

Table 6: Potential Project Areas Identified by the Nason Roads Assessment

#	Location	GPS points	Name	Description	Notes
1		797, 798, 800, 802, 271325 804, 806	Rainy Creek Road	The upper switchback of Smithbrook road ranks moderate for general erosion potential delivery to streams and there is a high potential for sediment delivery near two of the stream crossings. Field inventory mapped 5 stream crossings with direct sediment delivery to streams.	Not likely to be able to de-commission this road as it provides recreation access and through access to the Little Wenatchee river
2	261401, 261402	85 points*	USFS road 6970	Across hwy 2 from Smithbrook this section of road has moderate erosion potential with several stream crossings with high erosion potential. Field inventory mapped 16 road surface erosion points and 41 stream crossings. This area is south of Hwy 2 and Nason creek is north of the Hwy.	This road is part of the Mill Creek Nordic Center special use system. Just past junction with 116, it is blocked by a rock berm. There are drainage issues. This road was partially decommissioned in 1994 past junction with 511.
3	261505	None		This road system is not mapped as USFS roads and was missed during the field inventory. It was added based upon DNR maps and aerial photo interpretation. If this road system exists, it is within moderate to high erosion potential with ~30 stream crossings	Needs field verification
4	261507	464, 546, 550-555, 557-8, 560, 562	Mill Creek 1 (Spike and Switcher) USFS 6960	This project is a section of Mill Creek road plus a switchback up under the BPA powerlines with 3 surface erosion points and 6 stream crossings (5 fords). This section of road is ranked moderate for erosion potential to deliver to streams with 2-3 high potential for erosion stream crossings. The surface erosion points are described as follows: seep running across the road, water running across the road, erosion with cutslope failure and water running across the road.	Need to integrate information from the MRA
5	261513, 261518	468, 469, 472, 476	Mill Creek 2 (Guthrie Loop, Guthrie Heights) USFS 6960	This section of Mill Creek road and spur roads rank moderate for erosion potential to streams with 6 stream crossings that rank as high potential to deliver to streams. Field inventory mapped 4 stream crossings (2 fords).	The field inventory may not have covered the Guthrie heights part of this road which has ~7 stream crossings. Guthrie loop area looks like it may be wetland and a lot of roads/fill/disturbed areas.
6	261324	499-501, 503, 505, 507-520, 522, 525, 527-530, 532, 542, 545	Mill Creek 3, Outer Limits USFS 6960	This is the last driveable switchback in Mill Creek road. It is mapped as moderate erosion potential with one area having high erosion potential for stream delivery. In the 350' of road that makes this switchback, the field inventory maps 6 stream crossings (2 with plugged pipe and water running across the road at high flow and one pipe where flows run down a ditch).	Provides access to the PCT and back side of Stevens Pass Ski area. The upper end of Mill creek road has so much water on it, that it lacks fines and consists of large cobble to boulders.
7	261503		Above DOT maintenance facility	This road system is not mapped as USFS roads and was missed during the field inventory. It was added based upon aerial photo interpretation. If this road system exists, it is within moderate erosion potential with high potential for erosion at 3 stream crossings. Aerial photo interp indicates there may be 5 stream crossings	Needs field verification
8	261509	1070, 1075, 1077-1084, 1086-1089, 1091, 1093, 1095-7, 1099, 1103, 1104, 1107-1109, 1111, 1113-1115, 1117	Arrowhead access	This parcel is owned by Weyerhaeuser. The road switchbacks up the hillside providing access to Arrowhead Mtn. Modeling indicates moderate to high erosion potential for delivery to streams. Field inventory mapped 2 surface erosion points (water flows across the road, seep with erosion) and 23 stream crossings (5 direct sediment delivery to stream, 1 plugged pipe, 4 have water source from ditch or stream flows in ditch).	
9	261501	420, 429, 430, 440, 441, 778		Moderate erosion potential with one area of high erosion potential. Field inventory maps 3 surface erosion points; one described as fill slope failure and one described as 500' long surface erosion. This area includes at least 1 perennial stream crossing.	
10	261607	737, 739, 752, 2352, 2353, 2355, 2357, 2358, 2369, 2370, 2376-2378, 2380, 2381, 2385, 2386, 2388, 2389, 2392-2395, 2398, 2399, 2402		This parcel was purchased by Western Rivers Conservancy and sold to USFS in 2012. The road switchbacks up a steep slope and crosses several drainages. Modeling indicates there is moderate to high potential for surface erosion throughout most of the 4 miles of roads. The field inventory mapped four surface erosion points and 17 stream crossings on the roads that switchback up the hillside.	Non-system road
11	26164, 26165	BPA access 1031, 1034, 1035 and White Pine 714-716, 720, 722, 726-728, 730, 731, 1066-68, 2513, 2515, 2516, 2518	White Pine road (6950) and BPA access road through Merritt, USFS 6940-615	This project area could be divided into two project areas based upon land ownership. White Pine road is owned by USFS and it has evidence of surface erosion in a few areas, water ponds on the road near the BNSF bridge crossing, and there is one stream crossing that washes out the road frequently. The other area is south of Nason Creek and South of the BNSF road prism. Modeling depicts this entire road as moderate to high risk for surface erosion to streams. In reality, the BNSF prism is between the road and Nason Creek so I'm not sure how much surface erosion actually gets to Nason Creek. The field inventory mapped 2 surface erosion points and two stream crossings including a seep running down the road and a stream running parallel to the road.	White Pine road should be stormproofed; it provides access to private land and the White Pine trailhead. The road south of Nason Creek provides access to BPA towers and the MRA recommends changing the ML status to closed.
12	261601	938, 939, 941, 943, 944, 946-949, 952, 957, 960	Section 1 Butcher Creek non-system roads	The 1.77 miles of non-system roads in Section 1 contains 17 stream crossings. Of the mapped crossings four are described as fords plus one 1' wide stream crossing with no pipe. There are also two buried pipes at stream crossings and one notation that the stream is pirated in the ditch as the water source.	Non-system roads
13	261601	158, 162-164, 166, 168-178, 180, 183, 192-196, 931-934, 962-964, 1001-1003, 1005, 1006	Butcher Creek road USFS 6910 and spur roads	Part of this road system was built as temporary roads for timber salvage after the Round mountain fire in 1995-6. Some of these roads may have been partially de-commissioned. These roads contain large areas with moderate to high surface erosion potential. This road network (and similar conditions) extend slightly into adjacent sections 2, 35, and 36. Field inventory notes indicate 10 stream crossings deliver sediment directly to streams, one culvert is buried, 3 crossings have fillslope erosion or road failure, and 3 have water flowing in the ditch and/or the stream is the source of ditch water.	
14	261610	1050-1053, 1058-1060	Gill Creek area	There are 4 surface erosion points and 2 stream crossings on this stretch of Gill Creek road. The field inventory maps surface erosion, standing water in ditches, and one stream crossing that delivers sediment to the stream. The section of road modeled to have moderate to high surface erosion potential was mapped based upon aerial photo interpretation so this needs field verification.	Once it heads up hill, most of this road is so wet, that it is not driveable during wet conditions. MRA recommends de-commissioning this road beyond the trail access point (~1.15 miles)
15		336, 339-345, 348-354, 357, 359, 361, 363, 365-370, 372, 373	Coulter Creek road, USFS 6930 and 6930270	Modeling indicates some areas with moderate to high surface erosion potential to deliver to the stream. The field inventory mapped 8 surface erosion points that include comments such as stream parallels the road and water flows across the road in 4 areas. Field inventory maps 20 stream crossings (4 where stream water runs in the roadside ditch, 2 crossings with sediment delivery to the stream, 5 where water runs across the road). One stream crossing notes that the road surface is half eroded by the stream.	MRA notes to de-com the last .75 miles (past the junction with 6930270). MRA suggests closure (reduce to ML-1) for 6930270.
16	2616 Sections 13, 22-24, 25-27	198* sites within projects 16&17	Weyerhaeuser Butcher Creek block (S. of Hwy 2), Coulter Creek Road, USFS 6930, and 6935	Some portions of the road through these 9 sections are mapped as moderate to high potential for erosion and sediment delivery to streams.	Weyerhaeuser has completed road and stream crossing upgrades per RMAP requirements in this area. That said, they have agreed to review the surface erosion points mapped on their roads in summer 2017 to determine which, if any, have the potential to deliver sediment to streams. The MRA recommend to remove some cost share roads
17	2616 Sections 13, 22-24, 25-27	198* sites within projects 16&17	Cost share roads within Weyerhaeuser parcels, Coulter Creek Road, USFS 6930, and 6935	Even though most of these 9 sections are owned by Weyerhaeuser, much of the road network consists of cost share roads. DNR RMAP requirements do not apply to road conditions on cost share roads. Thus, the cost of road maintenance and upgrades are shared between the landowner and USFS.	The MRA recommends to remove some cost share roads
18	261707, 261617, 261718	1126-1129, 1135, 1137, 1141-1143, 1147, 1153, 1156, 1176, 1178, 1180	USFS 7912, 7912100, 7912212, 7912201, 7912230, 7912225, 7912235	There are sections of the road mapped as moderate erosion potential with one spot mapped as high potential for sediment delivery to stream. The field inventory mapped 13 surface erosion points including three points near the end of 7912225 described as fill slope failures. Only 1 stream crossing was mapped in this area, but I'm not sure that is correct and probably should be field verified.	MRA recommends some of this road network be de-commissioned, some remain as is, and some has already been closed.
19	271731, 271732, 2617 Sections 4-6 and 7-9	128* sites within projects 19 & 20	Weyerhaeuser Kahler Creek block	Some portions of the road through these 8 sections are mapped as moderate to high potential for erosion and sediment delivery to streams.	Weyerhaeuser has completed stream crossing upgrades per RMAP requirements in this area and the upgrades to address surface erosion delivery to streams is in progress. They have agreed to review the surface erosion points mapped on their roads in summer 2017 to determine which, if any, have the potential to deliver sediment to streams. The MRA recommends to remove some cost share roads
20	271731, 271732, 2617 Sections 4-6 and 7-9	128* sites within projects 19 & 20	Cost Share roads within the Weyerhaeuser Kahler Creek block	Even though most of these 8 sections are owned by Weyerhaeuser, much of the road network consists of cost share roads. DNR RMAP requirements do not apply to road conditions on cost share roads. Thus, the cost of road maintenance and upgrades are shared between the landowner and USFS.	MRA recommendeds to remove cost share on some roads
21	261709, 261710		Old Hwy 207, 6603, 6601810	Modeling indicates areas with moderate to high potential for sediment delivery to streams, however, there were no surface erosion issues or stream crossings mapped here during the field inventory. There is one avalanche chute that crosses the road and that may be an ephemeral stream but it does not connect hydrologically to Nason creek.	Evaluate whether or not to implement actions here as part of design
22	261703, 271734	636, 637, 640, 645, 1296, 1299-1301, 1307, 1308, 1312, 1313, 1315, 1318, 1321, 1323-1325, 1329, 1331, 1336	Happy Clown area, 6604, 6604111,	The field inventory mapped 8 surface erosion points on section 34 and 9 surface erosion points on section 3. Descriptions include over-steepened fill that delivers to the stream, ruts, massive landslide, and seep running across the road. There are two stream crossings mapped in Section 3.	These are gatead roads that are seasonally open. Road segments 112, 113, 114, and 115 (> 2 miles) were proposed for de-commissioning as part of the Natapoc EIS. Need to field check what was completed and what work remains.
23	26152	2512	1612010416, 9186010602	Modeling indicates areas with moderate to high potential for sediment delivery to streams	Evaluate whether or not to implement actions here as part of design.

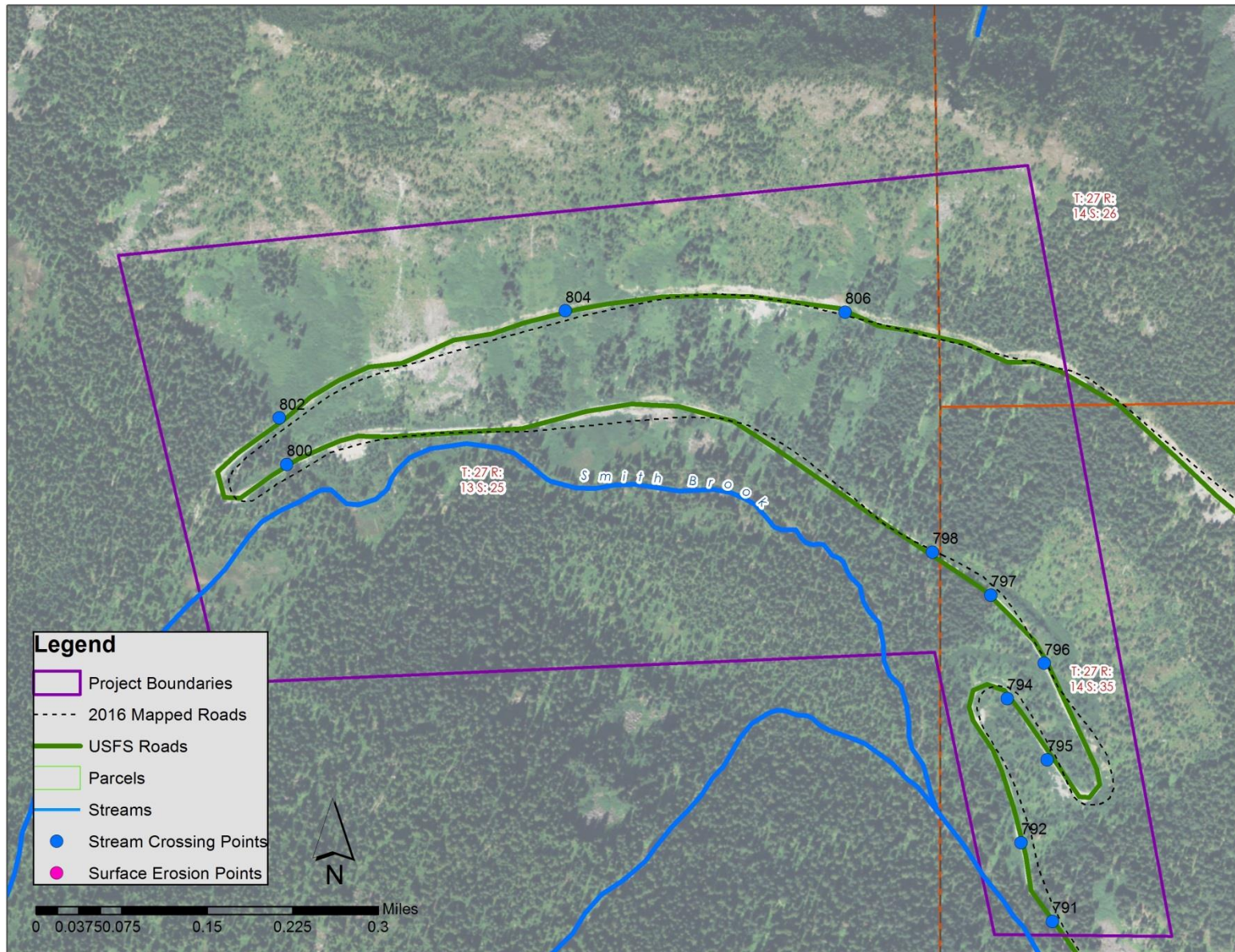
*List of GPS waypoints available upon request; will be incorporated into final report

Legend for all notes on maps:

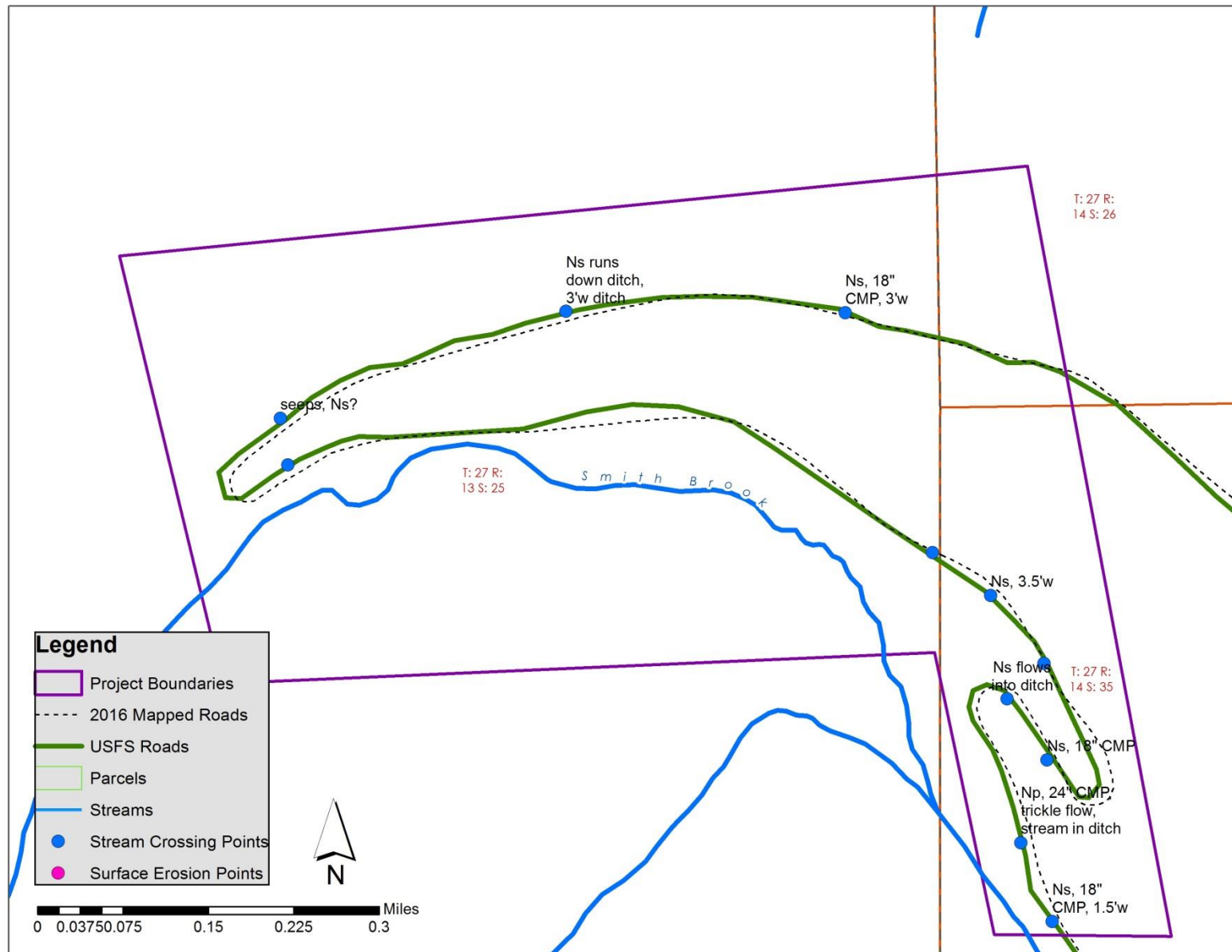
- Np = stream, likely perennial
- Ns = stream, likely seasonal
- CMP = corrugated metal pipe
- SE = surface erosion
- DL = delivers sediment to streams
- UDL = delivers sediment to streams on left
- UDR = delivers sediment to stream on right

Numbered points on aerial photos correspond to the GPS waypoints identified in Table 6 and in the Table included in Appendix D

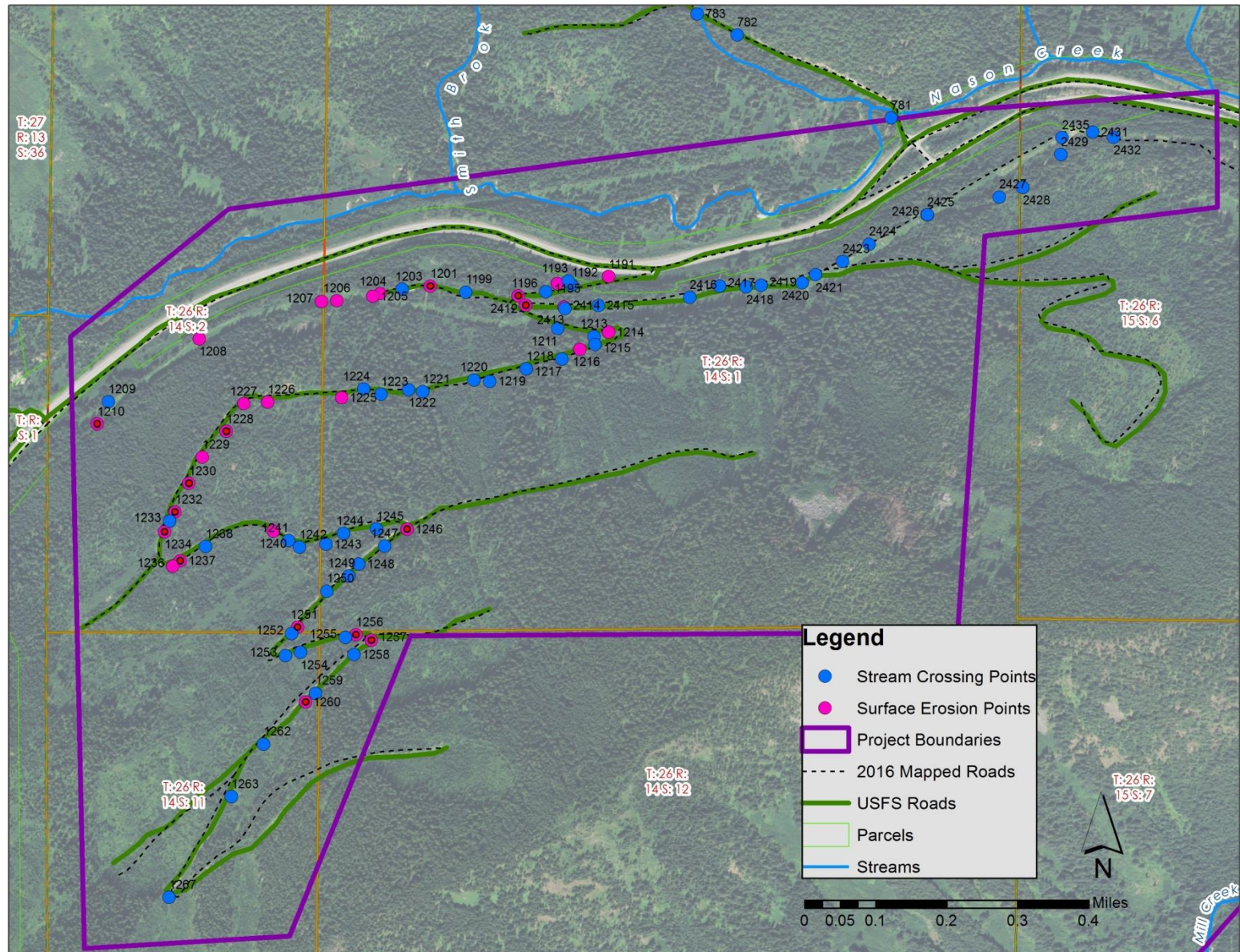
Project 1: Location of 2016 field inventory data overlaid on 2013 aerial photo



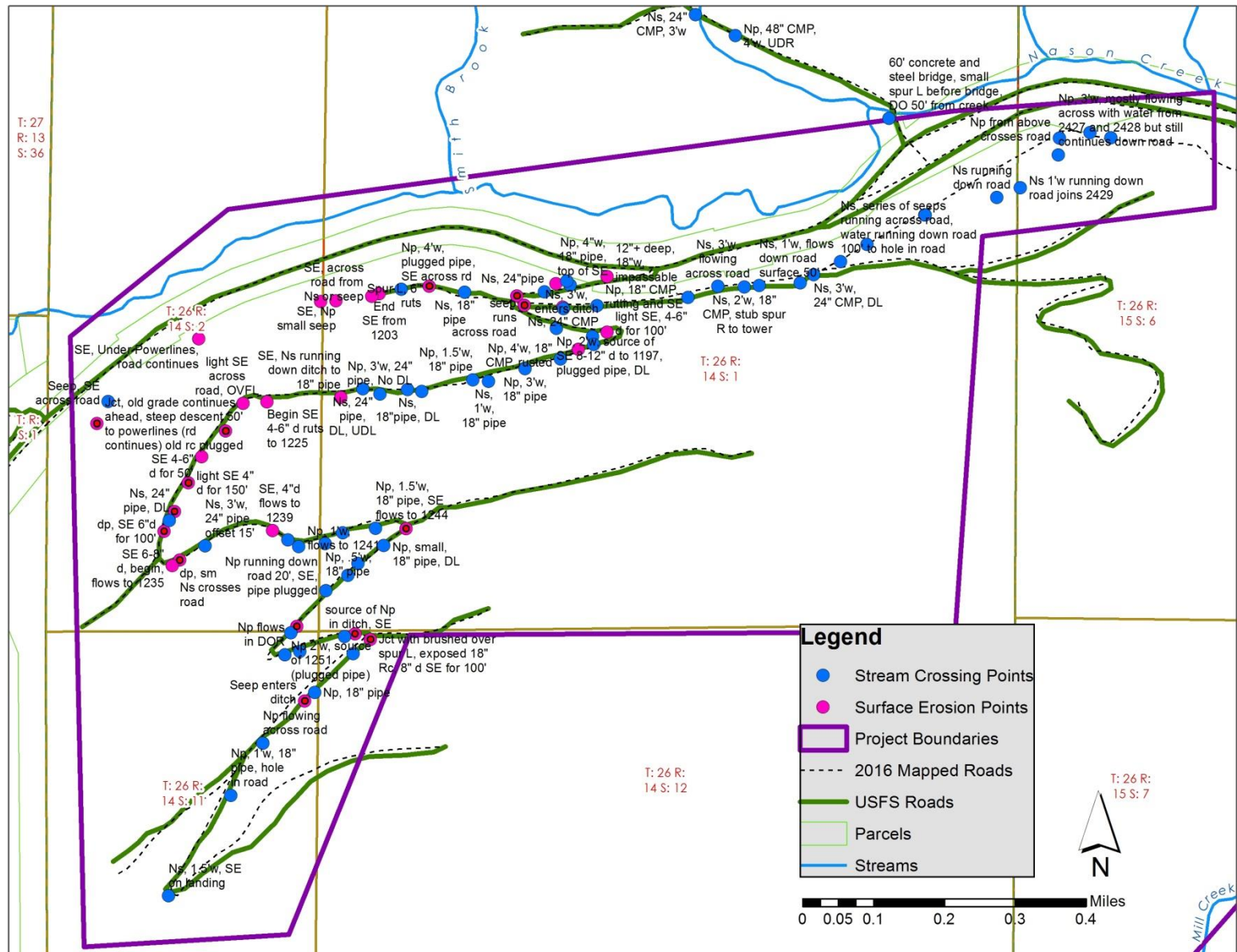
Project 1: Location of 2016 field inventory data with notes



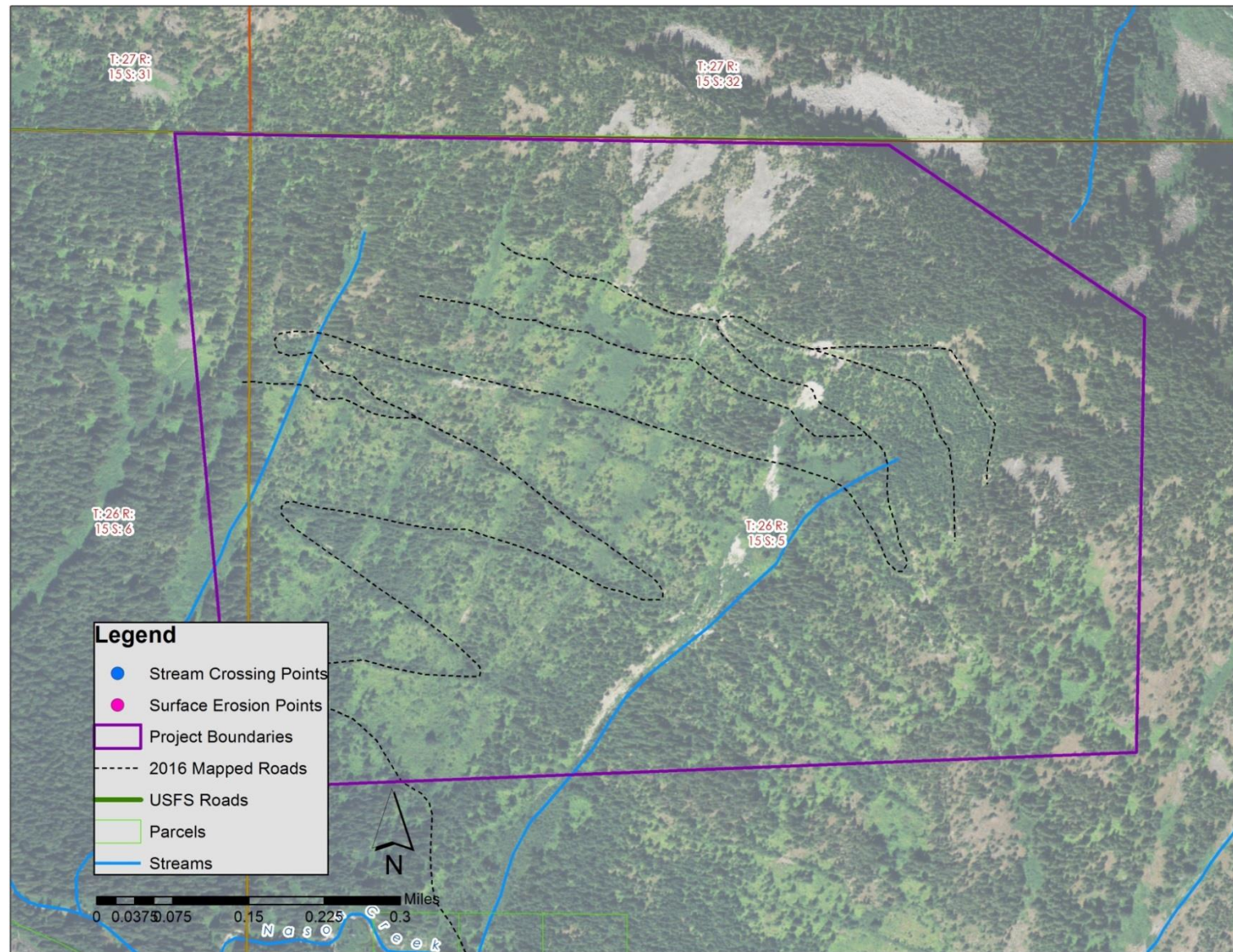
Project 2: Location of 2016 field inventory data overlaid on 2013 aerial photo



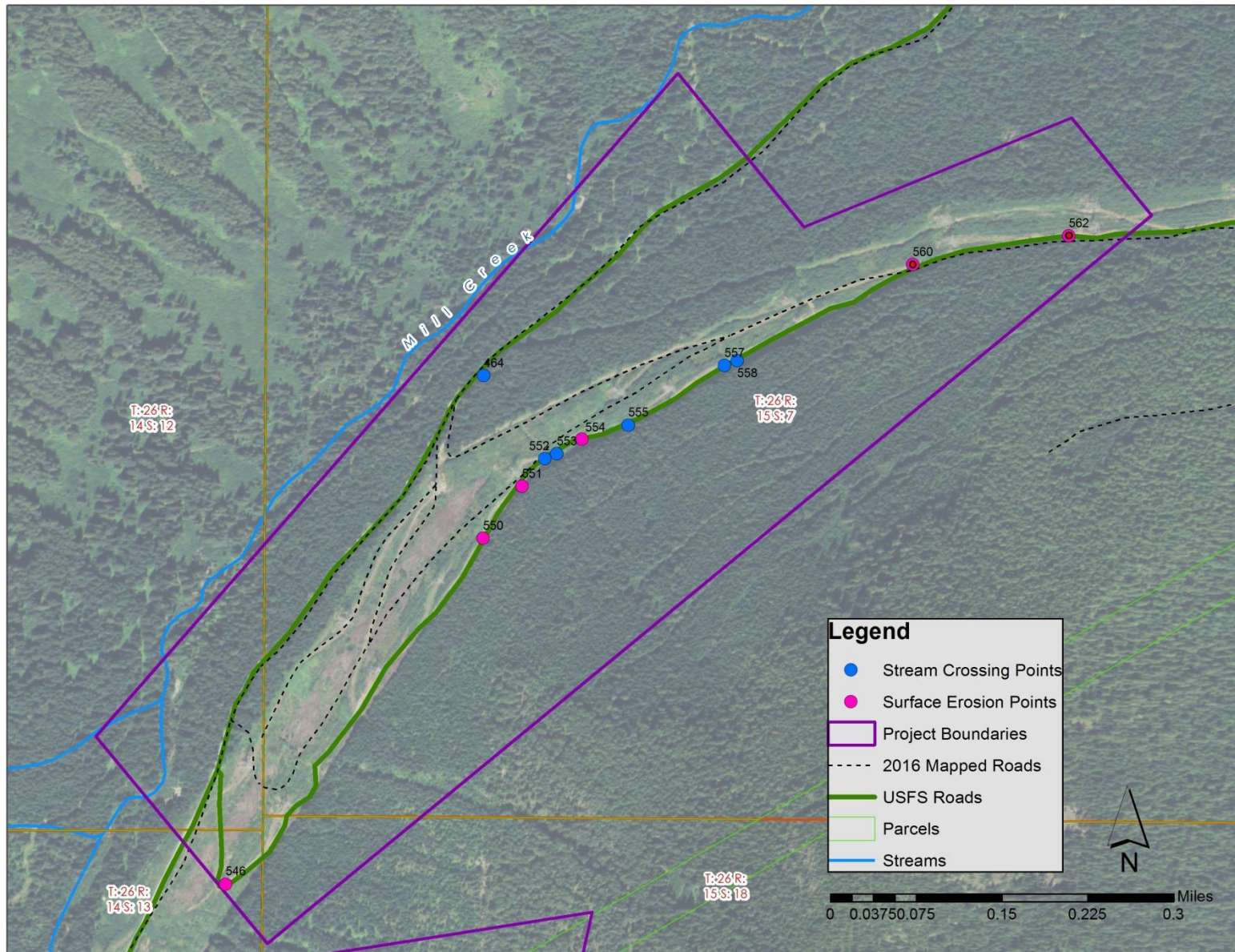
Project 2: Location of 2016 field inventory data with notes



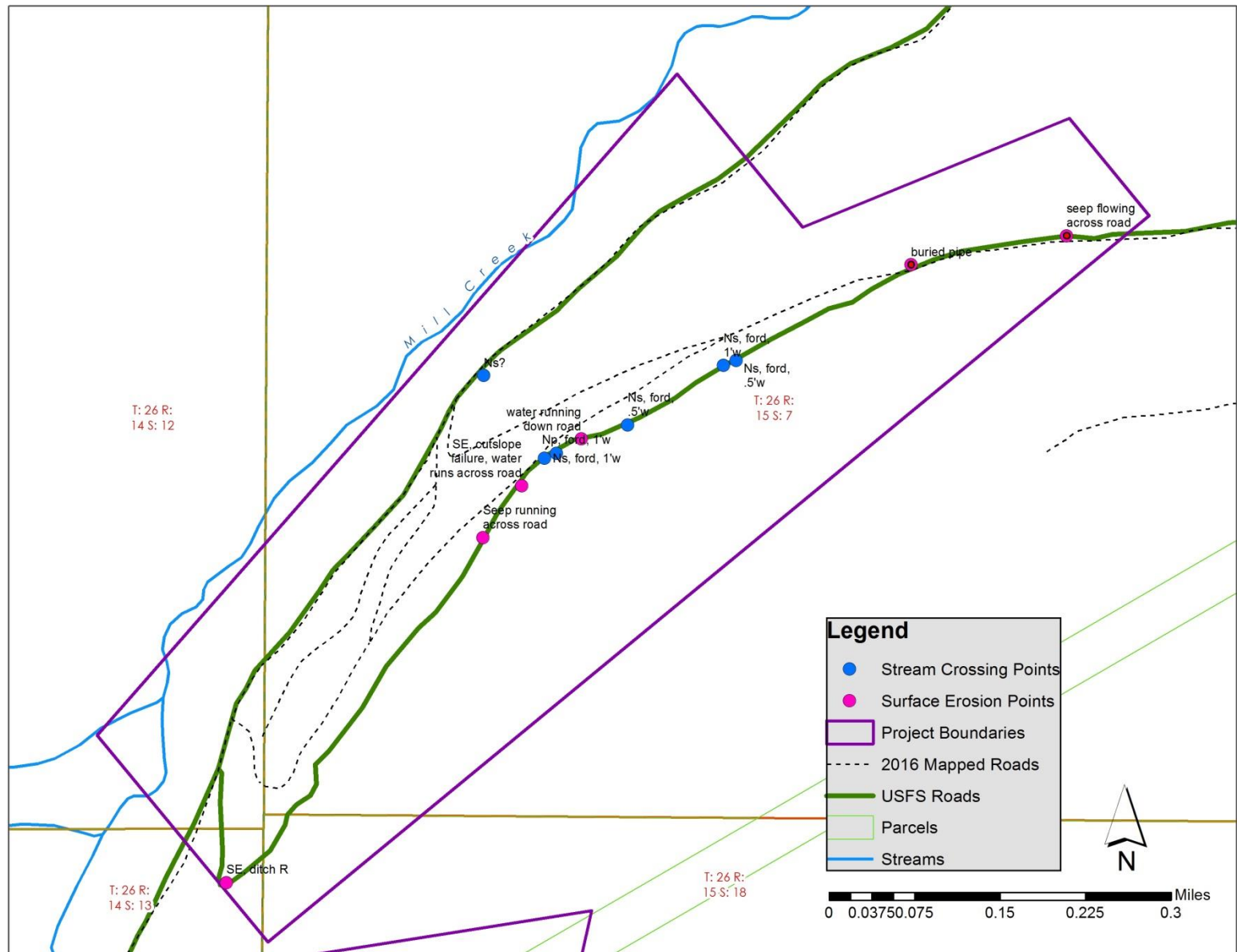
Project 3: This road system was missed during the 2016 field inventory and will be walked in 2017 to collect stream crossing and surface erosion data. Roads mapping depicted was secured from the DNR roads layer.



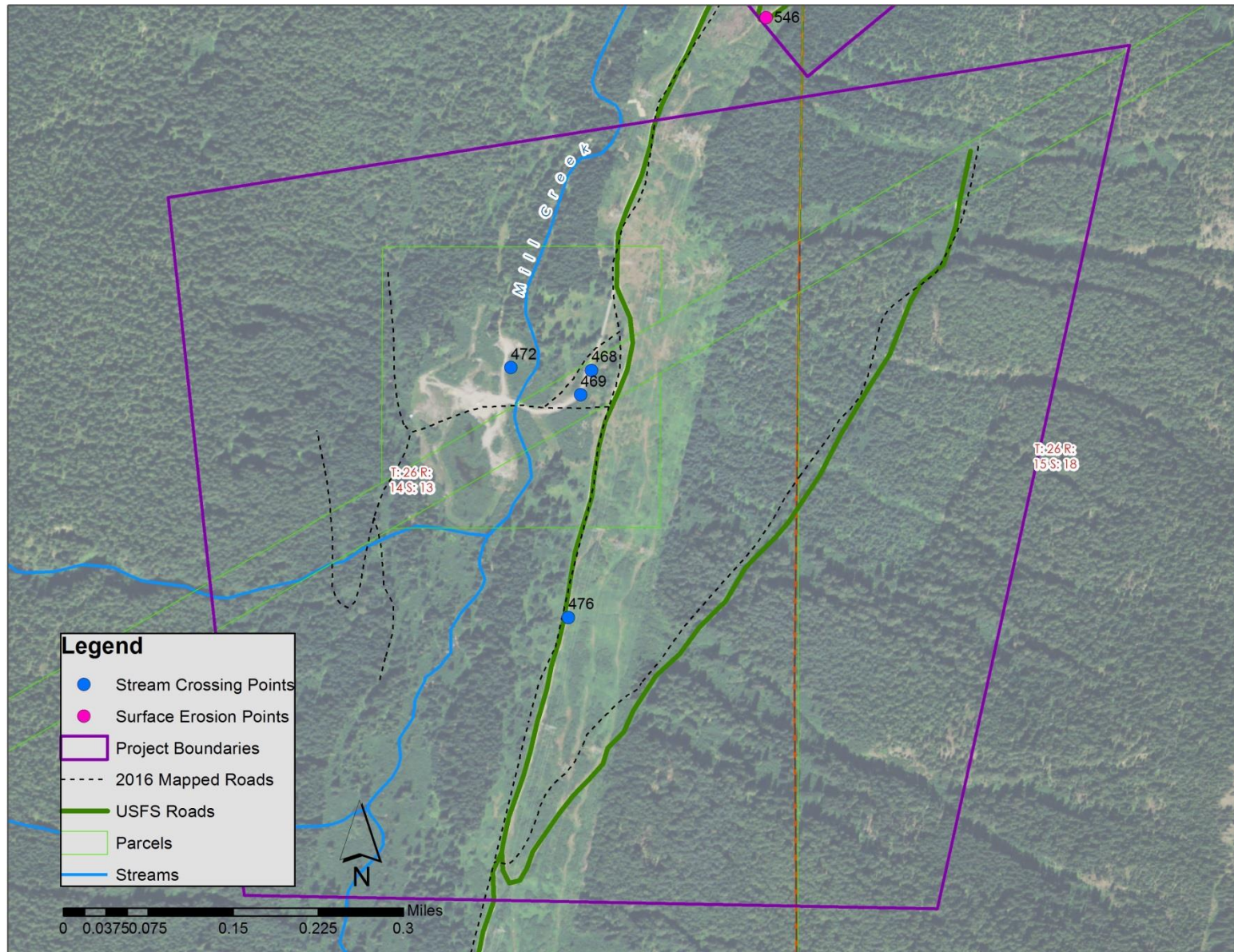
Project 4: Location of 2016 field inventory data overlaid on 2013 aerial photo



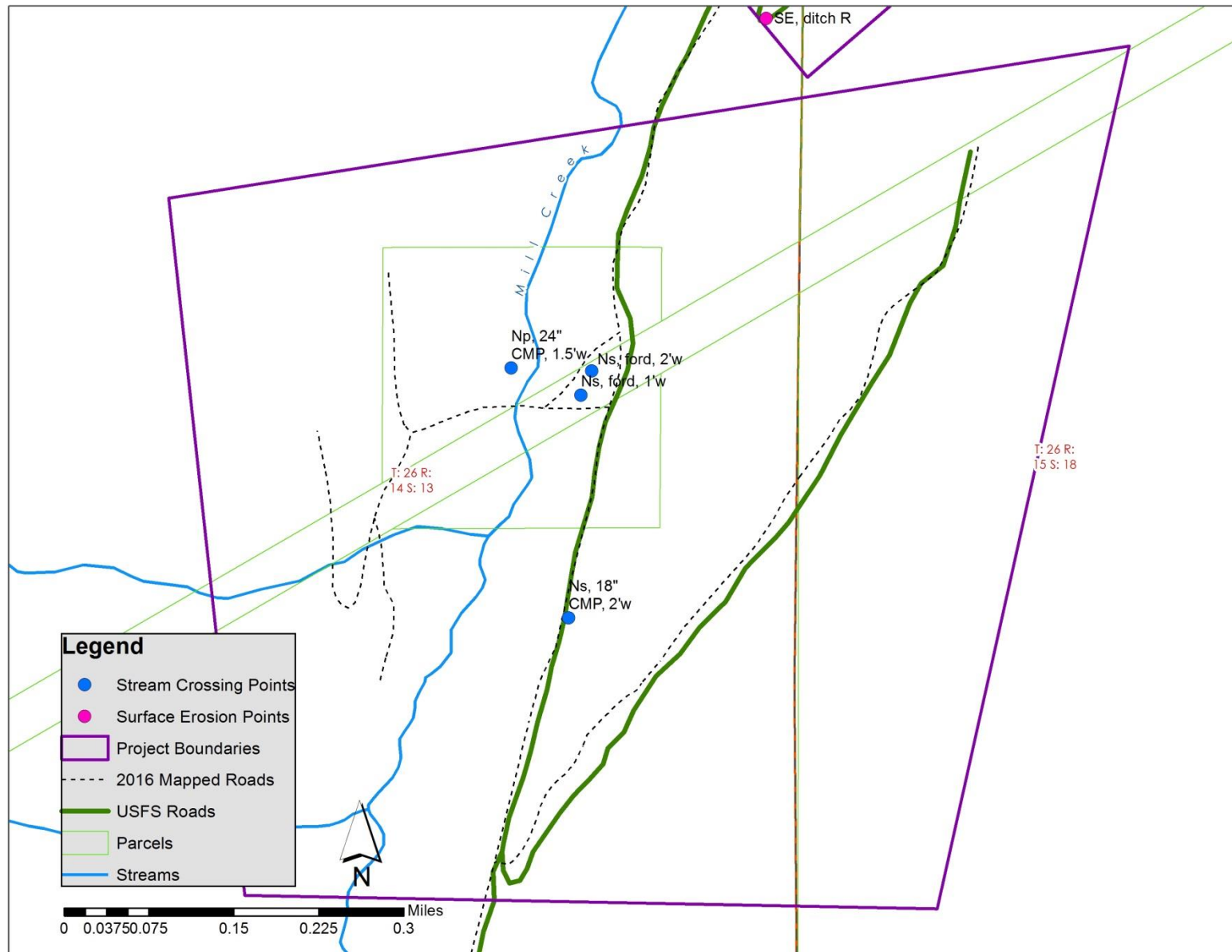
Project 4: Location of 2016 field inventory data with notes



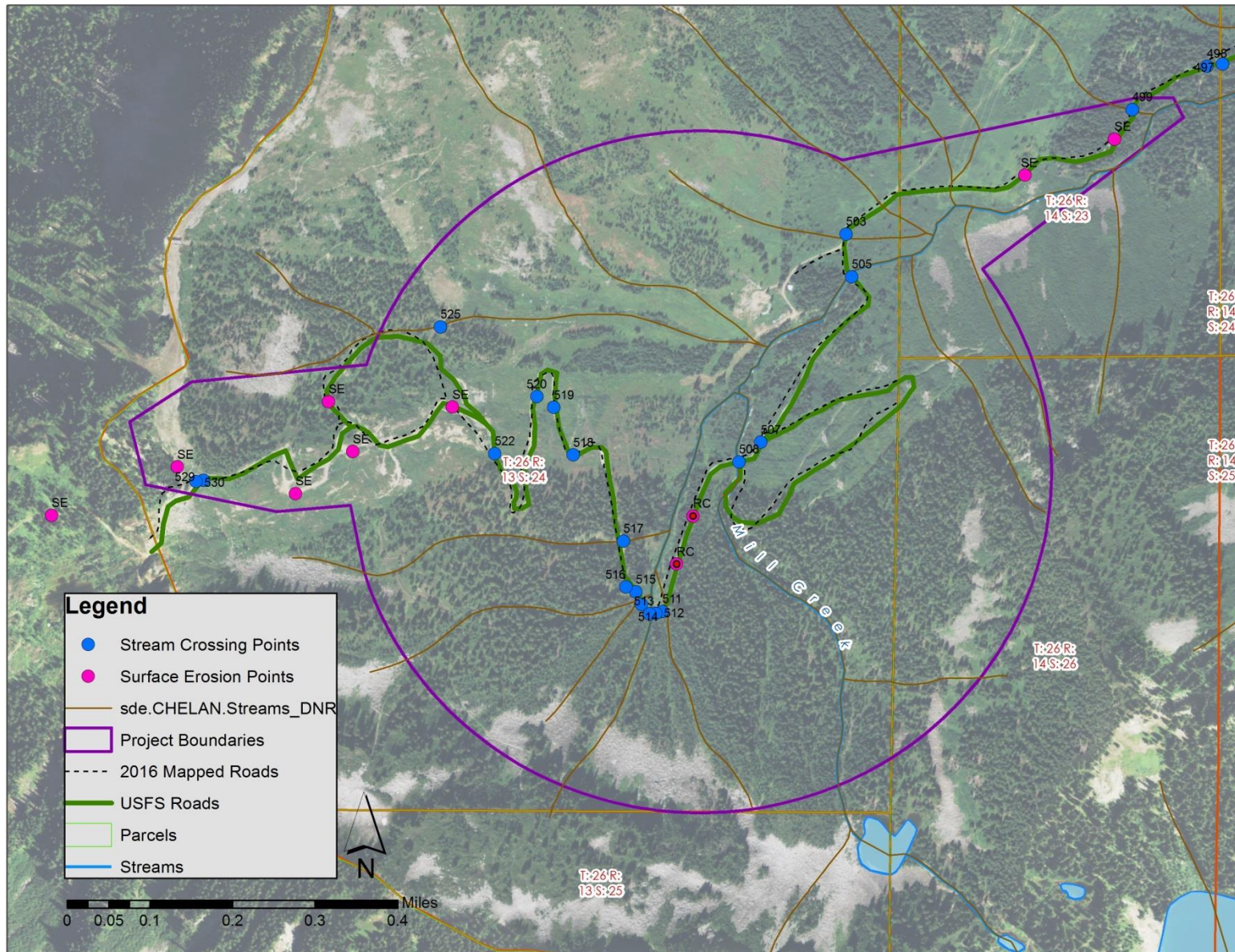
Project 5: Location of 2016 field inventory data overlaid on 2013 aerial photo



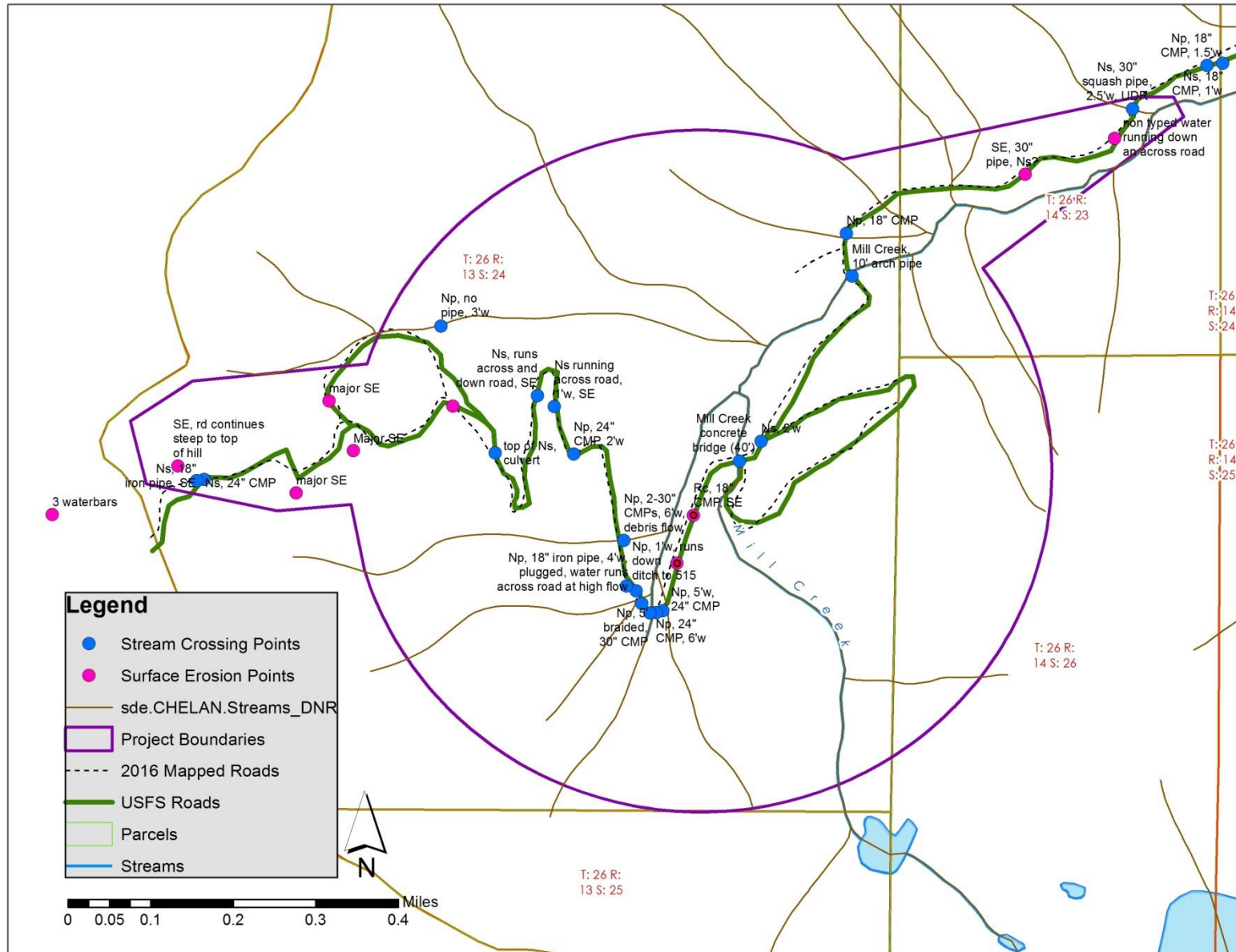
Project 5: Location of 2016 field inventory data with notes



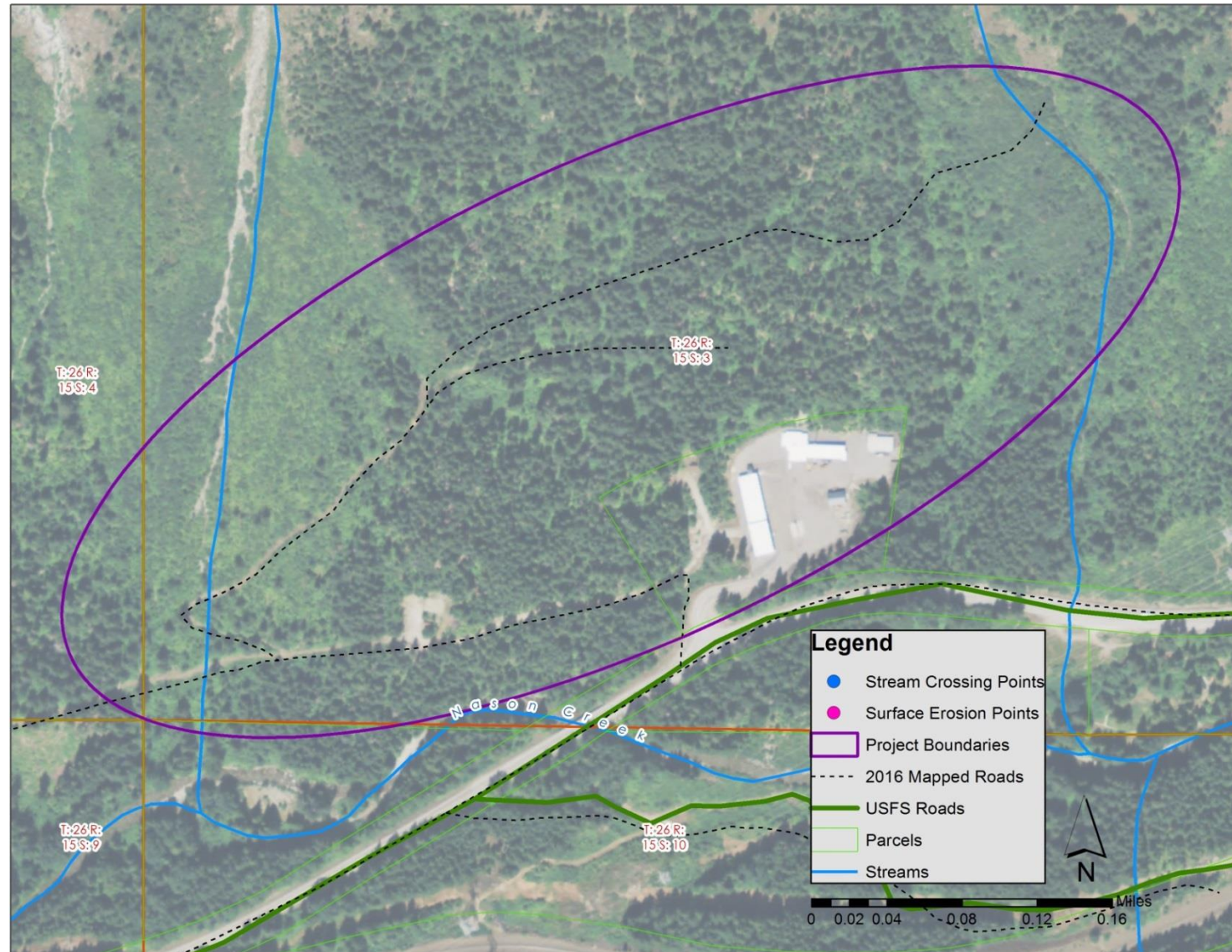
Project 6: Location of 2016 field inventory data overlaid on 2013 aerial photo



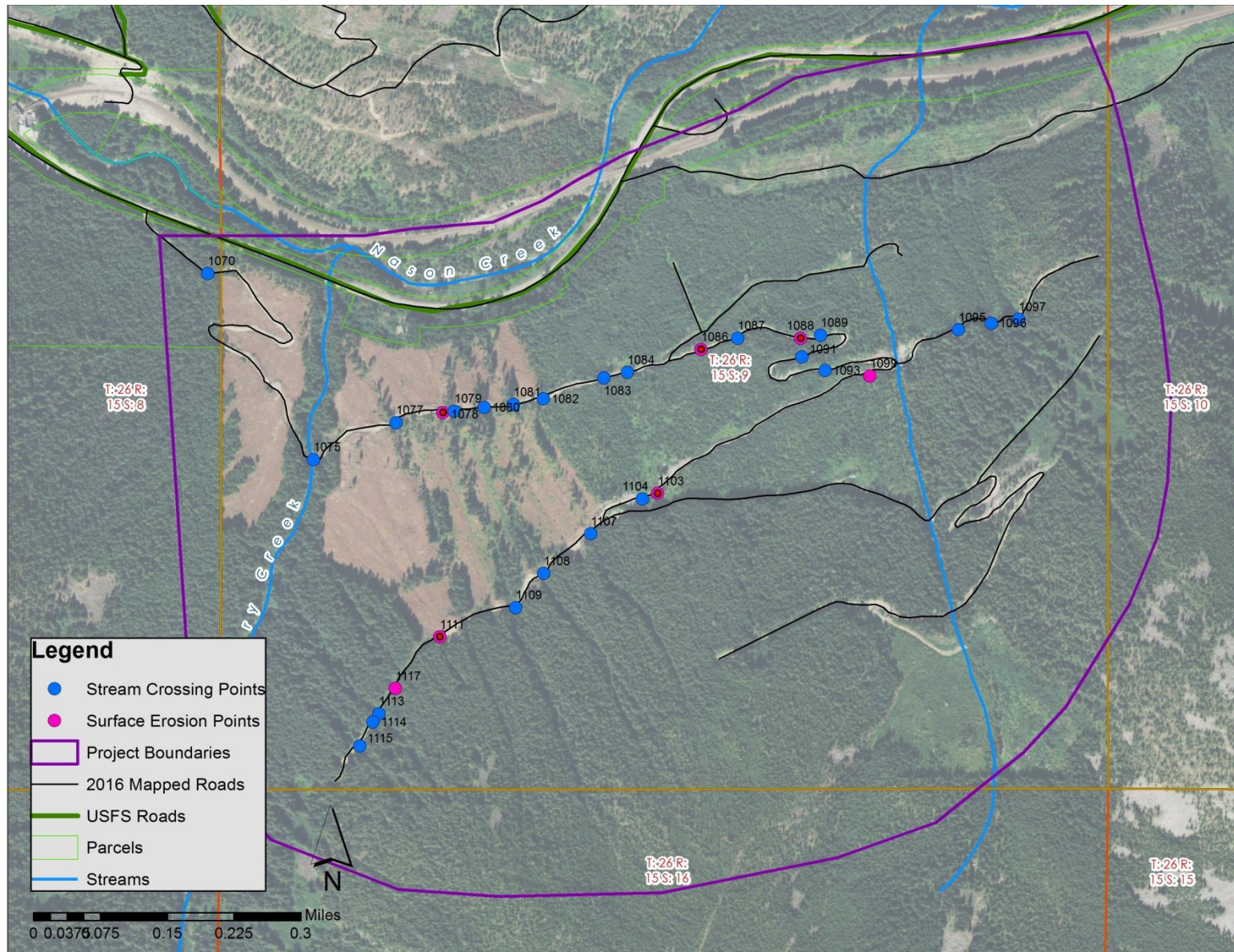
Project 6: Location of 2016 field inventory data with notes



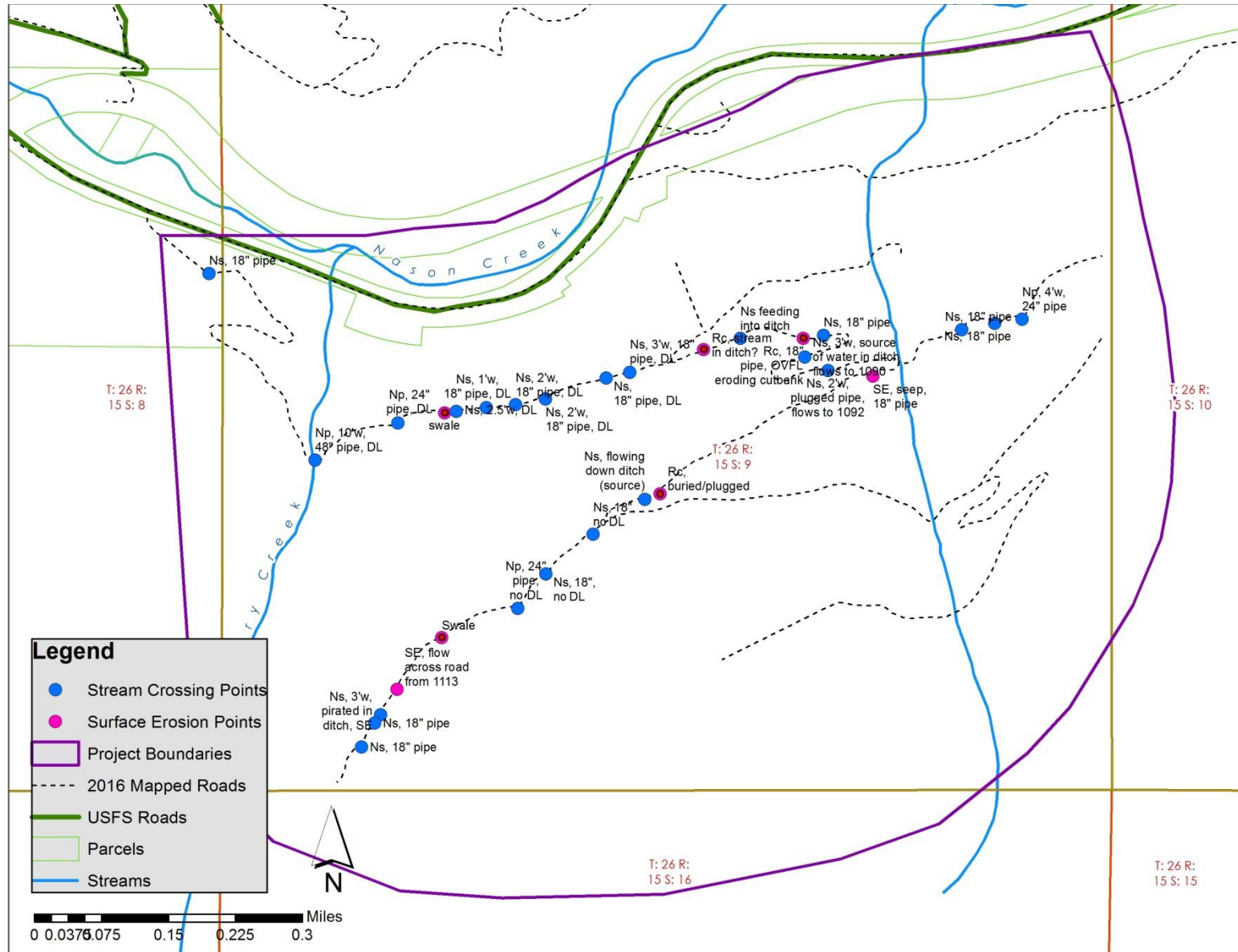
Project 7: This road system was missed during the 2016 field inventory and will be walked in 2017 to collect stream crossing and surface erosion data.



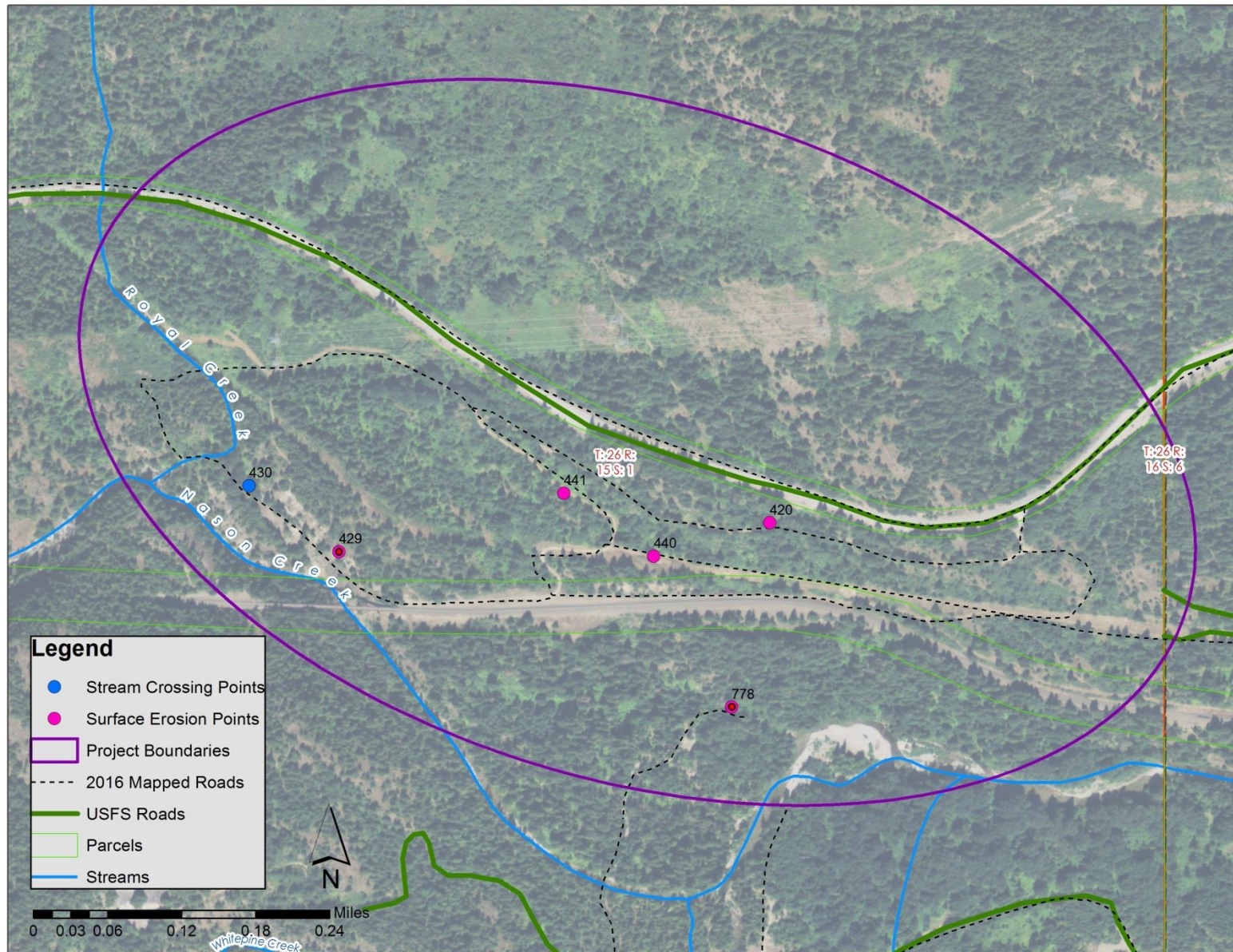
Project 8: Location of 2016 field inventory data overlaid on 2013 aerial photo



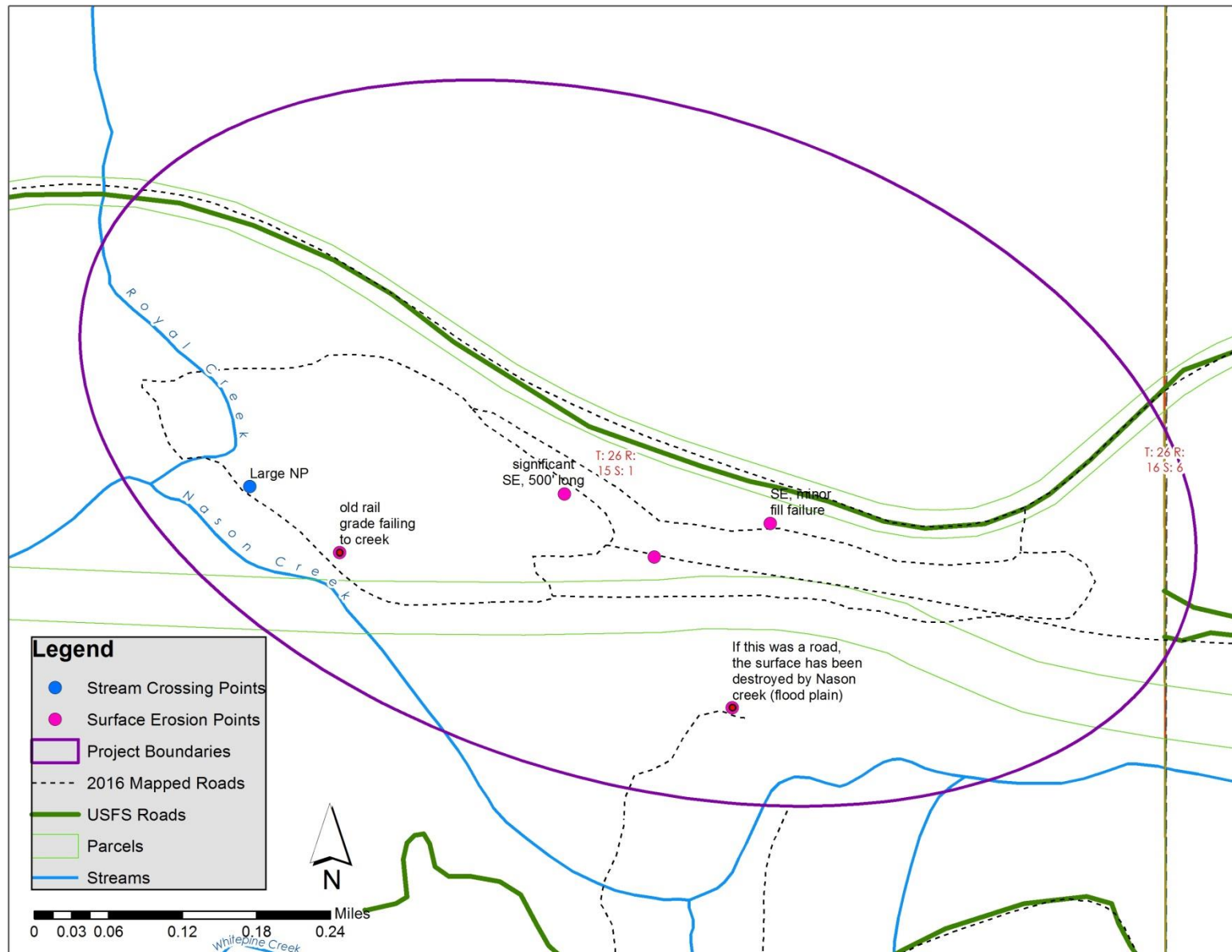
Project 8: Location of 2016 field inventory data with notes



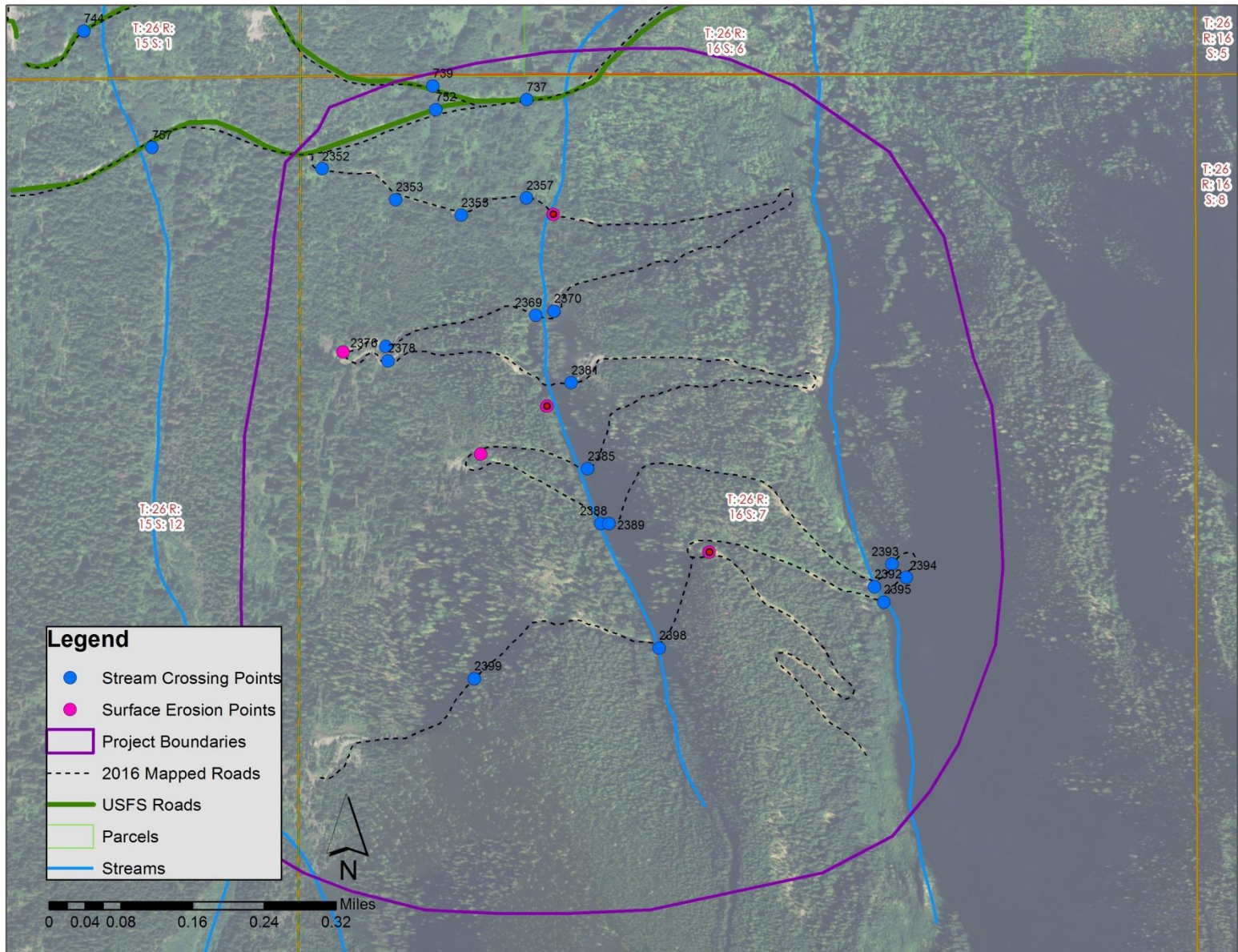
Project 9: Location of 2016 field inventory data overlaid on 2013 aerial photo



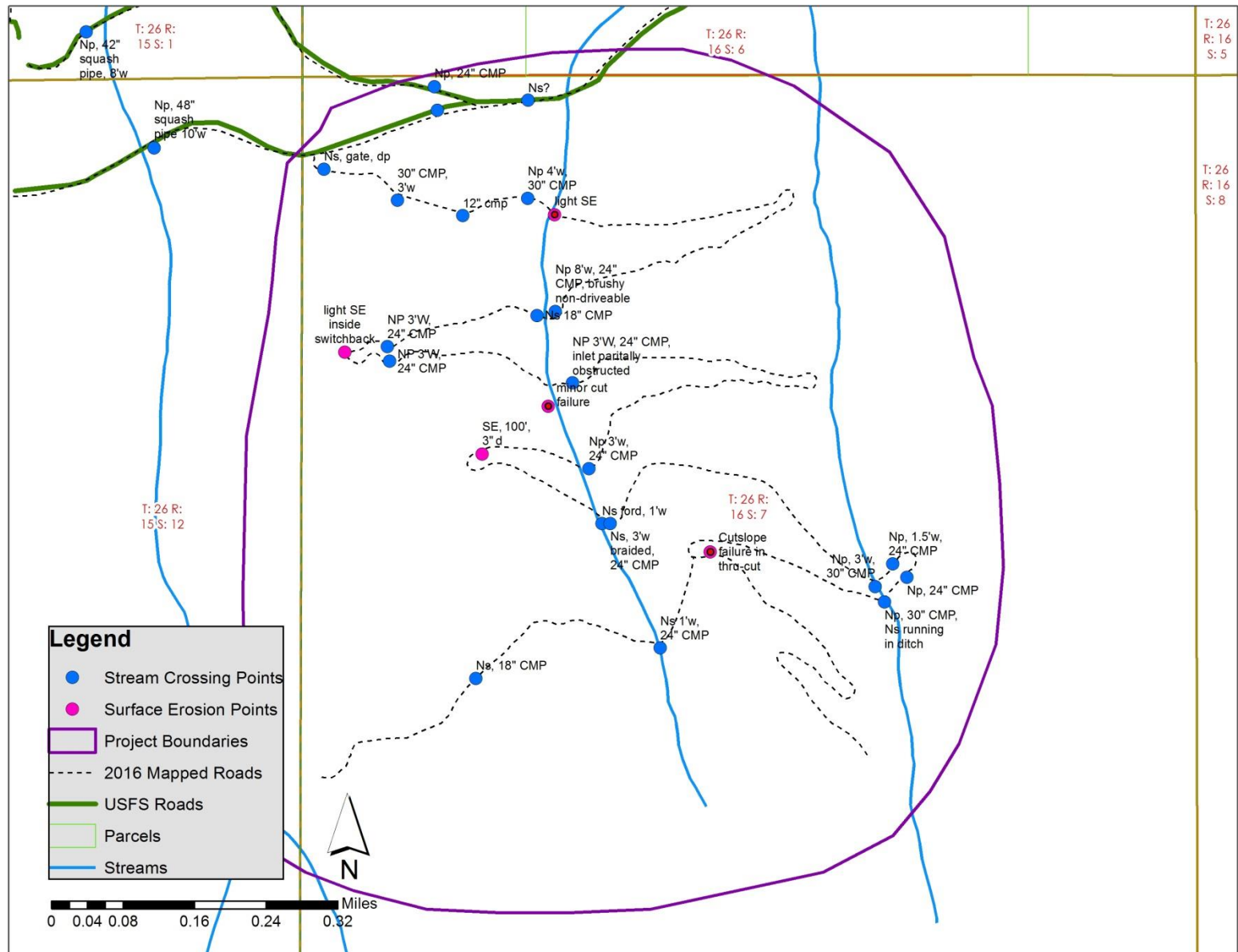
Project 9: Location of 2016 field inventory data with notes



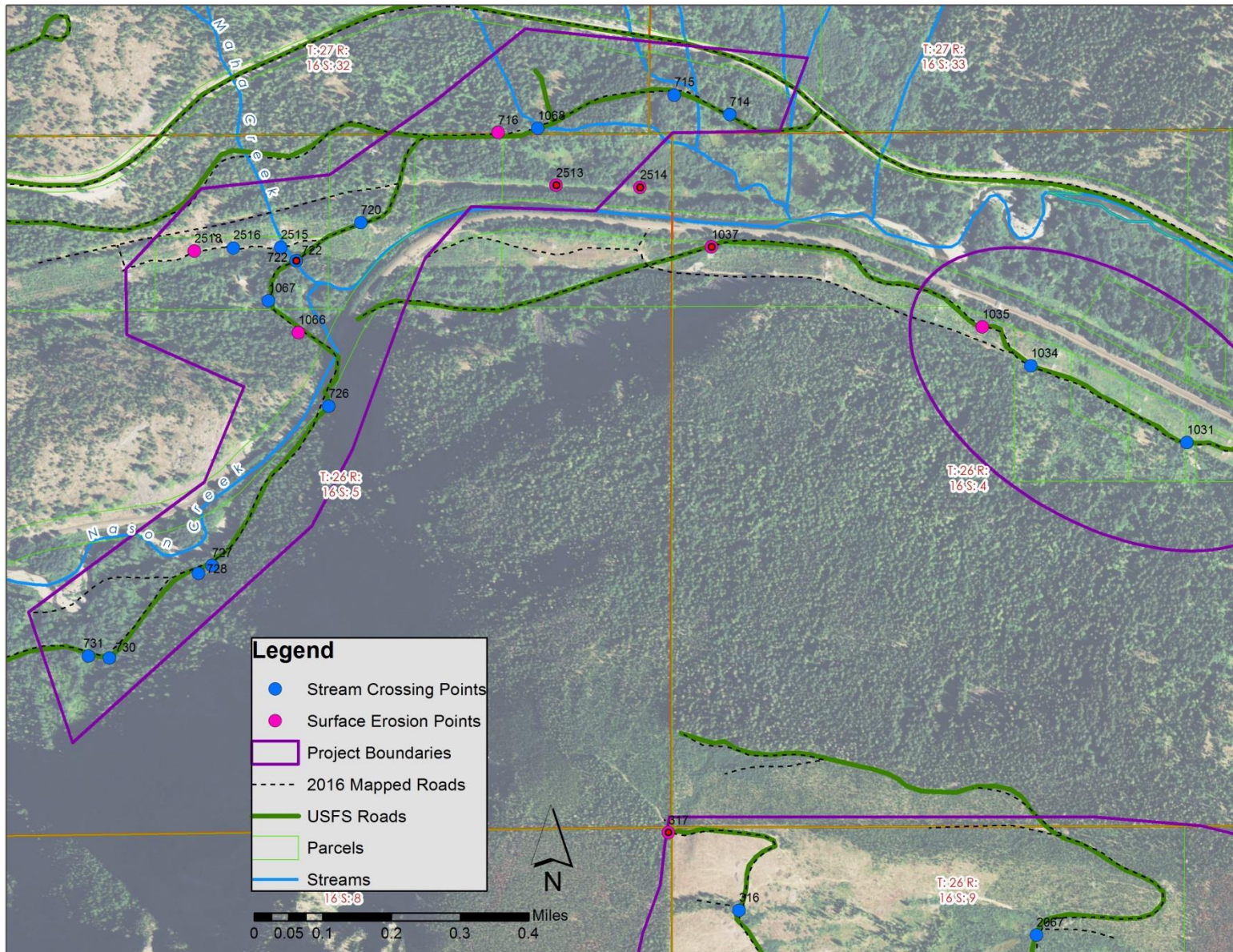
Project 10: Location of 2016 field inventory data overlaid on 2013 aerial photo



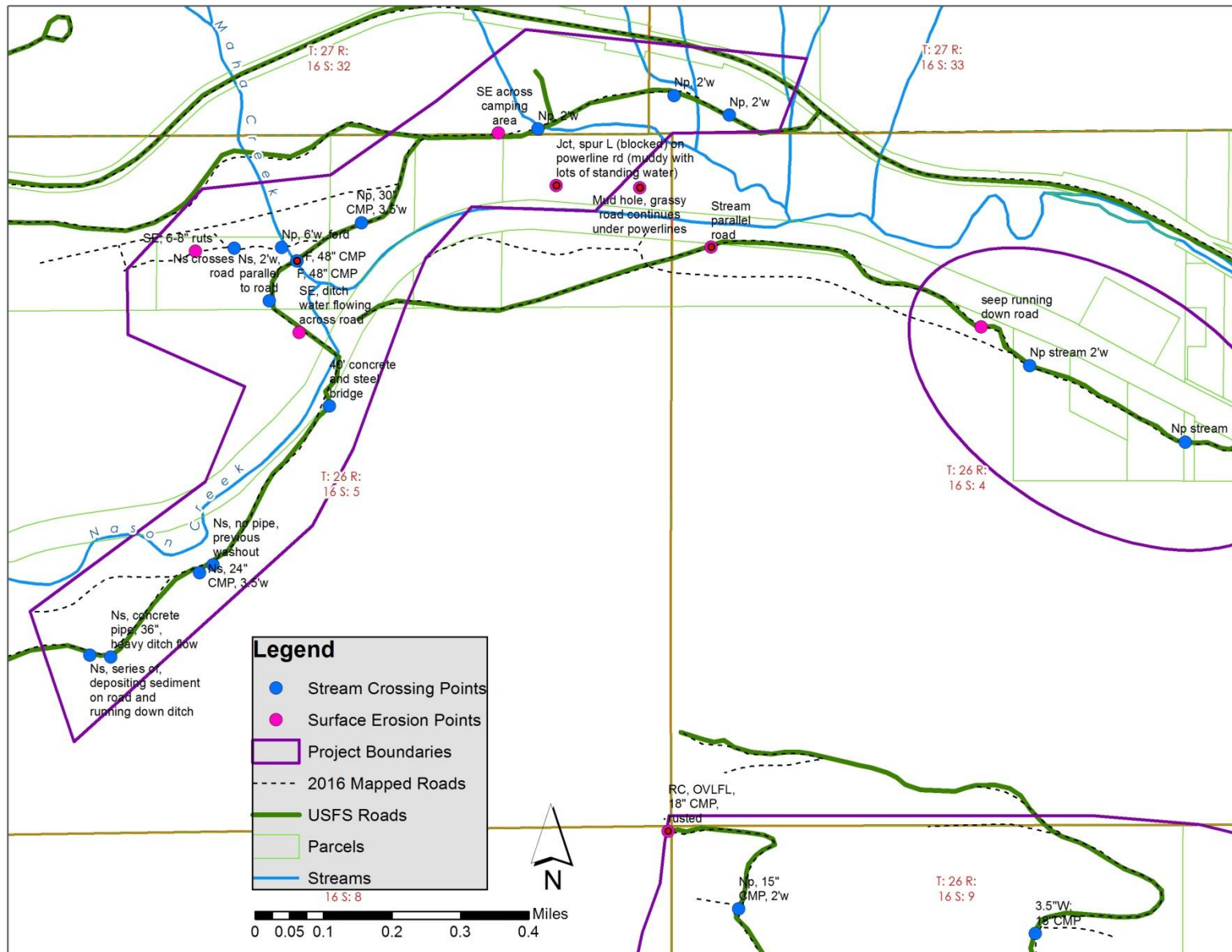
Project 10: Location of 2016 field inventory data with notes



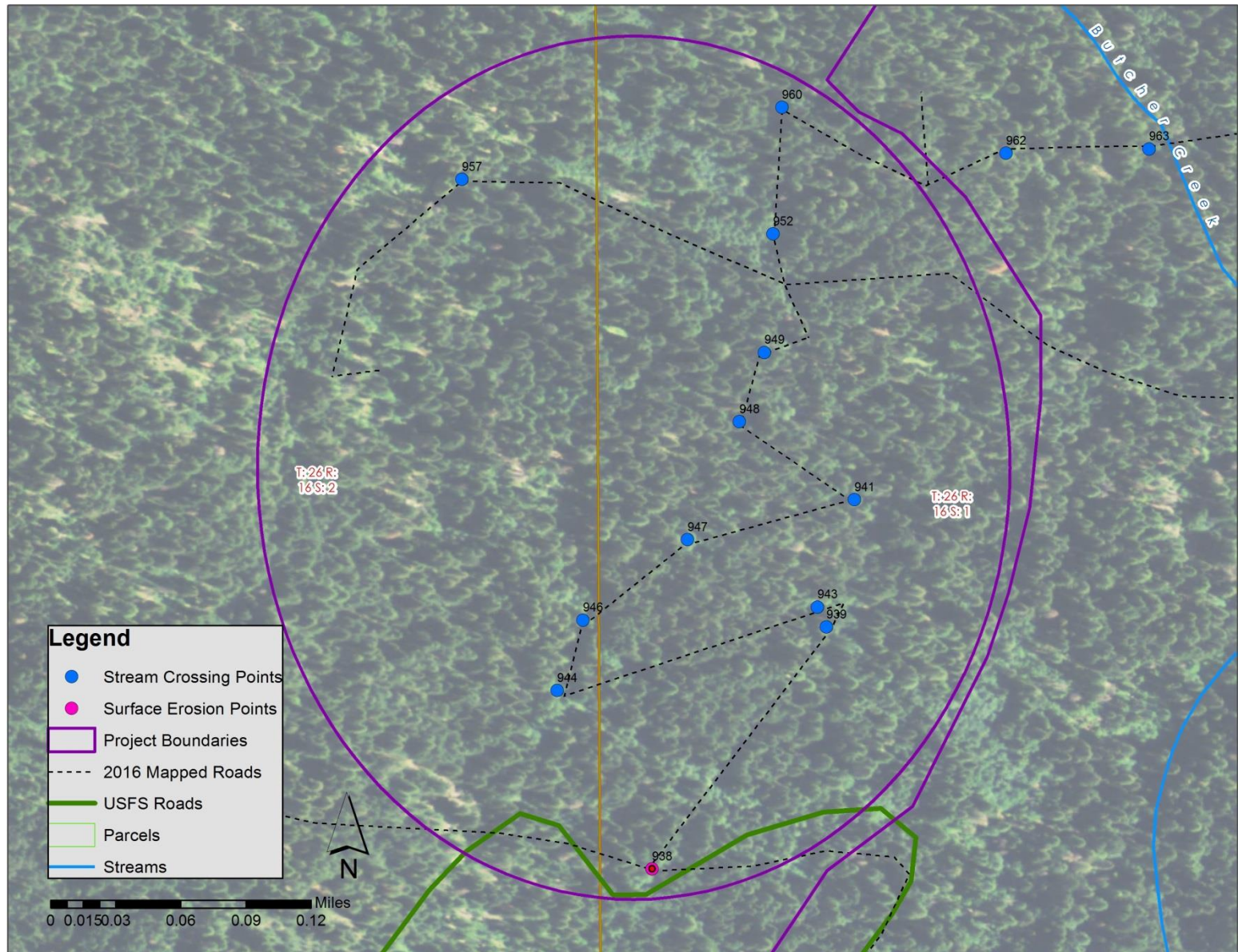
Project 11: Location of 2016 field inventory data overlaid on 2013 aerial photo



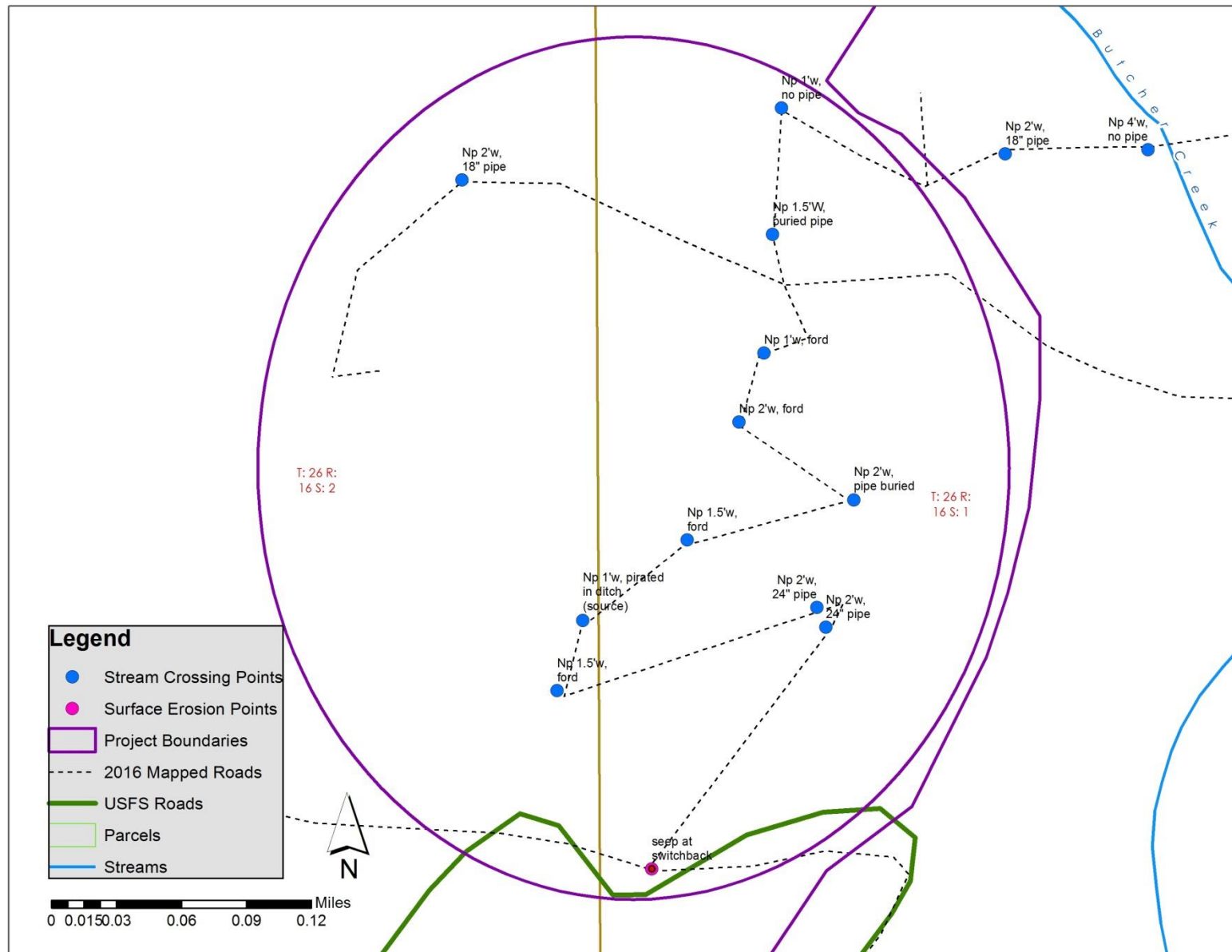
Project 11: Location of 2016 field inventory data with notes



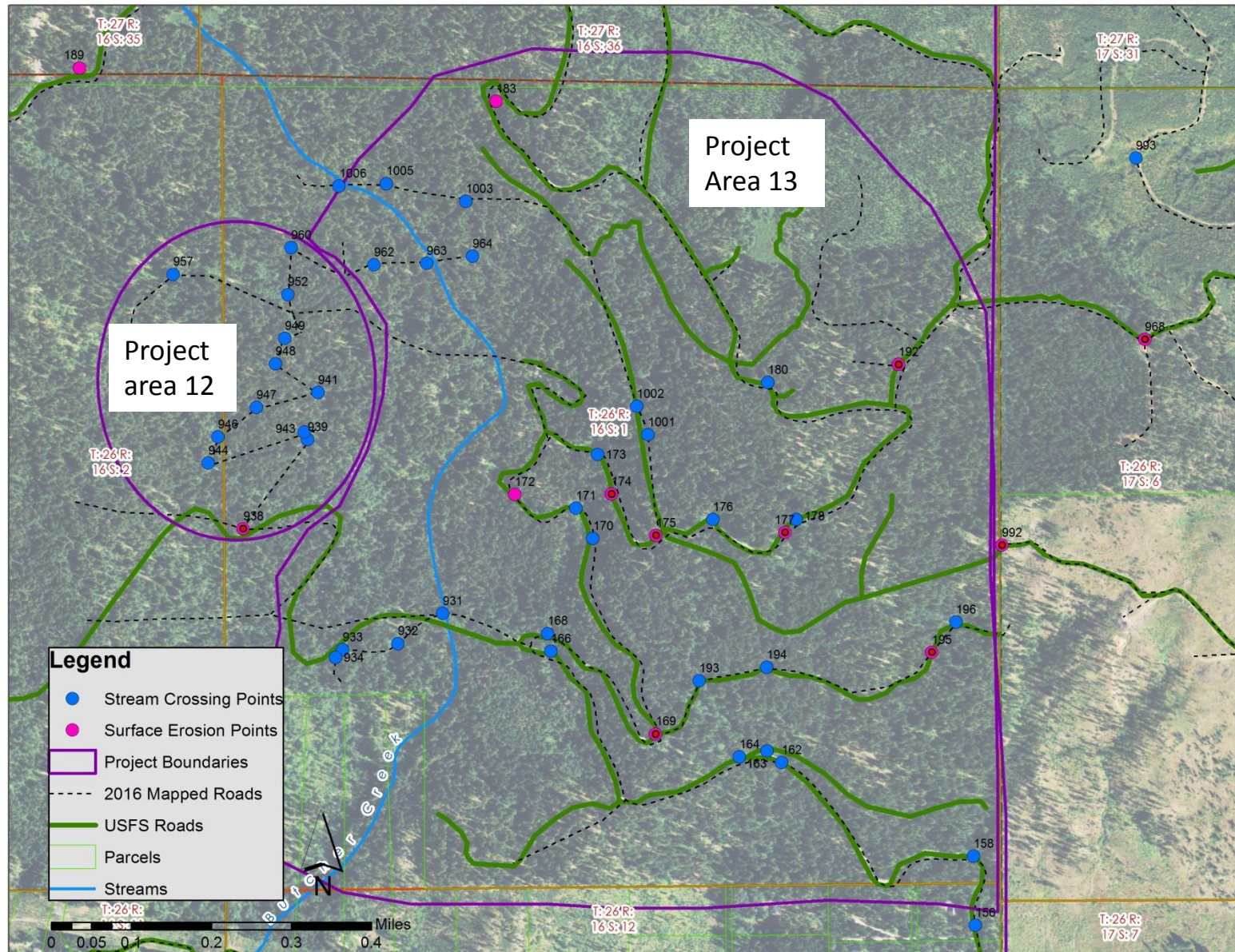
Project 12: Location of 2016 field inventory data overlaid on 2013 aerial photo



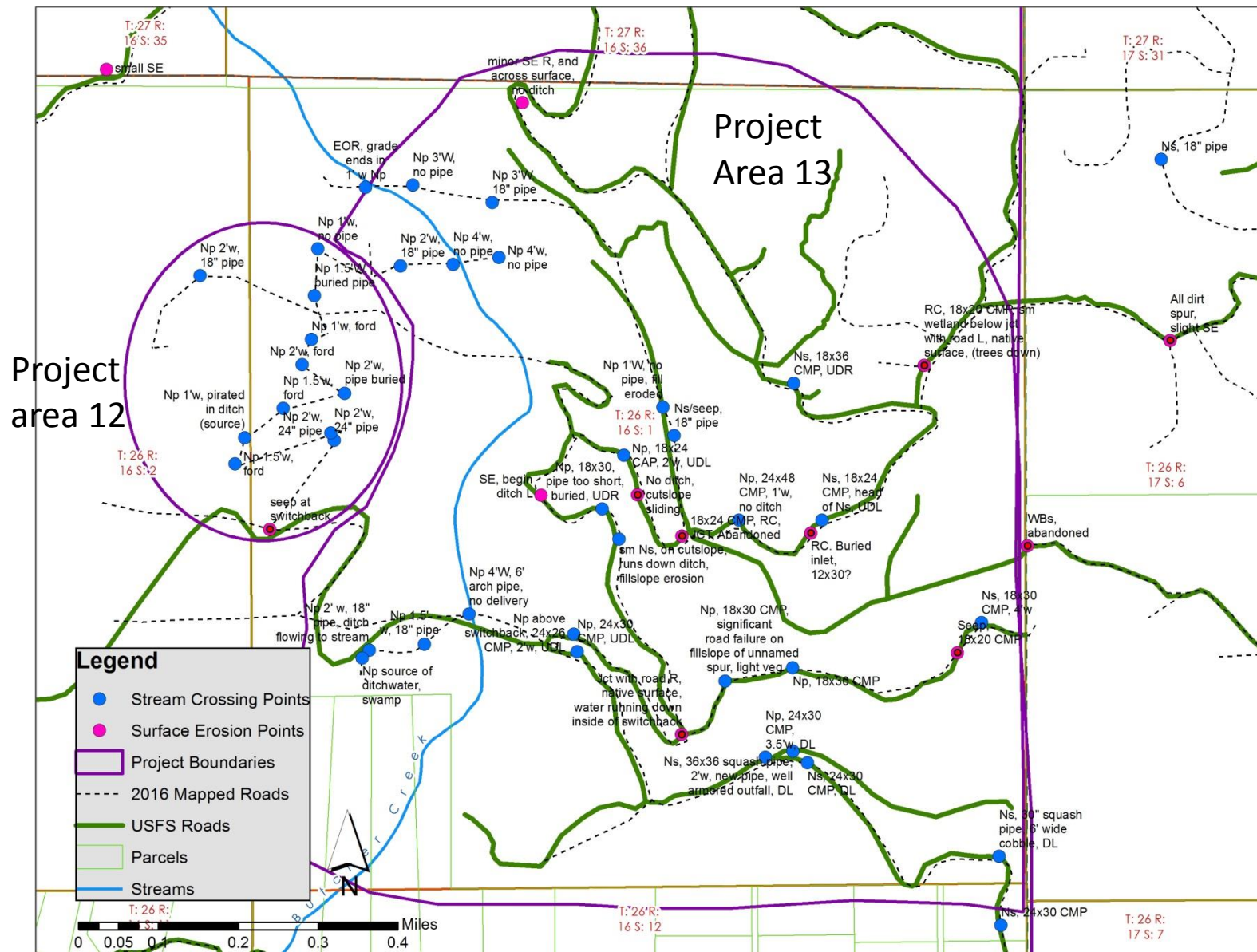
Project 12: Location of 2016 field inventory data with notes



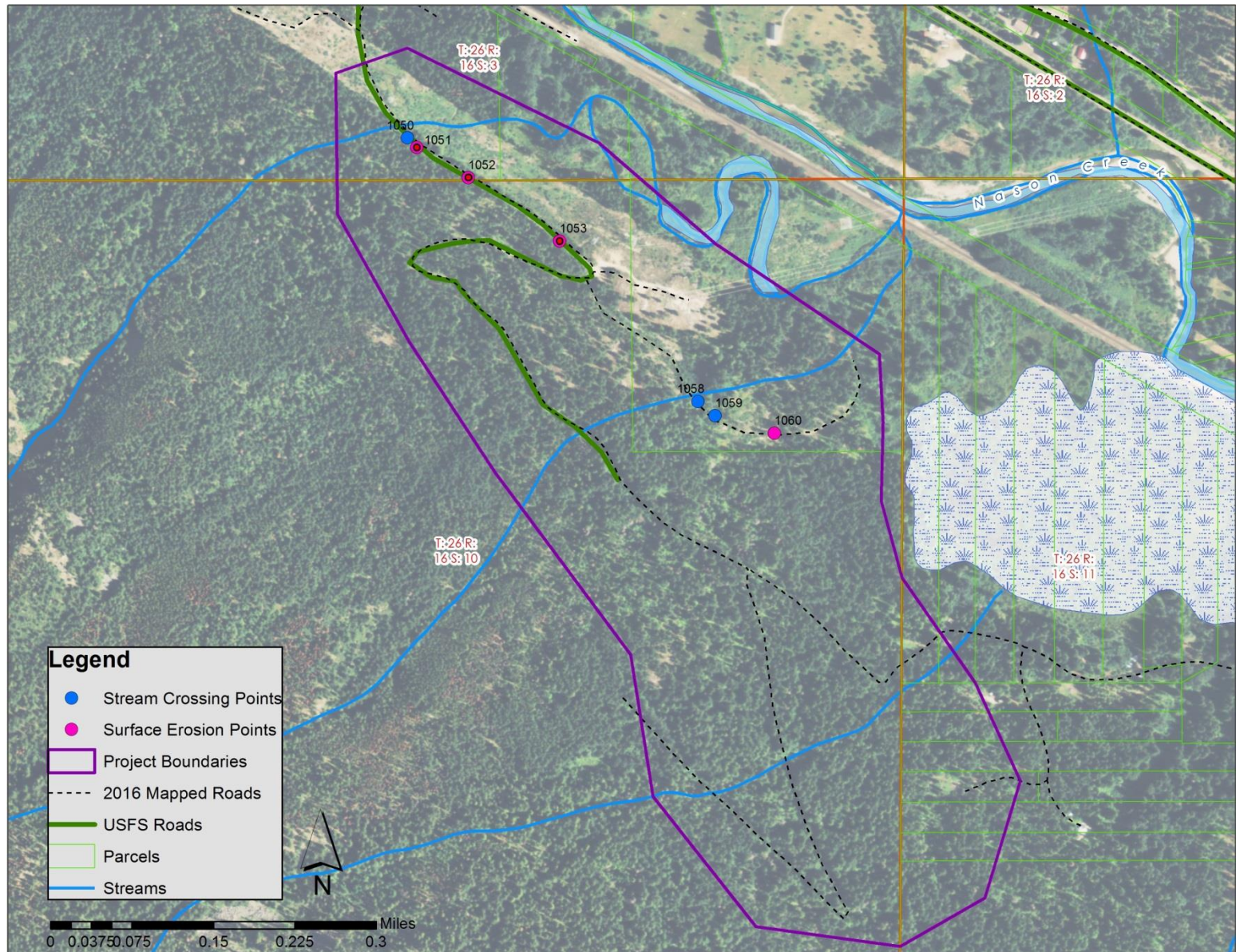
Project 13: Location of 2016 field inventory data overlaid on 2013 aerial photo



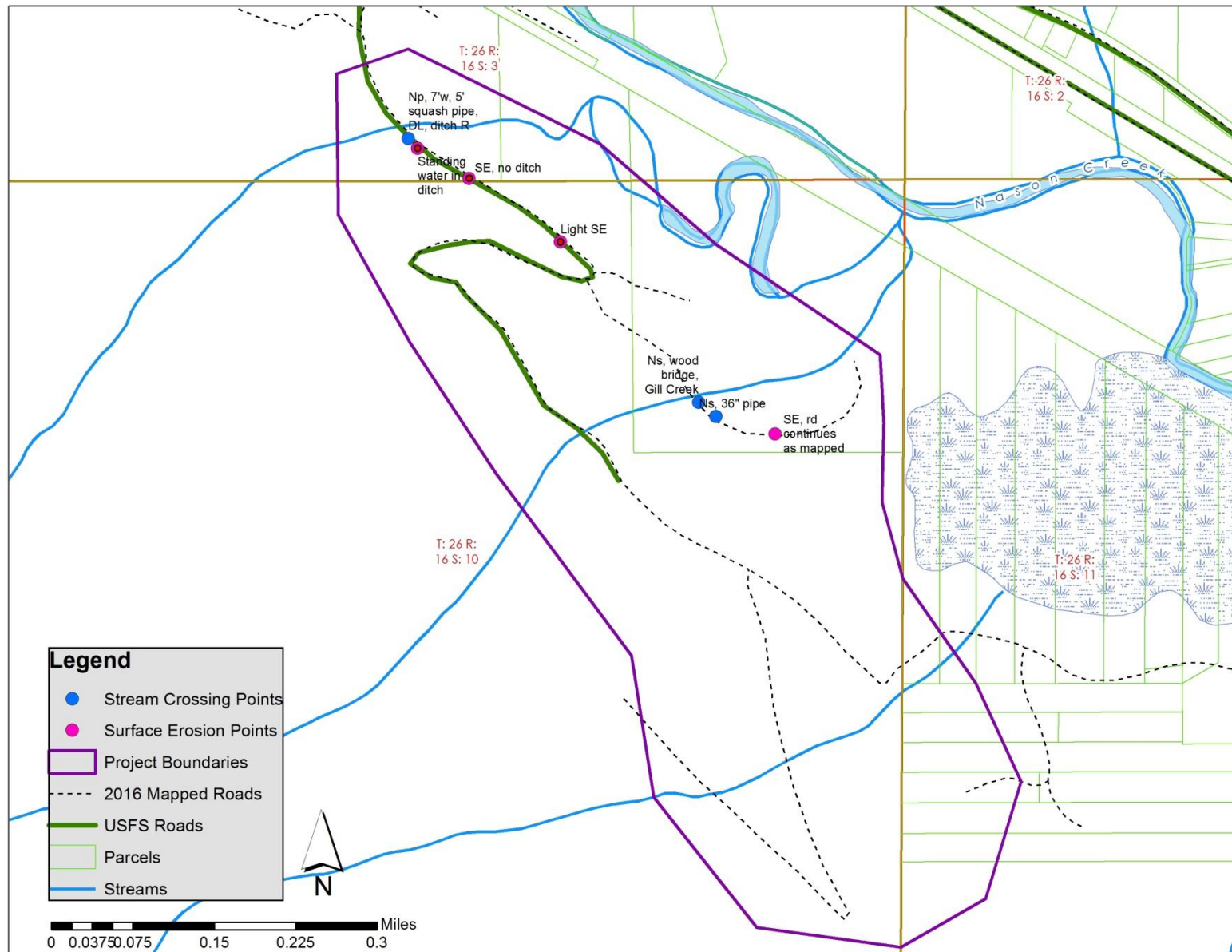
Project 13: Location of 2016 field inventory data with notes



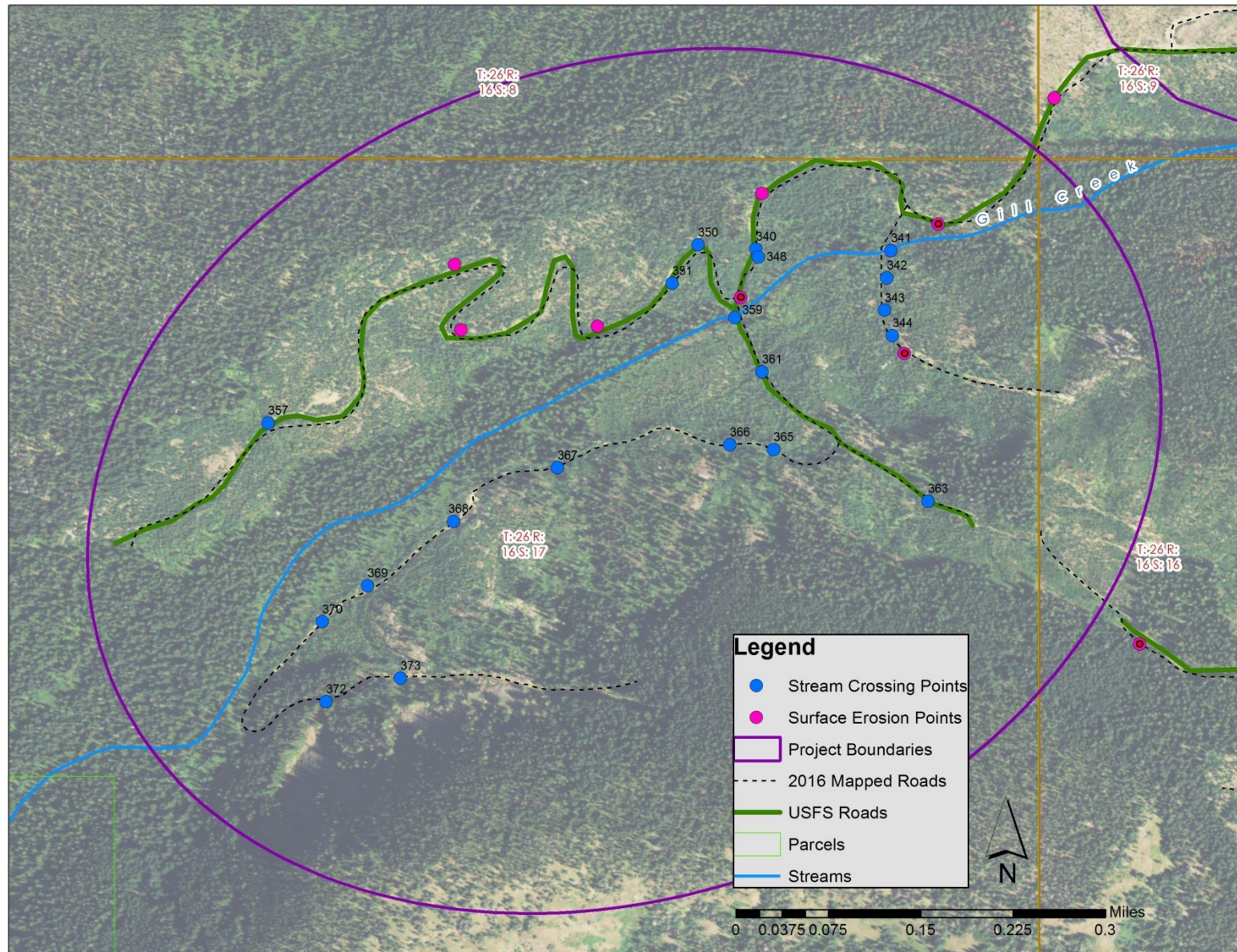
Project 14: Location of 2016 field inventory data overlaid on 2013 aerial photo



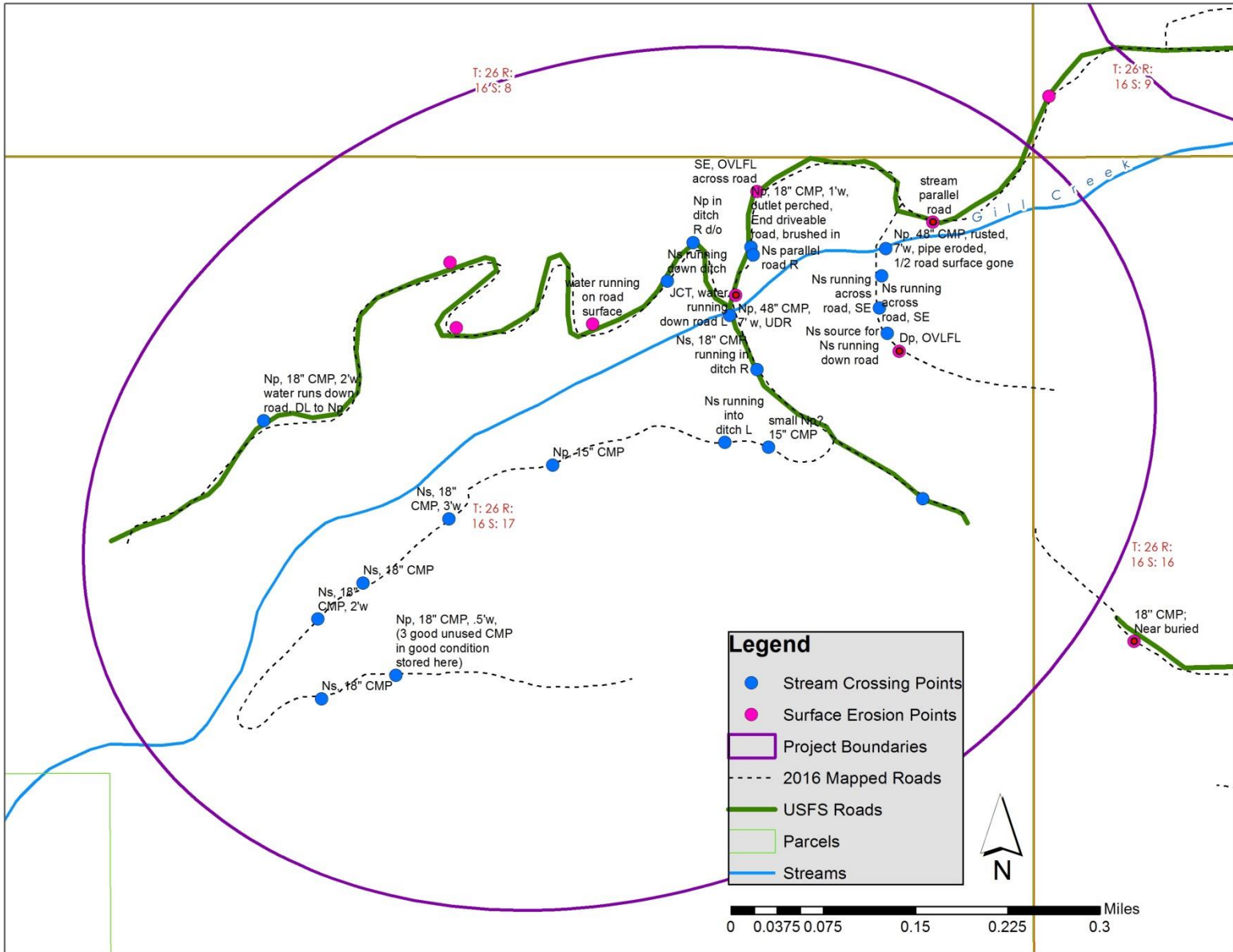
Project 14: Location of 2016 field inventory data with notes



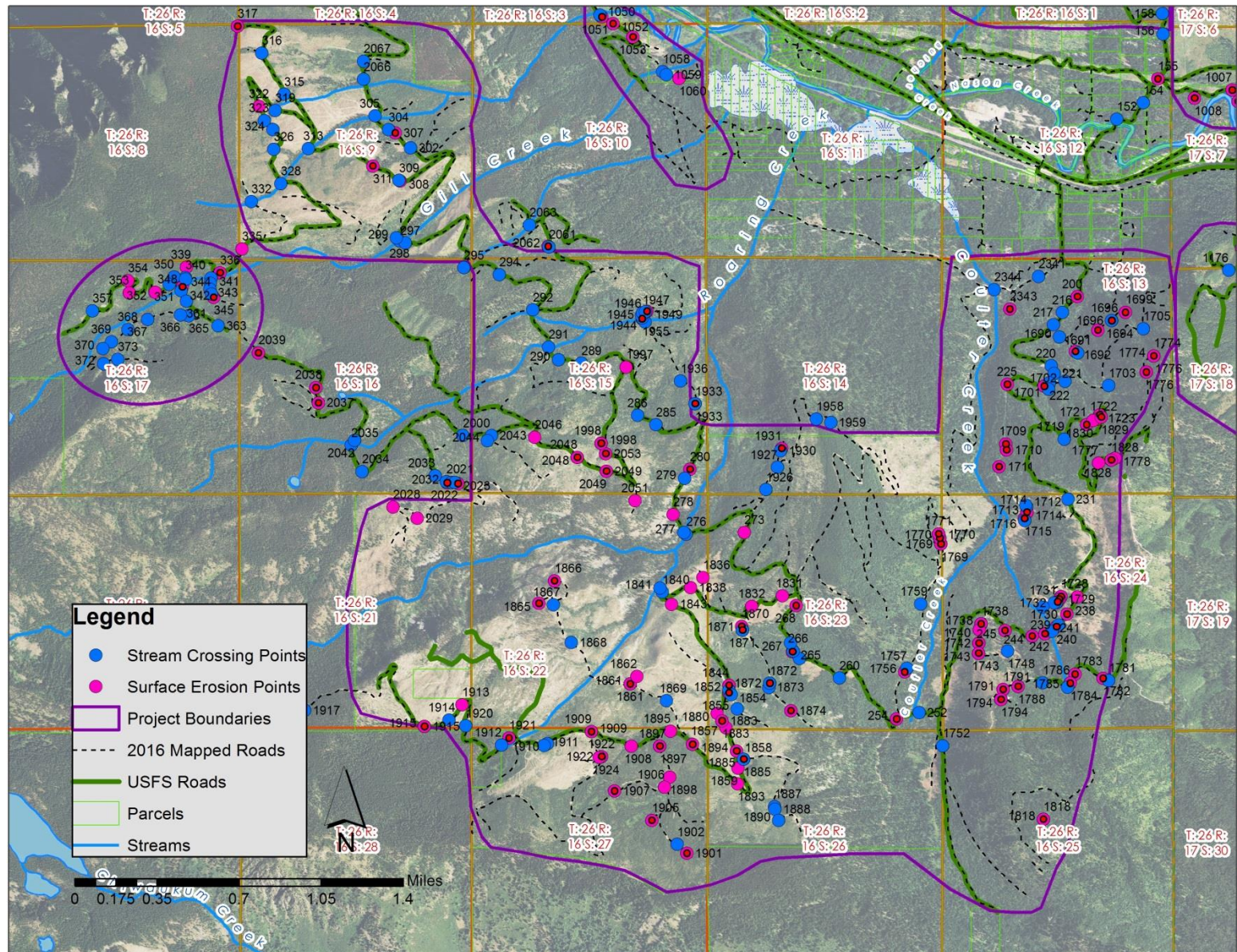
Project 15: Location of DNR mapped streams and 2016 field inventory data overlaid on 2013 aerial photo



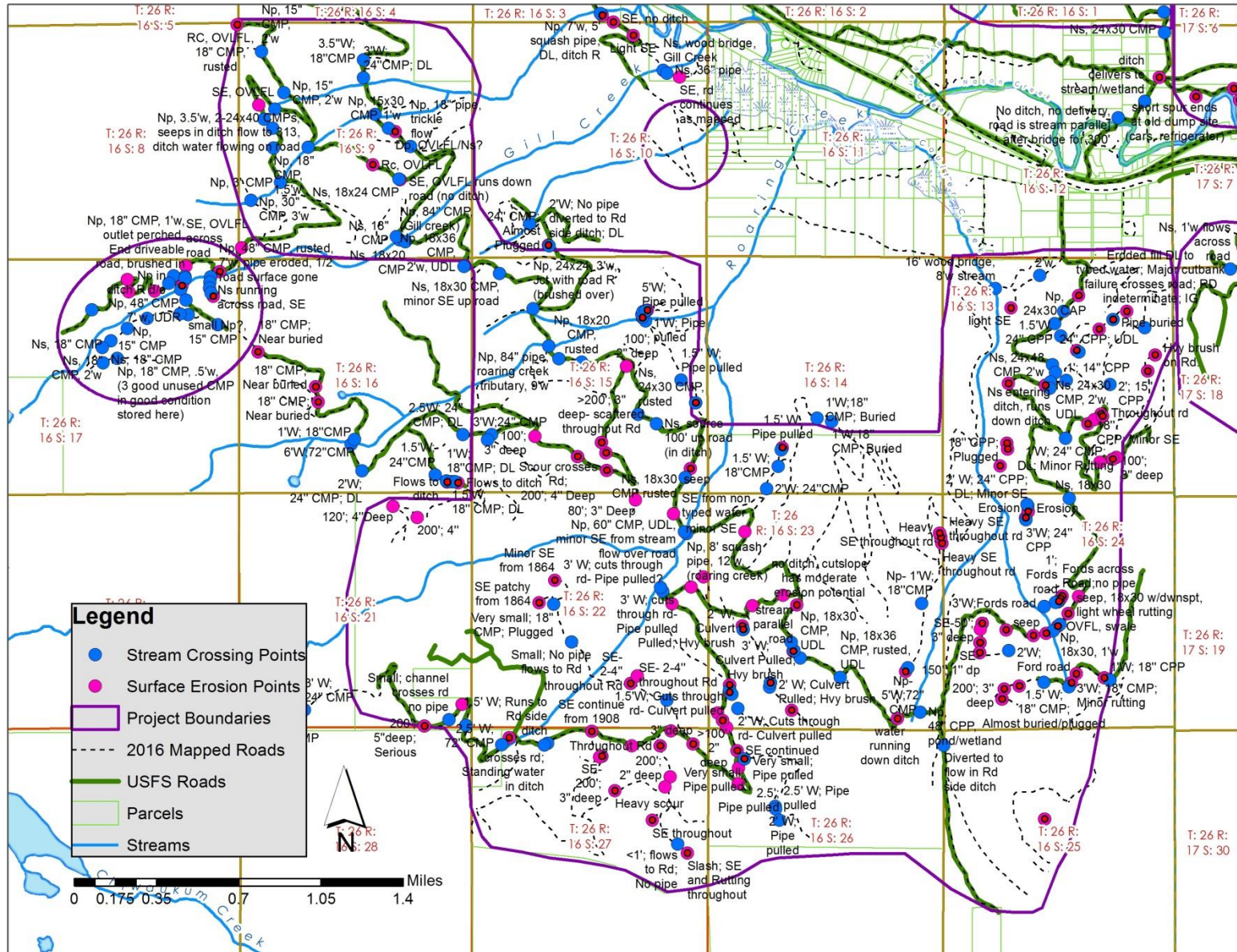
Project 15: Location of DNR mapped streams and 2016 field inventory data with notes



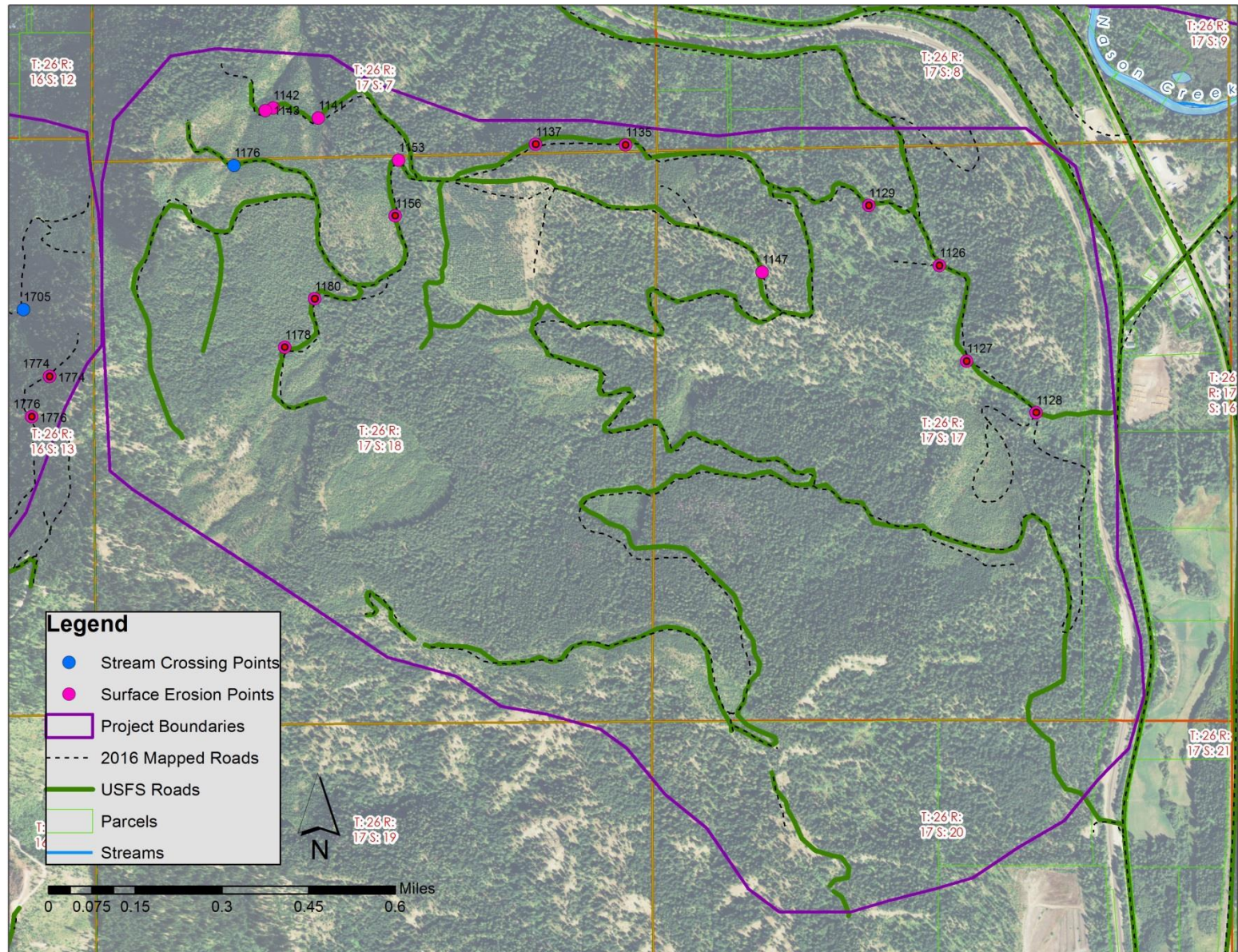
Projects 16 & 17: Location of DNR mapped streams and 2016 field inventory data overlaid on 2013 aerial photo



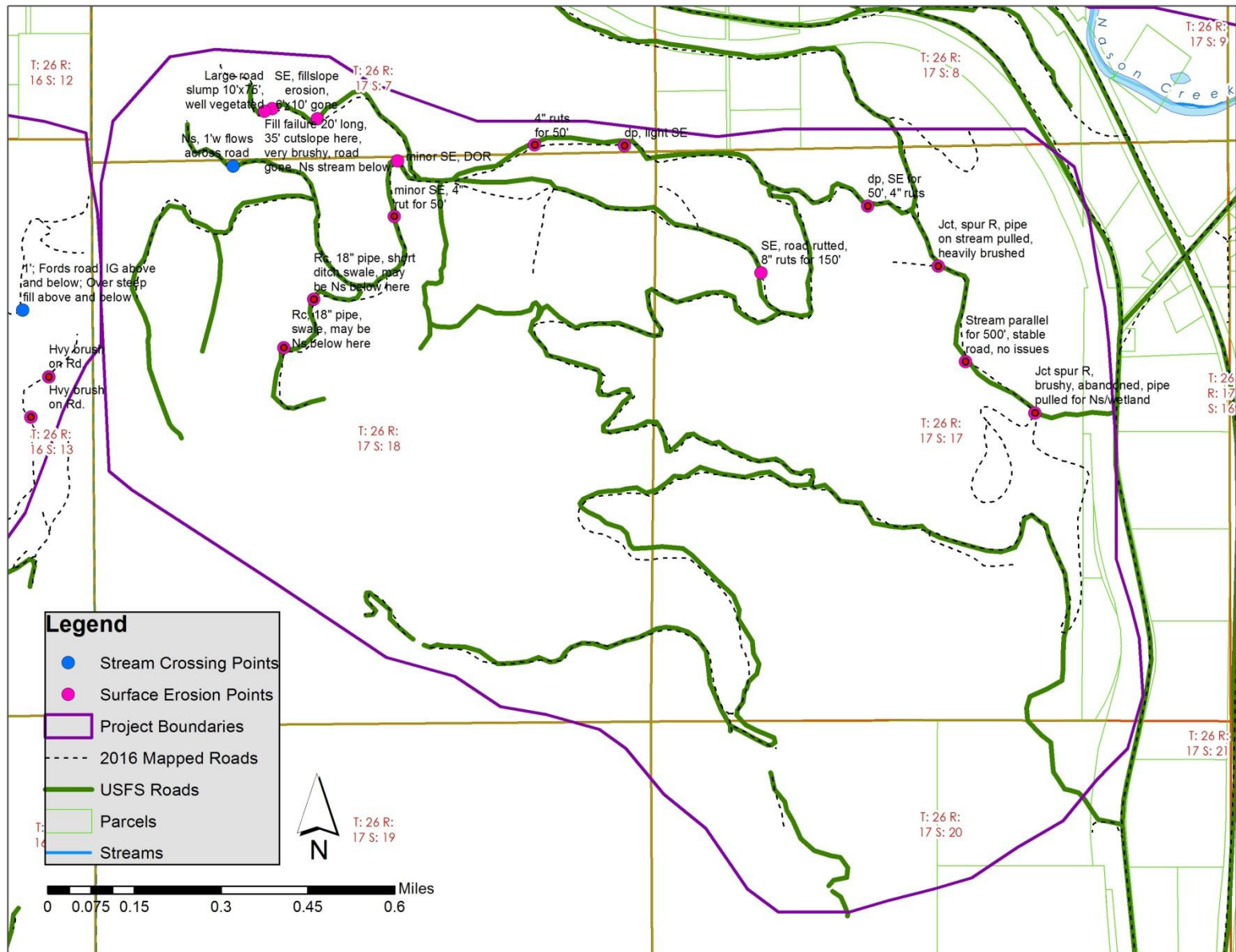
Projects 16 & 17: Location of DNR mapped streams and 2016 field inventory data with notes



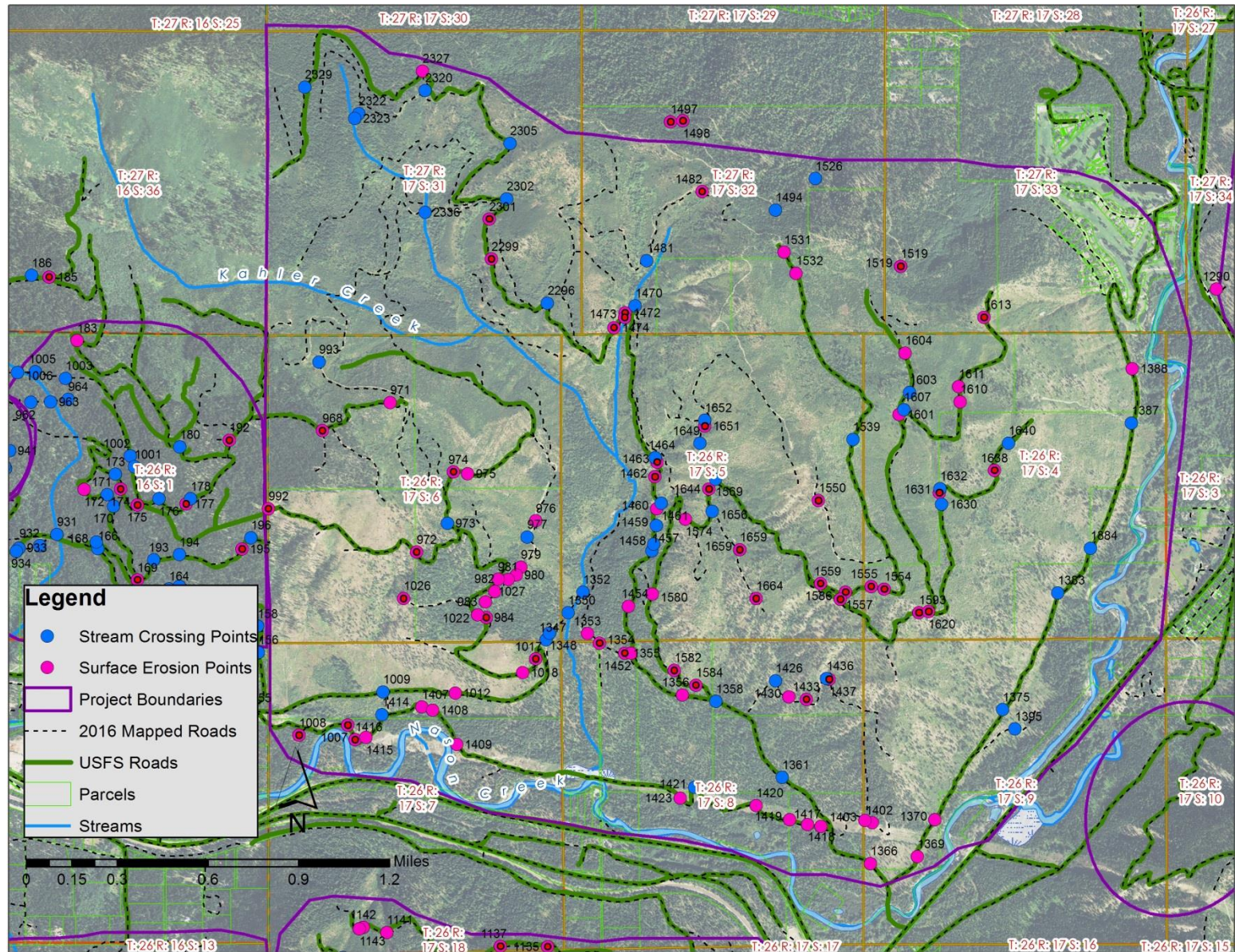
Project 18: Location of DNR mapped streams and 2016 field inventory data overlaid on 2013 aerial photo



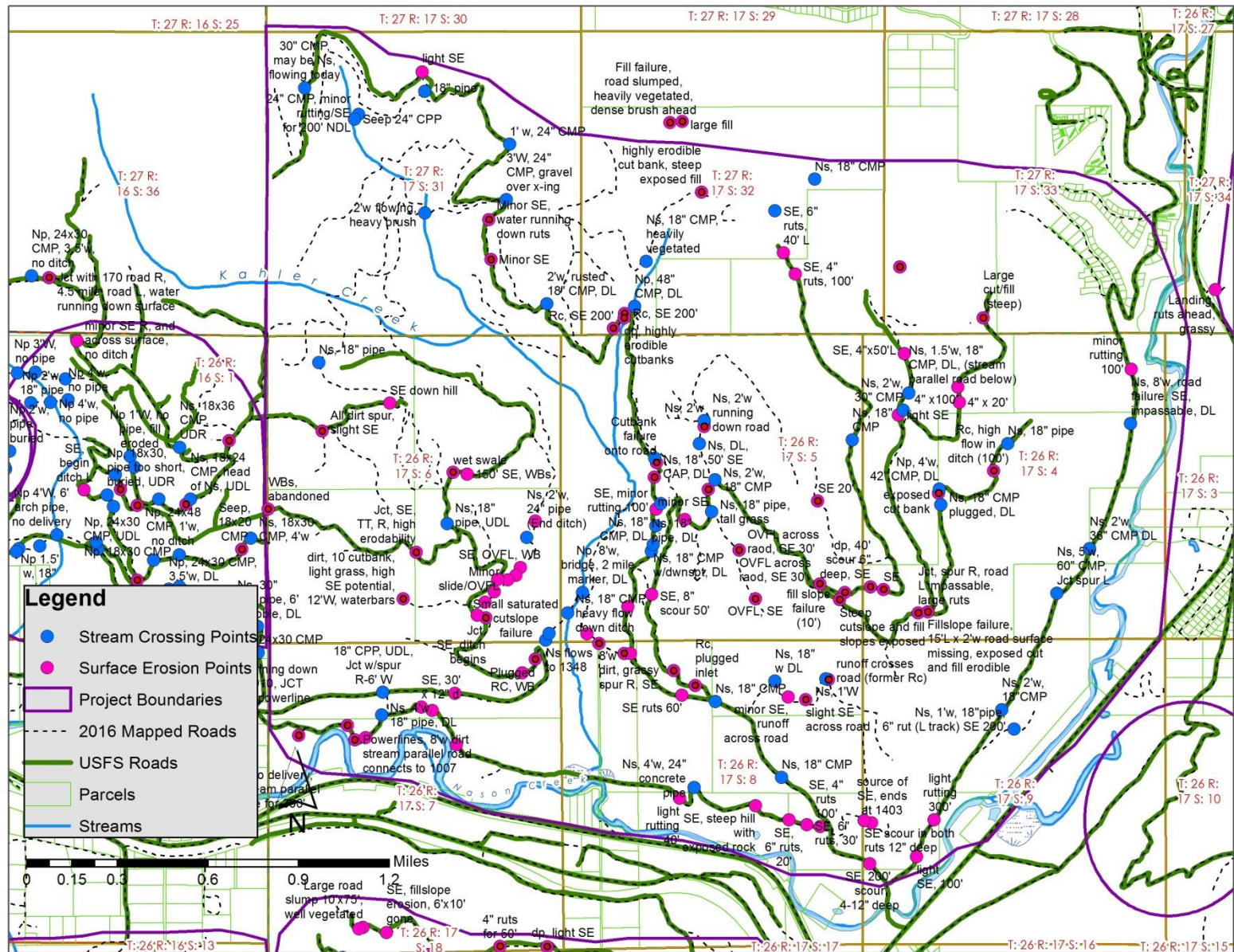
Project 18: Location of 2016 field inventory data with notes



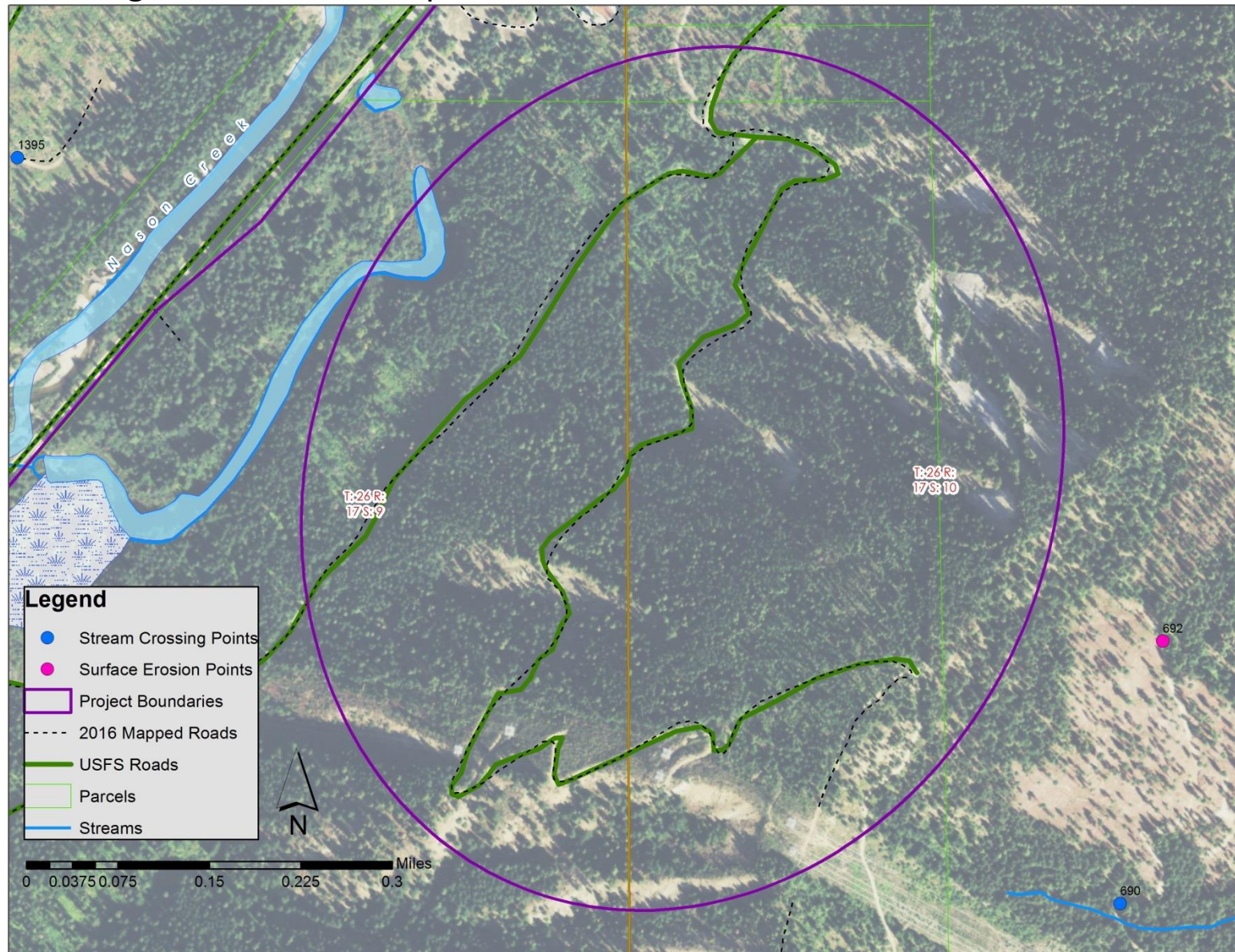
Projects 19 & 20: Location of 2016 field inventory data overlaid on 2013 aerial photo



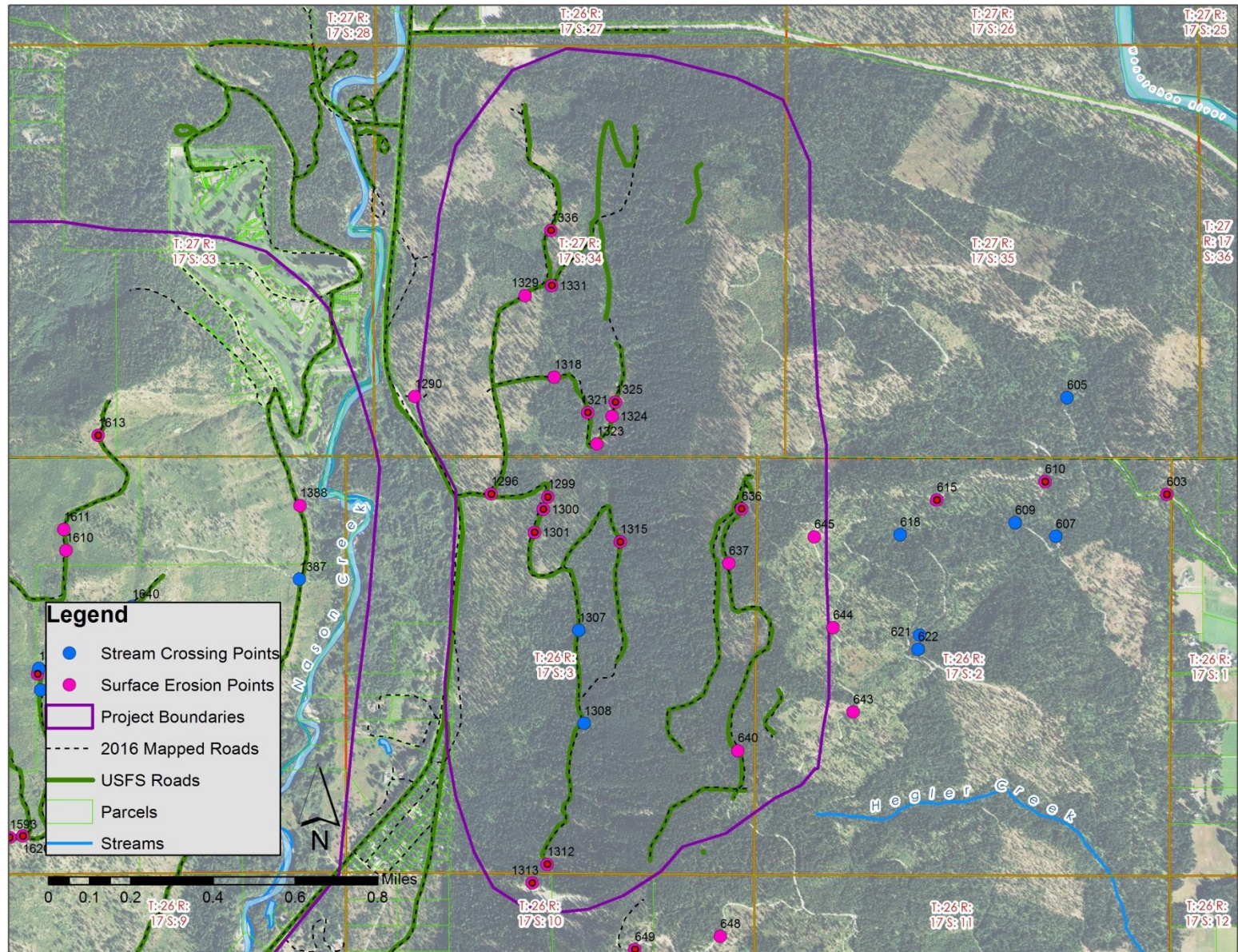
Projects 19 & 20: Location of 2016 field inventory data with notes



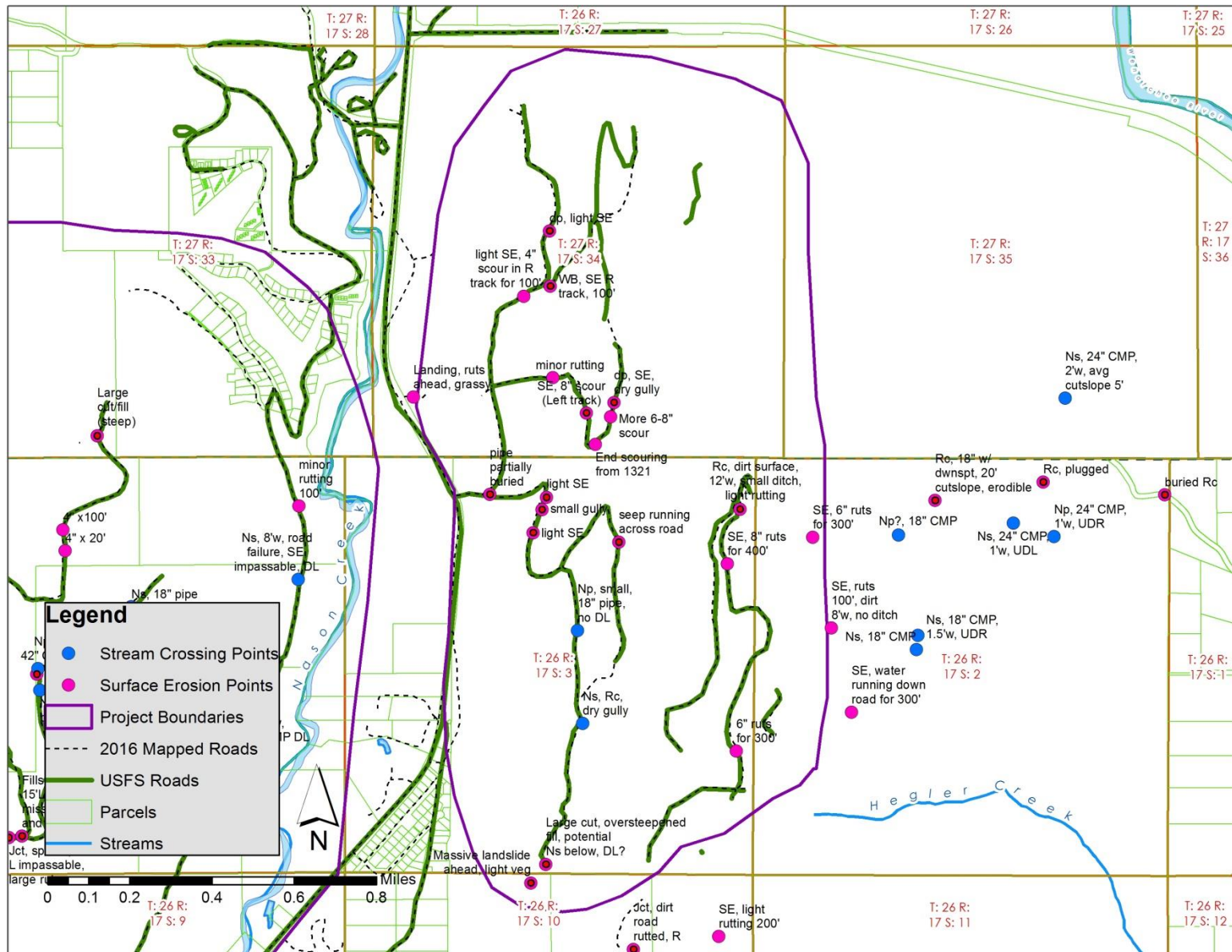
Project 21: Location of project area 21 on 2013 aerial photo; no surface erosion points or stream crossings were mapped here, however, it was included as a project area due to modeling results for future potential erosion issues



Project 22: Location of 2016 field inventory data overlaid on 2013 aerial photo



Project 22: Location of 2016 field inventory data with notes



Project 23: Location of Project Area 23 overlaid on 2013 aerial photo. No field data was collected here, however, it was included as a project area due to modeling results

