

APPENDIX B

Tree and Shrub Inventory Plan

Tree and Shrub Inventory Plan

**Enbridge Pipelines (North Dakota) LLC
Bakken Pipeline Project
Beaver Lodge Loop Project**

**Case No. PU-10-612
PU-10-613**

Prepared for:

Enbridge Pipelines (North Dakota) LLC

July 2011

Introduction

Enbridge Pipelines (North Dakota) LLC proposes to construct, own, and operate the the Bakken Pipeline Project US – Ward & Burke Counties (case number PU-10-612) and the Beaver Lodge Loop Project – Williams, Mountrail, & Ward Counties (case number PU-10-613). Enbridge Pipelines (North Dakota) LLC will comply with the tree and shrub mitigation specifications as outlined by the North Dakota Public Service Commission (Commission) Findings of Fact, Conclusion of Law and Order. Enbridge Pipelines (North Dakota) LLC proposes to contract McCain and Associates for the tree and shrub inventory. The tree and shrub mitigation specifications are found in Appendix A of this Tree and Shrub Inventory Plan. Specifically, this Plan outlines the process for completing the tree and shrub inventory.

Inventory Methods

Enbridge Pipelines (North Dakota) LLC will inventory trees and shrubs, including those considered invasive species, to be cleared within the right-of-way (ROW) easement. Inventories will be documented on standard forms and will include the inventory location, species present, and number of trees and shrubs in the location. An example form is found in Appendix B.

Windbreaks, Shelterbelts, and Other Planted Areas

In windbreaks, shelterbelts, and other planted areas, trees and shrubs anticipated to be cleared regardless of size will be counted by direct stem count. Trees that are one-inch or greater diameter at breast height (DBH) will be inventoried for replacement.

In windbreaks, shelterbelts, and other planted areas, shrubs that form colonies (such as buffalo currant, chokecherry, dogwood, plum, pussy willow, sandbar willow, western snowberry, and Woods rose) and that are cut flush with the ground surface and not cleared, so as to leave the naturally occurring seed bank and root stock intact will not be direct stem counted. Instead, the area will be delineated on an aerial photo and indicated on construction drawings to not be cleared or have the ground disturbed. If ground disturbance occurs, Enbridge Pipelines (North Dakota) LLC will conduct a direct stem count of the disturbance area or estimate the number of stems cleared using a Commission approved sampling estimate method (see Shrub Sampling Method, Appendix C).

Native Growth Areas

In native growth areas, trees that are one-inch or greater diameter at breast height (DBH) will be inventoried for replacement.

In high-density woodland areas, a Commission approved sampling method may be used in place of individual counting (see Tree Sampling Method, Appendix D).

In native growth areas, shrubs that form colonies (such as buffalo currant, chokecherry, dogwood, plum, pussy willow, sandbar willow, western snowberry, and Woods rose) and that are cut flush with the ground surface and not cleared, so as to leave the naturally occurring seed bank and root stock intact will not be direct stem counted. Instead, the area will be delineated on an aerial photo and indicated on construction drawings to not be cleared or have the ground disturbed. If ground disturbance occurs, Enbridge Pipelines (North Dakota) LLC will conduct a direct stem count of the disturbance area or estimate the number of stems cleared using a Commission approved sampling estimate method (see Shrub Sampling Method, Appendix C).

Tree Sampling Method

Per the Commission's Tree and Shrub Inventory Specifications (Inventory Specification No. 6 in Appendix A), in high-density woodland areas, Enbridge Pipelines (North Dakota) LLC proposes the following sampling method for the tree inventory. The dimensions of the entire woodland stand within the ROW will be delineated to determine the area of the woodland. Tree and shrub counts will be made in representative sample site areas within the woodland. Transects will be developed and the circular sample sites placed along the transect. The number of sample sites within a woodland stand will be dependent on woodland size and uniformity. A smaller, more uniform woodland stand would require fewer sample sites than a larger, less uniform woodland stand.

The sample sites will be 0.10 acres (37.42-foot radius circles). A rope 37.42 feet in length will be attached to a central stake and rotated in a circle (Appendix D). Trees and shrubs within the circle will be counted. Tree and shrub density for the entire woodland area within the ROW will be calculated based on the average density from all of the sample locations within the woodland, weighted against the woodland size.

Shrub Sampling Method

Per the Commission's Tree and Shrub Inventory Specifications (Inventory Specification No. 6 in Appendix A), in high-density woodland areas, Enbridge Pipelines (North Dakota) LLC proposes the following sampling method for the shrub inventory. The dimensions of the entire woodland stand within the ROW will be delineated to determine the area of the woodland. Shrub counts will be made in representative sample site areas within the woodland. Transects will be developed and the circular sample sites placed along the transect. The number of sample sites within a woodland stand will be dependent on woodland size and uniformity. A smaller, more uniform woodland stand would require fewer sample sites than a larger, less uniform woodland stand.

The sample sites will be 0.01 acres (3.72-foot radius circles). A rope 3.72 feet in length will be attached to a central stake and rotated in a circle (Appendix C). Shrubs within the circle will be counted. Tree and shrub density for the entire woodland area within the ROW will be calculated based on the average density from all of the sample locations within the woodland, weighted against the woodland size.

Appendix A

Tree and Shrub Mitigation Specifications

Inventory

1. Trees and shrubs anticipated to be cleared, including those that are considered invasive species or noxious weeds (e.g., *Caragana arborescens*, *Elaeagnus angustifolia*, *Rhamnus cathartica*, *Tamarix chinensis*, *T. parviflora*, *T. ramosissima*, *Ulmus pumila*), shall be inventoried before cutting. The inventory shall record the location, number, and species of trees and shrubs.
2. In windbreaks, shelterbelts and other planted areas, trees or shrubs anticipated to be cleared, regardless of size, shall be inventoried for replacement.
3. In native growth areas, trees anticipated to be cleared that are 1-inch diameter at breast height ("dbh") or greater shall be inventoried for replacement.
4. In native growth areas, shrubs anticipated to be cleared in the permanent right-of-way shall be inventoried for replacement.
5. In native growth areas outside the permanent right-of-way, shrubs shall be cut flush with the surface of the ground, taking care to leave the naturally occurring seed bank and root stock intact. If soil disturbance is necessary, the native topsoil shall be preserved and replaced after construction. Shrubs shall be allowed to regenerate naturally where native topsoil is preserved and replaced. Where native topsoil is not preserved and replaced, shrubs anticipated to be cleared shall be inventoried for replacement.
6. In native growth areas, trees and shrubs may be inventoried by actual count or by sampling method that will properly represent the woody vegetation population. A sampling plan developed by the company, filed with the North Dakota Public Service Commission (Commission) and approved prior to the start of construction shall define the sampling method to be used for trees, for tall shrubs and for low shrubs. The data from the sample plots shall be extrapolated to the total acreage of the wooded area to be cleared to determine the species and quantity of trees and shrubs to be replaced.

Clearing for Construction

7. Trees and shrubs shall be selectively cleared, leaving mature trees and shrubs intact where practical.
8. The width of clear cuts through windbreaks, shelterbelts and all other wooded areas shall be limited to 50 feet or less unless otherwise approved by the NDPSC.
9. If the area of trees or shrubs actually cleared differs from the area inventoried, the difference in number of trees and shrubs to be replaced shall be noted on the inventory.

Replacement

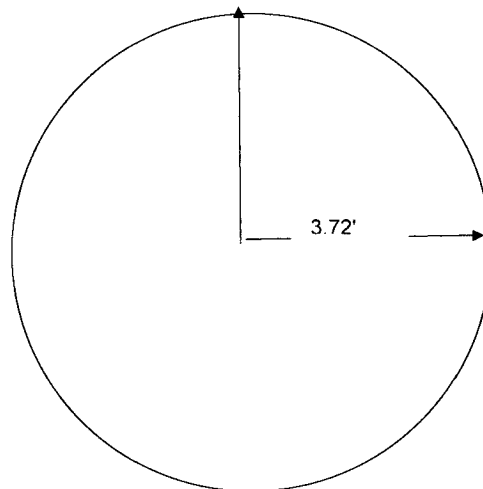
10. Prior to tree/shrub replacement, documentation identifying the number and variety of trees removed as well as the mitigation plan for the proposed number, variety, type, location and date of replacement plantings shall be filed with the NSPSC for approval.
11. Tree replacement shall be on a 2 to 1 basis with 2-year-old saplings. Shrub replacement shall be on a 2 to 1 basis with stem cuttings.
12. Trees and shrubs shall be replaced by the same species or similar species suitable for North Dakota growing conditions as recommended by the North Dakota Forest Service.
13. Landowners shall be given the option of having replacement trees/shrubs planted off the right-of-way on the landowner's property or waiving that requirement in writing and allowing those replacement trees/shrubs to be planted at alternative locations.
14. At the conclusion of the project, documentation identifying the actual number, variety, type, location, and date of the replacement plantings shall be filed with the NDPSC.
15. Tree/shrub replacements shall be inspected once a year for three years, on about the anniversary of the plantings, and, on or shortly before October 1 of each year, a report shall be submitted to the NDPSC documenting the condition of replacement planting and any woodlands work completed. If after three years from the anniversary of the plantings the survival rate is less than 75%, the NDPSC may order additional planting(s).

Appendix C

Shrub Sampling Method

Sample Plot

- Circular sample plots with a radius of 3.72 feet, or area equivalent to 0.01 acres created with a central stake and rope.
- The rope, 3.72 feet in length, anchored to the central stake and rotated in a circle



Shrub Counts

- Direct stem counts from each plot
- Talled on work sheet by species

Woodland size

- GPS points taken in the field around boundary
- GIS used to calculate acreage

Calculations

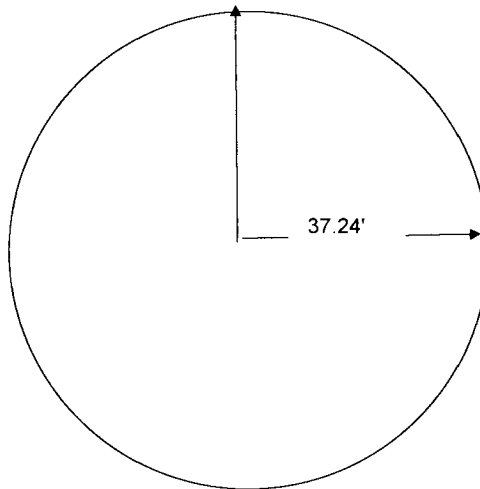
- Average determined from all plots sampled in a woodland area or area is equivalent to stems/0.001 acre
- Converted to a per acre basis (average times 100)
- Total number per woodland determined by multiplying average number per acre with woodland size

Appendix D

Tree Sampling Method

Sample Plot

- Circular sample plots with a radius of 37.24 feet, or area equivalent to 0.10 acres created with a central stake and rope.
- The rope, 37.24 feet in length, anchored to the central stake and rotated in a circle



Tree Counts

- Direct stem counts from each sample site
- Talled on work sheet by species

Woodland size

- GPS points taken in the field around boundary
- GIS used to calculate acreage

Calculations

- Average determined from all plots sampled in a woodland area or area is equivalent to stems/0.10 acre
- Converted to a per acre basis (average times 10)
- Total number per woodland determined by multiplying average number per acre with woodland size

APPENDIX C

Tree and Shrub Count Forms

TREE/SHRUB INVENTORY

Project Name: BLLP WEST

Sampled by: CT MS Date: 6/26

Location / Site ID: 32 156 093

Woodland Type (circle): Native Planted Plot Size (circle): 3.72 ft 37.2 ft

SPECIES	Planted	Native		TOTAL
	All trees shrubs	Trees >1"	All shrubs	
S1 Prunif		10 Plots		130
S2 Symocc		15		195
S3 Rosark		2		26
S4 Amelan		3		243
S5 Crasot		3		243
S2 S6 Prunif			18 Plot	828
S7 Symocc			2 Plot	92
T1 Frapen		1		1
T2 Frapen		1		1
BB(2?) Frapen		count 86		86

64

36 156 093

S1 Symocc			22	
S2 Symocc			26	
S3 Elacon			12	
S3 S4 Symocc			18	
S5 Elacon			10	
S6 Symocc			29	3799
S7 Elacon			7	917
S8 Symocc			38	3572
S9 Rosark			5	470
S10 Elacon			6	564
S6 S11 Symocc			16	816
Elacon			5	255
Rosark			5	255

All Plots

TREE/SHRUB INVENTORY

Project Name: BLLP WEST
 Sampled by: MS CT Date: 6/26/12
 Location / Site ID: 28156 092
 Woodland Type (circle): Native Planted Plot Size (circle): 3.72 ft 37.2 ft

SPECIES		Planted	Native		TOTAL
		All trees shrubs	Trees >1"	All shrubs	
Ela ang	T1			1	1
Popdel	T2			1	1
Salint	S1		2		2
Poptre	T4		1		1
Poptre	T5		1		1
Poptre	T6		1		1
Ela ang	T7		2		2
Salint	S3		3		3
She ang	S4			11	11
PRUAME	S5			2	2
PRUAME	S6			1	1
She ang	S7		3		3
Popdel	T3		1		1
Popdel	T9		1		1
Popdel	T10		7		7
Popdel	T11		7		7
Popdel	T12		2		2
Popdel	T13		1		1
Popdel	T14		3		3
Popdel	T15		1		1
Popdel	T16		2		2
Popdel	T17		1		1
Popdel	T18		6		6
Poptre	T20		3		3
Poptre	T21		2		2
Poptre	T22		1		1

DAY 1

TREE/SHRUB INVENTORY

Project Name: ~~EN13~~ EN13
 Sampled by: Stasica + Chad Date: 6/20/2012
 Location / Site ID: ~~FRAPEN~~ Road 2715691A88 East Side
 Woodland Type (circle): Native Planted Plot Size (circle): 3.72 ft 37.2 ft

3.72

SPECIES	Planted	Native		TOTAL
	All trees shrubs	Trees >1"	All shrubs	
2715691 + SYMOCC			1	
✓ S1 SYMOCC			11	66
✓ T1 - SALAMY		1	1	1
✓ T2 - FRAPEN		1	1	1
✓ T3 - ELAANG			1	1
2815691				
✓ S1 SYMOCC			24	1581
✓ T1 SALAMY		1	1	1
✓ S2 SYMOCC			54	15822
2915691				
✓ S1 PRUVIF			9	
3515692				
✓ S1 COTINT	1		1	
✓ S2 COTINT	1		1	
✓ S3 COTINT	1		1	
✓ T1 PINPON	1	15	1	
✓ S4 COTINT	1		1	
✓ S5 COTINT	1		1	
✓ T2 ULM PUM	1		1	
✓ T3 ULM PUM	1		1	
✓ T4 ULM PUM	1		1	
✓ T5 ULM PUM	1		1	
✓ T6 ULM PUM	1		1	
✓ T7 ULM PUM	1		1	
✓ T8 ULM PUM	1		1	
✓ T9 ULM PUM	1		1	

15498

DAY 2

TREE/SHRUB INVENTORY						
Project Name: ENB						
Sampled by: Matt & Chad			Date: 6/21/12			
Location / Site ID:						
Woodland Type (circle):		Native	Planted	Plot Size (circle):	3.72 ft	37.2 ft
SPECIES	Planted		Native		TOTAL	
	All trees	shrubs	Trees >1"	All shrubs		
33156095				-		
51 - PRUVIR				55	88	
52 - SYMOCC				97	446	
34156095						
51 - SYMOCC				34	9384	
52 - ROSARIK				7	28	
53 - PRUAME ^{Plum}				13	169	
54 - SYMOCC				80	7360	
55 ROSARIK				12	404	
35156095						
51 - FRAPEN	1		4	4		
51 - CARARB	1			4		
52 - CARARB	1			4		
53 - CARARB	1			4		
54 - CARARB	1			4		
36156095						
51 SYMOCC				60	1560	
52 ROSARIK				15	375	
53 SYMOCC				40	40	
54 ROSARIK				5	5	
55 SYMOCC				18	18	
56 ROSARIK				7	7	
57 SYMOCC				40	4320	
58 ROSARIK				30	8250	
59 SYMOCC				90	990	
510 ROSARIK				15	405	

guess on location?

9112
8094
7280
1092

15190
6510
540
90

Hairy Gold Aster

TREE/SHRUB INVENTORY

Project Name: ENB

Sampled by: Chad + Matt

Date: 6/21/12

Location / Site ID:

Woodland Type (circle): Native Planted Plot Size (circle): 3.72 ft 37.2 ft

SPECIES	Native		TOTAL
	All trees shrubs	Trees >1"	
36156095			
✓ 56 ⁵¹² SYMOCC		15	180
✓ 57 ⁵¹² ROSARIK		38	456
✓ 57 ⁵¹³ SYMOCC		32	832
✓ 58 ⁵¹⁴ ROSARIK		25	1050
✓ 58 ⁵¹⁵ SYMOCC		86	37056
✓ 510 ⁵¹⁶ ROSARIK		50	19500
33156094			
✓ 51 SHEARG		12	312
✓ 52 PRUVIR		16	416
✓ 53 ELACOM		9	234
✓ 54 SHEARG		22	1694
✓ 55 PRUVIR		13	1001
✓ 56 AMEALN		12	924
✓ 57 ELACOM		7	539
✓ 58 CORSER		7	539
✓ T1 FRAPEN		1	
✓ T2 FRAPEN		1	
✓ T3 FRAPEN		3	
✓ T4 FRAPEN		1	
✓ T5 FRAPEN		1	
✓ T6 ULMAME		1	
✓ T7 FRAPEN		1	
✓ T8 FRAPEN		3	
✓ T9 FRAPEN		1	
✓ T10 (poly) FRAPEN		36	180

32336
19800

169
8442
6566

✓ 59 TREE Amealn
✓ 510 PRUVIR

18 (shrub plot)
14 (shrub plot)

75.12
L
L

TREE/SHRUB INVENTORY

Project Name: ENB
 Sampled by: Matt Ched Date: 6/21/12
 Location / Site ID:
 Woodland Type (circle): Native Planted Plot Size (circle): 3.72 ft 37.2 ft

SPECIES	Planted		Native		TOTAL
	All trees shrubs	Trees >1"	All shrubs		
33156094					
✓ 59 ^{5/16} SYMOCC			12		276
✓ 60 ^{5/17} SYMOCC			95		4655
✓ 13 ^{5/18} PRUAME			6		54
✓ 51 ^{5/19} SYMOCC			18 18		1458 1458
✓ 520 SHEARG-ELACOM			38		3078
✓ 521 ROSARK			3		243
522 SYMOCC			18		
34156094					
✓ 516 SYMOCC			62		496
✓ 52 ¹⁸ SHEARG			19		2394
✓ 19 SYMOCC			10		1260
✓ 20 ROSARK			8		1008
✓ 21 PRUVIR			3		378
✓ 22 AMEALN			25		3150
✓ 513 SHEARG			7		224
✓ 24 ROSARK			3		96
✓ 25 SYMOCC			30		960
ELACOM					
SYMOCC					
03155094					
Sub Plot ✓ 51 ELACOM			23		2990
✓ 52 SYMOCC			18		2340
✓ 53 PRU VIR			5		650
✓ 54 COR SER			6		780
✓ 55 AME ALN			5		650
✓ 56 ROS ARK					

204
36
20,458

4 520



TREE/SHRUB INVENTORY

Project Name: ENB

Sampled by: Math & CHAD

Date: 6/21/12

Location / Site ID: W -> E

Woodland Type (circle): Native Planted Plot Size (circle): 3.72 ft 37.2 ft

33156094

SPECIES	Planted	Native		TOTAL
	All trees shrubs	Trees >1"	All shrubs	
51 PRUVIR (Shrub plot)			32 (plot)	864
✓ 511 FRAPEN		5 (count)		5
✓ 512 CORSEY			2 (plot)	54
✓ 513 AME PL			1 (count)	27
✓ 514 PRUVIR			1	27
535 CARROT			3 (Shrub plot)	324
* bottom of draw - Desk top delimitate				
✓ 12 ULM AME		1 (count)	1	1
0 34156094				
✓ 51 SHEARG			129 Actual	129
✓ 52 ROSARK			10	290
✓ 1 FRAPEN		1	1	1
✓ 53 RIBODO			2	14
✓ 54 PRUVIR			20 Actual	20
✓ 55 SHEARG			20	680
✓ 56 ROSARK			3	102
✓ 57 PRUVIR			2	68
✓ 58 SHEARG			26 Actual	
✓ 59 ROSARK			8 Actual	
✓ 510 SYMOCC			10 Actual	
✓ 511 SYMOCC			49	343
✓ 512 SHEARG Pnt			1	1
✓ 513 SYMOCC			30	720 630
514 SYMOCC			32	2432 2240
✓ 515 ROSARK			3	228 210

321

MARK ON MAP

630
2240
210

TREE/SHRUB INVENTORY

Project Name: ENB

Sampled by: Chad Matt

Date: 6/21/12

Location / Site ID:

Woodland Type (circle): Native Planted

Plot Size (circle): 3.72 ft 37.2 ft

SPECIES	Planted		Native		TOTAL
	All trees shrubs	Trees >1"	All shrubs		
03155094					
✓1 FRAPEN Actual CNT		131			131
ULMAME Actual CNT		21			
Relative CUR					
✓57 CORSER		4	4		2184
✓58 SYMOCE		8	8		4368
✓59 PRUVIR		15	15		8190
✓510 AMEALN		8	8		4368
✓12 ULMAME		1	2		1
✓3 ULMAME		1			1
✓5212 SHEARG Actual			79		79
✓ POPTRE Actual		1			1
✓ FRAPEN		12			
14 POPTRE		1			
Rel Cur PRU VIR 513		4	4		560
Rel Cur AME ALN 514		4			140
✓15 FRA PEN		1			
✓16 FRA PEN		1			
✓17 FRA PEN		1			
✓18 FRA PEN		1			
✓14 POPTRE		1			
✓19 FRAPEN		1			
✓10 FRAPEN		1			
✓11 FRAPEN		1			
✓12 POPTRE		1			
✓13 POPTRE		1			
✓14 POPTRE		1			

2116
4232
7935
4232

*
add 511
RTBOX
Rel Cur
2105
1092

Spalled
TOEHEE
BaBaBa tree

01
50
131

15

Make poly 50 of TH N° of S3 and
Use tally data for ABS count.

TREE/SHRUB INVENTORY					
Project Name: ENB					
Sampled by: Chad Matt			Date: 6/21/12		
Location / Site ID:					
Woodland Type (circle): Native		Planted	Plot Size (circle): 3.72 ft 37.2 ft		
SPECIES	Planted		Native		TOTAL
	All trees shrubs	Trees >1"	All shrubs		
03155094					
✓ T15 POPTRE		1			
✓ T16 POPTRE		1			
✓ T17 POPTRE		1			
✓ T18 FRAPEN		1			
✓ T19 FRAPEN		1			
✓ T20 FRAPEN		1			
✓ T21 FRAPEN		1			
✓ T22 FRAPEN		1			
✓ T23 FRAPEN		1			
✓ T24 FRAPEN		1			
✓ T25 FRAPEN		1			
✓ T26 FRAPEN		1			
✓ T27 FRAPEN		1			
✓ T28 FRAPEN		1			
✓ T29 FRAPEN		1			
✓ T30 FRAPEN		1			
✓ T31 FRAPEN		1			
✓ T32 FRAPEN		2			
✓ T33		2			
✓ T34		3			
✓ T35		2			
✓ T36		2			
✓ T37		4			
✓ T38		1			
✓ 39		1			
✓ 40		3			

~~FRAPEN~~
~~POPTRE~~
~~SYMOCC~~
~~AMEALN~~
~~PRUVIR~~
~~ROSARK~~

KIBADO
+10

57 SYMOCC
58 AMEALN ||||| +14 +14 +56
59 PRUVIR ||||| ||||| ||||| ||||| +12 +12 +2
50 ROSARK ||||| |||||

TREE/SHRUB INVENTORY

Project Name: ENB

Sampled by: Chad Matt

Date: 6/21/12

Location / Site ID:

Woodland Type (circle): Native Planted Plot Size (circle): 3.72 ft 37.2 ft

03155094

SPECIES	Planted	Native		TOTAL
		All trees shrubs	Trees >1"	
✓ T41 FRAPEN			1	
✓ T42			1	
✓ T43			1	
✓ T44 ACENEG			1	
✓ T45 FRAPEN			2	
✓ 46 FRAPEN			1	
✓ 47 FRAPEN			3	
✓ 48			2	
✓ 49 ACENEG			3	
✓ 50 FRAPEN			1	
✓ 51 FRAPEN			1	
<hr/>				
S37 FRAPEN			11	180 153
S12 PRUVIR			12 12	19596 16704
S13 SYMOCC			25 25	40825 34800
S14 AMEALN			14 14	228602 19488
S0 ULMAME			2 2	33 927
S15 SHEARG			8	208
S16 SYMOCC			13	338
S17 ROSARK			3	78
S18 AMEALN			6	156
S19 PRUVIR			6	156
S5 SHEARG S26			13	668 598
PRUVIR S27			20	1020 920
ROSARK S28			5	255 230
RIBOOD S29			3	153

134156094

(S1)

other page section

TREE/SHRUB INVENTORY

Project Name: EN13

Sampled by: MS Chad

Date: 6/2/12

Location / Site ID:

Woodland Type (circle): Native Planted

Plot Size (circle): 3.72 ft 37.2 ft

52 (56)

SPECIES		Planted		Native		TOTAL
		All trees shrubs	Trees >1"	All shrubs		
34156094						
✓ She ARG	S30	18				1458
✓ PRUVIR	S31	4				324
✓ ROSARK	S32	2				162
✓ SYMOCC	S33	12				972
S3 CRAROT	S34	19				380
✓ SYMOCC	S35	12				240
✓ AMEALN	S36	7				140
✓ RIBODO	S37	2				40
✓ PRUVIR	S38	2				40
S4 CRAROT	S39	13				3341
✓ SYMOCC	S40	12				3084
✓ PRUVIR	S41	5				1285
✓ ROSARK	S42	9				2313
✓ RIBODO	S43	6				1542
T2 FRAPEN			2			
T3						
T4						
T5						
T6						
T7						
T8						
T9						
T10						
T11						
T12						
T13						
T14						
T15						

✓ T12
 ✓ T13
 ✓ T14
 ✓ T15

①

TREE/SHRUB INVENTORY						
Project Name: <u>BILP</u>						
Sampled by: <u>MM HE</u>			Date: <u>6/22/12</u>			
Location / Site ID:						
Woodland Type (circle):		Native	Planted	Plot Size (circle):	3.72 ft	37.2 ft
SPECIES	Planted		Native		TOTAL	
	All trees shrubs		Trees >1"	All shrubs		
34155094-S 55 44						
✓ Cra rot				16	16	
✓ Ros oak				6	6	
✓ Sym oak				125	125	
34155094-S56 → 3.72 plot						
✓ 547 Sym oak				35	2695	
34155094-S57 → plot 3.72						
✓ 548 Sym oak				15	240	
34155094-S58						
✓ 549 She oak				21	21	
✓ 550 Sym oak				185	185	
35155094-S1						
✓ Sym oak → 3.72 (1)				22	900	
Sym oak → 3.72 (2)				23		
✓ Ros oak → 3.72				3	600	
35155094-S2 → 3.72 plot						
53 Sym oak				18	612	
54 Ros oak				2	60	

total 5

180

130

594

66

10

TREE/SHRUB INVENTORY

Project Name: RLLP

Sampled by: MM, HE

Date: 6/22/12

Location / Site ID: 31156093

Woodland Type (circle): Native Planted Plot Size (circle): 3.72 ft 37.2 ft

SPECIES	<u>Planted</u>	Native		TOTAL
	All trees shrubs	Trees >1"	All shrubs	
<u>Ulm pum - T3</u>	1			
<u>T4</u>	1			
<u>T5</u>	1			
<u>T6</u>	1			
<u>T7</u>	1			
<u>Car arb T8 S6</u>	1			
<u>S7</u>	1			
<u>S8</u>	1			
<u>S9</u>	1			
<u>S10</u>	1			
<u>S11</u>	1			
<u>S12</u>	1			
<u>S13</u>	1			
<u>S14</u>	1			
<u>S15</u>	1			
<u>S16</u>	1			
<u>S17</u>	1			
<u>S18</u>	1			
<u>S19</u>	1			
<u>S20</u>	1			
<u>S21</u>	1			
<u>S22</u>	1			
<u>S23</u>	1			
<u>S24</u>	1			
<u>S25</u>	1			
<u>S26</u>	1			

TREE/SHRUB INVENTORY					
Project Name: <i>BLIP</i>					
Sampled by: <i>MM, HE</i>			Date: <i>6/22/12</i>		
Location / Site ID:					
Woodland Type (circle):		Native	Planted	Plot Size (circle): 3.72 ft 37.2 ft	
SPECIES	Planted		Native		TOTAL
	All trees shrubs	Trees >1"	All shrubs		
<i>25155194-S3</i> → 3.72 <i>plot</i>					
<i>✓ S5 Syn. oak</i>			<i>18</i>	<i>432</i>	
<i>25155194-S4</i>					
<i>S4 S/o oak</i>			<i>1</i>		
<i>S5</i>			<i>1</i>		
<i>S6</i>			<i>1</i>		
<i>S7</i>			<i>1</i>		
<i>S8</i>			<i>1</i>		
<i>S9</i>			<i>1</i>		
<i>S10</i>			<i>1</i>		
<i>S11</i>			<i>1</i>		
<i>S12</i>			<i>1</i>		
<i>S13</i>			<i>1</i>		
<i>S14</i>			<i>1</i>		
<i>S15</i>			<i>1</i>		
<i>S16</i>			<i>1</i>		
<i>S17</i>			<i>1</i>		
<i>S18</i>			<i>1</i>		
<i>S19</i>			<i>1</i>		
<i>S20</i>			<i>1</i>		
<i>S21</i>			<i>1</i>		
<i>S22</i>			<i>1</i>		
<i>S23</i>			<i>1</i>		
<i>S24</i>			<i>1</i>		
<i>S25</i>			<i>1</i>		

TREE/SHRUB INVENTORY						
Project Name: <u>BLLP</u>						
Sampled by: <u>MM, HE</u>			Date: <u>6/22/12</u>			
Location / Site ID:						
Woodland Type (circle):		Native	Planted	Plot Size (circle):	3.72 ft	37.2 ft
SPECIES	Planted		Native		TOTAL	
	All trees	shrubs	Trees >1"	All shrubs		
<u>350155094</u>						
<u>S26</u>				<u>2</u>		
<u>S27</u>				<u>2</u>		
<u>S28</u>				<u>5</u>		
<u>S29</u>				<u>5</u>		
<u>S30</u>				<u>8</u>		
<u>S31</u>				<u>2</u>		
<u>S32</u>				<u>1</u>		
<u>S33</u>				<u>3</u>		
<u>S34</u>				<u>3</u>		
<u>S35</u>				<u>3</u>		
<u>S36</u>				<u>3</u>		
<u>S37</u>				<u>2</u>		
<u>S38</u>				<u>1</u>		
<u>S39</u>				<u>2</u>		
<u>S40</u>				<u>5</u>		
<u>S41</u>				<u>1</u>		
<u>S42</u>				<u>5</u>		
<u>S43</u>				<u>1</u>		
<u>S44</u>				<u>1</u>		
<u>S45</u>				<u>1</u>		
<u>S46</u>				<u>1</u>		
<u>S47</u>				<u>1</u>		
<u>S48</u>				<u>1</u>		
<u>S49</u>				<u>1</u>		
<u>S50</u>				<u>1</u>		

TREE/SHRUB INVENTORY

TREE/SHRUB INVENTORY					
Project Name: <i>BLLP</i>					
Sampled by: <i>MM, HE</i>			Date: <i>6/22/12</i>		
Location / Site ID:					
Woodland Type (circle):		Native	Planted	Plot Size (circle): 3.72 ft 37.2 ft	
SPECIES	Planted	Native		TOTAL	
		All trees shrubs	Trees >1"		All shrubs
<i>35155094</i>					
<i>S51 She oak</i>				<i>1</i>	
<i>S52</i>				<i>1</i>	
<i>S53</i>				<i>1</i>	
<i>S54</i>				<i>4</i>	
<i>S55</i>				<i>1</i>	
<i>S56</i>				<i>1</i>	
<i>S57</i>				<i>1</i>	
<i>S58</i>				<i>2</i>	
<i>S59</i>				<i>3</i>	
<i>S60</i>				<i>9</i>	
<i>S70</i>				<i>2</i>	
<i>S71</i>				<i>5</i>	
<i>S72</i>				<i>4</i>	
<i>S73</i>				<i>4</i>	
<i>S74</i>				<i>3</i>	
<i>S75</i>				<i>2</i>	
<i>S76</i>				<i>3</i>	
<i>S77</i>				<i>1</i>	
<i>S78</i>				<i>2</i>	
<i>S79</i>				<i>1</i>	
<i>S80</i>				<i>10 (small)</i>	
<i>S81</i>				<i>2</i>	
<i>S82</i>				<i>1</i>	
<i>S83</i>				<i>1</i>	
<i>S84</i>				<i>1</i>	
<i>S85</i>				<i>2</i>	

5

TREE/SHRUB INVENTORY

Project Name: ISLLP

Sampled by: MM, HE

Date: 6/22/12

Location / Site ID:

Woodland Type (circle): Native Planted

Plot Size (circle): 3.72 ft 37.2 ft

SPECIES	Planted	Native		TOTAL
	All trees shrubs	Trees >1"	All shrubs	
35155094				
S86			6	
S87			3	
S88			4	
S89			3	
S90			1	
S91			4	
S92			2	
S93			3	
S94			4	
S95			5	
S96			2	
S97			1	
S98			4	
S99			5	
S100			1	
S101			5	
S102			3	
S103			4	
S104			4	
✓ S105	Sym occ 3.72 plot		23	460
✓ S106	Ele ong } 3.72 plot (1)		4	1008
	Sym occ } 3.72 plot (2)		6	1512
	Ele ong } 3.72 plot (3)		5	

TREE/SHRUB INVENTORY

TREE/SHRUB INVENTORY						
Project Name: <i>BLLP</i>						
Sampled by: <i>MM, HE</i>			Date: <i>6/22/12</i>			
Location / Site ID:						
Woodland Type (circle):		Native	Planted	Plot Size (circle): <i>3.72 ft</i>	37.2 ft	
SPECIES		Planted		Native		TOTAL
		All trees shrubs	Trees >1"	All shrubs		
<i>35165094</i>						
✓ <i>S108</i>						
	<i>Sym occ 3.72 plot</i>			<i>51</i>	<i>1530</i>	<i>1032</i>
✓ <i>S108</i>	<i>She arg</i>			<i>3</i>	<i>3</i>	
✓ <i>S1090</i>	<i>She arg plot 1</i>			<i>8</i>	<i>858</i>	<i>533</i>
	<i>She arg plot 2</i>			<i>5</i>		
<i>S110</i>	<i>Pro vic plot 1</i>			<i>12</i>	<i>1584</i>	<i>984 11</i>
✓ <i>S112</i>	<i>Sym occ plot (same poly as She arg)</i>			<i>12</i>	<i>1584</i>	<i>984</i>
✓ <i>S113</i>	<i>Eke. com</i>			<i>11</i>	<i>1210</i>	
✓ <i>T1</i>	<i>Fra per</i>		<i>1</i>		<i>1</i>	
✓ <i>S114</i>	<i>She arg plot</i>			<i>3</i>	<i>18</i>	
<i>S114</i>	<i>Sym occ plot</i>			<i>21</i>		
<i>S115</i>	<i>Pro vic plot</i>			<i>7</i>		
✓ <i>S115</i>	<i>She arg plot</i>			<i>3</i>	<i>3</i>	
✓ <i>S116</i>	<i>She arg</i>			<i>4</i>	<i>4</i>	
✓ <i>S117</i>	<i>Pro vic</i>			<i>4</i>	<i>4</i>	
✓ <i>S118</i>	<i>She arg (plot 1)</i>			<i>7</i>	<i>852</i>	<i>748</i>
	<i>(plot 2)</i>			<i>6</i>		
✓ <i>S119</i>	<i>Sym occ (plot 1)</i>			<i>13</i>	<i>1638</i>	<i>14375</i>
	<i>(plot 2)</i>			<i>12</i>		
✓ <i>S120</i>	<i>Pro vic</i>			<i>9</i>	<i>9</i>	
✓ <i>S120</i>	<i>Junhor</i>	<i>covers ground throughout poly</i>			<i>10</i>	
✓ <i>S122</i>	<i>Sym occ plot</i>			<i>33</i>	<i>2310</i>	<i>2211</i>

TREE/SHRUB INVENTORY					
Project Name: <u>PLLP</u>					
Sampled by: <u>MM, HE</u>			Date: <u>6/22/12</u>		
Location / Site ID: <u>36155094</u>					
Woodland Type (circle):		Native	Planted	Plot Size (circle): <u>3.72 ft</u> 37.2 ft	
SPECIES	Planted		Native		TOTAL
	All trees shrubs	Trees >1"	All shrubs		
✓ S1 Ele corn (plot)			4	1740	1520
✓ S2 Sym oze (plot)			19	7368	760
✓ S3 Cra rot			3	3	
✓ S4 She sig (listed as the vir) - changed			4	4	
S5			2	2	
S6			3	3	
S7			2	2	
S8			1	1	
S9			5	5	
S10			1	1	
S11			1	1	
S12			4	4	
S13			4	4	
S14			1	1	
S15			3	3	
S16			1	1	
✓ S17 Ele corn (plot)			10	560	550
✓ T1 Fra gen			1	1	
✓ S18 Pru vir (plot 1)			3	1000	850
			4		
✓ S19 Sym oze (plot 1)			8	1025	1580
			5		
✓ S20 Cra rot (plot)			3	543	534
✓ S21 Rub ida plot			8	1448	1424
✓ S22 Ame aln plot			7	1267	1246
✓ T2 Fra gen			1	1	

Stop
strip



TREE/SHRUB INVENTORY

Project Name: RLLP

Sampled by: MM, HE

Date: 4/27/12

Location / Site ID: 36155094

Woodland Type (circle): Native Planted Plot Size (circle): 3.72 ft 37.2 ft

SPECIES	Planted	Native		TOTAL
	All trees shrubs	Trees >1"	All shrubs	
✓ S23 Pruome plot			8	128
✓ S24 Ame aln plot			11	176
✓ S25 Ame aln plot			9	99 90
✓ S26 Ele corn plot			12	3804 3708
✓ T3 Fra per		1	0	1
✓ S27 Sym Occ plot			15	3195 3435
✓ S28 Cra rot plot			3	114 102
✓ S29 Pru vic			6	42
✓ T4 Fra per		1	0	1
✓ S30 Ame aln			7	273
✓ S31 Sym occ			14	5382
✓ S32 Cra rot			2	200 196
✓ S33 Ame aln			11	121
✓ S34 Pru vic			5	115
✓ T5 Uln ame		1		1
✓ T6 Fra per		1		1
✓ T7 Fra per		1		1
✓ T8 Fra per		2		2
✓ S35 Ele corn			8	2808 2760
✓ S36 She arg			2	2
✓ S37 She arg			3	3
✓ S38 She arg			3	3
✓ S39 She arg			3	3
✓ S40 Cra rot			3	3
✓ S41 Cra rot			5	5
✓ T9 Fra per		1		1
✓ T10 Fra per		1		1
✓ T11 "		1		1

TREE/SHRUB INVENTORY

Project Name: BLP

Sampled by: MM, HE

Date: 6/22/12

Location / Site ID: 36155094

Woodland Type (circle): Native Planted

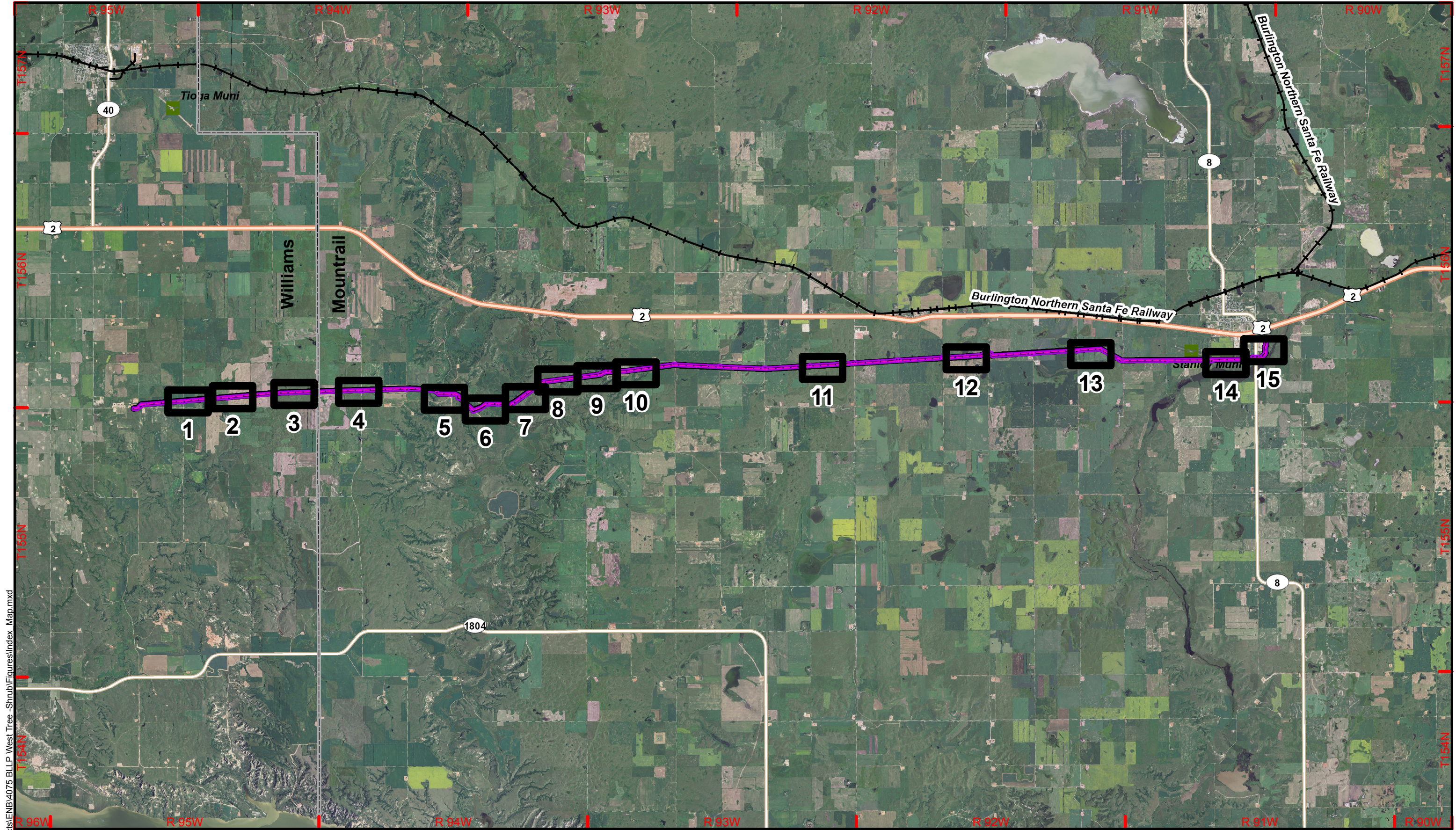
Plot Size (circle): 3.72 ft 37.2 ft

SPECIES	Planted	Native		TOTAL
	All trees shrubs	Trees >1"	All shrubs	
✓ S42 sym oca plot			14	1148
✓ T12 Fra per		1		1
✓ S43 Ele com plot			10	8770 8630
✓ T13 Fra per		2		2
✓ T14 "		1		1
✓ T15 "		1		1
✓ S44 sym oca plot			11	3553 3520
✓ S45 Pru vir			8	2584 2560
✓ T16 Fra per		1		1
✓ T17		1		1
✓ T18		4		4
✓ T19		1		1
✓ T20		1		1
✓ T21		1		1
✓ T22		1		1
✓ T23		1		1
✓ S46 Ame aln			7	2261 2240
✓ S47 Rub ida			3	969 960
✓ Ele com SI			3	123
✓ S2 Pru vir			6	1644 1494
✓ S3 sym oca			5	1370 1245
✓ T1 Fra per		1		1
✓ S4 Ame aln			13	1638 1456
✓ S5 Csa cat			3	711 108
✓ T2 Fra per		1		1

Some
noty Pru vir
31156094

APPENDIX D

Figures



August 2012 R:\projects\ENB\4075 BLLP West Tree -Shrub\Figures\Index Map.mxd

**Carlson
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600 South 2nd Street, Suite 105, Bismarck, North Dakota 58504
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1:126,720 1 inch = 2 miles

0 0.5 1 2 Miles

Basemap: NAIP Orthophoto 2010
Williams & Mountrail Counties



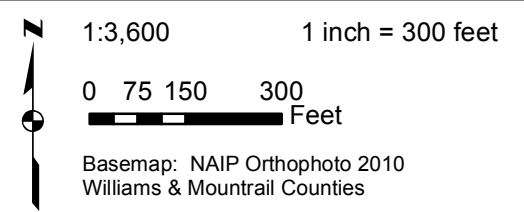
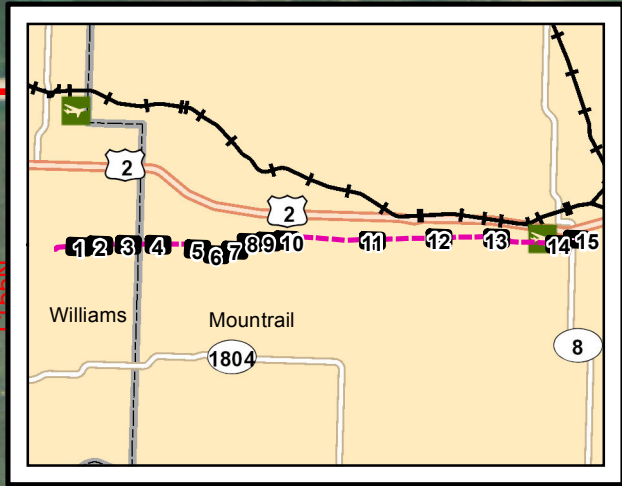
**Beaver Lodge Loop Project
(West)**

**Index Map
Tree & Shrub Locations**

R:\projects\ENB\4075 BLLP West Tree -Shrub\Figures\BLLP West Fig.1.mxd
August 2012



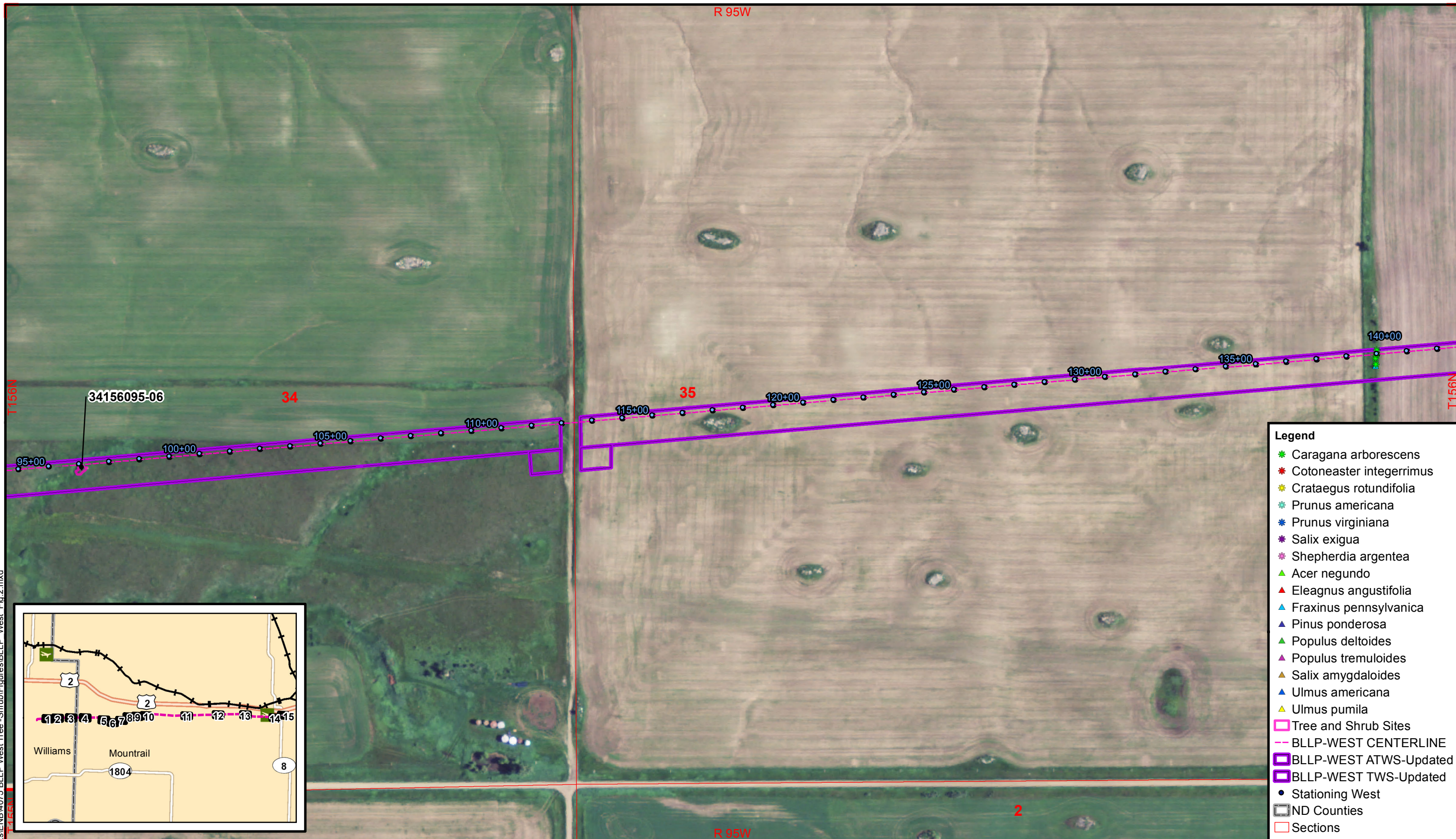
- Legend**
- ★ Caragana arborescens
 - ★ Cotoneaster integerrimus
 - ★ Crataegus rotundifolia
 - ★ Prunus americana
 - ★ Prunus virginiana
 - ★ Salix exigua
 - ★ Shepherdia argentea
 - ▲ Acer negundo
 - ▲ Eleagnus angustifolia
 - ▲ Fraxinus pennsylvanica
 - ▲ Pinus ponderosa
 - ▲ Populus deltoides
 - ▲ Populus tremuloides
 - ▲ Salix amygdaloides
 - ▲ Ulmus americana
 - ▲ Ulmus pumila
 - Tree and Shrub Sites
 - BLLP-WEST CENTERLINE
 - ▭ BLLP-WEST ATWS-Updated
 - ▭ BLLP-WEST TWS-Updated
 - Stationing West
 - ▭ ND Counties
 - ▭ Sections



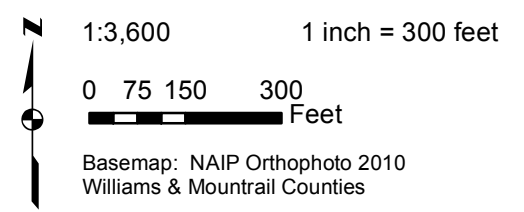
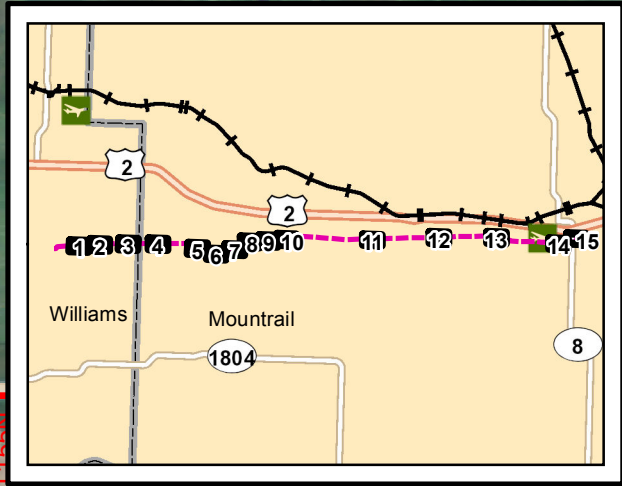
**Beaver Lodge Loop Project
(West)**

**FIGURE 1
Tree & Shrub Locations**

R:\projects\ENB\4075 BLLP West Tree - Shrub\Figures\BLLP West Fig.2.mxd August 2012



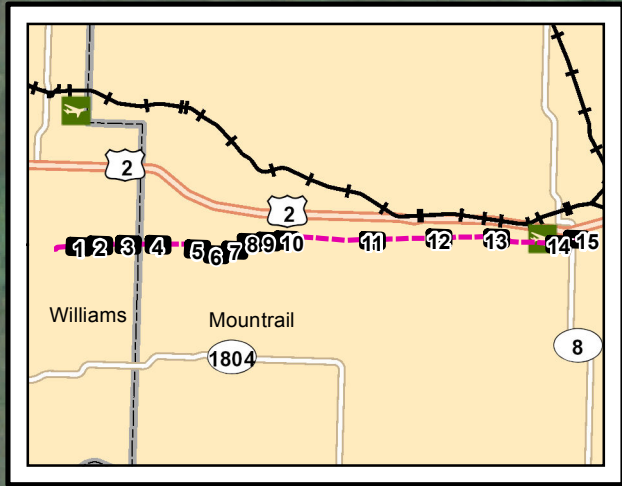
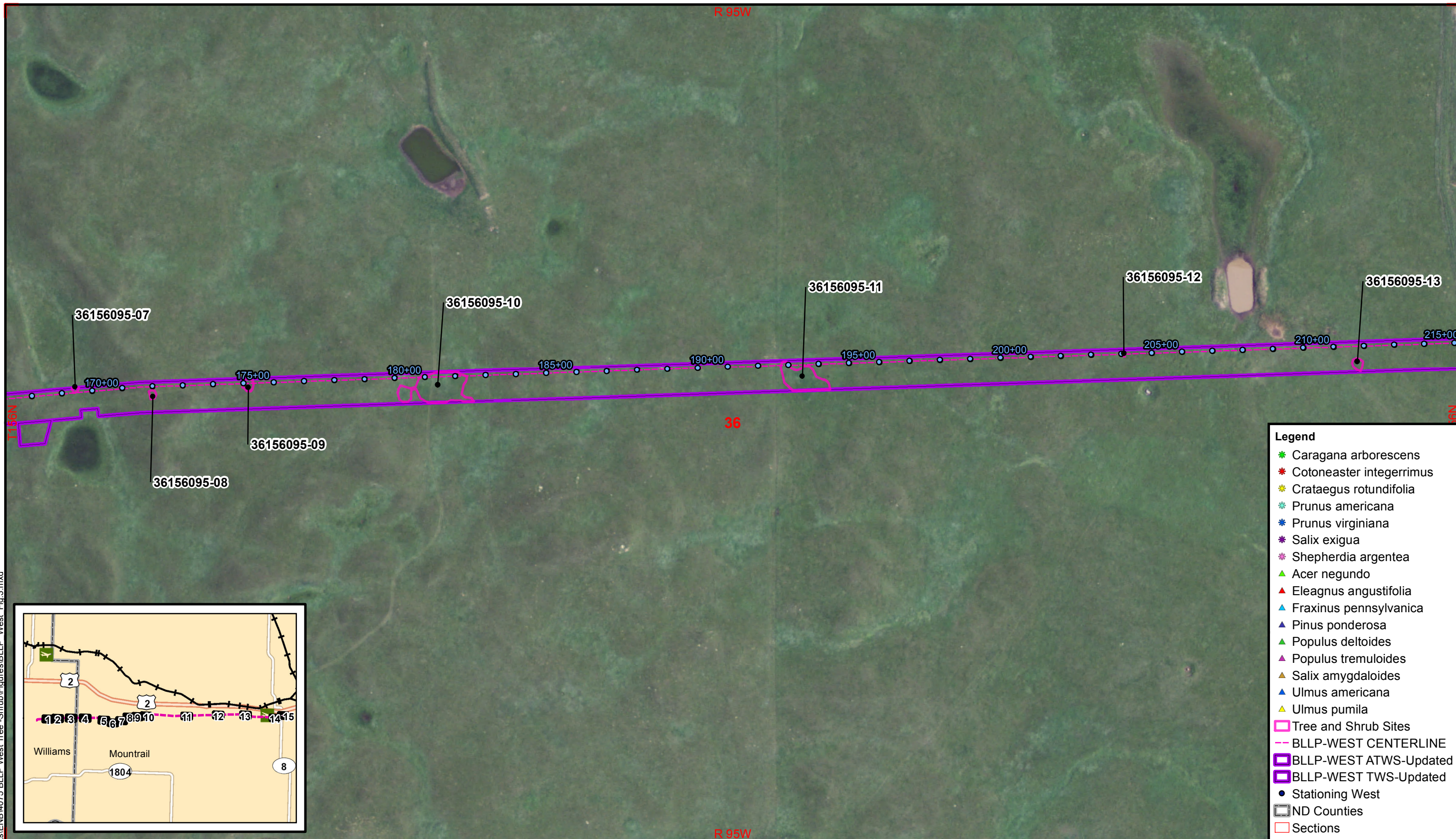
- Legend**
- ★ Caragana arborescens
 - ★ Cotoneaster integerrimus
 - ★ Crataegus rotundifolia
 - ★ Prunus americana
 - ★ Prunus virginiana
 - ★ Salix exigua
 - ★ Shepherdia argentea
 - ▲ Acer negundo
 - ▲ Eleagnus angustifolia
 - ▲ Fraxinus pennsylvanica
 - ▲ Pinus ponderosa
 - ▲ Populus deltoides
 - ▲ Populus tremuloides
 - ▲ Salix amygdaloides
 - ▲ Ulmus americana
 - ▲ Ulmus pumila
 - Tree and Shrub Sites
 - BLLP-WEST CENTERLINE
 - ▭ BLLP-WEST ATWS-Updated
 - ▭ BLLP-WEST TWS-Updated
 - Stationing West
 - ▭ ND Counties
 - ▭ Sections



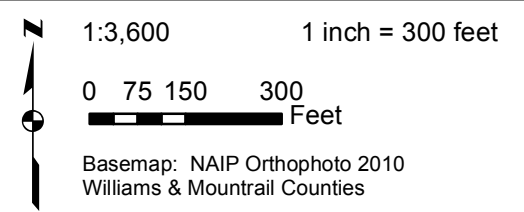
**Beaver Lodge Loop Project
(West)**

**FIGURE 2
Tree & Shrub Locations**

August 2012 R:\projects\ENB\4075 BLLP West Tree -Shrub\Figures\BLLP West Fig.3.mxd



- Legend**
- ★ Caragana arborescens
 - ★ Cotoneaster integerrimus
 - ★ Crataegus rotundifolia
 - ★ Prunus americana
 - ★ Prunus virginiana
 - ★ Salix exigua
 - ★ Shepherdia argentea
 - ▲ Acer negundo
 - ▲ Eleagnus angustifolia
 - ▲ Fraxinus pennsylvanica
 - ▲ Pinus ponderosa
 - ▲ Populus deltoides
 - ▲ Populus tremuloides
 - ▲ Salix amygdaloides
 - ▲ Ulmus americana
 - ▲ Ulmus pumila
 - Tree and Shrub Sites
 - BLLP-WEST CENTERLINE
 - BLLP-WEST ATWS-Updated
 - BLLP-WEST TWS-Updated
 - Stationing West
 - ND Counties
 - Sections



**Beaver Lodge Loop Project
(West)**

**FIGURE 3
Tree & Shrub Locations**