APPENDIX R

IRON RANGE – ST. LOUIS COUNTY – ARROWHEAD 345 KV TRANSMISSION LINE PROJECT

LIST OF LANDOWNERS ALONG AND ADJACENT TO ROUTE

Appendix R
Affected Landowners

Name	Parcel IDs
	530-0010-03802
A WORK OF ART LANDSCAPES LLC	555-0010-05790
AAMODT ERIC LEE	285-0010-01220; 285-0010-01398
AAMODT WADE	285-0010-01220; 285-0010-01398
AHO NICOLAS K	530-0010-04075
AHO NICOLAS K & JORDYN S	530-0010-04075
ALAN L. DEGOOD, FAMILY TRUST ALAN DEGOOD, TRUSTEE	555-0010-05590
ALFORD, JAMES & LELAND & JOSEPH	50-034-3300; 50-034-3400; 50-034-4300
ALLETE INC	395-0010-09015; 395-0010-09170; 395-0010-09182; 395-0010-09212; 395-0010-09215; 395-0010-09220; 395-0010-09225; 400-0010-03065; 50-019-4100; 50-019-4200; 50-019-4300; 50-019-4400; 50-020-3300
ALLETE INC / MINNESOTA POWER	395-0010-09015; 395-0010-09170; 395-0010-09182; 395-0010-09212; 395-0010-09215; 395-0010-09220; 395-0010-09225; 400-0010-03065
AMATUZIO STEVEN M	275-0010-00545
AMES ANDREW	530-0010-03350
AMES ANDREW & ELISE A	530-0010-03350
AMES ELIZABETH R	395-0010-09183
AMES ELIZABETH R & MARK A	395-0010-09183
AMPLE ACREAGE LLC	750-0010-00015; 750-0010-00015; 750-0010-00040; 750-0010-00040
ANDERSON DAVID R & MARY JANE	530-0010-03165
ANDERSON DAVID R ETUX	530-0010-03165
ANDERSON ELAINE	530-0010-05221
ANDERSON ROBERT	285-0010-03710; 285-0010-03720
ANDERSON ROBERT & FRANK THOMAS	285-0010-03710; 285-0010-03720
ANDERSON SCOTT C	285-0010-05586
ANDERSON, JAMES L & VICTORIA	50-029-4300; 50-029-4400
ANICH DARREN & JESSIE	275-0013-00540
ARFMAN CHARLES E	555-0010-00750
ARRO MARILYN Y	555-0010-02720
ARRO ROBERT J	555-0010-02720
ASPINWALL RITA	530-0010-04732

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Affected Landowners

Name	Parcel IDs
ASPINWALL RITA & KARPPINEN	530-0010-04732
AUNE GERRY L	530-0010-03340
AUNE GERRY L & SUSAN J	530-0010-03340
AUSTMAN INC	310-0010-01090
AUSTMAN-JONES INC	310-0010-01090
AUTIO TOD & RUTH	555-0010-01030; 555-0010-01040
AUTIO TOD A	555-0010-01030; 555-0010-01040
BAFFOE KWESI	285-0010-02250
BAHEN KELLY	530-0010-02970
BAILEY KIMBERLY A	360-0010-00150; 360-0010-00160
BAKKEN JUDY A	400-0010-05570; 400-0010-05575; 400-0010-05580; 400-0010-05585
BAKKEN JUDY ANN	400-0010-05570; 400-0010-05575; 400-0010-05580; 400-0010-05585
BAKKEN TIMOTHY K	530-0010-04972; 530-0010-04975
BATES KAY	275-0013-00770; 275-0013-00780
BECK TED	530-0010-04823; 530-0010-04823
BECKMAN MARVA J	555-0010-03430
BECKMAN-LASKEY MARVA J	555-0010-03430
BEESON SARA	285-0020-05340
BENNETT SHARON E	555-0010-05520
BENNETT WARREN JR	555-0010-05560
BENNETT WARREN R JR	555-0010-05560
BENSON, GLEN R	50-030-1200
BERG BRUCE	285-0010-02320
BERG DONALD A	530-0010-04910
BERG DONALD A ETUX	530-0010-04910
BERG WILLIAM P	395-0010-09202
BERG WILLIAM P ETUX	395-0010-09202
BERGHAMMER, CAROL L	50-030-4300
BERGMAN JEANNA	530-0010-04970; 530-0010-04971
BIELECKI, MICHAEL & VALERIE TRUSTEES	14-021-4400
BLANDIN PAPER COMPANY FORESTRY DEPARTMENT	12-001-9000; 12-002-9000; 12-003-9000; 12-004-9000; 12-010-9000; 12-011-9000; 12-012-9000; 12-013-9000; 12-014-9000; 12-015-9000; 12-023-9000; 12-024-9000; 12-025-9000; 14-007-9000; 14-018-9000; 14-019-9000; 14-020-9000; 14-028-9000; 14-030-9000; 50-020-9000; 50-030-9000; 50-034-9000; 50-035-9000
BODER BRIAN	275-0013-00345

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Affected Landowners

Name	Parcel IDs
BODER BRIAN & NICOLE	275-0013-00345
BOEHNE APRIL	275-0010-00671
BOEHNE APRIL & WELLMAN ETHAN	275-0010-00671
BOESELAGER KARL	530-0010-03885; 530-0010-03887
BORGSTROM KEVIN	360-0010-00490
BOSELL DANIEL T & BELINDA B	555-0010-05540; 555-0010-05550
BOYER MARK R	530-0010-06680; 530-0010-06682
BOYER MARK R ETUX	530-0010-06682
BRAATEN RYAN A	530-0010-03080; 530-0010-03130
BRADBURY THOMAS E SR & JANICE	530-0010-03710; 530-0010-03720
BRADBURY THOMAS E SR ETUX	530-0010-03710; 530-0010-03720
BRADFORD LYNN	530-0010-06810
BRADFORD LYNN R	530-0010-06810
BRANDT KAREN M	400-0010-05670; 400-0010-05700; 400-0010-05710
BRELIE SCOTT	530-0010-05240
BRIEGEL RANDY C	555-0010-05440; 555-0010-05530
BRIEGEL SHARON & RANDY	555-0010-05440; 555-0010-05530
BROUSE RANDY S & RISSANEN CHERI E	275-0010-00870
BRUMMER SANDRA C	530-0010-06580
BURCAR RONALD FRANK	530-0010-04326
BURLINGTON NO/SANTA FE RAILWAY CO PROPERTY TAX DEPARTMENT - AOB - 2	275-0013-00210; 275-0013-01060; 275-0013-01320
BURMEISTER RODNEY A JR	530-0010-05180; 530-0010-05181
BUSCHE LUCAS G	275-0010-00830; 275-0010-01040; 275-0010-01050
BUSCHE LUCAS G & TAHNI V	275-0010-00830; 275-0010-01040; 275-0010-01050
BUSH DAVID D & GLORIA J	285-0010-01480
BUSH, DANIEL D	14-020-1200
BUSH, DANIEL D & ALLISON M	14-020-1201

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Affected Landowners

Name	Parcel IDs
CARLSON GERALD C	530-0010-05175
CARLSON JOSEPH	285-0010-03660; 285-0010-03670
CARLSON JOSEPH AND KAROL	285-0010-03660; 285-0010-03670
CARLSON LARRY K & KATHRYN A	275-0010-00835; 275-0010-00920; 275-0010-00960; 275-0010-00980
CARLSON LARRY K ETUX	275-0010-00835
CARLSON MARY KAY	310-0010-02207
CARLSON MITCHEL R	275-0013-00782
CARLSON RONALD S & MARY	310-0010-02208
CARROLL GEORGE A	530-0010-04956
CARTER BOBBIE JO	275-0013-00545
CASTLEMAN SCOTT T	275-0013-00892
CHAIKA NATHAN	530-0010-05220
CHARTIER ALLEN J	400-0010-04990
CHRISTENSON ANNA	530-0010-03200; 530-0010-03220; 530-0010-03230
CHRISTENSON ANNA-MARIE	530-0010-03200; 530-0010-03220; 530-0010-03230
CITY OF FLOODWOOD	360-0010-00320
CIURLEO ANTHONY	530-0010-03880
CIURLEO KRIS M	530-0010-04720
CLARK CHRISTOPHER A	275-0010-00330; 275-0010-00340; 275-0010-00604
CLARK DARYL F	400-0010-05590
CLARK DAVID R	395-0010-08800
COLLELO RONALD LOUIS	275-0013-00511; 275-0013-00511
COOK SAMUEL M	530-0010-03590
CRANDALL LARRY	275-0010-00710
CRANDALL LARRY & BRITTANY E	275-0010-00710
CROWE, AMY	50-033-4203
CROWE, GREG O & AMY L	50-033-3103; 50-033-4201
CRUM JENNIFER L	530-0010-06478
DAHLSTROM BENJAMIN A SMITH BERNADETTE E	530-0010-03820
DALE & DAWN ECKSTROM REV TRUST	530-0010-03610; 530-0010-03620; 530-0010-03621; 530-0010-03650; 530-0010-03660; 530-0010-04853
DARST LEO	285-0010-03420

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Affected Landowners

Name	Parcel IDs
DARST LEO & BRYAN	285-0010-03420
DAVID, ANDREW & JACQUELINE	50-033-2400
DAVIDSON GERALDINE A	555-0010-04870
DAVIS BETTY J	275-0010-00840
DAVIS BRENDA	285-0010-03990; 285-0010-04000
DAVIS DAVID K TRUSTEE TRUSTEE	530-0010-04790; 530-0010-06640
DAVIS DAVID THOMAS AND ANNA HELGA DAVIS REVOCABLE LIVING TRUST	530-0010-04790; 530-0010-06640
DEAN ELLEN M	310-0010-02235
DECKER DALE J	750-0010-00010
DECKER PAUL	555-0010-05500; 555-0010-05510
DECKER PAUL & KATHERINE E	555-0010-05500; 555-0010-05510
DEGOOD ALAN L FAMILY TRUST	555-0010-05590
DEJARLAIS ZACHARIE	310-0010-01040
DEJARLAIS ZACHARIE & KRISTIN	310-0010-01040
DETTMER ROBERT J II	285-0010-02310; 285-0010-02330; 285-0010-02340; 285-0010-02350
DIETER CANDIS M	530-0010-06806
DIETER CANDIS M CARLSON MARK A CARLSON MARK A	530-0010-06806
DITTMAN, MARY ETAL C/O ALEX POCHUCHA	14-027-1100
DIVENS MATTHEW W	360-0010-00420
DIVENS MATTHEW W & HEATHER J JENSEN	360-0010-00420
DM & NE RAILROAD RIGHT OF WAY PROPERTY TAX DEPARTMENT - AOB - 2	275-0013-00210; 275-0013-01060; 275-0013-01320
DNR REAL ESTATE MGMT BUREAU OF REAL ESTATE MGMT	275-0013-01120; 275-0013-01240; 275-0013-01280; 275-0013-01290; 400-0010-03320; 400-0010-03360; 400-0010-03380; 400-0010-03430; 400-0010-05000; 400-0010-05050; 400-0010-05110; 400-0010-05140; 400-0010-05220

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Affected Landowners

Name	Parcel IDs
DOWNS MATTHEW G	275-0013-00860
DUNN, RAYMOND JR	42-001-2402
EASTLICK HOWARD L III PULLING ANNE	310-0010-01705
EASTLICK HOWARD L III PULLING ANNE PULLING ANNE	310-0010-01705
ECKSTROM AMBER	395-0010-09070
ECKSTROM AMBER & DEREK	395-0010-09070
ECKSTROM DALE & DAWN	530-0010-03610; 530-0010-03621; 530-0010-03650; 530-0010-03660; 530-0010-04853
ECKSTROM DEREK & AMBER	530-0010-03120; 530-0010-03132
ECKSTROM TANNER	530-0010-03600; 530-0010-03620
ECKSTROM TANNER LEE	530-0010-03622; 530-0010-03640
EDEN THOMAS G	530-0010-04830
EILEFSON EUGENE R ETUX	530-0010-03860
EILEFSON GENE	530-0010-05250
EILEFSON GENE R	530-0010-03860; 530-0010-05260
EILEFSON GENE R & LINDA M	530-0010-05250; 530-0010-05260
EKMAN ZACHARY	310-0010-00330
EKMAN ZACHARY & STODDARD KANDICE M	310-0010-00330
ELDER RICHARD A & DAVID R A	310-0010-01250
ELDER RICHARD A	310-0010-01250
ELLIAN CHRISTOPHER A	530-0010-06430
ENGELEMIER ROGER & SHERRI	275-0013-00380
ENGELMEIER ROGER W	275-0013-00380
ENGWALL DARYL	555-0010-00910; 555-0010-01010
ERHOLTZ ANTHONY D	400-0010-05650
ERHOLTZ KATHLEEN S	400-0010-04885
ERICKSON ASHLEY R & JOSHUA D	275-0010-00875; 275-0010-00880
ERICKSON COREY J	275-0013-00420
ERICKSON LARRY E	275-0013-00910; 275-0013-00940

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Affected Landowners

Name	Parcel IDs
ESTEP MATTHEW	395-0010-09261
ESTEP MATTHEW & ANNA	395-0010-09261
FAGRE JANICE C	555-0010-05660; 555-0010-05670
FAINT DONALD	530-0010-05025
FAINT DONALD M & MONICY	530-0010-05026
FAINT DONALD M ETAL	530-0010-05025
FAINT DONALD M ETUX	530-0010-05026
FEIRO CANDACE DANIELLE	275-0013-00880
FENLASON MARK L	275-0010-00706
FENLASON MARK L & KRISTEN L	275-0010-00706
FJELD LARRY D	360-0010-01660; 360-0010-01690; 555-0010-05680; 555-0010-05690; 555-0010-05710; 555-0010-05720
FJELD LARRY D & BONNIE J	360-0010-01660; 360-0010-01690; 555-0010-05680; 555-0010-05690; 555-0010-05710; 555-0010-05720
FLIER, LONNIE	14-028-2302
FLYNN DENNIS M SR & DEBBRA	395-0010-09260; 395-0010-09270
FLYNN DENNIS M SR ETUX	395-0010-09260; 395-0010-09270
FOLSTED MICHAEL A JR	285-0010-02420
FOLSTED MICHAEL A JR & KARYN M	285-0010-02420
FOND DU LAC BAND LAKE SUP CHIPPEWA LAND INFORMATION DEPT	310-0010-01980; 310-0010-02095
FORD JASON T	310-0010-00660; 310-0010-00700
FORD JASON T & KELLY M	310-0010-00660; 310-0010-00700
FOX BEN	530-0010-03831
FOX BEN & JESSICA	530-0010-03831
FOX BENJAMIN	530-0010-03801
FOX BENJAMIN & JESSICA	530-0010-03801
FOX GEORGE A	530-0010-03800
FRALICK ROBERT D	395-0010-09280
FRANKS DEAN	530-0010-04957
FRANKS DEAN & KAREN	530-0010-04957
FREMLING TINA M	395-0010-09200
FRIES DEAN W	310-0010-01720; 310-0010-01725; 310-0010-01730; 555-0010-03650

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Affected Landowners

Name	Parcel IDs
FRIES DEAN W & JILL M	310-0010-01720; 310-0010-01725
FROELICH LARRY R & SUSAN A FAMILY LIVING TRUST	285-0010-01380; 285-0010-01390; 285-0010-01430
G N RY	310-0010-00555; 310-0010-01515; 310-0010-02695
GARCIA DEREK H	310-0010-02202
GARCIA DEREK H & NELSON LILLIAN R	310-0010-02202
GARRICK GAIL	395-0010-09000; 395-0010-09010
GARRICK GAIL J	395-0010-09010; 395-0010-09060
GAUS BRIAN K	530-0010-03140
GEER BEAU M	285-0010-00640
GIERSDORF DUSTIN B	530-0010-06775
GILL RICHARD K	400-0010-05452
GLASSING CHRISTOPHER R	285-0010-03870; 285-0010-03870
GODS COUNTRY CHURCH OF MUNGER	530-0010-04892
GOEBEL BERNARD	285-0010-03900
GOEBEL BERNARD & BETTY	285-0010-03900; 285-0010-03905; 285-0010-03910; 285-0010-03930
GOEBEL BERNARD ETAL	285-0010-03905; 285-0010-03910
GOEBEL BERNARD J SR & BETTY	285-0010-03935
GOEBEL BERNARD JOSEPH	285-0010-03935
GOEBEL BERNIE & RONDA	285-0010-02360
GOEBLE BERNARD J	285-0010-03930
GOETTL JAMIE	400-0010-02990
GOETTL JAMIE & ROSALIE	400-0010-02990
GOLDEN KARL A	275-0010-01080; 400-0010-05441
GOLDEN MATT & RANDI	275-0010-01080; 400-0010-05441
GOUTERMONT LON H	555-0010-00980; 555-0010-00990; 555-0010-01050
GOUTERMONT LON H & ROXANA	555-0010-00980; 555-0010-00990; 555-0010-01050
GRADY SHANE E	530-0010-06690
GRAVES DONALD RICHARD	530-0010-05010
GRAY ALEXANDER W	530-0010-06825
GREGORICH STEPHANIE	530-0010-03816

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Affected Landowners

Name	Parcel IDs
GRINDLE DAN	310-0010-01920; 310-0010-01950
GRINDLE DANIEL V TRUST	310-0010-01920; 310-0010-01950
GROSSOEHME CASEY L	275-0010-00600
GROSSOEHME CASEY L/JOHNSON AMELIA R	275-0010-00600
GUBBE JOHN H	530-0010-02982
GULBRANSON JEFFREY L	530-0010-04785
GUSTAFSON ANGELA & KEITH	395-0010-09016
GUSTAFSON KEITH	395-0010-09016
GUZDA DONALD N & WOLF MARTHA J	310-0010-00320
GUZDA DONALD NED	310-0010-00320
GVESRUDE LEE R	530-0010-06774; 530-0010-06774; 530-0010-06776; 530-0010-06776
HAEDRICH SCOTT	530-0010-04800; 530-0010-04821
HAEDRICH SCOTT & SHELLEY	530-0010-04800; 530-0010-04821
HAFFTEN PETER C	530-0010-06801
HAFFTEN PETER C & ALLISON J	530-0010-06801
HALL CULLY J	275-0013-00400
HALL CULLY J AND TAMI L	275-0013-00400
HALVERSON DONALD	530-0010-05182
HALVERSON DONALD & SATHERS MACKENZIE	530-0010-05182
HANSEN BRYCE ROBERT	395-0010-09014
HANSEN BRYCE ROBERT & MIRANDA SUSANNE	395-0010-09014
HANSEN GLEN	395-0010-09135
HANSON BRUCE A	325-0020-02622
HANSON BRUCE A & MARLENE V	325-0020-02622
HANSON GLEN ETUX	395-0010-09135
HARGER JAMES M	530-0010-04966
HARGER JAMES MERLE	530-0010-04966
HARJU BRENT K	395-0010-08960; 395-0010-08972
HART RICHARD A	275-0010-00691

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Affected Landowners

Name	Parcel IDs
HART RICHARD A & CAREY A	275-0010-00691
HARTLEY CHARLES E	530-0010-05120; 530-0010-05130
HARTLEY CHARLES E & DIANE R	530-0010-05120; 530-0010-05130
HAYDON FRANCIS EUGENE JR	530-0010-04105
HAYES HOWARD A	360-0010-00500; 360-0010-00530
HAYES ROCKLAND B	275-0013-00792
HEDQUIST JOY	530-0010-04820
HEIN BRIAN	555-0010-02780
HEIN BRIAN & STACEY	555-0010-02800
HELLERSTEDT, ROBERT	14-021-4100; 14-021-4201
HELMER STEPHEN H	275-0010-00810; 275-0010-00820; 275-0010-00825
HELMER TODD W	310-0010-00710
HENAGIN DANIEL	275-0010-00700
HENDRICKSON DAVID & SHELLEY TRUST	285-0010-05617; 325-0020-04590
HENDRICKSON DAVID & SHELLEY TRUSTEE	285-0010-05617; 325-0020-04590
HENDRICKSON JOEL L	530-0010-05051
HERNESMAN, ROBERT L TRUSTEE	50-029-1300; 50-029-1400; 50-029-2200; 50-029-2300; 50-029-2400; 50-029-3100; 50-029-4200; 50-035-1300; 50-035-2200; 50-035-2300; 50-035-2400; 50-035-3100
HESTER JEREMY	530-0010-06480
HILDRE PETER W & KAREN S	530-0010-04148
HILL JASON	530-0010-03231
HILL JASON A	530-0010-03231
HILL JAY R	285-0010-00830
HILL ROGER M ETAL	285-0010-00830
HOFMAN ANDREW & KAY	325-0020-02610; 325-0020-02620; 325-0020-02655; 325-0020-02680; 325-0020-02700; 325-0020-02820
HOFMAN BRAD	285-0010-03640; 285-0010-03650; 285-0010-03655
HOFMAN RANDY	325-0020-02650
HOFMAN RANDY & CHASIDY	325-0020-02650
HOLEMAN MATHEW J	530-0010-03432
HOLLAND TAMATHA	530-0010-03813
HOLTE KELLY D	310-0010-00380
HOLTER JEFF	530-0010-05030; 530-0010-05035

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Affected Landowners

Name	Parcel IDs
HOLTER JOSH A	530-0010-05030; 530-0010-05035
HOPKINS HOLLI R	555-0010-04430
HORN NEIL T	310-0010-01820
HORN NEIL T & MELISSA	310-0010-01820
HOVDE DONALD E	275-0010-00842; 275-0010-00843
HOVDE KATHLYN ANN	275-0010-00842
HUBERT DUSTIN	530-0010-04063
HUHTA FLORENCE SYLVIA	285-0010-00440
HUTCHINSON CHANCE BURNETT	555-0010-03330
HUTCHINSON CHARLES MATTHEW	555-0010-03330
HUTCHINSON TODD J	555-0010-01132
HUTCHINSON TODD J ETAL	555-0010-01132
INDEPENDENT SCHOOL DISTRICT #704	530-0010-03410
ISAACS DARREN	285-0010-01300; 285-0010-01330
ISAACS KEITH	285-0010-01300; 285-0010-01330
ISAACS KEITH ALLEN	285-0010-00650
ISABELL JAMES E	530-0010-06750
ITASCA COUNTY	14-035-2200; 50-033-2202
JAAKOLA CLINTON L AND MAKI MARY J	275-0013-00622
JOHNSEN VERNON R & JENNIFER M	530-0010-05065
JOHNSEN VERNON ROBERT III	530-0010-05065
JOHNSON AUSTIN	275-0010-00602
JOHNSON BRUCE	400-0010-02873
JOHNSON CARY	530-0010-03687
JOHNSON CARY D	530-0010-03675
JOHNSON CARY D & KAREN A	530-0010-03675; 530-0010-03687
JOHNSON DAVID A & DERRICK E C/O JOHNSON WEAVER DIANE	285-0020-05060
JOHNSON DAVID A C/O JOHNSON WEAVER DIANE	285-0020-05060
JOHNSON DENNIS W	285-0010-03980; 285-0010-04010; 325-0020-04460; 325-0020-04470

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Affected Landowners

Name	Parcel IDs
JOHNSON JOHN G	285-0010-00500; 285-0010-00510; 285-0010-00620
JOHNSON JOHN G ETAL	285-0010-00500; 285-0010-00510; 285-0010-00620
JOHNSON KYLE JAMES	530-0010-05176
JOHNSON MARK	275-0010-00880
JOHNSON MARK A & DANETTE	555-0010-03202
JOHNSON MARK A & JUDITH A	555-0010-03202
JOHNSON MARK EDWARD	310-0010-00375
JOHNSON NANCY L	530-0010-05170
JOHNSON RENA	555-0010-03210; 555-0010-03220
JOHNSON STEVE J	555-0010-04590
JOHNSON STEVEN R	530-0010-05210
JOHNSON STEVEN R ETUX	530-0010-05210
JOHNSON, CHARLES & CINDY	50-029-4101; 50-029-4102; 50-033-2201
JOHNSON-KUSEL NANCY L	530-0010-05170
JOHNSTON BRIAN J C/O ROBERT D JOHNSTON SR	555-0010-01200; 555-0010-01210; 555-0010-01220; 555-0010-01230; 555-0010-01240
JOHNSTON GERALD J	555-0010-04380; 555-0010-04380; 555-0010-04490; 555-0010-04490; 555-0010-04500; 555-0010-04500; 555-0010-04510
JOHNSTON RICHARD J C/O ROBERT D JOHNSTON SR	555-0010-01200; 555-0010-01210; 555-0010-01220; 555-0010-01230; 555-0010-01240
JOHNSTON ROBERT D SR	555-0010-00960; 555-0010-00970; 555-0010-01000; 555-0010-01110; 555-0010-01120; 555-0010-01140; 555-0010-01250
JOHNSTON ROBERT D SR & SUSAN M	555-0010-01000; 555-0010-01110; 555-0010-01120; 555-0010-01140
JOHNSTON ROBERT DONALD SR	555-0010-01250
JONES RICHARD BENNETT	285-0010-01550
JONES RICHARD BENNETT & SHIRLEY RAE	285-0010-01550
JORDAN CHARLES W	285-0010-05610
JORDON CHARLES W & PAMELA A	285-0010-05610
JULIN RANDALL E	530-0010-03822
JUSSILA CRAIG S	285-0010-03630

Appendix R
Affected Landowners

Name	Parcel IDs
JUSSILA LANCE R	285-0010-03630
JUSSILA ROLAND & SUSAN	285-0010-00780; 285-0010-00810
JUSSILA ROLAND R	285-0010-00780; 285-0010-00810
K & K HUNTING PROPERTIES LLC	285-0010-01410; 285-0010-02440
K & M HUNTING ASSN C/O LAWRENCE L KUBIS	400-0010-03180; 400-0010-03210
KAIM LYNN	325-0020-02610; 325-0020-02620; 325-0020-02655; 325-0020-02680; 325-0020-02700; 325-0020-02820
KALDAHL DEAN T	530-0010-04735
KALDAHL DEAN T & LISA M	530-0010-04735
KANNIAINEN ALLAN EDWIN	555-0010-04820
KANTOLA, LOREN & GLORIA	50-030-1100; 50-030-1300
KAPPES CHAD & LISA	400-0010-04885
KARG JEREMY	530-0010-03761
KARG JEREMY & JODY	530-0010-03761
KARKKAINEN JEFF	530-0010-04081
KARKKAINEN JEFFREY A	530-0010-04081
KARLSTRAND EDYTHE H	285-0010-04020; 285-0010-04040
KARLSTRAND JAN RICHARD	285-0010-04020; 285-0010-04040
KELLY AARON D	275-0013-00440
KILPO ROBERT N	285-0010-00630
KIVELA WAYNE S	285-0010-01960; 285-0010-01990; 285-0010-02020
KIVI MARK & SHARON	530-0010-03770; 530-0010-03797; 530-0010-03830; 530-0010-03890
KIVI MARK S	530-0010-03770; 530-0010-03797; 530-0010-03830; 530-0010-03890
KLANDE FAMILY FORESTS LLC	14-029-2200
KLEIN THEODORE ALAN	310-0010-01960; 310-0010-01960; 310-0010-01970; 310-0010-01970; 310-0010-01985; 310-0010-01985; 310-0010-01990; 310-0010-01990
KLEIN THOMAS L	310-0010-00360
KOCHEVAR JOHN R	555-0010-02705
KOCHEVAR JOHN R & KELSI	555-0010-02705
KOHN JAMES M	530-0010-04965
KOIVISTO NIKOLAI R	285-0010-00580; 285-0010-00610
KOIVISTO NIKOLAI R & STEPHANIE A	285-0010-00580; 285-0010-00610

Appendix R
Affected Landowners

Name	Parcel IDs
KOSKI MICHAEL G JR	395-0010-09360
KOVALA STEVEN	325-0020-00790
KOVANEN, HEATHER J	14-022-3300; 14-022-3400
KRAMER PETER A	555-0010-05640; 555-0010-05650
KRATT MICHAEL RAY	530-0010-06660
KREIDLER BENJAMIN L	400-0010-01092
KRYZER MICAH	275-0010-00990
KRYZER MICAH & MARLEY	275-0010-00990
KUBIS RONALD D	310-0010-02040; 400-0010-01131; 400-0010-03000
KUHLMEY SCOTT	530-0010-06770
KULLHEM TIMOTHY R	310-0010-00490
KULLHEM TIMOTHY ROBERT	310-0010-00490
KUNELIUS RONALD J & BARBARA A	530-0010-03436
KUNELIUS RONALD J ETAL	530-0010-03436
LAFRANCE JON	275-0010-00537
LAFRANCE JON & ELIZABETH	275-0010-00537
LAINE MICHAEL	285-0010-03760; 285-0010-03770; 285-0010-03780; 285-0010-03790; 285-0010-03800; 285-0010-03810
LAINE MICHAEL -SGL	285-0010-03780; 285-0010-03790; 285-0010-03800
LAKE COUNTRY POWER	285-0010-05703
LALIBERTE RONALD G	530-0010-06772
LALIBERTE RONALD G & DIANE M	530-0010-06772
LAM BROOK	285-0010-03350; 285-0010-03360; 285-0010-03370; 285-0010-03380; 285-0010-03390; 285-0010-03410
LAM BROOK & KEVIN	285-0010-03350; 285-0010-03360; 285-0010-03370; 285-0010-03380; 285-0010-03390; 285-0010-03410
LAMB ALEXANDER L	310-0010-00385
LAMB ALEXANDER L & VALEREE R	310-0010-00385; 310-0010-00386
LAMB ALEXANDER LEON	310-0010-00386
LAMB CHESTER C	310-0010-00132
LAMB CHESTER C ETAL	310-0010-00132
LAMB LENNY C	400-0010-03060

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Affected Landowners

Name	Parcel IDs
LAMB MARK C/O SANDRA LAMB C/O SANDRA LAMB	400-0010-03060
LAMB STANLEY A	400-0010-03145; 400-0010-03151; 400-0010-03170; 400-0010-03175
LAMB STANLEY A ETUX	400-0010-03145; 400-0010-03175
LANE JOSEPH P	310-0010-00500; 310-0010-00540
LANE JOSEPH P & TAMMY J	310-0010-00500; 310-0010-00540
LANGEVIN TIM A	310-0010-00520
LARSEN PAUL A	400-0010-03010; 400-0010-03020; 400-0010-03040
LARSON ALEXANDER M	285-0010-01560; 285-0010-01570
LARSON CLINTON	530-0010-04145
LARSON CLINTON & LINDSEY	530-0010-04145
LARVA MARK	360-0010-00510
LARVA MARK A	360-0010-00510
LEDIN JAMES H	360-0010-01870
LEDIN JAMES H & ARLENE R	360-0010-01870
LEDIN JEFF H	360-0010-00120
LEDIN JEFF H AND CYNTHIA R	360-0010-00120
LEE CORY	275-0013-00340
LEE CORY S	275-0013-00340
LEGARDE GAVIN	530-0010-06580
LEIER BELINDA B	555-0010-05540
LEIER BELINDA B ETAL	555-0010-05550
LEMBERG LUANNE JEAN TRUST	310-0010-02120; 310-0010-02150
LEMBERG STANLEY C & LUANNE	310-0010-02120; 310-0010-02150
LENNARTSON BRYAN	310-0010-01965; 310-0010-01966; 310-0010-01975
LENNARTSON BRYAN & KARA	310-0010-01965; 310-0010-01966; 310-0010-01975
LEPAGE CAREY P	400-0010-03370
LESARGE, ADAM J & SCHAAR, BOBI J	14-021-3103
LIBBESMEIER JEFF	530-0010-04680
LIGHT ON THE HILL CHURCH OF GOD	530-0010-04892
LIND ELLSWORTH C	310-0010-01701
LIND ELLSWORTH C ETUX	310-0010-01701
LINDQUIST DUSTIN J	555-0010-02710; 555-0010-02750

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Affected Landowners

Name	Parcel IDs
LINDQUIST DUSTIN J & TAYLOR A	555-0010-02710
LORENCE, KEVIN W & CINDY	14-021-2300; 14-021-2401
M & K HUNTING ASSOCIATION C/O JASON R MAKI	400-0010-03050
MAC DONALD BRUCE A ETUX	530-0010-04040
MACDONALD BRUCE A	530-0010-04040
MADSON ALLAN J	275-0013-00406
MAHON MICHAEL JAMES	285-0010-00550; 285-0010-00660
MAKI ARTHUR & JANICE	275-0013-00424
MAKI ARTHUR A	275-0013-00424
MAKI HOWARD WAINO ETUX	275-0013-00423
MAKI JAMES M	530-0010-04780; 530-0010-04786
MAKI LARRY HUGO	285-0010-00590; 285-0010-00600; 285-0020-05110; 285-0020-05220; 285-0020-05230
MAKI LARRY HUGO ETAL	285-0010-00600
MAKI STEPHANIE R	275-0013-00423
MAKI THOMAS J SR	530-0010-04780; 530-0010-04786
MALZAC ANNA MARIE	310-0010-01916
MARKKULA PAUL A	530-0010-04074
MARKKULA PAUL A & CYNTHIA	530-0010-04074
MARKS RENTAL LLC	275-0010-00875
MARLOW ROY	275-0013-00405; 275-0013-00412; 360-0010-01670
MARSHALL, PETER J & LAURA I	50-030-4201
MARSHIK SIERRA N	310-0010-01755
MARTIN JULIA F	530-0010-03171
MARTIN JULIA F & CHARLES	530-0010-03171
MASON JAMES J JR	285-0010-03572
MATHEWS DARWIN E II	555-0010-03460; 555-0010-03470; 555-0010-03480; 555-0010-04570; 555-0010-04580
MATHEWS DARWIN E II & NANCY M	555-0010-03460; 555-0010-03470; 555-0010-03480; 555-0010-04570; 555-0010-04580
MATHEWS NANCY A	310-0010-01900
MATHEWS NANCY A & NOLAN M	310-0010-01900
MATTINEN JOSEPH D	325-0020-02710

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Affected Landowners

Name	Parcel IDs
MATTSON WALTER D	530-0010-03180
MAURER GERALD P	555-0010-03230
MCCUSKEY RONALD A	530-0010-02990
MCCUSKEY RONALD A ETUX	530-0010-02990
MCCUSKEY SCOTT A	530-0010-02980
MCGREGOR CHAUNCEY & ERIN	530-0010-05071
MCGREGOR CHAUNCEY J	530-0010-05071
MCGREGOR JOHN F ETUX	530-0010-05070
MCGREGOR JOHN F JR	530-0010-04862; 530-0010-04911; 530-0010-05070
MCGREGOR SCOTT F	530-0010-04841; 530-0010-04875
MCGREGOR SCOTT F & SHYANNE	530-0010-04841; 530-0010-04875
MCINTYRE HOWARD	530-0010-04980
MCINTYRE HOWARD C	530-0010-04980
MCLAIN ANNA K	275-0013-00383
MCLAIN ANNA K & MARSHALL J	275-0013-00383
MEHLE, MARK D	14-028-2310
MELIN PAUL D	310-0010-01740
MELIN PAUL D & SUSAN E	310-0010-01740
MERCIER JONATHAN W	530-0010-04941
MERCIER JONATHAN W & DENISE M	530-0010-04941
MERRILL THOMAS & KAY LIVING TRUST	275-0013-00770; 275-0013-00780
MIHELICH TODD & DANA	285-0010-03590; 285-0010-03600
MIHELICH TODD D ETUX	285-0010-03590; 285-0010-03600
MILLEKER JOSEF M	275-0010-00400; 275-0010-00420; 275-0013-00381
MILLEKER JOSEF M & KARA	275-0010-00400; 275-0010-00420; 275-0013-00381
MILLER JACOB	530-0010-06702
MILLER JACOB A & MARIA	530-0010-06702

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Affected Landowners

Name	Parcel IDs
MILLER JAMES	530-0010-04897
MILLER JAS L ETUX	530-0010-04897
MILLER, MARK & BRUBAKER, MARILOU	14-020-4101
MIXER, ANDREW P & MERICA J	14-021-4200
MIZE JOHNNY	310-0010-00355; 310-0010-00363
MIZE JOHNNY & KOHLHAGEN CALLEY L	310-0010-00355; 310-0010-00363
MJOLSNESS, JESS D	50-033-2100
MODICH CASEY	530-0010-03160
MODICH CASEY & KRISTINA	530-0010-03160
MODIN JOSHUA EDWARD	310-0010-02100
MOE GAIL ALLEN	555-0010-04630
MOE GAIL ALLEN & LUANNE G	555-0010-04630
MOE JOHN & CINDY	530-0010-05061
MOE JOHN A	530-0010-05062
MOE JOHN A ETUX	530-0010-05062
MOE JOHN ALLEN	530-0010-05061
MOE MATTHEW J	530-0010-05095
MOE R SCOTT ETUX	530-0010-05060; 530-0010-05098
MOE ROBERT S	530-0010-05060; 530-0010-05098
MORRIS PAUL W	275-0010-00535
MORRIS PAUL W & JANET L	275-0010-00535
MORRISON DAVID E	400-0010-05565
MORRISON DAVID E & REBEKKAH	400-0010-05565
MOSES JENNIFER L R	285-0020-05250
MRDUTT JAMES	530-0010-04715
MRDUTT JAMES & WENDY	530-0010-04715
MUELLER DAVID L & DIANE D	275-0013-00510
MUELLER DAVID L ETUX	275-0013-00510
MYERS CURTIS W	530-0010-05100
NARTNIK DAVID	530-0010-06650; 530-0010-06670; 530-0010-06790
NARTNIK DAVID G	530-0010-06790
NEIGHBORWOODS	275-0010-00350
NELSON JAMES A & WENDY JOY	530-0010-03430

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Affected Landowners

Name	Parcel IDs
NELSON JAMES A ETAL	530-0010-03430
NELSON KAREEN	530-0010-04976; 530-0010-05020
NELSON KAREEN SA	530-0010-04976; 530-0010-05020
NELSON RANDY R	530-0010-03880; 530-0010-03881
NELSON RANDY R & VIRGINIA M	530-0010-03881
NELSON RUSSELL D	530-0010-05015
NELSON RUSSELL DALE	530-0010-05015
NELSON, RAYMOND E & KERRY L	14-020-1400
NEUBERG NORMAN	400-0010-03090
NEUBERG NORMAN & CARRIE	400-0010-03090; 400-0010-03110
NEWLANDER HARVEY A	555-0010-01060; 555-0010-01125
NEWLANDER HARVEY A ETAL	555-0010-01060; 555-0010-01125
NICKELL BRIAN D	360-0010-00390
NICKELL BRIAN D & DEBORAH J	360-0010-00390
NORDIN JOHN & NANCY JOINT REV TRUST	395-0010-09050; 395-0010-09051
NORDIN JOHN C	395-0010-09051
NORDIN JOHN C & NANCY	395-0010-09050
NORDMAN JULIANA	530-0010-03630
NORDMAN JULIANA & BRETT	530-0010-03630
NORTH 400 CLUB C/O JON ITTEL	360-0010-00270; 360-0010-00330; 360-0010-00340; 360-0010-00350; 360-0010-00360; 360-0010-00370; 360-0010-00380; 360-0010-00400; 360-0010-00410; 360-0010-00450; 360-0010-00460; 360-0010-00475; 360-0010-00480
NORTH 400 CLUB C/O JON ITTEL C/O JON ITTEL	360-0010-00270; 360-0010-00330; 360-0010-00340; 360-0010-00350; 360-0010-00360; 360-0010-00370; 360-0010-00380; 360-0010-00400; 360-0010-00410; 360-0010-00430; 360-0010-00450; 360-0010-00460; 360-0010-00475; 360-0010-00480
NORTH 400 CLUB INC C/O JON ITTEL	360-0010-00430
NORTH FOUR HUNDRED CLUB INC C/O JON IHEL	555-0010-05700
NORTHERN PINES PARTNERSHIP	360-0010-00250; 360-0010-00250; 360-0010-00260; 360-0010-00260; 360-0010-00280; 360-0010-00280
NYLUND HEATHER R	530-0010-03280
NYLUND SCOTT D	530-0010-03372

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Affected Landowners

Name	Parcel IDs
NYLUND SCOTT D & HEATHER R	530-0010-03280; 530-0010-03372
NYLUND SHIRLEY ANN	530-0010-01520
OCONNER JAMES A ETAL	530-0010-04990
OCONNOR JAMES A	530-0010-04990
O'CONNOR PATRICK	530-0010-06740
O'CONNOR PATRICK & JULIE	530-0010-06740
O'GORMAN, RANDY & GAIL	14-021-3102
OHH LLC	400-0010-05560
OLSON SHANE	530-0010-03870
OLSON SHANE & KIM	530-0010-03870
OMAN BRIAN L	530-0010-03170
OMAN BRIAN L & JUDITH S	530-0010-03170
ONNEN WILLIAM	530-0010-03250
OPBROEK AARON	555-0010-04520; 555-0010-05570; 555-0010-05600
OPBROEK AARON & MELISSA	555-0010-04520; 555-0010-05570; 555-0010-05600
OPDAHL-FRALICK DEBORAH L	395-0010-09280
ORTTEL, DANNY	14-020-4201
OSVOLD KORIE	275-0010-01010; 275-0010-01060
OSVOLD KORIE D	275-0010-01010; 275-0010-01060
PADRNOS FLORENCE	285-0010-00440
PALLIN BRENDA M	275-0013-00900
PARKER STEVEN & LORI TRUST AGRMNT	275-0010-00845; 275-0010-01020; 275-0010-01070
PARKER STEVEN L & LORI L	275-0010-00845; 275-0010-01020; 275-0010-01070
PARROTT SKIP & ALLYSA	530-0010-04710
PATNAUDE JAMES & KAREN	530-0010-04770; 530-0010-04772
PATNAUDE JAMES A	530-0010-04770; 530-0010-04772; 530-0010-04775
PATNAUDE JAMES ARTHUR	530-0010-04775
PAULSON RANDOLPH L	275-0010-00670
PEARSON ERIK S	530-0010-04950; 530-0010-04954
PELLAND ANDREW J	395-0010-09297

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Affected Landowners

Name	Parcel IDs
PELLAND ANDREW J & SAMMIE	395-0010-09297
PERRY DAVID W	555-0010-00840; 555-0010-00930; 750-0010-00010
PERRY DAVID W & JANET M	555-0010-00840; 555-0010-00930
PETERSEN DEBORAH	275-0013-00622
PETERSON DENNIS M	530-0010-04960
PETERSON DENNIS M & KATHLEEN	530-0010-04960
PETERSON DOUGLAS R & LINDA L	310-0010-02080; 310-0010-02090; 310-0010-02105; 310-0010-02110
PETERSON DOUGLAS R ETUX	310-0010-02080; 310-0010-02090; 310-0010-02105; 310-0010-02110
PETERSON LAWRENCE L	310-0010-01750; 310-0010-01752; 310-0010-01756
PETERSON MICHAEL R	275-0013-00580
PETERSON RICHELLE RAE	275-0013-00870
PETERSON SCOTT	285-0010-02290
PEYTON BARBARA	395-0010-09005
PEYTON BARBARA J	395-0010-09005
PHELPS, JEREMY & HEIDI	50-032-1101; 50-032-1102
PILEGAARD JOHN P	530-0010-04750
PILEGAARD JOHN P REVOC TRUST	530-0010-04750
PIRKOLA BRIAN J	275-0013-00422
PIRKOLA BRIAN J & NICOLE M	275-0013-00422
PLAISTED PROPERTY MGMT NORTH LLC	225-0020-01290
PLUMLEY, JASON D & KIMBERLY J	14-020-2200; 14-020-2300
POCHARDT NICHOLAS A	285-0010-03750
POLICH STEVEN S	225-0020-00590; 225-0020-00600; 225-0020-00630; 225-0020-00640
POLICH STEVEN S & LYNN R	225-0020-00590; 225-0020-00600; 225-0020-00630; 225-0020-00640
POMMIER JASON	285-0010-02040
POMMIER JASON & STEPHANIE	285-0010-02040
PORT BRIAN W PORT LANA M	275-0010-00860; 275-0010-00865
PORT LANA & BRIAN	275-0010-00860; 275-0010-00865

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Affected Landowners

Name	Parcel IDs
PRINGLE JEFFREY W	275-0013-00891
PRINGLE MELVINA	275-0013-00890
PRINGLE MELVINA L	275-0013-00890
PRIOLA DEANNA J	530-0010-06420
PRIOLA DEANNA JOY	530-0010-06420
PRIOLO ROBERT & ELIZABETH	530-0010-04737
PRIOLO ROBERT ETAL	530-0010-04737
PRUSI DANIEL & SHERILEE	285-0010-03560; 285-0010-03570; 285-0010-03573
PRUSI DANIEL W ETAL	285-0010-03560; 285-0010-03570
PRUSI DANIEL W ETUX	285-0010-03573
PUTNAM ARCHIE & MAXINE	275-0013-00900
PUTNAM CRAIG E	275-0013-00490; 275-0013-00520
PUTNAM CRAIG E & CARRIE J	275-0013-00490; 275-0013-00520
QUADE BRENDON	530-0010-04730
QUADE BRENDON & CONE JADE	530-0010-04730
QUINN, JOHN E	14-020-3100; 14-020-3200; 14-020-3300; 14-020-3400; 14-020-4202
QUINNEY DEAN LIVING TRUST	275-0010-00800
QUINNEY DEAN NILES, TRUSTEE	275-0010-00800
RADAICH, DAVID P & ROBERTA L	14-018-2300; 14-018-3100; 14-018-3200; 14-018-3300; 14-018-3400; 14-018-4200; 14-018-4301
RADAICH, EMIL J & BEVERLY J	12-013-4200; 12-013-4300
RADAICH, EMIL J JR	12-013-1400
RADAICH, NEIL T	12-013-4100; 12-013-4400; 12-024-1100; 12-024-1200; 12-024-1300; 12-024-1400
RADAICH, NEIL T & BOBBIE	14-020-4300; 14-020-4400; 14-021-3101; 14-021-3200; 14-021-3300; 14-021-3400
RADERMACHER WILLIAM L & REBECCA F	285-0010-02010
RADERMACHER WILLIAM LEONARD	285-0010-02010
RAETHER DONALD & MARILYN	400-0010-04970; 400-0010-04980; 400-0010-05010; 400-0010-05020; 400-0010-05030; 400-0010-05040; 400-0010-05060; 400-0010-05070; 400-0010-05080; 400-0010-05090; 400-0010-05100; 400-0010-05280; 400-0010-05310; 400-0010-05450; 400-0010-05460; 400-0010-05490; 400-0010-05510
RAETHER DONALD ETAL	400-0010-05490; 400-0010-05510

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Affected Landowners

Name	Parcel IDs
RAETHER DONALD ETUX	400-0010-05460
RAETHER DONALD M	400-0010-05010; 400-0010-05020; 400-0010-05030; 400-0010-05040; 400-0010-05060; 400-0010-05310
RAETHER DONALD M ETUX	400-0010-04970; 400-0010-04980; 400-0010-05070; 400-0010-05080; 400-0010-05090; 400-0010-05100; 400-0010-05280; 400-0010-05450
RAHJA JOSEPH R	555-0010-04670; 555-0010-04680; 555-0010-05410; 555-0010-05415; 555-0010-05420
RAHJA JOSEPH R & RACHEL L	555-0010-04670; 555-0010-04680; 555-0010-05420
RAHJA ROBERT L	555-0010-04460
RAHJA ROBERT L & PAMELA	555-0010-04460
RAIHALA CARMEL JOY	285-0010-03430; 555-0010-02670
RAIHALA MARC A	555-0010-02680; 555-0010-02690; 555-0010-02740
RAIHO REVOCABLE TRUST	530-0010-06800
RAIHO ROBERT J & DONNA M	530-0010-06800
RALPH MICHAEL P	395-0010-09290
RALPH MICHAEL P ETUX	395-0010-09290
RANNILA MATTHEW PHILIP	530-0010-03810; 530-0010-03814
RANNILA PHILIP M	530-0010-03810; 530-0010-03814
RAUVOLA DALE E	555-0010-03560; 555-0010-03660; 555-0010-04370; 555-0010-04390
RAUVOLA DALE E & MARY TRUST	555-0010-03530; 555-0010-03560; 555-0010-03660; 555-0010-03670; 555-0010-04370; 555-0010-04390; 555-0010-04480
RAUVOLA DALE ELDON	555-0010-03530; 555-0010-03670; 555-0010-04480
RAY JUDY ANNE	275-0010-00461
REED ADAM D	285-0020-05250
REIFF MARK D	360-0010-01890
RENDFIELD LAND CO INC	50-020-1300; 50-020-3100; 50-020-3200; 50-020-4200; 530-0010-03796
RENSTROM DENNIS	285-0010-00545
RHODES DANA L & CALEB B	530-0010-04955
RHODES DANA LETICA	530-0010-04955
RICHARDSON ERIC L	530-0010-03715
RICHARDSON ERIC L & JODI K	530-0010-03715
RISSANEN CHERI	275-0010-00870
RISSANEN JAMES T	275-0010-00890; 400-0010-05537
RISSANEN JAMES T & DEBRA D	400-0010-05533; 400-0010-05535; 400-0010-05537; 400-0010-05550
RISSANEN JAMES T ETAL	400-0010-05550

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Affected Landowners

Name	Parcel IDs
RISSANEN JAMES T ETUX	275-0010-00890; 400-0010-05535
RITCHIE, AARON W	14-029-1200
RITCHIE, AARON W & VICKY J	14-029-1100; 14-029-2100
RITCHIE, WESLEY A	14-029-1400; 14-030-1100; 14-030-1200
RIVARD JAMES N	530-0010-04900
ROCHEL RICHARD	530-0010-03370
ROCHEL RICHARD & KATY	530-0010-03370
ROEHLER DANIEL JAMES	530-0010-05110
ROGALLA JOHN J	530-0010-04762
ROGALLA JOHN J ETUX	530-0010-04762
ROGALLA SARAH	530-0010-06691; 530-0010-06700; 530-0010-06730
ROGALLA SARAH LYNN	530-0010-06700; 530-0010-06730
ROHLOFF LLC	14-017-3300; 14-018-4302; 14-018-4402
ROLLAND, DAVID S ETAL	50-033-2203
ROMANEK STEVE W	555-0010-01020; 750-0010-01780
ROSENBERGER JOSEPH J	530-0010-05140
ROSENBERGER TRICIA A & JOSEPH J	530-0010-05140
ROSIER DALE & PEGGY	285-0010-03980; 285-0010-04010; 325-0020-04460; 325-0020-04470
ROUND RIVER LLC	530-0010-04142
RS3 LLC	275-0013-00700; 530-0010-01340
RS3 LLC ATTN: RONALD E PETERSON	275-0013-00680; 275-0013-00720; 275-0013-00730; 275-0013-00810; 275-0013-00820; 530-0010-03300; 530-0010-03310
RS3 LLC ATTN: RONALD E PETERSON ATTN: RONALD E PETERSON	275-0013-00680; 275-0013-00700; 275-0013-00720; 275-0013-00730; 275-0013-00810; 275-0013-00820; 530-0010-03300; 530-0010-03310
RUDER, CHRISTOPHER E	14-020-2100
RUHNKE LOWELL W	395-0010-09060
RUNQUIST JEFF	285-0010-03990; 285-0010-04000
RUNYAN CHRISTOOPHER A & MARIA J	395-0010-09291
RUNYAN CHRISTOPHER A	395-0010-09291

Appendix R
Affected Landowners

Name	Parcel IDs
RUOHO BRAD	395-0010-08995
RUOHO BRADLEY M	395-0010-08995
RUONA GERALD ETAL	530-0010-03795
RUONA GERALD M	530-0010-03795
RUSCO HARVEY	285-0010-01080; 285-0010-01350; 285-0010-03620
RUSCO HARVEY & JULIE	285-0010-01080; 285-0010-01350
RUSCO HARVEY R	285-0010-03686
RUSCO HARVEY R & JULIE	285-0010-03620; 285-0010-03686
SADLER DILLON J	285-0010-00860
SADLER DILLON J & MADELINE R	285-0010-00860
SALO MARK J	400-0010-02972
SALO MARK J ETUX	400-0010-02972
SALO MYRON R	310-0010-01570
SALO STEVEN	285-0010-03690
SALO STEVEN M	285-0010-03690
SANDSTEDT JULIANN K	395-0010-09210
SANDSTEDT THOMAS	395-0010-09207
SANDSTEDT THOMAS ETAL	395-0010-09207
SANDSTROM KELLY W	275-0010-00705
SANDSTROM KELLY W ETUX	275-0010-00705
SANDSTROM ZACHARY	530-0010-03900
SANDSTROM ZACHARY & ASHLEY	530-0010-03900
SANTA DALE H	285-0010-00710
SANTA HERBERT F	285-0010-00710
SATHER ERIK & ERIN	530-0010-04062; 530-0010-04092
SATHER ERIK J	530-0010-04062; 530-0010-04092
SAYER, JOHN E JR ETAL	14-027-4100; 14-027-4200; 14-027-4400
SAYLER JESSE R	530-0010-04984
SAYLER JESSE R & BROOKE D	530-0010-04984
SCALON JEFFREY J	285-0010-02260
SCANLON BRANDON	285-0010-01420; 285-0010-01450; 285-0010-02265
SCANLON DALE P	285-0010-01420; 285-0010-01450; 285-0010-02265

Appendix R
Affected Landowners

Name	Parcel IDs
SCANLON DALE P & SUSAN M TRUSTEES	285-0010-03862
SCANLON DANIEL F	285-0010-02140
SCANLON JEFFREY J	285-0010-02260
SCANLON RITA	285-0010-03862
SCANLON THOMAS D	285-0010-02210; 285-0010-02220
SCANLON THOMAS D & ANN M	285-0010-02210; 285-0010-02220
SCHARNBERG KEVIN & CAROL	360-0010-00520
SCHAUMBURG ZACHARIAH	530-0010-03460
SCHAUMBURG ZACHARIAH & KAITLIN M	530-0010-03460
SCHIRMER WILLIAM H JR	285-0010-00670; 285-0010-00700
SCHIRMER WILLIAM JR	285-0010-00670; 285-0010-00700
SCHMIDT JOAN C	530-0010-04670
SCHOLZ KIRBY L	530-0010-05215
SCHOLZ KIRBY L & BETH	530-0010-05215
SCHROEDER BRIAN L	285-0010-03820; 285-0010-03830; 285-0010-03835; 285-0010-03842; 285-0010-03845; 285-0010-03850
SCHROEDER LELAND J	285-0010-03820; 285-0010-03830; 285-0010-03835; 285-0010-03842; 285-0010-03845; 285-0010-03850
SCHUBITZKE JOSHUA C	530-0010-03855
SCHUBITZKE JOSHUA C & SANDRA K	530-0010-03855
SCHUNK DAVID M	530-0010-05112
SCHUNK DAVID M & FAE M	530-0010-05112
SEAMAN ROBERT E	400-0010-03030; 400-0010-03100; 400-0010-03120
SEAMAN ROBIN	400-0010-03080
SEDOR HOWARD	530-0010-03374
SELDOM HUNTING LLC C/O ALAN GIST	310-0010-01521; 310-0010-01541; 310-0010-01753; 310-0010-01760
SELDOM HUNTING LLC C/O ALAN GIST C/O ALAN GIST	310-0010-01521; 310-0010-01541; 310-0010-01753; 310-0010-01760
SELDOM INN CAMP LLC C/O CLINTON JAAKOLA	310-0010-01520; 310-0010-01540
SELENSKI JULIE A	530-0010-05205

Appendix R
Affected Landowners

Name	Parcel IDs
SELL TERRANCE	275-0013-00670
SELL TERRANCE E	275-0013-00670
SELLNOW JONATHAN K	530-0010-03131
SELLNOW JONATHAN K & CHRISTINE L	530-0010-03131
SHAW RYAN	285-0010-02270; 285-0010-02280; 285-0010-02312; 285-0010-02342
SHAW RYAN & ERINN	285-0010-02270; 285-0010-02280; 285-0010-02312; 285-0010-02342
SHEEHAN SHAYNA	530-0010-04832
SHEEHAN SHAYNA & NEVADA R	530-0010-04832
SHILLING JANICE	275-0013-00650
SHILLING-BRAZY JANICE	275-0013-00650
SHOCKLEY BRIAN & NICOLE	400-0010-05608
SHOCKLEY NICOLE C	400-0010-05608
SHOUTS BRENDA KAY	530-0010-03845
SIEGLE RODNEY	530-0010-04940
SIEGLE RODNEY & CONSIDINE DENISE	530-0010-04940
SIIRO FRANK	530-0010-03840; 530-0010-03850
SIIRO FRANK ETUX	530-0010-03840; 530-0010-03850
SKLUZACEK JOSEPH J	400-0010-05410
SKLUZACEK JOSEPH J & AMY C	400-0010-05410
SLC ENVIRONMENTAL SERVICES DEPT	285-0010-01555
SMEDSHAMMER TYLER & ANNETTE	530-0010-03375
SMITH ALECK	325-0020-02690; 325-0020-02720
SMITH BRUCE	530-0010-04061
SMITH BRUCE & CINDY	530-0010-04061
SMITH GENE R	530-0010-06490
SMITH LORNE MATHEW	310-0010-02700
SMITH LORNE MATTHEW & TIFFANY MARIE	310-0010-02700
SMITH MARC	530-0010-06780; 530-0010-06780
SMITKE APRIL L	285-0010-05586
SOBCZAK BRANDON J	530-0010-06681; 530-0010-06683

Appendix R
Affected Landowners

Name	Parcel IDs
SOBCZAK BRANDON J & DANIELLE M	530-0010-06681; 530-0010-06683
SOUKKALA DUSTIN	555-0010-03200
SOUKKALA DUSTIN & AMBER	555-0010-03200
SOUKKALA DUSTIN A	555-0010-03370; 555-0010-03410
SOUKKALA JUDY ANN	555-0010-03370; 555-0010-03410
SPAWN, DOROTHY P	14-021-3301; 14-021-3401; 14-021-4300
SPICER-CREEGAN ELLEN M	310-0010-02235
SPIKBERG DENNIS & LINDA	400-0010-03340; 400-0010-03410; 400-0010-03420; 400-0010-03460; 400-0010-03470; 400-0010-03480; 400-0010-03490; 400-0010-03500; 400-0010-04950; 400-0010-04960
SPIKBERG DENNIS C & LINDA J TRUST	400-0010-03340; 400-0010-03410; 400-0010-03420; 400-0010-03460; 400-0010-03470; 400-0010-03480; 400-0010-03490; 400-0010-03500; 400-0010-04950; 400-0010-04960
ST LOUIS COUNTY	530-0010-04822
ST LOUIS COUNTY LAND AND MINERALS	275-0010-00490; 275-0010-00550; 275-0010-00610; 275-0010-00720; 275-0010-00730; 275-0010-00740; 275-0010-00750; 275-0010-01000; 275-0010-01365; 275-0010-01370; 275-0010-01390; 275-0010-01500; 275-0011-00010; 275-0012-00010; 275-0013-00010; 275-0013-00050; 275-0013-00230; 275-0013-00260; 275-0013-00300; 275-0013-00350; 275-0013-01420; 275-0014-00010
ST LOUIS COUNTY PUBLIC WORKS	530-0010-04822

Appendix R
Affected Landowners

Name	Parcel IDs
ST OF MN C278 L35	225-0020-00750; 225-0020-00790; 225-0020-00800; 225-0020-00970; 225-0020-00980; 225-0020-00990; 225-0020-01010; 225-0020-01020; 225-0020-01030; 225-0020-01040; 225-0020-01050; 225-0020-01130; 225-0020-01150; 225-0020-01160; 225-0020-01190; 225-0020-01260; 225-0020-01270; 225-0020-01280; 225-0020-01330; 225-0020-01390; 225-0020-01630; 225-0020-01730; 225-0020-01870; 225-0020-01890; 225-0020-02090; 225-0020-02140; 225-0020-02250; 225-0020-02730; 275-0013-00220; 285-0010-00820; 285-0010-01310; 285-0010-01490; 285-0010-01930; 285-0010-01950; 285-0010-02150; 285-0010-03700; 285-0010-03860; 285-0010-03920; 285-0010-03940; 285-0010-04030; 285-0010-05420; 285-0020-04160; 285-0020-04320; 285-0020-04480; 285-0020-04640; 285-0020-04800; 285-0020-04960; 285-0020-05120; 285-0020-05330; 310-0010-00870; 310-0010-01060; 310-0010-01100; 310-0010-01110; 310-0010-01120; 310-0010-01160; 310-0010-01200; 310-0010-01240; 310-0010-01260; 310-0010-01280; 310-0010-01320; 310-0010-01330; 310-0010-01340; 310-0010-01360; 310-0010-01560; 310-0010-01580; 310-0010-01590; 310-0010-01610; 310-0010-01620; 310-0010-01630; 310-0010-01640; 310-0010-01660; 310-0010-01780; 310-0010-01830; 310-0010-01840; 310-0010-01880; 310-0010-02050; 310-0010-02060; 310-0010-02070; 310-0010-02160; 310-0010-02210; 310-0010-02240; 310-0010-02420; 310-0010-02540; 310-0010-02550; 310-0010-03860; 310-0010-03870; 310-0010-03890; 310-0010-03900; 310-0010-03980; 310-0010-04010; 310-0010-04020; 325-0020-00710; 325-0020-00850; 325-0020-02310; 325-0020-02470; 325-0020-02660; 325-0020-04210; 325-0020-04370; 325-0020-04530; 325-0020-04690; 360-0010-00110; 360-0010-00190; 360-0010-00220; 360-0010-00230; 360-0010-00240; 360-0010-00290; 360-0010-00300; 360-0010-01820; 360-0010-01840; 360-0010-01850; 360-0010-01860; 360-0010-01880; 360-0010-01900; 360-0010-01910; 360-0010-01960; 360-0010-02000; 360-0010-02160; 360-0010-02320; 395-0010-08990; 400-0010-03150; 400-0010-03160; 400-0010-03200; 400-0010-03220; 400-0010-05120; 400-0010-05160; 400-0010-05530; 555-0010-00490; 555-0010-00650; 555-0010-00810; 555-0010-01150; 555-0010-01310; 555-0010-01470; 555-0010-02290; 555-0010-02610; 555-0010-03390; 555-0010-03540; 555-0010-04400; 555-0010-04530; 555-0010-05430
ST OF MN DEPT OF NATURAL RESOURCES	275-0013-00550; 275-0013-00640; 275-0013-01065; 400-0010-03320; 400-0010-03360; 400-0010-03380; 400-0010-03430; 400-0010-05000; 400-0010-05050; 400-0010-05110; 400-0010-05140; 400-0010-05220
ST OF MN DEPT OF NATURAL RESOURCES DEPT OF NATURAL RESOURCES	275-0013-00550; 275-0013-00640; 275-0013-01065
ST OF MN FOR BOESELAGER KARL	530-0010-03887
ST OF MN FOR HESTER JEREMY ADAM	530-0010-06480
STAFSHOLT DALE	285-0020-05240; 285-0020-05260; 285-0020-05270
STAFSHOLT DALE MICHAEL	285-0020-05240; 285-0020-05260; 285-0020-05270
STANIUS RANDALL & DEBORAH	530-0010-03150

Appendix R
Affected Landowners

Name	Parcel IDs
STANIUS RANDALL D	530-0010-03150
STASKIVIGE, ROBERT & GLORIA	50-029-3200; 50-029-3310; 50-029-3400; 50-032-1200
STATE OF MINNESOTA	225-0020-00030; 225-0020-00250; 225-0020-00410; 225-0020-00810; 225-0020-01170; 225-0020-01310; 225-0020-01450; 225-0020-01460; 225-0020-01470; 225-0020-01480; 225-0020-01490; 225-0020-01500; 225-0020-01530; 225-0020-01610; 225-0020-01620; 225-0020-01650; 225-0020-01660; 225-0020-01670; 225-0020-01680; 225-0020-01770; 225-0020-02130; 225-0020-02260; 225-0020-02410; 275-0010-00170; 275-0013-00280; 275-0013-00310; 285-0010-02430; 285-0010-05590; 285-0020-05280; 310-0010-00800; 310-0010-00880; 310-0010-00940; 310-0010-01050; 310-0010-02580; 360-0010-01830; 530-0010-03360; 530-0010-06652; 555-0010-02450; 555-0010-04280; 555-0010-05580; 555-0010-05610
STATE OF MINNESOTA BUREAU OF REAL ESTATE MGMT	275-0013-01120; 275-0013-01240; 275-0013-01280; 275-0013-01290
STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION DEPARTMENT OF TRANSPORTATION	275-0010-00320
STATE OF MINNESOTA MN DNR DIV OF LANDS & MINERALS	12-002-1300; 12-002-2100; 12-002-2300; 12-002-2400; 12-004-1400; 14-026-3400; 14-026-4100; 14-026-4300; 14-026-4400; 14-034-1100; 14-034-1200; 14-036-0000; 50-020-1400; 50-020-3400; 50-028-1300; 50-028-1400; 50-028-2200; 50-028-2300; 50-028-2400; 50-034-1400; 50-034-4100; 50-036-0000
STATE OF MN	275-0010-00320
STATE SCHOOL LANDS	530-0010-06720
STAWARSKI JEFF	285-0010-02230
STERLING JEANNIE	530-0010-03434; 530-0010-03434
STINOCHER MICHAEL	285-0010-01440
STINOCHER MICHAEL & DIANA	285-0010-01440
STOKKE DENNIS W	395-0010-08805
STOKKE MONICA	530-0010-03794
STOKKE MONICA R	395-0010-08985; 395-0010-09055
STOKKE MONICA R & DENNIS W	395-0010-08805; 395-0010-08985; 395-0010-09055; 530-0010-03794
STOKKE SHAINE	400-0010-03140
STOMBERG ERIC	400-0010-01120
STOMBERG ERIC & KLAWITTER ASPEN	400-0010-01120
STRUB DAVID T	310-0010-01961
STRUB DAVID T ETUX	310-0010-01961
STRUCK ROBERT A	285-0010-02190; 285-0010-02200; 285-0010-02240

Appendix R
Affected Landowners

Name	Parcel IDs
STUDNICKA THOMAS	555-0010-00910; 555-0010-01010
SUGGS, DARYL & BENHAM, BRITTANY	50-029-3302
SUNDEEN CORY A	530-0010-03812; 530-0010-03815
SUOMELA PAUL A	530-0010-05172
SVETC, DUANE L ESTATE C/O VICKY SCHOELLER	12-009-1100
SVOBODA ALAN R	275-0010-00690
SVOBODA JOE	400-0010-01092
SWAN JUDY ANNE	275-0010-00461
SWEDBERG DAVID E	530-0010-05000
SWEDBERG DAVID E & JUDITH	530-0010-05000
SYMICZEK LINDA	275-0010-00405
SYNNOTT AMANDA M	530-0010-05050
SYNNOTT AMANDA M & JOSHUA T	530-0010-05050
TAKANEN SHAWN	310-0010-00830; 310-0010-00860
TAKANEN SHAWN & TAMEY	310-0010-00830; 310-0010-00860
TAPANI TIMOTHY J	530-0010-03161
TAPANI TIMOTHY J & JESSICA L	530-0010-03161
TAX FORFEIT	12-004-1100; 14-006-3300; 14-025-0000; 14-026-1300; 14-026-2300; 14-026-2400; 14-026-3100; 14-026-3200; 14-026-3300; 14-026-4200; 14-027-1200; 14-027-1300; 14-027-1400; 14-027-2100; 14-027-2200; 14-027-2300; 14-027-2400; 14-027-3100; 14-027-3200; 14-027-3300; 14-027-3400; 14-027-4300; 14-028-1100; 14-028-1200; 14-028-1300; 14-028-1400; 14-028-2100; 14-028-2201; 14-028-2400; 14-028-3100; 14-028-4000; 14-035-1000; 14-035-2100; 14-035-2300; 14-035-2400; 14-035-3100; 14-035-4000; 42-001-1300; 42-001-1400; 42-001-2300; 42-001-2401; 42-002-1300; 42-002-1400; 50-020-4100; 50-020-4300; 50-020-4400; 50-021-2300; 50-021-3000; 50-027-1000; 50-027-2000; 50-027-3000; 50-027-4200; 50-027-4300; 50-027-4400; 50-028-4000; 50-029-1100; 50-029-1200; 50-029-2100; 50-033-1000; 50-033-2204; 50-033-2300; 50-033-4100; 50-033-4400; 50-034-1100; 50-034-1200; 50-034-1300; 50-034-2000; 50-034-3100; 50-034-3200; 50-034-4200; 50-035-1400
TAYLOR GEORGE E C/O TAYLOR CURTIS	530-0010-04060; 530-0010-04070; 530-0010-04080; 530-0010-04090; 530-0010-04120; 530-0010-04130
TAYLOR GEORGE ESTATE	530-0010-04060; 530-0010-04070; 530-0010-04080; 530-0010-04090; 530-0010-04120; 530-0010-04130
TAYLOR PHILIP C	360-0010-00470; 360-0010-00470
TAYLOR SCOTT A	530-0010-04135; 530-0010-04135
TAYLOR, JAMES D & CHRISTINE A ETAL	50-028-3102; 50-028-3402

Appendix R
Affected Landowners

Name	Parcel IDs
TAYLOR, JAMES D & WEDGE, TRICIA A & TAYLOR, ANDREW J	50-028-3101; 50-028-3201; 50-028-3301; 50-028-3401
TAYLOR, LARRY A	50-028-3202; 50-028-3302
TEMPLER MARK F ETUX	530-0010-03910
TEMPLER TROY	530-0010-03891; 530-0010-03911
TEMPLER TROY & CHERYL	530-0010-03891
TEMPLER TROY W	530-0010-03911
THE CONSERVATION FUND	275-0010-00155; 275-0013-00630; 275-0013-00690; 530-0010-01300; 530-0010-03260; 530-0010-03270; 530-0010-03290
THUMS GREGORY E	555-0010-02780; 555-0010-02800
THYGESON KERI E	310-0010-01700
THYGESON TODD T	310-0010-01702
THYGESON TODD T ETUX	310-0010-01702
TIKKANEN KEVIN B	285-0010-00540; 285-0010-00540
TIMONEN FOREST PRODUCTS LLC	275-0013-00405; 275-0013-00412
TORGERSON AMBER	530-0010-03120; 530-0010-03132
TOUMINEN DANIEL & VIRGINIA	275-0010-00692
TOWN OF SOLWAY	530-0010-03425
TOWN OF VAN BUREN	555-0010-02751
TUOMINEN DALE	275-0010-00666; 275-0010-00762
TUOMINEN DANIEL E	275-0010-00692
TUOMINEN DAVID	275-0010-00764; 275-0010-00764
TUOMINEN MARTIN	325-0020-00790
TWETEN DALE D	530-0010-03133
ULLAND JAMES E	310-0010-02130
UMPIERRE CARRIE A	395-0010-09320; 395-0010-09330; 395-0010-09340
UMPIERRE MANNY	395-0010-09140
UMPIERRE MANNY & SHARON	395-0010-09140
UNKNOWN	310-0010-00555; 310-0010-01515; 310-0010-02035; 310-0010-02695; 360-0010-00320; 395-0010-08980; 395-0010-09020; 395-0010-09076; 400-0010-01140; 530-0010-01565; 530-0010-03245; 530-0010-03360; 530-0010-03425; 530-0010-03625; 530-0010-03925; 530-0010-04415; 530-0010-04835; 530-0010-05046; 530-0010-06635; 530-0010-06652; 555-0010-02450
URNESS DAVID	530-0010-03080; 530-0010-03130

Appendix R
Affected Landowners

Name	Parcel IDs
USA IN TRUST FOR FOND DU LAC BAND LAND INFORMATION DEPT	310-0010-01980
VAH SAMANTHA	395-0010-09180
VAH SAMANTHA & JONATHAN	395-0010-09180
VANARMAN JON	530-0010-05045
VANDERSCHEUREN DALE	530-0010-06802
VANDERSCHEUREN DALE & NANCY	530-0010-06802
VITTORIO FRANK & TAMMY, TRUSTEES	530-0010-03046
VITTORIO RICK J	530-0010-03060; 530-0010-03110
VITTORIO WEALTH TRUST	530-0010-03046
VOIT, ROSS R & JULIE A	12-013-1200; 12-013-1300
VOLTZKE JONATHAN & KRISTINA	530-0010-04760
VOLTZKE JONATHAN DAVID	530-0010-04760
VUKELICH DIANNE	530-0010-04740
VUKILICH DIANNE	530-0010-04740
WAGNER JOEL D	275-0010-00930
WAGNER KEVIN	555-0010-04590
WAGNER REBECCA	275-0010-00930
WAHLQUIST, HARVEY & SANDRA	50-019-1400; 50-020-2302
WAHLQUIST, JESSICA	50-020-2303; 50-020-2304
WALINSKI JOEL	275-0010-00350
WALKER DAVID & BETH	750-0010-00130; 750-0010-00160
WALKER DAVID E	750-0010-00130; 750-0010-00160
WALTERS GREGORY J	285-0010-03540; 285-0010-03550
WALTERS GREGORY J & TUSSANEE	285-0010-03540; 285-0010-03550
WAPPES ANDREW	530-0010-05040
WARD MARK B	530-0010-06820
WARD MARK B ETUX	530-0010-06820
WARGIN DEAN	530-0010-04861; 530-0010-04920; 530-0010-04930
WARGIN KOBY & CAROLINE	530-0010-04861; 530-0010-04920; 530-0010-04930

Appendix R
Affected Landowners

Name	Parcel IDs
WARGIN MARY E	530-0010-04852
WARGIN MARY ELIZABETH	530-0010-04852
WARGIN MCGREGOR TAMI	530-0010-04862; 530-0010-04911
WARREN DALE RICHARD	530-0010-06765
WARREN MICHAEL DENNIS	530-0010-06765
WATERS REXFORD A	285-0010-05702
WATERS REXFORD A & KERRY A	285-0010-05702
WATSON, JEANNETTE H	14-020-1102
WELINSKI EUGENE J	555-0010-04720
WELINSKI EUGENE J & KOPIC KAYLEE G	555-0010-04720
WENTZ TINA	275-0013-00618
WENTZ TINA & JAMES T	275-0013-00618
WEYANDT JOAN	530-0010-04810
WEYANDT-FULTON JOAN	530-0010-04810
WHERLEY JOHN	310-0010-01531
WHERLEY JOHN ARNOLD	310-0010-01531
WHERLEY MICHAEL THOMAS	310-0010-01530
WHITE TERRY L	555-0010-05450
WHITE TERRY L & SANDRA L	555-0010-05450
WIETMAN BRANDON THOMAS	395-0010-09190
WILLECK BRUCE KEVIN	275-0013-00620; 275-0013-00625
WILLECK BRUCE KEVIN ETAL	275-0013-00625
WILLECK CATHERINE MAE	275-0013-00620
WILLECK GREGORY R	400-0010-05470
WILLECK GREGORY R ETUX	400-0010-05470
WILLIAMS SAMUEL P	530-0010-06684
WILLIAMS SAMUEL P & MORRIS HANNAH J	530-0010-06684

Appendix R
Affected Landowners

Name	Parcel IDs
WILMOT RYAN J	310-0010-01930; 310-0010-01940
WILMOT TODD J & DEE ANN	530-0010-03420
WILMOT TODD J ETAL	530-0010-03420
WINDUS THEODORE J JR	325-0020-04410
WISCONSIN CENTRAL LTD ATTN: TAX DEPARTMENT	310-0010-02035; 395-0010-08980; 395-0010-09020; 395-0010-09076
WISNESKI PETER & JOAN	275-0013-00610
WISNESKI PETER ALVIN JR	275-0010-00151; 275-0013-00612
WOLDSTAD, MARI JO	14-020-1300
WOLF LANDS INC	555-0010-04440; 555-0010-04470
WOZNIAK JAMES J	530-0010-03920
WOZNIAK JAMES J & STEPHANIE M	530-0010-03920
WRIGHT BRUCE	530-0010-03210; 530-0010-03240
WRIGHT JAMES C DECLARATION OF TRUST	530-0010-03210; 530-0010-03240
YATES-LALLI, TAMMY	50-019-1300
YOST BARBARA J	450-0010-00840
YOUNG KEVIN W	285-0010-02050; 285-0010-02060; 285-0010-03740
YOUNG STEVEN HERBERT	530-0010-03912; 530-0010-03912
ZAWACKI CHAD C	275-0013-00430
ZAWACKI CHAD C & HEIDI	275-0013-00430
ZENITH PLAZA INC C/O JUDNICK SCOTT	530-0010-06450
ZENITH PLAZA INC C/O JUDNICK SCOTT C/O JUDNICK SCOTT	530-0010-06450
ZIELLS JAMES	530-0010-03190
ZIELLS JAMES ROBERT ETUX	530-0010-03190
ZIELLS JOEL	530-0010-06440
ZIELLS SHAWN J	530-0010-06441
ZOLLMAN JOAN M	285-0010-03840
ZUEHLKE, ROBERT JR & MISKOVICH, NIKKI A	50-030-1400
ZYWICKI CORY J	310-0010-02000

Appendix R
Affected Landowners

Name	Parcel IDs
ZYWICKI CORY J & SHERYL L	310-0010-02000

PUBLIC DOCUMENT
TRADE SECRET DATA EXCISED

APPENDIX S

IRON RANGE – ST. LOUIS COUNTY – ARROWHEAD 345 KV TRANSMISSION LINE PROJECT

NATURAL HERITAGE INFORMATION SYSTEM, USFWS SPECIES LIST, AND PHASE IA CULTURAL RESOURCES LITERATURE SEARCH

Minnesota Power

Phase Ia Literature Review for the Iron Range – St. Louis County - Arrowhead 345 kV Transmission Project

Itasca and St. Louis Counties, Minnesota

PREPARED BY

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Minneapolis, Minnesota 55414

Kevin Mieras

August 2025

EXECUTIVE SUMMARY

Minnesota Power and American Transmission Company, LLC by and through its corporate manager ATC Management Inc. (“ATC”) (collectively, the “Applicants”) are proposing to construct the Iron Range – St. Louis County – Arrowhead 345 kilovolt (“kV”) Transmission Project (also the “Project” or “ISA Project”) located in Itasca and St. Louis Counties, Minnesota. The Applicants contracted with Merjent, Inc. (Merjent) to conduct a Phase Ia literature review to identify previously conducted surveys, recorded historic structures, and recorded archaeological sites within 1 mile (Study Area) of the Project. In July and August 2025, Merjent conducted a literature review of cultural resources reports, archaeological sites, historic cemeteries, and historic architectural resources within the Study Area, provided by the Minnesota State Historic Preservation Office and Office of the State Archaeologist, as well as nineteenth-century General Land Office maps, historical atlases, and historical aerial photography.

The Phase Ia literature review identified 3 previous surveys, 36 historic architectural structures, 4 recorded archaeological sites, and 4 reported historic cemeteries within the Study Area. Of these surveys and cultural resources, 3 previous surveys, 10 historic architectural structures, 2 recorded archaeological sites, and 2 reported historic cemeteries intersect the Project (see Figure 4 in Appendix A).

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ACRONYMS AND ABBREVIATIONS

Applicants	Minnesota Power and ATC
ATC	American Transmission Company, LLC by and through its corporate manager ATC Management Inc.
BCE	Before the Common Era
BLM	Bureau of Land Management
CE	Common Era
GLO	General Land Office
kV	kilovolt
Merjent	Merjent, Inc.
MNDNR	Minnesota Department of Natural Resources
MnSHIP	Minnesota State Historic Inventory Portal
NRHP	National Register of Historic Places
OSA	Office of the State Archaeologist
OSA Portal	secure online dataset of known and suspected archaeological sites maintained by the Office of the State Archaeologist
Project	Iron Range - St. Louis County – Arrowhead 345 kV Transmission Project
SHPO	Minnesota State Historic Preservation Office
Study Area	1-mile buffer around the Project area

1.0 PROJECT DESCRIPTION

Minnesota Power and American Transmission Company, LLC by and through its corporate manager ATC Management Inc. ("ATC") (collectively, the "Applicants are proposing to construct the Iron Range - to St. Louis County – Arrowhead 345 kV Transmission Project (Project) located in Itasca and St. Louis Counties, Minnesota (see Table 1.0-1 below and Figure 1 in Appendix A). The proposed Project consists of the construction of a new, approximately 62-mile-long, single-circuit 345-kV transmission line on double-circuit capable structures from Minnesota Power's Iron Range Substation in Itasca County, Minnesota to Minnesota Power's St. Louis County Substation. The Project also involves construction of a new, approximately 1-mile, double-circuit 345-kV transmission line from Minnesota Power's St. Louis County Substation to the ATC Arrowhead Substation in St. Louis County, Minnesota.

TABLE 1.0-1

Sections Containing the Project

County	Township	Range	Sections
St. Louis	51N	17W	18–20, 29, 32
St. Louis	51N	18W	7–13
St. Louis	51N	19W	7–12
St. Louis	51N	20W	2–4, 11, 12
St. Louis	52N	20W	6–8, 16, 17, 20–22, 27, 28, 33, 34
St. Louis	53N	20W	19, 30, 31
St. Louis	53N	21W	4, 9, 10, 13–15, 22–25, 36
St. Louis	54N	21W	31–33
Itasca	54N	22W	18–21, 26–28, 35, 36
Itasca	54N	23W	2, 3, 11–13, 24
Itasca	55N	23W	16, 19, 20, 27–30, 33–35

The Project consists of two primary segments:

1. Segment 1 – Approximately 32 miles of new single circuit 345 kV line on double circuit capable structures, to be built adjacent to existing high voltage transmission lines owned by Minnesota Power from the existing Iron Range Substation to north of the St. Louis River.

2. Segment 2 – Replace an approximately 33.5 miles of 230 kV line from north of the St. Louis River to the existing Arrowhead Substation along existing high-voltage transmission lines right-of-way using double-circuit 345 kV structures.

There will also be expansions at the Iron Range Substation, St. Louis County Substation, and Arrowhead Substation.

The Applicants contracted with Merjent, Inc. (Merjent) to conduct a Phase Ia literature review to identify previously conducted surveys, recorded historic structures, and recorded archaeological sites within 1 mile (Study Area) of the Project. In July and August 2025, Merjent conducted a literature review of cultural resources reports, archaeological sites, historic cemeteries, and historic architectural resources within the Study Area, provided by the Minnesota State Historic Preservation Office and Office of the State Archaeologist, as well as nineteenth-century General Land Office maps, historical atlases, and historical aerial photography.

2.0 ENVIRONMENTAL BACKGROUND

The Project area is within the Tamarack Lowlands and North Shore Highlands Subsection of the Northern Superior Uplands section of the Laurentian Mixed Forest Province as defined by the Minnesota Department of Natural Resources (MNDNR) Ecological Classification System. The Tamarack Lowlands subsection covers the Glacial Lake Upham Plain and Aurora Till Plain geologic features. The North Shore Highlands subsection is located adjacent to Lake Superior and parallels the Highland Moraine associated with the lake, 20 to 25 miles inland. Lake Superior is the main feature in this region and moderates the climate throughout the year. Pre-settlement vegetation of this area was pine, fir, and aspen-birch forest; tamarack; and white cedar along with conifer bogs and swamps. The present land cover is still dominated by forest; therefore, forest management and recreation, along with tourism, are the primary uses (MNDNR 2025).

2.1 TOPOGRAPHY

The landscape ranges from rugged lake-dotted terrain with thin glacial deposits over bedrock to hummocky or undulating plains with deep glacial drift to large, flat, poorly drained peatlands (MNDNR 2025). Further, the Project area is in the Northern Superior Uplands Section which predominantly coincides with the Canadian Shield and is characterized by glacially scoured bedrock terrain with thin and discontinuous deposits of coarse loamy till around numerous lakes. The section has high relief, reflecting the rugged topography of the underlying bedrock. Elevations in the Project area vary from 384 to 457 meters above sea level.

2.2 GEOLOGY

The geology of the Project consists of thin glacial drift over the entire subsection and large areas of exposed bedrock near the surface. The underlying bedrock consists of Upper Precambrian basalt, rhyolite, gabbro, diabase, anorthosite, granite, sandstone, and shale (Morey and Walton 1976). Bedrock within the immediate Project corridor is part of the Animikie Group. The Animikie Group is a geologic group composed of sedimentary and metasedimentary rock and was deposited between 2,500 and 1,800 million years ago during the Paleoproterozoic Era. This group of formations is geographically divided into the Gunflint, the Mesabi, the Vermillion, and the Cuyuna Ranges. The Mesabi Range is located largely in St. Louis County.

2.3 SOILS

The Project begins in eastern Itasca County and crosses much of southern St. Louis County. Soils within these areas are diverse and exhibit primarily Alfisols, Spodisols, Inceptisols, and Entisols (Natural Resources Conservation Service 2025). Alfisols are soils that have often developed under forests and typically have moderate to high fertility for both agriculture and forestry. These soils exhibit well developed horizons. Spodisols are characterized by an accumulation of aluminum, iron, and organic matter. These soils are developed in coniferous forests and contain stratified deposits. Inceptisols are young soils with minimal horizon development. Entisols are soils of recent origin that developed in unconsolidated parent material with usually no genetic horizons except an A horizon (University of Minnesota Extension 2025).

Alfisols and Spodisols are moderately well drained and stratified, suggesting there is potential to encounter archaeological deposits in these areas. However, Holliday (2004) states that soil series mapped by the NRCS potentially provide clues but should be recognized as having considerable limitations in archaeological applications.

2.4 VEGETATION

The Project area is located in the Laurentian Mixed Forest physiographic province (MNDNR 2025). Near the Project area, the province is characterized by broad areas of conifer forest, mixed hardwood and conifer forests, and conifer bogs and swamps.

3.0 CULTURAL AND HISTORICAL OVERVIEW

Merjent, Inc. (Merjent) archaeologists conducted an archival review of the Project's area and the surrounding area within a 1-mile radius, referred to as the Study Area (see Figure 1 in Appendix A). The Project is within the Minnesota State Historic Preservation Office's (SHPO) Archaeological Sub-Regions 5c (Central Lakes Coniferous Central) and 5e (Central Lakes Coniferous East) (Gibbon et al. 2002).

3.1 PRECONTACT PERIOD (10,900 BCE TO1650 CE)

The first inhabitants of Minnesota are known as Paleoindians (10,900 to 7,500 years Before the Common Era [BCE]). These people were highly nomadic hunter-gatherers, moving in small bands in search of food and other subsistence resources; however, in the Late Glacial and Early Holocene forests of Minnesota, Paleoindians likely relied more on gathering and the hunting of a variety of smaller animals. Paleoindian sites are small and relatively ephemeral and are commonly identified with the recovery of distinctive spear tips that occur across much of North America (Gibbon et al. 2002).

The Paleoindian peoples were followed by Archaic Tradition hunter-gatherers. At the end of the Ice Age around 10,000 years BCE, the climate became warmer and drier, which led to major changes in plant and animal communities. Spruce forests followed the retreating glacial ice northward and were replaced by a new landscape comprised of extensive lakes and rivers. Many large game species became extinct. Archaic Tradition hunters-gatherers (7,500 to 500 BCE) adapted to this new environment, shifting their focus to smaller game such as deer and elk, the abundant fish and shellfish in the numerous lakes and rivers, and wild plants such as nuts and berries (Gibbon et al. 2002).

The Archaic peoples appear to have been less nomadic and lived in smaller household groups when compared with their predecessors. Archaic sites are identified by large notched and stemmed projectile points. Immense sedimentation during the early part of the Archaic, corresponding with the Early and Middle Holocene periods, resulted in many Archaic Tradition sites being deeply buried under river valley deposits; therefore, these sites are not usually evident in surficial contexts (Gibbon et al. 2002).

The Woodland Tradition followed the Archaic Tradition. In Minnesota, the Woodland culture is separated into two periods: the earlier Initial Woodland period (circa 500 BCE to 500 years into the Common Era [CE]) and the later Terminal Woodland period (500 to 1650 CE) (Gibbon et al. 2002).

The frequent surficial expression of Woodland site locations, coupled with burial mounds that frequently mark their place, has resulted in more frequent documentation and excavation of Woodland sites. Due to this higher frequency of identification, many Woodland sites have also been grouped into specific regional archaeological cultures (Gibbon et al. 2002; Gibbon 2012).

The Initial Woodland period is primarily marked by the emergence of precontact ceramic traditions and burial mounds. Regional archaeological cultures of the Initial Woodland period include Howard Lake, Malmo, Elk Lake, and Laurel (Gibbon et al. 2002; Gibbon 2012).

The Terminal Woodland period has been defined throughout eastern and central Minnesota, the Red River Valley, and portions of the Dakotas (Gibbon 2012). During this time period, populations began to increase, which in turn led to an increase in size and number of precontact sites. Burial mounds became more prevalent, and the cultural material artifacts began shifting to smaller, unnotched triangular projectile points and thinner ceramic vessels that were more globular in shape. Agriculture and wild rice harvests also increased (Gibbon et al. 2002; Gibbon 2012).

In the northern portion of the state, ceramic types and burial practices indicate specific regional archaeological cultures, including Kathio, Blackduck, and Psinomani. In the southern portion of the state, primarily comprised of deciduous forests and prairie, some cultures adopted the cultivation of maize and the construction of effigy burial mounds (Gibbon et al. 2002; Gibbon 2012).

Around approximately 1,000 CE, Mississippian populations from Cahokia, near present-day St. Louis, Missouri, began to extend their influence northward into the Upper Mississippi River Valley, and evidence suggests that there were attempts at colonization. Archaeologists tend to regard some southern Minnesota Terminal Woodland cultures as the northern expression of a "Mississippian" lifeway distinguished by distinctive ceramic styles, larger and more diverse artifact assemblages, and evidence of maize production. In southern Minnesota, three Mississippian complexes have been identified: Silvernale, Oneota, and Plains Village (Gibbon et al. 2002). It was the Mississippian peoples in the south and the Terminal Woodland peoples in the north who had contact with the first Europeans to explore Minnesota in the mid-seventeenth century (Gibbon et al. 2002; Gibbon 2012).

3.2 CONTACT PERIOD (1650 TO 1837 CE)

Euro-American fur traders and settlers encountered the Dakota (also known as Sioux) and Ojibwe (also known as Chippewa) Native American peoples when they moved into traditional lands in what is now Minnesota. Several other Native American tribes, including the Assiniboine, moved west in the early 1600s, soon after the explorers and traders entered the region (Holmquist 1981). The Dakota lived in village-centered societies in the southern portion of Minnesota while the Ojibwe were organized into independent migratory bands in the northern portion of Minnesota (Gibbon 2012:205).

The first written European accounts about the Ojibwe appear in Jesuit diaries published in collected form as *The Jesuit Relations and Allied Documents 1610-1791* (Thwaites 1898). The documents are so detailed in their descriptions of Native Americans and their cultures, they are considered ethnographic accounts. Following the Jesuits, French explorers and trappers traveled portions of Minnesota in the seventeenth century and established a fur trading economy with local native populations, including the Dakota and Ojibwe. Early trading posts were established along the lower Mississippi River, and the first French fort was established in 1700 near present day Mankato. The fur trade resulted in the Ojibwe becoming reliant on traded goods rather than the clothing, utensils, and weapons they had traditionally constructed.

In the early eighteenth century, the French began to move their fur trade north into Canada. Over the next 100 years, the Ojibwe and French established strong relationships, and the French embraced Ojibwe culture, learned the language, and married into Ojibwe families. Territorial

disputes, competition, and shifts in political alliances eventually led to the French and Indian War (1754 to 1763). The Ojibwe sided with the French against the British in the final Colonial War fought between 1689 and 1763, which culminated with the French and Indian War. At the end of the French and Indian War, the 1763 Treaty of Paris resulted in the French ceding all land east of the Mississippi River in the New World to the British (Fond du Lac Band of Lake Superior Chippewa 2018). The French had already ceded the land west of the Mississippi River to Spain with the 1762 Treaty of Fontainebleau, but the transfer was not publicly announced until 1764. The region was retroceded to France under the terms of the 1800 Third Treaty of San Ildefonso and the 1801 Treaty of Aranjuez then was transferred to the United States in 1803 by the Louisiana Purchase (World History Project 2018). Although the United States purchased the land, the Dakota, Ojibwe, and several other Native American groups maintained sovereignty, resulting in numerous subsequent treaties with the United States.

After the Treaty of Paris in 1763, the British quickly set up fur trading posts throughout Minnesota. The British fur trading economy was centered at Grand Portage, where traders would bring their furs and leave with other valuable trade goods. Jonathon Carver explored the upper Mississippi River in the 1760s. After the Revolutionary War of 1776, competition between the United States and British companies intensified throughout Minnesota. In 1803, the Louisiana Purchase established United States lands extending from the Atlantic to the Rocky Mountains. The War of 1812 saw a demise in the British fur traders due to the United States denying business licenses to British traders (Dobbs 1989).

Early British and United States citizens conducted the first fully documented land survey of Minnesota in the mid-eighteenth and early-nineteenth centuries. By 1806, Zebulon Pike had explored portions of the Mississippi River. Missionaries began to arrive in the early nineteenth century, primarily along the Minnesota River. The American Fur Company was founded by John Jacob Astor in 1811, after which numerous fur trading posts were quickly established throughout the state. At the confluence of the Minnesota and Mississippi Rivers, Fort Snelling was constructed in 1819 to protect the new United States' investments in the area. Large-scale fur trade resulted in a major decline in the native beaver populations, and by 1842, the fur trade in Minnesota came to an end when the American Fur Company came to its demise (Dobbs 1989). After the passing of the fur trading industry, land was opened to Euro-American settlers.

4.0 METHODS

The literature search included an analysis of protected datasets on file at the SHPO and the Minnesota Office of the State Archaeologist (OSA) for the Study Area. Sections included in the Study Area are shown in Table 4.0-1 below. The OSA maintains a secure online dataset of known and suspected archaeological sites (OSA Portal), which is regularly updated and referenced. Mr. Kevin Mieras reviewed the OSA Portal files and archived copies of site forms for all known archaeological sites, and he reviewed the Minnesota State Historic Inventory Portal (MnSHIP) for all recorded historic architectural structures within the Study Area. Additionally, on July 22, 2025, Mr. Mieras reviewed previous survey reports for Itasca and St. Louis Counties on file at the SHPO office in St. Paul, Minnesota.

TABLE 4.0-1

Sections Included in the Study Area

County	Township	Range	Sections
St. Louis	49N	15W	5, 6
St. Louis	49N	16W	1, 2
St. Louis	50N	15W	19, 29–32

TABLE 4.0-1

Sections Included in the Study Area

St. Louis	50N	16W	6-9, 14-30, 33–36
St. Louis	50N	17W	1–16, 23, 24
St. Louis	51N	17W	6–8, 16–21, 26–35
St. Louis	51N	18W	1–18, 23–25
St. Louis	51N	19W	1–18
St. Louis	51N	20W	1–5, 7, 9–15
St. Louis	52N	20W	5–9, 15–23, 26–29, 32–35
St. Louis	52N	21W	1, 12, 13
St. Louis	53N	20W	7, 17–20, 29–32
St. Louis	53N	21W	3–17, 21–27, 35, 36
St. Louis	54N	21W	27–34
Itasca	53N	22W	1–3, 12
Itasca	54N	22W	6, 7, 16–36
Itasca	54N	23W	1–4, 10–14, 23–25
Itasca	55N	23W	16–22, 26–36

Merjent also reviewed nineteenth-century General Land Office (GLO) maps and notes on file with the Bureau of Land Management (BLM) (BLM 2025), historical atlases, and aerial photographs from 1939 to present provided on the OSA Portal and Google Earth (2025).

Geographic information system shapefiles of archaeological survey locations and archaeological site boundaries are not available from SHPO or OSA, so Merjent digitized previous site locations based on digital files provided by SHPO and available on the OSA Portal. In addition, Mr. Mieras reviewed background materials on file at Merjent and publicly available data sources available online for information about Itasca and St. Louis Counties and the ecological setting of the Study Area.

5.0 LITERATURE REVIEW RESULTS

In July and August 2025, Merjent conducted a Phase Ia literature review for the Study Area. Merjent reviewed archaeological site forms from the OSA Portal, archaeological survey reports provided by SHPO, and historic architectural structures provided on MnSHIP. Additionally, nineteenth-century GLO maps, historic plat maps, and historic aerial photography were reviewed. The results of the Phase Ia literature review are provided below.

5.1 PREVIOUS SURVEYS

The review of files on file at SHPO indicates that three previous archaeological surveys have been conducted within the Study Area (see Table 5.1-1 and Figure 2 in Appendix A). These surveys were conducted in support of electrical transmission line improvements. All three surveys intersect small portions of the Project, but the majority of the Project has not been previously surveyed.

TABLE 5.1-1

Previously Conducted Archaeological Surveys in the Study Area

Report Number	Title	Authors	Year	Figure 2 Page(s)
SL-11-10*	Phase I Archaeological Reconnaissance Survey of the Proposed Savanna 115kV Transmission Line Cedar Valley to Savanna Segment	Grohnke	2011	2.7–2.9
None*	Phase I Reconnaissance Survey, HVDC Modernization Project, St. Louis County, Minnesota	Larsen and Madson	2022	2.16, 2.17
None*	Addendum to Phase I Reconnaissance Survey, HVDC Modernization Project, St. Louis County, Minnesota	Larsen and Madson	2023	2.16, 2.17

* Intersects Project

5.2 PREVIOUSLY RECORDED ARCHITECTURAL STRUCTURES

The results of the MnSHIP review indicated there are 36 recorded historic architectural structures in the Study Area (see Table 5.2-1 and Figure 2 in Appendix A). One recorded historic architectural structure has been listed on the National Register of Historic Places (NRHP); the Frank Gran Farmstead (IC-UOG-00017) is located approximately 0.75 mile southwest of the Project. Ten of the recorded structures intersect the Project (see Figure 4 in Appendix A). The structures that intersect the Project include five railroads, three highways, and two bridges. Two of these structures (XX-RRD-CNR001 and XX-RRD-DMR008) are eligible for listing to the NRHP. The remaining structures are unevaluated or have been determined not eligible.

TABLE 5.2-1

Previously Recorded Architectural Structures within the Study Area

Structure Number	Structure Name	Historic Function/Use	Address	NRHP Eligibility	Figure 2 Page(s)
IC-GLD-00004	Log Structures	Domestic Single Dwelling	off Mn. Hwy. 65	Unevaluated	2.3
IC-UOG-00013	Log Barn	Agriculture/Subsistence Animal Facility	off Co. Rd. 445	Unevaluated	2.1
IC-UOG-00017	Frank Gran Farmstead	Agriculture/Subsistence Farmstead	off Co. Hwy. 10	Listed	2.1
IC-UOG-00088	Bridge No. 7423 (Marsh Rainbow Arch Bridge)	Transportation/Road-related (Vehicular)	County Rd 421 over the Swan River	Eligible	2.1
SL-BRV-00006	Bridge 69115	Transportation/Road-related (Vehicular)	TH 33 SB over US 2	Not Eligible	2.14, 2.15
SL-BRV-00007	Bridge 69116	Transportation/Road-related (Vehicular)	TH 33 NB over US 2	Not Eligible	2.14, 2.15
SL-BRV-00011	Bridge 6093	Transportation/Road-related (Vehicular)	MN 33 over Dutch Slough	Unevaluated	2.15
SL-CDV-00001	National Evangelical Lutheran Church	Religion/Religious Facility	off Co. Rd. 187	Unevaluated	2.4, 2.5
SL-CDV-00002	School	Education/School	off Co. Rd. 187	Unevaluated	2.4, 2.5
SL-CDV-00003	Cedar Valley Town Hall	Government/City Hall	off Co. Rd. 187	Unevaluated	2.5
SL-CDV-00005*	Bridge 92241	Transportation/Road-related (Vehicular)	1.1 MI E OF JCT TH 73 (carries CR 189 over Joula Creek)	Unevaluated	2.6
SL-CDV-00006	Floodwood (10 mi N) Wayside	Transportation/Road-related (Vehicular)	NE side of MN 73, 0.3 mi NW of jct CR 186	Not Eligible	2.6
SL-CDV-00007	Culvert 93511	Transportation/Road-related (Vehicular)	CR 183 over Floodwood River	Not Eligible	2.4, 2.5
SL-CDV-00010*	Bridge 6739	Transportation/Road-related (Vehicular)	MN 73 over Vaara Creek	Unevaluated	2.6
SL-CDV-00011	Bridge 6740	Transportation/Road-related (Vehicular)	MN 73 over Joula Creek	Unevaluated	2.6
SL-CDV-00012	Bridge 8731	Transportation/Road-related (Vehicular)	MN 73 over stream	Unevaluated	2.6, 2.7
SL-CUL-00001	General Store	Commerce/Trade-Department Store	off Co. Rd. 8	Unevaluated	2.12
SL-CUL-00005	Culvert 93133	Transportation/Road-related (Vehicular)	CSAH 8 over Artichoke River	Not Eligible	2.12
SL-CUL-00006	Culvert 96589	Transportation/Road-related (Vehicular)	CR 866 over Artichoke River	Not Eligible	2.13
SL-MID-00007	Bridge 88789	Transportation/Road-related (Vehicular)	unknown	Unevaluated	2.17
SL-SOL-00001	School (Solway Town Hall)	Education/School	NW corner U.S. Hwy. 2 & Co. Rd. 6	Not Eligible	2.15–2.17
SL-SOL-00002	Munger School	Education/School	4096 Munger Shaw Road	Unevaluated	2.15, 2.16
SL-SOL-00003	Hope Lutheran Church	Religion/Religious Facility	SW corner Co. Rd. 864 & Co. Rd. 6	Unevaluated	2.15, 2.16
SL-SOL-00004	Bridge No. 7726	Transportation/Road-related (Vehicular)	CSAH 56 under DW & P Railroad	Unevaluated	2.16, 2.17
SL-SOL-00006	Bridge 9233	Transportation/Road-related (Vehicular)	DW & P Railroad US2 5.2 miles S of Jct. TH 194	Unevaluated	2.15–2.17
SL-SOL-00011	Bridge 7788	Transportation/Road-related (Vehicular)	CSAH 6 over White Pine River	Unevaluated	2.15, 2.16

TABLE 5.2-1

Previously Recorded Architectural Structures within the Study Area

Structure Number	Structure Name	Historic Function/Use	Address	NRHP Eligibility	Figure 2 Page(s)
SL-SOL-00012	Bridge 8017	Transportation/Road-related (Vehicular)	US 2 over Stream	Unevaluated	2.17
SL-VBT-00003	Bridge 8732	Transportation/Road-related (Vehicular)	MN 73 over STREAM	Unevaluated	2.7
XX-ROD-00165*	Trunk Highway 33	Transportation/Road-related (Vehicular)	Carlton to St. Louis Counties	Not Eligible	2.13–2.15
XX-ROD-00176*	Trunk Highway 2	Transportation/Road-related (Vehicular)	from the Wisconsin state line in Duluth to the North Dakota state line in East Grand Forks	Not Eligible	2.9, 2.14–2.17
XX-ROD-00179*	Trunk Highway 65	Transportation/Road-related (Vehicular)	Transportation/Road-related (Vehicular)	Not Eligible	2.3
XX-RRD-CNR001*	Duluth Winnipeg and Pacific Railway Company/Canadian National Railway	Transportation/Rail-related	Rainier to Duluth	Eligible	2.15–2.17
XX-RRD-DMR008*	Duluth Missabe and Northern Railway Company/Duluth Missabe and Iron Range Railway Company: Main Line	Transportation/Rail-related	Railroad right-of-way from S 27th Avenue W in Duluth to Mountain Iron	Eligible	2.12–2.17
XX-RRD-DMR021*	Duluth Missabe and Northern Railway Company/Duluth Missabe and Iron Range Railroad Company: Stony Brook Branch Line	Transportation/Rail-related	The former railroad right-of-way between Culver on the DM&N Main Line and Brookston	Not Eligible	2.12–2.13
XX-RRD-GNR019*	Duluth Mississippi River and Northern Railroad Company/Eastern Railway Company/ Great Northern Railway Company	Transportation/Rail-related	Between Jacobson, at the confluence of the Swan and Mississippi Rivers, and Hibbing in Itasca and St. Louis Counties.	Not Eligible	2.3
XX-RRD-GNR021*	Eastern Railway Company/Great Northern Railway Company: Brookston to Kelly Lake	Transportation/Rail-related	located between Brookston and the Kelly Lake railroad yard, west of Hibbing in St. Louis County	Not Eligible	2.11, 2.12

* Intersects Project

5.3 PREVIOUSLY RECORDED ARCHAEOLOGICAL SITES

According to the OSA Portal, there are four recorded archaeological sites within the Study Area (see Table 5.3-1 below and Figure 2 in Appendix A). All four sites remain unevaluated for listing to the NRHP. The OSA considers sites 21SLaq, 21SLar, and 21SLat as alpha sites, which are reported archaeological resources that have not been confirmed by a professional archaeologist. Sites 21SL1274 and 21SLat intersect the Project (see Figure 4 in Appendix A). According to the MnModel (Phase 4) Survey Implementation Model (Minnesota Department of Transportation 2020), the Project area is primarily within an area of Unknown Potential/Poorly Surveyed with small areas of Low Site Potential/Well Surveyed.

TABLE 5.3-1

Previously Recorded Archaeological Sites in the Study Area

Site Number	Site Name	Context/Type	Township	Range	Section(s)	NRHP Eligibility	Figure 2 Page(s)
21SL1274*	None	Historic Domestic	[redacted]	[redacted]	[redacted]	Unevaluated	2.17
21SLaq	None	Trading Post	[redacted]	[redacted]	[redacted]	Unevaluated	2.14
21SLar	Nagonab	Ghost Town	[redacted]	[redacted]	[redacted]	Unevaluated	2.15
21SLat*	Brevator	Ghost Town	[redacted]	[redacted]	[redacted]	Unevaluated	2.12, 2.13

* Intersects Project

5.4 HISTORICAL CEMETERIES

The Historical Cemeteries Layer provided on the OSA Portal depicts the locations of potential historic cemeteries identified within various historic documentation. Review of the OSA Portal identified four potential historic cemeteries within the Study Area (see Table 5.4-1 and Figures 2 and 4 in Appendix A). The potential locations of the Forest Hill Cemetery and the Indian Cemetery, as depicted in the OSA Portal, intersect the Project (see Figure 4 in Appendix A). Review of topographic maps and aerial photography depict the precise location of the Forest Hill Cemetery as outside of the Project area (see Figure 4.17 in Appendix A). The precise location of the Indian Cemetery was not identified, but the OSA Portal shows a portion of the Indian Cemetery as a Tribal Reservation Boundary, perhaps indicating a more precise location of the Indian Cemetery (see Figure 4.26 in Appendix A). The potential locations of the Cedar Valley Cemetery and the Solway Cemetery are located outside of the Project area and will not be impacted.

TABLE 5.4-1

Potential Historic Cemeteries in the Study Area

Cemetery Name	Township	Range	Section(s)	Figure 2 Page(s)
Cedar Valley Cemetery	[redacted]	[redacted]	[redacted]	2.5, 2.6
Solway Cemetery	[redacted]	[redacted]	[redacted]	2.15, 2.16
Forest Hill Cemetery*	[redacted]	[redacted]	[redacted]	2.8
Indian Cemetery*	[redacted]	[redacted]	[redacted]	2.12

* Intersects Project

5.5 HISTORICAL MAP REVIEW

Merjent reviewed nineteenth-century GLO maps and notes on file with the BLM (2025), aerial photographs taken between 1939 and present, and historical plat maps from 1916 (W.W. Hixon & Co.1916a, 1916b). The GLO maps from 1857 to 1874 for the Study Area show the majority of the Study Area as a mosaic of wetlands and upland areas (see Figure 3 in Appendix A). Named natural features include the Cloquet River, the Floodwood River, and the St. Louis River. One historic feature was identified within the Study Area. This feature consists of a roughly east-west trending unnamed trail or road in Sections 35 and 36 of Township 50 North, Range 16 West (see Figure 3.17 in Appendix A). This feature does not intersect the Project. No other historic features, including the Indian Cemetery described in Section 5.4, were identified within the GLO maps.

The historical aerial photographs from 1939 to present show the Study Area much as it is today. Some of the present road systems were already present in 1939, and many faint linear features, presumably logging roads, are evident within upland wooded area throughout the Study Area. Occasional farmsteads and agricultural fields were also identified as early as 1939.

Review of historical atlases from 1916 show the general area as parceled out to primarily private landowners, with occasional structures within the Study Area. The most common landowner of note is the Duluth & Iron Range Railway Company who owned numerous parcels throughout the Study Area (W.W. Hixson & Co. 1916a, 1916b).

6.0 SUMMARY AND RECOMMENDATIONS

The Phase Ia literature review identified 3 previous surveys, 36 historic architectural structures, 4 recorded archaeological sites, and 4 reported historic cemeteries within the Study Area. Of these surveys and cultural resources, 3 previous surveys, 10 historic architectural structures, 2 recorded archaeological sites, and 2 reported historic cemeteries intersect the Project (see Figure 4 in Appendix A).

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APPENDIX A

Project Figures

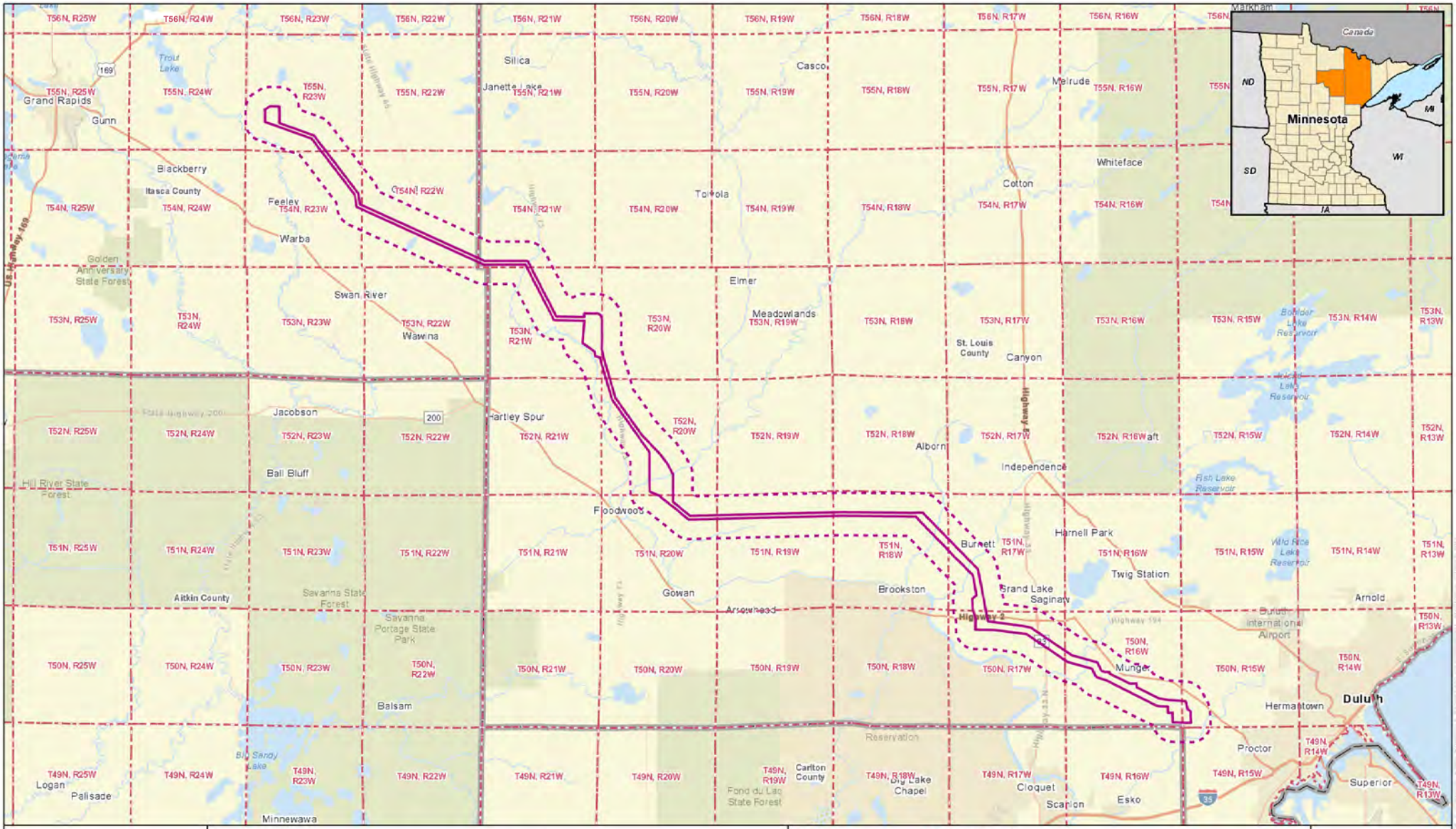
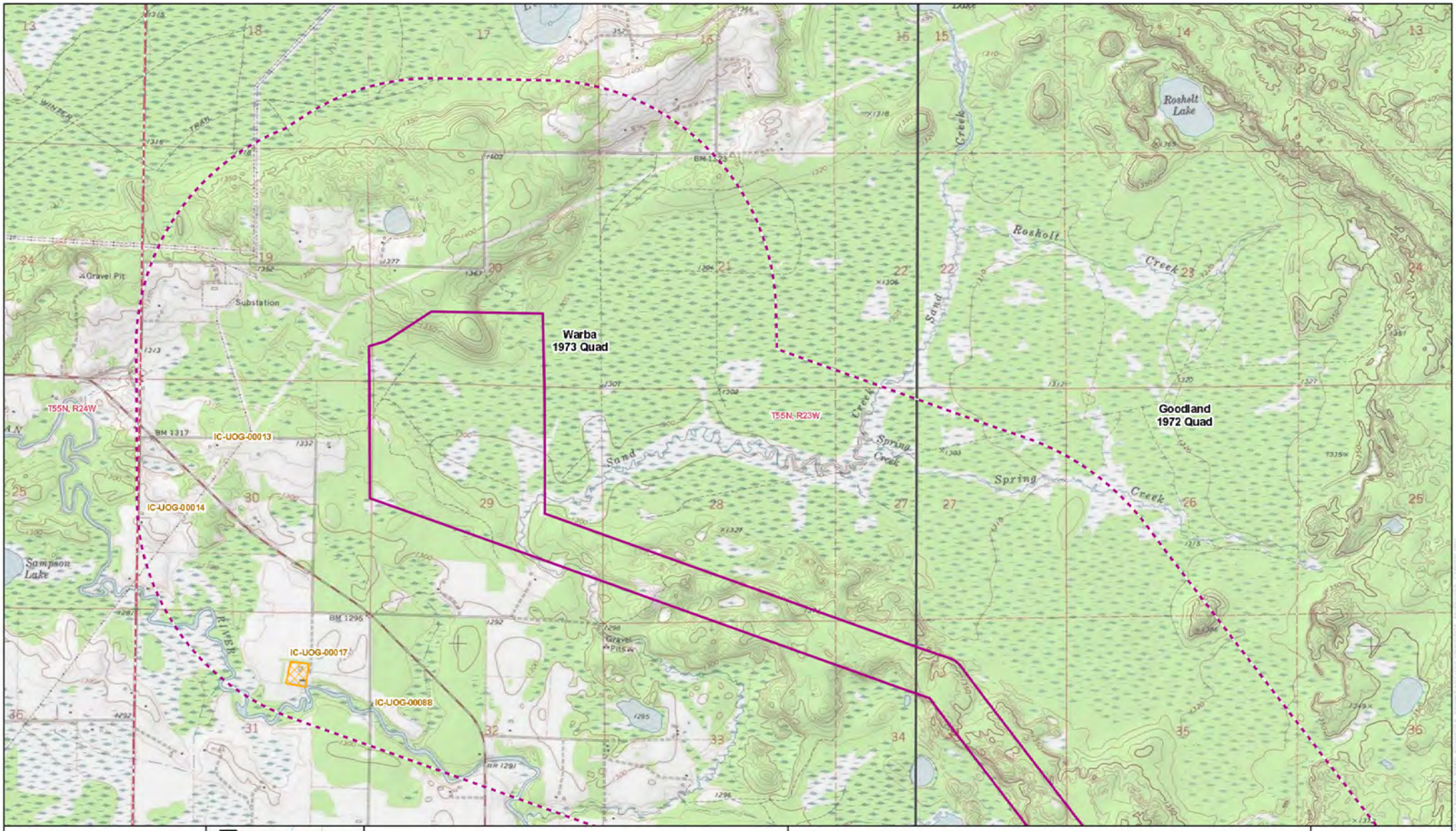


Figure 1: Project Overview
Minnesota Power
Iron Range to St. Louis County 345 kV Project
Itasca and St. Louis Counties, Minnesota



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For Environmental Review Purposes Only

Figure 2.1: Project Location and Previous Cultural Resources
Minnesota Power
Iron Range to St. Louis County 345 kV Project
Itasca County, Minnesota

Project Area
One-Mile Buffer
SHPO Architectural Resource
SHPO Architectural Resource
Quad Map
Township Boundary

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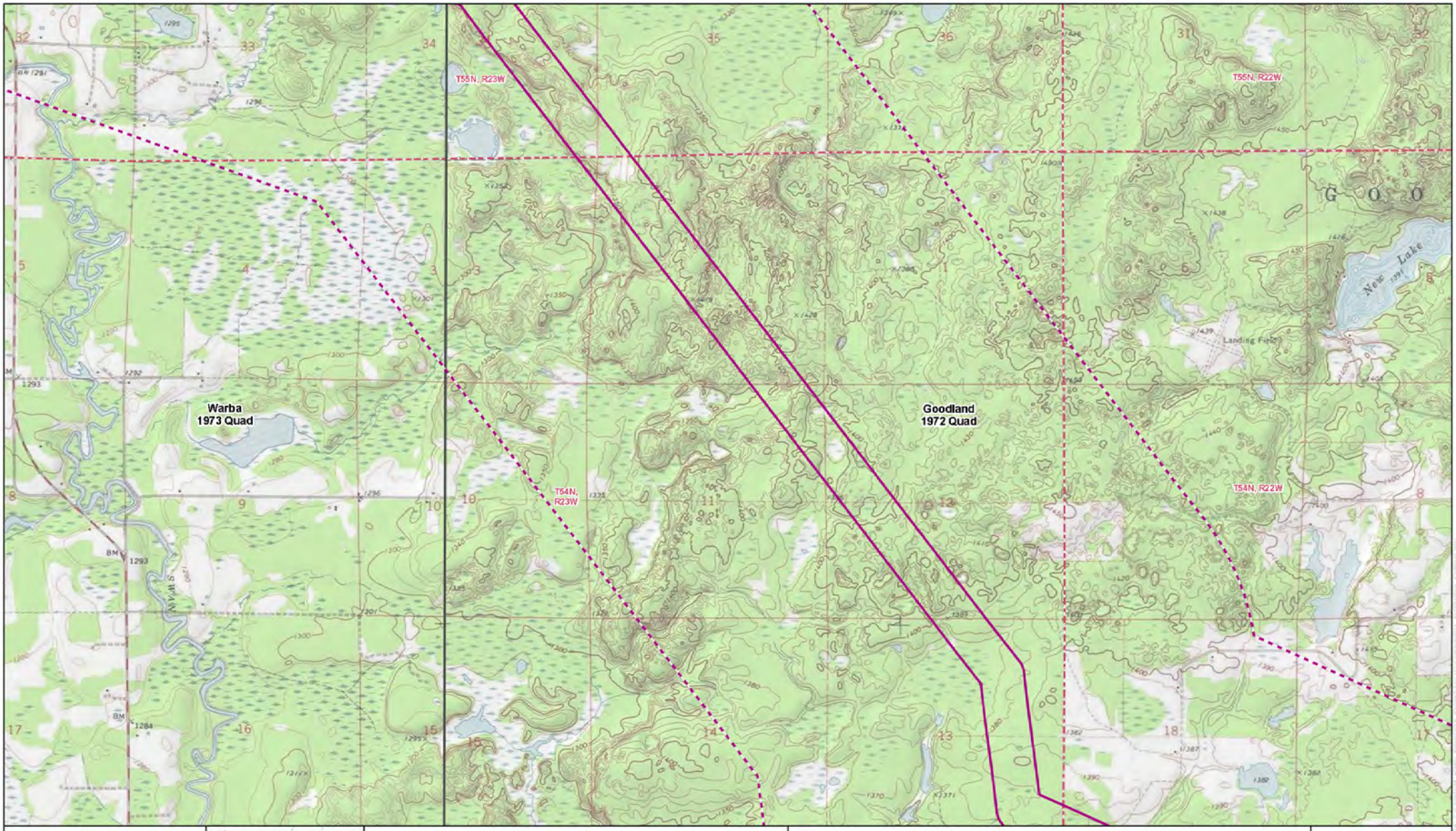
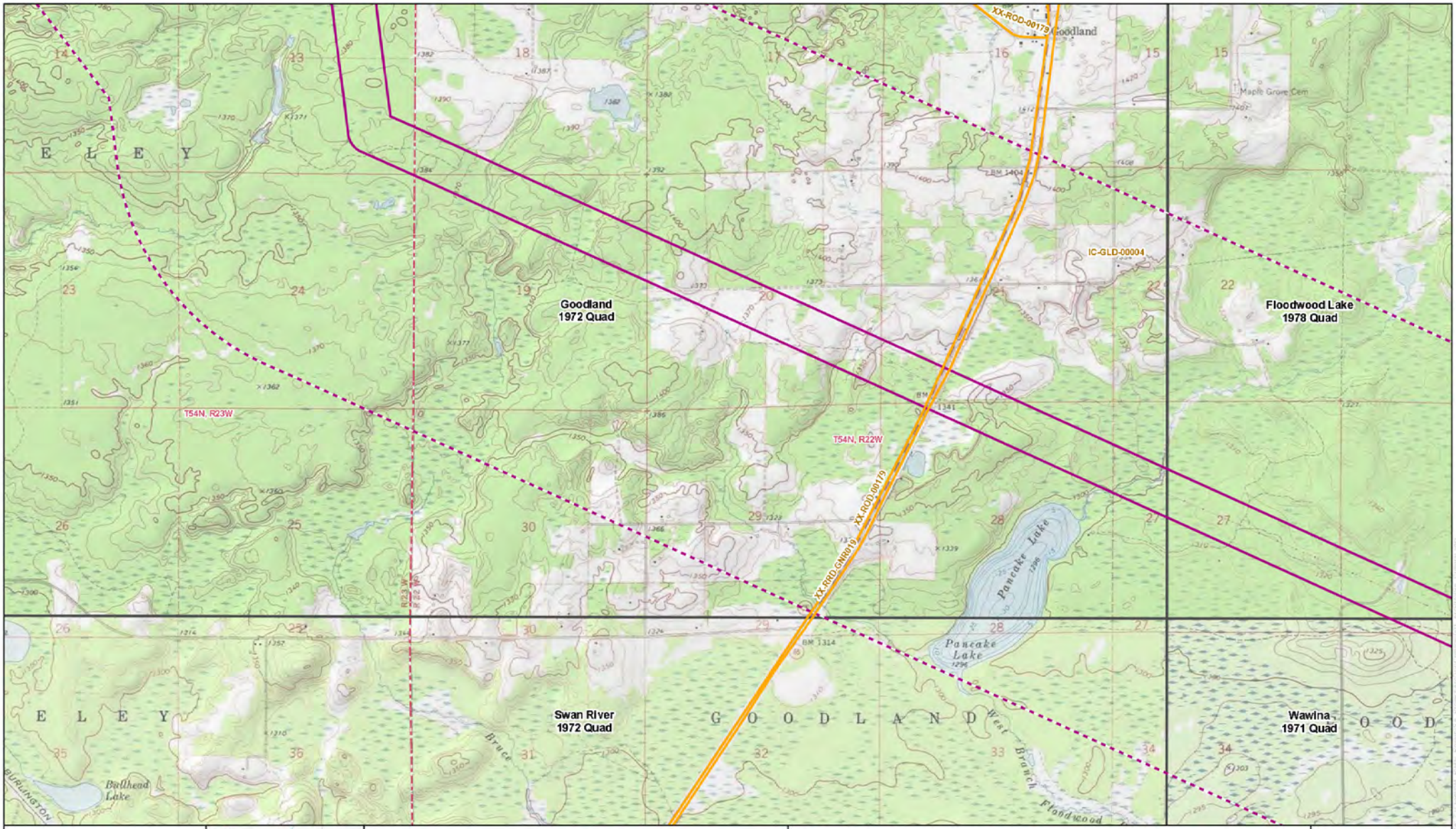


Figure 2.2: Project Location and Previous Cultural Resources
Minnesota Power
Iron Range to St. Louis County 345 kV Project
Itasca County, Minnesota



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For Environmental Review Purposes Only

Figure 2.3: Project Location and Previous Cultural Resources
Minnesota Power
Iron Range to St. Louis County 345 kV Project
Itasca County, Minnesota

Project Area
One-Mile Buffer
SHPO Architectural Resource
SHPO Architectural Resource
Quad Map
Township Boundary

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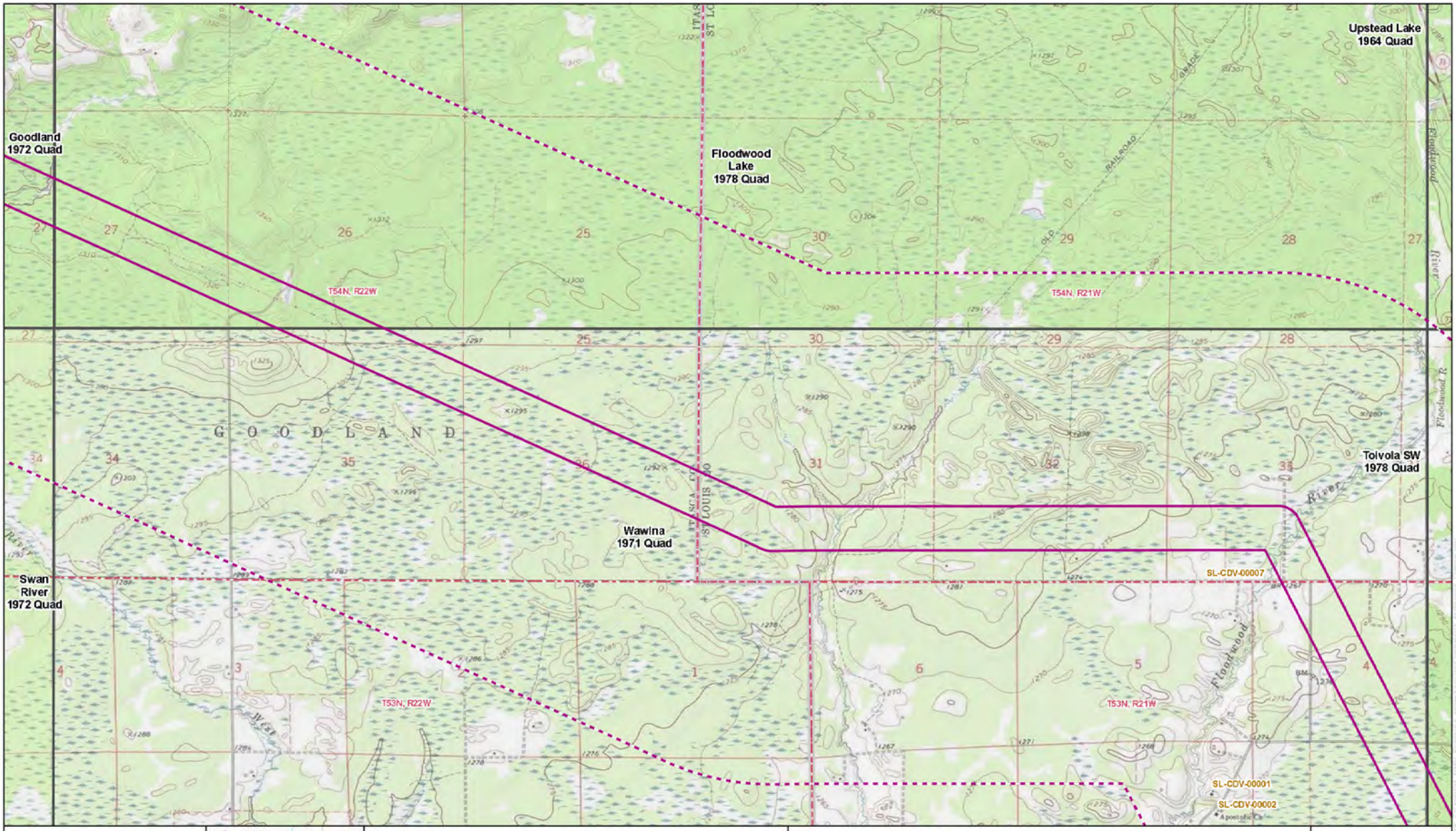

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Figure 2.4: Project Location and Previous Cultural Resources
Minnesota Power
Iron Range to St. Louis County 345 kV Project
Itasca and St. Louis Counties, Minnesota

Project Area
One-Mile Buffer
SHPO Architectural Resource
Quad Map
Township Boundary

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TRADE SECRET DATA EXCISED

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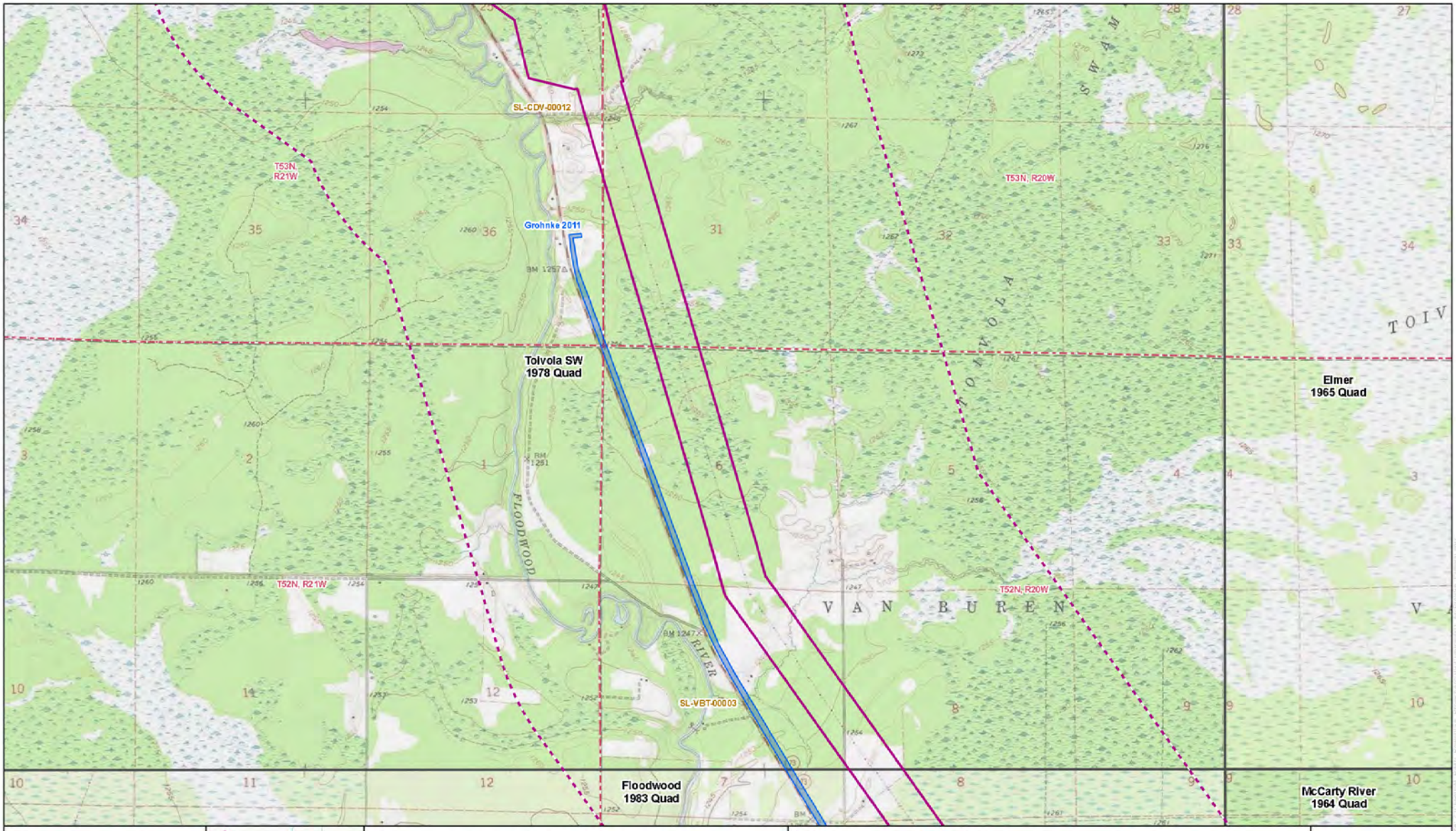

Figure 2.7: Project Location and Previous Cultural Resources
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

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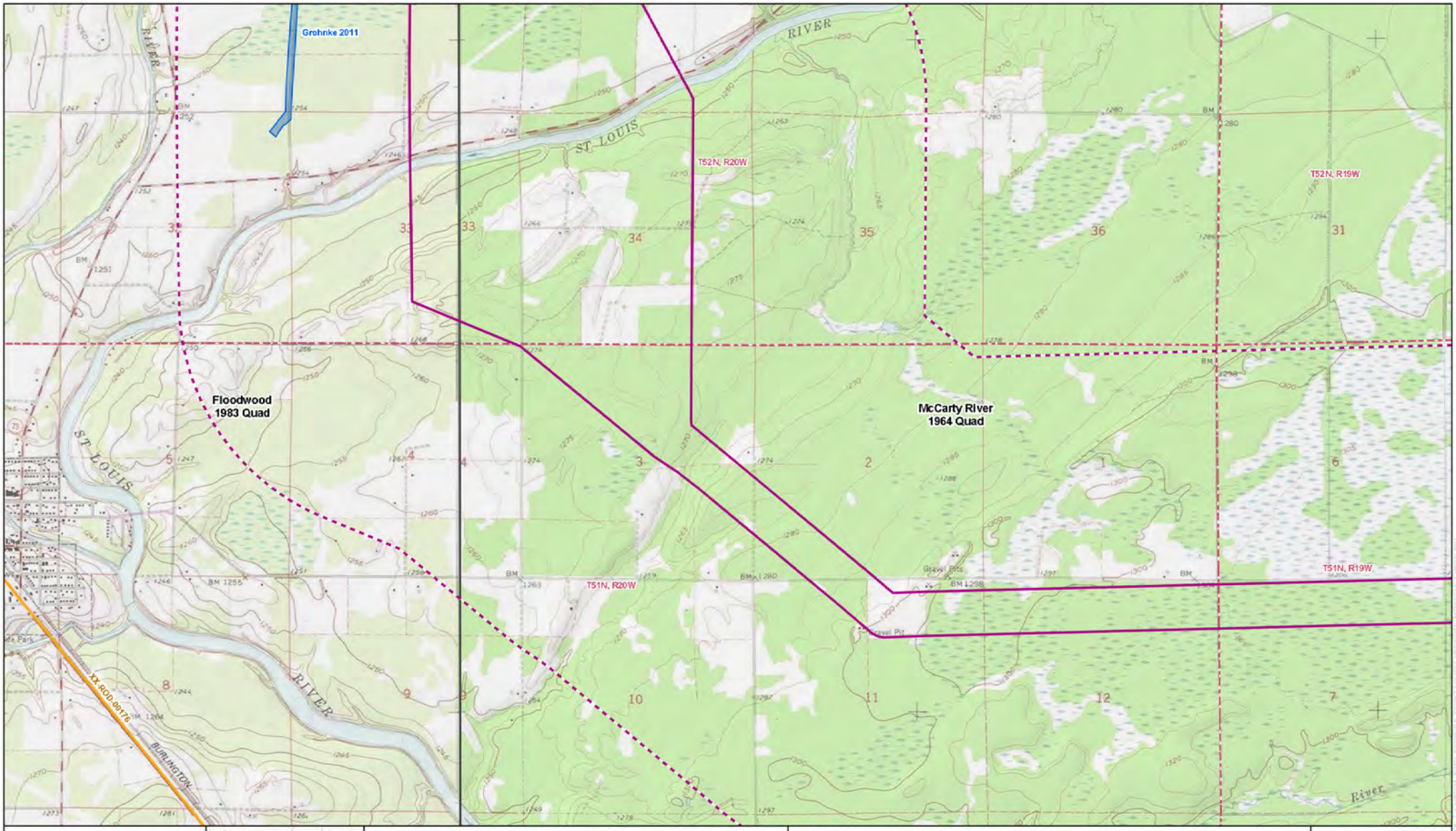

Figure 2.9: Project Location and Previous Cultural Resources
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

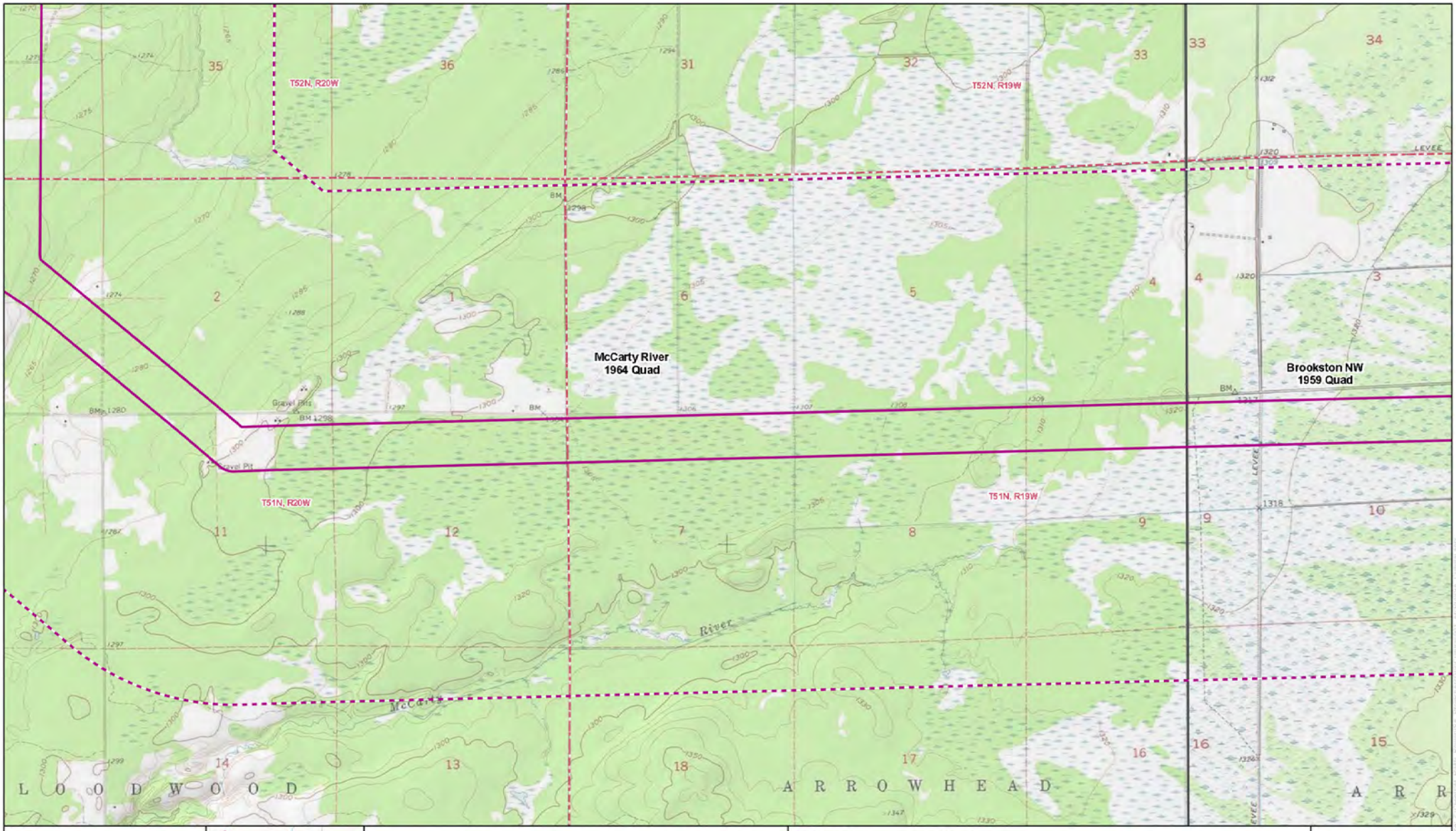

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Figure 2.10: Project Location and Previous Cultural Resources
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
One-Mile Buffer
Quad Map
Township Boundary

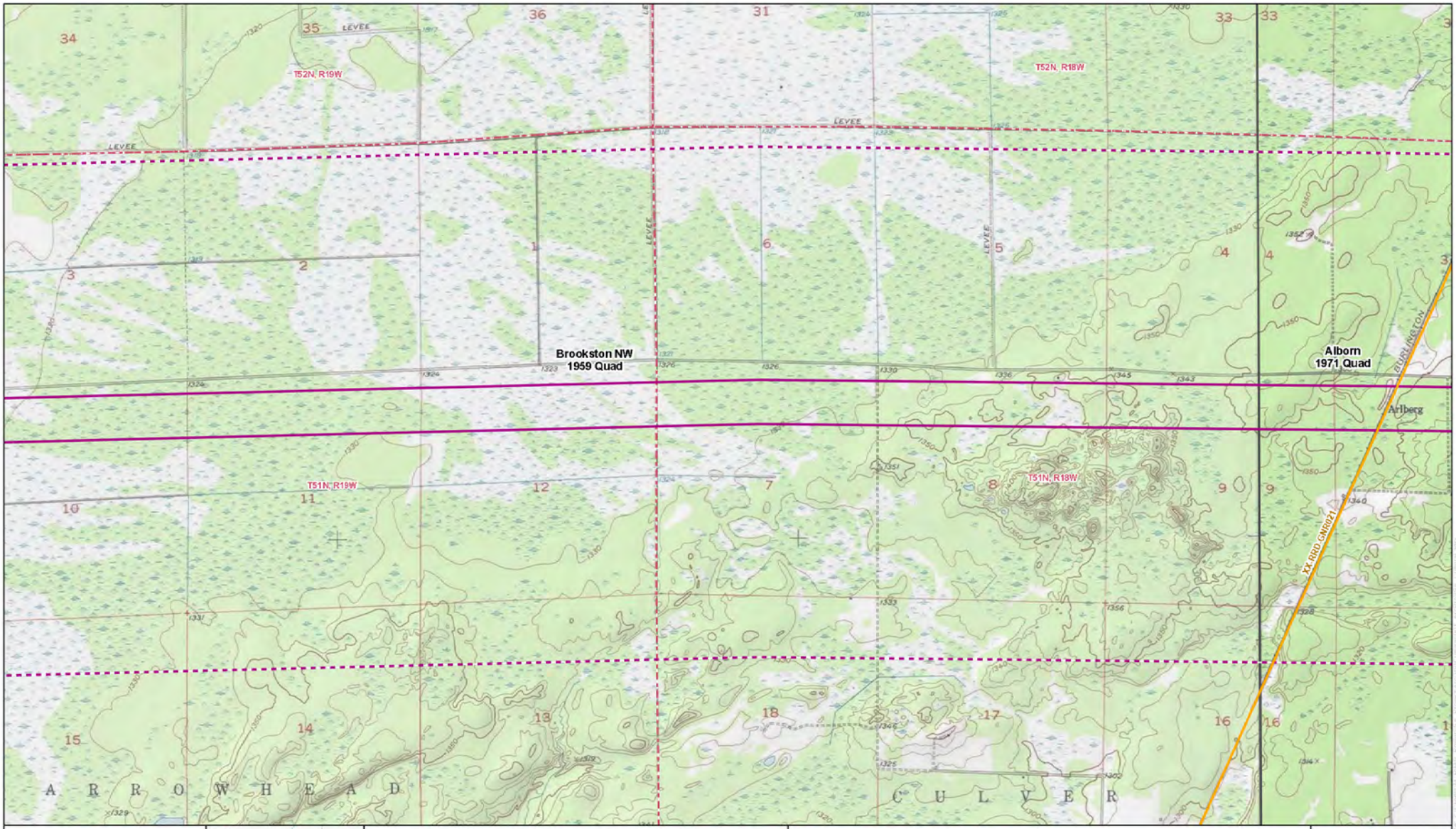

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Figure 2.11: Project Location and Previous Cultural Resources
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
One-Mile Buffer
SHPO Architectural Resource
Quad Map
Township Boundary

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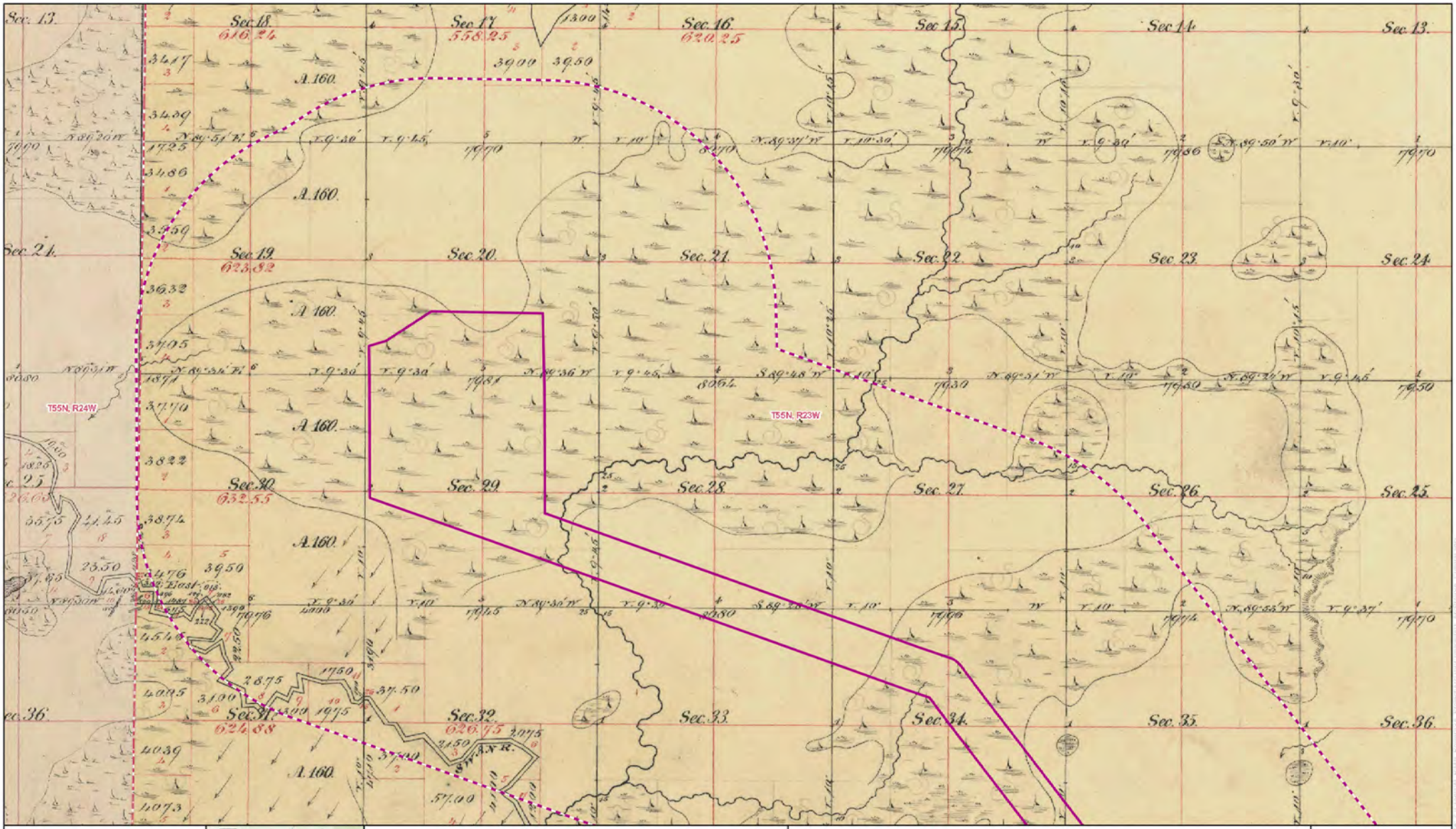

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Figure 3.1: 1857-1874 GLO Map
Minnesota Power
Iron Range to St. Louis County 345 kV Project
Itasca County, Minnesota

Project Area
One-Mile Buffer
Township Boundary

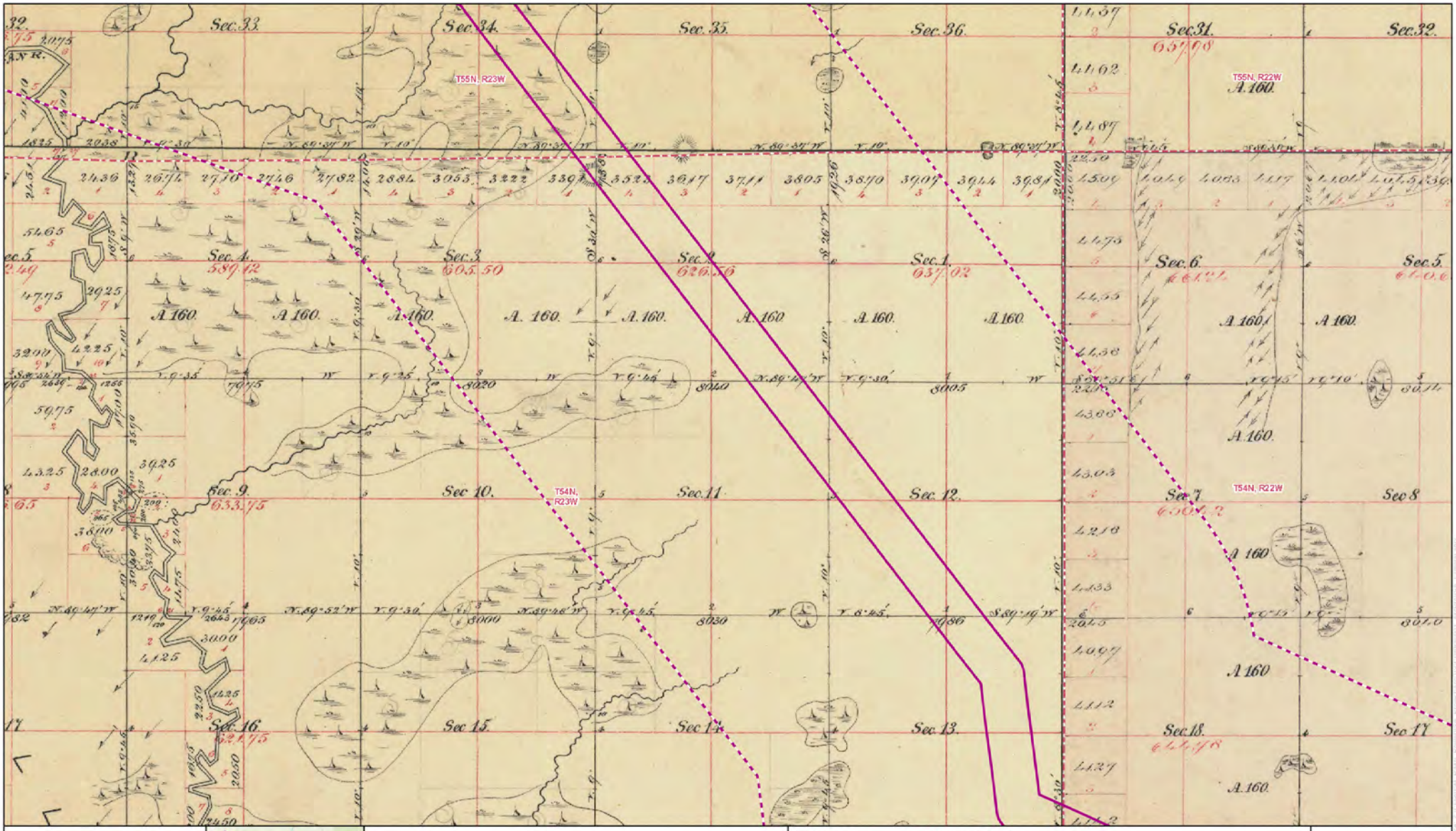

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Figure 3.2: 1857-1874 GLO Map
Minnesota Power
Iron Range to St. Louis County 345 kV Project
Itasca County, Minnesota

Project Area
One-Mile Buffer
Township Boundary

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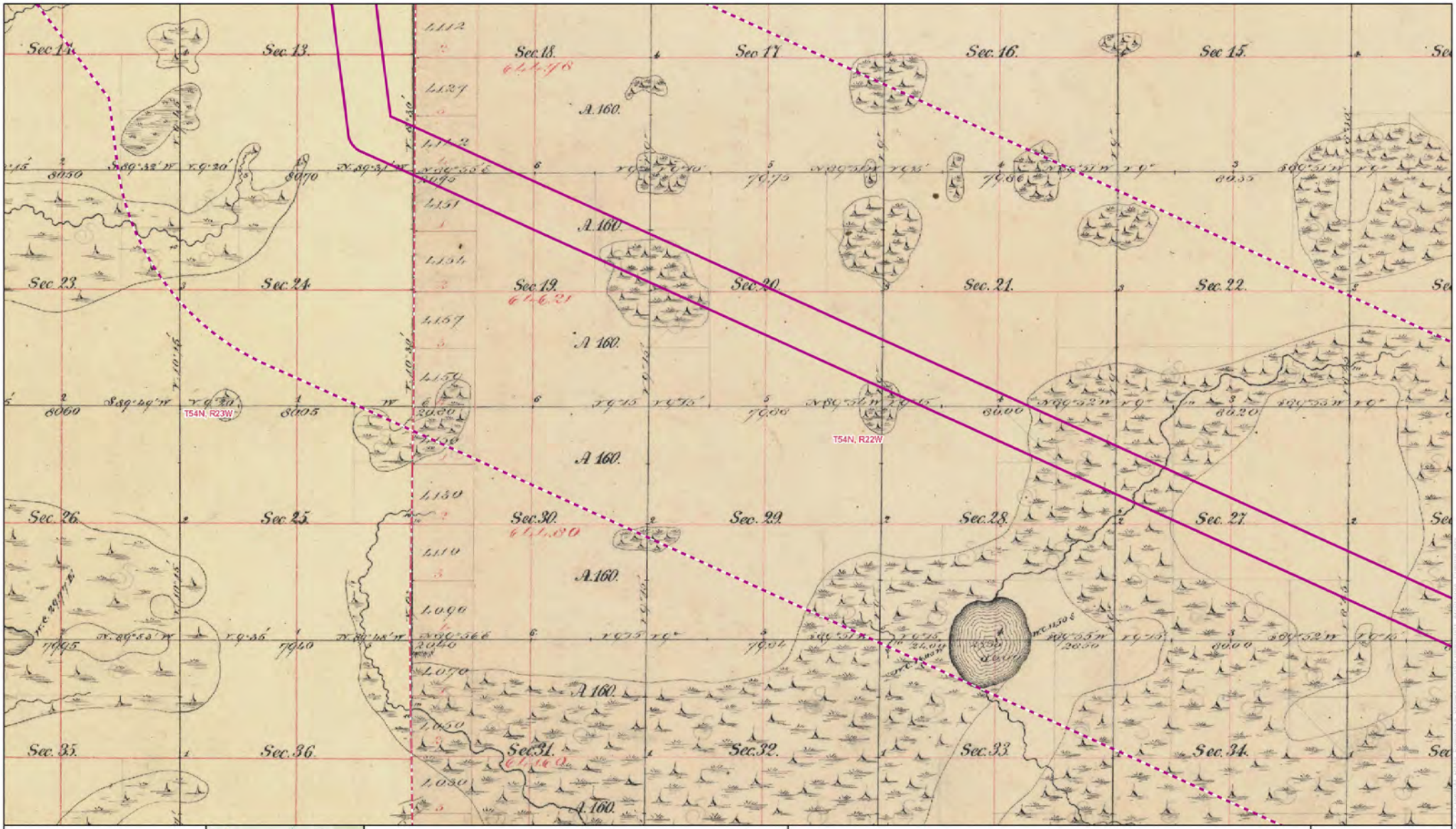

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Figure 3.3: 1857-1874 GLO Map
Minnesota Power
Iron Range to St. Louis County 345 kV Project
Itasca County, Minnesota

Project Area
One-Mile Buffer
Township Boundary

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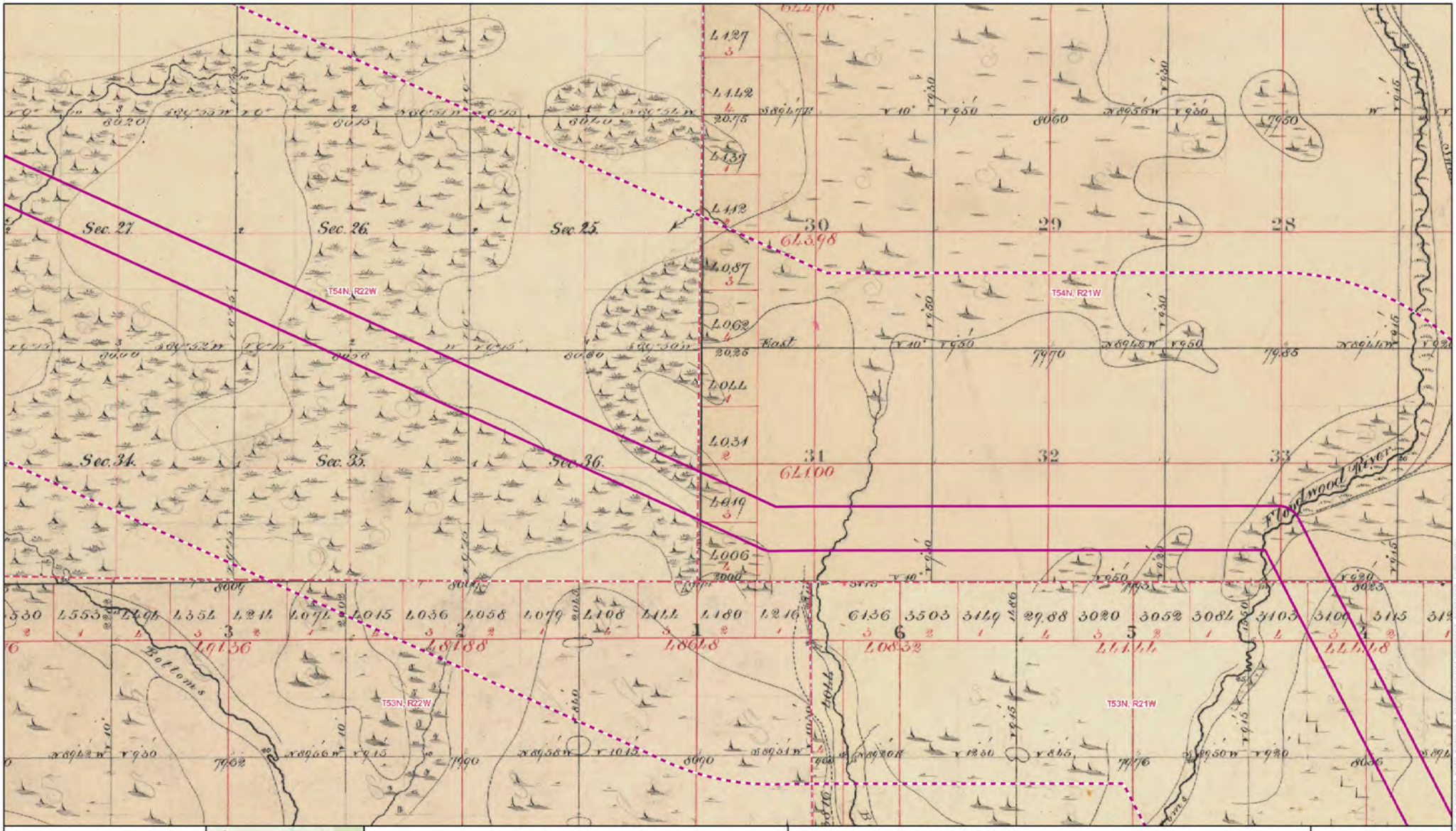

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Figure 3.4: 1857-1874 GLO Map
Minnesota Power
Iron Range to St. Louis County 345 kV Project
Itasca and St. Louis Counties, Minnesota

Project Area
One-Mile Buffer
Township Boundary

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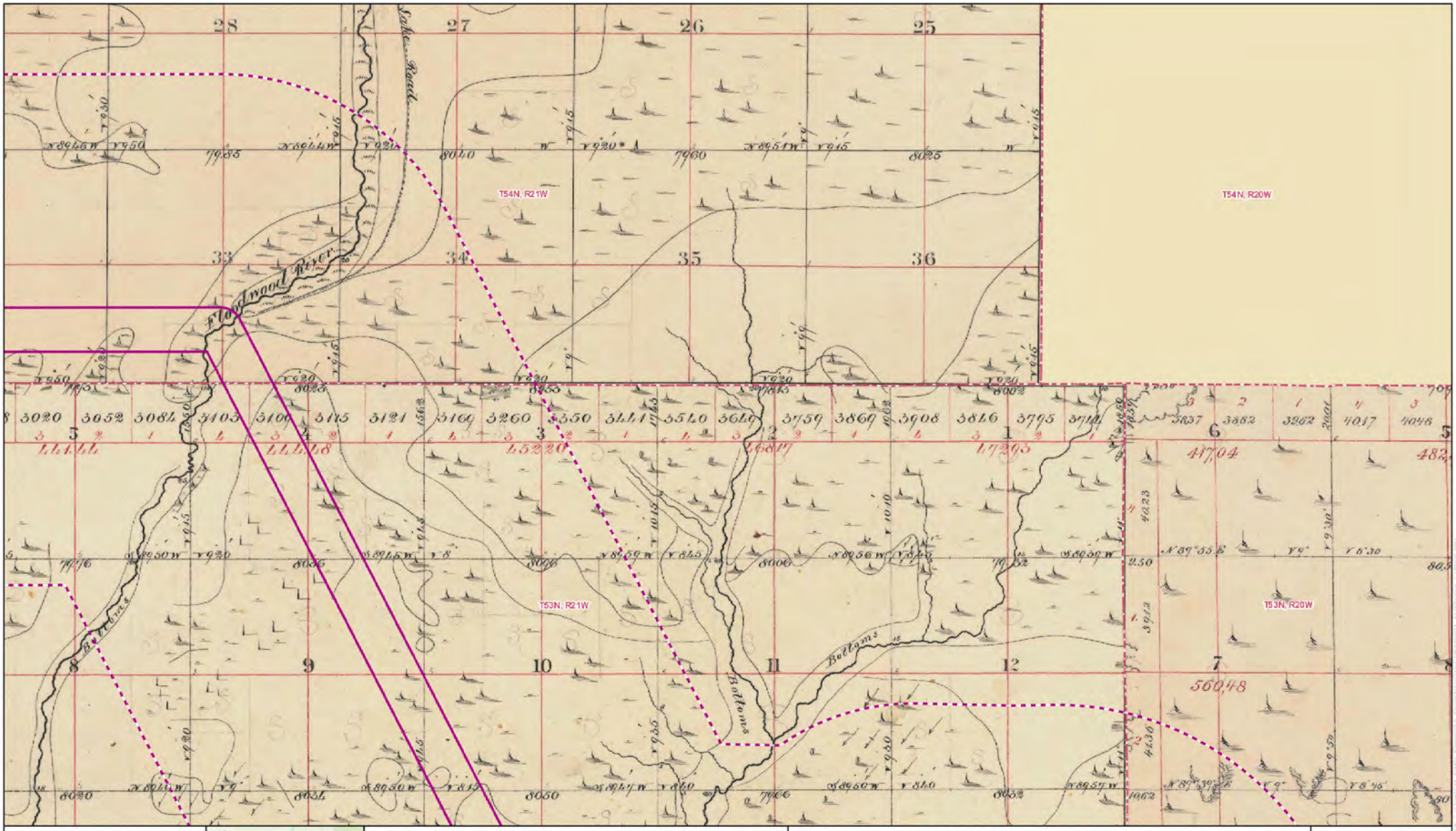

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Figure 3.5: 1857-1874 GLO Map
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
One-Mile Buffer
Township Boundary

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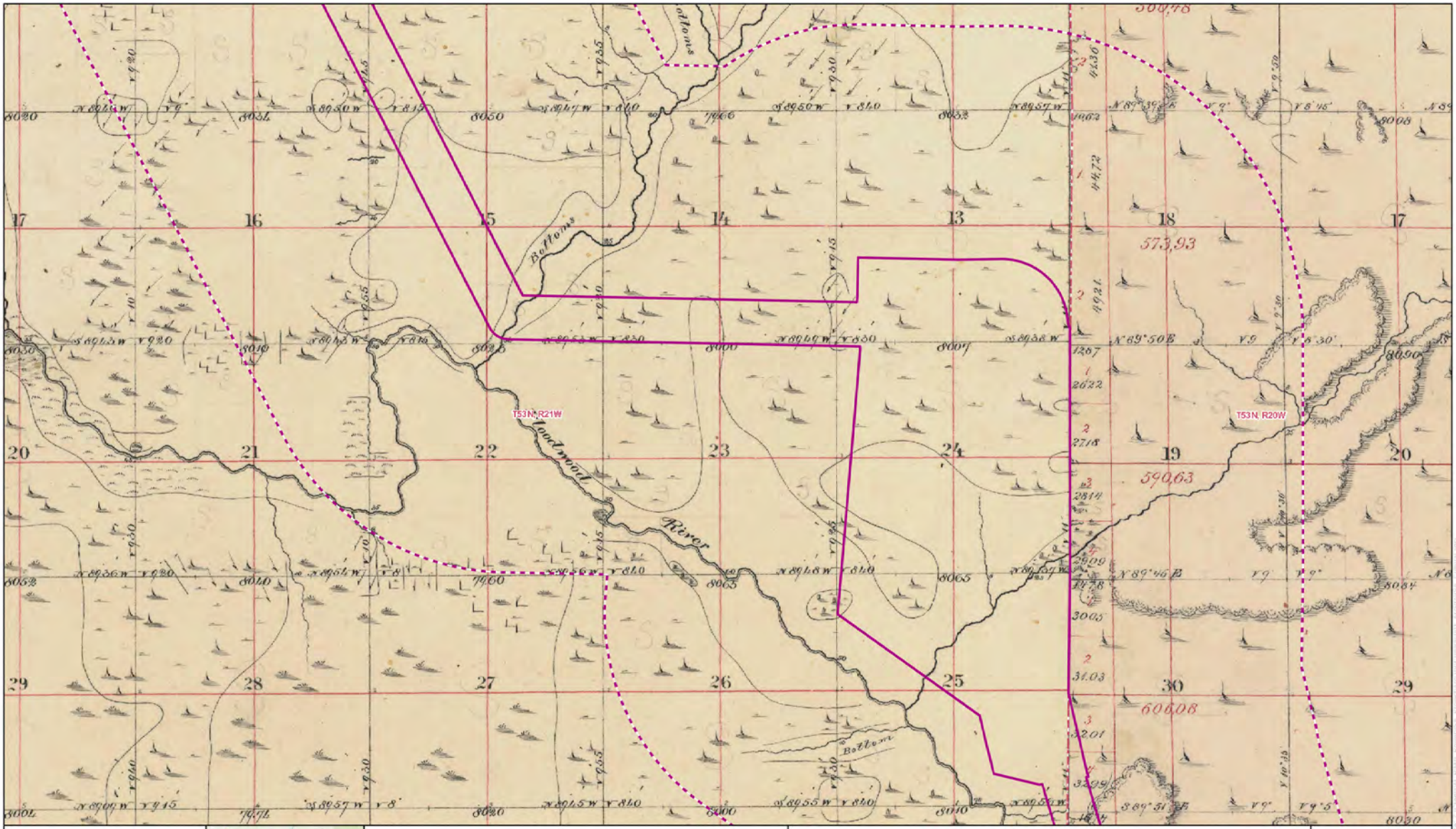

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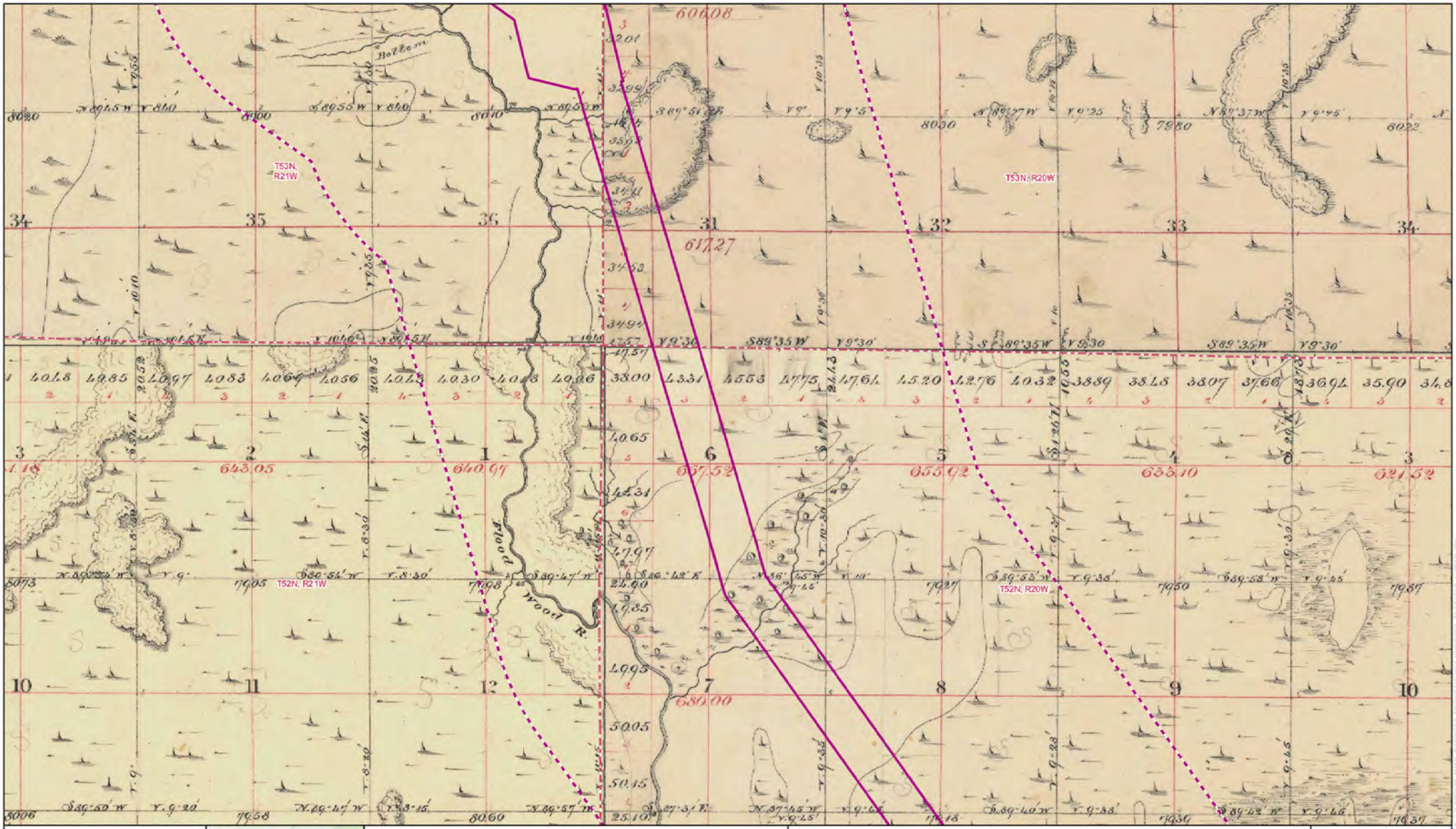
Figure 3.6: 1857-1874 GLO Map
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
One-Mile Buffer
Township Boundary



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Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

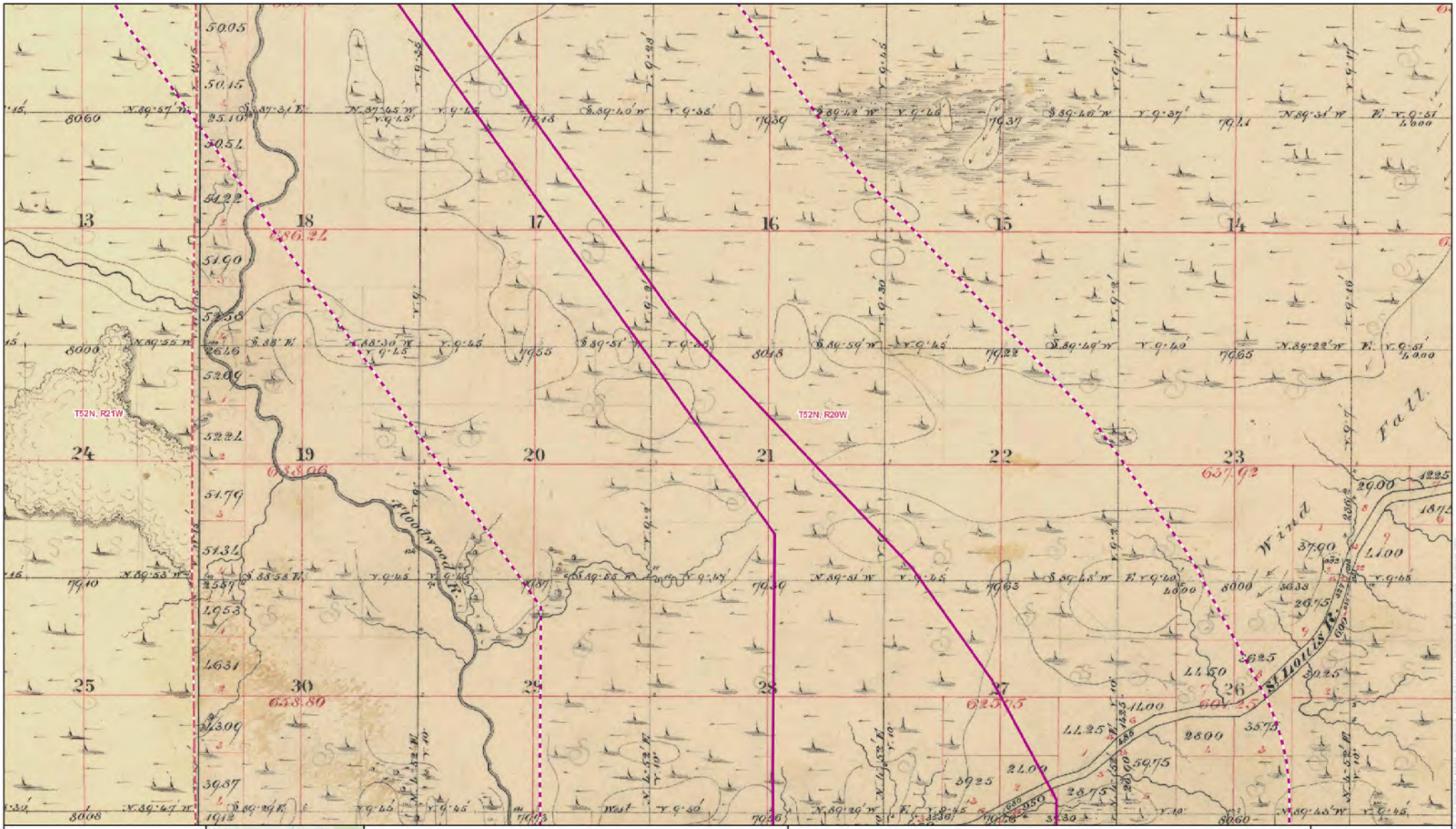

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Figure 3.8: 1857-1874 GLO Map
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
One-Mile Buffer
Township Boundary

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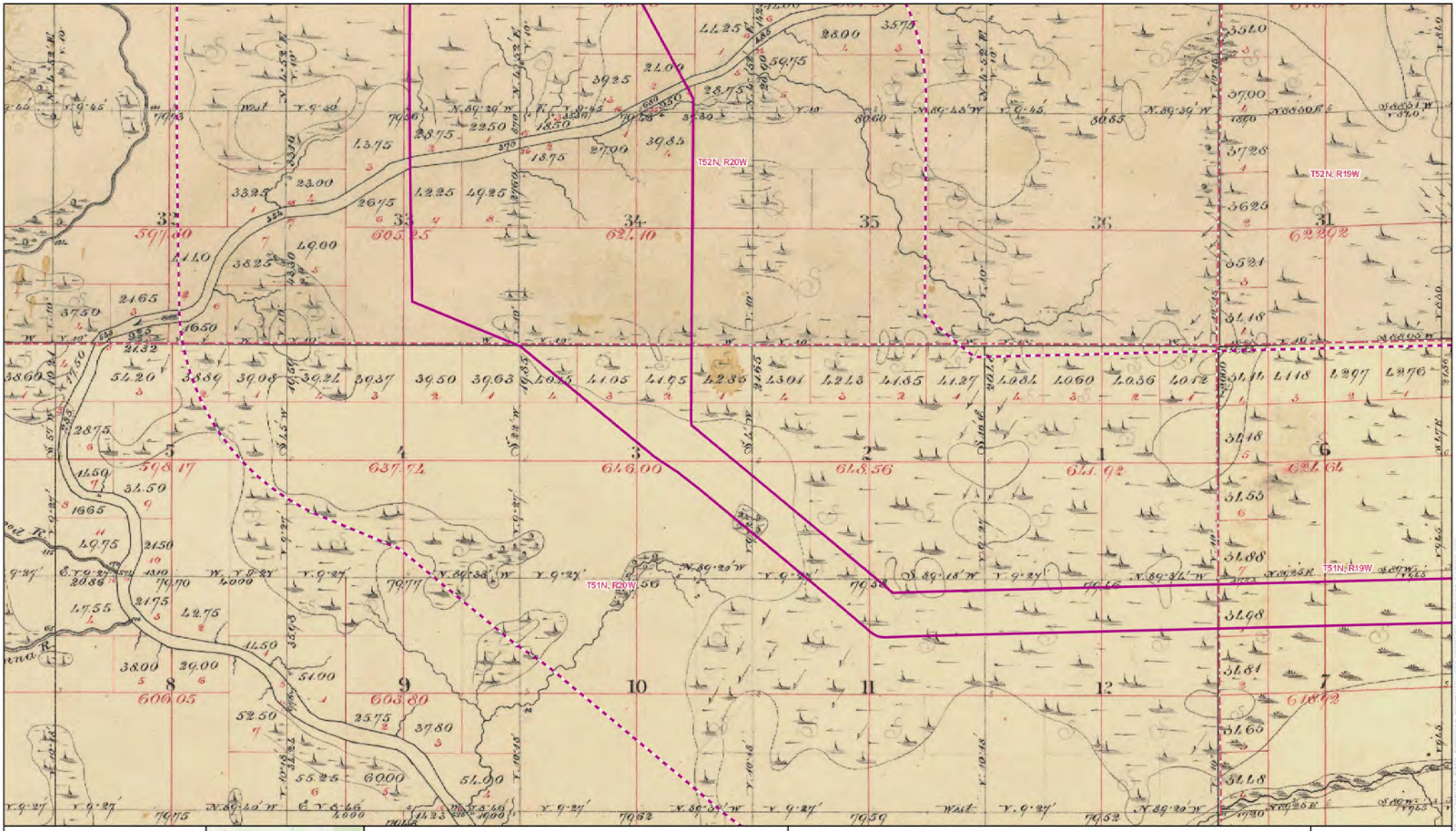

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Figure 3.9: 1857-1874 GLO Map
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
One-Mile Buffer
Township Boundary

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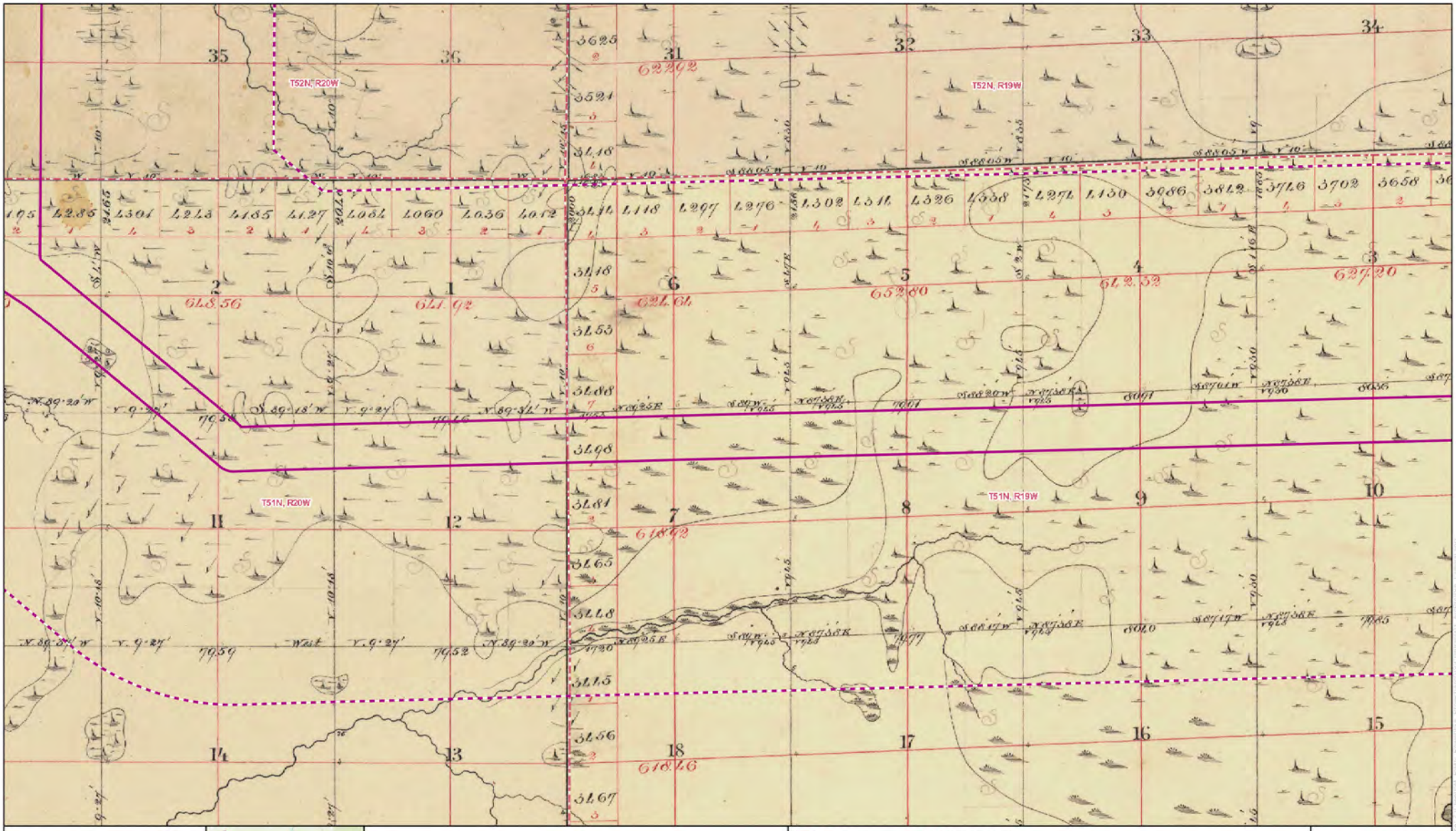

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Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

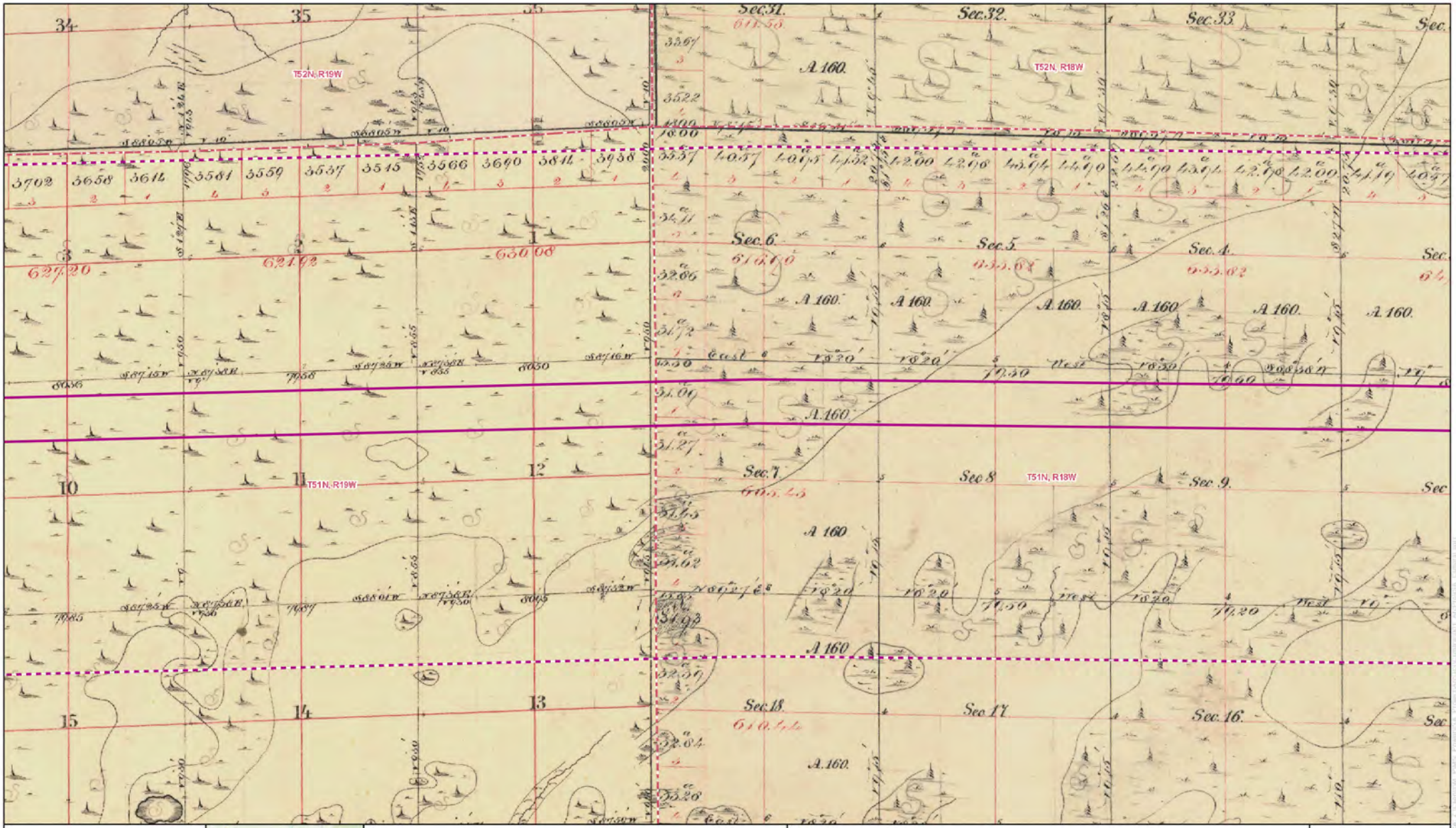

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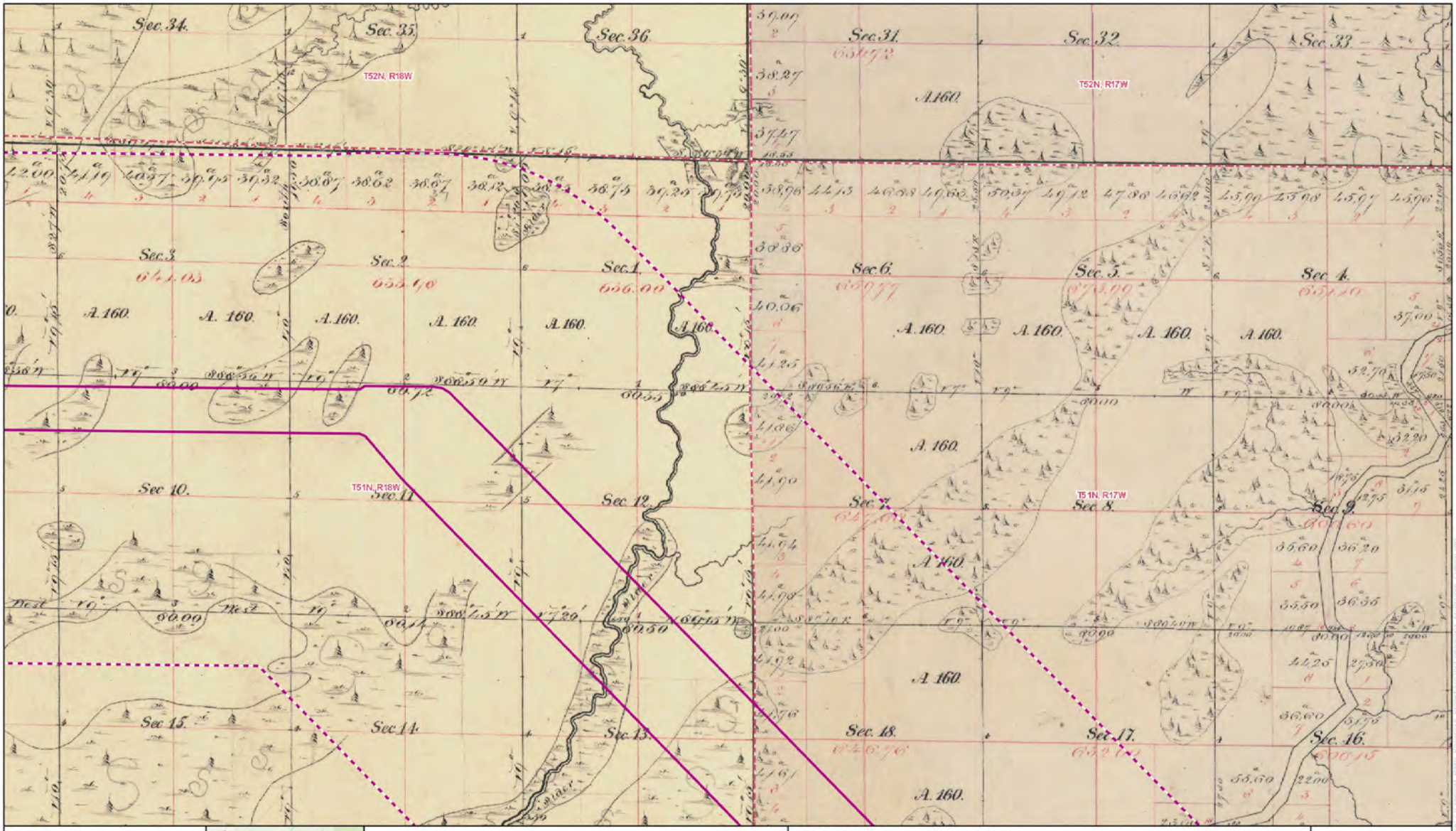
Figure 3.11: 1857-1874 GLO Map
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
One-Mile Buffer
Township Boundary



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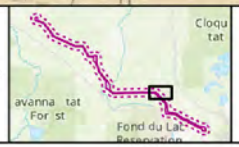
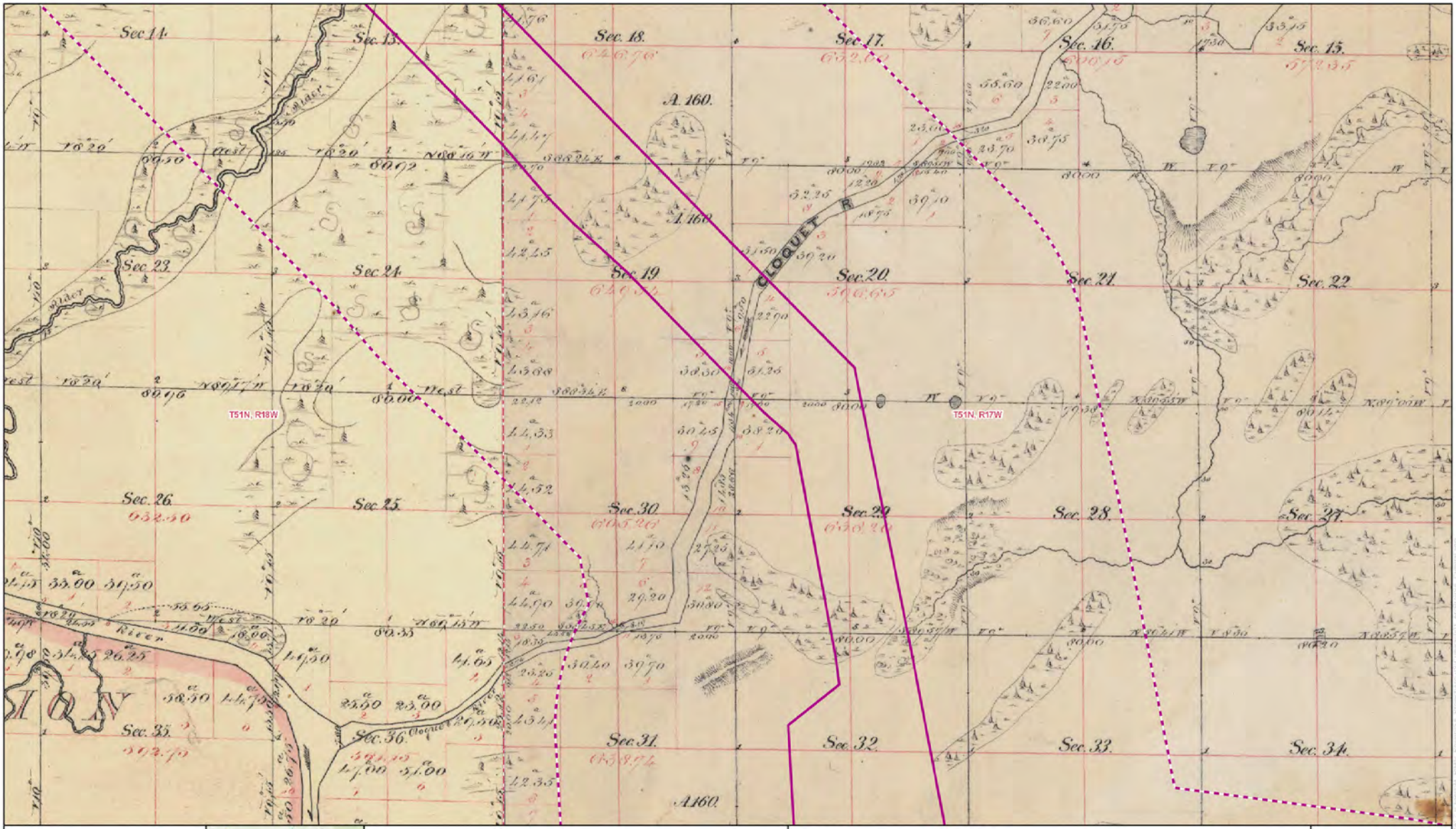


Figure 3.12: 1857-1874 GLO Map
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
One-Mile Buffer
Township Boundary



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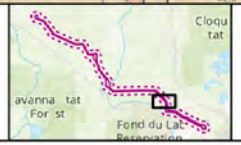

Figure 3.13: 1857-1874 GLO Map
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
One-Mile Buffer
Township Boundary

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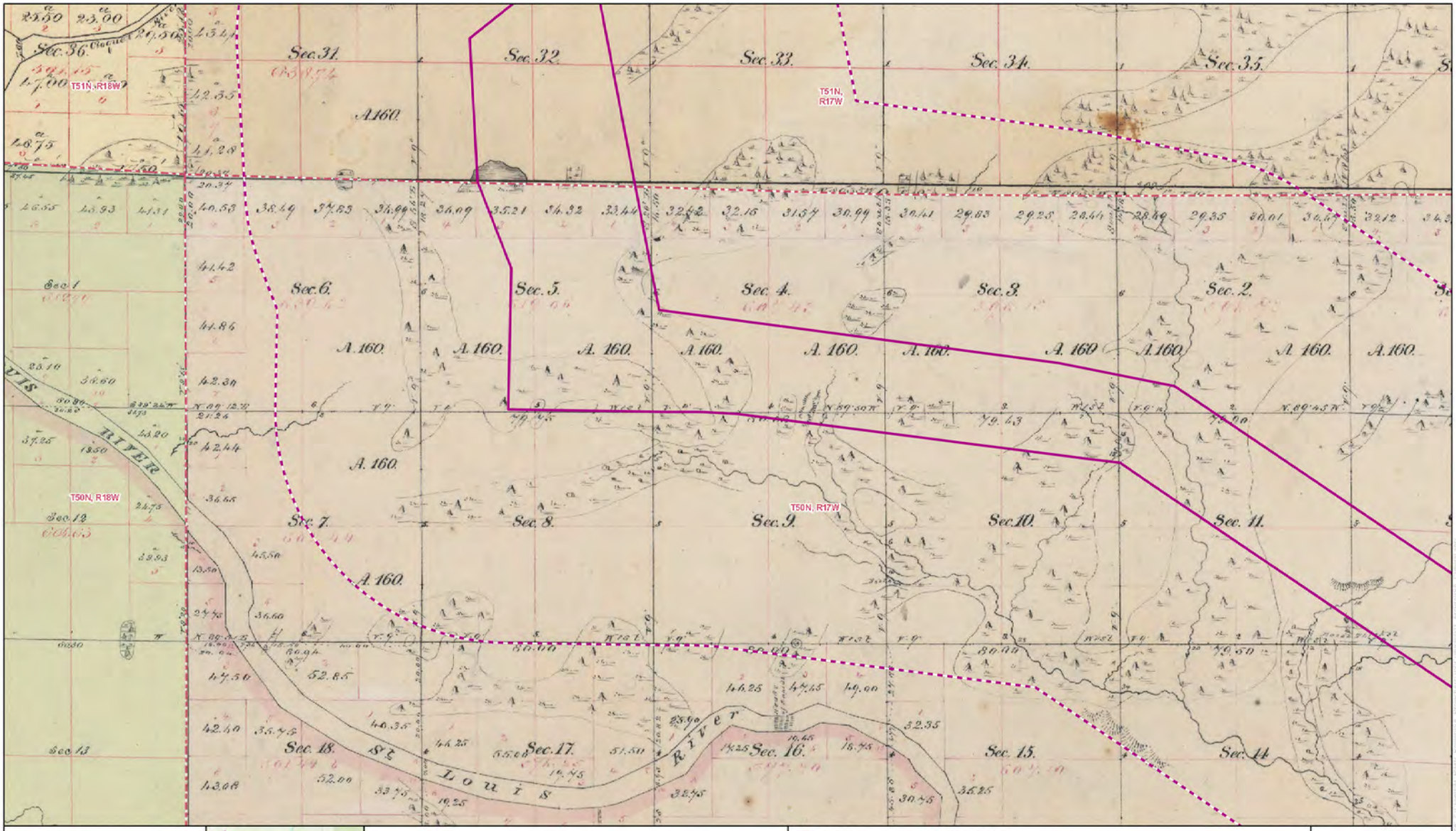

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For Environmental Review Purposes Only

Figure 3.14: 1857-1874 GLO Map
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
One-Mile Buffer
Township Boundary

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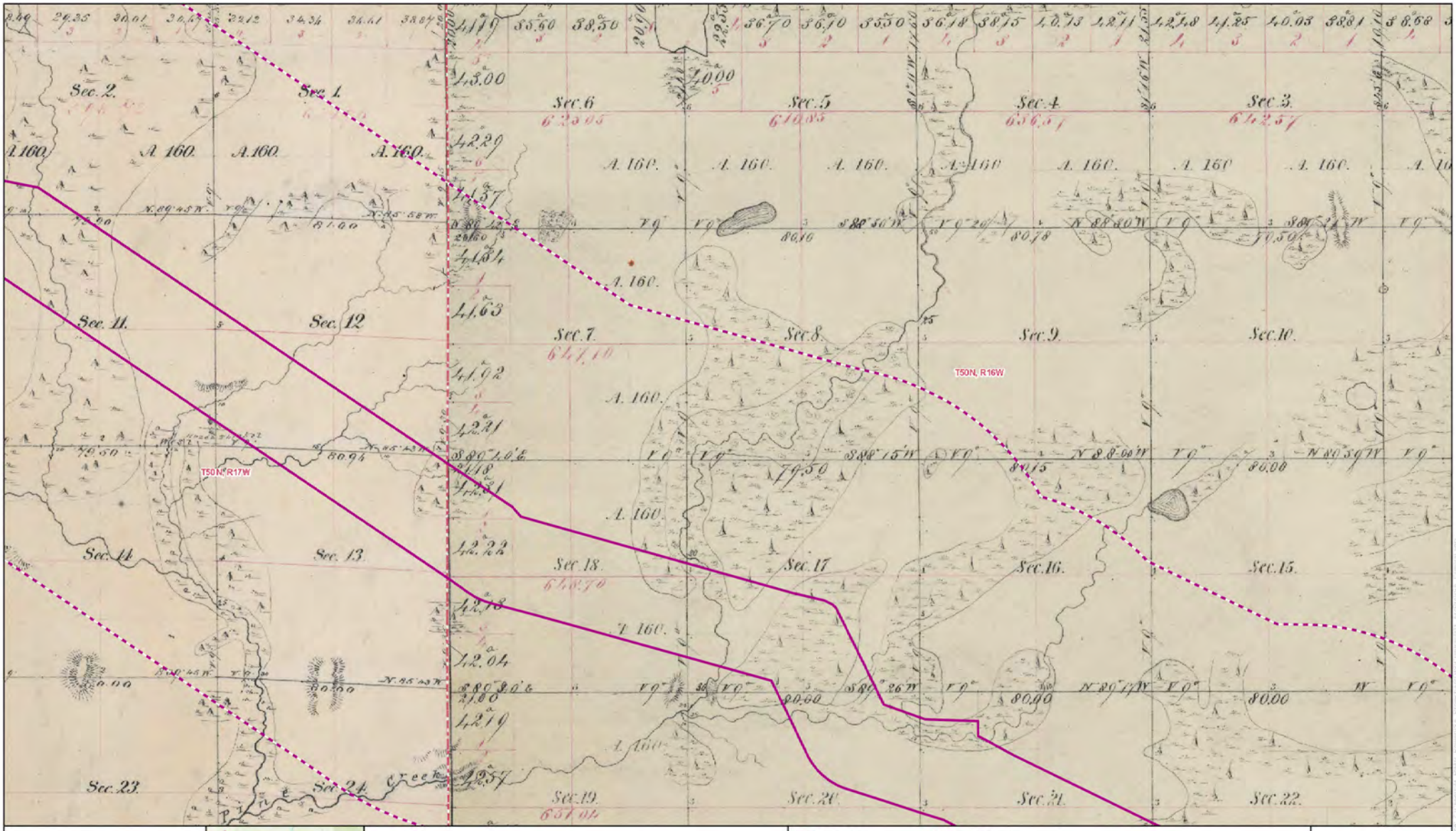

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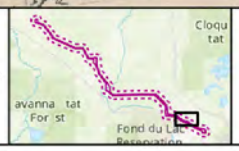
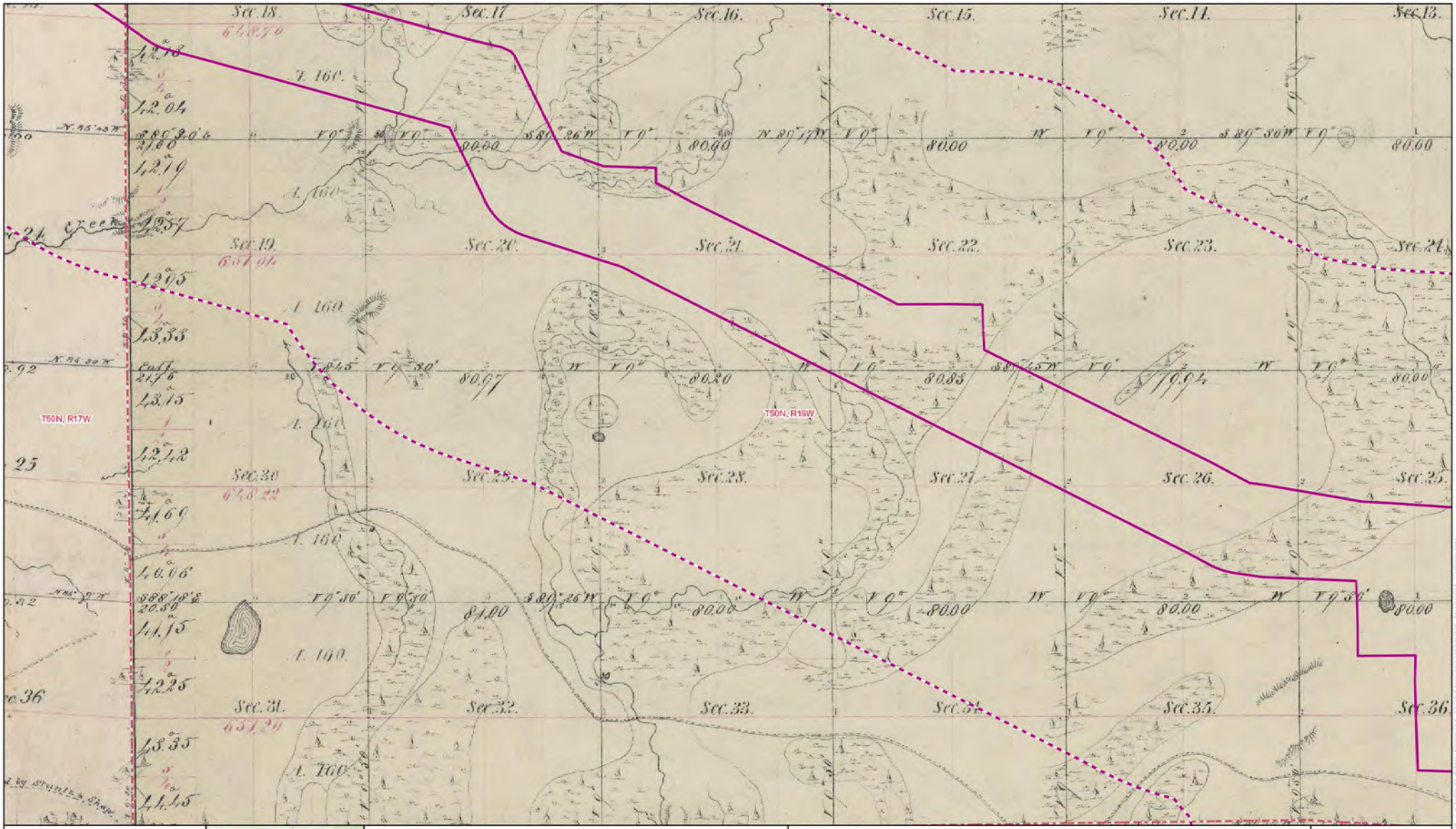


Figure 3.15: 1857-1874 GLO Map
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
One-Mile Buffer
Township Boundary



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For Environmental Review Purposes Only

Figure 3.16: 1857-1874 GLO Map
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
One-Mile Buffer
Township Boundary

merjent

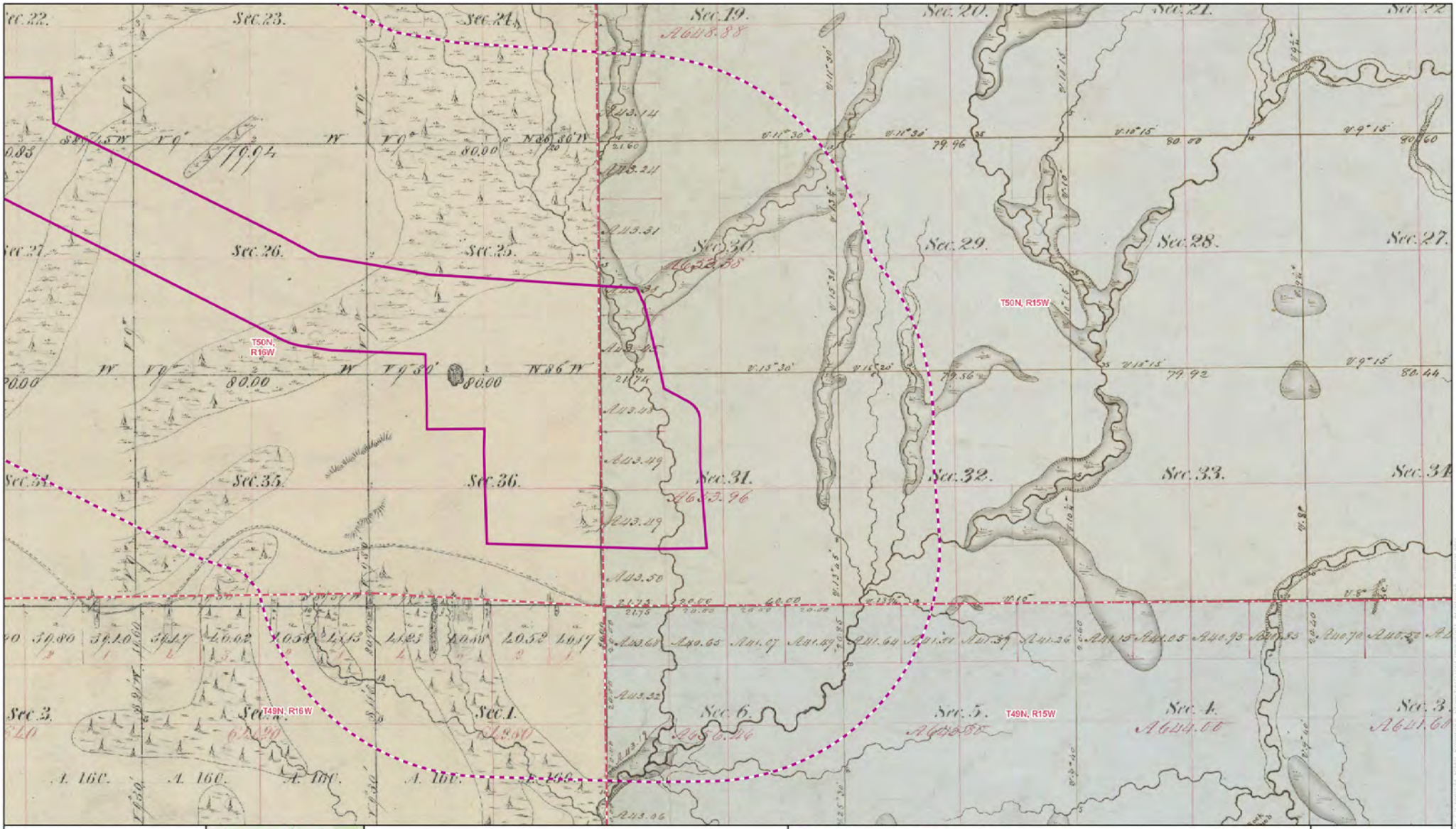

Figure 3.17: 1857-1874 GLO Map
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis and Carlton Counties, Minnesota

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For Environmental Review Purposes Only

Figure 4.1: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
Itasca County, Minnesota

Project Area
Section Boundary

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For Environmental Review Purposes Only

Figure 4.2: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
Itasca County, Minnesota

Project Area
Section Boundary

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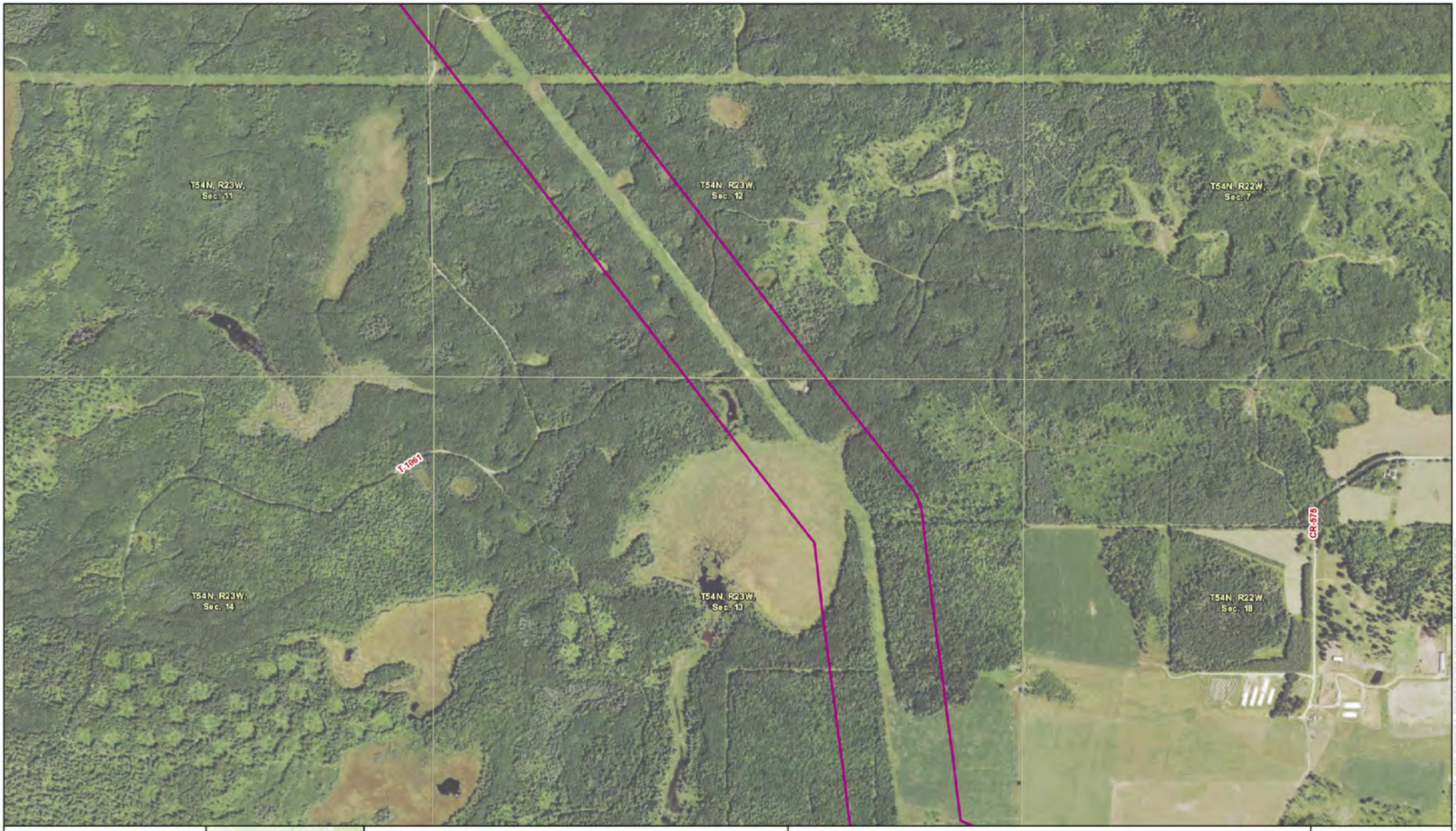
For Environmental Review Purposes Only

Figure 4.3: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
Itasca County, Minnesota

Project Area
Section Boundary



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For Environmental Review Purposes Only

Figure 4.4: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
Itasca County, Minnesota

Project Area
Section Boundary

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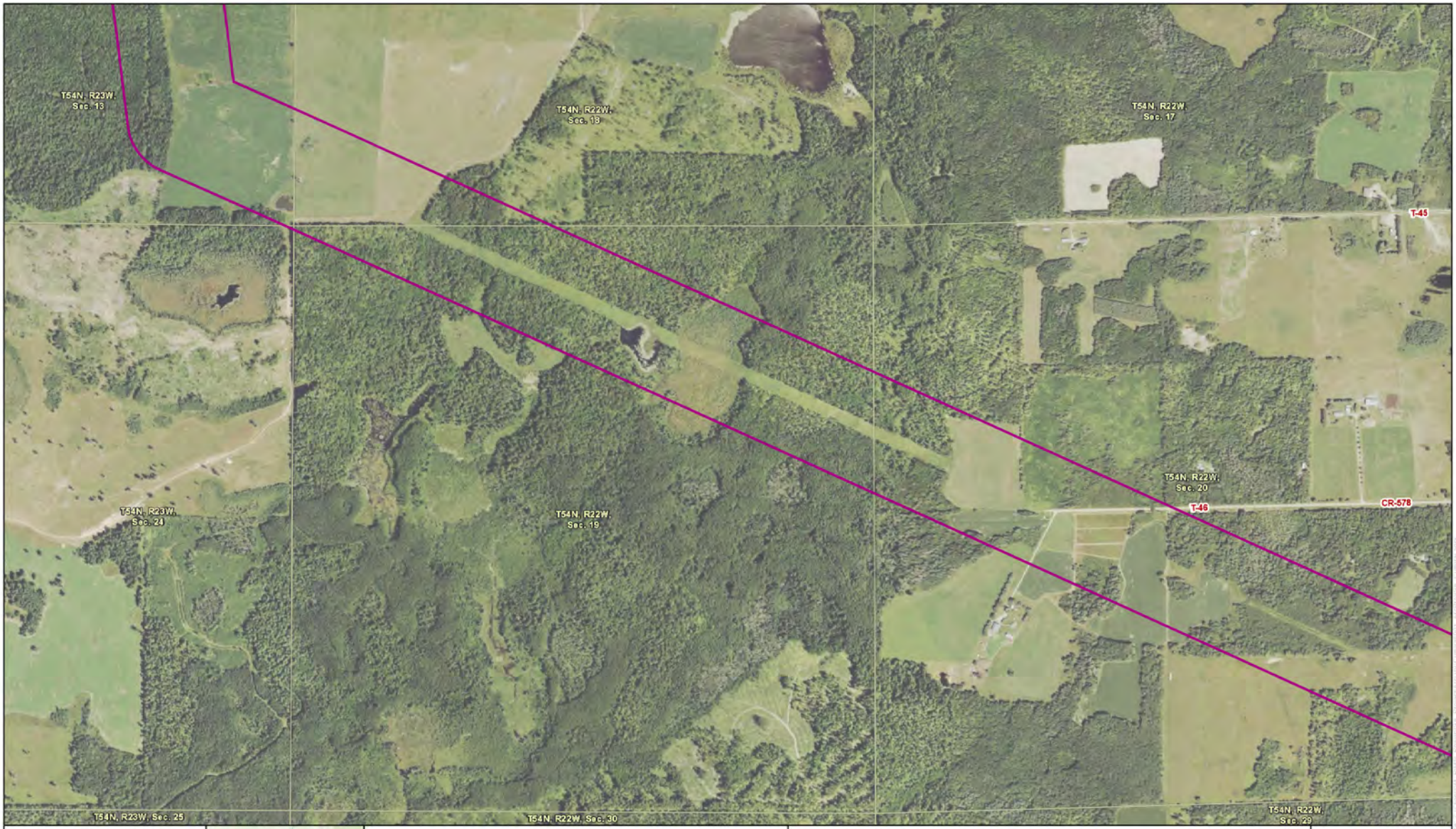

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For Environmental Review Purposes Only

Figure 4.5: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
Itasca County, Minnesota

Project Area
Section Boundary

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For Environmental Review Purposes Only

Figure 4.6: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
Itasca County, Minnesota

Project Area
SHPO Architectural Resource
Section Boundary

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For Environmental Review Purposes Only

Figure 4.7: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
Itasca and St. Louis Counties, Minnesota

Project Area
Section Boundary

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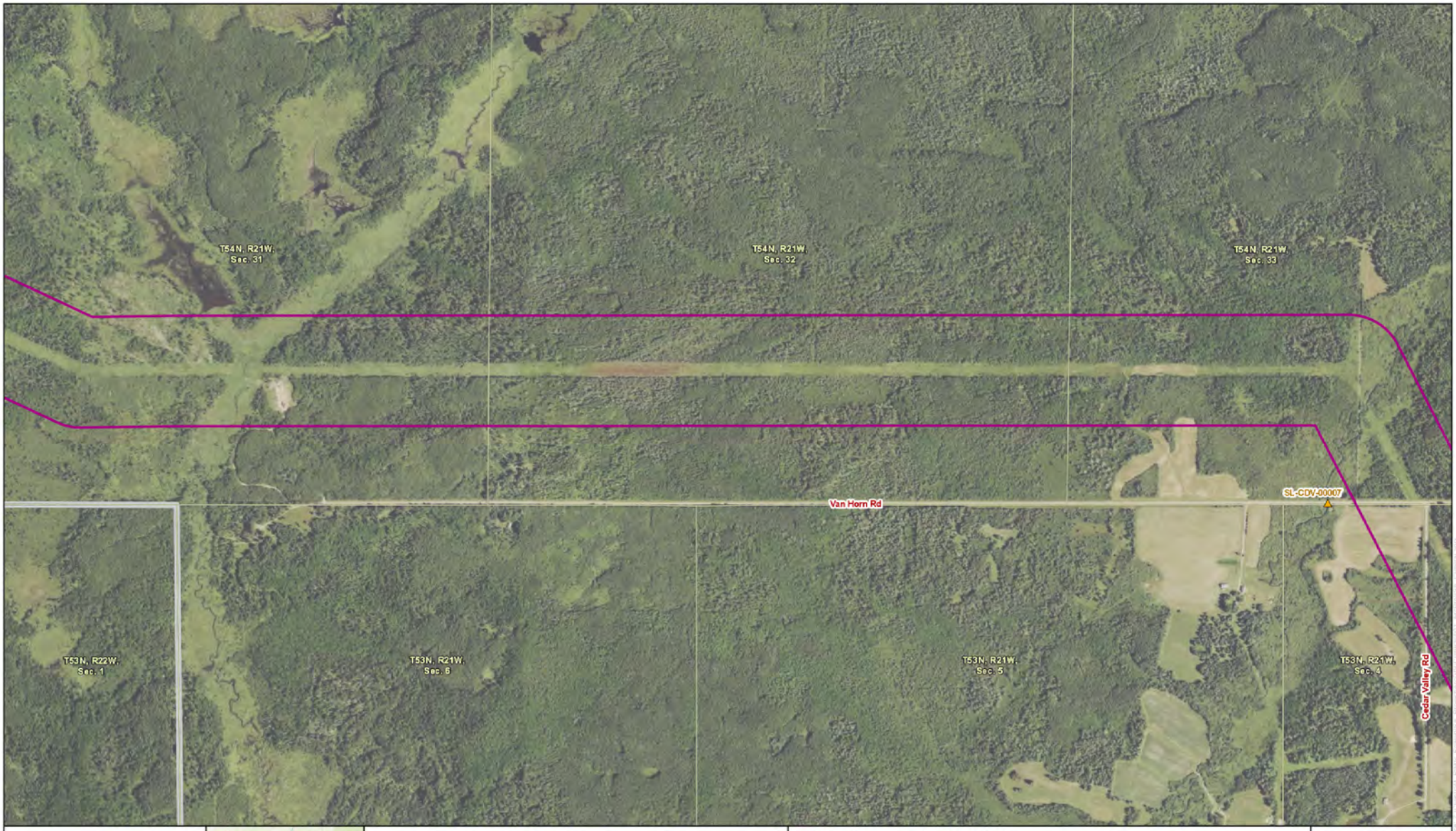

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For Environmental Review Purposes Only

Figure 4.8: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
Itasca and St. Louis Counties, Minnesota

Project Area
SHPO Architectural Resource
Section Boundary

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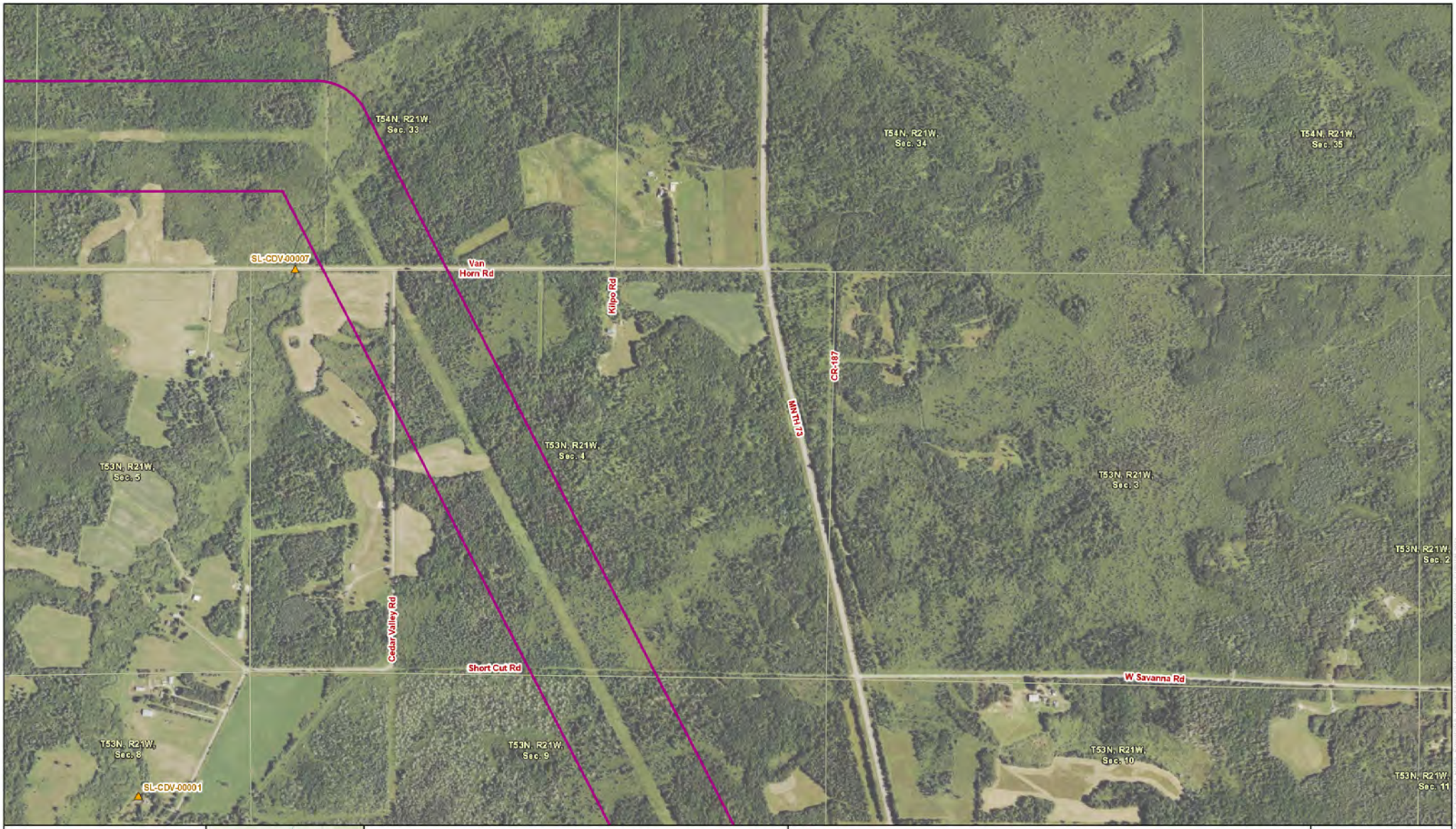

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For Environmental Review Purposes Only

Figure 4.9: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
SHPO Architectural Resource
Section Boundary

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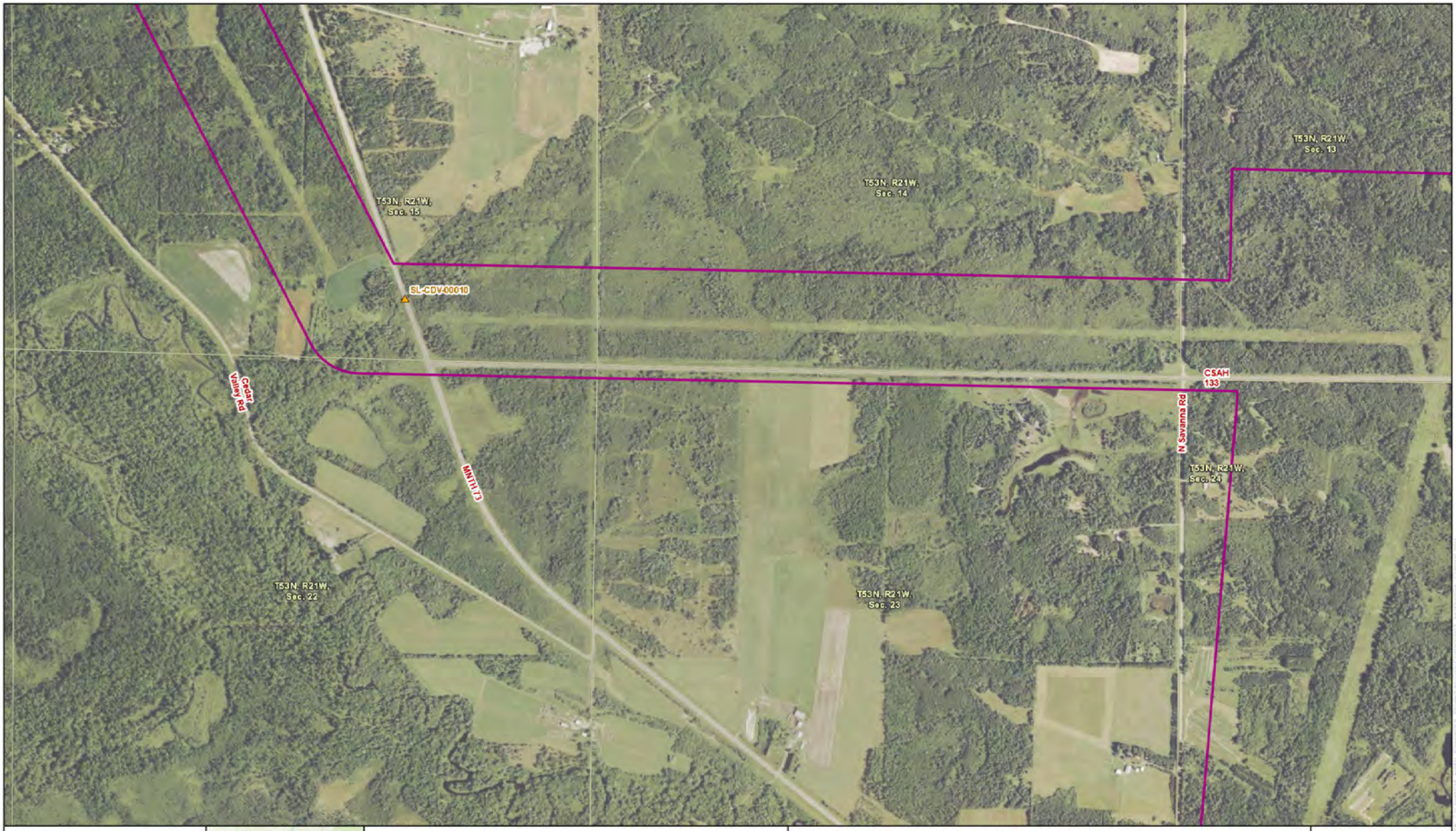

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For Environmental Review Purposes Only

Figure 4.11: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
SHPO Architectural Resource
Section Boundary

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For Environmental Review Purposes Only

Figure 4.12: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
Section Boundary

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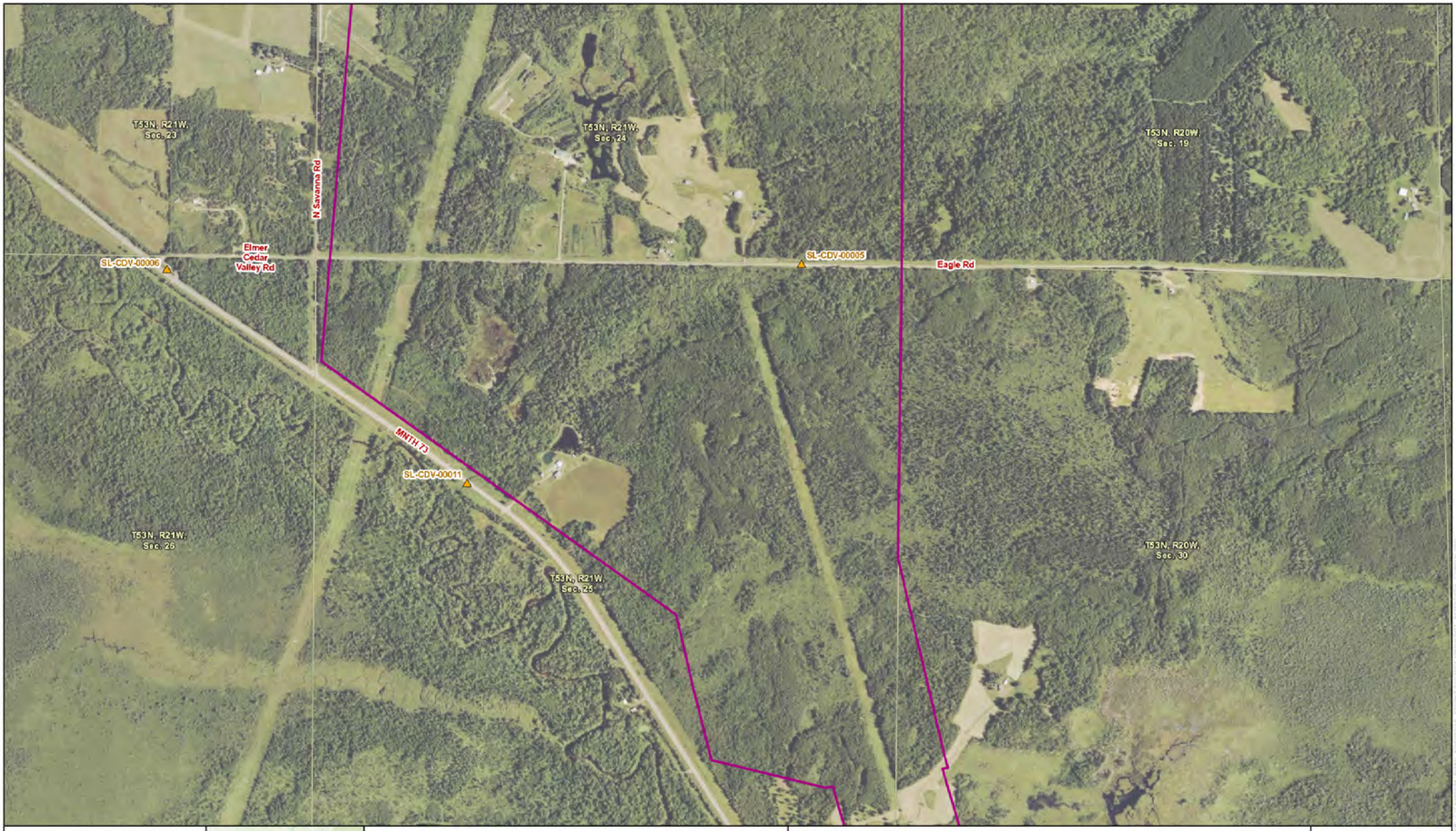

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For Environmental Review Purposes Only

Figure 4.13: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
SHPO Architectural Resource
Section Boundary

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For Environmental Review Purposes Only

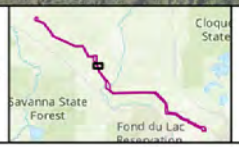
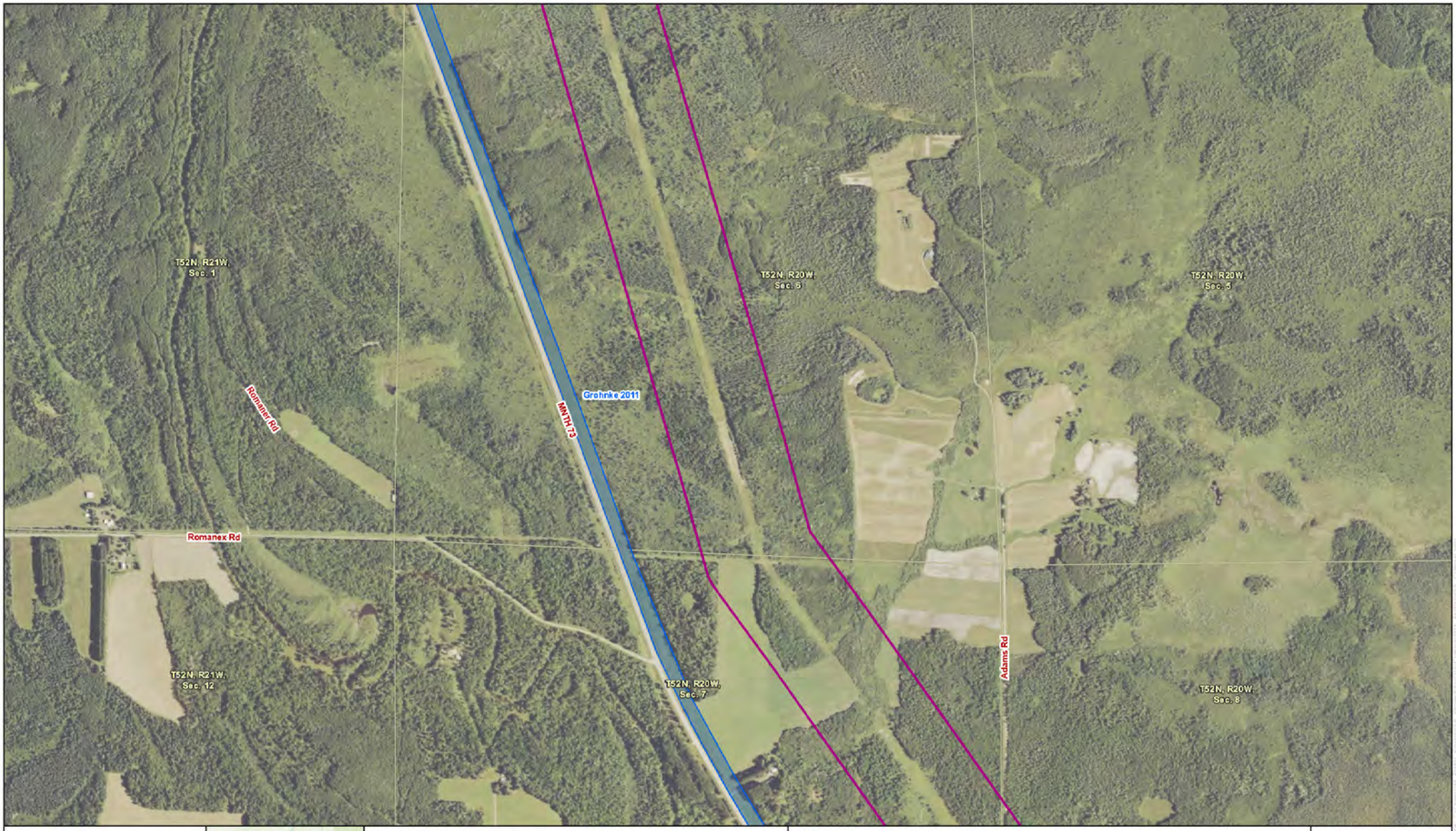


Figure 4.14: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
SHPO Architectural Resource
Previous Survey
Section Boundary



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For Environmental Review Purposes Only

Figure 4.15: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
Previous Survey
Section Boundary

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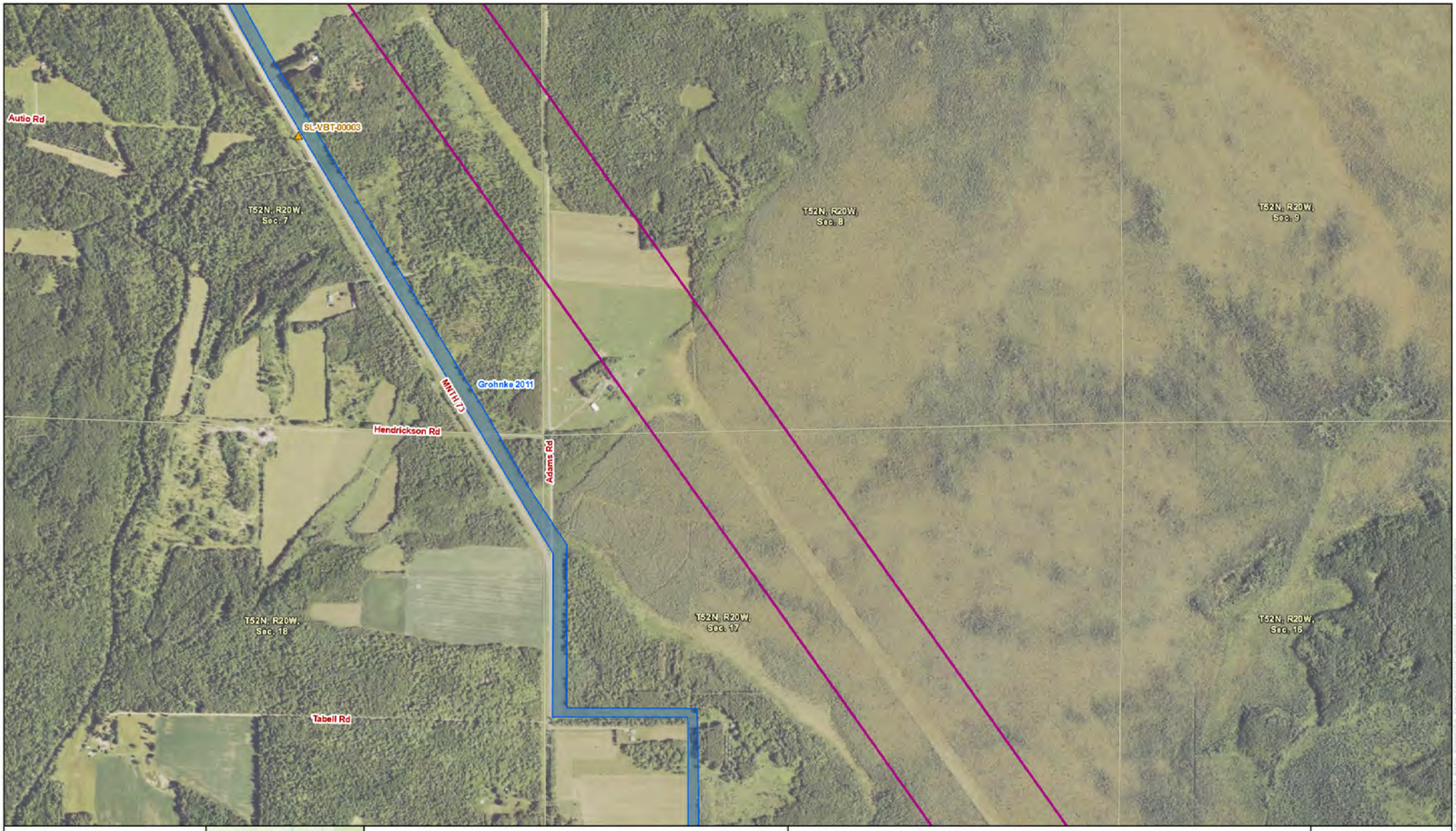

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For Environmental Review Purposes Only

Figure 4.16: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
SHPO Architectural Resource
Previous Survey
Section Boundary

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For Environmental Review Purposes Only

Figure 4.18: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
Previous Survey
Section Boundary

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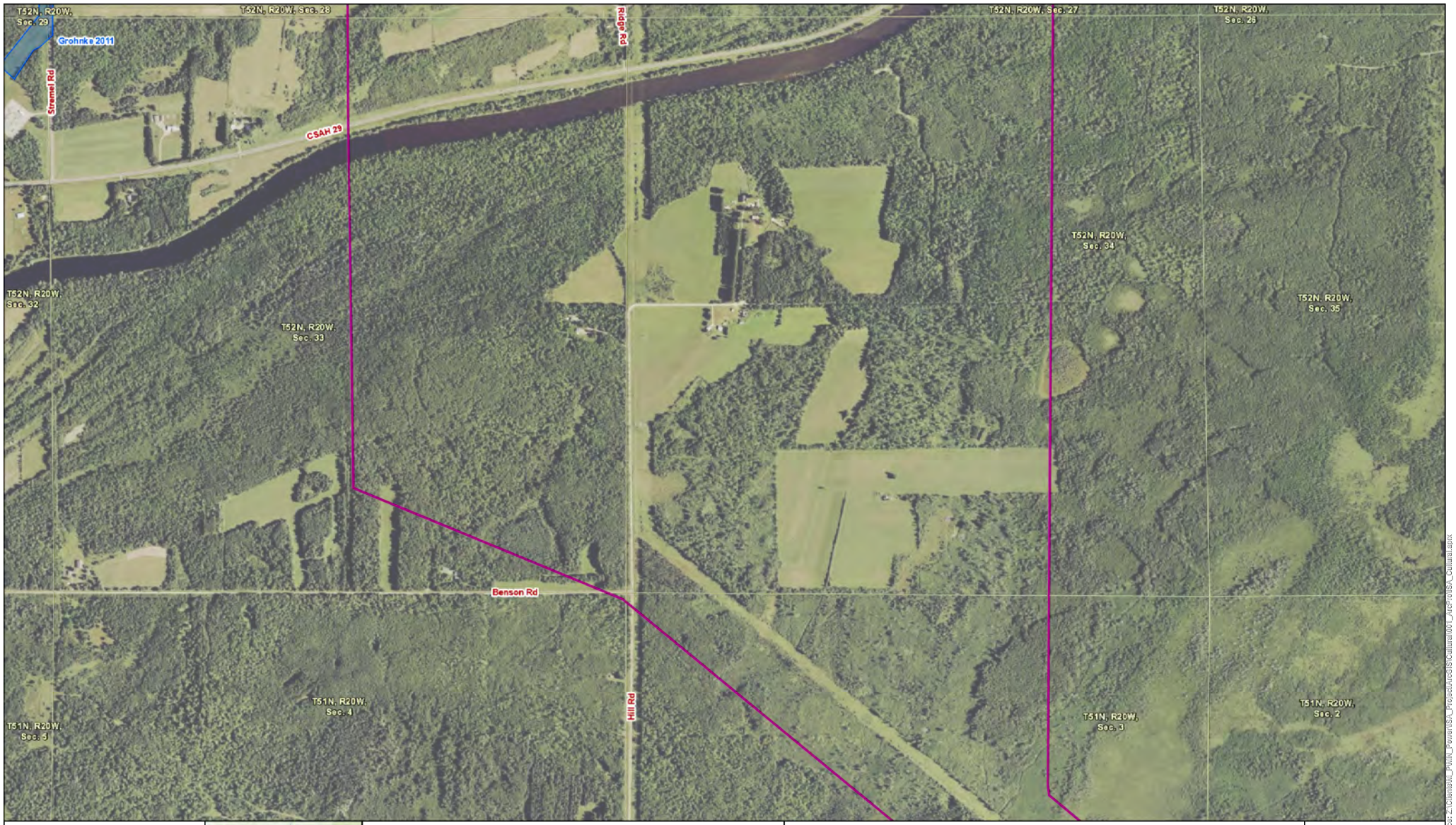

Figure 4.19: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

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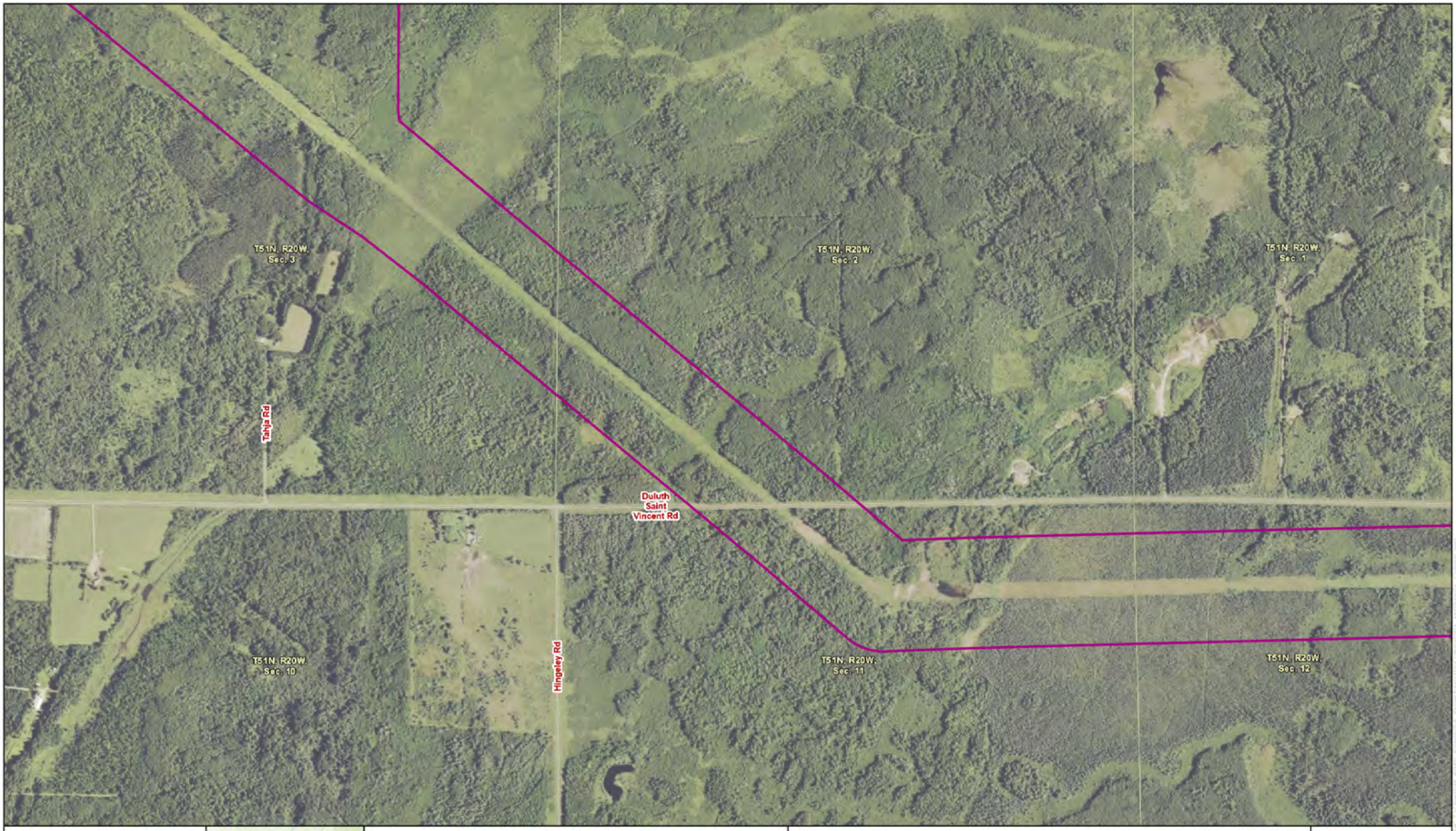
Date: (8/26/2025)



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For Environmental Review Purposes Only

Figure 4.20: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
Section Boundary

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For Environmental Review Purposes Only

Figure 4.21: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
Section Boundary

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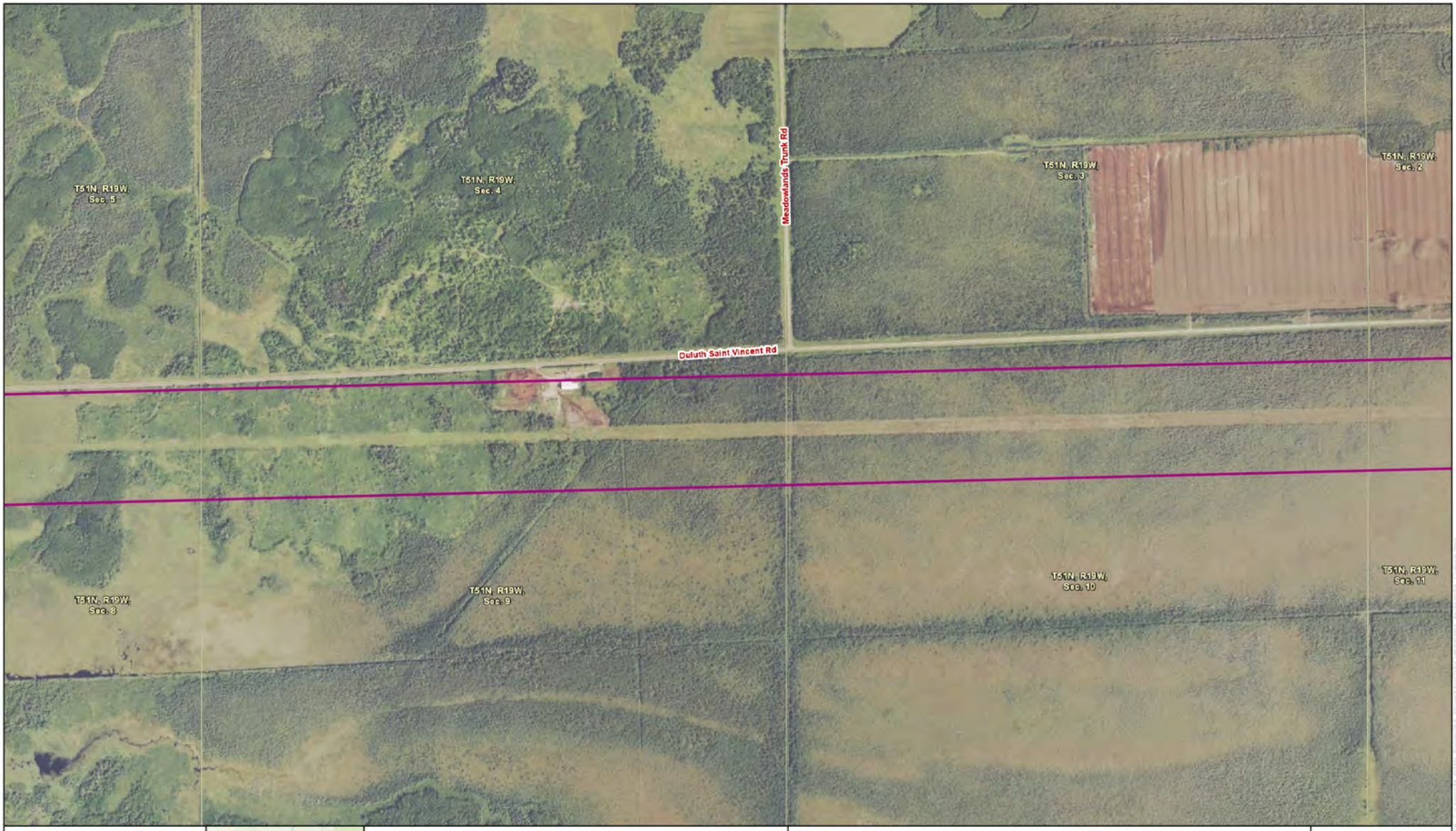

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For Environmental Review Purposes Only

Figure 4.22: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
Section Boundary

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For Environmental Review Purposes Only

Figure 4.23: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
Section Boundary

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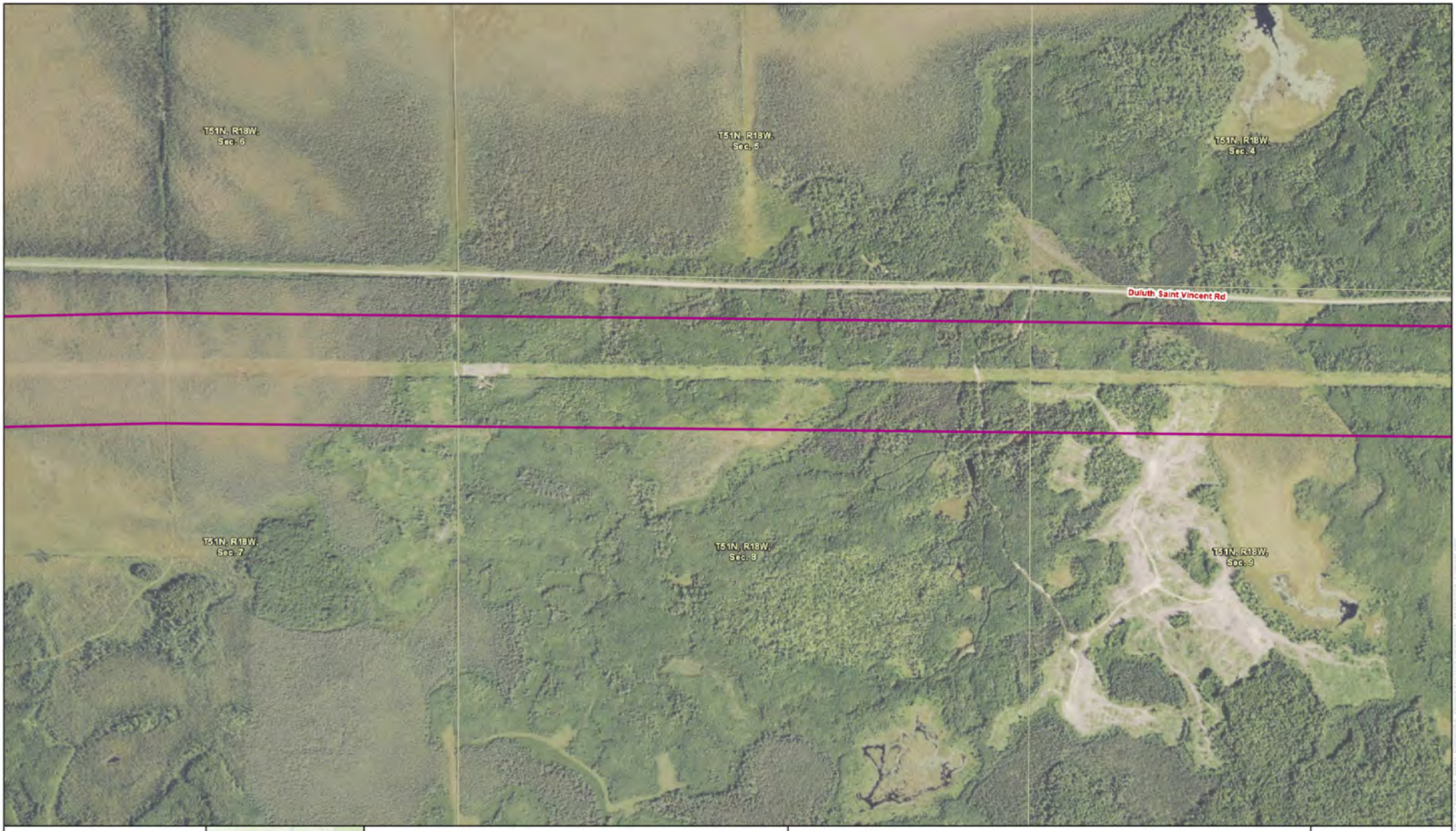

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For Environmental Review Purposes Only

Figure 4.24: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
Section Boundary

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For Environmental Review Purposes Only

Figure 4.25: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
SHPO Architectural Resource
OSA Historic Cemetery
Section Boundary

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Figure 4.28: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
SHPO Architectural Resource
Section Boundary

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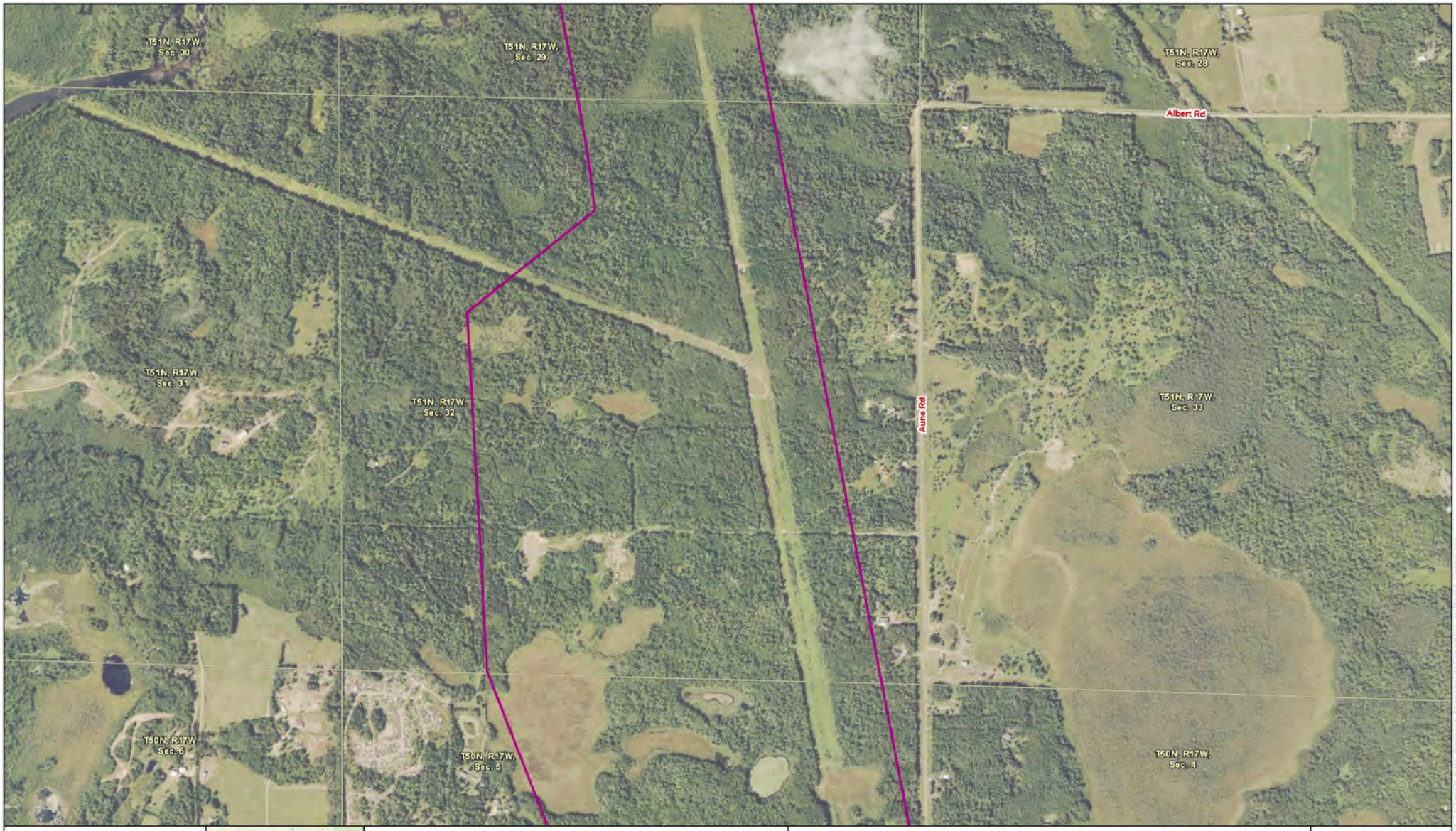

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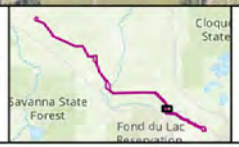

Figure 4.29: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
Section Boundary

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For Environmental Review Purposes Only

Figure 4.31: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
SHPO Architectural Resource
SHPO Architectural Resource
Section Boundary

merjent

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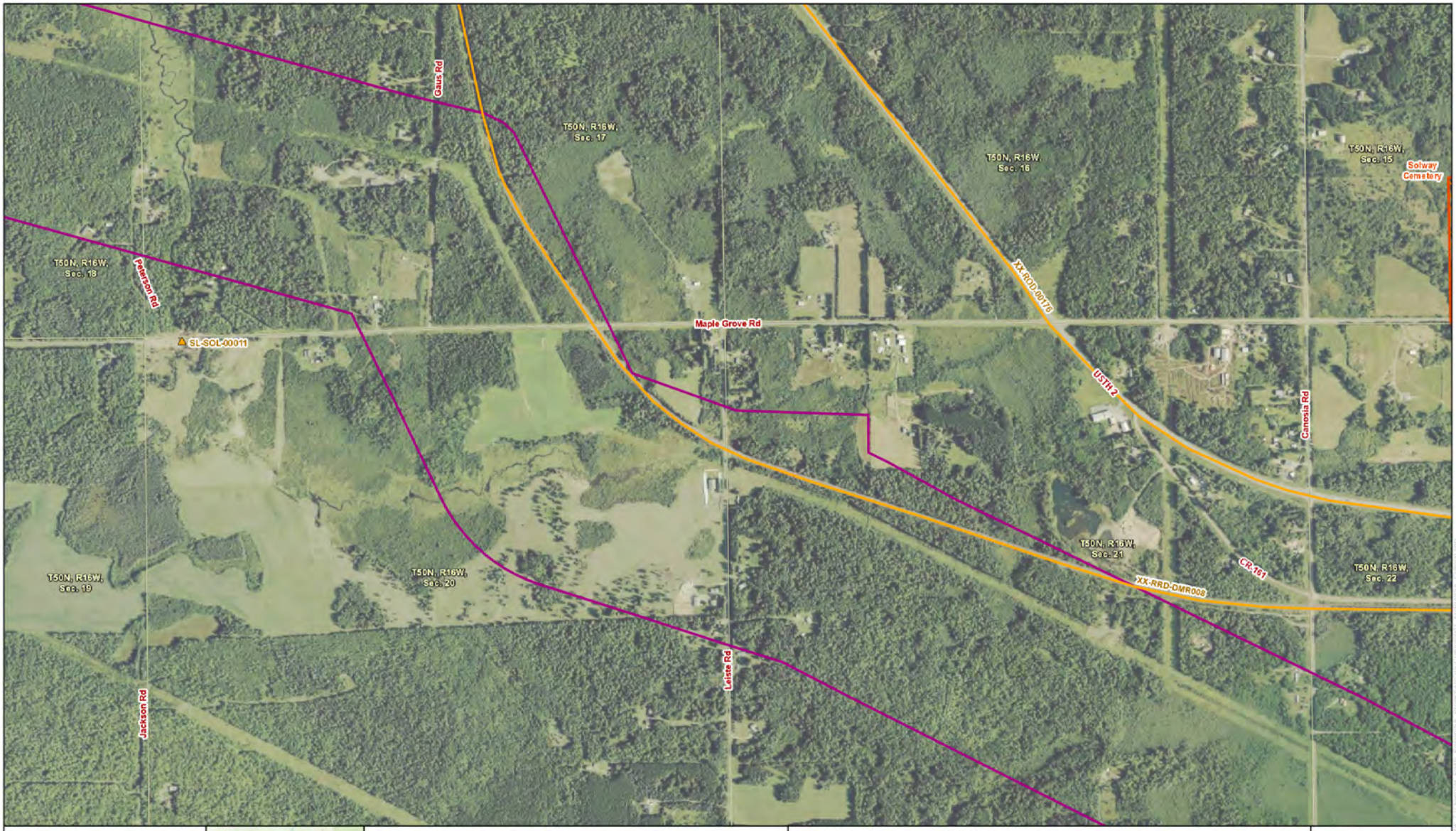
For Environmental Review Purposes Only

Figure 4.32: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
SHPO Architectural Resource
SHPO Architectural Resource
Section Boundary



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For Environmental Review Purposes Only

Figure 4.33: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
SHPO Architectural Resource
SHPO Architectural Resource
OSA Historic Cemetery
Section Boundary

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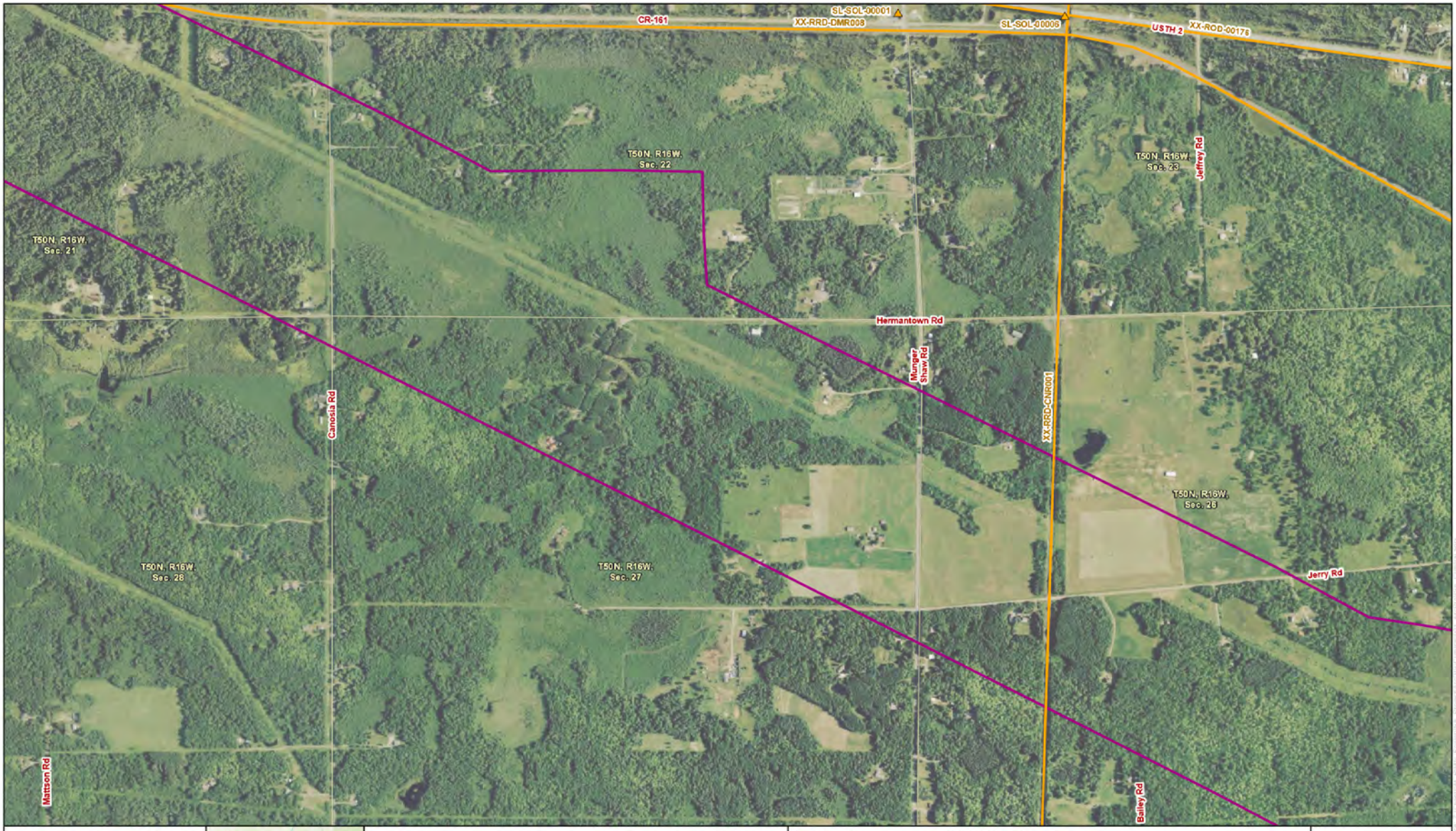

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For Environmental Review Purposes Only

Figure 4.34: Project Location on Modern Aerial
Minnesota Power
Iron Range to St. Louis County 345 kV Project
St. Louis County, Minnesota

Project Area
SHPO Architectural Resource
SHPO Architectural Resource
Section Boundary

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Minnesota Department of Natural Resources
Division of Ecological & Water Resources
500 Lafayette Road, Box 25
St. Paul, MN 55155-4025

September 8, 2025

Mandy Bohnenblust
Merjent, Inc.

RE: Natural Heritage Review of the proposed ISA Transmission Line Project,
Itasca and St. Louis Counties

Dear Mandy Bohnenblust,

For all correspondence regarding the Natural Heritage Review of this project please include the project ID **MCE-2025-00541** in the email subject line.

As requested, the Minnesota Natural Heritage Information System has been reviewed to determine if the proposed project has the potential to impact any rare species or other significant natural features. Based on the project details provided with the request, the following rare features may be impacted by the proposed project:

Ecologically Significant Areas

- The Minnesota Biological Survey (MBS) has identified 13 Sites of Biodiversity Significance within the vicinity of the proposed project. One is *Outstanding*, four are *High*, and eight are *Moderate*. Sites of Biodiversity Significance (MBS Sites) have varying levels of native biodiversity and are ranked based on the relative significance of this biodiversity at a statewide level. Factors taken into account during the ranking process include the number of rare species documented within the site, the quality of the native plant communities in the site, the size of the site, and the context of the site within the landscape. There are also 36 Native Plant Communities (NPCs) in or near the proposed project area. **The DNR recommends avoidance of MBS Sites ranked *High* or *Outstanding* and NPCs ranked S1-S3.** A Conservation Planning Report, which includes a list of MBS Sites and NPCs in the proposed project area, has been created and uploaded to the project page (2025-09-03-ISATransmissionLine-CRP).

  MBS Sites of Biodiversity Significance and DNR Native Plant Communities can be viewed using the Explore page in Minnesota Conservation Explorer (MCE) or their GIS shapefiles can be downloaded from the MN Geospatial Commons. Reference the MBS Site Biodiversity Significance and Native Plant Community websites for information on interpreting the data. To receive a list of MBS Sites of Biodiversity Significance and DNR Native Plant Communities in the vicinity of your project, create a Conservation Planning Report using the Explore page in MCE.

- If the Wetland Conservation Act (WCA) is applicable to this project, please note that native plant communities with a Conservation Status Rank of S1 through S3 or wetlands within *High* or *Outstanding* MBS Sites of Biodiversity Significance may qualify as Rare Natural Communities (RNC) under WCA. Minnesota Rules, part 8420.0515, subpart 3 states that a wetland replacement plan for activities that modify a RNC must be denied if the local government unit determines the proposed activities will permanently adversely affect the RNC. If the proposed project includes a wetland replacement plan under WCA, please contact your DNR Regional Ecologist for further evaluation. Please visit WCA Program Guidance and Information for additional information, including the RNC Technical Guidance.

State-listed Species

- Several state-listed plant species have been documented within the vicinity of the proposed project; these are listed in the table below. As detailed above, the project overlaps with many areas of ecological significance which are more likely to contain habitat for state-protected species. Minnesota's Endangered Species Statute (*Minnesota Statutes*, section 84.0895) and associated Rules (*Minnesota Rules*, part 6212.1800 to 6212.2300 and 6134) prohibit the take of threatened or endangered species without a permit. **To demonstrate avoidance, a qualified surveyor will need to determine if suitable habitat exists within the activity impact area and, if so, conduct a survey prior to any project activities.** Except for montane yellow-eyed grass, these species are unlikely to occur in the currently maintained utility right-of-way but may have suitable habitat if the project impacts areas outside of that.

  The goal of the habitat assessment is to identify potential locations where endangered (END) and threatened (THR) species may occur to help formulate an avoidance plan or to determine the need for a permit to take. Species of special concern (SPC) are also rare and an important component of Minnesota's natural heritage; we strongly encourage project alternatives that avoid or minimize impacts to these species as well.

Common Name	Scientific Name	MN Status	Habitat
Narrow Triangle Moonwort	*Botrychium angustisegmentum*	THR	Mesic Hardwood Forest
Goblin Fern	*Botrychium mormo*	THR	Mesic Hardwood Forest
Cuckoo Flower	*Cardamine pratensis*	THR	Forested Rich Peatland, Non-forested Rich Peatland
Lapland Buttercup	*Ranunculus lapponicus*	SPC	Forested Rich Peatland
Barren Strawberry	*Waldsteinia fragarioides*	SPC	Mesic Hardwood Forest, Fire Dependent Forest
Montane Yellow-eyed Grass	*Xyris montana*	SPC	Non-forested Rich Peatland, Non-forested Acid Peatland

  Surveys must be conducted by a qualified surveyor and follow the standards contained in the Rare Species Survey Process and Rare Plant Guidance. Visit the Natural Heritage Review page for a list of certified surveyors and more information on this process. Survey proposals should be submitted to Reports.NHIS@state.mn.us prior to initiating survey work. Project planning should take into account

that any botanical survey needs to be conducted during the appropriate time of the year, which may be limited. Please consult Review.NHIS@state.mn.us if you have any questions regarding this process.

- The American goshawk (*Accipiter atricapillus*), a state-listed bird species of special concern, has been documented in the vicinity of the proposed project. This species is found in large, older upland forests systems. They are impacted by fragmentation, loss of forest diversity, and decrease in mature trees. If there is any tree removal associated with the proposed project, we recommend trees be inspected for nests prior to being cut down between April 1 and August 15.

- Trumpeter swans (*Cygnus buccinator*), a state-listed species of special concern, have been documented nesting in the vicinity of the proposed project. During the breeding season, trumpeter swans select small ponds and lakes with extensive beds of cattails, bulrush, sedges, and/or horsetail. Ideal habitat includes about 100 m of open water for take-off, stable levels of unpolluted water, emergent vegetation, low levels of human disturbance, and the presence of muskrat (*Ondatra zibethicus*) houses and American beaver (*Castor canadensis*) lodges for use as nesting platforms. If any of the wetlands on site provide suitable habitat, swans may choose to nest in these wetlands. The DNR recommends avoiding construction activities during the nesting season, April 15 through June 15, near suitable nesting habitat.

- Pugnose shiner (*Miniellus anogenus*), state-listed as threatened, has been found in the Floodwood River near the proposed project. The pugnose shiner prefers clear, low velocity lakes and streams with an abundance of submerged vegetation such as eelgrass, Canadian elodea, pondweed, and muskgrass. This species is vulnerable to the removal of littoral vegetation from lakes, the invasion of Eurasian water milfoil (*Myriophyllum spicatum*), increases in eutrophication from nutrient enrichment, and increases in water turbidity. Minnesota's Endangered Species Statute (Minnesota Statutes, section 84.0895) and associated Rules (Minnesota Rules, part 6212.1800 to 6212.2300 and 6134) prohibit the take of threatened or endangered species without a permit. To protect spawning pugnose shiner, **work within the water, including crossing by vehicles, must be avoided from May 1 through July 31.** Consult with the NH Review Team (Review.NHIS@state.mn.us) if this is not feasible, as further action may be needed.

- Creek heelsplitter (*Lasmigona compressa*) and black sandshell (*Ligumia recta*), both state-listed mussel species of special concern, have been documented in the Swan, Cloquet, and St. Louis Rivers in the vicinity of the proposed project. Mussels are particularly vulnerable to deterioration in water quality, especially increased siltation. As such, effective erosion prevention and sediment control practices must be implemented and maintained near the river throughout the duration of the project and incorporated into any stormwater management plan.

- The Natural Heritage Information System (NHIS) tracks bat roost trees and hibernacula plus some acoustic data, but this information is not exhaustive. Even if there are no bat records listed nearby, all of Minnesota's bats, including the federally endangered northern long-eared bat (*Myotis septentrionalis*), can be found throughout Minnesota. During the active season (approximately April-November) bats roost underneath bark, in cavities, or in crevices of both live and dead trees. Tree removal can negatively impact bats by destroying roosting habitat, especially during the pup rearing season when females are

forming maternity roosting colonies and the pups cannot yet fly. To minimize these impacts, **the DNR recommends that tree removal be avoided from June 1 through August 15.**

- Please visit the DNR Rare Species Guide for more information on the habitat use of these species and recommended measures to avoid or minimize impacts.

Federally Protected Species

- To ensure compliance with federal law, conduct a federal regulatory review using the U.S. Fish and Wildlife Service's (USFWS) online Information for Planning and Consultation (IPaC) tool.

Environmental Review and Permitting

- Please include a copy of this letter and the MCE-generated Final Project Report in any state or local license or permit application. Please note that measures to avoid or minimize disturbance to the above rare features may be included as restrictions or conditions in any required permits or licenses.

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available and is the most complete source of data on Minnesota's native plant communities, rare species, and other rare features. However, the NHIS is not an exhaustive inventory and does not contain the locations of all rare features in the state. Therefore, ecologically significant features for which we have no records may exist within the project area. If additional information becomes available regarding rare features in the vicinity of the project, further review may be necessary.

For environmental review purposes, the results of this Natural Heritage Review are valid for one year; the results are only valid for the project location and project description provided with the request. **If project details change or the project has not occurred within one year, please resubmit the project for review within one year of initiating project activities.** Resubmit by selecting *Clone Project as Draft* on the project page in MCE.

The Natural Heritage Review does not constitute project approval by the Department of Natural Resources. Instead, it identifies issues regarding known occurrences of rare features and potential impacts to these rare features. Visit Natural Heritage Review for additional information regarding this process, survey guidance, and other related information. For information on the environmental review process or other natural resource concerns, please contact your DNR Regional Environmental Assessment Ecologist.

Thank you for consulting on this matter and for your interest in preserving Minnesota's rare natural resources.

Sincerely,

James Drake

Natural Heritage Review Specialist
james.f.drake@state.mn.us

Cc: Jessica Parson, Samantha Bump

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
Phone: (952) 858-0793

In Reply Refer To: 10/08/2025 23:09:51 UTC
Project Code: 2025-0109649
Project Name: ISA Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

This response has been generated by the Information, Planning, and Conservation (IPaC) system to provide information on natural resources that could be affected by your project. The U.S. Fish and Wildlife Service (Service) provides this response under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq.*).

Threatened and Endangered Species
The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance
Please refer to refer to our Section 7 website for guidance and technical assistance, including step-by-step instructions for making effects determinations for each species that might be present and for specific guidance on the following types of projects: projects in developed areas, HUD, CDBG, EDA, USDA Rural Development projects, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

We recommend running the project (if it qualifies) through our **Minnesota-Wisconsin Federal Endangered Species Determination Key (Minnesota-Wisconsin ("D-key"))**. A demonstration video showing how-to access and use the determination key is available. Please note that the Minnesota-Wisconsin D-key is the third option of 3 available d-keys. D-keys are tools to help Federal agencies and other project proponents determine if their proposed action has the potential to adversely affect federally listed species and designated critical habitat. The Minnesota-Wisconsin D-key includes a structured set of questions that assists a project proponent in determining whether a proposed project qualifies for a certain predetermined consultation outcome for all federally listed species found in Minnesota and Wisconsin (except for the northern long-eared bat- see below), which includes determinations of “no effect” or “may affect, not likely to adversely affect." In each case, the Service has compiled and analyzed the best available information on the species’ biology and the impacts of certain activities to support these determinations.

If your completed d-key output letter shows a "No Effect" (NE) determination for all listed species, print your IPaC output letter for your files to document your compliance with the Endangered Species Act.

For Federal projects with a “Not Likely to Adversely Affect” (NLAA) determination, our concurrence becomes valid if you do not hear otherwise from us after a 30-day review period, as indicated in your letter.

If your d-key output letter indicates additional coordination with the Minnesota-Wisconsin Ecological Services Field Office is necessary (i.e., you get a “May Affect” determination), you will be provided additional guidance on contacting the Service to continue ESA coordination outside of the key; ESA compliance cannot be concluded using the key for “May Affect” determinations unless otherwise indicated in your output letter.

Note: Once you obtain your official species list, you are not required to continue in IPaC with d-keys, although in most cases these tools should expedite your review. If you choose to make an effects determination on your own, you may do so. If the project is a Federal Action, you may want to review our section 7 step-by-step instructions before making your determinations.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of “There are no listed species found within the vicinity of the project,” then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **no effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.
2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see below) – then project proponents must determine if proposed activities will have **no effect** on or **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species on our office website. If no impacts will occur to a species on the IPaC species list (e.g., there is no habitat present in the project area), the appropriate determination is **no effect**. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.

3. Should you determine that project activities **may affect** any federally listed, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

Northern Long-Eared Bats
Northern long-eared bats occur throughout Minnesota and Wisconsin and the information below may help in determining if your project may affect these species.

Suitable summer habitat for northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches dbh for northern long-eared bat that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, northern long-eared bats could be affected. For bat activity dates, please review Appendix L in the Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines.

Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas,
- Trees found in highly developed urban areas (e.g., street trees, downtown areas),
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees, and
- A monoculture stand of shrubby vegetation with no potential roost trees.

If IPaC returns a result that northern long-eared bats are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** this species **IF** one or more of the following activities are proposed:

- Clearing or disturbing suitable roosting habitat, as defined above, at any time of year,
- Any activity in or near the entrance to a cave or mine,
- Mining, deep excavation, or underground work within 0.25 miles of a cave or mine,
- Construction of one or more wind turbines, or
- Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on the northern long-eared bat. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC

species list report for your records.

If any of the above activities are proposed, and the northern long-eared bat appears on the user's species list, the federal project user will be directed to either the northern long-eared bat and tricolored bat range-wide D-key or the Federal Highways Administration, Federal Railways Administration, and Federal Transit Administration Indiana bat/Northern long-eared bat D-key, depending on the type of project and federal agency involvement. Similar to the Minnesota-Wisconsin D-key, these d-keys helps to determine if prohibited take might occur and, if not, will generate an automated verification letter. Additional information about available tools can be found on the Service's northern long-eared bat website.

Whooping Crane
Whooping crane is designated as a non-essential experimental population in Wisconsin and consultation under Section 7(a)(2) of the Endangered Species Act is only required if project activities will occur within a National Wildlife Refuge or National Park. If project activities are proposed on lands outside of a National Wildlife Refuge or National Park, then you are not required to consult. For additional information on this designation and consultation requirements, please review "Establishment of a Nonessential Experimental Population of Whooping Cranes in the Eastern United States."

Other Trust Resources and Activities
Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. It is the responsibility of the project proponent to survey the area for any migratory bird nests. If there is an eagle nest on-site while work is on-going, eagles may be disturbed. We recommend avoiding and minimizing disturbance to eagles whenever practicable. If you cannot avoid eagle disturbance, you may seek a permit. A nest take permit is always required for removal, relocation, or obstruction of an eagle nest. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

State Department of Natural Resources Coordination
While it is not required for your Federal section 7 consultation, please note that additional state endangered or threatened species may also have the potential to be impacted. **Please contact the Minnesota or Wisconsin Department of Natural Resources for information on state listed species that may be present in your proposed project area.**

Minnesota
Minnesota Department of Natural Resources - Endangered Resources Review Homepage
Email: Review.NHIS@state.mn.us

Wisconsin
Wisconsin Department of Natural Resources - Endangered Resources Review Homepage
Email: DNRERReview@wi.gov

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
(952) 858-0793

PROJECT SUMMARY

Project Code: 2025-0109649
Project Name: ISA Project
Project Type: Transmission Line - New Constr - Above Ground
Project Description: Transmission Line
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@46.99828875,-92.91115075453897,14z

Counties: Itasca and St. Louis counties, Minnesota

ENDANGERED SPECIES ACT SPECIES

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Canada Lynx *Lynx canadensis* Population: Wherever Found in Contiguous U.S. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3652	Threatened
Gray Wolf *Canis lupus* Population: MN There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4488	Threatened
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened
Suckley's Cuckoo Bumble Bee *Bombus suckleyi* Population: No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10885	Proposed Endangered

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

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1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are Bald Eagles and/or Golden Eagles in your project area.

Measures for Proactively Minimizing Eagle Impacts
For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the National Bald Eagle Management Guidelines. You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to Bald Eagle Nesting and Sensitivity to Human Activity.

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

If disturbance or take of eagles cannot be avoided, an incidental take permit may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the Do I Need A Permit Tool. For assistance making this determination for golden eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

Ensure Your Eagle List is Accurate and Complete
If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

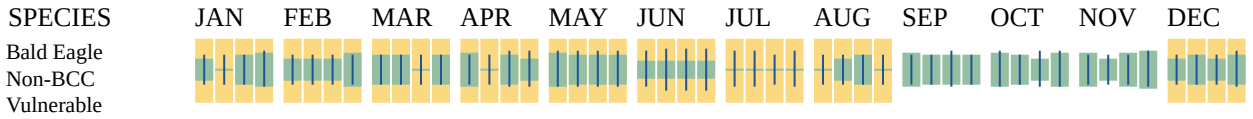
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

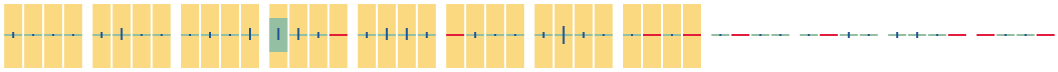
Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

probability of presence breeding season survey effort no data



Golden Eagle
Non-BCC
Vulnerable



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10

NAME	BREEDING SEASON
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9454	Breeds May 20 to Jul 31
Canada Warbler *Cardellina canadensis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9643	Breeds May 20 to Aug 10
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Connecticut Warbler *Oporornis agilis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9442	Breeds Jun 15 to Aug 10
Eastern Whip-poor-will *Antrostomus vociferus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10678	Breeds May 1 to Aug 20
Evening Grosbeak *Coccothraustes vespertinus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9465	Breeds May 15 to Aug 10
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Golden-winged Warbler *Vermivora chrysoptera* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Le Conte's Sparrow *Ammospiza leconteii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9469	Breeds Jun 1 to Aug 15
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere

NAME	BREEDING SEASON
Olive-sided Flycatcher *Contopus cooperi* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Ruddy Turnstone *Arenaria interpres morinella* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/10633	Breeds elsewhere
Veery *Catharus fuscescens fuscescens* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/11987	Breeds May 15 to Jul 15
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9431	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

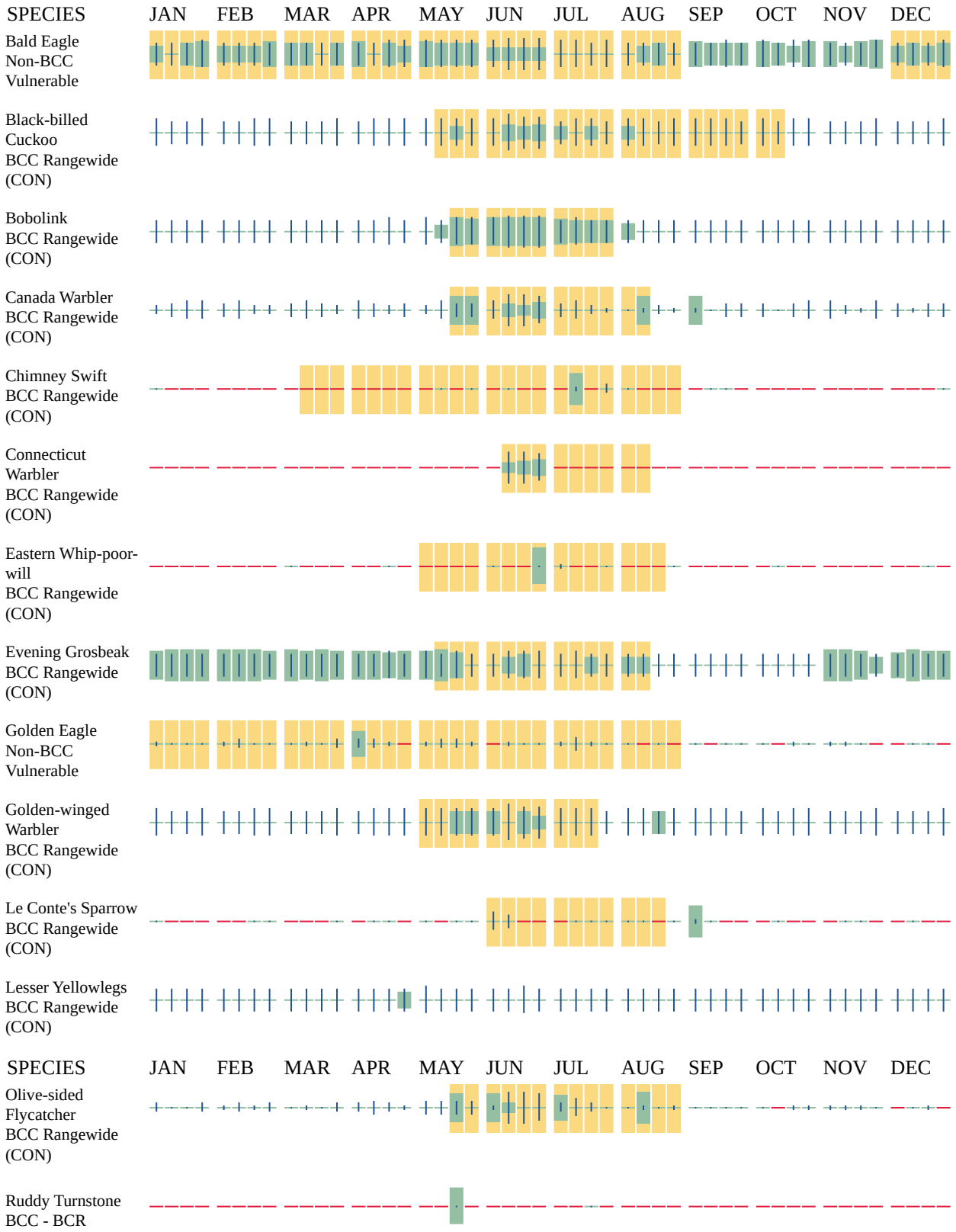
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

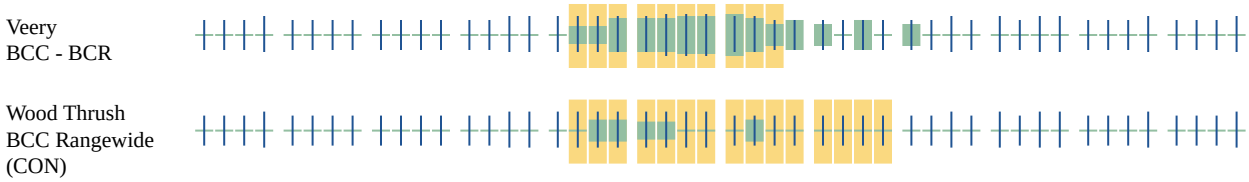
Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

■ probability of presence ■ breeding season | survey effort – no data


SPECIES
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
Bald Eagle
Non-BCC
Vulnerable
Black-billed Cuckoo
BCC Rangewide (CON)
Bobolink
BCC Rangewide (CON)
Canada Warbler
BCC Rangewide (CON)
Chimney Swift
BCC Rangewide (CON)
Connecticut Warbler
BCC Rangewide (CON)
Eastern Whip-poor-will
BCC Rangewide (CON)
Evening Grosbeak
BCC Rangewide (CON)
Golden Eagle
Non-BCC
Vulnerable
Golden-winged Warbler
BCC Rangewide (CON)
Le Conte's Sparrow
BCC Rangewide (CON)
Lesser Yellowlegs
BCC Rangewide (CON)
SPECIES
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
Olive-sided Flycatcher
BCC Rangewide (CON)
Ruddy Turnstone
BCC - BCR



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER FORESTED/SHRUB WETLAND

- PSS2/EM1Dg
- PFO1/EM1D
- PFO1/SS1D
- PSS3/EM1Dg
- PFO2/4D
- PFO1/EM1A
- PSS1/4Dg
- PFO4D
- PSS1/4D
- PSS1Ab
- PSS1/EM1Db
- PSS1/EM1A

- PFO1/4D
- PFO1/SS1A
- PFO4/SS3Dg
- PSS1/EM1D
- PFO1/SS1C
- PFO1Cb
- PFO4/EM1D
- PFO4/SS1D
- PSS2/3Dg
- PSS1/EM1Cb
- PFO4Dg
- PSS3Dg
- PFO1A
- PFO2/SS3Dg
- PFO2/SS1D
- PFO1C
- PSS1C
- PFO1D
- PSS3/4Dg
- PSS1Cx
- PFO1/2D
- PFO2/SS4Dg
- PSS1/2D
- PSS1Cb
- PSS1/3Dg
- PFO2D
- PFO4/EM1Dg
- PSS4Dg
- PFO4/SS1Dg
- PSS1A
- PFO2/SS1Dg
- PFO1/4Dg
- PSS1/EM1C
- PSS2/4Dg
- PFO2/4Dg
- PFO1/EM1C

- PFO2Dg
- PSS1D

FRESHWATER EMERGENT WETLAND

- PEM1D
- PEM1E
- PEM2Hb
- PEM1F
- PEM1C
- PEM1Cd
- PEM1Dd
- PEM1Db
- PEM1Fb
- PEM1Fd
- PEM1Cb
- PEM1A
- PEM1Cx
- PEM2G

RIVERINE

- R4SBC
- R3UBFx
- R2UBG
- R2UBH
- R2UBFx
- R3UBH

FRESHWATER POND

- PUBFx
- PABG
- PUBGx
- PUBF
- PUBHb
- PABH
- PUBH
- PUBG
- PUBGb
- PUBFb
- PABGb

IPAC USER CONTACT INFORMATION

Agency: Private Entity
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State: MN
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LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers

APPENDIX T

IRON RANGE – ST. LOUIS COUNTY – ARROWHEAD 345 KV TRANSMISSION LINE PROJECT

GREENHOUSE GAS CALCULATIONS

Minnesota Power and American Transmission Company, LLC
Iron Range - St. Louis County - Arrowhead 345 kV Transmission Line Project
Construction Emission Calculations
Criteria Pollutant Summary

	Emissions (tons per year) Criteria Pollutants					
Description	**NOx**	**CO**	**VOC**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Off-Road Engine Emissions	12.30	2.98	0.88	0.01	0.48	0.48
Unpaved Roads	--	--	--	--	1.89	0.19
Earthmoving	--	--	--	--	2.07	0.22
TOTAL	**12.30**	**2.98**	**0.88**	**0.01**	**4.45**	**0.89**

Minnesota Power and American Transmission Company, LLC
Iron Range - St. Louis County - Arrowhead 345 kV Transmission Line Project
Construction Emission Calculations
Fugitive Dust Emissions from Unpaved Roads

Equipment	Quantity [a]	Total Days Used	VMT [b]	W	Emission Factor (lb/VMT) [c] PM_{10}	Emission Factor (lb/VMT) [c] $PM_{2.5}$	Emissions (ton/yr) PM_{10}	Emissions (ton/yr) $PM_{2.5}$
ATV	4	240	120	20	1.73	0.17	0.10	0.01
Backhoe	1	120	60	50	2.62	0.26	0.08	0.01
Bulldozer	1	120	60	20	1.73	0.17	0.05	0.01
Fork Lift	2	240	120	20	1.73	0.17	0.10	0.01
Concrete Mixer Truck	2	240	120	20	1.73	0.17	0.10	0.01
Dump Truck	2	240	120	21	1.77	0.18	0.11	0.01
Excavator	1	120	60	22	1.81	0.18	0.05	0.01
Front End Loader	1	120	60	23	1.85	0.18	0.06	0.01
Pickup Truck	20	2,400	1,200	24	1.88	0.19	1.13	0.11
Skid steer loader	1	120	60	26	1.95	0.20	0.06	0.01
Water truck	1	100	50	20	1.73	0.17	0.04	0.00
TOTAL	--	--	--	--	--	--	**1.89**	**0.19**

[a] Equipment counts are estimated based current construction plan.
[b] Each vehicle is assumed to travel 0.5 mile per day on site.
[c] AP-42 Section 13.2.2 Unpaved Roads, dated November 2006, Equations 1a and 2 TOTALS 11.19 1.12 Surface Silt content based on Table 13.2.2 1 construction sites.

Eq 1a: $E = k * (s/12)^a * (W/3)^b$

Eq 2: $E_{ext} = E * [(365-P)/365]$

Constants	PM	PM_{10}	$PM_{2.5}$
k (lb/VMT)	4.9	1.5	0.15
a	0.7	0.9	0.9
b	0.45	0.45	0.45

where:
VMT = Vehicle Miles Traveled
W = Mean Vehicle Weight, tons
S = Mean Vehicle Speed, mph
P = 120 days with at least 0.01 inches rain, EPA's AP-42 Figure 13.2.2-1
s = 8.5 surface material silt content (%) for construction sites, EPA's AP-42 Table 13.2.2-1
E = size-specific emission factor, lb/ VMT
E_{ext} = annual size-specific emission factor extrapolated for natural migration, lb/VMT

Minnesota Power and American Transmission Company, LLC
Iron Range - St. Louis County - Arrowhead 345 kV Transmission Line Project
Construction Emission Calculations
Fugitive Dust Emissions from Earthmoving Activities

Summary of Fugitive Dust Emissions From Earthmoving Activities

Construction Activity	Daily Material Handling: Construction Rate [a] (ton/day)	Daily Material Handling: Handling Time (days)	Average Exposed Area (acres)	Emission Factors [b - f] (lb/ton) PM_{10}	Emission Factors [b - f] (lb/ton) $PM_{2.5}$	Emissions (ton/yr) PM_{10}	Emissions (ton/yr) $PM_{2.5}$
Topsoil removed by scraper [g]	28.0	720	---	0.058	0.0061	0.58	0.06
Topsoil replacement	28.0	720	---	0.012	0.0013	0.12	0.01
Wind erosion of exposed areas	--	720	10.00	0.38	0.03999	1.37	0.14
TOTAL						**2.07**	**0.22**

Notes and Assumptions:

[a] Soil density: 1.25 tons per yard

[b] Trench excavation and loading to storage piles emission factor: AP 42 Section 11.9 Western Surface Coal Mining, Table 11.9 4, July 1998, truck loading by batch dump

[c] Backfilling trench and topsoil replacement emission factor: AP 42 Section 11.9 Western Surface Coal Mining, Table 11.9 4, July 1998, overburden replacement

[d] As worst case, PM_{10} is set equal to Total Particulate Matter. $PM_{2.5}$ is set to 0.105 times PM_{10} per Table 11.9 1

[e] Emission factor: AP 42 Section 11.9 Western Surface Coal Mining, Table 11.9 4, July 1998, topsoil removal by scraper

[f] Wind Erosion Exposed Areas emission factor: AP 42 Section 11.9 Western Surface Coal Mining, Table 11.9 4, July 1998, wind erosion of exposed areas (ton/yr/acre)

[g] Assumes the entire workspace is cleared to 1 foot deep, 1.25 tons per cubic yard.

Construction Schedule

Work Hours:	12	7 am - 7 pm
Work Days	6	Monday through Saturday
Hours per week	72	
Crews:	1	
Weeks:	20	
Total Days:	720	

Topsoil Removed by Scraper

County/Facility	Total (Acres)	Soil Volume (yd^3)	Soil Weight (ton)	Daily Material Handling Rate (ton/day)
Facility 1	5	8,067	10,083	14
Facility 2	5	8,067	10,083	14
Facility 3	0	0	0	0
TOTAL	**10**	**16,133**	**20,167**	**28**

Minnesota Power and American Transmission Company, LLC

Iron Range - St. Louis County - Arrowhead 345 kV Transmission Line Project

Construction Emission Calculations

GHG Summary

	Greenhouse Gas Emissions From Construction Engines			
Description	**CO_2**	**CH_4**	**N_2O**	**CO_2e [a]**
Off-Road Engine Emissions	551.17	0.02	0.00	552.98
Commuters and Delivery Vehicles	118.75	0.00	0.00	118.75
Land Use Change[b]	604.80	0.00	0.00	604.80
TOTAL	**1274.72**	**0.02**	**0.00**	**1276.53**

[a] CO_2e = carbon dioxide equivalent. Includes global warming potentials from 40 CFR 98 Table A-1.

[b] Impacts from land use change were calculated using the climate calculator prepared by the Minnesota Environmental Quality Board.

Global Warming Potentials		
CO_2	**CH_4**	**N_2O**
1	28	265

Source: 40 CFR 98 Table A-1: https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-98#Table-A-1-to-Subpart-A-of-Part-98

Minnesota Power and American Transmission Company, LLC
Iron Range - St. Louis County - Arrowhead 345 kV Transmission Line Project
Construction Emission Calculations
Emission Factors for Construction Engines

Equipment	Quantity [a]	Hours per Day	Days per Week	Number of Weeks	Total Hours Used [b]	Max Power (HP)	Load Factor [c]	Loaded Power (HP)	Emission Factors [d,e] (g/hp hr) CO_2	CH_4	N_2O
Air Compressor	4	6	6	20	2,880	80	1	80	188.262	0.008	0.002
ATV	4	3	3	20	720	20	0.5	10	188.262	0.008	0.002
Backhoe	1	6	6	20	720	75	0.8	60	188.262	0.008	0.002
Bulldozer	1	3	6	20	360	250	1	250	188.262	0.008	0.002
Compactor	0			20	0	300	1	300	188.262	0.008	0.002
Compactor, Vibratory	0			20	0	100	1	100	188.262	0.008	0.002
Fork Lift	2	6	6	20	1,440	120	1	120	188.262	0.008	0.002
Concrete Mixer Truck	2	6	6	20	1,440	325	1	325	188.262	0.008	0.002
Concrete Pump	1	6	3	20	360	300	1	300	188.262	0.008	0.002
Dump Truck	2	8	6	20	1,920	325	0.8	260	188.262	0.008	0.002
Excavator	1	6	6	20	720	138	1	138	188.262	0.008	0.002
Front End Loader	1	5	6	20	600	196	1	196	188.262	0.008	0.002
Generator	2	5	6	20	1,200	250	0.5	125	188.262	0.008	0.002
Guided Bore Machine	0			20	0	150	0.8	120	188.262	0.008	0.002
Light Tower	0			20	0	50	1	50	188.262	0.008	0.002
Manlift	0			20	0	50	1	50	188.262	0.008	0.002
Pickup Truck	20	3	6	20	7,200	150	0.25	38	188.262	0.008	0.002
Piping Truck	0			20	0	300	1	300	188.262	0.008	0.002
Skid steer loader	1	6	6	20	720	50	1	50	188.262	0.008	0.002
Water truck	1	6	5	20	600	100	0.5	50	188.262	0.008	0.002
Welding machine	0			20	0	35	0.8	28	188.262	0.008	0.002
Grader	1	6	6	20	720	35	0.8	28	188.262	0.008	0.002
Large Crane	1	6	6	20	720	15	0.21	3	188.262	0.008	0.002
Medium Crane	1	6	6	20	720	450	0.7	315	188.262	0.008	0.002
Fuel Truck	1	6	6	20	720	200	0.59	118	188.262	0.008	0.002
Hydrovac Truck	0			20	0	200	0.59	118	188.262	0.008	0.002
Road Bore Machine	0			20	0	260	0.79	205	188.262	0.008	0.002
Pile Driver	0			20	0	49	1	49	188.262	0.008	0.002
100 HP Tractor	1	6	6	20	720	100	0.21	100	188.262	0.008	0.002
Semitruck/Trailer	1	3	6	20	360	500	0.59	500	188.262	0.008	0.002
Light Tower	0			20	0	50	1	50	188.262	0.008	0.002

[a] Equipment counts based on experience with construction of a similar project.
[b] Generally assumes work will occur 7 am - 7 pm, Monday through Saturday, for a total of 72 work hours per week over 16 weeks
[c] Load Factors from Appendix A of EPA 420_P 04 005, Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling , USEPA, April 2004.
[d] EPA 420 P 04 009, Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling Compression Ignition, USEPA, April 2004 Tier 2 Engines.
[e] GHG emission factors from Title 40 Subchapter C Part 98 Subpart C Table C-1 and C-2 to Subpart C.

Assumption:

393.5 hp-hr/MMBtu
453.6 g/lb

Minnesota Power and American Transmission Company, LLC
Iron Range - St. Louis County - Arrowhead 345 kV Transmission Line Project
Construction Emission Calculations
Emission Estimates from Construction Engines

	Potential Emissions (ton/yr)									
Equipment	**VOC**	**CO**	**NOx**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Air Compressor	9.33E-02	0.601	1.194	0.061	0.061	0.001	47.81	1.9E-03	3.9E-04	47.97
ATV	3.48E-03	0.017	0.035	0.002	0.002	0.000	1.49	6.1E-05	1.2E-05	1.50
Backhoe	1.75E-02	0.113	0.224	0.011	0.011	0.000	8.97	3.6E-04	7.3E-05	8.99
Bulldozer	3.06E-02	0.074	0.397	0.013	0.013	0.000	18.68	7.6E-04	1.5E-04	18.74
Compactor	0.00E+00	0.000	0.000	0.000	0.000	0.000	0.00	0.0E+00	0.0E+00	0.00
Compactor, Vibratory	0.00E+00	0.000	0.000	0.000	0.000	0.000	0.00	0.0E+00	0.0E+00	0.00
Fork Lift	3.18E-02	0.160	0.826	0.025	0.025	0.000	35.86	1.5E-03	2.9E-04	35.98
Concrete Mixer Truck	1.75E-01	0.447	2.115	0.093	0.093	0.001	97.12	3.9E-03	7.9E-04	97.44
Concrete Pump	4.03E-02	0.103	0.488	0.021	0.021	0.000	22.41	9.1E-04	1.8E-04	22.49
Dump Truck	1.86E-01	0.477	2.256	0.099	0.099	0.001	103.60	4.2E-03	8.4E-04	103.94
Excavator	3.38E-02	0.082	0.438	0.014	0.014	0.000	20.62	8.4E-04	1.7E-04	20.69
Front End Loader	4.00E-02	0.097	0.519	0.017	0.017	0.000	24.40	9.9E-04	2.0E-04	24.48
Generator	2.76E-02	0.139	0.717	0.022	0.022	0.000	31.13	1.3E-03	2.5E-04	31.23
Guided Bore Machine	0.00E+00	0.000	0.000	0.000	0.000	0.000	0.00	0.0E+00	0.0E+00	0.00
Light Tower	0.00E+00	0.000	0.000	0.000	0.000	0.000	0.00	0.0E+00	0.0E+00	0.00
Manlift	0.00E+00	0.000	0.000	0.000	0.000	0.000	0.00	0.0E+00	0.0E+00	0.00
Pickup Truck	4.97E-02	0.251	1.290	0.039	0.039	0.001	56.03	2.3E-03	4.5E-04	56.22
Piping Truck	0.00E+00	0.000	0.000	0.000	0.000	0.000	0.00	0.0E+00	0.0E+00	0.00
Skid steer loader	1.22E-02	0.030	0.159	0.005	0.005	0.000	7.47	3.0E-04	6.1E-05	7.50
Water truck	2.11E-02	0.078	0.155	0.008	0.008	0.000	6.23	2.5E-04	5.0E-05	6.25
Welding machine	0.00E+00	0.000	0.000	0.000	0.000	0.000	0.00	0.0E+00	0.0E+00	0.00
Grader	9.73E-03	0.048	0.099	0.006	0.006	0.000	4.18	1.7E-04	3.4E-05	4.20
Large Crane	1.10E-03	0.005	0.011	0.001	0.001	0.000	0.47	1.9E-05	3.8E-06	0.47
Medium Crane	7.71E-02	0.187	1.000	0.033	0.032	0.001	47.07	1.9E-03	3.8E-04	47.22
Fuel Truck	2.89E-02	0.070	0.375	0.012	0.012	0.000	17.63	7.2E-04	1.4E-04	17.69
Hydrovac Truck	0.00E+00	0.000	0.000	0.000	0.000	0.000	0.00	0.0E+00	0.0E+00	0.00
Road Bore Machine	0.00E+00	0.000	0.000	0.000	0.000	0.000	0.00	0.0E+00	0.0E+00	0.00
6-inch Water Pump	0.00E+00	0.000	0.000	0.000	0.000	0.000	0.00	0.0E+00	0.0E+00	0.00
4-inch Water Pump.	0.00E+00	0.000	0.000	0.000	0.000	0.000	0.00	0.0E+00	0.0E+00	0.00
2-inch Water Pump	0.00E+00	0.000	0.000	0.000	0.000	0.000	0.00	0.0E+00	0.0E+00	0.00
Light Tower	0.00E+00	0.000	0.000	0.000	0.000	0.000	0.00	0.0E+00	0.0E+00	0.00
TOTAL	**0.88**	**2.98**	**12.30**	**0.48**	**0.48**	**0.01**	**551.17**	**2.2E-02**	**4.5E-03**	**552.98**

Global Warming Potentials		
CO_2	**CH_4**	**N_2O**
1	28	265

Source: Title 40 Part 98 Table A-1.

Minnesota Power and American Transmission Company, LLC

Iron Range - St. Louis County - Arrowhead 345 kV Transmission Line Project

Construction Emission Calculations

Greenhouse Gas Emissions from On Road Construction Traffic

On-Road Vehicles					
	Vehicles per day	**Miles per vehicle**	**Number of Days**	**Fuel Used (gallons)**	**CO_2 Emissions [a] (tons)**
Commuter Vehicles - Gasoline [b,c]	20	60	120	6,000	58.78
Delivery Trucks - Diesel [d]	1	60	120	1,108	12.43
Concrete Mixer Trucks - Diesel [e]	2	60	120	4,235	47.54
TOTAL					**118.75**

[a] Assumes 1 gallon of gasoline = 8,887 grams CO_2 and 1 gallon of diesel = 10,180 g CO_2, per US EPA's "Greenhouse Gas Emissions from a Typical Passenger Vehicle," available online at: https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100U8YT.pdf

[b] Assumes commuters travel 30 miles each way (60 miles round trip) per day, with a fuel economy of 24 miles per gallon, per US EPA and US Department of Energy Fuel Economy data for combined city and highway driving in 2023, available online at: https://www.fueleconomy.gov/feg/download.shtml.

[c] Assumes commuters will travel for 5 months, 6 days a week.

[d] Assumes delivery trucks travel 30 miles each way (60 miles round trip) per day, with a fuel economy of 6.5 miles per gallon, industry average.

[e] Assumes concrete mixer trucks travel 30 miles each way (60 miles round trip) per day, with a fuel economy of 3.4 miles per gallon, industry average.
http://ascpro0.ascweb.org/archives/cd/2012/paper/CPRT221002012.pdf#:~:text=The%20National%20Ready%20Mix%20Concrete%20Association%20%28NRMCA%29%20in,average%203.4%20miles%20per%20gallon%20of%20diesel%20fuel.

1 short ton =	907,185	grams
1 gal gasoline =	8,887	g CO2
1 gal diesel =	10,182	g CO2

Commuter Vehicle MPG=	24
Delivery Trucks (Diesel) MPG=	6.5
Concrete Mixer Truck MPG=	3.4

APPENDIX U

IRON RANGE – ST. LOUIS COUNTY – ARROWHEAD 345 KV TRANSMISSION LINE PROJECT

ENVIRONMENTAL IMPACT TABLES

IRON RANGE – ST. LOUIS COUNTY – ARROWHEAD 345 kV TRANSMISSION PROJECT
ENVIRONMENTAL IMPACT TABLES

	Route				Centerline / Right-of-way			
Worksheet / Row Type / Row Label	**Segment 1**	**Segment 2**	**Segment 3**	**Total Segment 1 & 2 & 3**	**TOTAL Segment 1**	**TOTAL Segment 2**	**TOTAL Segment 3**	**Total Segment 1 & 2 & 3**
01.Length ACRES Greenfield								
Summary								
AREA (acres)	5,108.4	7,833.2	399.2	13,340.8	557.2	610.5	21.3	1,189.0
LENGTH (Mile)	0.0	0.0	0.0	0.0	32.7	33.6	1.2	67.5
Total Distance Brown vs Greenfield (miles)								
Following existing / Replacing existing	0.0	0.0	0.0	0.0	28.5	33.3	0.7	62.5
Greenfield	0.0	0.0	0.0	0.0	4.2	0.0	0.8	5.0
Total Percentage Brown vs Greenfield								
Following existing / Replacing existing	0.0%	0.0%	0.0%	0.0%	42.2%	49.3%	1.0%	92.6%
Greenfield	0.0%	0.0%	0.0%	0.0%	6.2%	0.0%	1.2%	7.4%
Total Distance (miles) of greenfield that follows existing infrastructure (not HVTL)								
Follows Sub-transmission 69kV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Follows Sub-transmission Roadway	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Total Percentage of greenfield that follows existing infrastructure (not HVTL)								
Follows Sub-transmission 69kV	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Follows Sub-transmission Roadway	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
ROW Breakdown Details (miles)								
Crossover (one side to other)	0.0	0.0	0.0	0.0				
Replace Existing HVTL	0.0	0.0	0.0	0.0	0.0	33.3	0.0	33.3
Follows existing HVTL	0.0	0.0	0.0	0.0	28.5	0.0	0.7	29.2
Follows Sub-transmission 69kV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Greenfield (follows no linear features)	0.0	0.0	0.0	0.0	4.2	0.0	0.8	5.0
Greenfield Parcel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Greenfield Roadway	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
02.Structures and Features								
Residential structures within 1000ft of Centerline (count)								
0 - 75ft	0	0	0	0	0	0	0	0
75 - 150ft	0	0	0	0	0	1	0	1
150 - 300ft	0	0	0	0	3	11	0	14
300 - 500ft	0	0	0	0	2	14	0	16
500 - 1000ft	0	0	0	0	13	53	1	67
Total	**0**	**0**	**0**	**0**	**18**	**79**	**1**	**98**
Non-Residential Structures within 1000ft of Centerline (count)								
0 - 75ft	0	0	0	0	0	2	0	2
75 - 150ft	0	0	0	0	0	3	0	3
150 - 300ft	0	0	0	0	1	26	0	27
300 - 500ft	0	0	0	0	1	26	0	27
500 - 1000ft	0	0	0	0	48	132	0	180
Total	**0**	**0**	**0**	**0**	**50**	**189**	**0**	**239**
Total Structures within the Proposed Route (count)								
Residential	9	72	0	81	0	0	0	0
Non-Residential	18	175	0	193	0	0	0	0
Total	**27**	**247**	**0**	**274**	**0**	**0**	**0**	**0**
03.SSURGO SOIL Map Unit								
Summary								
AREA (acres)	5,108.4	7,833.2	399.2	13,340.8	557.2	610.5	21.3	1,189.0
LENGTH (Mile)	0.0	0.0	0.0	0.0	32.7	33.6	1.2	67.5
SSURGO Soil Type by Route or ROW (Acres)								
Ahmeek-Aldenlake complex, 18 to 45 percent slopes	0.0	84.8	73.9	158.6	0.0	6.4	0.0	6.4
Ahmeek-Canosia complex, 0 to 45 percent slopes	0.0	20.7	0.0	20.7	0.1	0.2	0.3	0.4

	Route				Centerline / Right-of-way			
Worksheet / Row Type / Row Label	Segment 1	Segment 2	Segment 3	Total Segment 1 & 2 & 3	TOTAL Segment 1	TOTAL Segment 2	TOTAL Segment 3	Total Segment 1 & 2 & 3
Ahmeek-Normanna-Canosia complex, 0 to 18 percent slopes	0.0	236.3	0.0	236.3	0.0	19.5	0.0	19.5
Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0 to 25 percent slopes	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
Alborn-Sax complex, 0 to 2 percent slopes	35.1	15.0	0.0	50.2	5.7	2.7	0.0	8.3
Aldenlake sandy loam, 0 to 3 percent slopes	0.0	141.9	0.0	141.9	0.0	13.6	0.0	13.6
Aldenlake sandy loam, 2 to 8 percent slopes	0.0	48.3	43.2	91.5	0.0	2.8	5.5	8.3
Aldenlake sandy loam, 8 to 18 percent slopes	0.0	84.5	0.0	84.5	0.0	1.4	0.0	1.4
Aldenlake-Ahmeek complex, 8 to 18 percent slopes	0.0	53.0	109.3	162.3	0.0	3.1	5.1	8.2
Aldenlake-Pequaywan complex, 0 to 6 percent slopes	0.0	58.5	0.0	58.5	0.0	0.1	0.0	0.1
Aldenlake-Pequaywan complex, pitted, 0 to 18 percent slopes	0.0	246.2	0.0	246.2	0.0	17.3	0.0	17.3
Aldenlake-Pequaywan complex, pitted, 0 to 45 percent slopes	0.0	34.5	0.0	34.5	0.0	2.2	0.0	2.2
Aldenlake-Pequaywan complex, pitted, 0 to 8 percent slopes	0.0	183.0	0.0	183.0	0.0	5.0	0.0	5.0
Baden muck, depressional, 0 to 1 percent slopes	0.0	185.5	0.0	185.5	0.0	15.7	0.0	15.7
Baudette-Littleswan complex, 0 to 6 percent slopes	0.0	46.8	0.0	46.8	0.0	2.1	0.0	2.1
Blackhoof-Cathro-Baden complex, depressional, 0 to 1 percent slopes	0.0	103.2	0.0	103.2	0.0	14.1	0.0	14.1
Bowstring and Fluvaquents, loamy, 0 to 2 percent slopes, frequently flooded	42.2	248.1	23.8	314.1	6.1	15.3	1.1	22.6
Canosia loam, 0 to 2 percent slopes	0.0	84.9	13.3	98.2	0.0	6.9	1.4	8.3
Cathro muck, depressional, 0 to 1 percent slopes	0.0	5.2	0.0	5.2	0.0	0.8	0.0	0.8
Cathro muck, depressional, dense substratum, 0 to 1 percent slopes	0.0	108.5	2.4	110.9	0.0	9.1	0.0	9.1
Cathro muck, depressional, duluth catena, 0 to 1 percent slopes	0.0	52.9	0.0	52.9	0.0	8.6	0.0	8.6
Cathro muck, occasionally ponded, 0 to 1 percent slopes	69.1	0.0	0.0	69.1	3.1	0.0	0.0	3.1
Cedar Valley-Cowhorn-Onega complex, 0 to 5 percent slopes	232.9	0.0	0.0	232.9	22.3	0.0	0.0	22.3
Cowhorn-Onega-Sago, frequently ponded complex, 0 to 3 percent slopes	860.1	0.0	0.0	860.1	79.5	0.0	0.0	79.5
Cromwell fine sandy loam, 10 to 25 percent slopes	10.9	0.0	0.0	10.9	3.1	0.0	0.0	3.1
Culver-Dusler-Ellsburg complex, 0 to 8 percent slopes	0.0	268.3	0.0	268.3	0.0	30.3	0.0	30.3
Cutaway loamy sand, 0 to 8 percent slopes	182.9	0.0	0.0	182.9	28.6	0.0	0.0	28.6
Dinham-Duluth complex, 8 to 18 percent slopes	0.0	7.3	0.0	7.3	0.0	1.9	0.0	1.9
Dinham-Dusler complex, 1 to 8 percent slopes	0.0	101.4	0.0	101.4	0.0	3.7	0.0	3.7
Duluth-Culver complex, 3 to 18 percent slopes	0.0	8.1	0.0	8.1	0.0	0.6	0.0	0.6
Duluth-Culver-Cathro, depressional, complex, 0 to 18 percent slopes	0.0	47.6	0.0	47.6	0.0	5.7	0.0	5.7
Duluth-Duluth, coarse substratum, complex, 18 to 45 percent slopes	0.0	6.6	0.0	6.6	0.0	0.0	0.0	0.0
Duluth-Duluth, coarse substratum-Ellsburg complex, 0 to 18 percent slopes	0.0	58.2	0.0	58.2	0.0	2.2	0.0	2.2
Dusler-Ellsburg complex, 0 to 3 percent slopes	0.0	243.6	0.0	243.6	0.0	23.1	0.0	23.1
Ellsburg-Baden complex, 0 to 2 percent slopes	0.0	160.6	0.0	160.6	0.0	28.0	0.0	28.0
Eutrudepts-Fluvaquents complex, 0 to 8 percent slopes, flooded	49.2	0.0	0.0	49.2	6.4	0.0	0.0	6.4
Fluvaqents-Eutrudepts-Udifluvents complex, 0 to 35 percent slopes, flooded	4.9	0.0	0.0	4.9	0.8	0.0	0.0	0.8
Fluvaquents-Eutrudepts-Udifluvents complex, 0 to 18 percent slopes, flooded	59.1	29.9	0.0	89.0	2.0	1.0	0.0	3.0
Giese muck, 0 to 2 percent slopes, rubbly	0.0	31.1	0.0	31.1	0.0	2.1	0.0	2.1
Giese muck, depressional, 0 to 1 percent slope	0.0	106.3	0.0	106.3	0.0	11.2	0.0	11.2
Giese muck, depressional, 0 to 1 percent slopes	0.0	5.0	0.1	5.1	0.0	0.0	0.0	0.0
Gowan-Alborn-Sax complex, 0 to 2 percent slopes	55.6	110.3	0.0	165.9	0.6	2.2	0.0	2.8

	Route				Centerline / Right-of-way			
Worksheet / Row Type / Row Label	Segment 1	Segment 2	Segment 3	Total Segment 1 & 2 & 3	TOTAL Segment 1	TOTAL Segment 2	TOTAL Segment 3	Total Segment 1 & 2 & 3
Grayling-Cromwell complex, 18 to 45 percent slopes	0.0	31.7	0.0	31.7	0.0	3.5	0.0	3.5
Grayling-Cromwell complex, 2 to 8 percent slopes	0.0	10.8	0.0	10.8	0.0	1.3	0.0	1.3
Grayling-Cromwell complex, 8 to 18 percent slopes	0.0	11.1	0.0	11.1	0.0	0.0	0.0	0.0
Grayling-Grytal-Cromwell complex, pitted, 0 to 18 percent slopes	0.0	13.9	0.0	13.9	0.0	1.2	0.0	1.2
Grayling-Grytal-Cromwell complex, pitted, 0 to 8 percent slopes	0.0	67.0	0.0	67.0	0.0	6.7	0.0	6.7
Greenwood soils, 0 to 1 percent slopes	0.0	2.1	0.0	2.1	0.0	15.5	0.0	15.5
Greenwood soils, dense substratum, 0 to 1 percent slopes	0.0	201.6	0.0	201.6	0.0	0.0	0.0	0.0
Greenwood soils, duluth catena, 0 to 1 percent slopes	0.0	322.4	0.0	322.4	0.0	15.5	0.0	15.5
Greenwood-Greenwood, ponded, complex, 0 to 1 percent slopes	603.4	0.0	0.0	603.4	69.0	0.0	0.0	69.0
Grytal sandy loam, 0 to 3 percent slopes	0.0	124.5	0.0	124.5	0.0	3.2	0.0	3.2
Hegberg-Eldes complex, 0 to 3 percent slopes	0.0	28.9	0.0	28.9	0.0	2.2	0.0	2.2
Hellwig-Ellsburg-Baden, depressional, complex, 0 to 2 percent slopes	0.0	9.7	0.0	9.7	0.0	1.9	0.0	1.9
Hermantown silt loam, 1 to 3 percent slopes	0.0	50.6	0.0	50.6	0.0	0.0	0.0	0.0
Hermantown-Canosia-Giese, depressional, complex, 0 to 3 percent slopes	0.0	516.1	3.0	519.1	0.0	33.6	0.0	33.6
Hulligan fine sandy loam, 0 to 1 percent slopes	0.0	0.8	0.0	0.8	0.0	0.0	0.0	0.0
Hulligan mucky fine sandy loam, depressional, 0 to 1 percent slopes	0.0	28.2	0.0	28.2	0.0	0.7	0.0	0.7
Itasca silt loam, 1 to 10 percent slopes	406.6	0.0	0.0	406.6	60.8	0.0	0.0	60.8
Itasca-Goodland silt loams, 12 to 25 percent slopes	133.2	0.0	0.0	133.2	14.6	0.0	0.0	14.6
Itasca-Goodland silt loams, 2 to 12 percent slopes	264.5	0.0	0.0	264.5	38.6	0.0	0.0	38.6
Kapla, depressional-Wabuse complex, 0 to 2 percent slopes	79.2	109.1	0.0	188.4	2.2	0.0	0.0	2.2
Lahti-Gowan-Littleswan complex, 1 to 3 percent slopes	0.0	23.7	0.0	23.7	0.0	0.0	0.0	0.0
Littleswan silt loam, 0 to 3 percent slopes	0.0	24.0	0.0	24.0	0.0	0.7	0.0	0.7
Lobo-Waskish complex, 0 to 2 percent slopes	0.0	445.5	0.0	445.5	0.0	67.2	0.0	67.2
Melrude-Schisler-Baden, depressional, complex, 0 to 2 percent slopes	0.0	20.9	0.0	20.9	0.0	2.3	0.0	2.3
Merwin peat, dense substratum, 0 to 1 percent slopes	0.0	8.8	0.0	8.8	0.0	0.3	0.0	0.3
Merwin peat, duluth catena, 0 to 1 percent slopes	0.0	48.4	0.0	48.4	0.0	2.0	0.0	2.0
Merwin peat, upham basin, 0 to 1 percent slopes	44.3	153.6	0.0	197.9	2.5	6.2	0.0	8.7
Mooselake and Lupton soils, 0 to 1 percent slopes	220.2	0.0	0.0	220.2	15.1	0.0	0.0	15.1
Normanna-Aldenlake-Canosia complex, 0 to 8 percent slopes	0.0	378.6	15.4	394.0	0.0	26.9	0.0	26.9
Normanna-Canosia-Hermantown complex, 0 to 8 percent slopes	0.0	763.7	66.8	830.5	0.0	51.8	4.8	56.6
Normanna-Giese, depressional, complex, pitted, 0 to 8 percent slopes	0.0	75.5	0.0	75.5	0.0	4.4	0.0	4.4
Onega-Kapla, frequently ponded complex, 0 to 1 percent slope	276.0	0.0	0.0	276.0	19.4	0.0	0.0	19.4
Pengilly-Winterfield association	10.9	0.0	0.0	10.9	1.0	0.0	0.0	1.0
Pequaywan fine sandy loam, 0 to 3 percent slopes	0.0	29.0	0.0	29.0	0.0	2.5	0.0	2.5
Pits, gravel-Udipsamments complex	0.0	88.3	14.2	102.5	0.0	11.3	0.0	11.3
Rifle soils, 0 to 1 percent slopes	0.0	57.7	0.0	57.7	0.0	6.9	0.0	6.9
Rifle soils, dense substratum, 0 to 1 percent slopes	0.0	252.2	0.0	252.2	0.0	16.2	0.0	16.2
Rifle soils, duluth catena, 0 to 1 percent slopes	0.0	54.0	0.0	54.0	0.0	6.0	0.0	6.0
Rifle-Rifle, ponded, complex, 0 to 1 percent slopes	160.0	0.0	0.0	160.0	19.2	0.0	0.0	19.2
Rollins sandy loam, 18 to 45 percent slopes	0.0	10.2	0.0	10.2	0.0	0.8	0.0	0.8
Rollins sandy loam, 8 to 18 percent slopes	0.0	30.5	1.7	32.1	0.0	0.0	0.8	0.8
Rollins-Pequaywan complex, pitted, 0 to 45 percent slopes	0.0	30.7	0.0	30.7	0.0	1.6	0.0	1.6
Sago and Roscommon soils	2.2	0.0	0.0	2.2	0.0	0.0	0.0	0.0

	Route				Centerline / Right-of-way			
Worksheet / Row Type / Row Label	**Segment 1**	**Segment 2**	**Segment 3**	**Total Segment 1 & 2 & 3**	**TOTAL Segment 1**	**TOTAL Segment 2**	**TOTAL Segment 3**	**Total Segment 1 & 2 & 3**
Sago muck, 0 to 1 percent slopes, frequently ponded	257.9	0.0	0.0	257.9	33.0	0.0	0.0	33.0
Sandwick loamy fine sand	21.8	0.0	0.0	21.8	2.5	0.0	0.0	2.5
Sax, frequently ponded-Spooner complex, 0 to 1 percent slopes	0.0	25.2	0.0	25.2	0.0	0.0	0.0	0.0
Schisler-Ellsburg-Baden, depressional, complex, 0 to 2 percent slopes	0.0	358.0	0.0	358.0	0.0	10.9	0.0	10.9
Seelyeville-Bowstring association	4.5	0.0	0.0	4.5	0.0	0.0	0.0	0.0
Seelyeville-Seelyeville, ponded, complex, 0 to 1 percent slopes	9.2	0.0	0.0	9.2	1.5	0.0	0.0	1.5
Spidercreek sandy loam, 0 to 1 percent slopes	0.0	2.8	0.0	2.8	0.0	0.0	0.0	0.0
Spooner-Littleswan complex, 0 to 2 percent slopes	0.0	30.6	0.0	30.6	0.0	0.0	0.0	0.0
Stuntz very fine sandy loam	223.0	0.0	0.0	223.0	28.7	0.0	0.0	28.7
Tacoosh mucky peat, 0 to 1 percent slopes	0.0	40.0	0.0	40.0	0.0	1.7	0.0	1.7
Tacoosh mucky peat, dense substratum, 0 to 1 percent slopes	0.0	26.4	12.4	38.7	0.0	3.1	2.6	5.7
Tacoosh mucky peat, duluth catena, 0 to 1 percent slopes	0.0	23.2	0.0	23.2	0.0	3.7	0.0	3.7
Tacoosh mucky peat, upham basin, 0 to 1 percent slopes	510.3	7.3	0.0	517.6	58.5	2.3	0.0	60.9
Talmoon silt loam	9.4	0.0	0.0	9.4	2.1	0.0	0.0	2.1
Twig-Tacoosh-Giese complex, depressional, 0 to 1 percent slopes	0.0	5.0	0.0	5.0	0.0	1.4	0.0	1.4
Urban land-Hermantown-Canosia complex, 0 to 3 percent slopes	0.0	0.0	19.6	19.6	0.0	0.0	0.0	0.0
Vasso-Keenan complex, 1 to 6 percent slopes	16.5	0.0	0.0	16.5	2.6	0.0	0.0	2.6
Wabuse-Vasso-Leeora, depressional, complex, 0 to 3 percent slopes	5.6	0.0	0.0	5.6	0.0	0.0	0.0	0.0
Wahbegon, depressional-Eldes complex, 0 to 2 percent slopes	0.0	6.9	0.0	6.9	0.0	1.6	0.0	1.6
Warba very fine sandy loam, 1 to 8 percent slopes	246.6	0.0	0.0	246.6	27.5	0.0	0.0	27.5
Water	0.0	57.6	0.0	57.6	0.0	1.4	0.0	1.4
Wawina-Cedar Valley complex, 1 to 18 percent slopes	1.1	0.0	0.0	1.1	0.0	0.0	0.0	0.0
Total Acres	**5,108.4**	**7,833.2**	**399.2**	**13,340.8**	**557.2**	**610.5**	**21.3**	**1,189.0**
04.SSURGO Prime Farm								
Summary	**Segment 1**	**Segment 2**	**Segment 3**	**Total Segment 1 & 2 & 3**	**TOTAL Segment 1**	**TOTAL Segment 2**	**TOTAL Segment 3**	**Total Segment 1 & 2 & 3**
AREA (acres)	5,108.4	7,833.2	399.2	13,340.8	557.2	610.5	21.3	1,189.0
LENGTH (Mile)	0.0	0.0	0.0	0.0	32.7	33.6	1.2	67.5
SSURGO Prime Farmland Soils by length of Centerline (miles)	**Segment 1**	**Segment 2**	**Segment 3**	**Total Segment 1 & 2 & 3**	**TOTAL Segment 1**	**TOTAL Segment 2**	**TOTAL Segment 3**	**Total Segment 1 & 2 & 3**
All areas are prime farmland	0.0	0.0	0.0	0.0	4.9	1.8	0.0	6.6
Farmland of statewide importance	0.0	0.0	0.0	0.0	5.7	9.7	0.6	15.9
Not prime farmland	0.0	0.0	0.0	0.0	20.7	22.2	0.6	43.4
Prime farmland if drained	0.0	0.0	0.0	0.0	1.5	0.0	0.0	1.5
Total	**0.0**	**0.0**	**0.0**	**0.0**	**32.7**	**33.6**	**1.2**	**67.5**
SSURGO Prime Farmland Soils by length of Percent of Centerline	**Segment 1**	**Segment 2**	**Segment 3**	**Total Segment 1 & 2 & 3**	**TOTAL Segment 1**	**TOTAL Segment 2**	**TOTAL Segment 3**	**Total Segment 1 & 2 & 3**
All areas are prime farmland	0.0%	0.0%	0.0%	0.0%	7.2%	2.7%	0.0%	9.8%
Farmland of statewide importance	0.0%	0.0%	0.0%	0.0%	8.4%	14.4%	0.8%	23.6%
Not prime farmland	0.0%	0.0%	0.0%	0.0%	30.6%	32.9%	0.8%	64.3%
Prime farmland if drained	0.0%	0.0%	0.0%	0.0%	2.2%	0.0%	0.0%	2.2%
Total	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**48.4%**	**50.0%**	**1.6%**	**100.0%**
SSURGO Prime Farmland Soils by ROUTE and ROW (acres)	**Segment 1**	**Segment 2**	**Segment 3**	**Total Segment 1 & 2 & 3**	**TOTAL Segment 1**	**TOTAL Segment 2**	**TOTAL Segment 3**	**Total Segment 1 & 2 & 3**
All areas are prime farmland	653.2	315.1		968.3	88.3	32.5	0.0	120.8
Farmland of statewide importance	796.8	2792.4	128.3	3717.5	100.6	175.3	10.3	286.2
Not prime farmland	3435.4	4695.2	270.8	8401.4	339.6	402.8	11.1	753.4
Prime farmland if drained	223.0	30.6		253.6	28.7	0.0	0.0	28.7

	Route				Centerline / Right-of-way			
Worksheet / Row Type / Row Label	**Segment 1**	**Segment 2**	**Segment 3**	**Total Segment 1 & 2 & 3**	**TOTAL Segment 1**	**TOTAL Segment 2**	**TOTAL Segment 3**	**Total Segment 1 & 2 & 3**
Total	**5,108.4**	**7,833.2**	**399.2**	**13,340.8**	**557.2**	**610.5**	**21.3**	**1,189.0**
SSURGO Prime Farmland Soils by length of Percent of Route or ROW								
All areas are prime farmland	4.9%	2.4%	0.0%	7.3%	7.4%	2.7%	0.0%	10.2%
Farmland of statewide importance	6.0%	20.9%	1.0%	27.9%	8.5%	14.7%	0.9%	24.1%
Not prime farmland	25.8%	35.2%	2.0%	63.0%	28.6%	33.9%	0.9%	63.4%
Prime farmland if drained	1.7%	0.2%	0.0%	1.9%	2.4%	0.0%	0.0%	2.4%
Total	**38.3%**	**58.7%**	**3.0%**	**100.0%**	**46.9%**	**51.3%**	**1.8%**	**100.0%**
05.USDA CROP								
Summary								
AREA (acres)	5,108.4	7,833.2	399.2	13,340.8	557.2	610.5	21.3	1,189.0
LENGTH (Mile)	0.0	0.0	0.0	0.0	32.7	33.6	1.2	67.5
USDA 2024 Crop Type Crossed by Route or ROW (acres)	**Segment 1**	**Segment 2**	**Segment 3**	**Total Segment 1 & 2 & 3**	**TOTAL Segment 1**	**TOTAL Segment 2**	**TOTAL Segment 3**	**Total Segment 1 & 2 & 3**
Alfalfa	3.5	8.2	0.0	11.7	0.5	0.2	0.0	0.6
Barren	0.7	5.9	3.8	10.4	0.1	0.2	0.0	0.3
Clover/Wildflowers	7.5	0.0	0.0	7.5	1.6	0.0	0.0	1.6
Corn	60.7	0.0	0.0	60.7	12.5	0.0	0.0	12.5
Deciduous Forest	1185.1	2625.8	196.9	4007.7	131.6	95.6	7.4	234.6
Developed/High Intensity	0.0	0.5	19.7	20.3	0.0	0.0	0.0	0.0
Developed/Low Intensity	10.2	51.3	4.0	65.6	0.4	2.4	0.0	2.9
Developed/Med Intensity	1.2	9.6	3.4	14.2	0.0	1.2	0.0	1.2
Developed/Open Space	50.1	101.6	4.6	156.3	3.7	6.6	0.1	10.4
Evergreen Forest	10.7	101.2	6.1	118.0	0.3	0.2	0.0	0.5
Fallow/Idle Cropland	0.0	0.9	0.0	1.0	0.0	0.0	0.0	0.0
Grassland/Pasture	205.9	534.8	40.1	780.7	29.6	63.9	5.8	99.4
Herbaceous Wetlands	51.5	173.5	2.3	227.3	5.0	39.5	0.3	44.9
Mixed Forest	415.9	345.8	10.8	772.5	32.2	3.4	0.9	36.5
Oats	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Open Water	3.5	48.0	0.1	51.7	0.0	3.3	0.0	3.3
Other Hay/Non Alfalfa	2.6	0.2	0.0	2.8	0.5	0.0	0.0	0.5
Rye	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0
Shrubland	2.4	3.4	0.0	5.8	0.4	2.0	0.0	2.4
Soybeans	0.7	0.2	0.0	0.9	0.0	0.0	0.0	0.0
Spring Wheat	1.7	0.0	0.0	1.7	0.3	0.0	0.0	0.3
Sweet Corn	0.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Woody Wetlands	3094.2	3821.8	107.4	7023.4	338.3	392.0	6.8	737.0
Total Acres	**5,108.4**	**7,833.2**	**399.2**	**13,340.8**	**557.2**	**610.5**	**21.3**	**1,189.0**
USDA 2024 Crop Type Percentage of Route or ROW	**Segment 1**	**Segment 2**	**Segment 3**	**Total Segment 1 & 2 & 3**	**TOTAL Segment 1**	**TOTAL Segment 2**	**TOTAL Segment 3**	**Total Segment 1 & 2 & 3**
Alfalfa	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%
Barren	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Clover/Wildflowers	0.1%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%
Corn	0.5%	0.0%	0.0%	0.5%	1.0%	0.0%	0.0%	1.1%
Deciduous Forest	8.9%	19.7%	1.5%	30.0%	11.1%	8.0%	0.6%	19.7%
Developed/High Intensity	0.0%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%
Developed/Low Intensity	0.1%	0.4%	0.0%	0.5%	0.0%	0.2%	0.0%	0.2%
Developed/Med Intensity	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%
Developed/Open Space	0.4%	0.8%	0.0%	1.2%	0.3%	0.6%	0.0%	0.9%
Evergreen Forest	0.1%	0.8%	0.0%	0.9%	0.0%	0.0%	0.0%	0.0%
Fallow/Idle Cropland	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grassland/Pasture	1.5%	4.0%	0.3%	5.9%	2.5%	5.4%	0.5%	8.4%
Herbaceous Wetlands	0.4%	1.3%	0.0%	1.7%	0.4%	3.3%	0.0%	3.8%
Mixed Forest	3.1%	2.6%	0.1%	5.8%	2.7%	0.3%	0.1%	3.1%
Oats	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Open Water	0.0%	0.4%	0.0%	0.4%	0.0%	0.3%	0.0%	0.3%
Other Hay/Non Alfalfa	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

	Route				Centerline / Right-of-way			
Worksheet / Row Type / Row Label	**Segment 1**	**Segment 2**	**Segment 3**	**Total Segment 1 & 2 & 3**	**TOTAL Segment 1**	**TOTAL Segment 2**	**TOTAL Segment 3**	**Total Segment 1 & 2 & 3**
Rye	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Shrubland	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.2%
Soybeans	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spring Wheat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sweet Corn	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Woody Wetlands	23.2%	28.6%	0.8%	52.6%	28.4%	33.0%	0.6%	62.0%
Total Acres	**38.3%**	**58.7%**	**3.0%**	**100.0%**	**46.9%**	**51.3%**	**1.8%**	**100.0%**
06.NLCD 2021								
Summary								
AREA (acres)	5,108.4	7,833.2	399.2	13,340.8	557.2	610.5	21.3	1,189.0
LENGTH (Mile)	0.0	0.0	0.0	0.0	32.7	33.6	1.2	67.5
NLCD 2021 Category by Centerline (miles)	**Segment 1**	**Segment 2**	**Segment 3**	**Total Segment 1 & 2 & 3**	**TOTAL Segment 1**	**TOTAL Segment 2**	**TOTAL Segment 3**	**Total Segment 1 & 2 & 3**
Barren Land	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cultivated Crops	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4
Deciduous Forest	0.0	0.0	0.0	0.0	7.7	4.7	0.4	12.8
Developed, High Intensity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Developed, Low Intensity	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.3
Developed, Medium Intensity	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Developed, Open Space	0.0	0.0	0.0	0.0	0.4	0.3	0.0	0.7
Emergent Herbaceous Wetlands	0.0	0.0	0.0	0.0	1.7	4.1	0.0	5.9
Evergreen Forest	0.0	0.0	0.0	0.0	0.3	0.2	0.0	0.5
Hay/Pasture	0.0	0.0	0.0	0.0	1.3	1.6	0.3	3.2
Herbaceous	0.0	0.0	0.0	0.0	0.4	0.4	0.1	0.8
Mixed Forest	0.0	0.0	0.0	0.0	3.9	1.1	0.2	5.2
Open Water	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Shrub/Scrub	0.0	0.0	0.0	0.0	0.5	2.2	0.1	2.8
Woody Wetlands	0.0	0.0	0.0	0.0	16.1	18.5	0.1	34.7
Total	**0.0**	**0.0**	**0.0**	**0.0**	**32.7**	**33.6**	**1.2**	**67.5**
NLCD 2021 Category (acres)								
Barren Land	0.0	0.0	0.9	**0.926992**	0	0	0	**0**
Cultivated Crops	47.8	10.9	0.0	**58.692577**	7.3	1.1	0.0	**8.4**
Deciduous Forest	1098.4	1988.5	225.4	**3312.227881**	128.5	92.8	8.7	**230**
Developed, High Intensity	0.6	0.7	17.3	**18.526419**	0.0	0.0	0.0	**0**
Developed, Low Intensity	17.1	74.3	6.1	**97.532608**	1.1	3.4	0.0	**4.5**
Developed, Medium Intensity	2.9	13.6	6.3	**22.741296**	0.0	2.0	0.0	**2**
Developed, Open Space	68.4	107.5	4.0	**179.833955**	6.6	5.6	0.2	**12.4**
Emergent Herbaceous Wetlands	290.3	430.3	1.8	**722.368505**	36.4	66.7	0.0	**103.1**
Evergreen Forest	43.8	270.5	4.3	**318.588027**	3.8	4.9	0.0	**8.7**
Hay/Pasture	166.2	297.8	33.8	**497.821032**	25.6	28.8	5.2	**59.6**
Herbaceous	47.6	71.8	7.8	**127.129519**	9.6	7.5	0.6	**17.7**
Mixed Forest	501.8	511.2	30.7	**1043.716327**	60.2	21.8	4.1	**86.1**
Open Water	2.2	42.2	0.0	**44.41364**	0.0	2.5	0.0	**2.5**
Shrub/Scrub	63.1	119.3	9.6	**191.966376**	11.4	35.8	0.9	**48.1**
Woody Wetlands	2758.2	3894.9	51.2	**6704.315534**	266.8	337.6	1.6	**606**
Total	**5,108.4**	**7,833.2**	**399.2**	**13,340.8**	**557.3**	**610.5**	**21.3**	**1189.1**
NLCD 2021 Category Percentage of Centerline								
Barren Land	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cultivated Crops	0.0%	0.0%	0.0%	0.0%	1.2%	0.0%	0.0%	0.6%
Deciduous Forest	0.0%	0.0%	0.0%	0.0%	23.5%	14.0%	33.3%	19.0%
Developed, High Intensity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Developed, Low Intensity	0.0%	0.0%	0.0%	0.0%	0.3%	0.6%	0.0%	0.4%
Developed, Medium Intensity	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.1%
Developed, Open Space	0.0%	0.0%	0.0%	0.0%	1.2%	0.9%	0.0%	1.0%
Emergent Herbaceous Wetlands	0.0%	0.0%	0.0%	0.0%	5.2%	12.2%	0.0%	8.7%
Evergreen Forest	0.0%	0.0%	0.0%	0.0%	0.9%	0.6%	0.0%	0.7%
Hay/Pasture	0.0%	0.0%	0.0%	0.0%	4.0%	4.8%	25.0%	4.7%

	Route				Centerline / Right-of-way			
Worksheet / Row Type / Row Label	**Segment 1**	**Segment 2**	**Segment 3**	**Total Segment 1 & 2 & 3**	**TOTAL Segment 1**	**TOTAL Segment 2**	**TOTAL Segment 3**	**Total Segment 1 & 2 & 3**
Herbaceous	0.0%	0.0%	0.0%	0.0%	1.2%	1.2%	8.3%	1.2%
Mixed Forest	0.0%	0.0%	0.0%	0.0%	11.9%	3.3%	16.7%	7.7%
Open Water	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.1%
Shrub/Scrub	0.0%	0.0%	0.0%	0.0%	1.5%	6.5%	8.3%	4.1%
Woody Wetlands	0.0%	0.0%	0.0%	0.0%	49.2%	55.1%	8.3%	51.4%
Total	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**100.3%**	**99.7%**	**100.0%**	**100.0%**
NLCD 2021 Category Percentage within Route or ROW								
Barren Land	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Cultivated Crops	0.9%	0.1%	0.0%	0.4%	1.3%	0.2%	0.0%	0.7%
Deciduous Forest	21.5%	25.4%	56.5%	24.8%	23.1%	15.2%	40.8%	19.3%
Developed, High Intensity	0.0%	0.0%	4.3%	0.1%	0.0%	0.0%	0.0%	0.0%
Developed, Low Intensity	0.3%	0.9%	1.5%	0.7%	0.2%	0.6%	0.0%	0.4%
Developed, Medium Intensity	0.1%	0.2%	1.6%	0.2%	0.0%	0.3%	0.0%	0.2%
Developed, Open Space	1.3%	1.4%	1.0%	1.3%	1.2%	0.9%	0.9%	1.0%
Emergent Herbaceous Wetlands	5.7%	5.5%	0.5%	5.4%	6.5%	10.9%	0.0%	8.7%
Evergreen Forest	0.9%	3.5%	1.1%	2.4%	0.7%	0.8%	0.0%	0.7%
Hay/Pasture	3.3%	3.8%	8.5%	3.7%	4.6%	4.7%	24.4%	5.0%
Herbaceous	0.9%	0.9%	1.9%	1.0%	1.7%	1.2%	2.8%	1.5%
Mixed Forest	9.8%	6.5%	7.7%	7.8%	10.8%	3.6%	19.2%	7.2%
Open Water	0.0%	0.5%	0.0%	0.3%	0.0%	0.4%	0.0%	0.2%
Shrub/Scrub	1.2%	1.5%	2.4%	1.4%	2.0%	5.9%	4.2%	4.0%
Woody Wetlands	54.0%	49.7%	12.8%	50.3%	47.9%	55.3%	7.5%	51.0%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
07.Native Vegetation								
Summary								
AREA (acres)	5,108.4	7,833.2	399.2	13,340.8	557.2	610.5	21.3	1,189.0
LENGTH (Mile)	0.0	0.0	0.0	0.0	32.7	33.6	1.2	67.5
Native Vegetation System Description crossed by Route and ROW (acres)								
Acid Peatland System	138.8	442.1	0.0	581.0	19.5	5.3	0.0	24.7
Fire-Dependent Forest/Woodland System	0.0	43.4	0.0	43.4	0.0	0.2	0.0	0.2
Floodplain Forest System	0.0	24.0	0.0	24.0	0.0	0.0	0.0	0.0
Forested Rich Peatland System	176.3	7.2	0.0	183.5	22.8	0.3	0.0	23.1
Mesic Hardwood Forest System	122.8	85.9	0.0	208.7	14.0	4.1	0.0	18.1
Wet Forest System	42.8	2.3	0.0	45.1	9.4	0.1	0.0	9.5
Wet Meadow/Carr System	20.0	5.8	0.0	25.8	2.7	0.5	0.0	3.2
Total	**500.8**	**610.9**	**0.0**	**1,111.5**	**68.3**	**10.5**	**0.0**	**78.8**
Native Vegetation System Description Percentage crossed by Route and ROW								
Acid Peatland System	1.0%	3.3%	0.0%	4.4%	1.6%	0.4%	0.0%	2.1%
Fire-Dependent Forest/Woodland System	0.0%	0.3%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%
Floodplain Forest System	0.0%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%
Forested Rich Peatland System	1.3%	0.1%	0.0%	1.4%	1.9%	0.0%	0.0%	1.9%
Mesic Hardwood Forest System	0.9%	0.6%	0.0%	1.6%	1.2%	0.3%	0.0%	1.5%
Wet Forest System	0.3%	0.0%	0.0%	0.3%	0.8%	0.0%	0.0%	0.8%
Wet Meadow/Carr System	0.2%	0.0%	0.0%	0.2%	0.2%	0.0%	0.0%	0.3%
Total	3.8%	4.6%	0.0%	8.3%	5.7%	0.9%	0.0%	6.6%
08.DNR LANDS								
Summary								
AREA (acres)	5,108.4	7,833.2	399.2	13,340.8	557.2	610.5	21.3	1,189.0
LENGTH (Mile)	0.0	0.0	0.0	0.0	32.7	33.6	1.2	67.5
DNR Managed Lands by Route and ROW (acres)								
Riverlands State Forest	0.0	183.2	0.0	183.2	0.0	9.5	0.0	9.5
Bruce Creek AMA	2.6	0.0	0.0	2.6	0.0	0.6	0.0	0.6
White Pine River AMA	0.0	1.7	0.0	1.7	0.0	0.0	0.0	0.0

	Route				Centerline / Right-of-way			
Worksheet / Row Type / Row Label	**Segment 1**	**Segment 2**	**Segment 3**	**Total Segment 1 & 2 & 3**	**TOTAL Segment 1**	**TOTAL Segment 2**	**TOTAL Segment 3**	**Total Segment 1 & 2 & 3**
Sand Creek AMA	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Land and Water Conservation Fund (LAWCON)	0.0	64.1	0.0	64.1	0.0	3.7	0.0	3.7
Feely Deer Management Area	19.4	0.0	0.0	19.4	3.7	0.0	0.0	3.7
Other State Forest Lands	284.8	474.7	0.1	759.6	42.7	73.0	0.0	115.7
Total	**307.0**	**723.7**	**0.1**	**1,030.8**	**46.4**	**86.8**	**0.0**	**133.2**
DNR Managed Lands Percentage of Route and ROW								
Riverlands State Forest	0.0%	1.4%	0.0%	1.4%	0.0%	0.8%	0.0%	0.8%
Bruce Creek AMA	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%
White Pine River AMA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sand Creek AMA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Land and Water Conservation Fund (LAWCON)	0.0%	0.5%	0.0%	0.5%	0.0%	0.3%	0.0%	0.3%
Feely Deer Management Area	0.1%	0.0%	0.0%	0.1%	0.3%	0.0%	0.0%	0.3%
Other State Forest Lands	2.1%	3.6%	0.0%	5.7%	3.6%	6.1%	0.0%	9.7%
Total	**2.3%**	**5.4%**	**0.0%**	**7.7%**	**3.9%**	**7.3%**	**0.0%**	**11.2%**
09.Trails and Crossing								
Summary								
AREA (acres)	5,108.4	7,833.2	399.2	13,340.8	557.2	610.5	21.3	1,189.0
LENGTH (Mile)	0.0	0.0	0.0	0.0	32.7	33.6	1.2	67.5
Trails Snowmobile crossed by Centerline (count)								
Itasca Trail #1 - Greenway	0	0	0	0	1	0	0	1
Floodwoods/Meadowlands Trails	0	0	0	0	1	0	0	1
Alborn Trails	0	0	0	0	0	2	0	2
Cloquet Trails	0	0	0	0	0	1	0	1
Total	**0**	**0**	**0**	**0**	**2**	**3**	**0**	**5**
MN State Park Trails crossed by Centerline (count)								
St. Louis River	0	0	0	0	1	0	0	1
Cloquet River Trail	0	0	0	0	0	2	0	2
Cloquet-Saginaw State Trail (Saginaw Grade/Lumberjack Multi-use Trail, OHV00081)	0	0	0	0	0	1	0	1
Total	**0**	**0**	**0**	**0**	**1**	**3**	**0**	**4**
OTV Trails crossed by Centerline (count)								
Cloquet-Saginaw State Trail (Saginaw Grade/Lumberjack Multi-use Trail, OHV00081)	0	0	0	0	0	1	0	1
Total	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**
Memorial, Scenic Byway or Highway crossed by Centerline (count)								
County Highways	0	0	0	0	2	1	0	3
MN 33	0	0	0	0	0	2	0	2
MN 65	0	0	0	0	1	0	0	1
MN 73	0	0	0	0	1	0	0	1
US Highway 2	0	0	0	0	0	1	0	1
Total	**0**	**0**	**0**	**0**	**4**	**4**	**0**	**8**
All Roads Crossed (count)								
All Roads Crossed	0	0	0	0	16	16	0	32
10.MCBS								
Summary								
AREA (acres)	5,108.4	7,833.2	399.2	13,340.8	557.2	610.5	21.3	1,189.0
LENGTH (Mile)	0.0	0.0	0.0	0.0	32.7	33.6	1.2	67.5
MCBS Biodiversity Significance sites crossed by Route and ROW (acres)								
Below	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
High	396.6	624.4	0.0	1021.0	48.3	92.0	0.0	140.3
Moderate	1,416.5	1313.2	0.0	2729.7	157.5	112.5	0.0	270.0
Outstanding	337.9	0.0	0.0	337.9	49.0	0.0	0.0	49.0
Total	**2,151.0**	**1,937.6**	**0.0**	**4,088.6**	**254.8**	**204.5**	**0.0**	**459.3**

	Route				Centerline / Right-of-way			
Worksheet / Row Type / Row Label	**Segment 1**	**Segment 2**	**Segment 3**	**Total Segment 1 & 2 & 3**	**TOTAL Segment 1**	**TOTAL Segment 2**	**TOTAL Segment 3**	**Total Segment 1 & 2 & 3**
MCBS Biodiversity Significance sites Percentage crossed by Route and ROW								
Below	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High	7.8%	8.0%	0.0%	7.7%	8.7%	15.1%	0.0%	11.8%
Moderate	27.7%	16.8%	0.0%	20.5%	28.3%	18.4%	0.0%	22.7%
Outstanding	6.6%	0.0%	0.0%	2.5%	8.8%	0.0%	0.0%	4.1%
Total	**42.1%**	**24.7%**	**0.0%**	**30.6%**	**45.7%**	**33.5%**	**0.0%**	**38.6%**
MCSB Site Below Biodiversity Significance within Route or ROW (acres)								
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
MCSB Site Moderate Biodiversity Significance within Route or ROW (acres)								
Blackberry - Warba Peatlands	553.8	0.0	0.0	553.8	59.6	0.0	0.0	59.6
Brevator Woods	0.0	87.7	0.0	87.7	0.0	0.0	0.0	0.0
Floodwood Lake Wetlands	302.6	0.0	0.0	302.6	48.0	0.0	0.0	48.0
Goodland Township Swamp	145.5	0.0	0.0	145.5	22.3	0.0	0.0	22.3
Industrial Peatland	0.0	302.3	0.0	302.3	0.0	19.0	0.0	19.0
McCarty River	0.0	714.1	0.0	714.1	0.0	85.2	0.0	85.2
Toivola Swamp - South	414.7	209.1	0.0	623.8	27.6	8.4	0.0	36.0
Total	**1,416.6**	**1,313.2**	**0.0**	**2,729.8**	**157.5**	**112.6**	**0.0**	**270.1**
MCSB Site High Biodiversity Significance within Route or ROW (acres)								
Arlberg Bog	0.0	624.4	0.0	624.4	0.0	92.0	0.0	92.0
Rosholt Swamp	39.3	0.0	0.0	39.3	0.0	0.0	0.0	0.0
Toivola Swamp	357.3	0.0	0.0	357.3	48.3	0.0	0.0	48.3
Total	**396.6**	**624.4**	**0.0**	**1,021.0**	**48.3**	**92.0**	**0.0**	**140.3**
MCSB Site Outstanding Biodiversity Significance within Route or ROW (acres)								
Pancake Hardwoods and Swamp	337.9	0.0	0.0	337.9	49.0	0.0	0.0	49.0
Total	**337.9**	**0.0**	**0.0**	**337.9**	**49.0**	**0.0**	**0.0**	**49.0**
11.PWI DNR LAKES								
Summary								
AREA (acres)	5,108.4	7,833.2	399.2	13,340.8	557.2	610.5	21.3	1,189.0
LENGTH (Mile)	0.0	0.0	0.0	0.0	32.7	33.6	1.2	67.5
DNR Lakes Crossed by ROW (count)								
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DNR Lakes Crossed by Route and ROW (acres)								
Andy Lake	0.0	0.6	0.0	0.6	0.0	0.0	0.0	0.0
Unnamed Lake	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0
Total	**0.0**	**1.6**	**0.0**	**1.6**	**0.0**	**0.0**	**0.0**	**0.0**
PWI Basin crossed by ROW (count)								
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
PWI Basin crossed by Route and ROW (acres)								
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
PWI Wetlands crossed by Route and ROW (acres)								
Andy Lake	0.0	1.2	0.0	1.2	0.0	0.0	0.0	0.0
Unnamed	0.0	28.0	0.0	28.0	0.0	3.5	0.0	3.5
Total	**0.0**	**29.2**	**0.0**	**29.2**	0.0	**3.5**	0.0	**3.5**
12.PWI Stream crossing CL								
Summary								
LENGTH (Mile)	0.0	0.0	0.0	0.0	32.7	33.6	1.2	67.5
PWI Streams crossed by Centerline (count)								

	Route				Centerline / Right-of-way			
Worksheet / Row Type / Row Label	**Segment 1**	**Segment 2**	**Segment 3**	**Total Segment 1 & 2 & 3**	**TOTAL Segment 1**	**TOTAL Segment 2**	**TOTAL Segment 3**	**Total Segment 1 & 2 & 3**
Artichoke River (S-002-018)	0	0	0	0	0	1	0	1
Bruce Creek (M-128-003)	0	0	0	0	1	0	0	1
Cloquet River (S-002-016)	0	0	0	0	0	1	0	1
Dutch Slough (S-002-014-002)	0	0	0	0	0	1	0	1
Floodwood River (S-002-032)	0	0	0	0	1	0	0	1
Floodwood River, West Branch (S-002-032-007)	0	0	0	0	1	0	0	1
Johnson Creek (S-002-014-002-004)	0	0	0	0	0	1	0	1
Joula Creek (S-002-032-005)	0	0	0	0	2	0	0	2
Judicial Ditch 4	0	0	0	0	0	2	0	2
Pine River (S-002-014)	0	0	0	0	0	1	0	1
Sand Creek (M-128-010)	0	0	0	0	1	0	0	1
St. Louis River (S-002)	0	0	0	0	0	1	0	1
Unnamed Stream (M-128-003-002)	0	0	0	0	1	0	0	1
Unnamed Stream (S-002-014-002-002)	0	0	0	0	0	1	0	1
Unnamed Stream (S-002-014-002-003)	0	0	0	0	0	1	0	1
Unnamed Stream (S-002-014-004)	0	0	0	0	0	1	0	1
Unnamed Stream (S-002-032-004)	0	0	0	0	3	0	0	3
Vaara Creek (S-002-032-006)	0	0	0	0	1	0	0	1
West Rocky Run (S-002-010-003)	0	0	0	0	0	0	1	1
Grand Total	**0**	**0**	**0**	**0**	**11**	**11**	**1**	**23**
13.DNR Stream crossing CL								
Summary								
LENGTH (Mile)	0.0	0.0	0.0	0.0	32.7	33.6	1.2	67.5
DNR Streams crossed by Centerline (count)								
Artichoke River (S-002-018)	0	0	0	0	0	1	0	1
Bruce Creek (M-128-003)	0	0	0	0	1	0	0	1
Cloquet River (S-002-016)	0	0	0	0	0	1	0	1
Dutch Slough (S-002-014-002)	0	0	0	0	0	1	0	1
Floodwood River (S-002-032)	0	0	0	0	1	0	0	1
Floodwood River, West Branch (S-002-032-007)	0	0	0	0	1	0	0	1
Hay Creek (S-002-010-002)	0	0	0	0	0	1	0	1
Johnson Creek (S-002-014-002-004)	0	0	0	0	0	1	0	1
Joula Creek (S-002-032-005)	0	0	0	0	2	0	0	2
Pine River (S-002-014)	0	0	0	0	0	1	0	1
Sand Creek (M-128-010)	0	0	0	0	1	0	0	1
St. Louis River (S-002)	0	0	0	0	0	1	0	1
Unnamed Stream (M-128-003-002)	0	0	0	0	1	0	0	1
Unnamed Stream (MAJ-12386)	0	0	0	0	1	0	0	1
Unnamed Stream (MAJ-14361A)	0	0	0	0	0	1	0	1
Unnamed Stream (S-002-010-002-004)	0	0	0	0	0	1	0	1
Unnamed Stream (S-002-014-002-002)	0	0	0	0	0	1	0	1
Unnamed Stream (S-002-014-002-003)	0	0	0	0	0	1	0	1
Unnamed Stream (S-002-014-004)	0	0	0	0	0	1	0	1
Unnamed Stream (S-002-016-000.5)	0	0	0	0	0	1	0	1
Unnamed Stream (S-002-029-003-001)	0	0	0	0	0	1	0	1
Unnamed Stream (S-002-032-004)	0	0	0	0	3	0	0	3
Unnamed Stream (S-002-032-004.8)	0	0	0	0	1	0	0	1
Unnamed Stream (S-002-032-007-003-002)	0	0	0	0	1	0	0	1
Unnamed Stream (S-002-032-008)	0	0	0	0	1	0	0	1
Unnamed Stream (S-002-034-006)	0	0	0	0	0	1	0	1
Unnamed Stream (S-002-034-009)	0	0	0	0	0	1	0	1
Vaara Creek (S-002-032-006)	0	0	0	0	1	0	0	1
West Rocky Run (S-002-010-003)	0	0	0	0	0	0	1	1
Grand Total	**0**	**0**	**0**	**0**	**15**	**16**	**1**	**32**
14.State Wetland								
Summary								
AREA (acres)	5,108.4	7,833.2	399.2	13,340.8	557.2	610.5	21.3	1,189.0

	Route				Centerline / Right-of-way			
Worksheet / Row Type / Row Label	**Segment 1**	**Segment 2**	**Segment 3**	**Total Segment 1 & 2 & 3**	**TOTAL Segment 1**	**TOTAL Segment 2**	**TOTAL Segment 3**	**Total Segment 1 & 2 & 3**
LENGTH (Mile)	0.0	0.0	0.0	0.0	32.7	33.6	1.2	67.5
State Wetland Category by Centerline (miles)								
Freshwater Emergent Wetland	0.0	0.0	0.0	0.0	0.9	4.4	0.0	5.3
Freshwater Forested Wetland	0.0	0.0	0.0	0.0	3.5	0.0	0.0	3.5
Freshwater Forested/Shrub Wetland	0.0	0.0	0.0	0.0	1.6	0.0	0.0	1.6
Freshwater Pond	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Freshwater Shrub Wetland	0.0	0.0	0.0	0.0	5.1	0.9	0.0	6.0
Freshwater Shrub/Emergent Wetland	0.0	0.0	0.0	0.0	1.6	6.7	0.0	8.3
Riverine	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Total	**0.0**	**0.0**	**0.0**	**0.0**	**12.7**	**12.1**	**0.0**	**24.8**
State Wetland Category by Area (acres)								
Freshwater Emergent Wetland	235.4	316.6	1.5	553.5	30.9	70.5	0.2	101.6
Freshwater Forested Wetland	551.2	620.8	1.4	1,173.4	53.1	6.6	0.0	59.7
Freshwater Forested/Emergent Wetland	28.3	5.2	0.0	33.5	0.1	0.0	0.0	0.1
Freshwater Forested/Shrub Wetland	433.9	479.8	0.0	913.8	27.8	6.2	0.0	34.0
Freshwater Pond	12.1	18.3	1.5	31.9	0.4	0.9	0.0	1.2
Freshwater Shrub Wetland	673.2	676.2	12.3	1,361.7	75.9	29.0	0.6	105.5
Freshwater Shrub/Emergent Wetland	241.5	523.4	3.2	768.1	34.8	120.2	0.0	155.0
Riverine	8.8	51.7		60.4	0.9	2.3	0.0	3.2
Total	**2,184.4**	**2,692.1**	**19.9**	**4,896.3**	**223.6**	**235.7**	**0.9**	**460.2**
State Wetland Category Length Percentage of centerline								
Freshwater Emergent Wetland	0.0%	0.0%	0.0%	0.0%	1.3%	6.5%	0.0%	7.9%
Freshwater Forested Wetland	0.0%	0.0%	0.0%	0.0%	5.2%	0.0%	0.0%	5.2%
Freshwater Forested/Shrub Wetland	0.0%	0.0%	0.0%	0.0%	2.4%	0.0%	0.0%	2.4%
Freshwater Pond	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Freshwater Shrub Wetland	0.0%	0.0%	0.0%	0.0%	7.6%	1.3%	0.0%	8.9%
Freshwater Shrub/Emergent Wetland	0.0%	0.0%	0.0%	0.0%	2.4%	9.9%	0.0%	12.3%
Riverine	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%
Total	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**18.8%**	**17.9%**	**0.0%**	**36.7%**
State Wetland Category Acreage Percentage								
Freshwater Emergent Wetland	1.8%	2.4%	0.0%	4.1%	2.59%	5.93%	0.02%	8.54%
Freshwater Forested Wetland	4.1%	4.7%	0.0%	8.8%	4.46%	0.56%	0.00%	5.02%
Freshwater Forested/Emergent Wetland	0.2%	0.0%	0.0%	0.3%	0.01%	0.00%	0.00%	0.01%
Freshwater Forested/Shrub Wetland	3.3%	3.6%	0.0%	6.8%	2.33%	0.52%	0.00%	2.86%
Freshwater Pond	0.1%	0.1%	0.0%	0.2%	0.03%	0.07%	0.00%	0.10%
Freshwater Shrub Wetland	5.0%	5.1%	0.1%	10.2%	6.38%	2.44%	0.05%	8.87%
Freshwater Shrub/Emergent Wetland	1.8%	3.9%	0.0%	5.8%	2.92%	10.11%	0.00%	13.03%
Riverine	0.1%	0.4%	0.0%	0.5%	0.08%	0.19%	0.00%	0.27%
Total	**16.4%**	**20.2%**	**0.1%**	**36.7%**	**18.81%**	**19.83%**	**0.07%**	**38.71%**
State Wetland over 800ft crossed by centerline (count)								
Crossings over 800ft in length	0	0	0	0	23	17	0	40
15.Habitat LAKES								
Summary								
AREA (acres)	5,108.4	7,833.2	399.2	13,340.8	557.2	610.5	21.3	1,189.0
LENGTH (Mile)	0.0	0.0	0.0	0.0	32.7	33.6	1.2	67.5
DNR Wildrice Lakes Crossed by Route and ROW (acres)								
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
DNR Shallow Lakes Crossed by Route and ROW (acres)								
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
16.DNR Catchment								
Summary								
AREA (acres)	5,108.4	7,833.2	399.2	13,340.8	557.2	610.5	21.3	1,189.0
LENGTH (Mile)	0.0	0.0	0.0	0.0	32.7	33.6	1.2	67.5

	Route				Centerline / Right-of-way			
Worksheet / Row Type / Row Label	**Segment 1**	**Segment 2**	**Segment 3**	**Total Segment 1 & 2 & 3**	**TOTAL Segment 1**	**TOTAL Segment 2**	**TOTAL Segment 3**	**Total Segment 1 & 2 & 3**
DNR Catchment Basin by HUC Names Crossed by Route and ROW (acres)								
Artichoke River	0.0	812.4	0.0	812.4	0.0	67.5	0.0	67.5
Bruce Creek	126.4	0.0	0.0	126.4	19.0	0.0	0.0	19.0
City of Brookston-Saint Louis River	0.0	97.8	0.0	97.8	0.0	17.1	0.0	17.1
City of Floodwood-Saint Louis River	4.7	1,533.3	0.0	1,538.0	0.0	85.5	0.0	85.5
Cloquet River	0.0	1,121.4	0.0	1,121.4	0.0	75.7	0.0	75.7
Floodwood Lake-Floodwood River	575.0	0.0	0.0	575.0	87.2	0.0	0.0	87.2
Floodwood River	913.9	54.5	0.0	968.5	102.2	1.1	0.0	103.3
Juola Creek-Floodwood River	1,327.3	0.0	0.0	1,327.3	75.4	0.0	0.0	75.4
Leeman Lake-Saint Louis River	0.0	182.6	0.0	182.6	0.0	25.3	0.0	25.3
Lower Midway River	0.0	575.4	0.0	575.4	0.0	38.0	0.0	38.0
McCarty River	0.0	556.2	0.0	556.2	0.0	82.5	0.0	82.5
Middle Midway River	0.0	490.4	399.2	889.6	0.0	30.0	21.3	51.4
Pine River	0.0	2,095.4	0.0	2,095.4	0.0	140.6	0.0	140.6
Sand Creek	825.6	0.0	0.0	825.5	86.4	0.0	0.0	86.4
Spider Creek	0.0	314.4	0.0	314.4	0.0	47.3	0.0	47.3
Vaara Creek	329.8	0.0	0.0	329.7	48.0	0.0	0.0	48.0
Warba Creek-Swan River	425.5	0.0	0.0	398.0	51.8	0.0	0.0	51.8
West Branch Floodwood River	580.3	0.0	0.0	580.3	87.2	0.0	0.0	87.2
Total	**5,108.4**	**7,833.9**	**399.2**	**13,340.8**	**557.2**	**610.5**	**21.3**	**1,189.0**
DNR Catchment Basin by HUC Names Percentage of Route and ROW								
Artichoke River	0.0%	6.1%	0.0%	6.1%	0.0%	5.7%	0.0%	5.7%
Bruce Creek	0.9%	0.0%	0.0%	0.9%	1.6%	0.0%	0.0%	1.6%
City of Brookston-Saint Louis River	0.0%	0.7%	0.0%	0.7%	0.0%	1.4%	0.0%	1.4%
City of Floodwood-Saint Louis River	0.0%	11.5%	0.0%	11.5%	0.0%	7.2%	0.0%	7.2%
Cloquet River	0.0%	8.4%	0.0%	8.4%	0.0%	6.4%	0.0%	6.4%
Floodwood Lake-Floodwood River	4.3%	0.0%	0.0%	4.3%	7.3%	0.0%	0.0%	7.3%
Floodwood River	6.9%	0.4%	0.0%	7.3%	8.6%	0.1%	0.0%	8.7%
Juola Creek-Floodwood River	9.9%	0.0%	0.0%	9.9%	6.3%	0.0%	0.0%	6.3%
Leeman Lake-Saint Louis River	0.0%	1.4%	0.0%	1.4%	0.0%	2.1%	0.0%	2.1%
Lower Midway River	0.0%	4.3%	0.0%	4.3%	0.0%	3.2%	0.0%	3.2%
McCarty River	0.0%	4.2%	0.0%	4.2%	0.0%	6.9%	0.0%	6.9%
Middle Midway River	0.0%	3.7%	3.0%	6.7%	0.0%	2.5%	1.8%	4.3%
Pine River	0.0%	15.7%	0.0%	15.7%	0.0%	11.8%	0.0%	11.8%
Sand Creek	6.2%	0.0%	0.0%	6.2%	7.3%	0.0%	0.0%	7.3%
Spider Creek	0.0%	2.4%	0.0%	2.4%	0.0%	4.0%	0.0%	4.0%
Vaara Creek	2.5%	0.0%	0.0%	2.5%	4.0%	0.0%	0.0%	4.0%
Warba Creek-Swan River	3.2%	0.0%	0.0%	3.0%	4.4%	0.0%	0.0%	4.4%
West Branch Floodwood River	4.3%	0.0%	0.0%	4.3%	7.3%	0.0%	0.0%	7.3%
Total	**38.3%**	**58.7%**	**3.0%**	**100.0%**	**46.9%**	**51.3%**	**1.8%**	**100.0%**
17.Geology S21 PreCamb								
Summary								
AREA (acres)	5,108.4	7,833.2	399.2	13,340.8	557.2	610.5	21.3	1,189.0
LENGTH (Mile)	0.0	0.0	0.0	0.0	32.7	33.6	1.2	67.5
Precambrian Bedrock by Route and ROW (acres)								
Pas	5,108.4	7,833.2	399.2	13,340.8	557.2	610.5	21.3	1,189.0
Total	**5,108.4**	**7,833.2**	**399.2**	**13,340.8**	**557.2**	**610.5**	**21.3**	**1,189.0**
Precambrian Bedrock Percentage of Route and ROW								
Pas	38.29%	58.72%	2.99%	100.00%	46.86%	51.35%	1.79%	100.00%
Total	**38.37%**	**58.84%**	**3.00%**	**100.00%**	**46.86%**	**51.35%**	**1.79%**	**100.00%**
18.MCPA Sites								
Summary								
AREA (acres)	5,108.4	7,833.2	399.2	13,340.8	557.2	610.5	21.3	1,189.0
LENGTH (Mile)	0.0	0.0	0.0	0.0	32.7	33.6	1.2	67.5

	Route				Centerline / Right-of-way			
Worksheet / Row Type / Row Label	**Segment 1**	**Segment 2**	**Segment 3**	**Total Segment 1 & 2 & 3**	**TOTAL Segment 1**	**TOTAL Segment 2**	**TOTAL Segment 3**	**Total Segment 1 & 2 & 3**
MCPA Sites within Route (count)								
Feedlots	0	0	0	0	0	0	0	0
Hazardous Waste	0	3	0	3	0	0	0	0
Stormwater	0	0	2	2	0	0	0	0
Solid Waste	0	1	0	1	0	0	0	0
Total	**0**	**4**	**2**	**6**	**0**	**0**	**0**	**0**