PLAN OF OPERATIONS

RESOLUTION PRE-FEASIBILITY ACTIVITIES

Prepared for:

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FEBRUARY 7, 2008
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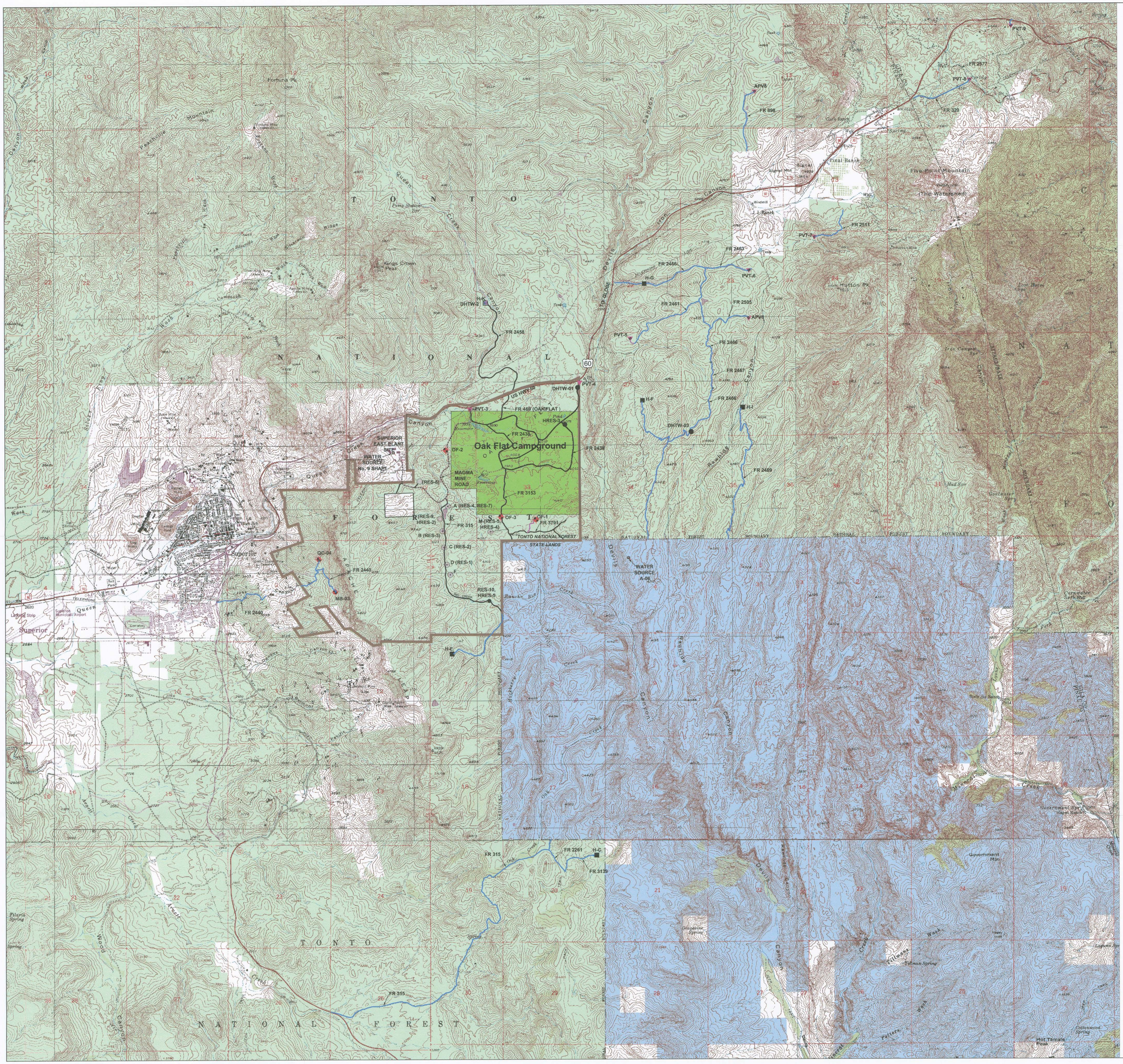
1.0 INTRODUCTION

Resolution Copper Mining, LLC (Resolution) proposes to continue previously approved exploration operations and conduct various new activities associated with the planning stages for copper mining within Tonto National Forest. Resolution has conducted exploration operations within portions of the subject area that were previously approved by the USDA Forest Service (Forest Service) (P.O.O. No. 01-12-002 and associated amendments). New proposed mine-planning activities include: 1) drilling five exploration drill holes, 2) drilling three deep hydrogeologic testing and monitoring wells, 4) drilling six shallow hydrologic monitoring wells, 5) drilling nine tunnel characterization boreholes, 6) constructing roadway improvements for access, and 7) clearing and brushing along portions of Magma Mine Road, an existing paved road.

The proposed activities would occur on Forest Service lands within Township 1 South, Range 12 East, portions of Section 36; Township 1 South, Range 13 East, Sections 11, 13, 14, 21 through 24, and 26 through 35; Township 1 South, Range 14 East; portions of Sections 5, 7, and 8; Township 2 South, Range 12 East, portions of Sections 1, 2, 3, 11, 12, 13, and 25; Township 2 South, Range 13 East, portions of Sections 6, 7, 18, 19, 20, and 30, Gila and Salt River Baseline and Meridian, (Figure 1).

The proposed new activities would require disturbance of approximately 5.3 acres for the placement of drill pads on new and existing drill sites, approximately 0.6 acres for the construction of approximately 0.3 mile of new access roads, and approximately 33.3 acres for the improvement of approximately 16.9 miles of existing roads for access. The total area that would be disturbed for proposed drilling operations, new access roads, and existing access road improvements is 39.2 acres. Areas of disturbance provided here are based on conservative estimates of the maximum area that would be required for proposed activities. Impacts within Forest Service lands would be minimized to the greatest extent practicable.

This Plan of Operations (Plan) generally follows the outline presented on standard form FS-2800-5. A completed and signed form is provided as Appendix A.



LEGEND

- Resolution Parcel Boundary
- Exploration Drill Site
- Tunnel Characterization Bore Holes
- Deep Hydrogeology Testing / Monitor Wells
- Shallow Hydrogeology Well Site
- Drill Site (Approved Under November 2004 Modification)
- Drill Site (Approved Under The Original February 2001 P.O.O.)
- Existing Access Road (To Be Improved)
- New Road
- Existing Road (To Be Maintained)
- Brushing/Clearing Along Roadway
- Tonto National Forest
- State Trust Lands

N
W E
S

0' 2000' 4000'

SCALE 1" = 2000'

Pinal County, Arizona
Superior, Pinal Ranch &
Teapot Mountain 7.5'
USGS Maps

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LOCATION MAP

Figure 1

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2.0 CONTACT AND OPERATOR INFORMATION

The operator of the drilling program is:

Resolution Copper Mining, LLC
Carl Hehnke, Site Manager
102 Magma Heights
Superior, Arizona 85273
Tel: (520) 689-9374 x12

or

Resolution Copper Mining, LLC
Bruce Marsh, Manager, Environmental Impact Assessments
102 Magma Heights
Superior, AZ 85273
(520) 689-9374

The owners of the claims are:

Resolution Copper Mining, LLC
102 Magma Heights
Superior, Arizona 85273

3.0 DESCRIPTION OF ACTIVITIES

3.1. APPROVED OPERATIONS

In this Plan, activities previously approved by Forest Service under P.O.O. No. 01-12-002 and associated amendments are identified. These operations would continue to be conducted in accordance with the procedures established in P.O.O. No. 01-12-002 and associated amendments. Approved activities include the continued use of nine sites for exploration and groundwater monitoring purposes (Appendix B and Figure 1), the improvement and maintenance of Forest Service roadways within the Resolution Parcel (Figure 1), and the placement of aboveground plastic pipe and storage tanks for potable water transfer across the Resolution Parcel (Figure 1). Appendix B provides detailed descriptions of the approved activities and identifies those activities that would continue as part of this Plan.

The Resolution Parcel has been the subject of extensive resource investigations, and biological and cultural resources surveys have been completed in the previously approved activity areas within the parcel. Adverse effects to resources of concern would continue to be avoided as operations proceed.

3.2. EXPLORATION DRILLING

3.2.1. Purpose and Location of Activity

Five exploration drill holes are proposed as part of this plan. Three of these sites, Sites MB-03, QC-04, and OF-2, would be placed on previously disturbed lands. MB-03 and QC-04 would be placed on previously used drill pads along the west boundary of the Resolution Parcel, and OF-2 would be placed within an area along Magma Mine Road that was previously disturbed from road construction activities (Figure 1; Table 1). Complete detailed descriptions of proposed exploration activities are provided in Appendix C. Plan views of proposed activities with 2007 aerial base mapping and 10-foot contour intervals are provided in Appendix D.

Table 1. Exploration Site Locations and Claim Information

Hole #	Northing	Easting	Section	Township	Range	Claim Name
QC-04	3683222	492518	NE ¼ NE ¼ of 2	2S	12E	Hard Rock #7 Hard Rock #12
MB-03	3682705	492777	NW ¼ SW ¼ of 1	2S	12E	Hard Rock #6 Apache Leap
OF-1	3683843	495926	SW ¼ SE ¼ of 33	1S	13E	Sun #40 Sun #41
OF-2	3684934	494510	NE ¼ SE ¼ of 32	1S	13E	Oak No. 43 Oak No. 44
OF-3	3683885	495375	SW ¼ SW ¼ of 33	1S	13E	Sun #40 Sun #41

Note: Detailed claim information for proposed exploration drilling and associated access is provided in Appendix E.

The purpose of drilling QC-04 and MB-03 is to intersect an important structure (West Boundary Fault) concealed beneath the cover rocks of Apache Leap. At present, there are only two pierce points to the north from underground drilling in the old Magma Mine. Two deflections would be drilled from each side in a rough fan shape towards the east at an angle between 20 and 30 degrees from vertical to depths between 1,100 and 1,300 meters. OF-1, OF-2, and OF-3 would be drilled for mineral exploration purposes. No directional drilling would be conducted under Oak Flat Campground while it remains removed from mineral entry.

Roadway improvements required to gain access to the proposed exploration drill sites are identified in Figure 1 and Section 3.7.

3.2.2. Description of Drilling Operations

The exploration drill sites proposed as part of this Plan have an approximately 80- by 100-foot disturbance footprint. This disturbance footprint provides required space for the placement of drill pads, and associated equipment and mud pits (Figure 2). Some sites would require additional area for grading and fill slopes. The estimated disturbance for the placement of the proposed exploration drill sites is 1.3 acres. The estimated disturbance area for each individual site is identified in Section 3.12 of this Plan.

At each exploration site, a trunk hole would be drilled to a depth of approximately 3,000 feet using open-hole technique. The trunk hole is then deepened to 7,000 feet by diamond drilling. Multiple deflections would be drilled by motor/diamond drilling. No directional drilling would occur under the Oak Flat Campground.

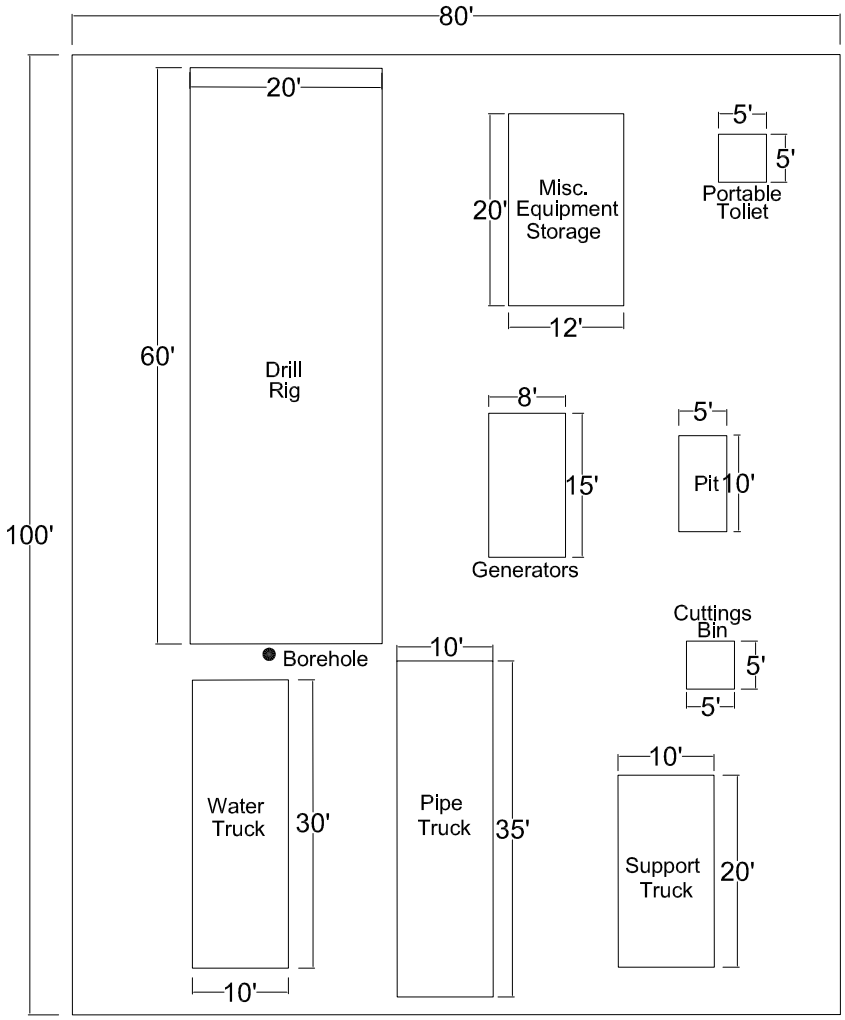
Temporary structures for equipment storage may be used by the drillers for shelter at each active rig (Figure 2). In addition, a portable toilet would be placed at each active drill site and would be serviced periodically by a contractor (Figure 2).

An equipment list for the proposed fault drilling operations is provided in Section 3.9 of this Plan.

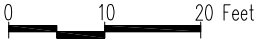
3.3. DEEP HYDROGEOLOGIC TESTING AND MONITORING WELLS

3.3.1. Purpose and Location of Activity

Three deep hydrogeologic testing and monitoring well sites, Sites DHTW-01, DHTW-02, and DHTW-03, would be drilled for hydrogeologic testing (Figure 1 and Table 2). One of these sites, DHTW-03, would be placed within areas previously disturbed by drilling activities.



Note: Layout will vary depending on site conditions



SCALE: 1" = 20 Feet

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Conceptual Drill Site Disturbance Footprint

Figure 2

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Table 2. Deep Hydrogeologic Testing and Monitoring Well Locations, Elevation, and Claim Information

Hole #	Northing	Easting	Elevation (m)	Legal Description	Claim Name
DHTW-01	3685909	496582	1,250	T1S, R13E, Sec 28 N ½ SE ¼	Sun #58 Sun #68
DHTW-02	3687219	495111	1,225	T1S, R13E, Sec 21 SW ¼ SW ¼	Kay 148 Kay 150
DHTW-03	3685230	498370	1,378	T1S. R13E, Sec 26 SW ¼ SW ¼	Margaret #275

Note: Detailed claim information for proposed deep hydrogeologic testing and monitoring wells and associated access is provided in Appendix E.

Geologic and hydrologic data to be obtained from the monitor wells would include: 1) depth to groundwater level; 2) lithology of drill cuttings; 3) aquifer hydraulic parameters including transmissivity, hydraulic conductivity, and storage coefficients; and 4) chemical quality of groundwater.

Roadway improvements required to gain access to the proposed deep hydrogeologic testing wells are identified in Figure 1 and Section 3.7.

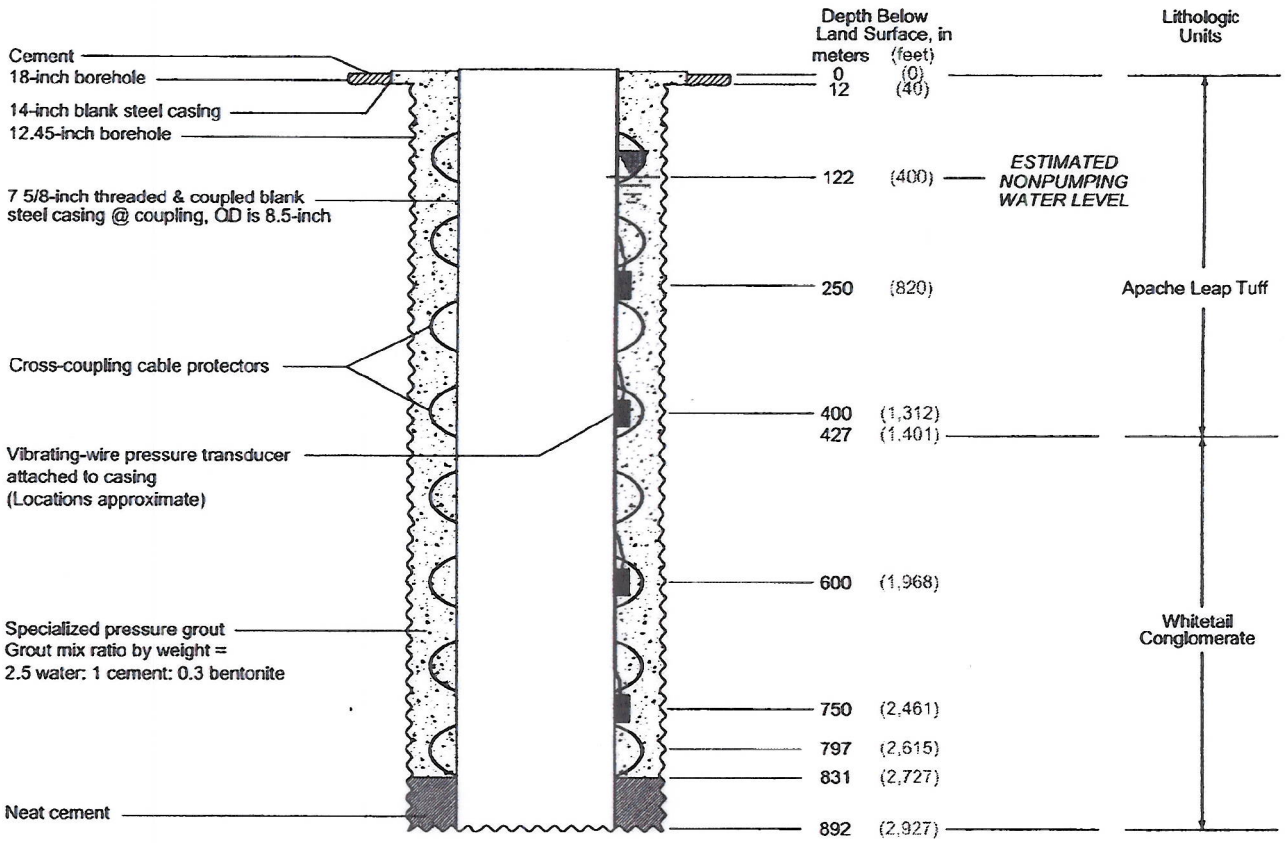
3.3.2. Deep Hydrologeologic Testing and Monitoring Well Drilling

The deep hydrogeologic testing and monitoring well sites proposed as part of this Plan have an approximately 80- by 100-foot disturbance footprint. This disturbance footprint provides required space for the placement of drill pads, and associated equipment and mud pits (Figure 2). Some sites would require additional area for grading and fill slopes. The estimated disturbance for the placement of the proposed deep hydrogeologic well sites is 0.9 acre. The estimated disturbance area for each individual site is identified in Section 3.12 of this Plan.

Complete descriptions of proposed deep hydrogeologic testing and monitoring activities are provided in Appendix C. Plan views of proposed activities with 2007 aerial base mapping and 10-foot contour intervals are provided in Appendix D.

Each site would be core drilled to approximately 2,000 meters with the same method used at proposed exploration holes. Each drill hole would be completed with a 4-inch steel casing for hydrogeology testing and groundwater level monitoring. A schematic diagram of a typical deep hydrogeologic testing well is provided in Figures 3a through 3c.

A minimum 16-inch diameter hole would be drilled, and 12-inch diameter steel surface casing would be set and cemented to a depth of 20 feet. A vertical 9 $^{7}/_{8}$-inch diameter borehole would be drilled using the reverse-circulation air-drilling technique to a depth of 450 to 800 meters. Careful observation of any formation water entering the borehole would be made, and drilling may be paused periodically to evaluate



Source Data:

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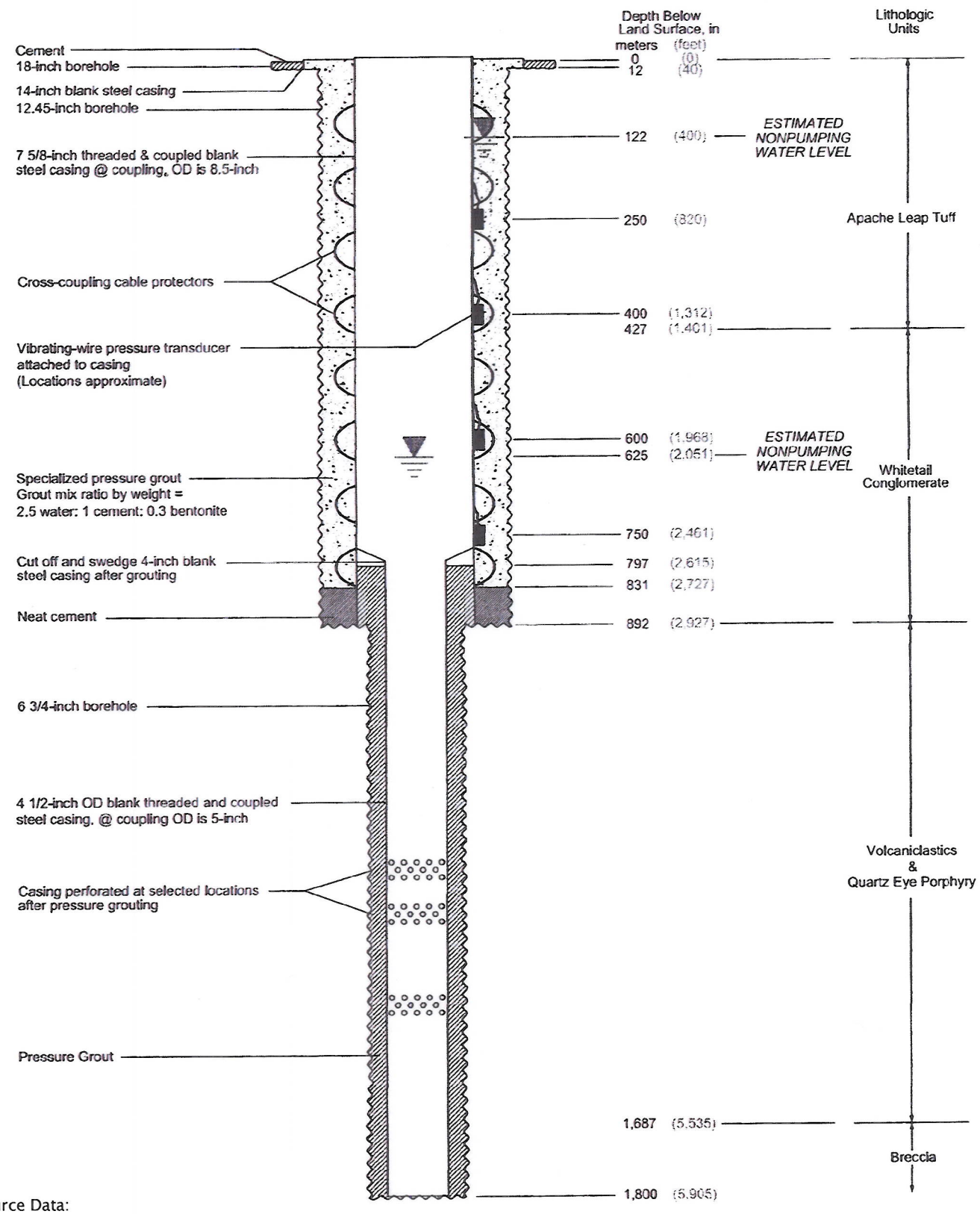
SCHEMATIC DIAGRAM OF DEEP HYDROGEOLOGY TESTING AND MONITORING WELL

Figure 3A



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SCHEMATIC DIAGRAM OF DEEP HYDROGEOLOGY TESTING AND MONITORING WELL

Figure 3B

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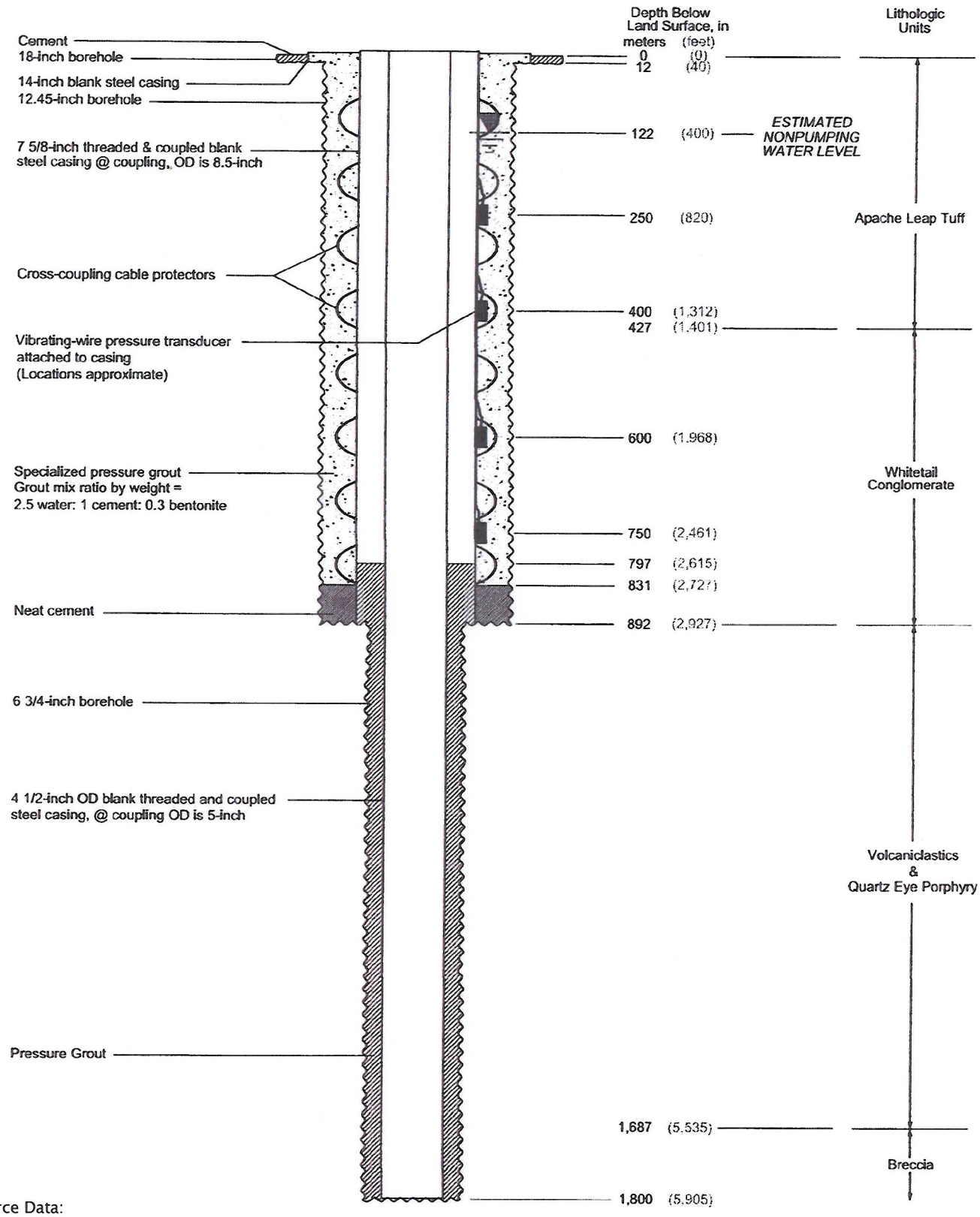

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SCHEMATIC DIAGRAM OF DEEP HYDROGEOLOGY TESTING AND MONITORING WELL

Figure 3C

the quantity and quality of the groundwater entering the borehole by airlift pumping. A hydrologist would monitor the drilling operations.

A nominal 4-inch diameter (with 0.25-inch wall thickness) blank and perforated steel casing would be installed to the total borehole depth. Based on the results of drilling and borehole geophysical logging operations, a part of the borehole may be backfilled and capped with bentonite seal. Gravel would be installed in the annulus between the 4½-inch OD casing and $9^{7}/_{8}$-inch borehole walls to a depth of 10 meters above the perforated zone. Once gravel is installed, an airline would be lowered into the well for airlift development of the perforated zone. If airlift is not possible, a bailer of swab may be used to develop the perforated zone prior to the placement of a bentonite seal (if required) on top of the gravel. Additional gravel and bentonite may be installed at several intervals within the annulus for potential future perforation and testing of perched zones that may occur higher in the formation.

A small-capacity electric submersible pump would be installed in the well for well testing using the drill rig. Hydrologic testing would include a 12-hour, constant-rate pumping test followed by a 12-hour recovery. As many as three tests may be conducted at each well. Testing of multiple perforated zones would require perforation of the 4-inch casing adjacent to identified perch zones of interest, installation of a bridge packer below each successive perforated zone, and development of each additional perforated zone by airlift pumping or bailing prior to pump installation.

Once testing operations are completed, a 1-meter by 1-meter by 15-centimeter thick concrete pad would be installed at the wellhead. A locking steel security vault would be installed over the well head. The hydrologic testing sequence proposed as part of this Plan is identified in Section 3.5.

Temporary structures for equipment storage may be used by the drillers for shelter at each active rig (Figure 2). In addition, a portable toilet would be placed at each active drill site and would be serviced periodically by a contractor (Figure 2).

An equipment list for the proposed deep groundwater monitoring well drilling is provided in Section 3.9 of this Plan.

3.4. SHALLOW HYDROLOGIC MONITORING WELLS

3.4.1. Purpose and Location of Activity

Six shallow groundwater monitoring wells would be drilled on Forest Service lands (Figure 1, Table 3). Roadway improvements required to gain access to the proposed shallow groundwater monitoring wells are identified in Figure 1 and Section 3.7.

Table 3. Shallow Hydrologic Monitoring Well Locations, Elevation, and Claim Information

ID #	Northing	Easting	Elevation (Feet, MSL)	Legal Description	Claim Name
H-C	3678575	496860	3,850	T2S, R13E, Sec 20 NE ¼ NE ¼	--
H-E	3681030	494375	4,450	T2S, R13E, Sec 7 NW ¼ SW ¼	Dan 15 Dan 16 Dacite No. 12 Dacite No. 13
H-F	3685660	497525	4,300	T1S, R13E, Sec 27 NW ¼ SE ¼	Margaret #261 Margaret #263
H-G	3687527	497628	4,240	T1S, R13E, Sec 22 SW ¼ NE ¼	Margaret #162 Margaret #163
H-I	3685580	499150	4,280	T1S, R13E, Sec 26 SW ¼ NW ¼	LD No. 5 LD No. 6
H-K	3687219	495111	4,140	T1S, R13E, Sec 21 SW ¼ SW ¼	Kay 148 Kay 150

Note: Detailed claim information for proposed shallow hydrologic monitoring wells and associated access is provided in Appendix E.

The groundwater exploration objectives for the shallow monitoring well sites are provided in Table 4.

Table 4. Shallow Hydrologic Monitoring Well Exploration Objectives

ID	Groundwater Exploration Objectives
H-C	Explore groundwater in Whitetail Conglomerate of underlying units where Apache Leap Tuff is absent; provide additional control for direction and magnitude of water level gradients south of the Resolution Parcel; provide aquifer parameters for Whitetail of underlying units
H-E	Evaluate present water levels/aquifer conditions in Apace Leap Tuff/Whitetail Conglomerate/Older units near edge of Apace Leap
H-F	Evaluate potential enhanced fracturing on downthrown side of main north-south (NS) fault east of Devils Canyon, east from the Resolution Parcel; provide additional control in Apache Leap Tuff aquifer for direction and magnitude of water level gradients northeast of the Resolution Parcel; provide additional aquifer parameters
H-G	Evaluate potential enhanced fracturing on downthrown side of main NS fault east of Devils Canyon; provide additional control in Apache Leap Tuff aquifer for direction and magnitude of water level gradients northeast of the Resolution Parcel; provide additional aquifer parameters for tuff; provide baseline and long-term monitoring data for potential impacts to Top-of-the-World area wells
H-I	Provide additional control in Apache Leap Tuff aquifer for direction and magnitude of water level gradients in east part of Devils Canyon drainage basin; provide additional aquifer parameters for tuff
H-K	Provide additional control in Apache Leap Tuff aquifer on water level gradient direction and magnitude north of Resolution Parcel; provide additional aquifer parameters for tuff

3.4.2. Shallow Hydrologic Monitoring Well Drilling

The shallow monitoring well sites proposed as part of this Plan have an approximately 80- by 100-foot disturbance footprint (Figure 2). This disturbance footprint provides required space for the placement of drill pads, and associated equipment and mud pits. Some sites would require additional area for grading and fill slopes. The estimated disturbance for the placement of the proposed shallow monitoring well sites is 1.3 acres. The estimated disturbance area for each individual site is identified in Section 3.12 of this Plan.

Complete detailed descriptions of proposed shallow hydrologic monitoring activities are provided in Appendix C and plan views of proposed activities with 2007 aerial base mapping and 10-ft contour intervals are provided in Appendix D.

Shallow hydrologic monitoring wells would be drilled at a depth of approximately 1,500 feet. These borings would be advanced using rotary and/or percussion methods using air and water for circulation. The wells would be drilled using a bit with a maximum diameter of 12 inches to start then reduced to 9 inches and then 6 inches depending on the depth. Arizona state regulations require construction of a small concrete pad around the monitoring well surface casing. The concrete pad would be approximately 3 by 3 feet. Wells would be completed with steel casing, pump and/or transducers, gravel pack, sounder access, and inflatable packers designed for continuous monitoring. A schematic drawing of a typical shallow monitoring well is provided in Figure 4.

Temporary structures for equipment storage may be used by the drillers for shelter at each active rig (Figure 2). In addition, a portable toilet would be placed at each active drill site and would be serviced periodically by a contractor (Figure 2).

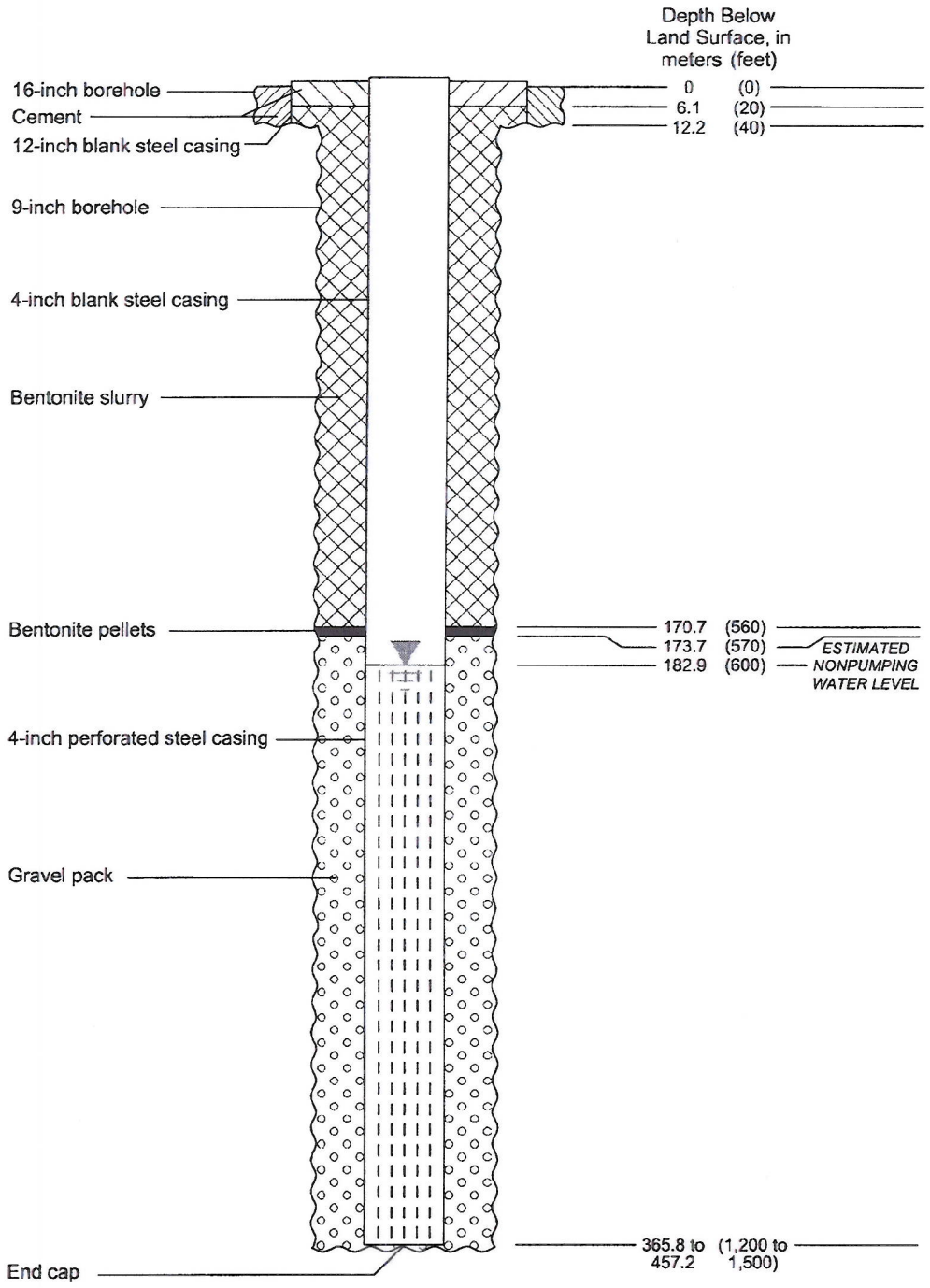
An equipment list for the proposed shallow groundwater monitoring well drilling is provided in Section 3.9 of this Plan.

3.5. HYDROLOGIC TESTING SEQUENCE

After drilling boreholes to total depth, geological and geophysical logging (e.g., televiewer, resistivity, and sonic) would be conducted to identify zones of frequent rock fractures. After logging, open borehole airlift operations would be conducted for development of the borehole prior to casing and for preliminary indication of specific capacity (a measure of discharge rate and maximum groundwater level drawdown during pumping). Development is a term used to indicate procedures used by drillers for maximizing groundwater yield. Objectives of development are to repair well borehole damage caused by drilling processes by smearing clays on the borehole wall, to remove fines in the aquifer caused by drill cuttings, and to enhance the physical characteristics of the borehole to allow free movement of groundwater.

After completing open borehole airlift operations, blank and perforated steel casing would be installed to isolate fracture intervals. Annular bentonite seals would be installed between the borehole wall and blank steel casing at isolated fracture intervals and perforated casing strings would allow for hydraulic testing and monitoring of isolated fractured rock intervals. The hydraulic testing program would be preceded by composite testing of multiple fracture zones intersected within the well and detailed hydrologic characterization testing of isolated fracture zone(s) using inflatable packers.

A normal test sequence for hydrologic testing would include the following elements:



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SCHEMATIC DIAGRAM OF SHALLOW
HYDROLOGIC MONITORING WELL

Figure 4

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Open Borehole Airlift Operations. These operations would provide: 1) development of the borehole to reduce impacts of drilling process; 2) specific capacity of the well prior to well construction; 3) an estimate of aquifer transmissivity based on constant-rate pumping and recovery analysis; and 4) an opportunity for collection of representative water samples for chemical and isotopic analysis.

Constant-Rate Pumping Tests (Drawdown). Drawdown data obtained during constant-rate pumping tests would be used to diagnostically evaluate operative aquifer conditions (e.g., leaky aquifer or unconfined aquifer), and detect the presence of nearby hydrogeologic features (e.g., boundaries such as faults or surface water). Pumping tests also would provide opportunities for the collection of representative water samples for detailed hydrochemical and isotopic analysis, which are useful for assessing the source and origin of groundwater and evaluating hydrologic connection with surface water sources.

Constant-Rate Pumping Tests (Recovery). Analysis of groundwater level recovery data would provide corroborative information (i.e., to drawdown response) during the constant-rate pumping test.

A packer assembly would be used to isolate fracture intervals in the well opposite perforated casing. The packer assembly would help determine vertical hydraulic gradient in the well, testing of isolated fracture sets, and obtaining groundwater samples to identify hydrochemistry. Normal procedures with the packer assembly would include:

Packer Inflation. The test tool would be positioned and packers would be inflated to isolate the test interval.

Pressure Stabilization The down hole shut-in tool would be closed and pressure would be monitored to establish the static formation pressure.

Constant-Rate Pumping Test. A constant-rate pumping test would be conducted to determine aquifer parameters for the discrete fracture interval open in the well to pumping.

Prior to pumping tests, short-duration pre-tests would routinely be conducted. Pre-testing would be conducted primarily for additional well development and for determining pumping rates for the constant-rate discharge test.

3.6. TUNNEL CHARACTERIZATION BOREHOLES

3.6.1. Purpose and Location of Activity

A total of nine cored boreholes are proposed on Forest Service lands (Figure 1, Table 5) along two potential tunnel alignments. These boreholes are required to further define rock conditions along a

planned conveyor tunnel alignment. All boreholes would be logged for geology and rock mass properties by a competent rock mechanics engineer, geological engineer or engineering geologist.

Table 5. Tunnel Characterization Borehole Locations, Dimensions, and Claim Information

Hole #	Northing	Easting	Elevation	Tunnel Elevation	Depth	Tilt
PVT-3	3685533	494897	1,201	900	301	-90
PVT-4	3685900	496630	21,286	930	356	-90
PVT-5	3686712	497417	1,329	945	384	-90
PVT-6	3687667	499292	1,413	960	453	-70
PVT-7	3688152	500363	1,478	970	508	-90
PVT-8	3690714	502741	1,440	990	450	-90
PVT-9	3691544	503389	1,490	1,000	490	-90
APV-6	3686990	499270	1,437	960	477	-90
APV-8	3690549	499378	1,440	970	470	-90

Note: Detailed claim information for the tunnel characterization boreholes and associated access is provided as Appendix E.

Roadway improvements required to gain access to the tunnel characterization boreholes are identified in Figure 1 and Section 3.7.

3.6.2. Tunnel Characterization Borehole Drilling

The tunnel characterization sites proposed as part of this Plan have an approximately 60- by 100-foot disturbance footprint. This disturbance footprint provides required space for the placement of drill pads, and associated equipment and mud pits (Figure 2). Some sites would require additional area for grading and fill slopes. The estimated disturbance for the placement of the proposed tunnel characterization sites is 1.8 acres. The estimated disturbance area for each individual site is identified in Section 3.12 of this Plan.

Complete detailed descriptions of proposed tunnel characterization activities are provided in Appendix C. Plan views of proposed activities with 2007 aerial base mapping and 10-foot contour intervals are provided in Appendix D.

Boreholes would be core drilled to depths between 301 meters and 508 meters, depending on collar elevation (Table 5). Tunnel characterization boreholes would be core drilled with the same method used at the proposed exploration holes.

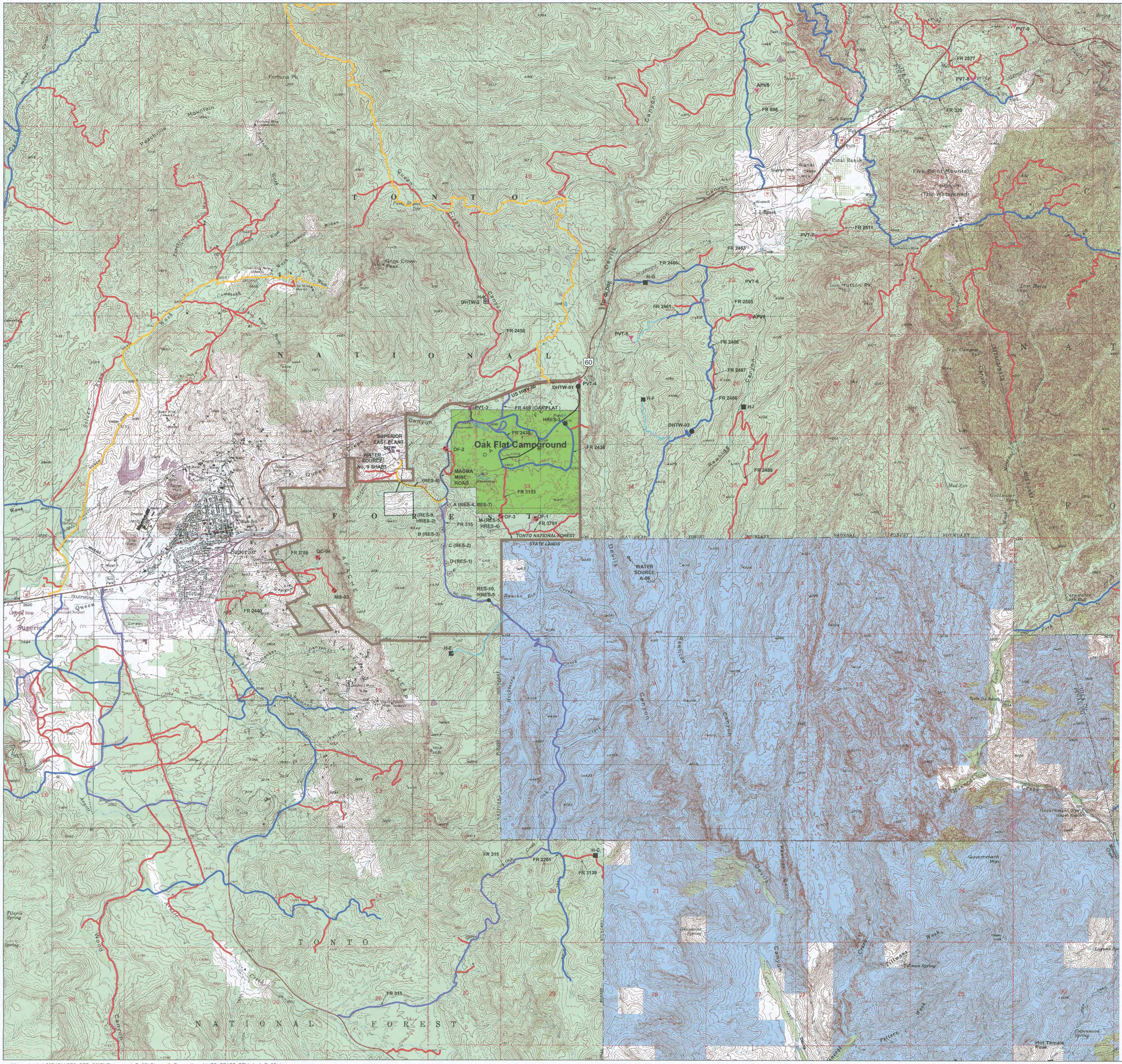
Temporary structures for equipment storage may be used by the drillers for shelter at each active rig (Figure 2). In addition, a portable toilet would be placed at each active drill site and would be serviced periodically by a contractor (Figure 2). An equipment list for the proposed tunnel characterization borehole drilling is provided in Section 3.9 of this Plan.

3.7. ACCESS

Access to proposed drilling operations would generally be gained from either US Highway 60 or State Route 177 through Forest Service lands. Within Forest Service lands approximately 16.9 miles of existing road are proposed for improvement and approximately 0.3 mile of new access road are planned (Figure 1 and Tables 6.1 and 6.2). In addition, approximately 3.2 miles of the proposed access road improvements would traverse state and privately owned lands that are adjacent to Tonto National Forest (Appendix G). The current Forest Service Road Maintenance Levels within proposed activity areas are shown on Figure 5.

Since the terrain is rocky within proposed activity areas, boulders may narrowly constrict some portions of the road or the curve radii may be too small for the long drill rigs. The use of dozers, hammer-hoes, or track hoes would be required to modify these constrictions. Access road improvements would be minimized to the greatest extent practicable. Based on the current understanding of conditions along the proposed access routes, cuts and fills would be balanced onsite in a manner that minimizes disturbance. Complete detailed descriptions of proposed access within Forest Service lands are provided in Appendix C and plan views of proposed access route improvements with 2007 aerial base mapping and 10-foot contour intervals are provided in Appendix D. Access to PVT-7 is currently planned to be helicopter-supported along FR 2511 (Figure1). Ground access options for this site are still under consideration.

Public access of proposed activity areas would be managed by crew members during roadway construction and improvements. To the extent practicable, roadway activities proposed as part of this plan would be conducted in a manner that would allow continued use by the public. Temporary road closures causing limited access may occur for short periods. Traffic control signage would be posted to identify, when possible, detour routes for public access. To the extent practicable turn-outs would be provided along roadways to allow the public to pass construction areas. All closure, restrictions, and signing for access management would comply with the guidelines in the Manual on Uniform Traffic Control Devices (FSM 7103.3) for signs and markers. The contractor will provide a traffic management plan and coordinate with the Department of Public Safety for access to Forest roads from any state or federal highway to ensure public safety.



LEGEND

- Resolution Parcel Boundary
- Exploration Drill Site
- Tunnel Characterization Bore Holes
- Deep Hydrogeology Testing / Monitor Wells
- Shallow Hydrogeology Well Site
- Drill Site (Approved Under November 2004 Modification)
- Drill Site (Approved Under The Original February 2001 P.O.O.)
- User Created Road (To Be Improved)
- New Road (No RATM Designation)
- Other User Created Road (To Be Maintained)
- Brushing/Clearing Along Roadway

Forest Service Transportation Management Maintenance Levels:

- Level 1-Basic Custodial Care (closed)
- Level 2-High Clearance Vehicles
- Level 3-Suitable for Passenger Cars
- Level 4-Moderate Degree of User Comfort
- Level 5- High Degree of User Comfort (Not found on this map)

Forest Service Transportation Management Maintenance Levels are defined in FSH 7709.58, 10, 12.3:

Level 1 (Basic Custodial Care) roads may be of any type, class or construction standard, and may be managed at any other maintenance level during the time they are open for traffic; however, while maintained at Level 1, they are closed to vehicular traffic, but may be open and suitable for non-motorized uses.
Level 2 (High Clearance Vehicles) roads are open for use by high clearance vehicles and have low traffic volume and speed. These roads typically are local and connect collector roadways, have at-grade drainage treatment, are not subject to the requirements of the Highway Safety Act, do not provide surface smoothness, and are not suitable for passenger cars.
Level 3 (Suitable for Passenger Cars) roads typically have low speed and a single lane with turnouts and spot surfacing. These roads have low to moderate traffic volume, typically connect to arterial and collector roads, and may include some dispersed recreation roads.
Level 4 (Moderate Degree of User Comfort) roads provide a moderate degree of user comfort and convenience at moderate travel speeds. These roads typically may connect to county roads, are usually considered collector roads, can be double-lane, aggregate surfaced, and dust-abated, and can have culverts for drainage treatment.
Level 5 (High Degree of User Comfort) roads provide a high degree of user comfort and convenience. These roads provide the highest traffic volume and speeds, are usually arterial or collector roadways, and are normally double-lane, paved facilities. Some may be aggregate surfaced and dust-abated.

Note: No Convert Use or Decommission Roads occur within the view of this map.

- Tonto National Forest
- State Trust Lands

N
W E
S

0' 2000' 4000'

SCALE 1" = 2000'

Pinal County, Arizona
Superior, Pinal Ranch & Teapot Mountain 7.5' USGS Maps

WestLand Resources Inc.
Engineering and Environmental Consultants

RESOLUTION COPPER MINING
PLAN OF OPERATIONS

LOCATION MAP WITH FOREST ROAD CLASSIFICATIONS

Figure 5

M:\projects\807.12\USFS POO 2007\Figures 4-7-08\Plan_of_Operation-W FS ROADS-REV-A 4-7-08.dwg

Table 6.1. Proposed Access Road Improvements within Tonto National Forest

Road	Current Forest Service Road Maintenance Level (1, 2)	Planned Road Condition During Pre-feasibility Plan of Operation Activities (2)	Length (4, 5)	
			Feet	Miles
FR 315	Level 4 – Moderate Degree of User Comfort	Maintain and repair road segments that currently meet the Moderate Degree of User Comfort standard if they are damaged or adversely affected by planned activities and improve road segments where its condition is not sufficient to provide required access. When necessary, degraded road segments will be brought up to a Level 2 maintenance standard suitable to provide access for the equipment required to accomplish planned activities	19,164	3.63
FR 320	Level 2 – High Clearance Vehicles	Maintain and repair road segments that currently meet the Level 2 maintenance standard if they are damaged or adversely affected by planned activities and improve road segments where this current condition is not met to generally achieve a Level 2 maintenance standard suitable to provide access for the equipment required to accomplish planned activities	3,174	0.60
FR 898	Level 2 – High Clearance Vehicles	Maintain and repair road segments that currently meet the Level 2 maintenance standard if they are damaged or adversely affected by planned activities and improve road segments where this current condition is not met to generally achieve a Level 2 maintenance standard suitable to provide access for the equipment required to accomplish planned activities	2,979	0.56
Existing Road from FR 898 to APV-8	User Created (3)	Improve road segment to generally achieve the Level 2 maintenance standard suitable to provide access for the equipment required to accomplish planned activities	486	0.09
FR 2261	Level 2 – High Clearance Vehicles	Maintain and repair road segments that currently meet the Level 2 maintenance standard if they are damaged or adversely affected by planned activities and improve road segments where this current condition is not met to generally achieve a Level 2 maintenance standard suitable to provide access for the equipment required to accomplish planned activities	1,389	0.26
FR 2440	Level 1 – Basic Custodial Care	Improve road segments to generally achieve a Level 2 maintenance standard suitable to provide access for the equipment required to accomplish planned activities	4,643	0.88
FR 2461	Level 2 – High Clearance Vehicles	Maintain and repair road segments that currently meet the Level 2 maintenance standard if they are damaged or adversely affected by planned activities and improve road segments where this current condition is not met to generally achieve a Level 2 maintenance standard suitable to provide access for the equipment required to accomplish planned activities	2,106	0.40
Existing Extension of 2461	User Created (3)	Improve road segments to generally achieve the Level 2 maintenance standard suitable to provide access for the equipment required to accomplish planned activities	2,477	0.47
FR 2463	Level 1 – Basic Custodial Care	Improve road segments to generally achieve a Level 2 maintenance standard suitable to provide access for the equipment required to accomplish planned activities	2,606	0.49
FR 2466 (and small portion of FR 2467)	Level 2 – High Clearance Vehicles	Maintain and repair road segments that currently meet the Level 2 maintenance standard if they are damaged or adversely affected by planned activities and improve road segments where this current condition is not met to generally achieve a Level 2 maintenance standard suitable to provide access for the equipment required to accomplish planned activities	22,285	4.22
FR 2469	Level 1 – Basic Custodial Care	Improve road segments to generally achieve a Level 2 maintenance standard suitable to provide access for the equipment required to accomplish planned activities	9,029	1.71
FR 2505	Level 1 – Basic Custodial Care	Improve road segments to generally achieve a Level 2 maintenance standard suitable to provide access for the equipment required to accomplish planned activities	2,523	0.48

Table 6.1 Proposed Access Road Improvements within Tonto National Forest (Continued)

Road	Current Forest Service Road Maintenance Level (1,2)	Planned Road Condition During Pre-feasibility Plan of Operations Activities (2)	Length (4)	
			Feet	Miles
FR 2511	Level 1 – Basic Custodial Care	Improve road segments to generally achieve a Level 2 maintenance standard suitable to provide access for the equipment required to accomplish planned activities	2,640	0.50
FR 3786	Level 1 – Basic Custodial Care	Improve road segments to generally achieve a Level 2 maintenance standard suitable to provide access for the equipment required to accomplish planned activities	1,968	0.37
Existing Road from FR 315 to H-E	User Created (3)	Improve road segments to generally achieve the Level 2 maintenance standard suitable to provide access for the equipment required to accomplish planned activities	4,183	0.79
Existing Road from FR 2440 to QC-04	User Created (3)	Improve road segments to generally achieve the Level 2 maintenance standard suitable to provide access for the equipment required to accomplish planned activities	522	0.10
Existing Road from FR 2466 to H-F	User Created (3)	Improve road segments to generally achieve the Level 2 maintenance standard suitable to provide access for the equipment required to accomplish planned activities	3,746	0.71
Existing Road from US Highway 60 to PVT-9	User Created (3)	Improve road segments to generally achieve the Level maintenance standard suitable to provide access for the equipment required to accomplish planned activities	336	0.06
Existing Road from Magma Mine Road to private in-holding	User Created (3)	Improve road segments to generally achieve the Level 2 maintenance standard suitable to provide access for the equipment required to accomplish planned activities	651	0.12
		Total Length of Existing Road Improvements	**89,150**	**16.86**

Note 1: Data provided as a shape file by Tonto National Forest on December 4, 2007, file name - Globerd_rds.shp. These are transportation management designations and do not necessarily reflect the current condition or drivability of the specific road segment in question.
Note 2: Forest Service Transportation Management Maintenance Standards are defined in FSH 7709.58, 10, 12.3:
Level 1 (Basic Custodial Care) roads may be of any type, class or construction standard, and may be managed at any other maintenance level during the time they are open for traffic; however, while maintained at Level 1, they are closed to vehicular traffic, but may be open and suitable for non-motorized uses.
Level 2 (High Clearance Vehicles) roads are open for use by high clearance vehicles and have low traffic volume and speed. These roads typically are local and connect collector roadways, have at-grade drainage treatment; are not subject to the requirements of the Highway Safety Act; do not provide surface smoothness; and are not suitable for passenger cars.
Level 3 (Suitable for Passenger Cars) roads typically have low speed and a single lane with turnouts and spot surfacing. These roads have low to moderate traffic volume, typically connect to arterial and collector roads, and may include some dispersed recreation roads.
Level 4 (Moderate Degree of User Comfort) roads provide a moderate degree of user comfort and convenience at moderate travel speeds. These roads typically may connect to county roads, are usually considered collector roads, can be double-lane, aggregate surfaced, and dust-abated, and have culverts for drainage treatment.
Level 5 (High Degree of User Comfort) roads provide a high degree of user comfort and convenience. These roads provide the highest traffic volume and speeds, are usually arterial or collector roadways, and are normally double-lane, paved facilities. Some may be aggregate surfaced and dust abated.
Note 3: User Created is the Forest Service terminology for roads that were not created and maintained under the Forest system road management plan. In all cases these roads existed prior Resolution Copper Mining activities in the region
Note 4: These values reflect an estimate of the linear distance of Forest system roads that will be used to access the pre-feasibility activities areas. As indicated on Sheets 1 to 53 in Appendix D various levels of improvement will be needed along these road segments. Improvements will range from minor dressing and maintenance activities to relatively extensive reconstruction to achieve the desired condition required to provide access for pre-feasibility activities.
Note 5: In addition to the proposed access improvements on Tonto National Forest, approximately 3.2 miles of existing roads would be improved on state and privately owned lands to access proposed activities on the Forest.

Table 6.2. New Temporary Access Roads Proposed within Tonto National Forest

Road	Current Forest Service Road Management Classification	Planned Road Condition During Pre-feasibility Plan of Operation Activities	Length	
			Feet	Miles
New Access from FR 2458 to H-K	No Classification	Improve road segments to generally achieve the High Clearance Vehicles management standard suitable for the equipment required to accomplish planned activities	177	0.03
New Access from FR 2458 to DHTW-02	No Classification	Improve road segments to generally achieve the High Clearance Vehicles management standard suitable for the equipment required to accomplish planned activities	151	0.03
New Access from FR 2461 to PVT-5	No Classification	Improve road segments to generally achieve the High Clearance Vehicles management standard suitable for the equipment required to accomplish planned activities	330	0.06
New Access from FR 3791 to OF-1	No Classification	Improve road segments to generally achieve the High Clearance Vehicles management standard suitable for the equipment required to accomplish planned activities	1,069	0.20
Total Length of New Access			**1,727**	**0.33**

3.8. MAGMA MINE ROAD MAINTENANCE

Magma Mine Road is an existing paved road with deteriorating pavement. In order to improve visibility for the transport of heavy equipment along this roadway, the vegetation immediately adjacent to the paved roadway would be cleared and brushed regularly, as has been the practice in prior years.

3.9. EQUIPMENT REQUIRED FOR PROPOSED OPERATIONS

A list of equipment is displayed in Table 7 (similar equipment may be used, depending on which drilling contractor is selected). Equipment lists for each individual site are also provided in Appendix C.

Table 7. Equipment List

Quantity	Equipment	Size
Exploratory Drilling Operations		
1	UDR-5000 Core Drill Rig or equivalent	10 ft X 58 ft
1	CP-50 Core Drill Rig or equivalent	10 ft X 58 ft
1	Schram 685 Rotary Drill Rig or equivalent	10 ft X 40 ft
1	LF-90 Rotary Drill Rig or equivalent	10-ft X 40-ft
1	Mud Tank (associated with active drill rigs)	9,500-gallon
2	Pipe Truck	10 X 35 ft
1	Water Storage Tank (associated with active drill rigs)	1,000-gallon
2	Generators associated with Drill Rigs	8 ft X 15 ft
1	Cat Bulldozer	D-9
1	Track Hoe	10 ft X 20 ft
1	Tracked Jaw Crusher	10 ft X 20 ft
1	Water Truck	10 ft X 30 ft
Deep Hydrologic Well Drilling		
1	UDR-5000 Core Drill Rig or equivalent	10 ft X 58 ft
1	UDR-1500 Core Drill Rig or equivalent	10 ft X 58 ft
1	Lang LM-200 Series Tophead Rotary Rig or equivalent	10 ft X 40 ft
1	Schram 685 Rotary Drill Rig or equivalent	10 ft X 40 ft
1	Mud Tank (associated with active drill rigs)	9,500-gallon
2	Pipe Truck	10 X 35 ft
1	Water Storage Tank (associated with active drill rigs)	1,000-gallon
2	Generators associated with Drill Rigs	8 ft X 15 ft
1	Cat Bulldozer	D-9
1	Track Hoe	10 ft X 20 ft
1	Tracked Jaw Crusher	10 ft X 20 ft
1	Water Truck	10 ft X 30 ft
Shallow Hydrologic Well Drilling		
1	Lang LM-200 Series Tophead Rotary Rig or equivalent	10 ft X 40 ft
1	Mud Tank (associated with active drill rigs)	9,500-gallon
2	Pipe Truck	10 X 35 ft
1	Heavy duty air compressor	
1	Water Storage Tank (associated with active drill rigs)	1,000-gallon
2	Generators associated with Drill Rigs	8 ft X 15 ft
1	Front end loader	10 ft X 30 ft
1	Backhoe	10 ft X 20 ft
1	Tracked Jaw Crusher	10 ft X 20 ft
1	Water Truck	10 ft X 30 ft
Tunnel Characterization Boreholes		
1	Lang LM-200 Series Tophead Rotary Rig or equivalent	10 ft X 40 ft
1	UDR-1500 Core Drill Rig or equivalent	10 ft X 58 ft
1	Schram 685 Rotary Drill Rig or equivalent	10 ft X 40 ft
1	Mud Tank (associated with active drill rigs)	9,500-gallon
2	Pipe Truck	10 X 35 ft
1	Water Storage Tank (associated with active drill rigs)	1,000-gallon
2	Generators associated with Drill Rigs	8 ft X 15 ft
1	Cat Bulldozer	D-9
1	Track Hoe	10 ft X 20 ft

Table 7. Equipment List

Quantity	Equipment	Size
1	Tracked Jaw Crusher	10 ft X 20 ft
1	Water Truck	10 ft X 30 ft
Access Road Construction and Improvement		
1	Track Hoe	10 ft X 20 ft
1	Hammer hoe	10 ft X 20 ft
1	Front end loader	10 ft X 30 ft
1	Water truck	10 ft X 30 ft

3.10. WATER MANAGEMENT

Water would be used for dust suppression and some drilling processes. Water for the proposed drilling and dust suppression would be obtained from the Superior Mine's potable water tanks which originate from the approximately 500-foot level of the No. 9 Shaft underground workings (ADWR #59-524492; Figure 1) and from a well located within Township 2 South, Range 13 East, NW ¼ of Section 4, on adjacent state lands, Well A-06 (ADWR #55-214967; Figure 1). The water source at the No. 9 Shaft occurs within the Phoenix Active Management Area (AMA) and Well A-06 occurs outside the AMA. Water from Well A-06 would only be used along Forest Road (FR) 2466 and FR 2469. The remaining activity areas would use water from the underground workings of the No. 9 Shaft. Water trucks would be used to transport water from the water sources to proposed activity areas.

It is anticipated that drill holes may "make" water during drilling processes. In accordance with standard industry practices, water used for drilling purposes or emerging from the holes would be routed to a single large pit or a series of settling pits in order to settle the solids. These mud pits would be excavated alongside each drill site or at other nearby places where excavation is feasible. The excavation is usually done using a track hoe. The initial pit would contain water and ground rock pumped from the hole and would act as a decant-evaporation pit during open-hole drilling. The water in the pit would fully evaporate. The second and successive pits (if needed) would initially be used as back-up infiltration pits. If excessive mud is produced, the mud pits may be pumped out and the contents properly disposed of at a permitted landfill. Because of the in-place system of evaporation and infiltration pits, any discharges would be in compliance with the Arizona Department of Environmental Quality's (ADEQ's) Arizona Pollutant Discharge Elimination System (AZPDES) De Minimus General Permit for well development activities. Water bars and straw bales would be used as needed to prevent erosion.

The associated drill rig mud tank and/or settling pits would be used during drilling phases to hold drilling mud that is re-circulated down the hole to cool and lubricate the drill rods and the diamond bit, and to help carry ground up rock to the surface. While used for this purpose, the mud pit would be lined with plastic sheeting and/or the mud would be contained in one or more steel tanks. Drilling mud would be allowed to evaporate to dryness or may be periodically pumped and transported offsite for proper disposal. During reclamation activities, drilling mud would be removed from the site.

The Forest Service would be provided with any information gathered concerning the levels or formations where groundwater is encountered, and flow rates if known or determined.

3.11. BEST MANAGEMENT PRACTICES

Resolution will develop and implement a construction Stormwater Pollution Prevention Plan (SWPPP) in accordance with the regulations of the AZPDES Stormwater Construction General Permit (CGP). Sediment control features, such as silt fencing, would be used at the downgradient toe of fill slopes in order to catch sediment and keep it from entering drainages. Road engineering would avoid drainage channel bottoms to the greatest extent possible. Water bars would be provided to minimize erosion on steep sections of roadway. If maintenance is necessary, personnel may periodically grade the road surface. The cross slope, stormwater system design, erosion control features, and limited maintenance constitute Best Management Practices (BMPs) for the roadways.

The drilling operations would be conducted round-the-clock and notices would be posted along the access road in accordance with Forest Service guidelines.

For fire prevention measures, the Resolution 2007 Fire Restriction Response Plan (Appendix F) would be posted and implemented at each drill site. Resolution employees and their contractors would take care to always thoroughly extinguish all smoking materials. Litter would be cleared from around any ignition sources.

3.12. TOTAL ESTIMATED DISTURBANCE ACRES

An estimated 39.2 acres would be disturbed for proposed drilling operations, new access roads, and existing access road improvements (Table 8). The proposed new activities would require disturbance of approximately 5.3 acres for the placement of drill pads on new and existing drill sites, approximately 0.6 acre for the construction of approximately 0.3 mile of new access roads, and approximately 33.3 acres for the improvement of approximately 16.9 miles of existing roads for access. Areas of disturbance provided here are based on conservative estimates of the maximum area that would be required for proposed activities.

3.13. ACTIVITIES WITHIN STATE AND PRIVATELY OWNED LANDS

Resolution has conducted and proposes to continue exploration activities within state lands and privately owned lands in the vicinity of the proposed activities. An exploration plan of operations under Mineral Exploration Permit No. 08-110148 was approved by the Arizona State Land Department (ASLD) Minerals Section in July 2007 for the placement of two monitoring well sites, HRES-07 and HRES-08, and associated access improvements on State Lands (Appendix G). A Special Land Use Permit was obtained for hydrologic monitoring well site HRES-05 and associated access in 2004 and an exploration plan of operations under Mineral Exploration Permit No. 08-110147 was approved by the ASLD Minerals Section in 2006 for exploration site RES-12 (Appendix G). Appendix G identifies the locations and

provides detailed descriptions of other actions that are planned within adjacent state and privately owned lands.

3.14. SCHEDULE OF ACTIVITIES

Activities would be scheduled generally based on their proximity to major access routes that serve the area, US Highway 60, State Route 177, and Magma Mine Road. The proposed schedule for phasing and abandonment of each site and associated access routes are provided in Appendix C. This schedule is based on the current understanding of planned activities.

Table 8. Estimated Disturbance Acres

Disturbance Area	Description of Disturbance	Estimated Acres of Disturbance
Drill Pads		
QC-04	80-ft X 100-ft drill pad plus grading/fill area	0.3
MB-03	80-ft X 100-ft drill pad plus grading/fill area	0.3
OF-1	80-ft X 100-ft drill pad plus grading/fill area	0.2
OF-2	80-ft X 100-ft drill pad plus grading/fill area	0.3
OF-3	80-ft X 100-ft drill pad plus grading/fill area	0.2
	Subtotal	**1.3**
Deep Hydrogeology Testing/Monitor Wells		
DHTW-01	80-ft X 100-ft drill pad plus grading/fill area	0.3
DHTW-02	80-ft X 100-ft drill pad plus grading/fill area	0.3
DHTW-03	80-ft X 100-ft drill pad plus grading/fill area	0.3
	Subtotal	**0.9**
Shallow Hydrologic Monitor Wells		
H-C	80-ft X 100-ft drill pad plus grading/fill area	0.3
H-E	80-ft X 100-ft drill pad plus grading/fill area	0.2
H-F	80-ft X 100-ft drill pad plus grading/fill area	0.3
H-G	80-ft X 100-ft drill pad plus grading/fill area	0.3
H-I	80-ft X 100-ft drill pad plus grading/fill area	0.2
H-K	80-ft X 100-ft drill pad plus grading/fill area	*
	Subtotal	**1.3**
Conveyor Tunnel Boreholes		
PVT-3	60-ft X 100-ft drill pad plus grading/fill area	0.1
PVT-4	60-ft X 100-ft drill pad plus grading/fill area	0.2
PVT-5	60-ft X 100-ft drill pad plus grading/fill area	0.2
PVT-6	60-ft X 100-ft drill pad plus grading/fill area	0.2
PVT-7	60-ft X 100-ft drill pad plus grading/fill area	0.3
PVT-8	60-ft X 100-ft drill pad plus grading/fill area	0.2
PVT-9	60-ft X 100-ft drill pad plus grading/fill area	0.2
APV-6	60-ft X 100-ft drill pad plus grading/fill area	0.1
APV-8	60-ft X 100-ft drill pad plus grading/fill area	0.3
	Subtotal	**1.8**
Existing Access Road Improvements**	Road dressing/improvement along 16.9 miles	**33.3**
New Access Road ***	Grading/clearing for new road construction	**0.6**
Total Disturbance		**39.2**

* H-K would be located on the same site as deep hydrogeologic testing/monitoring well DHTW-02.

** Roadway improvements would be conducted along portions of approximately 16.9 miles of existing access roads. The maximum area of this disturbance for existing road improvements was estimated using roadway profiles created with 2007 aerial imagery and 10-foot contour intervals.

*** Approximately 0.3 mile of new access road would be required. The maximum area of disturbance was estimated using roadway profiles created with 2007 aerial imagery and 10-foot contour intervals and a maximum disturbance width of 15 feet.

4.0 ENVIRONMENTAL PROTECTION MEASURES

4.1 AIR QUALITY

Minimal impacts to air quality are expected due to light travel along the existing and newly constructed dirt roads. The following practices would reduce impacts:

- Dust suppression techniques, such as applying water and DusTreat DC9112 (Appendix H) during road construction activities would be used.

- Water would be used in the drilling process at all times, nearly eliminating any dust production from the drill.

- Service vehicles would drive slowly on the dirt roads and adjust their speed depending on conditions to avoid creating a dust tail.

4.2 WATER QUALITY

Water would come into contact with bentonite drilling mud and ground rock at depth. It would be treated after it is pumped back out of the hole by evaporation and by allowing solids to settle out in excavated mud pits at each drill site. If excess material cannot be managed in the mud pits, the material would be pumped and disposed of at a permitted facility. Resolution will obtain authorization under the AZPDES De Minimus General Permit from ADEQ for well development activities.

Resolution would develop and implement a construction SWPPP. The effects of erosion and sediment discharge into offsite drainages would be mitigated through the use of water bars on the steeper sections of roadway, and silt fences or other BMPs below fill slopes and elsewhere, as appropriate.

The strategic installation of bentonite seals and professional drilling practices would minimize potential impacts of the drilling program to the existing groundwater aquifer system.

4.3 SOLID WASTES

Solids from drilling (e.g. rock and drilling mud) may be pumped and disposed of at a permitted landfill or may be allowed to dry out in the excavated pits. When all drilling is completed, the material contained in the pits would be removed from the Forest Service lands and disposed of in accordance with applicable laws and regulations. During reclamation activities, these pits would be covered over, graded and revegetated. All other wastes, such as paper and food waste, would be stored in garbage sacks and removed from the site each day. A portable toilet would be placed at each active drill site and serviced periodically by a contractor.

4.4 SCENIC VALUES

Scenic values would be protected by good housekeeping practices, minimizing disturbance, and implementation of timely reclamation.

4.5 FISH AND WILDLIFE

A site-wide Biological Evaluation (BE) was conducted on the Resolution Parcel and species-specific survey for the Arizona hedgehog cactus (*Echinocereus triglochidiatus var. arizonicus*), a listed endangered species, was conducted over the proposed disturbance areas, with negative results.

All proposed activity areas were surveyed for the endangered Arizona hedgehog cactus in July and September 2007 and January, February, and March 2008. This cactus occurs near portions of the proposed activities. Detailed plan views of proposed activities that identify Arizona hedgehog cacti locations with respect to ground clearing activities were submitted to the Forest Service. All Arizona hedgehog cacti that occur in the proximity of ground-disturbing activities will be avoided. Clear-limit fencing and cactus guards will be used when necessary and a biological monitor will be present at the time clearing takes place. A Biological Evaluation and Assessment is in preparation and will be submitted to the Forest Service upon its completion.

Potential Sonoran Desert Tortoise shelters (a Forest Service Sensitive species which has the potential to occur in the areas of proposed activities) will be examined during field work for the project. If encountered, the desert tortoise would be handled according to the Arizona Game and Fish Department (AGFD) protocols. A copy of the tortoise protocol is on file at the drilling operations office located at the Resolution Core Facility.

Noxious weed surveys will be conducted within construction areas prior to ground disturbance and in accordance with Forest Service guidelines. Additional mitigation may be required depending on the results of the survey.

Open mud pits at unoccupied drill sites would be covered to prevent wildlife from becoming trapped. Drilling operations are anticipated to be continuous, however, and wildlife would not likely approach active rigs.

4.6 CULTURAL RESOURCES

A Class III cultural resources survey was conducted on the Resolution Parcel in 2003. Class III survey was conducted within the remaining proposed pre-feasibility activities in 2007 and 2008. A Class III cultural resource survey report was completed and will be submitted to the Forest Service under separate cover. Detailed plan views of proposed activities that identify eligible cultural resources site locations with respect to ground clearing activities were submitted to the Forest Service.

Ground-disturbing activities associated with drilling activities and obtaining access to drill sites would occur within some register-eligible cultural resource sites as part of this Plan (Table 9). To the extent practicable impacts to cultural resource sites would be avoided. Field visits with a certified archaeologist were made to define the boundaries of those cultural sites that occur within the proximity of proposed vegetation clearing and an archaeological monitor would be present during vegetation clearing within or adjacent to any register-eligible cultural resource site boundaries.

Table 9. Class III Cultural Resource Survey Review and Planned Approach for Avoiding Impacts to Register-Eligible Cultural Resource Sites

Disturbance Area	Within Register-Eligible Site?	Approach for Avoidance
Exploration Drill Pads		
QC-04	No	Located outside any register-eligible cultural resource sites.
MB-03	Yes AR-03-12-02-1517 (AZ U:12:173)	This drill pad is located within a register-eligible site consisting of historic mining features dating from the early to mid 1900's. No features or artifacts were discovered within the area proposed for vegetation clearing. An archaeologist will monitor site construction.
OF-1	Yes AR-03-12-02-125 (AZ U:12:26)	This site is located within a 1930's Civilian Conservation Corps (CCC) register-eligible site. No features or artifacts were discovered within the area proposed for vegetation clearing. An archaeologist will monitor site construction.
OF-2	No	Located outside any register-eligible cultural resource sites.
OF-3	No	Located outside any register-eligible cultural resource sites.
Deep Hydrogeologic Testing/Monitor Wells		
DHTW-01	Yes AR-03-12-02-1077 (AZ V:2:101)	No features or artifacts were discovered within the area proposed for vegetation clearing. An archaeologist will monitor site construction.
DHTW-02	No	Located outside any register-eligible cultural resource sites.
DHTW-03	No	Located outside any register-eligible cultural resource sites.
Shallow Hydrologic Monitor Wells		
H-C	No	A prehistoric, register-eligible site (AR-03-12-02-1720) is located in the proximity of this well site. A site visit was made with a certified archaeologist and the drill pad was relocated to the extent practicable to avoid impacts to this site. An archaeological monitor will be present for clearing activities associated with this site.
H-E	No	Located outside any register-eligible cultural resource sites.
H-F	No	Located outside any register-eligible cultural resource sites.

Table 9. Class III Cultural Resource Survey Review and Planned Approach for Avoiding Impacts to Register-Eligible Cultural Resource Sites (Continued)

Disturbance Area	Within Register-Eligible Site?	Approach for Avoidance
H-G	No	Located outside any register-eligible cultural resource sites.
H-I	No	Located outside any register-eligible cultural resource sites.
H-K	No	Located outside any register-eligible cultural resource sites.
Tunnel Characterization Boreholes		
PVT-3	Yes AR-03-12-02-125 (AZ U:12:26) and AR-03-12-02-1077 (AZ V:2:101)	PVT-3 is located on the early 1920's alignment of US 60. This portion of the historic site is considered a non-contributing element to the eligibility of the site. This site is also located within a Civilian Conservation Corps (CCC) register-eligible site, however, no features or artifacts were discovered within the area proposed for vegetation clearing. An archaeologist will monitor site construction. No adverse impact is anticipated.
PVT-4	Yes AR-03-12-02-1077 (AZ V:2:101)	PVT-4 is located within the mapped historic site as mapped on AZSITE. However, this drill site is located just west of the historic highway and would not impact it. An archaeologist will monitor site construction. No adverse impacts is anticipated.
PVT-5	No	Located outside any register-eligible cultural resource sites.
PVT-6	No	Located outside any register-eligible cultural resource sites.
PVT-7	No	Located outside any register-eligible cultural resource sites.
PVT-8	No	Located outside any register-eligible cultural resource sites. A prehistoric register-eligible site (AR-03-12-02-1714 [AZ V:9:534]) occurs in the proximity of PVT-8. Site construction would not impact this site. An archaeologist will monitor site construction.
PVT-9	No	Located outside any register-eligible cultural resource sites.
APV-6	No	Located outside any register-eligible cultural resource sites.
APV-8	No	Located outside any register-eligible cultural resource sites.
Access Road Improvements		
FR 315	No	Located outside any register-eligible cultural resource sites.

Table 9. Class III Cultural Resource Survey Review and Planned Approach for Avoiding Impacts to Register-Eligible Cultural Resource Sites (Continued)

Disturbance Area	Within Register-Eligible Site?	Approach for Avoidance
FR 320	Yes AR-03-12-02-1077 (AZ V:2:101)	FR 320 is located within the 1920's alignment of US 60. No adverse impact would occur to the site due to the implementation of the following procedures: • Fill potholes will fill dirt • Use only rubber-tire vehicles. • Cleanly remove ramps used to access drill pad. • Keep vegetation removal to a minimum. An archaeologist will monitor site construction.
FR 898	No	Located outside any register-eligible cultural resource sites.
FR 2261	No	Located outside any register-eligible cultural resource sites.
FR 2440	Yes AR-03-12-02-1517 (AZ U:12:173)	Access road improvements along FR 2440 for exploration sites QC-04 and MB-03 occur within a register-eligible cultural resource site. No features or artifacts were discovered within areas proposed for vegetation clearing. An archaeologist will monitor site construction.
FR 2461	No	Located outside any register-eligible cultural resource sites.
FR 2463	No	Located outside any register-eligible cultural resource sites.
FR 2466 (and small portion of FR 2467)	No	Located outside any register-eligible cultural resource sites.
FR 2469	No	Located outside any register-eligible cultural resource sites.
FR 2505	No	Located outside any register-eligible cultural resource sites.
FR 2511	No	Located outside any register-eligible cultural resource sites.
FR 3139	No	Located outside any register-eligible cultural resource sites.
FR 3786	Yes AR-03-12-02-1517 (AZ U:12:173)	Access road improvements along FR 3786 for exploration site MB-03 occur within a register-eligible cultural resource site. No features or artifacts were discovered within the area proposed for vegetation clearing. An archaeologist will monitor site construction.
Existing road from FR 315 to H-E	No	Located outside any register-eligible cultural resource sites.
Existing Road from FR 2438 to DHTW-01	Yes AR-03-12-02-125 (AZ U:12:26)	The DHTW-01 access road is located within a register-eligible cultural resource site and there are archaeological features (check dams) near the proposed disturbance area. An archaeologist will monitor site construction.

Table 9. Class III Cultural Resource Survey Review and Planned Approach for Avoiding Impacts to Register-Eligible Cultural Resource Sites (Continued)

Disturbance Area	Within Register-Eligible Site?	Approach for Avoidance
Existing Road from FR 2440 to QC-04	No	Located outside any register-eligible cultural resource sites.
Existing Road from FR 2466 to H-F	No	Located outside any register-eligible cultural resource sites.
Existing Road from US Highway 60 to PVT-9	No	Located outside any register-eligible cultural resource sites.
Existing Road from Magma Mine Road to private inholding	No	Located outside any register-eligible cultural resource sites.
New Access Roads		
New Access from FR 2458 to H-K	No	Located outside any register-eligible cultural resource sites.
New Access from FR 2458 to DHTW-02	No	Located outside any register-eligible cultural resource sites.
New Access from FR 2461 to PVT-5	No	Located outside any register-eligible cultural resource sites.
New Access from FR 3791 to OF-1	Yes AR-03-12-02-125 (AZ U:12:26)	A small stretch of new access road to OF-1 is located within a register-eligible cultural resource site. No features or artifacts were discovered within the area proposed for vegetation clearing. An archaeologist will monitor site construction.

4.7 HAZARDOUS SUBSTANCES / PETROLEUM PRODUCTS / DRILLING MATERIALS

Resolution will revise the project's Spill Prevention, Control, and Countermeasures (SPCC) Plan to include additional proposed drill sites for submittal to the Forest Service under separate cover. The SPCC Plan details good engineering practices used to prevent releases when handling and storing petroleum products.

No extremely hazardous substances, as defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Superfund Amendments Reauthorization Act (SARA), and Emergency Planning and Community Right-To-Know Act (EPCRA), would be used in any of the activities described in this Plan. Storage for materials such as drilling mud, fuel, and lubricants, would be provided at the Resolution Core Facility. Only small quantities (container capacity of less than 5 gallons) of fuels and lubricants would be stored in secondary containment structures adjacent to the active rigs. An adequate supply of fire extinguishers would be placed at these containment structures, and each active rig would maintain enough spill supplies for any incidental releases. During drilling operations, drill rigs would be parked on top of plastic sheeting overlain by absorbent material. Plastic and absorbent materials would also be used under other gas or diesel motors, or other equipment that may leak oil, as needed. Refuse containers designated for disposal of the absorbent materials would be located at each drill rig. This material would be disposed of offsite in accordance with applicable laws and regulations.

5.0 RECLAMATION

5.1 DRILL SITES

Resolution would notify the Forest Service prior to the commencement of reclamation activities. Following the completion of all drilling, solids and desiccated drilling muds in the mud pits would be excavated and removed from the site. These inert materials would be disposed of in accordance with applicable state and federal regulations. The drill sites and mud pits would then be returned to natural grade with a track hoe using rocks and soil set aside during site construction and mud pit excavation. Each drill site would be mulched and seeded in accordance with Forest Service guidance using approved seed mixes of native species.

5.2 ROADS

Table 10 identifies the current Forest Service Road Maintenance Level for each segment of access roadway and describes the proposed reclamation and the post pre-feasibility study condition of the roadways based on the Forest Service Travel Management Guidelines for Road Maintenance Levels.[1]

As determined by the Forest Officer, the sections of the existing access roads, if they require improvement, would generally be reclaimed by ripping/roughing and seeding with an appropriate seed mix and placement of rocks or other protective materials. All new access roads would be reclaimed and closed through the placement of earthern berm. Areas of re-seeding would be scarified (ripped) prior to seeding to break-up compaction. Road surfacing material, if any, may need to be removed as determined by the Forest Officer. Stormwater BMPs, such as water bars, culverts, and erosion control features, would be repaired or removed as necessary and as specified by the Forest Officer.

[1] USDA Forest Service. 2005. Guidelines for Road Maintenance Levels. USDA Forest Service Technology and Development Program. December 2005.

Table 10. Road Reclamation and Post Pre-feasibility Study Management Designation

Road	Current Forest Service Road Maintenance Level	Post Pre-feasibility Study Forest Service Road Maintenance Level and Reclamation Activities
FR 315	Level 4 – Moderate Degree of User Comfort	The road will retain its current FS designation subject to FS maintenance and repair activities. No reclamation or restoration is proposed for the roadway travel area.
FR 320	Level 2 – High Clearance Vehicles	The road will retain its current FS designation subject to FS maintenance and repair activities. No reclamation or restoration is proposed for the roadway travel area.
FR 898	Level 2 – High Clearance Vehicles	The road will retain its current FS designation subject to FS maintenance and repair activities. No reclamation or restoration is proposed for the roadway travel area.
Existing Road from FR 898 to APV-8	User Created	Level 1 closure will be accomplished by placing an earthen berm at the start of this user created road's intersection with FR 898 when the roadway is no longer required for access to pre-feasibility study activities.
FR 2261	Level 2 – High Clearance Vehicles	The road will retain its current FS designation subject to FS maintenance and repair activities. No reclamation or restoration is proposed for the roadway travel area.
FR 2440	Level 1 – Basic Custodial Care	Level 1 closure will be accomplished by placing an earthen berm at the start of FR 2440 when the roadway is no longer required for access to pre-feasibility study activities.
FR 2461	Level 2 – High Clearance Vehicles	The road will retain its current FS designation subject to FS maintenance and repair activities. No reclamation or restoration is proposed for the roadway travel area.
Existing Extension of 2461	User Created	Level 1 closure of this extension of FR 2461 will be accomplished by construction of an earthen berm at the start of the user created roadway when the roadway is no longer required for access to pre-feasibility study activities.
FR 2463	Level 1 – Basic Custodial Care	The road will retain its current FS designation. Level 1 closure will be accomplished by placing an earthen berm at the start of FR 2463 when the roadway is no longer required for access to pre-feasibility study activities.
FR 2466 (and small portion of FR 2467)	Level 2 – High Clearance Vehicles	The road will retain its current FS designation subject to FS maintenance and repair activities. No reclamation or restoration is proposed for the roadway travel area.
FR 2469	Level 1 – Basic Custodial Care	The road will retain its current FS designation. Level 1 closure will be accomplished by placing an earthen berm at the start of FR 2469 when the roadway is no longer required for access to pre-feasibility study activities.
FR 2505	Level 1 – Basic Custodial Care	The road will retain its current FS designation. Level 1 closure will be accomplished by placing an earthen berm at the start of FR 2505 when the roadway is no longer required for access to pre-feasibility study activities.
FR 2511	Level 1 – Basic Custodial Care	The road will retain its current FS designation. Level 1 closure will be accomplished by placing an earthen berm at the start of FR 2511 when the roadway is no longer required for access to pre-feasibility study activities.
FR 3139	Level 1 – Basic Custodial Care	The road will retain its current FS designation. Level 1 closure will be accomplished by placing an earthen berm at the start of FR 3139 when the roadway is no longer required for access to pre-feasibility study activities.
FR 3786	Level 1 – Basic Custodial Care	The road will retain its current FS designation. Level 1 closure will be accomplished by placing an earthen berm at the start of FR 3786 when the roadway is no longer required for access to pre-feasibility study activities.
Existing Road from FR 315 to H-E	User Created	Level 1 closure will be accomplished by placing an earthen berm at the start of this user created road's intersection with FR 315 when the roadway is no longer required for access to pre-feasibility study activities.
Existing Road from FR 2440 to QC-04	User Created	Level 1 closure will be accomplished by placing an earthen berm at the start of this user created roads intersection with FR 2440 when the roadway is no longer required for access to pre-feasibility study activities.

5.3 DRILL HOLES

Drilling and drill hole abandonment would be conducted in accordance with Arizona Administrative Code (AAC) R12-15, and Arizona Revised Statutes (ARS) Title 45, Chapter 2, Article 10, as administered by the ADWR. In general, the procedures for each type of drill hole are provided in Table 11.

Table 11. Resolution Copper Mining Drill Hole Abandonment Procedures

Type	Purpose	Abandonment Timing	Abandonment Procedures
Exploration	Delineation of major structures and resource modeling	Holes would be abandoned when they have reached their reasonable limit of deflections based on current technology – Selected holes may be converted to hydrological monitoring wells (ADWQ) if in critical areas for pre-feasibility studies.	Drill hole abandonment would be conducted in accordance with Arizona Administrative Code (ACC) R12-15, Arizona Revised Statutes (ARS) Title 45, Chapter 2, Article 10, as administered by the Arizona Department of Water Resources (ADWR) In General, this procedure includes the following steps • After completion of each deflection, that portion of the hole would be filled with bentonite mud of sufficient density to prevent movement of groundwater between any aquifers. • After completion of all deflections, the cased trunk holes would be filled with bentonite mud and a cement grout plug would be placed extending from two feet below grade to a minimum of twenty feet below grade.
Deep Hydrogeology	Characterization of deep regional aquifer	Intended for long term monitoring of vertical K in the Whitetail conglomerate and flow/water quality in the deep aquifer	Wells completed to specifications would be maintained as long term monitoring locations. In the event of a lost hole or insufficient data from a well the selected well would be abandoned in accordance with the same procedures (ADWR) as the Resolution exploration holes.
Tunnel Characterization	Geotechnical and hydrological characterization of proposed tunnel alignment	After initial testing drill holes that are not necessary for pre-feasibility studies would be abandoned according to plan	Once selected for abandonment these holes would be abandoned in accordance with ADWR standards similar to the exploration holes with slight modifications due to the relatively shallow depth and absence of deflections. • A bentonite cement plug would be placed in the bottom forty feet of the hole • Bentonite grout would fill the entire hole with the exception of the top twenty feet. • A cement plug would be placed from two feet below grade to a minimum of twenty feet below grade.
Shallow Hydrology	Monitor of Apache Leap Tuff aquifer	Intended for long term monitoring / Dry wells will be abandoned according to plan	Wells completed to specifications will be maintained as long term monitoring locations. In the event of a lost hole or insufficient data from a well the selected well would be abandoned in accordance with the same procedures (ADWR) as the tunnel characterization holes.

5.4 APPURTENANCES

Pumps, signs, and any other items would be removed from Forest Service lands.

5.5 BOND

As part of this Plan, proposed drill sites and new access roads would be reclaimed. Reclamation activities as approved by the Forest Service would be bonded by Resolution Copper Mining, LLC.

APPENDIX A

FORM FS-2800-5

USDA, Forest Service

PLAN OF OPERATIONS FOR MINING ACTIVITIES ON NATIONAL FOREST SYSTEM LANDS

FS-2800-5
OMB NO. 0596-0022

USE OF THIS FORM IS OPTIONAL! **1st TIME USERS SHOULD DIRECT QUESTIONS REGARDING THIS FORM OR REGULATIONS (36 CFR 228A) TO THE FOREST SERVICE DISTRICT OFFICE NEAREST YOUR AREA OF INTEREST.**

Submitted by:	Rme E. Marsh	Manager, Environmental Impact Statements	July 11, 2007
	Signature	Title	Date *(mm/dd/yy)*
Plan Received by:			
	Signature	Title	Date *(mm/dd/yy)*

I. GENERAL INFORMATION

A. Name of Mine/Project: **Resolution Geophysical Studies and Exploration Activities**

B. Type of Operation: **Exploration**
(lode, placer, mill, exploration, development, production, other)

C. Is this a (☒new/☐continuing) operation? (check one). If continuing a previous operation, this plan (☐replaces/☐modifies/☐supplements) a previous plan of operations. (check one)

D. Proposed start-up date *(mm/dd/yy)* of operation: **Upon approval.**

E. Expected total duration of this operation: **3 years**

F. If seasonal, expected date *(mm/dd/yy)* of annual reclamation/stabilization close out: **N/A**

G Expected date *(mm/dd/yy)* for completion of all required reclamation: _____

II. PRINCIPALS

A. Name, address and phone number of operator: **Resolution Copper Mining (Attention: Carl Hehnke)**
102 Magma Heights
Superior, Arizona 85273 Phone: (520) 689-9374 x12

B. Name, address, and phone number of authorized field representative (if other than the operator). Attach authorization to act on behalf of operator. _____

C. Name, address and phone number of owners of the claims (if different than the operator):

D. Name, address and phone number of any other lessees, assigns, agents, etc., and briefly describe their involvement with the operation, if applicable:

(If more space is needed to fill out a block of information, use additional sheets and attach form)

III. PROPERTY OR AREA

Name of claim, if applicable, and the legal land description where the operation will be located.

MC#	Name	Section	Township	Range
	See Section 3.0.			

IV. DESCRIPTION OF THE OPERATION

A. **Access.** Show on a map (USGS quadrangle map or a National Forest map, for example) the claim boundaries, if applicable, and all access needs such as roads and trails, on and off the claim. Specify which Forest Service roads will be used, where maintenance or reconstruction is proposed, and where new construction is necessary. For new construction, include construction specifications such as widths, grades, etc., location and size of culverts, describe maintenance plans, and the type and size of vehicles and equipment that will use the access routes.

See Section 3.0.

B. **Map, Sketch or Drawing.** Show location and layout of the area of operation. Identify any streams, creeks or springs if known. Show the size and kind of all surface disturbances such as trenches, pits, settling ponds, stream channels and run-off diversions, waste dumps, drill pads, timber disposal or clearance, etc. Include sizes, capacities, acreage, amounts, locations, materials involved, etc.

See Figures 1 through 8.

(If more space is needed to fill out a block of information, use additional sheets and attach form)

C. **Project Description.** Describe all aspects of the operation including mining, milling, and exploration methods, materials, equipment, workforce, construction and operation schedule, power requirements, how clearing will be accomplished, topsoil stockpile, waste rock placement, tailings disposal, proposed number of drillholes and depth, depth of proposed suction dredging, and how gravels will be replaced, etc. Calculate production rates of ore. Include justification and calculations for settling pond capacities, and the size of runoff diversion channels.

See Section 3.0.

(If more space is needed to fill out a block of information, use additional sheets and attach form)

D. **Equipment and Vehicles.** Describe that which is proposed for use in your operation (Examples: drill, dozer, wash plant, mill, etc.). Include: sizes, capacity, frequency of use, etc.

See Section 3.9.

E. **Structures.** Include information about fixed or portable structures or facilities planned for the operation. Show locations on the map. Include such things as living quarters, storage sheds, mill buildings, thickener tanks, fuel storage, powder magazines, pipelines, water diversions, trailers, sanitation facilities including sewage disposal, etc. Include engineering design and geotechnical information for project facilities, justification and calculations for sizing of tanks, pipelines and water diversions, etc.

See Section 3.0 and Figures 1 through 8.

V. ENVIRONMENTAL PROTECTION MEASURES (SEE 36 CFR 228.8)

A. **Air Quality.** Describe measures proposed to minimize impacts on air quality such as obtaining a burning permit for slash disposal or dust abatement on roads.

See Section 4.1.

(If more space is needed to fill out a block of information, use additional sheets and attach form)

B. **Water Quality.** State how applicable state and federal water quality standards will be met. Describe measures or management practices to be used to minimize water quality impacts and meet applicable standards.

1. State whether water is to be used in the operation, and describe the quantity, source, methods and design of diversions, storage, use, disposal, and treatment facilities. Include assumptions for sizing water conveyance or storage facilities.

2. Describe methods to control erosion and surface water runoff from all disturbed areas, including waste and tailings dumps.

3. Describe proposed surface water and groundwater quality monitoring, if required, to demonstrate compliance with federal or state water quality standards.

4. Describe the measures to be used to minimize potential water quality impacts during seasonal closures, or for a temporary cessation of operations.

5. If land application is proposed for waste water disposal, the location and operation of the land application system must be described. Also describe how vegetation, soil, and surface and groundwater quality will be protected if land application is used.

See Section 4.2.

C. **Solid Wastes.** Describe the quantity and the physical and chemical characteristics of solid waste produced by the operation. Describe how the wastes will be disposed of including location and design of facilities, or treated so as to minimize adverse impacts.

See Section 4.3.

D. **Scenic Values.** Describe protection of scenic values such as screening, slash disposal, or timely reclamation.

See Section 4.4.

(If more space is needed to fill out a block of information, use additional sheets and attach form)

E. **Fish and Wildlife.** Describe measures to maintain and protect fisheries and wildlife, and their habitat (includes threatened, endangered, and sensitive species) affected by the operations.

See Section 4.5

F. **Cultural Resources.** Describe measures for protecting known historic and archeological values, or new sites in the project area.

See Section 4.6.

G. **Hazardous Substances.**

1. Identify the type and volume of all hazardous materials and toxic substances which will be used or generated in the operations including cyanide, solvents, petroleum products, mill, process and laboratory reagents.

See Section 4.7.

2. For each material or substance, describe the methods, volume, and frequency of transport (include type of containers and vehicles), procedures for use of materials or substances, methods, volume, and containers for disposal of materials and substances, security (fencing), identification (signing/labeling), or other special operations requirements necessary to conduct the proposed operations.

See Section 4.7.

(If more space is needed to fill out a block of information, use additional sheets and attach form)

3. Describe the measures to be taken for release of a reportable quantity of a hazardous material or the release of a toxic substance. This includes plans for spill prevention, containment, notification, and cleanup.

Harzadous materials will not be stored or used on Forest Lands. Lubricants will be placed on plastic and any small spills will be immediately cleaned up.

H. **Reclamation.** Describe the annual and final reclamation standards based on the anticipated schedule for construction, operations, and project closure. Include such items as the removal of structures and facilities including bridges and culverts, a revegetation plan, permanent containment of mine tailings, waste, or sludges which pose a threat of a release into the environment, closing ponds and eliminating standing water, a final surface shaping plan, and post operations monitoring and maintenance plans.

See Section 5.0.

VI. FOREST SERVICE EVALUATION OF PLAN OF OPERATIONS

A. Required changes/modifications/special mitigation for plan of operations:

(If more space is needed to fill out a block of information, use additional sheets and attach form)

B. **Bond.** Reclamation of all disturbances connected with this plan of operations is covered by Reclamation Performance Bond No. , dated *(mm/dd/yy)* , signed by (Principal) and (Surety), for the penal sum of . This Reclamation Performance Bond is a guarantee of faithful performance with the terms and conditions listed below, and with the reclamation requirements agreed upon in the plan of operations. This Reclamation Performance Bond also extends to and includes any unauthorized activities conducted in connection with this operation.

The bond amount for this Reclamation Performance Bond was based on a bond calculation worksheet. The bond amount may be adjusted during the term of this proposed plan of operations in response to changes in the operations or to changes in the economy. Both the Reclamation Performance Bond and the bond calculation worksheet are attached to and made part of this plan of operations.

Acceptable bond securities (subject to change) include:
1. Negotiable Treasury bills and notes which are unconditionally guaranteed as to both principle and interest in an amount equal at their par value to the penal sum of the bond; or
2. Certified or cashier's check, bank draft, Post Office money order, cash, assigned certificate of deposit, assigned savings account, blanket bond, or an irrevocable letter of credit equal to the penal sum of the bond.

VII. TERMS AND CONDITIONS

A. If a bond is required, it must be furnished before approval of the plan of operations.

B. Information provided with this plan marked confidential will be treated in accordance with the agency's laws, rules, and regulations.

C. Approval of this plan does not constitute certification of ownership to any person named herein and/or recognition of the validity of any mining claim named herein.

D. Approval of this plan does not relieve me of my responsibility to comply with other applicable state or federal laws, rules, or regulations.

E. If previously undiscovered cultural resources (historic or prehistoric objects, artifacts, or sites) are exposed as a result of operations, those operations will not proceed until notification is received from the Authorized Officer that provisions for mitigating unforeseen impacts as required by 36 CFR 228.4(e) and 36 CFR 800 have been complied with.

F. This plan of operations has been approved for a period of or until *(mm/dd/yy)* . A new or revised plan must be submitted in accordance with 36 CFR part 228, subpart A, if operations are to be continued after that time period.

(If more space is needed to fill out a block of information, use additional sheets and attach form)

VIII. OPERATING PLAN ACCEPTANCE

☐I/☐We have reviewed and agreed to comply with all conditions in this plan of operations including the required changes, modifications, special mitigation, and reclamation requirements.

☐I/☐We understand that the bond will not be released until the Authorized Officer in charge gives written approval.

_____ _____

☐Operator (or ☐Authorized Representative) (Date) *(mm/dd/yy)*

IX. OPERATING PLAN APPROVAL

_____ _____

(Name) (Title)

_____ _____

(Authorized Officer) (Date) *(mm/dd/yy)*

"According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB number. The valid OMB number for this information collection is 0596-0022. The time required to complete this information collection is estimated to average 8 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information."

(If more space is needed to fill out a block of information, use additional sheets and attach form)

APPENDIX B

APPROVED ACTIVITIES UNDER EXISTING RESOLUTION PROJECT EXPLORATORY DRILLING PLAN OF OPERATIONS

Approved Activities Under Existing Resolution Project Exploratory Drilling Plan of Operations (POO No. 01-12-002 and associated amendments)

Activity Name	Purpose and Uses	Location	Land Ownership	Disturbance		Facility Description	Equipment Used	Phasing/Abandonment
				Within Existing Disturbance?	Estimated Area			
Site A (RES-4, RES-7)	Exploration Hydrologic Monitoring	T1S, R13E, SE 1/4 Sec 32	Forest Service	Yes	0.25 ac	• 40ft X 100ft drill pad plus equivalent area for grading, fill, and mud pits • Approximately 3,000 ft trunk hole (6" diameter to start) through open hole technique • multiple deflections by diamond drilling	1 Schram 685 Rotary Drill Rig 2 Pipe trucks 1 UDR-5000 Core Drill Rig 1 CP-50 Core Drill Rig 1 D-9 Cat Bulldozer 1 Track hoe	**Initiation** – Currently in use and authorized through December 2008 **Length of Occupancy** Throughout mine planning stage **Concurrent reclamation** – After completion of drilling and testing activities the pad will be graded and reclaimed. **Closure** Hydro well monitoring will continue throughout life of mine – Pad will be graded and road maintained to allow support vehicles and pump rigs to access well.
Site B (RES-3)	Exploration/Hydrologic Monitoring	T1S, R13E, SE 1/4 Sec 32	Forest Service	Yes	0.25 ac	• 40ft X 100ft drill pad plus equivalent area for grading, fill, and mud pits • Approximately 3000ft trunk hole (6" diameter to start) through open hole technique • multiple deflections by diamond drilling	1 Schram 685 Rotary Drill Rig 2 Pipe trucks 1 UDR-5000 Core Drill Rig 1 CP-50 Core Drill Rig 1 D-9 Cat Bulldozer 1 Track hoe	**Initiation** - Authorized through December 2008 **Length of Occupancy** - Throughout mine planning stage **Concurrent reclamation** – After completion of drilling and testing activities the pad will be graded and reclaimed. **Closure** RES -03 is abandoned according to site procedure with hung transducer in open bore hole below casing- transducer will be removed when water level drops below measured zone.
Site C (RES-2)	Exploration	T2S, R13E, NE 1/4 SE 1/4 Sec 6	Forest Service	Yes	0.25 ac	• 30ft X 130ft drill pad plus equivalent area for grading, fill, and mud pits • Approximately 3000ft trunk hole (6" diameter to start) through open hole technique • multiple deflections by diamond drilling	1 Schram 685 Rotary Drill Rig 2 Pipe trucks 1 CP-50 Core Drill Rig 1 D-9 Cat Bulldozer 1 Track hoe	**Initiation** - Authorized through December 2008 **Length of Occupancy** - Throughout mine planning stage **Concurrent reclamation** – After completion of drilling and testing activities the pad will be graded and reclaimed **Closure** - Drill hole abandonment will be conducted in accordance with ACC R12-15, ARS Title 45, Chapter 2, Article 10, as administered by the ADWR. Cleared areas will be ripped and seeded with Forest Service-approved mix.
Site D (RES-1)	Exploration	T2S, R13E, NW 1/4 Sec 6	Forest Service	Yes	0.25 ac	• 40ft X 100ft drill pad plus equivalent area for grading, fill, and mud pits • Approximately 3000ft trunk hole (6" diameter to start) through open hole technique • multiple deflections by diamond drilling	1 Schram 685 Rotary Drill Rig 2 Pipe trucks 1 CP-50 Core Drill Rig 1 D-9 Cat Bulldozer 1 Track hoe	**Initiation** - Authorized through December 2008 **Length of Occupancy** - Throughout mine planning stage **Concurrent reclamation** – After completion of drilling and testing activities the pad will be graded and reclaimed

Approved Activities Under Existing Resolution Project Exploratory Drilling Plan of Operations (POO No. 01-12-002 and associated amendments)

Activity Name	Purpose and Uses	Location	Land Ownership	Disturbance		Facility Description	Equipment Used	Phasing/Abandonment
				Within Existing Disturbance?	Estimated Area			
								Closure - Drill hole abandonment will be conducted in accordance with ACC R12-15, ARS Title 45, Chapter 2, Article 10, as administered by the ADWR. Cleared areas will be ripped and seeded with Forest Service-approved mix.
Site F (SITE NOT OCCUPIED)	Exploration/Hydrologic Monitoring	T2S, R13E, NW 1/4 Sec 6	Forest Service	Yes	Site not occupied	SITE NOT OCCUPIED • 40ft X 100ft drill pad plus equivalent area for grading, fill, and mud pits • Approximately 3000ft trunk hole (6" diameter to start) through open hole technique • multiple deflections by diamond drilling	SITE NOT OCCUPIED 1 Schram 685 Rotary Drill Rig 2 Pipe trucks 1 UDR-5000 Core Drill Rig 1 UDR-1500 Core Drill Rig 1 D-9 Cat Bulldozer 1 Track hoe	SITE NOT OCCUPIED
FR 315 from FR-469 to State Land boundary	Improvements/Maintenance for access to State Lands	T1S, R13E, SE 1/4 Sec 32; T2S, R13E, NE 1/4 SE 1/4 Sec 6, NE 1/4 SW 1/4 Sec 6, and NW 1/4 Sec 6	Forest Service	Yes	2.5 ac	• 20ft X 4000ft widening of roadway	1 D-9 Cat Bulldozer 1 Track hoe Maintenance Front end loader Backhoe	**Initiation** – Continual maintenance **Length of Occupancy** - Throughout mine planning stage **Concurrent reclamation** – Periodic maintenance to allow support vehicles to access hydrology wells **Closure** - Drill hole abandonment will be conducted in accordance with ACC R12-15, ARS Title 45, Chapter 2, Article 10, as administered by the ADWR. Cleared areas will be ripped and seeded with Forest Service-approved mix.
Site M (RES-5, HRES-4)	Hydrologic Monitoring/Exploration	T1S, R13E, SW 1/4 Sec 33	Forest Service	Yes	0.25	• 40ft X 100ft drill pad plus equivalent area for grading, fill, and mud pits • Approximately 3000ft trunk hole (6" diameter to start) through open hole technique and deepen trunk hole to 7000ft by diamond drilling • multiple deflections by diamond drilling	1 Schram 685 Rotary Drill Rig and other rotary rig for hydrology works 2 Pipe trucks 1 CP-50 Core Drill Rig 1 D-9 Cat Bulldozer 1 Track hoe 1 tracked jaw crusher	**Initiation** - Authorized through December 2008 **Length of Occupancy** - Throughout mine planning stage **Concurrent reclamation** – After completion of drilling and testing activities the pad will be graded and reclaimed. **Closure** Hydro well monitoring will continue throughout life of mine – Pad will be graded and road maintained to allow support vehicles and pump rigs to access well.

Resolution Copper Mining, LLC - Approved Activities Under Existing Resolution Project Exploratory Drilling Plan of Operations (POO No. 01-12-002 and associated amendments)								
Activity Name	**Purpose and Uses**	**Location**	**Land Ownership**	**Disturbance**		**Facility Description**	**Equipment Used**	**Phasing/Abandonment**
FR 469 to Site M	Improvements/Maintenance for access to Site M	T1S, R13E, W 1/2 Sec 33	Forest Service	Yes	2.0 ac	• 8ft X 3300ft widening of roadway	1 D-9 Cat Bulldozer 1 Track hoe Maintenance Front end loader Backhoe	**Initiation** – Continual maintenance **Length of Occupancy** - Throughout mine planning stage **Concurrent reclamation** – Periodic maintenance to allow support vehicles to access hydrology wells **Closure** - Drill hole abandonment will be conducted in accordance with ACC R12-15, ARS Title 45, Chapter 2, Article 10, as administered by the ADWR. Cleared areas will be ripped and seeded with Forest Service-approved mix.
New Road to Site M	Road Construction for access to Site M	T1S, R13E, SW 1/4 Sec 33	Forest Service	No	0.15 ac	• 15ft X 450ft grading modification	1 D-9 Cat Bulldozer 1 Track hoe Maintenance Front end loader Backhoe	**Initiation** - Completed **Length of Occupancy** - Throughout mine planning stage **Concurrent reclamation** – Periodic maintenance to allow support vehicles to access hydrology wells **Closure** - Drill hole abandonment will be conducted in accordance with ACC R12-15, ARS Title 45, Chapter 2, Article 10, as administered by the ADWR. Cleared areas will be ripped and seeded with Forest Service-approved mix.
Site #1 (RES-6)	Exploration	T1S, R13E, SE 1/4 NW 1/4 Sec 32	Forest Service	Yes	.25 ac	• 40ft X 100ft drill pad plus equivalent area for grading, fill, and mud pits • Approximately 3000ft trunk hole (6" diameter to start) through open hole technique and deepen trunk hole to 7000ft by diamond drilling • multiple deflections by diamond drilling	1 Schram 685 Rotary Drill Rig 2 Pipe trucks 1 UDR-5000 Core Drill Rig 1 CP-50 Core Drill Rig 1 D-9 Cat Bulldozer 1 Track hoe	**Initiation** - Authorized through December 2008 **Length of Occupancy** - Throughout mine planning stage **Concurrent reclamation** – After completion of drilling and testing activities the pad will be graded and reclaimed. **Closure** - Drill hole abandonment will be conducted in accordance with ACC R12-15, ARS Title 45, Chapter 2, Article 10, as administered by the ADWR. Cleared areas will be ripped and seeded with Forest Service-approved mix.
Site #2 (RES-9, HRES-2)	Exploration/Hydrologic Monitoring	T1S, R13E, SW 1/4 SE 1/4 Sec 32	Forest Service	Yes	.25 ac	• 40ft X 100ft drill pad plus equivalent area for grading, fill, and mud pits • Approximately 3000ft trunk hole (6" diameter to start) through open hole technique and deepen trunk hole to 7000ft by diamond drilling • multiple deflections by diamond drilling	1 Schram 685 Rotary Drill Rig 2 Pipe trucks 1 UDR-5000 Core Drill Rig 1 CP-50 Core Drill Rig 1 D-9 Cat Bulldozer 1 Track hoe	**Initiation** - Authorized through December 2008 **Length of Occupancy** - Hydro well monitoring will continue throughout life of mine – Pad will be graded and road maintained to allow support vehicles and pump rigs to access the well site **Concurrent reclamation** – Periodic maintenance to allow support vehicles to

Resolution Copper Mining, LLC - Approved Activities Under Existing Resolution Project Exploratory Drilling Plan of Operations (POO No. 01-12-002 and associated amendments)								
Activity Name	**Purpose and Uses**	**Location**	**Land Ownership**	**Disturbance**		**Facility Description**	**Equipment Used**	**Phasing/Abandonment**
								access hydrology wells **Closure** - Drill hole abandonment will be conducted in accordance with ACC R12-15, ARS Title 45, Chapter 2, Article 10, as administered by the ADWR. Cleared areas will be ripped and seeded with Forest Service-approved mix.
Site #3 (RES-10, 11)	Exploration	T2S, R13E, NW 1/4 SE 1/4 Sec 6	Forest Service	Yes	.25 ac	• 40ft X 100ft drill pad plus equivalent area for grading, fill, and mud pits • Approximately 3000ft trunk hole (6" diameter to start) through open hole technique and deepen trunk hole to 7000ft by diamond drilling • multiple deflections by diamond drilling	2 Pipe trucks 1 UDR-5000 Core Drill Rig 1 D-9 Cat Bulldozer 1 Track hoe	**Initiation** - Authorized through December 2008 **Length of Occupancy** - Throughout mine planning stage **Concurrent reclamation** – After completion of drilling and testing activities the pad will be reclaimed. **Closure** - Drill hole abandonment will be conducted in accordance with ACC R12-15, ARS Title 45, Chapter 2, Article 10, as administered by the ADWR. Cleared areas will be ripped and seeded with Forest Service-approved mix.
DOE Well Site (HRES-3)	Hydrologic Monitoring	T1S, R13E, SE 1/4 SE 1/4 Sec 28	Forest Service	Yes	.30 ac	• 100ft X 100ft drill pad plus equivalent area for grading, fill, and mud pits • Approximately 1500 ft hole (12" diameter to start reduced to 9" then 6" depending on depth. • Well completion with steel casing, pump and or transducers, gravel pack, sounder access and inflatable packers designed for continual monitoring	1 Schram 685 Rotary Drill Rig 2 Pipe trucks 1 D-9 Cat Bulldozer 1 Track hoe	**Initiation** - Authorized through December 2008 **Length of Occupancy** - Hydro well monitoring will continue throughout life of mine – **Concurrent reclamation** – Pad will be graded and road maintained to allow support vehicles and pump rigs to access well. **Closure** - After completion of monitoring activities the pad will be reclaimed in accordance with ACC R12-15, ARS Title 45, Chapter 2, Article 10, as administered by the ADWR. Cleared areas will be ripped and seeded with Forest Service-approved mix.
Road to private inholding parcel	Maintenance and improvement for access to the private inholding parcel	T1S, R13E, S 1/2 NW 1/4 Sec 32	Forest Service	Yes	Not specified	Maintain and improve existing road for access to the privately owned inholding parcel.	1 Track hoe 1 Front end loader	**Initiation** – Continual maintenance **Length of Occupancy** - Throughout life of mine **Concurrent reclamation** – This road will be maintained throughout the life of the mine. **Closure** - On periodic maintenance throughout life of mine

Resolution Copper Mining, LLC - Approved Activities Under Existing Resolution Project Exploratory Drilling Plan of Operations (POO No. 01-12-002 and associated amendments)								
Activity Name	**Purpose and Uses**	**Location**	**Land Ownership**	**Disturbance**		**Facility Description**	**Equipment Used**	**Phasing/Abandonment**
Road to Drill Site 1 RES-06	Maintenance and improvement for access to Site 1 (RES-06)	T1S, R13E, SE 1/4 NW 1/4 Sec 32	Forest Service	Yes	Not specified	Maintain and improve existing road for access to exploration Site 1 (RES-06)	1 Track hoe 1 Front end loader	**Initiation** – Continual maintenance **Length of Occupancy** - Throughout mine planning stage **Concurrent reclamation** – This road will be maintained throughout the life of the mine. **Closure** - On periodic maintenance throughout life of mine
Road to State Lands from Drill Site M	Maintenance and improvement for access to Drill Site M	T1S, R13E, SW 1/4 SW 1/4 Sec 33	Forest Service	Yes	Not specified	Maintain and improve existing road for access to Site M	1 Track hoe 1 Front end loader	**Initiation** – Continual maintenance **Length of Occupancy** - Throughout mine planning stage **Concurrent reclamation** – This road will be maintained throughout the life of the mine. **Closure** - On periodic maintenance throughout life of mine

APPENDIX C

RESOLUTION
PLAN OF OPERATIONS
DESCRIPTION OF
PROPOSED
ACTIVITIES

Activity Name	Purpose and Uses	Location	Land Ownership	Disturbance		Facility Description	Equipment Used	Phasing/Abandonment
				Within Existing Disturbance?	Estimated Surface Disturbance			
Exploration Boreholes								
QC-04	Exploration	T2S, R12E, NE 1/4 Section 2	Forest Service	Yes	0.3 ac	• 80ft X 100ft drill pad size • 3,000ft drill trunk hole using open hole technique • trunk hole deepened to 7,000ft by diamond drilling • multiple deflections by motor/diamond drilling	1 LF-90 Rotary Drill Rig 1 Schram 685 Rotary Drill Rig 1 mud tank 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	**Initiation** – January 2009 **Length of Occupancy** – Throughout mine-planning stage **Concurrent reclamation** – After completion of drilling and testing activities the pad will be graded and reclaimed. **Closure** – Drill hole abandonment will be conducted in accordance with ACC R12-15, ARS Title 45, Chapter 2, Article 10, as administered by the ADWR. Cleared areas will be ripped and seeded with Forest Service-approved mix.
MB-03	Exploration	T2S, R12E, SE 1/4 Section 2	Forest Service	Yes	0.3 ac	• 80ft X 100ft drill pad size • 3,000ft drill trunk hole using open hole technique • trunk hole deepened to 7,000ft by diamond drilling • multiple deflections by motor/diamond drilling	1 LF-90 Rotary Drill Rig 1 Schram 685 Rotary Drill Rig 1 mud tank 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	**Initiation** – January 2009 **Length of Occupancy** - Throughout mine-planning stage **Concurrent reclamation** – After completion of drilling and testing activities the pad will be graded and reclaimed. **Closure** – Drill hole abandonment will be conducted in accordance with ACC R12-15, ARS Title 45, Chapter 2, Article 10, as administered by the ADWR. Cleared areas will be ripped and seeded with Forest Service-approved mix.
OF-1	Exploration	T1S, R12E, S ½ Section 33	Forest Service	No	0.2 ac	• 80ft X 100ft drill pad size • 3,000ft drill trunk hole using open hole technique • trunk hole deepened to 7,000ft by diamond drilling • multiple deflections by motor/diamond drilling	1 UDR-5000 Core Drill Rig 1 CP-50 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	**Initiation** – January 2009 **Length of Occupancy** - Throughout mine-planning stage **Concurrent reclamation** – After completion of drilling and testing activities the pad will be graded and reclaimed. **Closure** - Drill hole abandonment will be conducted in accordance with ACC R12-15, ARS Title 45, Chapter 2, Article 10, as administered by the ADWR. Cleared areas will be ripped and seeded with Forest Service-approved mix.
OF-2	Exploration	T1S, R12E, NE ¼ NE ¼ Section 32	Forest Service	Yes	0.3 ac	• 80ft X 100ft drill pad size • 3,000ft drill trunk hole using open hole technique • trunk hole deepened to 7,000ft by diamond drilling • multiple deflections by motor/diamond drilling	1 UDR-5000 Core Drill Rig 1 CP-50 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe	**Initiation** – January 2009 **Length of Occupancy** - Throughout mine-planning stage **Concurrent reclamation** – After completion of drilling and testing activities the pad will be graded and reclaimed. **Closure** - Drill hole abandonment will be conducted in accordance with ACC R12-15, ARS Title 45, Chapter 2, Article 10, as administered by the ADWR. Cleared areas will be ripped and seeded with Forest Service-approved mix.
OF-3	Exploration	T1S, R12E, SW 1/4 SW 1/4 Section 33	Forest Service	No	0.2 ac	• 80ft X 100ft drill pad size • 3,000ft drill trunk hole using open hole technique • trunk hole deepened to 7,000ft by diamond drilling • multiple deflections by motor/diamond drilling	1 UDR-5000 Core Drill Rig 1 CP-50 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe	**Initiation** – January 2009 **Length of Occupancy** - Throughout mine-planning stage **Concurrent reclamation** – After completion of drilling and testing activities the pad will be graded and reclaimed. **Closure** - Drill hole abandonment will be conducted in accordance with ACC R12-15, ARS Title 45, Chapter 2, Article 10, as administered by the ADWR. Cleared areas will be ripped and seeded with Forest Service-approved mix.
Deep Hydrogeologic Testing and Monitoring Wells								
DHTW-01	Deep hydrologic monitoring for depth to groundwater, lithology of drill cuttings, aquifer hydraulic parameters, and chemical quality data	T1S, R13E, N ½ SE ¼ Section 28	Forest Service	Yes	0.3 ac	• 80ft X 100ft drill pad size • 2,000-meter core drill hole completed with 4-inch steel casing • 1m X 1m concrete pad be installed at wellhead	1 UDR-5000 Core Drill Rig 1 CP-50 Core Drill Rig 1 Lang LM-200 series tophead rotary drill rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	**Initiation** – July 2009 **Length of Occupancy** –Six to eight weeks on site for drilling and well testing—long term monitoring location throughout life of mine **Concurrent reclamation** – After completion of drill and testing activities the drill pad will be graded and reclaimed according to operating procedures. **Closure** – Long term monitor well through life of mine

Activity Name	Purpose and Uses	Location	Land Ownership	Disturbance		Facility Description	Equipment Used	Phasing/Abandonment
				Within Existing Disturbance?	Estimated Surface Disturbance			
DHTW-02	Deep hydrologic monitoring for depth to groundwater, lithology of drill cuttings, aquifer hydraulic parameters, and chemical quality data	T1S, R13E, SW ¼ SW ¼ Section 21	Forest Service	No	0.3 ac	• 80ft X 100ft drill pad size • 2,000-meter core drill hole completed with 4-inch steel casing • 1m X 1m concrete pad be installed at wellhead	1 UDR-5000 Core Drill Rig 1 CP-50 Core Drill Rig 1 Lang LM-200 series tophead rotary drill rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	**Initiation** – September 2009 **Length of Occupancy** – Six to eight weeks on site for drilling and well testing—long term monitoring location throughout life of mine **Concurrent reclamation** – After completion of drill and testing activities the drill pad will be graded and reclaimed according to operating procedures. **Closure** - Long term monitor well through life of mine
DHTW-03	Deep hydrologic monitoring for depth to groundwater, lithology of drill cuttings, aquifer hydraulic parameters, and chemical quality data	T1S, R13E, SW ¼ SW ¼ Section 26	Forest Service	Yes	0.3 ac	• 80ft X 100ft drill pad size • 2,000-meter core drill hole completed with 4-inch steel casing • 1m X 1m concrete pad be installed at wellhead	1 UDR-5000 Core Drill Rig 1 CP-50 Core Drill Rig 1 Lang LM-200 series tophead rotary drill rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	**Initiation** –November 2009 **Length of Occupancy** – Six to eight weeks on site for drilling and well testing—long term monitoring location throughout life of mine **Concurrent reclamation** – After completion of drilling and testing activities the drill pad will be graded and reclaimed according to operating procedures. **Closure** - Long term monitor well through life of mine
Shallow Hydrologic Monitoring Wells								
H-C	Explore groundwater in Whitetail Conglomerate of underlying units where Apache Leap Tuff is absent; provide additional control for direction and magnitude of water level gradients south of the Resolution Parcel; provide aquifer parameters for Whitetail of underlying units	T2S, R13E, NW ¼ NW ¼ Section 20	Forest Service	No	0.3 ac	• 80ft X 100ft drill pad size • Approximately 1500 ft hole (12" diameter to start reduced to 9" then 6" depending on depth. • Well completion with steel casing, pump and or transducers, gravel pack, sounder access and inflatable packers designed for continual monitoring	1 Lang LM-140 series tophead rotary drill rig or equivalent 1 mud tank 1 heavy duty air compressor 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 front end loader 1 backhoe 1 tracked jaw crusher	**Initiation** – May 2009 **Length of Occupancy** – Three to four weeks for drilling and well set-up and construction - periodic visits with pump rig to reconfigure packers and transducers during mine planning period **Concurrent reclamation** – Sites will be reclaimed but left accessible for long term monitoring of the Apache Leap Aquifer. **Closure** - Long term monitor well through life of mine
H-E	Evaluate present water levels/aquifer conditions in Apace Leap Tuff/Whitetail Conglomerate/Older units near edge of Apace Leap	T2S, R13E, SW ¼ NW ¼ Section 7	Forest Service	No	0.2 ac	• 80ft X 100ft drill pad size • Approximately 1500 ft hole (12" diameter to start reduced to 9" then 6" depending on depth. • Well completion with steel casing, pump and or transducers, gravel pack, sounder access and inflatable packers designed for continual monitoring	1 Lang LM-140 series tophead rotary drill rig or equivalent 1 mud tank 1 heavy duty air compressor 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 front end loader 1 backhoe 1 tracked jaw crusher	**Initiation** – July 2009 **Length of Occupancy** – Three to four weeks for drilling and well set-up and construction - periodic visits with pump rig to reconfigure packers and transducers during mine planning period **Concurrent reclamation** – Sites will be reclaimed but left accessible for long term monitoring of the Apache Leap Aquifer **Closure** - Long term monitor well through life of mine.
H-F	Evaluate potential enhanced fracturing on downthrown side of main NS fault east of Devils Canyon, east from the Resolution Parcel; provide additional control in Apache Leap Tuff aquifer for direction and magnitude of water level gradients northeast of the Resolution Parcel; provide additional aquifer parameters	T1S, R13E, NW ¼ SE ¼ Section 27	Forest Service	No	0.3 ac	• 80ft X 100ft drill pad size • Approximately 1500 ft hole (12" diameter to start reduced to 9" then 6" depending on depth. • Well completion with steel casing, pump and or transducers, gravel pack, sounder access and inflatable packers designed for continual monitoring	1 Lang LM-140 series tophead rotary drill rig or equivalent 1 mud tank 1 heavy duty air compressor 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 front end loader 1 backhoe 1 tracked jaw crusher	**Initiation** – April 2009 **Length of Occupancy** — Three to four weeks for drilling and well set-up and construction - periodic visits with pump rig to reconfigure packers and transducers during mine planning period **Concurrent reclamation** – Sites will be reclaimed but left accessible for long term monitoring of the Apache Leap Aquifer. **Closure** - Long term monitor well through life of mine

Activity Name	Purpose and Uses	Location	Land Ownership	Disturbance		Facility Description	Equipment Used	Phasing/Abandonment
				Within Existing Disturbance?	Estimated Surface Disturbance			
H-G	Evaluate potential enhanced fracturing on downthrown side of main NS fault east of Devils Canyon; provide additional control in Apache Leap Tuff aquifer for direction and magnitude of water level gradients northeast of the Resolution Parcel; provide additional aquifer parameters for tuff; provide baseline and long-term monitoring data for potential impacts to Top-of-the-World area wells	T1S, R13E, SW ¼ of NE ¼ Section 22	Forest Service	Yes	0.3 ac	• 80ft X 100ft drill pad size • Approximately 1500 ft hole (12" diameter to start reduced to 9" then 6" depending on depth. • Well completion with steel casing, pump and or transducers, gravel pack, sounder access and inflatable packers designed for continual monitoring	1 Lang LM-140 series tophead rotary drill rig or equivalent 1 mud tank 1 heavy duty air compressor 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 front end loader 1 backhoe 1 tracked jaw crusher	**Initiation** – March 2009 **Length of Occupancy** – Three to four weeks for drilling and well set-up and construction - periodic visits with pump rig to reconfigure packers and transducers during mine planning period **Concurrent reclamation** – Sites will be reclaimed but left accessible for long term monitoring of the Apache Leap Aquifer. **Closure** - Long term monitor well through life of mine
H-I	Provide additional control in Apache Leap Tuff aquifer for direction and magnitude of water level gradients in east part of Devils Canyon drainage basin; provide additional aquifer parameters for tuff	T1S, R13E, NW ¼ of SE ¼ Section 26	Forest Service	No	0.2ac	• 80ft X 100ft drill pad size • Approximately 1500 ft hole (12" diameter to start reduced to 9" then 6" depending on depth. • Well completion with steel casing, pump and or transducers, gravel pack, sounder access and inflatable packers designed for continual monitoring	1 Lang LM-140 series tophead rotary drill rig or equivalent 1 mud tank 1 heavy duty air compressor 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 front end loader 1 backhoe 1 tracked jaw crusher	**Initiation** – October 2009 **Length of Occupancy** – Three to four weeks for drilling and well set-up and construction - periodic visits with pump rig to reconfigure packers and transducers during mine planning period **Concurrent reclamation** – Sites will be reclaimed but left accessible for long term monitoring of the Apache Leap Aquifer. **Closure** - Long term monitor well through life of mine
H-K	Provide additional control in Apache Leap Tuff aquifer on water level gradient direction and magnitude north of Resolution Parcel; provide additional aquifer parameters for tuff	T1S, R13E, SW ¼ SW ¼ Section 21	Forest Service	No	0.3 ac (same site as DHTW-02)	• 80ft X 100ft drill pad size • Approximately 1500 ft hole (12" diameter to start reduced to 9" then 6" depending on depth. • Well completion with steel casing, pump and or transducers, gravel pack, sounder access and inflatable packers designed for continual monitoring	1 Lang LM-140 series tophead rotary drill rig or equivalent 1 mud tank 1 heavy duty air compressor 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 front end loader 1 backhoe 1 tracked jaw crusher	**Initiation** – June 2009 **Length of Occupancy** – Three to four weeks for drilling and well setup &construction - periodic visits with pump rig to reconfigure packers and transducers during mine planning period. **Concurrent reclamation** – Sites will be reclaimed but left accessible for long term monitoring of the Apache Leap Aquifer **Closure** - Long term monitor well through life of mine. Upon completion of long-term monitoring, site will be abandoned in accordance with ACC R12-15, ARS Title 45, Chapter 2, Article 10, as administered by the ADWR. Cleared areas will be ripped and seeded with Forest-approved mix.
Tunnel Characterization Boreholes								
PVT-3	Geotechnical drilling for tunnel characterization	T1S, R13E, SE ¼ SE ¼ Section 29	Forest Service	No	0.1 ac	• 60ft X 100ft drill pad size • Approximately 1200 ft hole 12" surface casing then core drilled to TD with HQ (2.5") • Hydrological tests will be conducted in open hole	1 Lang LM-140 series tophead rotary drill rig 1 UDR-1500 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	**Initiation** – September 2009 **Length of Occupancy** –Four to five weeks for drilling, hydrological and geotechnical testing **Concurrent reclamation** – Sites will be reclaimed. Decision on designating individual wells as long term monitoring locations will be made after testing has been conducted. **Closure** – Those sites not designated as long term monitor locations will be abandoned in accordance with ADWR standards similar to the exploration holes with slight modifications due to the relatively shallow depth and absence of deflections**.** Cleared areas will be ripped and seeded with Forest Service-approved mix.
PVT-4	Geotechnical drilling for tunnel characterization	T1S, R13E, NW ¼ SW ¼ Section 27	Forest Service	No	0.2 ac	• 60ft X 100ft maximum drill pad size • Approximately 1200 ft hole 12" surface casing then core drilled to TD with HQ (2.5") • Hydrological tests will be conducted in open hole	1 Lang LM-140 series tophead rotary drill rig 1 UDR-1500 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	**Initiation** – October 2009 **Length of Occupancy** – Four to five weeks for drilling, hydrological and geotechnical testing **Concurrent reclamation** – Sites will be reclaimed. Decision on designating individual wells as long term monitoring locations will be made after testing has been conduccted. **Closure** - – Those sites not designated as long term monitor locations will be abandoned in accordance with ADWR standards similar to the exploration holes with slight modifications due to the relatively shallow depth and absence of deflections**.** Cleared areas will be ripped and seeded with Forest Service-approved mix.

Activity Name	Purpose and Uses	Location	Land Ownership	Disturbance		Facility Description	Equipment Used	Phasing/Abandonment
				Within Existing Disturbance?	Estimated Surface Disturbance			
PVT-5	Geotechnical drilling for tunnel characterization	T1S, R13E, NW ¼ NE ¼ Section 27	Forest Service	No	0.2 ac	• 60ft X 100ft drill pad size • Approximately 1200 ft hole 12" surface casing then core drilled to TD with HQ (2.5") • Hydrological tests will be conducted in open hole	1 Lang LM-140 series tophead rotary drill rig 1 UDR-1500 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	**Initiation** –November 2009 **Length of Occupancy** — Four to five weeks for drilling, hydrological and geotechnical testing **Concurrent reclamation** – Sites will be reclaimed. Decision on designating individual wells as long term monitoring locations will be made after testing has been conducted. **Closure** - – Those sites not designated as long term monitor locations will be abandoned in accordance with ADWR standards similar to the exploration holes with slight modifications due to the relatively shallow depth and absence of deflections**.** Cleared areas will be ripped and seeded with Forest Service-approved mix.
PVT-6	Geotechnical drilling for tunnel characterization	T1S, R13E, SW ¼ NE ¼ Section 23	Forest Service	No	0.2 ac	• 60ft X 100ft drill pad size • Approximately 1200 ft hole 12" surface casing then core drilled to TD with HQ (2.5") • Hydrological tests will be conducted in open hole	1 Lang LM-140 series tophead rotary drill rig 1 UDR-1500 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	**Initiation** – January 2010 **Length of Occupancy** – Four to five weeks for drilling, hydrological and geotechnical testing **Concurrent reclamation** – Sites will be reclaimed. Decision on designating individual wells as long term monitoring locations will be made after testing has been conducted. **Closure** - Those sites not designated as long term monitor locations will be abandoned in accordance with ADWR standards similar to the exploration holes with slight modifications due to the relatively shallow depth and absence of deflections**.** Cleared areas will be ripped and seeded with Forest Service-approved mix.
PVT-7	Geotechnical drilling for tunnel characterization	T1S, R13E, NE ¼ NE ¼ Section 23	Forest Service	Yes	0.3 ac	• 60ft X 100ft maximum drill pad size • Approximately 1200 ft hole 12" surface casing then core drilled to TD with HQ (2.5") • Hydrological tests will be conducted in open hole	1 Lang LM-140 series tophead rotary drill rig 1 UDR-1500 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	**Initiation** – February 2010 **Length of Occupancy** – Four to five weeks for drilling, hydrological and geotechnical testing **Concurrent reclamation** – Sites will be reclaimed. Decision on designating individual wells as long term monitoring locations will be made after testing has been conducted. **Closure** - Those sites not designated as long term monitor locations will be abandoned in accordance with ADWR standards similar to the exploration holes with slight modifications due to the relatively shallow depth and absence of deflections**.** Cleared areas will be ripped and seeded with Forest Service-approved mix.
PVT-8	Geotechnical drilling for tunnel characterization	T1S, R14E, NE ¼ SE ¼ Section 7	Forest Service	No	0.2 ac	• 60ft X 100ft drill pad size • Approximately 1200 ft hole 12" surface casing then core drilled to TD with HQ (2.5") • Hydrological tests will be conducted in open hole	1 Lang LM-140 series tophead rotary drill rig 1 UDR-1500 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer	**Initiation** – April 2010 **Length of Occupancy** — Four to five weeks for drilling, hydrological and geotechnical testing **Concurrent reclamation** – Sites will be reclaimed. Decision on designating individual wells as long term monitoring locations will be made after testing has been conducted. **Closure** - Those sites not designated as long term monitor locations will be abandoned in accordance with ADWR standards similar to the exploration holes with slight modifications due to the relatively shallow depth and absence of deflections**.** Cleared areas will be ripped and seeded with Forest Service-approved mix.
PVT-9	Geotechnical drilling for tunnel characterization	T1 S, R13E, NE ¼ NW ¼ Section 22	Forest Service	Yes	0.2 ac	• 60ft X 100ft drill pad size • Approximately 1200 ft hole 12" surface casing then core drilled to TD with HQ (2.5") • Hydrological tests will be conducted in open hole	1 Lang LM-140 series tophead rotary drill rig 1 UDR-1500 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	**Initiation** – May 2010 **Length of Occupancy** — Four to five weeks for drilling, hydrological and geotechnical testing **Concurrent reclamation** – Sites will be reclaimed. Decision on designating individual wells as long term monitoring locations will be made after testing ghas been conducted. **Closure** - Those sites not designated as long term monitor locations will be abandoned in accordance with ADWR standards similar to the exploration holes with slight modifications due to the relatively shallow depth and absence of deflections**.** Cleared areas will be ripped and seeded with Forest Service-approved mix.

Activity Name	Purpose and Uses	Location	Land Ownership	Disturbance		Facility Description	Equipment Used	Phasing/Abandonment
				Within Existing Disturbance?	Within Existing Disturbance?			
APV-6	Geotechnical drilling for tunnel characterization	T1S, R13E, SW ¼ SE ¼ Section 23	Forest Service	Yes	0.1 ac	• 60ft X 100ft drill pad size • Approximately 1200 ft hole 12" surface casing then core drilled to TD with HQ (2.5") • Hydrological tests will be conducted in open hole	1 Lang LM-140 series tophead rotary drill rig 1 UDR-1500 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	**Initiation** – January 2010 (if alternate tunnel route is chosen) **Length of Occupancy** – Four to five weeks for drilling, hydrological and geotechnical testing **Concurrent reclamation** – Sites will be reclaimed. Decision on designating individual wells as long term monitoring locations will be made after testing has been conducted. **Closure** - Those sites not designated as long term monitor locations will be abandoned in accordance with ADWR standards similar to the exploration holes with slight modifications due to the relatively shallow depth and absence of deflections**.** Cleared areas will be ripped and seeded with Forest Service-approved mix.
APV-8	Geotechnical drilling for tunnel characterization	T1S, R13E, S1/2 Section 13	Forest Service	Yes	0.3 ac	• 60ft X 100ft drill pad size • Approximately 1200 ft hole 12" surface casing then core drilled to TD with HQ (2.5") • Hydrological tests will be conducted in open hole	1 Lang LM-140 series tophead rotary drill rig 1 UDR-1500 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	**Initiation** – March 2010 (if alternate tunnel route is chosen) **Length of Occupancy** —– Four to five weeks for drilling, hydrological and geotechnical testing **Concurrent reclamation** – Sites will be reclaimed. Decision on designating individual wells as long term monitoring locations will be made after testing has been conducted. **Closure** - Those sites not designated as long term monitor locations will be abandoned in accordance with ADWR standards similar to the exploration holes with slight modifications due to the relatively shallow depth and absence of deflections**.** Cleared areas will be ripped and seeded with Forest Service-approved mix.
Existing Access Road Improvements								
FR-315	Roadway improvements for access to H-C	T2S, R13E, portions of Sections 19, 20, and 30; T2S, R12E, portions of Section 25	Forest Service	Yes	[Note 1]	Improve approximately 3.6 miles of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** – January 2009 **Length of Occupancy** – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. **Concurrent reclamation** – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix. The contractor will provide a detailed traffic management plan and coordinate with the Department of Public Safety for access to Forest Roads from any state or federal highway to ensure public safety. **Closure** - On periodic maintenance until well is not needed. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).
FR 320	Roadway improvements for access to PVT-8	T1S, R14E, Section 7S ½	Forest Service	Yes	[Note 1]	Improve approximately 0.6 mile of existing road FR 320 is located within the 1920's alignment of US 60. No adverse impact would occur to the site due to the implementation of the following procedures: • Fill potholes will fill dirt • Use only rubber-tire vehicles • Cleanly remove ramps used to access drill pad • Keep vegetation removal to a minimum An archaeologist will monitor site construction.	1 front end loader 1 water truck	**Initiation** – November 2009 **Length of Occupancy** – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. **Concurrent reclamation** – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix. The contractor will provide a detailed traffic management plan and coordinate with the Department of Public Safety for access to Forest Roads from any state or federal highway to ensure public safety. **Closure** - On periodic maintenance until well is not needed. Areas will be reclaimed (ripped and seeded with a Forest Service-approved mix).
FR 898	Roadway improvements for access to APV-8	T1S, R13E, E ½ of Sections 11 and 14	Forest Service (a portion of FR 898 traverses privately owned lands)	Yes	[Note 1]	Improve approximately 0.7 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** – November 2009 **Length of Occupancy** – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. **Concurrent reclamation** – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix. The contractor will provide a detailed traffic management plan and coordinate with the Department of Public Safety for access to Forest Roads from any state or federal highway to ensure public safety. **Closure** - On periodic maintenance until well is not needed. Areas will be reclaimed (ripped and seeded with a Forest Service-approved mix).

Activity Name	Purpose and Uses	Location	Land Ownership	Location		Facility Description	Equipment Used	Phasing/Abandonment
				Within Existing Disturbance?	Estimated Surface Disturbance			
FR 2261	Roadway improvements for access to H-C	T2S, R13E, portion of N½ Section 20	Forest Service	Yes	[Note 1]	Improve approximately 0.3 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** – January 2009 **Length of Occupancy** – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. **Concurrent reclamation** – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix **Closure** - On periodic maintenance until well is not needed. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).
FR 2440	Roadway improvements for access to drill sites QC-04 and MB-03	T2S, R12E, Sections 2 S ½, and 3 SE ¼	Forest Service (FR 2440 traverses privately owned lands located within the TNF)	Yes	[Note 1]	Improve approximately 0.9 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** – January 2009 **Length of Occupancy** – Three to four weeks **Concurrent reclamation** – Road will be maintained through out life of mine for long term monitoring well on Resolution fee land. The contractor will provide a detailed traffic management plan and coordinate with the Department of Public Safety for access to Forest Roads from any state or federal highway to ensure public safety. **Closure** - Remain on maintenance for life of mine
FR 2461	Improvements to an existing road and grading and clearing for extension of road to access PVT-5	T1S, R13E, Sections 22 SE ¼, 23 W½, and 27 N ½	Forest Service	Partially	[Note 1]	Improve approximately 0.9 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** – January 2009 **Length of Occupancy** – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. **Concurrent reclamation** – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix **Closure** - On periodic maintenance until well is not needed. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).
FR 2463	Roadway improvements for access to PVT-6	T1S, R13E, Section 23 N½	Forest Service	Yes	[Note 1]	Improve approximately 0.5 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** – January 2009 **Length of Occupancy** – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. **Concurrent reclamation** – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix **Closure** - On periodic maintenance until well is not needed. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).
FR 2466 (and small section of FR 2467)	Roadway improvements for access to various well sites and geotechnical borehole sites	T1S, R13E, Sections 22, 23, 26, 27, and 34; T2S, R13E, Section 4.	Forest Service (a portion of FR 2466 extends on to adjacent State Lands)	Yes	[Note 1]	Improve approximately 4.2 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** – January 2009 **Length of Occupancy** – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. **Concurrent reclamation** – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix. The contractor will provide a detailed traffic management plan and coordinate with the Department of Public Safety for access to Forest Roads from any state or federal highway to ensure public safety. **Closure** On periodic maintenance throughout life of mine
FR 2469	Roadway improvements for access to shallow well site H-I	T1S, R13E, Sections 26 and 35; T2S, R13E, Section 3	Forest Service (a portion of FR 2469 extends on to adjacent State Lands)	Yes	[Note 1]	Improve approximately 1.7 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** – January 2009 **Length of Occupancy** – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. **Concurrent reclamation** – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix **Closure** On periodic maintenance throughout life of mine. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).
FR 2505	Roadway improvements for access to APV-6	T1S, R13E, Section 23 S½	Forest Service	No	[Note 1]	Improve approximately 0.5 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** – January 2009 **Length of Occupancy** – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. **Concurrent reclamation** – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix **Closure** - On periodic maintenance until well is not needed. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).

Activity Name	Purpose and Uses	Location	Land Ownership	Location		Facility Description	Equipment Used	Phasing/Abandonment
				Within Existing Disturbance?	Estimated Surface Disturbance			
FR 2511	Potential roadway improvements for helicopter support and access to PVT-7	T1S, R13E, portions of S½ Section 13 and N½ of Section 24	Forest Service	Yes	[Note 1]	Improve approximately 0.5 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** – January 2009 **Length of Occupancy** – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. **Concurrent reclamation** – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix **Closure** - On periodic maintenance until well is not needed. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).
FR 3139	Roadway improvements for access to H-C	T2S, R13E, portion of NE¼ Section 20	Forest Service	Yes	[Note 1]	Improve approximately 0.4 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** – January 2009 **Length of Occupancy** – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. **Concurrent reclamation** – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix **Closure** - On periodic maintenance until well is not needed. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).
FR 3786	Roadway improvements for access to drill site MB-03	T2S, R12E, SW ¼ and SE ¼ Section 2	Forest Service	Yes	[Note 1]	Improve approximately 0.4 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** – May 2009 **Length of Occupancy** – Three to four weeks **Concurrent reclamation** – Road can be reclaimed when drilling is completed at QC-04 **Closure** - On periodic maintenance for life of mine
Existing unidentified road from FR 315 to H-E	Roadway improvements to gain access to H-E	T2S, R13E, portions of N ½ Section 7 and SE ¼ Section 6	Forest Service	Yes	[Note 1]	Improve approximately 0.8 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** – January 2009 **Length of Occupancy** – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. **Concurrent reclamation** – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix **Closure** - On periodic maintenance until well is not needed. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).
Existing unidentified road from FR 2440 to QC-04	Roadway improvements for access to drill site QC-04	T2S, R12E, NE ¼ Section 2	Forest Service	Yes	[Note 1]	Improve approximately 0.1 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** –May 2009 **Length of Occupancy** – Three to four weeks **Concurrent reclamation** – Road can be reclaimed when drilling is completed at QC-04. **Closure** – Remain on maintenance for life of mine
Existing unidentified road from FR 2466 to H-F	Improvements to existing road for access to H-F	T1S, R13E, SE ¼ Section 27	Forest Service	Yes, heavily vegetated trail alignment	[Note 1]	Improve approximately 0.7 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** – January 2009 **Length of Occupancy** – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. **Concurrent reclamation** – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix **Closure** - On periodic maintenance until well is not needed. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).
Existing unidentified road from Highway 60 to PVT-9	Roadway improvements for access to PVT-9	T1S, R14E, Sections 5 SW ¼ and 8 NW ¼	Forest Service	Yes	[Note 1]	Improve approximately 0.1 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** – December 2009 **Length of Occupancy** – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. **Concurrent reclamation** – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix. The contractor will provide a detailed traffic management plan and coordinate with the Department of Public Safety for access to Forest Roads from any state or federal highway to ensure public safety. **Closure** - On periodic maintenance until well is not needed. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).

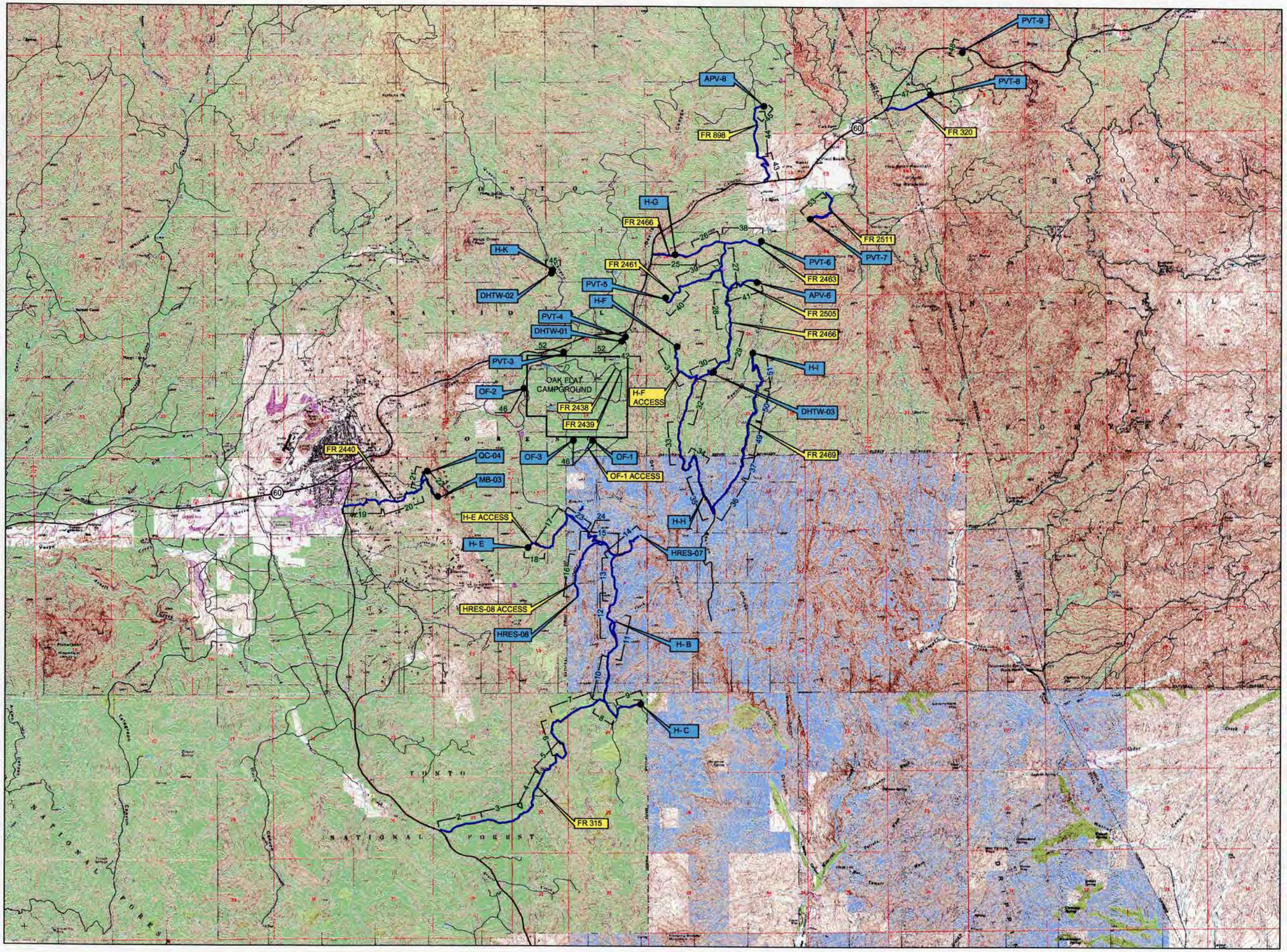
Activity Name	Purpose and Uses	Location	Land Ownership	Disturbance		Facility Description	Equipment Used	Phasing/Abandonment
				Within Existing Disturbance?	Within Existing Disturbance?			
New Access Roads								
New access road from FR 2458 to DHTW-02	Grading and clearing for new access road to monitoring well DHTW-02	T1S, R13E, SW ¼ SW ¼ Section 21	Forest Service	No	[Note 2]	Approximately 175 feet of new access road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** –June 2009 **Length of Occupancy** – Throughout life of mine **Concurrent reclamation** – This road will be reclaimed when monitoring is no longer required. **Closure** - On periodic maintenance throughout life of mine
New access road from FR 2458 to H-K	Grading and clearing for new access road to monitoring well H-K	T1S, R13E, SW ¼ SW ¼ Section 21	Forest Service	No	[Note 2]	Approximately 150 feet of new access road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** –June 2009 **Length of Occupancy** – Throughout life of mine **Concurrent reclamation** – This road will be reclaimed when monitoring is no longer required. **Closure** - On periodic maintenance throughout life of mine
New access road from FR 2461 to PVT-5	Grading and clearing for new access road to tunnel characterization borehole PVT-5	T1S, R13E, portions of N ½ of Section 27	Forest Service	No (extension of existing FR 2461)	[Note 2]	Approximately 330 feet of new access road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** – January 2009 **Length of Occupancy** – Throughout life of mine **Concurrent reclamation** – This road will be reclaimed when monitoring is no longer required for mine-planning purposes. **Closure** - On periodic maintenance throughout life of mine
New access road from FR 3791 to OF-1	Grading and clearing for new access road to exploration drill site OF-1	T1S, R13E, SW ¼ SE ¼ Section 33	Forest Service	No	[Note 2]	Approximately 1,070 feet of new access road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** – January 2009 **Length of Occupancy** – Throughout life of mine **Concurrent reclamation** – This road will be reclaimed when monitoring is no longer required for mine-planning purposes. **Closure** - On periodic maintenance throughout life of mine

Note 1: The maximum area of disturbance for existing road improvements was estimated using roadway profiles created with 2007 aerial imagery and 10-foot contour intervals. Approximately 33.3 acres would be disturbed as a result of roadway improvements along portions of approximately 16.9 miles of existing access roads.

Note 2: The maximum area of disturbance for new roads was estimated using roadway profiles created with 2007 aerial imagery and 10-foot contour intervals and a maximum disturbance width of 15 feet. Approximately 0.6 acre of disturbance would be required for the construction of 0.3 mile of new access road.

APPENDIX D

RESOLUTION COPPER MINING PLAN VIEWS OF PROPOSED ACTIVITIES AND PROFILES OF PROPOSED ACCESS ROAD IMPROVEMENTS (SHEETS 1 THROUGH 53)



LEGEND

- New or Improved Road
- Well or Drill Site
- Tonto National Forest
- State Trust Lands
- 2 Sheet Number

N
W E
S

0' 1500' 3000'
SCALE 1" = 3000'

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RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
Overview

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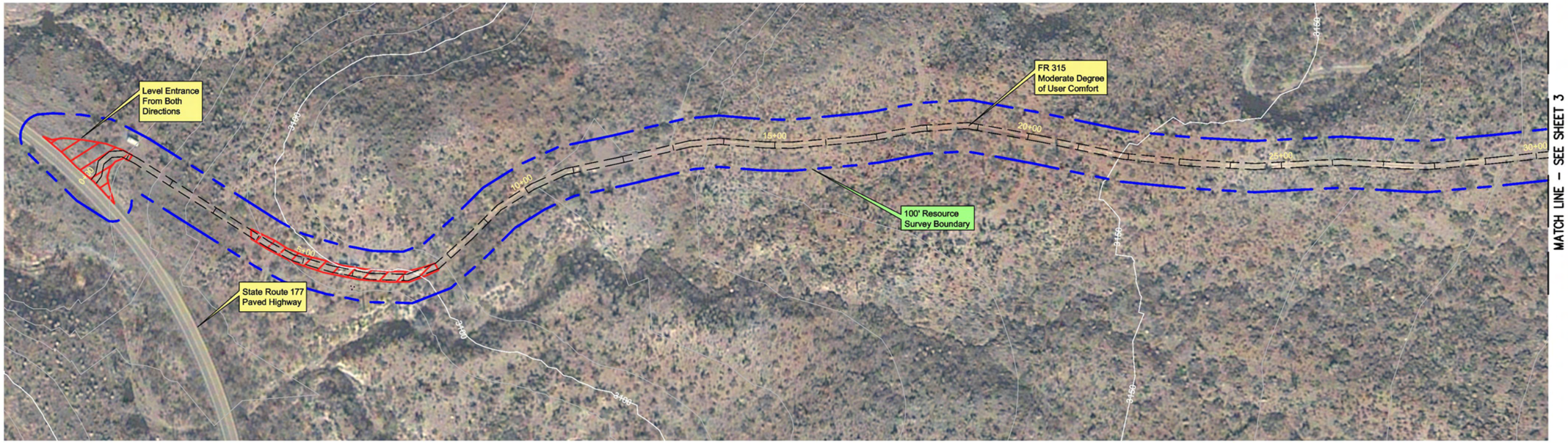
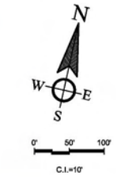


T2S - R12E - SECTION 25



Equipment List

- Track Hoe
- Hammer Hoe
- Front End Loader
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead Rotary Drill Rig Or Equivalent
- Pipe Trucks
- Backhoe
- Water Truck

This Sheet:

- Rework Entrance to Allow Entry From Both Directions (SR 177)
- Minimimal New Surface Disturbance on Remaining Portions

FR 315 PROFILE

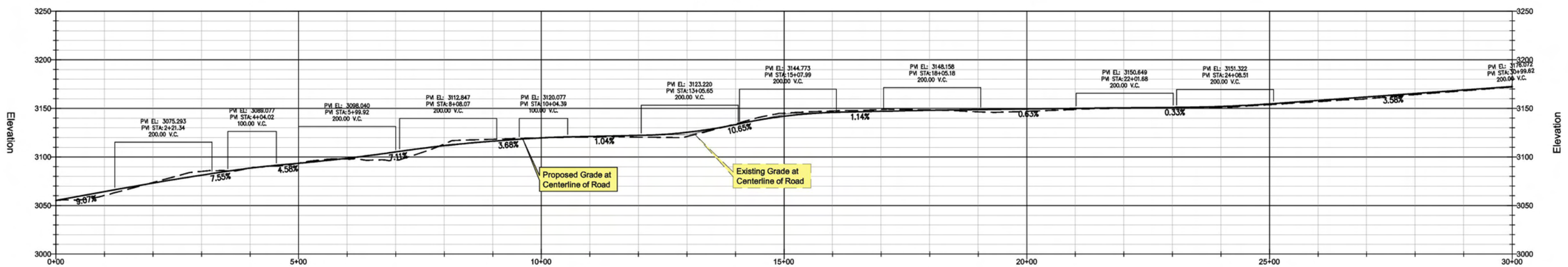


Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

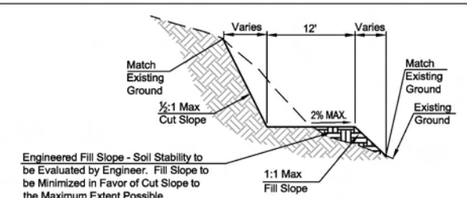
1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

2- High Clearance Vehicles - assigned to roads operated for use by high clearance vehicles

3- Suitable for Passenger Cars - assigned to roads operated and maintained for travel by a prudent driver in a standard passenger car

4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

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Resolution Pre-Feasibilty Activities
FR 315 Improvements
Access To Shallow Well Site H-C

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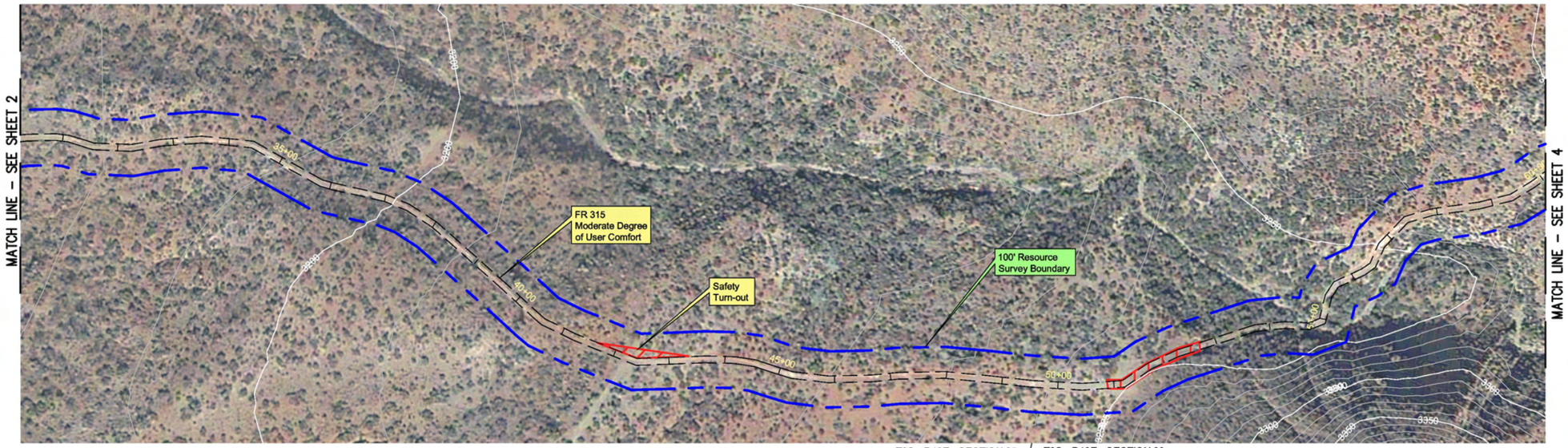

Equipment List

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- Pipe Trucks
- Backhoe
- Water Truck

This Sheet:

- Providing Safety Turn-Out
- Minimal Disturbance on Remaining Portions

FR 315 PROFILE

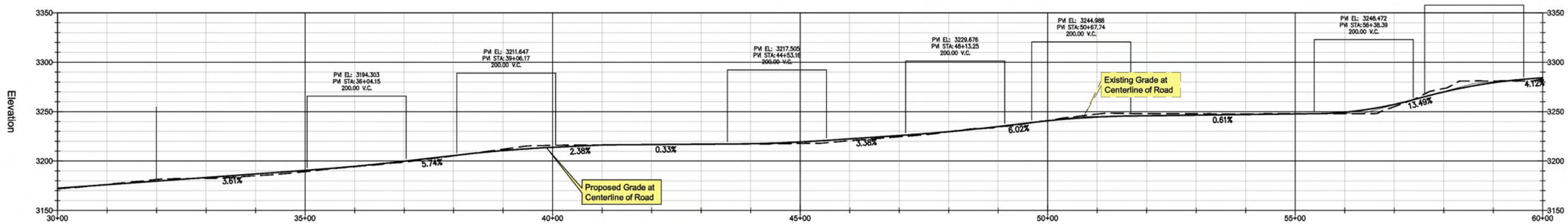

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

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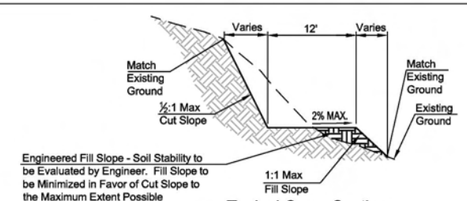
4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

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RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 315 Improvements
Access To Shallow Well Site H-C

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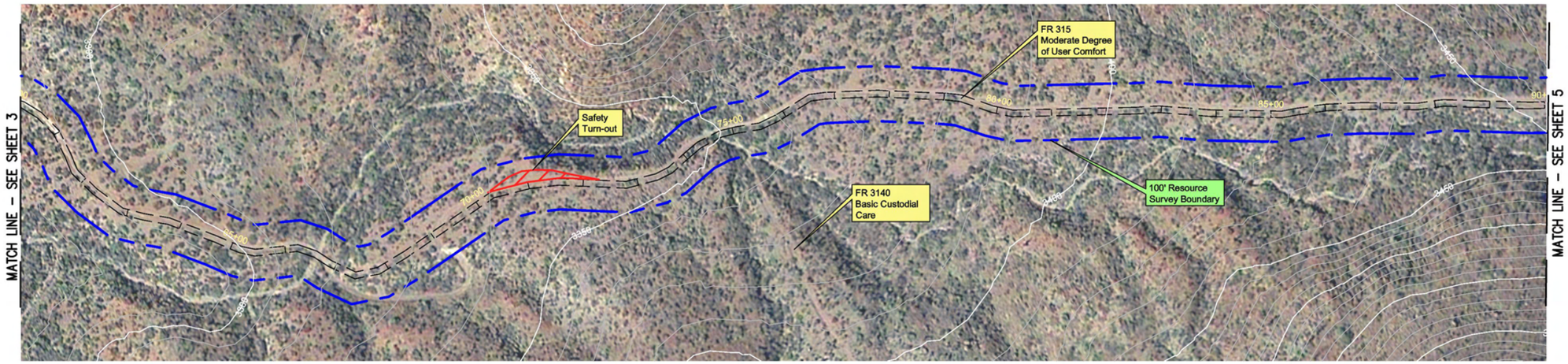
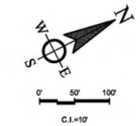


T2S - R13E - SECTION 30



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- Lang LM-140 Series Tophead Rotary Drill Rig Or Equivalent
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This Sheet:

- Providing Safety Turn-Out
- Minimal Disturbance on Remaining Portions

FR 315 PROFILE

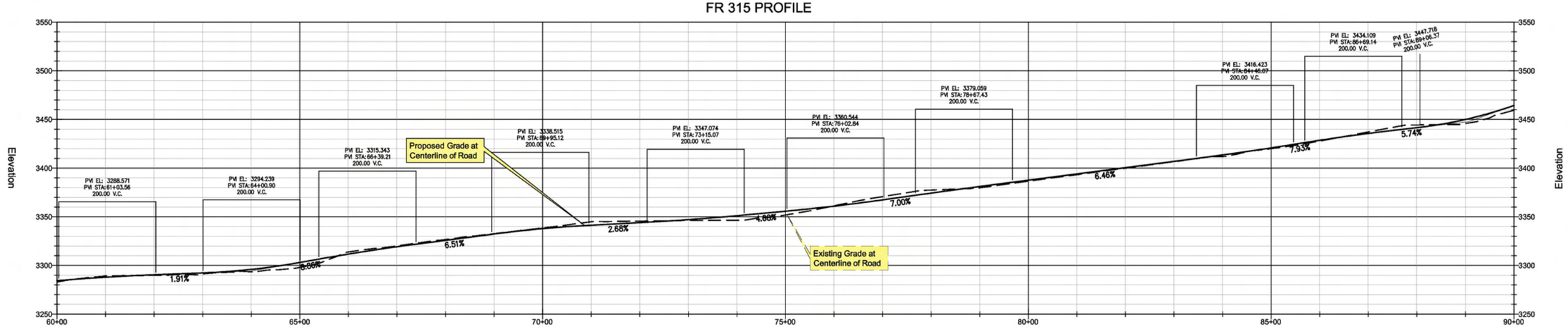

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

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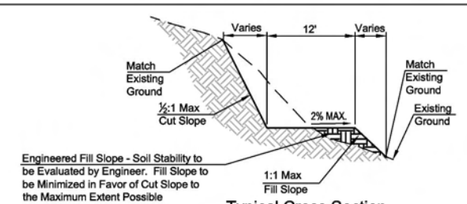
5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 315 Improvements
Access To Shallow Well Site H-C

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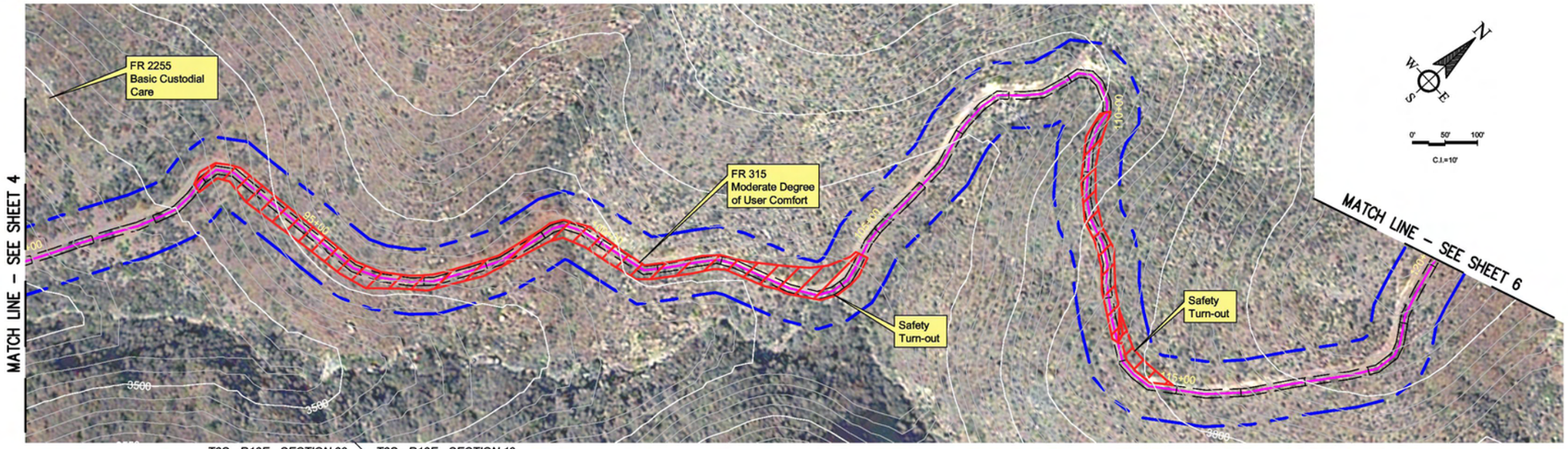

Equipment List

- Track Hoe
- Hammer Hoe
- Front End Loader
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead Rotary Drill Rig Or Equivalent
- Pipe Trucks
- Backhoe
- Water Truck

This Sheet:

- Providing Safety Turn-Outs
- Grading for Treatment of Existing Topography
- Minimal Disturbance on Remaining Portions

FR 315 PROFILE

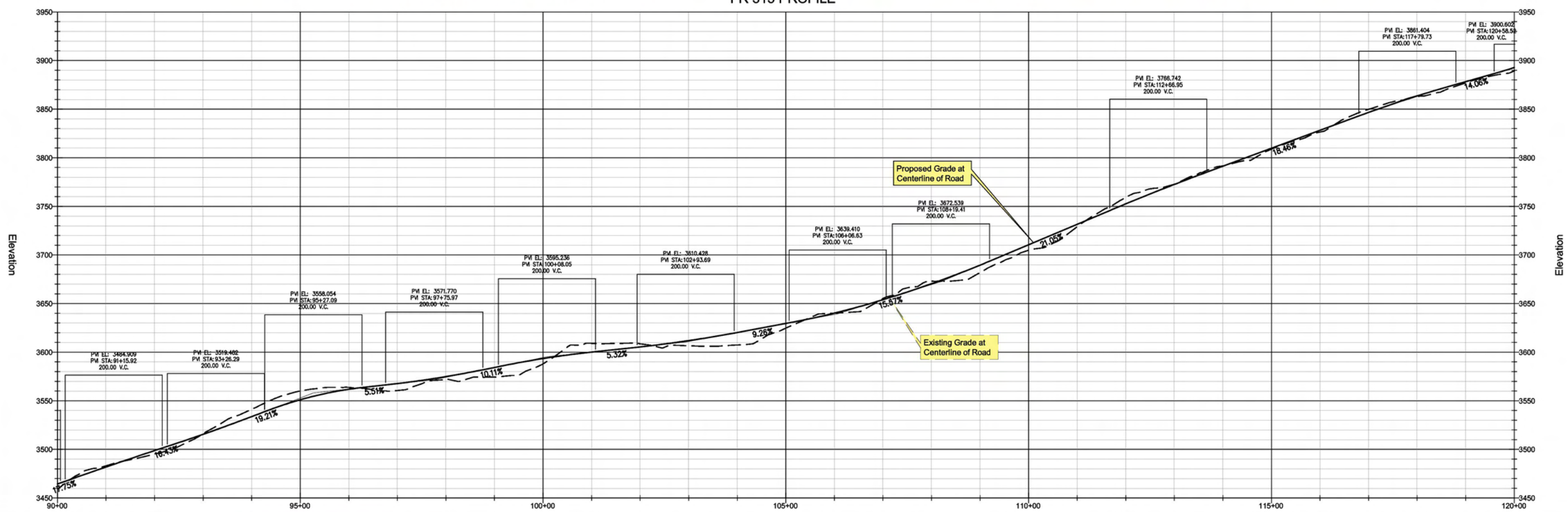

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
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Legend

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  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
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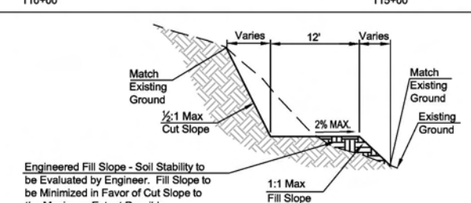

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Engineering and Environmental Consultants
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Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 315 Improvements
Access To Shallow Well Site H-C

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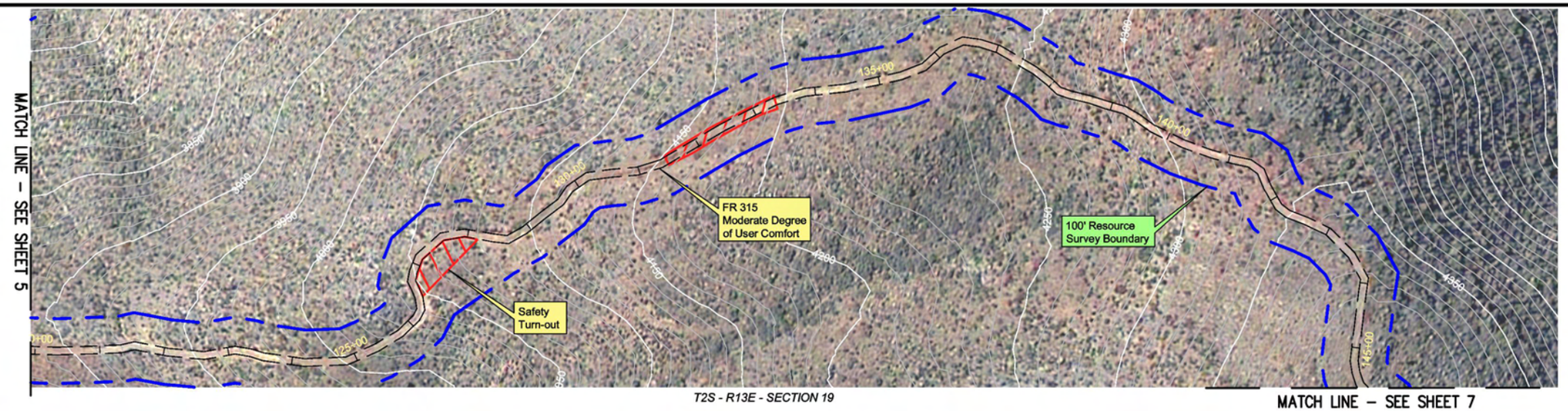

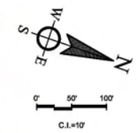

Equipment List

- Track Hoe
- Hammer Hoe
- Front End Loader
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead Rotary Drill Rig Or Equivalent
- Pipe Trucks
- Backhoe
- Water Truck

This Sheet:

- Providing Safety Turn-Out
- Minimal Disturbance on Remaining Portions

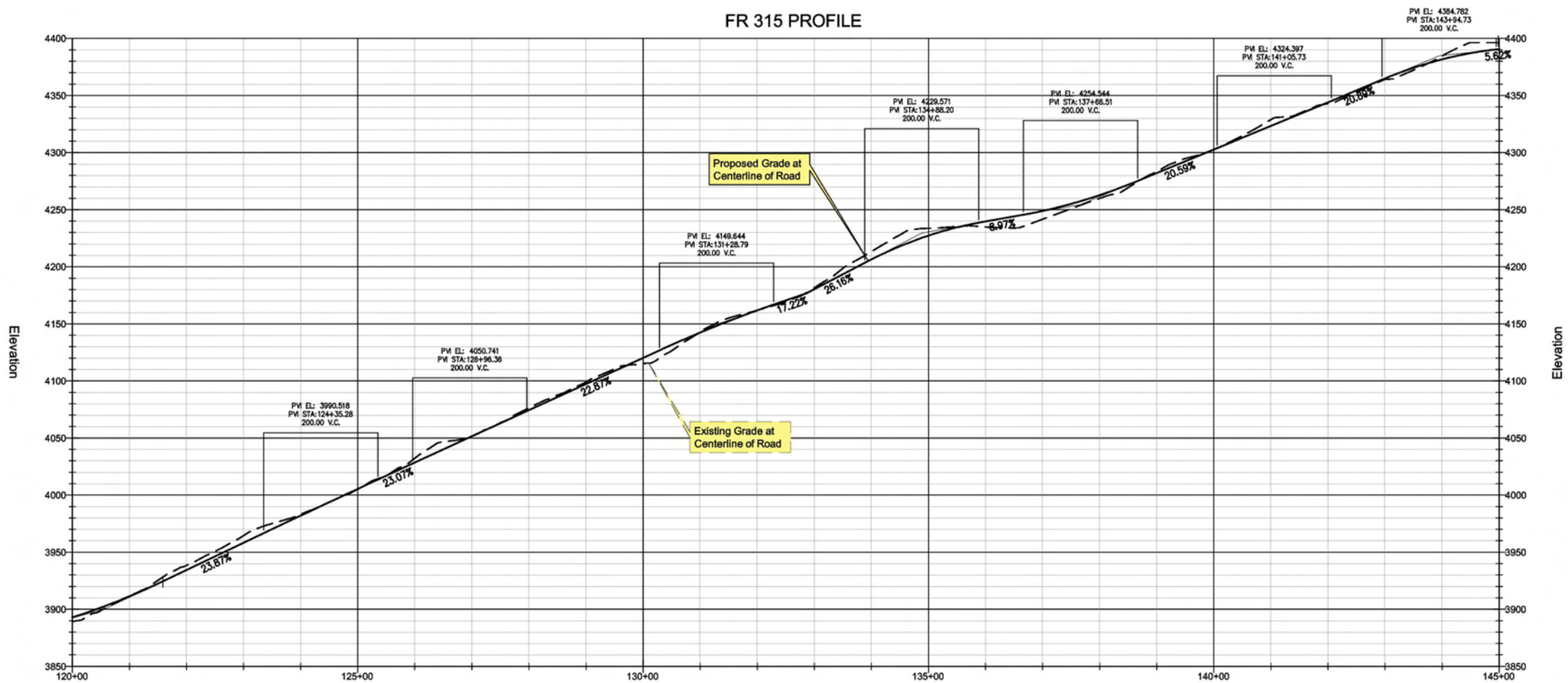

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
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Legend

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- T-Post and Wire Clear Limit Fencing
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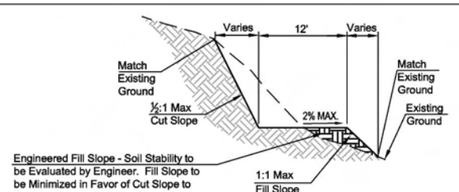

Typical Cross Section

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WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

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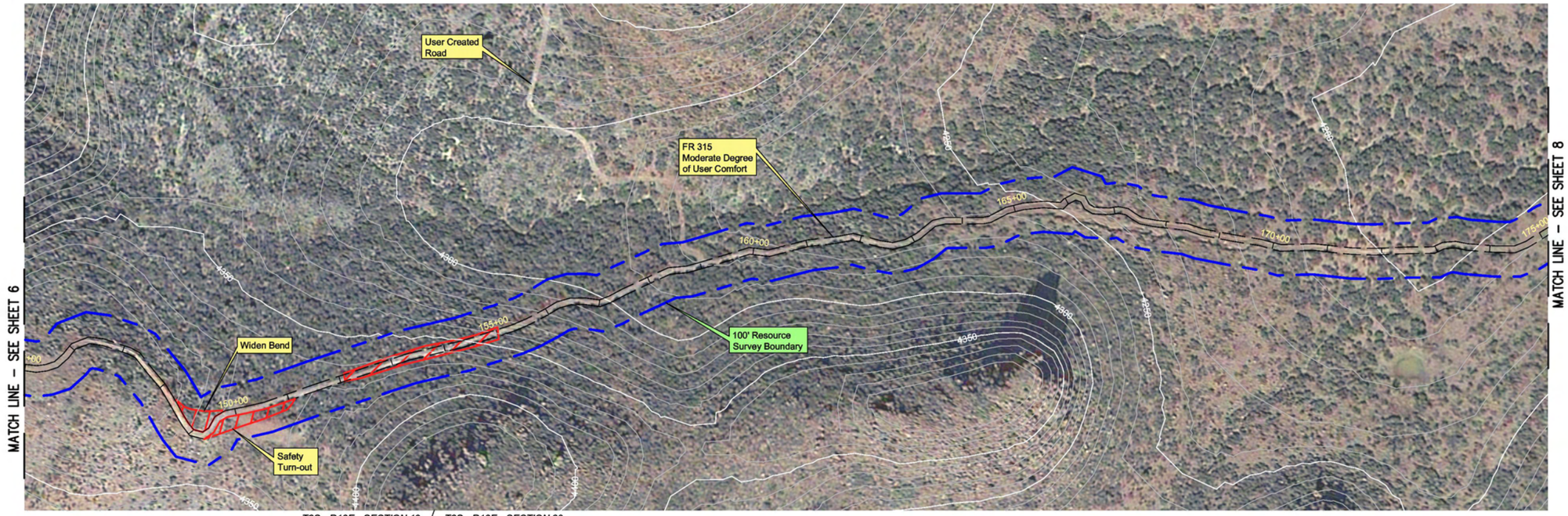
RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 315 Improvements
Access To Shallow Well Site H-C



Equipment List

- Track Hoe
- Hammer Hoe
- Front End Loader
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead Rotary Drill Rig Or Equivalent
- Pipe Trucks
- Backhoe
- Water Truck

This Sheet:

- Providing Safety Turn-Out
- Widening Bend for Safety
- Minimal Disturbance on Remaining Portions

FR 315 PROFILE

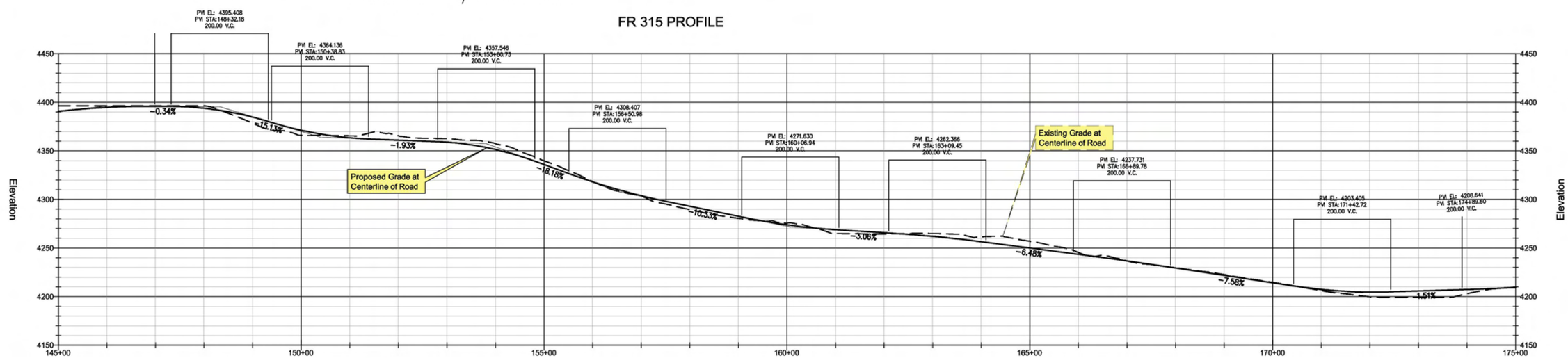


Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
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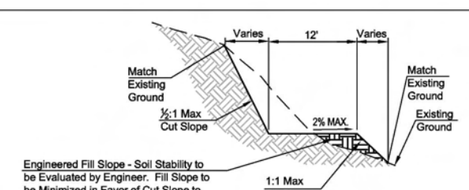

Typical Cross Section

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Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 315 Improvements
Access To Shallow Well Site H-C

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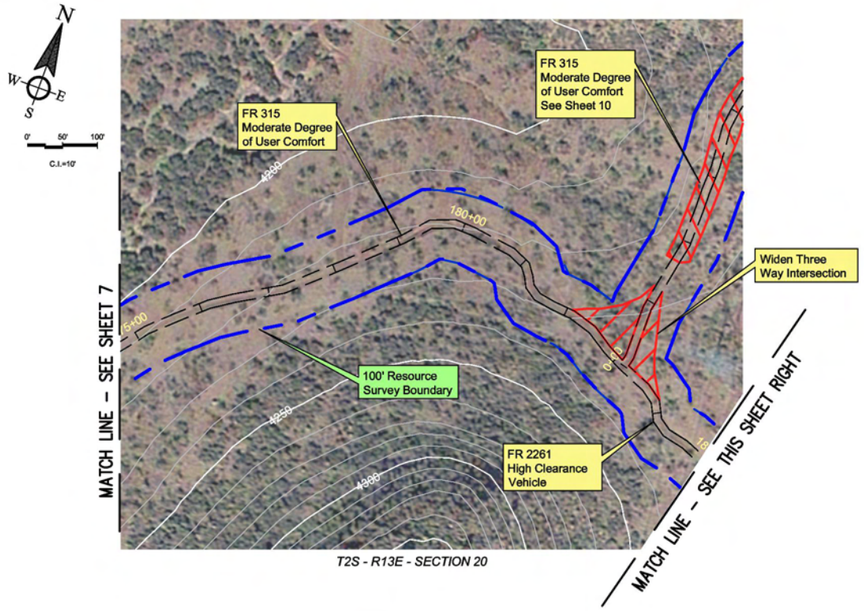

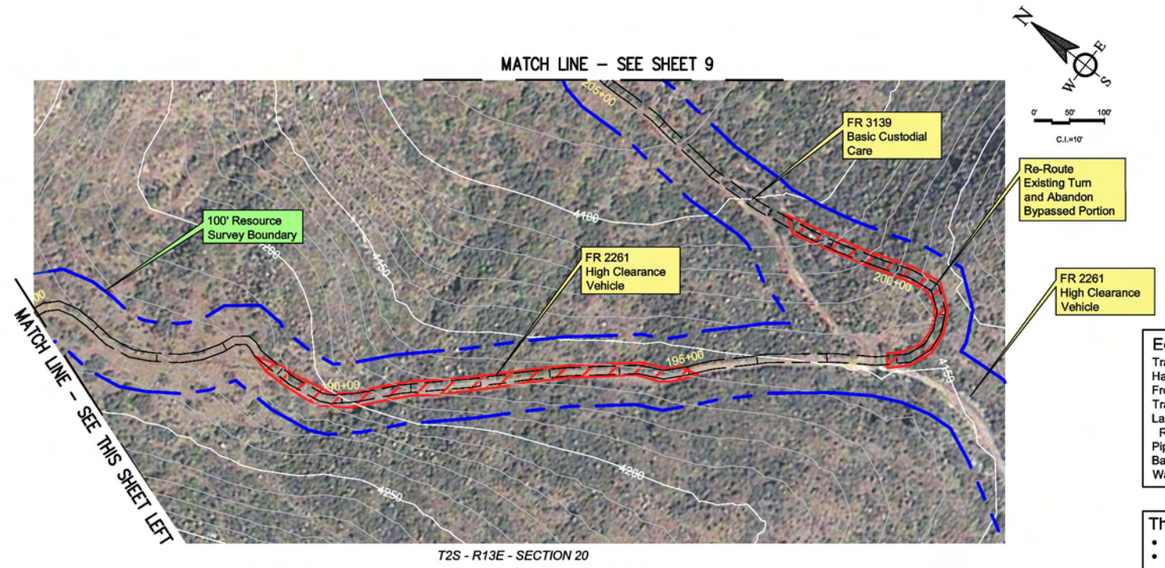

Equipment List

- Track Hoe
- Hammer Hoe
- Front End Loader
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead Rotary Drill Rig Or Equivalent
- Pipe Trucks
- Backhoe
- Water Truck

This Sheet:

- Widening 3-Way Intersection
- Re-Routing Existing Turn to Improve Radius
- Minimal Disturbance on Remaining Portions

FR 315, FR 2261, AND FR 3139 PROFILE

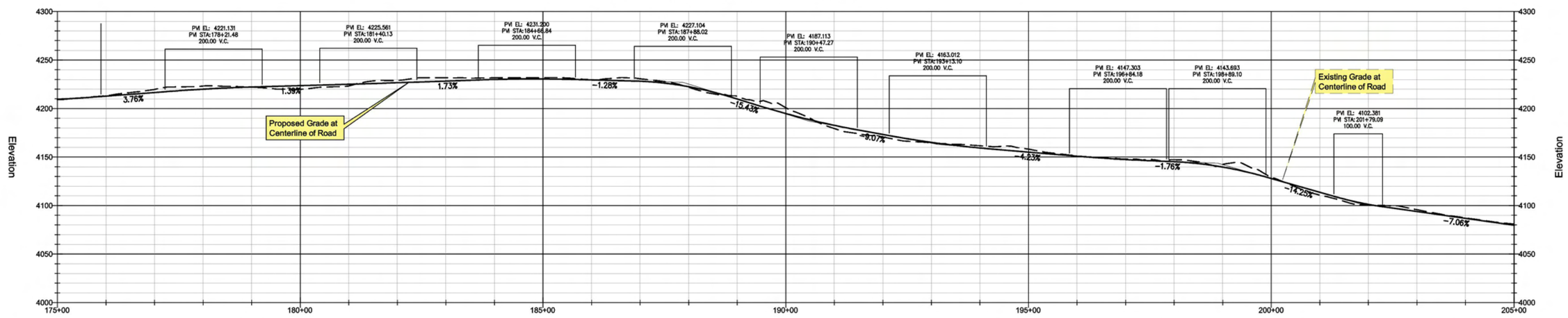

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
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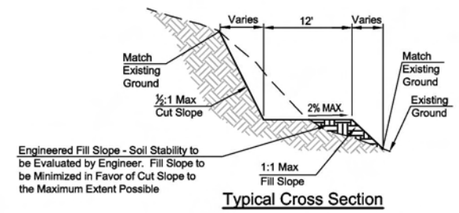

Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 315, FR 2261, and FR 3139 Improvements
Access To Shallow Well Site H-C

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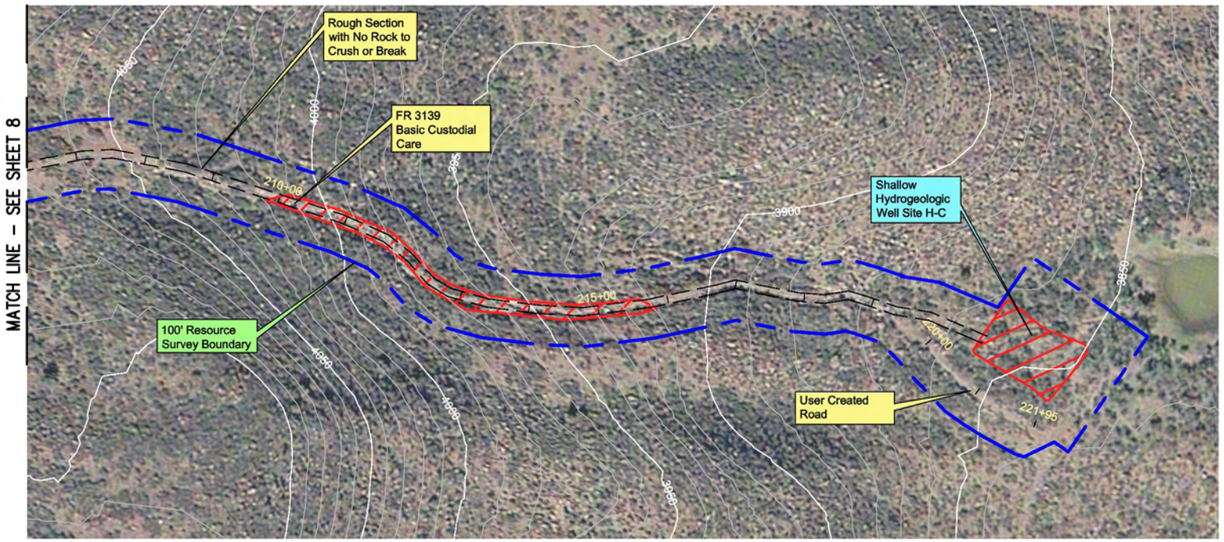
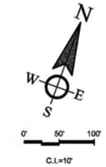


T2S - R13E - SECTION 20



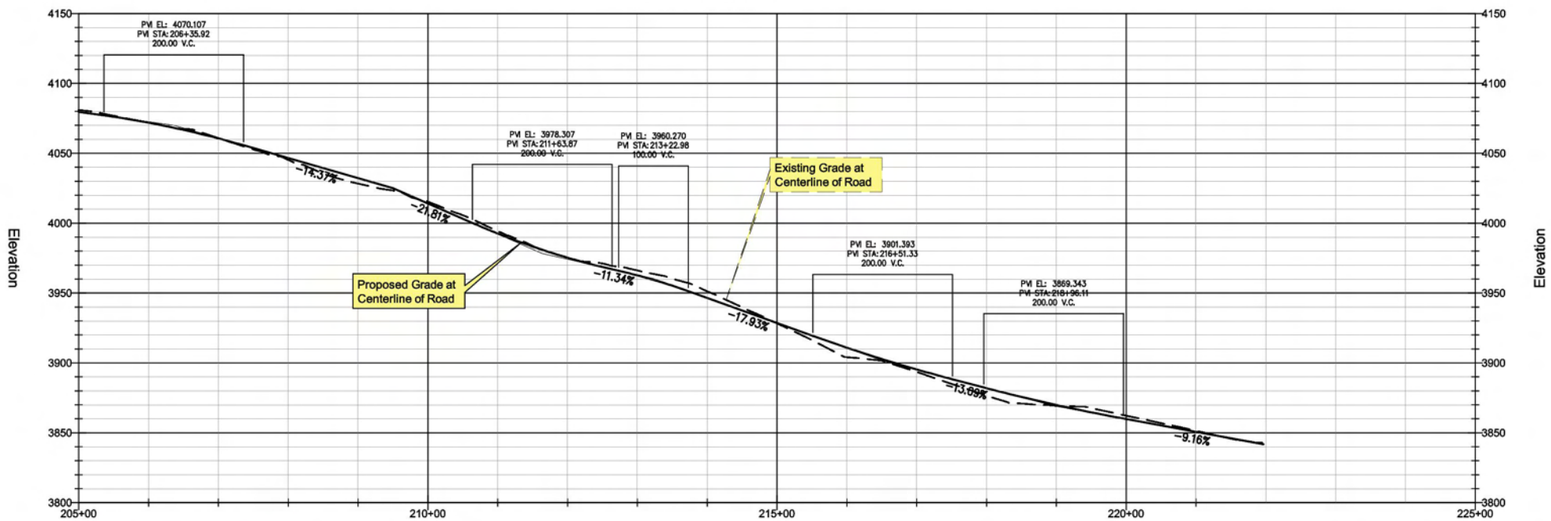
Equipment List

- Track Hoe
- Hammer Hoe
- Front End Loader
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead Rotary Drill Rig Or Equivalent
- Mud Tank
- Heavy Duty Air Compressor
- Pipe Trucks
- Water Storage Tank
- Generators For Drill Rig
- Backhoe
- Water Truck

This Sheet:

- Portions of Road Are Rough with No Rocks to Break or Crush
- Reworking of Roadway Material Required - Possibly Bringing Fill from Upper Portions of Road.
- Clearing and Grading for H-C Pad
- An Archaeological Monitor Will Be Present for H-C Clearing Activities

FR 3139 PROFILE



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Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
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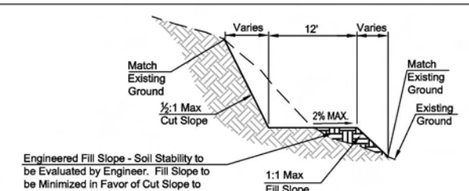

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RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 3139 Improvements
Access To Shallow Well Site H-C

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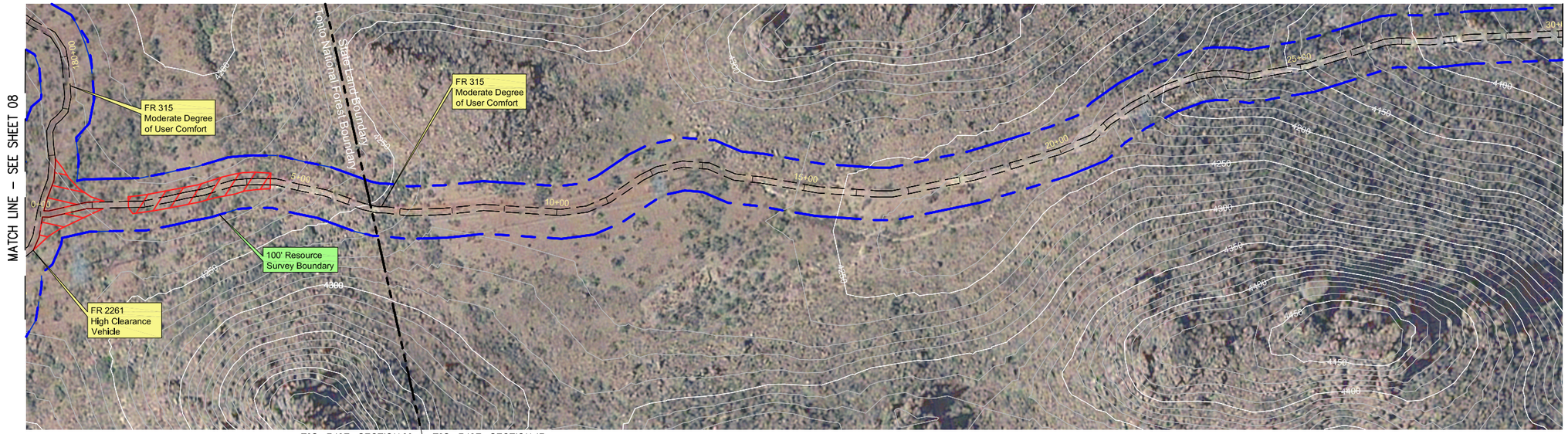

Equipment List

Track Hoe
Hammer Hoe
Front End Loader
Tracked Jaw Crusher
Lang LM-140 Series Tophead Rotary Drill Rig Or Equivalent
Pipe Trucks
Backhoe
Water Truck

This Sheet:

- Minimimal New Surface Disturbance - Grading of Existing Road on Forest Lands
- Widening Portion of Road for Access

EXTENSION OF FR 315 PROFILE (PARTIALLY ON STATE LAND)

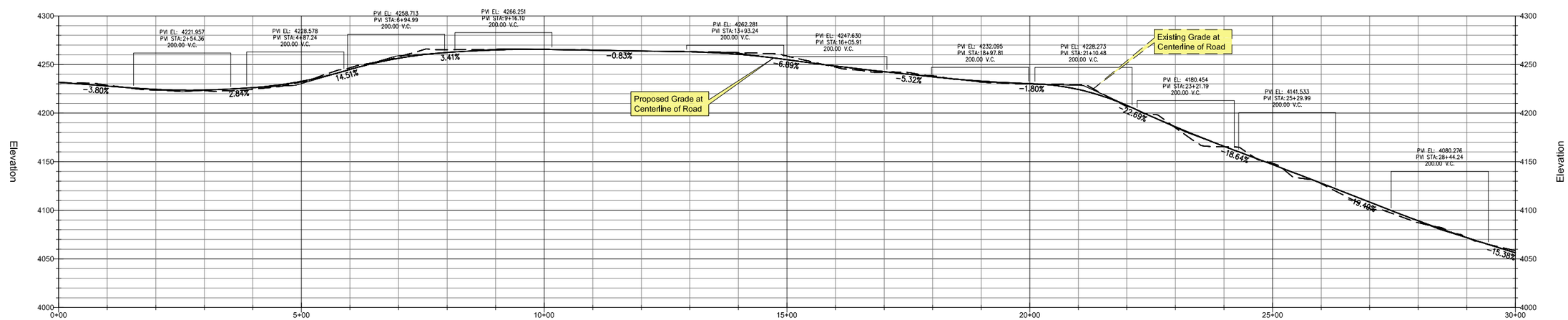

Image Source: DigIt, Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
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Legend

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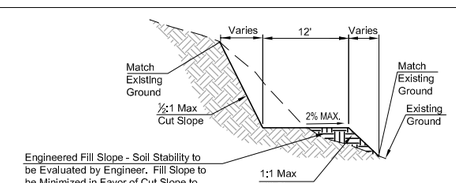

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RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 315 Improvements
Partially on State Land

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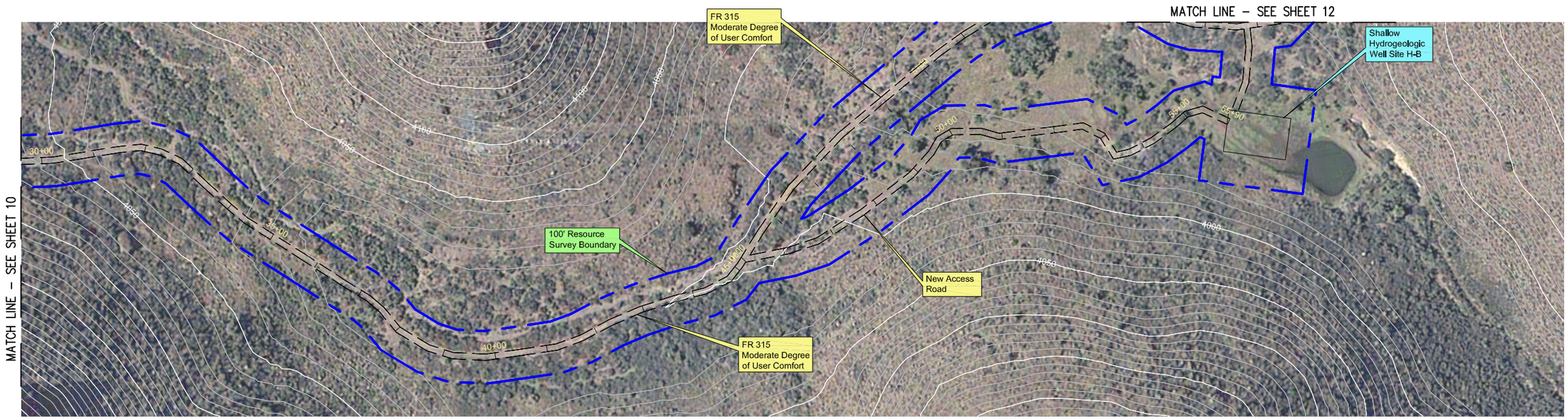
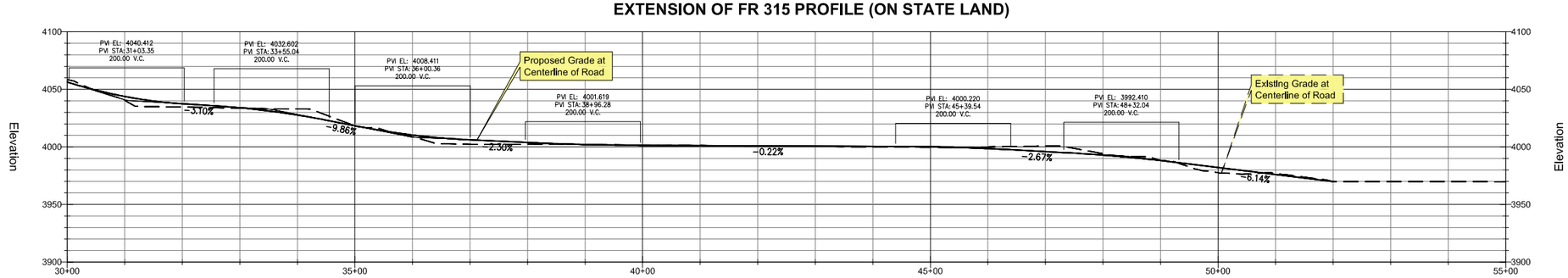


T2S - R13E - SECTION 17

EXTENSION OF FR 315 PROFILE (ON STATE LAND)



Equipment List

- Track Hoe
- Hammer Hoe
- Front End Loader
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead Rotary Drill Rig Or Equivalent
- Pipe Trucks
- Backhoe
- Water Truck

Image Source: DIgIt, Globe QuickBIrd Dataset
TopographIcal Source: USGS NED Dataset
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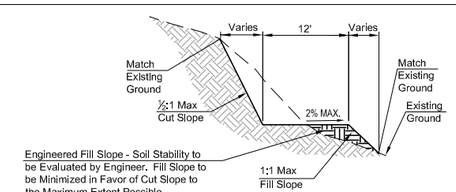

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Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibility Activities
Extension of FR 315
Access to Shallow Well Site H-B
on State Land

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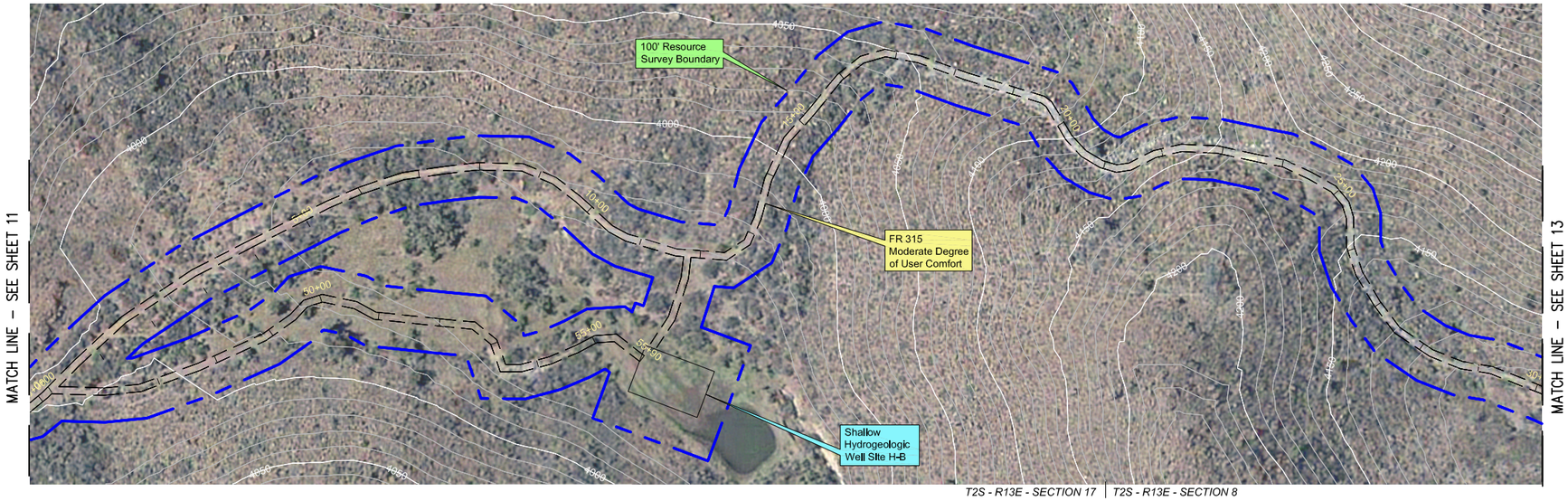

Equipment List

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- Hammer Hoe
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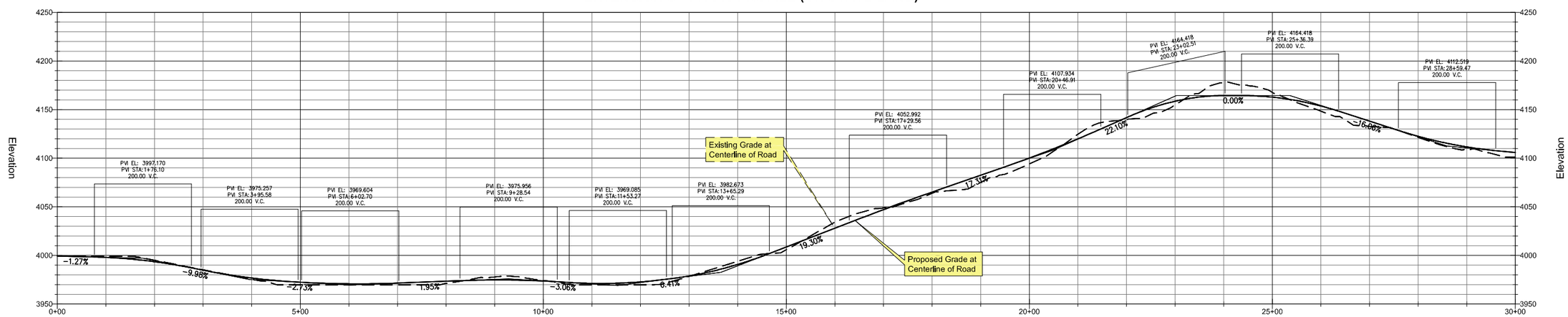
- Pipe Trucks
- Backhoe
- Water Truck

EXTENSION OF FR 315 PROFILE (ON STATE LAND)



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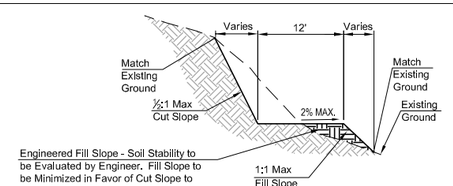
4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 315 Improvements
Access to Shallow Well Site H-B
on State Land

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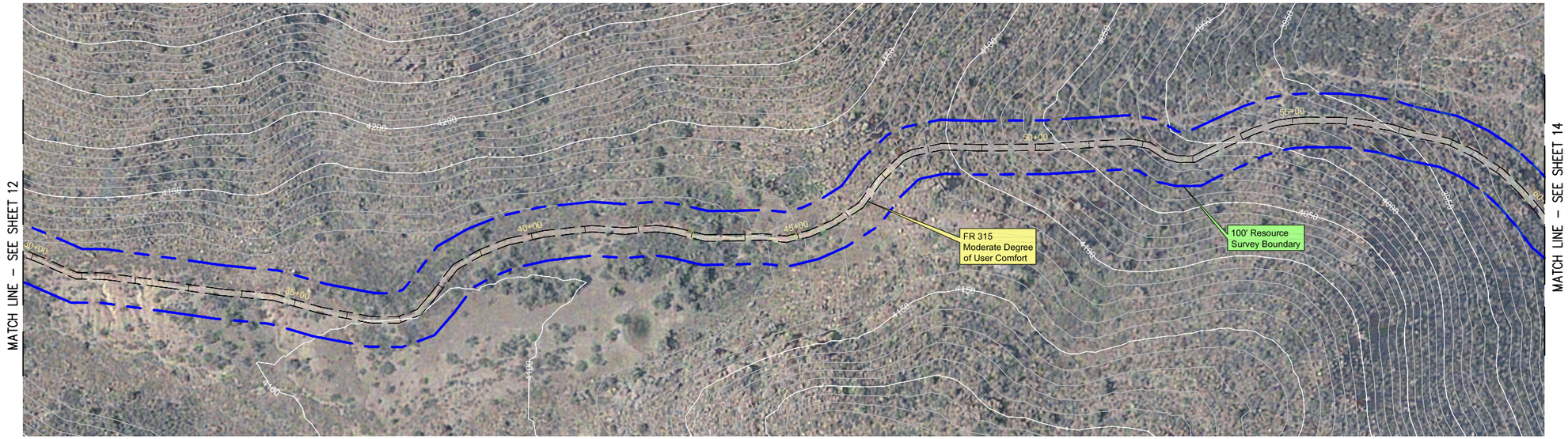

T2S - R13E - SECTION 8

Equipment List

- Track Hoe
- Hammer Hoe
- Front End Loader
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead Rotary Drill Rig or Equivalent
- Pipe Trucks
- Backhoe
- Water Truck

EXTENSION OF FR 315 PROFILE (ON STATE LAND)

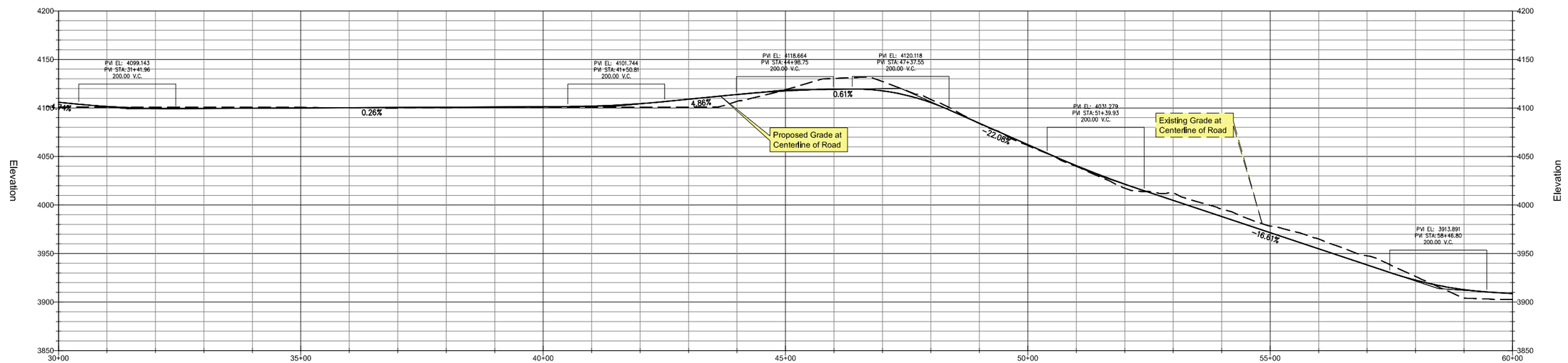

Image Source: DIgIt, Globe QulckBIrd Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

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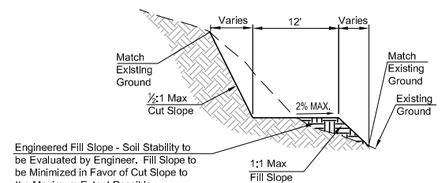

Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 315 Improvements
Access to Shallow Well Site H-B
on State Land

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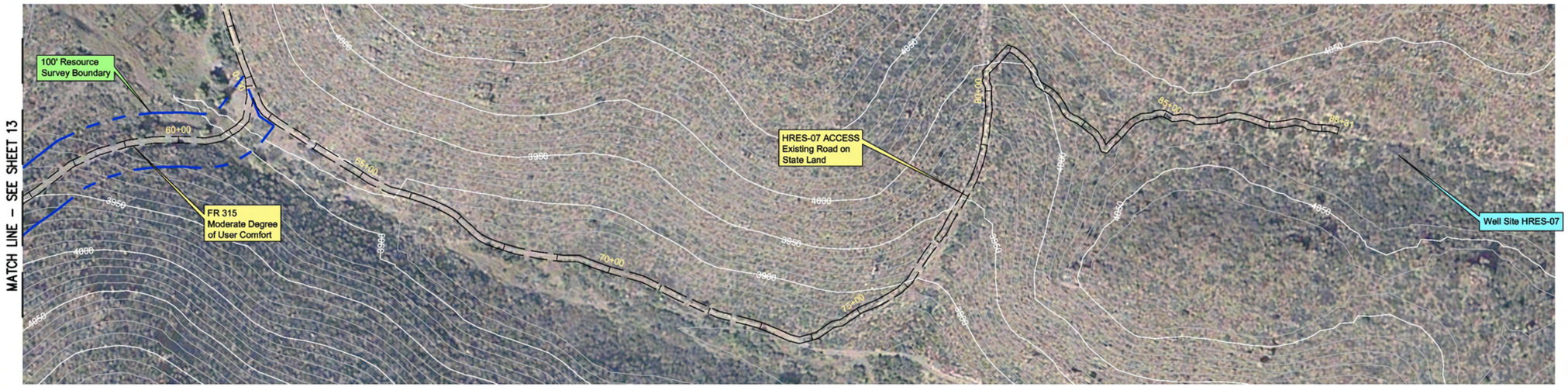

T2S - R13E - SECTION 8

HRES-07 ACCESS PROFILE (OCCURS ON STATE LAND, WORK COMPLETED)

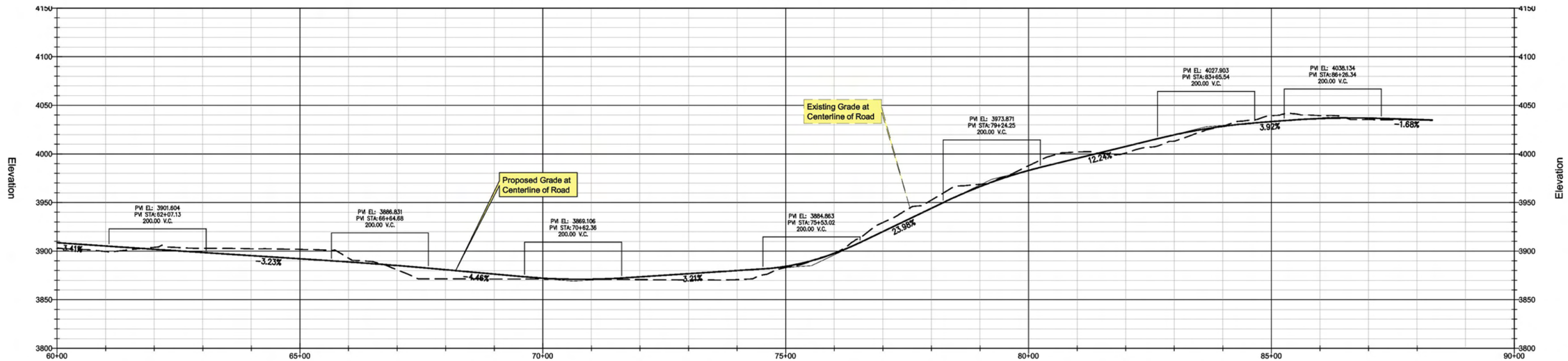

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
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- Resource Survey Area -
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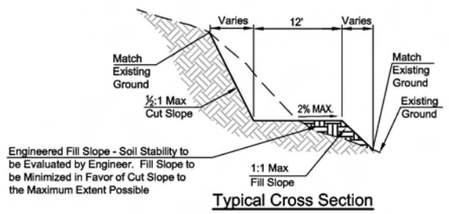

Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
Access To Well HRES-07
on State Land (Completed)

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

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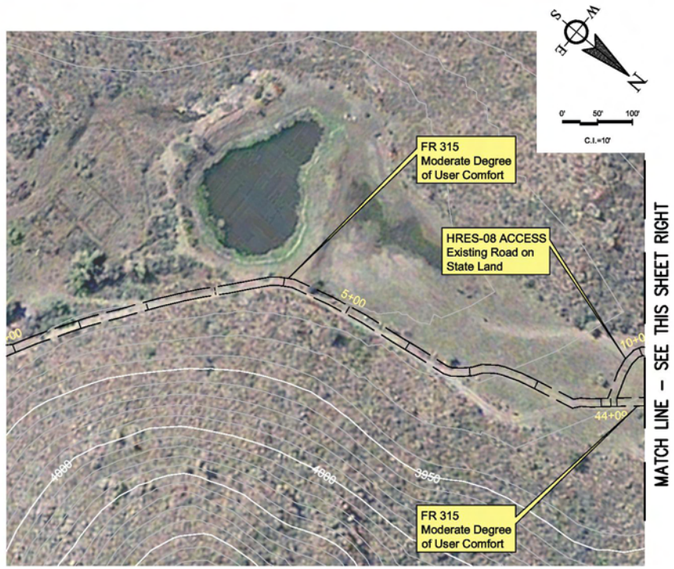

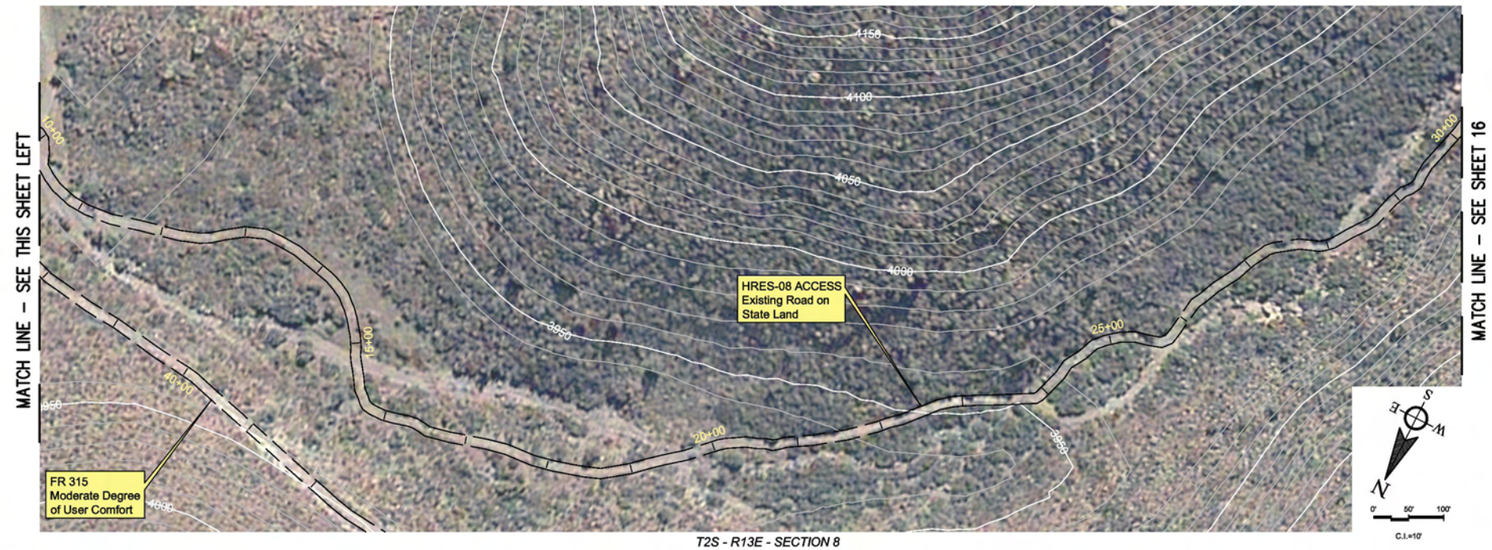

EXTENSION OF FR 315 AND HRES-08 ACCESS PROFILE (OCCURS ON STATE LAND, WORK COMPLETED)

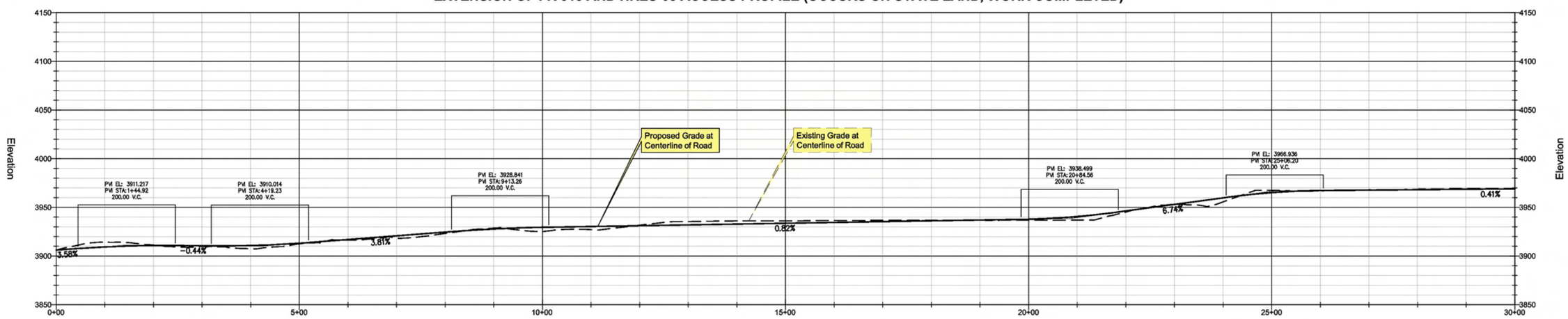

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

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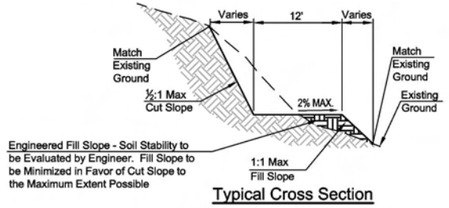

Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
Access To Well Site HRES-08
on State Land (Completed)

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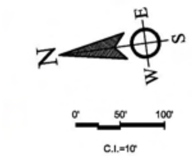

T2S - R13E - SECTION 8

HRES-08 ACCESS PROFILE (OCCURS ON STATE LAND, WORK COMPLETED)

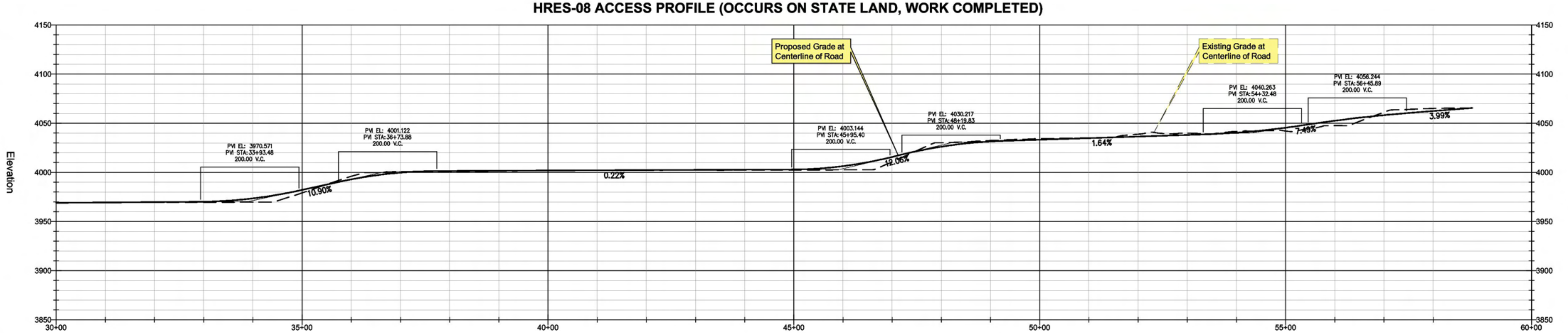

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
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Legend

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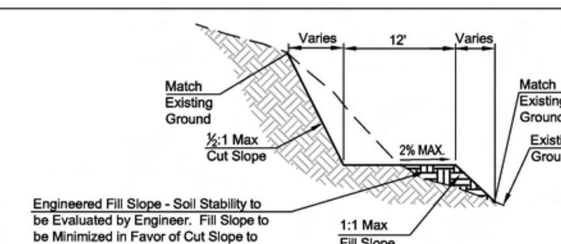

Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
Access To Well Site HRES-08
on State Land (Completed)

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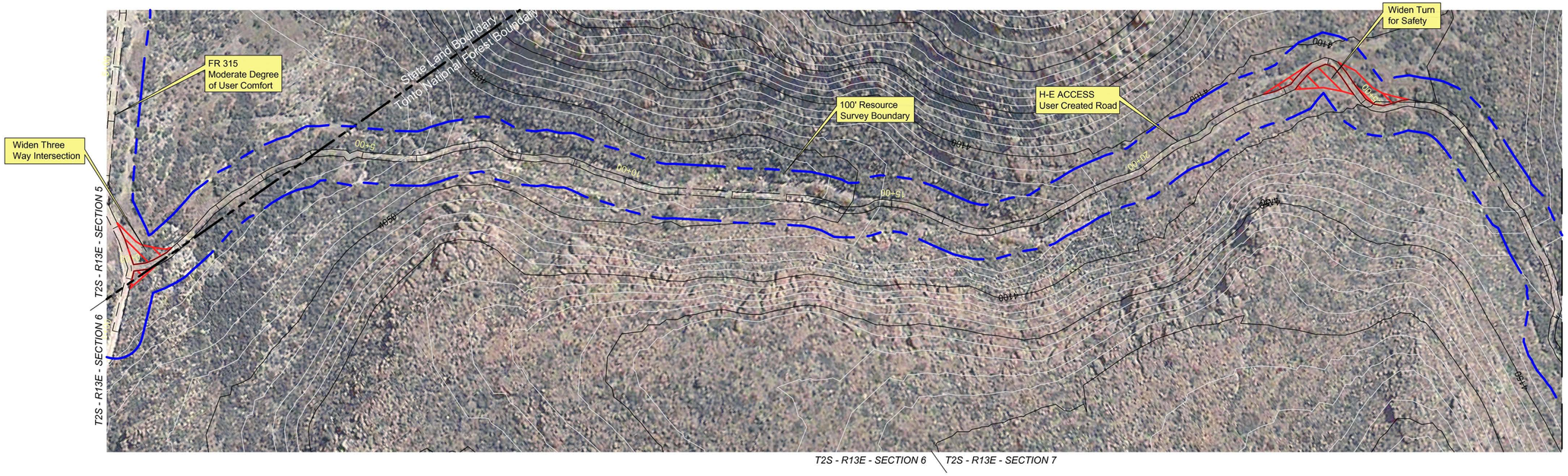

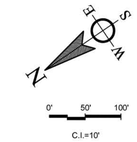

Equipment List

- Track Hoe
- Front End Loader
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead Rotary Drill Rig Or Equivalent
- Pipe Trucks
- Backhoe
- Water Truck

This Sheet:

- Minimal New Surface Disturbance - Grading of Existing Road
- Widening Turn for Safety
- Widening 3-way Intersection

USER CREATED ROAD (H-E ACCESS) PROFILE

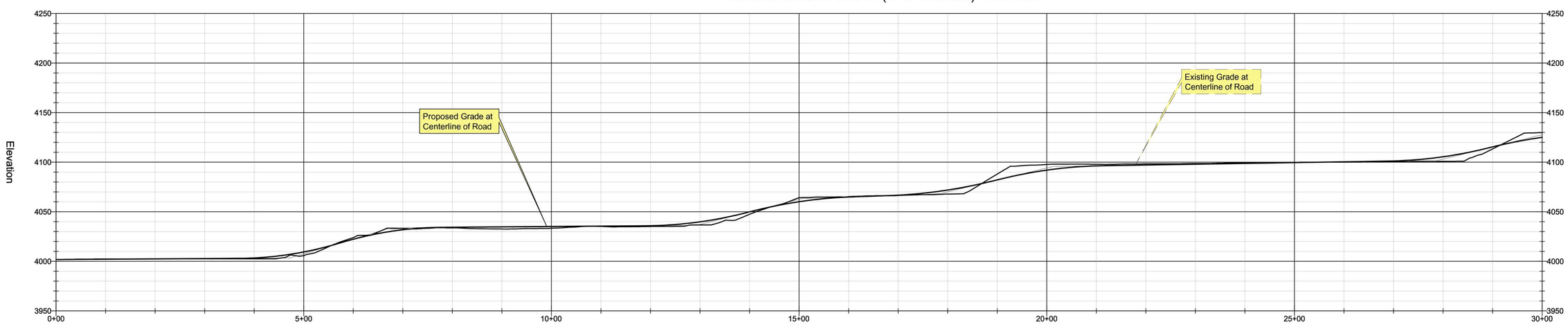

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
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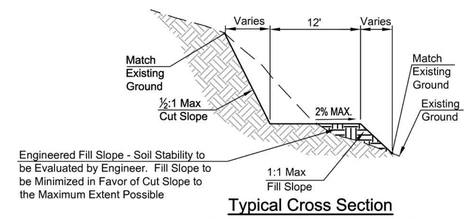

Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
Improvements to User Created Road
Access To Shallow Well Site H-E

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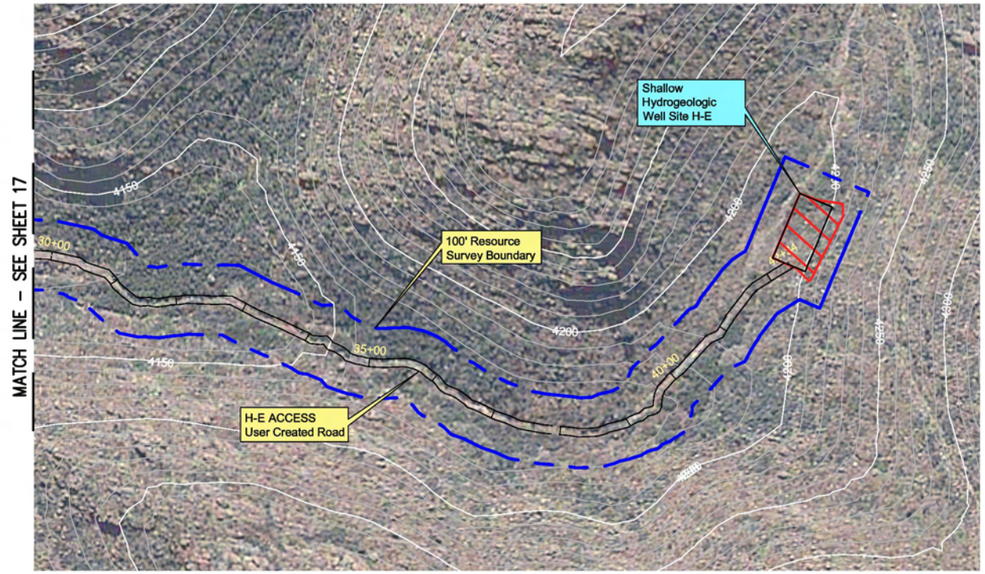

T2S - R13E - SECTION 7

Equipment List

- Lang LM-140 Series Tophead Rotary Drill Rig Or Equivalent
- Mud Tank
- Heavy Duty Air Compressor
- Pipe Trucks
- Water Storage Tank
- Generators For Drill Rig
- Front End Loader
- Backhoe
- Tracked Jaw Crusher
- Water Truck

This Sheet:

- Minimimal New Surface Disturbance - Grading of Existing Road
- Clearing and Grading for H-E Pad
- Rock Removed From Excavation of Drill Site H-E Will Be Crushed and Used to Dress Road Surface

USER CREATED ROAD (H-E ACCESS) PROFILE

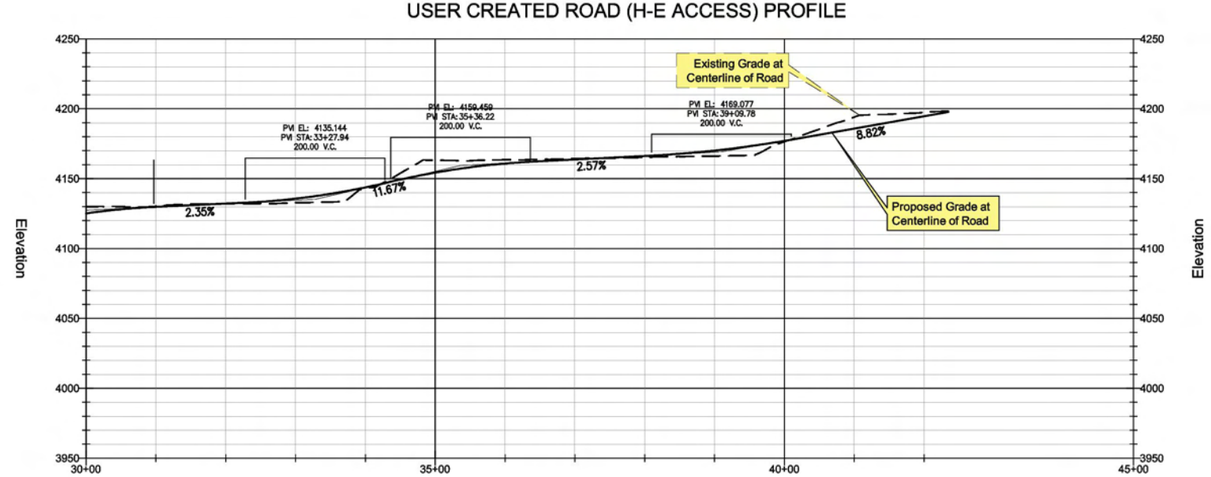

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing Note: All Fencing to be placed by Qualified Monitors Prior to Construction
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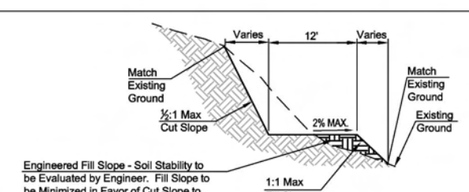

Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
Improvements to User Created Road
Access To Shallow Well Site H-E

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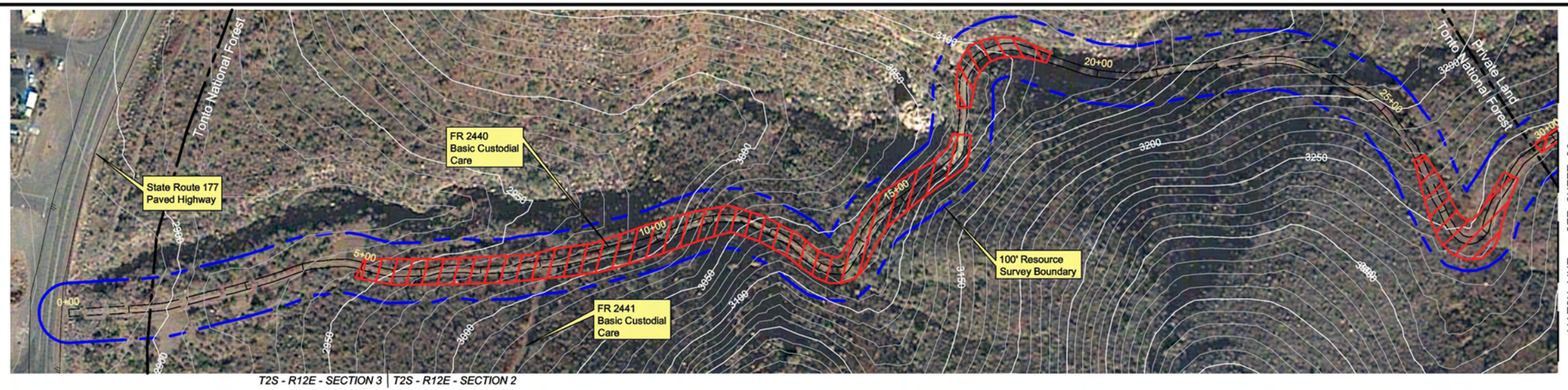

MATCH LINE – SEE SHEET 20

N
W E
S
0' 50' 100'
C.I.=10'

Equipment List

- Schram 685 Rotary Drill Rig
- Pipe Trucks
- Cat Bulldozer
- Track Hoe
- Hammer Hoe
- Front End Loader
- Tracked Jaw Crusher
- Water Truck
- LF-90 Rotary Drill Rig

This Sheet:

- Grading of Existing Road
- Widening Turns for Safety

FR 2440 PROFILE

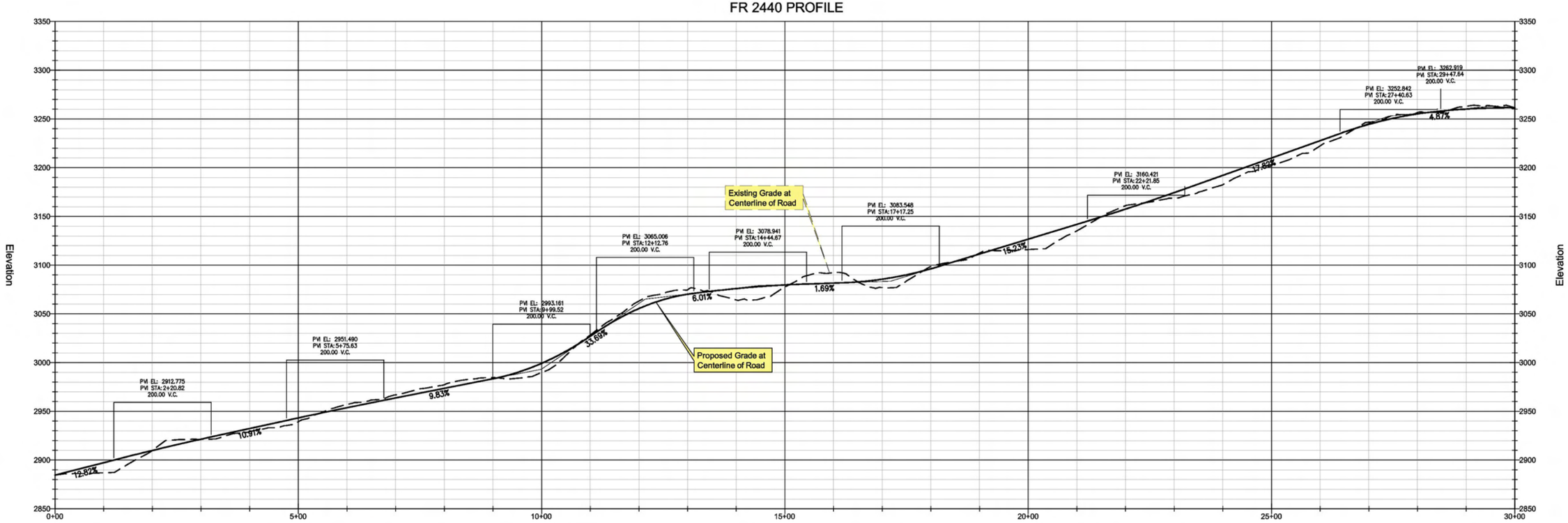

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
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Legend

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- Approximate Area of Cut/ Fill
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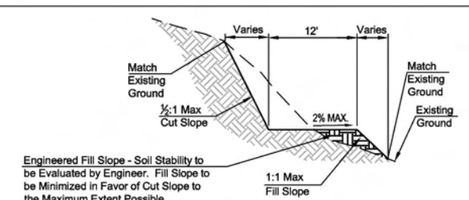

Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibility Activities
FR 2440 Improvements
Access To Exploration Sites
QC-4 And MB-03

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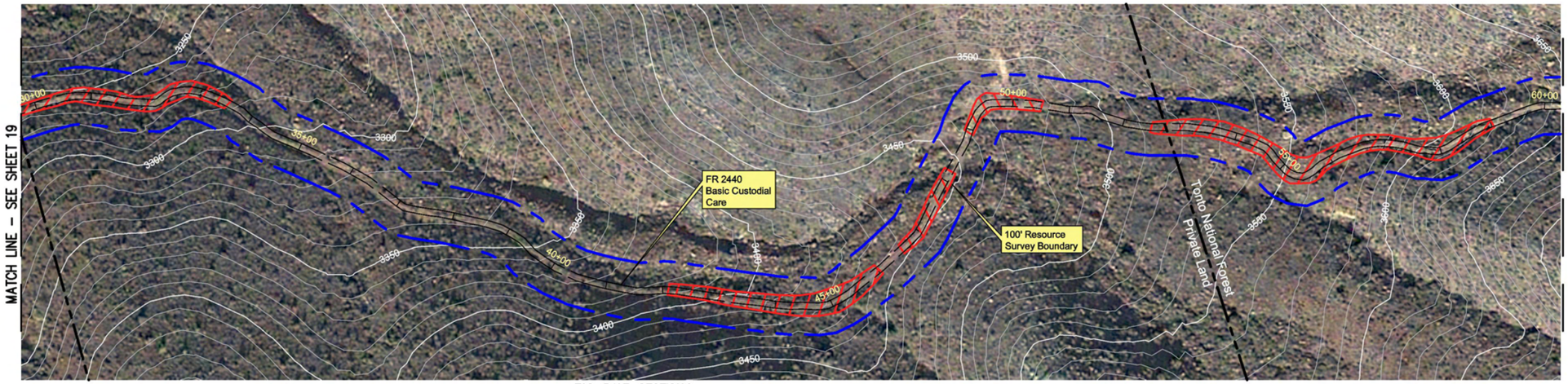

T2S - R12E - SECTION 2

N
W E
S
0' 50' 100'
C.I.=10'

Equipment List

Schram 685 Rotary Drill Rig
Pipe Trucks
Cat Bulldozer
Track Hoe
Hammer Hoe
Font End Loader
Tracked Jaw Crusher
Water Truck
LF-90 Rotary Drill Rig

This Sheet:

- Grading of Existing Road
- Widening Turn for Safety
- An Archaeological Monitor Will Be Present for Clearing Activities Within AR-03-12-02-1517(TNF)

FR 2440 PROFILE

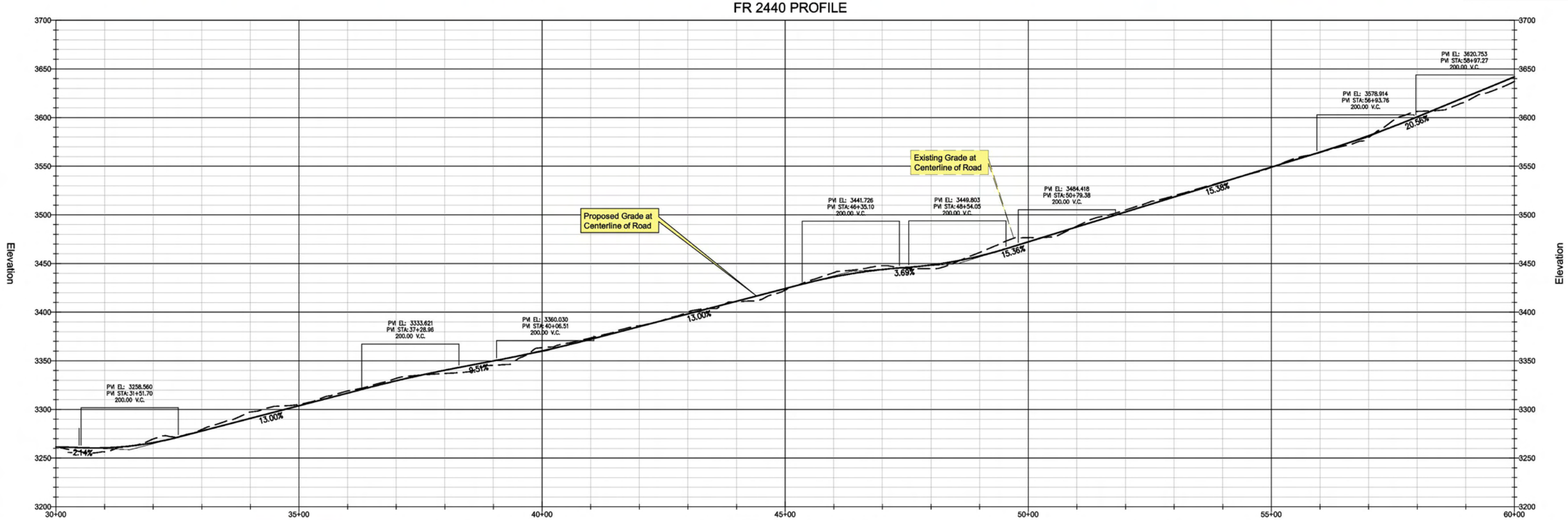

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
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Legend

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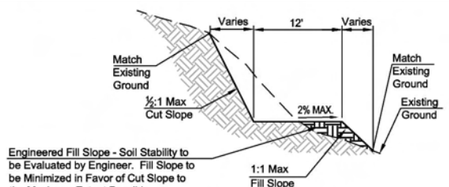

Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 2440 Improvements
Access To Exploration Sites
QC-4 And MB-03

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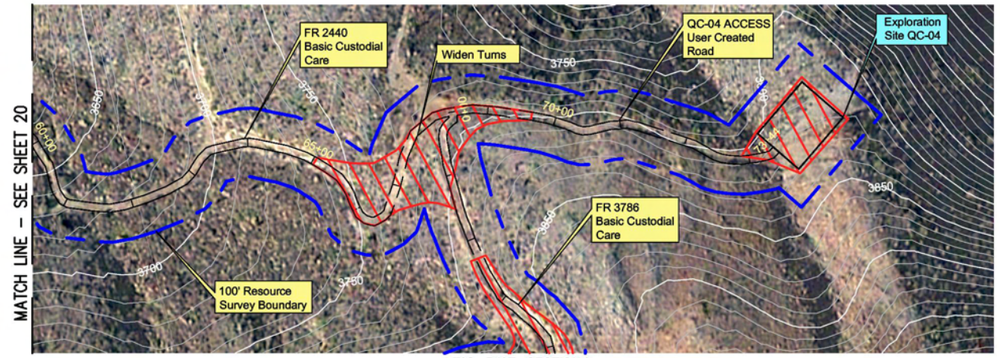
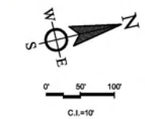




Equipment List

Schram 685 Rotary Drill Rig
Pipe Trucks
Water Storage Tank
Generators For Drill Rig
Cat Bulldozer
Track Hoe
Hammer Hoe
Front End Loader
Tracked Jaw Crusher
Water Truck
Mud Tank
LF-90 Rotary Drill Rig

This Sheet:

- Minimimal New Surface Disturbance - Grading of Existing Road
- Widening Bends for Safety
- Clearing and Grading for QC-04 Pad
- Rock Removed From Excavation of Drill Site QC-04 Will Be Crushed and Used to Dress Road Surface
- An Archaeological Monitor Will Be Present for Clearing Activities Within AR-03-12-02-1517(TNF)

FR 2440 PROFILE

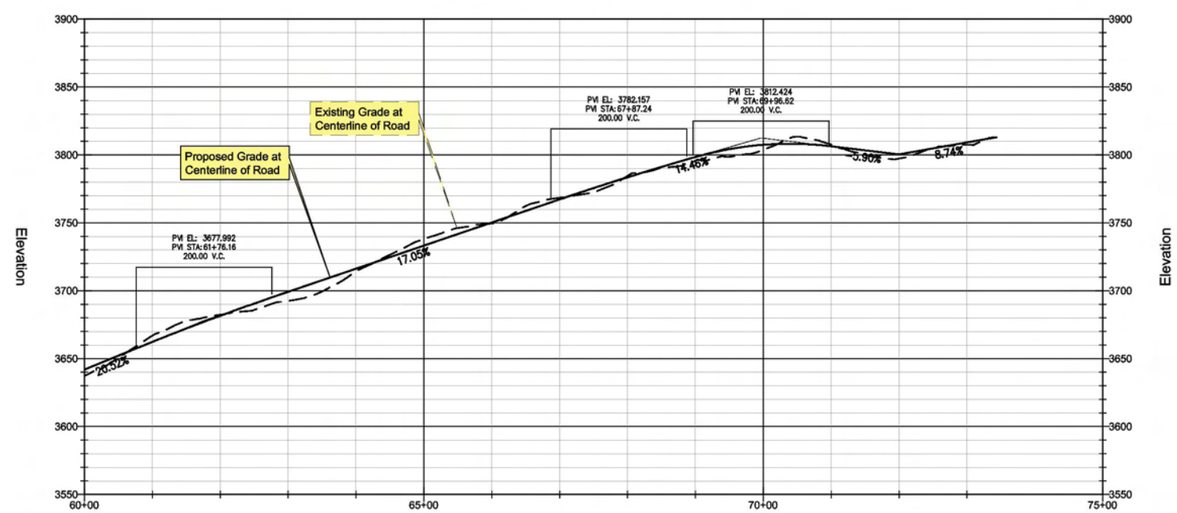


Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

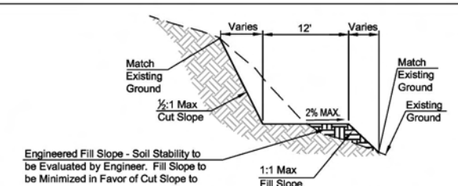
1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

2- High Clearance Vehicles - assigned to roads operated for use by high clearance vehicles

3- Suitable for Passenger Cars - assigned to roads operated and maintained for travel by a prudent driver in a standard passenger car

4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 2440 and FR 3786 Improvements
Access to Exploration Sites
QC-04 And MB-03

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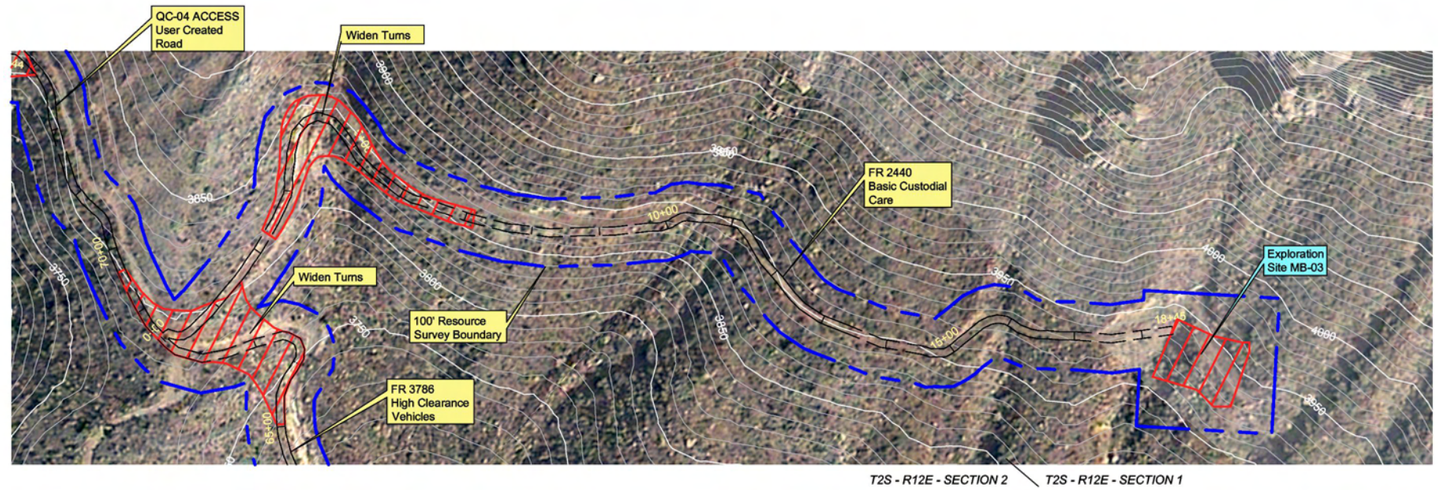

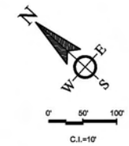

Equipment List

- Mud Tank
- Schram 685 Rotary Drill Rig
- Pipe Trucks
- Water Storage Tank
- Generators For Drill Rig
- Cat Bulldozer
- Track Hoe
- Hammer Hoe
- Front End Loader
- Tracked Jaw Crusher
- Water Truck
- LF-90 Rotary Drill Rig

This Sheet:

- Minimimal New Surface Disturbance - Grading of Existing Road
- Widening Hairpin Turn for Safety
- Clearing and Grading for MB-03 Pad
- An Archaeological Monitor Will Be Present for Clearing Activities Within AR-03-12-02-1517(TNF)

FR 2440 PROFILE

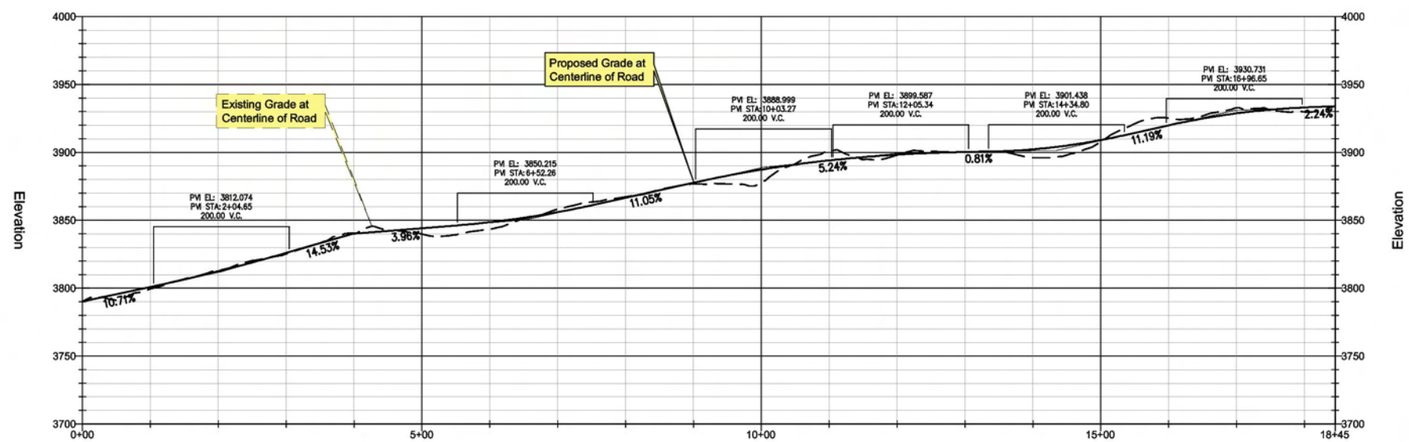

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

2- High Clearance Vehicles - assigned to roads operated for use by high clearance vehicles

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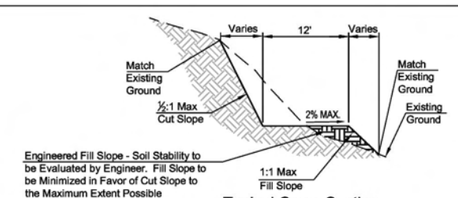
4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 2440 Access Improvements
Access To Exploration Site MB-03

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EXTENSION OF FR 315 PROFILE (OCCURS ON STATE LAND, WORK COMPLETED)

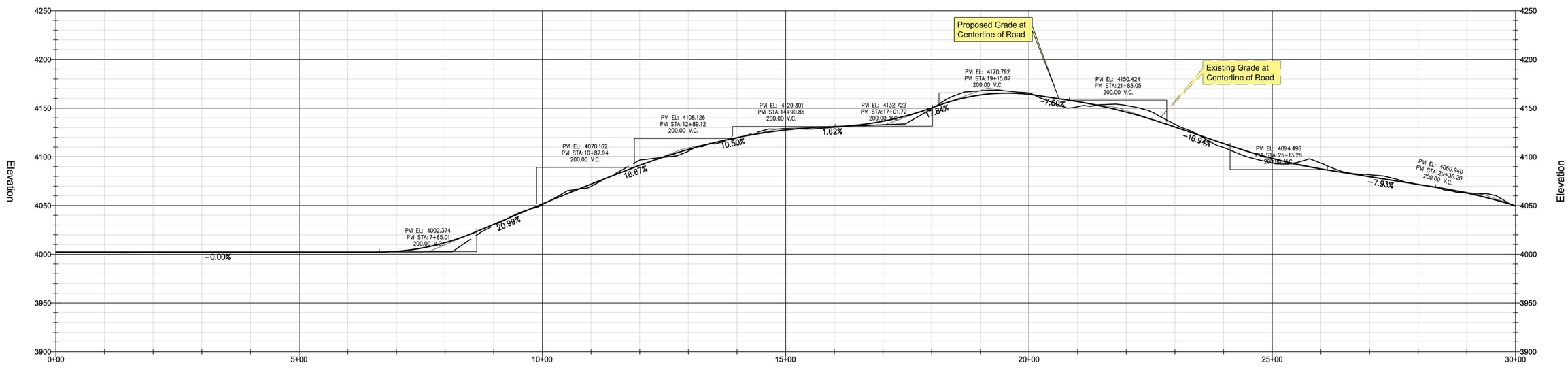

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
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Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

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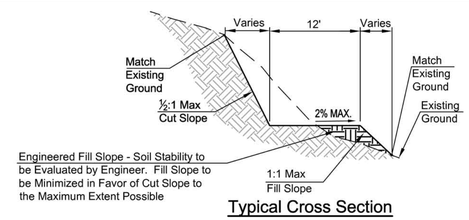
4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 315 on State Land (Completed)

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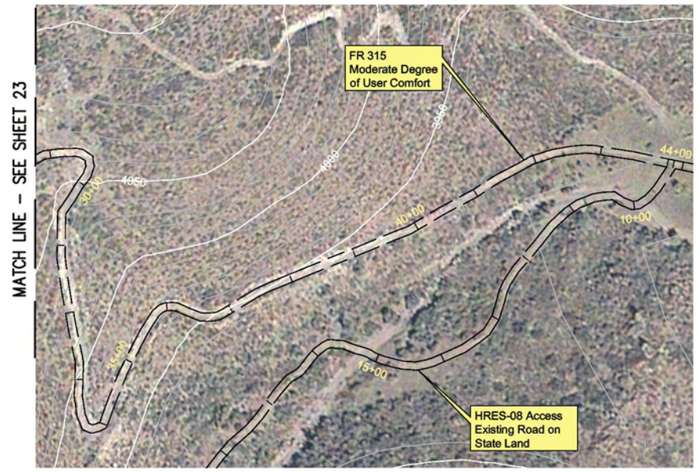

T2S - R13E - SECTION 8

EXTENSION OF FR 315 PROFILE (OCCURS ON STATE LAND, WORK COMPLETED)

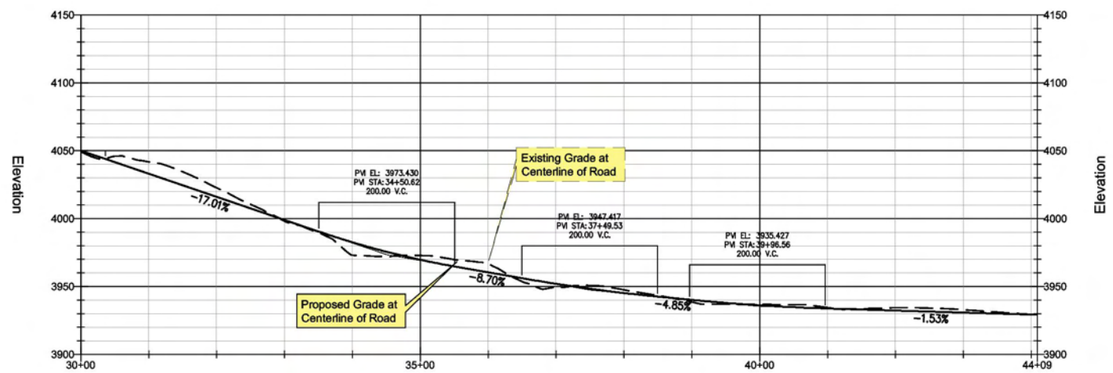

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

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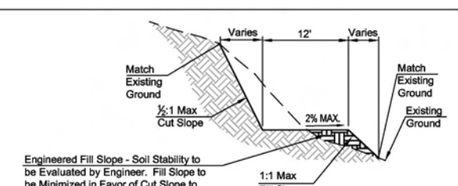

Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 315 Access to HRES-8
on State Land (Completed)

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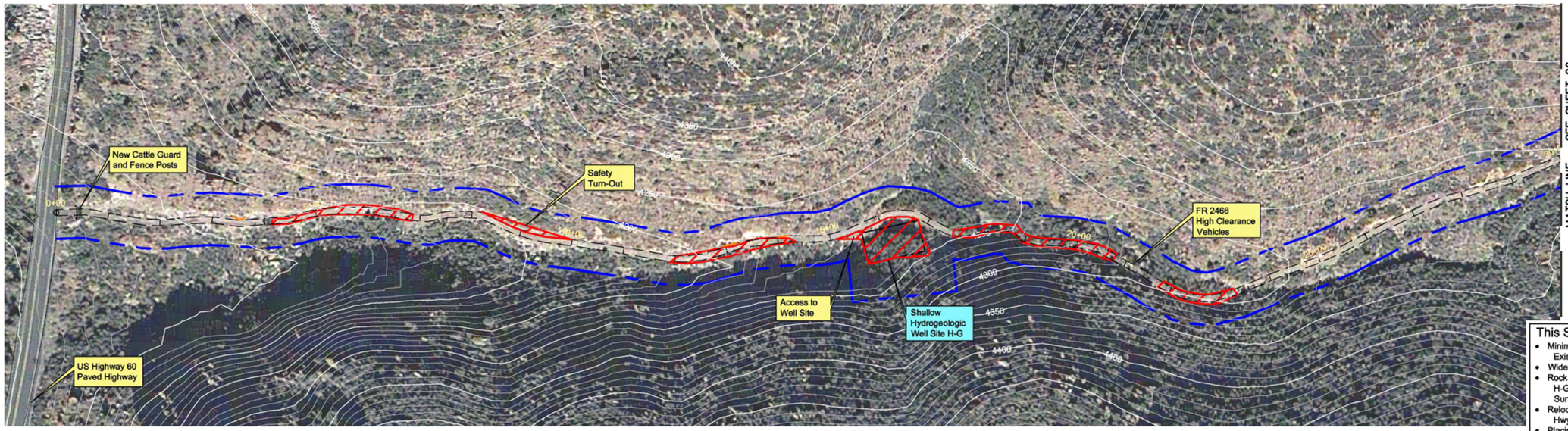

T1S - R13E - SECTION 22

N
W E
S
0' 50' 100'
C.I.=10'

Equipment List

- Track Hoe
- Hammer Hoe
- Front End Loader
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead Rotary Drill Rig Or Equivalent
- Schram 685 Rotary Drill Rig
- UDR-5000 Core Drill Rig
- CP-50 Core Drill Rig
- Pipe Trucks
- Mud Tank
- Heavy Duty Air Compressor
- Water Storage Tank
- Generators For Drill Rig
- Backhoe
- Water Truck

This Sheet:

- Minimal New Surface Disturbance. Grading of Existing Road
- Widening of Existing Tight Spots with Track Hoe
- Rock Removed From Excavation of Drill Site H-G Will Be Crushed and Used to Dress Road Surface
- Relocating Fence Post at Entrance from US Hwy 60
- Placing Cattleguard at Entrance
- Arizona Hedgehog Cacti to be Fenced and Protected with Cactus Guards Where Possible
- A Biological Monitor will be Present During Clearing and Grading Activities

FR 2466 PROFILE

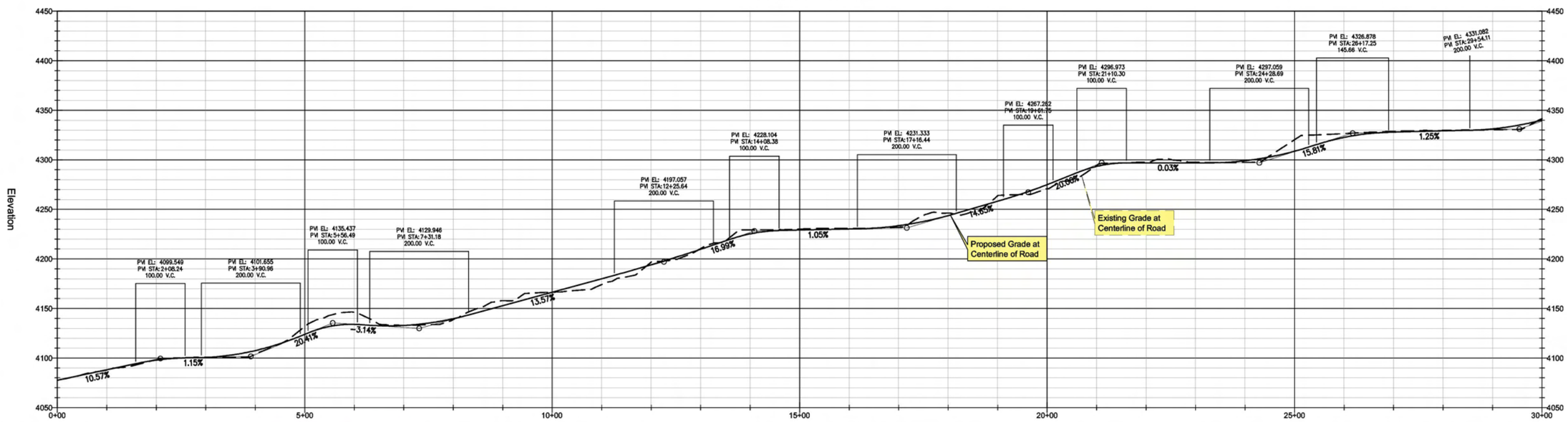

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area - Note: 100' Wide or Greater

Forest Service Road Designations:

1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

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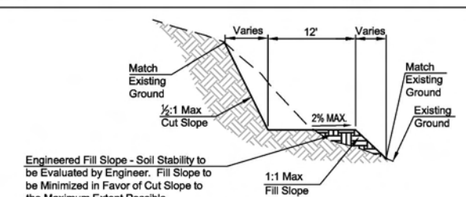

Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 2466 Improvements
And Shallow Well Site H-G

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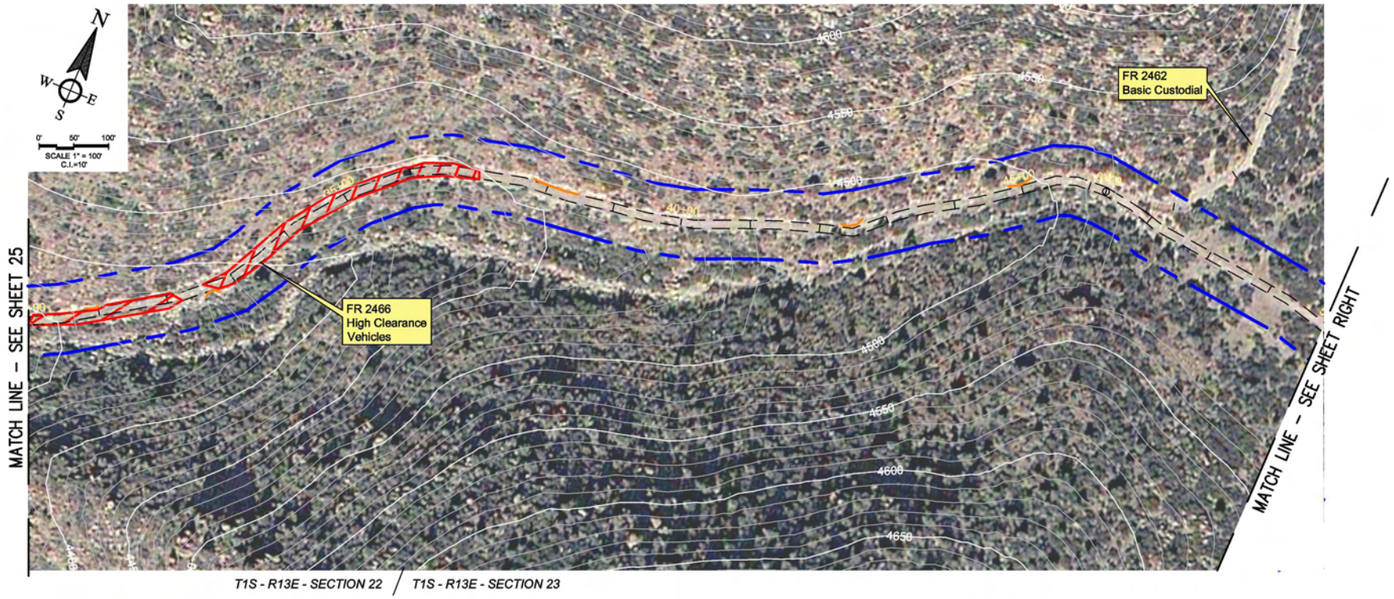
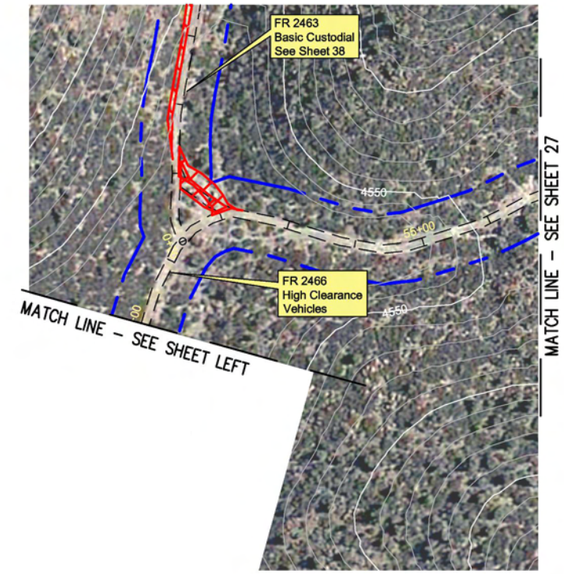
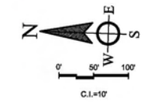


T1S - R13E - SECTION 22 / T1S - R13E - SECTION 23



T1S - R13E - SECTION 23



Equipment List

- Track Hoe
- Hammer Hoe
- Front End Loader
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead Rotary Drill Rig Or Equivalent
- Schram 685 Rotary Drill Rig
- UDR-5000 Core Drill Rig
- CP-50 Core Drill Rig
- UDR-1500 Core Drill Rig
- Pipe Trucks
- Backhoe
- Water Truck
- Cat Bulldozer

This Sheet:

- Minimal New Surface Disturbance - Grading Existing Road and Widening Tight Areas with Track Hoe
- Providing New Roadway Segment Connecting FR-2466 and FR 2463
- Rock Removed From Excavation of H-G Will Be Used to Dress Road Surface
- Arizona Hedgehog Cacti to be Fenced and Protected with Cactus Guards
- A Biological Monitor will be Present During Clearing and Grading Activities

FR 2466 PROFILE

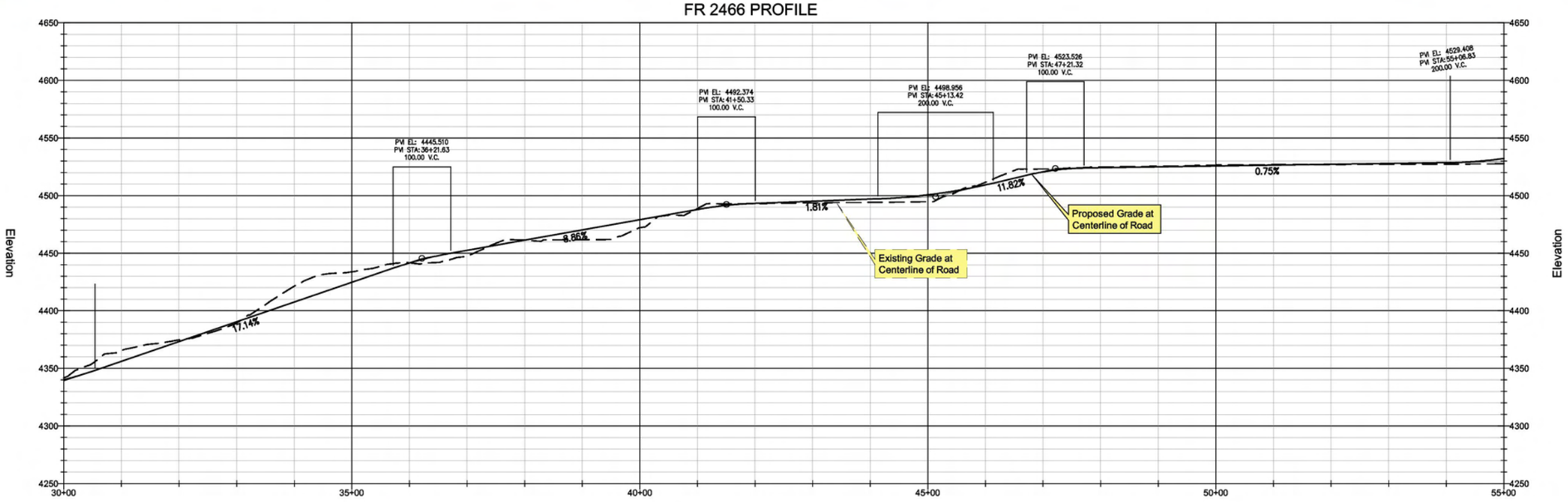


Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

2- High Clearance Vehicles - assigned to roads operated for use by high clearance vehicles

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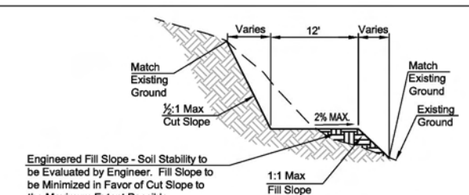
4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

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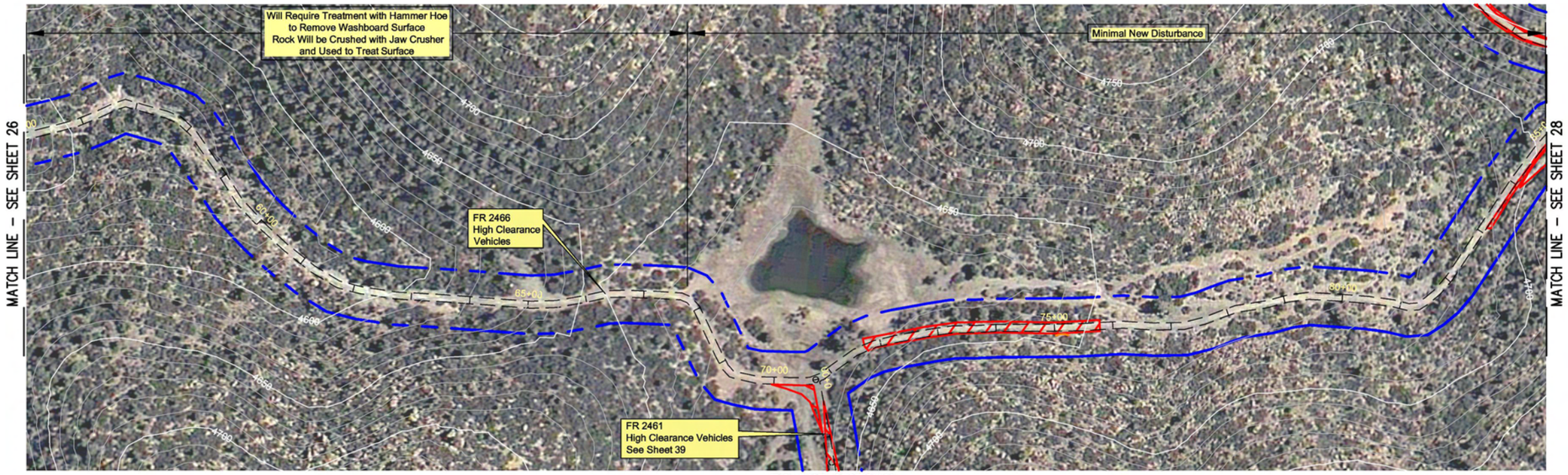
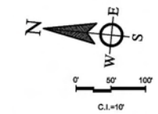
RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 2466 And FR 2463 Improvements
Access to Tunnel Borehole PVT-6 and Areas South





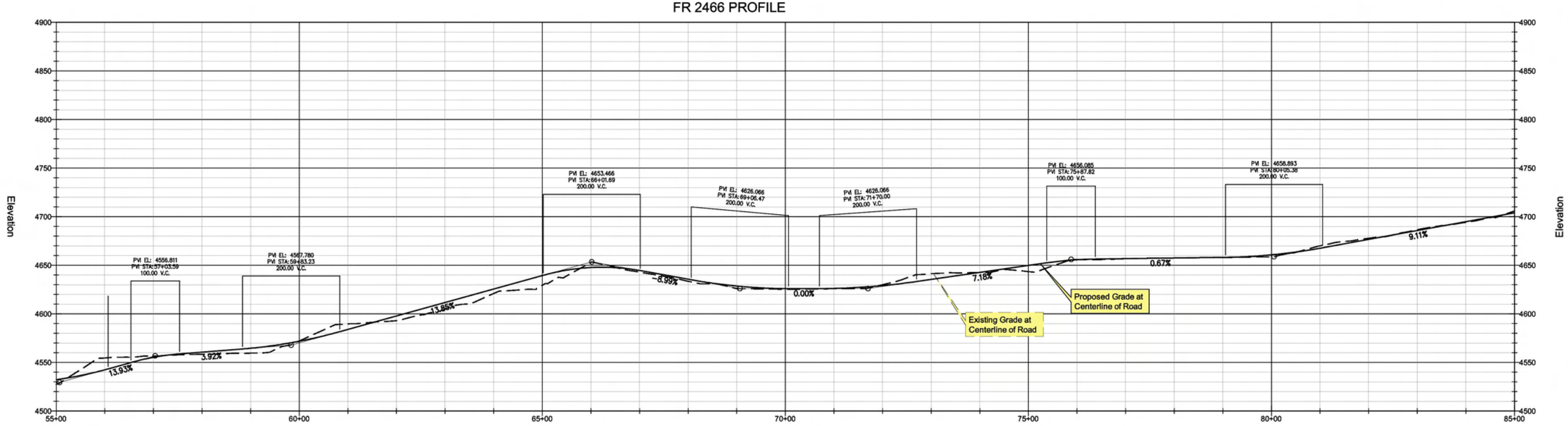
Equipment List

- Track Hoe
- Hammer Hoe
- Front End Loader
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead Rotary Drill Rig Or Equivalent
- Schram 685 Rotary Drill Rig
- UDR-5000 Core Drill Rig
- CP-50 Core Drill Rig
- UDR-1500 Core Drill Rig
- Pipe Trucks
- Backhoe
- Water Truck
- Cat Bulldozer

This Sheet:

- Portions of Road Are Rough with No Rocks to Break or Crush
- Reworking of Roadway Material Required - Possibly Bringing Fill from Upper Portions of Road
- Clearing and Grading for H-C Pad
- Arizona Hedgehog Cactus to be Fenced and Protected with Cactus Guards
- A Biological Monitor will be Present During Clearing and Grading Activities

FR 2466 PROFILE



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Topographical Source: USGS NED Dataset
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- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

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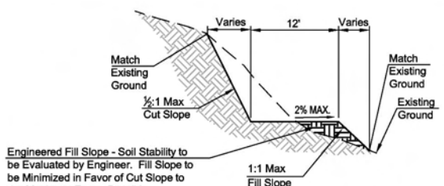

Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 2466 And FR 2461 Improvements

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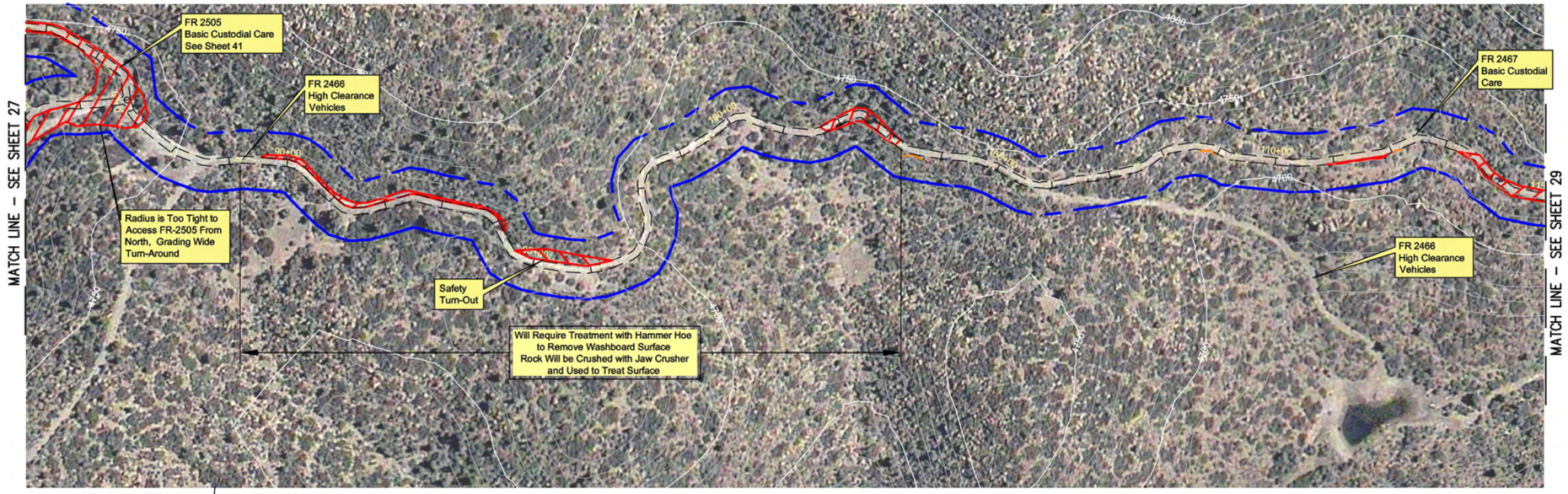

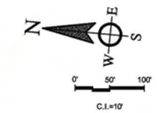

Equipment List

- Track Hoe
- Hammer Hoe
- Front End Loader
- Tracked Jaw Crusher
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- Schram 685 Rotary Drill Rig
- UDR-5000 Core Drill Rig
- CP-50 Core Drill Rig
- UDR-1500 Core Drill Rig
- Pipe Trucks
- Backhoe
- Water Truck
- Cat Bulldozer

This Sheet:

- Portions of Road Will Need Significant Treatment with Hammer Hoe to Remove Washboard Surface
- Rock Will Be Crushed with Jaw Crusher and Used to Treat Surface
- Three-Way Intersection Will Be Widened to Improve Radius for Access to FR 2505
- Remaining Areas Will Require Little Disturbance
- Arizona Hedgehog Cacti to be Fenced and Protected with Cactus Guards
- A Biological Monitor Will Be Present During Clearing and Grading Activities

FR 2466 PROFILE

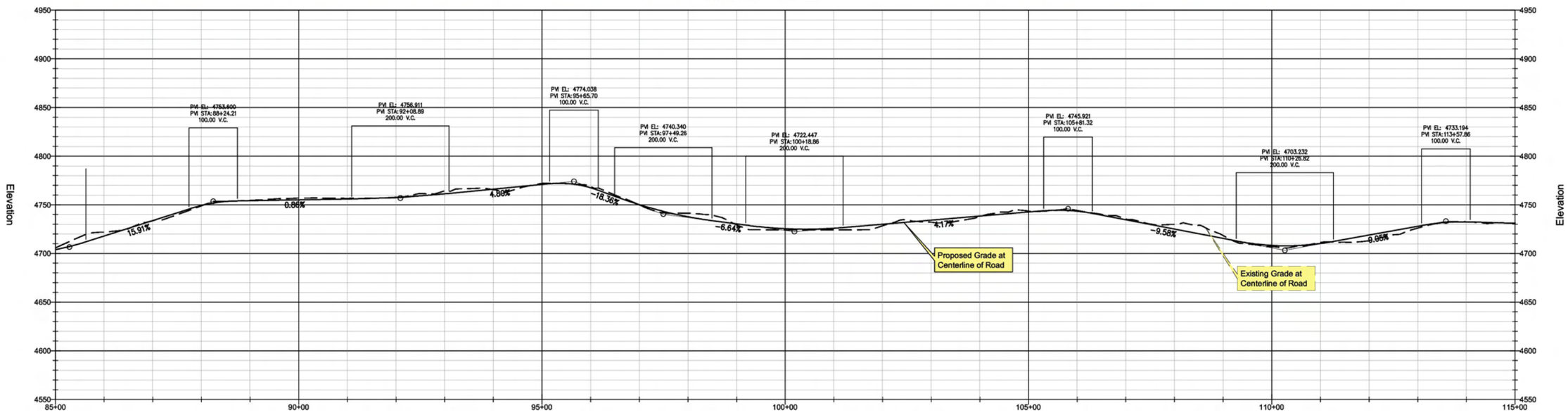

Image Source: Digit. Globe QuickBird Dataset
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Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
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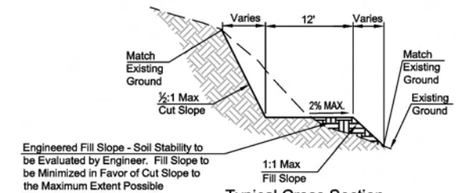

Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 2466 And FR 2467 Improvements

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

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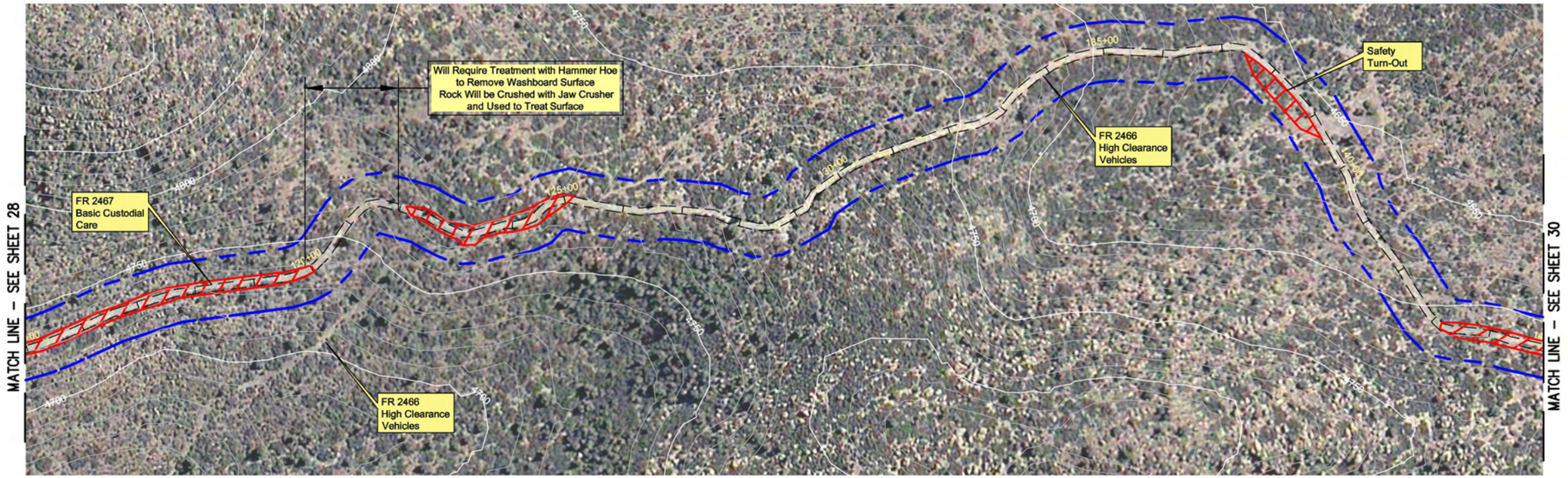
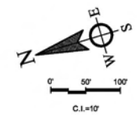




Equipment List

- Track Hoe
- Hammer Hoe
- Front End Loader
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead Rotary Drill Rig Or Equivalent
- Schram 685 Rotary Drill Rig
- UDR-5000 Core Drill Rig
- CP-50 Core Drill Rig
- UDR-1500 Core Drill Rig
- Pipe Trucks
- Backhoe
- Water Truck
- Cat Bulldozer

This Sheet:

- Area Will Need Significant Treatment with Hammer Hoe Ram to Remove Washboard Surface
- Rock Will Be Crushed With Jaw Crusher and Used to Treat Surface
- Remaining Area Will Require Little Disturbance

FR 2467 and FR 2466 PROFILE

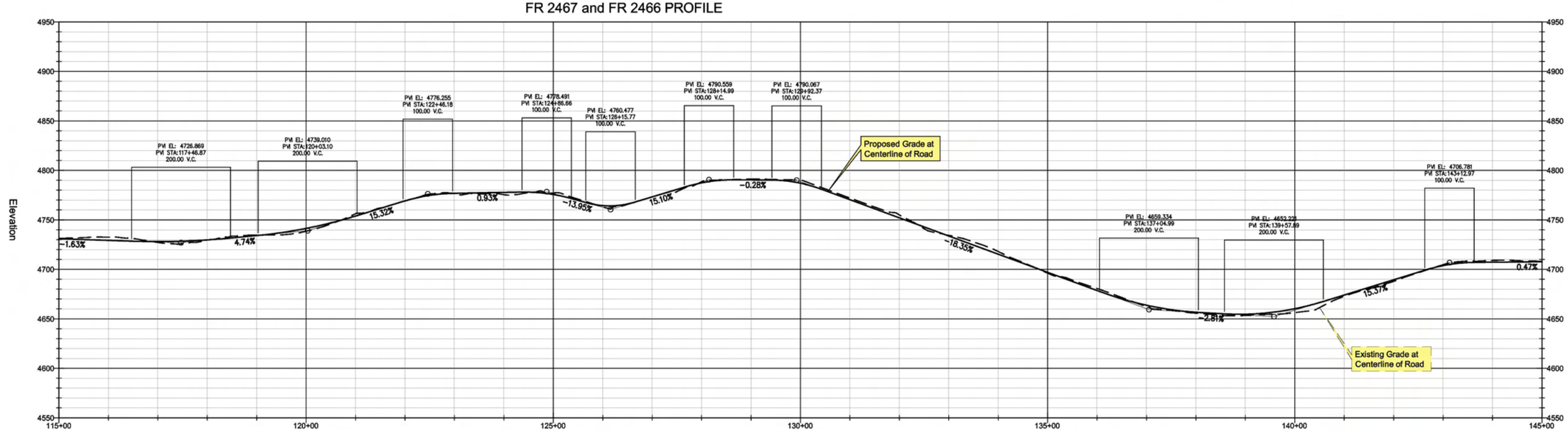


Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

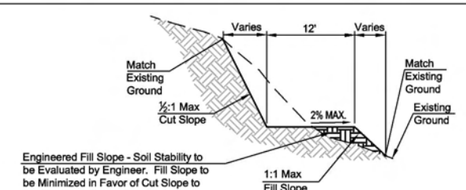
1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

2- High Clearance Vehicles - assigned to roads operated for use by high clearance vehicles

3- Suitable for Passenger Cars - assigned to roads operated and maintained for travel by a prudent driver in a standard passenger car

4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

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RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 2466 And FR 2467 Improvements

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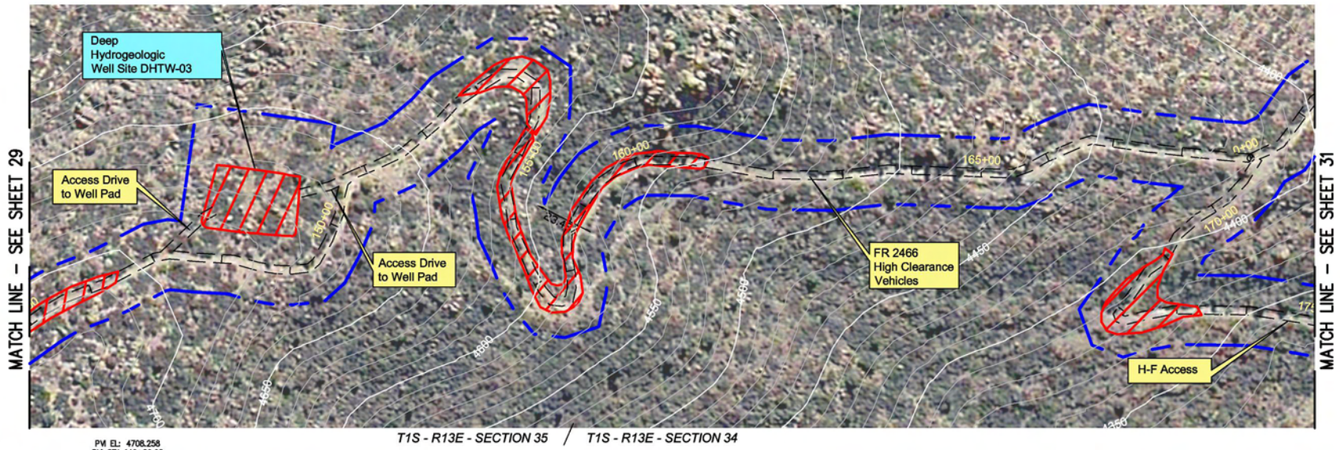

Equipment List

- Track Hoe
- Hammer Hoe
- Front End Loader
- Water Truck
- Tracked Jaw Crusher
- UDR-5000 Core Drill Rig
- CP-50 Core Drill Rig
- Lang LM-140 Series Tophead Rotary Drill Rig Or Equivalent
- Schram 685 Rotary Drill Rig
- Pipe Trucks
- Mud Tank
- Water Storage Tank
- Generators For Drill Rigs
- Cat Bulldozer

This Sheet:

- Minimimal New Surface Disturbance - Grading of Existing Road
- Widening of Tight Spots with Track Hoe
- Clearing and Grading for DHTW-03 Pad
- Boulders Removed for Drill Pad Placement WIll Be Replaced Upon Completetion of Activities
- Rock Removed From Excavation of Drill Site DHTW-03 Will Be Crushed and Used to Dress Road Surface

FR 2466 and H-F ACCESS PROFILE

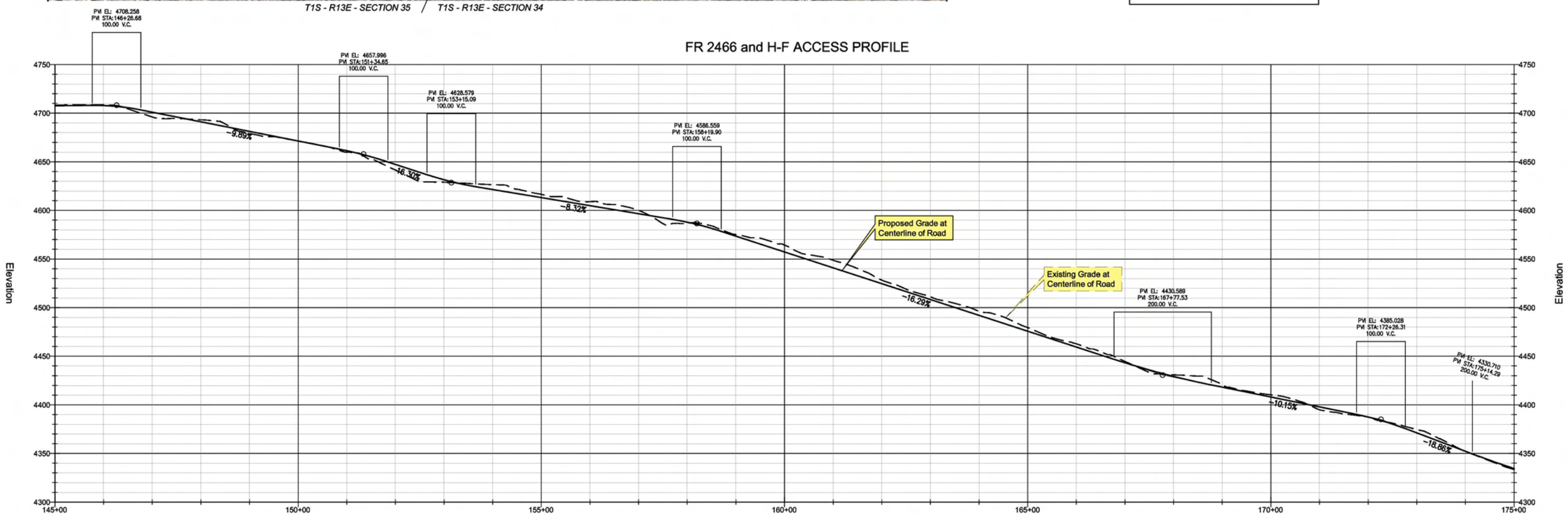

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

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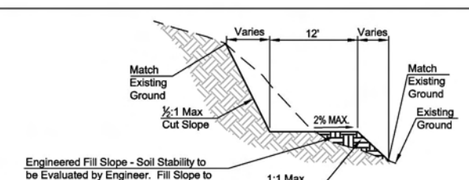
4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
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RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
Improvements to FR 2466 and Unidentified Road
Access To Shallow Well Site H-F
and DHTW-03

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Equipment List

- Track Hoe
- Hammer Hoe
- Front End Loader
- Water Truck
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead Rotary Drill Rig Or Equivalent
- Mud Tank
- Heavy Duty Air Compressor
- Pipe Trucks
- Water Storage Tank
- Generators For Drill Rig
- Backhoe

This Sheet:

- Minimimal New Surface Disturbance - Grading of Existing Road
- Widening of Tight Spots with Track Hoe
- Rock Removed From Excavation of Drill Site DHTW-03 Will Be Crushed and Used to Dress Road Surface
- Stretch of Road will be Cut to By-Pass Hair-Pin Turns
- Clearing and Grading for H-F Pad

H-F ACCESS PROFILE

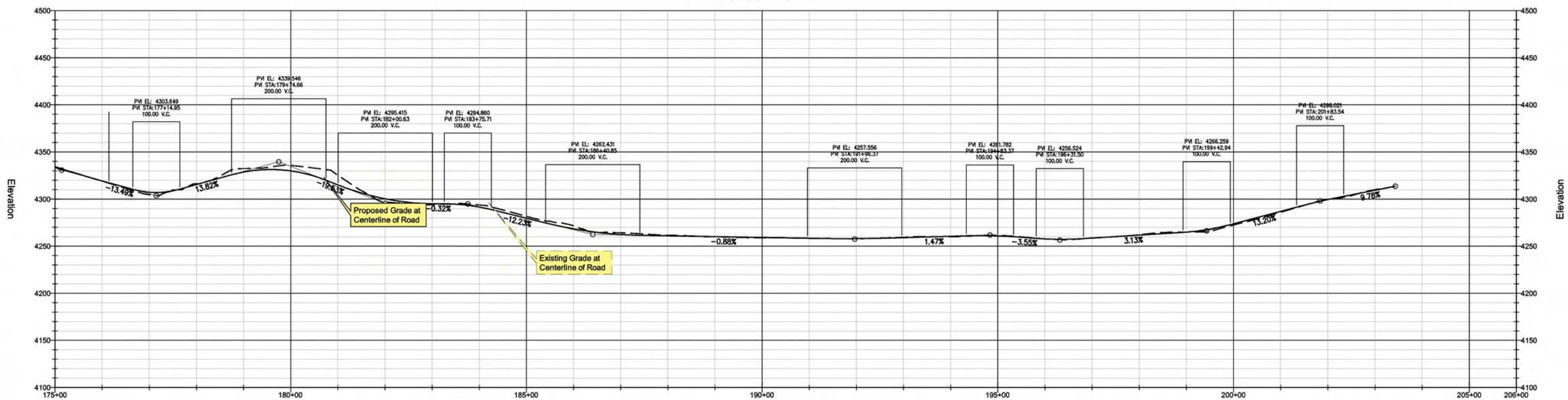

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

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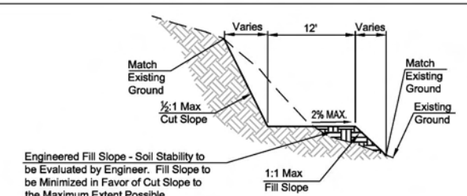
4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

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Engineering and Environmental Consultants
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Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
Improvements to Unidentified Road
Access to Shallow Well Site H-F

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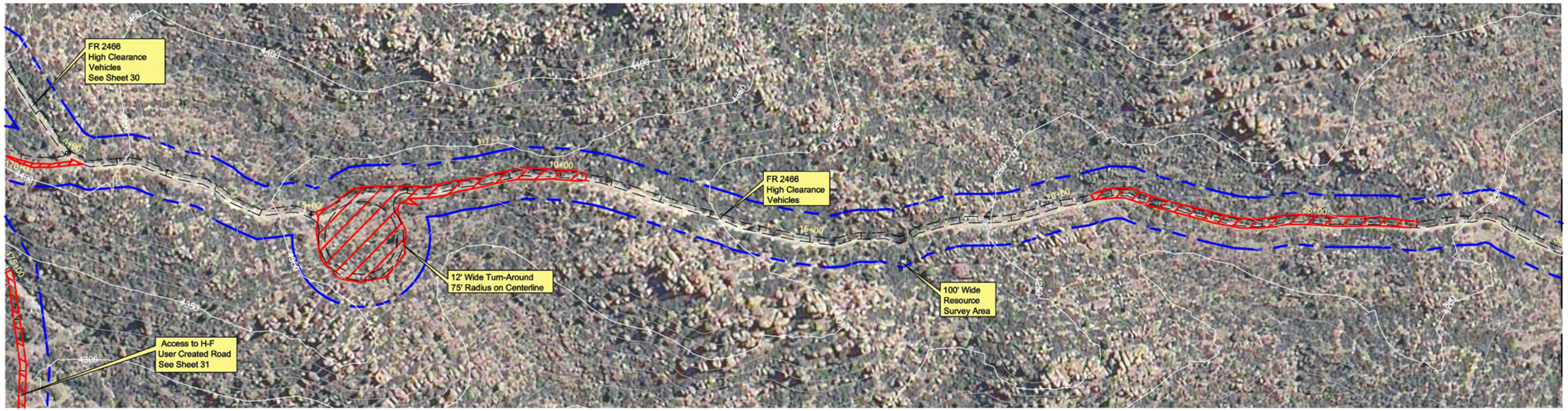

T1S - R13E - SECTION 34

N E S W

0' 50' 100'

C.I.=10'

Equipment List

Lang LM-140 Series Tophead
Rotary Drill Rig Or Equivalent
Pipe Trucks
Front End Loader
Backhoe
Tracked Jaw Crusher
Water Truck
Track Hoe

This Sheet:

- Minimimal New Surface Disturbance - Grading of Existing Road
- Widening of Tight Spots with Track Hoe
- Creating 12' Wide Turnaround

FR 2466 PROFILE

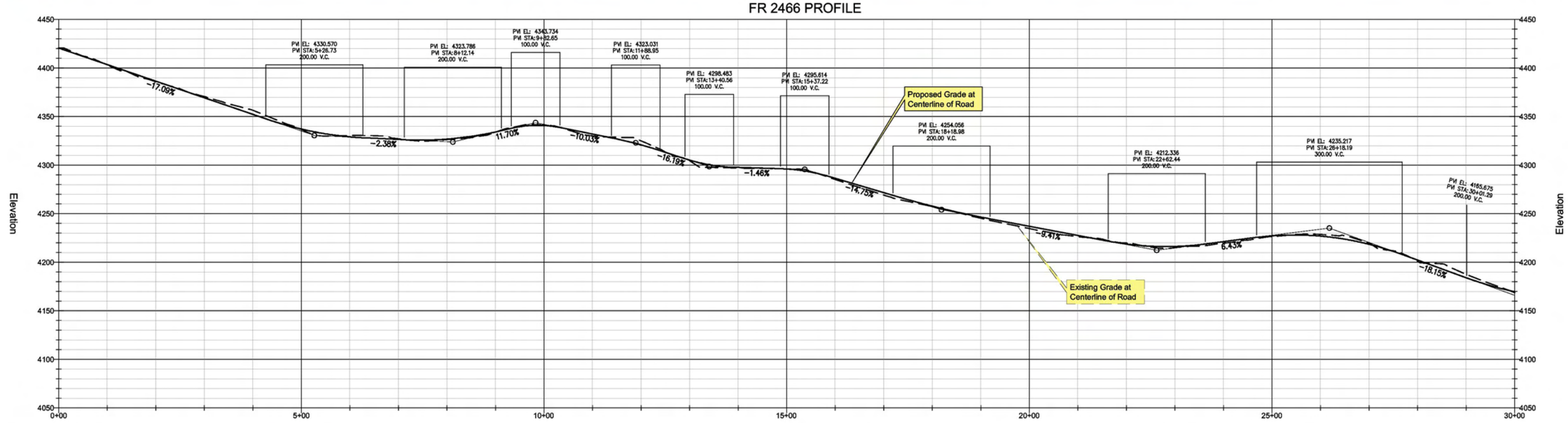

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
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PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

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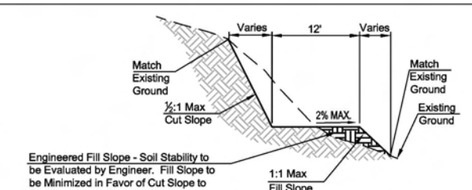
5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 2466 Improvements

WestLand Resources Inc.
Engineering and Environmental Consultants
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Tucson, Az 85712 (520) 206-9585

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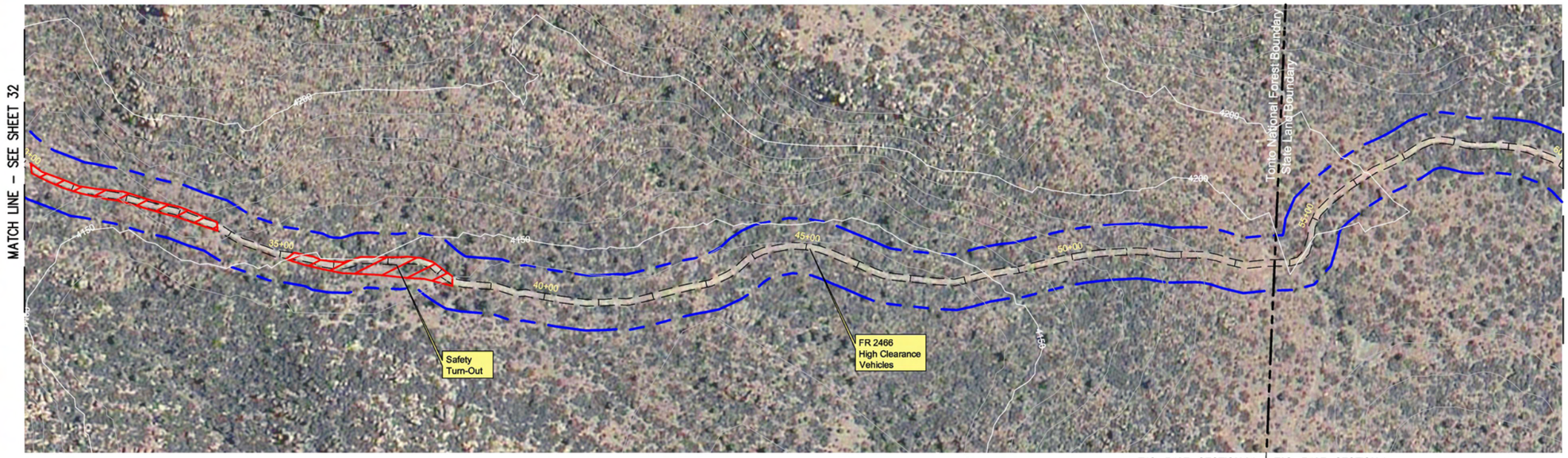

Equipment List

- Lang LM-140 Series Tophead
- Rotary Drill Rig or Equivalent
- Pipe Trucks
- Front End Loader
- Backhoe
- Tracked Jaw Crusher
- WaterTruck
- Track Hoe

This Sheet:

- Minimimal New Surface Disturbance - Grading of Existing Road
- Widening of Tight Spots with Track Hoe
- Safety Turnout

FR 2466 PROFILE

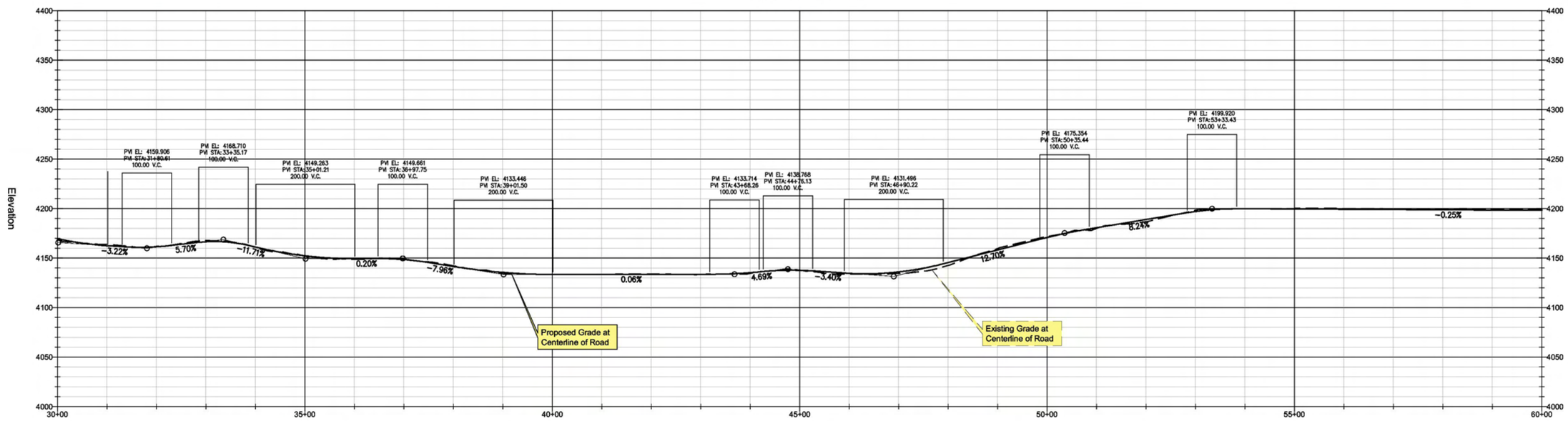

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
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Legend

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  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
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- Resource Survey Area -
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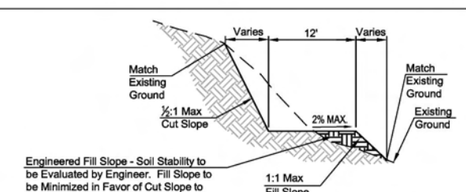

Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

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4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 2466 Improvements

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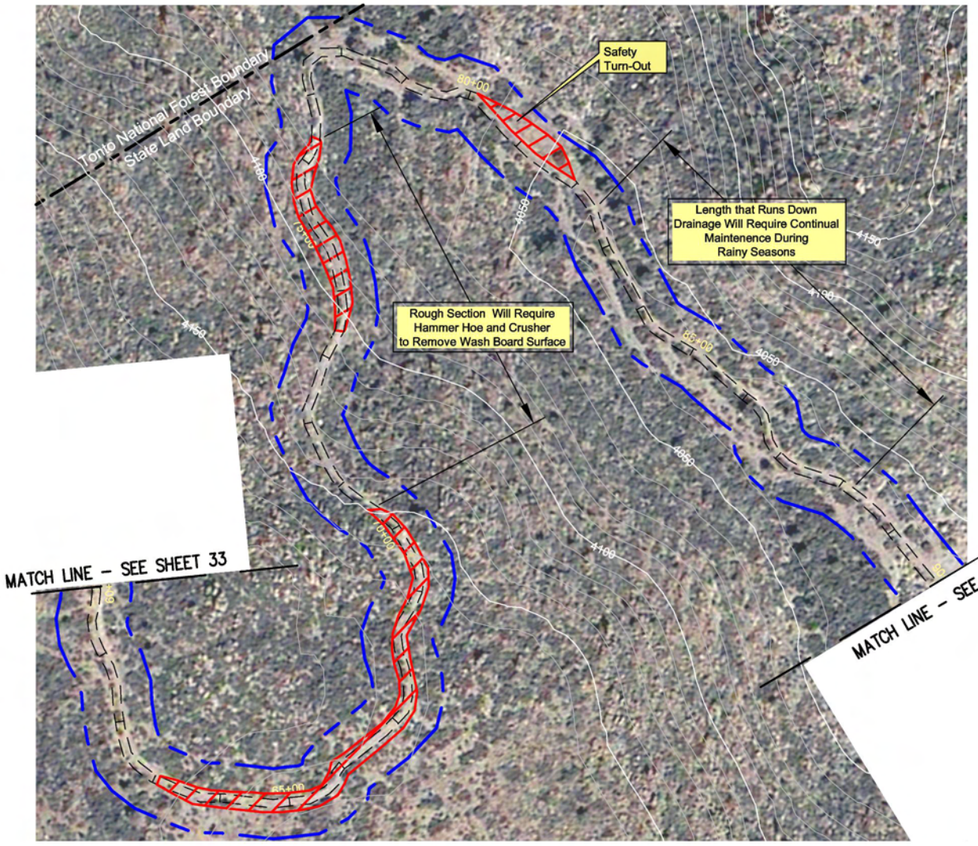

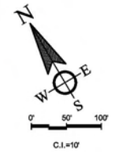

Equipment List

Lang LM-140 series Tophead Rotary Drill Rig or equivalent
Pipe Trucks
Front End Loader
Backhoe
Tracked Jaw Crusher
Water Truck
Hammer Hoe
Track Hoe

This Sheet:

- Rough Section - Will Require Hammer Hoe and Crusher to Remove Wash Board Length that Runs Down Drainage
- Will Require Continual Maintenance During Rainy Seasons
- Providing Safety Turn-out

EXTENSION FR 2466 PROFILE (OCCURS ON STATE LAND)

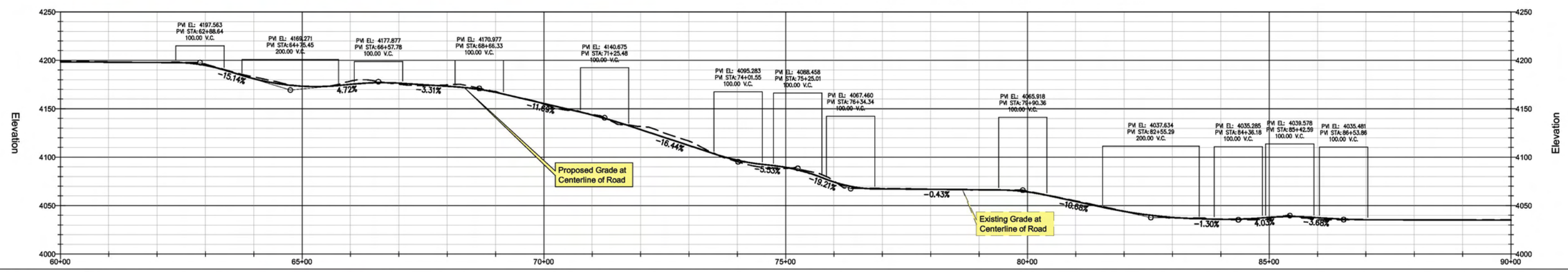

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
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Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

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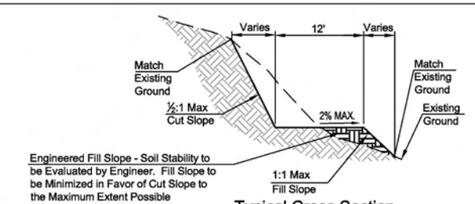
4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
Extension of FR 2466 on State Land

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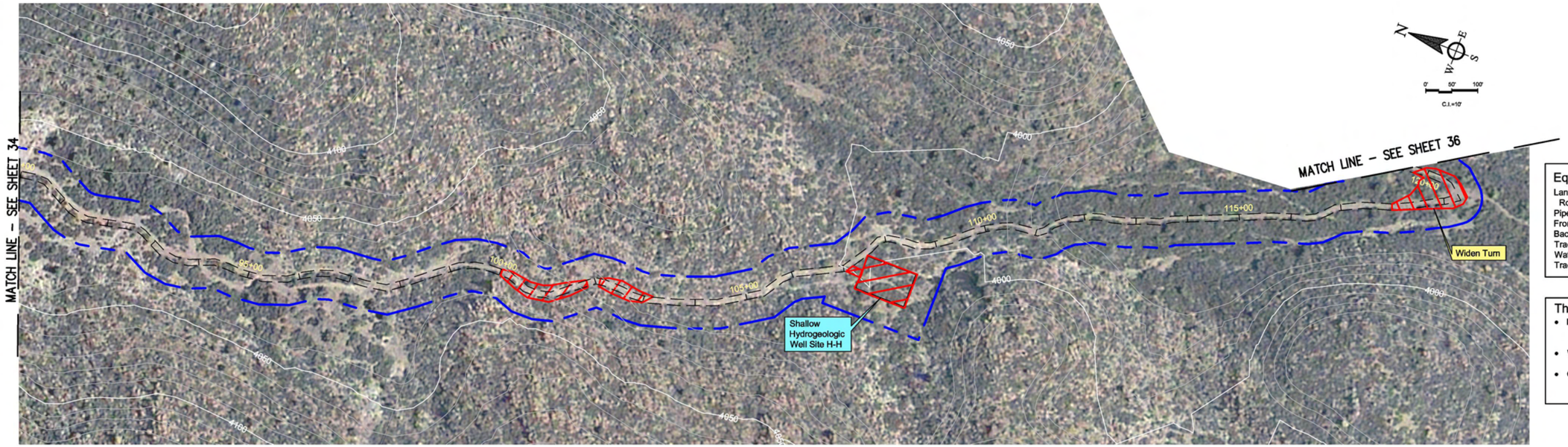

T2S - R13E - SECTION 4

Equipment List

Lang LM-140 series Tophead Rotary Drill Rig or equivalent
Pipe Trucks
Front End Loader
Backhoe
Tracked Jaw Crusher
Water Truck
Track Hoe

This Sheet:

- Minimimal New Surface Disturbance - Grading of Existing Road
- Widening of Tight Spots with Track Hoe
- Clearing and Grading for Placement of H-H on State Land

EXTENSION OF FR 2466 PROFILE (OCCURS ON STATE LAND)

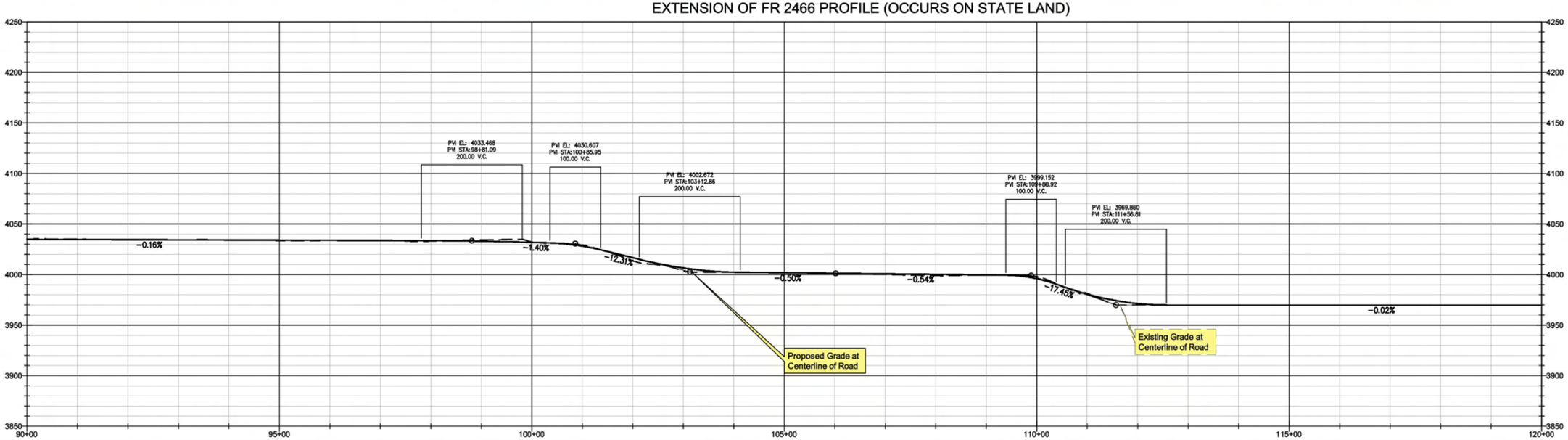

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
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Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

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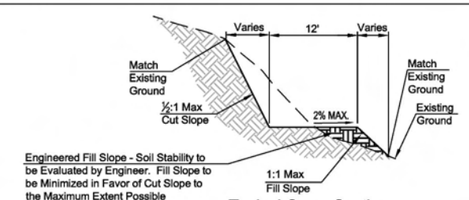

Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
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Tucson, Az 85712 (520) 206-9585

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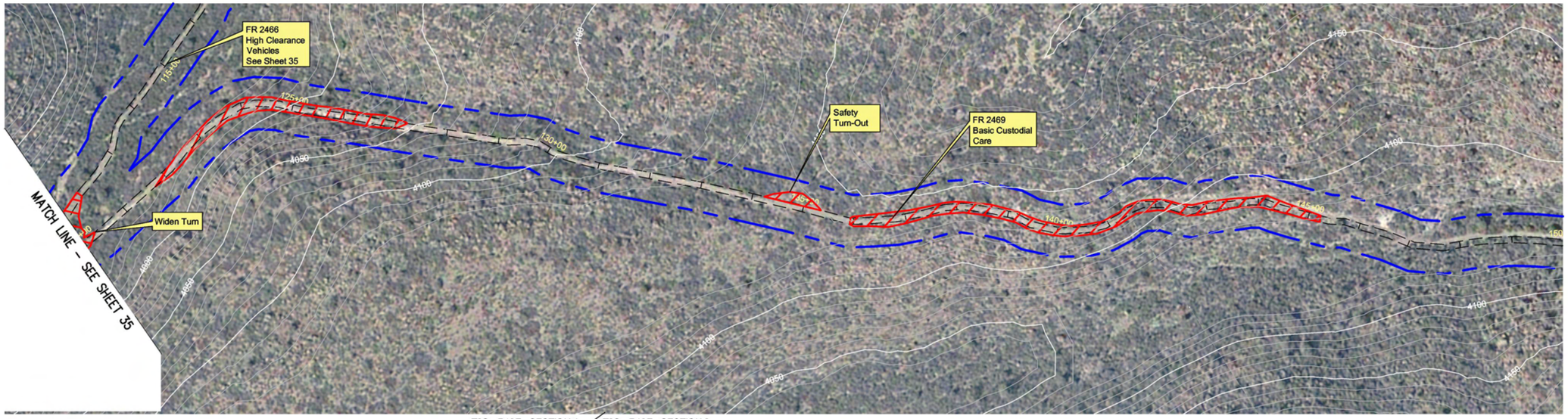
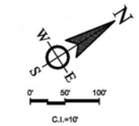
Resolution Pre-Feasibilty Activities
Extension of FR 2466 and Well Site H-H
on State Land





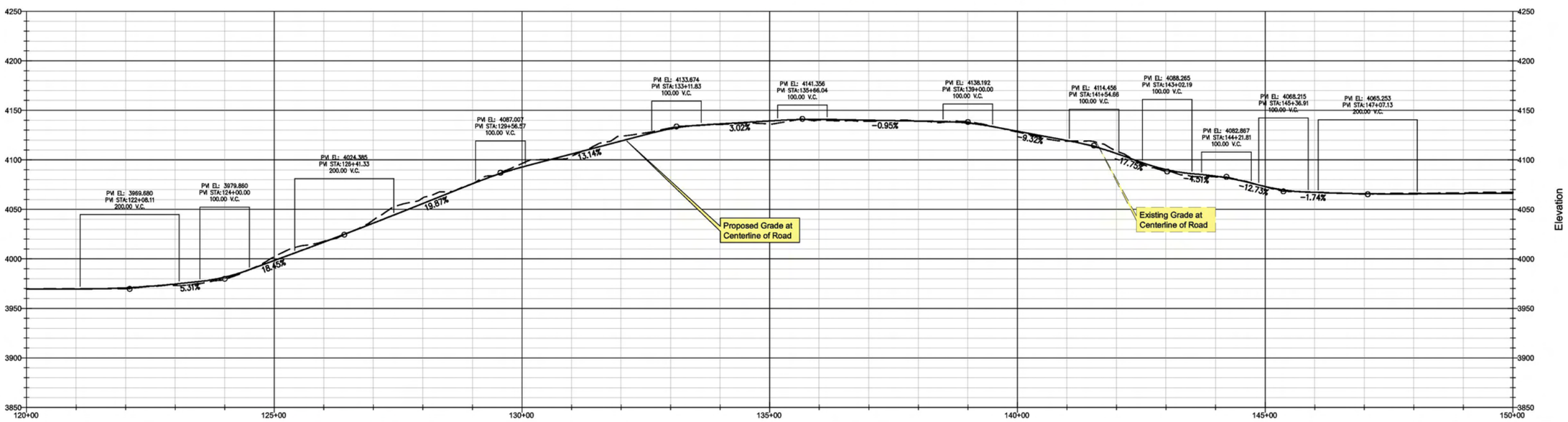
Equipment List

Lang LM-140 series Tophead Rotary Drill Rig or equivalent
Pipe Trucks
Front End Loader
Backhoe
Tracked Jaw Crusher
Water Truck
Track Hoe

This Sheet:

- Minimimal New Surface Disturbance - Grading of Existing Road
- Widening of Tight Spots with Track Hoe
- Providing Safety Turn-out

EXTENSION OF FR 2469 PROFILE (ON STATE LAND)



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Topographical Source: USGS NED Dataset
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PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
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- Resource Survey Area -
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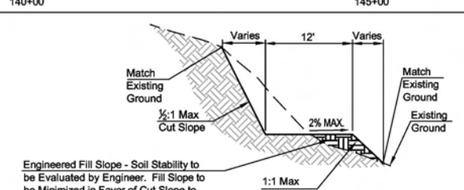
5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
Extension of FR 2466 and FR 2469
on State Land

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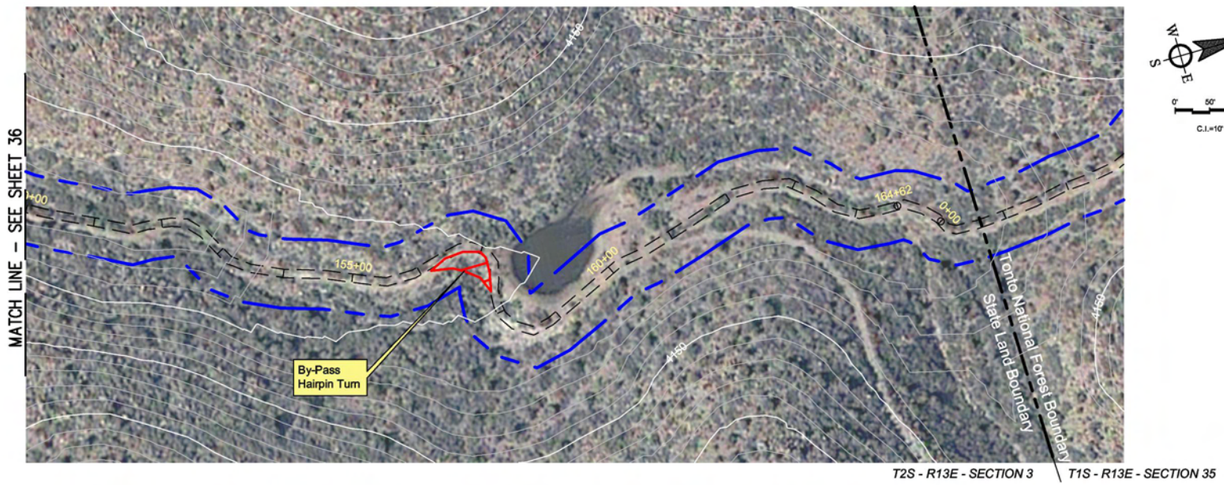
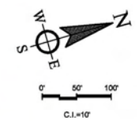




Equipment List

- Lang LM-140 series Tophead Rotary Drill Rig or equivalent
- Mud Tank
- Heavy Duty Air Compressor
- Pipe Trucks
- Water Storage Tank
- Generators for Drill Rig
- Front End Loader
- Backhoe
- Tracked Jaw Crusher
- Water Truck
- Track Hoe

This Sheet:

- Minimal New Surface Disturbance - Grading of Existing Road
- Adding Bypass to Hairpin Turn

EXTENSION OF FR 2469 PROFILE (ON STATE LAND)

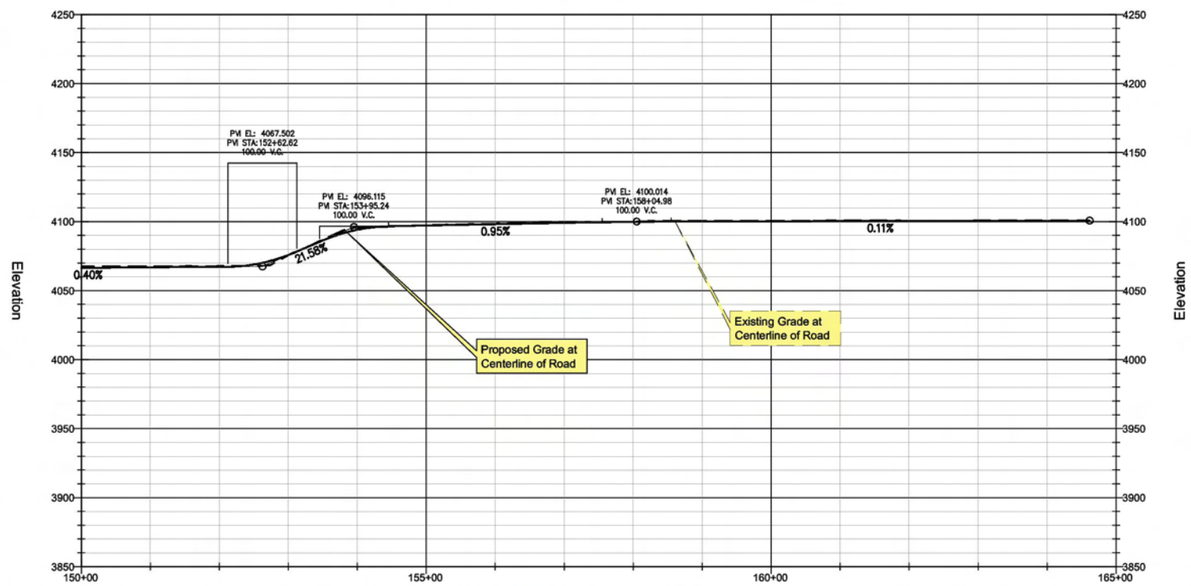


Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

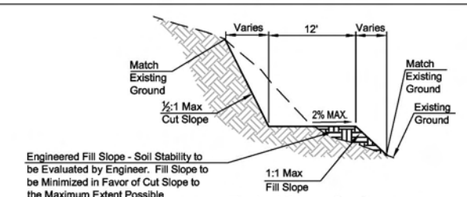
1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

2- High Clearance Vehicles - assigned to roads operated for use by high clearance vehicles

3- Suitable for Passenger Cars - assigned to roads operated and maintained for travel by a prudent driver in a standard passenger car

4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
Extension of FR 2469
On State Land

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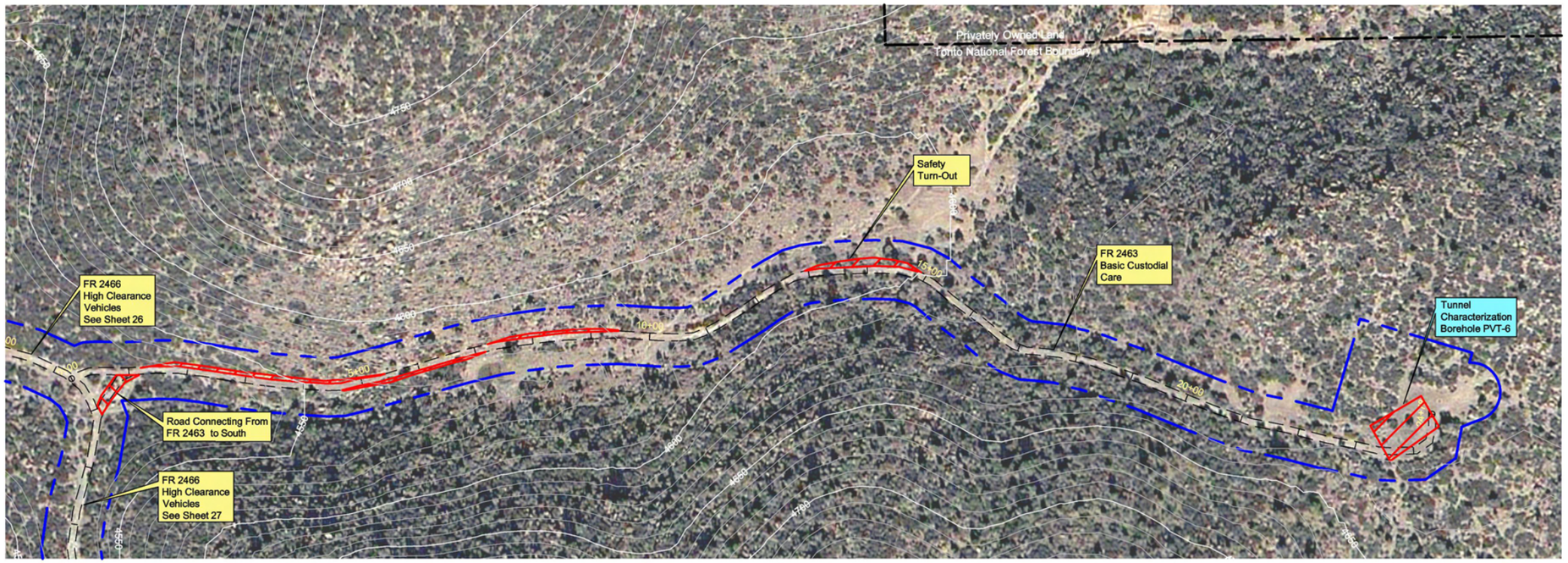
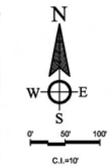


T1S - R13E - SECTION 23



Equipment List

- Track Hoe
- Hammer Hoe
- Front end Loader
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead Rotary Drill Rig or equivalent
- Schram 685 Rotary Drill Rig
- UDR-1500 Core Drill Rig
- Mud Tank
- Pipe Trucks
- Water Storage Tank
- Generators for Drill Rig
- Cat Bulldozer

This Sheet:

- Minimal New Surface Disturbance - Grading of Existing Road
- Providing Safety Turn-out
- Adding Segment to Connect FR 2463 to FR 2466 South
- Clearing and Grading for PVT-6 Pad
- Arizona Hedgehog Cacti Will Be Avoided
- A Biological Monitor Will Be Present During Clearing and Grading Activities

FR 2463 PROFILE

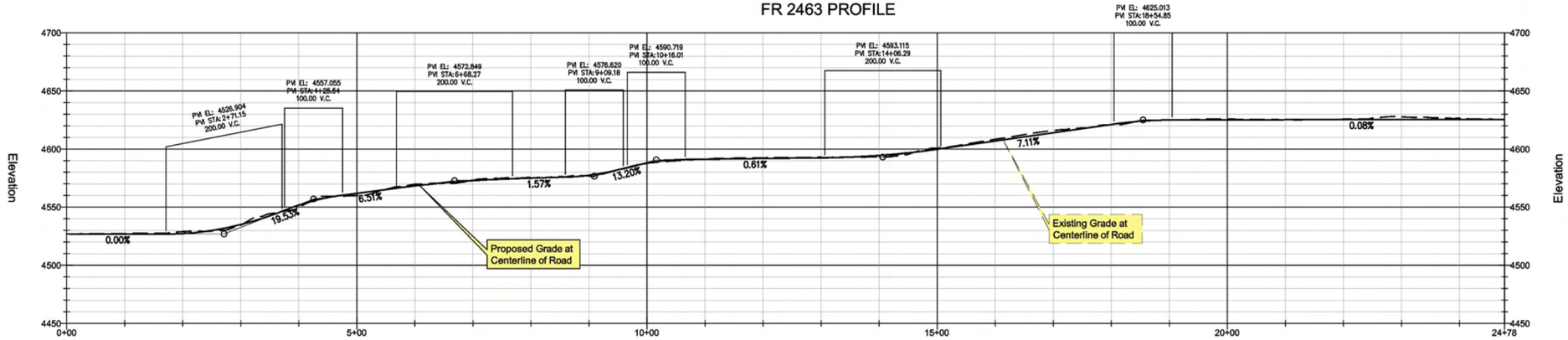


Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

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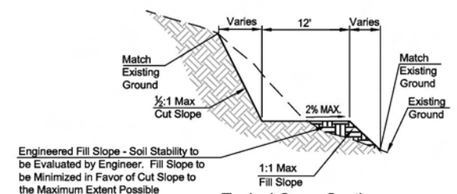
4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 2466 and FR 2463 Improvements
Access To PVT-6

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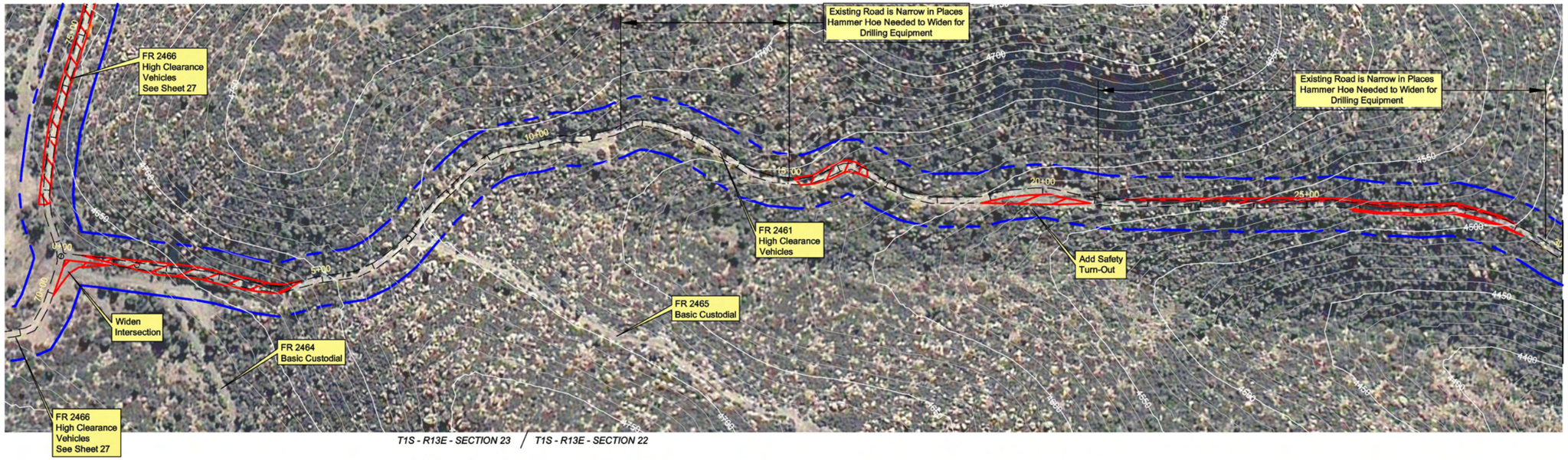

Equipment List

- Track Hoe
- Hammer Hoe
- Front End Loader
- Water Truck
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead Rotary Drill Rig or Equivalent
- Schram 685 Rotary Drill Rig
- UDR-1500 Core Drill Rig
- Pipe Trucks
- Cat Bulldozer
- Water Truck

This Sheet:

- Existing Road is Narrow in Places - Using Hammer Hoe to Widen for Equipment Access
- Widening Intersection of FR 2461 and FR 2466 South
- Arizona Hedgehog Cacti Will Be Avoided
- A Biological Monitor Will Be Present During Clearing and Grading Activities Adjacent to Hedgehog Cacti

FR 2461 PROFILE

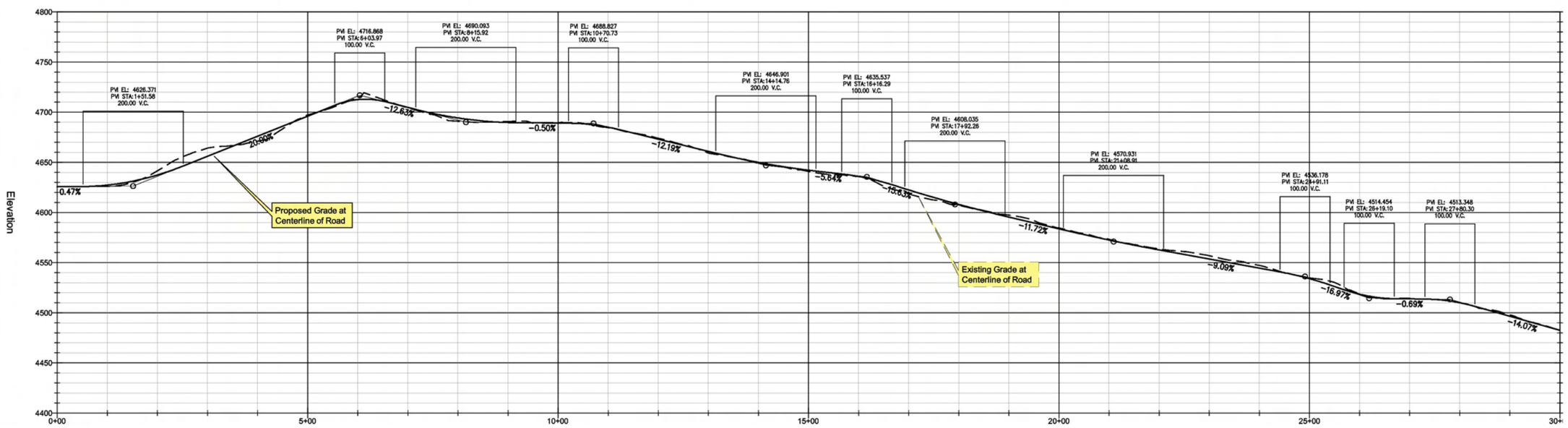

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

2- High Clearance Vehicles - assigned to roads operated for use by high clearance vehicles

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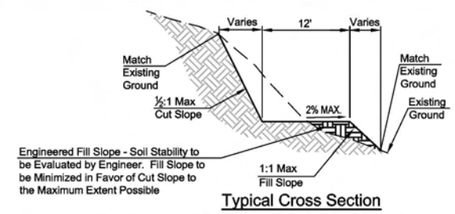
4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 2466 and FR 2461 Improvements
Access To PVT-5

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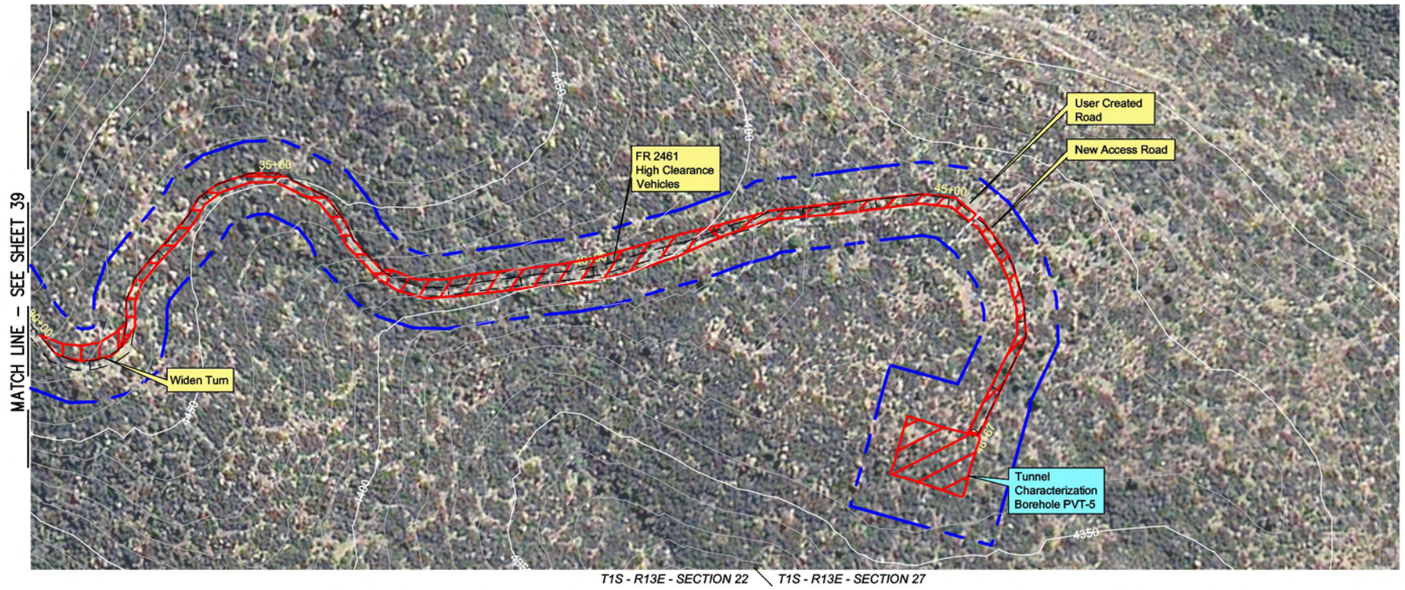

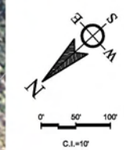

Equipment List

- Track Hoe
- Hammer Hoe
- Front EndLoader
- Water Truck
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead
- Rotary Drill Rig or Equivalent
- Schram 685 Rotary Drill Rig
- UDR-1500 Core Drill Rig
- Mud Tank
- Pipe Trucks
- Water Storage Tank
- Generators for Drill Rig
- Cat Bulldozer
- Water Truck

This Sheet:

- This Section Takes Advantage of an Existing Road
- Some Segments of Roadway Improvement May Require an Extra 3 Feet or More Cut for Required Width and Stability
- Clearing and Grading for PVT-5 Pad

PVT-5 ACCESS PROFILE

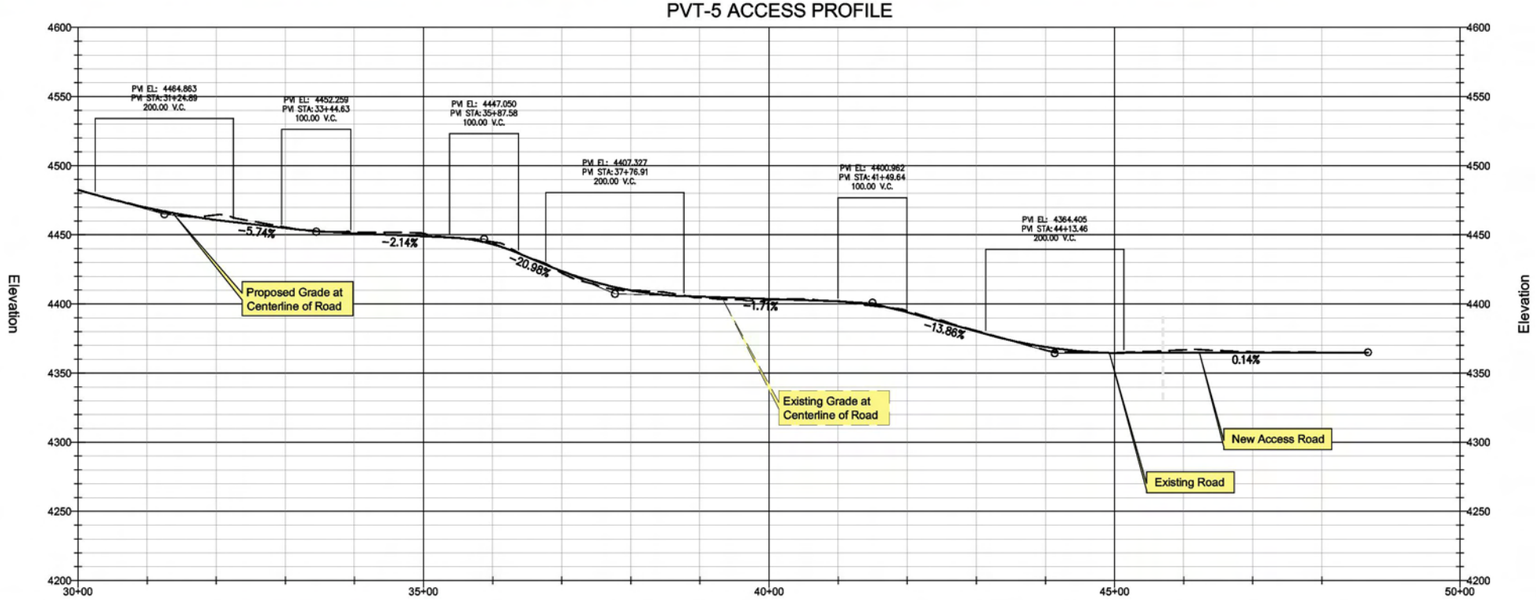

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

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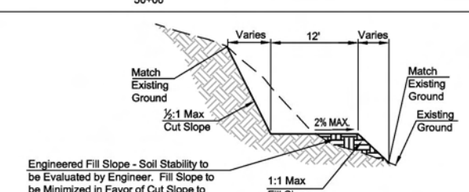
4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
New Access Road Segment
Access To PVT-5

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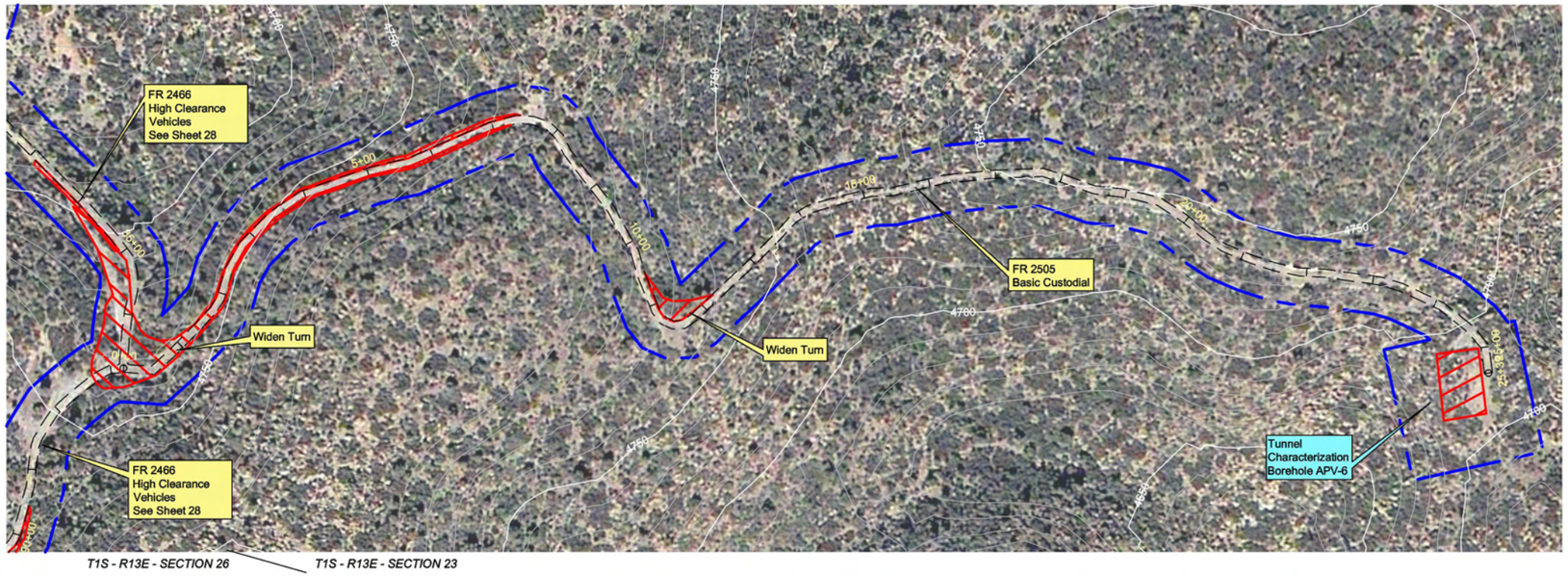

Equipment List

- Track Hoe
- Hammer Hoe
- Front End Loader
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead Rotary Drill Rig or Equivalent
- Schram 685 Rotary Drill Rig
- UDR-1500 Core Drill Rig
- Mud Tank
- Pipe Trucks
- Water Storage Tank
- Generators for Drill Rig
- Cat Bulldozer
- Water Truck

This Sheet:

- Minimal New Surface Disturbance - Grading of Existing Road
- Enlarging Junction of FR 2505 and FR 2466 to Prevent Hairpin Turn
- Clearing and Grading for APV-6 Pad

FR 2505 PROFILE

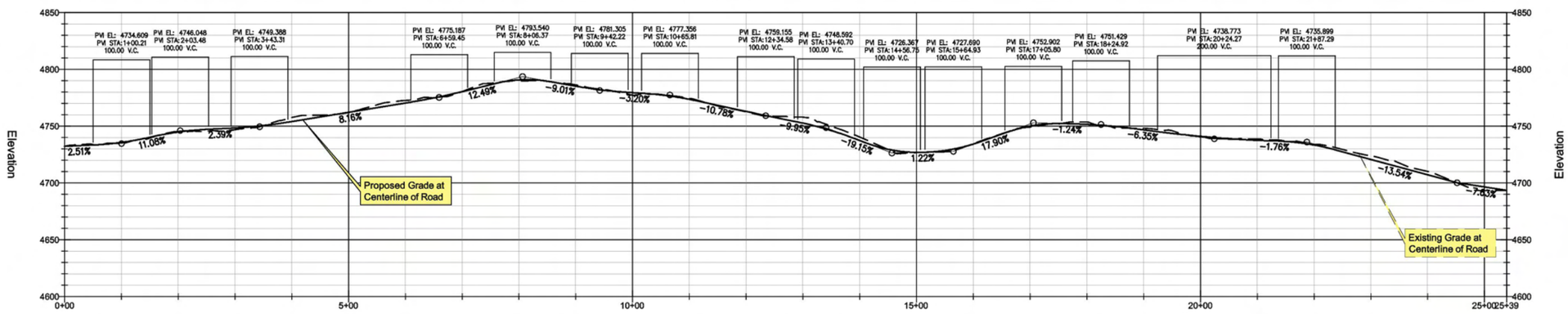

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

2- High Clearance Vehicles - assigned to roads operated for use by high clearance vehicles

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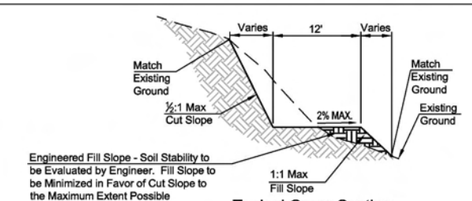
4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 2466 and FR 2505 Improvements
Access To APV-6

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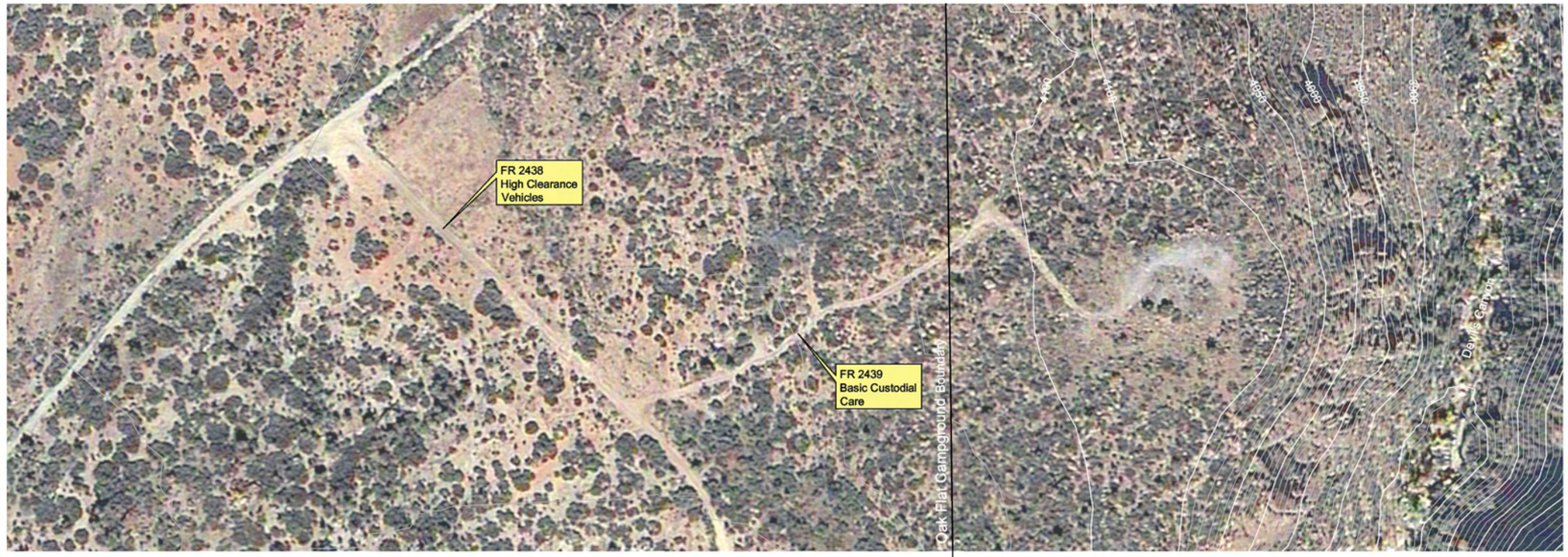

Note: Deep hydrogeological monitoring well DHTW-01 was relocated (see sheet 52).

FR 2439 PROFILE

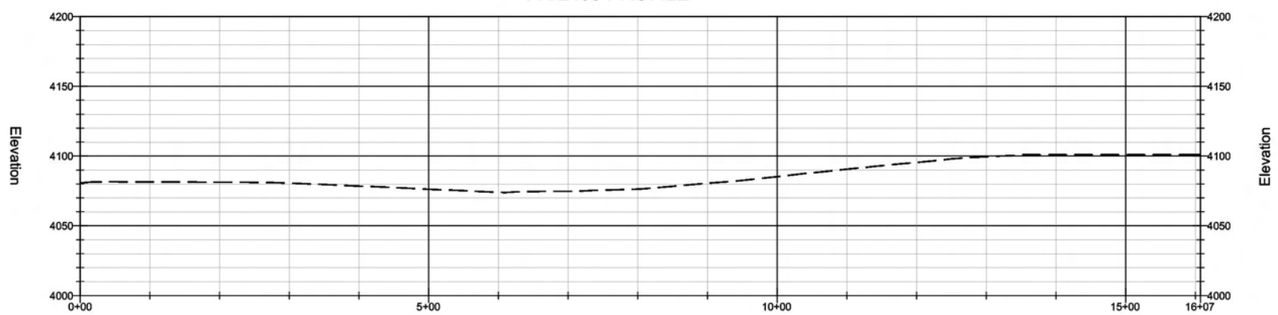

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

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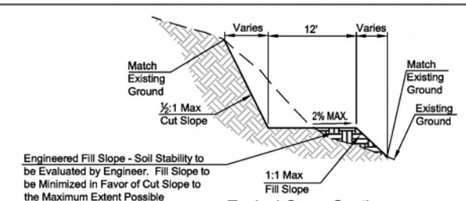
5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 2438 and FR 2439
Previously Proposed Access To DHTW-01

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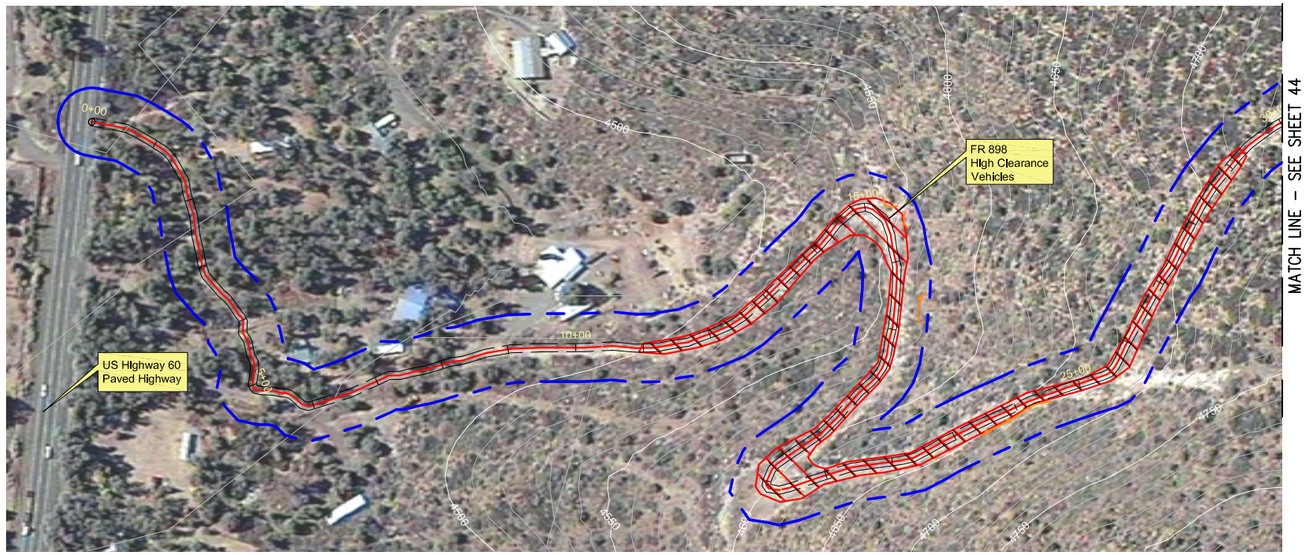
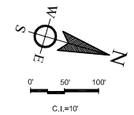


T1S - R13E - SECTION 14



Equipment List

- Track Hoe
- Hammer Hoe
- Front EndLoader
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead Rotary Drill Rig or equivalent
- Schram 685 Rotary Drill Rig
- UDR-1500 Core Drill Rig
- Pipe Trucks
- Water Truck
- Cat Bulldozer

This Sheet:

- Widening of Turns for Equipment
- Arizona Hedgehog Cacti Would Be Fenced and Protected with Cactus Guards
- A Biological Monitor Will Be Present During Grading and Clearing Activities
- No Adverse Effect Would Occur to Cultural Site AR-03-12-02-1403(TNF)

EXTENSION OF FR 898 PROFILE (ON PRIVATELY OWNED LANDS)

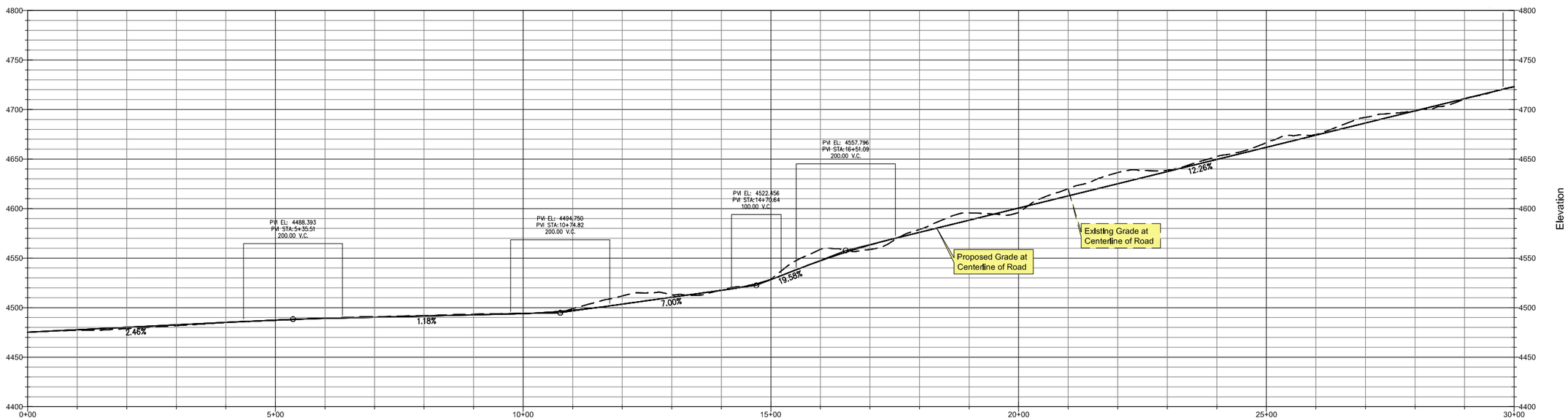


Image Source: DIgIt. Globe QuickBIrd Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

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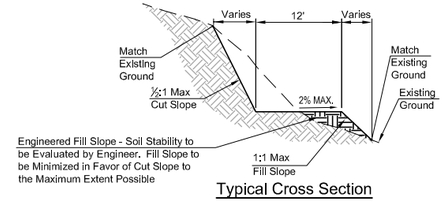
5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibility Activities
FR 898 Improvements
Access To Tunnel Borehole APV-8
on Privately Owned Lands

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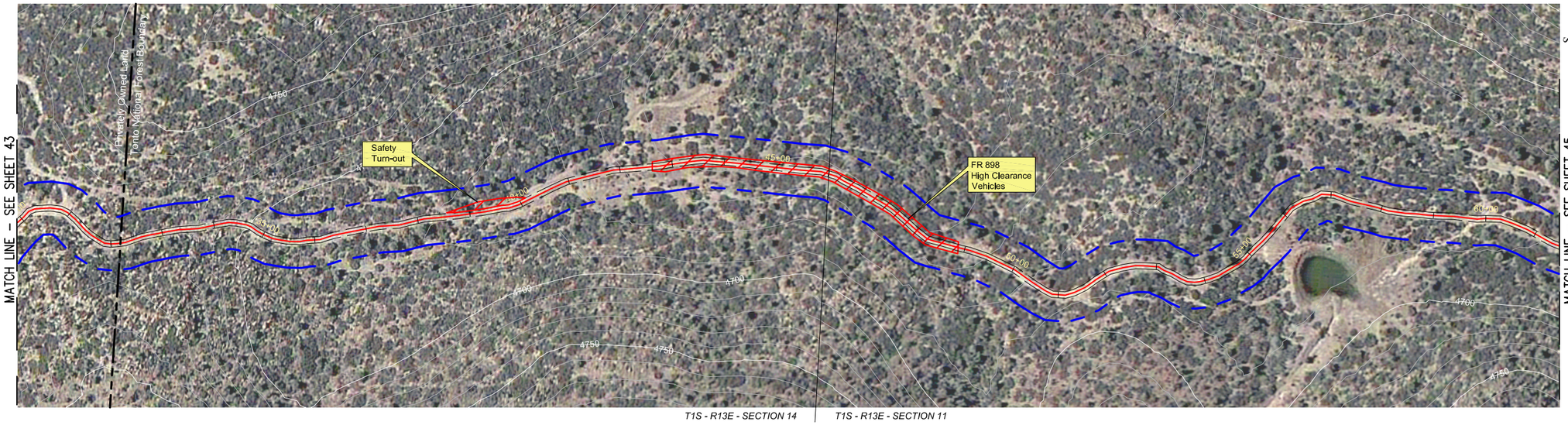

Equipment List

- Track Hoe
- Hammer Hoe
- Front End Loader
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead Rotary Drill Rig or Equivalent
- Schram 685 Rotary Drill Rig
- UDR-1500 Core Drill Rig
- Pipe Trucks
- Water Truck
- Cat Bulldozer

This Sheet:

- Providing Safety Turn-out
- Widening Portions of Road for Access
- Grading of Existing Road

FR 898 PROFILE

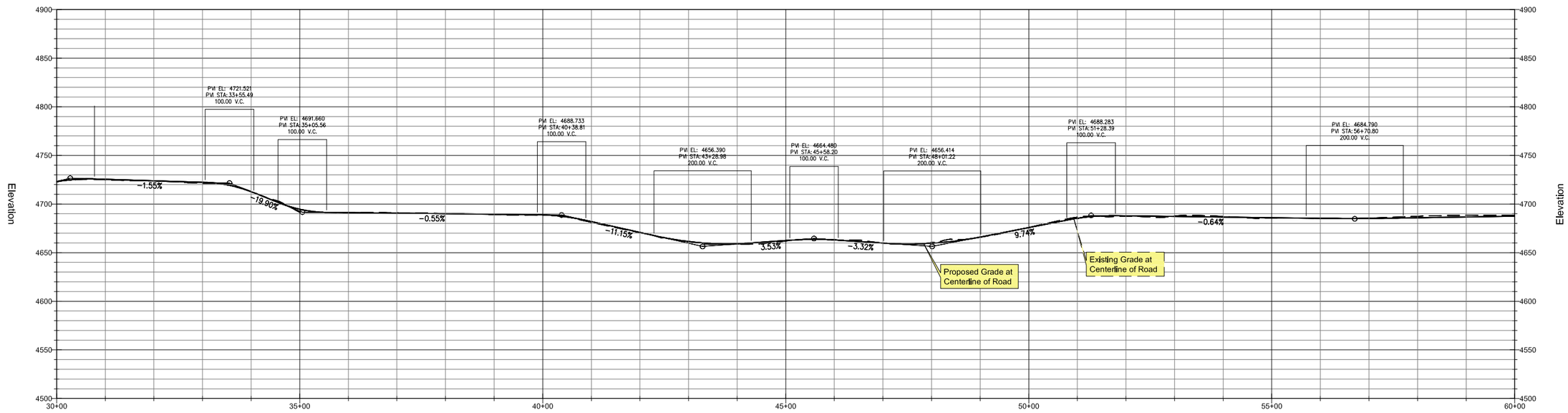

Image Source: DigIt, Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

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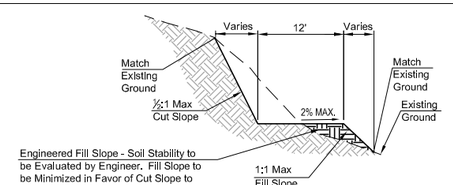
5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibility Activities
FR 898 Improvements
Access To Tunnel Borehole APV-8

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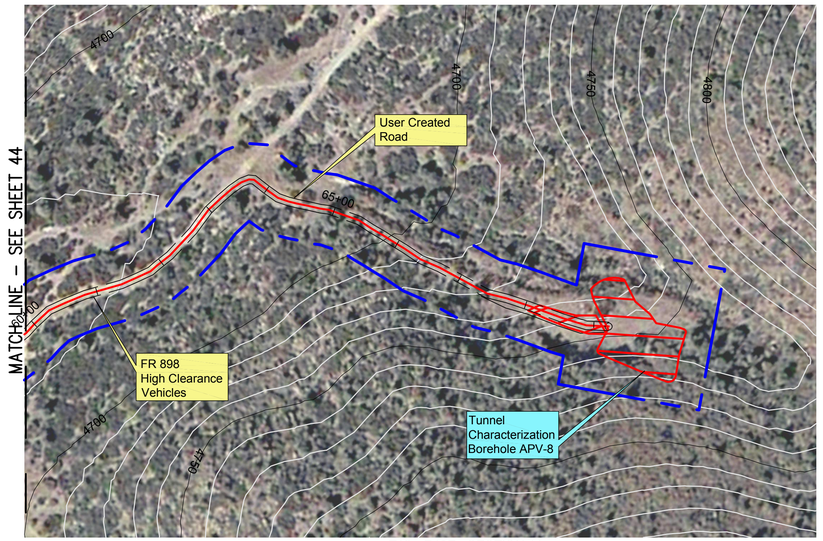
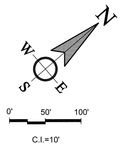
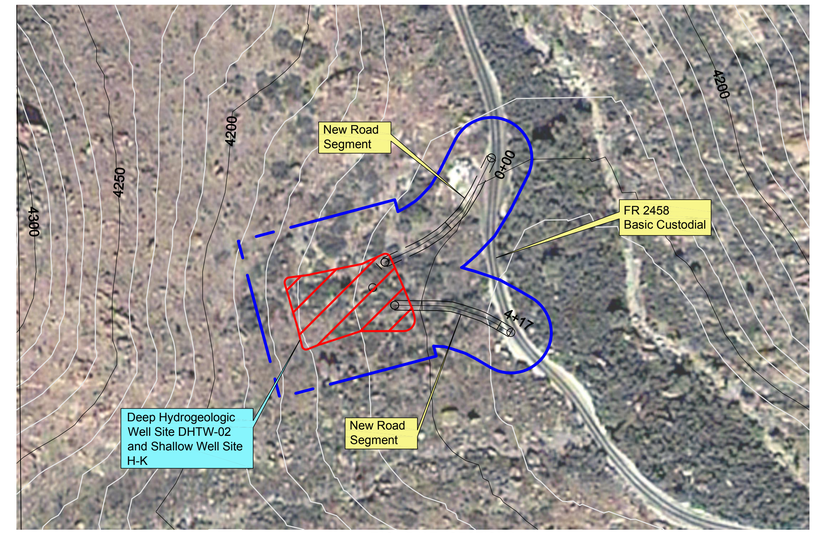
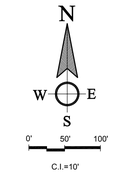


T1S - R13E - SECTION 11





T1S - R13E - SECTION 21



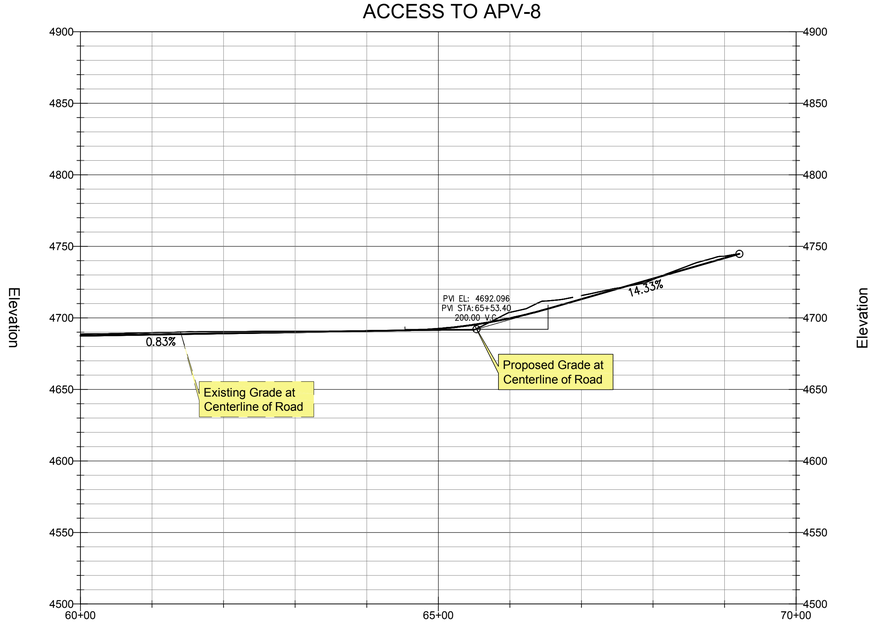
Equipment List

- Track Hoe
- Hammer Hoe
- Front End Loader
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead Rotary Drill Rig or Equivalent
- Schram 685 Rotary Drill Rig
- UDR-1500 Core Drill Rig
- Pipe Trucks
- Water Truck
- Mud Tank

This Sheet:

- Minimal New Surface Disturbance - Grading of Existing Road
- Widening of Tight Spots with Track Hoe
- Clearing and Grading for Drill Pads
- Rock Removed from Excavation of Drill Sites Will Be Crushed and Used to Dress Road Surface

ACCESS TO APV-8



H-K AND DHTW-2 ACCESS PROFILE

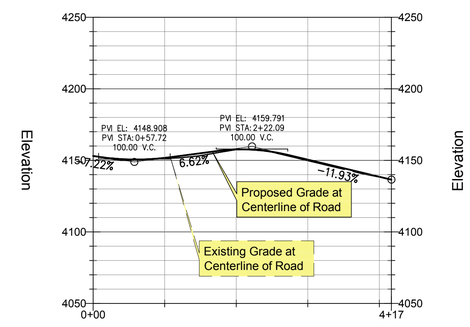


Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

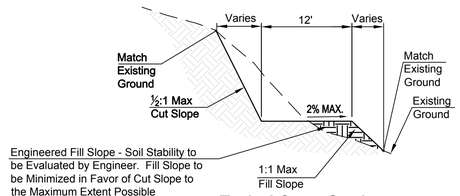
1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

2- High Clearance Vehicles - assigned to roads operated for use by high clearance vehicles

3- Suitable for Passenger Cars - assigned to roads operated and maintained for travel by a prudent driver in a standard passenger car

4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
Access To APV-8, DHTW-02, and H-K

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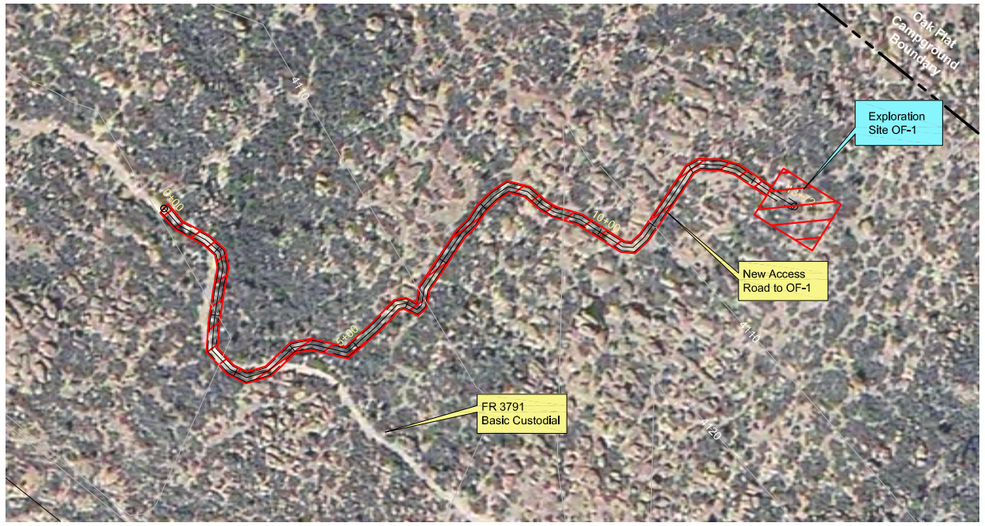
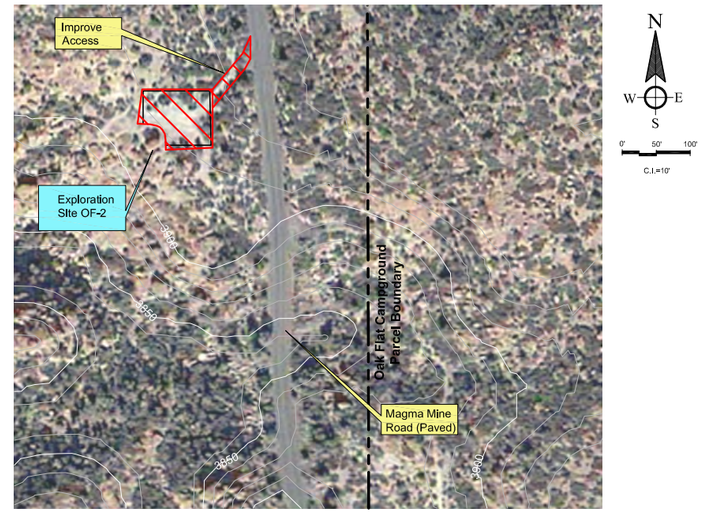


T1S - R13E - SECTION 33



T1S - R13E - SECTION 32

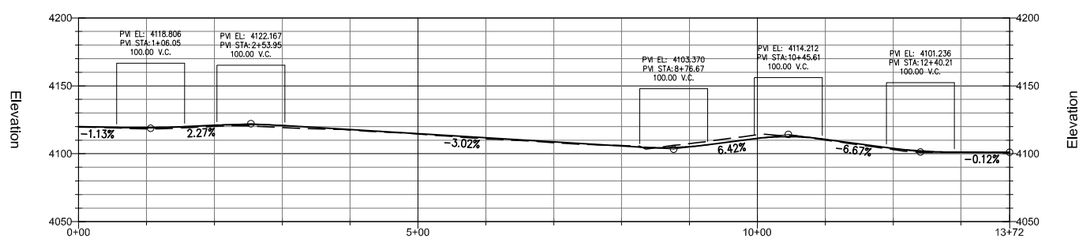
Equipment List

UDR-5000 Core Drill Rig
CP-50 Core Drill Rig
Mud Tank
Schram 685 Rotary Drill Rig
Pipe Trucks
Water Storage Tank
Generators for Drill Rig
Cat Bulldozer
Track Hoe
Water Truck

This Sheet:

- Clearing and Grading for Drill Pads
- Constructing New Access Road to OF-1
- An Archaeological Monitor Will Be Present for Clearing Activities Associated with OF-1 and Access to this Site
- No Features Within AR-03-12-02-125 (TNF) Would Be Impacted

OF-1 ACCESS PROFILE



T1S - R13E - SECTION 33

Image Source: DIgIt. Globe QulckBIrd Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

2- High Clearance Vehicles - assigned to roads operated for use by high clearance vehicles

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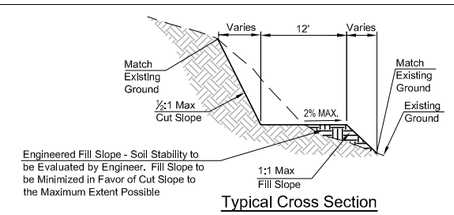
4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibility Activities
OF-1, OF-2, AND OF-3, and
OF-1 Access Road Improvements

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T1S - R14E - SECTION 7

Equipment List

Lang LM-140 Series Tophead Rotary Drill Rig
UDR-5000 Core Drill Rig
Mud Tank
Schram 685 Rotary Drill Rig
Pipe Trucks
Water Storage Tank
Generators for Drill Rig
Cat Bulldozer
Water Truck
Front End Loader

This Sheet:

FR 320 is Located Within the 1920's Alignment of US 60. No Adverse Impact Would Occur to the Site Due to the Implementation of the Following Procedures:

- Fill Potholes With Fill Dirt
- Use Only Rubber-Tire Vehicles
- Cleanly Remove Ramps Used to Access Drill Pad
- Keep Vegetation Removal to a Minimum

An Archaeologist Will Monitor Site Construction

PVT-8 is Located Within Ineligible Cultural Site AR-03-12-02-1456(TNF)

Arizona Hedgehog Cacti Would Be Fenced and Protected with Cactus Guards where Necessary

FR 320 PROFILE

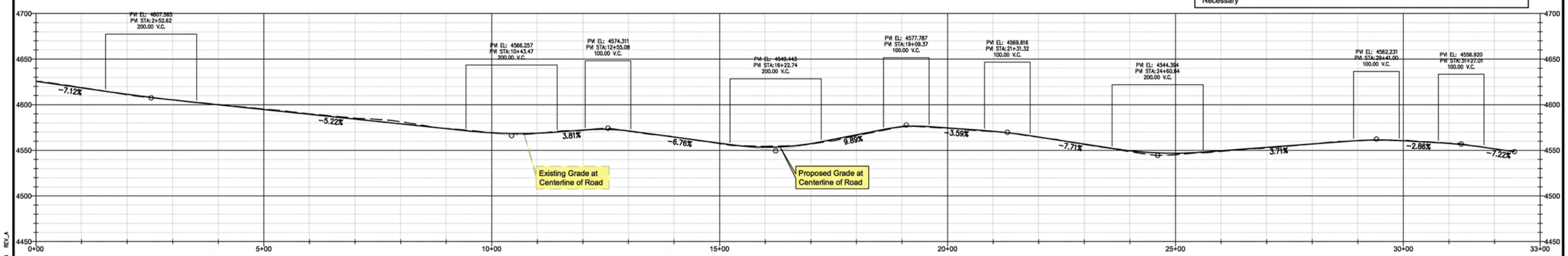


Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

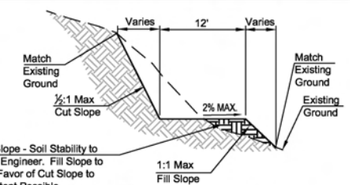
1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

2- High Clearance Vehicles - assigned to roads operated for use by high clearance vehicles

3- Suitable for Passenger Cars - assigned to roads operated and maintained for travel by a prudent driver in a standard passenger car

4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 320 Improvements
Access To Tunnel Borehole PVT-8

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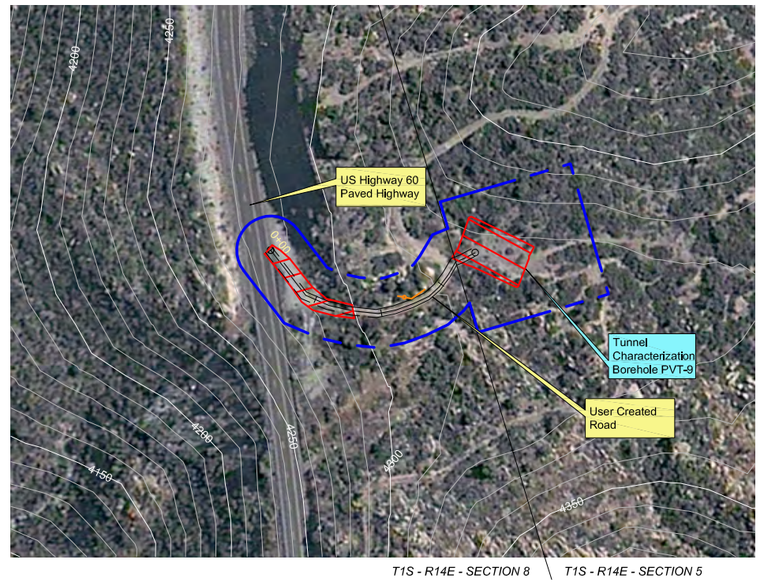

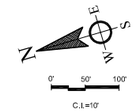

Equipment List

Track Hoe
Hammer Hoe
Front End Loader
Water Truck
Tracked Jaw Crusher
Lang LM-140 Series Tophead
Rotary Drill Rig or Equivalent
UDR-1500 Core Drill Rig
Mud Tank
Schram 685 Rotary Drill Rig
Pipe Trucks
Water Storage Tank
Generators for Drill Rigs
Cat Bulldozer

This Sheet:

- Minor Improvements to Existing Road
- Clearing and Grading for PVT-9 Pad
- Arizona Hedgehog Cacti Will Be Fenced and Protected with Cactus Guards
- A Biological Monitor Will Be Present During Clearing Activities
- Cultural Sites
  AR-03-12-02-1448(TNF) and AR-03-12-02-1449(TNF) are Ineligible for Inclusion in the NRHP and Would Not Be Adversely Affected

PVT-9 ACCESS PROFILE

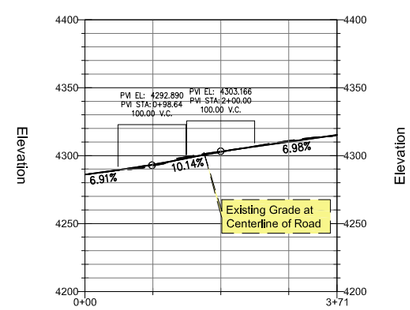

Image Source: DIgIt. Globe QuickBIrd Dataset
TopographIcal Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

2- High Clearance Vehicles - assigned to roads operated for use by high clearance vehicles

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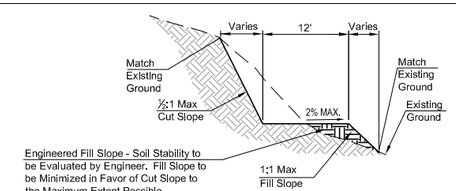
4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibility Activities
Access To Tunnel Borehole PVT-9

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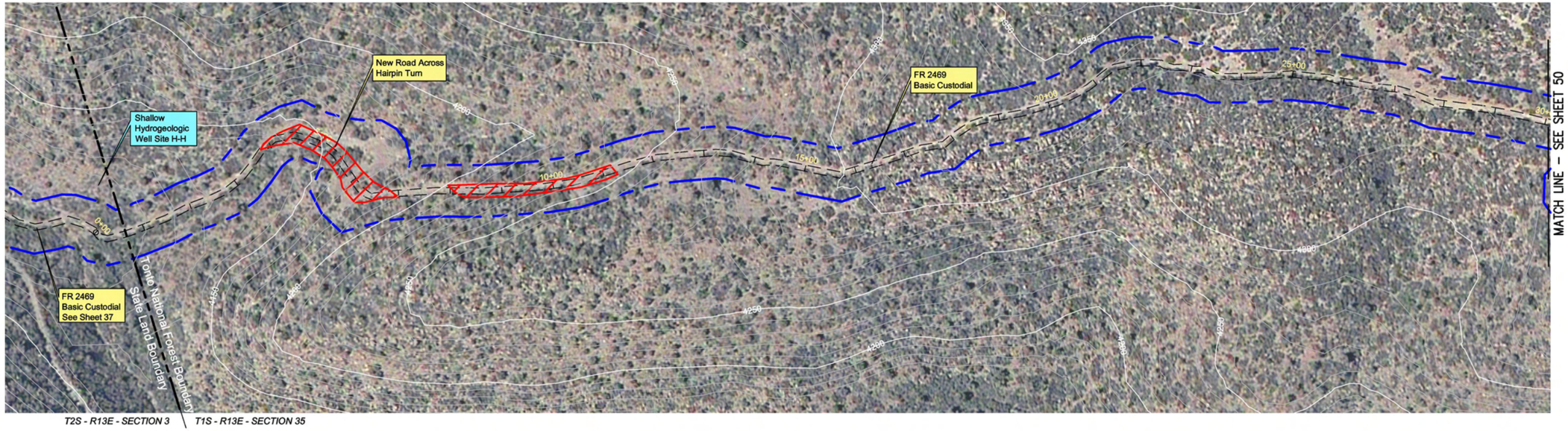
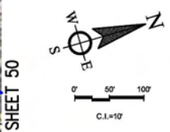




Equipment List

Lang LM-140 Series Tophead Rotary Drill Rig or equivalent
Pipe Trucks
Front End Loader
Backhoe
Tracked Jaw Crusher
Water Truck
Track Hoe

This Sheet

- Minimal New Surface Disturbance - Grading of Existing Road
- Widening Turn
- Leveling Small Washboard Area Close to Pad H-H
- Cutting New Road Across Hairpin Turn

FR 2469 PROFILE

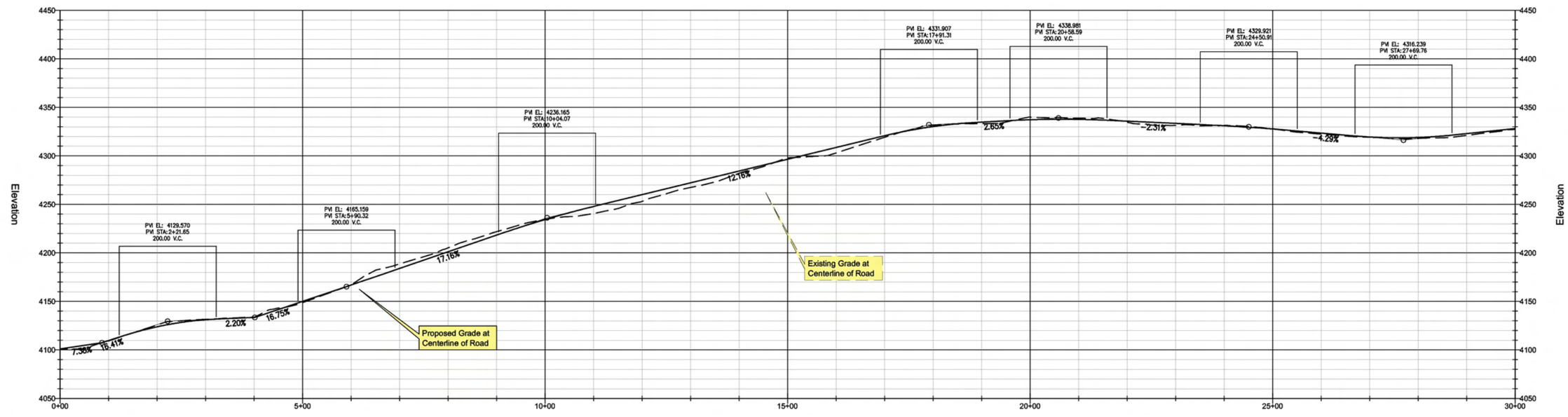


Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

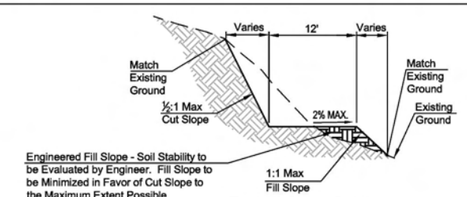
1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

2- High Clearance Vehicles - assigned to roads operated for use by high clearance vehicles

3- Suitable for Passenger Cars - assigned to roads operated and maintained for travel by a prudent driver in a standard passenger car

4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 2469 Improvements
Access to Shallow Well Site H-I

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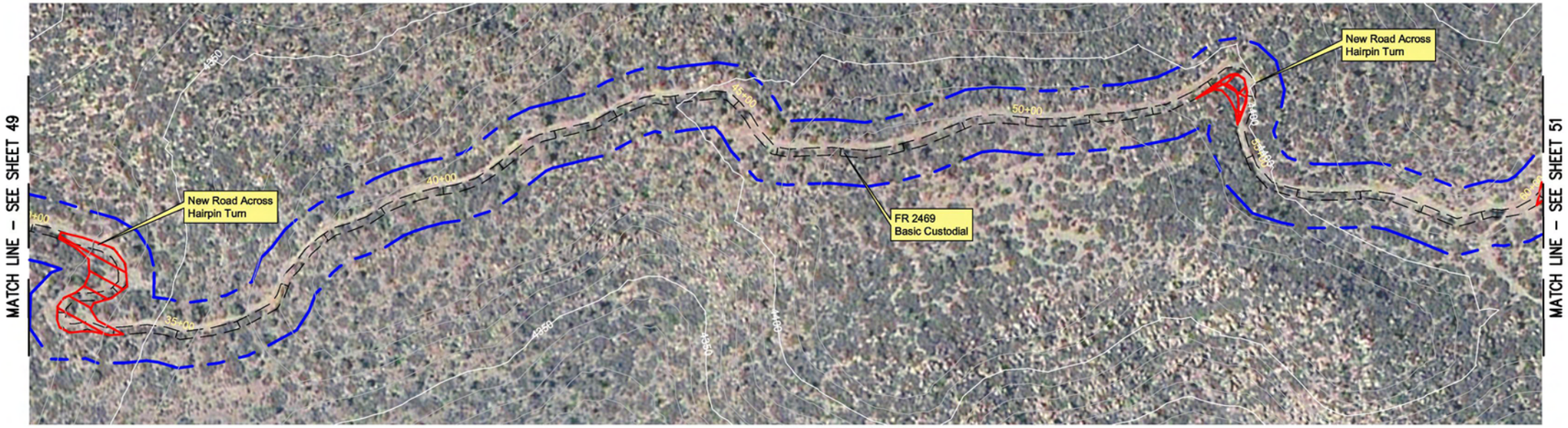
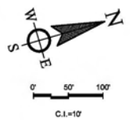


T1S - R13E - SECTION 35



Equipment List

Lang LM-140 Series Tophead
Rotary Drill Rig or Equivalent
Pipe Trucks
Front End Loader
Backhoe
Tracked Jaw Crusher
Water Truck
Track Hoe

This Sheet:

- Minimal New Surface Disturbance- Grading of Existing Road.
- Cutting New Road Across Hairpin Turns at Two Locations

FR 2469 PROFILE

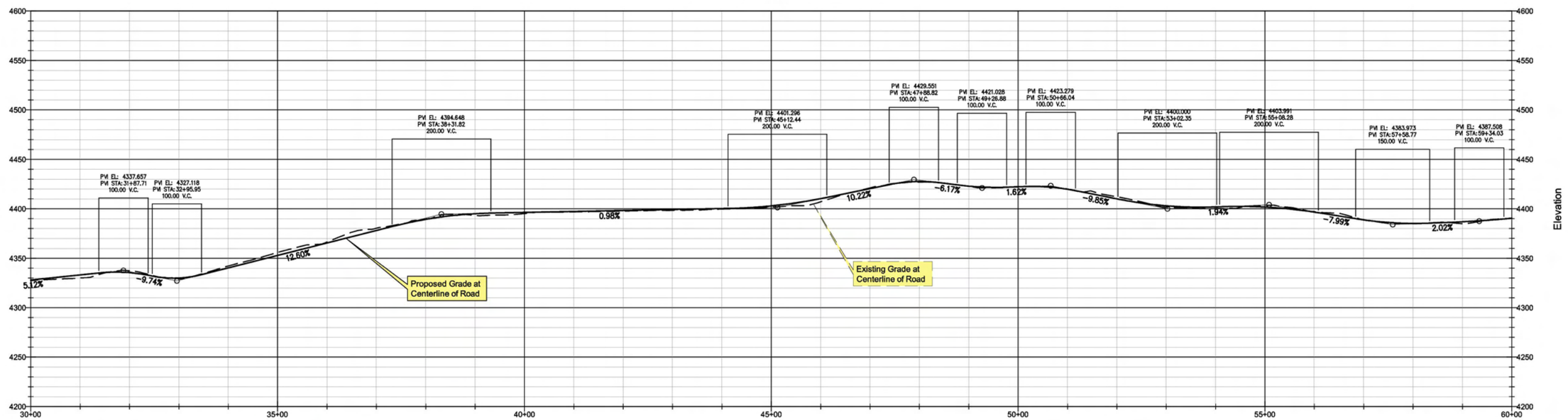


Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

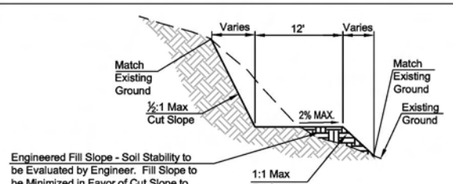
1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

2- High Clearance Vehicles - assigned to roads operated for use by high clearance vehicles

3- Suitable for Passenger Cars - assigned to roads operated and maintained for travel by a prudent driver in a standard passenger car

4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 2469 Improvements
Access to Shallow Well Site H-I

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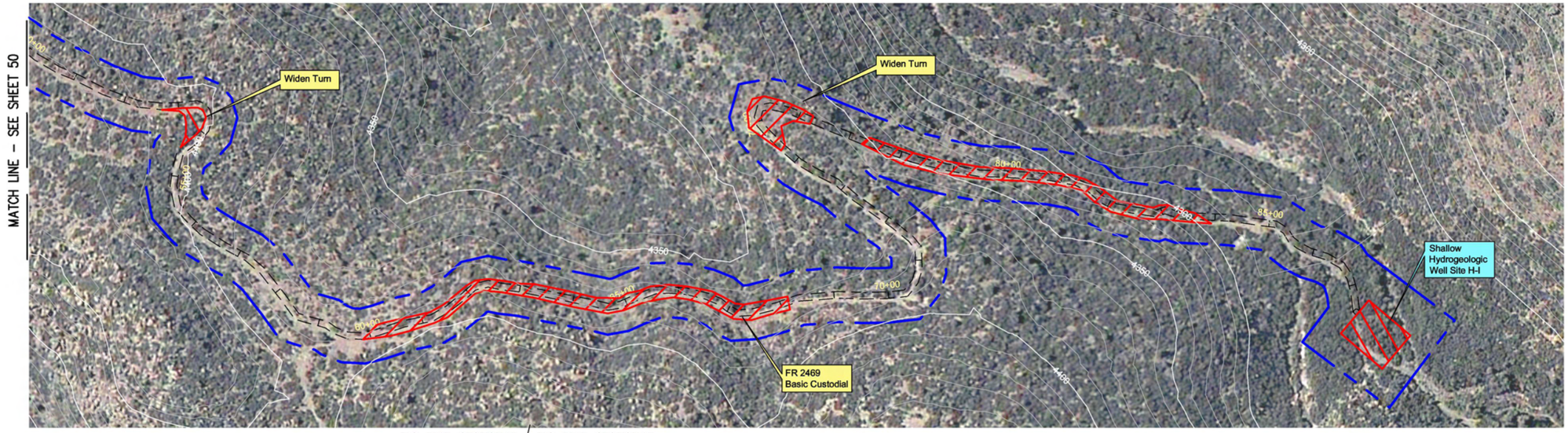

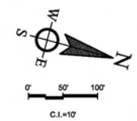

Equipment List

- Lang LM-140 Series Tophead Rotary Drill Rig or Equivalent
- Mud Tank
- Heavy Duty Air Compressor
- Pipe Trucks
- Water Storage Tank
- Generators for Drill Rig
- Front End Loader
- Backhoe
- Tracked Jaw Crusher
- Water Truck

This Sheet:

- Grading of Existing Road
- Widening of Tight Spots with Track Hoe
- Clearing and Grading for H-I Pad

FR 2469 PROFILE

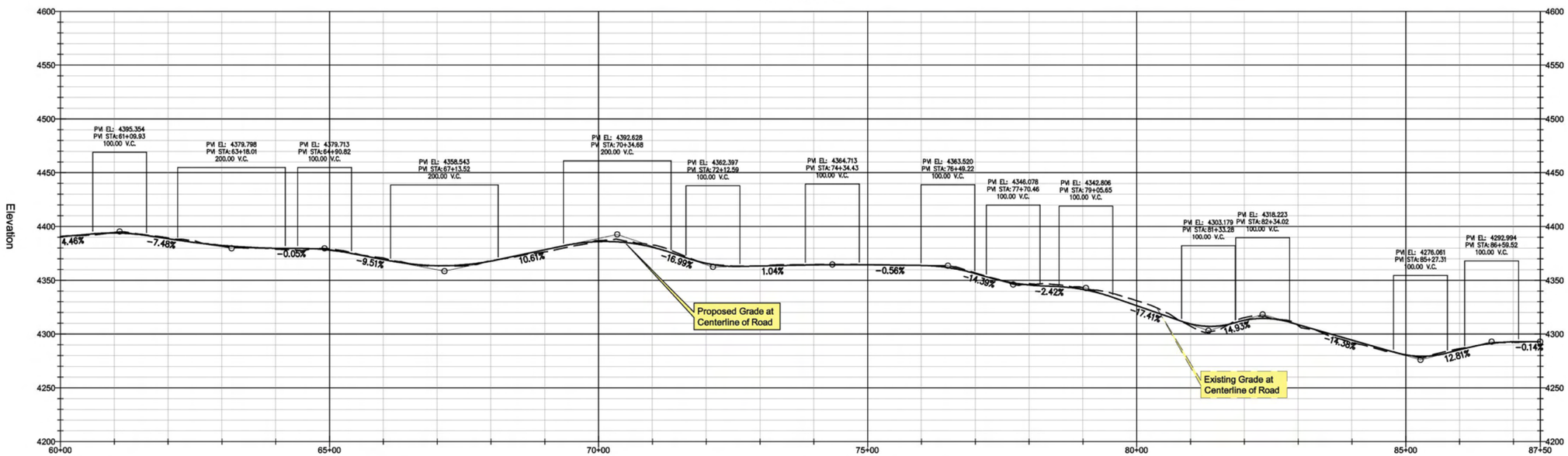

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

2- High Clearance Vehicles - assigned to roads operated for use by high clearance vehicles

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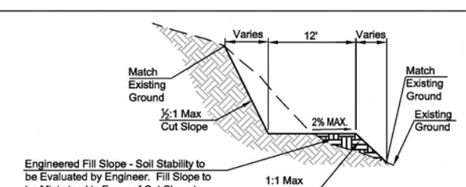
4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
FR 2469 Improvements
and Shallow Well H-I

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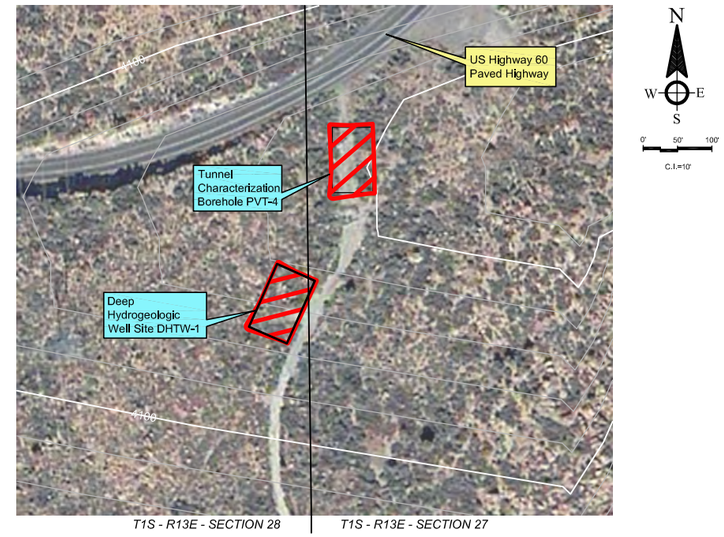
T1S - R13E - SECTION 28



T1S - R13E - SECTION 28 | T1S - R13E - SECTION 27

Equipment List

Lang LM-140 Series Tophead Rotary Drill Rig or Equivalent
UDR-1500 Core Drill Rig
Mud Tank
Schram 685 Rotary Drill Rig
PipeTrucks
Water Storage Tank
Generators for Drill Rig
Cat Bulldozer
Track Hoe
Tracked Jaw Crusher
Water Truck

This Sheet:

- Rock Removed From Excavation of Drill Sites PVT-3, PVT-4, and DHTW-01 Will Be Crushed and Used to Dress Road Surface
- Access to Drill Sites from the South on Existing Roads
- No Improvements to Roads Required

Image Source: Digit. Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

Forest Service Road Designations:

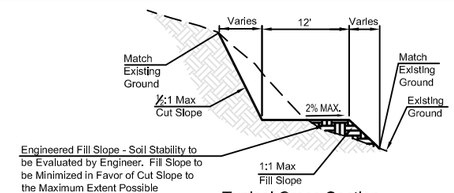
1- Basic Custodial Care (closed) - assigned to intermittent service roads during times when they are closed to vehicular traffic

2- High Clearance Vehicles - assigned to roads operated for use by high clearance vehicles

3- Suitable for Passenger Cars - assigned to roads operated and maintained for travel by a prudent driver in a standard passenger car

4- Moderate Degree of User Comfort - assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

5- High Degree of User Comfort - assigned to roads that provide a high degree of user comfort and convenience



Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibilty Activities
PVT-3, PVT-4, and DHTW-01

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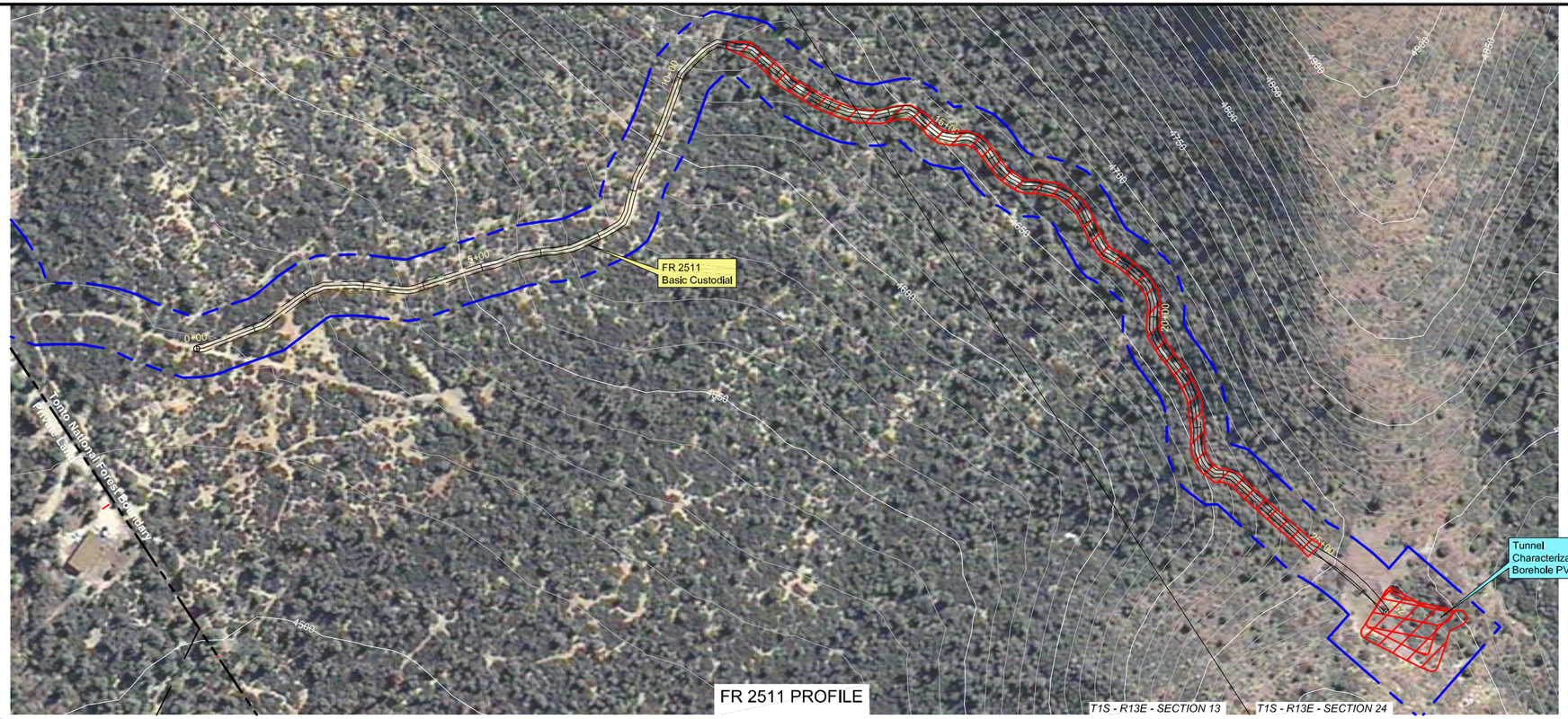
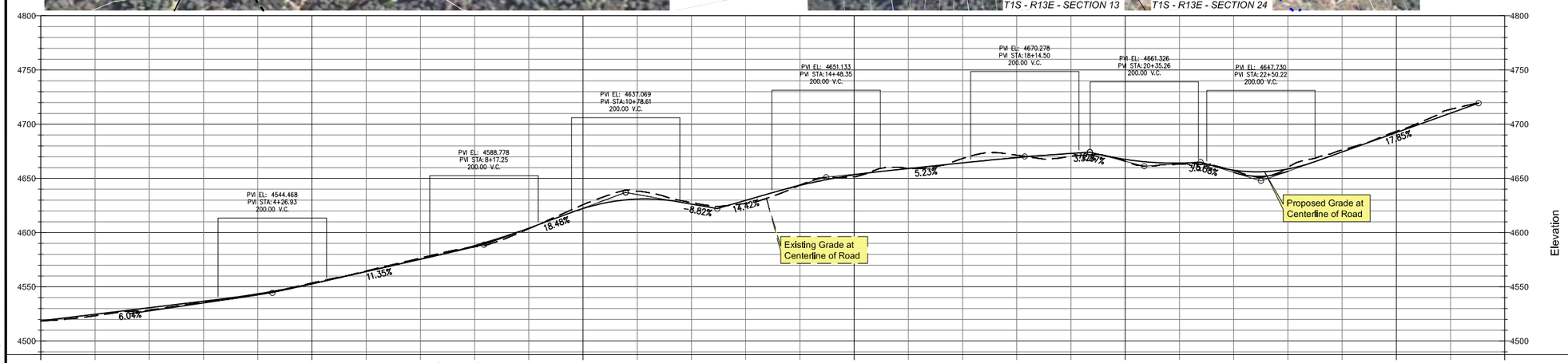


FR 2511 PROFILE



Equipment List

- Track Hoe
- Hammer Hoe
- Front End Loader
- Tracked Jaw Crusher
- Lang LM-140 Series Tophead Rotary Drill Rig or Equivalent
- Schram 685 Rotary Drill Rig
- UDR-1500 Core Drill Rig
- Pipe Trucks
- Water Truck
- Mud Tank
- Water Storage Tank
- Generators for Drill Rig
- Cat Bulldozer

This Sheet:

- Minimal New Surface Disturbance - Grading of Existing Road
- Clearing and Grading for PVT-7 Pad
- Clearing and Grading Along FR 2511 for Potential Helipad Locations

Image Source: DigIt, Globe QuickBird Dataset
Topographical Source: USGS NED Dataset
Contour Interval= 10'
PVI= Point of Vertical Intersection of Slopes
VC = Vertical Curve Between Slopes to Avoid Abrupt Transition Between Grades

Legend

- Existing Road - To Be Improved
- Approximate Area of Cut/ Fill
- T-Post and Wire Clear Limit Fencing
  Note: All Fencing to be placed by Qualified Monitors Prior to Construction
- National Forest Boundary
- Resource Survey Area -
  Note: 100' Wide or Greater

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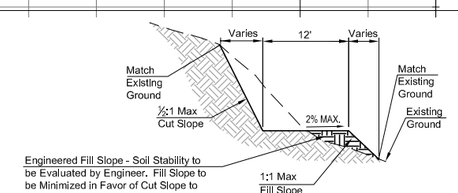

Typical Cross Section

Road to be maintained within existing road to maximum extent possible to minimimize fill and cut

WestLand Resources Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, Az 85712 (520) 206-9585

RESOLUTION COPPER MINING, LLC

Resolution Pre-Feasibility Activities
FR 2511 Improvements
Access To Tunnel Borehole PVT-7

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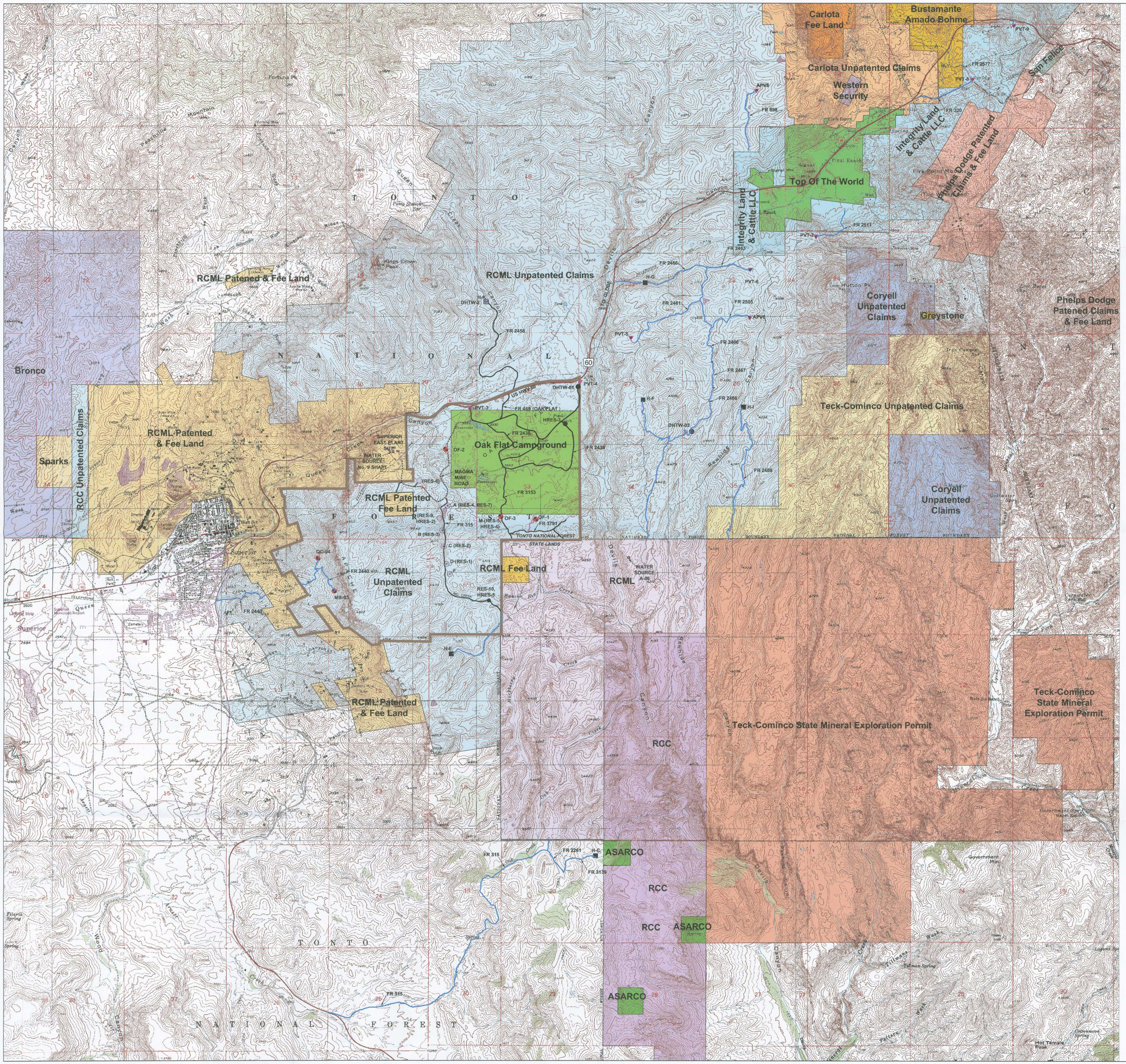
APPENDIX E

MINING CLAIM INFORMATION



LEGEND

- Resolution Parcel Boundary
- Scanner Location
- Prism Location
- Exploration Drill Site
- Tunnel Characterization Bore Holes
- Deep Hydrogeology Testing / Monitor Wells
- Well Site
- Drill Site (Approved Under November 2004 Modification)
- Drill Site (Approved Under The Original February 2001 P.O.O.)
- Existing Access Road (To Be Improved)
- New Road
- Existing Road (To Be Maintained)
- Brushing/Clearing Along Roadway

N
W E
S

0' 2000' 4000'

SCALE 1" = 2000'

Pinal County, Arizona
Superior, Pinal Ranch & Teapot Mountain 7.5' USGS Maps

WestLand Resources Inc.
Engineering and Environmental Consultants

RESOLUTION COPPER MINING
PLAN OF OPERATIONS

LAND AND MINERAL OWNERSHIP

APPENDIX E

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EXPLORATION
SITES
CLAIMS
DATA

EXPLORATION DRILL HOLES

MB-03

T2S, R12E SECTION 1 NW1/4 SW1/4

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC60204	SW	HARD ROCK #6	RESOLUTION COPPER MINING LLC	384101
AMC60224	SW	APACHE LEAP	RESOLUTION COPPER MINING LLC	384101

ROAD ACCESS TO MB-03 FROM HWY 177

FR 3786 (TO BE IMPROVED) LOCATED IN SECTION 1 W1/2
T2S, R12E SECTION 1 W1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC356181	SW	DAN 2	RESOLUTION COPPER MINING LLC	384101
AMC356187	SW SE	DAN 8	RESOLUTION COPPER MINING LLC	384101
AMC356188	SE	DAN 9	RESOLUTION COPPER MINING LLC	384101
AMC356196	SW SE	DAN 17	RESOLUTION COPPER MINING LLC	384101
AMC356197	SW SE	DAN 18	RESOLUTION COPPER MINING LLC	384101
AMC356884	NW	LEGAL TENDER 1	RESOLUTION COPPER MINING LLC	384101
AMC356885	NW	LEGAL TENDER 2	RESOLUTION COPPER MINING LLC	384101
AMC356886	SW	LEGAL TENDER 3	RESOLUTION COPPER MINING LLC	384101
AMC356887	SW	LEGAL TENDER 4	RESOLUTION COPPER MINING LLC	384101
AMC356888	NW	LEGAL TENDER 5	RESOLUTION COPPER MINING LLC	384101
AMC356889	NW	LEGAL TENDER 6	RESOLUTION COPPER MINING LLC	384101
AMC356890	NW	LEGAL TENDER 7	RESOLUTION COPPER MINING LLC	384101
AMC356891	NW	LEGAL TENDER 8	RESOLUTION COPPER MINING LLC	384101
AMC359395	SW	GALAXY NO.1	RESOLUTION COPPER MINING LLC	384101
AMC60180	NW	ALTO	RESOLUTION COPPER MINING LLC	384101
AMC60181	NW	ALTO NO 1	RESOLUTION COPPER MINING LLC	384101
AMC60182	NW	ALTO NO 2	RESOLUTION COPPER MINING LLC	384101
AMC60183	NW	ALTO NO 3	RESOLUTION COPPER MINING LLC	384101
AMC60184	NW SW	ALTO NO 4	RESOLUTION COPPER MINING LLC	384101
AMC60185	NW SW	ALTO NO 5	RESOLUTION COPPER MINING LLC	384101
AMC60187	NE NW SW SE	ALTO NO 7	RESOLUTION COPPER MINING LLC	384101
AMC60188	NE NW	ALTO NO 8	RESOLUTION COPPER MINING LLC	384101
AMC60189	NE NW	ALTO NO 9	RESOLUTION COPPER MINING LLC	384101
AMC60190	NE NW	ALTO NO 10	RESOLUTION COPPER MINING LLC	384101
AMC60191	NE NW	ALTO NO 11	RESOLUTION COPPER MINING LLC	384101
AMC60227	SW	CONNECTING LINK	RESOLUTION COPPER MINING LLC	384101
AMC60204	SW	HARD ROCK #6	RESOLUTION COPPER MINING LLC	384101
AMC60224	SW	APACHE LEAP	RESOLUTION COPPER MINING LLC	384101

FR 2440 LOCATED IN SECTION 2 NE & SW AND SECTION 3 SE (SEE BELOW)

T2S, R12E SECTION 2 NE & SW

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC60180	NE	ALTO	RESOLUTION COPPER MINING LLC	384101
AMC60181	NE	ALTO NO 1	RESOLUTION COPPER MINING LLC	384101
AMC60193	NE SE	BIG LEDGE	RESOLUTION COPPER MINING LLC	384101
AMC60198	SW	CHICAGO	RESOLUTION COPPER MINING LLC	384101
AMC60199	NW SW	GARDNER	RESOLUTION COPPER MINING LLC	384101

AMC60200	NW SW	GUSSIE	RESOLUTION COPPER MINING LLC	384101
AMC60203	NE	HARD ROCK #2	RESOLUTION COPPER MINING LLC	384101
AMC60204	NE SE	HARD ROCK #6	RESOLUTION COPPER MINING LLC	384101
AMC60205	NE	HARD ROCK #7	RESOLUTION COPPER MINING LLC	384101
AMC60206	NE NW SW SE	HARD ROCK #11	RESOLUTION COPPER MINING LLC	384101
AMC60207	NE NW	HARD ROCK #12	RESOLUTION COPPER MINING LLC	384101
AMC60208	NE	HORN SILVER	RESOLUTION COPPER MINING LLC	384101
AMC60209	NE	HORN SILVER NO 1	RESOLUTION COPPER MINING LLC	384101
AMC60210	NE	JANE	RESOLUTION COPPER MINING LLC	384101
AMC60213	NE NW	LEGAL TENDER	RESOLUTION COPPER MINING LLC	384101
AMC60214	SW	LIBBIE	RESOLUTION COPPER MINING LLC	384101
AMC60215	SW	LIBBIE NO 1	RESOLUTION COPPER MINING LLC	384101
AMC60216	SW	LIBBIE NO 2	RESOLUTION COPPER MINING LLC	384101
AMC60219	SW	MICHIGAN	RESOLUTION COPPER MINING LLC	384101
AMC60221	SW SE	RUBE	RESOLUTION COPPER MINING LLC	384101
AMC60222	NW SW	RUBY	RESOLUTION COPPER MINING LLC	384101
AMC60244	SW SE	SAN JUAN	RESOLUTION COPPER MINING LLC	384101

PATENTED CLAIMS IN T2S, R12E, SECTION 2

Claims name	**Patent Number**
David Harum	524455
Gold Crown	1042131
Gold Crown #1	982602
Maine #1	982602
Maine #3	982602

T2S, R12E SECTION 3 SE

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC356180	SE	DAN 1	RESOLUTION COPPER MINING LLC	384101
AMC60199	NE SE	GARDNER	RESOLUTION COPPER MINING LLC	384101

EXPLORATION DRILL HOLES

QC-04

T2S, R12E SECTION 2 NE1/4 NE1/4

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC60205	NE	HARD ROCK #7	RESOLUTION COPPER MINING LLC	384101
AMC60207	NE NW	HARD ROCK #12	RESOLUTION COPPER MINING LLC	384101

ROAD ACCESS TO QC-04 FROM HWY 177
FR 2440 (TO BE IMPROVED) AND UNIDENTIFIED EXISTING ROAD (TO BE IMPROVED)
LOCATED IN SECTION 2 NE & SW

T2S, R12E SECTION 2 NE & SW

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC60180	NE	ALTO	RESOLUTION COPPER MINING LLC	384101
AMC60181	NE	ALTO NO 1	RESOLUTION COPPER MINING LLC	384101
AMC60193	NE SE	BIG LEDGE	RESOLUTION COPPER MINING LLC	384101
AMC60198	SW	CHICAGO	RESOLUTION COPPER MINING LLC	384101
AMC60199	NW SW	GARDNER	RESOLUTION COPPER MINING LLC	384101
AMC60200	NW SW	GUSSIE	RESOLUTION COPPER MINING LLC	384101
AMC60203	NE	HARD ROCK #2	RESOLUTION COPPER MINING LLC	384101
AMC60204	NE SE	HARD ROCK #6	RESOLUTION COPPER MINING LLC	384101
AMC60205	NE	HARD ROCK #7	RESOLUTION COPPER MINING LLC	384101
AMC60206	NE NW SW SE	HARD ROCK #11	RESOLUTION COPPER MINING LLC	384101
AMC60207	NE NW	HARD ROCK #12	RESOLUTION COPPER MINING LLC	384101
AMC60208	NE	HORN SILVER	RESOLUTION COPPER MINING LLC	384101
AMC60209	NE	HORN SILVER NO 1	RESOLUTION COPPER MINING LLC	384101
AMC60210	NE	JANE	RESOLUTION COPPER MINING LLC	384101
AMC60213	NE NW	LEGAL TENDER	RESOLUTION COPPER MINING LLC	384101
AMC60214	SW	LIBBIE	RESOLUTION COPPER MINING LLC	384101
AMC60215	SW	LIBBIE NO 1	RESOLUTION COPPER MINING LLC	384101
AMC60216	SW	LIBBIE NO 2	RESOLUTION COPPER MINING LLC	384101
AMC60219	SW	MICHIGAN	RESOLUTION COPPER MINING LLC	384101
AMC60221	SW SE	RUBE	RESOLUTION COPPER MINING LLC	384101
AMC60222	NW SW	RUBY	RESOLUTION COPPER MINING LLC	384101
AMC60244	SW SE	SAN JUAN	RESOLUTION COPPER MINING LLC	384101

PATENTED CLAIMS IN T2S, R12E, SECTION 2

Claims name	Patent Number
David Harum	524455
Gold Crown	1042131
Gold Crown #1	982602
Maine #1	982602
Maine #3	982602

EXPLORATION DRILL HOLES

OF-1

T1S, R13E SECTION 33 SW1/4 SE1/4

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC60288	SW SE	SUN #40	RESOLUTION COPPER MINING LLC	384101
AMC60289	SW SE	SUN #41	RESOLUTION COPPER MINING LLC	384101

ROAD ACCESS TO OF-1

NEW ROAD LOCATED IN SECTION 33 SE (SEE ABOVE)

FR 3791 (NO IMPROVEMENTS NEEDED) LOCATED IN SECTION 33 S1/2 LEADING FROM SITE-2 AND CONTINUING EASTWARD BEYOND NEW ROAD (SEE ABOVE)

T1S, R13E SECTION 33 S1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC60288	SW SE	SUN #40	RESOLUTION COPPER MINING LLC	384101
AMC60289	SW SE	SUN #41	RESOLUTION COPPER MINING LLC	384101
AMC60290	SE	SUN #44	RESOLUTION COPPER MINING LLC	384101
AMC60291	SE	SUN #45	RESOLUTION COPPER MINING LLC	384101

EXPLORATION DRILL HOLES

OF-2

T1S, R13E SECTION 32 NE1/4 SE1/4

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC60170	NE	0AK NO 43	RESOLUTION COPPER MINING LLC	384101
AMC60171	NE	0AK NO 44	RESOLUTION COPPER MINING LLC	384101

ROAD ACCESS TO OF-2 (NO IMPROVEMENTS NEEDED)

MAGMA MINE ROAD FROM SUPERIOR EAST PLANT SITE LOCATED IN SECTION 32
MAGMA MINE ROAD ALSO PROCEEDS NORTH FROM OF-2 TO STATE HIGHWAY 60

T1S, R13E SECTION 32 NE,SE,NW

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC356872	SE	LEGAL TENDER 22	RESOLUTION COPPER MINING LLC	384101
AMC356933	NW SW	LEGAL TENDER 23	RESOLUTION COPPER MINING LLC	384101
AMC359396	NW	GLADIATOR NO.1	RESOLUTION COPPER MINING LLC	384101
AMC359397	NE NW	GLADIATOR NO.2	RESOLUTION COPPER MINING LLC	384101
AMC359398	NE	GLADIATOR NO.3	RESOLUTION COPPER MINING LLC	384101
AMC359399	NW	GLADIATOR NO.4	RESOLUTION COPPER MINING LLC	384101
AMC359400	NE NW	GLADIATOR NO.5	RESOLUTION COPPER MINING LLC	384101
AMC359401	NE	GLADIATOR NO.6	RESOLUTION COPPER MINING LLC	384101
AMC60136	NW SW	OAK NO 9	RESOLUTION COPPER MINING LLC	384101
AMC60170	NE	0AK NO 43	RESOLUTION COPPER MINING LLC	384101
AMC60171	NE	0AK NO 44	RESOLUTION COPPER MINING LLC	384101
AMC60250	NE NW	SUN #2	RESOLUTION COPPER MINING LLC	384101
AMC60251	NE	SUN #3	RESOLUTION COPPER MINING LLC	384101
AMC60252	NE NW SW SE	SUN #4	RESOLUTION COPPER MINING LLC	384101
AMC60253	NE	SUN #5	RESOLUTION COPPER MINING LLC	384101
AMC60254	SE	SUN #6	RESOLUTION COPPER MINING LLC	384101
AMC60255	SE	SUN #7	RESOLUTION COPPER MINING LLC	384101
AMC60256	SW SE	SUN #8	RESOLUTION COPPER MINING LLC	384101
AMC60257	SE	SUN #9	RESOLUTION COPPER MINING LLC	384101
AMC60258	SW SE	SUN #10	RESOLUTION COPPER MINING LLC	384101
AMC60259	SE	SUN #11	RESOLUTION COPPER MINING LLC	384101
AMC60260	SW SE	SUN #12	RESOLUTION COPPER MINING LLC	384101
AMC60261	SE	SUN #13	RESOLUTION COPPER MINING LLC	384101
AMC60263	SE	SUN #15	RESOLUTION COPPER MINING LLC	384101
AMC60284	SE	SUN #36	RESOLUTION COPPER MINING LLC	384101
AMC60285	SE	SUN #37	RESOLUTION COPPER MINING LLC	384101
AMC60286	SE	SUN #38	RESOLUTION COPPER MINING LLC	384101

PATENTED CLAIMS IN T1S, R13E, SECTION 32

Claims name	Patent Number
East #1	02-70-0081
East #2	02-70-0081
East #7	02-70-0081
Oak #14	02-96-0027

EXPLORATION DRILL HOLES

OF-3

T1S, R13E SECTION 33 SW1/4 SW1/4

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC60288	SW SE	SUN #40	RESOLUTION COPPER MINING LLC	384101
AMC60289	SW SE	SUN #41	RESOLUTION COPPER MINING LLC	384101

ROAD ACCESS TO OF-3

FR 2438 AND FR 3153 (NO IMPROVEMENTS NEEDED) LOCATED IN SECTION 33 N1/2

FR 469 AND FR 2438 LOCATED IN SECTION 28 S1/2

T1S, R13E SECTION 33 N1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC60288	SW SE	SUN #40	RESOLUTION COPPER MINING LLC	384101
AMC60289	SW SE	SUN #41	RESOLUTION COPPER MINING LLC	384101

T1S, R13E SECTION 28 S1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC355530	SW	OAK NO 38A	RESOLUTION COPPER MINING LLC	384101
AMC355531	SW	OAK NO 39A	RESOLUTION COPPER MINING LLC	384101
AMC355534	SW	SUN NO 62A	RESOLUTION COPPER MINING LLC	384101
AMC355535	SW	SUN NO 63A	RESOLUTION COPPER MINING LLC	384101
AMC355536	SW SE	SUN NO 64A	RESOLUTION COPPER MINING LLC	384101
AMC359404	NW SW	GLADIATOR NO.9	RESOLUTION COPPER MINING LLC	384101
AMC60165	NW SW	0AK NO 38	RESOLUTION COPPER MINING LLC	384101
AMC60166	NW SW	0AK NO 39	RESOLUTION COPPER MINING LLC	384101
AMC60304	NW SW	SUN #62	RESOLUTION COPPER MINING LLC	384101
AMC60305	NW SW	SUN #63	RESOLUTION COPPER MINING LLC	384101
AMC60306	NE NW SW SE	SUN #64	RESOLUTION COPPER MINING LLC	384101
AMC60307	NE SE	SUN #65	RESOLUTION COPPER MINING LLC	384101
AMC60308	NE SE	SUN #66	RESOLUTION COPPER MINING LLC	384101
AMC60309	NE SE	SUN #67	RESOLUTION COPPER MINING LLC	384101
AMC60310	NE SE	SUN #68	RESOLUTION COPPER MINING LLC	384101

DEEP HYDROGEOLOGIC WELL SITES CLAIMS DATA

DEEP HYDRO HOLES

DHTW-01

T1S, R13E SECTION 27 NW1/4 SW1/4

AMC60310	NW SW	SUN #68	RESOLUTION COPPER MINING LLC	384101

ROAD ACCESS TO DHTW-01
EXISTING UNIDENTIFIED ROAD (NO IMPROVEMENTS NEEDED) LOCATED IN SECTION 27 W1/2 JUST OFF OF HIGHWAY 60.

T1S, R13E SECTION 27 NW1/4 SW1/4

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC60300	NW	SUN #58	RESOLUTION COPPER MINING LLC	384101

DEEP HYDRO HOLES

DHTW-02

T1S, R13E SECTION 21 SW1/4 SW1/4

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC313033	SW	KAY 148	RESOLUTION COPPER MINING LLC	384101
AMC313035	SW	KAY 150	RESOLUTION COPPER MINING LLC	384101

ROAD ACCESS TO DHTW-02 FROM HWY 60
FR 2458 (NO IMPROVEMENTS NEEDED) LOCATED IN SW OF SECTION 21
FR 2458 ALSO LOCATED IN SECTION 28 W1/2 (SEE BELOW)

T1S, R13E SECTION 21 SW

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC313027	SW	KAY 141	RESOLUTION COPPER MINING LLC	384101
AMC313033	SW	KAY 148	RESOLUTION COPPER MINING LLC	384101
AMC313035	SW	KAY 150	RESOLUTION COPPER MINING LLC	384101
AMC357098	SW	KAY 140A	RESOLUTION COPPER MINING LLC	384101

T1S, R13E SECTION 28 W1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC313035	NW	KAY 150	RESOLUTION COPPER MINING LLC	384101
AMC348057	NW	ERIC #243	RESOLUTION COPPER MINING LLC	384101
AMC348058	NE NW	ERIC #244	RESOLUTION COPPER MINING LLC	384101
AMC348061	NW	ERIC #247	RESOLUTION COPPER MINING LLC	384101
AMC355534	SW	SUN NO 62A	RESOLUTION COPPER MINING LLC	384101
AMC355535	SW	SUN NO 63A	RESOLUTION COPPER MINING LLC	384101
AMC355536	SW SE	SUN NO 64A	RESOLUTION COPPER MINING LLC	384101
AMC359404	NW SW	GLADIATOR NO.9	RESOLUTION COPPER MINING LLC	384101
AMC362903	NW	OLGA 1	RESOLUTION COPPER MINING LLC	384101
AMC362904	NW	OLGA 2	RESOLUTION COPPER MINING LLC	384101
AMC362905	NW	OLGA 3	RESOLUTION COPPER MINING LLC	384101
AMC46016	NE NW	MARGARET # 336	RESOLUTION COPPER MINING LLC	384101
AMC47117	NW	KAY NO 152	RESOLUTION COPPER MINING LLC	384101
AMC60162	NW	0AK NO 35	RESOLUTION COPPER MINING LLC	384101
AMC60163	NW	0AK NO 36	RESOLUTION COPPER MINING LLC	384101
AMC60164	NW	0AK NO 37	RESOLUTION COPPER MINING LLC	384101
AMC60294	NW	SUN #52	RESOLUTION COPPER MINING LLC	384101

DEEP HYDRO HOLES

DHTW-03

T1S, R13E SECTION 26 SW1/4 SW1/4

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC45959	SW	MARGARET # 275	RESOLUTION COPPER MINING LLC	384101

ROAD ACCESS TO DHTW-03

FR 2466 AND FR 2467 (TO BE IMPROVED) LOCATED IN T1S, R13E SECTION 26 W1/2

FR 2466 ALSO LOCATED IN T1S, R13E SECTION 23 W1/2 TO FR 2466

T1S, R13E SECTION 26 W1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC45935	NW	MARGARET # 251	RESOLUTION COPPER MINING LLC	384101
AMC45937	NW	MARGARET # 253	RESOLUTION COPPER MINING LLC	384101
AMC45939	NW	MARGARET # 255	RESOLUTION COPPER MINING LLC	384101
AMC45941	NW	MARGARET # 257	RESOLUTION COPPER MINING LLC	384101
AMC45943	NW	MARGARET # 259	RESOLUTION COPPER MINING LLC	384101
AMC45949	SW	MARGARET # 265	RESOLUTION COPPER MINING LLC	384101
AMC45951	SW	MARGARET # 267	RESOLUTION COPPER MINING LLC	384101
AMC45957	SW	MARGARET # 273	RESOLUTION COPPER MINING LLC	384101
AMC45959	SW	MARGARET # 275	RESOLUTION COPPER MINING LLC	384101
AMC45961	SW SE	MARGARET # 277	RESOLUTION COPPER MINING LLC	384101
AMC45962	SW SE	MARGARET # 278	RESOLUTION COPPER MINING LLC	384101
AMC45963	SW SE	MARGARET # 279	RESOLUTION COPPER MINING LLC	384101
AMC45964	SW SE	MARGARET # 280	RESOLUTION COPPER MINING LLC	384101
AMC45965	NE NW	MARGARET # 281	RESOLUTION COPPER MINING LLC	384101
AMC45966	NE NW	MARGARET # 282	RESOLUTION COPPER MINING LLC	384101
AMC45967	NE NW	MARGARET # 283	RESOLUTION COPPER MINING LLC	384101
AMC45968	NE NW	MARGARET # 284	RESOLUTION COPPER MINING LLC	384101
AMC45969	NE NW	MARGARET # 285	RESOLUTION COPPER MINING LLC	384101
AMC45985	SW SE	MARGARET # 305	RESOLUTION COPPER MINING LLC	384101
AMC45986	SW	MARGARET # 306	RESOLUTION COPPER MINING LLC	384101

T1S, R13E SECTION 23 W1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC347702	NW	ERIC #1	RESOLUTION COPPER MINING LLC	384101
AMC45823	NW	MARGARET #135	RESOLUTION COPPER MINING LLC	384101
AMC45826	NW	MARGARET #137	RESOLUTION COPPER MINING LLC	384101
AMC45828	NW	MARGARET #139	RESOLUTION COPPER MINING LLC	384101
AMC45843	NE NW	MARGARET #154	RESOLUTION COPPER MINING LLC	384101
AMC45844	NE NW	MARGARET #155	RESOLUTION COPPER MINING LLC	384101
AMC45845	NE NW	MARGARET #156	RESOLUTION COPPER MINING LLC	384101
AMC45901	NW	MARGARET # 217	RESOLUTION COPPER MINING LLC	384101
AMC45903	NW	MARGARET # 219	RESOLUTION COPPER MINING LLC	384101
AMC45905	NW	MARGARET # 221	RESOLUTION COPPER MINING LLC	384101
AMC45907	SW	MARGARET # 223	RESOLUTION COPPER MINING LLC	384101
AMC45909	SW	MARGARET # 225	RESOLUTION COPPER MINING LLC	384101
AMC45911	NE NW	MARGARET # 227	RESOLUTION COPPER MINING LLC	384101

AMC45912	NE NW	MARGARET # 228	RESOLUTION COPPER MINING LLC	384101
AMC45913	NE NW	MARGARET # 229	RESOLUTION COPPER MINING LLC	384101
AMC45914	SW SE	MARGARET # 230	RESOLUTION COPPER MINING LLC	384101
AMC45915	SW SE	MARGARET # 231	RESOLUTION COPPER MINING LLC	384101
AMC45931	SW	MARGARET # 247	RESOLUTION COPPER MINING LLC	384101
AMC45933	SW	MARGARET # 249	RESOLUTION COPPER MINING LLC	384101
AMC45935	SW	MARGARET # 251	RESOLUTION COPPER MINING LLC	384101
AMC45969	NW SW	MARGARET # 285	RESOLUTION COPPER MINING LLC	384101
AMC45970	SW SE	MARGARET # 286	RESOLUTION COPPER MINING LLC	384101
AMC45971	SW SE	MARGARET # 287	RESOLUTION COPPER MINING LLC	384101

SHALLOW HYDROLOGIC WELL SITES CLAIMS DATA

SHALLOW HYDRO HOLES

H-C

T2S, R13E SECTION 20 NE1/4 NE1/4 NE1/4

PROPERTY OWNER IS THE UNITED STATES FOREST SERVICE; NO UNPATENTED CLAIMS ARE LOCATED WHERE THE DRILL HOLE IS INDICATED ON THE MAP:

ROAD ACCESS TO H-C

FR 315, FR 2261, AND FR 3139 (TO BE IMPROVED) LOCATED IN SECTION 20 N1/2

FR 315 ALSO LOCATED IN SECTION 19 E1/2, SECTION 30 W1/2 AND T2S, R12E SECTION 25 S1/2 (SEE BELOW)

T2S, R13E SECTION 19 E1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC387998	SW SE	AT 127	TECK COMINCO AMER INC	384101
AMC387999	SE	AT 128	TECK COMINCO AMER INC	384101
AMC388000	SW SE	AT 129	TECK COMINCO AMER INC	384101
AMC388001	SE	AT 130	TECK COMINCO AMER INC	384101
AMC388002	SW SE	AT 131	TECK COMINCO AMER INC	384101
AMC388003	SE	AT 132	TECK COMINCO AMER INC	384101
AMC388004	SW SE	AT 133	TECK COMINCO AMER INC	384101
AMC388005	SE	AT 134	TECK COMINCO AMER INC	384101
AMC388006	NE NW SW SE	AT 135	TECK COMINCO AMER INC	384101
AMC388007	NE SE	AT 136	TECK COMINCO AMER INC	384101

T2S, R13E SECTION 30 NE, W1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC387937	SW	AT 66	TECK COMINCO AMER INC	384101
AMC387939	SW	AT 68	TECK COMINCO AMER INC	384101
AMC387941	SW	AT 70	TECK COMINCO AMER INC	384101
AMC387943	SW	AT 72	TECK COMINCO AMER INC	384101
AMC387945	NW SW	AT 74	TECK COMINCO AMER INC	384101
AMC387947	NW	AT 76	TECK COMINCO AMER INC	384101
AMC387949	NW	AT 78	TECK COMINCO AMER INC	384101
AMC387951	NW	AT 80	TECK COMINCO AMER INC	384101
AMC387953	NW	AT 82	TECK COMINCO AMER INC	384101
AMC387980	SW SE	AT 109	TECK COMINCO AMER INC	384101
AMC387982	SW SE	AT 111	TECK COMINCO AMER INC	384101
AMC387984	SW SE	AT 113	TECK COMINCO AMER INC	384101
AMC387986	SW SE	AT 115	TECK COMINCO AMER INC	384101
AMC387988	SW SE	AT 117	TECK COMINCO AMER INC	384101
AMC387990	NE NW SW SE	AT 119	TECK COMINCO AMER INC	384101
AMC387991	NE SE	AT 120	TECK COMINCO AMER INC	384101
AMC387992	NE NW	AT 121	TECK COMINCO AMER INC	384101
AMC387993	NE	AT 122	TECK COMINCO AMER INC	384101
AMC387994	NE NW	AT 123	TECK COMINCO AMER INC	384101
AMC387995	NE	AT 124	TECK COMINCO AMER INC	384101

AMC387996	NE NW	AT 125	TECK COMINCO AMER INC	384101
AMC387997	NE	AT 126	TECK COMINCO AMER INC	384101
AMC387998	NE NW	AT 127	TECK COMINCO AMER INC	384101
AMC387999	NE	AT 128	TECK COMINCO AMER INC	384101

T2S, R12E SECTION 25 S1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC366951	SW	DND 102	COGHLAN DAVID III	384201
AMC366951	SW	DND 102	COGHLAN DAVID JR	384201
AMC387888	SW	AT 17	TECK COMINCO AMER INC	384101
AMC387889	SW SE	AT 18	TECK COMINCO AMER INC	384101
AMC387890	SW	AT 19	TECK COMINCO AMER INC	384101
AMC387891	SW SE	AT 20	TECK COMINCO AMER INC	384101
AMC387892	SW	AT 21	TECK COMINCO AMER INC	384101
AMC387893	SW SE	AT 22	TECK COMINCO AMER INC	384101
AMC387894	SW	AT 23	TECK COMINCO AMER INC	384101
AMC387895	SW SE	AT 24	TECK COMINCO AMER INC	384101
AMC387896	SW	AT 25	TECK COMINCO AMER INC	384101
AMC387897	SW SE	AT 26	TECK COMINCO AMER INC	384101
AMC387898	NW SW	AT 27	TECK COMINCO AMER INC	384101
AMC387899	NE NW SW SE	AT 28	TECK COMINCO AMER INC	384101
AMC387934	SE	AT 63	TECK COMINCO AMER INC	384101
AMC387935	SE	AT 64	TECK COMINCO AMER INC	384101
AMC387936	SE	AT 65	TECK COMINCO AMER INC	384101
AMC387937	SE	AT 66	TECK COMINCO AMER INC	384101
AMC387938	SE	AT 67	TECK COMINCO AMER INC	384101
AMC387939	SE	AT 68	TECK COMINCO AMER INC	384101
AMC387940	SE	AT 69	TECK COMINCO AMER INC	384101
AMC387941	SE	AT 70	TECK COMINCO AMER INC	384101
AMC387942	SE	AT 71	TECK COMINCO AMER INC	384101
AMC387943	SE	AT 72	TECK COMINCO AMER INC	384101
AMC387944	NE SE	AT 73	TECK COMINCO AMER INC	384101
AMC387945	NE SE	AT 74	TECK COMINCO AMER INC	384101

SHALLOW HYDRO HOLES

H-E

T2S, R13E SECTION 7, NW1/4 SW1/4

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC356194	NW	DAN 15	RESOLUTION COPPER MINING LLC	384101
AMC356195	NW	DAN 16	RESOLUTION COPPER MINING LLC	384101
AMC60238	SW	DACITE NO 12	RESOLUTION COPPER MINING LLC	384101
AMC60239	SW	DACITE NO 13	RESOLUTION COPPER MINING LLC	384101

ROAD ACCESS TO H-E
UNIDENTIFIED ROAD (TO BE IMPROVED) LOCATED IN W1/2 AND NE OF SECTION 7

AMC60248	NW	SOUTH SYNDICATE NO 4	RESOLUTION COPPER MINING LLC	384101
AMC60394	NW	SOUTH SYNDICATE NO 6	RESOLUTION COPPER MINING LLC	384101
AMC60395	NW	SOUTH SYNDICATE NO 7	RESOLUTION COPPER MINING LLC	384101
AMC60396	NW	SOUTH SYNDICATE NO 8	RESOLUTION COPPER MINING LLC	384101
AMC60397	NE NW	SOUTH SYNDICATE NO 9	RESOLUTION COPPER MINING LLC	384101
AMC60398	NW SW	SOUTH SYNDICATE NO10	RESOLUTION COPPER MINING LLC	384101
AMC60399	NE NW SW SE	SOUTH SYNDICATE NO11	RESOLUTION COPPER MINING LLC	384101
AMC60400	NE NW SE	SOUTH SYNDICATE NO12	RESOLUTION COPPER MINING LLC	384101
AMC60402	SW	EXTENSION NO 1A	RESOLUTION COPPER MINING LLC	384101
AMC60441	NE	EXTENSION NO 39	RESOLUTION COPPER MINING LLC	384101
AMC60442	NE	EXTENSION NO 40	RESOLUTION COPPER MINING LLC	384101
AMC60443	NE	EXTENSION NO 41	RESOLUTION COPPER MINING LLC	384101

FR 315 (NO IMPROVEMENTS NEEDED) LOCATED IN SECTION 6 S1/2 & NW
T2S, R13E SECTION 6 S1/2 & NW

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC356865	NW	LEGAL TENDER 13	RESOLUTION COPPER MINING LLC	384101
AMC356866	SW SE	LEGAL TENDER 14	RESOLUTION COPPER MINING LLC	384101
AMC356867	SW	LEGAL TENDER 15	RESOLUTION COPPER MINING LLC	384101
AMC356868	NW	LEGAL TENDER 17	RESOLUTION COPPER MINING LLC	384101
AMC356869	NW	LEGAL TENDER 18	RESOLUTION COPPER MINING LLC	384101
AMC356870	SE	LEGAL TENDER 20	RESOLUTION COPPER MINING LLC	384101
AMC356896	SE	LEGAL TENDER 16	RESOLUTION COPPER MINING LLC	384101
AMC60178	NW SW	ACE 5	RESOLUTION COPPER MINING LLC	384101
AMC60179	SW	ACE 6	RESOLUTION COPPER MINING LLC	384101
AMC60248	SW	SOUTH SYNDICATE NO 4	RESOLUTION COPPER MINING LLC	384101
AMC60249	SW	SOUTH SYNDICATE NO 5	RESOLUTION COPPER MINING LLC	384101
AMC60262	NW	SUN #14	RESOLUTION COPPER MINING LLC	384101
AMC60263	NE NW	SUN #15	RESOLUTION COPPER MINING LLC	384101
AMC60264	NW	SUN #16	RESOLUTION COPPER MINING LLC	384101
AMC60265	NE NW	SUN #17	RESOLUTION COPPER MINING LLC	384101
AMC60266	NW	SUN #18	RESOLUTION COPPER MINING LLC	384101
AMC60267	NE NW	SUN #19	RESOLUTION COPPER MINING LLC	384101
AMC60268	NW	SUN #20	RESOLUTION COPPER MINING LLC	384101
AMC60269	NE NW	SUN #21	RESOLUTION COPPER MINING LLC	384101
AMC60270	NW SW	SUN #22	RESOLUTION COPPER MINING LLC	384101
AMC60271	NW SW	SUN #23	RESOLUTION COPPER MINING LLC	384101
AMC60272	SW	SUN #24	RESOLUTION COPPER MINING LLC	384101

AMC60273	SW SE	SUN #25	RESOLUTION COPPER MINING LLC	384101
AMC60274	SW	SUN #26	RESOLUTION COPPER MINING LLC	384101
AMC60275	SW SE	SUN #27	RESOLUTION COPPER MINING LLC	384101
AMC60276	SW SE	SUN #28	RESOLUTION COPPER MINING LLC	384101
AMC60277	SE	SUN #29	RESOLUTION COPPER MINING LLC	384101
AMC60278	SE	SUN #30	RESOLUTION COPPER MINING LLC	384101
AMC60279	SE	SUN #31	RESOLUTION COPPER MINING LLC	384101
AMC60280	NE SE	SUN #32	RESOLUTION COPPER MINING LLC	384101
AMC60397	SW	SOUTH SYNDICATE NO 9	RESOLUTION COPPER MINING LLC	384101
AMC60441	SE	EXTENSION NO 39	RESOLUTION COPPER MINING LLC	384101
AMC60442	SE	EXTENSION NO 40	RESOLUTION COPPER MINING LLC	384101
AMC60443	SE	EXTENSION NO 41	RESOLUTION COPPER MINING LLC	384101

ROAD ACCESS TO H-E FROM SUPERIOR EAST PLANT SITE IN SECTION 32 OF T1S, R13E

T1S,R13E SECTION 32 S1/2

MAGMA MINE ROAD LOCATED IN SECTION 32 S1/2 AND NW

T1S, R13E SECTION 32 S1/2 & NW

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC356872	SE	LEGAL TENDER 22	RESOLUTION COPPER MINING LLC	384101
AMC356897	SW	LEGAL TENDER 19	RESOLUTION COPPER MINING LLC	384101
AMC356933	NW SW	LEGAL TENDER 23	RESOLUTION COPPER MINING LLC	384101
AMC359396	NW	GLADIATOR NO.1	RESOLUTION COPPER MINING LLC	384101
AMC359397	NE NW	GLADIATOR NO.2	RESOLUTION COPPER MINING LLC	384101
AMC359399	NW	GLADIATOR NO.4	RESOLUTION COPPER MINING LLC	384101
AMC359400	NE NW	GLADIATOR NO.5	RESOLUTION COPPER MINING LLC	384101
AMC60136	NW SW	OAK NO 9	RESOLUTION COPPER MINING LLC	384101
AMC60141	SW	OAK NO 18	RESOLUTION COPPER MINING LLC	384101
AMC60142	SW	OAK NO 19	RESOLUTION COPPER MINING LLC	384101
AMC60144	SW	OAK NO 21	RESOLUTION COPPER MINING LLC	384101
AMC60145	SW	OAK NO 22	RESOLUTION COPPER MINING LLC	384101
AMC60146	SW	OAK NO 23	RESOLUTION COPPER MINING LLC	384101
AMC60175	SW	ACE 2	RESOLUTION COPPER MINING LLC	384101
AMC60250	NE NW	SUN #2	RESOLUTION COPPER MINING LLC	384101
AMC60252	NE NW SW SE	SUN #4	RESOLUTION COPPER MINING LLC	384101
AMC60254	SE	SUN #6	RESOLUTION COPPER MINING LLC	384101
AMC60255	SE	SUN #7	RESOLUTION COPPER MINING LLC	384101
AMC60256	SW SE	SUN #8	RESOLUTION COPPER MINING LLC	384101
AMC60257	SE	SUN #9	RESOLUTION COPPER MINING LLC	384101
AMC60258	SW SE	SUN #10	RESOLUTION COPPER MINING LLC	384101
AMC60259	SE	SUN #11	RESOLUTION COPPER MINING LLC	384101
AMC60260	SW SE	SUN #12	RESOLUTION COPPER MINING LLC	384101
AMC60261	SE	SUN #13	RESOLUTION COPPER MINING LLC	384101
AMC60263	SE	SUN #15	RESOLUTION COPPER MINING LLC	384101
AMC60284	SE	SUN #36	RESOLUTION COPPER MINING LLC	384101
AMC60285	SE	SUN #37	RESOLUTION COPPER MINING LLC	384101
AMC60286	SE	SUN #38	RESOLUTION COPPER MINING LLC	384101

SHALLOW HYDRO HOLES

H-F

T1S, R13E SECTION 27 NW1/4 SE1/4

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC45945	SW SE	MARGARET # 261	RESOLUTION COPPER MINING LLC	
AMC45947	SW SE	MARGARET # 263	RESOLUTION COPPER MINING LLC	

ROAD ACCESS TO H-F FROM FR 2466

UNIDENTIFIED ROAD (TO BE IMPROVED) LOCATED IN SE OF SECTION 27 AND NE OF SECTION 34
FR 2466 (TO BE IMPROVED) LOCATED IN SECTION 34 NE
FR 2466 ALSO LOCATED IN SECTION 26 W1/2 AND SECTION 23 W1/2

T1S, R13E SECTION 27 NW1/4 SE1/4

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC45945	SW SE	MARGARET # 261	RESOLUTION COPPER MINING LLC	384101
AMC45947	SW SE	MARGARET # 263	RESOLUTION COPPER MINING LLC	384101
AMC45950	SE	MARGARET # 266	RESOLUTION COPPER MINING LLC	384101
AMC45952	SE	MARGARET # 268	RESOLUTION COPPER MINING LLC	384101
AMC45953	SW SE	MARGARET # 269	RESOLUTION COPPER MINING LLC	384101
AMC45955	SW SE	MARGARET # 271	RESOLUTION COPPER MINING LLC	384101
AMC45958	SE	MARGARET # 274	RESOLUTION COPPER MINING LLC	384101
AMC45960	SE	MARGARET # 276	RESOLUTION COPPER MINING LLC	384101
AMC45993	SE	MARGARET # 313	RESOLUTION COPPER MINING LLC	384101
AMC45994	SW SE	MARGARET # 314	RESOLUTION COPPER MINING LLC	384101

T1S, R13E SECTION 34 NE

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC347774	NE	ERIC #73	RESOLUTION COPPER MINING LLC	384101
AMC347775	NE	ERIC #74	RESOLUTION COPPER MINING LLC	384101
AMC347837	NE	ERIC #138	RESOLUTION COPPER MINING LLC	384101
AMC347838	NE	ERIC #139	RESOLUTION COPPER MINING LLC	384101

T1S, R13E SECTION 26 W1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC45935	NW	MARGARET # 251	RESOLUTION COPPER MINING LLC	384101
AMC45937	NW	MARGARET # 253	RESOLUTION COPPER MINING LLC	384101
AMC45939	NW	MARGARET # 255	RESOLUTION COPPER MINING LLC	384101
AMC45941	NW	MARGARET # 257	RESOLUTION COPPER MINING LLC	384101
AMC45943	NW	MARGARET # 259	RESOLUTION COPPER MINING LLC	384101
AMC45949	SW	MARGARET # 265	RESOLUTION COPPER MINING LLC	384101
AMC45951	SW	MARGARET # 267	RESOLUTION COPPER MINING LLC	384101
AMC45957	SW	MARGARET # 273	RESOLUTION COPPER MINING LLC	384101
AMC45959	SW	MARGARET # 275	RESOLUTION COPPER MINING LLC	384101
AMC45961	SW SE	MARGARET # 277	RESOLUTION COPPER MINING LLC	384101
AMC45962	SW SE	MARGARET # 278	RESOLUTION COPPER MINING LLC	384101
AMC45963	SW SE	MARGARET # 279	RESOLUTION COPPER MINING LLC	384101
AMC45964	SW SE	MARGARET # 280	RESOLUTION COPPER MINING LLC	384101

AMC45965	NE NW	MARGARET # 281	RESOLUTION COPPER MINING LLC	384101
AMC45966	NE NW	MARGARET # 282	RESOLUTION COPPER MINING LLC	384101
AMC45967	NE NW	MARGARET # 283	RESOLUTION COPPER MINING LLC	384101
AMC45968	NE NW	MARGARET # 284	RESOLUTION COPPER MINING LLC	384101
AMC45969	NE NW	MARGARET # 285	RESOLUTION COPPER MINING LLC	384101
AMC45985	SW SE	MARGARET # 305	RESOLUTION COPPER MINING LLC	384101
AMC45986	SW	MARGARET # 306	RESOLUTION COPPER MINING LLC	384101

T1S, R13E SECTION 23 W1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC347702	NW	ERIC #1	RESOLUTION COPPER MINING LLC	384101
AMC45823	NW	MARGARET #135	RESOLUTION COPPER MINING LLC	384101
AMC45826	NW	MARGARET #137	RESOLUTION COPPER MINING LLC	384101
AMC45828	NW	MARGARET #139	RESOLUTION COPPER MINING LLC	384101
AMC45843	NE NW	MARGARET #154	RESOLUTION COPPER MINING LLC	384101
AMC45844	NE NW	MARGARET #155	RESOLUTION COPPER MINING LLC	384101
AMC45845	NE NW	MARGARET #156	RESOLUTION COPPER MINING LLC	384101
AMC45901	NW	MARGARET # 217	RESOLUTION COPPER MINING LLC	384101
AMC45903	NW	MARGARET # 219	RESOLUTION COPPER MINING LLC	384101
AMC45905	NW	MARGARET # 221	RESOLUTION COPPER MINING LLC	384101
AMC45907	SW	MARGARET # 223	RESOLUTION COPPER MINING LLC	384101
AMC45909	SW	MARGARET # 225	RESOLUTION COPPER MINING LLC	384101
AMC45911	NE NW	MARGARET # 227	RESOLUTION COPPER MINING LLC	384101
AMC45912	NE NW	MARGARET # 228	RESOLUTION COPPER MINING LLC	384101
AMC45913	NE NW	MARGARET # 229	RESOLUTION COPPER MINING LLC	384101
AMC45914	SW SE	MARGARET # 230	RESOLUTION COPPER MINING LLC	384101
AMC45915	SW SE	MARGARET # 231	RESOLUTION COPPER MINING LLC	384101
AMC45931	SW	MARGARET # 247	RESOLUTION COPPER MINING LLC	384101
AMC45933	SW	MARGARET # 249	RESOLUTION COPPER MINING LLC	384101
AMC45935	SW	MARGARET # 251	RESOLUTION COPPER MINING LLC	384101
AMC45969	NW SW	MARGARET # 285	RESOLUTION COPPER MINING LLC	384101
AMC45970	SW SE	MARGARET # 286	RESOLUTION COPPER MINING LLC	384101
AMC45971	SW SE	MARGARET # 287	RESOLUTION COPPER MINING LLC	384101

SHALLOW HYDRO HOLES

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T1S, R13E SECTION 22 SW1/4 NE1/4

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC45853	NW	MARGARET #162	RESOLUTION COPPER MINING LLC	384101
AMC45855	SW SE	MARGARET #163	RESOLUTION COPPER MINING LLC	384101

ROAD ACCESS TO H-G FROM HWY 60

FR 2466 RUNS E & W THROUGH MIDDLE OF SECTION 22
T1S, R13E SECTION 22

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC45852	NE NW	MARGARET #161	RESOLUTION COPPER MINING LLC	384101
AMC45853	NW	MARGARET #162	RESOLUTION COPPER MINING LLC	384101
AMC45855	SW SE	MARGARET #163	RESOLUTION COPPER MINING LLC	384101
AMC45856	SW	MARGARET #164	RESOLUTION COPPER MINING LLC	384101
AMC45906	NE	MARGARET # 222	RESOLUTION COPPER MINING LLC	384101
AMC45908	SE	MARGARET # 224	RESOLUTION COPPER MINING LLC	384101

SHALLOW HYDRO HOLES

H-I

T1S, R13E SECTION 26 NW1/4 SE1/4

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC348158	SE	ERIC #345	RESOLUTION COPPER MINING LLC	384101
AMC348159	NE SE	ERIC #346	RESOLUTION COPPER MINING LLC	384101
AMC348160	SE	ERIC #347	RESOLUTION COPPER MINING LLC	384101
AMC348161	NE SE	ERIC #348	RESOLUTION COPPER MINING LLC	384101

ROAD ACCESS TO H-I

FR 2469 (TO BE IMPROVED) LOCATED IN SE AND SW OF SECTION 26
FR 2469 ALSO LOCATED IN W1/2 OF SECTION 35,
AND SE OF SECTION 34

T1S, R13E SECTION 26 S1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC348156	SE	ERIC #343	RESOLUTION COPPER MINING LLC	384101
AMC348157	NE SE	ERIC #344	RESOLUTION COPPER MINING LLC	384101
AMC348158	SE	ERIC #345	RESOLUTION COPPER MINING LLC	384101
AMC348159	NE SE	ERIC #346	RESOLUTION COPPER MINING LLC	384101
AMC348160	SE	ERIC #347	RESOLUTION COPPER MINING LLC	384101
AMC348161	NE SE	ERIC #348	RESOLUTION COPPER MINING LLC	384101
AMC45949	SW	MARGARET # 265	RESOLUTION COPPER MINING LLC	384101
AMC45951	SW	MARGARET # 267	RESOLUTION COPPER MINING LLC	384101
AMC45957	SW	MARGARET # 273	RESOLUTION COPPER MINING LLC	384101
AMC45959	SW	MARGARET # 275	RESOLUTION COPPER MINING LLC	384101
AMC45961	SW SE	MARGARET # 277	RESOLUTION COPPER MINING LLC	384101
AMC45962	SW SE	MARGARET # 278	RESOLUTION COPPER MINING LLC	384101
AMC45963	SW SE	MARGARET # 279	RESOLUTION COPPER MINING LLC	384101
AMC45964	SW SE	MARGARET # 280	RESOLUTION COPPER MINING LLC	384101
AMC45985	SW SE	MARGARET # 305	RESOLUTION COPPER MINING LLC	384101
AMC45986	SW	MARGARET # 306	RESOLUTION COPPER MINING LLC	384101
AMC47276	NE SE	LD NO 5	RESOLUTION COPPER MINING LLC	384101
AMC47277	SE	LD NO 6	RESOLUTION COPPER MINING LLC	384101
AMC47278	SE	LD NO 7	RESOLUTION COPPER MINING LLC	384101

T1S, R13E SECTION 35 W1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC348169	NE NW SW SE	ERIC #356	RESOLUTION COPPER MINING LLC	384101
AMC348170	NW SW	ERIC #357	RESOLUTION COPPER MINING LLC	384101
AMC348171	NW SW	ERIC #358	RESOLUTION COPPER MINING LLC	384101
AMC348172	NW SW	ERIC #359	RESOLUTION COPPER MINING LLC	384101
AMC348173	NW SW	ERIC #360	RESOLUTION COPPER MINING LLC	384101
AMC348174	SW	ERIC #361	RESOLUTION COPPER MINING LLC	384101
AMC348175	SW	ERIC #362	RESOLUTION COPPER MINING LLC	384101
AMC348176	SW	ERIC #363	RESOLUTION COPPER MINING LLC	384101
AMC355464	SW	RESOLUTION NO. 9	RESOLUTION COPPER MINING LLC	384101

AMC355465	SW	RESOLUTION NO. 10	RESOLUTION COPPER MINING LLC	384101
AMC355474	SW	RESOLUTION NO. 19	RESOLUTION COPPER MINING LLC	384101
AMC358074	SW	RAW 1	TECK COMINCO AMER INC	384101
AMC358075	SW	RAW 2	TECK COMINCO AMER INC	384101
AMC358076	SW	RAW 3	TECK COMINCO AMER INC	384101
AMC358077	SW	RAW 4	TECK COMINCO AMER INC	384101
AMC358168	SW	RAW 95	TECK COMINCO AMER INC	384101
AMC358169	SW	RAW 96	TECK COMINCO AMER INC	384101
AMC45985	NE NW	MARGARET # 305	RESOLUTION COPPER MINING LLC	384101
AMC45986	NW	MARGARET # 306	RESOLUTION COPPER MINING LLC	384101
AMC45987	NE NW	MARGARET # 307	RESOLUTION COPPER MINING LLC	384101
AMC45988	NW	MARGARET # 308	RESOLUTION COPPER MINING LLC	384101
AMC45989	NE NW	MARGARET # 309	RESOLUTION COPPER MINING LLC	384101
AMC45990	NW	MARGARET # 310	RESOLUTION COPPER MINING LLC	384101
AMC45991	NE NW	MARGARET # 311	RESOLUTION COPPER MINING LLC	384101
AMC45992	NW	MARGARET # 312	RESOLUTION COPPER MINING LLC	384101

T1S, R13E SECTION 34 SE

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC355461	NE SE	RESOLUTION NO. 6	RESOLUTION COPPER MINING LLC	384101
AMC355462	NE SE	RESOLUTION NO. 7	RESOLUTION COPPER MINING LLC	384101
AMC355463	SE	RESOLUTION NO. 8	RESOLUTION COPPER MINING LLC	384101
AMC355464	SE	RESOLUTION NO. 9	RESOLUTION COPPER MINING LLC	384101
AMC355465	SE	RESOLUTION NO. 10	RESOLUTION COPPER MINING LLC	384101
AMC355466	SE	RESOLUTION NO. 11	RESOLUTION COPPER MINING LLC	384101
AMC355467	SE	RESOLUTION NO. 12	RESOLUTION COPPER MINING LLC	384101
AMC355468	SE	RESOLUTION NO. 13	RESOLUTION COPPER MINING LLC	384101
AMC355469	SW SE	RESOLUTION NO. 14	RESOLUTION COPPER MINING LLC	384101
AMC355474	SE	RESOLUTION NO. 19	RESOLUTION COPPER MINING LLC	384101
AMC355475	SE	RESOLUTION NO. 20	RESOLUTION COPPER MINING LLC	384101

SHALLOW HYDRO HOLES

H-K

T1S, R13E SECTION 21 SW1/4 SW1/4

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC313033	SW	KAY 148	RESOLUTION COPPER MINING LLC	384101
AMC313035	SW	KAY 150	RESOLUTION COPPER MINING LLC	384101

ROAD ACCESS TO H-K FROM HWY 60
FR 2458 (NO IMPROVEMENTS NEEDED) LOCATED IN SW OF SECTION 21
FR 2458 ALSO LOCATED IN SECTION 28 W1/2 (SEE BELOW)

T1S, R13E SECTION 21 SW

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC313027	SW	KAY 141	RESOLUTION COPPER MINING LLC	384101
AMC313033	SW	KAY 148	RESOLUTION COPPER MINING LLC	384101
AMC313035	SW	KAY 150	RESOLUTION COPPER MINING LLC	384101
AMC357098	SW	KAY 140A	RESOLUTION COPPER MINING LLC	384101

T1S, R13E SECTION 28 W1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC313035	NW	KAY 150	RESOLUTION COPPER MINING LLC	384101
AMC348057	NW	ERIC #243	RESOLUTION COPPER MINING LLC	384101
AMC348058	NE NW	ERIC #244	RESOLUTION COPPER MINING LLC	384101
AMC348061	NW	ERIC #247	RESOLUTION COPPER MINING LLC	384101
AMC355534	SW	SUN NO 62A	RESOLUTION COPPER MINING LLC	384101
AMC355535	SW	SUN NO 63A	RESOLUTION COPPER MINING LLC	384101
AMC355536	SW SE	SUN NO 64A	RESOLUTION COPPER MINING LLC	384101
AMC359404	NW SW	GLADIATOR NO.9	RESOLUTION COPPER MINING LLC	384101
AMC362903	NW	OLGA 1	RESOLUTION COPPER MINING LLC	384101
AMC362904	NW	OLGA 2	RESOLUTION COPPER MINING LLC	384101
AMC362905	NW	OLGA 3	RESOLUTION COPPER MINING LLC	384101
AMC46016	NE NW	MARGARET # 336	RESOLUTION COPPER MINING LLC	384101
AMC47117	NW	KAY NO 152	RESOLUTION COPPER MINING LLC	384101
AMC60162	NW	0AK NO 35	RESOLUTION COPPER MINING LLC	384101
AMC60163	NW	0AK NO 36	RESOLUTION COPPER MINING LLC	384101
AMC60164	NW	0AK NO 37	RESOLUTION COPPER MINING LLC	384101
AMC60294	NW	SUN #52	RESOLUTION COPPER MINING LLC	384101

TUNNEL CHARACTERIZATION BOREHOLES CLAIMS DATA

TUNNEL BOREHOLES

PVT-3

T1S, R13E SECTION 29 SE1/4 SE1/4

AMC355532	SE	OAK NO 40A	RESOLUTION COPPER MINING LLC	384101

ROAD ACCESS TO PVT-3
MAGMA MINE ROAD (NO IMPROVEMENTS NEEDED) LOCATED IN SECTION 29 SE
NEXT TO HIGHWAY 60

T1S, R13E SECTION 29 SE

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC355532	SE	OAK NO 40A	RESOLUTION COPPER MINING LLC	384101

TUNNEL BOREHOLES

PVT-4

T1S, R13E SECTION 27 NW1/4 SW1/4

AMC60310	NW SW	SUN #68	RESOLUTION COPPER MINING LLC	384101

ROAD ACCESS TO PVT-4

EXISTING UNIDENTIFIED ROAD (NO IMPROVEMENTS NEEDED) LOCATED IN SECTION 27 W1/2 JUST OFF OF HIGHWAY 60.

T1S, R13E SECTION 27 NW1/4 SW1/4

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC60300	NW	SUN #58	RESOLUTION COPPER MINING LLC	384101

TUNNEL BOREHOLES

PVT-5

T1S, R13E SECTION 27 NE1/4 NW1/4

AMC45924	NW	MARGARET # 240	RESOLUTION COPPER MINING LLC	384101

ROAD ACCESS TO PVT-5
NEW ROAD LOCATED IN SECTION 27 N1/2
NEW ROAD ALSO LOCATED IN SECTION 22 SE
FR 2461 LOCATED IN SECTION 22 SE AND SECTION 23 W1/2

T1S, R13E SECTION 27 N1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC45923	NE NW	MARGARET # 239	RESOLUTION COPPER MINING LLC	384101
AMC45924	NW	MARGARET # 240	RESOLUTION COPPER MINING LLC	384101

T1S, R13E SECTION 22 SE

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC45855	SW SE	MARGARET #163	RESOLUTION COPPER MINING LLC	384101
AMC45858	SW SE	MARGARET #165	RESOLUTION COPPER MINING LLC	384101
AMC45908	SE	MARGARET # 224	RESOLUTION COPPER MINING LLC	384101
AMC45910	SE	MARGARET # 226	RESOLUTION COPPER MINING LLC	384101
AMC45916	SW SE	MARGARET # 233	RESOLUTION COPPER MINING LLC	384101
AMC45919	SW SE	MARGARET # 235	RESOLUTION COPPER MINING LLC	384101
AMC45921	SW SE	MARGARET # 237	RESOLUTION COPPER MINING LLC	384101
AMC45932	SE	MARGARET # 248	RESOLUTION COPPER MINING LLC	384101
AMC45934	SE	MARGARET # 250	RESOLUTION COPPER MINING LLC	384101
AMC45936	SE	MARGARET # 252	RESOLUTION COPPER MINING LLC	384101

T1S, R13E SECTION 23 W1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC347702	NW	ERIC #1	RESOLUTION COPPER MINING LLC	384101
AMC45823	NW	MARGARET #135	RESOLUTION COPPER MINING LLC	384101
AMC45826	NW	MARGARET #137	RESOLUTION COPPER MINING LLC	384101
AMC45828	NW	MARGARET #139	RESOLUTION COPPER MINING LLC	384101
AMC45843	NE NW	MARGARET #154	RESOLUTION COPPER MINING LLC	384101
AMC45844	NE NW	MARGARET #155	RESOLUTION COPPER MINING LLC	384101
AMC45845	NE NW	MARGARET #156	RESOLUTION COPPER MINING LLC	384101
AMC45901	NW	MARGARET # 217	RESOLUTION COPPER MINING LLC	384101
AMC45903	NW	MARGARET # 219	RESOLUTION COPPER MINING LLC	384101
AMC45905	NW	MARGARET # 221	RESOLUTION COPPER MINING LLC	384101
AMC45907	SW	MARGARET # 223	RESOLUTION COPPER MINING LLC	384101
AMC45909	SW	MARGARET # 225	RESOLUTION COPPER MINING LLC	384101
AMC45911	NE NW	MARGARET # 227	RESOLUTION COPPER MINING LLC	384101
AMC45912	NE NW	MARGARET # 228	RESOLUTION COPPER MINING LLC	384101
AMC45913	NE NW	MARGARET # 229	RESOLUTION COPPER MINING LLC	384101
AMC45914	SW SE	MARGARET # 230	RESOLUTION COPPER MINING LLC	384101
AMC45915	SW SE	MARGARET # 231	RESOLUTION COPPER MINING LLC	384101
AMC45931	SW	MARGARET # 247	RESOLUTION COPPER MINING LLC	384101
AMC45933	SW	MARGARET # 249	RESOLUTION COPPER MINING LLC	384101
AMC45935	SW	MARGARET # 251	RESOLUTION COPPER MINING LLC	384101

AMC45969	NW SW	MARGARET # 285	RESOLUTION COPPER MINING LLC	384101
AMC45970	SW SE	MARGARET # 286	RESOLUTION COPPER MINING LLC	384101
AMC45971	SW SE	MARGARET # 287	RESOLUTION COPPER MINING LLC	384101

TUNNEL BOREHOLES

PVT-6

T1S, R13E SECTION 23 NW1/4 SE1/4

AMC316548	NE	ROOK NO 1	RESOLUTION COPPER MINING LLC	384101
AMC316549	NE SE	ROOK NO 2	RESOLUTION COPPER MINING LLC	384101

ROAD ACCESS TO PVT-6
FR 2463 (TO BE IMPROVED) LOCATED IN SECTION 23 N1/2
FR 2463 ALSO LOCATED IN SECTION 22 TO FR 2466

T1S, R13E SECTION 23 N1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC316548	NE	ROOK NO 1	RESOLUTION COPPER MINING LLC	384101
AMC316549	NE SE	ROOK NO 2	RESOLUTION COPPER MINING LLC	384101
AMC45903	NW	MARGARET # 219	RESOLUTION COPPER MINING LLC	384101
AMC45905	NW	MARGARET # 221	RESOLUTION COPPER MINING LLC	384101
AMC45911	NE NW	MARGARET # 227	RESOLUTION COPPER MINING LLC	384101
AMC45912	NE NW	MARGARET # 228	RESOLUTION COPPER MINING LLC	384101
AMC45913	NE NW	MARGARET # 229	RESOLUTION COPPER MINING LLC	384101
AMC47272	NE	LD NO 1	RESOLUTION COPPER MINING LLC	384101
AMC47273	NE SE	LD NO 2	RESOLUTION COPPER MINING LLC	384101

T1S, R13E SECTION 22

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC45846	NE NW	MARGARET #157	RESOLUTION COPPER MINING LLC	384101
AMC45849	NE NW	MARGARET #159	RESOLUTION COPPER MINING LLC	384101
AMC45852	NE NW	MARGARET #161	RESOLUTION COPPER MINING LLC	384101
AMC45853	NW	MARGARET #162	RESOLUTION COPPER MINING LLC	384101
AMC45855	SW SE	MARGARET #163	RESOLUTION COPPER MINING LLC	384101
AMC45856	SW	MARGARET #164	RESOLUTION COPPER MINING LLC	384101
AMC45858	SW SE	MARGARET #165	RESOLUTION COPPER MINING LLC	384101
AMC45859	SW	MARGARET #166	RESOLUTION COPPER MINING LLC	384101
AMC45902	NE	MARGARET # 218	RESOLUTION COPPER MINING LLC	384101
AMC45904	NE	MARGARET # 220	RESOLUTION COPPER MINING LLC	384101
AMC45906	NE	MARGARET # 222	RESOLUTION COPPER MINING LLC	384101
AMC45908	SE	MARGARET # 224	RESOLUTION COPPER MINING LLC	384101
AMC45910	SE	MARGARET # 226	RESOLUTION COPPER MINING LLC	384101

TUNNEL BOREHOLES

APV-6

T1S, R13E SECTION 23 SW1/4 SE1/4

AMC45970	SW SE	MARGARET # 286	RESOLUTION COPPER MINING LLC	384101
AMC47274	SE	LD NO 3	RESOLUTION COPPER MINING LLC	384101

ROAD ACCESS TO APV-6
FR 2505 (TO BE IMPROVED) LOCATED IN SECTION 23 S1/2

T1S, R13E SECTION 23 S1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC45931	SW	MARGARET # 247	RESOLUTION COPPER MINING LLC	384101
AMC45933	SW	MARGARET # 249	RESOLUTION COPPER MINING LLC	384101
AMC45935	SW	MARGARET # 251	RESOLUTION COPPER MINING LLC	384101
AMC45969	NW SW	MARGARET # 285	RESOLUTION COPPER MINING LLC	384101
AMC45970	SW SE	MARGARET # 286	RESOLUTION COPPER MINING LLC	384101
AMC45971	SW SE	MARGARET # 287	RESOLUTION COPPER MINING LLC	384101
AMC47274	SE	LD NO 3	RESOLUTION COPPER MINING LLC	384101

TUNNEL BOREHOLES

PVT-7

T1S, R13E SECTION 24 NW1/4 NW1/4

AMC348106	NW	ERIC #293	RESOLUTION COPPER MINING LLC	384101
AMC348107	NW	ERIC #294	RESOLUTION COPPER MINING LLC	384101

ROAD ACCESS TO PVT-7
FR 2511 (TO BE IMPROVED) LOCATED IN SECTION 24 N 1/2 AND SECTION 13 E1/2

T1S, R13E SECTION 24 N1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC348104	NE NW	ERIC #291	RESOLUTION COPPER MINING LLC	384101
AMC348105	NW	ERIC #292	RESOLUTION COPPER MINING LLC	384101
AMC348106	NW	ERIC #293	RESOLUTION COPPER MINING LLC	384101
AMC348107	NW	ERIC #294	RESOLUTION COPPER MINING LLC	384101
AMC348108	NW	ERIC #295	RESOLUTION COPPER MINING LLC	384101

T1S, R13E SECTION 13 E1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC377139	NE	WILEY BILL #1	INTEGRITY LAND AND CATTLE CO	384101
AMC377142	SE	WILEY BILL #4	INTEGRITY LAND AND CATTLE CO	384101
AMC377143	SE	WILEY BILL #5	INTEGRITY LAND AND CATTLE CO	384101
AMC377144	SE	WILEY BILL #6	INTEGRITY LAND AND CATTLE CO	384101
AMC377145	SE	WILEY BILL #7	INTEGRITY LAND AND CATTLE CO	384101
AMC377146	NE SE	WILEY BILL #8	INTEGRITY LAND AND CATTLE CO	384101
AMC377147	NE	WILEY BILL #9	INTEGRITY LAND AND CATTLE CO	384101
AMC377148	NE	WILEY BILL #10	INTEGRITY LAND AND CATTLE CO	384101
AMC377149	SE	WILEY BILL #11	INTEGRITY LAND AND CATTLE CO	384101
AMC377150	NE SE	WILEY BILL #12	INTEGRITY LAND AND CATTLE CO	384101
AMC377158	NE	WILEY BILL #21	INTEGRITY LAND AND CATTLE CO	384101
AMC377160	NE	WILEY BILL #23	INTEGRITY LAND AND CATTLE CO	384101
AMC377209	SE	WILEY BILL #72	INTEGRITY LAND AND CATTLE CO	384101

TUNNEL BOREHOLES

APV-8

T1S, R13E SECTION 11 NW1/4 SE1/4SE

AMC347874	NE SE	ERIC #175	RESOLUTION COPPER MINING LLC	384101
AMC347875	NE SE	ERIC #176	RESOLUTION COPPER MINING LLC	384101

ROAD ACCESS TO APV-8
FR 898 (NO IMPROVEMENTS NEEDED) LOCATED IN SECTION 11 SE
FR 898 ALSO LOCATED IN SECTION 14 NE

T1S, R13E SECTION 11 SE

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC347835	SE	ERIC #136	RESOLUTION COPPER MINING LLC	384101
AMC347836	SE	ERIC #137	RESOLUTION COPPER MINING LLC	384101
AMC347837	SE	ERIC #138	RESOLUTION COPPER MINING LLC	384101
AMC347838	SE	ERIC #139	RESOLUTION COPPER MINING LLC	384101
AMC347839	SW SE	ERIC #140	RESOLUTION COPPER MINING LLC	384101
AMC347872	NE NW SW SE	ERIC #173	RESOLUTION COPPER MINING LLC	384101
AMC347873	NE SE	ERIC #174	RESOLUTION COPPER MINING LLC	384101
AMC347874	NE SE	ERIC #175	RESOLUTION COPPER MINING LLC	384101
AMC347875	NE SE	ERIC #176	RESOLUTION COPPER MINING LLC	384101
AMC347876	NE SE	ERIC #177	RESOLUTION COPPER MINING LLC	384101

T1S, R13E SECTION 14 NE

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC347774	NE	ERIC #73	RESOLUTION COPPER MINING LLC	384101
AMC347775	NE	ERIC #74	RESOLUTION COPPER MINING LLC	384101
AMC347776	NE NW	ERIC #75	RESOLUTION COPPER MINING LLC	384101
AMC347837	NE	ERIC #138	RESOLUTION COPPER MINING LLC	384101
AMC347838	NE	ERIC #139	RESOLUTION COPPER MINING LLC	384101
AMC347839	NE NW	ERIC #140	RESOLUTION COPPER MINING LLC	384101

TUNNEL BOREHOLES

PVT-8

T1S, R14E SECTION 7 NW1/4 SE1/4

AMC377172	SE	WILEY BILL #35	INTEGRITY LAND AND CATTLE CO	384101
AMC377173	SE	WILEY BILL #36	INTEGRITY LAND AND CATTLE CO	384101
AMC377174	NE SE	WILEY BILL #37	INTEGRITY LAND AND CATTLE CO	384101
AMC377175	NE SE	WILEY BILL #38	INTEGRITY LAND AND CATTLE CO	384101

ROAD ACCESS TO PVT-8
FR 320 (TO BE IMPROVED) LOCATED IN SECTION 7 S1/2
T1S, R14E SECTION 7 S1/2

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC377170	SE	WILEY BILL #33	INTEGRITY LAND AND CATTLE CO	384101
AMC377171	SE	WILEY BILL #34	INTEGRITY LAND AND CATTLE CO	384101
AMC377172	SE	WILEY BILL #35	INTEGRITY LAND AND CATTLE CO	384101
AMC377173	SE	WILEY BILL #36	INTEGRITY LAND AND CATTLE CO	384101
AMC377174	NE SE	WILEY BILL #37	INTEGRITY LAND AND CATTLE CO	384101
AMC377175	NE SE	WILEY BILL #38	INTEGRITY LAND AND CATTLE CO	384101

TUNNEL BOREHOLES

PVT-9

T1S, R14E SECTION 8 NE1/4 NW1/4

AMC377195	NW	WILEY BILL #58	INTEGRITY LAND AND CATTLE CO	384101
AMC377197	NW	WILEY BILL #60	INTEGRITY LAND AND CATTLE CO	384101

ROAD ACCESS TO PVT-9
UNIDENTIFIED ROAD (TO BE IMPROVED) LOCATED IN SECTION 5 SW AND SECTION 8 NW OF T1S, R14E JUST OFF HWY 60

T1S, R14E SECTION 8 NW

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC377195	NW	WILEY BILL #58	INTEGRITY LAND AND CATTLE CO	384101
AMC377197	NW	WILEY BILL #60	INTEGRITY LAND AND CATTLE CO	384101

T1S, R14E SECTION 5 SW

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case Type
AMC377197	SW	WILEY BILL #60	INTEGRITY LAND AND CATTLE CO	384101

APPENDIX F

RESOLUTION
2007 FIRE RESTRICTION RESPONSE PLAN; RESOURCE EVALUATION PROJECT

Resolution Copper Mining, LLC

PHOENIX OFFICE:
2525 E. Arizona Biltmore Circle - Suite C-135 - Phoenix, AZ 85016
Tel.: (602) 956-0223 - Fax: (602) 956-0332
SUPERIOR OFFICE:
102 Magma Heights – P.O. Box 1944 - Superior, AZ 85273
Tel.: (520) 689-9374 - Fax: (520) 689-9304

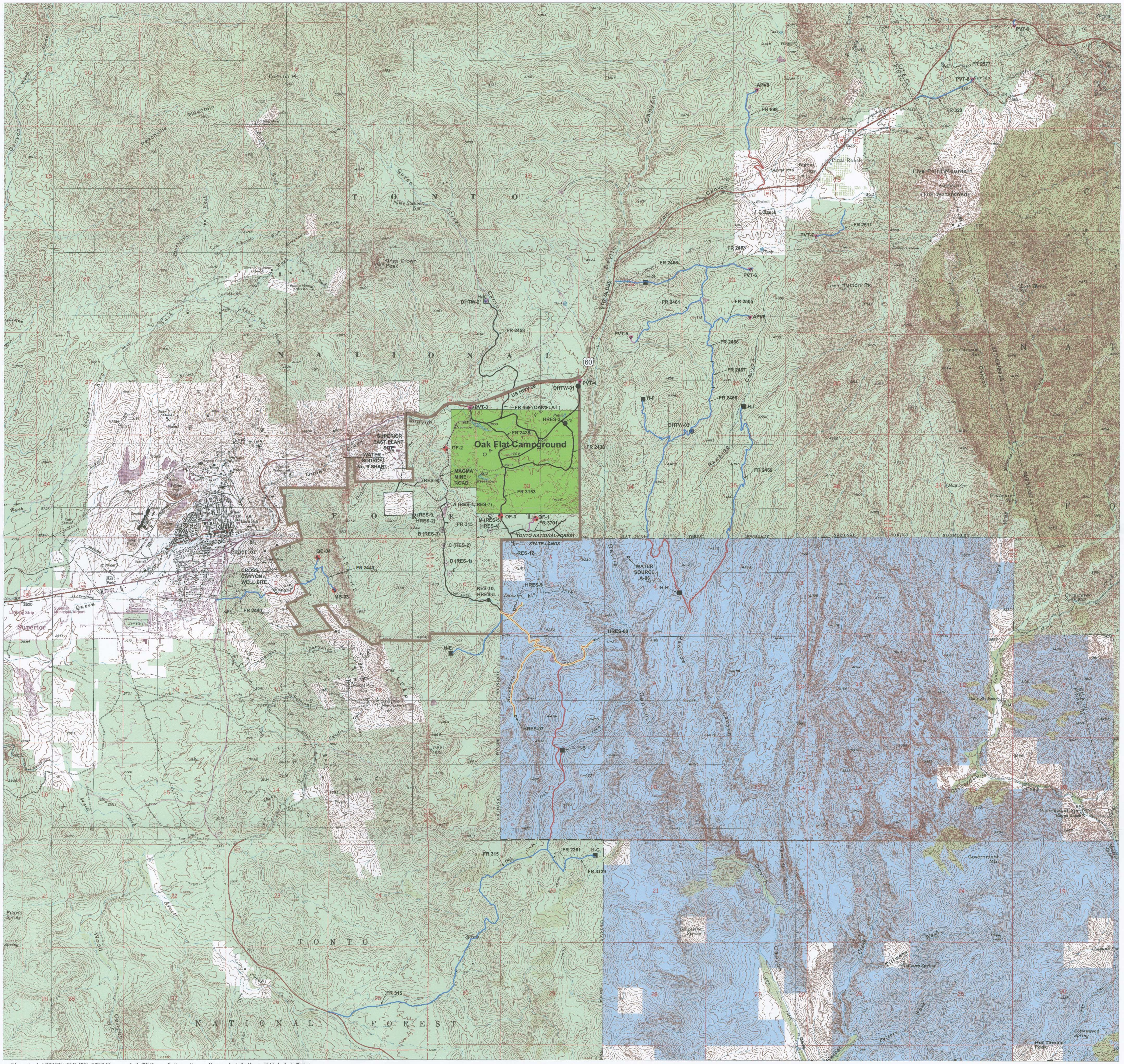
2007 Fire Restriction Response Plan; Resource Evaluation Project.

The following Fire Plan is to be posted at each drill site. In addition to this plan document, all requirements described in the USFS Fire Prevention document sent by fax to Carl Hehnke at the No. 9 site on June 13, 2001, and the document sent to RCML by Brad Johnson USFS on May 6, 2006 will form the basis of the Fire Plan. Major's drill foreman will be provided a copy of, and will become familiar with the USFS Fire Prevention requirements.

- Britton Kiefer; Senior Geologist is the contractor manager for the RCML Exploration Drilling Operations and will be designated as the Chief Fire Guard and Fire Plan Representative. During drilling operations, one member of the drilling crew will be designated as a Fire Guard in order to assure on-site guard duties are performed 24 hours per day. These fire guards will also act as fire lookouts to spot lightning-caused fires, or any other fires in the general area.
- A fire toolbox consisting of four shovels, two axes, one Pulaski and one five gallon backpack water pump will be provided at each drill site. This equipment is for the sole purpose of firefighting.
- Each drill site will be equipped with a fire hose at least 100 feet long. The water pressure will be provided either by the water lines at the drill rig, or by a portable pump operating with a large the water storage tank at each drill rig.
- Each drill site and each pickup or service truck will be equipped with a backpack water pump.
- Each drill site will be carefully cleared of brush.
- The drilling plan is for operating 24 hours per day, 7 days per week. Shutting down drill rigs operating at the depths anticipated has the potential to cause drill rods to become stuck in the hole. Therefore RCML has obtained a waiver that will allow continued operations during Stage D fire danger.
- RCML has also been issued a waiver that allows small welding jobs to be completed on site during Stage D fire danger. Prior to any welding, a 30-foot diameter area is to be thoroughly soaked down with water and kept wet during the entire length of the welding or cutting operations. In addition a RCML hot work permit outlining the procedures for fire watch and other safety precautions will be filled out and made available for inspection at all times during the Welding or Cutting operations. The Hot Work Permits will be turned into the Major Drilling Safety Manager at the end of the shift. No welding or cutting will be done when wind speeds exceed 10 mph. Whenever it is possible Hot Work will be done in the yard at Magma Shaft #9 instead of at the drill sites. The area adjacent to the welding/cutting operations shall be thoroughly checked for fires for one hour after the project has been completed.
- Smoking is allowed only in enclosed areas such as vehicles with the windows shut or the driller's barn.
- In addition to calling 911, all fires will be reported to Forest Dispatcher's office at 602-225-5355 even if fire is extinguished.
- No fires or cook stoves are permitted at the drill sites.
- Employee's who are found in violation of the conditions of this waiver will be subject to discipline up to and including discharge from the site.

APPENDIX G

STATE AND PRIVATELY OWNED LAND ACTIVITIES LOCATION MAP AND DESCRIPTION OF ACTIVITIES



LEGEND

- Resolution Parcel Boundary
- Exploration Drill Site
- Tunnel Characterization Bore Hole
- Deep Hydrogeology Testing / Monitor Well
- Shallow Hydrogeology Well Site
- Drill Site (Approved Under November 2004 Modification)
- Drill Site (Approved Under The Original February 2001 P.O.O.)
- Existing Access Road (To Be Improved)
- New Road
- Other Roadway Improvements
- Completed State Land Roadway Improvements
- Existing Road (To Be Maintained)
- Brushing/Clearing Along Roadway
- Tonto National Forest
- State Trust Lands

N / W E / S

0' 2000' 4000'

SCALE 1" = 2000'

Pinal County, Arizona
Superior, Pinal Ranch &
Teapot Mountain 7.5'
USGS Maps

WestLand Resources Inc.
Engineering and Environmental Consultants

RESOLUTION COPPER MINING
PLAN OF OPERATIONS

STATE AND PRIVATELY OWNED
LAND ACTIVITIES LOCATION MAP

Appendix G

M:\projects\807.12\USFS POO 2007\Figures 4-7-08\Plan_of_Operation-w-Connected Actions-REV-A 4-7-08.dwg

Description of Activities on State and Privately Owned Lands - Resolution Copper Mining, LLC

Activity Name	Purpose and Uses	Location	Land Ownership	Disturbance		Facility Description	Equipment Used	Phasing/Abandonment
				Within Existing Disturbance?	Estimated Disturbance Area			
HRES-07 (State Well Site A)	Geologic and Hydrologic data collection	T2S, R13E, NE 1/4 NE 1/4 Sec 8	State Land Dept	No	0.18 ac	• maximum disturbance area 80ft X 100ft • depth is 800 to 1,500 ft using rotary or percussion methods with maximum 12-inch diameter bit • 3ft X 3ft concrete pad placed around well surface casing	1 Lang LM-140 series tophead rotary drill rig 1 Pipe truck 1 D-9 Cat Bulldozer 1 track hoe 1 mud tank 1 water truck 1 water storage tank 1 generator for drill rig	**Completed**
HRES-08 (State Well Site D)	Geologic and Hydrologic data collection	T2S, R13E, SE 1/4 NW 1/4 Sec 8	State Land Dept	No	0.18 ac	• maximum disturbance area 80ft X 100ft • depth is 800 to 1,500 ft using rotary or percussion methods with maximum 12-inch diameter bit • 3ft X 3ft concrete pad placed around well surface casing	1 Lang LM-140 series tophead rotary drill rig 1 Pipe truck 1 D-9 Cat Bulldozer 1 track hoe 1 mud tank 1 water truck 1 water storage tank 1 generator for drill rig	**Completed**
HRES-07 Access Road	Roadway improvement and grading and clearing for new access to Well Site A	T2S, R13E, Sec 5 and 8	State Land Dept	Yes	0.90 ac	• 12ft X 3,272ft disturbance area assumed	bulldozer, hammer-hoes	**Completed** – on periodic maintenance through life of mine
HRES-08 Access Road	Roadway improvement and grading and clearing for new access to Well Site D	T2S, R13E, Sec 5 and 8	State Land Dept	Yes	0.79 ac	• 12ft X 2,880ft disturbance area assumed	bulldozer, hammer-hoes	**Completed**– on periodic maintenance through life of mine
HRES-05 (State Hydrologic Monitoring Well)	Groundwater monitoring	T2S, R13E, SW 1/4 SW 1/4 Sec 5	State Land Dept	Yes	--	• drilled with 16-inch drill bit to 20ft and 9-inch drill bit as deep as 500 m using reverse circulation air rotary method • 5ft X 5ft concrete pad installed at wellhead	1 Lang LM-140 series tophead rotary drill rig 1 crane-equipped flat-bed truck 1 8,000 gallon drill fluid containment system 1 winch truck 1 truck-mounted equipment storage container 1 auxiliary air compressor support vehicles	**Completed**
HRES-05 Access Road	Roadway improvement and widening for access to well site within State Lands	T2S, R13E, SW 1/4 SW 1/4 Sec 5	State Land Dept	Yes	--	--	--	**Completed**– on periodic maintenance through life of mine
RES-12 (State Drill Pad #2)	Exploration	T2S, R13E, Nw1/4 NW 1/4 Sec 5	State Land Dept	Yes	0.7 ac	• 50ft X 100ft drill pad • drilled by open hole technique for 3,000ft then deepened to 7,500ft by diamond drilling • up to 10 deflections from trunk hole by diamond drilling	1 Schram 685 Rotary Drill Rig 1 Pipe truck 1 UDR-5000 Core Drill Rig 1 UDR-1500 Core Drill Rig 1 hoe ram 1 water truck Rollers 1 track-mounted back hoe	**Initiation** – Currently in use and authorized through December 2008 **Length of Occupancy** Throughout mine planning stage **Concurrent reclamation** – After completion of drilling and testing activities the pad will be

Description of Activities on State and Privately Owned Lands - Resolution Copper Mining, LLC

Activity Name	Purpose and Uses	Location	Land Ownership	Disturbance		Facility Description	Equipment Used	Phasing/Abandonment
				Within Existing Disturbance?	Estimated Disturbance Area			
								graded and reclaimed. **Closure** Hydro well monitoring will continue throughout life of mine – Pad will be graded and road maintained to allow support vehicles and pump rigs to access well.
Shallow Well Site H-B	Explore groundwater in Whitetail Conglomerate of underlying units where Apache Leap Tuff is absent; provide additional control for direction and magnitude of water level gradients south of the Resolution Parcel; provide aquifer parameters for Whitetail of underlying units	T2S, R13E, NW ¼ NE ¼ Section 17	State Land Dept	Yes	0.18	• 80ft X 100ft maximum drill pad size • Approximately 1500 ft hole (12" diameter to start reduced to 9" then 6" depending on depth. • Well completion with steel casing, pump and or transducers, gravel pack, sounder access and inflatable packers designed for continual monitoring	1 Lang LM-140 series tophead rotary drill rig or equivalent 1 mud tank 1 heavy duty air compressor 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 front end loader 1 backhoe 1 tracked jaw crusher	**Initiation** – May 2009 **Length of Occupancy** – Three to four weeks for drilling and well set-up and construction - periodic visits with pump rig to reconfigure packers and transducers during mine planning period **Concurrent reclamation** – Sites will be reclaimed but left accessible for long term monitoring of the Apache Leap Aquifer. **Closure** - Long term monitor well through life of mine
Shallow Well Site H-H	Provide additional control in Apache Leap Tuff aquifer for direction and magnitude of water level gradients in east part of Devils Canyon drainage basin; provide additional aquifer parameters for tuff	T2S, R13E, SW ¼ Section 4	State Land Dept	No	0.18	• 80ft X 100ft maximum drill pad size • Approximately 1500 ft hole (12" diameter to start reduced to 9" then 6" depending on depth. • Well completion with steel casing, pump and or transducers, gravel pack, sounder access and inflatable packers designed for continual monitoring	1 Lang LM-140 series tophead rotary drill rig or equivalent 1 mud tank 1 heavy duty air compressor 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 front end loader 1 backhoe 1 tracked jaw crusher	**Initiation** – October 2009 **Length of Occupancy** – Three to four weeks for drilling and well set-up and construction - periodic visits with pump rig to reconfigure packers and transducers during mine planning period **Concurrent reclamation** – Sites will be reclaimed but left accessible for long term monitoring of the Apache Leap Aquifer. **Closure** - Long term monitor well through life of mine
Cross Canyon Well	Hydrologic Monitoring	T2S, R12E, NW ¼ SW ¼ Sec 2	Private	Yes	0.18	• 80ft X 100ft maximum drill pad size • 2,000-meter core drill hole completed with 4-inch steel casing • 1m X 1m concrete pad be installed at wellhead	1 Lang LM-200 series tophead rotary drill rig 1 Pipe truck 1 UDR-5000 Core Drill Rig 1 UDR-1500 Core Drill Rig 1 hoe ram 1 water truck Rollers 1 track-mounted back hoe	**Initiation** – January 2009 **Length of Occupancy** – throughout project life and reclaimed when monitoring is no longer required for PFS or EIS process **Concurrent reclamation** – Sites will be reclaimed but left accessible for long term monitoring of the Apache Leap Aquifer.

Description of Activities on State and Privately Owned Lands - Resolution Copper Mining, LLC

Activity Name	Purpose and Uses	Location	Land Ownership	Disturbance		Facility Description	Equipment Used	Phasing/Abandonment
				Within Existing Disturbance?	Estimated Disturbance Area			
								Closure - On periodic maintenance throughout life of mine
FR-315	Roadway improvements for access through state land to shallow hydrologic well site H-B (located on state land)	T2S, R13E, portions of E ½ Section 8 and 17	State Land Dept	Yes	[Note]	Improve approximately 2.2 miles of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** – January 2009 **Length of Occupancy** – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. **Concurrent reclamation** – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix **Closure** On periodic maintenance throughout life of mine
Extension of FR 898	Roadway improvements for access through privately owned land to tunnel characterization borehole APV-8 (located on Tonto National Forest)	T1S, R13E, portion of E ½ Section 14	Private	Yes	[Note]	Improve approximately 0.7 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** – November 2009 **Length of Occupancy** – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. **Concurrent reclamation** – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix **Closure** - On periodic maintenance until well is not needed. Areas will be reclaimed (ripped and seeded with a Forest Service-approved mix).
Extension of FR 2440	Roadway improvements for access through privately owned land to exploration sites QC-04 and MB-03 on Forest Lands	T2S, R12E, portion of S ½ Section 2	Private	Yes	[Note]	Improve existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** – January 2009 **Length of Occupancy** – Three to four weeks **Concurrent reclamation** – Road will be maintained through out life of mine for long term monitoring well on Resolution fee land **Closure** - Remain on maintenance for life of mine

Resolution Copper Mining, LLC - Description of Activities on State and Privately Owned Lands

Activity Name	Purpose and Uses	Location	Land Ownership	Disturbance		Facility Description	Equipment Used	Phasing/Abandonment
				Within Existing Disturbance?	Estimated Disturbance Area			
Extension of FR 2466 and FR 2469	Roadway improvements for access through state land to shallow hydrologic well site H-I (located on Tonto National Forest)	T2S, R13E, portions of Section 3 and 4	State Land Dept	Yes	[Note]	Improve existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	**Initiation** – January 2009 **Length of Occupancy** – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. **Concurrent reclamation** – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix **Closure** On periodic maintenance throughout life of mine

Note: Access road improvements are planned along portions of approximately 5.3 miles of existing access road on state and privately owned lands.
Approximately 3.2 miles of existing road would be improved for gaining access to activities on Tonto National Forest.

APPENDIX H

DUSTREAT DC9112 DESCRIPTION AND MATERIAL SAFETY DATA SHEET

GE Infrastructure
Water & Process Technologies

DusTreat™ DC9112

Dust Control Binding Agent

- Provides excellent control of fugitive emissions on unpaved roads.
- Effective on a broad range of access and mine haul roads.
- Reduces costs associated with typical dust suppression programs.
- Effective on coal, ores, and other bulk solid materials
- Controls dust in active storage piles

Description and Use

DusTreat™ DC9112 is a binder specifically formulated to control fugitive dust from storage piles and haul roads. This product is biodegradable and does not contain corrosive chloride compounds or waste oils. DusTreat DC9112 solutions are particularly effective in reducing respirable dust.

Fugitive dust is typically generated by moving vehicles and wind. These dust emissions can be a safety hazard, an environmental nuisance, and can increase maintenance of material handling equipment. In addition, these emissions can represent a substantial loss of valuable fuel.

Fugitive emissions can be significantly reduced by applying DusTreat DC9112 as a dilute solution from a water truck equipped with sprays. Dilution range will range from 1 –50% and depends on the type of traffic and road material.

Treatment and Feeding Requirements

Proper treatment levels for DusTreat DC9112 depend on many factors, such as severity of the problem, environmental influences and operating characteristics of the system. Therefore, this product should be used in accordance with the control parameters that GEWPT establishes for the application.

Maximum efficiency and minimum cost is ensured by using GEWPT wet suppression systems. These systems are fully automated and custom sized per site specifications to provide reliable and economical chemical treatment. While optimal results are obtained with GEWPT equipment, DusTreat DC9112 can be used in other feed systems. Check with your GEWPT representative for material compatibility information.

For contact with neat product, recommended materials of construction include stainless steel and PVC. For dilute aqueous solutions, use of mild steel is acceptable.

General Properties & Safety

Physical properties of DusTreat DC9112 are shown on the Material Safety Data Sheet, a copy of which is available on request.

Storage

DusTreat DC9112 should be stored at temperatures above freezing. To ensure maximum activity, use this product within six months.

Packaging Information

DusTreat DC9112 is a liquid blend available in a wide variety of customized containers and delivery methods. Contact your GEWPT representative for details.

General Electric Company
4636 Somerton Rd., PO Box 3002
Trevose, PA 19053-6783
T 215-355-3300

imagination at work

Company logo

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
Business telephone: (215) 355-3300

Material Safety Data Sheet

Issue Date: 29-MAR-2002

EMERGENCY TELEPHONE (Health/Accident): (800) 877-1940

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1 PRODUCT IDENTIFICATION

PRODUCT NAME:

DUSTREAT DC9112

PRODUCT APPLICATION AREA:

DUST CONTROL AGENT.

2 COMPOSITION / INFORMATION ON INGREDIENTS

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

This product is not hazardous as defined by OSHA regulations.

No component is considered to be a carcinogen by the National Toxicology Program, the International Agency for Research on Cancer, or the Occupational Safety and Health Administration at OSHA thresholds for carcinogens.

3 HAZARDS IDENTIFICATION

****

EMERGENCY OVERVIEW

CAUTION

May cause slight irritation to the skin. May cause moderate irritation to the eyes. Mists/aerosols may cause irritation to upper respiratory tract.

DOT hazard is not applicable
Emergency Response Guide is not applicable
Odor: Sweet; Appearance: Dark Brown, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water

****

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:
Primary route of exposure; May cause slight irritation to the skin.

ACUTE EYE EFFECTS:
May cause moderate irritation to the eyes.

ACUTE RESPIRATORY EFFECTS:
Mists/aerosols may cause irritation to upper respiratory tract.

INGESTION EFFECTS:
No adverse effects expected. If more than several mouthfuls are swallowed, abdominal discomfort, nausea, diarrhea and weakness may occur.

TARGET ORGANS:
No evidence of potential chronic effects.

MEDICAL CONDITIONS AGGRAVATED:
Asthma.

SYMPTOMS OF EXPOSURE:
May cause redness or itching of skin.

4 FIRST AID MEASURES

SKIN CONTACT:
Wash thoroughly with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists.

EYE CONTACT:
Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get immediate medical attention.

INHALATION:
If nasal, throat or lung irritation develops - remove to fresh air and get medical attention.

INGESTION:
Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 3-4 glasses milk or water.

NOTES TO PHYSICIANS:
No special instructions

5 FIRE FIGHTING MEASURES

FIRE FIGHTING INSTRUCTIONS:
Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

EXTINGUISHING MEDIA:
dry chemical, carbon dioxide, foam or water

HAZARDOUS DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

FLASH POINT:

> 200F > 93C P-M(CC)

6 ACCIDENTAL RELEASE MEASURES

PROTECTION AND SPILL CONTAINMENT:

Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.

DISPOSAL INSTRUCTIONS:

Water contaminated with this product may be sent to a sanitary sewer treatment facility,in accordance with any local agreement,a permitted waste treatment facility or discharged under a permit. Product as is - Incinerate or land dispose in an approved landfill.

7 HANDLING & STORAGE

HANDLING:

Normal chemical handling.

STORAGE:

Keep containers closed when not in use. Reasonable and safe chemical storage. Protect from freezing.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

This product is not hazardous as defined by OSHA regulations.

ENGINEERING CONTROLS:

adequate ventilation

PERSONAL PROTECTIVE EQUIPMENT:

Use protective equipment in accordance with 29CFR 1910 Subpart I

RESPIRATORY PROTECTION:

A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
USE AIR PURIFYING RESPIRATORS WITHIN USE LIMITATIONS ASSOCIATED WITH THE EQUIPMENT OR ELSE USE SUPPLIED AIR-RESPIRATORS.
If air-purifying respirator use is appropriate, use a respirator with dust/mist filters.

SKIN PROTECTION:

neoprene gloves-- Wash off after each use. Replace as necessary.

EYE PROTECTION:

splash proof chemical goggles

9 PHYSICAL & CHEMICAL PROPERTIES

Specific Grav.(70F,21C)	1.311	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	20	Vapor Density (air=1)	< 1.00
Freeze Point (C)	-7		
Viscosity(cps 70F,21C)	250	% Solubility (water)	~ 100.0

Odor Sweet

Appearance		Dark Brown
Physical State		Liquid
Flash Point	P-M(CC)	> 200F > 93C
pH As Is (approx.)		6.4
Evaporation Rate (Ether=1)		< 1.00

NA = not applicable ND = not determined

10 STABILITY & REACTIVITY

STABILITY:
Stable under normal storage conditions.
HAZARDOUS POLYMERIZATION:
Will not occur.
INCOMPATIBILITIES:
May react with strong oxidizers.
DECOMPOSITION PRODUCTS:
Thermal decomposition (destructive fires) yields elemental oxides.
INTERNAL PUMPOUT/CLEANOUT CATEGORIES:
"A"

11 TOXICOLOGICAL INFORMATION

Oral LD50 RAT:	>5,000 mg/kg
Dermal LD50 RABBIT:	>2,000 mg/kg
NOTE - Estimated value	
Skin Irritation Score RABBIT:	0
Ames Assay :	NEGATIVE
Non-Ames Mutagenicity :	NEGATIVE

NOTE - Mouse Micronucleus; Unscheduled DNA Synthesis

12 ECOLOGICAL INFORMATION

AQUATIC TOXICOLOGY
Daphnia magna 48 Hour Static Screen
0% Mortality= 2000 mg/L
Fathead Minnow 48 Hour Static Screen
0% Mortality= 2000 mg/L
Rainbow Trout 96 Hour Static Bioassay with 48-Hour Renewal
0% Mortality= 2000 mg/L

BIODEGRADATION
BOD-28 (mg/g): 208
BOD-5 (mg/g): 110
COD (mg/g): 750
TOC (mg/g): 240

13 DISPOSAL CONSIDERATIONS

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
Not applicable.

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding

the proper disposal of this material.

14 TRANSPORT INFORMATION

DOT HAZARD:	Not Applicable
UN / NA NUMBER:	Not applicable
DOT EMERGENCY RESPONSE GUIDE #:	Not applicable

15 REGULATORY INFORMATION

TSCA:

All components of this product are listed in the TSCA inventory.

CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):

No regulated constituent present at OSHA thresholds

SARA SECTION 312 HAZARD CLASS:

Product is non-hazardous under Section 311/312

SARA SECTION 302 CHEMICALS:

No regulated constituent present at OSHA thresholds

SARA SECTION 313 CHEMICALS:

No regulated constituent present at OSHA thresholds

CALIFORNIA REGULATORY INFORMATION

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65) CHEMICALS PRESENT:

No regulated constituent present at OSHA thresholds

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16 OTHER INFORMATION

NFPA/HMIS		CODE TRANSLATION
Health	1	Slight Hazard
Fire	1	Slight Hazard
Reactivity	0	Minimal Hazard
Special	NONE	No special Hazard
(1) Protective Equipment	B	Goggles,Gloves

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
MSDS status:	29-JAN-1997		** NEW **
	25-FEB-1998	12	29-JAN-1997
	30-APR-1998	8;EDIT:9	25-FEB-1998
	20-JUL-1998	8;EDIT:9	30-APR-1998
	29-MAR-2002	4,12	20-JUL-1998

APPENDIX I

RECLAMATION COST ESTIMATES FOR RESOLUTION PLAN OF OPERATIONS ACTIVITIES

Resolution Pre-Feasibility Activities

Reclamation Cost Estimates for
Resolution Pre-Feasibility Activities

D10R Dozer - Task	Area (feet^2)	New Access Road Length (ft)	Road Width (ft)	Avg. Estimated Rip/Regrade Depth (ft)	Total Regrade Volume (cy)	Maximum Production (cy/hr)	Productivity Correction Factor	Factored Production (cy/hr)	Total Time (hours)
Rip/light regrade access road surfaces only		1,727	15.0	1.00	959.4	500	0.760	380.0	2.5
Rip/light regrade road improvement surfaces only	1,454,904.0			1.00	53,885.3	500	0.760	380.0	141.8
Drill pads	230,868.0			1.00	8,550.7	500	0.760	380.0	22.5
Travel time between locations									16.0

Cost Summary

Equipment	Area Reclaimed (acres)	Hours	Cost							
			Equipment ($/hr)[2]	Subtotal Equipment ($)	Labor[3] ($/hr)	Subtotal Labor ($)	Revegetation[4] ($/ac)	Subtotal Revegetation ($)	Total ($)	Per Acre[5] ($/ac)
DOZER										
Mobilization/Demobilization Fee				$ 9,900.00					9,900.00	252.23
Rip/light regrade access road surfaces only	0.6	2.5	250.00	631.21	30.66	77.41	224.00	134.40	843.03	1,405.04
Rip/light regrade improvement surfaces only	33.4	141.8	250.00	35,450.88	30.66	4,347.70	224.00	7,481.60	47,280.18	1,415.57
Borehole drill pads	5.3	22.5	250.00	5,625.44	30.66	689.90	224.00	1,187.20	7,502.54	1,415.57
Travel time between locations		16.0	250.00	4,000.00	30.66	490.56		-	4,490.56	114.26
TOTAL	39.3	182.8		**$ 45,707.53**		**$ 5,605.57**		**$ 8,803.20**	**$ 70,016.30**	**$ 4,602.68**

1. Assume average of 1 foot ripping
2. Assume 10 hour operating day at $2,500 per day rental cost - Mob/Demob is estimated delivery charge
3. Rates are based on Davis Bacon Indices General Decision (1) AZ20030016 Modification 20 and (2) AZ20030012 Modification 19, dated 12/22/06 for Pima County Arizona (AZ20030016 is for heavy dam construction, and AZ20030012 is for heavy construction based on non-union indexes)
4. Seed mixes for revegetation plus an amendment cost for 16-16-8 fertilizer and a charge for testing suitability of plant growth material
5. Per acre cost for discrete reclamation reflects travel time between sites and has increased cost by appoximately 25%.

Resolution Pre-Feasibility Activities

Reclamation Cost Estimates for Resolution Pre-Feasibility Activities

D10R Dozer - Task	Area (feet^2)	New Access Road Length (ft)	Road Width (ft)	Avg. Estimated Rip/Regrade Depth (ft)	Total Regrade Volume (cy)	Maximum Production (cy/hr)	Productivity Correction Factor	Factored Production (cy/hr)	Total Time (hours)
Rip/light regrade access road surfaces only		4,689	15.0	1.00	2,605.0	500	0.760	380.0	6.9
Rip/light regrade road improvement surfaces only	1,424,412.0			1.00	52,756.0	500	0.760	380.0	138.8
Drill pads	230,868.0			1.00	8,550.7	500	0.760	380.0	22.5
Travel time between locations									16.0

Cost Summary

Equipment	Area Reclaimed (acres)	Hours	Cost							
			Equipment ($/hr)[2]	Subtotal Equipment ($)	Labor[3] ($/hr)	Subtotal Labor ($)	Revegetation[4] ($/ac)	Subtotal Revegetation ($)	Total ($)	Per Acre[5] ($/ac)
DOZER										
Mobilization/Demobilization Fee				$ 9,900.00					9,900.00	246.58
Rip/light regrade access road surfaces only	2.2	6.9	250.00	1,713.82	30.66	210.18	224.00	492.80	2,416.80	1,098.54
Rip/light regrade improvement surfaces only	32.7	138.8	250.00	34,707.90	30.66	4,256.58	224.00	7,324.80	46,289.27	1,415.57
Borehole drill pads	5.3	22.5	250.00	5,625.44	30.66	689.90	224.00	1,187.20	7,502.54	1,415.57
Travel time between locations		16.0	250.00	4,000.00	30.66	490.56		-	4,490.56	111.71
TOTAL	40.2	184.2		**$ 46,047.15**		**$ 5,647.22**		**$ 9,004.80**	**$ 70,599.18**	**$ 4,287.97**

1. Assume average of 1 foot ripping
2. Assume 10 hour operating day at $2,500 per day rental cost - Mob/Demob is estimated delivery charge
3. Rates are based on Davis Bacon Indices General Decision (1) AZ20030016 Modification 20 and (2) AZ20030012 Modification 19, dated 12/22/06 for Pima County Arizona (AZ20030016 is for heavy dam construction, and AZ20030012 is for heavy construction based on non-union indexes)
4. Seed mixes for revegetation plus an amendment cost for 16-16-8 fertilizer and a charge for testing suitability of plant growth material
5. Per acre cost for discrete reclamation reflects travel time between sites and has increased cost by appoximately 25%.