

Great Divide Alternate Colorado

Low altitude alternate to the San Juans

Cartography by Jerry Brown, Bear Creek Survey Service, LLC

1.00

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Map base from United States Geological Survey 1:24,000 quadrangles and Forest Service Single Edition digital maps. Scans, reprojections and digital images produced by Igage Mapping Corporation. These maps were produced using the Igage 'All Topo Maps V7 Pro New Mexico' product.

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1st Edition

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Bear Creek Survey Service, LLC
3065 East 2nd Avenue
Durango, CO 80301
(970) 403-3527

1.00 [2017 03 28]

Disclaimers

CDNST

Beware! Trail users need to be prepared for any and all contingencies!

*Throughout its length, the official route of the CDNST is a work in progress, with continuously ongoing changes occurring even as this information is published. With this in mind, it is the Trail user's responsibility to contact local land management agencies for the most current Trail information. It is also the responsibility of the CDNST user to be prepared and understand the risks. Failure to have the necessary knowledge, equipment and conditioning may cause extreme physical danger, injury or even death. **Know you are utilizing the CDNST and the information contained in this book at your own risk!***

Trail users may find portions of the official route closed or restricted due to ongoing forestry issues such as fires, salvage logging, dangerous downfall, or other events. Users may have to deviate from the maps at times because of these issues. Generally, any closed areas will be identified and alternate routes described. Trail users must utilize these alternate routes where directed to do so.

*The CDNST is not fully constructed yet and in places users will find themselves on paved highways and improved roads which can be extremely hazardous, particularly for stock animals. Paved highways and improved roads are not part of the "official" CDNST. No "official" route yet exists in these places. It is the trail users responsibility to study and find alternate safe access around these areas. **You are responsible for your own safety!** Generally, these highways and paved roads currently exist along portions of the CDNST due to private land ownership negotiations still in progress. It is a long term goal to develop Trail off of all these locations strategically over time. In the meantime, please respect private land owners by not trespassing on privately owned property. Landownership is not depicted on the maps and access through non-Federal areas is only allowed at the discretion or by agreement with the landowner.*

There are numerous areas where the trail is faint, unmarked, and largely unbuilt. Navigation through these areas can be extremely challenging. It is strongly suggested that users carry and understand how to operate navigation gear such as GPS and compass. There are places where large streams and rivers must be forded and at times of high water the potential for drowning is high. If you are hiking in a high water time, it is strongly suggested that you travel with another hiker and carry adequate equipment for dealing with deep, dangerous fordings.

Data Accuracy/Liability

The Continental Divide National Scenic Trail (CDNST) GIS map data, developed cooperatively by the Bear Creek Survey Service, LLC and the U.S. Forest Service, the lead federal agency with stewardship responsibility of the CDNST, represents a digital depiction of the Continental Divide National Scenic Trail centerline for recreational and entertainment purposes. The information contained in these data is dynamic and may change over time. Bear Creek Survey Service, LLC and U.S. Forest Service shall not be responsible for errors or omissions in the data and shall not be obligated to provide updates, additions, or corrections to the data in the future. Bear Creek Survey Service, LLC and U.S. Forest Service give no warranty, expressed or implied, as to the accuracy, reliability, or completeness of this data, including travel route data. It is the responsibility of the data user to use the data appropriately. Bear Creek Survey Service, LLC and U.S. Forest Service shall not be held liable for improper or incorrect use of the data described and/or contained herein.

Equestrian or Pack Stock Use

Please check all agency regulations ahead of time for the specific locations you plan on bringing stock. National Parks, Forest Service and BLM, to name a few, may have different regulations across the CDNST states.

Prepare yourself and your stock or pack animals. Much of the CDNST is over 8,000 feet in elevation and in many areas above tree line. Acclimation of stock or pack animals for 2-3 days is advisable. Never push the animal until you are certain that they have totally acclimated to the altitude. Stock and riders with little or no mountain experience may have problems with rapid stream crossings, slide areas, and other unfamiliar conditions.

For more information and sources for stock use on Trails:

Yosemite National Park's website <http://www.nps.gov/yose/planyourvisit/stock.htm>

Horse & Mule Trail Guide USA <http://www.horseandmuletrails.com/Packh.htm>

Backcountry Horsemen of America <http://www.backcountryhorse.com/>

The Backcountry Llama <http://bcllama.com/>

Leave No Trace !

The responsibility of stewardship falls to every individual who uses and enjoys the backcountry. When we set foot here, we should accept a simple creed – that we will respect these places in their natural state and that we will strive to leave no trace of our presence.

1. Plan ahead and prepare
2. Travel and camp on durable surfaces
3. Dispose of waste properly
4. Leave what you find
5. Minimize campfire impacts
6. Respect wildlife
7. Be considerate of other visitors

For more information please visit www.lnt.org.

Creating the maps:

The lines depicting The Continental Divide Trail in this book are actually GPS recordings collected by a field crew during the summers of 2009-2011 and maintained since to reflect changes. The GPS gear consists of two professional grade Ashtech receivers with sub-meter or better accuracies. The receivers are allowed to run continuously, with positions collected systematically while hiking. Whenever features such as intersections, roads, creeks, etc. are encountered the GPS is held stationary for a period of time to enhance accuracy. The data is differentially corrected, either by satellite based augmentation (SBAS) or post-processing to improve accuracy. More than 5.2 million points were recorded over about 3,047 miles of trail then thinned to favor accuracy based upon satellite geometry. The resulting database contains individual points with average spacing of about 6 feet which are connected to make a very detailed line. The map images are made by digitally cutting and combining hundreds of USGS topographical maps into smaller maps that reflect the trail corridor. The line and waypoint data was added and final images created for printing. Old map lines depicting the CDT, which are wildly erroneous in some places, were removed to prevent confusion.

How to use these maps:

These maps are intended to be used in conjunction with navigation tools such as a GPS receiver and/or compass. The maps show positions at critical intersections, stream crossings, and other features along the way. To save weight, the maps were reduced in scale from the original 1 inch = 2000 feet of the USGS maps to a scale of 1 inch = 3000 feet. The maps have UTM grid lines drawn on them to assist in navigation. There is a scale bar on every map to assist in locating a GPS position from the UTM grid. (See **With a GPS** for details.)

The trail is divided into hiking segments for the purpose of the guide. A typical title looks like this: **Map 1 Seg 1 Mi 0.0 to 06.1**. This means that the map covers part of Segment 1, and is used to travel from waypoints at mile 0.0 to mile 6.1. A subsequent map titled **Map 2 Seg 1 Mi 5.6 to 13.9** would cover Segment one, mile 5.6 to mile 13.9. The mileages begin in each segment with 0.0 and finish with the length of the segment.

Map symbols and GPS Coding:

Red lines depict trail. **Black lines** depict roads.

A gps point name consists of a mileage and descriptor. Decimal points are assumed to 1/10th of a mile. The coding for the point **12_363XR** means segment 12, mile 36.3, Intersection, turn Right.

Codes:

TH, AP=Trailhead or Access Point.

XX, XR, XL describe trail intersections. **XR**=Right turn. **XL**= Left turn. **XX**=Ahead without turning.

RX, RR, and RL describe road intersections. **RR** = Right turn. **RL** = Left turn. **RX** = Ahead without turning.

HP, T, RT= High Point. Ridges, passes, saddles.

MC, MS= Markers, Cairns or Signs. Noted in places where the trail is poorly defined. Very useful as gps navigation points.

GT=Gate

WT= Water - found in dry year 2014. **WS**= Seasonal Water
WR= Hiker reported water sources with date found.

M=Mileage marker only, no feature.

OP= Other Point. This is a sort of catch-all for miscellaneous points along the trail such as boundaries, power lines, buildings, etc.

Understanding UTM Coordinates

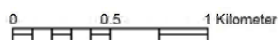
The best way to think of a rectangular coordinate system is to view the earth as a giant checkerboard of equally sized squares. UTM coordinates tell you where you are on the board. The easting (X) value is how many meters you are east of a projected longitude line. The Y value tells you how far north you are of the equator. If you are heading towards a waypoint, your gps will display where you are on the checkerboard, and how far you have to go to get where you want to go. This is also possible in a latitude and longitude system, but it is generally easier to think of your position in terms of meters as opposed to degrees, minutes, and seconds. The maps have this checkerboard already drawn as light blue lines in 2000 meter intervals.



This example shows part of a map with the trail on it. The light blue lines are the UTM grid. The Eastings (X) are printed along the bottoms and tops of the maps, and the Northings (Y) are printed along the sides in blue. In the example, the first Northing is 4,922,000. The first Easting is 388,000. To locate a place on the map, you have to measure how far east (or west) and north (or south) it is from the nearest blue lines. (Remember the lines are 2,000 meters apart.) Now look at the waypoint located at mile 12.5. It is possible to determine its UTM position by measuring how far east it is of the nearest north-south line and how far north (or south) it is of the east-west line. Without even measuring, I would guess it is not quite halfway to the 390,000 meter line. I would guess about 900 meters east of the 388,000 meter line.

Adding this value to the value of the line measured from, plus my easting (X) would be 388,900. It is north of the blue line, which is 4,922,000 meters. I would guess halfway, or 4,923,000 meters. Checking the actual position of the waypoint in the file, it is 388,865 E and 4,923,013 N.

My guess was within 40 meters of the actual location! If you use a specialized ruler, known as a scale, you can do much better than a guess. Scales are printed on every map. You can easily create your own portable scale by tracing a printed one onto a piece of paper or thin cardboard. Then you will be able to quickly determine your gps location on the maps.



Map Scale

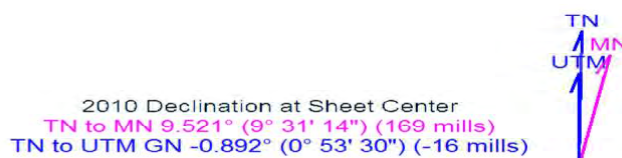
If you think you might be lost simply reverse the process to find out where you are. Turn on the gps, read your UTM location, and transfer that to the map using

the scale. You will be able to see where you are on the map. To get back on track navigate to the nearest waypoint to where you are and continue your trek.

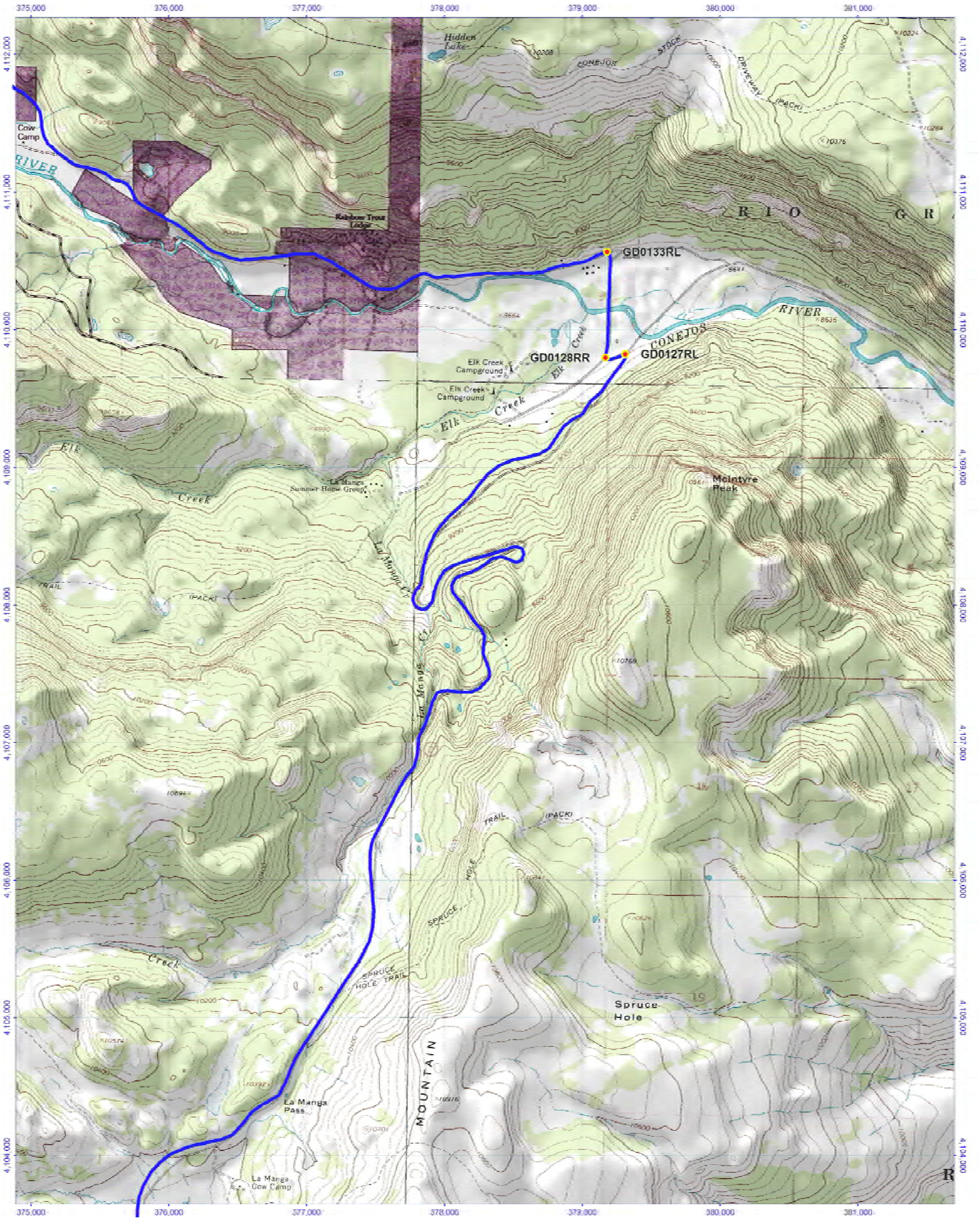
Important!!! None of this information will be of much help if your gps is set up wrong. In order to use this data your gps *MUST* be set up in **WGS84 BEFORE** you type in any data! If you want your gps data to match the maps then it must be this way.

GPS receivers all have a Setup screen where you can choose between many different systems, datums, and formats. On many Garmin units, try **SETUP> UNITS>** and select **UTM UPS** from the list. Click on **MAP DATUM** and select **WGS 84** from the list. That's it – you are ready to go. Some of the newer Garmins will use slightly different terms: **SETUP> Position Format>UTM UPS>Map Datum WGS84**. Magellan units are similar. Press **MENU>Setup>Map Datum>WGS84** Then press **Coord System>UTM**.

Using a compass: A North-South arrow is printed on every map. The pink line represents magnetic north. To orient the map, lay a compass parallel and along the edge of the pink line, then rotate the map until the compass needle points to zero. The map should now be oriented properly. Move the compass around on the oriented map to determine a bearing ahead. To set the declination in the compass, follow the step above then move the compass to the left or right edge of the map. (Note: this will differ depending upon whether the map is printed in a portrait or landscape orientation.) Being careful to not move the map, adjust the compass so the needle points to zero. Now the compass will point to true north whenever the needle points to zero. Declinations are calculated for every map and change along the way, so the easiest way to orient is by using the declination arrow. Declinations are in a constant state of change. You should change the declination settings in your compass occasionally to that shown on the map currently in use. Any declination on a map published more than ten years in the past is likely to be significantly erroneous and should not be trusted.

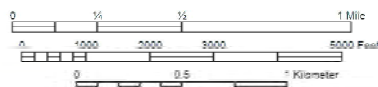


Example of a Magnetic Declination Arrow

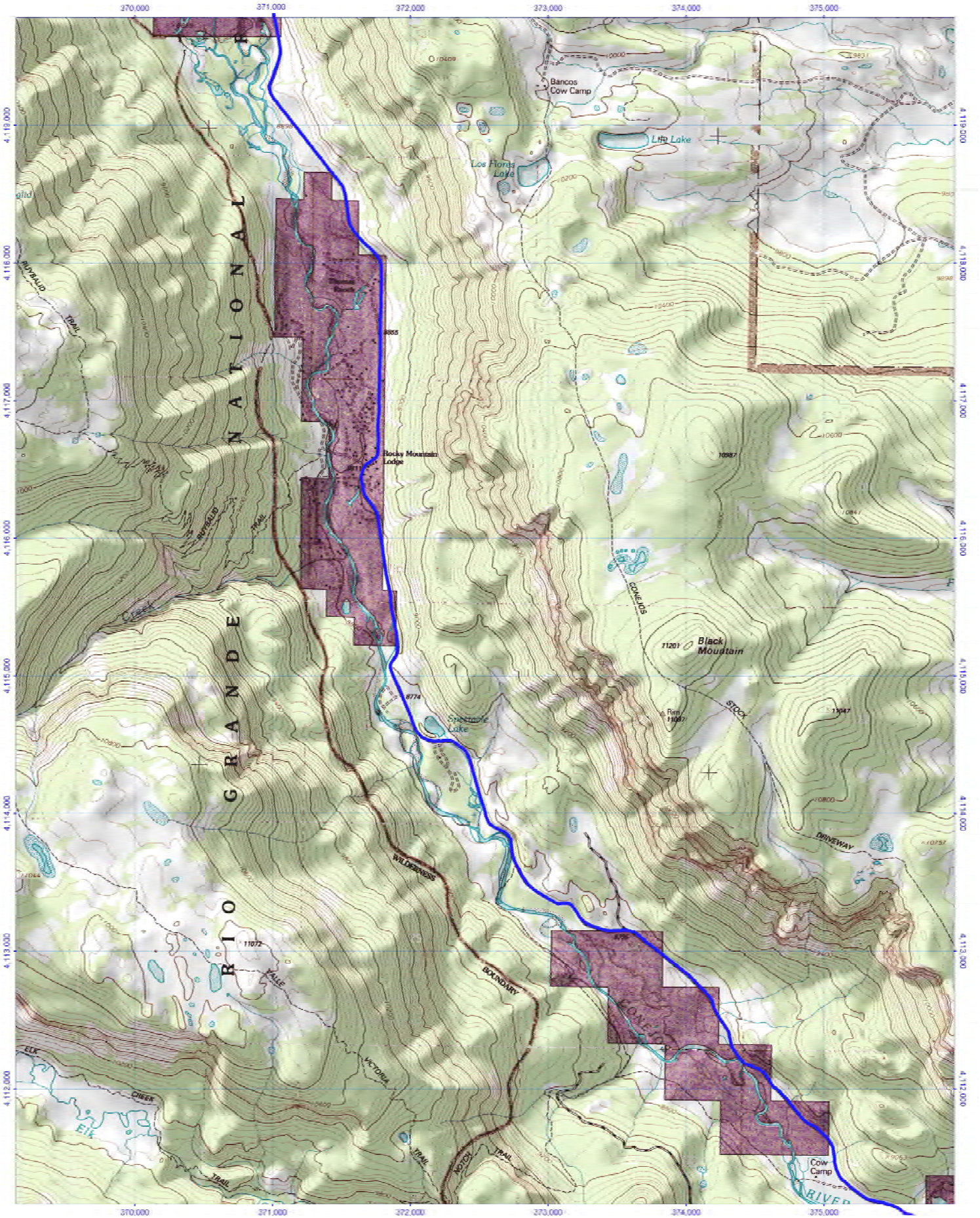


Map Projection: UTM Zone 18N, datum: WGS84
 UTM Zone: 18N, datum: WGS84
 Scale: 1:50,000
 Source: Bear Creek Survey, LLC, a Mesa, Oregon, CO, USA

© 2017 Distribution of Sheet Center
 376,500 N, 4,107,500 E
 TN to UTM GN: 0.927° (4° 56' 37" N) 1.145 miles

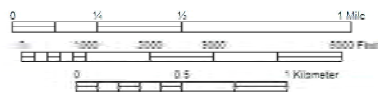


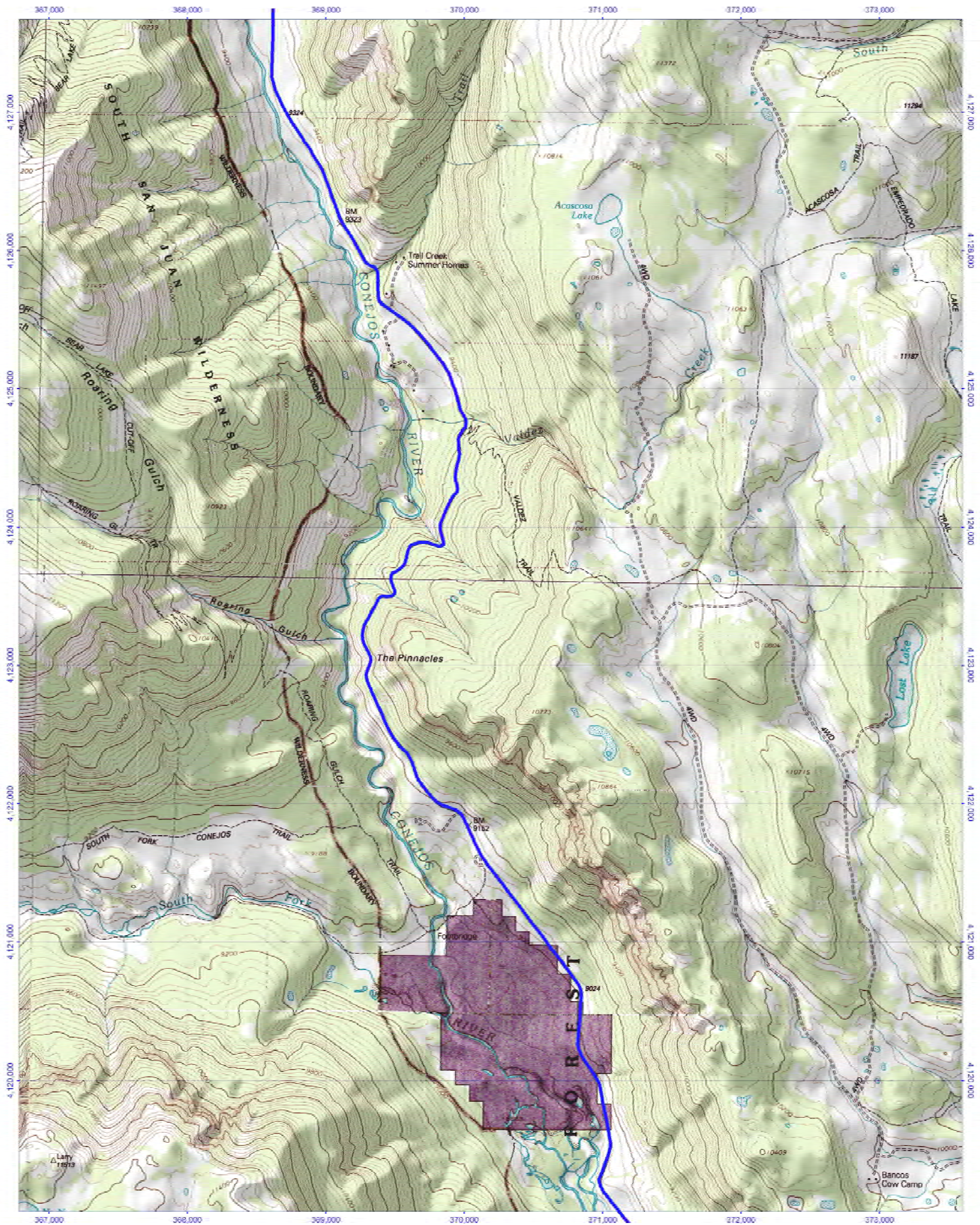
www.bearcreeksurvey.com



Map generated using ArcGIS 10.1
 UTM Zone 18N
 Datum: NAD 83
 Projection: UTM
 Scale: 1:50,000

©2011 Earthlink
 100% 8.561" x 11.693" (27.154 cm x 37.321 cm)
 TN to UTM (41-4800) (10° 12' 4" N, 115° 15' 0" W)



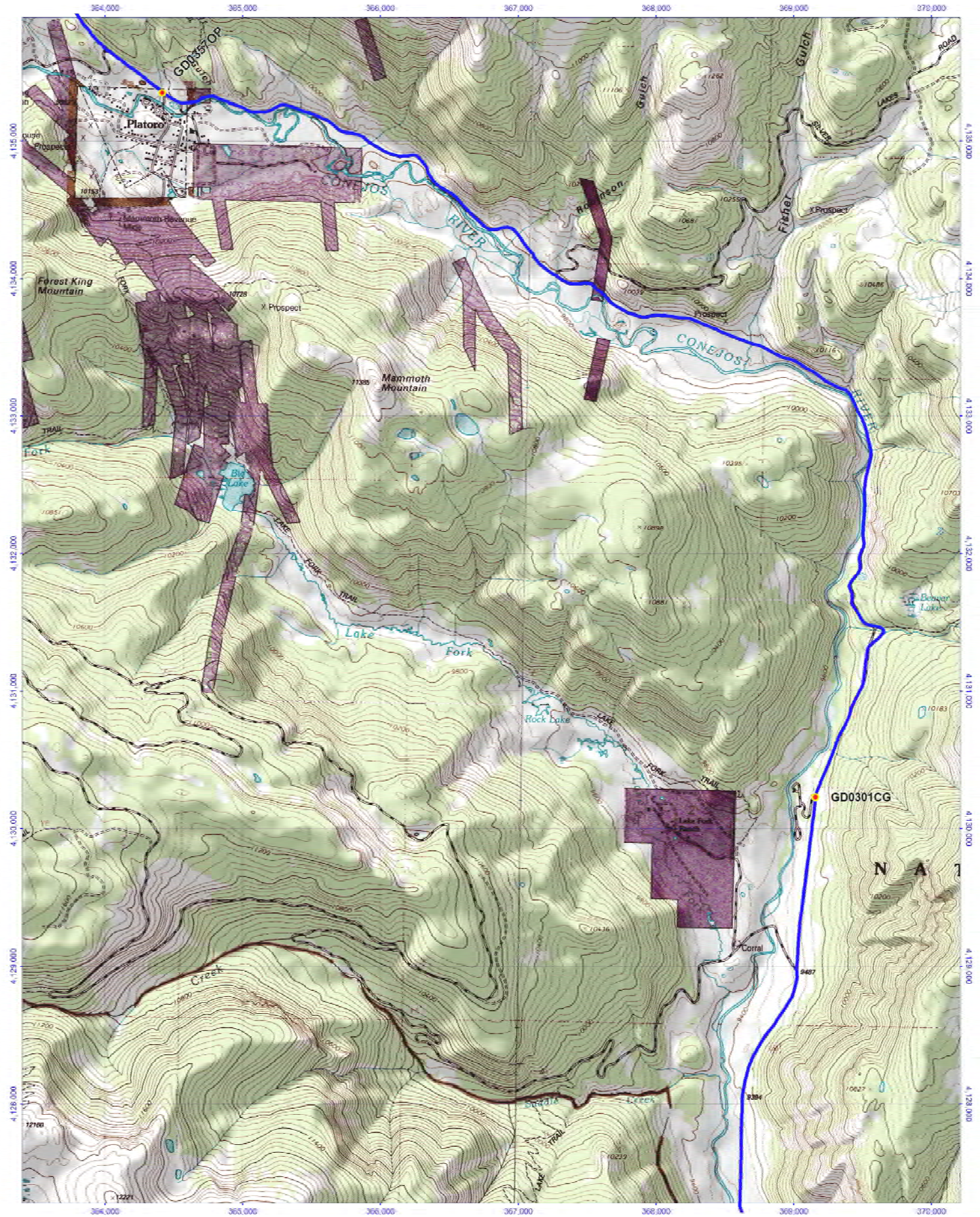


Map Projection: UTM Zone 13N, meters, WGS84
 UTM Grid: UTM Zone 13N, meters, WGS84
 Scale: 1:50,000 (Scale varies with zoom)

2017 Declaration of Shelf Center
 70° 5' 59.8732" W 37° 42' 32.7111" N
 TN to UTM (NAD 83) (4,900' x 12' 52" 107.116 meters)

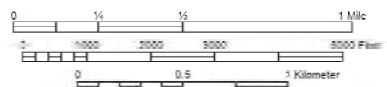


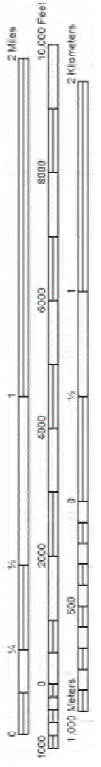
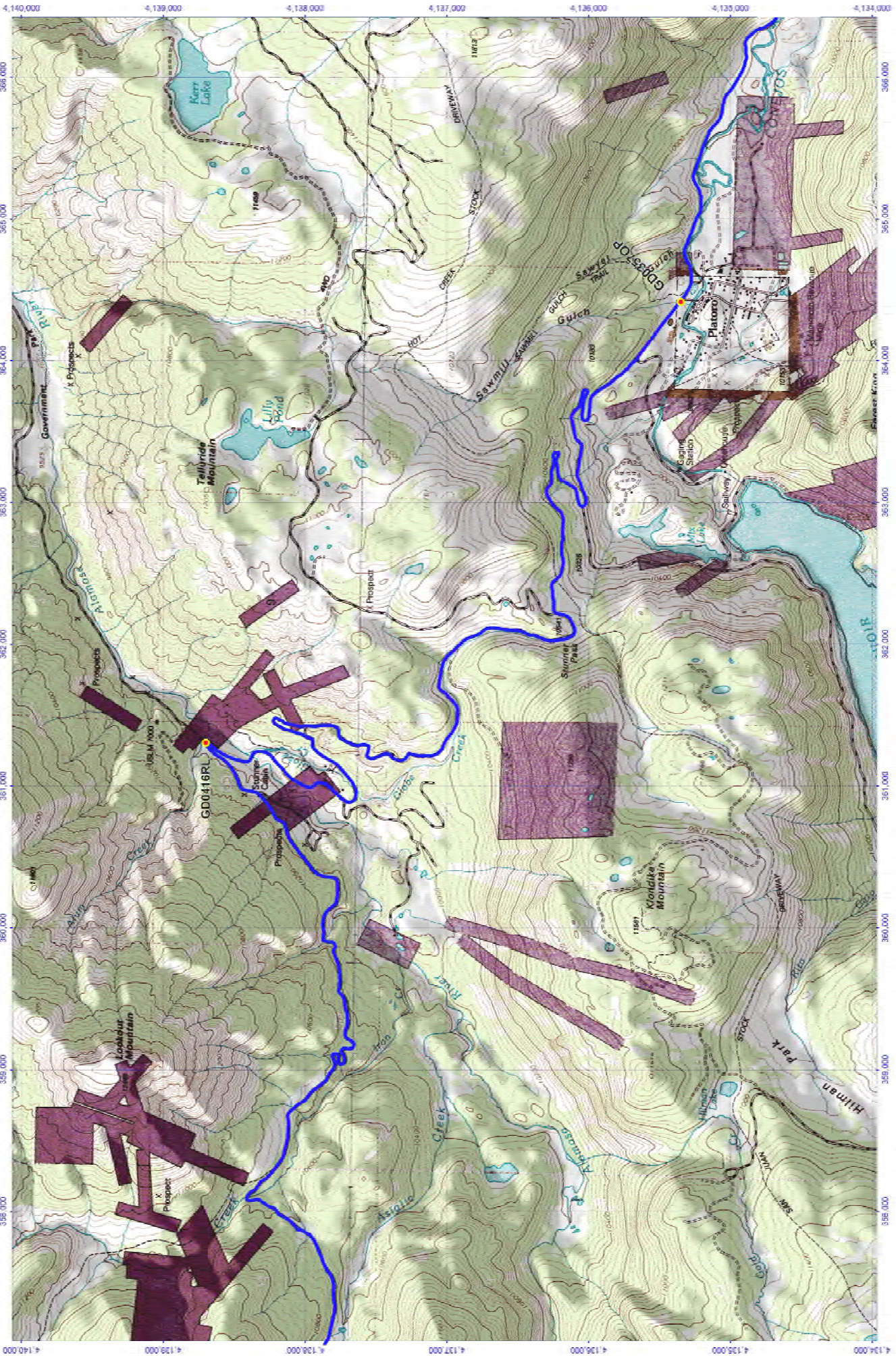
www.bearcreeksurvey.com



Map Projections: UTM Zone 13N, datum: NAD83
 4129 000 4130 000 4131 000 4132 000 4133 000 4134 000 4135 000
 364 000 365 000 366 000 367 000 368 000 369 000 370 000

2017 Declaration of Grand Center
 TNS 4 498 8 7327 20 43 227 1 255 444
 TN to UTM GN: 63927 6 07 54 427 1 76 1667

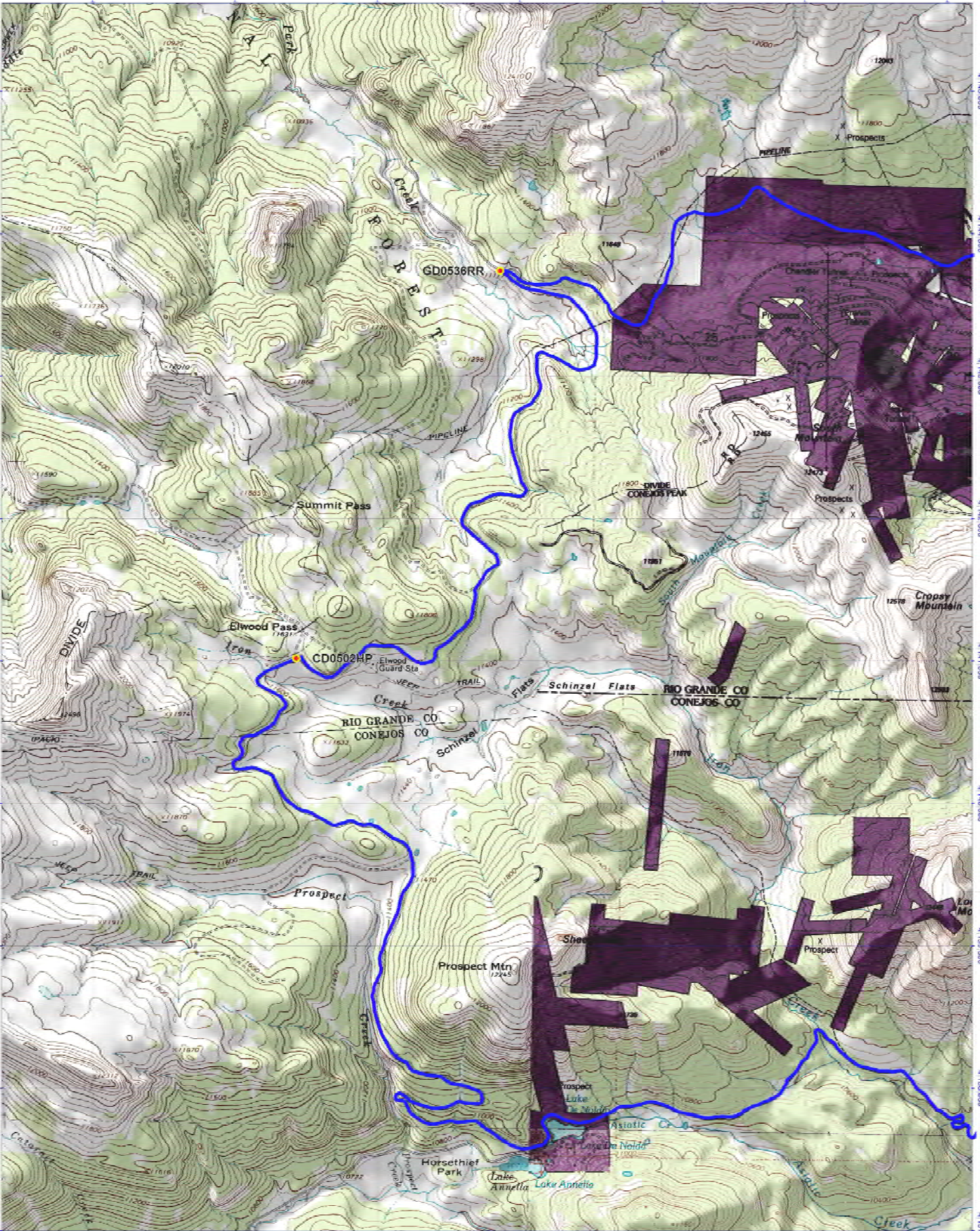




DNV Elevation of Base Line
 11,800.00 FT (3,627.17 Meters)

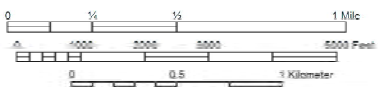
353,000 354,000 355,000 356,000 357,000 358,000 359,000

4,137,000 4,138,000 4,139,000 4,140,000 4,141,000 4,142,000 4,143,000 4,144,000 4,145,000



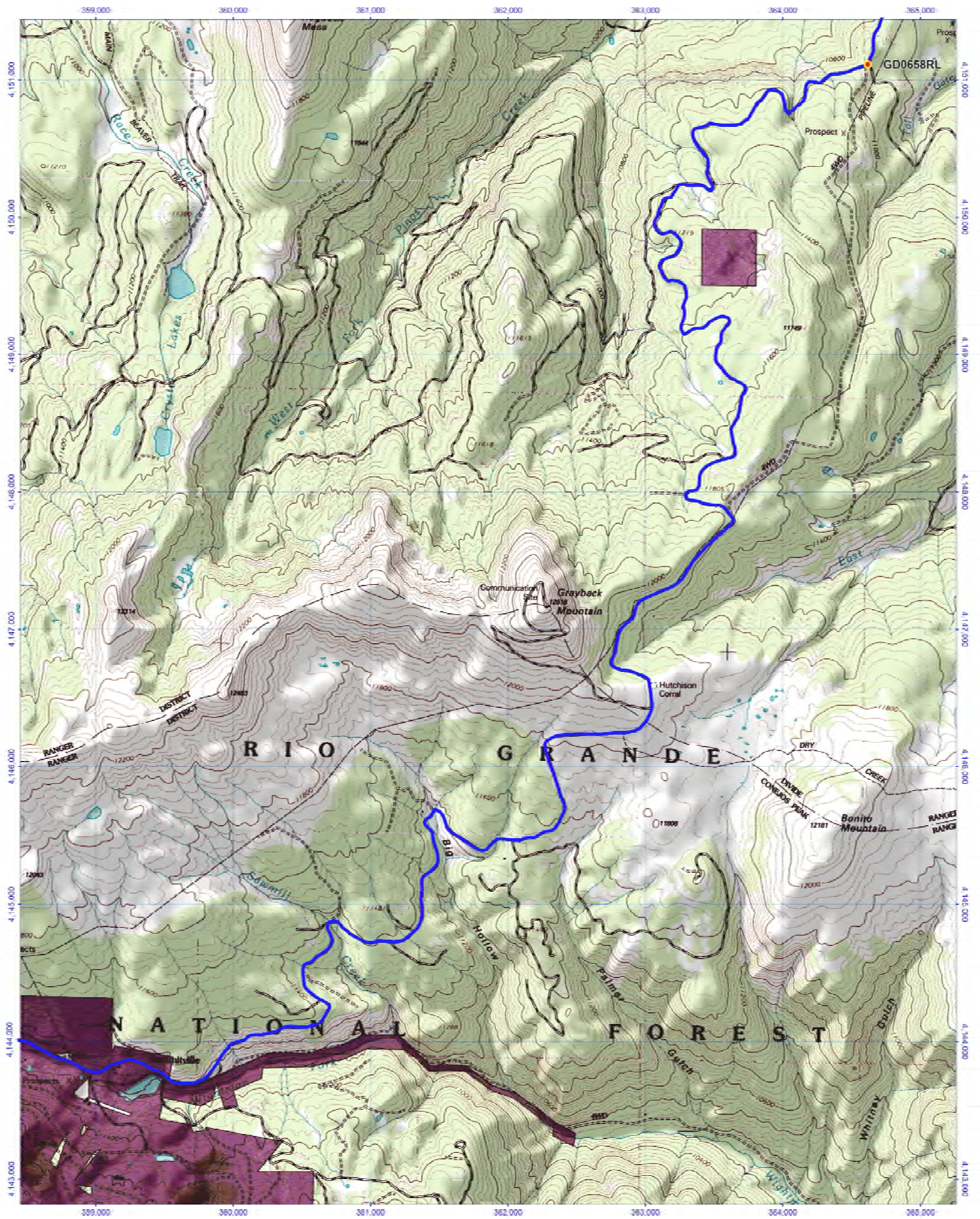
Map projection UTM zone 12N, datum WGS84
 2011 map, UTM zone 12N, datum WGS84
 Datum shift 2011/2011 with code 501
 Source: Esri, DeLorme, GeoEye, IGN, AeroGRID, IGN, Esri, Swire

2017 Definition of Sheet Center
 11N UTM GR-12000 47 2211330 11N
 11N UTM GR-12000 47 2211330 11N



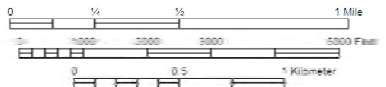
www.bearcreeksurvey.com

Map GD07 Mile 43.4 - 56.2



Map Property: 070 Snow (24 Years 3/2004)
 UTM Grid: UTM Zone 13N, Datum: NAD83
 Source: 2004 Data, Source: 2004 Data

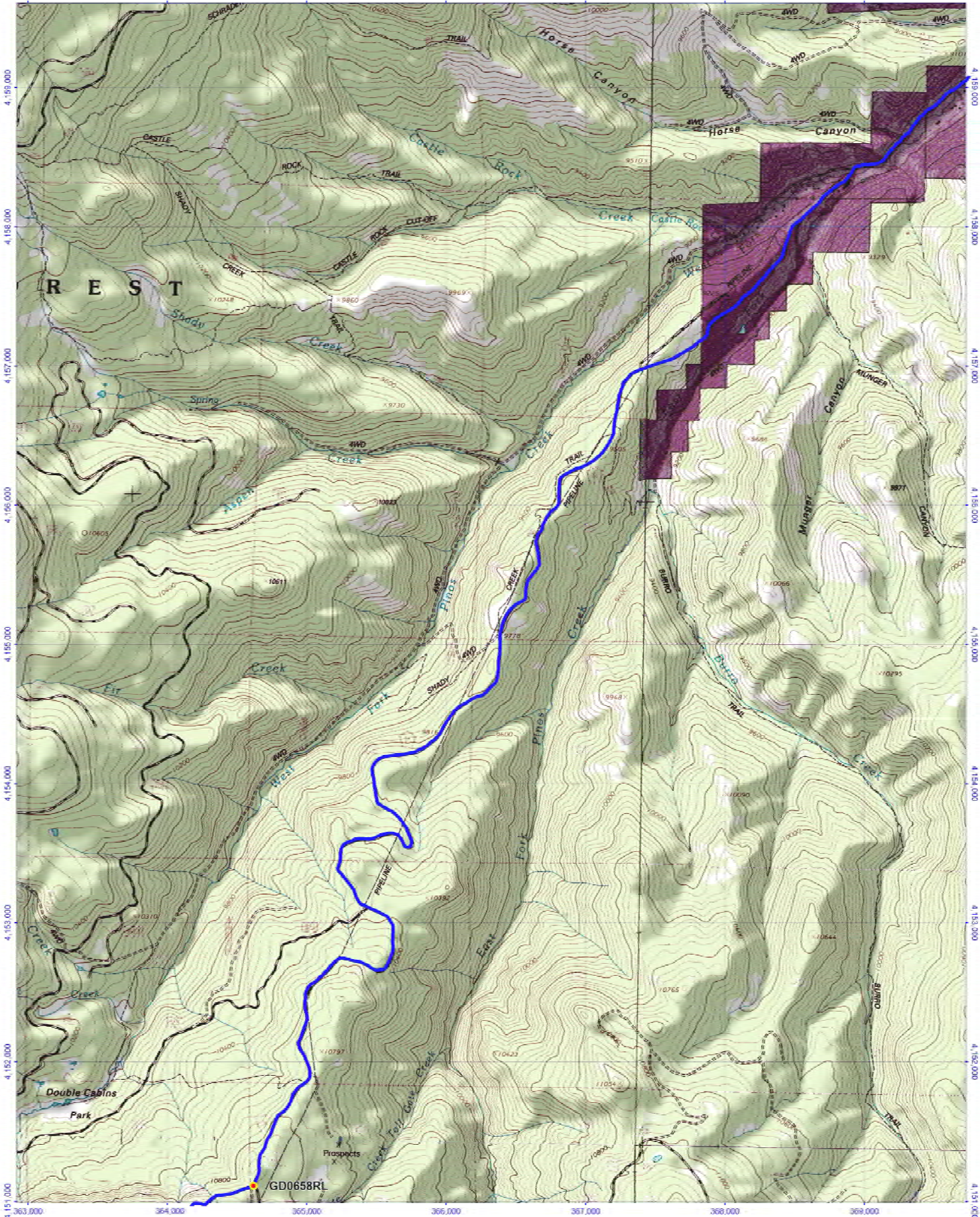
2002 Dedication of Silver Center
 100' x 100' at 100' x 100' (100' x 100')
 100' x 100' (100' x 100') (100' x 100')



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Map GD08 Mile 55.8 - 65.8

363.000 364.000 365.000 366.000 367.000 368.000 369.000

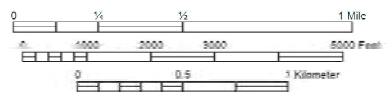


4 151.000
4 152.000
4 153.000
4 154.000
4 155.000
4 156.000
4 157.000
4 158.000
4 159.000

4 151.000
4 152.000
4 153.000
4 154.000
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4 156.000
4 157.000
4 158.000
4 159.000

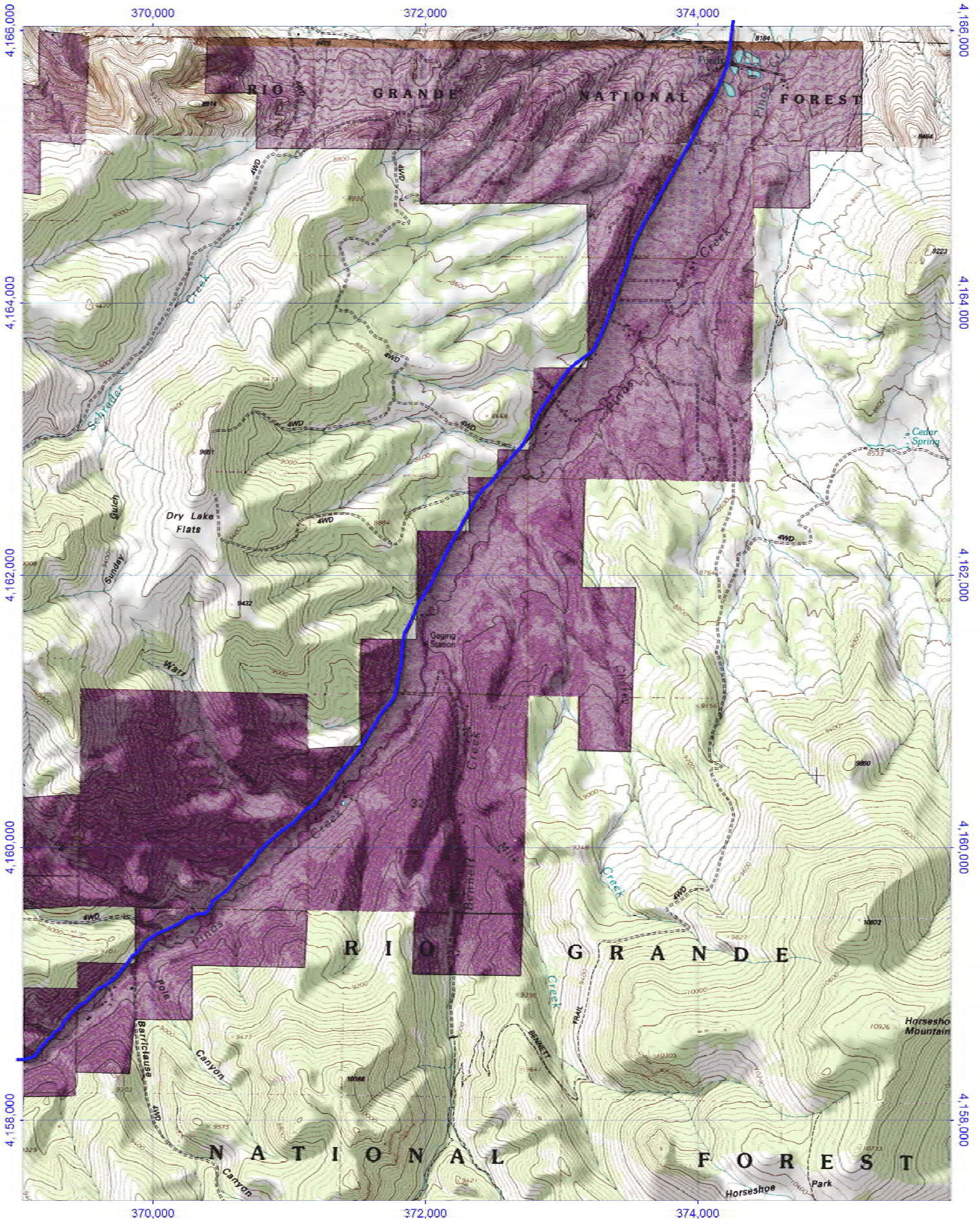
Map Projections: UTM Zone 18N, datum: NAD83
UTM Zone: 18N, datum: NAD83, UTM
Scale: 1:50,000
Source: Esri, DeLorme, GeoEye, IGN, Aerotech, IGN, Swire, GEBCO, Swire, GEBCO, Swire, GEBCO

2017 Declaration of Great Center
75% NAD 83 & 25% NAD 83
TN to UTM GN: G 922° 6' 07" 10° 19' 11.76" West



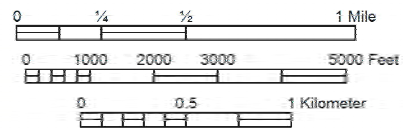
www.bearcreeksurvey.com

Map GD09 Mile 65.8 - 72.9

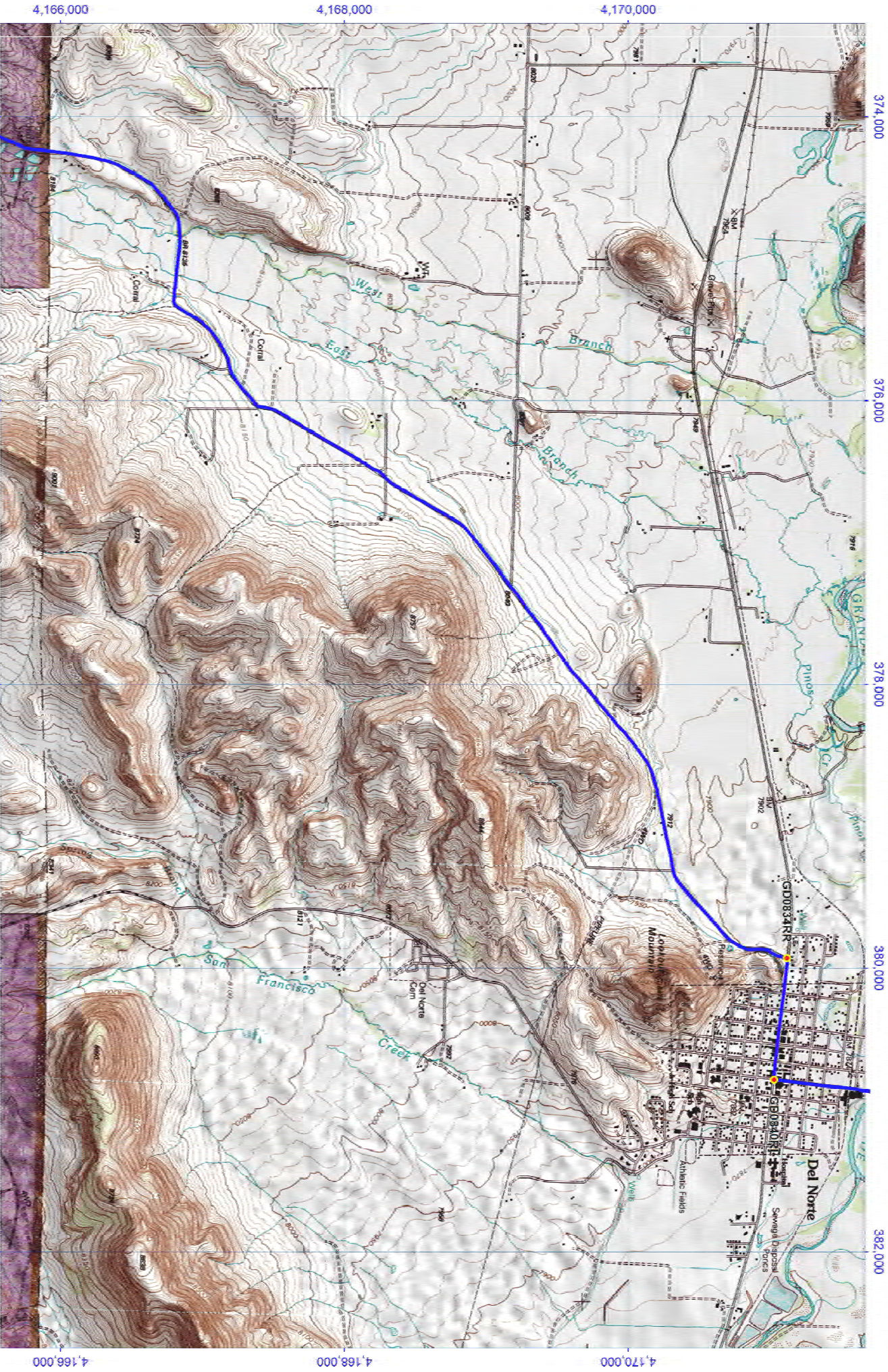


Map Projection: UTM: Zone 13N, Meters.
 WGS84
 UTM Grid: UTM: Zone 13N,
 Meters, WGS84
 Built with BigTopo9 www.igage.com (B9212)
 Source Map: Horseshoe Mountain, CO,
 Indian Head, CO

2017 Declination at Sheet Center
 TN to MN 8.731° (8° 43' 51") (155 mills)
 TN to UTM GN -0.882° (-0° 52' 54") (-16 mills)

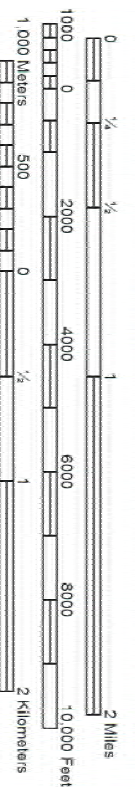


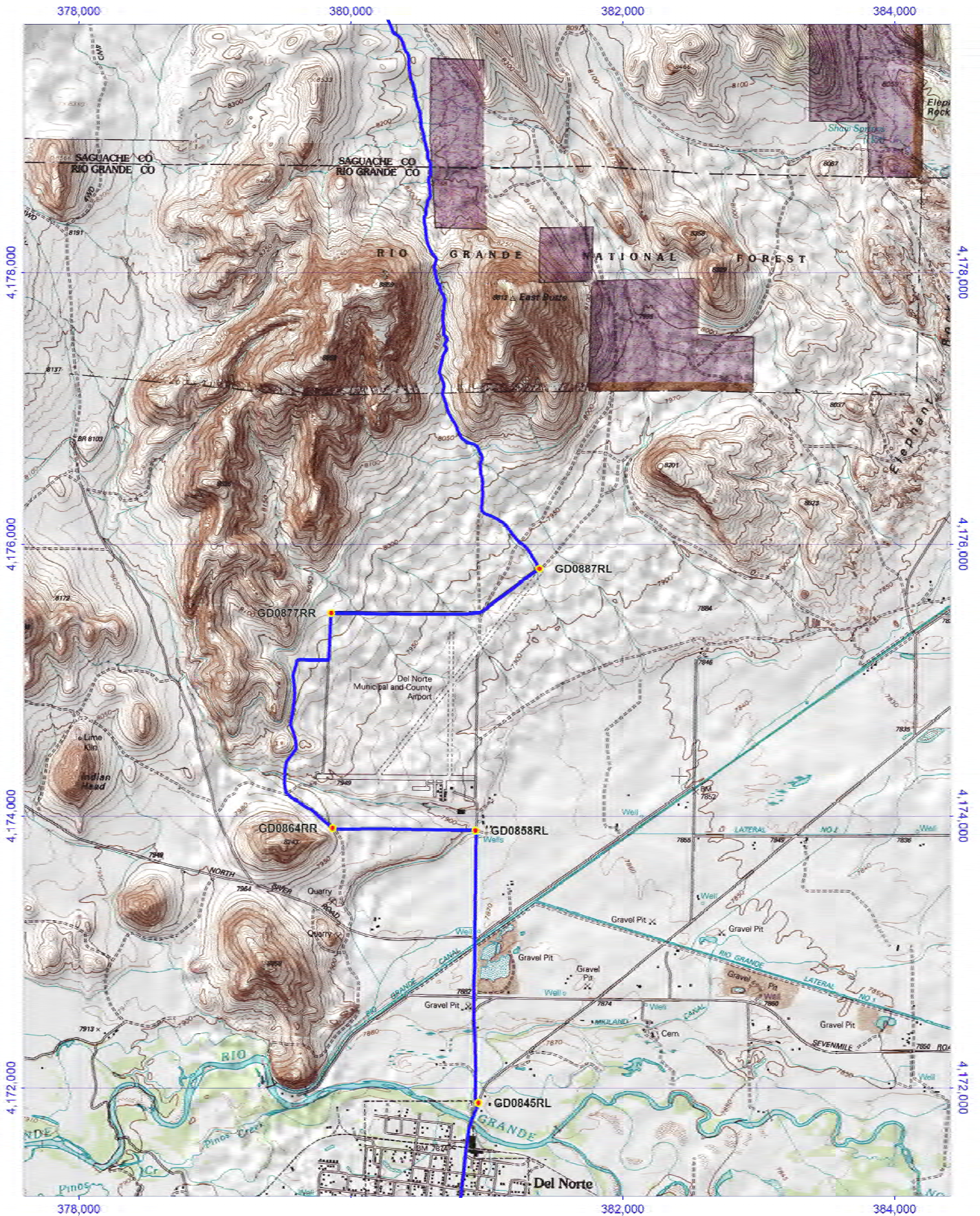
Map GD10 Mile 72.9 - 78.3



Map projection: UTM, Zone 13N, Meters, WGS84
 UTM Spheroid: UTM, Zone 13N, Meters, WGS84
 Built with BigFoot v0.0.8 www.bigfoot.com (982)12 CC
 Source: SRTM, DEM, USGS, USGS, USGS, USGS

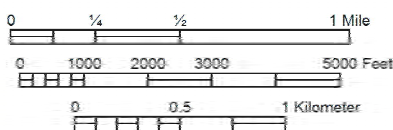
2017 Declination at Sheet Center
 TN to NAD 83: 7.08° (8' 42" 28") (155 miles)
 TN to UTM GN: -0.945° (0' 56" 42") (115 miles)



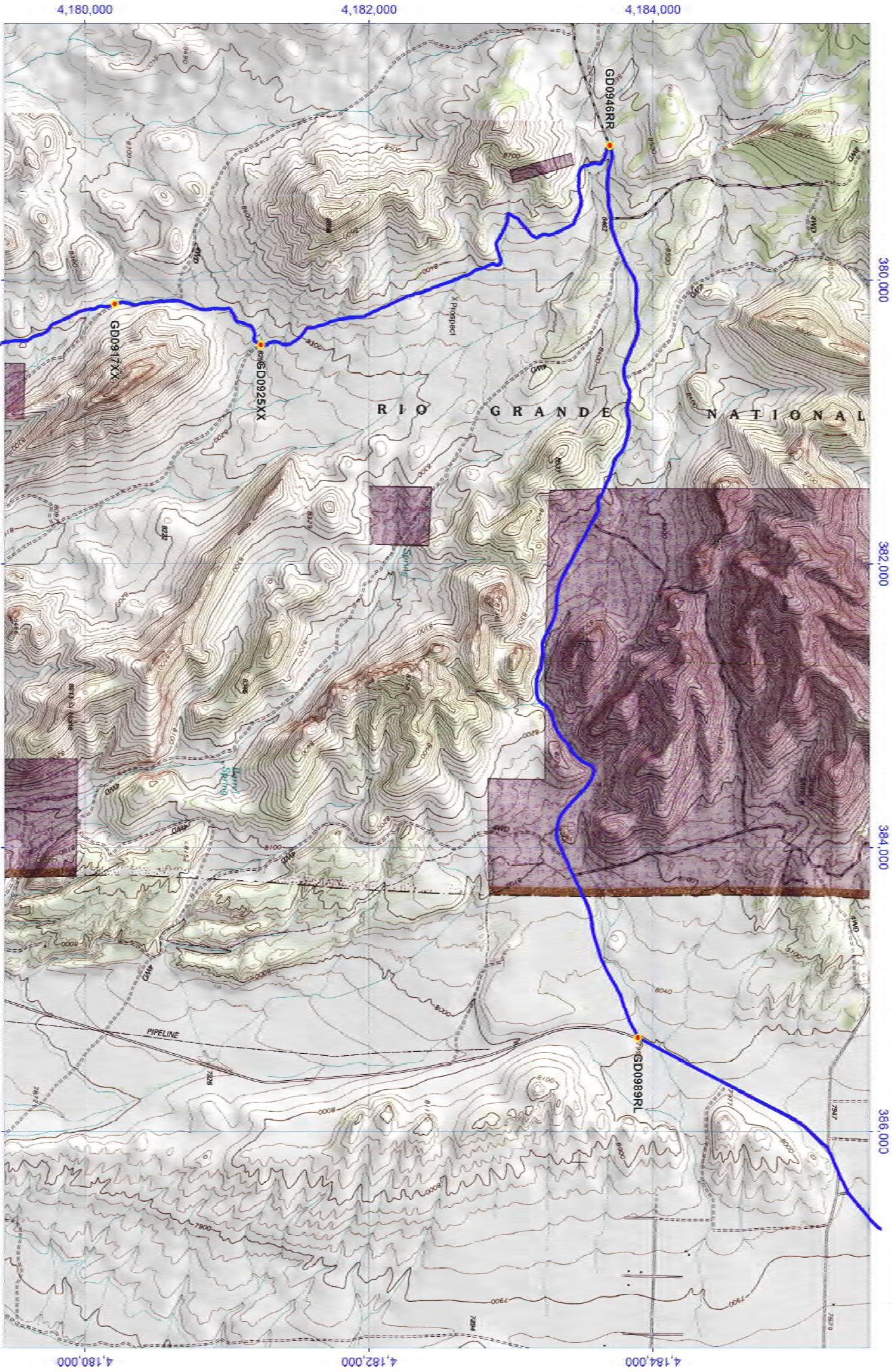


Map Projection: UTM, Zone 13N, Meters, WGS84
 UTM Grid: UTM, Zone 13N, Meters, WGS84
 Built with BigTopo9 www.bigtopo9.com (89212)
 Source Maps: Del Norte, CO; Indian Head, CO; Twin Mountains SE, CO; Twin Mountains, CO

2017 Declination at Sheet Center
 TN to MN 8.698° (8° 41' 54") (155 mills)
 TN to UTM GN -0.826° (-0° 49' 34") (-15 mills)

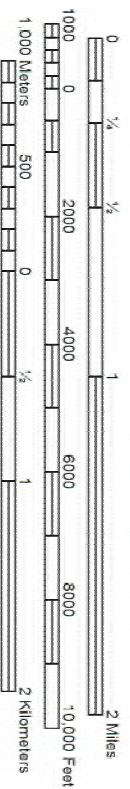


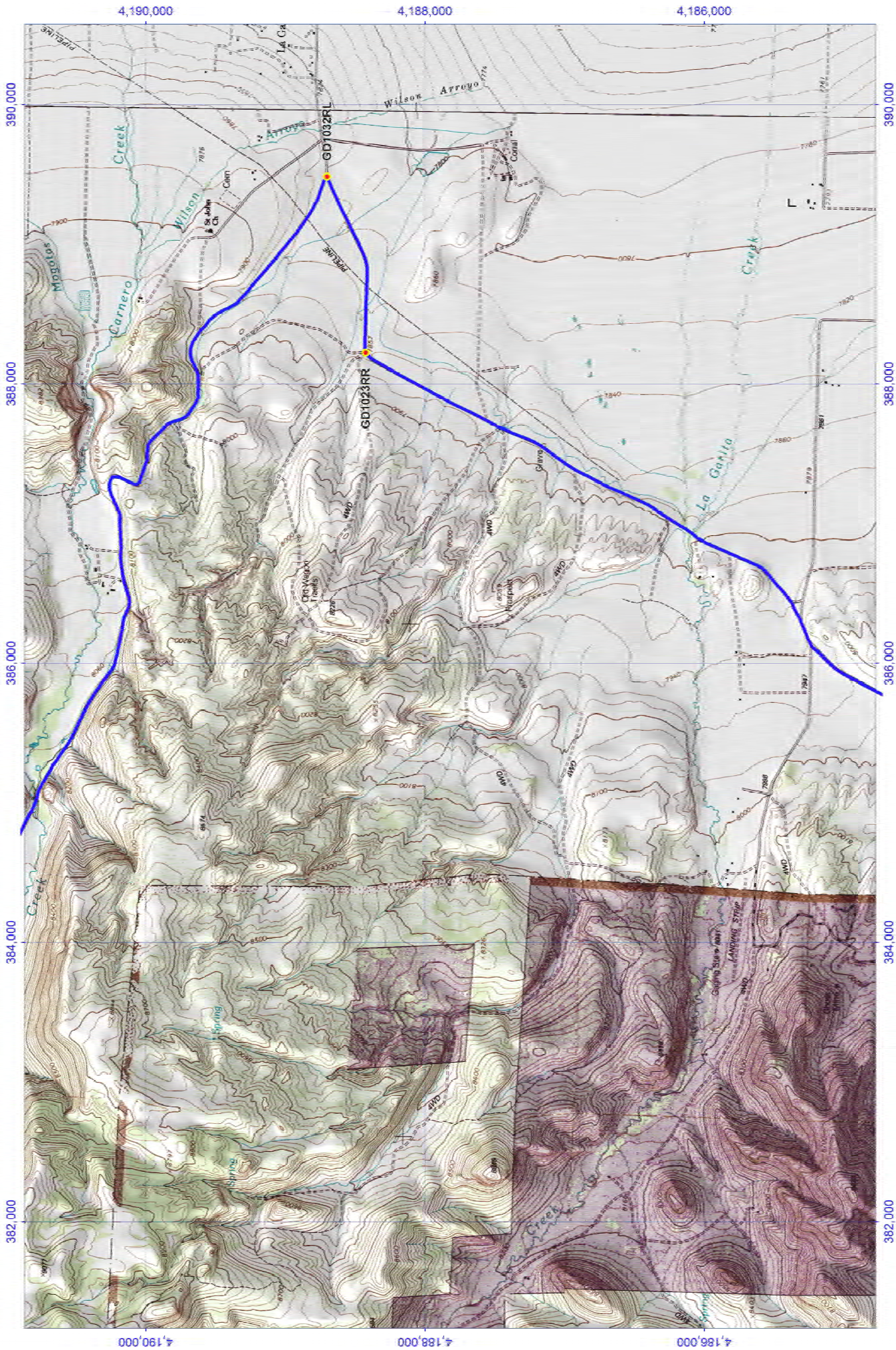
Map GD12 Mile 84.2 - 91.4



Map Projection: UTM, Zone 18N, Datum: WGS84
 Map Scale: 1:50,000
 Date: 10/15/2013
 Source: USGS, TN, USGS, SE, CD, TN, USGS, CD

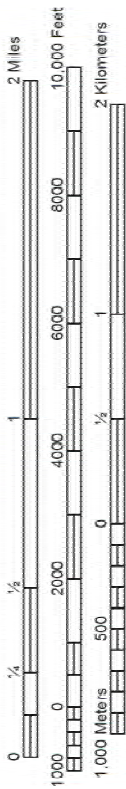
2017 Destination at Sheet Center
 TN 1014 8599 18 11 42 (1337116)
 TN 10 UTM GN -0.015 (0.42 547 (-14 miles))





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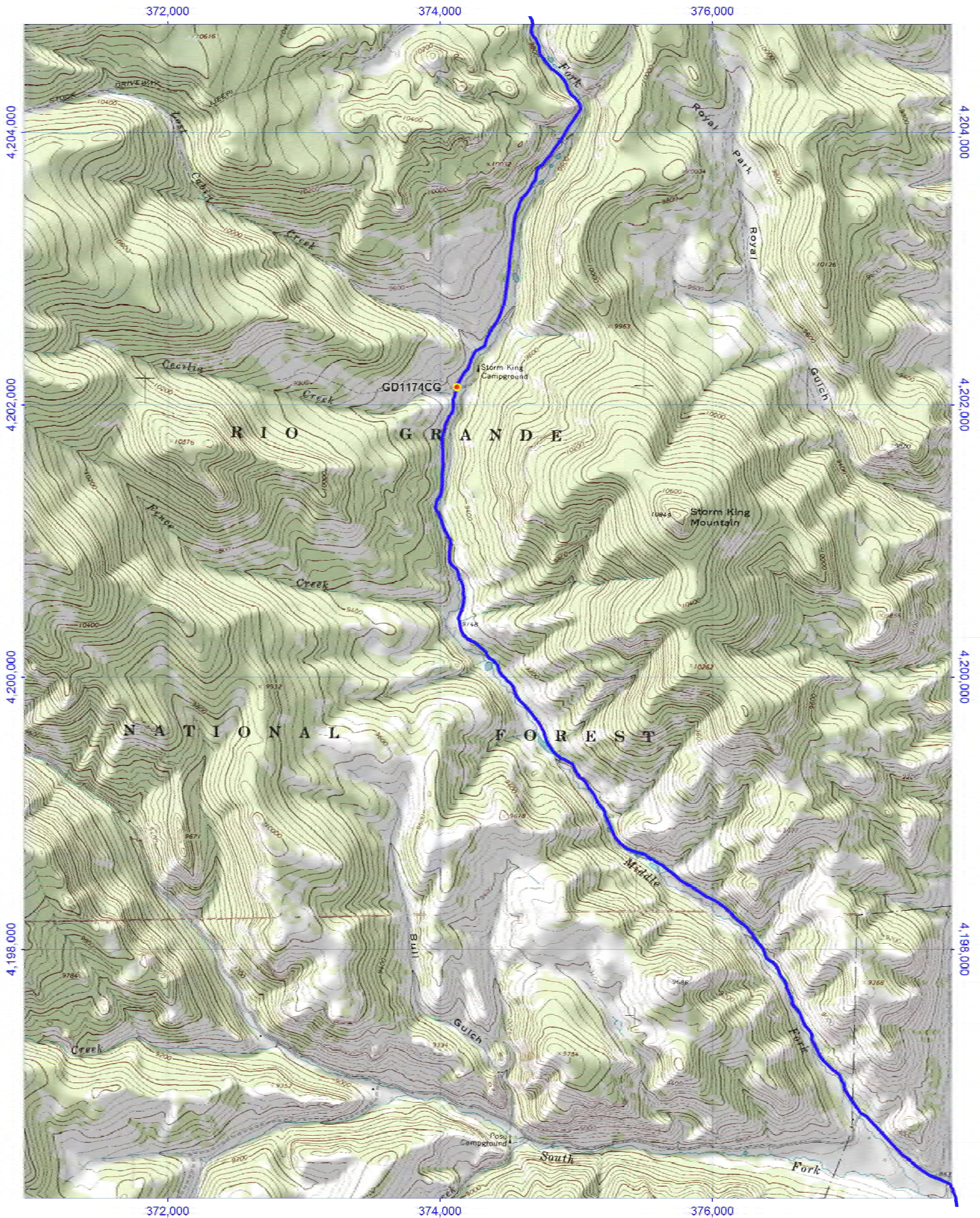
Map GD14 Mile 100.1 - 106.6



TN
NAD 83
UTM

2017 Declination at Sheet Center
 TN to NAD 83 8.684" (8' 41" (1") (154 mill)
 TN to UTM GN -0.795" (-0' 47" 42") (-14 mill)

Map Projections: UTM, Zone 18N, NAD 83, UTM
 UTM, Zone 18N, NAD 83, UTM, Zone 18N, NAD 83
 Built with Esri's ArcGIS Online (www.esri.com) (ESRI)
 Source: Maps, La Gaitia, CO, Vint Mountain SE, CO



372,000

374,000

376,000

4,204,000

4,204,000

4,202,000

4,202,000

4,200,000

4,200,000

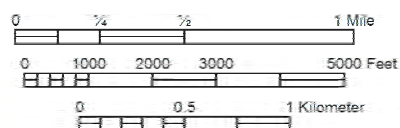
4,198,000

4,198,000

372,000

374,000

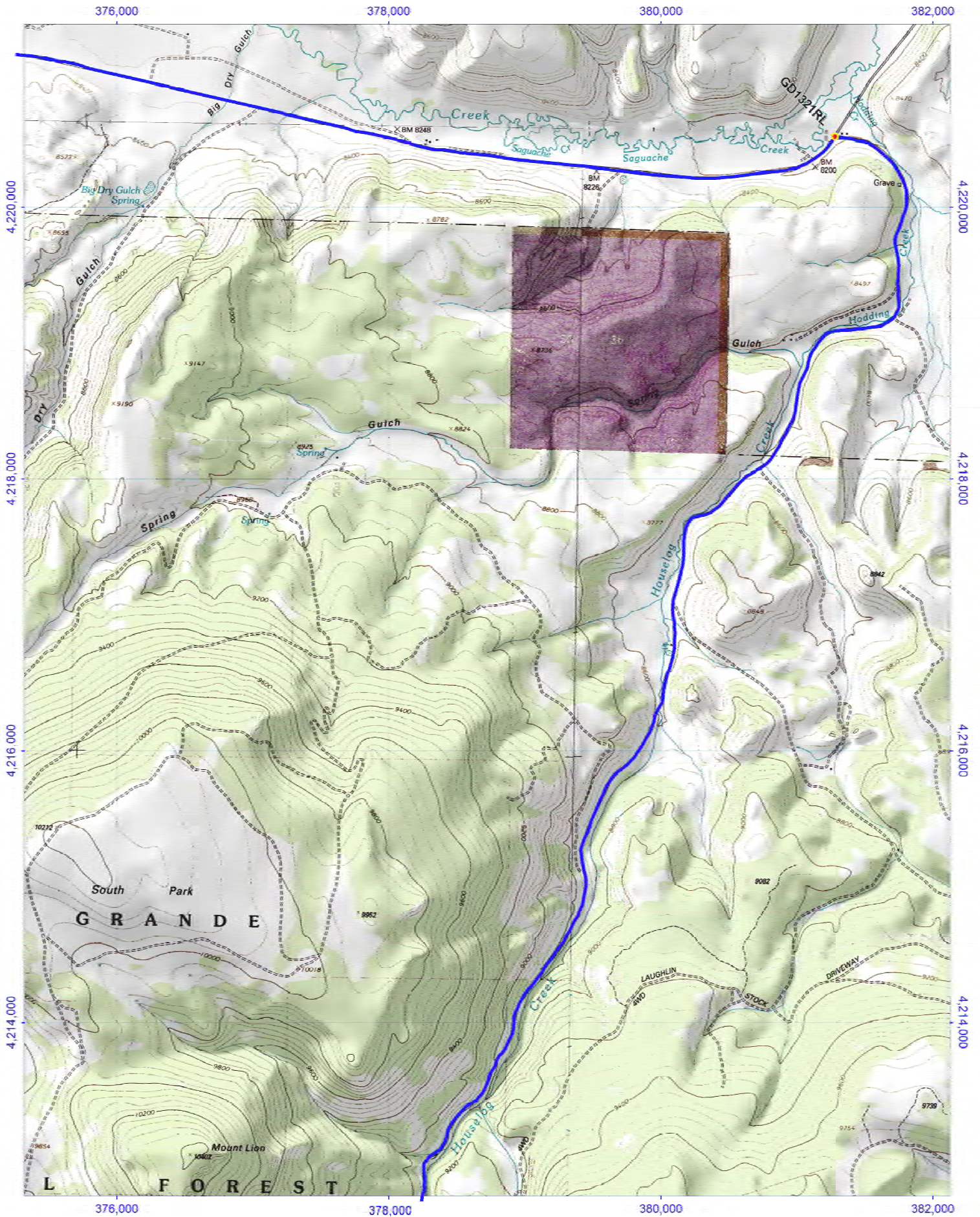
376,000



Map Projection: UTM, Zone 13N, Meters, WGS84
 UTM Grid: UTM, Zone 13N, Meters, WGS84
 Built with BigTopo9 www.bigtopo9.com (B1212)
 Source Maps: Lookout Mountain, ©

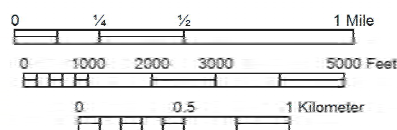
2017 Declination at Sheet Center:
 TN to MN 8.757° (8° 45' 26") (156 mills)
 TN to UTM GN -0.879° (-0° 52' 46") (-18 mills)

Map GD16 Mile 112.8 - 119.2

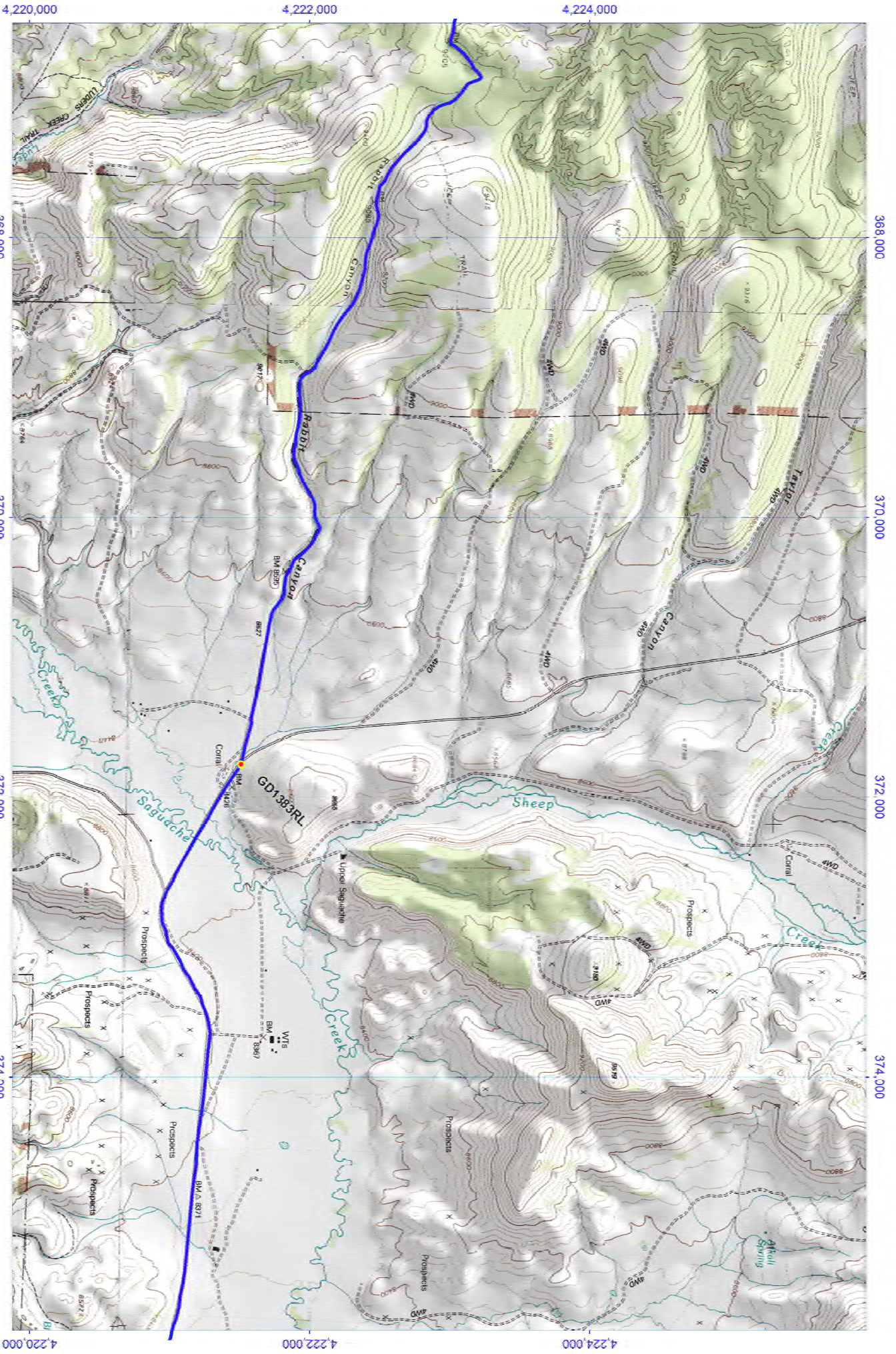


Map Projection UTM: Zone 13N, Meters, WGS84
 UTM Grid: UTM: Zone 13N, Meters, WGS84
 Built with BigTopo9 www.agage.com (B9212)
 Source Maps: Laughlin Gulch, CO, Lake Mountain, CO, Lake Mountain NE, CO, Twelve Mountain, CO

2017 Declination at Sheet Center
 TN to MN 8.749° (8° 44' 57") (156 mills)
 TN to UTM GN -0.853° (-0° 51' 12") (-15 mills)

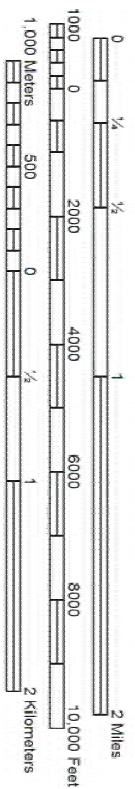


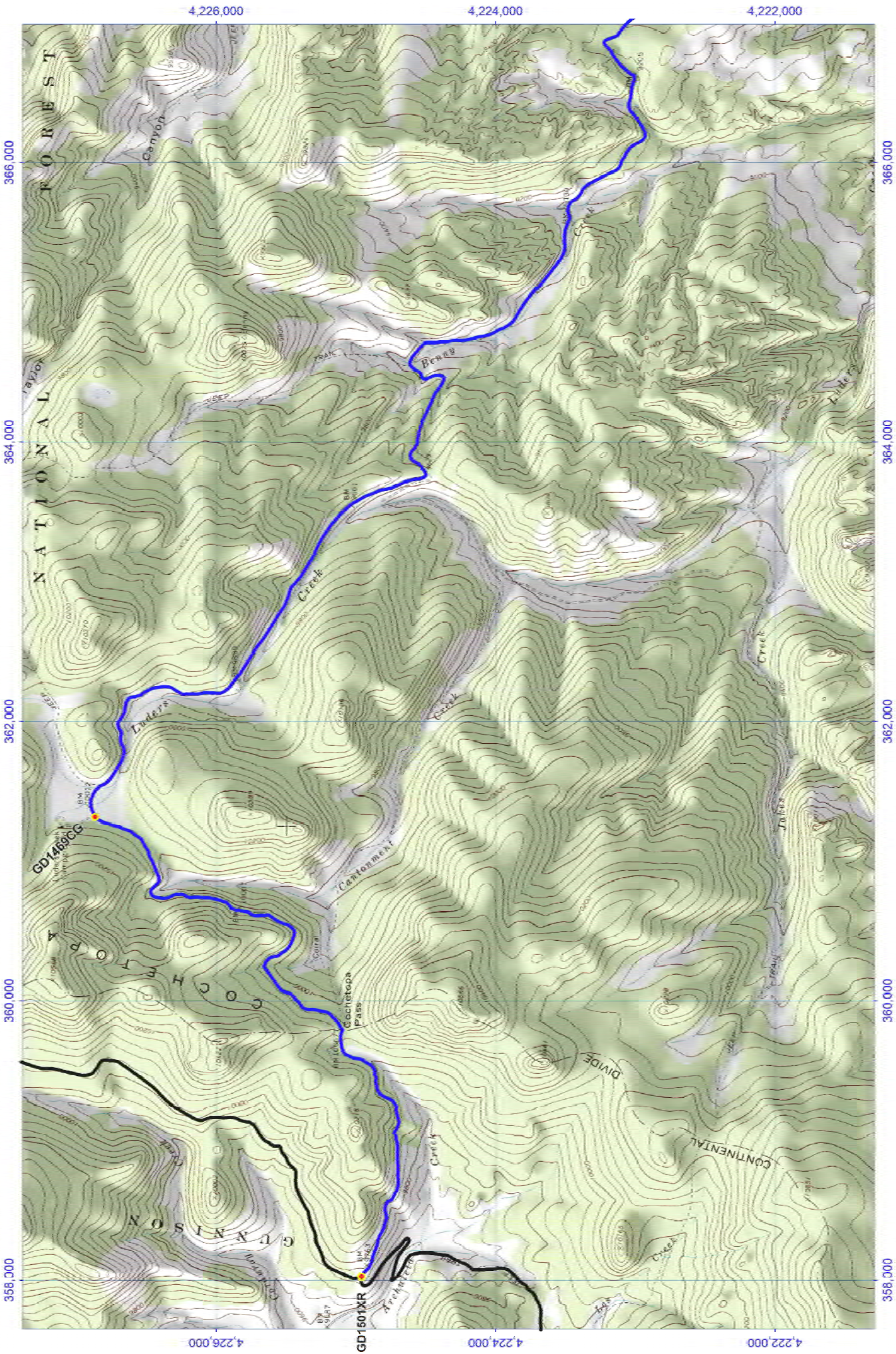
Map GD18 Mile 126.3 - 135.8



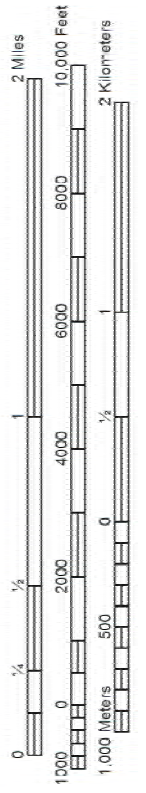
Map Projection: UTM, Zone 13N, Meters, WGS84
 UTM One: UTM, Zone 13N, Meters, WGS84
 Easting: 4,220,000 to 4,224,000
 Northing: 368,000 to 374,000
 State Plane: NAD 83, Zone 13N, Meters, WGS84
 State Plane: NAD 83, Zone 13N, Meters, WGS84
 State Plane: NAD 83, Zone 13N, Meters, WGS84

2017 Declination at Sheet Center
 TN to UTM: 0.7688 (7.62 (135.7) min)
 TN to UTM: 0.7688 (7.62 (135.7) min)
 TN to UTM: 0.7688 (7.62 (135.7) min)





Map GD20 Mile 141.9 - 150.1



2017 Declination at Sheet Center
 TN MAG 8.644° (80.405° (57.711°))
 TN to UTM GN -0.397° (-0.38 (0°) (-17 mills))

Map Projection: UTM, Zone 18N, Meters, WGS84
 Data Source: USGS, National Wetlands Inventory (NWI)
 Source: N. map, North Park, CO