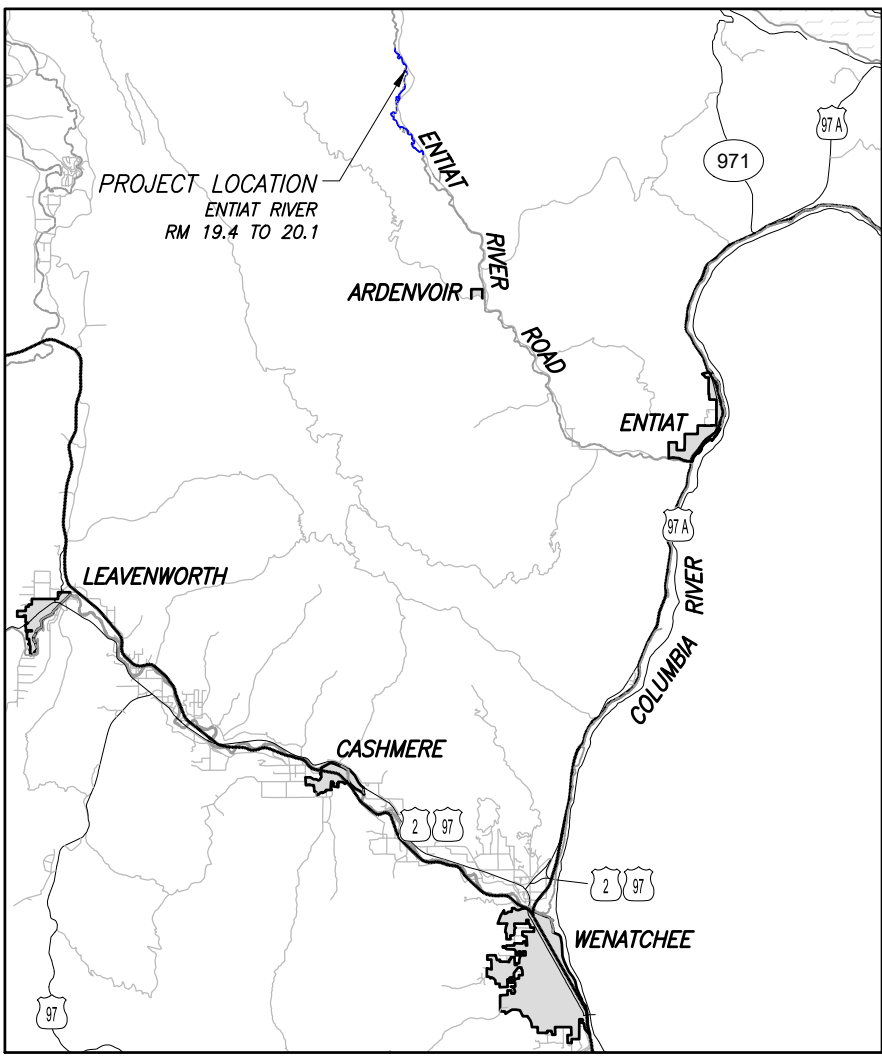


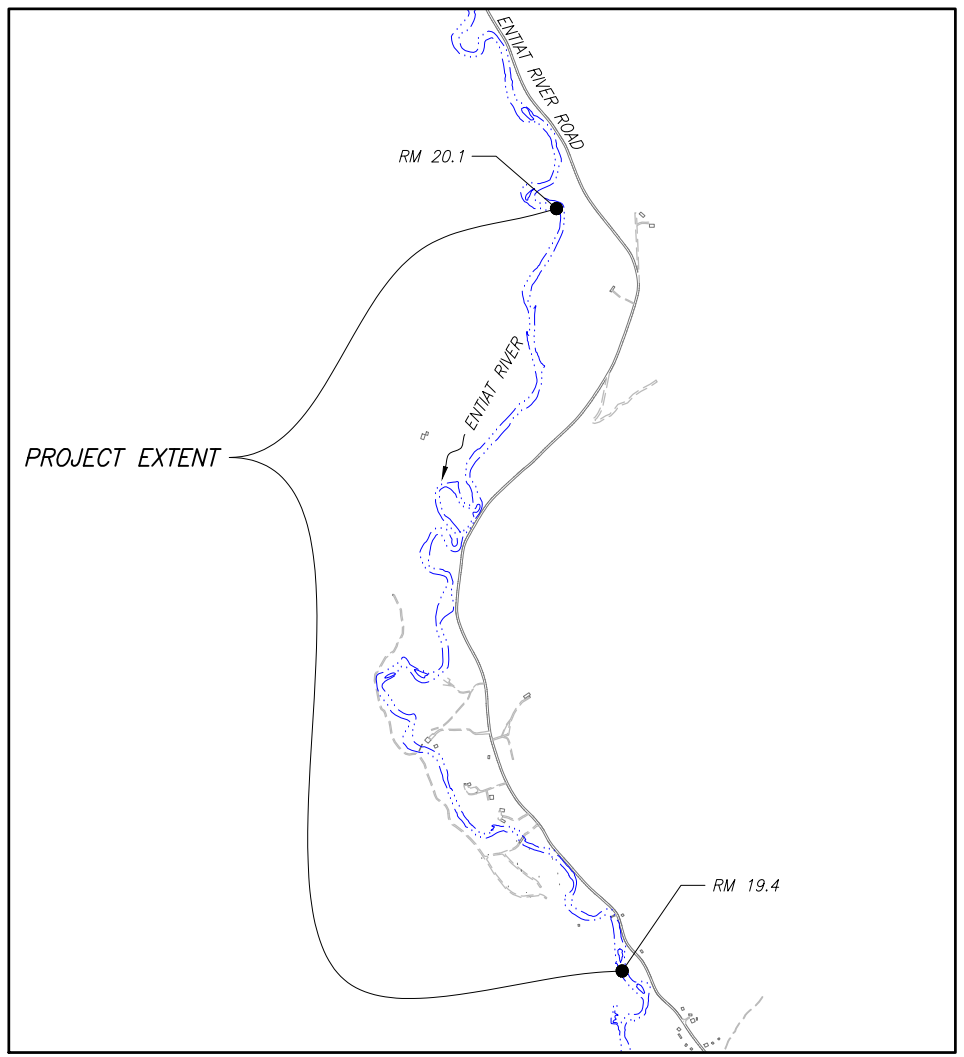
ENTIAT RIVER HELICOPTER LOG DELIVERY

Entiat River Subbasin

Chelan County, Washington



LOCATION MAP
NOT TO SCALE



VICINITY MAP
NOT TO SCALE

DRAWING LIST	
SHEET NUMBER	SHEET TITLE
H1	COVER SHEET
H2	HELICOPTER LOG DELIVERY PLAN - OVERVIEW
H3	HELICOPTER LOG DELIVERY PLAN - UPPER SEGMENT
H4	HELICOPTER LOG DELIVERY PLAN - LOWER SEGMENT
H5	HELICOPTER LOG DELIVERY PLAN

DATE AND TIME PLOTTED
2/15/2019 10:46 AM
PLOTTED BY

CAD SYSTEM
AutoCAD 2013
CAD FILENAME
CS_HELICOPTER_LOG_DELIVERY_COVER

PREPARED FOR



CHELAN COUNTY NATURAL RESOURCE DEPARTMENT
411 WASHINGTON, SUITE 201
WENATCHEE, WA 98801
TELEPHONE: (509) 667-6612
CONTACT: MR. PETE CRUICKSHANK

PREPARED BY



SITE SUMMARY

Chelan County
Entiat, Washington

S14 T27N R19E

N47°50'20" W120°25'3"



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 BUREAU OF RECLAMATION
 COLUMBIA SNAKE RIVER SALMON RECOVERY PROGRAM
 CORPS HABITAT IMPROVEMENT PROGRAM
ENTIAT RIVER SUBBASIN
 ENTIAT RIVER HELICOPTER LOG DELIVERY
 COVER SHEET

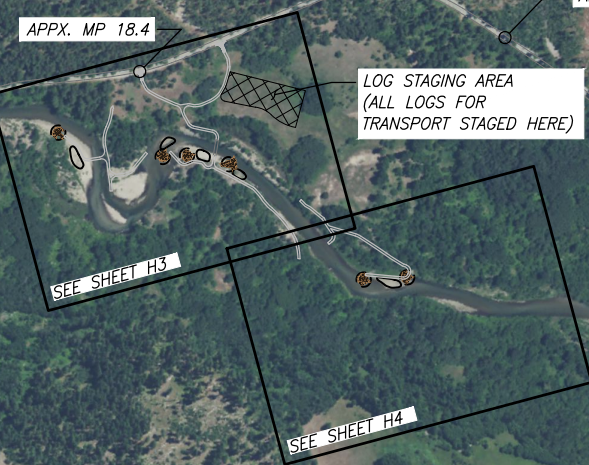
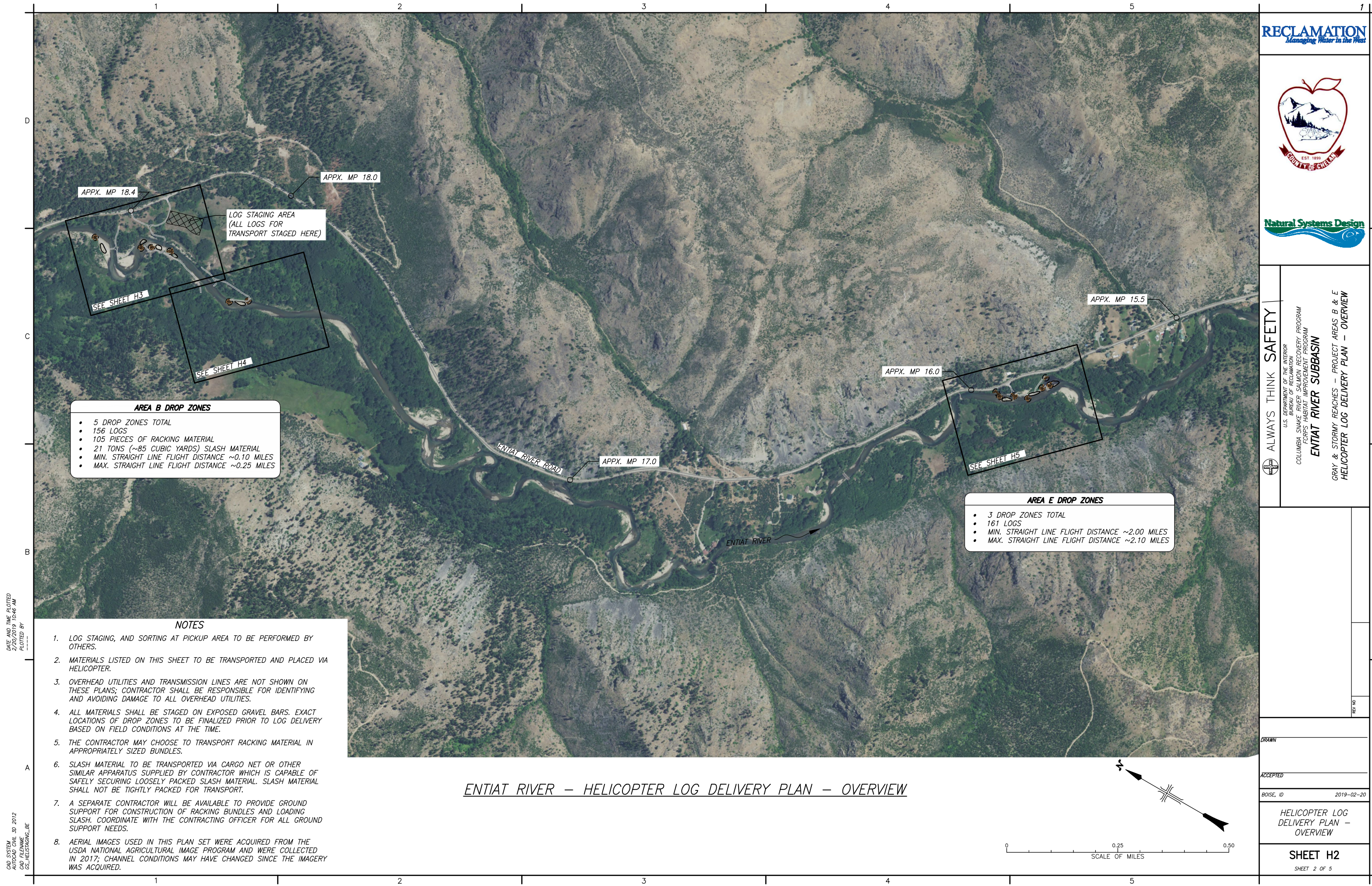
DRAWN

ACCEPTED

BOISE, ID 2019-02-20

COVER SHEET

SHEET H1
SHEET 1 OF 5



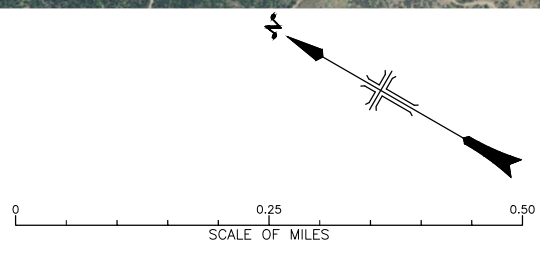
- AREA B DROP ZONES**
- 5 DROP ZONES TOTAL
 - 156 LOGS
 - 105 PIECES OF RACKING MATERIAL
 - 21 TONS (~85 CUBIC YARDS) SLASH MATERIAL
 - MIN. STRAIGHT LINE FLIGHT DISTANCE ~0.10 MILES
 - MAX. STRAIGHT LINE FLIGHT DISTANCE ~0.25 MILES

- APPX. MP 16.0
- SEE SHEET H5
- AREA E DROP ZONES**
- 3 DROP ZONES TOTAL
 - 161 LOGS
 - MIN. STRAIGHT LINE FLIGHT DISTANCE ~2.00 MILES
 - MAX. STRAIGHT LINE FLIGHT DISTANCE ~2.10 MILES

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 PLOTTED BY: [REDACTED]
 CAD SYSTEM: MicroStation
 CAD FILENAME: 03-HELICOPTER_BE

- NOTES**
- LOG STAGING, AND SORTING AT PICKUP AREA TO BE PERFORMED BY OTHERS.
 - MATERIALS LISTED ON THIS SHEET TO BE TRANSPORTED AND PLACED VIA HELICOPTER.
 - OVERHEAD UTILITIES AND TRANSMISSION LINES ARE NOT SHOWN ON THESE PLANS; CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING AND AVOIDING DAMAGE TO ALL OVERHEAD UTILITIES.
 - ALL MATERIALS SHALL BE STAGED ON EXPOSED GRAVEL BARS. EXACT LOCATIONS OF DROP ZONES TO BE FINALIZED PRIOR TO LOG DELIVERY BASED ON FIELD CONDITIONS AT THE TIME.
 - THE CONTRACTOR MAY CHOOSE TO TRANSPORT RACKING MATERIAL IN APPROPRIATELY SIZED BUNDLES.
 - SLASH MATERIAL TO BE TRANSPORTED VIA CARGO NET OR OTHER SIMILAR APPARATUS SUPPLIED BY CONTRACTOR WHICH IS CAPABLE OF SAFELY SECURING LOOSELY PACKED SLASH MATERIAL. SLASH MATERIAL SHALL NOT BE TIGHTLY PACKED FOR TRANSPORT.
 - A SEPARATE CONTRACTOR WILL BE AVAILABLE TO PROVIDE GROUND SUPPORT FOR CONSTRUCTION OF RACKING BUNDLES AND LOADING SLASH. COORDINATE WITH THE CONTRACTING OFFICER FOR ALL GROUND SUPPORT NEEDS.
 - AERIAL IMAGES USED IN THIS PLAN SET WERE ACQUIRED FROM THE USDA NATIONAL AGRICULTURAL IMAGE PROGRAM AND WERE COLLECTED IN 2017; CHANNEL CONDITIONS MAY HAVE CHANGED SINCE THE IMAGERY WAS ACQUIRED.

ENTIAT RIVER – HELICOPTER LOG DELIVERY PLAN – OVERVIEW



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CORPS HABITAT IMPROVEMENT PROGRAM

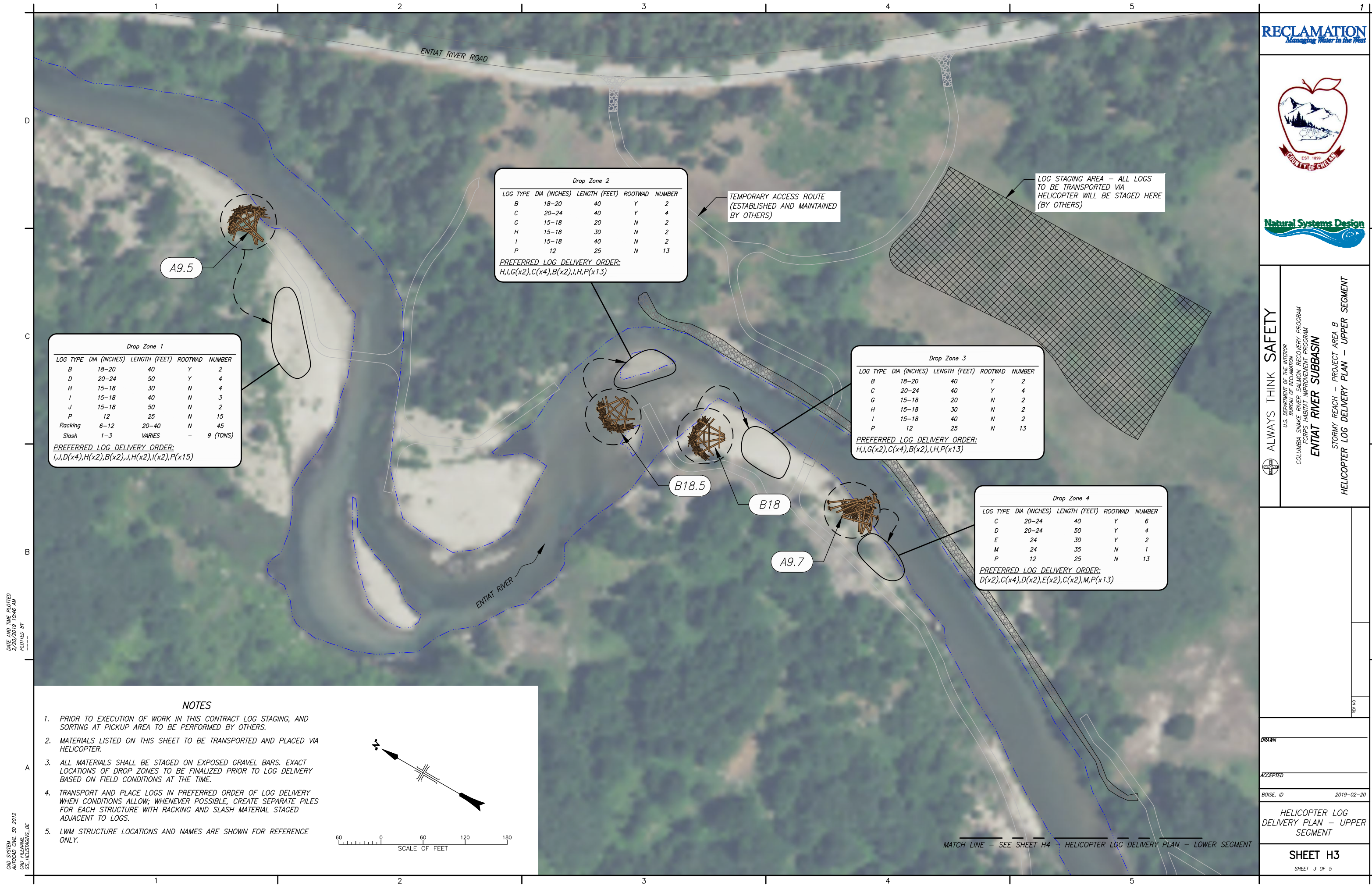
ENTIAT RIVER SUBBASIN
GRAY & STORMY REACHES – PROJECT AREAS B & E
HELICOPTER LOG DELIVERY PLAN – OVERVIEW

DRAWN: [REDACTED]

ACCEPTED: [REDACTED]

BOISE, ID 2019-02-20

HELICOPTER LOG DELIVERY PLAN – OVERVIEW



Drop Zone 2

LOG TYPE	DIA (INCHES)	LENGTH (FEET)	ROOTWAD	NUMBER
B	18-20	40	Y	2
C	20-24	40	Y	4
G	15-18	20	N	2
H	15-18	30	N	2
I	15-18	40	N	2
P	12	25	N	13

PREFERRED LOG DELIVERY ORDER:
H,I,G(x2),C(x4),B(x2),I,H,P(x13)

Drop Zone 1

LOG TYPE	DIA (INCHES)	LENGTH (FEET)	ROOTWAD	NUMBER
B	18-20	40	Y	2
D	20-24	50	Y	4
H	15-18	30	N	4
I	15-18	40	N	3
J	15-18	50	N	2
P	12	25	N	15
Racking	6-12	20-40	N	45
Slash	1-3	VARIES	-	9 (TONS)

PREFERRED LOG DELIVERY ORDER:
I,J,D(x4),H(x2),B(x2),J,H(x2),I(x2),P(x15)

Drop Zone 3

LOG TYPE	DIA (INCHES)	LENGTH (FEET)	ROOTWAD	NUMBER
B	18-20	40	Y	2
C	20-24	40	Y	4
G	15-18	20	N	2
H	15-18	30	N	2
I	15-18	40	N	2
P	12	25	N	13

PREFERRED LOG DELIVERY ORDER:
H,I,G(x2),C(x4),B(x2),I,H,P(x13)

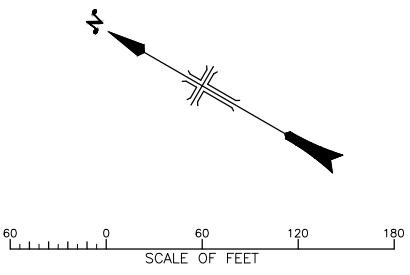
Drop Zone 4

LOG TYPE	DIA (INCHES)	LENGTH (FEET)	ROOTWAD	NUMBER
C	20-24	40	Y	6
D	20-24	50	Y	4
E	24	30	Y	2
M	24	35	N	1
P	12	25	N	13

PREFERRED LOG DELIVERY ORDER:
D(x2),C(x4),D(x2),E(x2),C(x2),M,P(x13)

NOTES

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5. LWM STRUCTURE LOCATIONS AND NAMES ARE SHOWN FOR REFERENCE ONLY.



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 PLOTTED BY: [redacted]
 CAD SYSTEM: AutoCAD 2012
 CAD FILENAME: 05-HELSTAGING.BE



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 FORPS HABITAT IMPROVEMENT PROGRAM
ENTIAT RIVER SUBBASIN

STORMY REACH - PROJECT AREA B
 HELICOPTER LOG DELIVERY PLAN - UPPER SEGMENT

DRAWN: [redacted]

ACCEPTED: [redacted]

BOISE, ID 2019-02-20

HELICOPTER LOG DELIVERY PLAN - UPPER SEGMENT

MATCH LINE - SEE SHEET H4 HELICOPTER LOG DELIVERY PLAN - LOWER SEGMENT



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STORMY REACH - PROJECT AREA B
HELICOPTER LOG DELIVERY PLAN - LOWER SEGMENT

DATE AND TIME PLOTTED
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PLOTTED BY

CAD SYSTEM
30 2012
CAD FILENAME
03-HELSTAGING_BE

A10.7

A11

TEMPORARY ACCESS ROUTE
(ESTABLISHED AND MAINTAINED
BY OTHERS)

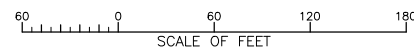
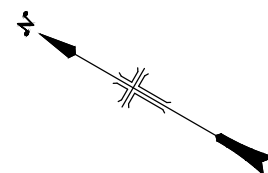
ENTIAT RIVER

Drop Zone 5				
LOG TYPE	DIA (INCHES)	LENGTH (FEET)	ROOTWAD	NUMBER
B	18-20	40	Y	4
C	20-24	40	Y	8
G	15-18	20	N	4
H	15-18	30	N	4
I	15-18	40	N	4
P	12	25	N	26
Racking	6-12	20-40	N	60
Slash	1-3	VARIES	-	12 (TONS)

PREFERRED LOG DELIVERY ORDER:
A10.7-H,I,G(x2),C(x4),B(x2),I,H,P(x13)
A11-H,I,G(x2),C(x4),B(x2),I,H,P(x13)

NOTES

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5. LWM STRUCTURE LOCATIONS AND NAMES ARE SHOWN FOR REFERENCE ONLY.



DRAWN

ACCEPTED

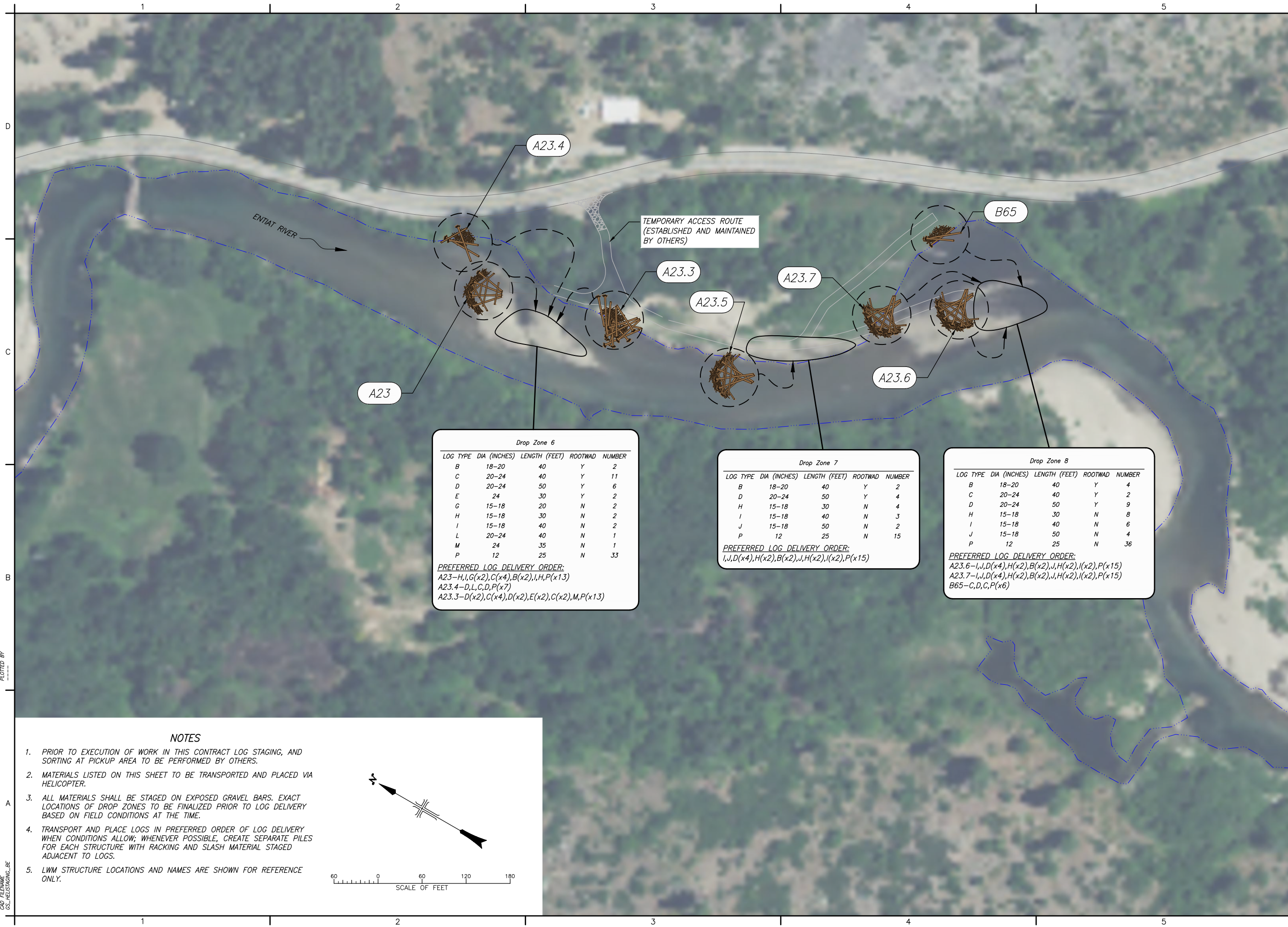
BOISE, ID 2019-02-20

HELICOPTER LOG DELIVERY PLAN - LOWER SEGMENT

SHEET H4

SHEET 4 OF 5

DATE AND TIME PLOTTED: 2/15/2012 10:46 AM
 PLOTTED BY: [REDACTED]
 CAD SYSTEM: AutoCAD 2012
 CAD FILENAME: 03-HELSTAGING_BE



Drop Zone 6

LOG TYPE	DIA (INCHES)	LENGTH (FEET)	ROOTWAD	NUMBER
B	18-20	40	Y	2
C	20-24	40	Y	11
D	20-24	50	Y	6
E	24	30	Y	2
G	15-18	20	N	2
H	15-18	30	N	2
I	15-18	40	N	2
L	20-24	40	N	1
M	24	35	N	1
P	12	25	N	33

PREFERRED LOG DELIVERY ORDER:
 A23-H,I,G(x2),C(x4),B(x2),I,H,P(x13)
 A23.4-D,L,C,D,P(x7)
 A23.3-D(x2),C(x4),D(x2),E(x2),C(x2),M,P(x13)

Drop Zone 7

LOG TYPE	DIA (INCHES)	LENGTH (FEET)	ROOTWAD	NUMBER
B	18-20	40	Y	2
D	20-24	50	Y	4
H	15-18	30	N	4
I	15-18	40	N	3
J	15-18	50	N	2
P	12	25	N	15

PREFERRED LOG DELIVERY ORDER:
 I,J,D(x4),H(x2),B(x2),J,H(x2),I(x2),P(x15)

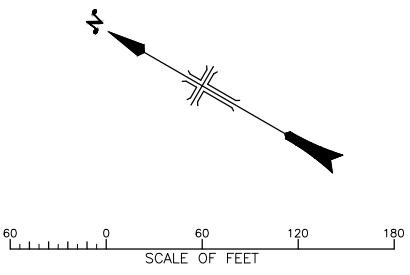
Drop Zone 8

LOG TYPE	DIA (INCHES)	LENGTH (FEET)	ROOTWAD	NUMBER
B	18-20	40	Y	4
C	20-24	40	Y	2
D	20-24	50	Y	9
H	15-18	30	N	8
I	15-18	40	N	6
J	15-18	50	N	4
P	12	25	N	36

PREFERRED LOG DELIVERY ORDER:
 A23.6-I,J,D(x4),H(x2),B(x2),J,H(x2),I(x2),P(x15)
 A23.7-I,J,D(x4),H(x2),B(x2),J,H(x2),I(x2),P(x15)
 B65-C,D,C,P(x6)

NOTES

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ENTIAT RIVER SUBBASIN
 GRAY REACH - PROJECT AREA E
 HELICOPTER LOG DELIVERY PLAN