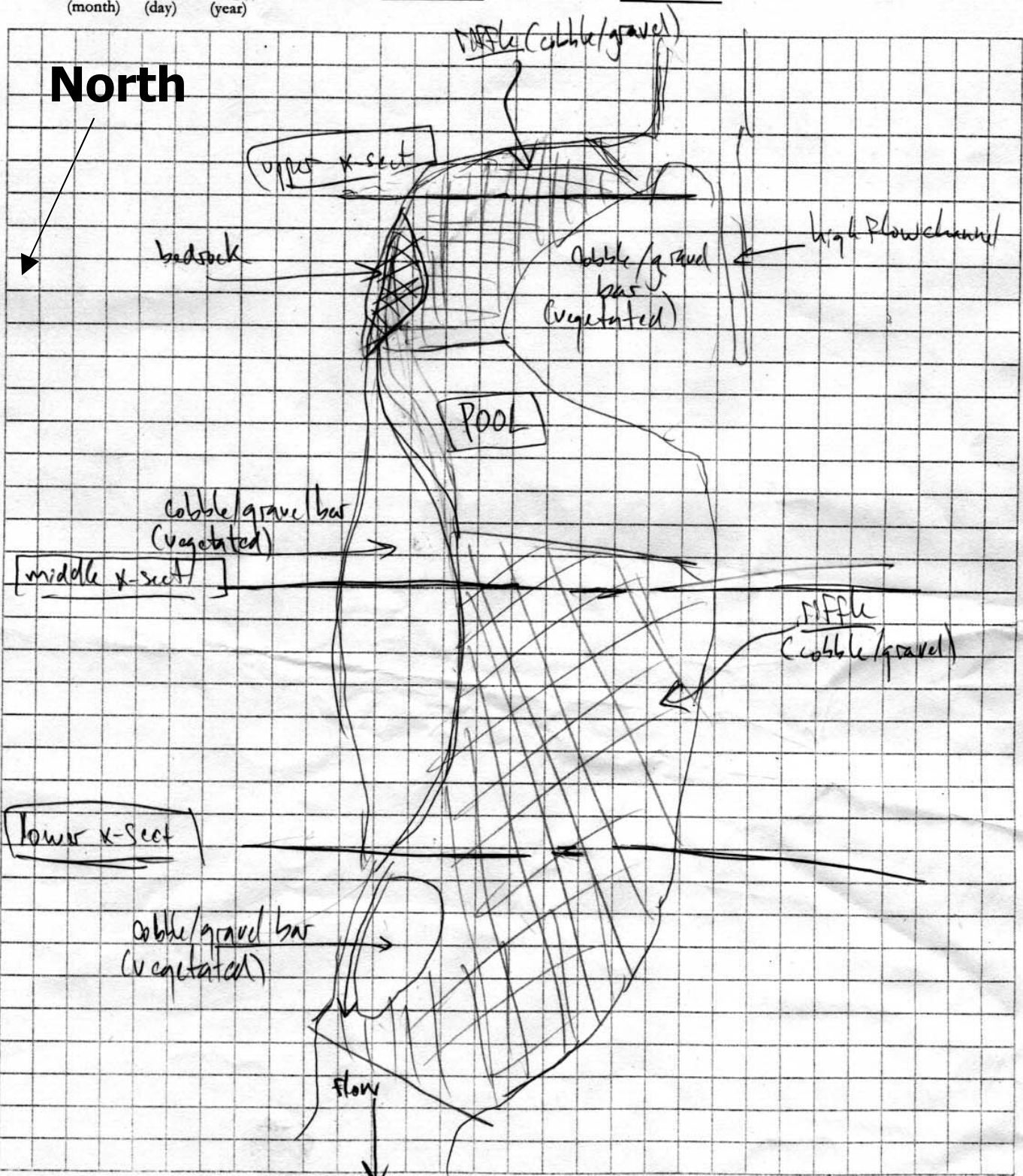
Study reach Name: RUBICON

Crew Initials: SRD, TNC

Date: 8 / 25 / 03
(month) (day) (year)

Start time: _____ End time: _____

North



33 rows x 30 columns Each cell equals _____ X _____

QA Check _____

Approximate scale (1:230)

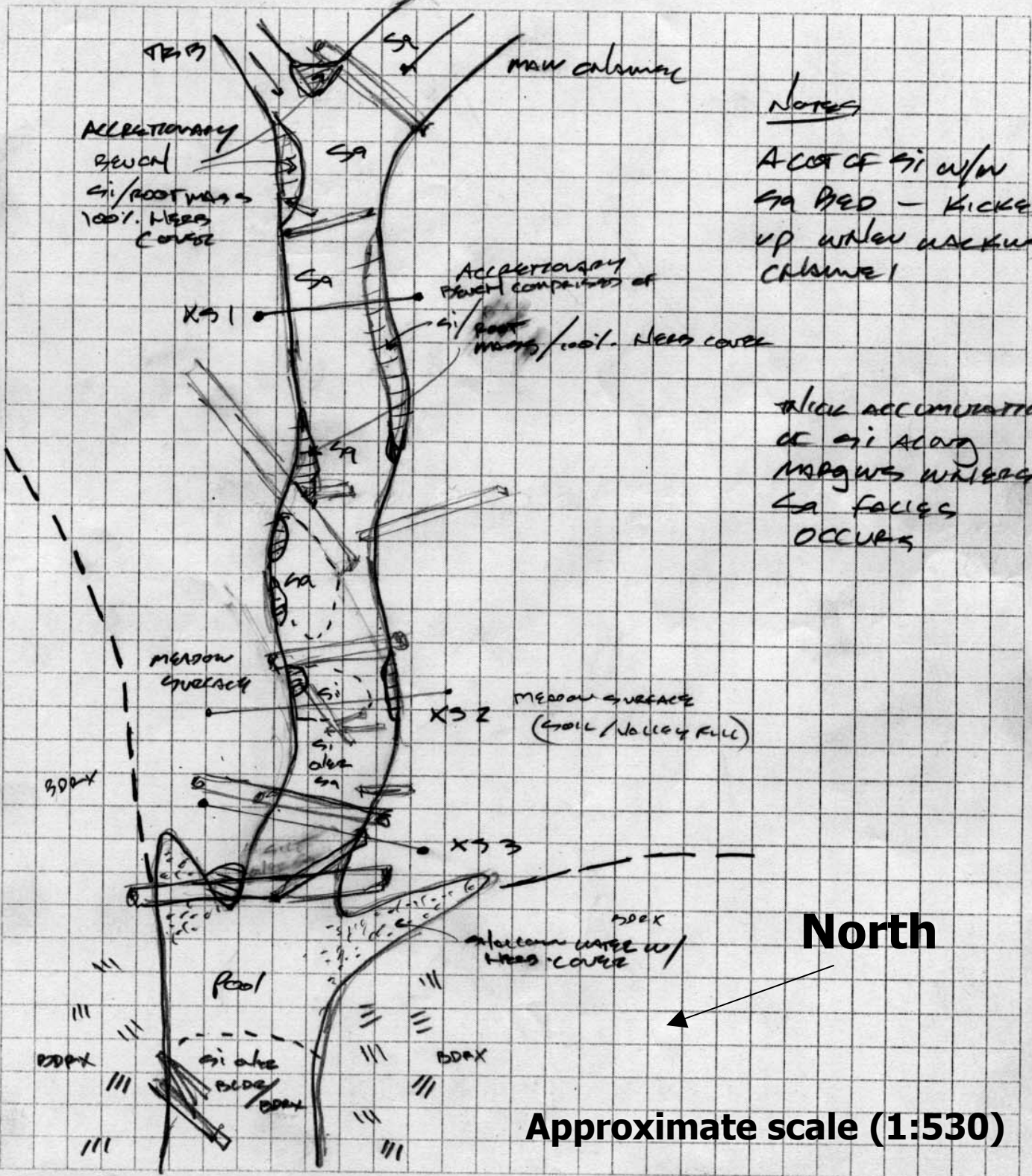
Loon Lake Dam Reach Upper Site (LL-G1)

The Loon Lake Dam Reach Upper Site has vegetated point bars and subtle pool-riffle morphology (there are no true riffle control points). There were many fallen trees across the channel, with some spanning above the water surface elevation, while others are submerged. The reach bed is comprised of silt and fine to coarse sand. A number of down trees are found beginning just upstream of the middle cross-section and continuing to the end of the reach. Some sand and/or silt deposition has occurred in the low-velocity zones on the downstream side of each log and along the channel margins. River banks are well vegetated with trees and grass/shrub understory.

Study reach Name: UPPER LOON LAKE

Crew Initials: JDS/MM

Date: 06 / 02 / 03 Start time: 1:00 End time: 1:50
(month) (day) (year)



Notes

A LOT OF Si w/w SA BED - KICKED UP WHEN WATER CHANNEL

ALSO ACCUMULATION OF Si ALONG MARGINS WHERE LA FALLS OCCURS

North

Approximate scale (1:530)

33 rows x 30 columns Each cell equals X
NTS

QA Check JDS

Loon Lake Dam Reach Middle Site (LL-G2)

At the Loon Lake Dam Reach Middle Site, channel and bank conditions are extremely uniform. The channel is wide and unconfined, banks are poorly defined. The entire reach is well vegetated and LWD is plentiful in the reach with several debris jams. Because of the low banks, LWD and debris jams tend to create frequent overflow channels and mid-channel bars. The channel primarily consists of cobble/boulder facies with a meadow on the river-right bank and large trees on the river-left bank. The banks and floodplains on both sides of the channel also consist of cobbles and boulders in a soil matrix with dense vegetation. Many of the forced overflow channels are also well vegetated with grasses and herbaceous plants.

Study reach Name: Loon Lake Middle

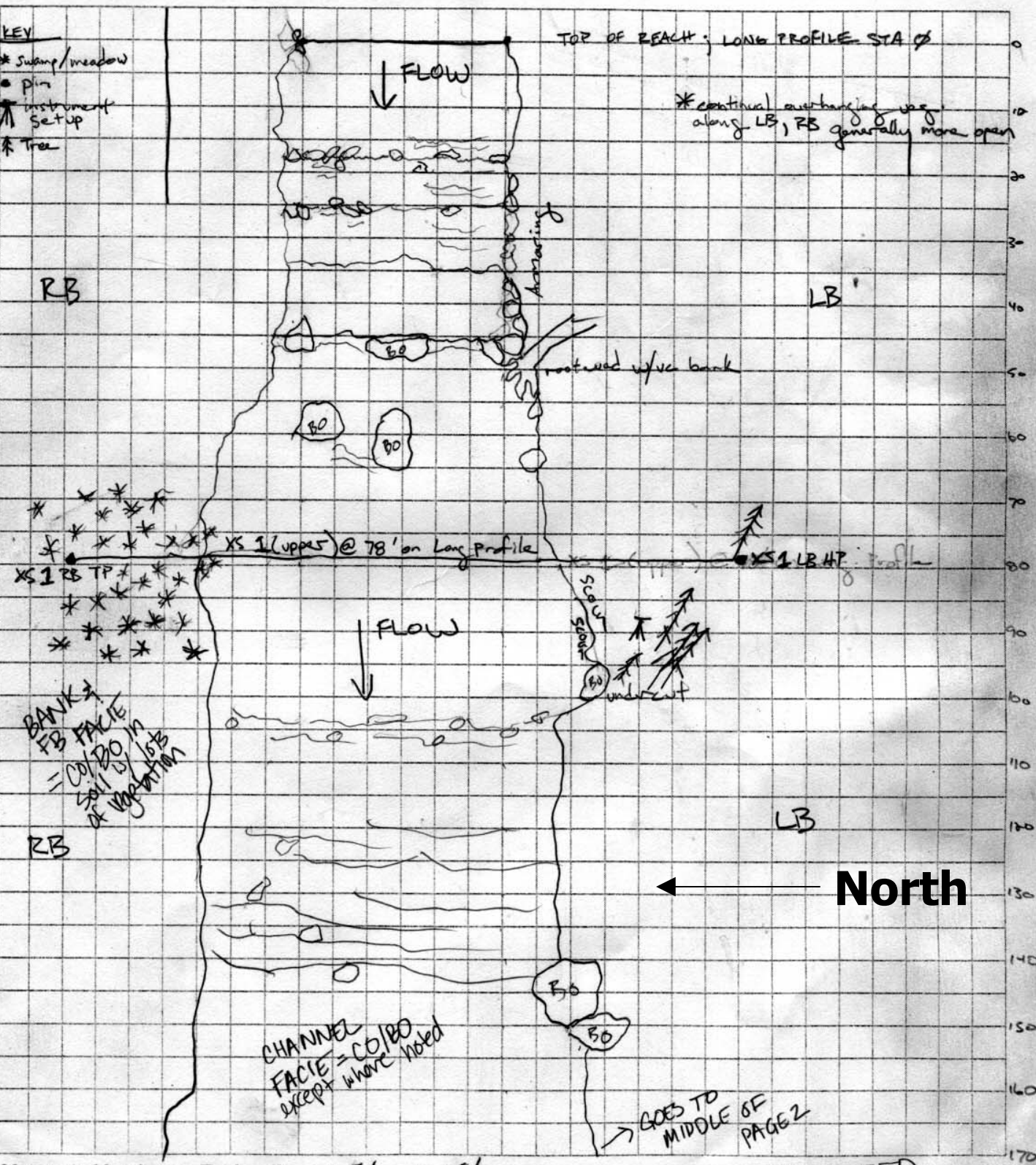
Crew Initials: ZED, JLA, MCM

Date: 07 / 12 / 03
(month) (day) (year)

Start time: 10:15

End time: 12:05

- KEY**
- * Swamp/meadow
 - Pin
 - ↑ Instrument Setup
 - ↑ Tree



33 rows x 30 columns - Each cell equals 5' X 25'

QA Check ZED

Approximate scale provided

Study reach Name: Loon Lake Middle

Crew Initials: MCM, JLA, ZED

Date: 7 / 12-13 / 03
(month) (day) (year)

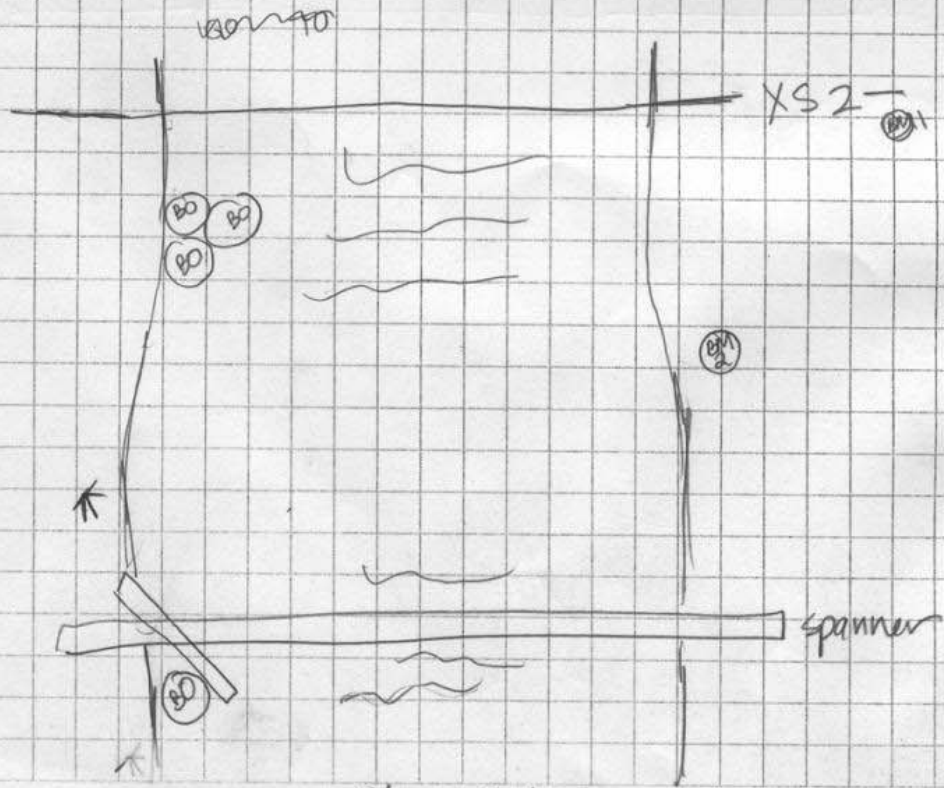
Start time: 10:15 End time: 12:05

CHANNEL = CO/BO, except where noted

Banks = CO/BO in soil matrix - very well vegetated w/ overhanging alder or grasses/herbaceous

Flood plains = CO/BO in soil matrix - very well vegetated w/ pines, cedars, alders, → grasses/herbaceous.

← North



33 rows x 30 columns Each cell equals 5' X 2.5'

QA Check ZED

Approximate scale provided

Facies Map Data Sheet

PROJECT CODE: 1100 TASK CODE: 1210

Page 3 of 3

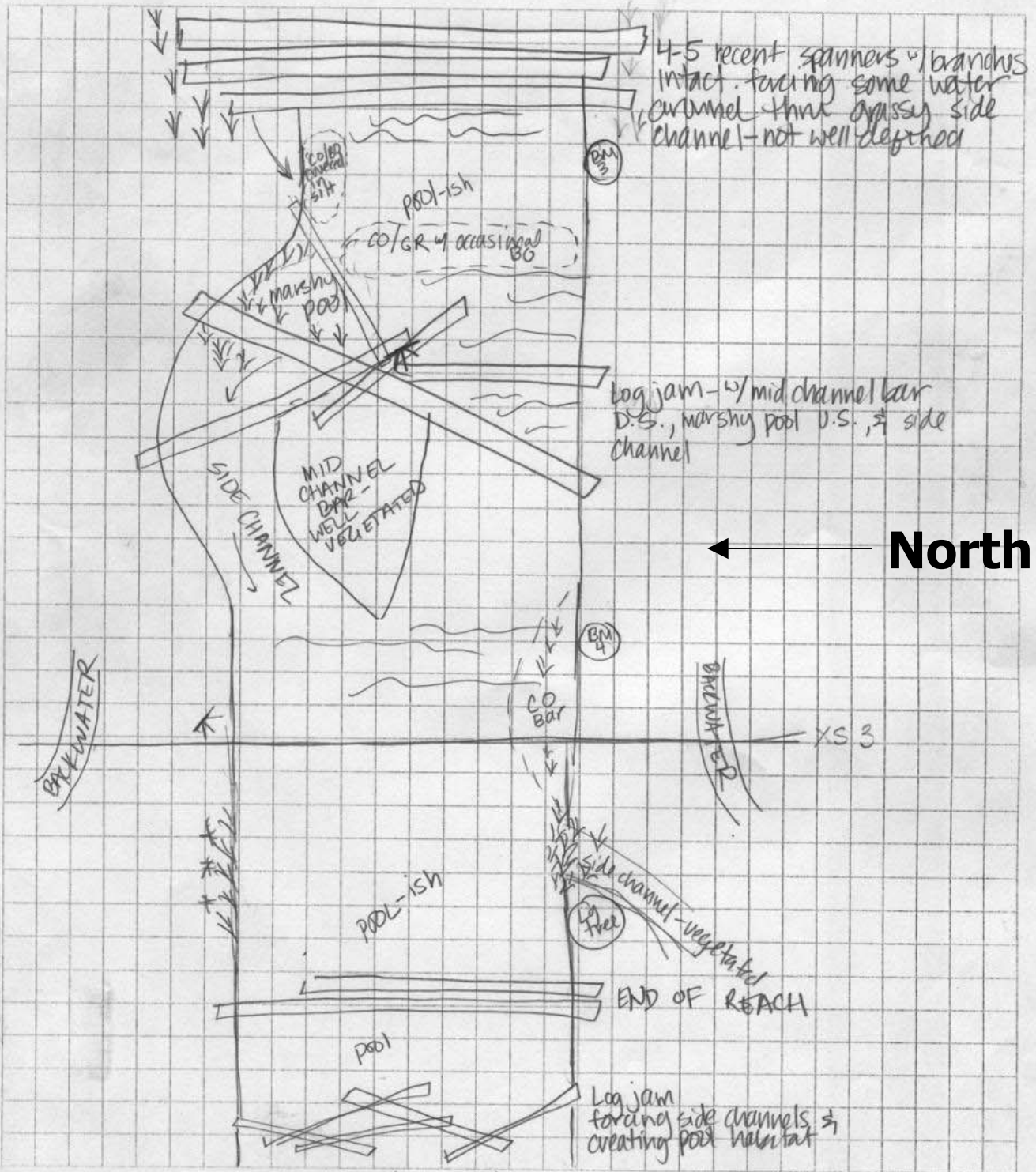
Study reach Name: Loon Lake Middle

Crew Initials: ZED, MCM, JLA

Date: 7 / 12 / 03
(month) (day) (year)

Start time: 10:15

End time: 12:05



33 rows x 30 columns Each cell equals 5' X 2.5' approx.

QA Check ZED

Approximate scale provided

Loon Lake Dam Reach Lower Site (LL-G3)

Pools at the Loon Lake Dam Reach Lower Site are scarce. Gravel, cobble, and sand form the channel bed downstream of the upper cross-section. Cobble with occasional boulders dominate as the river straightens out. The channel below the middle cross-section widens with several sand and gravel bars. Large cobbles and boulders, with small sand/fine gravel pockets, occur in the channel at the lower cross-section. Here, sand is deposited in high flow channels along the right bank and boulders form the moderately vegetated left bank, while the right bank is well vegetated.

Study reach Name: Loon Lake Lower

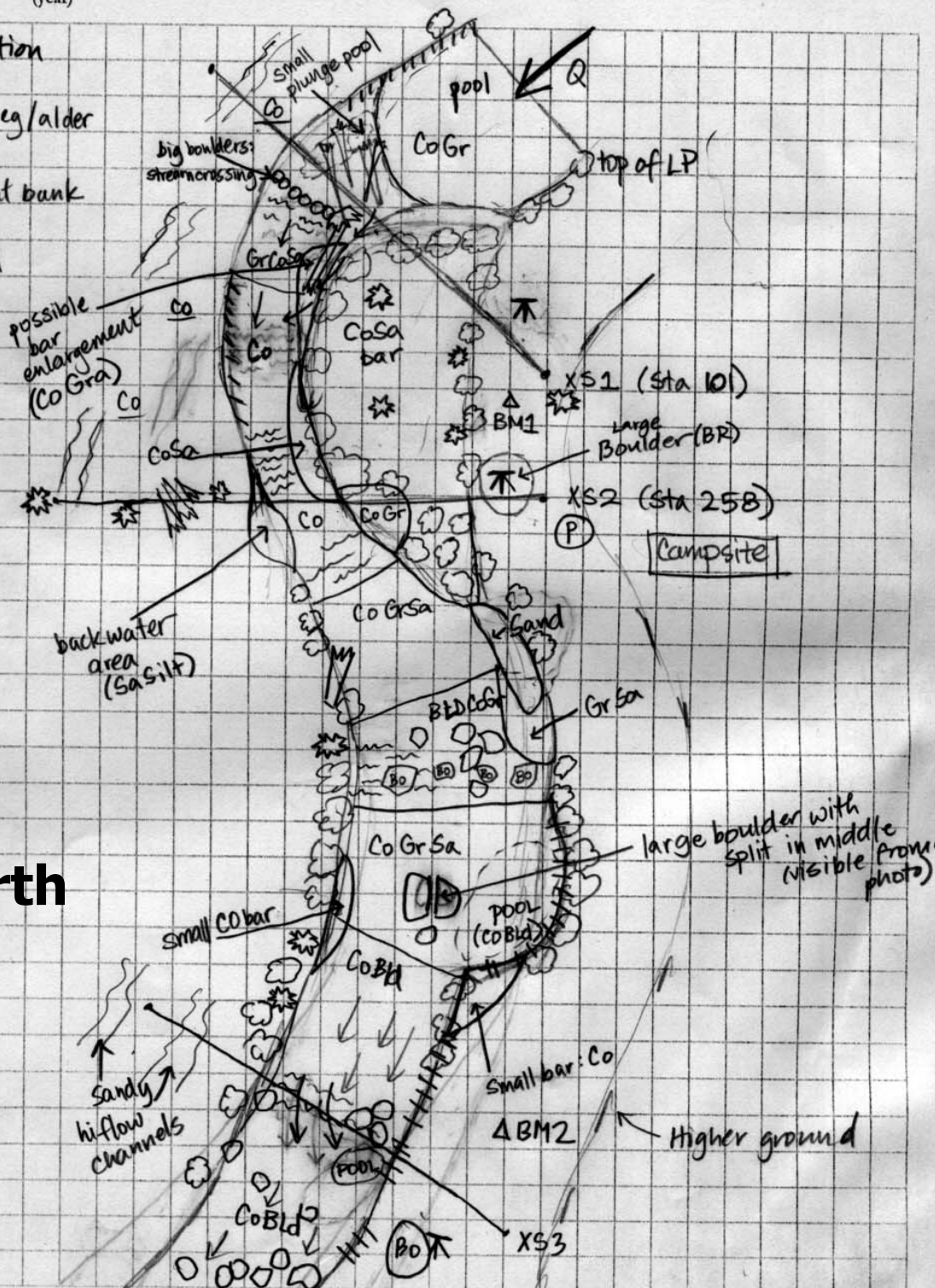
Crew Initials: JLA/MCM/ZED

Date: 7 / 14 / 03
(month) (day) (year)

Start time: 9:06

End time: 11:42

- ⊥ = level location
- △ = BM
- ☁ = riparian veg/alder
- ☆ = pine
- ||||| = undercut bank
- ↖ = LWD
- ⚡ = rootwad
- ~ ~ ~ = riffle
- (P) = parking spot
- ||||| = high flow channels (cobble substrate)
- ||||| = BLD/BR bank



North

33 rows x 30 columns Each cell equals 20 X 20 ft

Sketch by mcm!

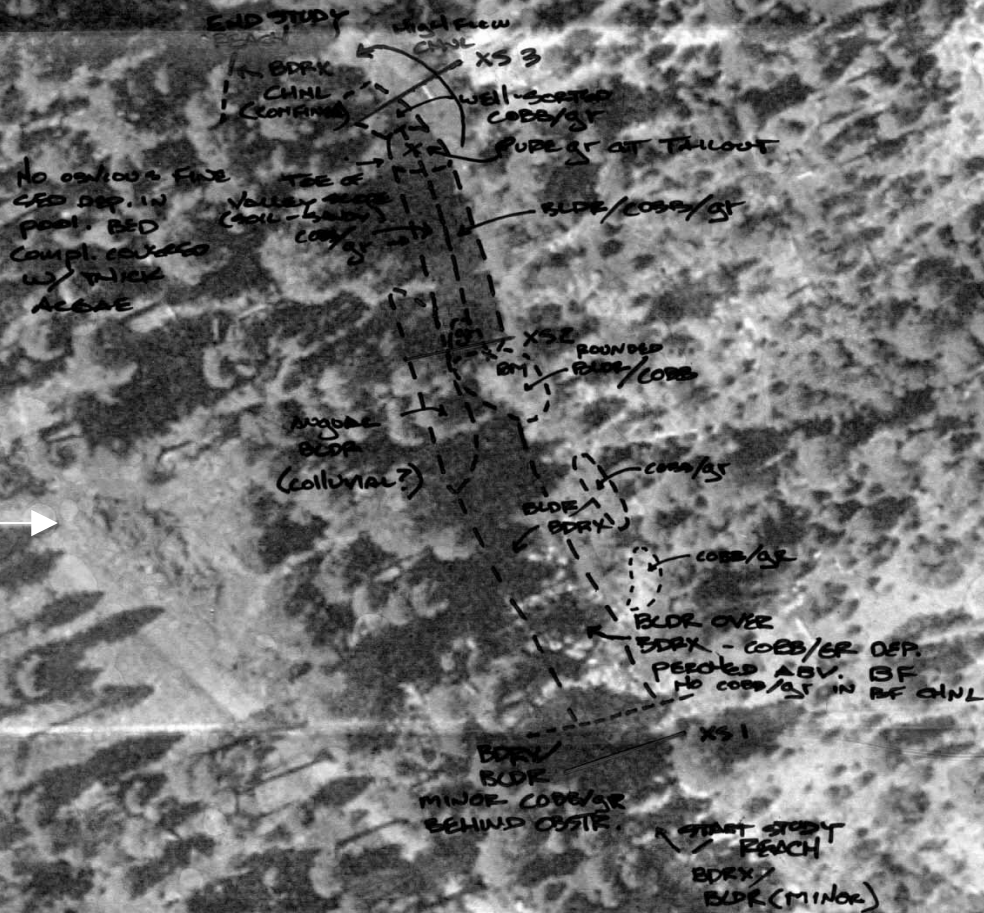
QA Check MCM

Approximate scale provided

Gerle Creek Dam Reach Site (GC-G1)

The Gerle Creek Dam Reach Site is a straight, boulder and bedrock channel. Patches of gravel and small cobble are deposited behind obstructions. Boulder and bedrock facies continues downstream to just above the middle cross-section. Very little fine sediment is stored at this site, except in deepest parts of the big pool. Riparian vegetation grows only in the margin and tailout of a pool below the lower cross-section. There is little or no vegetation in other parts of reach.

North →



Approximate scale (1:1400)

Robbs Peak Dam Reach Site (RPD-G1)

The channel substrate at the Robbs Peak Dam Reach Site is primarily coarse gravel, mixed with cobble and sand. Dense boulder deposits also exist, but are discontinuous. The active floodplain is wide with multiple flow paths, and sand is deposited on the margins and along the inside of the river meanders. Willows and some conifers grow in the channel, with frequent large woody debris piles observed above the low-flow wetted channel.

Facies Key*:

GRCBSD = Mixed gravel, cobble, and sand. Algae covering rocks.

CB = Cobble sorted on outside of bend. Estimated d50 = 70mm.

CBGRSD = mixed cobble, gravel, and sand. Coarser than upstream unit. Estimated d50 = 60 mm.

Gravel w/ Sand = Unit of sand and gravel at downstream end of bar.

Willow 2 = Apex 5 ft above water surface elevation. Gravel and cobble with a veneer of sand, and relatively flat. Upstream end is grades to high gravel and cobble bar.

GRCB1 = Gravel and cobble bar, high and exposed with greater than 10% sand. Local sand patches associated with willow growth (>10 ft height) with conifer and minor aspen growing on sand.

Willow 4 = Tall, approximately 8-10 ft, willows along old channel was next to approximately 50 year old conifers and sand.

BOCBSD1 = Deposits of boulder, cobble, and sand with minor amounts of gravel. Estimated d50 without the sand = 120mm.

Mixed GRCBBOSD = Gravel, cobble, boulder, and sand mixed. Sand is in discrete patches. Estimated d50 = 100mm. Very high widely distributed . Sediment covered with algae. Channel boulders dense in some places, but not continuous.

GRCB2 = Cobble with pockets of gravel. Placed for road, no entrance visible from main channel.

*Taken directly from field notes.



North

Approximate scale (1:1900)

Ice House Dam Reach Upper Site (IH-G1)

The active channel of the Ice House Dam Reach Upper Site is chiefly comprised of medium gravel and sand deposits with alternating bars and point bars. Large boulders lie in the channel and along the margins in several locations. Several channel-spanning pieces of LWD were found in the channel near the lower cross-section. Silt and sand are deposited in low-velocity zones on the margins and behind flow obstructions.

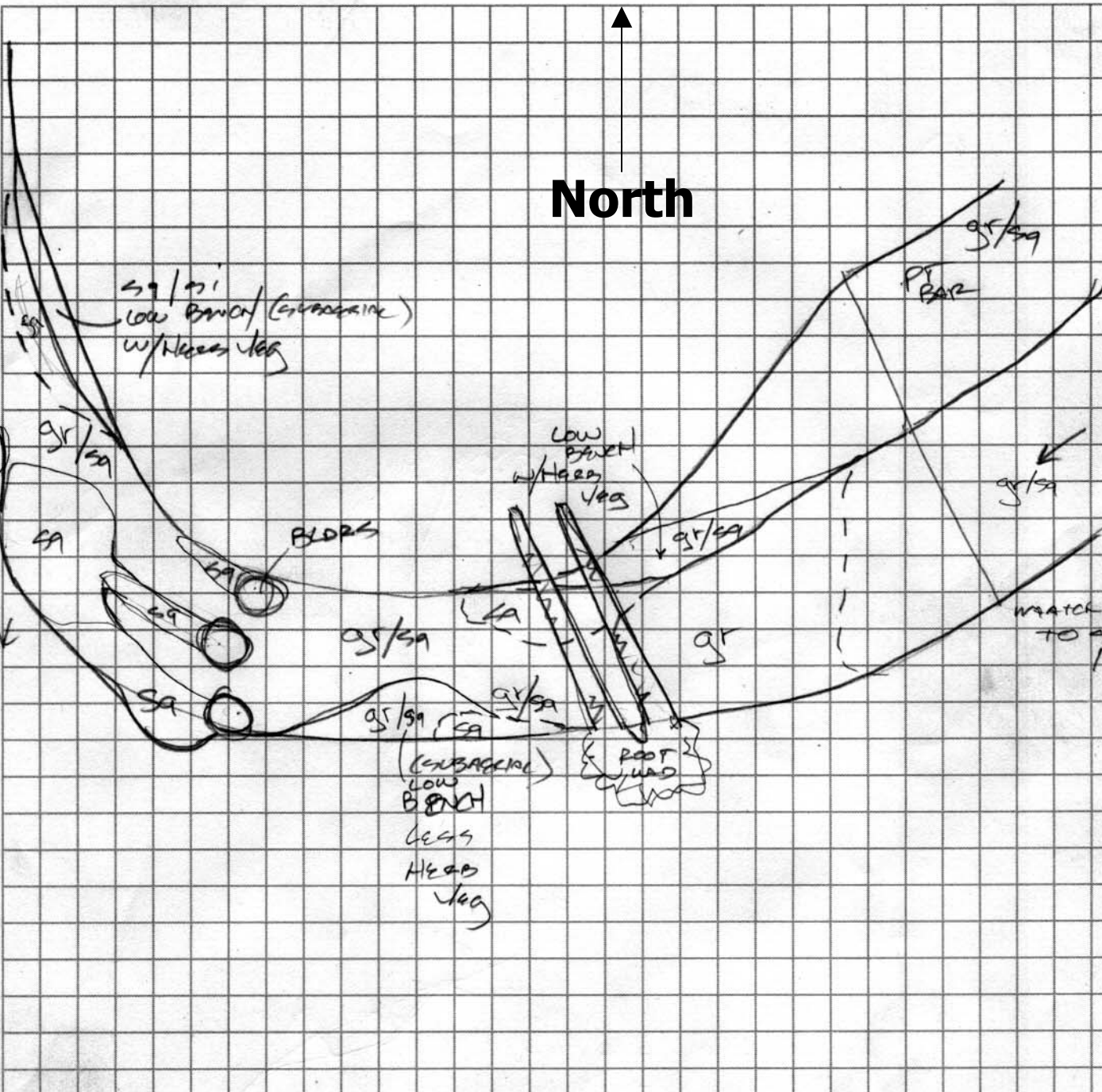
Study reach Name: UPPER ICE HOUSE

Crew Initials: JDS/RAF

Date: 05/15/03
(month) (day) (year)

Start time: _____

End time: _____



Approximate scale (1:300)

Ice House Dam Reach Lower Site (IH-G2)

Cobbly gravel facies dominate in most of the channel at the Ice House Dam Reach Lower Site, with intermittent boulder and bedrock outcrops. LWD is located on the river-left bank above and below the middle cross-section. Downstream of the middle cross-section, the boulder and cobble channel sweeps into a bedrock wall on the left. Here, a high flow side channel exists on the right bank. Boulder and cobble is deposited at the head of the overflow channel, gradually becoming cobble and gravel downstream. Terraces have formed on both banks. Vegetation is sparse throughout the reach.

Facies Map Data Sheet

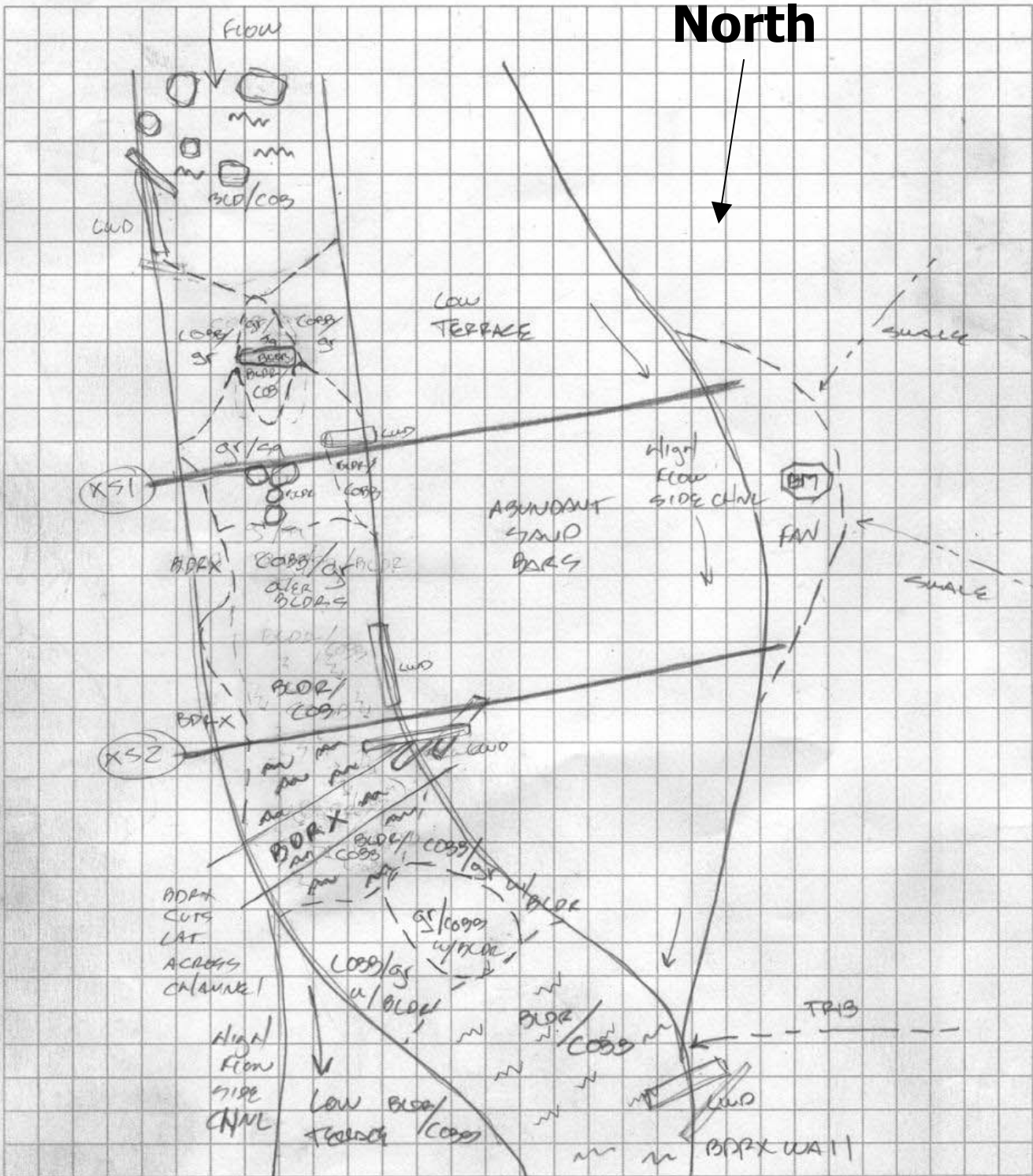
PROJECT CODE: _____ TASK CODE _____

Page 1 of 1

Study reach Name: LOWER ICE HOUSE

Crew Initials: JDS/MCM

Date: 05 / 18 / 03 Start time: _____ End time: _____
(month) (day) (year)



33 rows x 30 columns Each cell equals _____ X _____

QA Check MCM

Approximate scale (1:540)

Study reach Name: _____

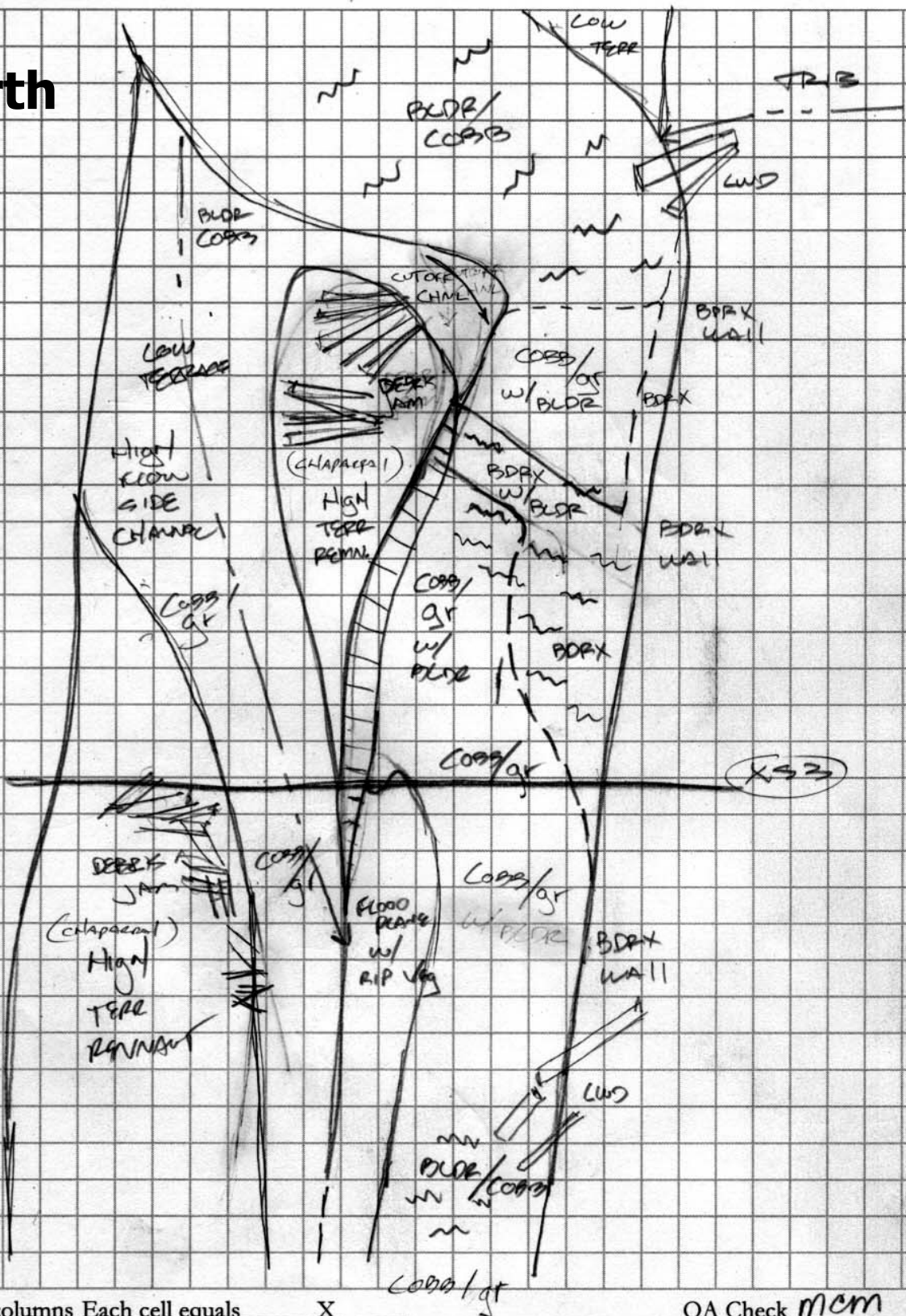
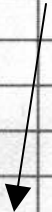
Crew Initials: _____

Date: ___ / ___ / ___
(month) (day) (year)

Start time: _____

End time: _____

North



33 rows x 30 columns Each cell equals _____ X _____

QA Check mcm

Approximate scale (1:540) 0-21

Junction Dam Reach Site (JD-G1)

At the Junction Dam Reach Site, cobble and gravel cover the channel and numerous boulders of various sizes occur over the entire length. Small patches of finer gravel and cobble exist behind large boulder obstructions, along the stream margins, and in the middle of the channel as lateral bar deposits. The channel is bedrock controlled, and outcrops occur on both banks throughout the site. Steep bedrock walls prevent vegetation growth, however trees and shrubs do begin to appear on top of the walls once they flatten out.

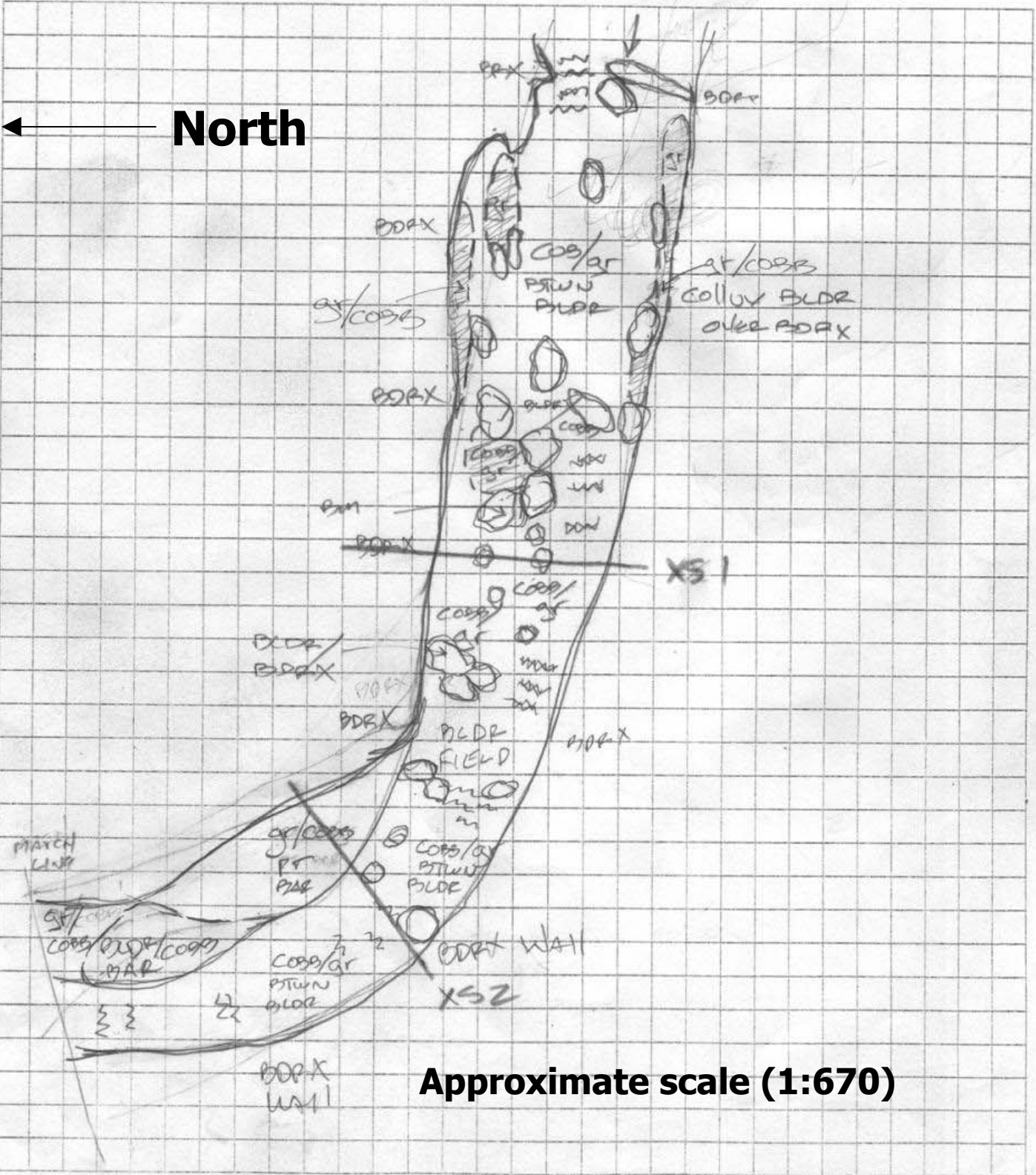
Study reach Name: JUNCTION

Crew Initials: ZED/JDS

Date: 05/19/03
(month) (day) (year)

Start time: _____ End time: _____

← North



Approximate scale (1:670)

33 rows x 30 columns Each cell equals _____ X _____

QA Check _____

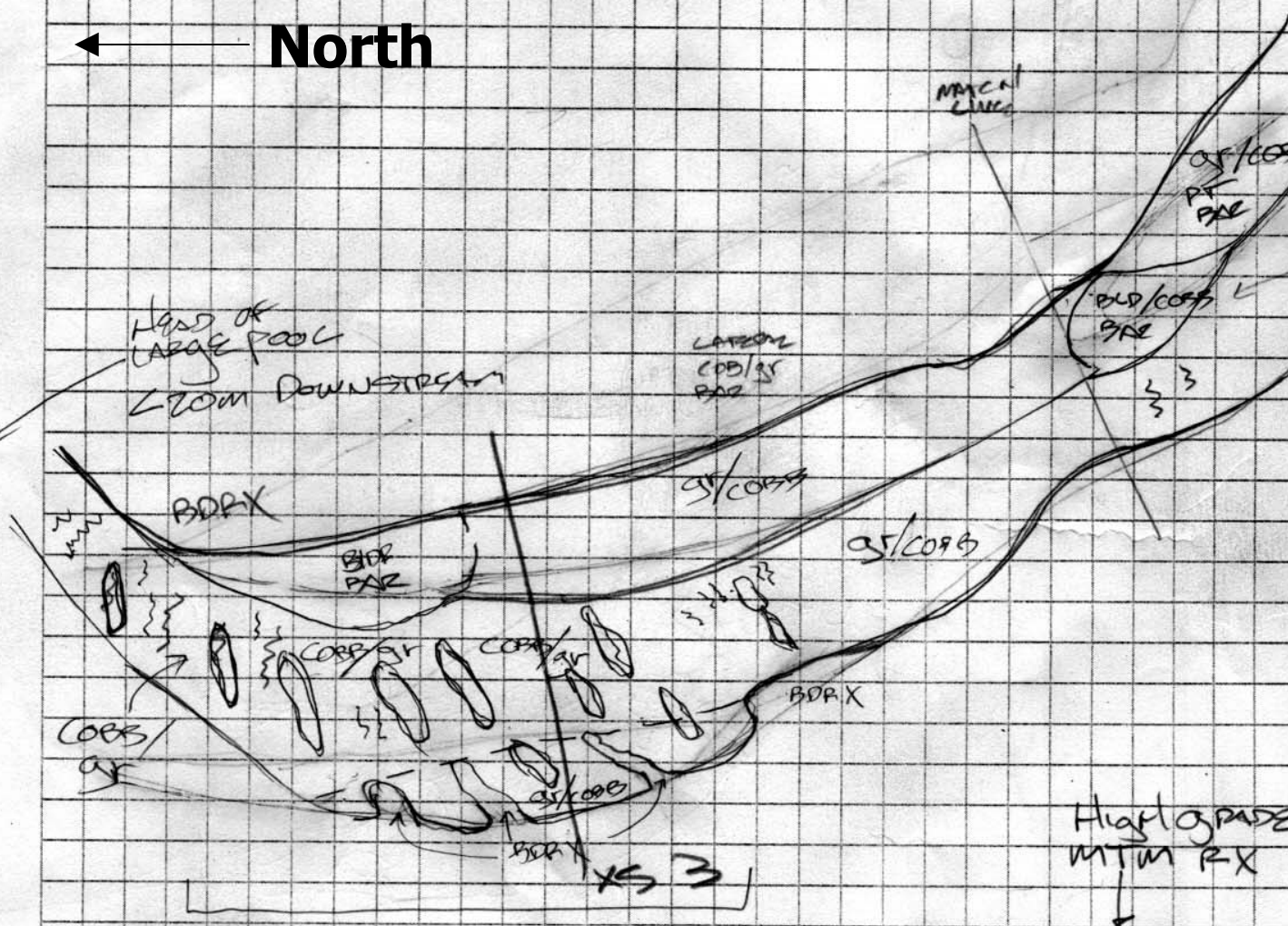
Study reach Name: JUNCTION

Crew Initials: JDS/ZED

Date: 05 / 19 / 03
(month) (day) (year)

Start time: _____ End time: _____

← North



CHANNEL PERPENDICULAR TO STRIKE OF BDRX
 BDRX DIPS UPSTREAM @ N 45°
 MANY EXPOSURES IN CHANNEL - CONTROLS
 RIFLE CREST ELEVATIONS

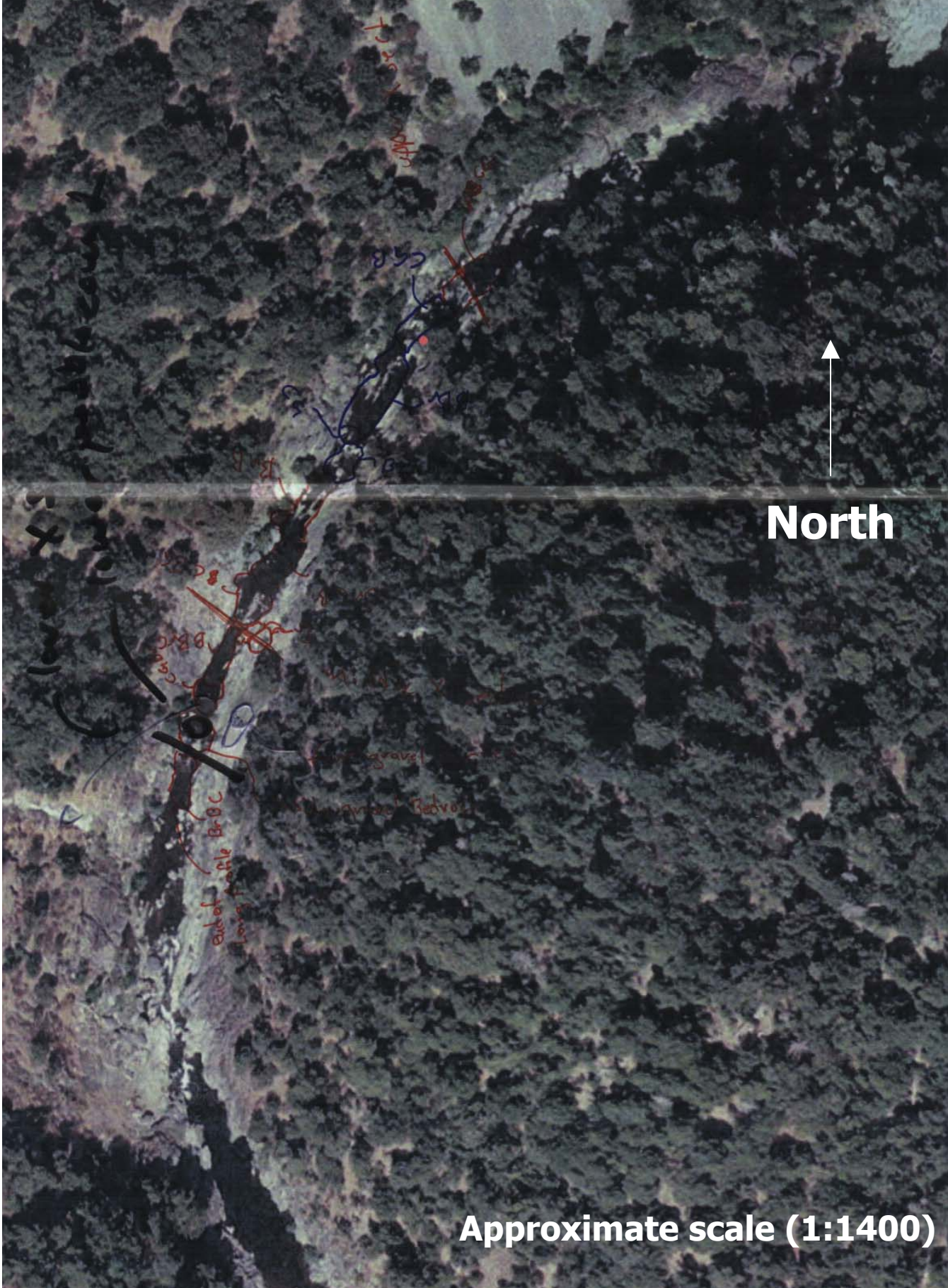
Approximate scale (1:670)

33 rows x 30 columns Each cell equals _____ X _____

QA Check _____

Camino Dam Reach Site (CD-G1)

The Camino Dam Reach Site is bedrock controlled with a predominantly cobble and gravel bed. Bank ledges are composed of gravel. At the upper cross-section is a pool with a cobble bottom, bound at the bottom end by boulders and bedrock outcrops. The middle cross-section is a run with a boulder/gravel channel and bedrock banks. The lower cross-section is located near a pool with cobble bottom. Bedrock forms the banks at the downstream end of the site.



S. F. American Reach Site (SFAR-G1)

South Fork American River Reach Site (SFAR-G1)

The channel at the South Fork American River Reach Site is straight with intermittent lateral bars made of coarse material. Sand fills the interstitial spaces between the dominant cobble and boulder facies. Bedrock outcrops are prevalent on both banks, with a coarse cobble and boulder bar development on the left bank near the lower cross-section. The channel is characterized by steep valley walls, is sparsely vegetated with coniferous trees, with smaller trees and shrubs growing closer to the waters edge.

← North

Boulder Dam/Falls

Run

Cobble/boulder/sand

Upper XS

Boulder Step

Middle XS

Bedrock

small boulder/cobble deposition

Run

Boulder/cobble/sand

Bedrock

Lower XS

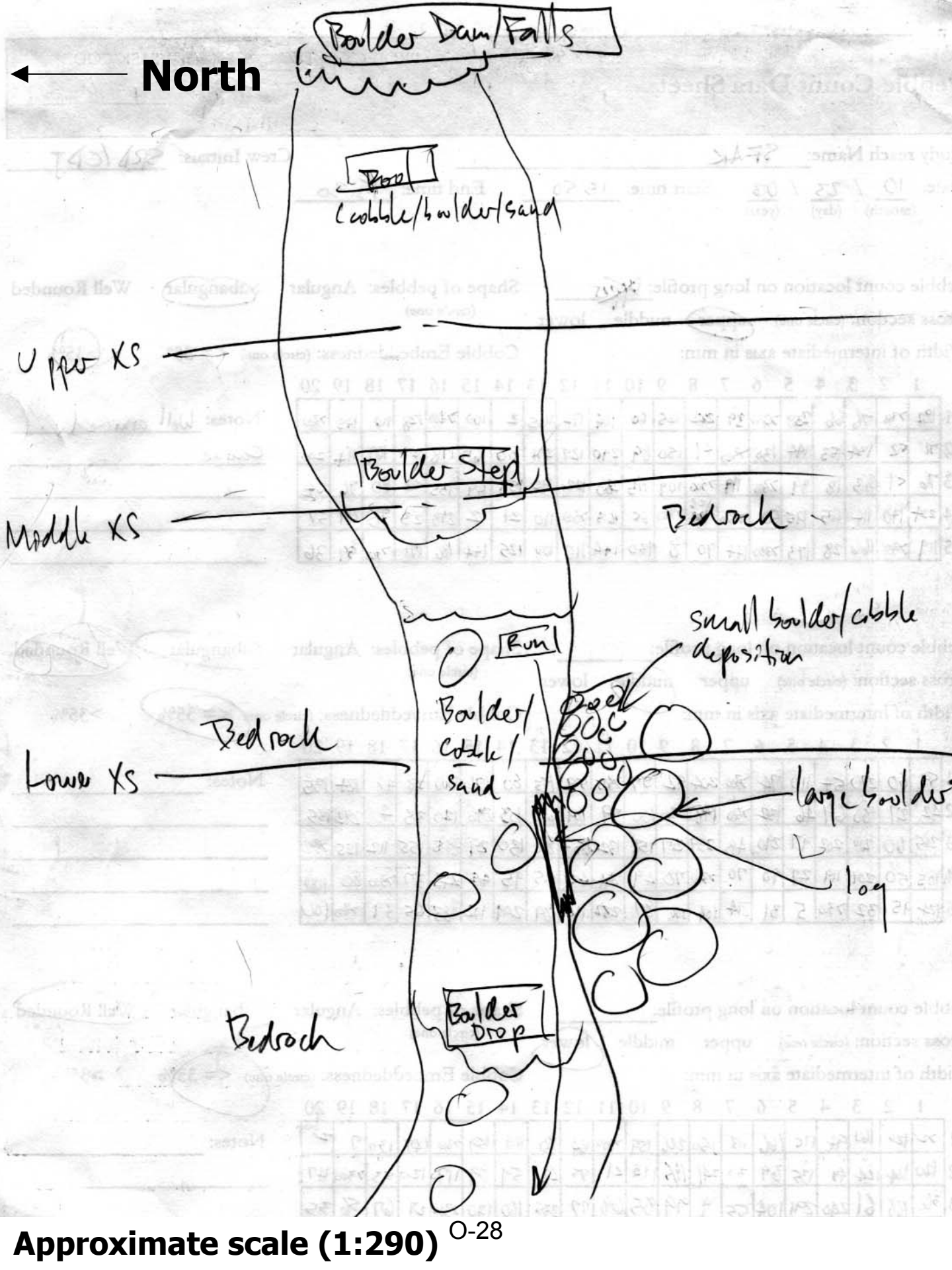
large boulder

log

Boulder Drop

Bedrock

Approximate scale (1:290) 0-28



Slab Creek Dam Reach Site (SC-G1)

Boulders and large cobble dominate substrate facies along the channel at the Slab Creek Dam Reach Site. The upper banks are characterized by moderate slopes with large boulders and bedrock outcrops. Primary channel flow meanders around two large boulder and cobble point bars. Minimal amounts of gravel are deposited in the low velocity areas behind boulders and bedrock flow obstructions. A thin veneer of silt is deposited along the margins of the low flow channel. Light shrubs and small trees are scattered in the boulder banks, but become denser up slope from the boulders.

Facies Key*:

CO1 = Cobble with few boulders on downstream end of bar. Estimated d50 is 80mm.

BOCO1 = Boulder field with cobbles and small patches of overbank gravel deposits. Estimated d50 is 500 mm.

BO1 = Boulder and bedrock steps in channel.

COBO1 = Channel cobbles and boulders, with very little gravel. Boulders arranged on small steps. Estimate d50 = 200 mm.

COBO2 = Cobble and boulder bar on left bank, with some gravel. Boulders are not arranged as steps. Estimated d50 = 180mm.

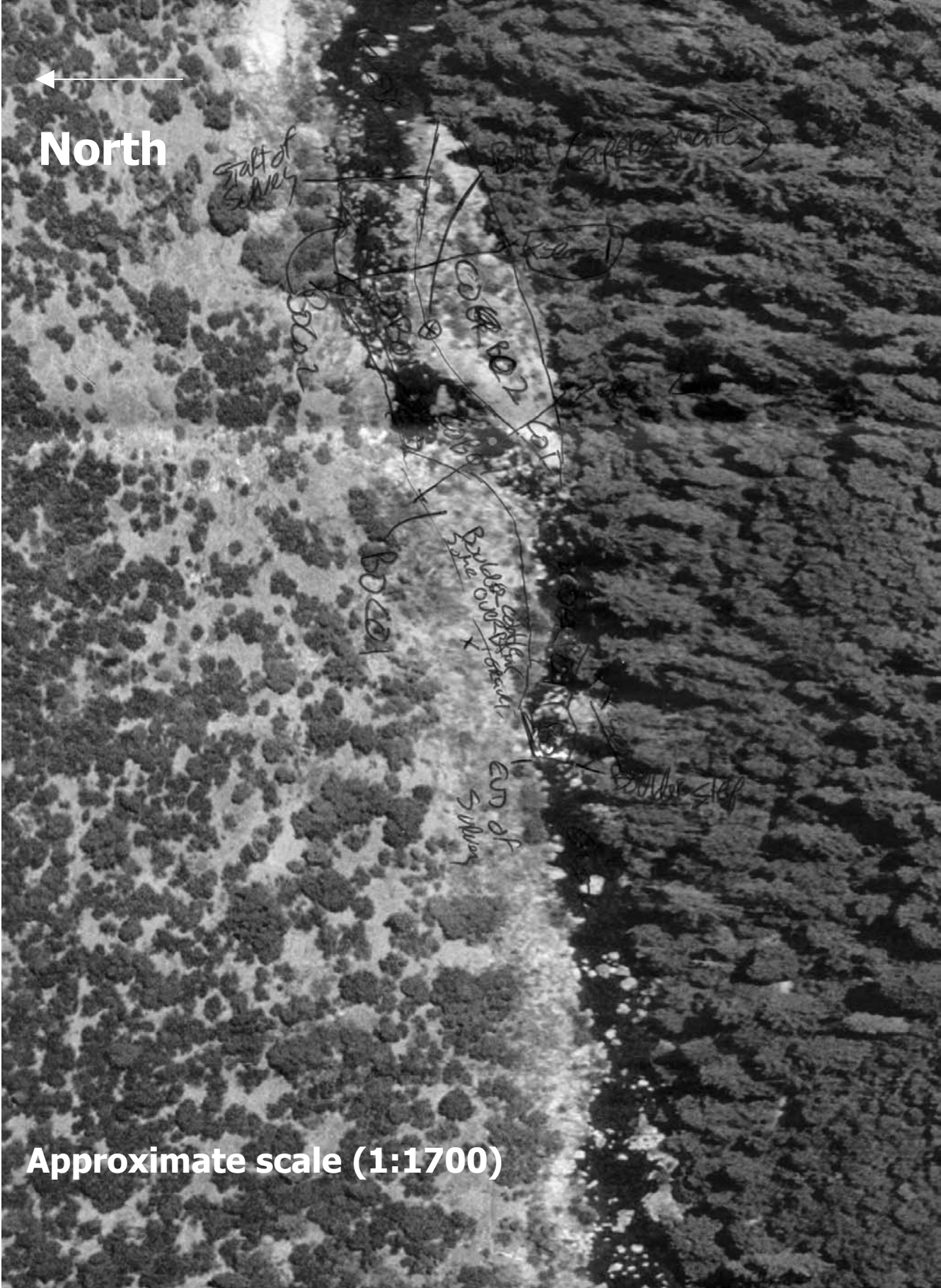
BOCO2 = Channel coarse boulder and cobble deposit along bedrock margin.

Note: There is a thin veneer of silt on the channel margins from slow water effects.

*Taken directly from field notes.



North



Approximate scale (1:1700)