Temporary Road Cost Worksheet

NTLJ 20154

Subdivision	Temp Road	Length (ft)	Work required	Cost/Station	Total
27	New	450	Berm and/or Rip and seed	$379.00	$1,706
27c	New	460	Berm and/or Rip and seed	$379.00	$1,743
27c	New	150	Berm and/or Rip and seed	$379.00	$569
30	New	250	Berm and/or Rip and seed	$379.00	$948
30	New	150	Berm and/or Rip and seed	$379.00	$569
30	Existing	530	Berm and/or Rip and seed	$95.00	$504
32	Reconst	880	Berm and/or Rip and seed	$189.00	$1,663
32	New	300	Berm and/or Rip and seed	$379.00	$1,137
34	Existing	610	Berm and/or Rip and seed	$95.00	$580
37	New	620	Berm and/or Rip and seed	$379.00	$2,350
51	New	80	Berm and/or Rip and seed	$379.00	$303
66	New	280	Berm and/or Rip and seed	$379.00	$1,061
74	Existing	500	Berm and/or Rip and seed	$95.00	$475
74	New	730	Berm and/or Rip and seed	$379.00	$2,767
74	New	80	Berm and/or Rip and seed	$379.00	$303
74	New	430	Berm and/or Rip and seed	$379.00	$1,630
***Total length in miles**		1.23	**Total Temporary Road Cost**		$18,305

New costs based on $20,000 per mile

Open exisitng costs based on $10,000 per mile

*Total length in miles does not include rehabilitation Length (ft)

Added to TEA as temporary development

CCF: 8,974

Total cost / CCF: $2.04

USDA Forest Service

125 (8/70)

TIMBER SALE EROSION CONTROL PLAN AND APPRAISAL

	Willamette		Sweet Home		NTLJ		
	(Forest)		(Ranger District)		(Sale Name)		
	8,974	C Cubic feet to be cut	188	ac skyline	91	Landings	
(3)	4,672	M board feet to be cut	0	ac heli	0	Heli Landings	
(4)	0.00	miles permanent road	129	ac tractor	1.23	miles temp	
(5)	Work will be done by purchaser.						

		Job	Acres	Number	Wages	COST Material	COST Total
(6)		**PERMANENT ROAD STABILIZATION**					
	a.	Seed, mulch, fertilize	0.00		$178.00	$870.00	$0.00
(7)	25' width	**TEMP. ROADS (put to bed)**					
	a.	Remove culverts & bridges					
	b.	Outsloping					
	c.	Waterbarring		65	$20.00		$1,300.00
	d.	Scarifying			$166.00		$0.00
	e.	Barriers					
	f.	Seed	3.73		$89.00	$435.00	$1,954.52
(8)		**SKIDDING & TRAILS (3%)**					
	a.	Remove culverts & bridges					
	b.	Waterbars & Cross drains					
	c.	Brush dams					
	d.	Seed	3.87		$89.00	$435.00	$2,027.88
(9)		**FIRELINE STABILIZATION**					
	a.	Waterbars & Cross drains					
	b.	Seed, mulch, fertilize					
(10)	40 x 40	**LANDINGS**					
	a.	Drainage Ditches					
	b.	Scarifying	3.34		$166.00		$554.44
	c.	Seed	3.34		$89.00	$435.00	$1,750.16
(11)		**DISTURBED MEADOWS**					
	a.	Land treatment					
	b.	Seed, mulch, fertilize					
(12)		**CHANNEL CLEARING**		(Miles)			
	a.	By hand					
	b.	By machine					
(13)		**MAINTAIN EROSION STRUCTURES**		(Number)			
(14)		**OTHER (specify)**					
	a.	Subsoiler					
(15)		Total Cost					$7,587.00
(16)		**TOTAL + OH & Dep ***					$7,587.00
(17)		Cost per CCF					$0.85
		***Above costs includes overhead and depreciation**					

TIMBER SALE EROSION CONTROL PLAN AND APPRAISAL

INSTRUCTIONS

(1) To be prepared as part of the appraisal of every timber sale on which requirement for erosion control measures is needed, (FSM 2456.6). Guidelines for planning the work are found in FSH 2482.2. Prepare one plan for work which you would not do cooperatively and one for work which you would do. All erosion control work should be shown on a plan, but cost estimates should be omitted (or shown in parentheses and not included in the totals) where the costs are included in other items such as skidding, road construction, road maintenance, or are included in other plans such as the BD Plan or the KV SAB Plan.

(3) Show total volume to be cut. Sum of acres to be logged should be equal to the total of area to be logged, exclusive of road right-of-way.

(5) Cross out words in parentheses if you will not assume work.

(6)-(11) Seed, mulch, fertilize - Cross out work not planned. For example, if only seeding is to be done, cross out "mulch, fertilize." Cross ditching, waterbars, etc. - Normally hand work will be undertaken cooperatively and machine work will not. If both kinds of work are estimated on one form, show separate cost estimates for each on an attached sheet.

(13) Cost estimate for maintenance of erosion control structures such as waterbars, diversion ditches, etc. during the life of the sale.

(14) Include a summary of work necessary because of disturbance from Forest Service BD and SAB activities. Do not enter cost in Totals for these activities.

(15) Do not include overhead on work which will not be undertaken cooperatively.

(16) Line (14) divided by total volume. If two estimates are made use total in appraisal.

(17) Line (15) divided by total volume. Does not apply to work not to be handled cooperatively.

Prepared:	Jean Schmidgall (name)	3/25/2015 date
Approved:	(name)	4/1/15 date
Approved:	Cynthia Glick (name)	4/29/15 date

Logging Cost Summary - Estimated Stump To Truck Cost

Summary By Sale And Logging System

Logging System	Vol Type	Total Volume	Stump-truck $/vol	Estimated Seasons
Skyline	*ccf*	5,294	103.14	2
Mechanized		0	0.00	0
Tractor	*ccf*	3,680	87.46	2
Shovel		0	0.00	0
Helicopter (1)		0	0.00	0
Sale-as-a-whole		8,974	96.71	

ovhd=6.18/ccf or 11.89/mbf, p&r=2% of costs included (except helicopter) includes biomass:

	$/saw timber		
Est biomass cost		Estimated total number operating days for sale	116
Include biomass in sale-as-a-whole?		Variable shutdown cost (all systems, if any) $/vol	
		Include variable shutdown in sale-as-a-whole?	

Include Chipper?

Hours Used

Haul-$'s

Select helicopter alternative **Helicopter (1)**

Sale: **NTLJ**
Date: **1/15/15**

LOGCOST Version 12.02

Report summary table above in tons

FALLING & BUCKING APPRAISAL - DATA INPUT TABLE

LOGCOST Version 12.02

Sale name	Vol type *select*	Geographic area - *select*	Date
NTLJ	CCF	OR	15-Jan-15

Average one-way walk-in time, hrs	Net ccf per acre	Avg gross cf per tree	Percent net recovery	Avg time per tree	Fuel cost $/gallon
0.25	28.3	23.4	91.6%	10	$4.00

COST DEFAULTS TABLE

Labor rate Fall-buck	Delay time Min/hr	Avg. hours Per day	Move cost In/out	Production Net ccf/hr	Production Net ccf/day	Total Cost/day
$29.27	9.0	8.0	$36.00	1.09	8.18	$303.12

Defaults used in above table

labor rate (region = OR)	$29.27	$/hr
delay time minute/hr	9.0	min/hr
hours worked/day	8.0	hrs/day
move in/out	$36.00	$/day

General Sale or Unit Input - *Skyline System*

LOGCOST Version 12.02

Sale Name: NTLJ

Date: 1/15/2015 Fuel-$/gal: $4.00

Geo area: OR Vol type: CCF

Months in opr season: 5.0

Sale or Unit #	Net unit CCF vol	Unit Acres	Total $'s Misc cost	Ave %slope To lnding	AYD Feet	Piece size net cf ft	Wood wt lbs/cf ft	Misc total $'s Explanation (text)	Include in summary
27a	60	2.0	500	40.0%	195	16.0	59.0	Surface Rock Replacement	yes
27b	60	2.0	250	40.0%	400	16.0	59.0	Surface Rock Replacement	yes
27c	358	12.0	2,000	40.0%	250	16.0	59.0	Surface Rock Replacement	yes
29	270	10.0	750	40.0%	390	16.0	59.0	Surface Rock Replacement	yes
29h	25	1.0	500	40.0%	195	16.0	59.0	Surface Rock Replacement	yes
29i	50	2.0	500	40.0%	235	16.0	59.0	Surface Rock Replacement	yes
29j	25	1.0	250	40.0%	200	16.0	59.0	Surface Rock Replacement	yes
32	405	15.0	2,250	40.0%	330	16.0	59.0	Surface Rock Replacement	yes
32h	100	4.0	500	40.0%	310	16.0	59.0	Surface Rock Replacement	yes
34	129	4.0	1,250	40.0%	140	16.0	59.0	Surface Rock Replacement	yes
37	540	20.0	2,000	40.0%	340	16.0	59.0	Surface Rock Replacement	yes
37h	25	1.0	0	40.0%	400	16.0	59.0	Surface Rock Replacement	yes
51	78	3.0	500	40.0%	440	16.0	59.0	Surface Rock Replacement	yes
51a	25	1.0	250	40.0%	200	16.0	59.0	Surface Rock Replacement	yes
54	50	1.0	0	40.0%	480	21.0	59.0	Surface Rock Replacement	yes
54a	50	1.0	0	40.0%	540	21.0	59.0	Surface Rock Replacement	yes
54b	50	1.0	0	40.0%	640	21.0	59.0	Surface Rock Replacement	yes
55	1,017	20.0	0	40.0%	1,250	21.0	59.0	Surface Rock Replacement	yes
66	549	15.0	1,250	70.0%	620	16.0	59.0	Surface Rock Replacement	yes
66a	36	1.0	250	40.0%	700	16.0	59.0	Surface Rock Replacement	yes
66b	110	3.0	250	70.0%	670	16.0	59.0	Surface Rock Replacement	yes
67	181	7.0	1,250	60.0%	290	16.0	59.0	Surface Rock Replacement	yes
67a	77	3.0	250	60.0%	380	16.0	59.0	Surface Rock Replacement	yes
73	43	2.0	500	40.0%	380	16.0	59.0	Surface Rock Replacement	yes
74	731	20.0	3,500	60.0%	380	21.0	59.0	Surface Rock Replacement	yes
74a	110	3.0	500	50.0%	560	21.0	59.0	Surface Rock Replacement	yes
800	140	33.0	2,000	40.0%	270	21.0	59.0	Surface Rock Replacement	yes
Tot or avg	5,294	188.0	21,250	47.7%	555	18.0	59.0		

Miscellaneous costs include $500 per landing constructed and $250 for surface rock replacement. Two hours of cat time with operator for construction. Rock for srr will come from a weed free commercial source.

Equipment Use Summary - Skyline System

Estimated total cost per hour does not include labor

Sale: NTLJ Date: 01/15/15

unit #	yarder	carriage	landing tractor	log loader	limber-bucker	feller-buncher	harvester	total $/hr
27a	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
27b	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
27c	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
29	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
29h	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
29i	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
29j	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
32	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
32h	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
34	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
37	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
37h	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
51	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
51a	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
54	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
54a	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
54b	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
55	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
66	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
66a	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
66b	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
67	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
67a	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
73	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
74	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
74a	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07
800	Madill-071-USED	Eagle-VI	D7 (used)	Avg medium loader	Danzco pull through w/DL4400 saw			$252.07

Production Estimate - Skyline System

Sale: NTLJ

Date: 01/15/15

Optional prebunching input - harvester or feller-buncher input (select the bunching machine on "Equipment Selection" screen)

unit number	net cct volume	# sky corridors	corridor change time-min	net-lbs payload	corridor spacing feet	outhaul feet/min	lateral feet/min	effect min/hr	maximum tension-lbs	yarder net - cct/day	machine selected	# bunching machines	avg cut trees per acre	avg cut tree total height	merch cf per cut tree	merch top dib inches	process min/tree	search min/tree	weave factor - %	avg cut tree dbh	additional time/hour	avg log length-feet	harv-fb pieces/day	harv-fb net cct/day	harv-fb net $/mcf
27a	60	2	45.0	4,000	150.0	1,000	150	50.0	7,300	79.13	none														
27b	60	1	45.0	4,000	150.0	1,000	150	50.0	7,300	74.20	none														
27c	358	9	45.0	4,000	150.0	1,000	150	50.0	7,300	79.92	none														
29	270	6	60.0	4,000	150.0	1,000	150	50.0	7,300	68.61	none														
29h	25	2	45.0	4,000	150.0	1,000	150	50.0	7,300	58.78	none														
29i	50	2	45.0	4,000	150.0	1,000	150	50.0	7,300	72.83	none														
29j	25	2	45.0	4,000	150.0	1,000	150	50.0	7,300	58.58	none														
32	405	10	45.0	4,000	150.0	1,000	150	50.0	7,300	74.58	none														
32h	100	2	45.0	4,000	150.0	1,000	150	50.0	7,300	78.53	none														
34	129	5	45.0	4,000	150.0	1,000	150	50.0	7,300	79.99	none														
37	540	4	45.0	4,000	150.0	1,000	150	50.0	7,300	84.00	none														
37h	25	1	45.0	4,000	150.0	1,000	150	50.0	7,300	63.84	none														
51	78	2	60.0	4,000	150.0	1,000	150	50.0	7,300	64.15	none														
51a	25	1	45.0	4,000	150.0	1,000	150	50.0	7,300	75.07	none														
54	50	2	60.0	5,452	150.0	1,000	150	50.0	6,900	67.61	none														
54a	50	1	60.0	4,000	150.0	1,000	150	50.0	6,900	70.63	none														
54b	50	1	60.0	4,000	150.0	1,000	150	50.0	6,900	65.51	none														
55	1,017	11	60.0	4,000	150.0	1,000	150	50.0	6,900	47.93	none														
66	549	7	90.0	4,123	150.0	1,000	150	50.0	7,500	59.23	none														
66a	36	1	45.0	4,123	150.0	1,000	150	50.0	7,500	55.45	none														
66b	110	1	45.0	4,000	150.0	1,000	150	50.0	7,500	62.77	none														
67	181	7	45.0	4,000	150.0	1,000	150	50.0	7,300	70.17	none														
67a	77	2	60.0	4,000	150.0	1,000	150	50.0	7,300	67.00	none														
73	43	1	45.0	4,000	150.0	1,000	150	50.0	7,300	72.15	none														
74	731	12	60.0	4,000	150.0	1,000	150	50.0	7,400	83.76	none														
74a	110	2	60.0	8,059	150.0	1,000	150	50.0	7,400	78.26	none														
800	140	6	30.0	4,000	150.0	1,000	150	50.0	6,900	74.56	none														
Tot or avg	5,294	7.4	56.2	4,111.6	150.0	1,000.0	150.0	50.0	7,243.4	69.27															

Labor Use Summary - Skyline System

Amount of each labor type shown in parenthesis

Sale: NTLJ Date: 01/15/15

unit #	Labor A	Labor B	Labor C	Labor D	Labor E	Labor F	Labor G	Labor H	total $/hr
27a	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
27b	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
27c	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
29	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
29h	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
29i	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
29j	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
32	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
32h	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
34	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
37	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
37h	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
51	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
51a	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
54	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
54a	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
54b	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
55	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
66	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
66a	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
66b	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
67	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
67a	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
73	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
74	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
74a	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70
800	Hook tender (1)	Rigging slinger (1)	Choker setter (3)	Chaser (1)	Yarder engineer (1)	Loader opr (1)			$149.70

Moving - Skyline System

Date: 01/15/15

Sale: NTLJ

net ccf vol	seasons to yard	seasons to use	first landing: move in (one way) tot miles	first landing: move in (one way) hours	first landing: rig up hours	additional lnds: unrig, move, rig up hrs/lnding	additional lnds: unrig, move, rig up # lndings	last landing: rig dwn hours	last landing: move out (one way) tot miles	last landing: move out (one way) hours
5,294	1	2	40.0	3.0	4.0	1.0	65.0	4.0	3.0	4.0

Days of variable shutdown/season

Miscellaneous Input - Skyline System

Sale: NTLJ

Date: 01/15/15

=data not needed

Current f&b
39.04

sale or unit #	net ccf vol	choker selection	choker life ccf	tail hold anchor (stump or tail, not both)		tag SL length-ft	tag HB length-ft	tag guy line length-ft	$/ccf fall-buck
				stump anchor selection	tail tree selection				
27a	60	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
27b	60	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
27c	358	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
29	270	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
29h	25	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
29i	50	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
29j	25	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
32	405	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
32h	100	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
34	129	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
37	540	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
37h	25	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
51	78	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
51a	25	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
54	50	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
54a	50	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
54b	50	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
55	1,017	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
66	549	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
66a	36	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
66b	110	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
67	181	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
67a	77	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
73	43	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
74	731	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
74a	110	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
0	140	9/16" X 20'	525		1" - 1 IS	0	0	0	39.04
Totals	5,294		525			0	0	0	39.04

General Sale or Unit Input - *Tractor System*

LOGCOST Version 12.02

Sale Name: NTLJ

Date: 01/15/15
Fuel-$/gal: $4.00

Geo-area: OR
Vol type: CCF

Months in opr season: 5.0

Sale or Unit #	Net unit CCF vol	Unit Acres	Total $'s Misc cost	Ave %slope To lnding	ASD Feet	Piece size net cf ft	Wood wt lbs/cf ft	Misc total $'s Explanation (text)	Include in summary
27	657	22.0	1,750	10.0%	335	16.0	59.0	Surface Rock Replacement	yes
27c	90	3.0	250	20.0%	170	16.0	59.0	Surface Rock Replacement	yes
28	217	8.0	500	25.0%	320	16.0	59.0	Surface Rock Replacement	yes
28a	217	8.0	250	-25.0%	500	16.0	59.0	Surface Rock Replacement	yes
30	1,108	40.0	1,500	10.0%	410	16.0	59.0	Surface Rock Replacement	yes
30h	99	4.0	250	-20.0%	320	16.0	59.0	Surface Rock Replacement	yes
32	242	9.0	250	15.0%	520	16.0	59.0	Surface Rock Replacement	yes
34	260	10.0	250	-15.0%	330	16.0	59.0	Surface Rock Replacement	yes
37	161	6.0	750	20.0%	320	16.0	59.0	Surface Rock Replacement	yes
37h	50	2.0	250	10.0%	405	16.0	59.0	Surface Rock Replacement	yes
50	188	5.0	500	10.0%	300	16.0	59.0	Surface Rock Replacement	yes
51	77	3.0	250	-20.0%	380	16.0	59.0	Surface Rock Replacement	yes
73	21	1.0	250	20.0%	260	16.0	59.0	Surface Rock Replacement	yes
74	293	8.0	500	15.0%	240	21.0	59.0	Surface Rock Replacement	yes
Tot or avg	3,680	129.0	7,500	7.1%	365	16.4	59.0		

Miscellaneous costs include $500 per landing constructed and $250 for surface rock replacement. Two hours of cat time with operator for construction. Rock for srr will come from a weed free commercial source.

Equipment Use Summary - Tractor System

Estimated total cost per hour does not include labor

Sale: NTLJ Date: 01/15/15

unit #	skidder	log loader	limber-bucker					total $/hr
27	Avg large wheel skidder	Avg medium loader	Danzco pull through w/DL4400 saw					$301.38
27c	Avg large wheel skidder	Avg medium loader	Danzco pull through w/DL4400 saw					$301.38
28	Avg large wheel skidder	Avg medium loader	Danzco pull through w/DL4400 saw					$301.38
28a	Avg large wheel skidder	Avg medium loader	Danzco pull through w/DL4400 saw					$301.38
30	Avg large wheel skidder	Avg medium loader	Danzco pull through w/DL4400 saw					$301.38
30h	Avg large wheel skidder	Avg medium loader	Danzco pull through w/DL4400 saw					$301.38
32	Avg large wheel skidder	Avg medium loader	Danzco pull through w/DL4400 saw					$301.38
34	Avg large wheel skidder	Avg medium loader	Danzco pull through w/DL4400 saw					$301.38
37	Avg large wheel skidder	Avg medium loader	Danzco pull through w/DL4400 saw					$301.38
37h	Avg large wheel skidder	Avg medium loader	Danzco pull through w/DL4400 saw					$301.38
50	Avg large wheel skidder	Avg medium loader	Danzco pull through w/DL4400 saw					$301.38
51	Avg large wheel skidder	Avg medium loader	Danzco pull through w/DL4400 saw					$301.38
73	Avg large wheel skidder	Avg medium loader	Danzco pull through w/DL4400 saw					$301.38
74	Avg large wheel skidder	Avg medium loader	Danzco pull through w/DL4400 saw					$301.38

Production Estimate - Tractor System

Sale: NTLJ

Date: 01/15/15

Unit number	Net CCF volume	log transport machine type	# transport machines	avg pieces per turn	% delay per hour	add time minutes	grapple on skidder?	Average skid trail spacing	Winching required?	Est net vol/day-CCF
27	657	wheeled skidder	2	3.0	8.0%		yes	100	no	129.42
27c	90	wheeled skidder	2	3.0	8.0%		yes	100	no	151.46
28	217	wheeled skidder	2	3.0	8.0%		yes	100	no	109.73
28a	217	wheeled skidder	2	3.0	8.0%		yes	100	no	87.46
30	1,108	wheeled skidder	2	3.0	8.0%		yes	100	no	117.28
30h	99	wheeled skidder	2	3.0	8.0%		yes	100	no	120.55
32	242	wheeled skidder	2	3.0	8.0%		yes	100	no	92.59
34	260	wheeled skidder	2	3.0	8.0%		yes	100	yes	96.04
37	161	wheeled skidder	2	3.0	8.0%		yes	100	no	114.14
37h	50	wheeled skidder	2	3.0	8.0%		yes	100	no	118.01
50	188	wheeled skidder	2	3.0	8.0%		yes	100	no	135.99
51	77	wheeled skidder	2	3.0	8.0%		yes	100	no	110.23
73	21	wheeled skidder	2	3.0	8.0%		yes	100	yes	95.77
74	293	wheeled skidder	2	3.0	8.0%		yes	100	no	176.36
Tot or avg	3,680		2.0	3.0	8.0%	0.0		100.0		120.30

Labor Use Summary - Tractor System

Amount of each labor type shown in parenthesis

Sale: NTLJ Date: 01/15/15

unit #	Labor A	Labor B	Labor C	Labor D	Labor E	Labor F	Labor G	Labor H	total $/hr
27	Chaser (1)	Choker setter (2)	Loader opr (1)	Skidder opr (2)					$115.77
27c	Chaser (1)	Choker setter (2)	Loader opr (1)	Skidder opr (2)					$115.77
28	Chaser (1)	Choker setter (2)	Loader opr (1)	Skidder opr (2)					$115.77
28a	Chaser (1)	Choker setter (2)	Loader opr (1)	Skidder opr (2)					$115.77
30	Chaser (1)	Choker setter (2)	Loader opr (1)	Skidder opr (2)					$115.77
30h	Chaser (1)	Choker setter (2)	Loader opr (1)	Skidder opr (2)					$115.77
32	Chaser (1)	Choker setter (2)	Loader opr (1)	Skidder opr (2)					$115.77
34	Chaser (1)	Choker setter (2)	Loader opr (1)	Skidder opr (2)					$115.77
37	Chaser (1)	Choker setter (2)	Loader opr (1)	Skidder opr (2)					$115.77
37h	Chaser (1)	Choker setter (2)	Loader opr (1)	Skidder opr (2)					$115.77
50	Chaser (1)	Choker setter (2)	Loader opr (1)	Skidder opr (2)					$115.77
51	Chaser (1)	Choker setter (2)	Loader opr (1)	Skidder opr (2)					$115.77
73	Chaser (1)	Choker setter (2)	Loader opr (1)	Skidder opr (2)					$115.77
74	Chaser (1)	Choker setter (2)	Loader opr (1)	Skidder opr (2)					$115.77

Moving - Tractor System

Date: 01/15/15

Sale: NTLJ

net ccf vol	seasons to yard	seasons to use	first landing: move in (one way) tot miles	first landing: move in (one way) hours	additional landings: move to hrs/lnding	additional landings: move to # lndings	last landing: move out (one way) tot miles	last landing: move out (one way) hours
3,680	1	2	40.0	3.0	1.0	24	40.0	3.0

Days of variable shutdown/season

Miscellaneous Input - Tractor System

Sale: NTLJ

Date: 01/15/15

sale or unit #	net ccf volume	$/ccf fall/buck	$/ccf additional	explanation of additional $/ccf
27	657	39.04		
27c	90	39.04		
28	217	39.04		
28a	217	39.04		
30	1,108	39.04		
30h	99	39.04		
32	242	39.04		
34	260	39.04		
37	161	39.04		
37h	50	39.04		
50	188	39.04		
51	77	39.04		
73	21	39.04		
74	293	39.04		
Tot or avg	3,680	39.04	0.00	

Log Haul Worksheet

3/31/2015

Sale Name NTLJ Thin
Volume 8974 CCF
Appraisal Point Sweet Home

Road Number	Begin Milepost	Ending Milepost	Termini	Distance	Vol hauled over rd segment	% Sale Volume	Weighted Haul Miles	Truck mph	RTM/Mile	Total RTM
2000245	3.47	2.24	Landing 37, 37h to Landing 34	1.23	776	0.1	0.11	15	8.0	0.9
2000245	2.24	1.68	Landings 34 to Landing unit 30, 30h	0.56	1165	0.1	0.07	15	8.0	0.6
2000245	1.68	1.03	Landing unit 30, 30h to Landing unit 29j	0.65	2372	0.3	0.17	15	8.0	1.4
2000245	1.03	0.86	Landing unit 29j to Landing unit 29i	0.17	2397	0.3	0.05	15	8.0	0.4
2000245	0.86	0.75	Landing unit 29i to Landing unit 29h	0.11	2447	0.3	0.03	15	8.0	0.2
2000245	0.75	0.56	Landing unit 29h to Landing unit 29	0.19	2472	0.3	0.05	15	8.0	0.4
2000425	0.56	0.00	Landing unit 29 to road junction Hwy 20	0.56	2742	0.3	0.17	15	8.0	1.4
2000047	0.40	0.21	Landing 32 to Landing 32h	0.19	647	0.1	0.01	15	8.0	0.1
2000047	0.21	0.03	Landing 32h to Landing 73	0.18	746	0.1	0.01	15	8.0	0.1
2000047	0.03	0.00	Landing 73 to Hwy 20 junction	0.03	810	0.1	0.00	15	8.0	0.0
2000037	1.56	1.10	Landing unit 66b to Landing unit 67	0.46	110	0.0	0.01	15	8.0	0.0
2000037	1.10	0.91	Landing unit 67 to temp spur junction	0.19	291	0.0	0.01	15	8.0	0.0
2000037	0.91	0.34	Temp spur junction to Landing unit 27c	0.57	953	0.1	0.06	15	8.0	0.5
2000037	0.34	0.28	Landing/temp spur in unit 27c to Landing unit 27b	0.06	1037	0.1	0.01	15	8.0	0.1
2000037	0.28	0.21	Landing unit 27b to Landing unit 27a	0.07	1097	0.1	0.01	15	8.0	0.1
2000037	0.21	0.00	Landing unit 27a to Landing unit 27/ rd jct 035	0.21	1372	0.2	0.03	15	8.0	0.3
2000033	0.41	0.29	Landing unit 27c to landing unit 27	0.12	474	0.1	0.01	15	8.0	0.1
2000033	0.29	0.00	Landing unit 27 to Landing unit 27/rd jct 035	0.29	916	0.1	0.03	15	8.0	0.2
2000035	0.88	0.78	Landing unit 28a to Landing unit 28	0.1	217	0.0	0.00	15	8.0	0.0
2000035	0.78	0.59	Landing unit 28 to rd jct 037	0.19	434	0.0	0.01	15	8.0	0.1
2000035	0.59	0.49	Rd jct 037 to rd jct 033	0.1	1806	0.2	0.02	15	8.0	0.2
2000035	0.49	0.41	rd jct 033 to Landing unit 27	0.08	2722	0.3	0.02	15	8.0	0.2
2000035	0.41	0.11	Landing unit 27 to Landing unit 74	0.3	2868	0.3	0.10	15	8.0	0.8
2000035	0.11	0.00	Landing unit 74 to rd jct Hwy 20	0.11	3746	0.4	0.05	15	8.0	0.4
2000362	0.44	0.00	Landing unit 50 to rd jct 030	0.44	188	0.0	0.01	15	8.0	0.1
2000363	0.90	0.65	Landing unit 800/54 to Landing unit 800/54a	0.25	68	0.0	0.00	15	8.0	0.0
2000363	0.65	0.45	Landing unit 800/54a to Landing unit 800/54b	0.2	136	0.0	0.00	15	8.0	0.0
2000363	0.45	0.30	Landing unit 800/54b to Landing unit 800/55	0.15	238	0.0	0.00	15	8.0	0.0
2000363	0.35	0.00	Landing unit 800/55 to landing unit 800/rd jct 030	0.35	1290	0.1	0.05	15	8.0	0.4
2000030	1.02	0.86	Rd jct 033/363 to Landing unit 51a	0.16	1307	0.1	0.02	15	8.0	0.2
2000030	0.86	0.75	Landing unit 51a to Landing unit 51	0.11	1332	0.1	0.02	15	8.0	0.1
2000030	0.75	0.33	Landing unit 51 to rd jct 362	0.42	1487	0.2	0.07	15	8.0	0.6
2000030	0.33	0.00	Rd jct 362 to highway 20	0.33	1675	0.2	0.06	15	8.0	0.5
Highway 20	34.90	34.80	Rd jct 035 to Rd jct 047	0.1	3747	0.4	0.04	45	2.7	0.1
Highway 20	34.80	33.70	Rd jct 047 to rd jct 245	1.1	4557	0.5	0.56	45	2.7	1.5
Highway 20	33.70	31.62	Rd jct 245 to rd jct 030	2.08	7299	0.8	1.69	45	2.7	4.5
Highway 20	31.61	0.00	Rd jct 030 to 228 jct	31.61	8974	1.0	31.61	45	2.7	84.3
Highway 228	7.80	0.00	Rd jct highway 20 to rd jct Brush Creek/Marcola rd	7.8	8974	1.0	7.80	45	2.7	20.8
Brush Creek/Marcola rd	26.20	0.00	Rd jct Highway 228 to rd jct Highway 126	26.2	8974	1.0	26.20	45	2.7	69.9
Highway 126	7.30	0.00	Jct Marcola rd to I5 interchange	7.3	8974	1.0	7.30	45	2.7	19.5
			Weighted Haul Miles				**76.48**	**Miles**		**210.73**

Time required to:

Load	25.0
Tighten binders	5.0
Scale	15.0
Unload	20.0

Transfer Total RTM to Haul Cost Worksheet 276

HAUL COST APPRAISAL - APPRAISAL SUMMARY

Version 7.2, XL 2007 12/1/2009b

Sale name: **NTLJ Thin** Geo. area: ***OR*** Date: **30-Oct-14**

Cost type	Average trip rtm's	CCF per load	Tot rtm's per day	Total OT rtm's	CCF vol per day	Gross cost per day	Net cost per day	Net cost per ccf	Net $/ccf w/inflation
w/o scale									
with scale	361.0	8.0	582.0	102.0	12.90	518.15	545.43	42.29	43.98

Forest Resource Enterprises

Include scale cost in final haul cost

Total haul cost, $/ccf = **$43.98**

276 minutes

Volume Type...
CCF

Sale or Haul Narrative

Scale cost: $55.20

LOGGING FEASIBILITY REPORT

NTLJ Timber Sale

Toll Joe E. A.

Prepared by Joanie Schmidgall Date January 23, 2015

Reviewed by Ken Loree Date January 23, 2015

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1	Vicinity Map
2-17	Unit Maps
18-19	Unit Logging Summary
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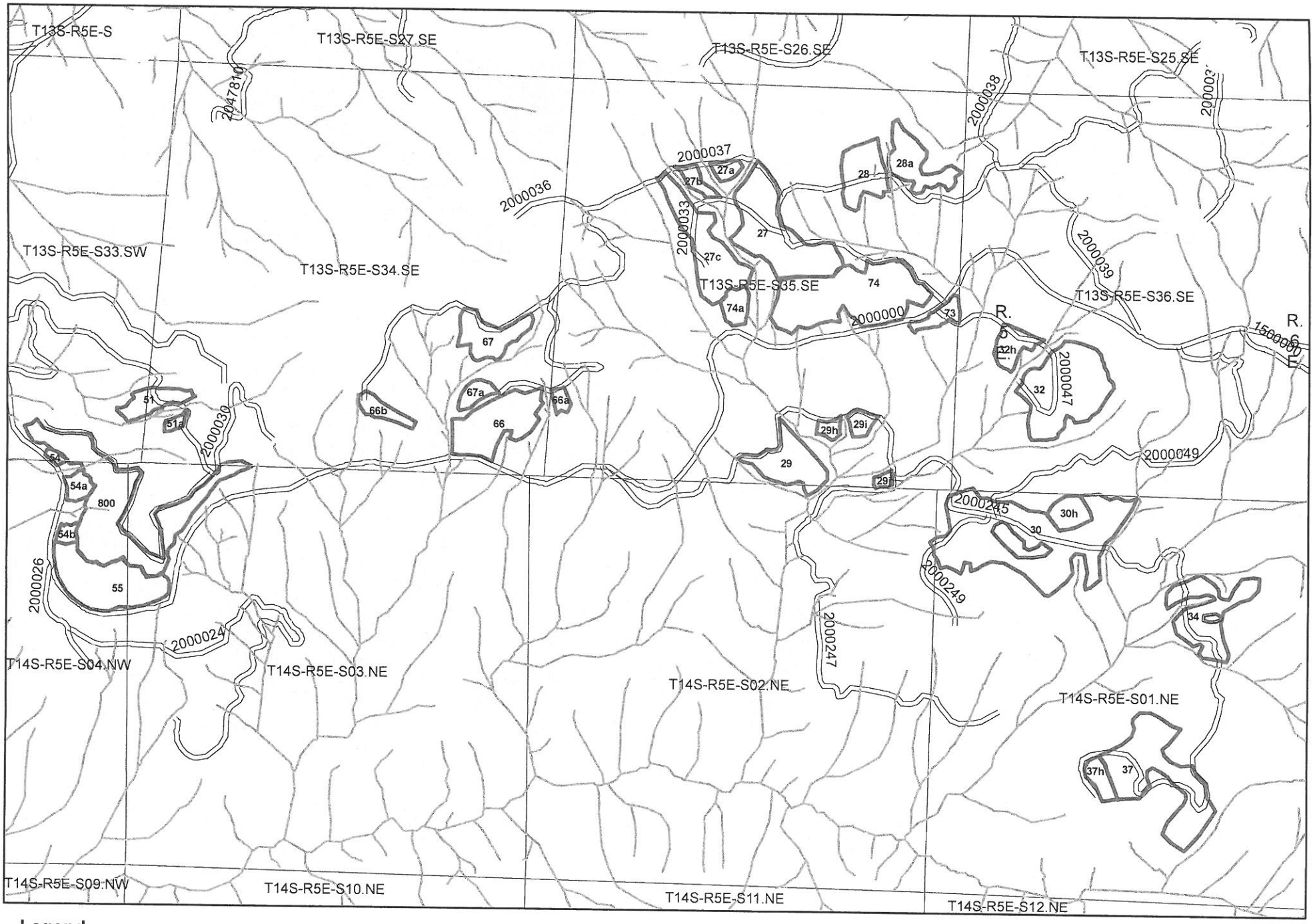
32	Landing Summary



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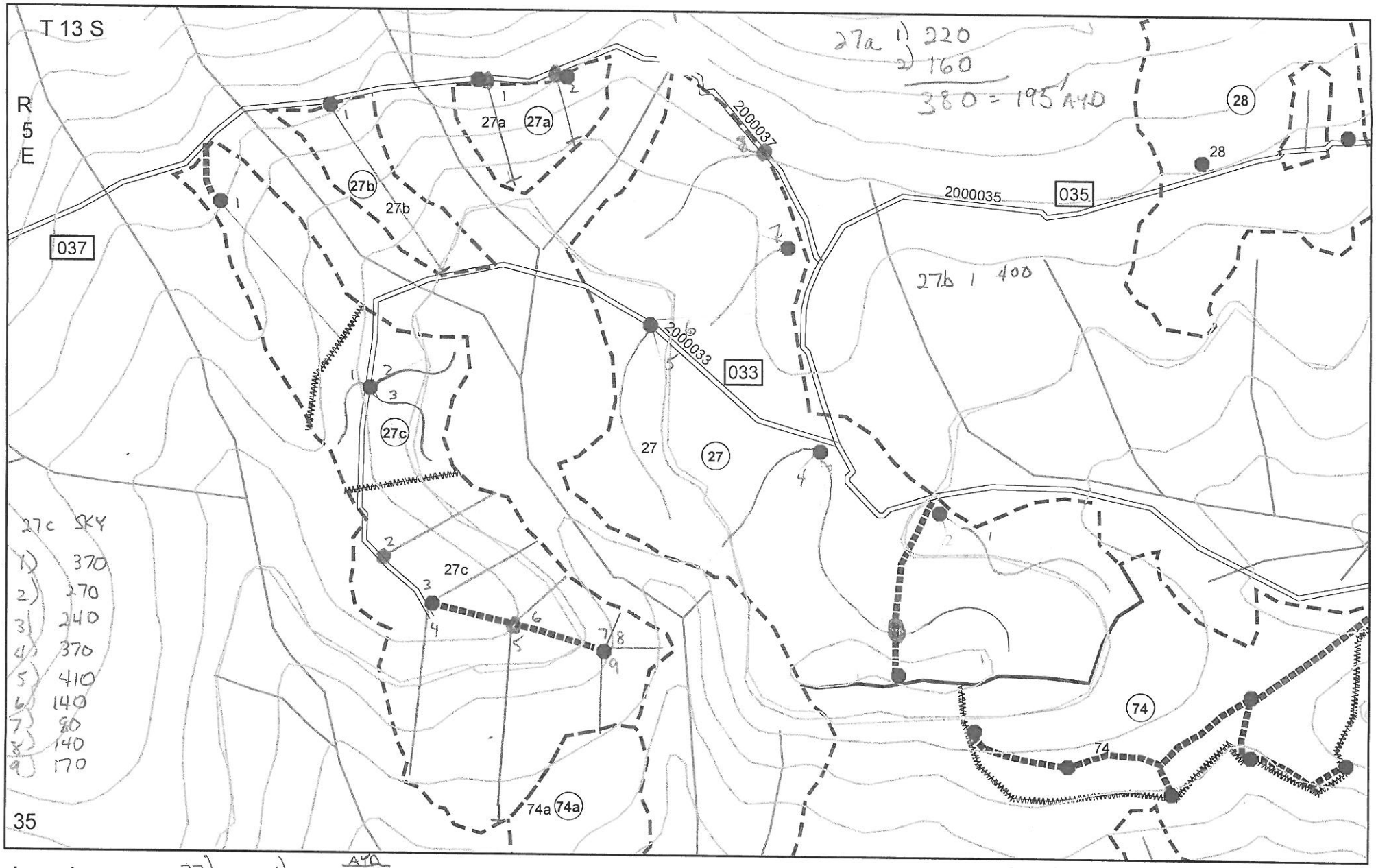
- Roads_clip
- Sections_clip
- NTLJ Thin

NTLJ

3/15 JS

N

0 1,500 3,000 6,000 Feet



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- Roads_clip
- Streams_clip
- NTLJ_final
- Existing_Spur_Road_clip
- Logging_Systems_break
- Proposed Temporary Spur clip

27)

	AYD
1)	420
2)	330
3)	470
4)	330
5)	330
6)	280
7)	330
8)	190
268 0/8	= 335' AYD

Logging Systems Map
NTLJ Thin
Unit 27, 27a, 27b, 27c

27c GB

1	140
2	200
3	200
	540

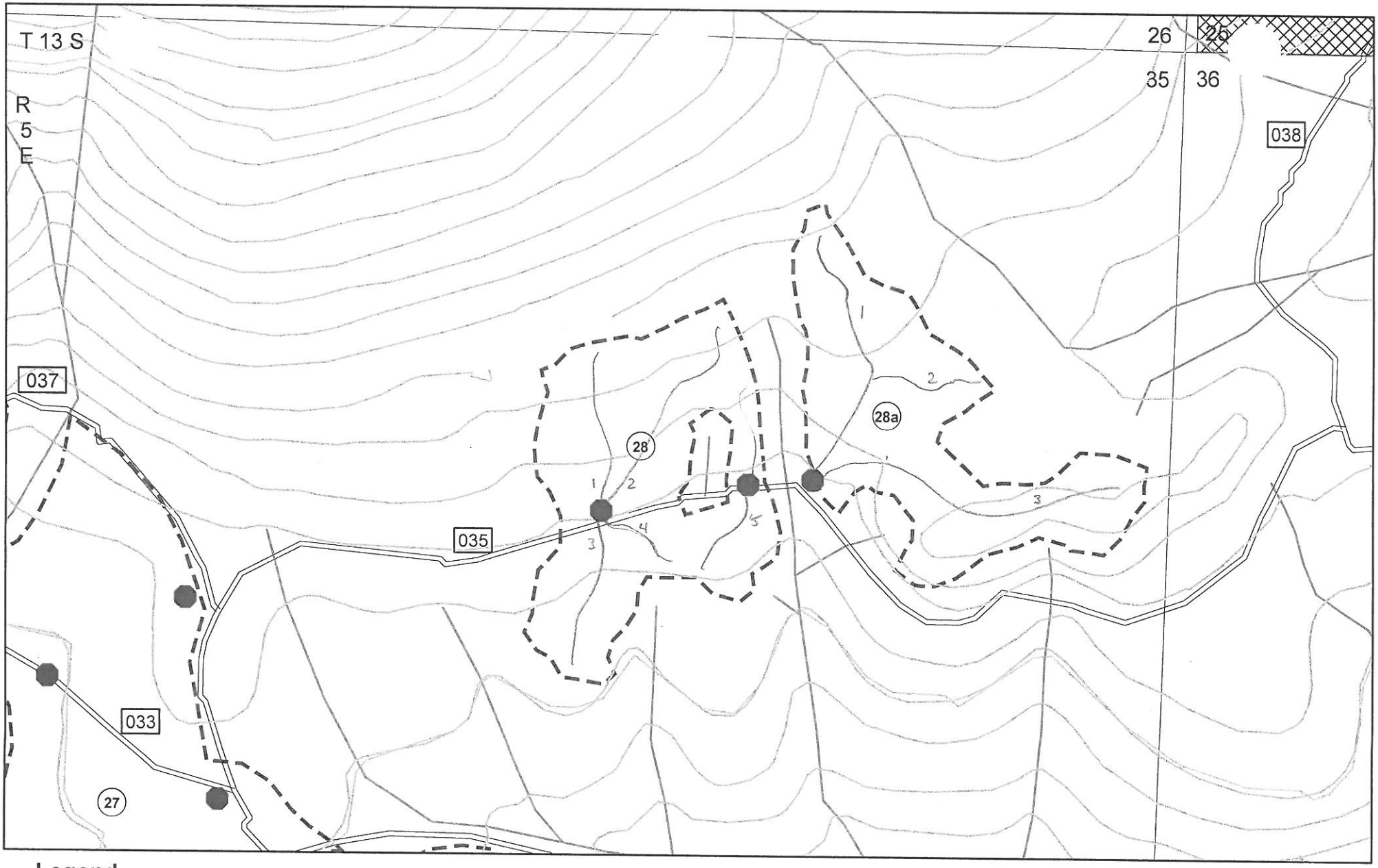
9/14 JS

1 inch = 330 feet

Feet

0 165 330 660

N



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- Roads_clip
- Streams_clip
- NTLJ_final

28
1) 390
2) 510
3) 310
4) 160
5) 210
1580 = 320 AKA

Logging Systems Map
NTLJ Thin
Unit 28, 28a

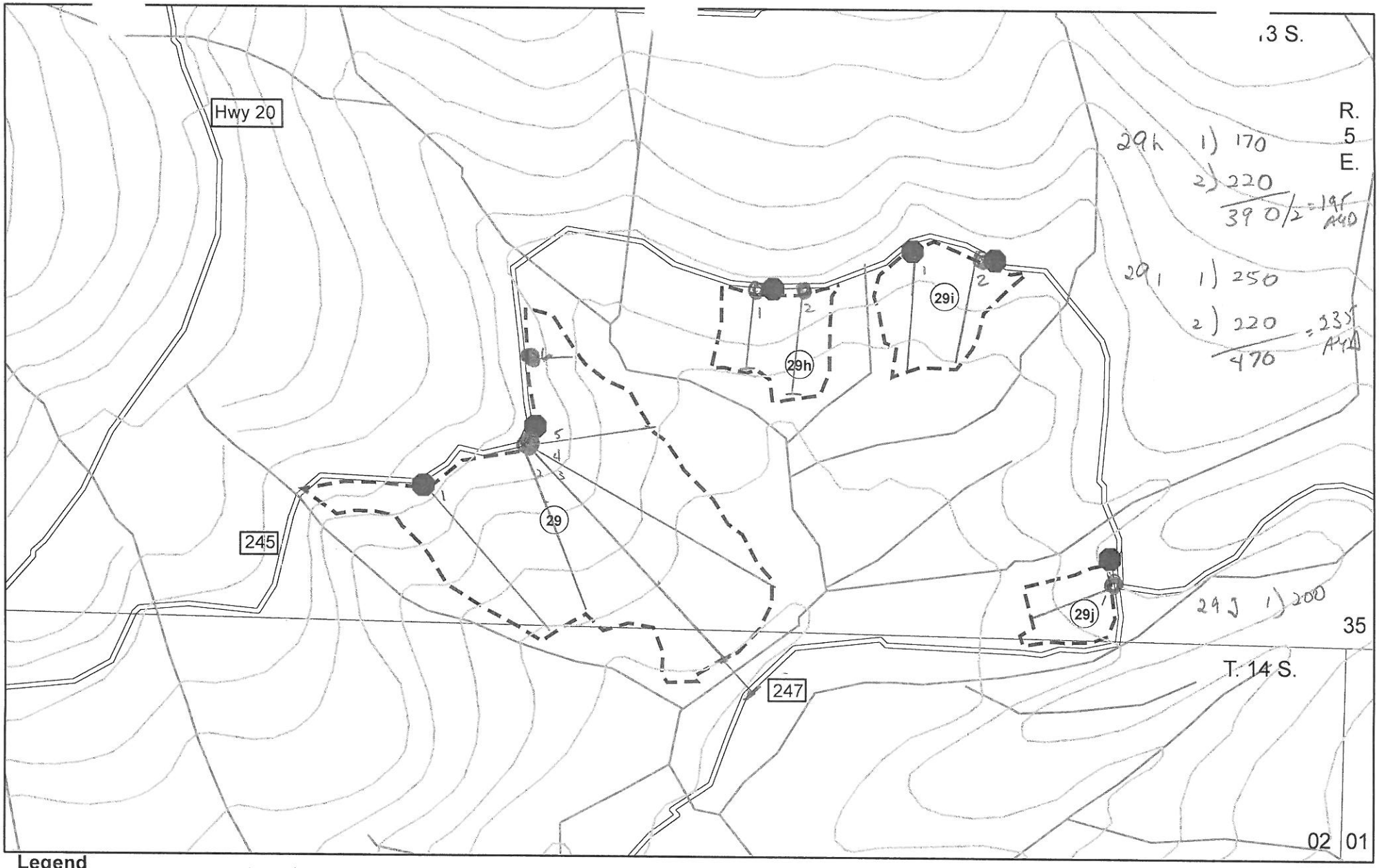
28a
1 580
2 380
3 640
1500 = 500 AKA

9/14 JS

1 inch = 330 feet

0 165 330 660 Feet

N



Legend

- Landings
- countour_clip
- Streams_clip
- Roads_clip
- NTLJ_final

29
1) 410
2) 390
3) 600
4) 580
5) 250
6) 110
2340/6 390 AYD

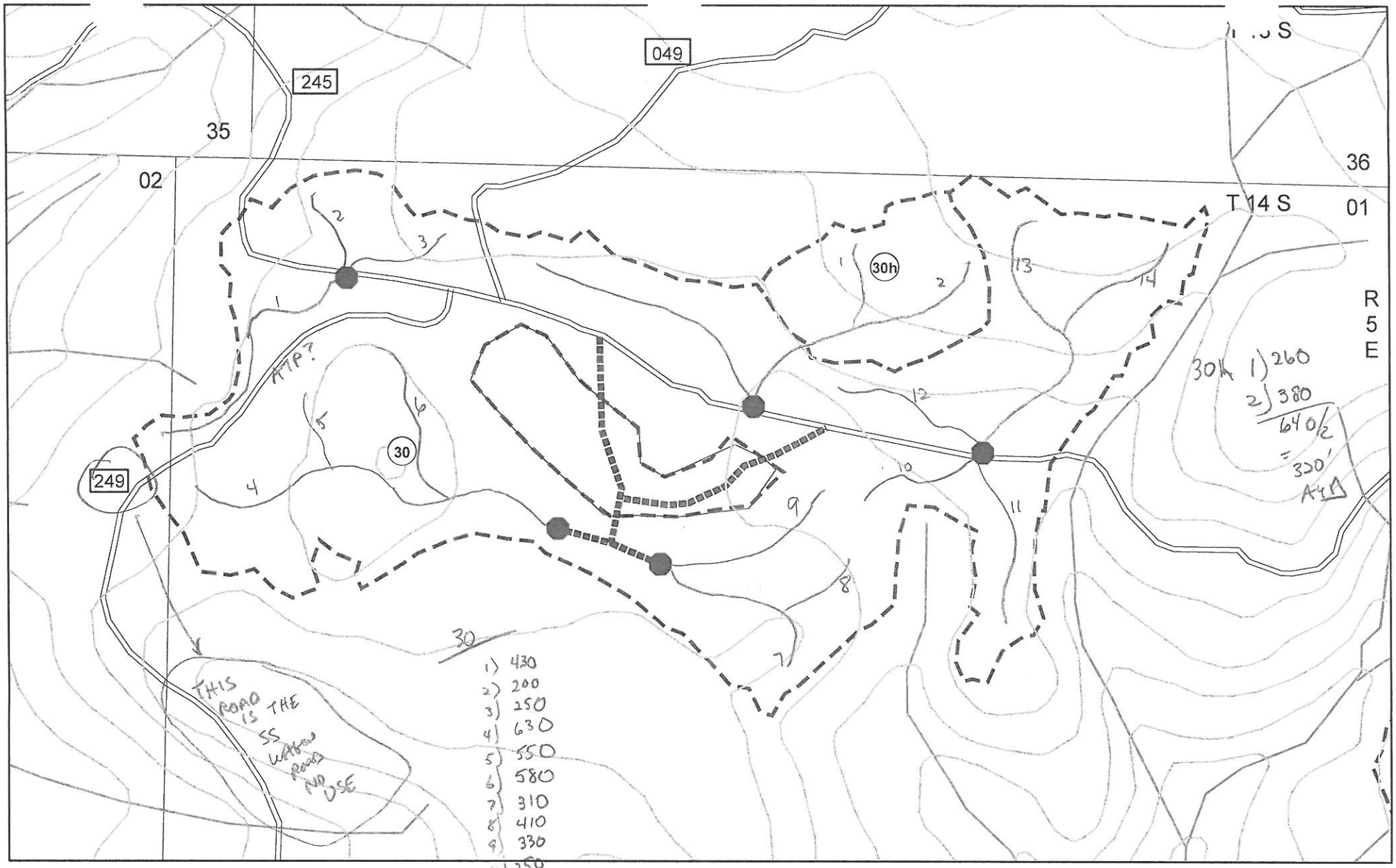
Logging Systems Map
NTLJ Thin
Unit 29, 29h, 29i, 29j

9/14 JS

1 inch = 330 feet

0 165 330 660 Feet

N



Logging Systems Map
NTLJ Thin
Unit 30, 30h

7/14 JS

Legend

- Landings
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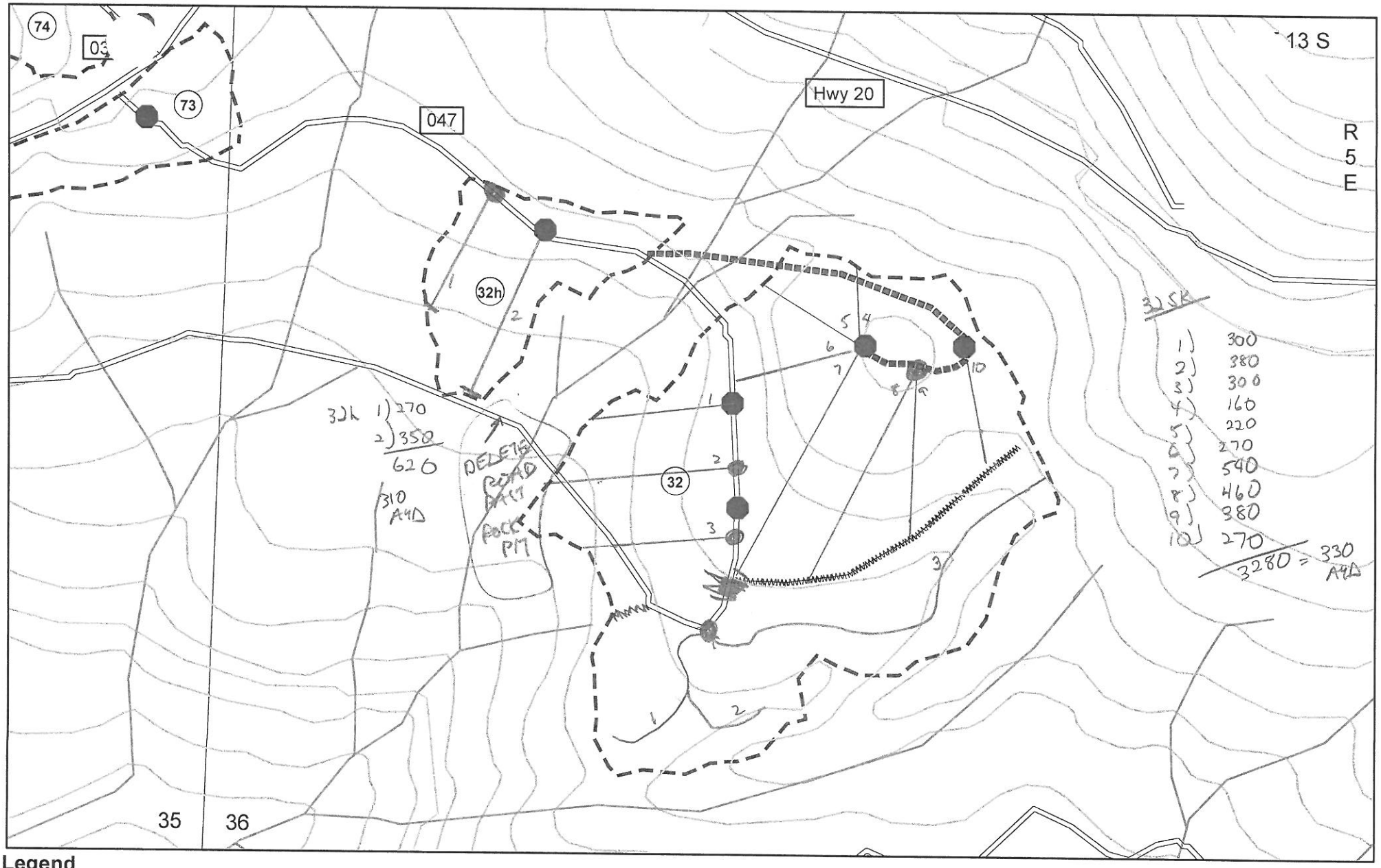
- Streams_clip
- Existing_Spur_Road_clip
- Logging_Systems_break
- Proposed_Temporary_Spur_clip
- Roads_clip
- NTLJ_final

1 inch = 330 feet

0 170 340 680 Feet

N



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- Landings
- Roads_clip
- Streams_clip
- NTLJ_final
- Existing_Spur_Road_clip
- Logging_Systems_break
- Proposed_Temporary_Spur_clip

32 GB
1) 300
2) 280
3) 970
1550 = 500 AVD

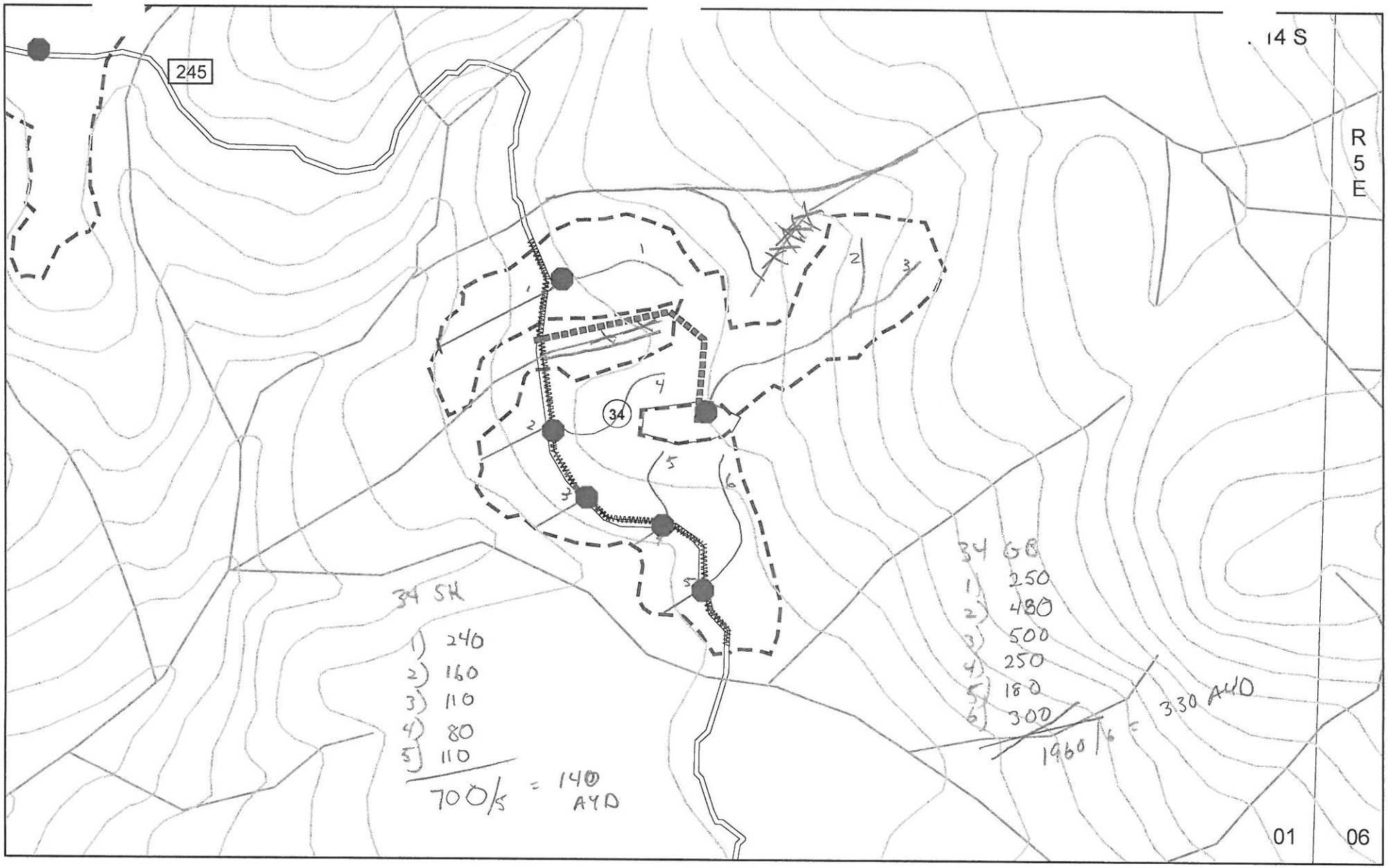
Logging Systems Map
NTLJ Thin
Unit 32, 32h

9/14 JS

1 inch = 330 feet

0 165 330 660 Feet

N



Legend

- Landings
- countour_clip
- Streams_clip
- Existing_Spur_Road_clip
- Logging_Systems_break
- Proposed_Temporary_Spur_clip
- Roads_clip
- NTLJ_final

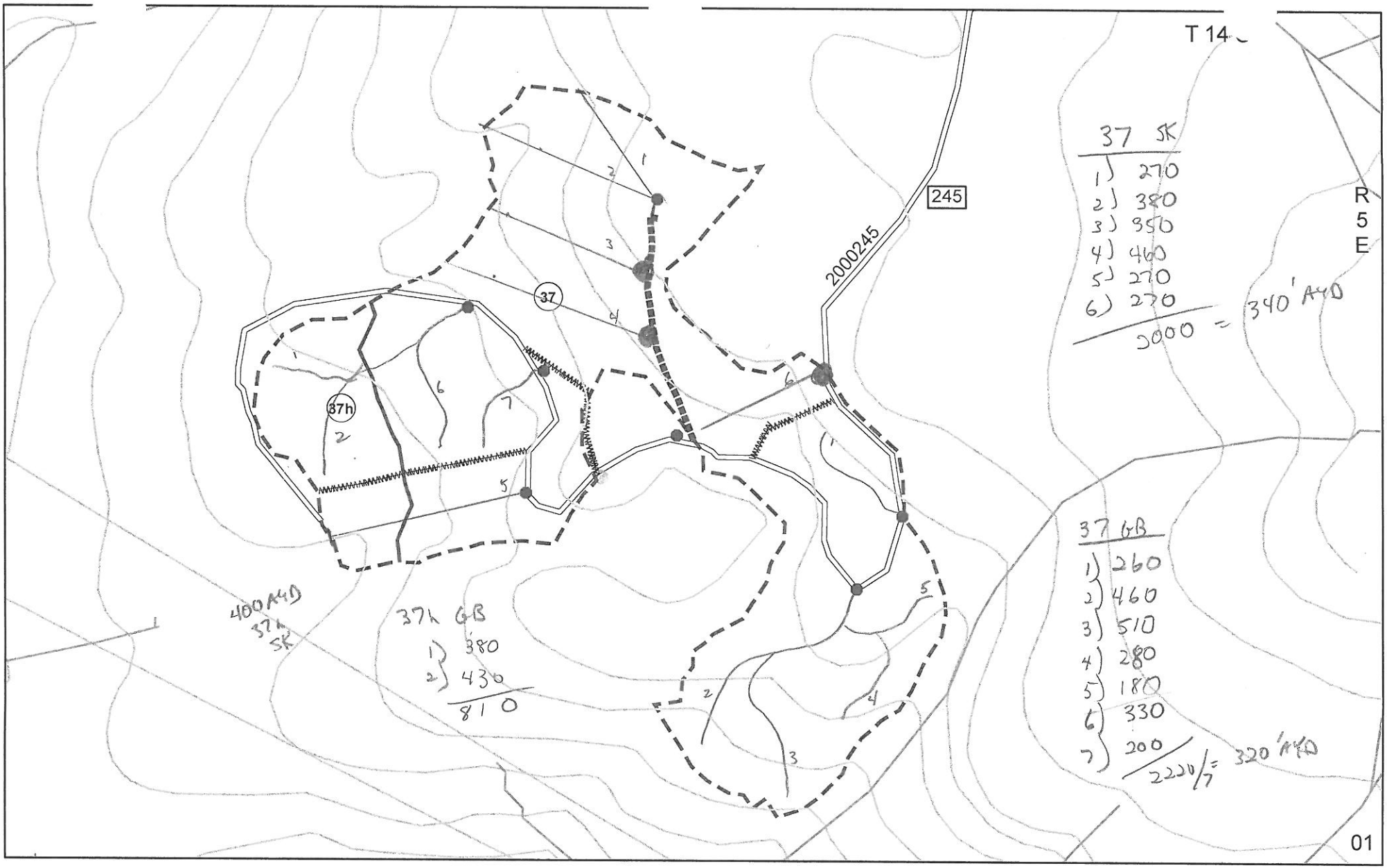
Logging Systems Map
NTLJ Thin
Unit 34

9/14 JS

1 inch = 330 feet

0 165 330 660 Feet

N



Legend

- Landings
- Streams_clip
- countour_clip
- Existing_Spur_Road_clip
- Roads clip
- Logging_Systems_break
- Proposed_Temporary_Spur_clip
- NTLJ_final

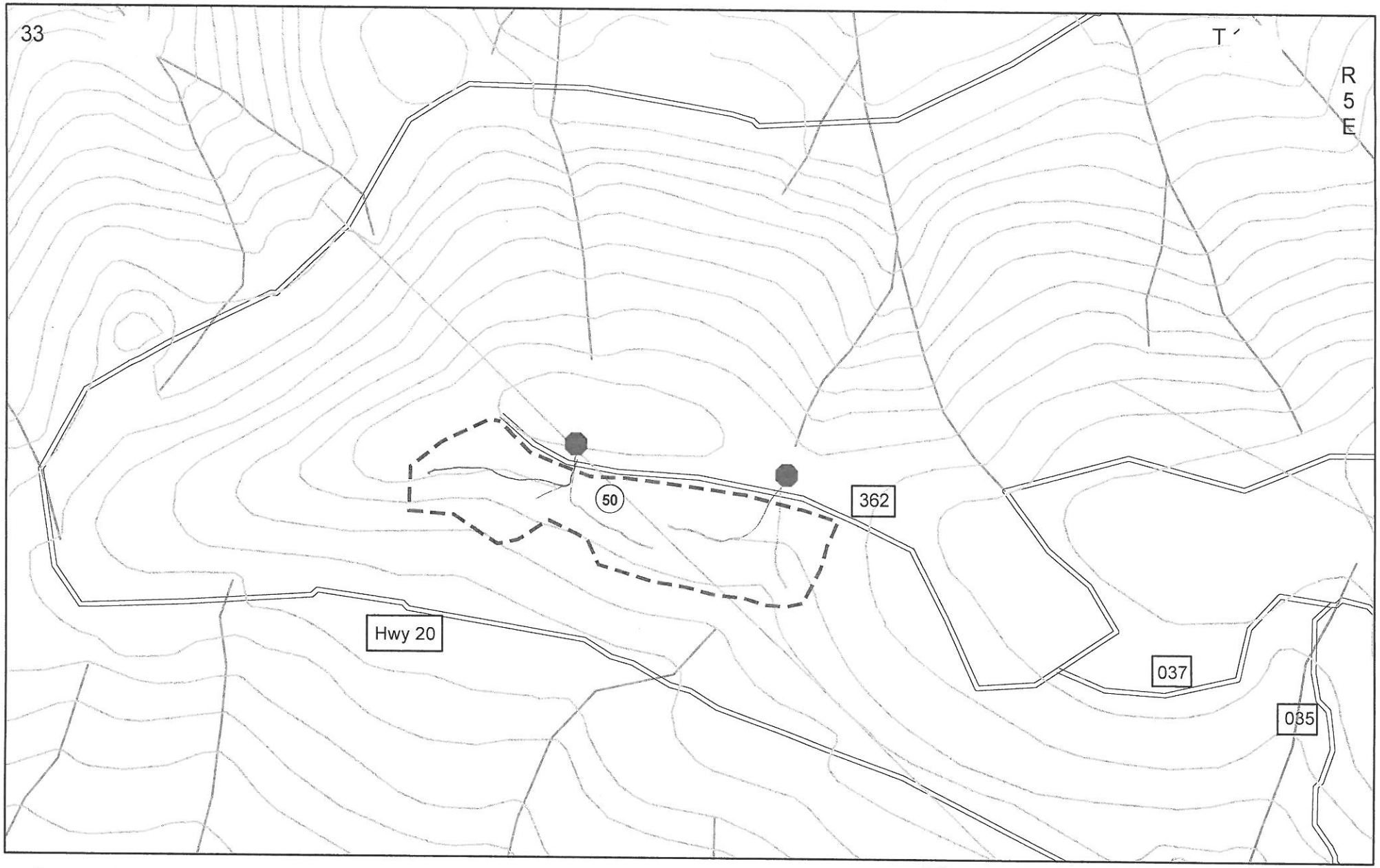
Logging Systems Map
NTLJ Thin
Unit 37

9/14 JS

1 inch = 330 feet

0 165 330 660 Feet

N



Legend

- Landings
- NTLJ_final
- countour_clip
- Roads_clip
- Streams_clip

Logging Systems Map
NTLJ Thin
Unit 50

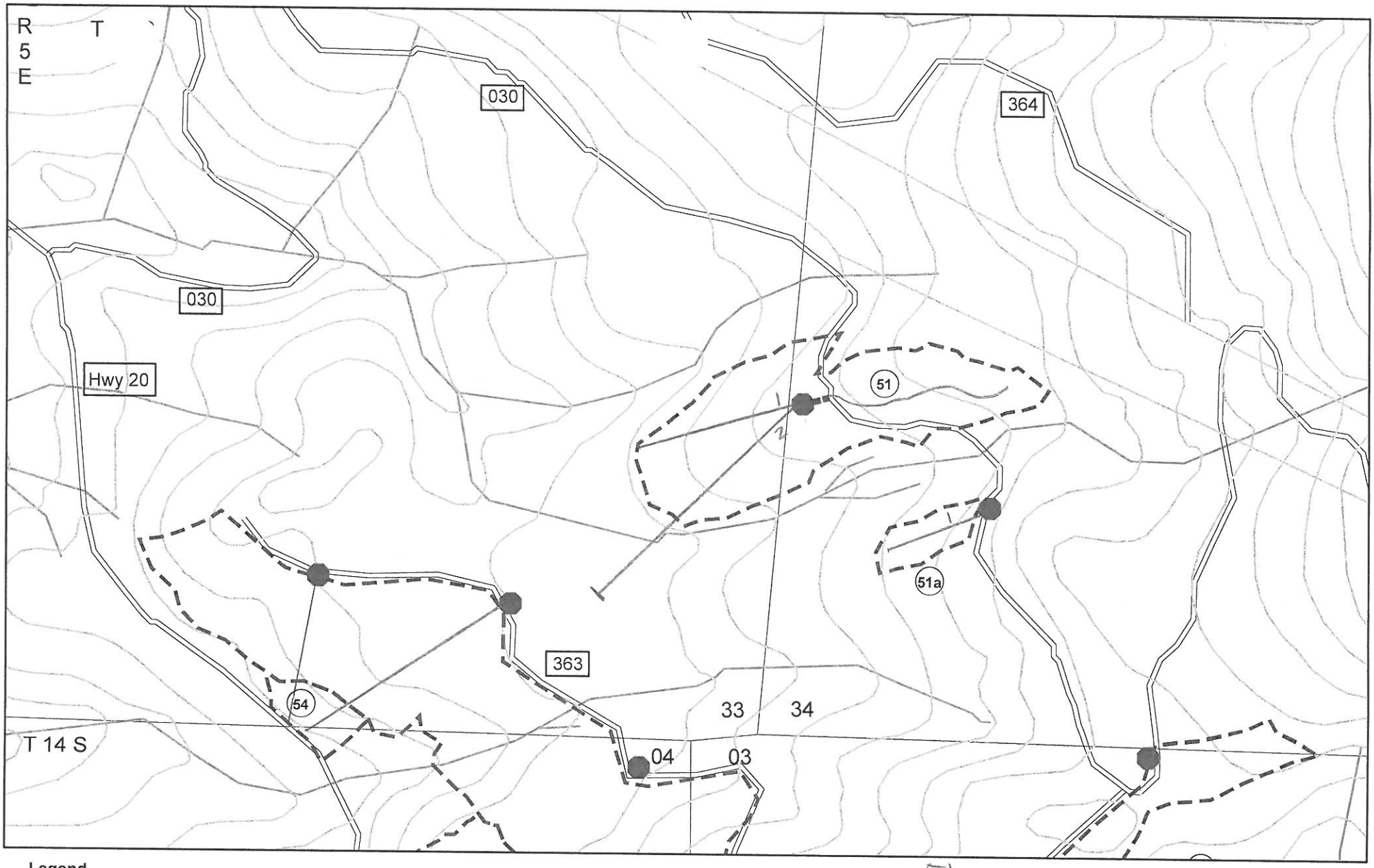
50
1 250
2 310
3 250
4 380

9/14 JS

1 inch = 330 feet

0 165 330 660 Feet

N



Legend

- NTLJ_final
- Landings
- countour_clip
- Roads_clip
- Streams_clip
- Existing_Spur_Road_clip
- Logging_Systems_break
- Proposed_Temporary_Spur_clip

Logging Systems Map
NTLJ Thin
Unit 51, 51a

51
SK 1) 320
2) 560
440
51a
1) 200

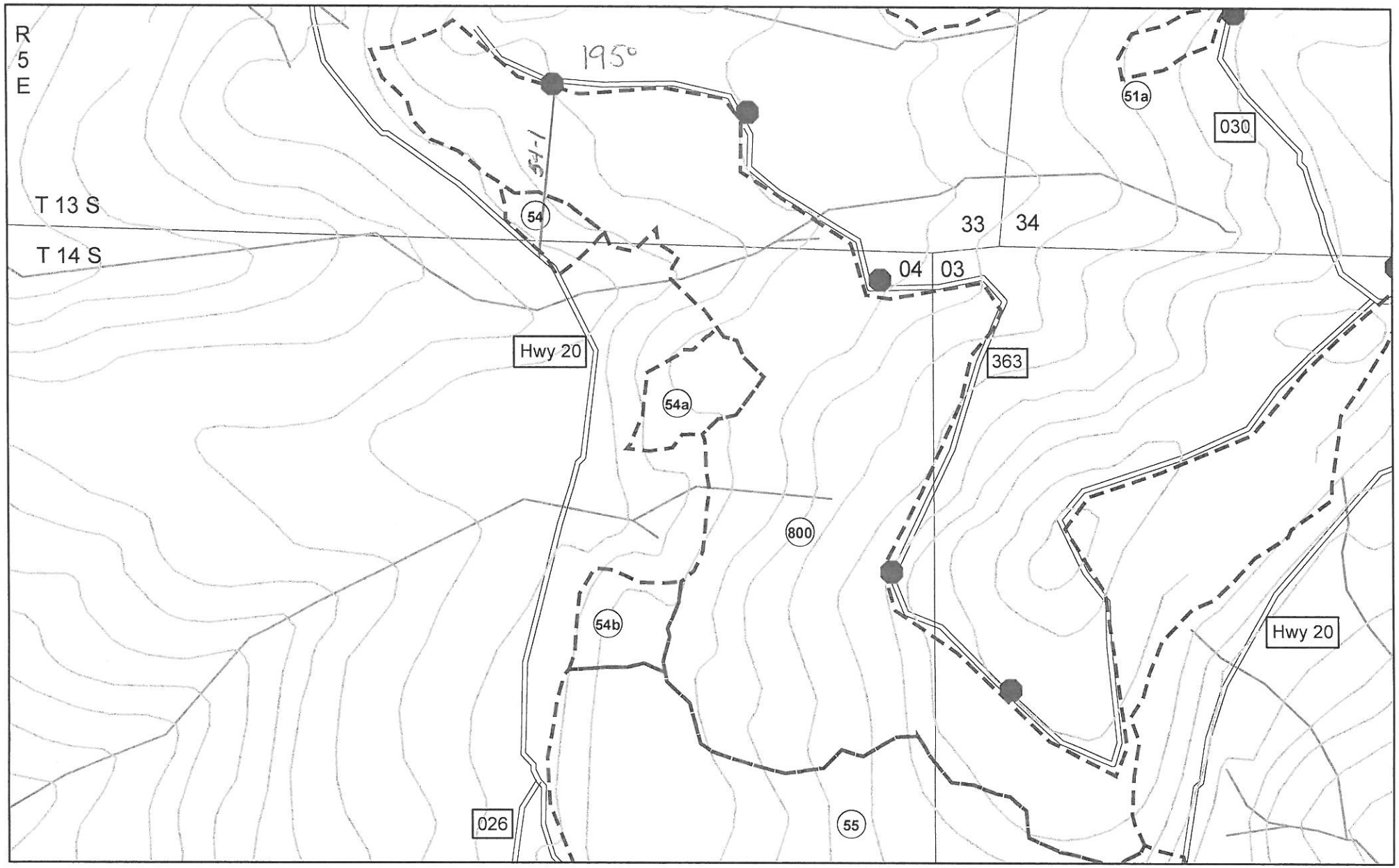
GB 1) 380

9/14 JS

1 inch = 330 feet

0 165 330 660 Feet

N



Legend

- NTLJ_final
- Landings
- countour_clip
- Roads_clip
- Streams_clip
- Existing_Spur_Road_clip
- Logging_Systems_break
- Proposed_Temporary_Spur_clip

Logging Systems Map
NTLJ Thin
Unit 54, 54a, 54b

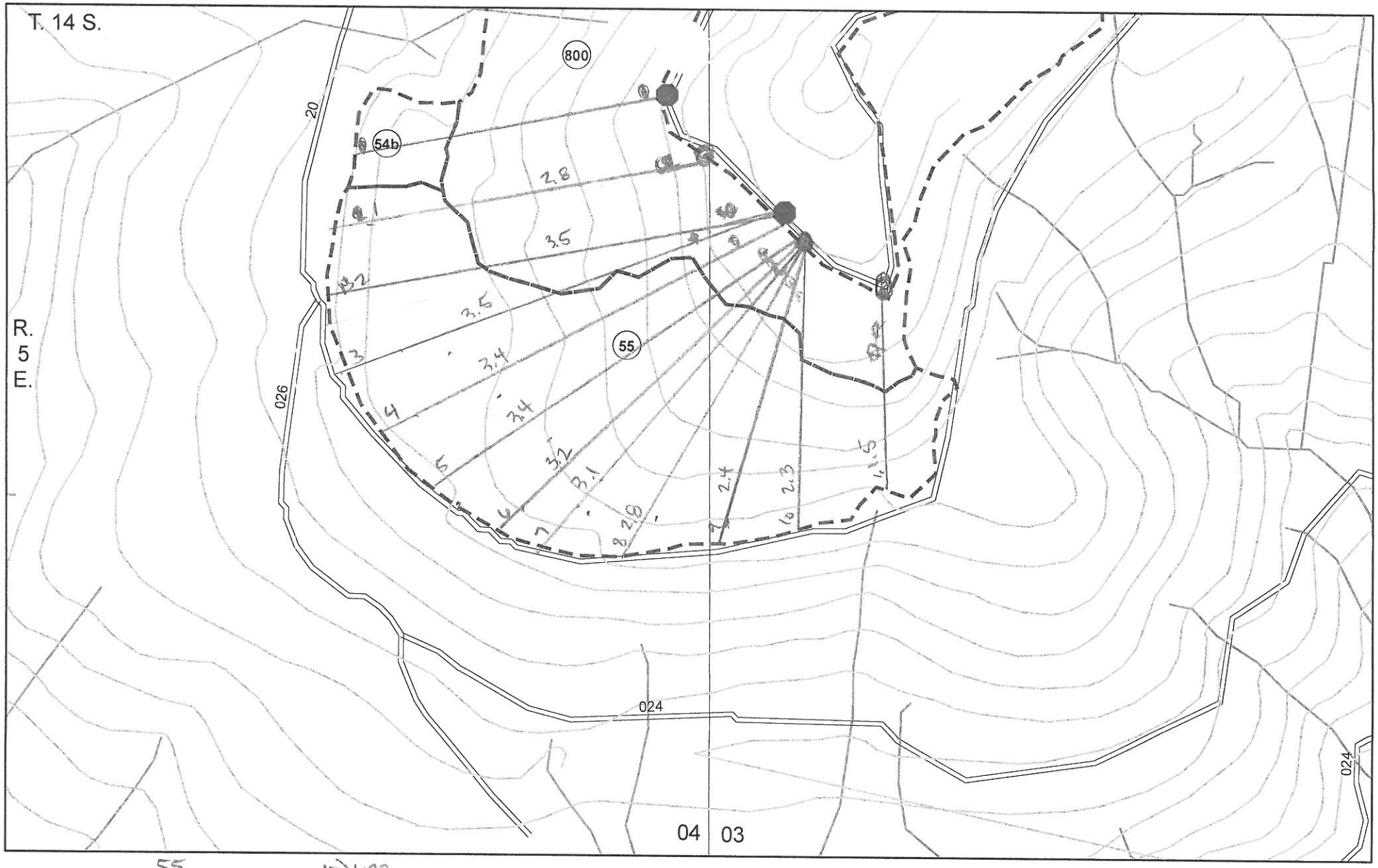
9/14 JS

1 inch = 330 feet

Feet

0 165 330 660

N



Legend

- NTLJ_final
- Landings
- countour_clip
- Roads_clip
- Streams_clip

55
1) 750
2) 940
3) 940
4) 910
5) 910
6) 860
7) 830
8) 750
9) 640
10) 620
11) 400
Ave: 780

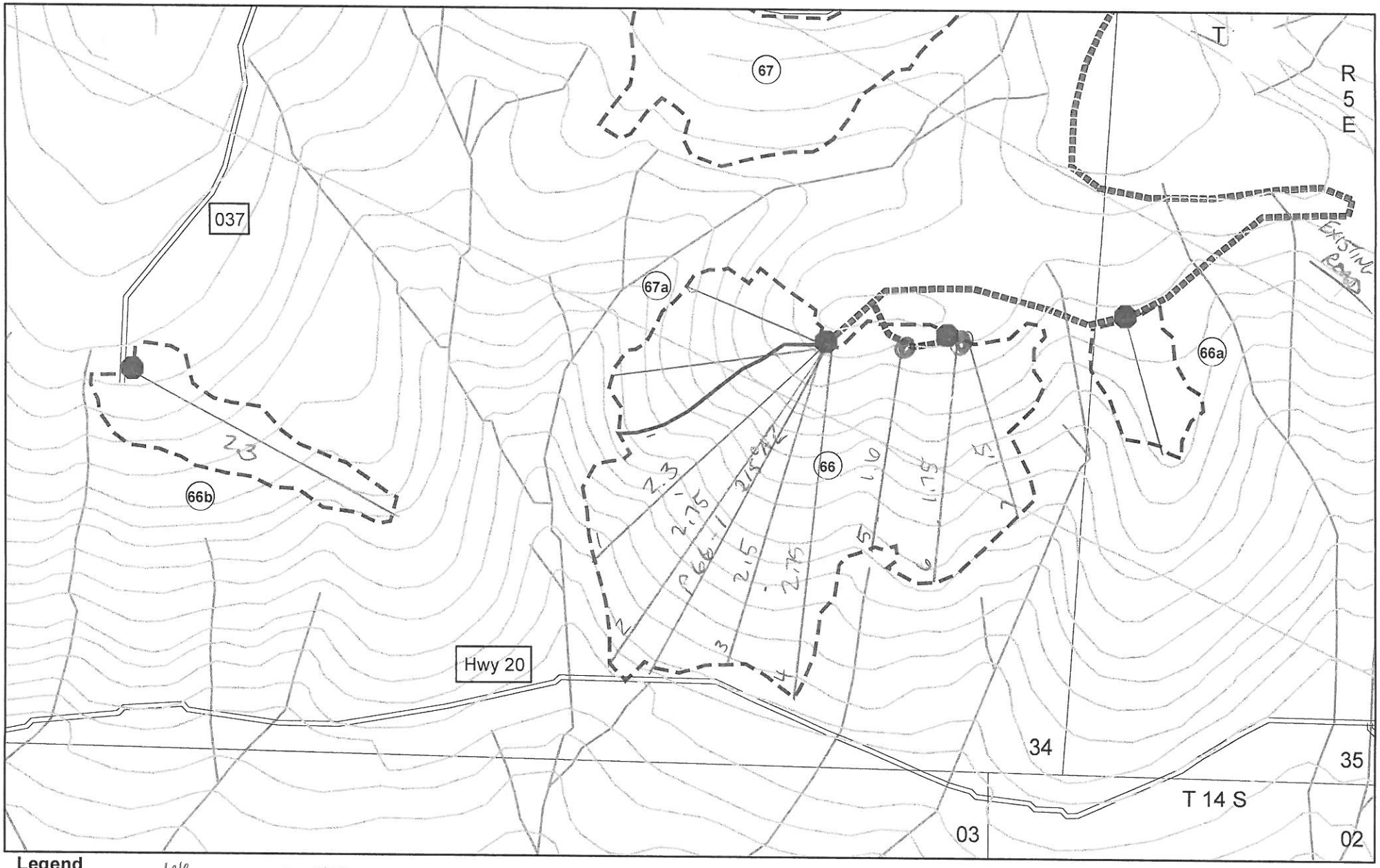
Logging Systems Map
NTLJ Thin
Unit 55

9/14 JS

1 inch = 330 feet

0 165 330 660 Feet

N



Legend

- NTLJ_final
- Landings
- countour_clip
- Roads_clip
- Streams_clip
- Existing_Spur_Road_clip
- Logging_Systems_break
- Proposed_Temporary_Spur_clip

66
1) 700
2) 830
3) 760
4) 830
5) 490
6) 530
7) 150
Ave

66a
270

66b
700

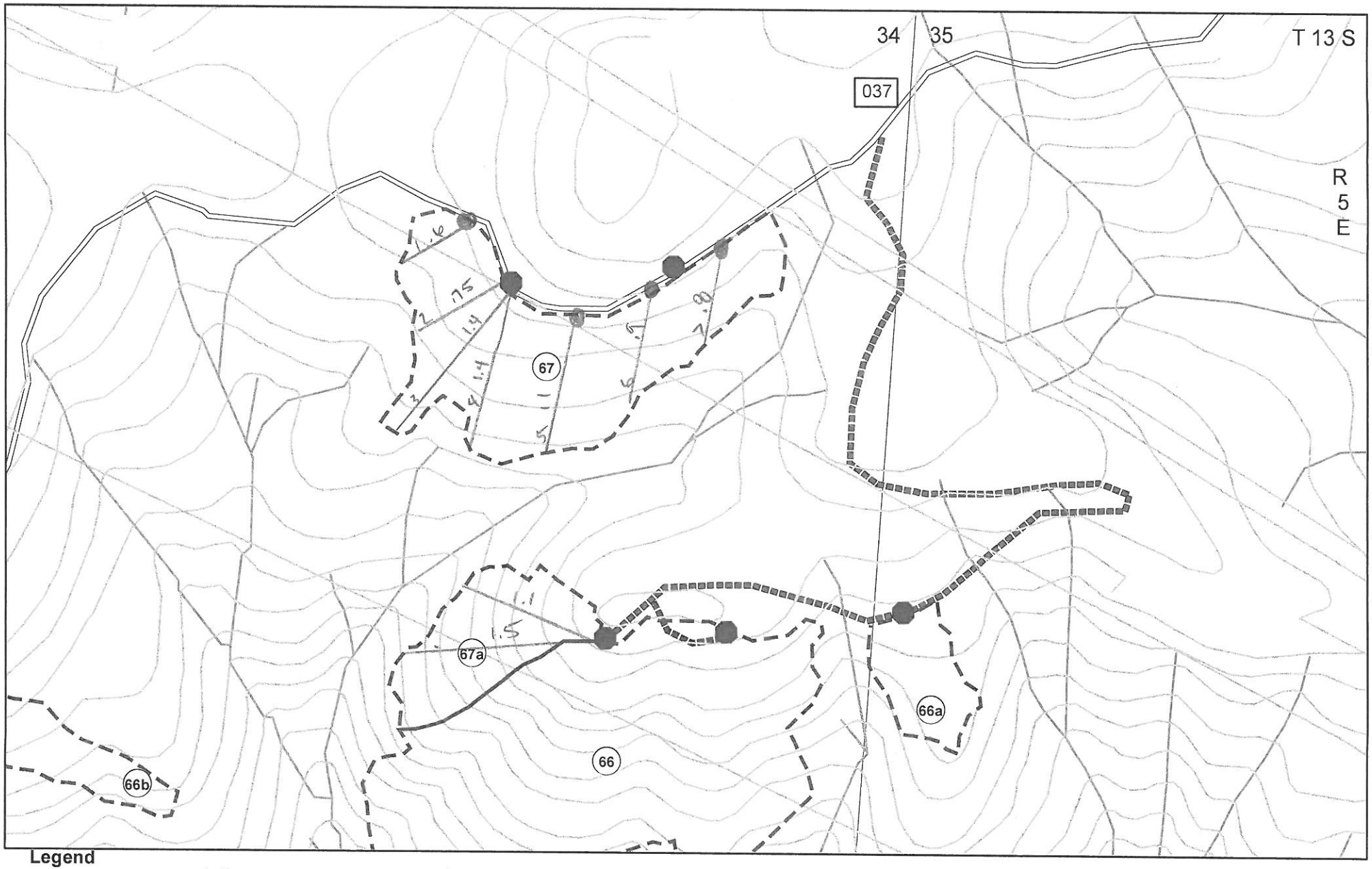
Logging Systems Map
NTLJ Thin
Unit 66, 66a, 66b

9/14 JS

1 inch = 330 feet

0 165 330 660 Feet

N



Legend

- Landings
- NTLJ_final
- countour_clip
- Roads_clip
- Streams_clip
- Existing_Spur_Road_clip
- Logging_Systems_break
- Proposed_Temporary_Spur_clip

67
1) 180
2) 220
3) 410
4) 410
5) 320
6) 260
7) 230
Ave 290

67a
1) 320
2) 440
Ave 380

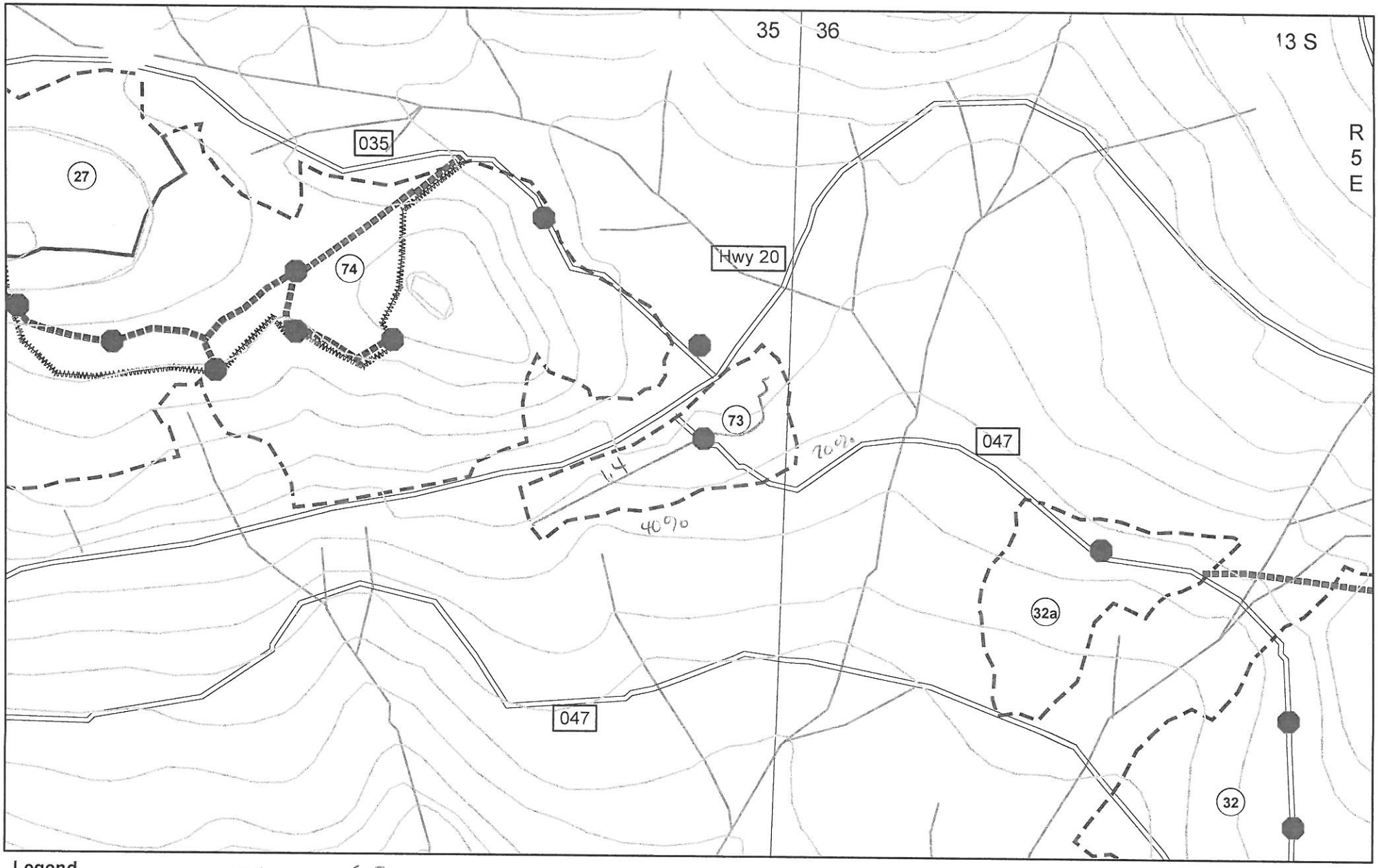
Logging Systems Map
NTLJ Thin
Unit 67, 67a

9/14 JS

1 inch = 330 feet

0 165 330 660 Feet

N



Legend

- Landings
- countour_clip
- Roads_clip
- Streams_clip
- Existing_Spur_Road_clip
- Logging_Systems_break
- Proposed_Temporary_Spur_clip

SK GB
Ave 380 260

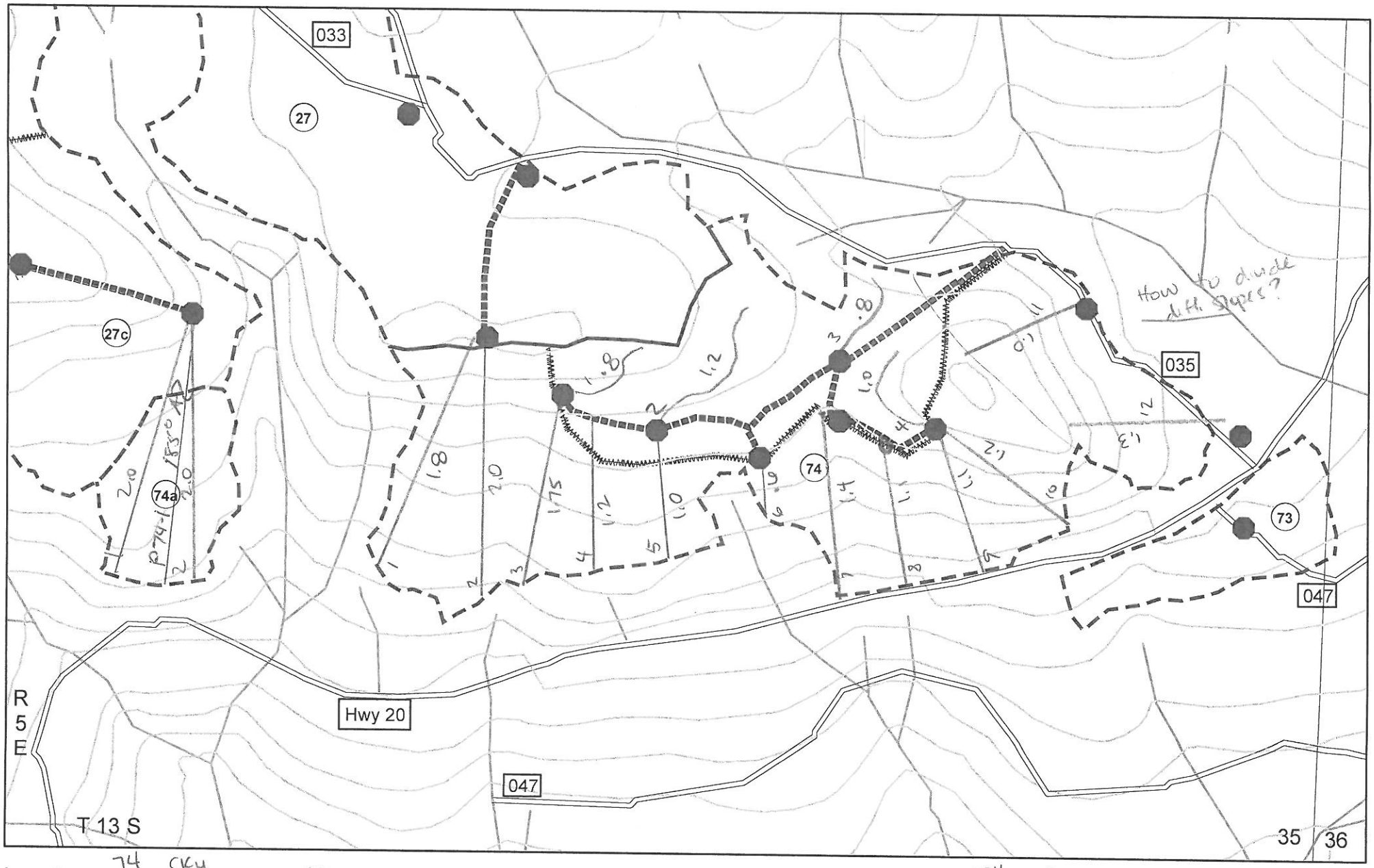
Logging Systems Map
NTLJ Thin
Unit 73

9/14 JS

1 inch = 330 feet

0 165 330 660 Feet

N



Legend

- NTLJ_final
- Landings
- Roads_clip
- countour_clip
- Streams_clip
- Existing_Spur_Road_clip
- Logging_Systems_break
- Proposed_Temporary_Spur_clip

74 SKY
1) 520
2) 580
3) 510
4) 350
5) 290
6) 180
7) 400
8) 320
9) 320
10) 350
11) 290
12) 375

Ave 380

74 GB
1) 200
2) 300
3) 200
4) 250

Ave 240

74a
1) 560
2) 560

Ave 560

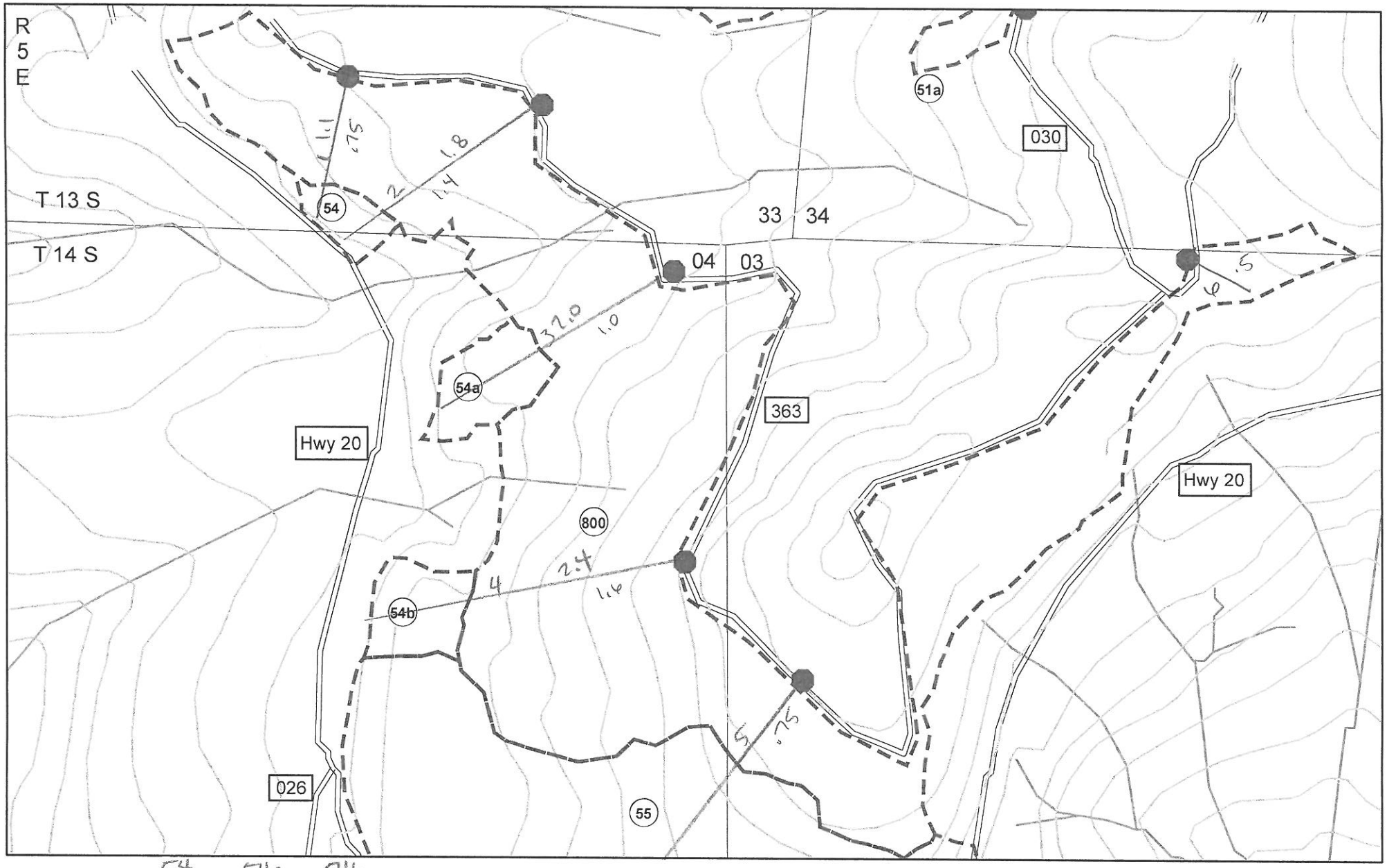
Logging Systems Map
NTLJ Thin
Unit 74, 74a

9/14 JS

1 inch = 330 feet

0 165 330 660 Feet

N



Legend

- NTLJ_final
- Landings
- countour_clip
- Roads_clip
- Streams_clip
- Existing_Spur_Road_clip
- Logging_Systems_break
- Proposed_Temporary_Spur_clip

54
300
480
390

54a
410

54b
640

800
1) 200
2) 380
3) 270
4) 430
5) 200
6) 140

Ave 270

Logging Systems Map
NTLJ Thin
Unit 800

9/14 JS

1 inch = 330 feet

0 165 330 660 Feet

N

UNIT LOGGING SUMMARY

UNIT NUMBER	EST. ACRES	EST. CCF VOLUME	SILV. PRESC.	LOGGING SYSTEM	SUSPENSION REQUIRED	AVE SLOPE	(SLOPE) MAX. YARD DT.	(SLOPE) AVERAGE YARD DT,	SLOPE DT. SKL RIGGING LENGTH (FT)
27	22	657	80-100 LT	GB	1 end	+10	620	335	
27a	2	60	80-100 LT	S	1 end	+40	290	195	290
27b	2	60	80-100 LT	S	1 end	+40	530	400	530
27c	12	358	80-100 LT	S	1 end	+40	540	250	600
	3	90	80-100 LT	GB	1 end	+20	270	170	
28	8	217	80-100 LT	GB	1 end	+25	680	320	
28a	8	217	80-100 LT	GB	1 end	-25	850	500	
29	10	270	80-100 LT	S	1 end	+40	800	390	910
29h	1	25	40-60 LT	S	1 end	+40	290	195	290
29i	2	50	40-60 LT	S	1 end	+40	330	235	330
29j	1	25	40-60 LT	S	1 end	+40	260	200	260
30	40	1108	80-100 LT	GB	1 end	+10	830	410	
30h	4	99	40-60 LT	GB	1 end	-20	510	320	
32	15	405	80-100 LT	S	1 end	+40	720	330	720
	9	242	80-100 LT	GB	1 end	+15	970	520	
32h	4	100	40-60 LT	S	1 end	+40	470	310	470
34	4	129	80-100 LT	S	1 end	+40	320	140	320
	10	260	80-100 LT	GB	1 end	-15	670	330	
37	20	540	80-100 LT	S	1 end	+40	610	340	610
	6	161	80-100 LT	GB	1 end	+20	680	320	
37h	1	25	40-60 LT	S	1 end	+40	540	400	540
	2	50	40-60 LT	GB	1 end	+10	570	405	
50	5	188	30-50 LT	GB	1 end	+10	500	300	
51	3	78	80-100 LT	S	1 end	+40	750	440	750
	3	77	80-100 LT	GB	1 end	-20	510	380	
51a	1	25	80-100 LT	S	1 end	+40	270	200	270
54	1	50	60-110 LT	S	1 end	+40	640	480	640
54a	1	50	60-110 LT	S	1 end	+40	720	540	720
54b	1	50	60-110 LT	S	1 end	+40	860	640	860
55	20	1017	60-110 LT	S	1 end	+40	1250	780	1250
66	15	549	80-100 LT	S	1 end	+70	1100	620	1100
66a	1	36	80-100 LT	S	1 end	+40	930	700	930
66b	3	110	80-100 LT	S	1 end	+70	890	670	890
67	7	181	80-100 LT	S	1 end	+60	540	290	540
67a	3	77	80-100 LT	S	1 end	+60	580	380	580
73	2	43	60-110 LT	S	1 end	+40	500	380	500
	1	21	60-110 LT	GB	1 end	+20	340	260	
74	20	731	80-100 LT	S	1 end	+60	770	380	770
	8	293	80-100 LT	GB	1 end	+15	400	240	

	8	293	80-100 LT	GB	1 end	+15	400	240	
74a	3	110	80-100 LT	S	1 end	+50	740	560	740
800	33	140	n/a	S	1 end	+40	570	270	570
TOTAL	**317**	**8974**							

S - Skyline
C - Cable
GB - Ground Based
H - Helicopter

C - No Suspension
PS - Partial Suspension (one end)
FS - Full Suspension

HCR - Clearcut w/Reserves
CT - Commercial Thin

Estimated Sale Volume Net Scale CCF 8974

Volume of Skyline CCF 5294

Volume of Ground Based CCF 3680

Both acres and volume are estimates at this time.

Longest Yarding distance 1250 feet (Mainline)

Longest Rigging Distance 1250 feet (Skyline)

EQUIPMENT SUMMARY

SALE NAME : NTLJ TIMBER SALE PAYMENT UNITS - ALL

SKYLINE VOLUME 5340 CCF

ESTIMATED WEIGHT LARGEST TREE – 22" x 34' for 3454 LBS

YARDER – MADILL 071 - YARDER

TOWER - 47 FEET DELIMBER – DANZCO PULL THROUGH DELIMBER

CARRIAGE – EAGLE VI Motorized LOADER – AVE MEDIUM LOADER

TRACTOR – D7

SINGLE-DRUM ( ) SPOOL TRUCK ( ) BANJO FAIRLEAD ( )
STUMP ANCHOR HARDWARE ( ) TAILTREE HARDWARE (X) SKIDDER ( )
5TH WHEEL DOLLY ( ) RADIO (X) LANDING CAT (X)
INT. SUPPORT RIGGING (X) CHOKERS: LENGTH 20' DIA 1/2"

LINE CAPACITIES OF YARDER AND CARRIAGE PROPOSED:

LINE	DIAMETER	DRUM CAPACITY	TAG LENGTH NEEDED
SKYLINE	1	1930'	n/a
MAINLINE	7/8	1600'	
HAULBACK	3/4	3045'	
STRAWLINE	5/16	4000'	
TONGLINE	n/a		
GUYLINE	7/8	3 X 145' = 435'	

YARDING LABOR	NUMBER
HOOKTENDER	1
RIGGING SLINGER	1
CHOKER SETTER W / RADIO	1
CHASER	1
CHOKER SETTER	2
YARDER ENGINEER	1
LOADER OPERATOR	1

SkylineXL 5.0 Profile Analysis - Yarder and Carriage Selections

Yarder...

Units: English

Select a Yarder
Madill 071, tower

Tower height (ft)	Yarder (HP)
47	284

Max brake torque	Mainline (lb-ft)	Haulback (lb-ft)
torque		

Operating line	Line Dia (in)	Line type	Weight (lb/ft)	Design tension (lbs)	Line length (ft)	Empty drum dia (in)	Empty drum width (in)
skyline	1.0000	Swaged	2.22	40,400	1,930		
mainline	0.8750	Swaged	1.70	31,600	1,600		
haulback	0.7500	EIPS	1.04	19,600	3,045		
slackpulling							

Carriage...

Units: English

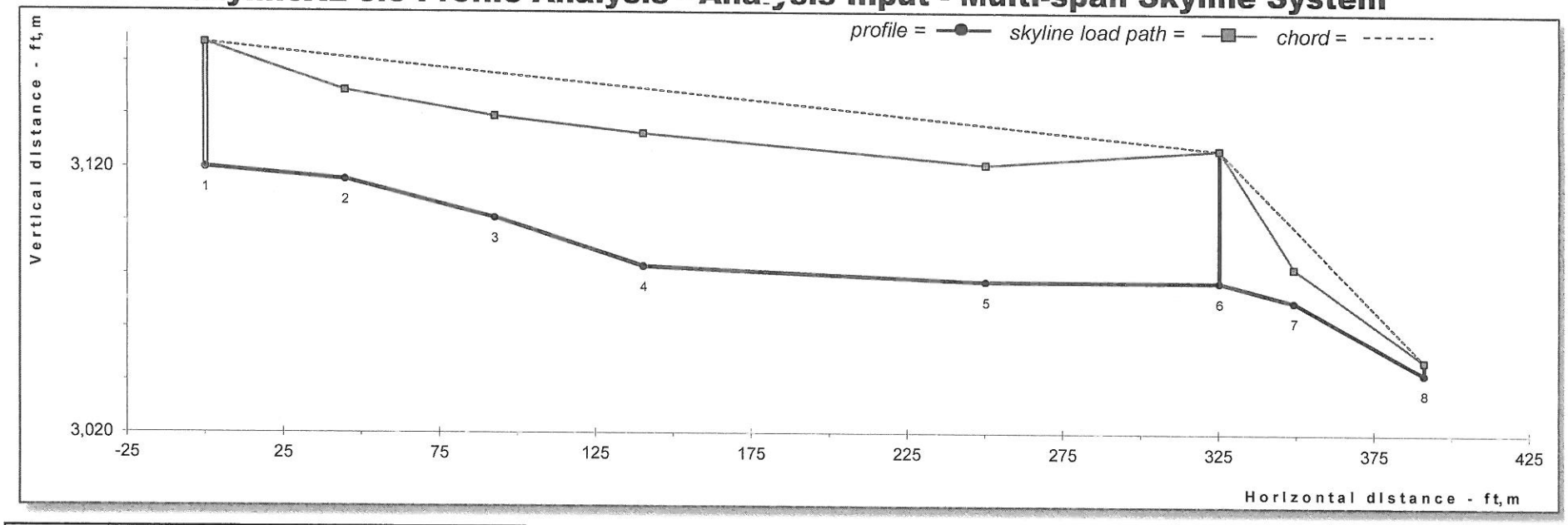
Select a Carriage
Eagle VI, motorized

Weight (lbs)	Carriage (HP)	Skyline clamp	Slack pull method	Multispan capable	# drums required
2,650	28	yes	carriage	yes	

Line	Min Dia (in)	Max Dia (in)	Length (ft)	Dia (in)
skyline	0.8750	1.3750		
mainline	0.6250	0.8750		
dropline				

Torque

SkylineXL 5.0 Profile Analysis - Analysis Input - Multi-span Skyline System



Analysis type	Selected yarder	Selected carriage
Multi-span	Madill 071, tower	Eagle VI, motorized

Log Geometry Table	
tag length - (ft)	15.0
log length - (ft)	34.0
log diameter - (in)	24.00

Min payload-(lbs)	At terrain point
5,452	4

Supports Table	At terrain point	Rigging height (ft)
head spar	1	47
tail spar	8	5
int support 1	6	50
int support 2		
int support 3		

Yarding Parameters Table	Inner dist terrain pt.	Outer dist terrain pt
yarding limits	2	7
landing cut (-) or fill (+) - (ft)		

Susp. type	Log Susp. and Clearance Table	Log clearance (ft)
partial		2.0

Analysis name: Multi
Units: English
Data source:
Analysis phase: 1

Pro date: 9/18/2014
Pro name: 54-1
Analyst: Loree

LIVE sky selections

- (●) Specified clearance
- ( ) Lift only
- ( ) Drop only

Lift-drop location at terrain point...
1
2
3
4
5

The above options for LIVE skyline analysis only

SkylineXL 5.0 Profile Analysis - Profile Input Table

Select measurement type: *English*

Terrain pt	Slope dist (ft)	% slope (+/-)	Horiz - (ft)	Vert - (ft)	Notes
1			0.0	3,120.0	Tower at Jct
	45.0	-10.0%			
2			44.8	3,115.5	Good TT 15 to 20" DF
	50.0	-30.0%			
3			92.7	3,101.1	Good TT 15 to 20" DF
	51.0	-38.0%			
4			140.4	3,083.0	Good TT 15 to 20" DF
	110.0	-5.0%			
5			250.3	3,077.5	Unit 54/800 bdry 20" DF
	75.0	0.0%			
6			325.3	3,077.5	20" DF
	25.0	-30.0%			
7			349.2	3,070.3	16" DF
	50.0	-65.0%			
8			391.1	3,043.1	16" DF

Profile name
54-1
Profile azimuth - deg
195
Profile date
9/18/2014
Analyst
Loree
Start elevation - (ft)
3,120
Profile data source

Profile reversed: ☐

GIS profile im

Use the SkylineXL for ArcMap

SkylineXL 5.0 Profile Analysis - Analysis Results - Multi-span Skyline System

Profile name: 54-1 | Units: English | Profile date: 9/18/14
Analysis name: Multi | Analyst: Loree
Data source:

MULTI-SPAN skyline analysis summary table...

Skyline analysis type	Selected yarder	Selected carriage	Minimum payload-(lbs)	At terrain point	Analysis phase
Multi-span	Madill 071, tower, 47-ft twr	Eagle VI, motorized	5,452	4	**1**

MULTI-SPAN skyline rigging lengths table...

Line	Capacity-(ft)	Required-(ft)	Notes
skyline	1,930	510	adequate
mainline	1,600	450	adequate
haulback	3,045	850	adequate

line capacities based on selected yarder

HB required

Chord slope span 1	Chord slope span 2	Chord slope span 3	Chord slope span 4	Average slope yarding dist for this analysis-(ft)
12.1%	120.7%			
Un-stretched skyline line length - (ft)			430.47	203

MULTI-SPAN skyline analysis detail table, PHASE 1 analysis...

TP	Horizontal distance - (ft)	Net payload at TP - (lbs)	Net payload to landing - (lbs)	Skyline tension - (lbs)	Mainline tension - (lbs)	Haulback tension - (lbs)	Skyline clearance - (ft)	Log clearance - (ft)	Full susp. bottom of log above TP-(ft)
2	45	14,165	14,165	40,400	7,672	-	33.5	19.0	-
3	93	8,350	8,350	40,400	3,910	-	38.4	23.5	-
4	140	5,452	5,452	40,400	1,472	-	50.1	Full	1.1
5	250	9,604	5,452	40,400	2,689	-	44.2	28.5	-
	support loc								
7	349	12,600	5,452	40,400	18,641	-	12.8	2.0	-

SkylineXL 5.0 Profile Analysis - Profile Input Table

Select measurement type	English

Terrain pt	Slope dist (ft)	% slope (+/-)	Horiz - (ft)	Vert - (ft)	Notes
1			0.0	4,120.0	Landing End of Road
	30.0	0.0%			
2			30.0	4,120.0	20" DF
	123.0	-48.0%			
3			140.9	4,066.8	20" DF
	63.0	-68.0%			
4			193.0	4,031.4	20" DF
	78.0	-66.0%			
5			258.1	3,988.4	20" DF
	107.0	-73.0%			
6			344.5	3,925.3	20" DF
	84.0	-66.0%			
7			414.6	3,879.0	20" DF
	113.0	-63.0%			
8			510.2	3,818.8	20" DF
	96.0	-69.0%			
9			589.2	3,764.3	20" DF
	123.0	-69.0%			
10			690.4	3,694.4	20" DF
	106.0	-78.0%			
11			774.0	3,629.2	22" DF
	105.0	-63.0%			
12			862.8	3,573.2	22" DF

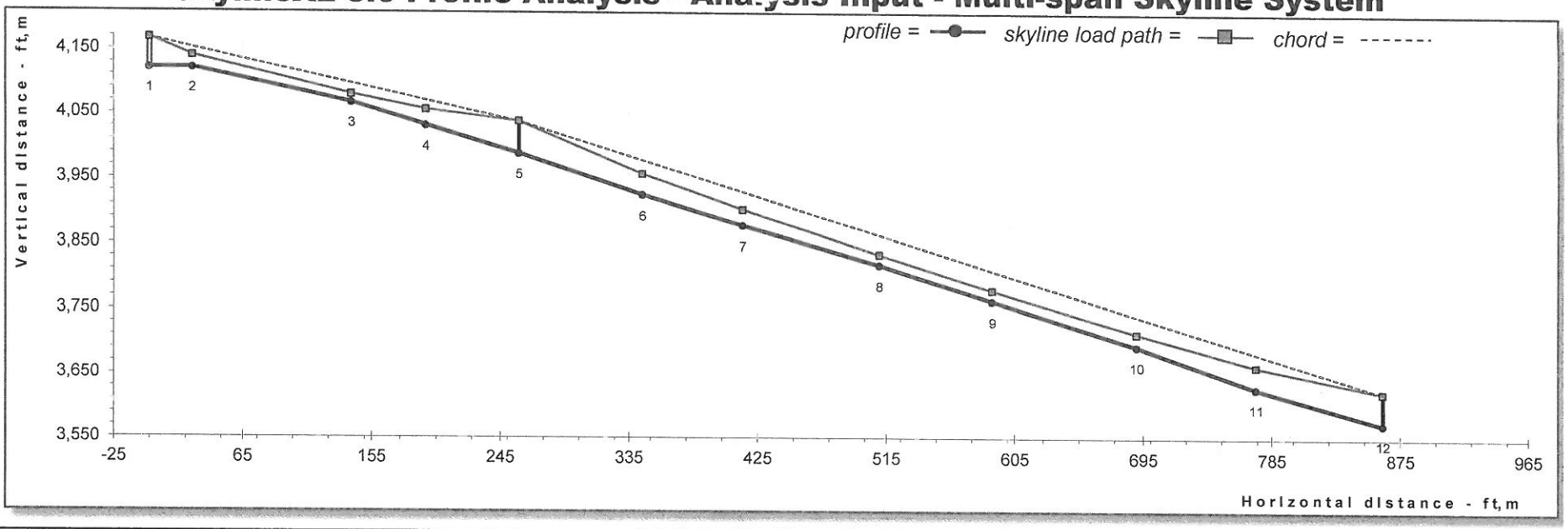
Profile name
66-1
Profile azimuth - deg
215
Profile date
9/18/2014
Analyst
Loree
Start elevation - (ft)
4,120
Profile data source

Profile reversed: ☐

GIS profile im

Use the SkylineXL for ArcMap

SkylineXL 5.0 Profile Analysis - Analysis Input - Multi-span Skyline System



Analysis type	Selected yarder	Selected carriage
Multi-span	Madill 071, tower	Eagle VI, motorized

Log Geometry Table	
tag length - (ft)	15.0
log length - (ft)	34.0
log diameter - (in)	24.00

Min payload-(lbs)	At terrain point
4,123	8

Supports Table	At terrain point	Rigging height (ft)
head spar	1	47
tail spar	12	50
int support 1	5	50
int support 2		
int support 3		

Yarding Parameters Table	Inner dist terrain pt.	Outer dist terrain pt
yarding limits	2	11
landing cut (-) or fill (+) - (ft)		

Susp. type	Log Susp. and Clearance Table	Log clearance (ft)
partial		2.0

Analysis name: Multi
Units: English
Data source:
Analysis phase: 1

Pro date: 9/18/2014
Pro name: 66-1
Analyst: Loree

LIVE sky selections
- (●) Specified clearance
- ( ) Lift only
- ( ) Drop only

Lift-drop location at terrain point...
1
2
3
4
5

The above options for LIVE skyline analysis only

SkylineXL 5.0 Profile Analysis - Analysis Results - Multi-span Skyline System

Profile name: 66-1 | Units: English | Profile date: 9/18/14
Analysis name: Multi | Analyst: Loree
Data source:

MULTI-SPAN skyline analysis summary table...

Skyline analysis type	Selected yarder	Selected carriage	Minimum payload-(lbs)	At terrain point	Analysis phase
Multi-span	Madill 071, tower, 47-ft twr	Eagle VI, motorized	4,123	8	**1**

MULTI-SPAN skyline rigging lengths table...

Line	Capacity-(ft)	Required-(ft)	Notes	Chord slope span 1	Chord slope span 2	Chord slope span 3	Chord slope span 4	Average slope yarding dist for this analysis-(ft)
skyline	1,930	1,220	**adequate**					
mainline	1,600	1,020	**adequate**	49.8%	68.7%			
haulback	3,045			**Un-stretched skyline line length - (ft)**			1,018.27	514

line capacities based on selected yarder

MULTI-SPAN skyline analysis detail table, PHASE 1 analysis...

TP	Horizontal distance - (ft)	Net payload at TP - (lbs)	Net payload to landing - (lbs)	Skyline tension - (lbs)	Mainline tension - (lbs)	Haulback tension - (lbs)	Skyline clearance - (ft)	Log clearance - (ft)	Full susp. bottom of log above TP-(ft)
2	30	30,407	30,407	40,400	26,147	-	19.9	7.5	-
3	141	12,107	12,107	40,400	11,172	-	12.8	2.0	-
4	193	11,411	11,411	40,400	8,728	-	25.0	12.0	-
	support loc								
6	345	4,551	4,551	40,400	5,537	-	32.1	18.0	-
7	415	4,320	4,320	40,400	5,288	-	25.1	12.0	-
8	510	4,123	4,123	40,400	5,377	-	16.5	5.0	-
9	589	4,255	4,123	40,400	5,486	-	16.5	5.0	-
10	690	4,803	4,123	40,400	5,772	-	20.2	8.0	-
11	774	6,781	4,123	40,400	6,374	-	34.4	20.0	-

SkylineXL 5.0 Profile Analysis - Profile Input Table

Select measurement type	*English*

Terrain pt	Slope dist (ft)	% slope (+/-)	Horiz - (ft)	Vert - (ft)	Notes
1			0.0	4,000.0	Landing End of Road Unit27
	72.0	-44.0%			
2			65.9	3,971.0	
	128.0	-54.0%			
3			178.5	3,910.2	Bdry 27/74a
	98.0	-22.0%			
4			274.2	3,889.1	18" DF
	58.0	-14.0%			
5			331.6	3,881.1	20" DF
	65.0	-12.0%			
6			396.1	3,873.4	22" DF
	68.0	-10.0%			
7			463.8	3,866.6	14" DF
	70.0	-10.0%			
8			533.5	3,859.6	20" DF
	84.0	-5.0%			
9			617.4	3,855.4	16" DF
	75.0	-23.0%			
10			690.5	3,838.6	18"DF / 20" WH

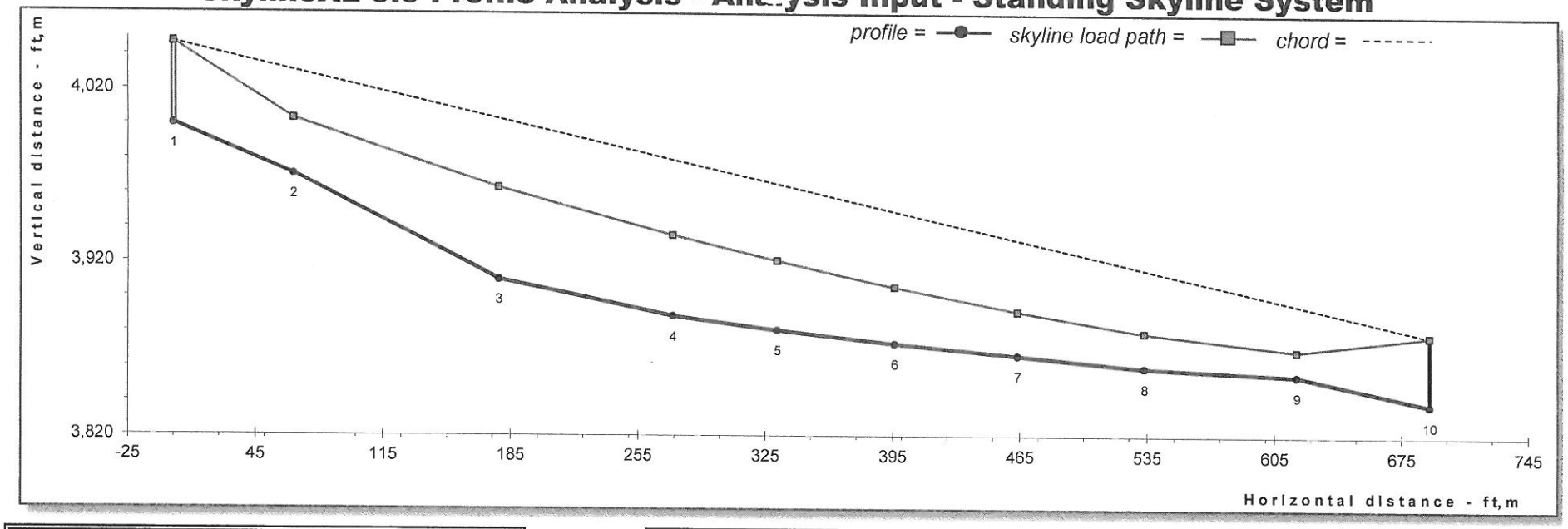
Profile name
74-1
Profile azimuth - deg
185
Profile date
9/17/2014
Analyst
Loree
Start elevation - (ft)
4,000
Profile data source

Profile reversed: ☐

GIS profile im

Use the SkylineXL for ArcMap

SkylineXL 5.0 Profile Analysis - Analysis Input - Standing Skyline System



Analysis type	Selected yarder	Selected carriage
Standing	Madill 071, tower	Eagle VI, motorized

Log Geometry Table	
tag length - (ft)	15.0
log length - (ft)	34.0
log diameter - (in)	24.00

Min payload-(lbs)	At terrain point
8,059	4

Supports Table	At terrain point	Rigging height (ft)
head spar	1	47
tail spar	10	40
int support 1		
int support 2		
int support 3		

Yarding Parameters Table	Inner dist terrain pt.	Outer dist terrain pt
yarding limits	2	9
landing cut (-) or fill (+) - (ft)		

Susp. type	Log Susp. and Clearance Table	Log clearance (ft)
partial		2.0

Analysis name: Multi
Units: English
Data source:
Analysis phase: 1

Pro date: 9/17/2014
Pro name: 74-1
Analyst: Loree

LIVE sky selections
- (●) Specified clearance
- ( ) Lift only
- ( ) Drop only

Lift-drop location at terrain point...
1
2
3
4
5

The above options for LIVE skyline analysis only

SkylineXL 5.0 Profile Analysis - Analysis Results - Standing Skyline System

Profile name: 74-1
Analysis name: Multi

Units: English
Analyst: Loree
Data source:

Profile date: 9/17/14

STANDING skyline analysis summary table...

Skyline analysis type	Selected yarder	Selected carriage	Minimum payload-(lbs)	At terrain point	Analysis phase
Standing	Madill 071, tower, 47-ft twr	Eagle VI, motorized	8,059	4	**1**

STANDING skyline rigging lengths table...

Line	Capacity-(ft)	Required-(ft)	Notes	Chord slope span 1	Chord slope span 2	Chord slope span 3	Chord slope span 4	Average slope yarding dist for this analysis-(ft)
skyline	1,930	890	adequate					
mainline	1,600	740	adequate	24.4%				
haulback	3,045			Un-stretched skyline line length - (ft)			712.36	359

line capacities based on selected yarder

STANDING skyline analysis detail table, PHASE 1 analysis...

TP	Horizontal distance - (ft)	Net payload at TP - (lbs)	Net payload to landing - (lbs)	Skyline tension - (lbs)	Mainline tension - (lbs)	Haulback tension - (lbs)	Skyline clearance - (ft)	Log clearance - (ft)	Full susp. bottom of log above TP-(ft)
2	66	20,405	20,405	40,400	13,524	-	32.1	18.0	-
3	179	8,331	8,331	40,400	3,456	-	53.3	Full	4.3
4	274	8,059	8,059	40,400	3,670	-	46.9	31.5	-
5	332	9,202	8,059	40,400	4,630	-	40.2	24.9	-
6	396	10,585	8,059	40,400	5,540	-	32.9	17.8	-
7	464	12,676	8,059	40,400	6,806	-	25.6	11.2	-
8	534	16,973	8,059	40,400	8,802	-	20.3	6.1	-
9	617	23,525	8,059	40,400	13,054	-	14.2	2.0	-

SALE ESTIMATED DAILY YARDING PRODUCTION 35 CCF/DAY NET LOG SCALE

Payload Analysis Summary

1. Payload analysis calculations were based on a 1" diameter skyline cable and a 47' tower coupled with the Eagle VI carriage for all tower settings. The Eagle VI motorized slack pulling carriage is multispan compatible, with a yarder controlled mechanical slackline system for lateral yarding purposes.
2. In order to gain adequate deflection, tailtrees were used on most analyzed profiles. Additional lift can be gained in some cases by hanging across draws and up adjacent hill. Individual unit summaries will give further details. In some cases, one or two intermediate supports were necessary to gain adequate payloads.
3. The following table summarizes the SkylineXL 5.0 output of the payload analysis using a standing skyline for analysis.

Unit Number	Skyline Number	Skyline Length (ft.)	Multispan Y or N	Payload* (lbs)	Yarding Direction
54	1	510	Y	5452	UP
66	2	1220	Y	4123	UP
74	2	890	N	8059	UP
All	All			4000	

*Payload refers to the weight of one turn of logs that does not exceed the safe working load of the skyline cable and meets the clearance criteria for each terrain point. The largest log expected in unit 54 is 5073# and in Unit 66 is 3341#. (see attached)

All use 7300 tension lbs for the mainline (average from Skyline XL).

LANDING SUMMARY

Subdivision	Construction		Existing *	
	Ground Based	Skyline	Ground Based	Skyline
27	1		5	
27a				2
27b				1
27c		3	1	2
28			2	
28a			1	
29				3
29h				2
29i				2
29j				1
30	2		2	
30h			1	
32		3	1	3
32h				2
34			1	5
37		3	3	2
37h			1	
50			2	
51		1	1	
51a				1
54	Landings are shown with Unit 800			
54a	Landings are shown with Unit 800			
54b	Landings are shown with Unit 800			
55	Landings are shown with Unit 800			
66		2		1
66a				1
66b				1
67				5
67a				1
73		1	1	
74	1	6		2
74a		1		
800				8
	4	20	22	45

*Landings on existing roads will require surface rock replacement and removal of woody material