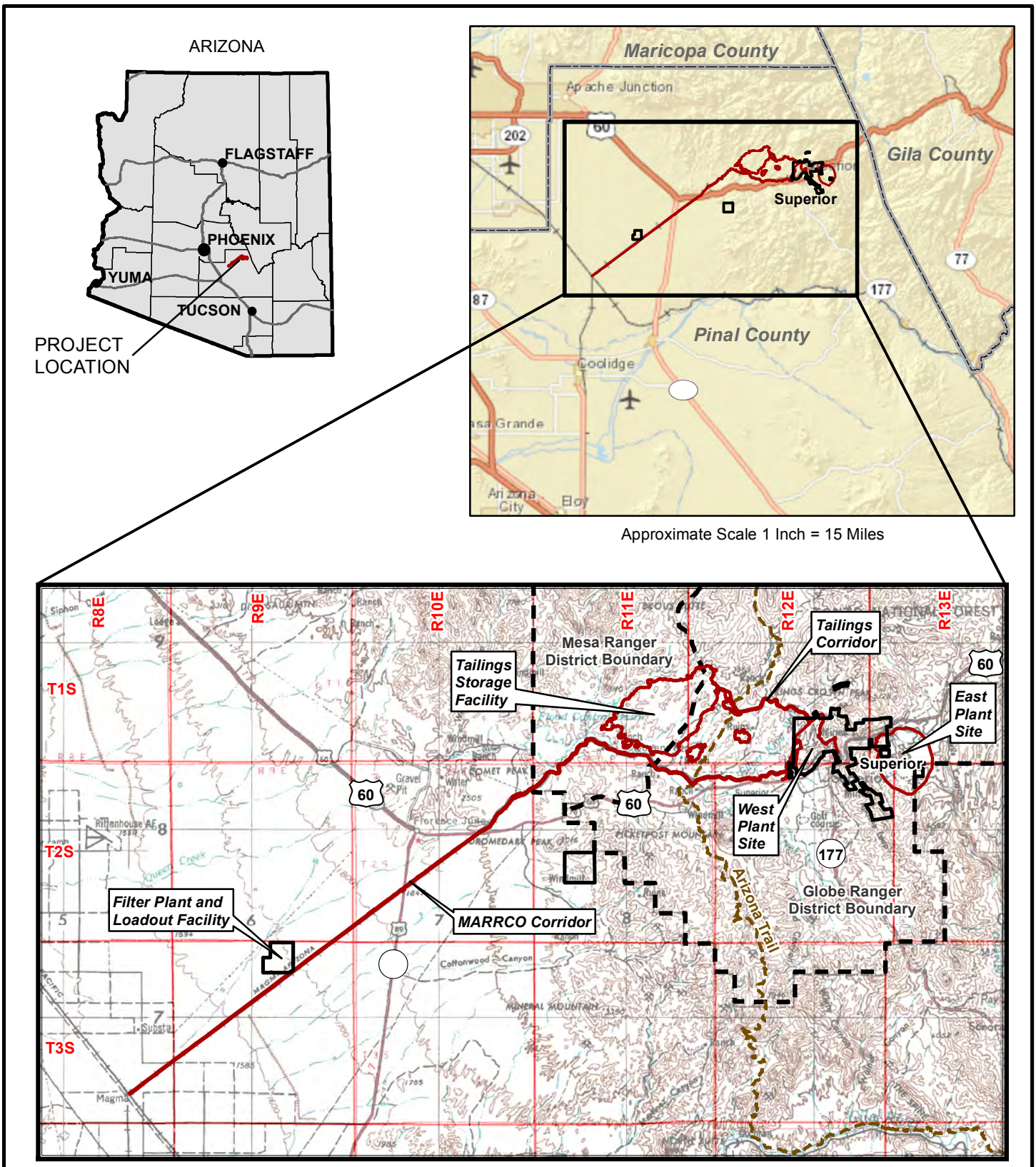
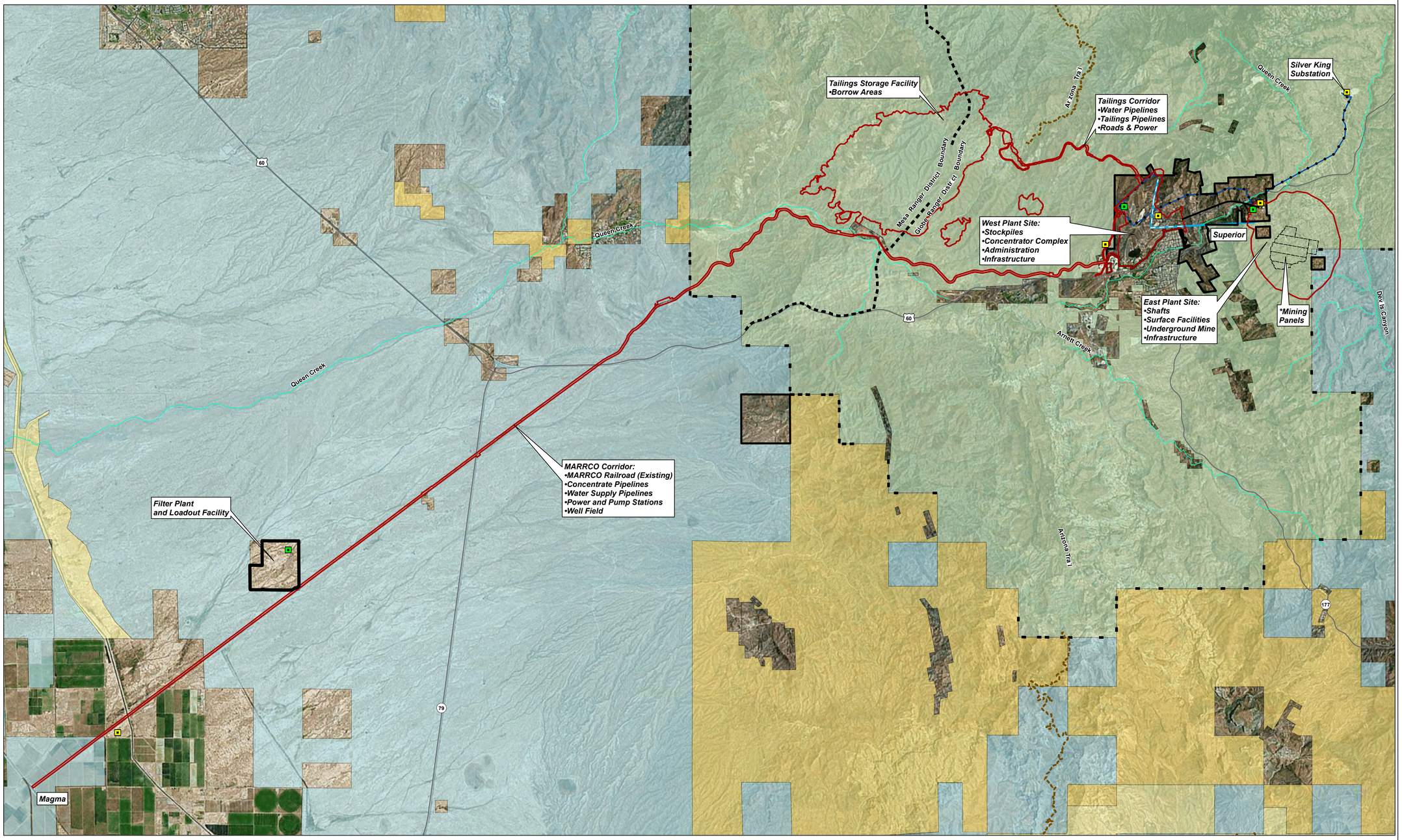


RESOLUTION COPPER
General Plan of Operations

VICINITY MAP
Figure 1.2-1

Path: M:\Jobs\800's\807.94\ENV\GPO_Response2TNF\MXD\Fig1.2-2_General_Arrange_5_2012.mxd



Legend

- Resolution Holdings
- Project Area
- Substation
- Existing Substation
- Power Line
- Conveyor/Infrastructure Tunnel
- Existing Never Sweat Tunnel
- Arizona Trail (ESRI Online Data)
- Tonto National Forest Ranger District Boundary

* Note: Mine Panel Configuration Subject to Change.

Surface Management (Source: BLM 2011)

- Bureau of Land Management (BLM)
- Bureau of Reclamation
- Private Land (No Color)
- State Trust Land
- US Forest Service (USFS)

Image Source: ESRI Online Microsoft November 2010

N

0 1 2 Miles

0 2 4 Kilometers

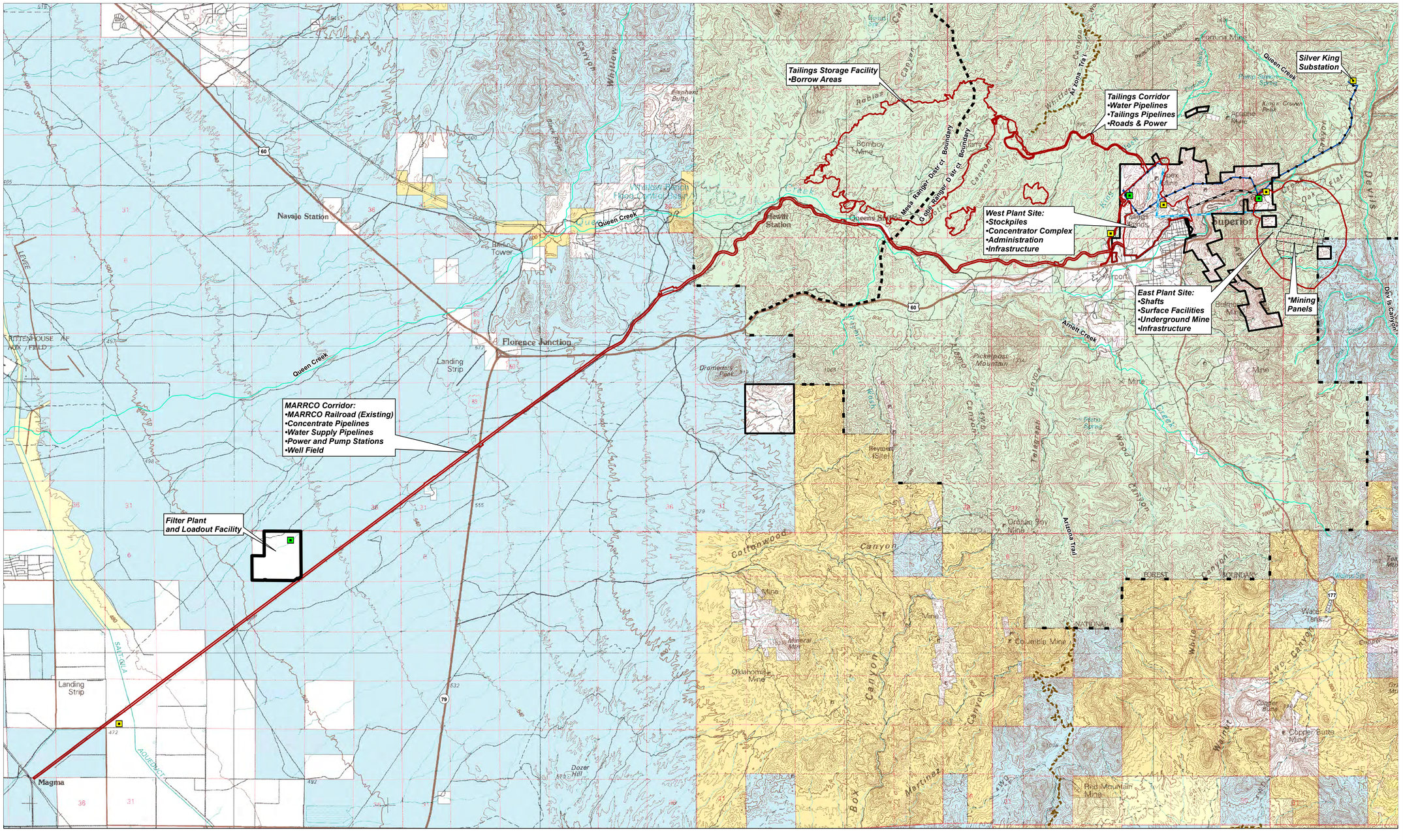
Note: This figure is designed to be plotted at 24" x 36". All map elements may not be legible at other plot sizes.

RESOLUTION COPPER
General Plan of Operations

GENERAL ARRANGEMENT

Figure 1.2-2

Path: M:\jobs\800's\807.94\ENV\GPO_Response2TNF\MXD\Fig1.3.1_Surface_Man_NearWest_7_2013.mxd



Legend

- Resolution Holdings
- Project Area
- Substation
- Existing Substation
- Power Line
- Conveyor/Infrastructure Tunnel
- Existing Never Sweat Tunnel
- Arizona Trail (ESRI Online Data)
- Tonto National Forest Ranger District Boundary

* Note: Mine Panel Configuration Subject to Change.

Surface Management (Source: BLM 2011)

- Bureau of Land Management (BLM)
- Bureau of Reclamation
- Private Land (No Color)
- State Trust Land
- US Forest Service (USFS)

Image Source: Mesa 1:100,000 USGS Quadrangle

N

0 1 2 Miles

0 2 4 Kilometers

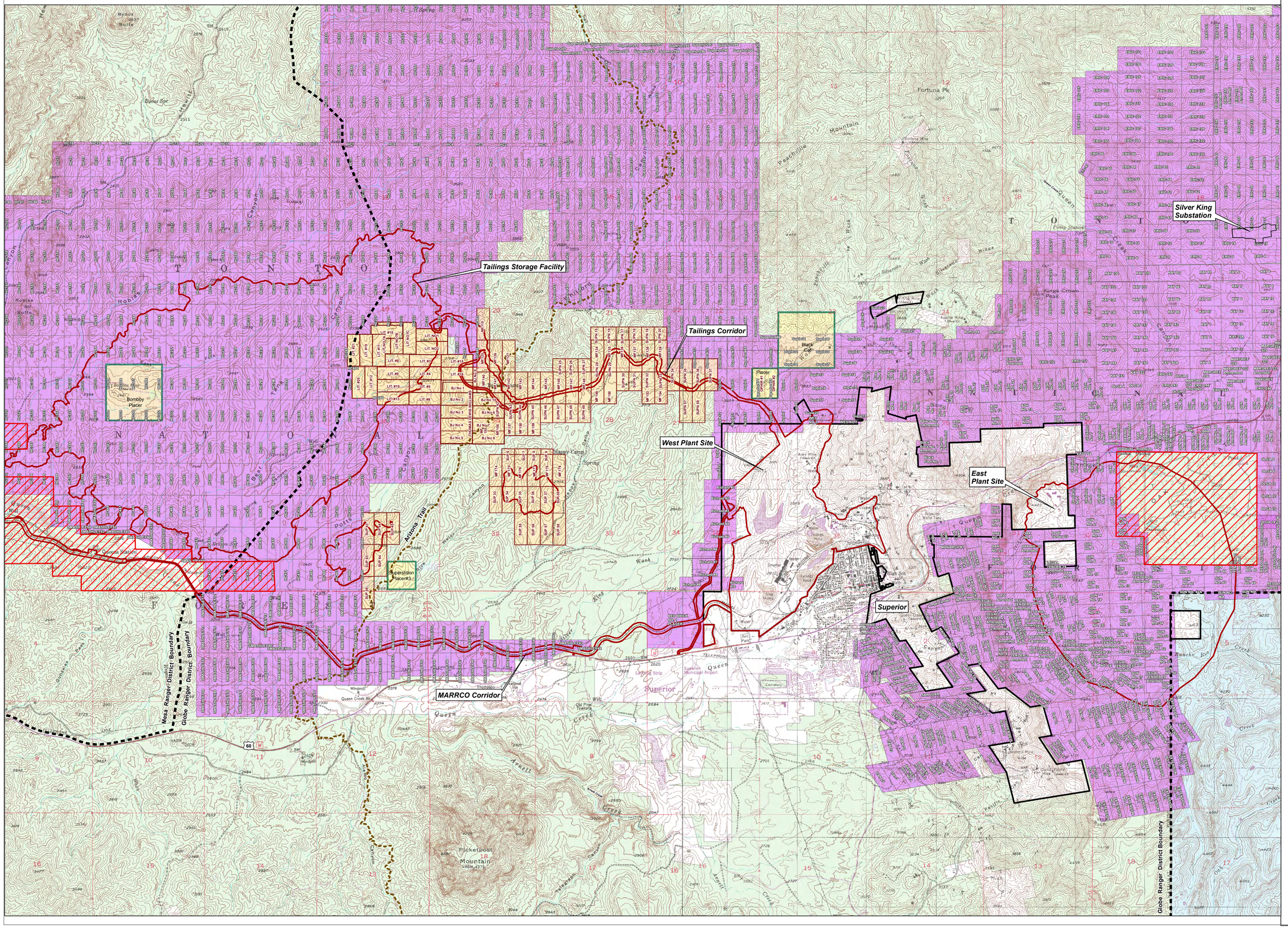
Note: This figure is designed to be plotted at 24" x 36". All map elements may not be legible at other plot sizes.

RESOLUTION COPPER
General Plan of Operations

SURFACE OWNERSHIP

Figure 1.3-1

Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig1.3-2_Claims_8_16_2013.mxd



Legend

- Resolution Holdings
- Project Area
- Mineral Withdrawal Area
- 3rd Party Placer Claims
- 3rd Party Unpatented Claims
- Resolution Copper Unpatented Claims
- Arizona Trail (ESRI Online Data)
- Tonto National Forest Ranger District Boundary

Surface Management (Source: BLM 2011)

- Private Land (No Color)
- State Trust Land
- US Forest Service (USFS)

Data Source: Mine Claim Data
Provided by Resolution Copper
August 2013

Image Source: Picketpost Mountain and Superior 1:24,000 USGS Quadrangles

N

0 0.5 1 Miles

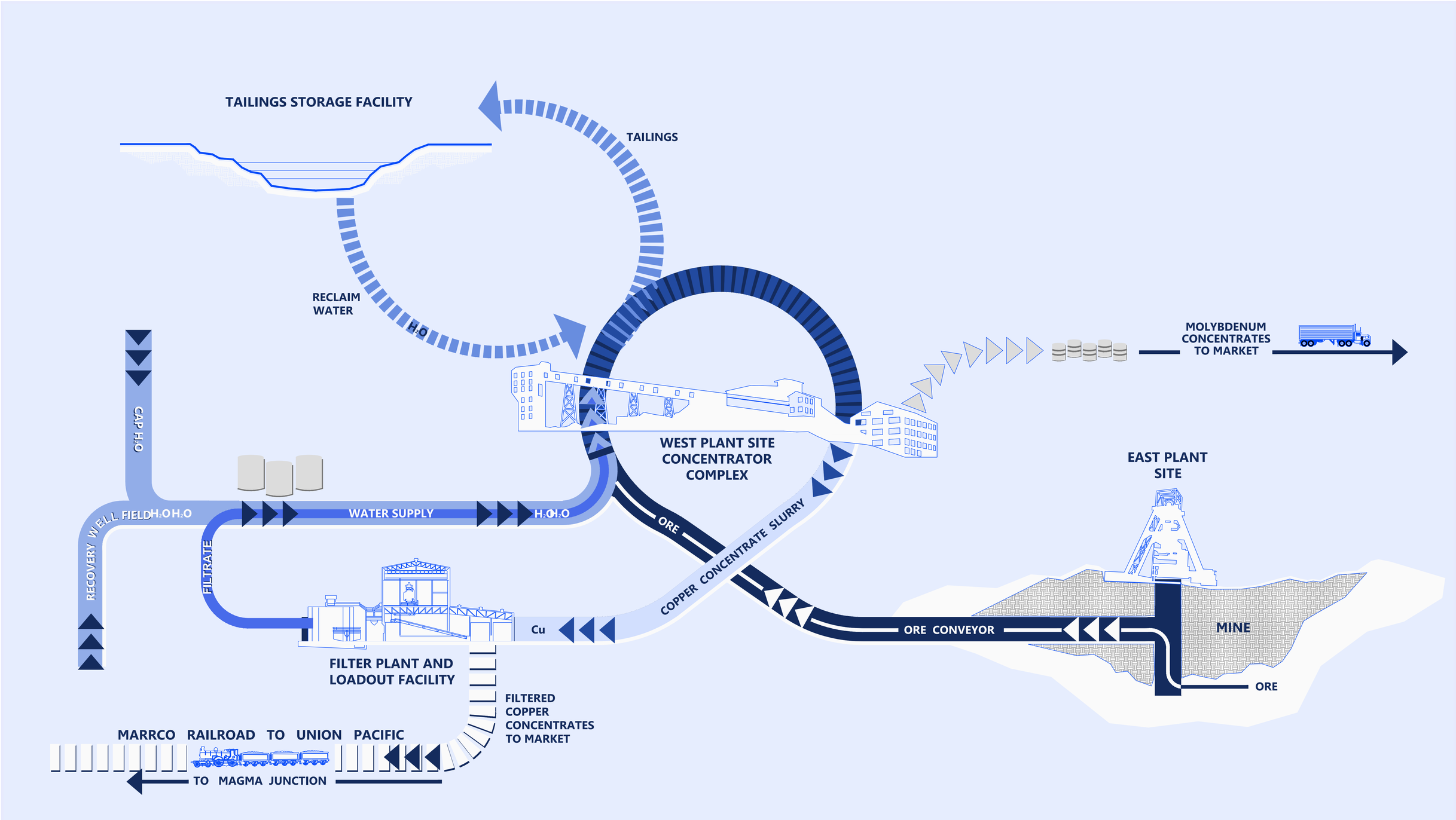
0 0.5 1 Kilometers

Note: This figure is designed to be plotted at 24" x 36". All map elements may not be legible at other plot sizes.

RESOLUTION COPPER
General Plan of Operations

MINING CLAIMS FOR
MAJOR PROJECT FEATURES

Figure 1.3-2



Not To Scale

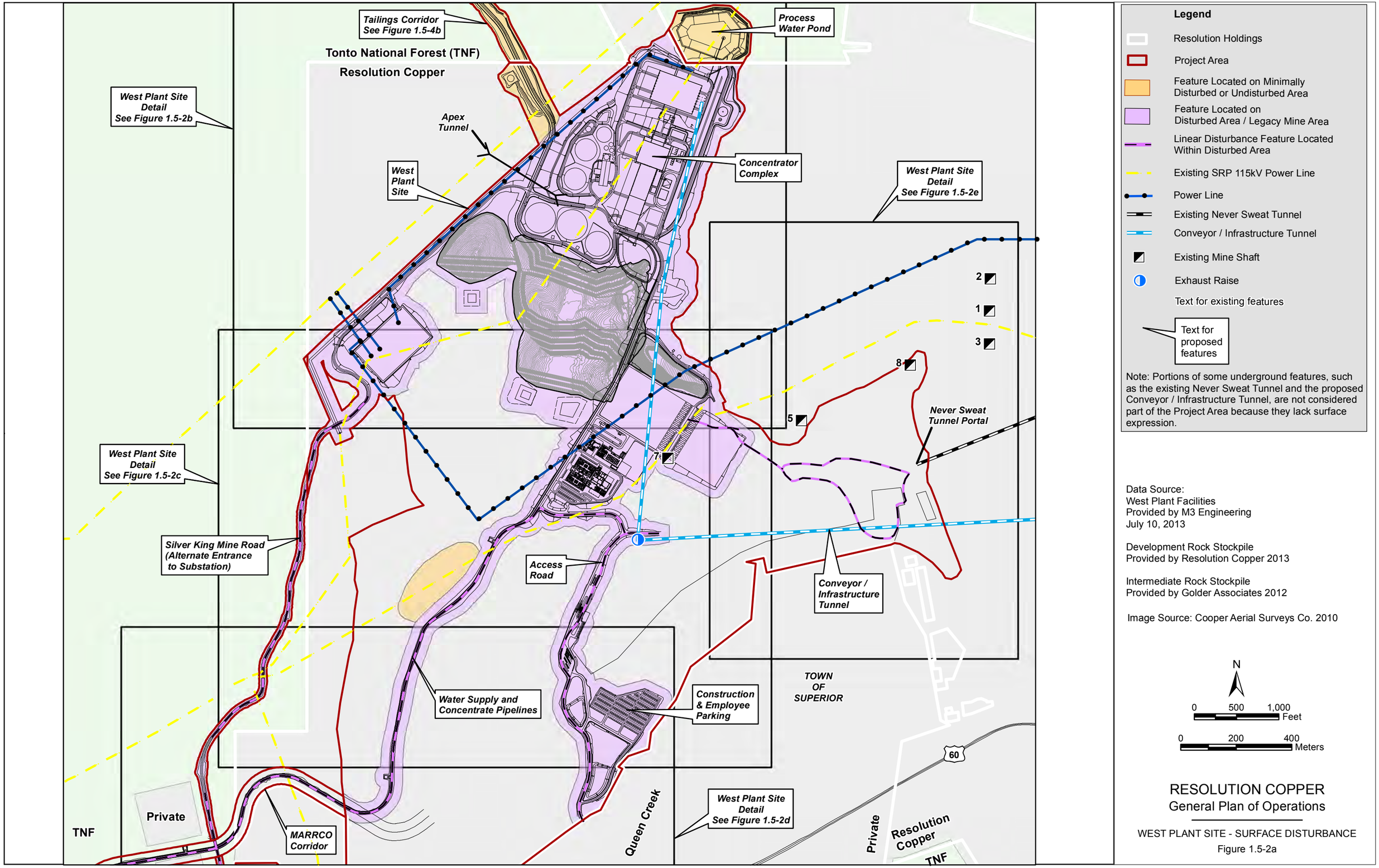
Note: This figure is designed to be plotted at 24" x 36".
All map elements may not be legible at other plot sizes.

RESOLUTION COPPER
General Plan of Operations

PROJECT CONCEPT SCHEMATIC

Figure 1.5-1

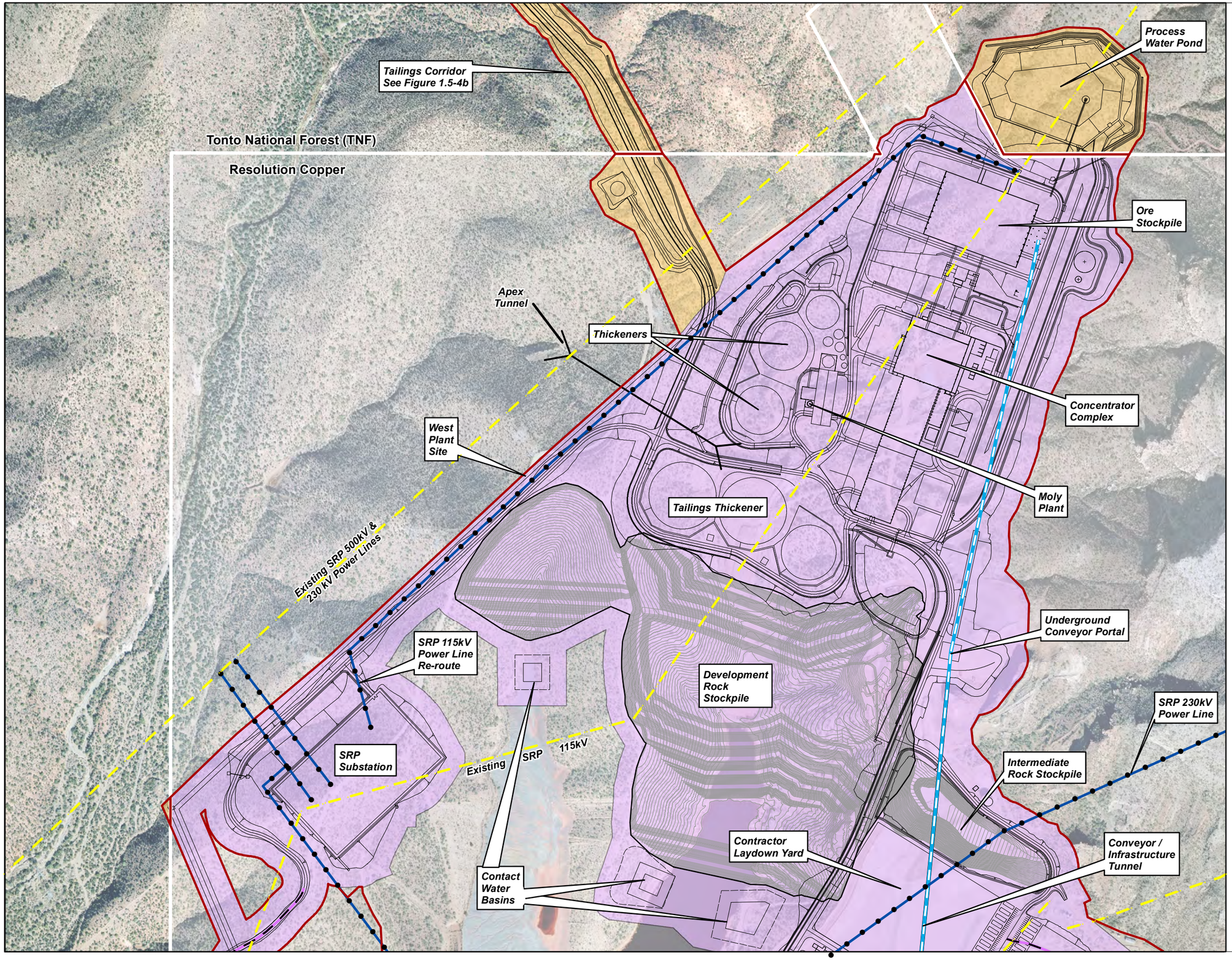
Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig1.5-2a_WPS_Surface_Disturb_9_9_14.mxd



RESOLUTION COPPER
General Plan of Operations

WEST PLANT SITE - SURFACE DISTURBANCE
Figure 1.5-2a

Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig1.5-2b_WPS_Surface_Disturb_N_Detail.mxd



Legend

- Resolution Holdings
- Project Area
- Feature Located on Minimally Disturbed or Undisturbed Area
- Feature Located on Disturbed Area / Legacy Mine Area
- Linear Disturbance Feature Located Within Disturbed Area
- Existing SRP 115kV Power Line
- Power Line
- Conveyor / Infrastructure Tunnel
- Text for existing features
- Text for proposed features

Note: Portions of some underground features, such as the existing Never Sweat Tunnel and the proposed Conveyor / Infrastructure Tunnel, are not considered part of the Project Area because they lack surface expression.

Data Source:
West Plant Facilities
Provided by M3 Engineering
July 10, 2013

Development Rock Stockpile
Provided by Resolution Copper 2013

Intermediate Rock Stockpile
Provided by Golder Associates 2012

Image Source: Cooper Aerial Surveys Co. 2010

N

0 250 500 Feet

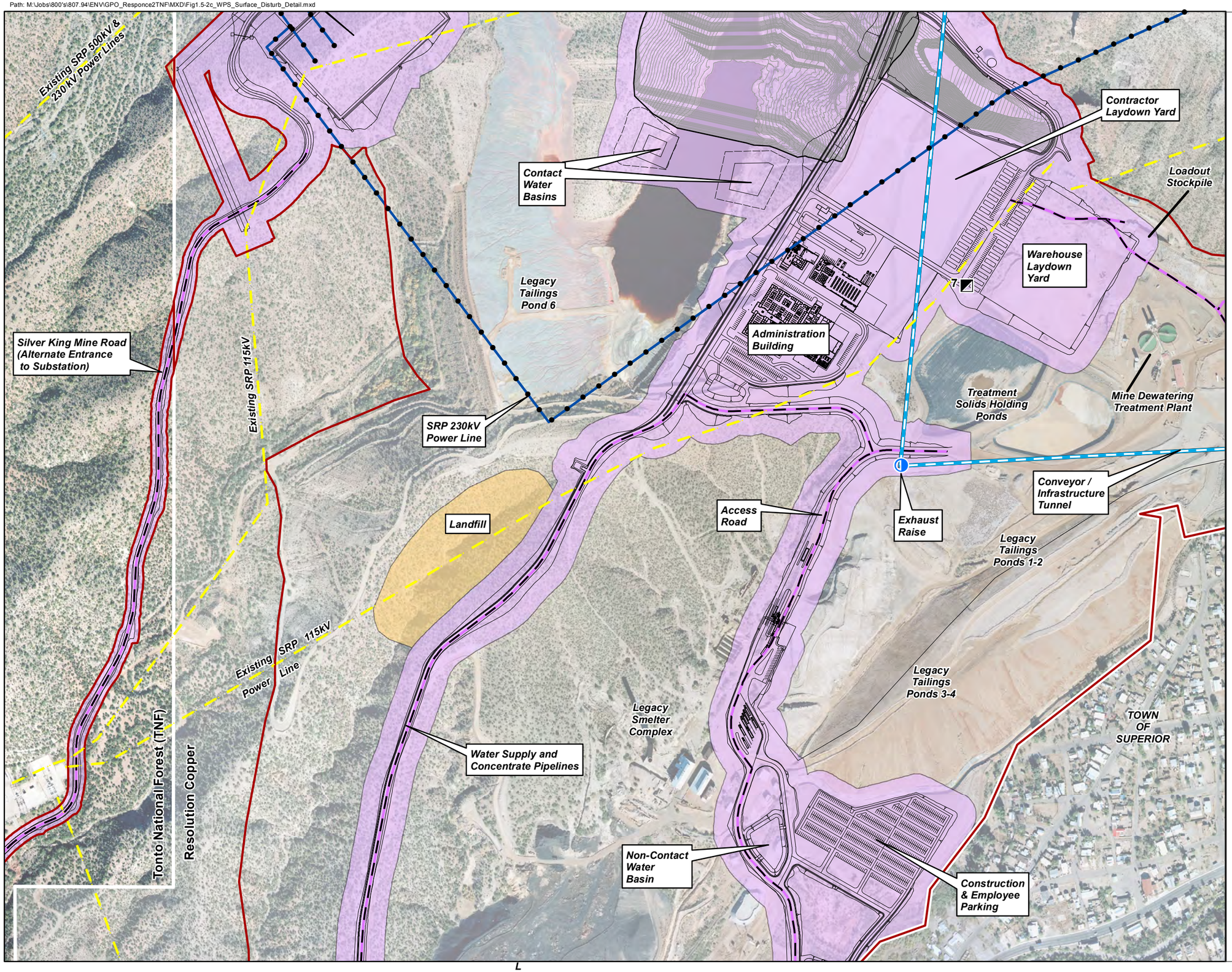
0 100 200 Meters

RESOLUTION COPPER
General Plan of Operations

WEST PLANT SITE - SURFACE DISTURBANCE DETAIL

Figure 1.5-2b

Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig1.5-2c_WPS_Surface_Disturb_Detail.mxd



Legend

- Resolution Holdings
- Project Area
- Feature Located on Minimally Disturbed or Undisturbed Area
- Feature Located on Disturbed Area / Legacy Mine Area
- Linear Disturbance Feature Located Within Disturbed Area
- Existing SRP 115kV Power Line
- Power Line
- Conveyor / Infrastructure Tunnel
- Existing Mine Shaft
- Exhaust Raise
- Text for existing features
- Text for proposed features

Note: Portions of some underground features, such as the existing Never Sweat Tunnel and the proposed Conveyor / Infrastructure Tunnel, are not considered part of the Project Area because they lack surface expression.

Data Source:
West Plant Facilities
Provided by M3 Engineering
July 10, 2013

Development Rock Stockpile
Provided by Resolution Copper 2013

Intermediate Rock Stockpile
Provided by Golder Associates 2012

Image Source: Cooper Aerial Surveys Co. 2010

N

0 250 500 Feet

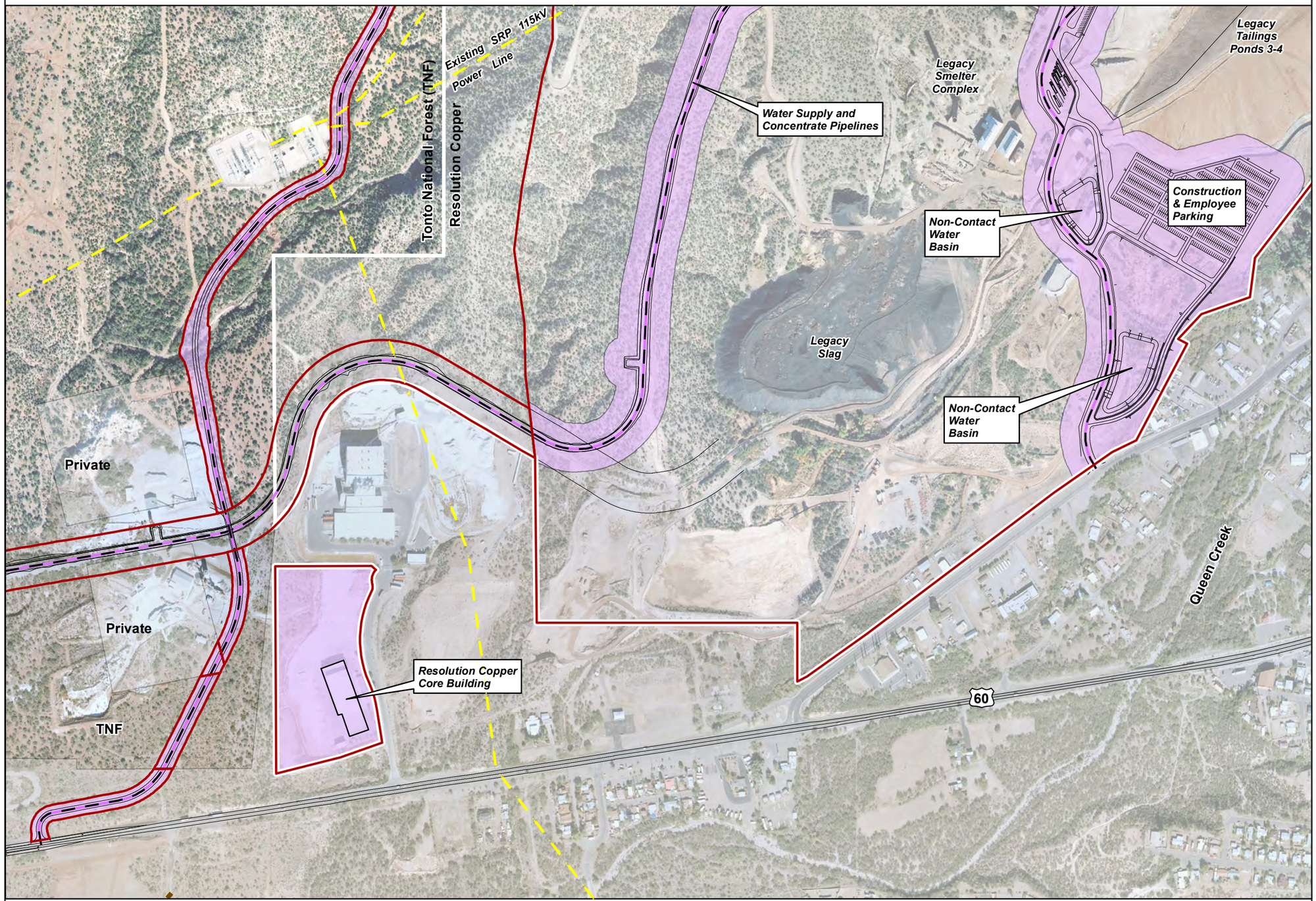
0 100 200 Meters

RESOLUTION COPPER
General Plan of Operations

WEST PLANT SITE - SURFACE DISTURBANCE DETAIL

Figure 1.5-2c

Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig1.5-2d_WPS_Surface_Disturb_S_Detail.mxd



Legend

- Resolution Holdings
- Project Area
- Feature Located on Disturbed Area / Legacy Mine Area
- Linear Disturbance Feature Located Within Disturbed Area
- Existing SRP 115kV Power Line
- Text for existing features
- Text for proposed features

Note: Portions of some underground features, such as the existing Never Sweat Tunnel and the proposed Conveyor / Infrastructure Tunnel, are not considered part of the Project Area because they lack surface expression.

Data Source:
West Plant Facilities
Provided by M3 Engineering
July 10, 2013

Image Source: Cooper Aerial Surveys Co. 2010

N

0 250 500 Feet

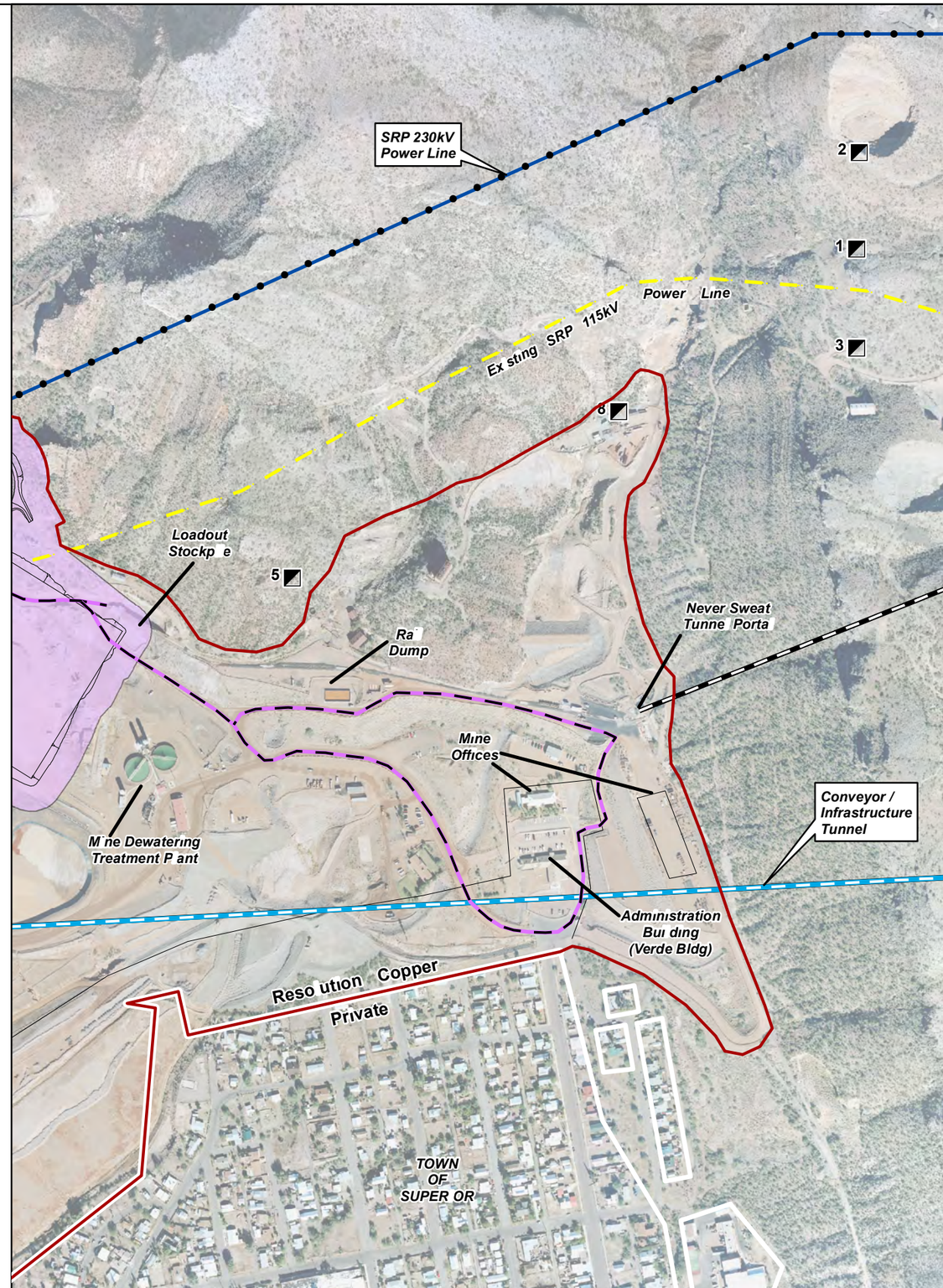
0 100 200 Meters

RESOLUTION COPPER
General Plan of Operations

WEST PLANT SITE - SURFACE DISTURBANCE DETAIL

Figure 1.5-2d

Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig1.5-2e_WPS_Surface_Disturb_Detail.mxd



Legend

- Resolution Holdings
- Project Area
- Feature Located on Disturbed Area / Legacy Mine Area
- Linear Disturbance Feature Located Within Disturbed Area
- Existing SRP 115kV Power Line
- Power Line
- Existing Never Sweat Tunnel
- Conveyor / Infrastructure Tunnel
- Existing Mine Shaft
- Text for existing features
- Text for proposed features

Note: Portions of some underground features, such as the existing Never Sweat Tunnel and the proposed Conveyor / Infrastructure Tunnel, are not considered part of the Project Area because they lack surface expression.

Data Source:
West Plant Facilities
Provided by M3 Engineering
July 10, 2013

Image Source: Cooper Aerial Surveys Co. 2010

N

0 250 500 Feet

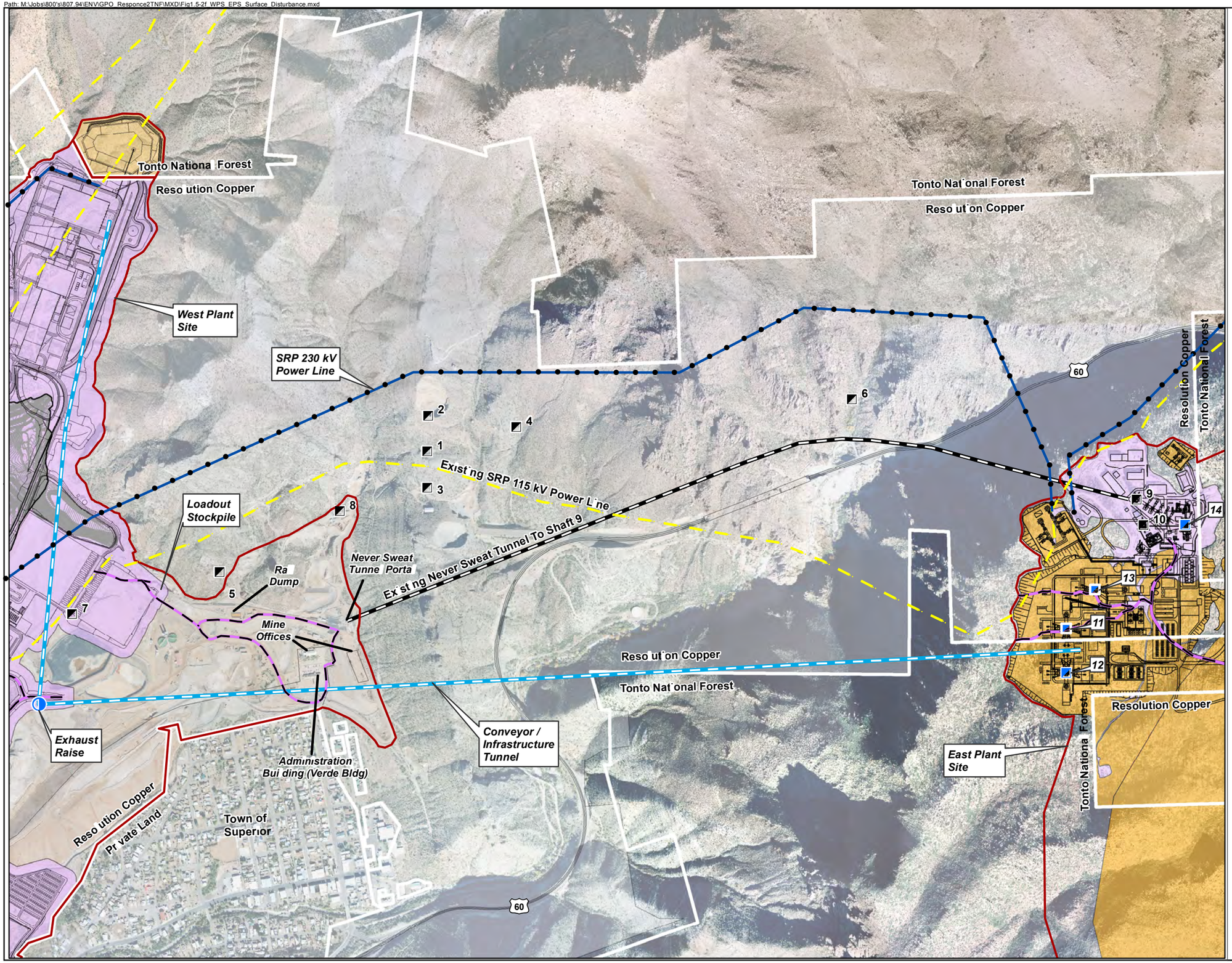
0 100 200 Meters

RESOLUTION COPPER
General Plan of Operations

WEST PLANT SITE - SURFACE DISTURBANCE DETAIL

Figure 1.5-2e

Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig1.5-2f_WPS_EPS_Surface_Disturbance.mxd



Legend

- Resolution Holdings
- Project Area
- Feature Located on Minimally Disturbed or Undisturbed Area
- Feature Located on Disturbed Area / Legacy Mine Area
- Linear Disturbance Feature Located Within Disturbed Area
- Existing SRP 115kV Power Line
- Power Line
- Existing Never Sweat Tunnel
- Conveyor / Infrastructure Tunnel
- Existing Mine Shaft
- Mine Shaft
- Exhaust Raise
- Text for existing features
- Text for proposed features

Note: Portions of some underground features, such as the existing Never Sweat Tunnel and the proposed Conveyor / Infrastructure Tunnel, are not considered part of the Project Area because they lack surface expression.

Data Source:
West Plant Facilities
Provided by M3 Engineering
July 10, 2013

Development Rock Stockpile
Provided by Resolution Copper 2013

Intermediate Rock Stockpile
Provided by Golder Associates 2012

East Plant Facilities
Provided by AMEC
2012

Image Source: Cooper Aerial Surveys Co. 2010

N

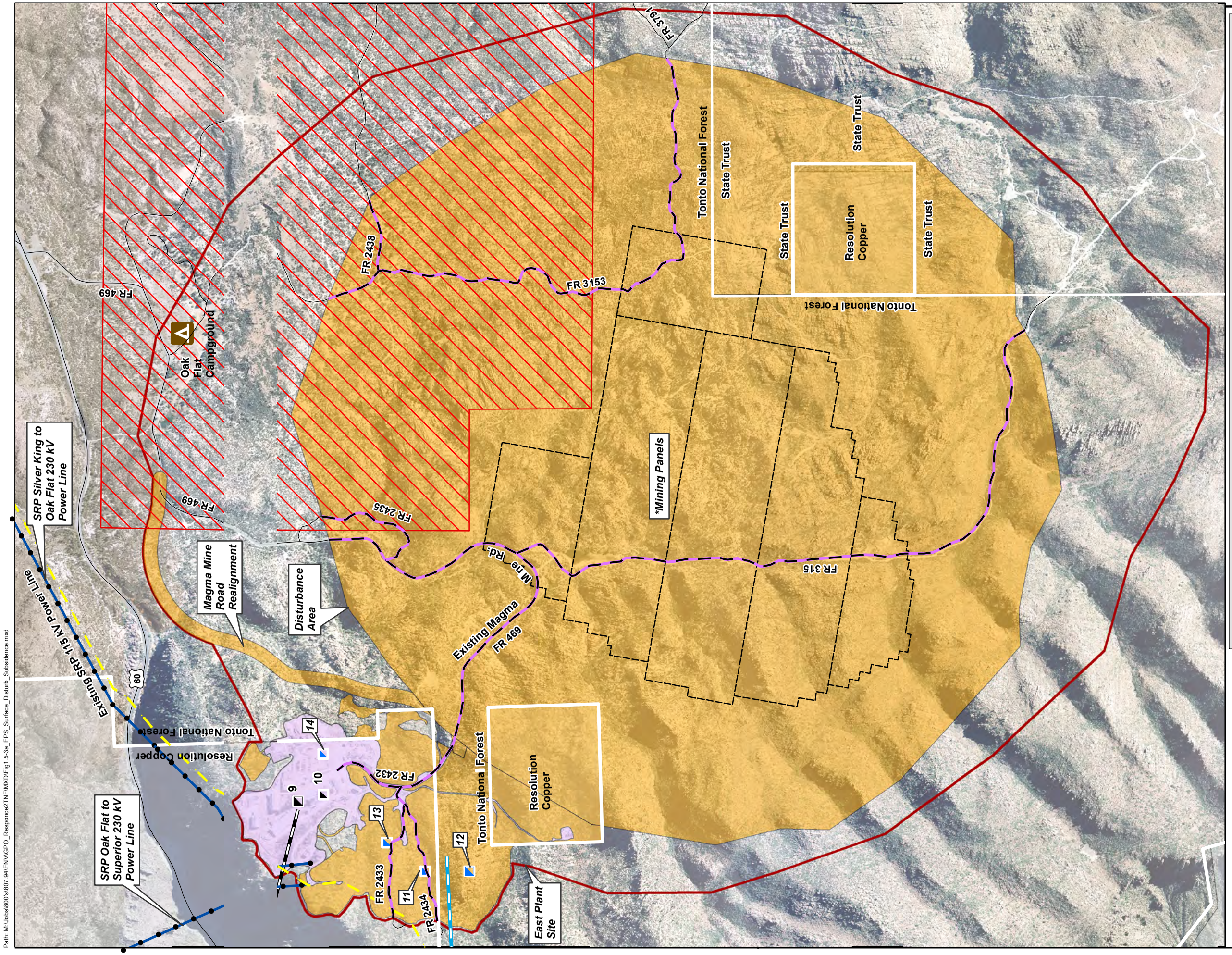
0 500 1,000 Feet

0 200 400 Meters

RESOLUTION COPPER
General Plan of Operations

CONNECTING INFRASTRUCTURE
SURFACE DISTURBANCE

Figure 1.5-2f



Legend

- Resolution Holdings
- Feature Located on Minimally Disturbed or Undisturbed Area
- Feature Located on Disturbed Area / Legacy Mine Area
- Existing Mine Shaft
- Campground
- Text for proposed features

* Note: Mine Panel Configuration Subject to Change

Note 1: Disturbance area around mining panels defined by modeled fracture zone. Project area around disturbance area defined by modeled zone of continuous subsidence.

Note 2: Portions of some underground features, such as the existing Never Sweat Tunnel and the proposed Conveyor / Infrastructure Tunnel, are not considered part of the Project Area because they lack surface expression.

Image Source: Cooper Aerial Surveys Co. 2010

N

0 500 1,000 Feet

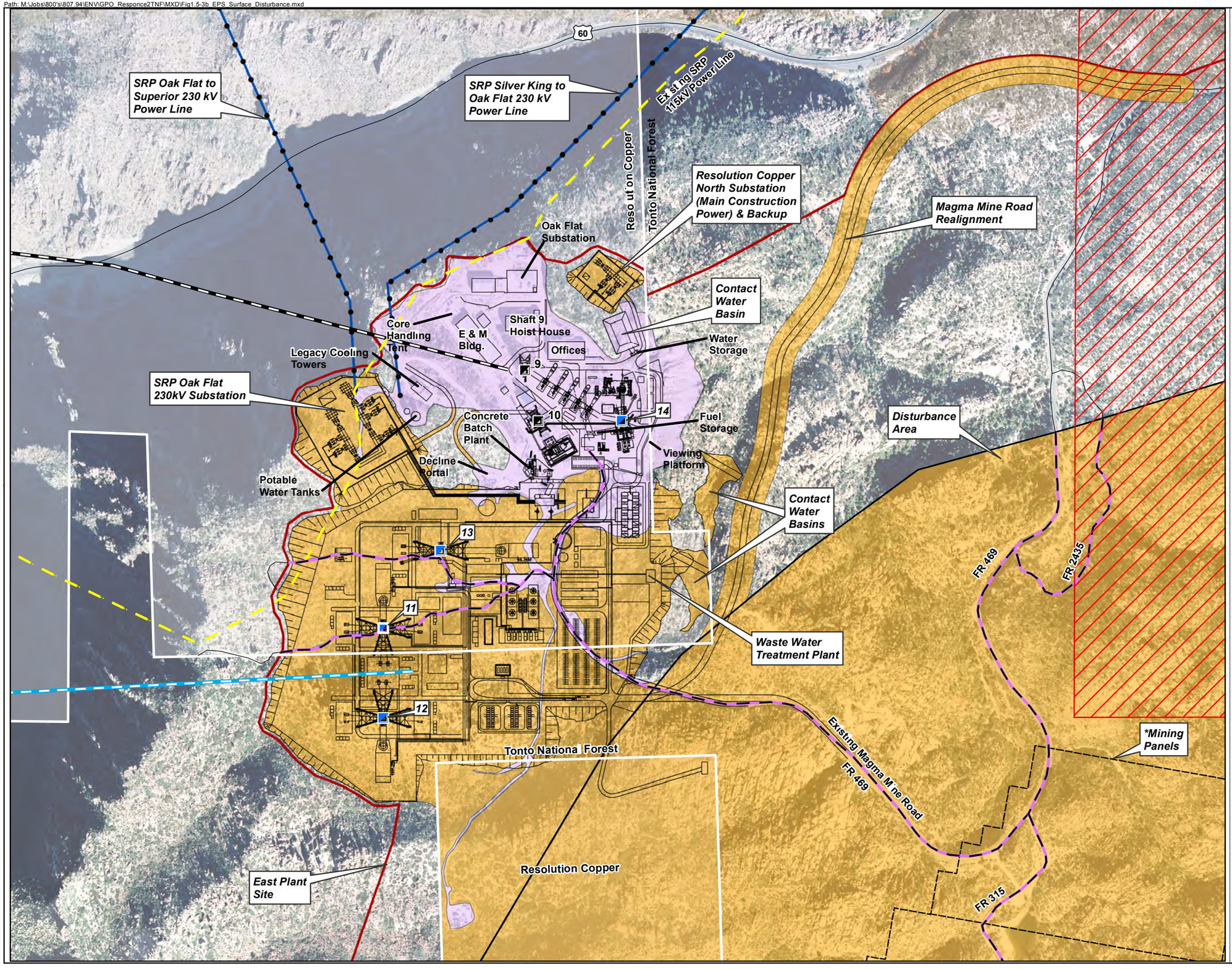
0 200 400 Meters

RESOLUTION COPPER
General Plan of Operations

EAST PLANT SITE - SURFACE DISTURBANCE
Figure 1.5-3a

Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig1.5-3a_EPS_Surface_Disturb_Subsidence.mxd

Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig1.5-3b_EPS_Surface_Disturbance.mxd



Legend

- Resolution Holdings
- Project Area
- Mineral Withdrawal Area
- Feature Located on Minimally Disturbed or Undisturbed Area
- Feature Located on Disturbed Area / Legacy Mine Area
- Linear Disturbance Feature Located Within Disturbed Area
- Existing SRP 115kV Power Line
- Power Line
- Existing Never Sweat Tunnel
- Conveyor / Infrastructure Tunnel
- Existing Mine Shaft
- Mine Shaft
- Text for existing features
- Text for proposed features

* Note: Mine Panel Configuration Subject to Change

Note: Portions of some underground features, such as the existing Never Sweat Tunnel and the proposed Conveyor / Infrastructure Tunnel, are not considered part of the Project Area because they lack surface expression.

Data Source:
East Plant Facilities
Provided by AMEC
2012

Image Source: Cooper Aerial Surveys Co. 2010

N

0 250 500 Feet

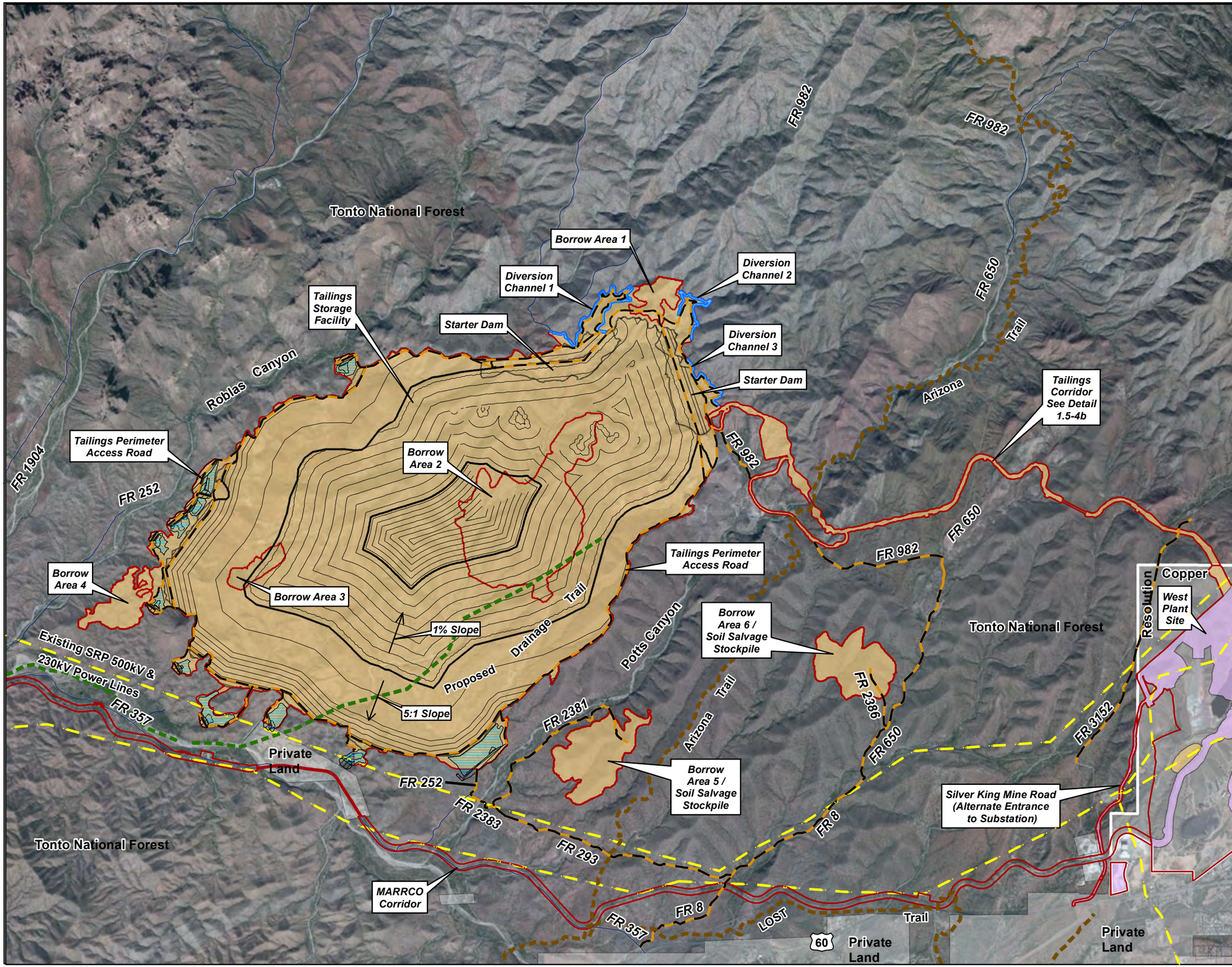
0 100 200 Meters

amec

RESOLUTION COPPER
General Plan of Operations

EAST PLANT SITE SURFACE FACILITIES
SURFACE DISTURBANCE
Figure 1.5-3b

Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig1.5-4a_NW_TSF_Surf_Disturb_9_2013.mxd



Legend

- Resolution Holdings
- Project Area
- Feature Located on Minimally Disturbed or Undisturbed Area
- Feature Located on Disturbed Area
- Seepage Collection Dam
- Seepage Collection Pond
- Linear Disturbance Feature Located Within Minimally Disturbed or Undisturbed Area
- Existing SRP Power Line
- Trail
- Proposed Drainage Trail
- Text for existing features
- Text for proposed features

Note: Portions of some underground features, such as the existing Never Sweat Tunnel and the proposed Conveyor / Infrastructure Tunnel, are not considered part of the Project Area because they lack surface expression.

Data Source: Tailings Corridor Facilities
Provided by M3 Engineering
July 10, 2013

Borrow Areas, Starter and Seepage Dams, Ponds, and Tailings Storage Facility Footprint
Provided by Klohn Crippen Berger
2013

Pinal County Open Space and Trails Master Plan
2007

Arizona Trail Provided by Arizona Trail Association
Aquired September 2012

Image Source: ESRI Online Imagery-Microsoft
November 2010

N

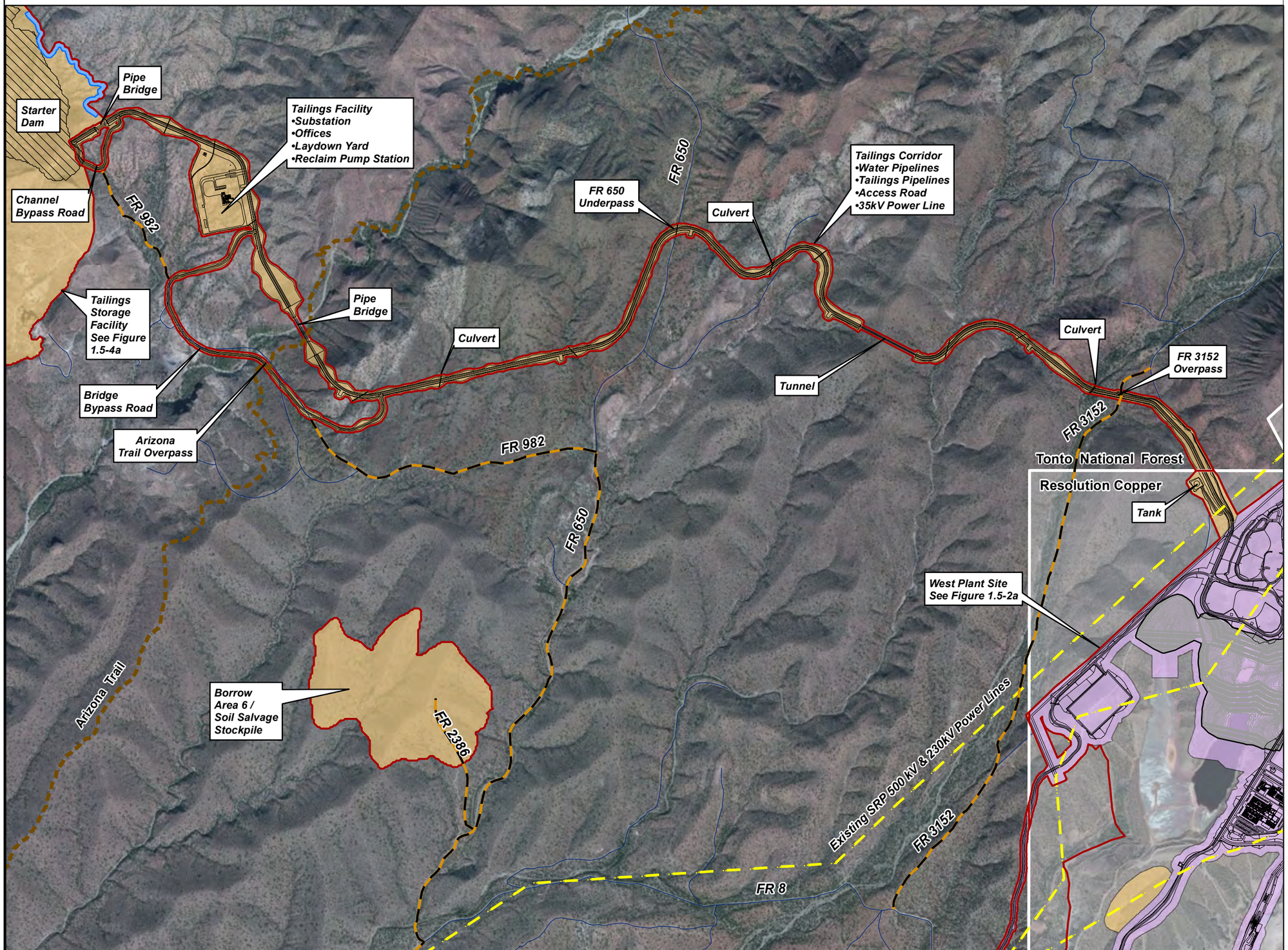
0 1,500 3,000 Feet

0 500 1,000 Meters

RESOLUTION COPPER
General Plan of Operations

TAILINGS STORAGE FACILITY
AND TAILINGS CORRIDOR
SURFACE DISTURBANCE
Figure 1.5-4a

Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig1.5-4b_NWPipeline_Surface_Disturb_8_13_revised.mxd



Legend

- Resolution Holdings
- Project Area
- Feature Located on Minimally Disturbed or Undisturbed Area
- Feature Located on Disturbed Area / Legacy Mine Area
- Linear Disturbance Feature Located Within Minimally Disturbed or Undisturbed Area
- Existing SRP Power Line
- Arizona Trail

Text for existing features

Text for proposed features

Note: Portions of some underground features, such as the existing Never Sweat Tunnel and the proposed Conveyor / Infrastructure Tunnel, are not considered part of the Project Area because they lack surface expression.

Data Source: Tailings Corridor Facilities
Provided by M3 Engineering
July 10, 2013

Borrow Areas and Starter Dam
Provided by Klohn Crippen Berger
2013

Arizona Trail Provided by Arizona Trail Association
Aquired September 2012

Image Source: ESRI Online Microsoft Imagery,
November 2010

N

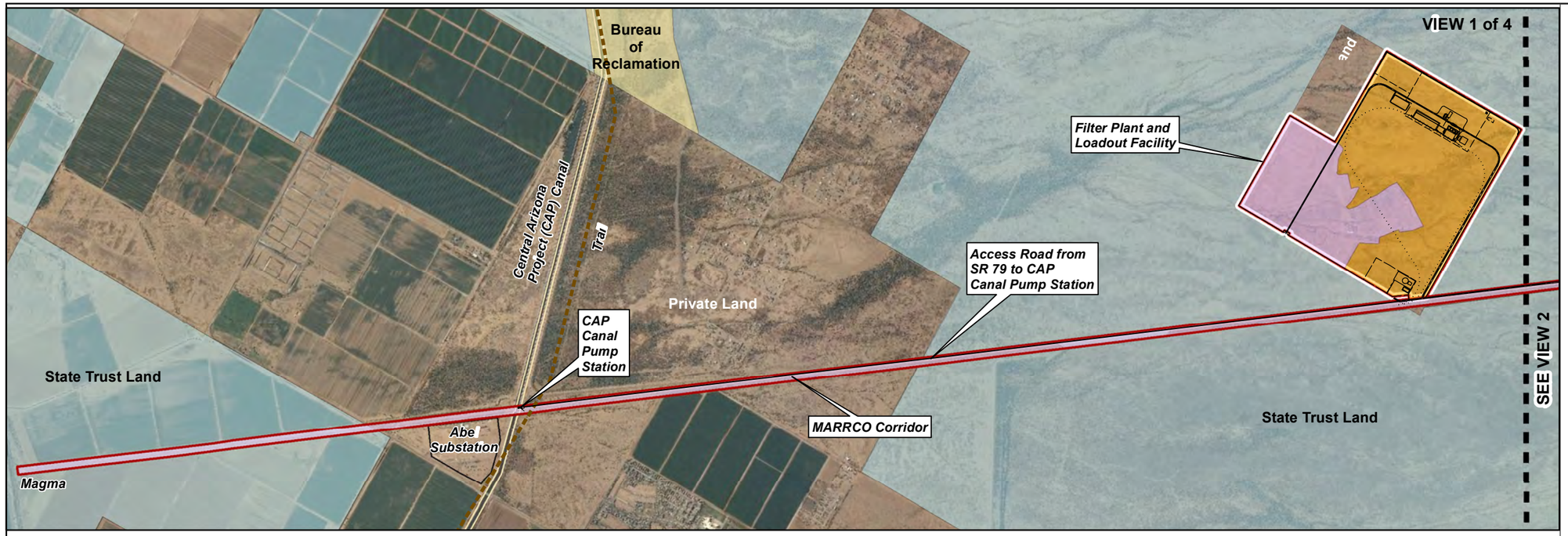
0 700 1,400 Feet

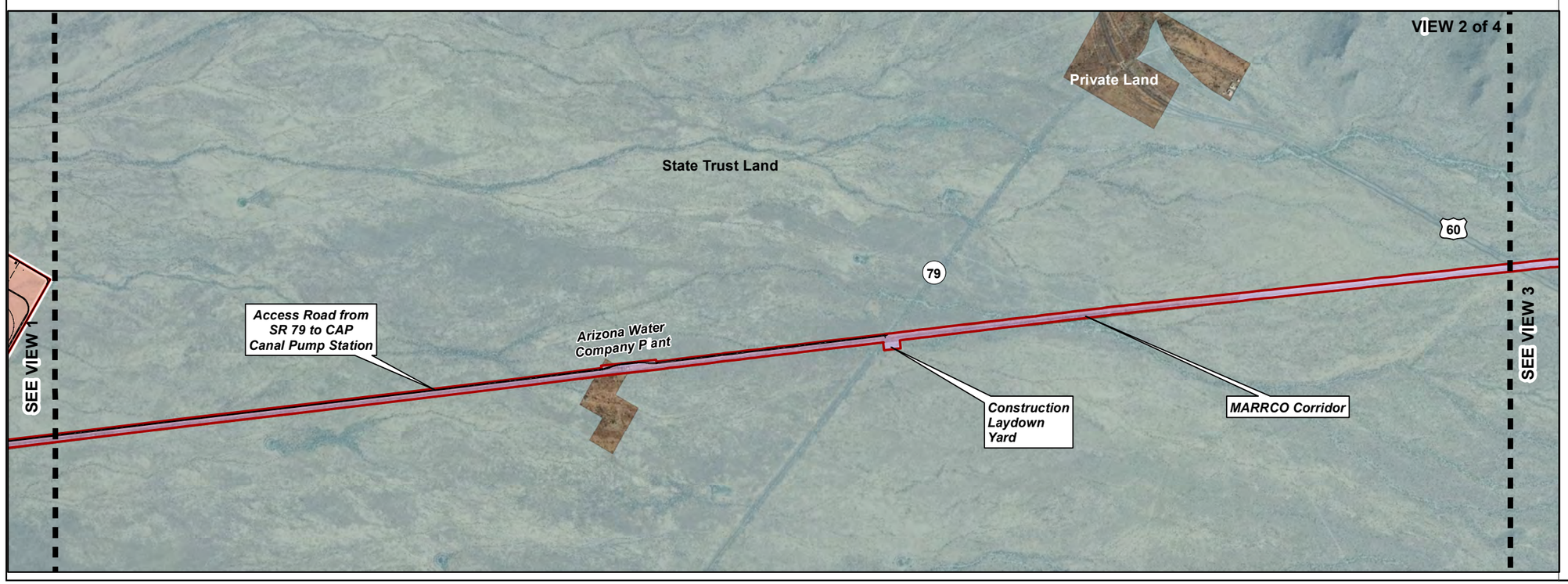
0 200 400 Meters

RESOLUTION COPPER
General Plan of Operations

TAILINGS CORRIDOR DETAIL
SURFACE DISTURBANCE
Figure 1.5-4b

Path: M:\Jobs\800\v807.04\ENV\GPO_Response2TNF\MXD\Fig1.5-5a_MARRCO_CFilterP_Disturbance.mxd





Legend

- Resolution Holdings
- Project Area
- Feature Located on Minimally Disturbed or Undisturbed Area
- Feature Located on Disturbed Area / Legacy Mine Area
- Trail
- Text for existing features
- Text for proposed features

Note: Portions of some underground features, such as the existing Never Sweat Tunnel and the proposed Conveyor / Infrastructure Tunnel, are not considered part of the Project Area because they lack surface expression.

Data Source: Filter Plant and Loadout Facility
Provided by M3 Engineering
April, 2012

Pinal County Open Space and Trails Master Plan
2007

Image Source:
2010 National Agriculture Imagery Program

N

0 1,500 3,000 Feet

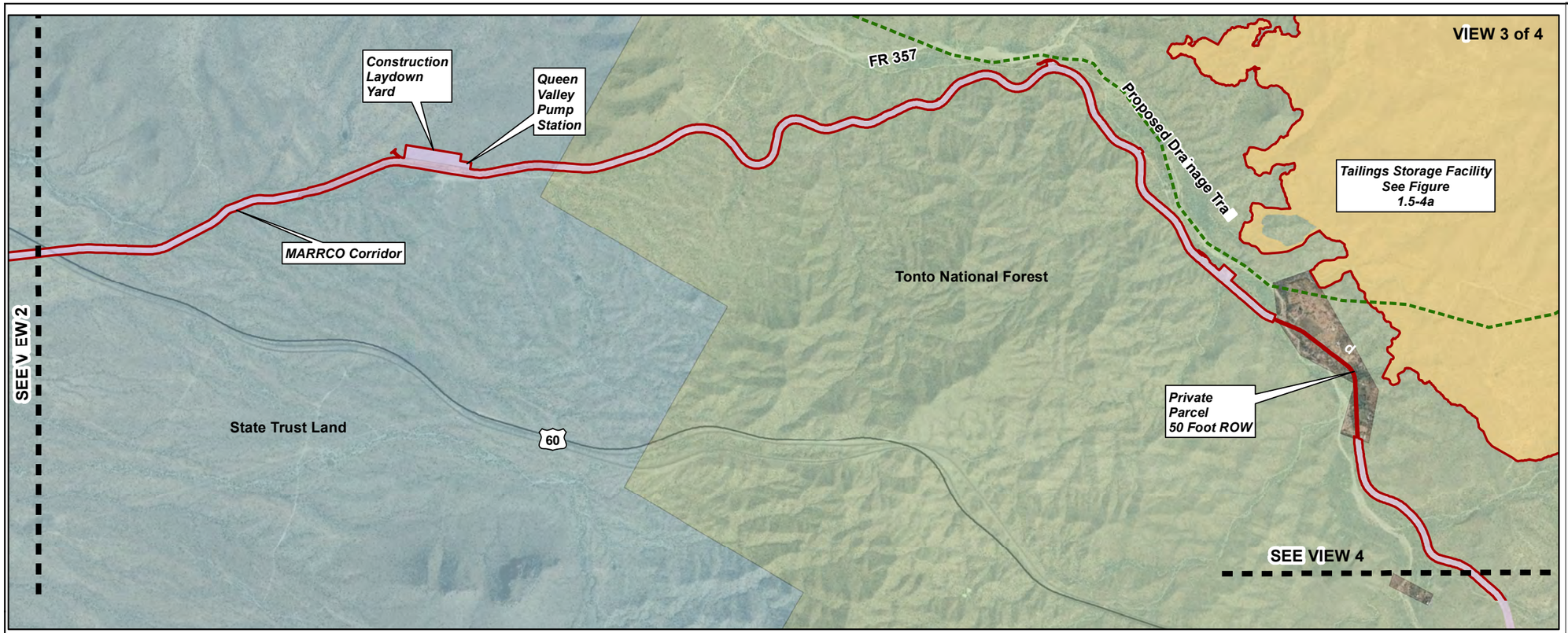
0 500 1,000 Meters

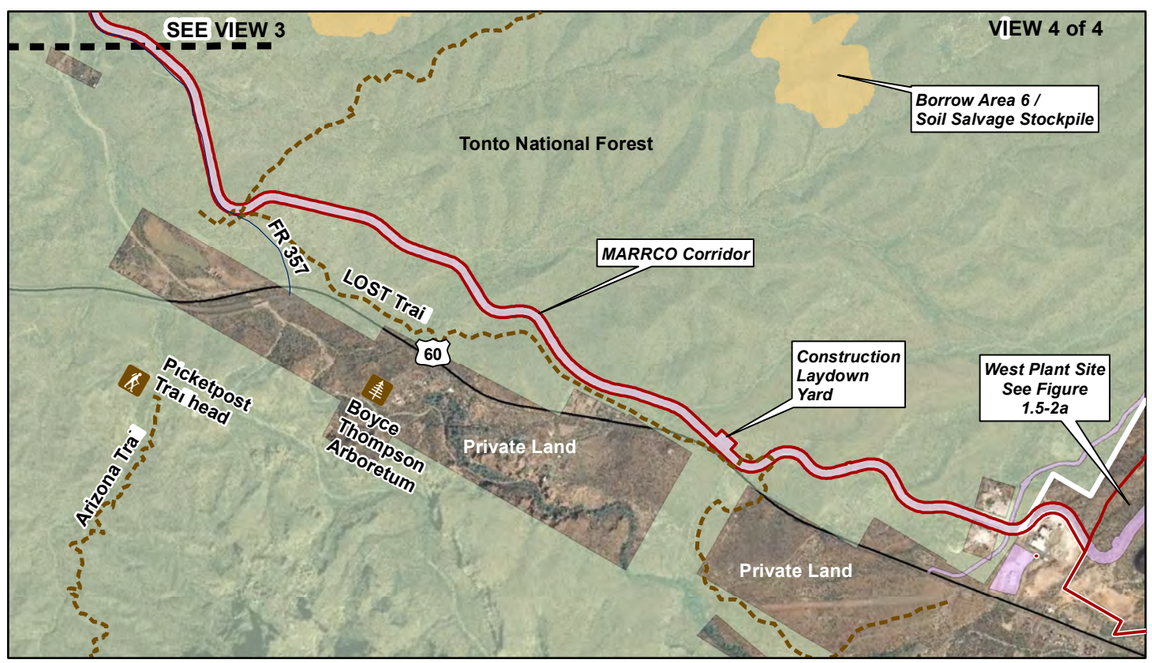
RESOLUTION COPPER
General Plan of Operations

MARRCO CORRIDOR AND
FILTER PLANT AND LOADOUT FACILITY
SURFACE DISTURBANCE

Figure 1.5-5a

Path: M:\Jobs\800\v807.04\ENV\GPO_Response2TNF\MXD\Fig1.5-5b_MARRCO_CFilterP_Disturbance.mxd





Legend

- Resolution Holdings
- Project Area
- Feature Located on Minimally Disturbed or Undisturbed Area
- Feature Located on Disturbed Area / Legacy Mine Area
- Trail
- Proposed Drainage Trail
- Trailhead
- Arboretum
- Text for existing features
- Text for proposed features

Note: Portions of some underground features, such as the existing Never Sweat Tunnel and the proposed Conveyor / Infrastructure Tunnel, are not considered part of the Project Area because they lack surface expression.

Data Source:
Pinal County Open Space and Trails Master Plan 2007
USFS Forest Maps and AZ Recreation Map
Arizona Trail Provided by Arizona Trail Association Aquired September 2012

Image Source:
2010 National Agriculture Imagery Program

N

0 1,500 3,000 Feet

0 500 1,000 Meters

RESOLUTION COPPER
General Plan of Operations

MARRCO CORRIDOR AND
FILTER PLANT AND LOADOUT FACILITY
SURFACE DISTURBANCE

Figure 1.5-5b

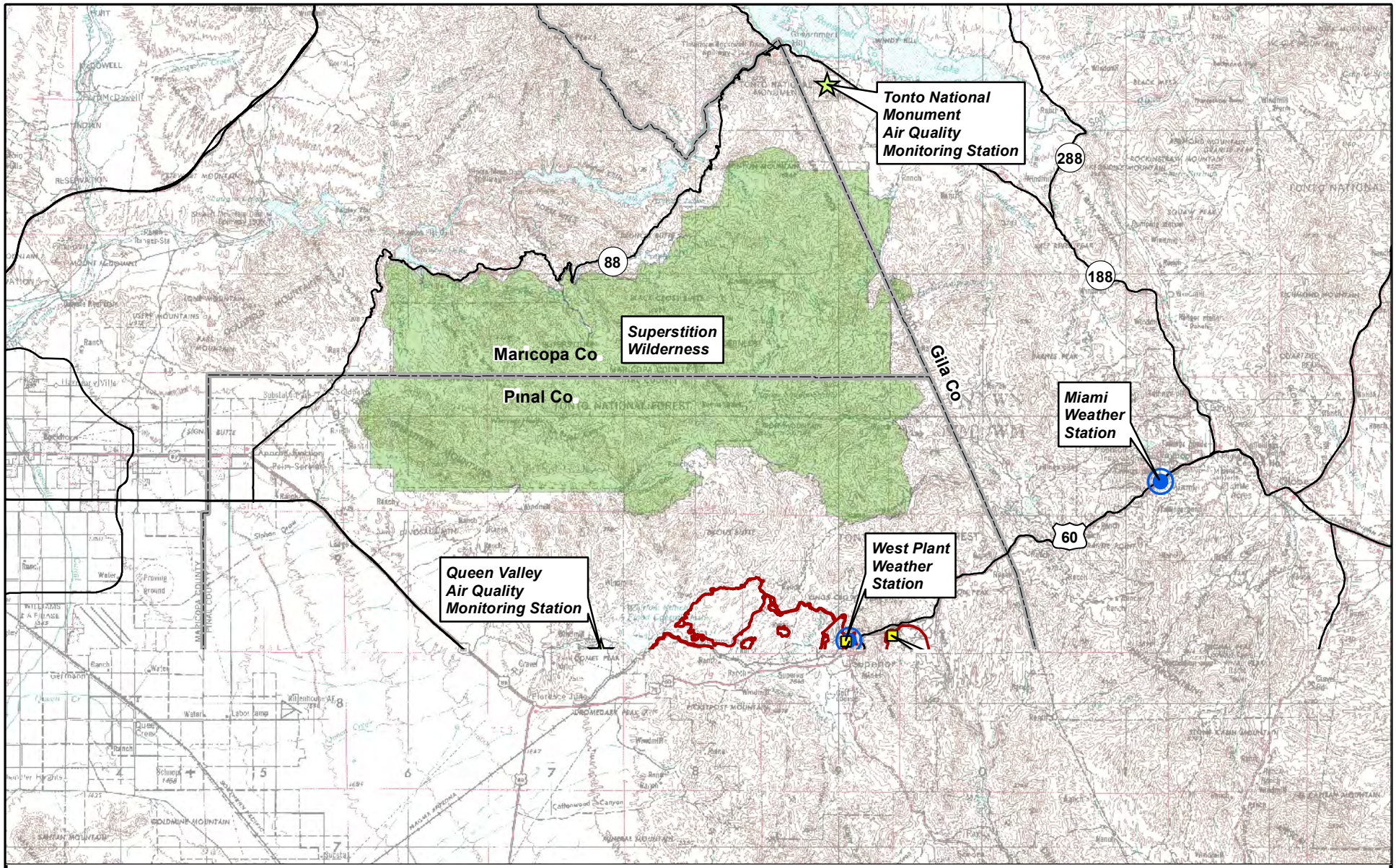


Image Source: Mesa 1:250,000 USGS Quadrangle

0 3 6 Miles

0 5 10 Kilometers

N

Legend

- Project Area
- NOAA Weather Station
- Resolution Copper Weather Station
- Air Quality Monitoring Station

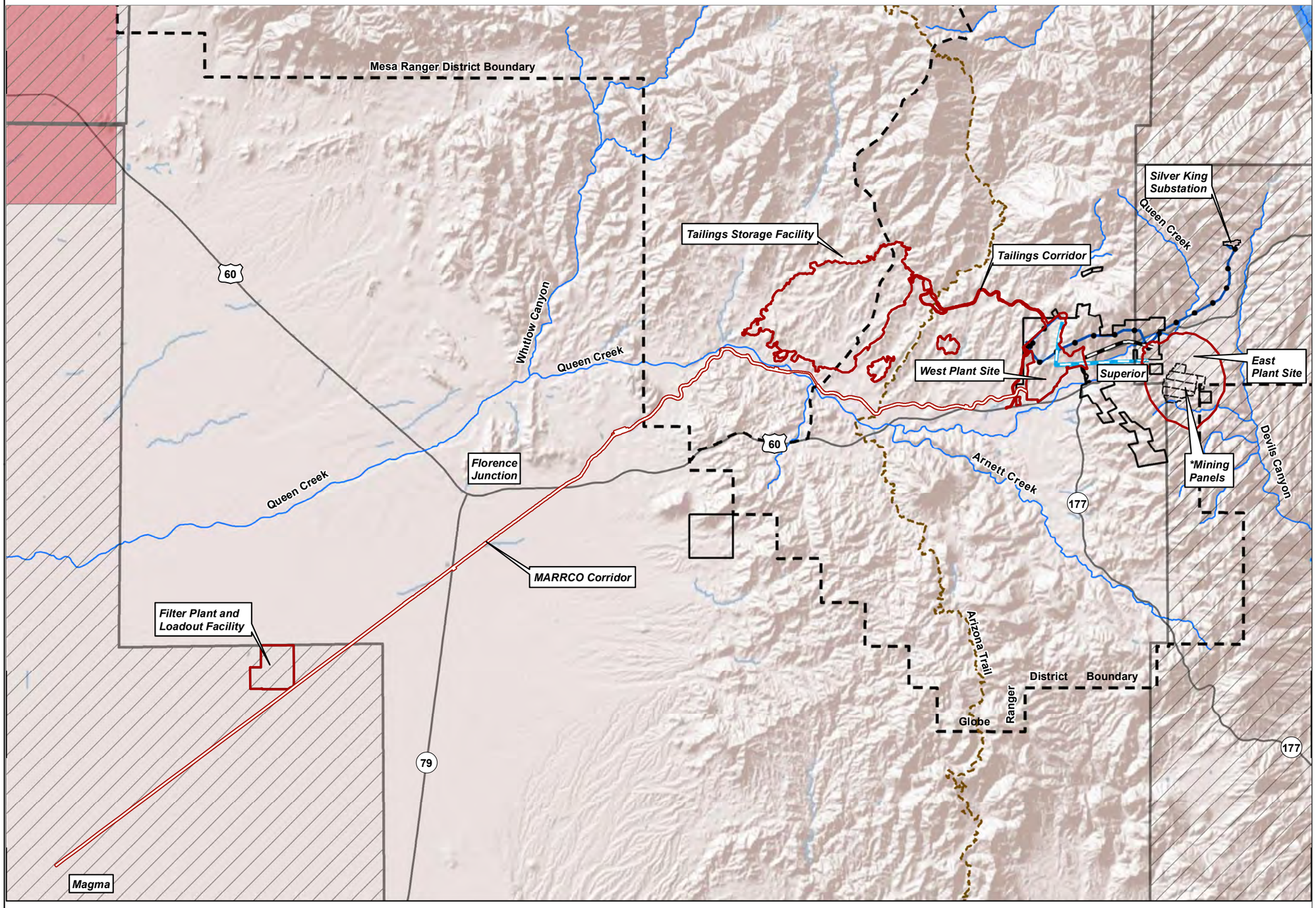
RESOLUTION COPPER

General Plan of Operations

WEATHER STATIONS

Figure 2.1-1

Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig2.1-2_Nonattainment_areas_11x17.mxd



Legend

- Resolution Holdings
- Project Area
- Power Line
- Conveyor/Infrastructure Tunnel
- Existing Never Sweat Tunnel
- Arizona Trail (ESRI Online Data)
- Tonto National Forest Ranger District Boundary

*Note: Mine Panel Configuration Subject to Change.

ADEQ Non-attainment & Maintenance Areas

- PM10 Non-attainment
- Sulfer Dioxide Maintenance
- Ozone 8-Hour Non-attainment

Image Source: ESRI Online World Shaded Relief

N

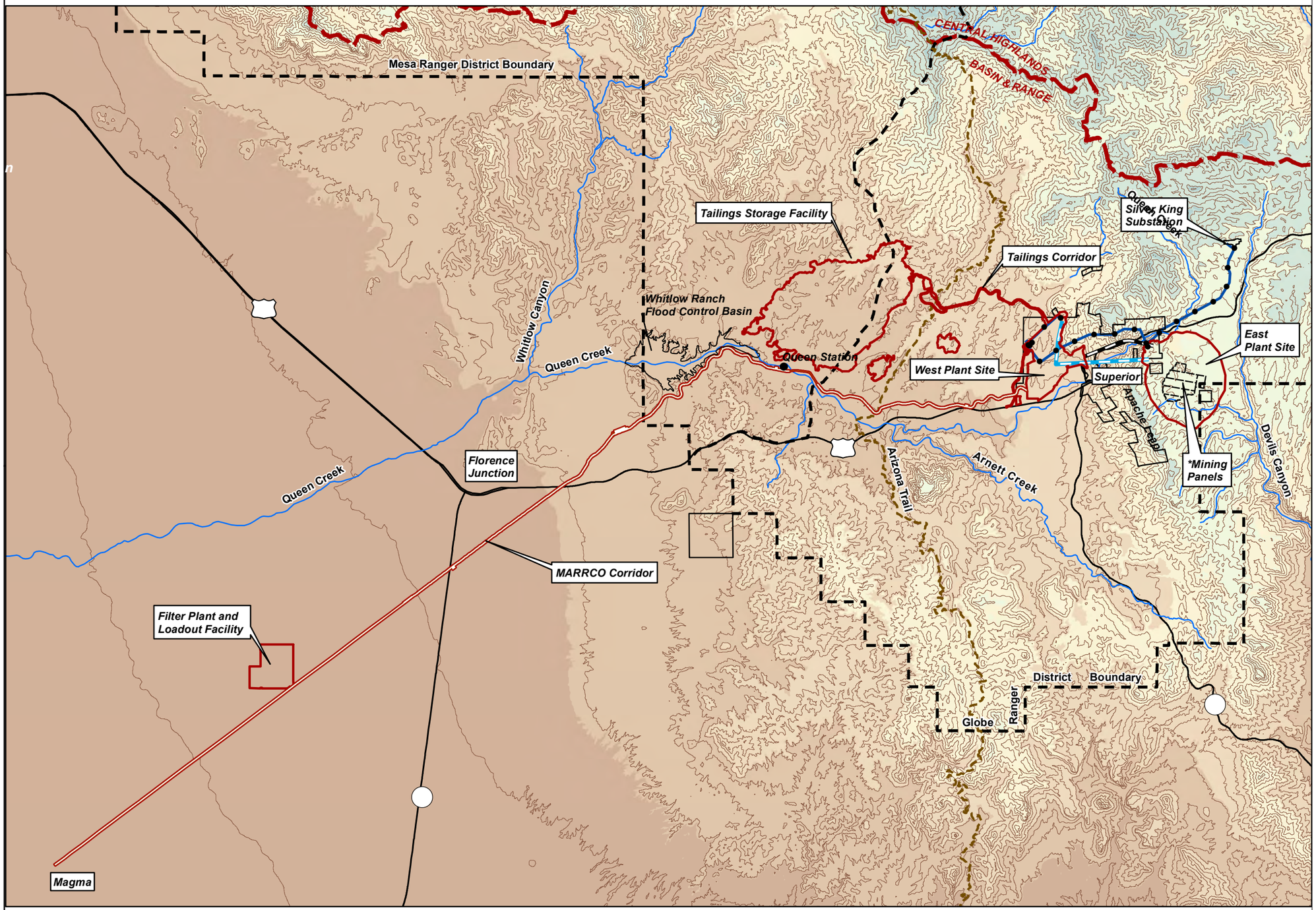
0 1 2 Miles

0 2 4 Kilometers

RESOLUTION COPPER
General Plan of Operations

BOUNDARIES OF NON-ATTAINMENT AND MAINTENANCE AREAS
Figure 2.1-2

Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig2.2_1_Topo_and_Physiography.mxd



Legend

- Resolution Holdings
- Project Area
- Power Line
- Conveyor/Infrastructure Tunnel
- Existing Never Sweat Tunnel
- Arizona Trail (ESRI Online Data)
- Tonto National Forest Ranger District Boundary

*Note: Mine Panel Configuration Subject to Change.

Elevation Range
(Feet above mean sea level)

- 5,900 - 6,600
- 5,200 - 5,900
- 4,600 - 5,200
- 3,900 - 4,600
- 3,300 - 3,900
- 2,600 - 3,300
- 2,000 - 2,600
- 1,300 - 2,000

Contour Interval 200 feet

Digital Elevation Model Source: USGS 1/3-Arc Second National Elevation Dataset

N

0 1 2 Miles

0 2 4 Kilometers

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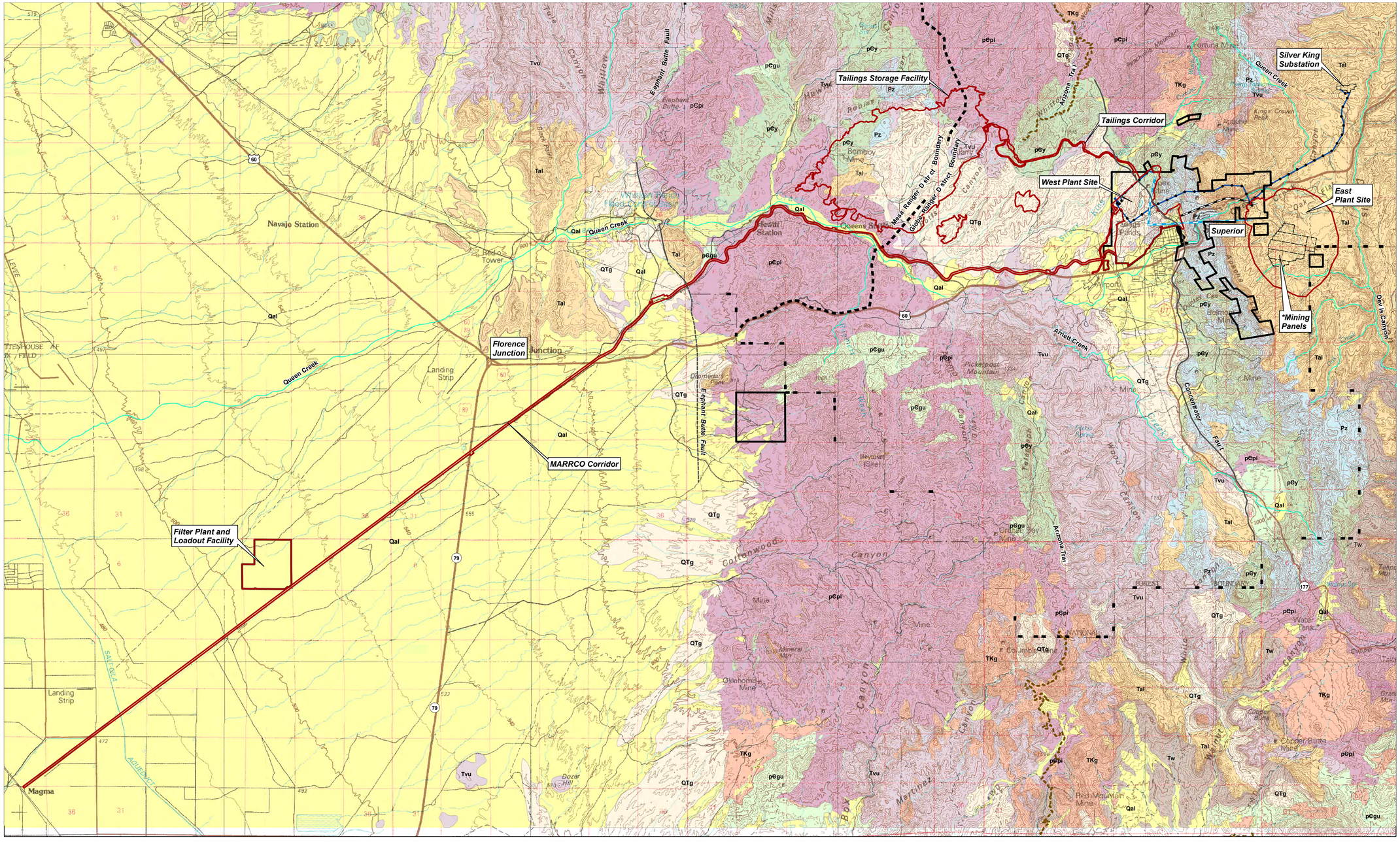
TOPOGRAPHY & PHYSIOGRAPHY
Figure 2.2-1

Path: M:\Jobs\800's\807.94\ENV\GPO_Response2TNF\MXD\Fig2.2-2_Regional_Surface_Geology.mxd



Legend

- Resolution Holdings
- Project Area
- Power Line
- Conveyor/Infrastructure Tunnel
- Existing Never Sweat Tunnel
- Arizona Trail (ESRI Online Data)
- Tonto National Forest Ranger District Boundary

* Note: Mine Panel Configuration Subject to Change.

Geologic Units

d	Disturbed Surficial Deposits
Qal	Quaternary Alluvial and Surficial Deposits
QTg	Quaternary and Tertiary Basin-Fill Deposits
Tal	Tertiary Apache Leap Tuff
Tvu	Tertiary Volcanic Rocks, Undifferentiated
Tw	Tertiary Whitetail Conglomerate
TKg	Cretaceous and Tertiary Intrusive Rocks
Pz	Paleozoic Sedimentary Rocks, Undifferentiated
pЄy	Younger Precambrian Sedimentary and Intrusive Rocks, Undifferentiated
pЄgu	Undifferentiated Precambrian Intrusive Rocks
pЄpi	Older Precambrian Pinal Schist
	Fault
	Fault - Approximate

Data Source: Geology Map
Spencer, J.E., Richard, S.M., and Pearthree, P.A., 1998, Geologic Map of the Mesa 30'x60' Quadrangle, Arizona: Digital Information Series DI-11, version 1.0, Arizona Geological Survey.

Fault Lines
Peterson, 1969, and
Spencer and Richard, 1995

Geology generalized from Spencer, Richard, and Pearthree, 1998, by Montgomery & Associates. 2013

MONTGOMERY & ASSOCIATES
Water Resource Consultants

Image Source: Mesa 1:100,000 USGS Quadrangle

N

0 1 2 Miles

0 2 4 Kilometers

Note: This figure is designed to be plotted at 24" x 36". All map elements may not be legible at other plot sizes.

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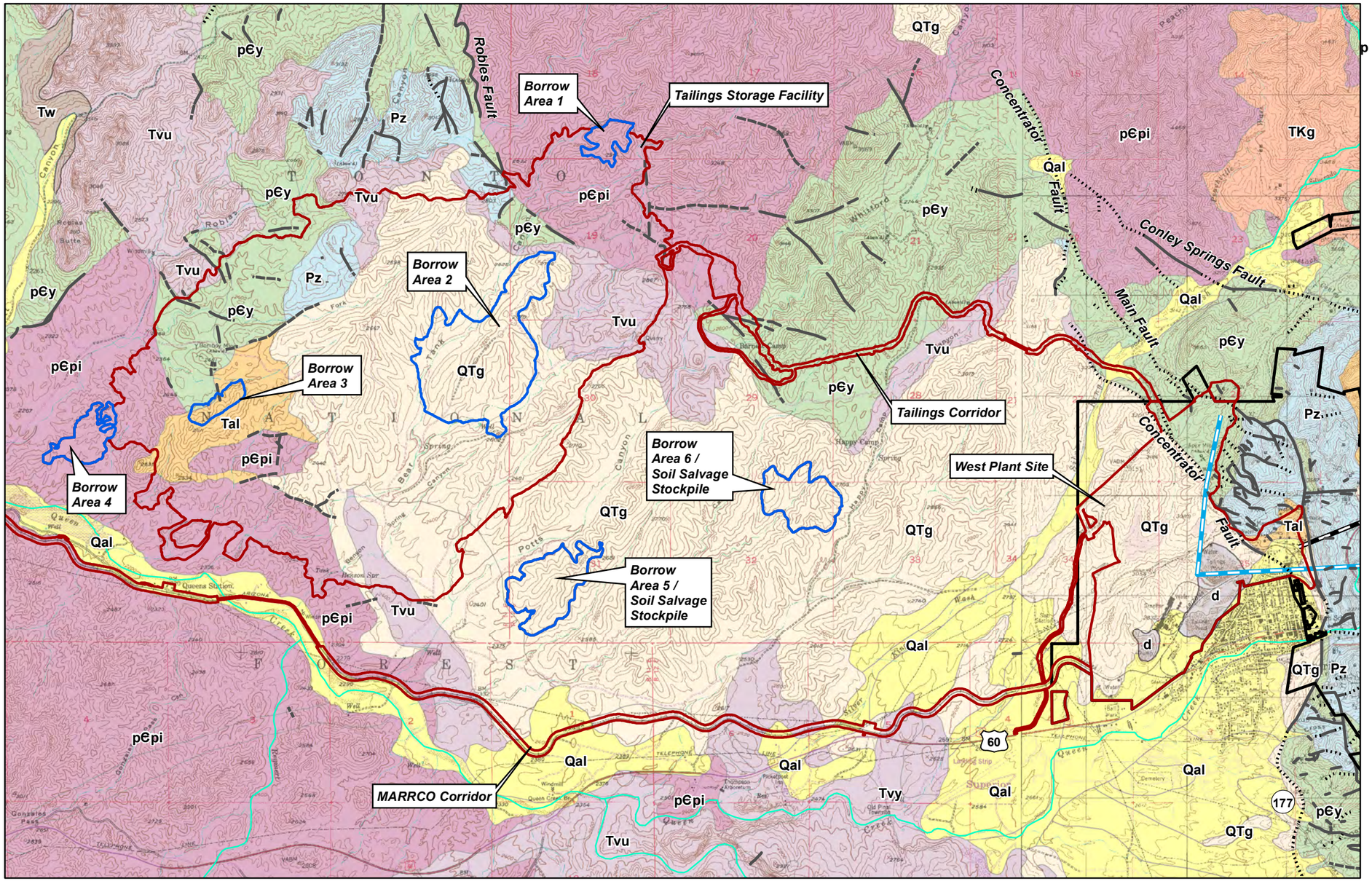
REGIONAL SURFACE GEOLOGY

Figure 2.2-2



Legend

- Resolution Holdings
- Project Area
- Borrow Areas
- Conveyor / Infrastructure Tunnel
- Existing Never Sweat Tunnel

Geologic Units

d	Disturbed Surficial Deposits
Qal	Quaternary Alluvial and Surficial Deposits
QTg	Quaternary and Tertiary Basin-Fill Deposits
Tal	Tertiary Apache Leap Tuff
Tvu	Tertiary Volcanic Rocks, Undifferentiated
Tw	Tertiary Whitetail Conglomerate
TKg	Cretaceous and Tertiary Intrusive Rocks
Pz	Paleozoic Sedimentary Rocks, Undifferenieated
pЄy	Younger Precambrian Sedimentary and Intrusive Rocks, Undifferentiated
pЄpi	Older Precambrian Pinal Schist

- Fault
- Fault - Approximate
- Fault - Concealed

Data Source: Geology Map
Spencer, J.E., Richard, S.M., and Pearthree, P.A., 1998, Geologic Map of the Mesa 30'x60' Quadrangle, Arizona: Digital Information Series DI-11, version 1.0, Arizona Geological Survey.

Fault Lines
Peterson, 1969, and
Spencer and Richard, 1995
Spencer et al, 1998

Geology generalized from Spencer, Richard, and Pearthree, 1998, by Montgomery & Associates. 2013

MONTGOMERY & ASSOCIATES
Water Resource Consultants

Image Source: Picketpost Mountain & Superior 1:24,000 USGS Quadrangles

N

0 1,800 3,600 Feet

0 500 1,000 Meters

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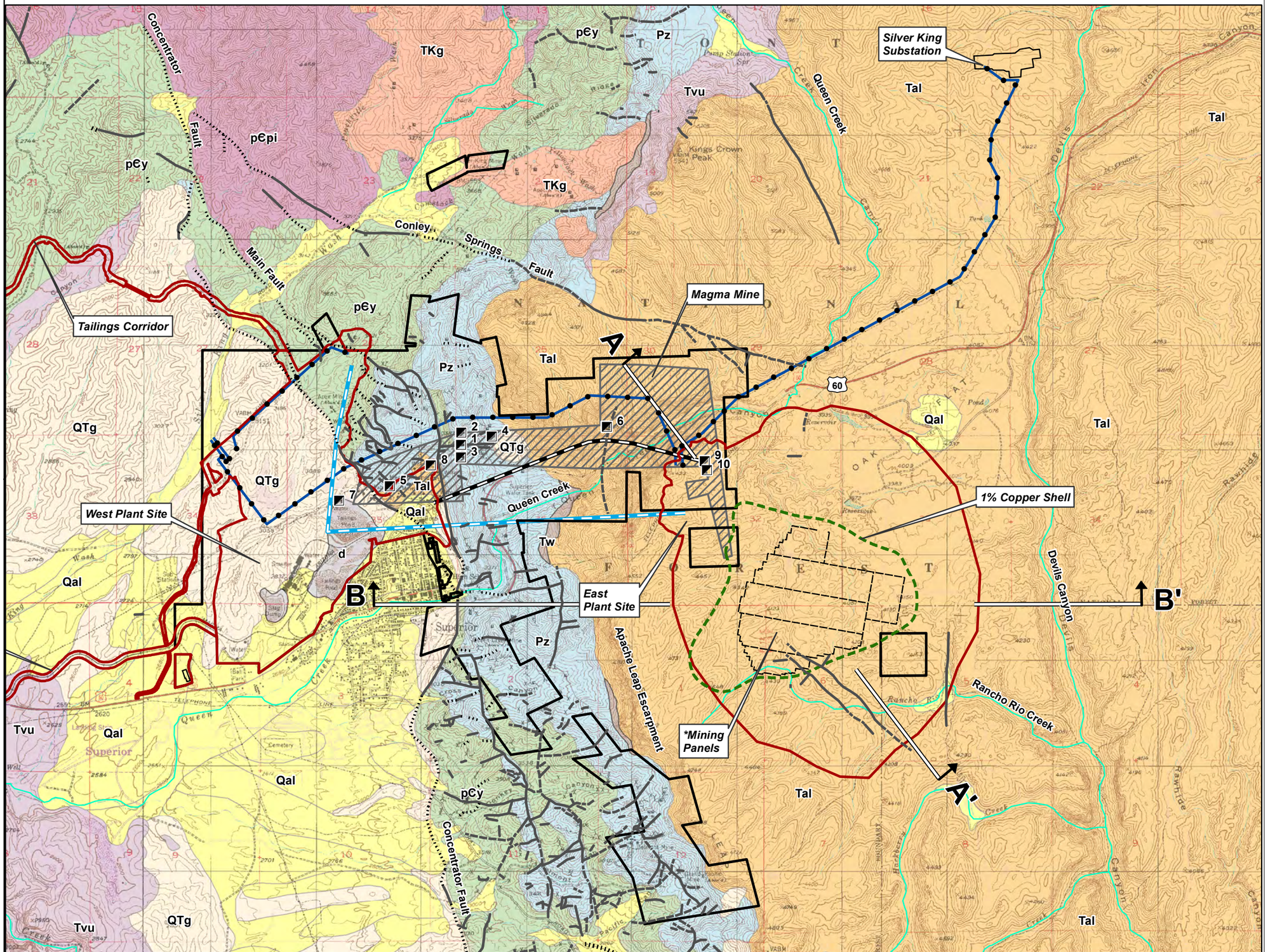
General Plan of Operations

GEOLOGIC MAP
TAILINGS STORAGE FACILITY & WEST PLANT SITE
Figure 2.2-3

Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig2.2-4_Geologic_Map_of_WPS_EPS.mxd



Legend

- Resolution Holdings
- Project Area
- Magma Mine
- Existing Mine Shaft
- Power Line
- Conveyor / Infrastructure Tunnel
- Existing Never Sweat Tunnel

*Note: Mine Panel Configuration Subject to Change

Geologic Units

d	Disturbed Surficial Deposits
Qal	Quaternary Alluvial and Surficial Deposits
QTg	Quaternary and Tertiary Basin-Fill Deposits
Tal	Tertiary Apache Leap Tuff
Tvu	Tertiary Volcanic Rocks, Undifferentiated
Tw	Tertiary Whitetail Conglomerate
TKg	Cretaceous and Tertiary Intrusive Rocks
Pz	Paleozoic Sedimentary Rocks, Undifferenciated
pЄy	Younger Precambrian Sedimentary and Intrusive Rocks, Undifferentiated
pЄpi	Older Precambrian Pinal Schist
	Fault
	Fault - Approximate
	Fault - Concealed

Data Source: Geology Map
Spencer, J.E., Richard, S.M., and Pearthree, P.A., 1998, Geologic Map of the Mesa 30'x60' Quadrangle, Arizona: Digital Information Series DI-11, version 1.0, Arizona Geological Survey.

Fault Lines
Peterson, 1969, and
Spencer and Richard, 1995
Spencer et al, 1998

Geology generalized from Spencer, Richard, and Pearthree, 1998, by Montgomery & Associates. 2013

MONTGOMERY & ASSOCIATES
Water Resource Consultants

Image Source: Picketpost Mountain & Superior 1:24,000 USGS Quadrangles

N

0 1,500 3,000 Feet

0 500 1,000 Meters

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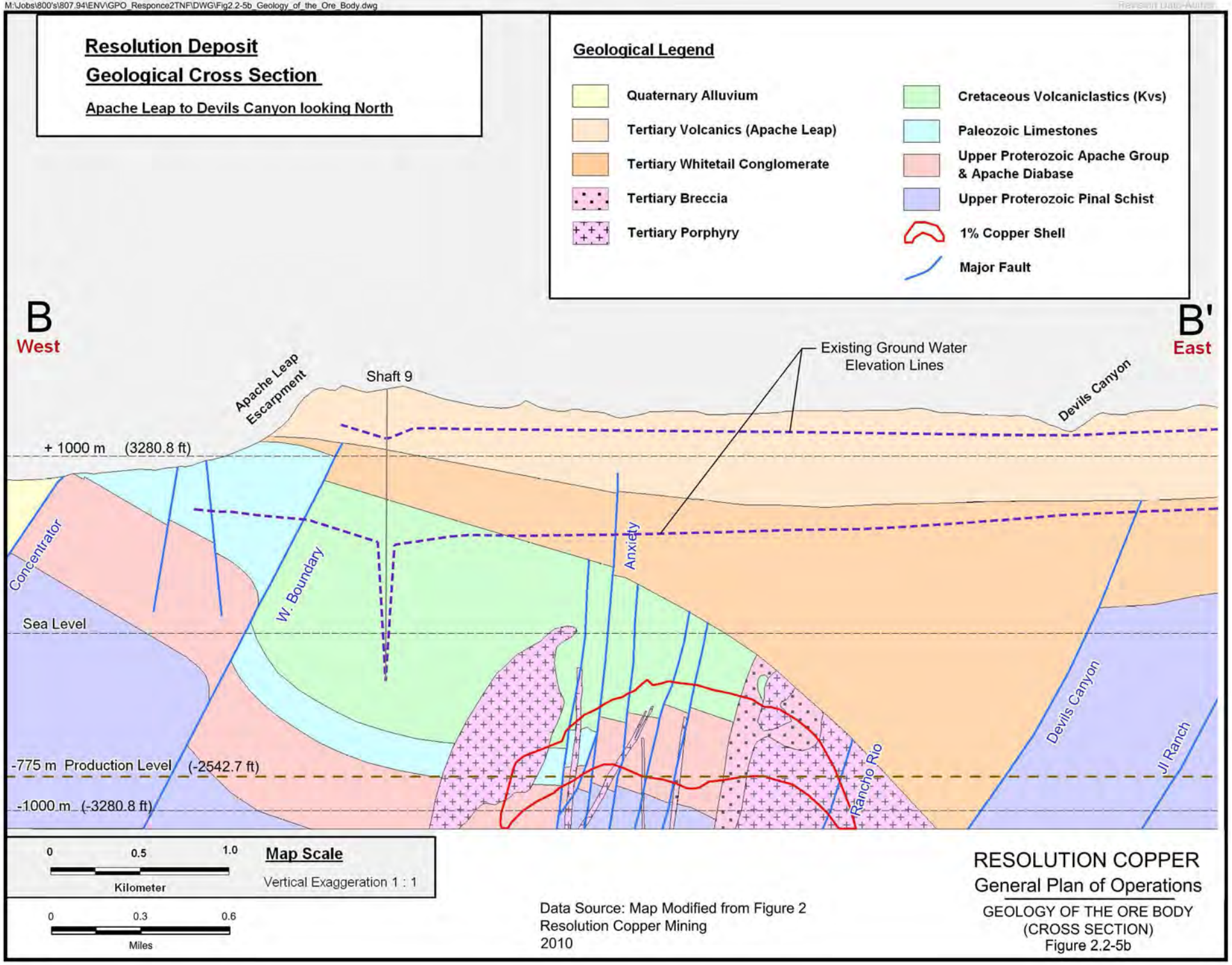
General Plan of Operations

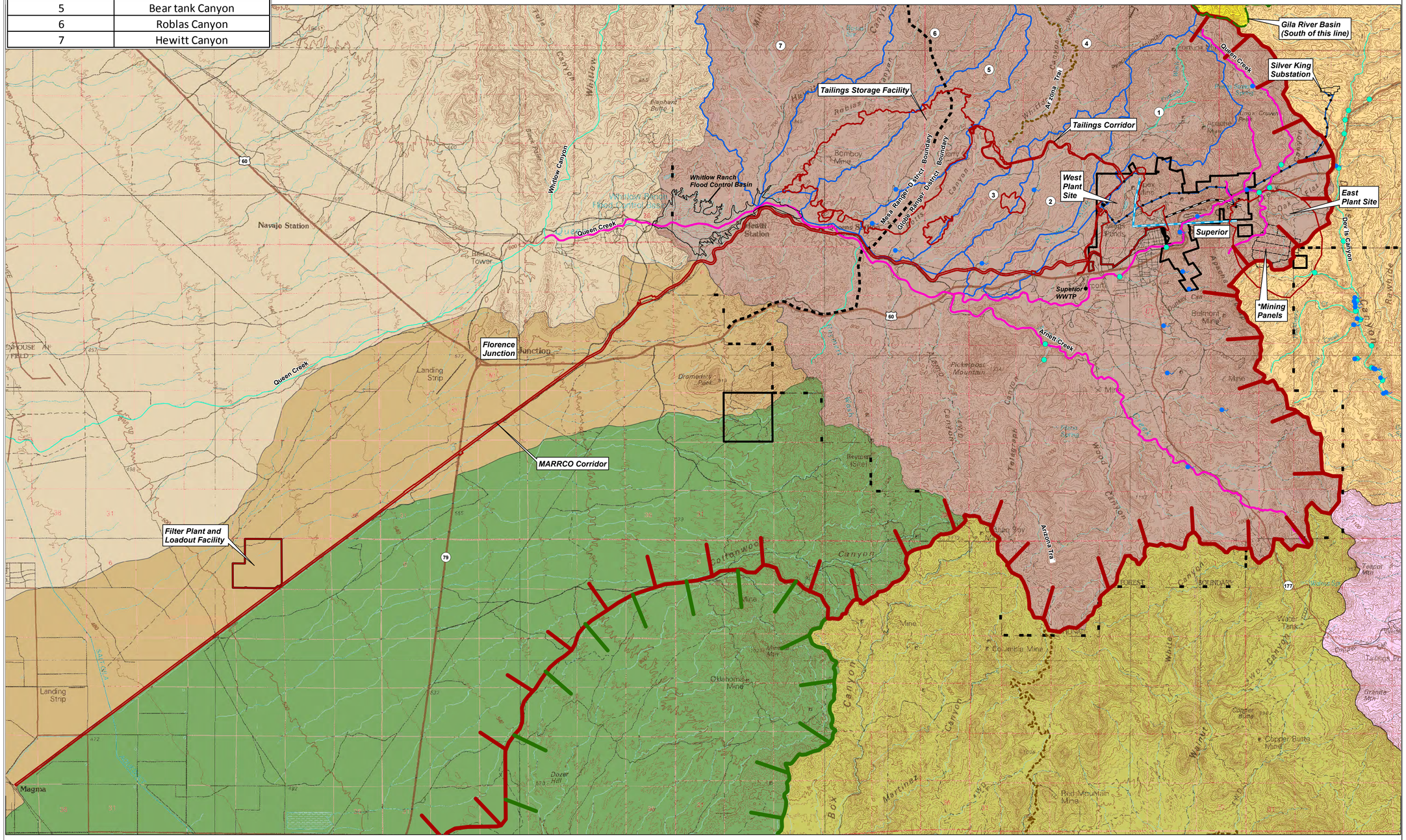
GEOLOGIC MAP
WEST AND EAST PLANT SITES
Figure 2.2-4

M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\DWG\Fig2.2-5b_Geology_of_the_Ore_Body.dwg



Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig2.3-1_Regional_Drainage_Basins.mxd

Sub-basin Number	Upper Queen Creek Sub-basin
1	Silver King Canyon
2	Happy Camp Canyon
3	Rice Water Canyon
4	Potts Canyon
5	Bear tank Canyon
6	Roblas Canyon
7	Hewitt Canyon



Legend

- Resolution Holdings
- Project Area
- Power Line
- Conveyor/Infrastructure Tunnel
- Existing Never Sweat Tunnel
- Arizona Trail (ESRI Online Data)
- Tonto National Forest Ranger District Boundary
- ADEQ 2010 Impaired Stream
- Spring Location
- Surface Water Sample Location

ADEQ Active Management Area (AMA)

- Phoenix AMA
- Pinal AMA

Watershed

- Pinto Creek
- Mineral Creek
- Devils Canyon
- Lower Queen Creek
- Middle Queen Creek
- Upper Queen Creek
- Upper Queen Creek Sub-basins (1) Sub-basin Number (See Table)
- Paisano Wash
- Box O Wash

Data Source: Springs, Surface Water and Sample Locations
Provided by Montgomery & Associates
2012

Additional Spring Data
Provided by WestLand Resources
Wetland Plant Survey of Springs in the Resolution Project Area.
2012

Watershed Data
Provided by USGS - Hydrologic Unit Code (HUC)
Aquired August 13, 2012

Upper Queen Creek Sub-basins
Provided by Klohn Crippen Berger, 2013

2010 Impaired Waters
Provided by ADEQ
Aquired August 6, 2013

* Note: Mine Panel Configuration Subject to Change.

Image Source: Mesa 1:100,000 USGS Quadrangle

N

0 1 2 Miles

0 2 4 Kilometers

Note: This figure is designed to be plotted at 24" x 36".
All map elements may not be legible at other plot sizes.

RESOLUTION COPPER
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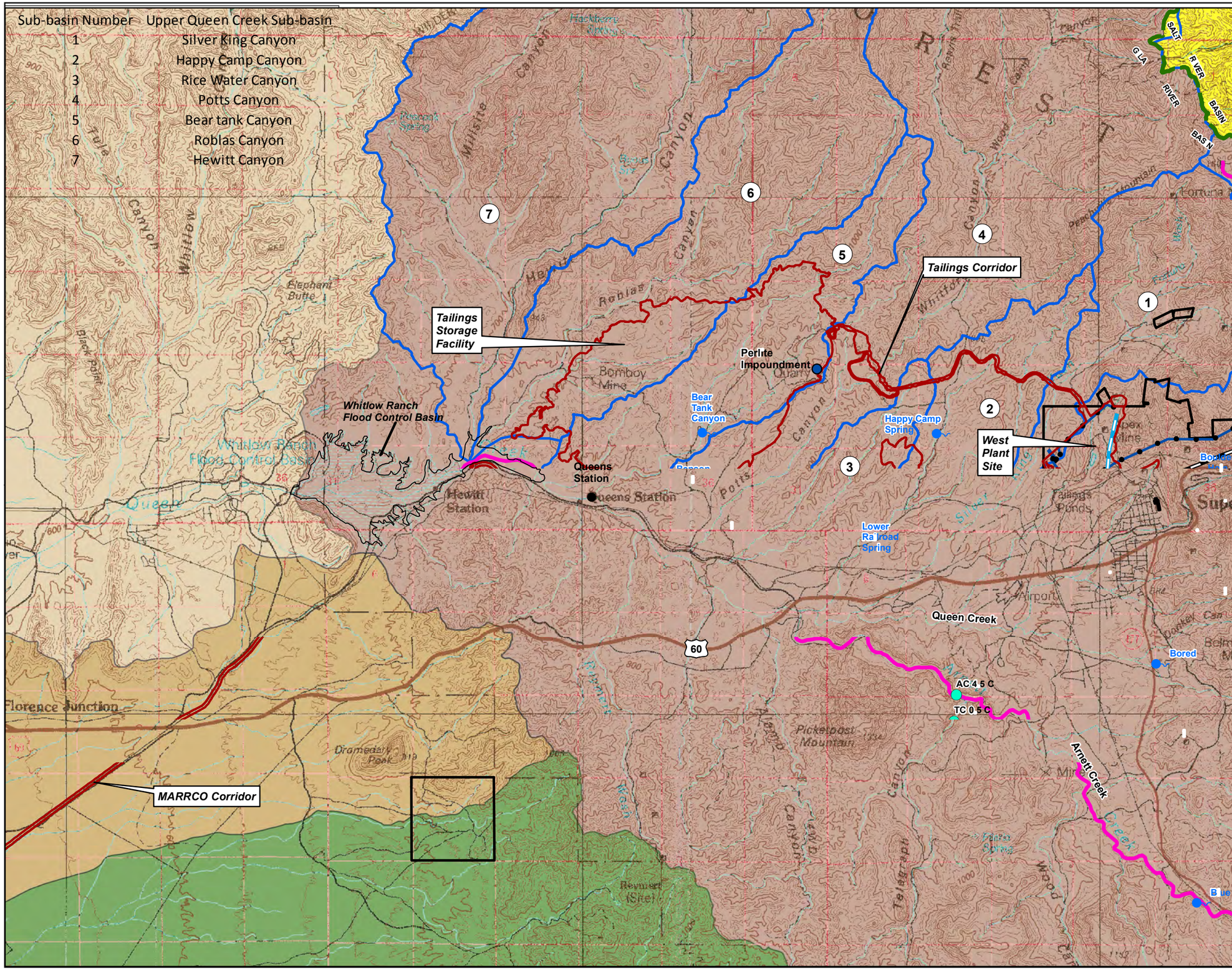
REGIONAL DRAINAGE BASINS

Figure 2.3-1

Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig2.3-2_Basins_TSF_11x17.mxd



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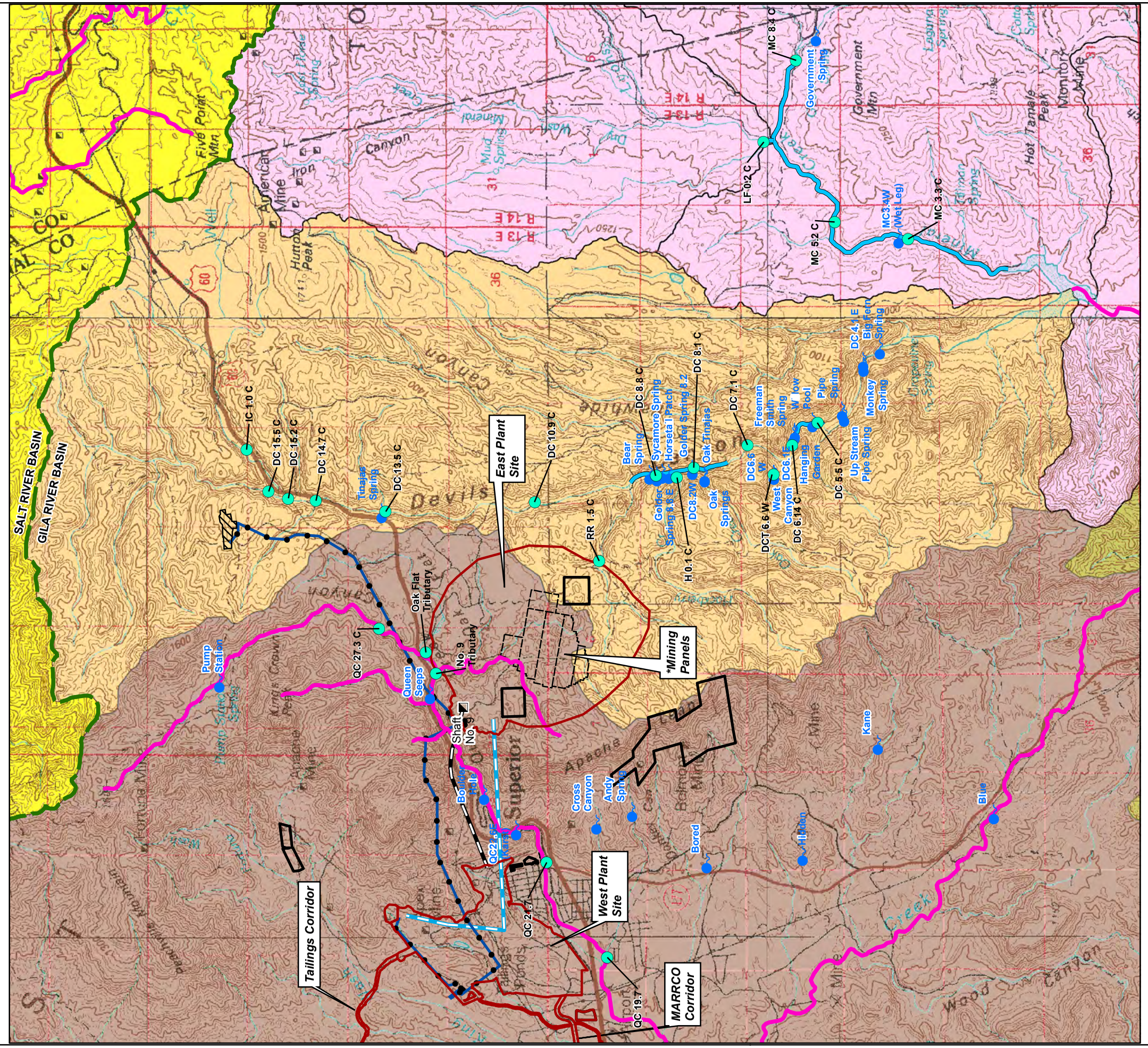
DRAINAGE BASINS
VICINITY OF TAILINGS STORAGE FACILITY

Figure 2.3-2



Legend

- Resolution Holdings
- Project Area
- Perennial Reach
- Power Line
- Conveyor / Infrastructure Tunnel
- Existing Never Sweat Tunnel
- ADEQ 2010 Impaired Stream
- Spring Location and ID
- Surface Water Sample Location and ID

Watershed

- Pinto Creek
- Mineral Creek
- Devils Canyon
- Upper Queen Creek
- Box O Wash

Data Source: Springs, Surface Water, Sample Locations & Perennial Reach Data
Provided by Montgomery & Associates
2012

Additional Spring Data
Provided by WestLand Resources
Wetland Plant Survey of Springs in the Resolution Project Area.
2012

Watershed Data
Provided by USGS - Hydrologic Unit Code (HUC)
Aquired August 13, 2012

2010 Impaired Waters
Provided by ADEQ
Aquired August 6, 2013

*Note: Mine Panel Configuration Subject to Change

Image Source: Mesa 1:100,000 USGS Quadrangle

N

0 2,700 5,400 Feet

0 1,000 2,000 Meters

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DRAINAGE BASINS
VICINITY OF WEST AND EAST PLANT SITES

Figure 2.3-3

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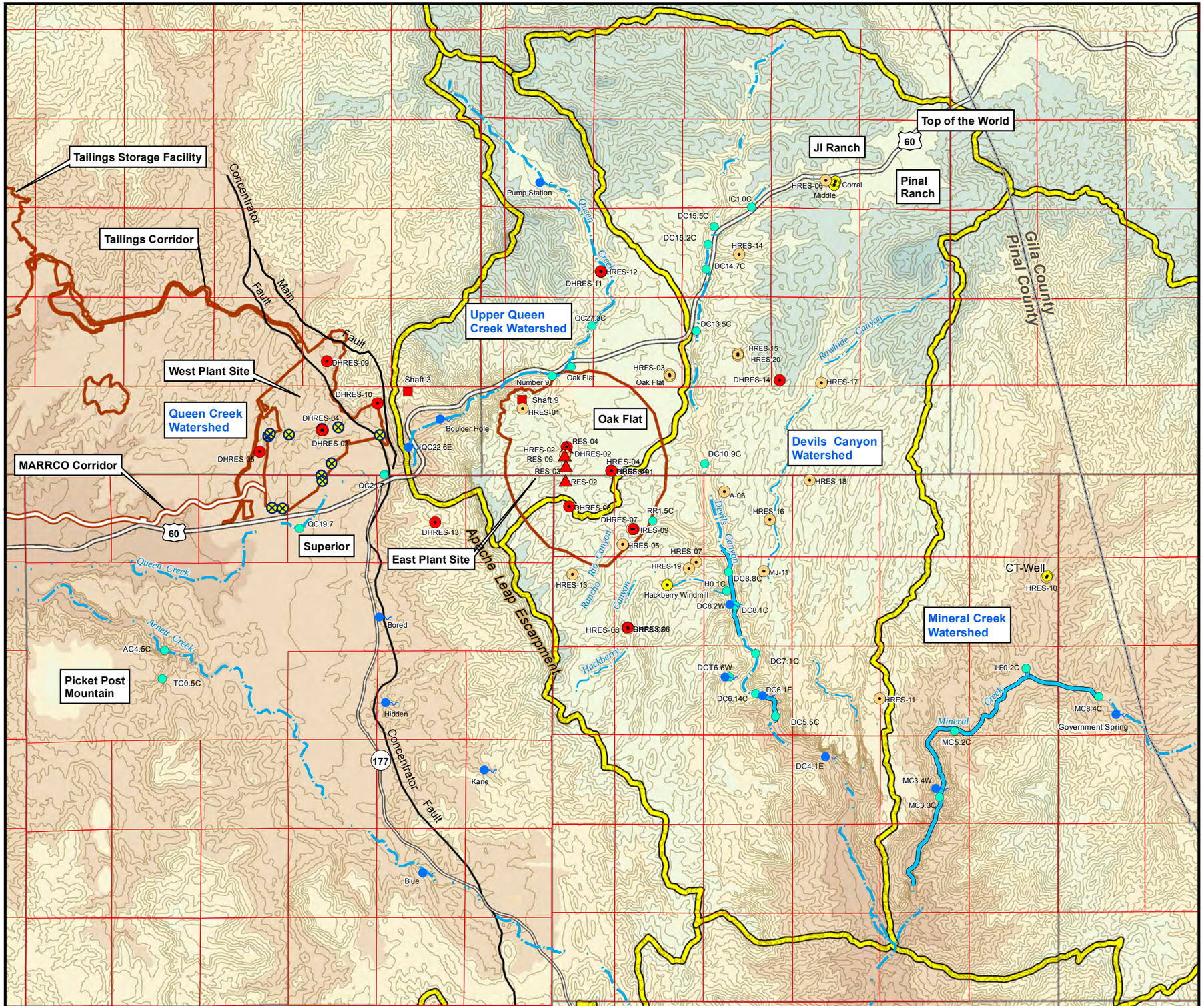

Legend

Project Area

Watershed Boundary

Groundwater Monitoring Sites

- Corral Well — Shallow Groundwater System Monitor Well and Identifier
- A-06 — Apache Leap Tuff Aquifer Monitor Well and Identifier
- DHRES-01 — Deep Groundwater System Monitor Well and Identifier
- RES-01 — Exploration Borehole and Identifier
- Shaft 9 — Shaft and Identifier
- Point of Compliance Well (Golder Associates, 2013)

Surface Water Monitoring Sites (Selected)

- MC3.4W — Spring and Identifier
- DC14.7C — Surface Water Sample and Identifier
- Perennial Reach

Elevation Range

(Feet above mean sea level)

- 5,900 - 6,600
- 5,200 - 5,900
- 4,600 - 5,200
- 3,900 - 4,600
- 3,300 - 3,900
- 2,600 - 3,300
- 2,000 - 2,600
- 1,300 - 2,000

Topographic contour interval : 100 Feet

MONTGOMERY & ASSOCIATES
Water Resource Consultants

Data Source: Map Modified from Figure 1 Montgomery & Associates 2012a

Note: Point of Compliance Wells Provided by Golder Associates, 2013.

N

0 3,000 6,000 Feet

0 1,000 2,000 Meters

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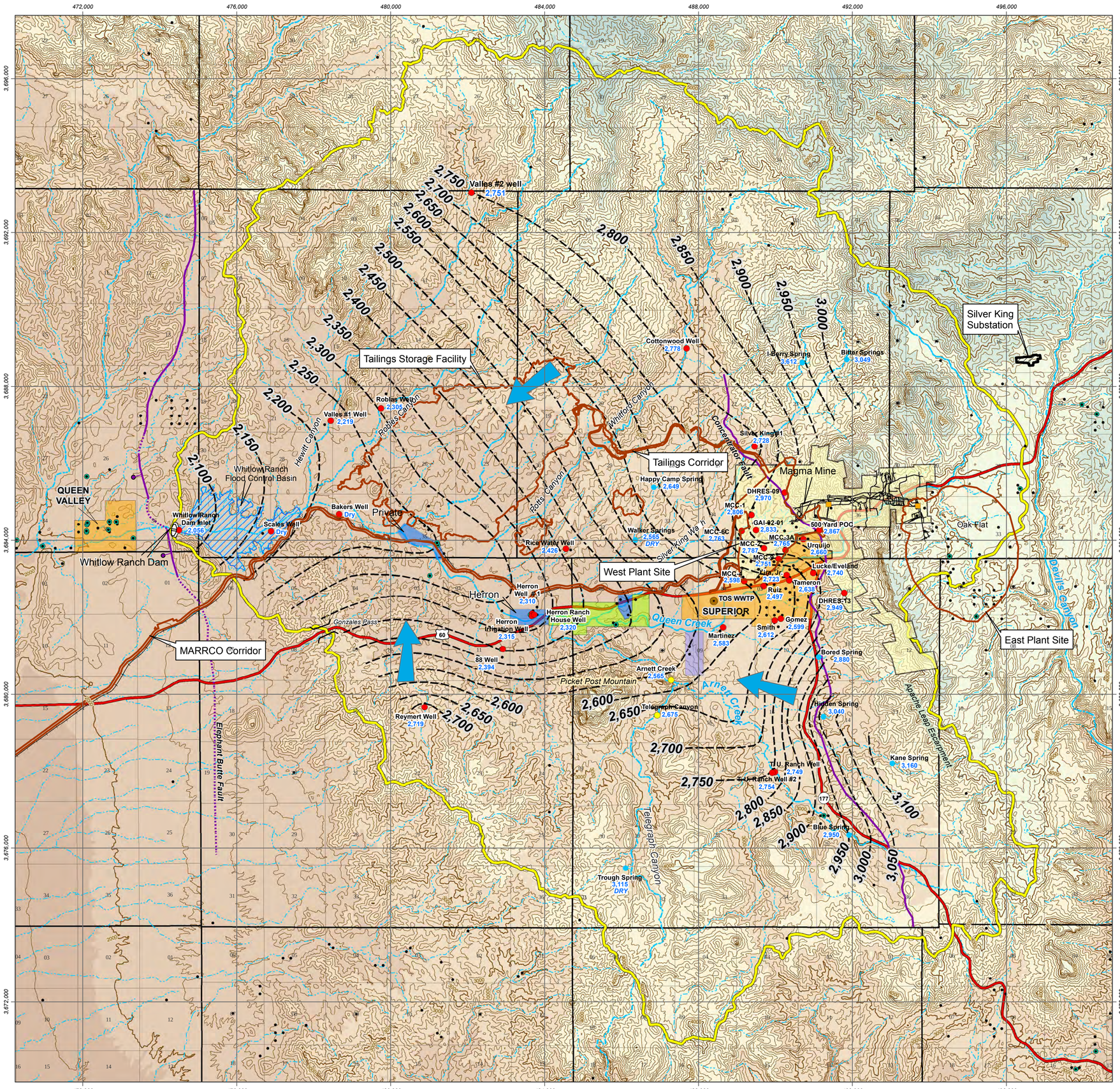
General Plan of Operations

HYDROLOGIC MONITORING LOCATIONS

Figure 2.3-4

Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig2.3-4_Hydro_Monitor_Loc_UQC_Devils_Cw_ProjAreas.mxd



EXPLANATION

- ADWR GWSI Well Registry
- ADWR 55 Well Registry, July 2012
- Shaft
- Town of Superior Waste Water Treatment Plant (TOS WWTP)
- Fault; dotted where inferred; bar and ball on downthrown side
- Railroad
- Watershed Boundary, Superior Basin
- Project Area

Water Level Elevation - Summer 2012

- Rice Water Well 2,426 — Well Location and Identifier; Water Level Elevation, in feet above mean sea level
- Telegraph Canyon 2,675 — Location of Beginning of Flowing Reach; Water Level Elevation, in feet above mean sea level
- Trough Spring 3,115 — Spring Location and Identifier; Water Level Elevation, in feet above mean sea level
- Water Level Elevation Contour
- Direction of Groundwater Movement

Land Use (Selected Areas)

- Townsite or Subdivision
- BoyceThompson Arboretum
- Resolution Copper Property
- Harborlite Quarry
- Other Private Lands

Elevation Range

(Feet above mean sea level)

- 5,900 - 6,600
- 5,200 - 5,900
- 4,600 - 5,200
- 3,900 - 4,600
- 3,300 - 3,900
- 2,600 - 3,300
- 2,000 - 2,600
- 1,300 - 2,000

Topographic contour interval: 100 Feet

MONTGOMERY & ASSOCIATES
Water Resource Consultants

Data Source: Map Modified from Figure 2
Montgomery & Associates
2013a

N

0 1 2 Miles

0 2 4 Kilometers

Note: This figure is designed to be plotted at 22" x 28".
All map elements may not be legible at other plot sizes.

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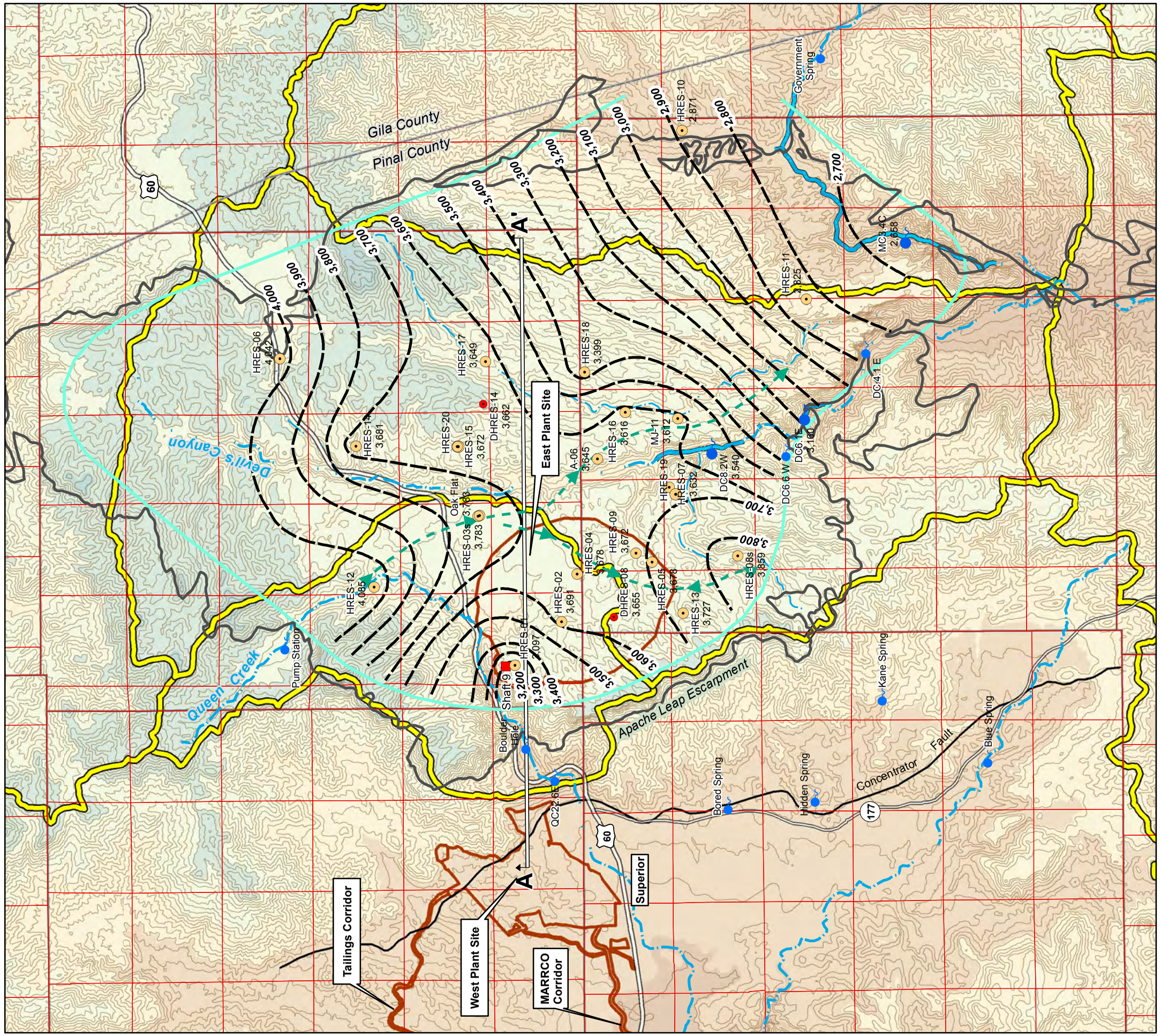
General Plan of Operations

GROUNDWATER ELEVATIONS
TAILINGS STORAGE FACILITY & WEST PLANT SITE

Figure 2.3-5

Document Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig2.3-5_Montgom_GroundWaterTSF_rec8_23_2013_mod.mxd



Legend

- HRES-08s 3,859 — Well and Identifier; Water Level Elevation, in feet, July 2011
- Piezometer
- Spring
- Shaft
- Perennial Reach
- Project Area
- Approximate Extent of Apache Leap Tuff Aquifer
- Extent of Outcrop of Apache Leap Tuff
- Watershed Boundary
- 3,300 — Water Level Elevation Contour, in feet above sea level
- General Direction of Groundwater Movement

Elevation Range
(Feet above mean sea level)

- 5,900 - 6,600
- 5,200 - 5,900
- 4,600 - 5,200
- 3,900 - 4,600
- 3,300 - 3,900
- 2,600 - 3,300
- 2,000 - 2,600
- 1,300 - 2,000

Topographic contour interval : 100 Feet

MONTGOMERY & ASSOCIATES
Water Resource Consultants

Data Source: Map modified from Montgomery & Associates 2011

N

0 3,000 6,000 Feet

0 1,000 2,000 Meters

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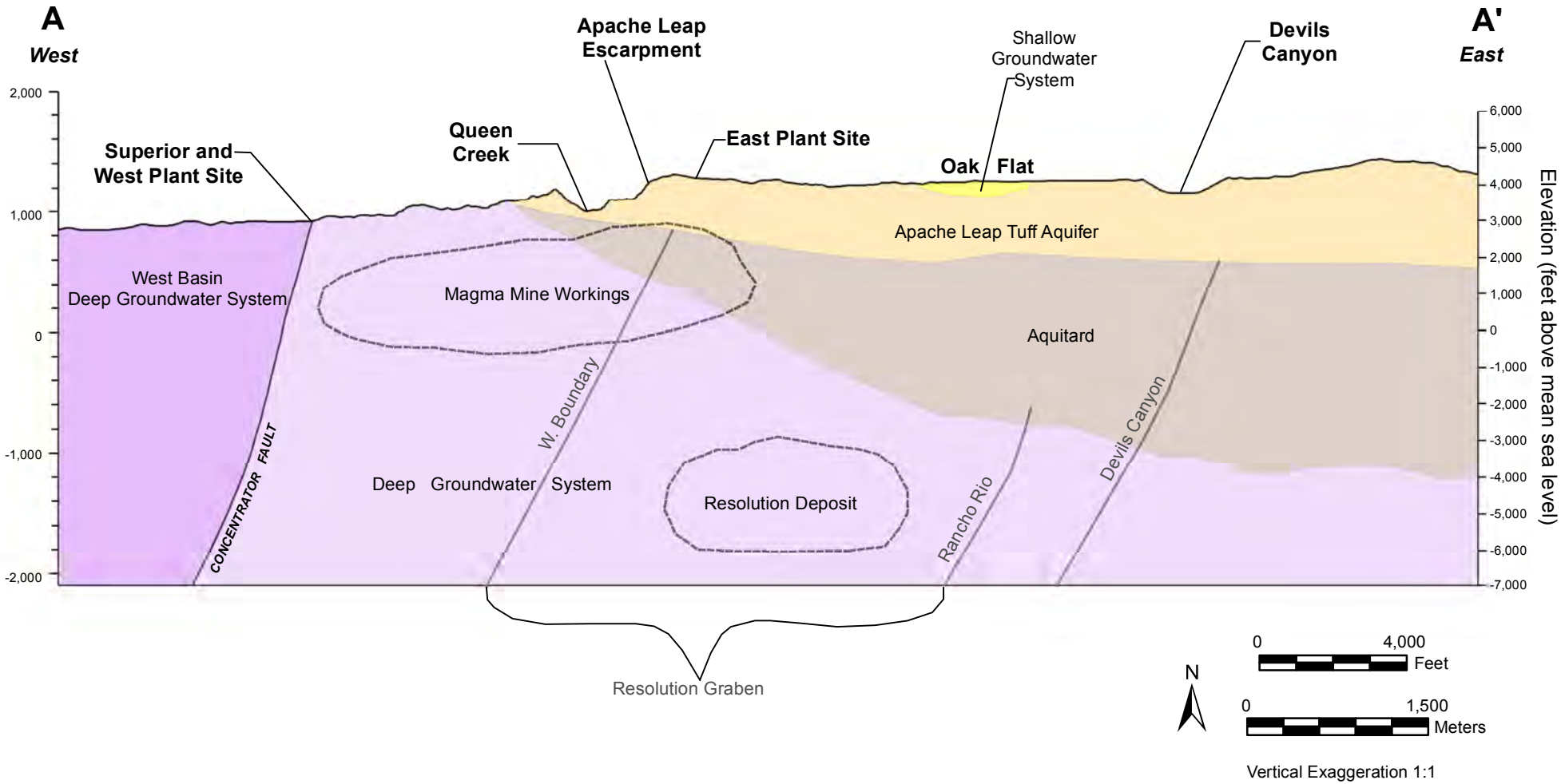
GROUNDWATER ELEVATIONS
EAST PLANT SITE

Figure 2.3-6

SCHEMATIC REPRESENTATION OF HYDROGEOLOGIC SYSTEMS FOR THE EAST PLANT SITE AND WEST PLANT SITE



MONTGOMERY & ASSOCIATES
Water Resource Consultants

Data Source: Map Modified from Montgomery & Associates 2012b

RESOLUTION COPPER
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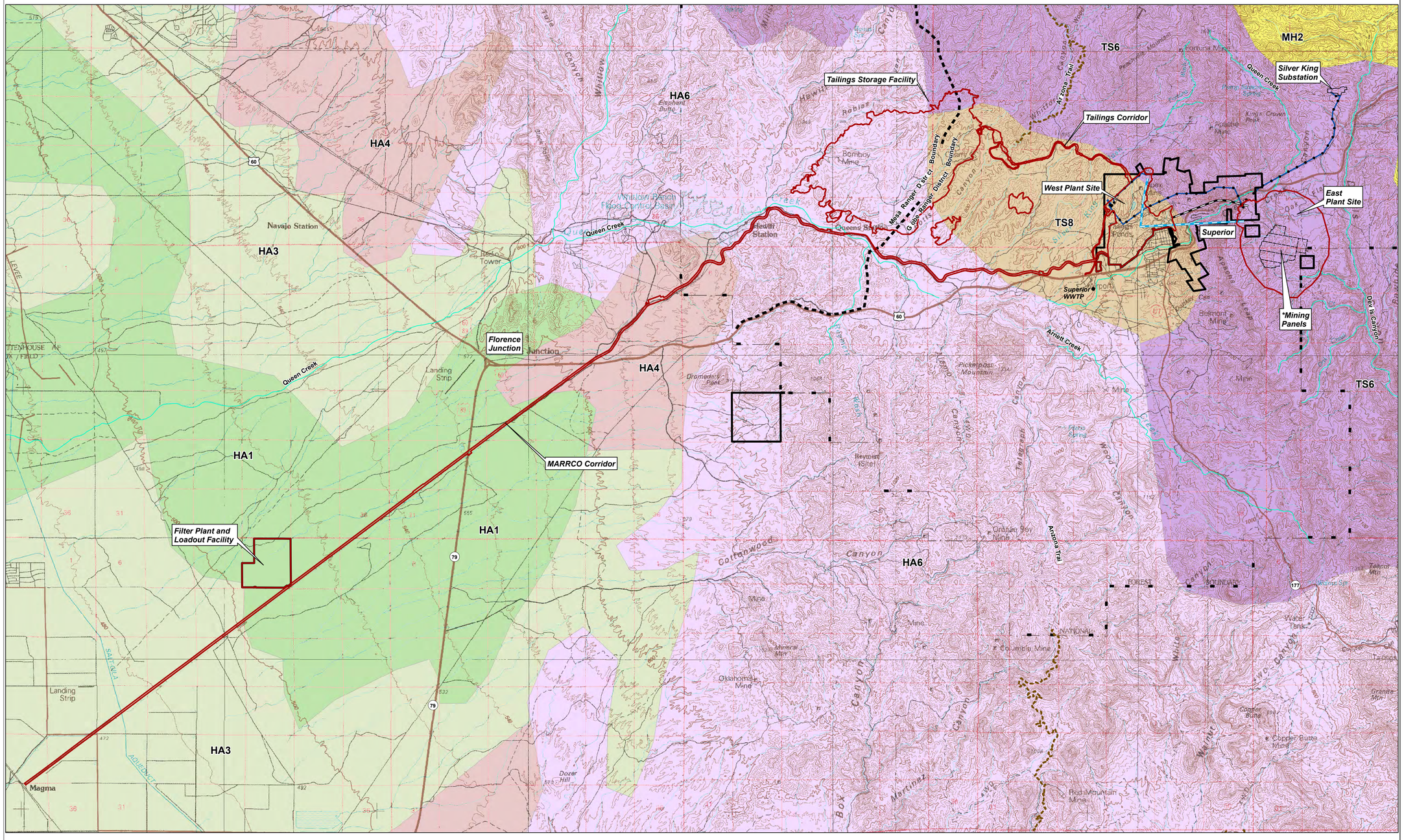
SCHEMATIC REPRESENTATION OF HYDROGEOLOGIC SYSTEMS

Figure 2.3-7

Path: M:\Jobs\800's\807.94\ENV\GPO_Response2TNF\MXD\Fig2.4-1_Regional_Generalized_Soils.mxd



Legend

- Resolution Holdings
- Project Area
- Power Line
- Conveyor/Infrastructure Tunnel
- Existing Never Sweat Tunnel
- Arizona Trail (ESRI Online Data)
- Tonto National Forest Ranger District Boundary

*Note: Mine Panel Configuration Subject to Change.

Soil Descriptions

- HA1- Torrifluvents Association
- HA3- Mohall-Vecont-Pinamt Association
- HA4- Gunsight-Rillito-Pinal Association
- HA6- Lithic Camborthids-Rock Outcrop-Lithic Haplargids Association
- MH2- Lithic Haplustolls-Lithic Argiustolls-Rock Outcrop Association
- TS6- Lithic Torriorthents-Lithic Haplustolls-Rock Outcrop Association
- TS8- Caralampi-White House Association

Data Source: General Soil Map
Provided by Arizona Land Resource Information Systems (ALRIS), U.S. Dept. of Agriculture, Soil Conservation Service and U of AZ Experimental Station
1975

Image Source: Mesa 1:100,000 USGS Quadrangle

N

0 1 2 Miles

0 2 4 Kilometers

Note: This figure is designed to be plotted at 24" x 36". All map elements may not be legible at other plot sizes.

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REGIONAL MAP OF GENERALIZED SOIL TYPES

Figure 2.4-1

Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig2.4-2_Regional_Soils_Detailed_12_17_2012.mxd

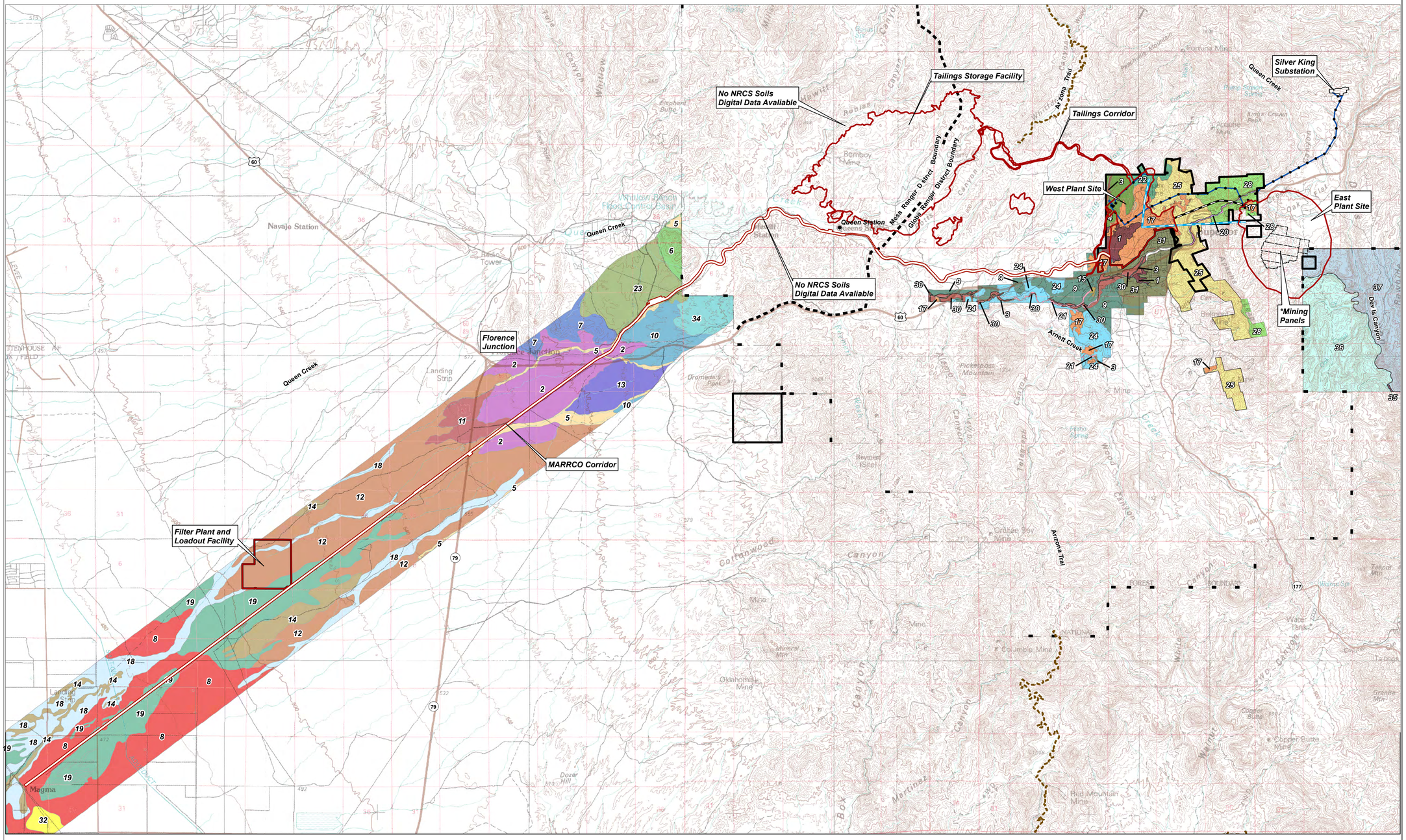


Image Source: Mesa 1:100,000 USGS Quadrangle

Soil Data Source: U.S. Department of Agriculture, Natural Resources Conservation Service
Soil Survey Geographic Database for Eastern Pinal & Southern Gila Counties, AZ
Soil Survey Area Data for AZ661, Publication Date: 20090428.
Soil Survey Geographic Database for Eastern Maricopa & Northern Pinal Counties, AZ
Soil Survey Area Data for AZ655, Publication Date: 20080902.

Soil Data Source: U.S. Department of Agriculture,
Natural Resources Conservation Service,
Soil Survey Geographic Database for Tonto National
Forest, AZ, Parts of Gila, Maricopa, Pinal & Yavapai Counties, AZ
Soil Survey Area Data for AZ687, Publication Date: 20101022.

Legend

- Resolution Holdings
- Project Area
- Power Line
- Conveyor/Infrastructure Tunnel
- Existing Never Sweat Tunnel
- Arizona Trail (ESRI Online Data)
- Tonto National Forest Ranger District Boundary

* Note: Mine Panel Configuration Subject to Change.

NRCS 655, 661, & 687 Soils

1	Andrada extremely gravelly sandy loam, 10 to 40 percent slopes
2	Beardsley-Suncity complex, 1 to 10 percent slopes
3	Bodecker soils and Riverwash, 0 to 5 percent slopes
4	Caralampi extremely gravelly sandy loam, moderately deep, 20 to 40 percent slopes
5	Carrizo family-Brios-Riverwash complex, 0 to 5 percent slopes
6	Cellar-Anklam-Rock outcrop complex, 20 to 70 percent slopes
7	Cellar-Rock outcrop complex, 20 to 70 percent slopes
8	Contine loam, 0 to 3 percent slopes
9	Deloro-Andrada-Sasabe, deep complex, 2 to 15 percent slopes
10	Delnorte-Nahda complex, 3 to 20 percent slopes
11	Denure-Dateland complex, 0 to 3 percent slopes
12	Denure-Mohall complex, 1 to 5 percent slopes
13	Denure-Momoli complex, 1 to 10 percent slopes
14	Denure sandy loam, 1 to 3 percent slopes
15	Dumps
17	Mined land
18	Mohall clay loam, 0 to 5 percent slopes
19	Mohall sandy loam, 0 to 3 percent slopes
20	Oxyaquic Torrifluvents and Typic Fluvaquents soils and Riverwash, 0 to 5 percent slopes
21	Oxyaquic Torrifluvents-Riverwash-Water complex, 0 to 5 percent slopes
35	Oxyaquic Torrifluvents-Riverwash complex, 0 to 5 percent slopes
22	Pantak-Cammerman-Rock outcrop complex, 20 to 65 percent slopes
23	Rock outcrop-Lajitas complex, 5 to 60 percent slopes
24	Rock outcrop-Lampshire complex, 5 to 40 percent slopes
36	Rock outcrop-Lampshire complex, 10 to 60 percent slopes
37	Rock outcrop-Lampshire complex, chaparral 5 to 50 percent slopes
25	Rock outcrop-Mabray-Pantak complex, 20 to 70 percent slopes
28	Rock outcrop-Woodcutter complex, tuff, 15 to 50 percent slopes
30	Tenneco-Bodecker complex, 0 to 3 percent slopes
31	Urban land and Haplic Torriarents soils, 2 to 15 percent slopes
32	Vecont clay
34	Wikieup family very channery sandy loam, 10 to 60 percent slopes

N

0 1 2 Miles

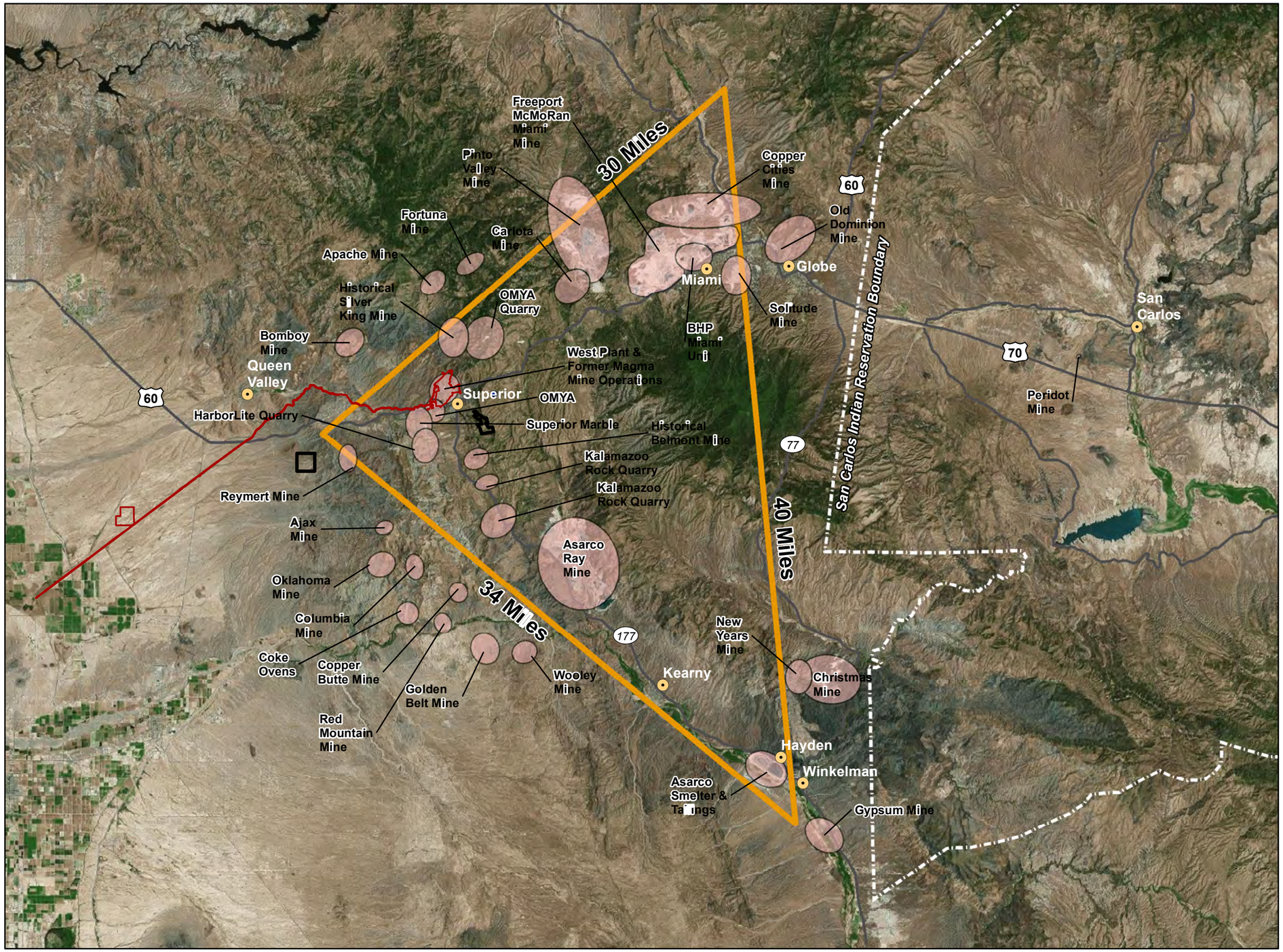
0 2 4 Kilometers

Note: This figure is designed to be plotted at 24" x 36". All map elements may not be legible at other plot sizes.

RESOLUTION COPPER
General Plan of Operations

MAP OF DETAILED SOIL TYPES

Figure 2.4-2



Legend

- Resolution Holdings
- Project Area
- Copper Triangle
- Arizona Mines

Image Source: ESRI Online Microsoft 2010

N

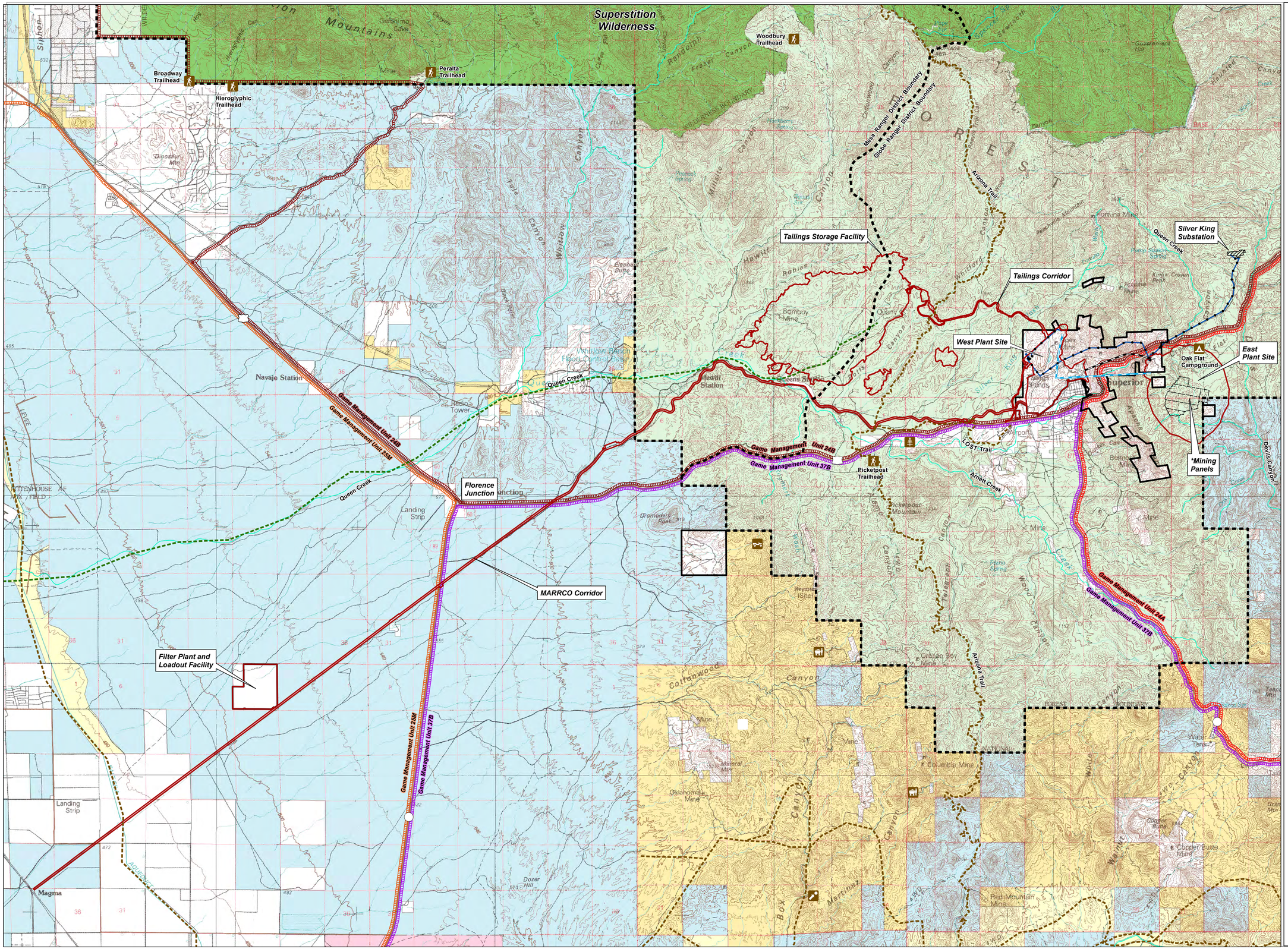
0 3 6 Miles

0 5 10 Kilometers

RESOLUTION COPPER
General Plan of Operations

COPPER TRIANGLE
Figure 2.5-1

Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig2.5-2_Designated_Rec_Areas.mxd



Legend

- Resolution Holdings
- Project Area
- Power Line
- Conveyor/Infrastructure Tunnel
- Existing Never Sweat Tunnel
- Tonto National Forest Ranger District Boundary
- Trail
- Proposed Drainage Trail
- Offroad
- Campground
- Arboretum
- Trailhead
- Other Point of Interest
- Mine

Arizona Game & Fish Department Game Management Units

- 24A
- 24B
- 25M
- 37B

* Note: Mine Panel Configuration Subject to Change.

Data Source:
Pinal County Open Space and Trails Master Plan 2007
ALRIS 2000
USFS Forest Maps and AZ Recreation Map
Arizona Trail Provided by Arizona Trail Association Aquired September 2012
Arizona Game & Fish Department Game Management Unit Aquired June 2013

Surface Management (Source: BLM 2011)

- Bureau of Land Management (BLM)
- Bureau of Reclamation
- Military
- Private Land (No Color)
- State Trust Land
- US Forest Service (USFS)
- Wilderness

Image Source: 1:100,000 Mesa USGS Quadrangle

N

0 1 2 Miles

0 2 4 Kilometers

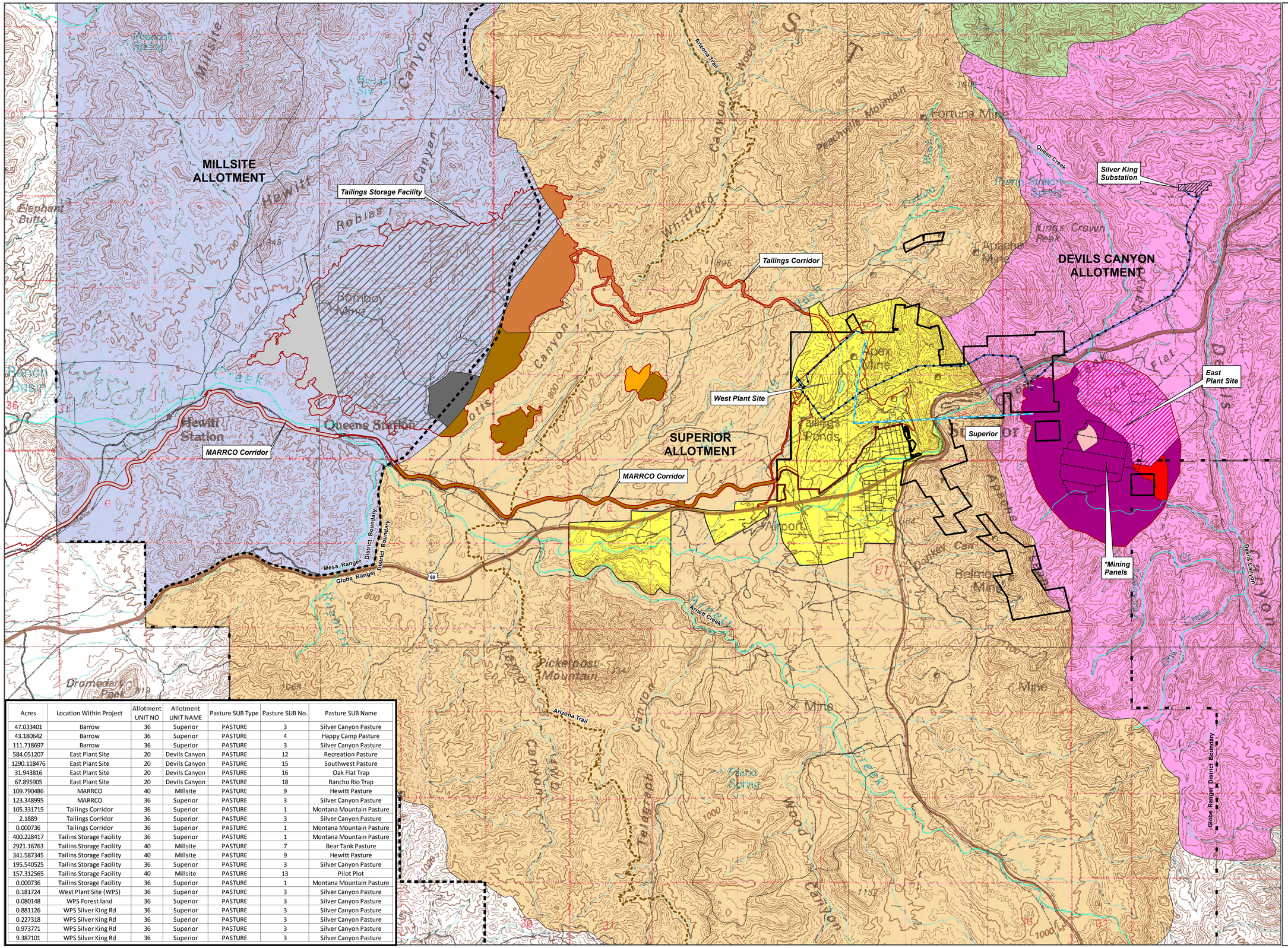
Note: This figure is designed to be plotted at 24" x 36". All map elements may not be legible at other plot sizes.

RESOLUTION COPPER
General Plan of Operations

DESIGNATED RECREATIONAL AREAS

Figure 2.5-2

Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNP\MXD\Fig2.5-3_Grazing_Allotments.mxd



Acres	Location Within Project	Allotment UNIT NO	Allotment UNIT NAME	Pasture SUB Type	Pasture SUB No.	Pasture SUB Name
47.033401	Barrow	36	Superior	PASTURE	3	Silver Canyon Pasture
43.180642	Barrow	36	Superior	PASTURE	4	Happy Camp Pasture
111.718697	Barrow	36	Superior	PASTURE	3	Silver Canyon Pasture
584.051207	East Plant Site	20	Devils Canyon	PASTURE	12	Recreation Pasture
1290.118476	East Plant Site	20	Devils Canyon	PASTURE	15	Southwest Pasture
31.943816	East Plant Site	20	Devils Canyon	PASTURE	16	Oak Flat Trap
67.895905	East Plant Site	20	Devils Canyon	PASTURE	18	Rancho Rio Trap
109.790486	MARRCO	40	Millsite	PASTURE	9	Hewitt Pasture
123.348995	MARRCO	36	Superior	PASTURE	3	Silver Canyon Pasture
105.331715	Tailings Corridor	36	Superior	PASTURE	1	Montana Mountain Pasture
2.1889	Tailings Corridor	36	Superior	PASTURE	3	Silver Canyon Pasture
0.000736	Tailings Corridor	36	Superior	PASTURE	1	Montana Mountain Pasture
400.228417	Tailins Storage Facility	36	Superior	PASTURE	1	Montana Mountain Pasture
2921.16763	Tailins Storage Facility	40	Millsite	PASTURE	7	Bear Tank Pasture
341.587345	Tailins Storage Facility	40	Millsite	PASTURE	9	Hewitt Pasture
195.540525	Tailins Storage Facility	36	Superior	PASTURE	3	Silver Canyon Pasture
157.312565	Tailins Storage Facility	40	Millsite	PASTURE	13	Pilot Plot
0.000736	Tailins Storage Facility	36	Superior	PASTURE	1	Montana Mountain Pasture
0.181724	West Plant Site (WPS)	36	Superior	PASTURE	3	Silver Canyon Pasture
0.080148	WPS Forest land	36	Superior	PASTURE	3	Silver Canyon Pasture
0.881126	WPS Silver King Rd	36	Superior	PASTURE	3	Silver Canyon Pasture
0.227318	WPS Silver King Rd	36	Superior	PASTURE	3	Silver Canyon Pasture
0.973771	WPS Silver King Rd	36	Superior	PASTURE	3	Silver Canyon Pasture
9.387101	WPS Silver King Rd	36	Superior	PASTURE	3	Silver Canyon Pasture

Legend

- Resolution Holdings
- Project Area
- Power Line
- Conveyor/Infrastructure Tunnel
- Existing Never Sweat Tunnel
- Arizona Trail (ESRI Online Data)
- Tonto National Forest Ranger District Boundary

* Note: Mine Panel Configuration Subject to Change.

Pasture, Allotment

- Hewitt Pasture, Millsite
- Bear Tank Pasture, Millsite
- Pilot Plot, Millsite
- Happy Camp Pasture, Superior
- Silver Canyon Pasture, Superior
- Montana Mountain Pasture, Superior
- Oak Flat Trap, Devils Canyon
- Recreation Pasture, Devils Canyon
- Rancho Rio Trap, Devils Canyon
- Southwest Pasture, Devils Canyon

Allotment

- Millsite
- Superior
- Devils Canyon
- Brushiest
- EXCLUDED

Tonto National Forest Rangeland Data Aquired July 2013

* Note: Mine Panel Configuration Subject to Change.

Image Source: 1:100,000 Mesa USGS Quadrangle

N

0 0.5 1 Miles

0 1 2 Kilometers

Note: This figure is designed to be plotted at 24" x 36". All map elements may not be legible at other plot sizes.

RESOLUTION COPPER
General Plan of Operations

GRAZING ALLOTMENTS AND PASTURES

Figure 2.5-3

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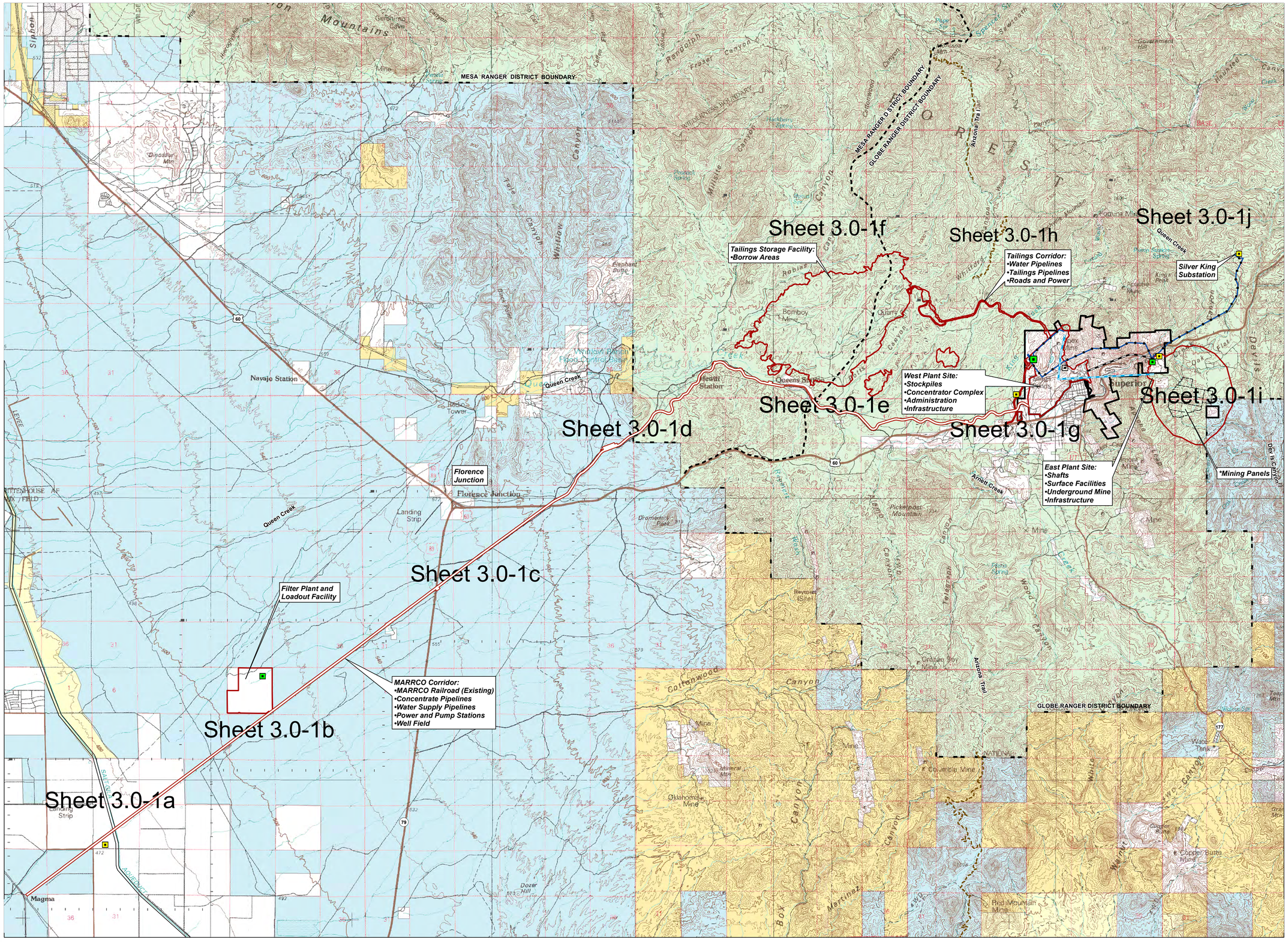


Legend

- Resolution Holdings
- Project Area
- Substation
- Existing Substation
- Power Line
- Conveyor/Infrastructure Tunnel
- Existing Never Sweat Tunnel
- Arizona Trail (ESRI Online Data)
- Tonto National Forest Ranger District Boundary

*Note: Mine Panel Configuration Subject to Change

Surface Management (Source: BLM 2011)

- Bureau of Land Management (BLM)
- Bureau of Reclamation
- Private Land (No Color)
- State Trust Land
- US Forest Service (USFS)

Image Source: Mesa 1:100,000 USGS Quadrangle

N

0 1 2 Miles

0 2 4 Kilometers

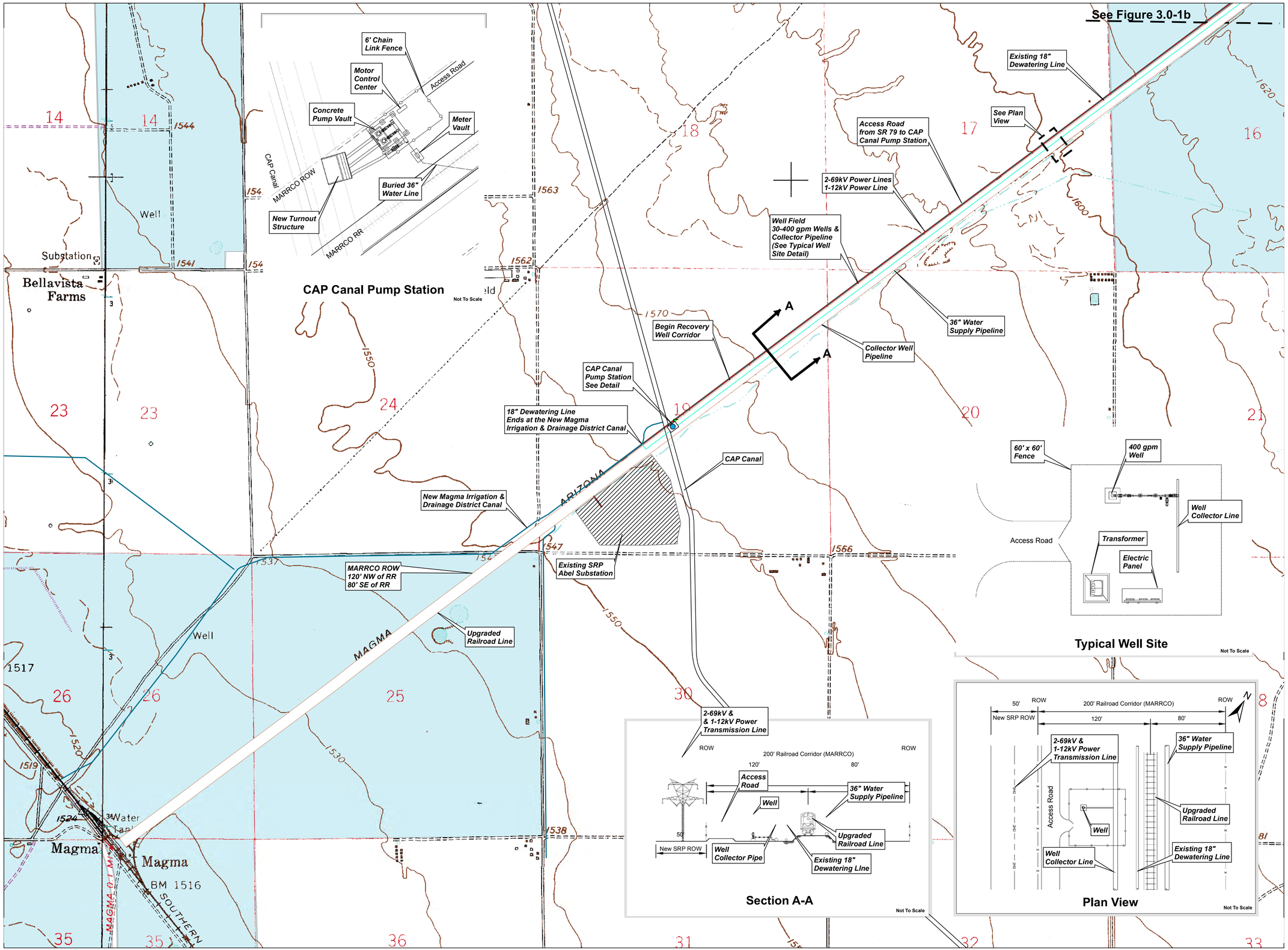
Note: This figure is designed to be plotted at 24" x 36". All map elements may not be legible at other plot sizes.

RESOLUTION COPPER
General Plan of Operations

GENERAL ARRANGEMENT OVERVIEW

Figure 3.0-1

Path: M:\Jobs\800's\807.94\ENV\GPO_Response2TNF\MXD\Fig3.0-1a_pipesystem.mxd

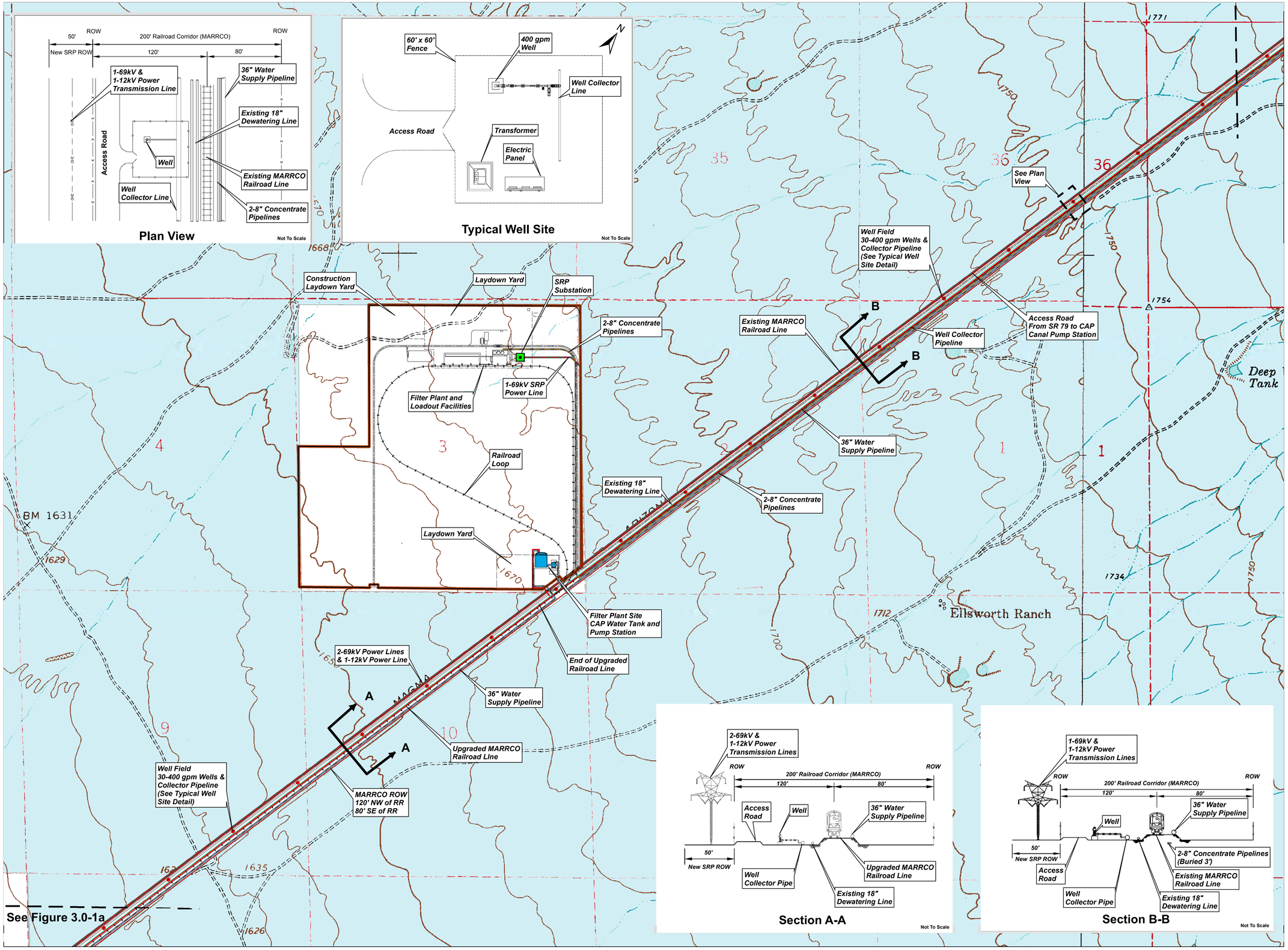


RESOLUTION COPPER
General Plan of Operations

GENERAL ARRANGEMENT

Figure 3.0-1a

Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig3.0-1b_pipesystem.mxd



Legend

- Resolution Holdings
- Project Area
- Substation
- Power Line
- Existing Power Line
- Dewatering Line
- Water Supply Pipeline
- Concentrate Pipelines
- Storage Tank
- Pump Station
- Well

Surface Management (Source: BLM 2011)

- Private Land (No Color)
- State Trust Land

Image Source: Magma & Florence NE 1:24,000 USGS Quadrangles

N

0 800 1,600 Feet

0 300 600 Meters

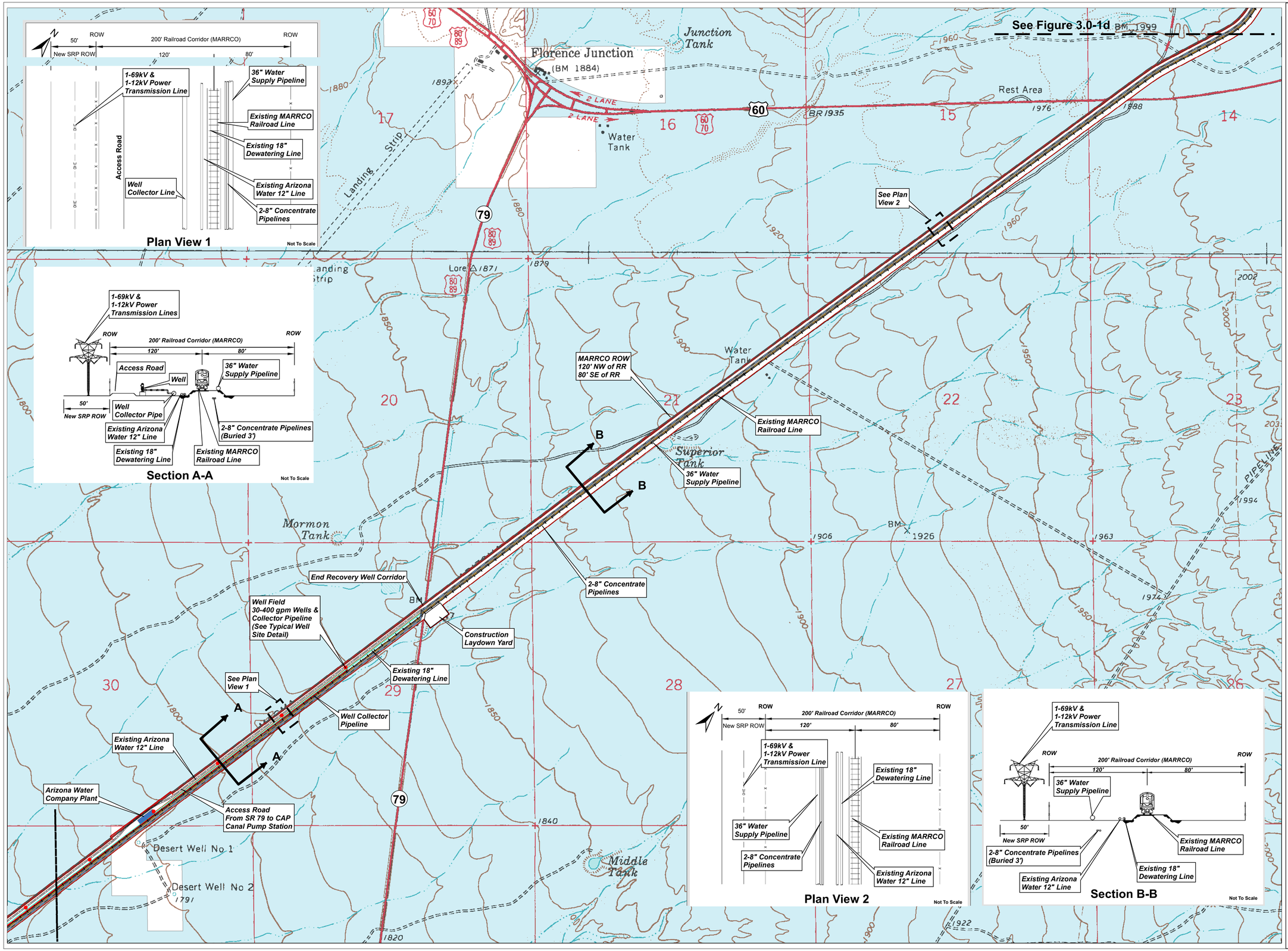
Note: This figure is designed to be plotted at 24" x 36". All map elements may not be legible at other plot sizes.

RESOLUTION COPPER
General Plan of Operations

GENERAL ARRANGEMENT

Figure 3.0-1b

Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig3.0-1c_pipesystem.mxd



RESOLUTION COPPER
General Plan of Operations

GENERAL ARRANGEMENT

Figure 3.0-1c

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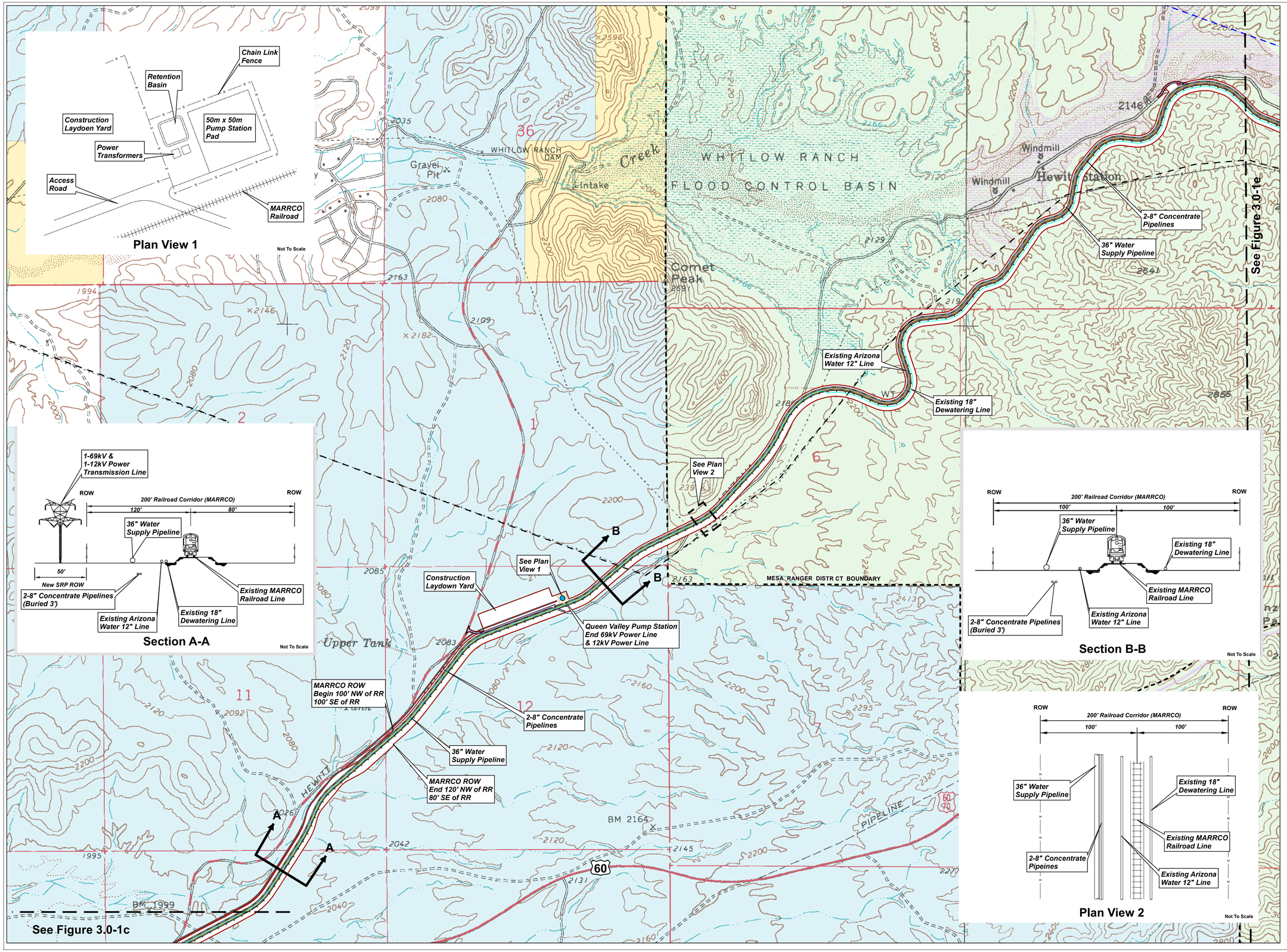

Image Source: Florence Junction & Picketpost Mountain 1:24,000 USGS Quadrangles

Note: This figure is designed to be plotted at 24" x 36". All map elements may not be legible at other plot sizes.

RESOLUTION COPPER
General Plan of Operations

GENERAL ARRANGEMENT

Figure 3.0-1d

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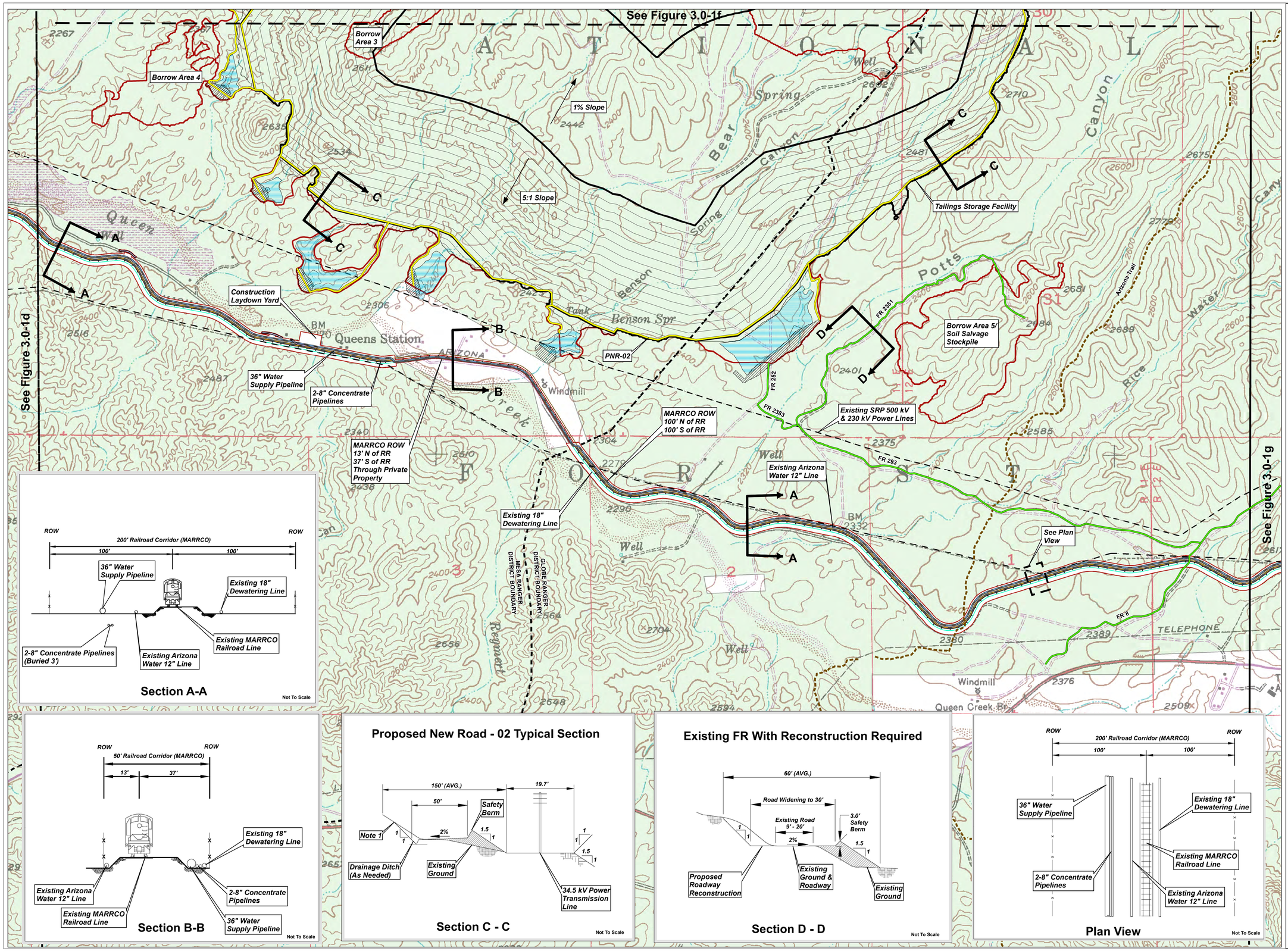

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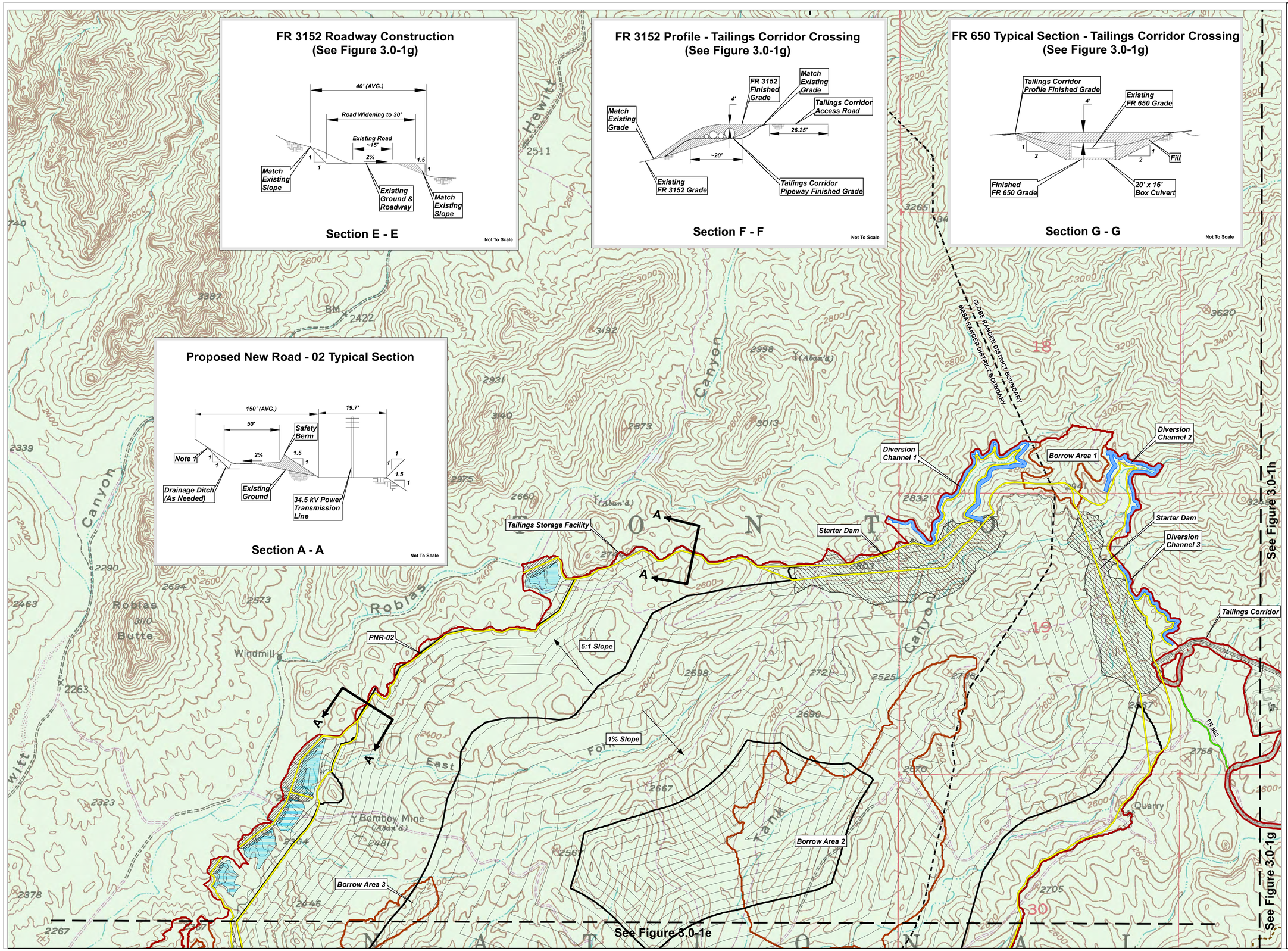


Note 1: Maximum cut slope is 1:1. Where PNR-02 is adjacent to or on tailings the cut slope shall be 5:1.

Data Source: Tailings Corridor Facilities
Provided by M3 Engineering
July 10, 2013

Borrow Areas, Starter and Seepage Dams, Ponds, and Tailings Storage Facility Footprint
Provided by Klohn Crippen Berger
2013

Image Source: Picketpost Mountain
1:24,000 USGS Quadrangle

N

0 800 1,600 Feet

0 300 600 Meters

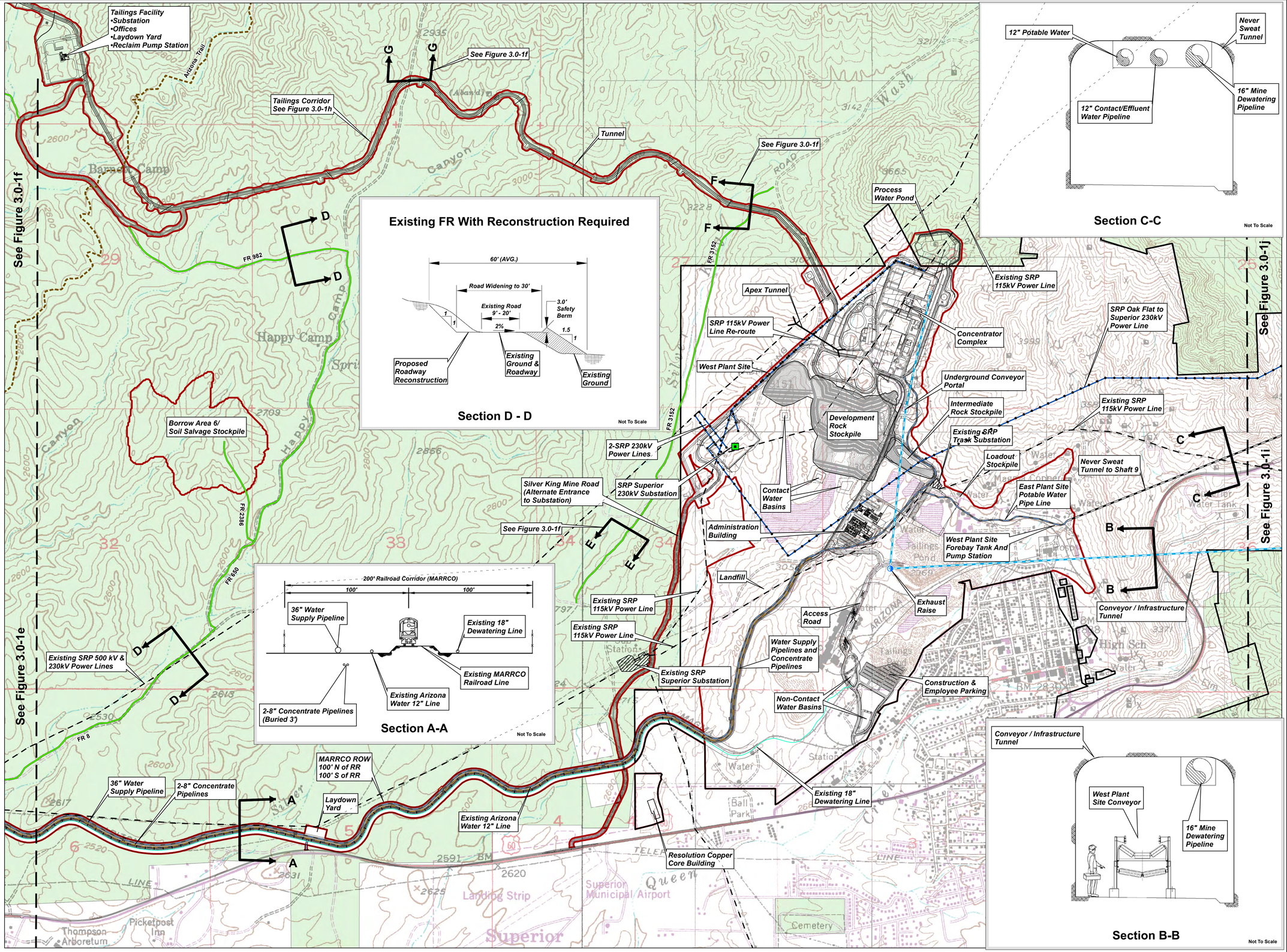
Note: This figure is designed to be plotted at 24" x 36". All map elements may not be legible at other plot sizes.

RESOLUTION COPPER
General Plan of Operations

GENERAL ARRANGEMENT

Figure 3.0-1f

Path: M:\Jobs\800's\807.94\ENV\GPO_Responce2TNF\MXD\Fig3.0-1g_pipesystem.mxd



Legend

- Resolution Holdings
- Project Area
- Substation
- Power Line
- Existing Power Line
- Conveyor/Infrastructure Tunnel
- Existing Never Sweat Tunnel
- Dewatering Line
- Water Supply Pipeline
- Concentrate Pipelines
- Existing FR With Reconstruction Required
- Arizona Trail (ESRI Online Data)
- Exhaust Raise

Surface Management (Source: BLM 2011)

- Private Land (No Color)
- US Forest Service (USFS)

Data Source:
West Plant Facilities
Provided by M3 Engineering
July 10, 2013

Development Rock Stockpile
Provided by Resolution Copper 2013

Intermediate Rock Stockpile
Provided by Golder Associates 2012

Image Source: Picketpost Mountain & Superior
1:24,000 USGS Quadrangles

N

0 800 1,600 Feet

0 300 600 Meters

Note: This figure is designed to be plotted at 24" x 36".
All map elements may not be legible at other plot sizes.

RESOLUTION COPPER
General Plan of Operations

GENERAL ARRANGEMENT

Figure 3.0-1g

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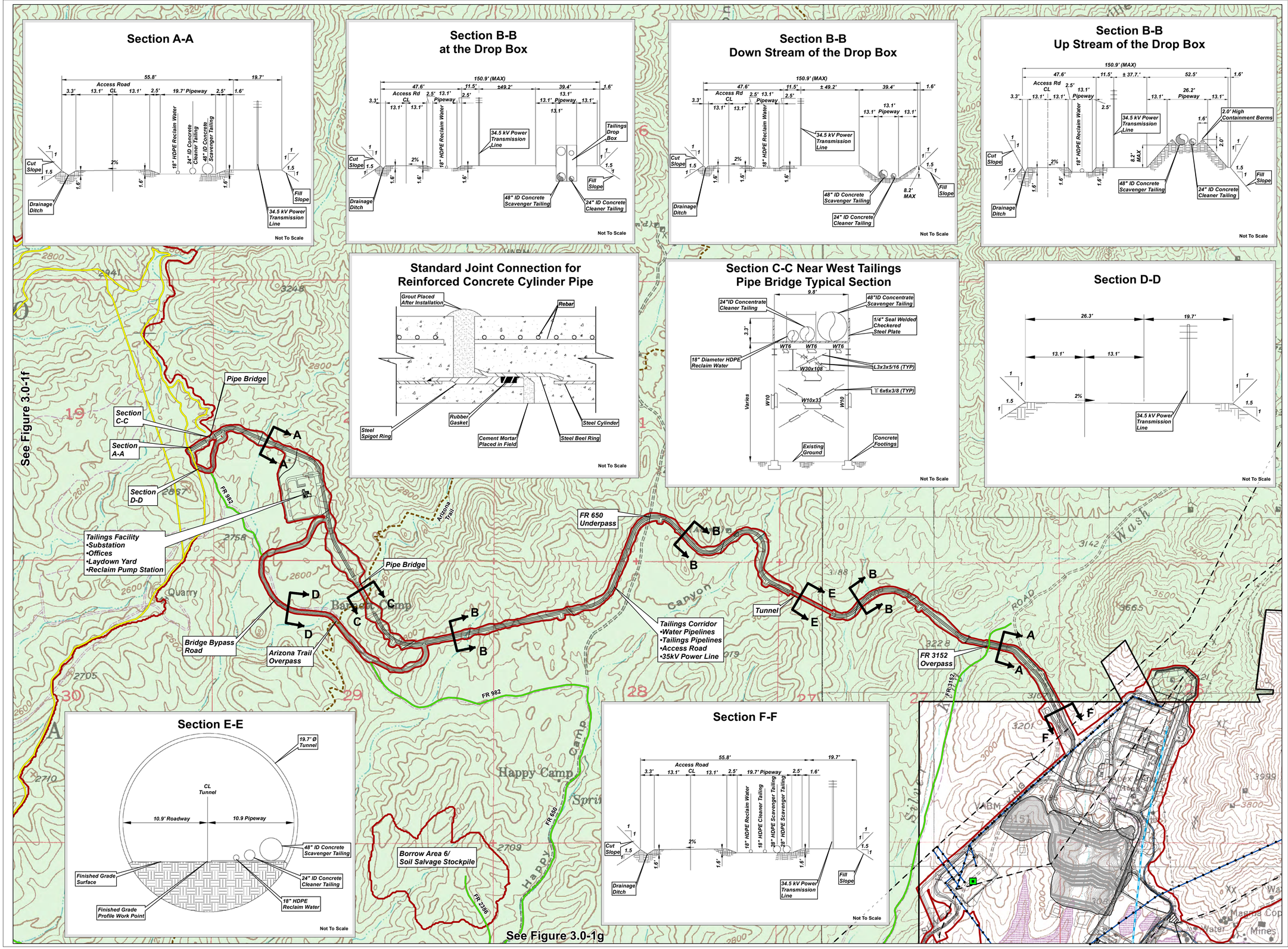

Legend

- Resolution Holdings
- Project Area
- Substation
- Power Line
- Existing Power Line
- Conveyor/Infrastructure Tunnel
- Water Supply Pipeline
- Proposed New Road (PNR)
- Existing FR With Reconstruction Required
- Arizona Trail (ESRI Online Data)

Surface Management (Source: BLM 2011)

- Private Land (No Color)
- US Forest Service (USFS)

Data Source:
West Plant Facilities & Tailings Corridor Facilities
Provided by M3 Engineering
July 10, 2013

Drawings for Cross Sections Details
Provided by M3 Engineering
2013 and 2014

Development Rock Stockpile
Provided by Resolution Copper 2013

Image Source: Picketpost Mountain & Superior
1:24,000 USGS Quadrangles

N

0 800 1,600 Feet

0 300 600 Meters

Note: This figure is designed to be plotted at 24" x 36".
All map elements may not be legible at other plot sizes.

RESOLUTION COPPER
General Plan of Operations

GENERAL ARRANGEMENT

Figure 3.0-1h

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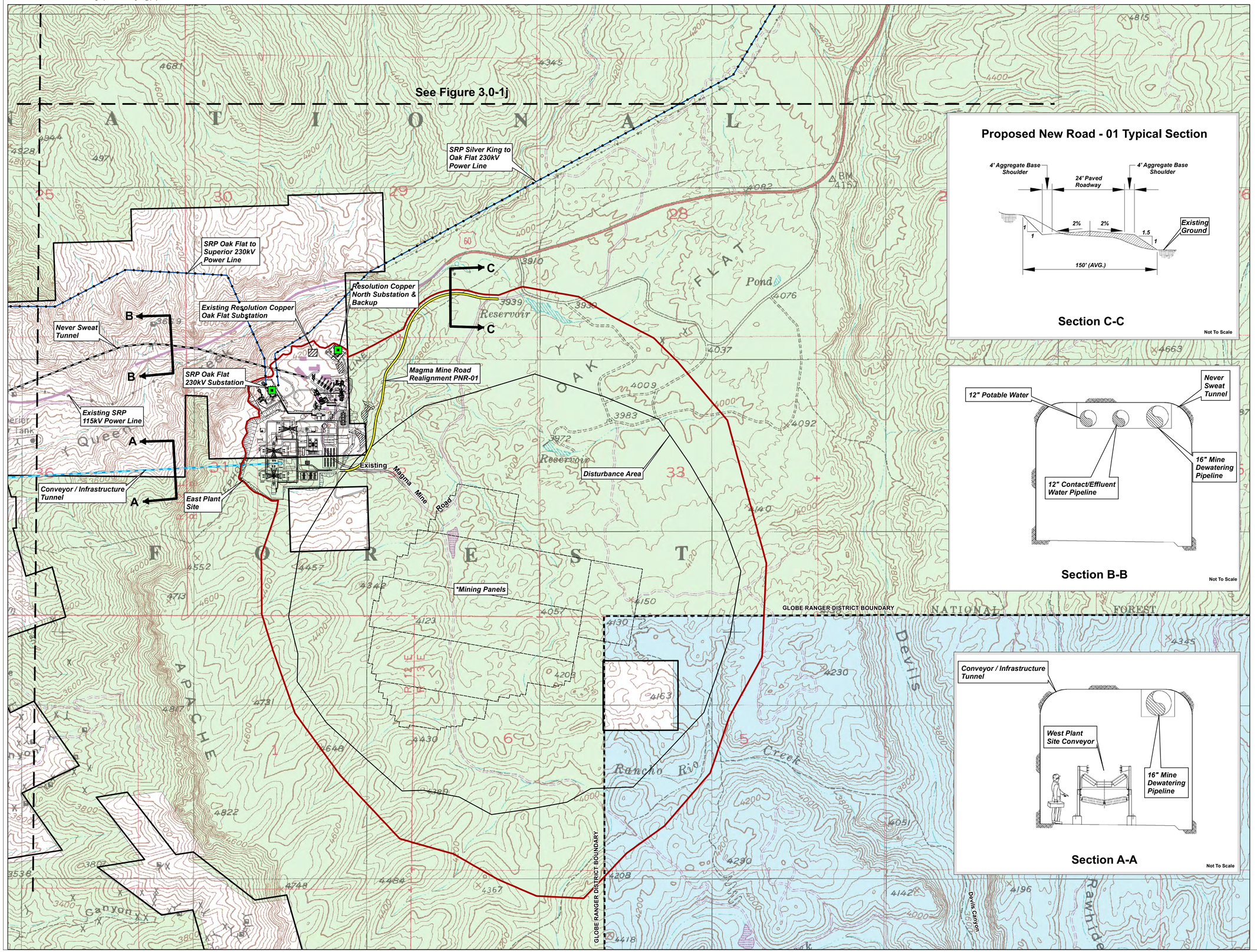

Proposed New Road - 01 Typical Section

Section C-C

Not To Scale

Section B-B

Not To Scale

Section A-A

Not To Scale

Legend

- Resolution Holdings
- Project Area
- Substation
- Power Line
- Existing Power Line
- Conveyor/Infrastructure Tunnel
- Existing Never Sweat Tunnel
- Proposed New Road (PNR)
- Tonto National Forest Ranger District Boundary

*Note: Mine Panel Configuration Subject to Change

Surface Management (Source: BLM 2011)

- Private Land (No Color)
- State Trust Land
- US Forest Service (USFS)

Note: Project area around disturbance area defined by modeled zone of continuous subsidence.

Data Source: East Plant Facility Provided by AMEC 2012

Image Source: Superior 1:24,000 USGS Quadrangle

N

0 800 1,600 Feet

0 300 600 Meters

Note: This figure is designed to be plotted at 24" x 36". All map elements may not be legible at other plot sizes.

RESOLUTION COPPER
General Plan of Operations

GENERAL ARRANGEMENT

Figure 3.0-1i

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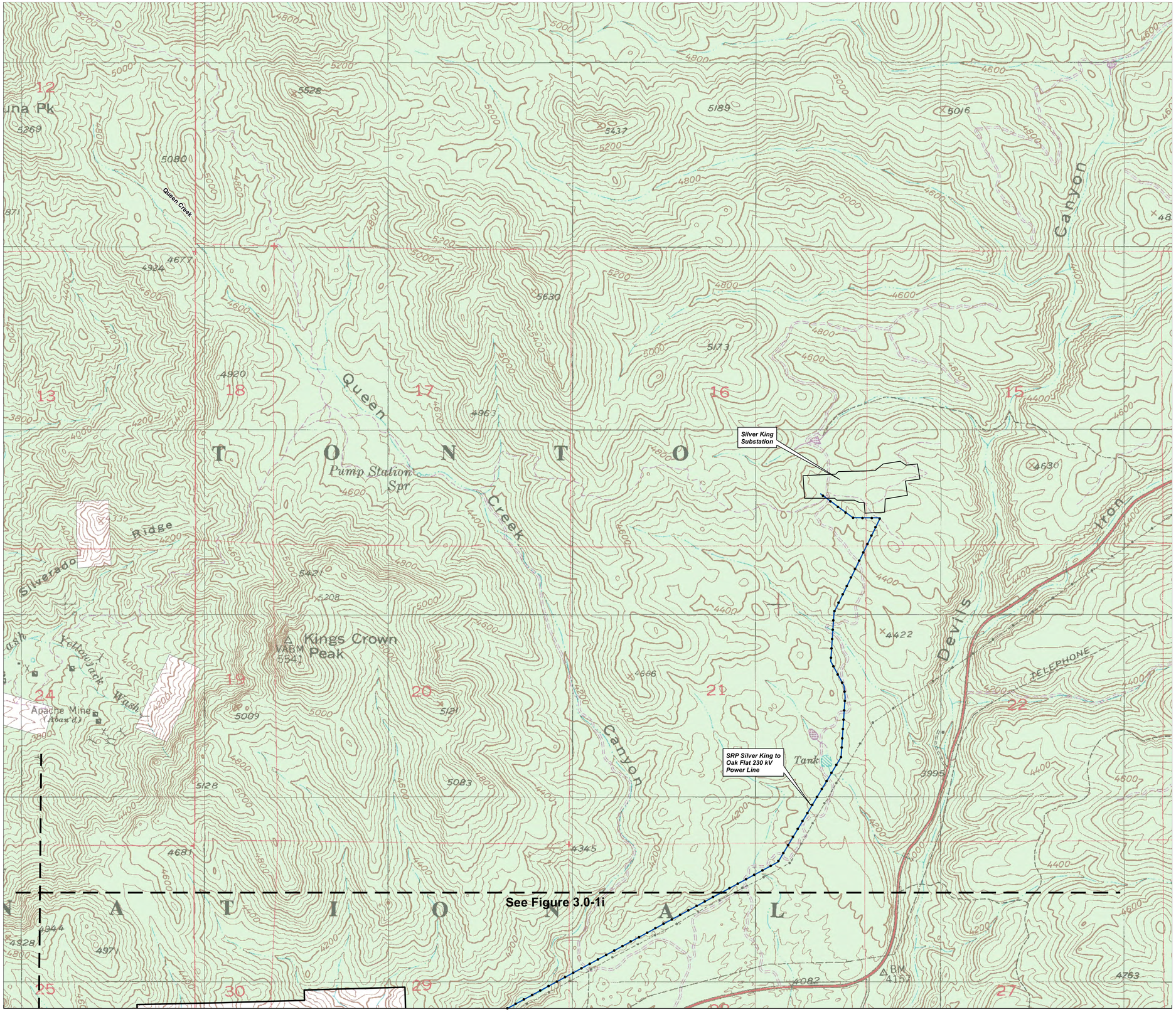

Legend

- Resolution Holdings
- Power Line
- Existing Power Line

Surface Management (Source: BLM 2011)

- Private Land (No Color)
- US Forest Service (USFS)

Image Source: Superior
1:24,000 USGS Quadrangle

N

0 800 1,600 Feet

0 300 600 Meters

Note: This figure is designed to be plotted at 24" x 36".
All map elements may not be legible at other plot sizes.

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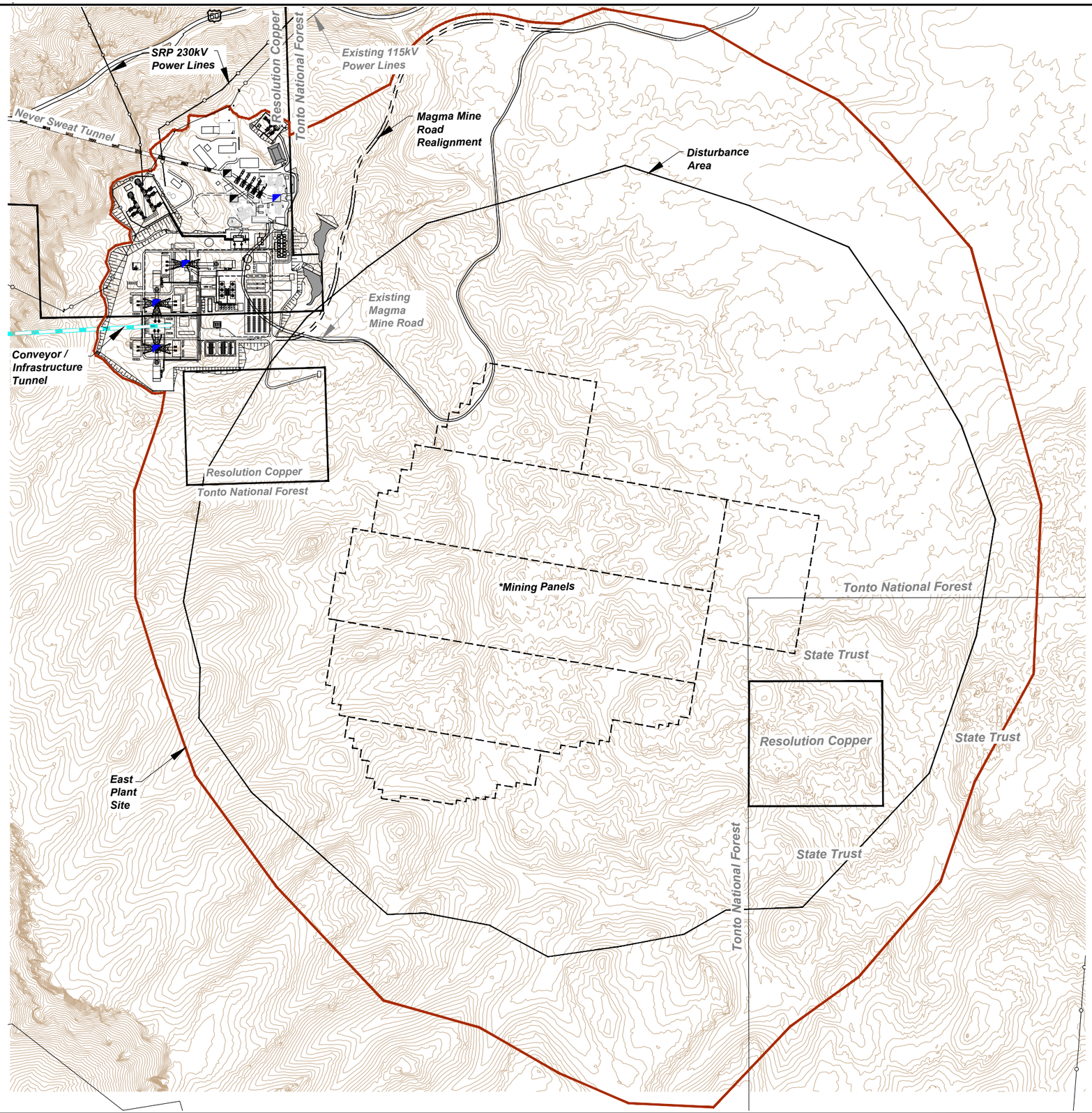
General Plan of Operations

GENERAL ARRANGEMENT

Figure 3.0-1j



Legend

- Resolution Holdings
- Project Area
- Existing Never Sweat Tunnel
- Conveyor/Infrastructure Tunnel
- Mining Panels
- Existing Mine Shaft
- Mine Shaft

*Note: Mine Panel Configuration Subject to Change

N

0 500 1,000 Feet

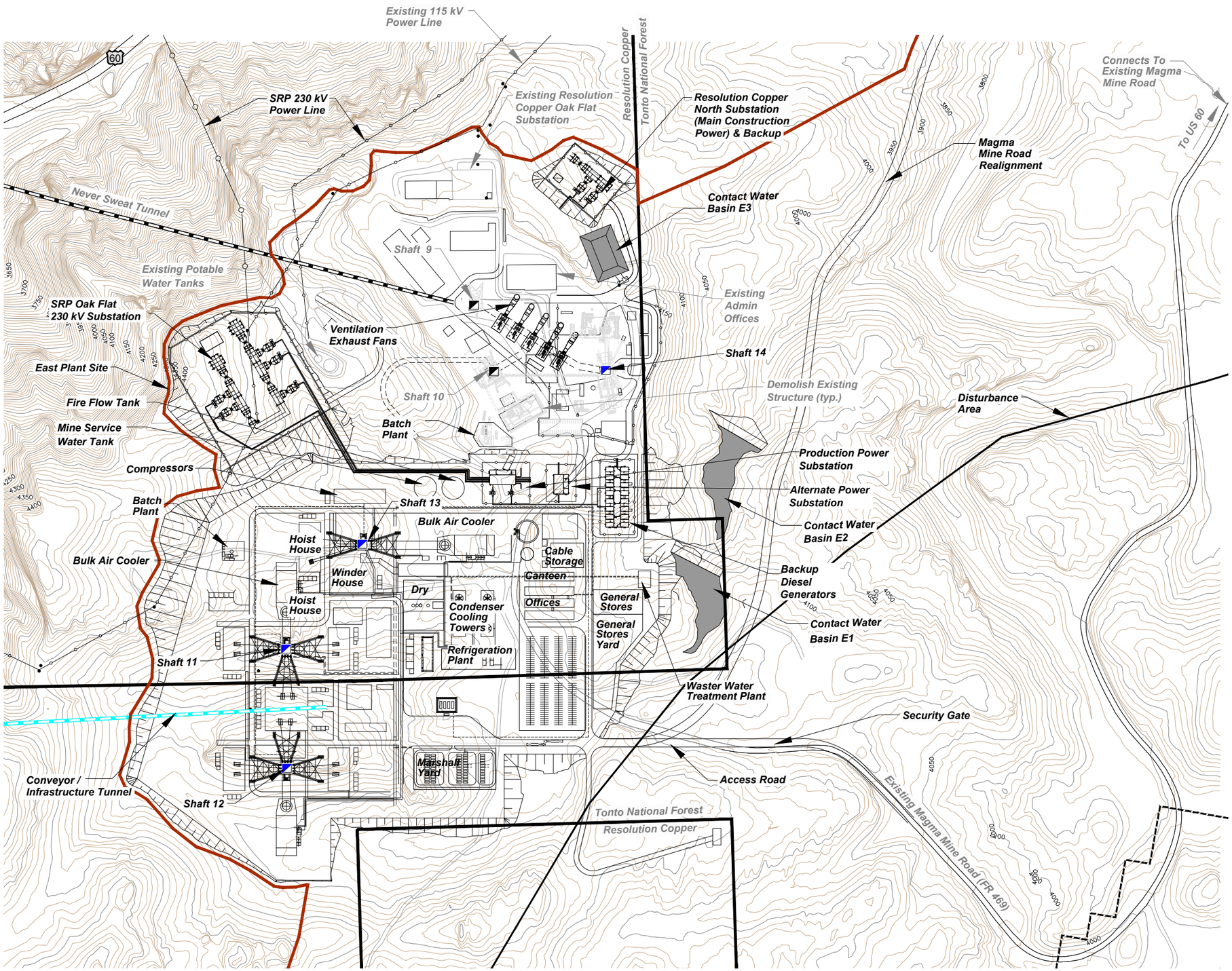
0 150 300 Meters

Data Source: East Plant Facilities
Provided by AMEC
2012

RESOLUTION COPPER
General Plan of Operations

EAST PLANT SITE OVERVIEW

Figure 3.2-1



Legend

- Resolution Holdings
- Project Area
- Existing Never Sweat Tunnel
- Conveyor/Infrastructure Tunnel
- Mining Panels
- Existing Mine Shaft
- Mine Shaft

*Note: Mine Panel Configuration Subject to Change

General Plan of Operations
Initial Submittal: November 2013
Revised: September 23, 2014
Figure 3.2-2
Page Modified: January 12, 2016

N

0 250 500 Feet

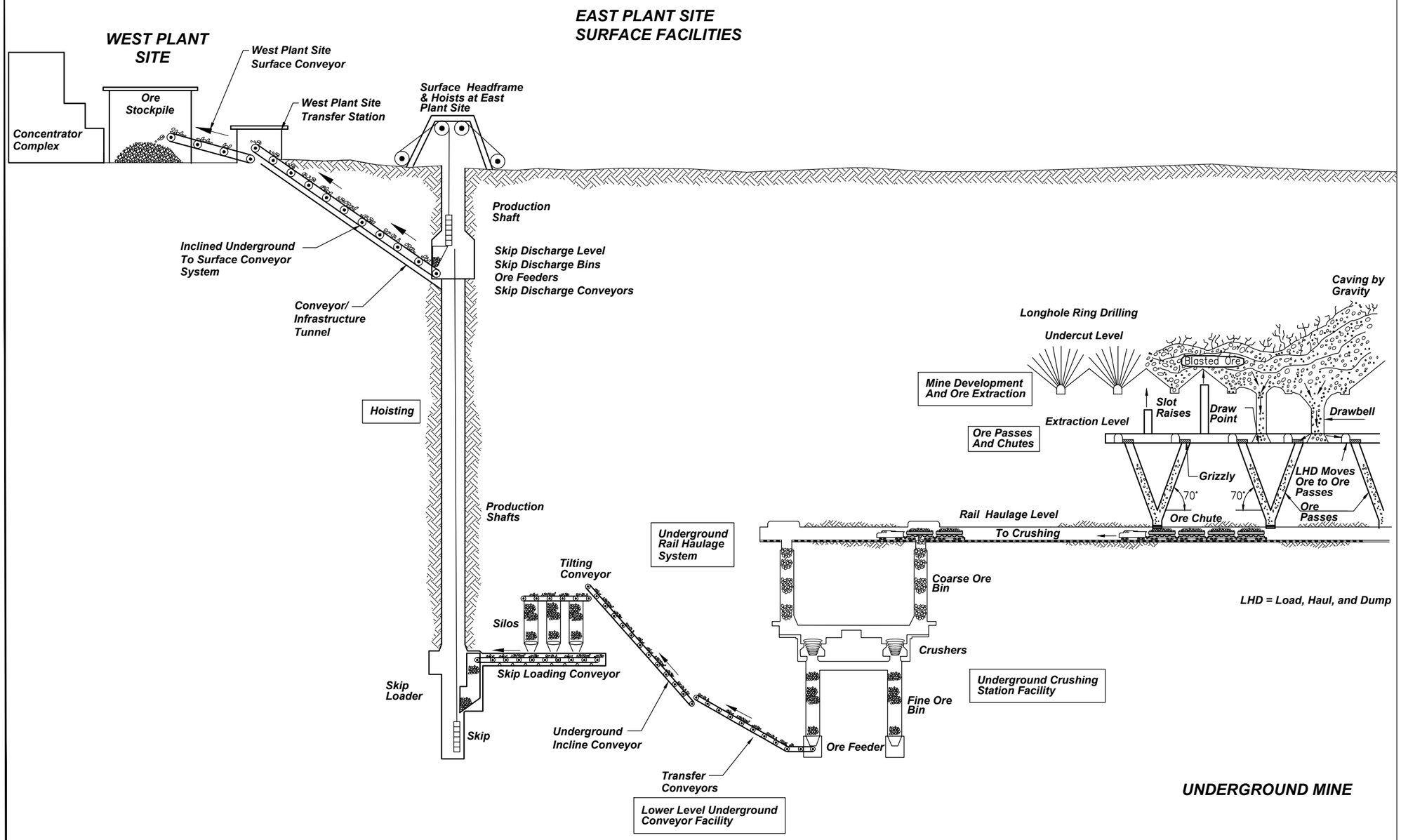
0 100 200 Meters

Data Source: East Plant Facilities
Provided by AMEC
2012

amec

RESOLUTION COPPER
General Plan of Operations

EAST PLANT SITE
BUILD-OUT SURFACE GENERAL ARRANGEMENT
Figure 3.2-2



RESOLUTION COPPER
General Plan of Operations

RESOLUTION COPPER
ORE FLOW SYSTEM DIAGRAM
Figure 3.2-3

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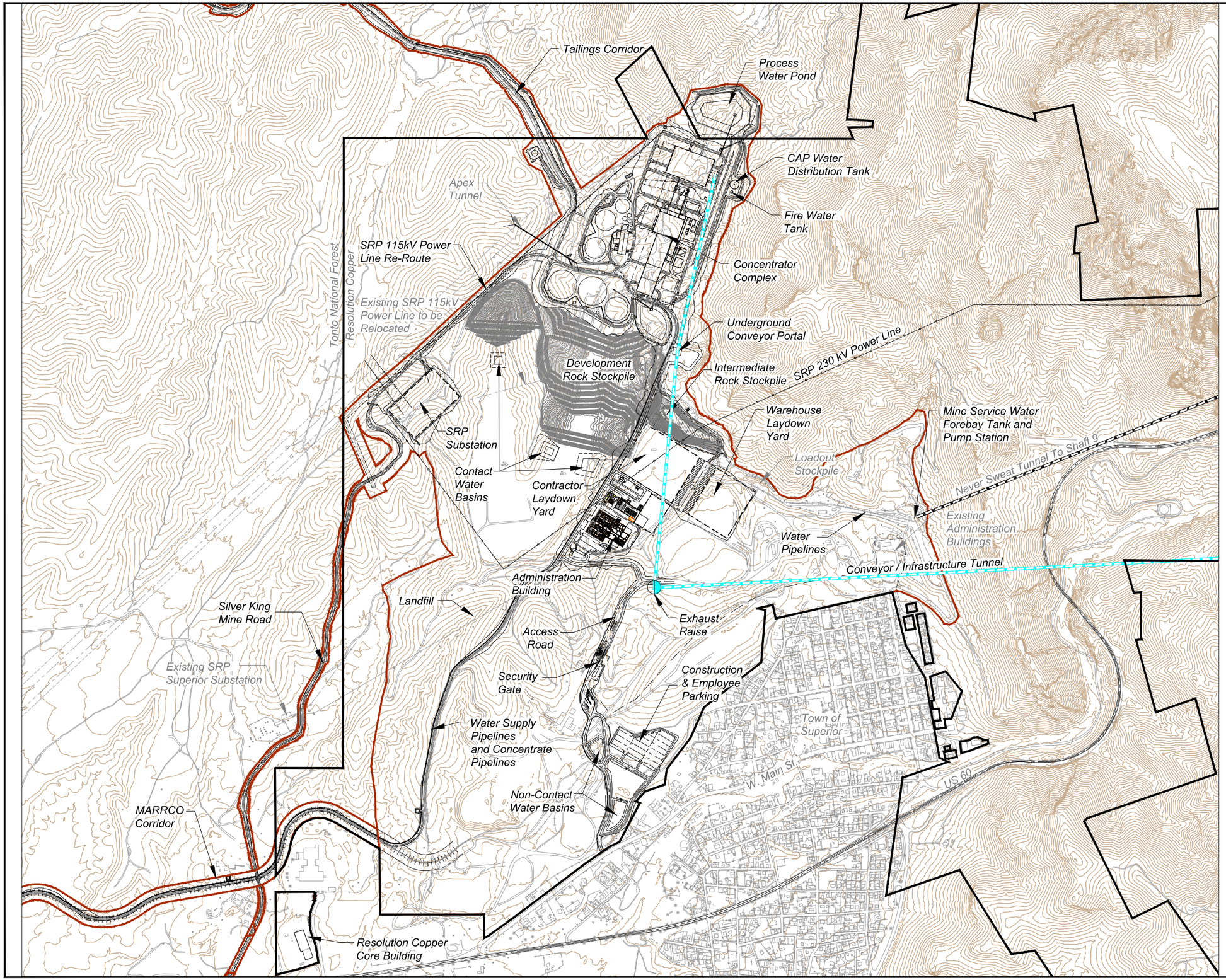

Legend

- Resolution Holdings
- Project Area
- Existing Never Sweat Tunnel
- Conveyor / Infrastructure Tunnel
- Exhaust Raise

N

0 600 1,200 Feet

0 150 300 Meters

Data Source:
West Plant Facilities
Provided by M3 Engineering
July 10, 2013

Development Rock Stockpile
Provided by Resolution Copper 2013

Intermediate Rock Stockpile
Provided by Golder Associates 2012

RESOLUTION COPPER
General Plan of Operations

WEST PLANT SITE OVERVIEW
Figure 3.3-1a

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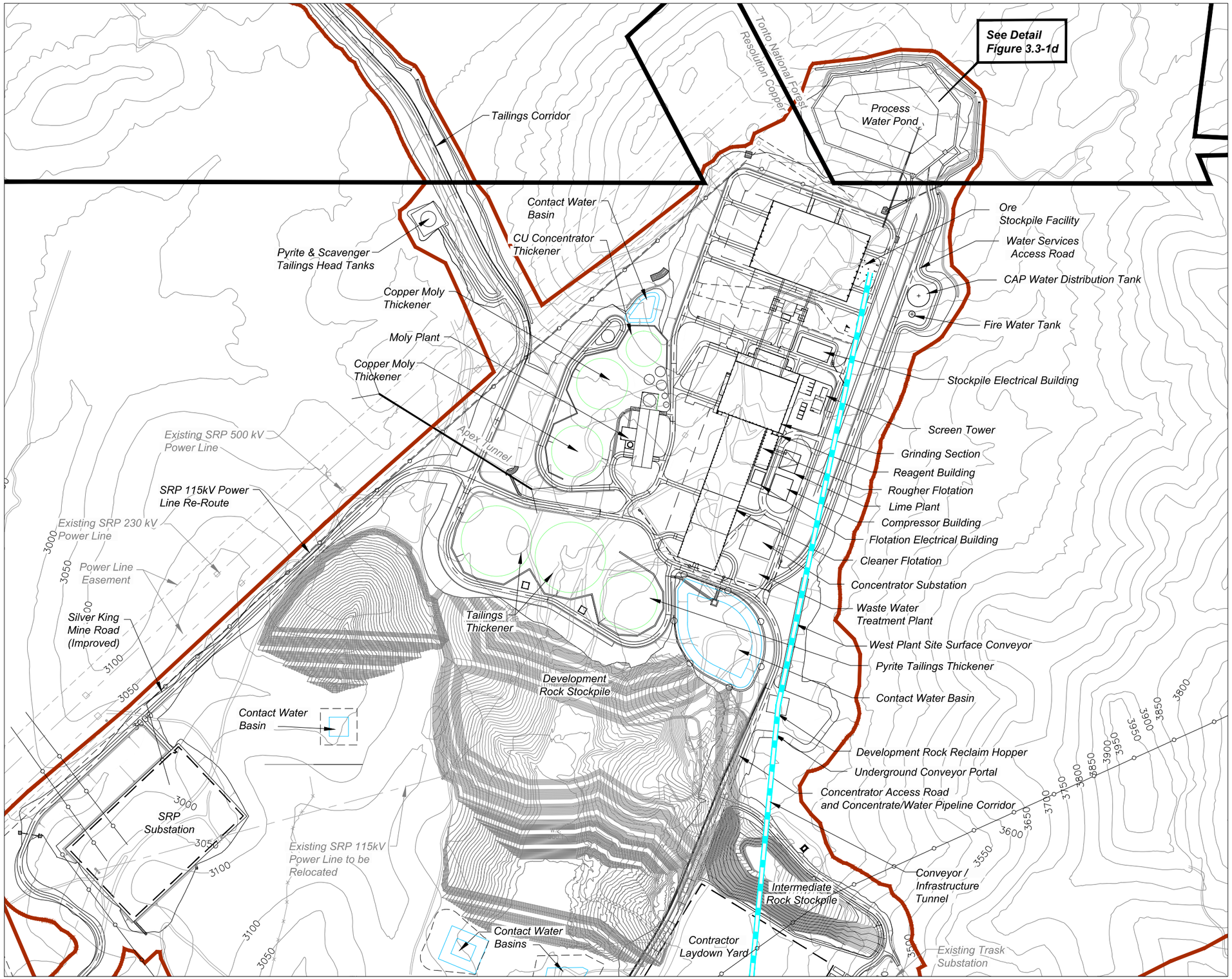

Legend

- Resolution Holdings
- Project Area
- Conveyor / Infrastructure Tunnel

N

0 250 500 Feet

0 100 200 Meters

Data Source:
West Plant Facilities
Provided by M3 Engineering
July 10, 2013

Development Rock Stockpile
Provided by Resolution Copper 2013

Intermediate Rock Stockpile
Provided by Golder Associates 2012

RESOLUTION COPPER
General Plan of Operations

WEST PLANT SITE GENERAL ARRANGEMENT
SUPERIOR CONCENTRATOR LAYOUT
Figure 3.3-1b

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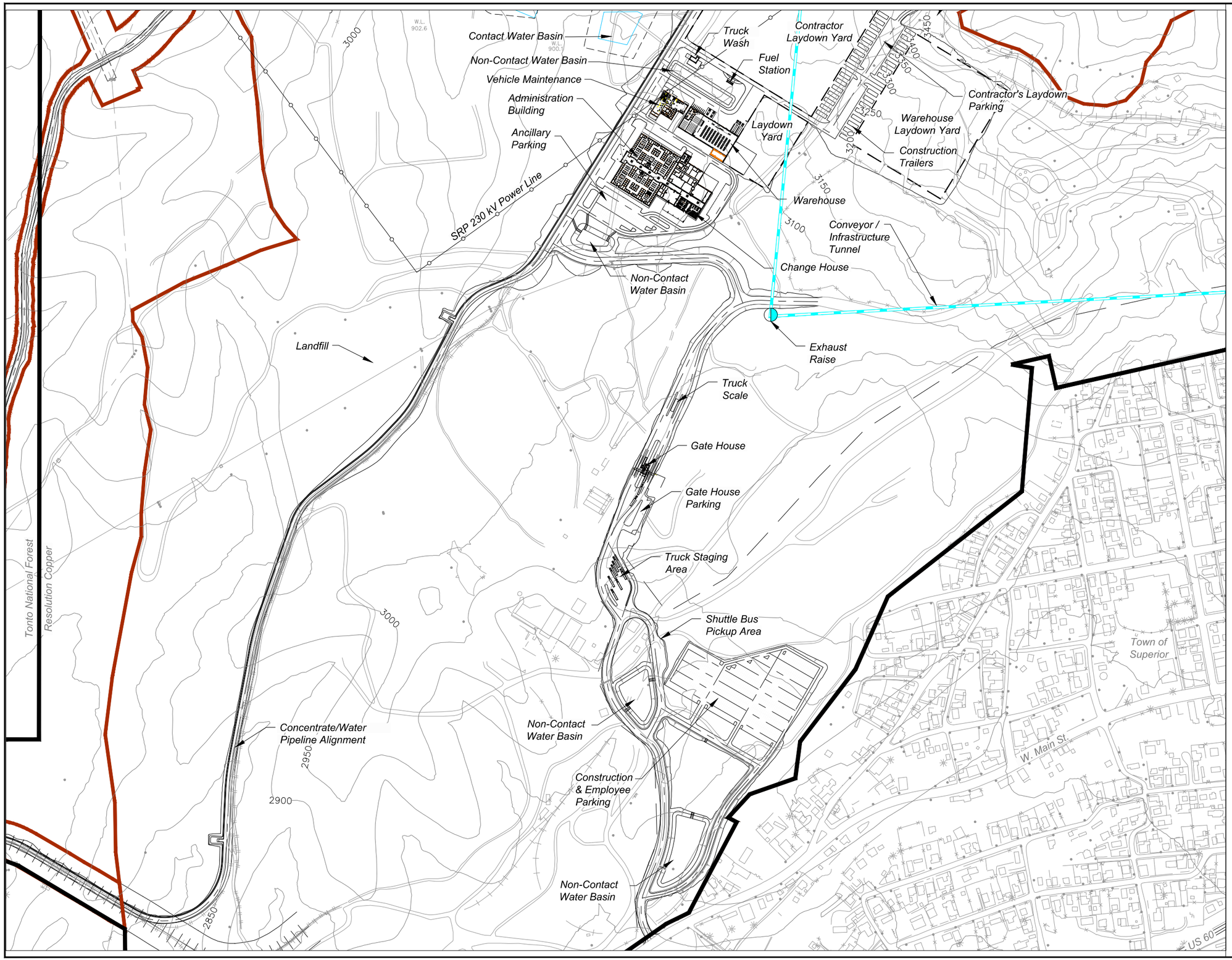

Legend

- Resolution Holdings
- Project Area
- Conveyor / Infrastructure Tunnel
- Exhaust Raise

N

0 250 500 Feet

0 100 200 Meters

Data Source:
West Plant Facilities
Provided by M3 Engineering
July 10, 2013

RESOLUTION COPPER

General Plan of Operations

WEST PLANT SITE GENERAL ARRANGEMENT
ANCILLARY SITE LAYOUT
Figure 3.3-1c

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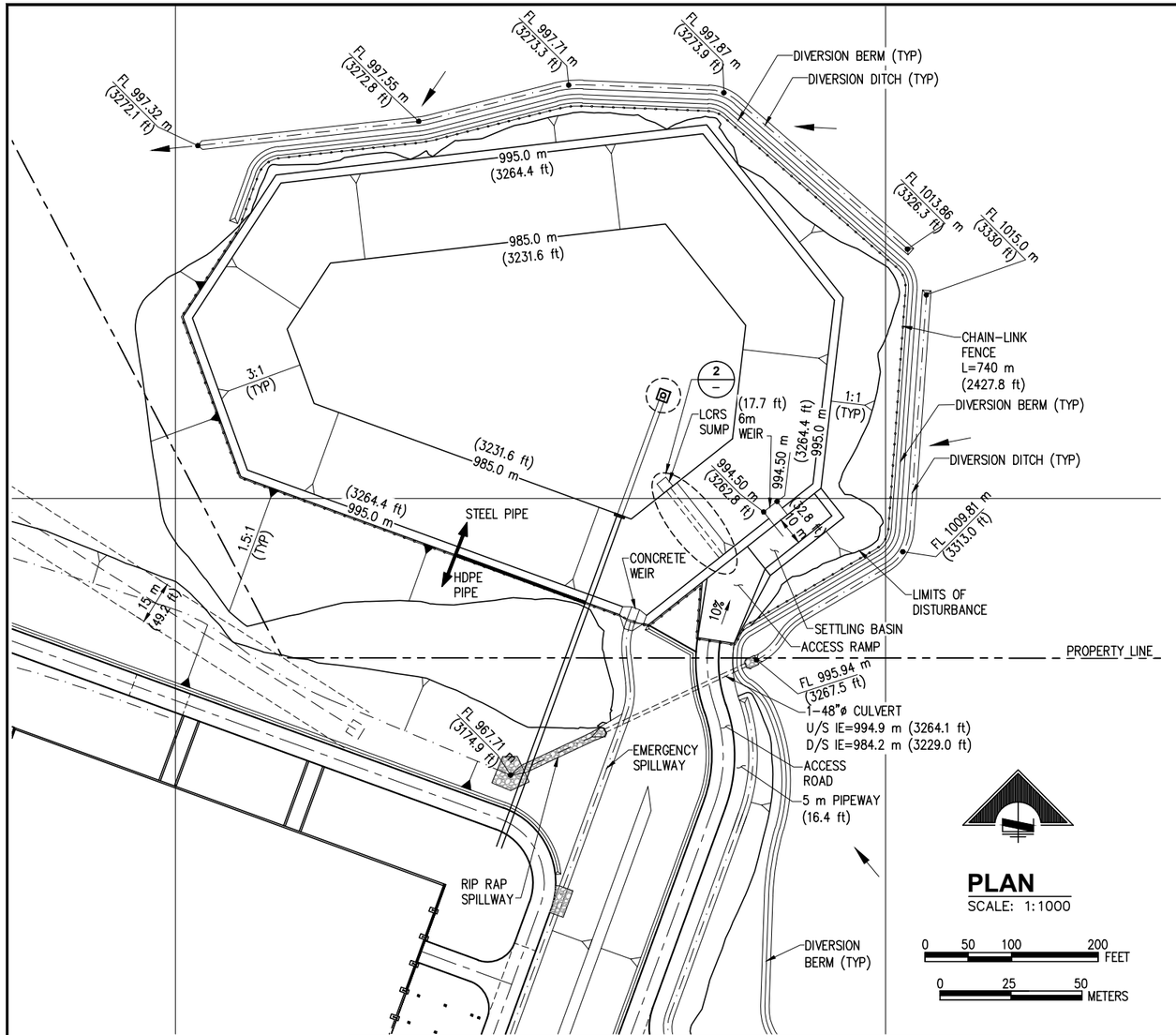
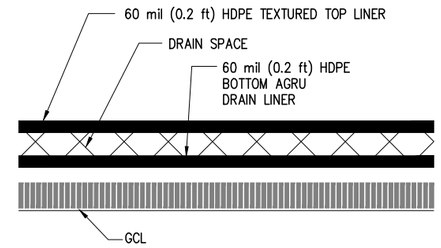


PLAN

SCALE: 1:1000

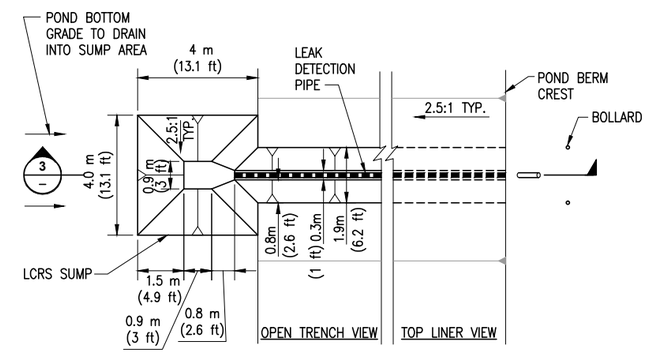
0 50 100 200 FEET

0 25 50 METERS



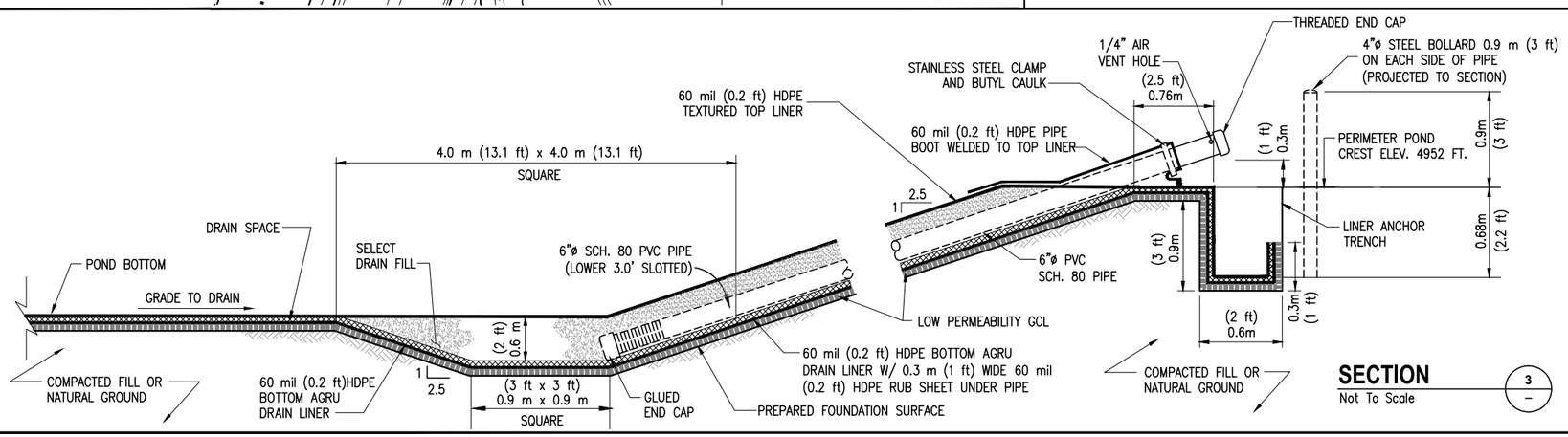
TYPICAL PROCESS WATER POND LINER

Not To Scale



PROCESS WATER POND - LCRS SUMP PLAN

Not To Scale



SECTION

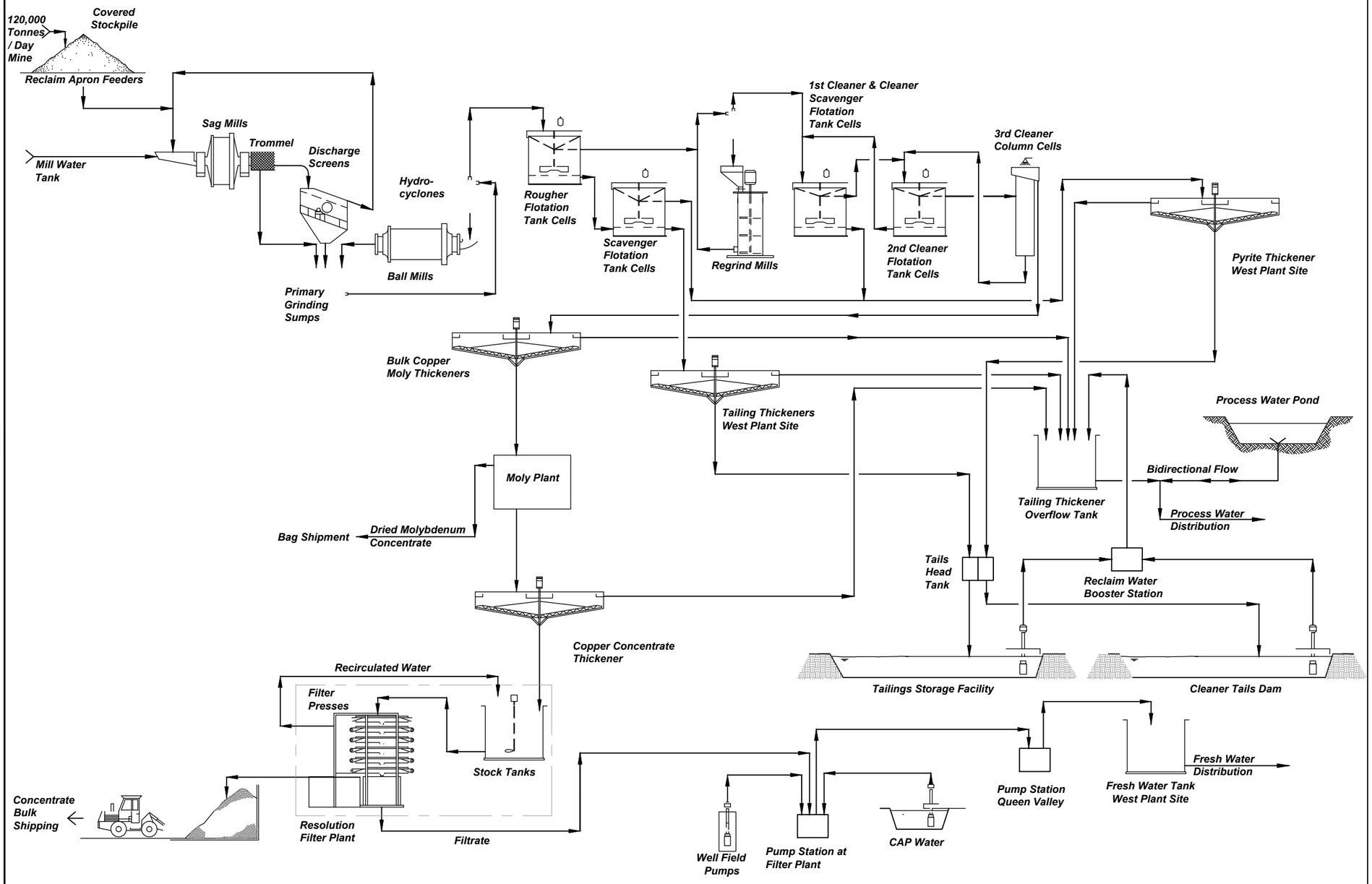
Not To Scale

Data Source:
West Plant Process Water Pond
Provided by M3 Engineering July 31, 2014

RESOLUTION COPPER

General Plan of Operations

WEST PLANT SITE GENERAL ARRANGEMENT
PROCESS WATER POND PLAN & SECTIONS
Figure 3.3-1d



Not To Scale

Data Source: Process Flow Diagram
Provided by M3 Engineering 2013
Modified by WestLand Resources Inc. 2013

RESOLUTION COPPER
General Plan of Operations

TYPICAL ORE PROCESSING FLOW DIAGRAM
Figure 3.3-2

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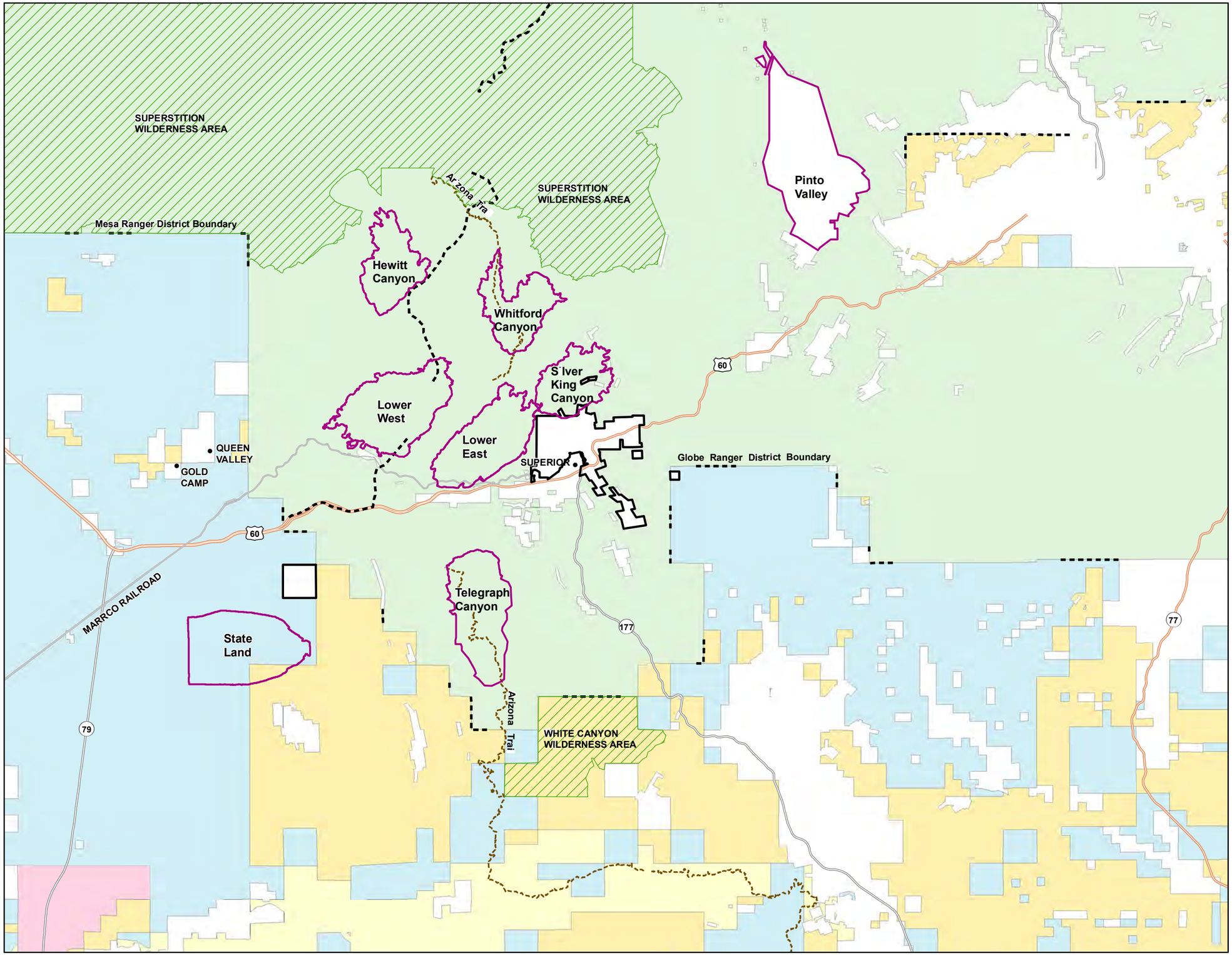


Legend

- Resolution Holdings
- Alternatives
- Arizona Trail (ESRI Online Data)
- Tonto National Forest Ranger District Boundary

Surface Management (BLM 2011)

- Bureau of Land Management (BLM)
- Bureau of Reclamation
- Military
- Private Land (No Color)
- State Trust Land
- US Forest Service (USFS)
- Wilderness

Image Source: ESRI Online World Street Map

N

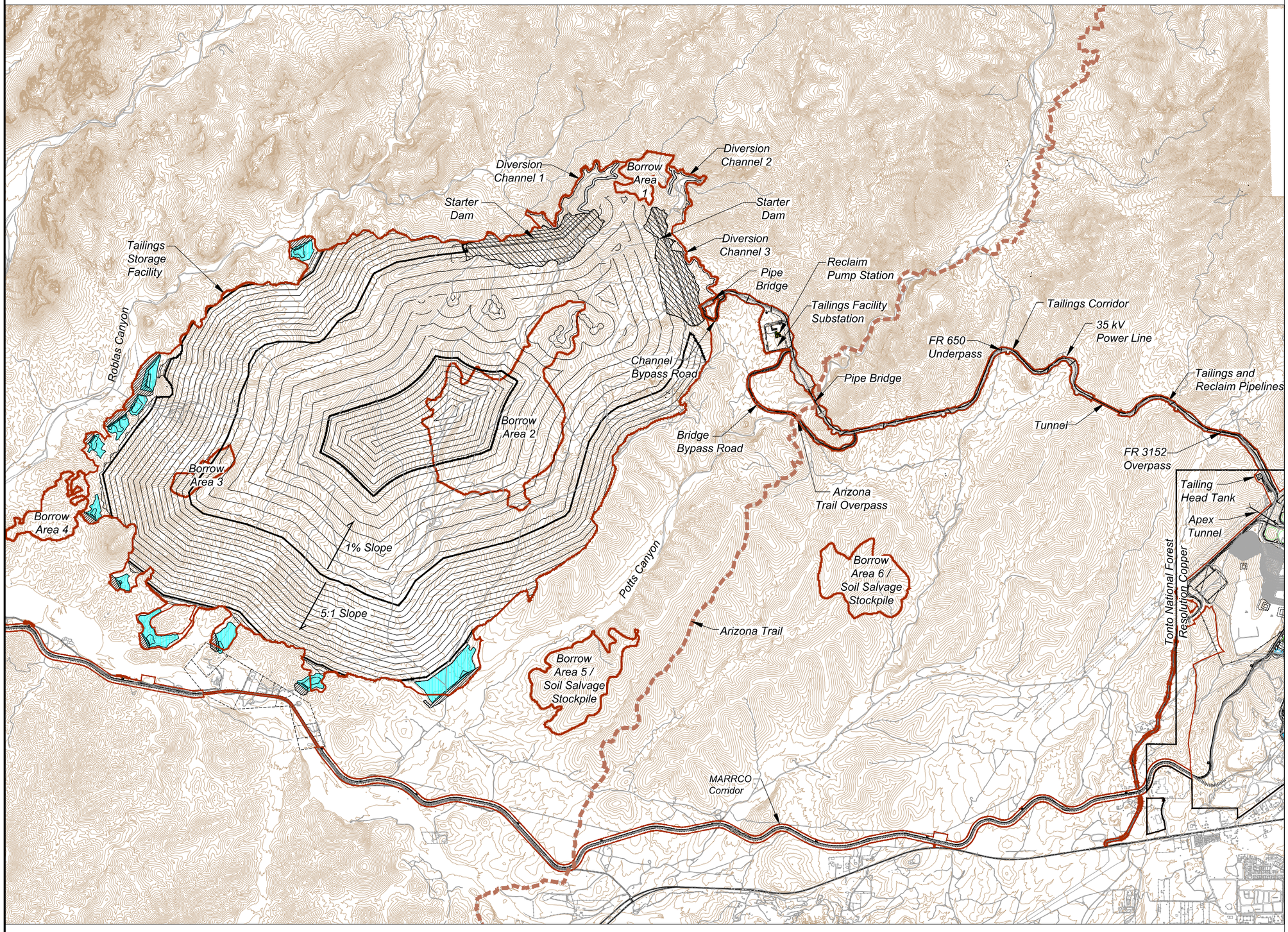
0 3 6 Miles

0 5 10 Kilometers

RESOLUTION COPPER
General Plan of Operations

REGIONAL PLAN OF
ALTERNATIVE TAILINGS STORAGE SITES
Figure 3.3-3

m:\jobs\800's\807.94\env\gpo_responce2tnf\dwg\fig3.3-3a.dwg



Legend

- Resolution Holdings
- Project Area
- Seepage Collection Dam
- Seepage Collection Pond

Data Source: Tailings Corridor Facilities
Provided by M3 Engineering
July 10, 2013

Borrow Areas, Starter and Seepage Dams, Ponds, and Tailings Storage Facility Footprint
Provided by Klohn Crippen Berger
2013

N

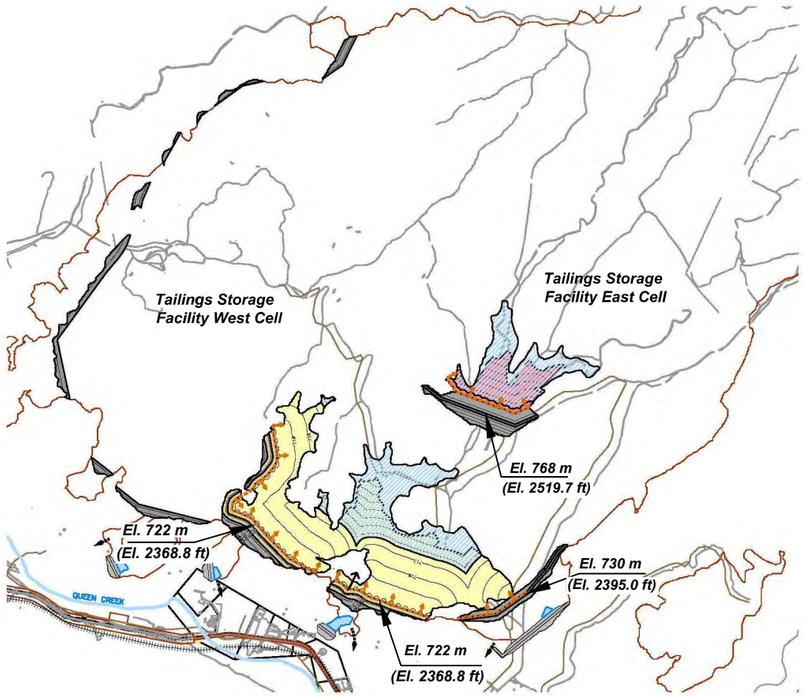
0 1,400 2,800 Feet

0 500 1,000 Meters

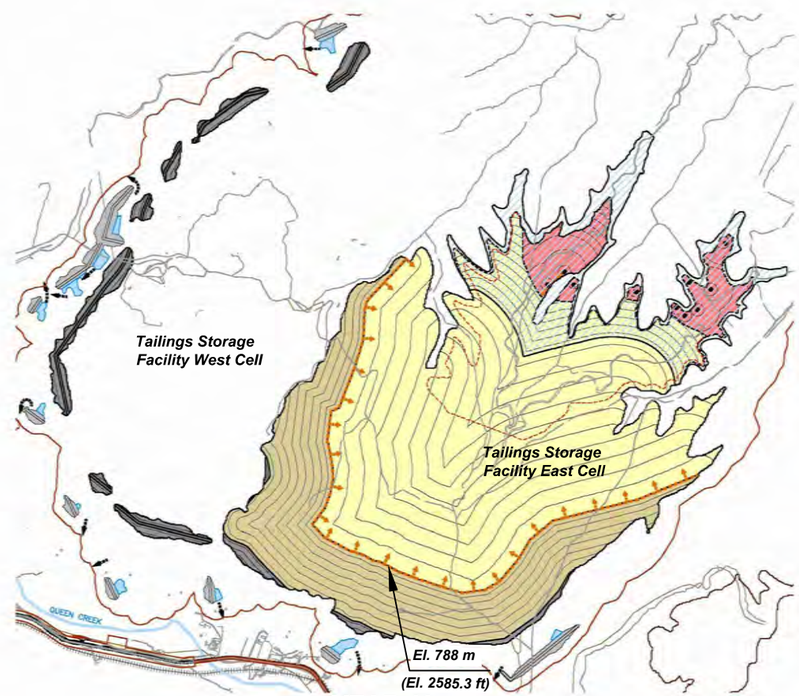
RESOLUTION COPPER
General Plan of Operations

TAILINGS STORAGE FACILITY OVERVIEW
Figure 3.3-3a

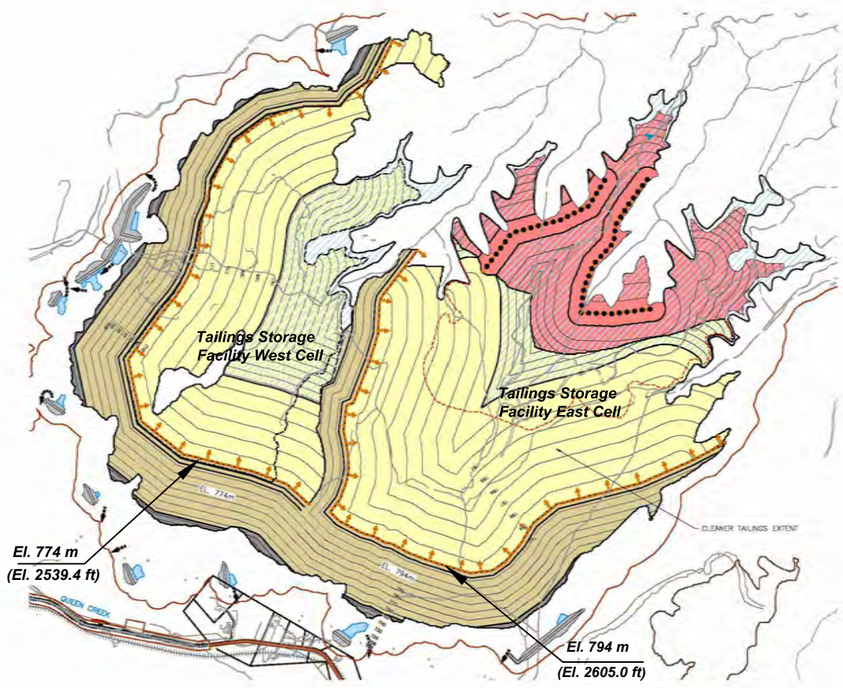
m:\jobs\800's\807.94\env\gpo_responce2tnf\dwg\fig3.3-3b_revised_8_20_14.dwg May 15, 2012 renee witzke



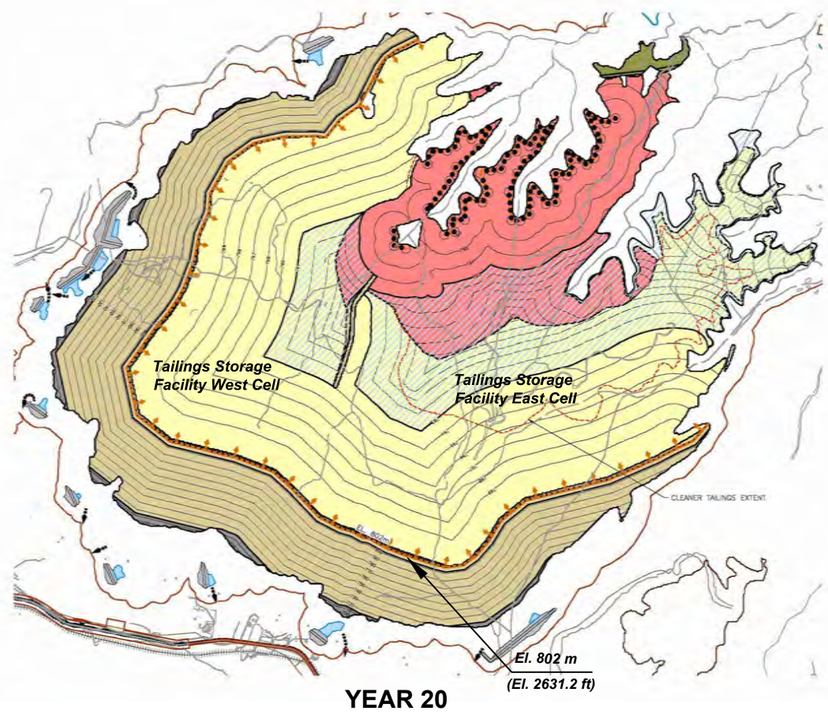
YEAR 2



YEAR 10



YEAR 15



YEAR 20

Legend

- Railway
- Existing Road
- Stream
- Tie-in Point
- Scavenger Pipeline
- Cleaner Pipeline
- Seepage Water Pipeline (typical)
- Seepage Collection Dam (SCD)
- Tailings Discharge
- Cleaner Tailings Spigot
- Spillway
- Project Area
- Upstream Embankment Raise Fill
- Starter Dam
- Thickened Scavenger Tailings
- Thickened Cleaner Tailings
- TSF Reclaim Pond
- Seepage Collection Dam Pond

Topography Based on 1 m (3.3 ft) Interval Contours Received From Resolution January, 2013.

N

0 1,000 2,000 Feet

0 500 Meters

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General Plan of Operations

TAILINGS LAYOUT
STARTUP TO YEAR 43
Figure 3.3-3b

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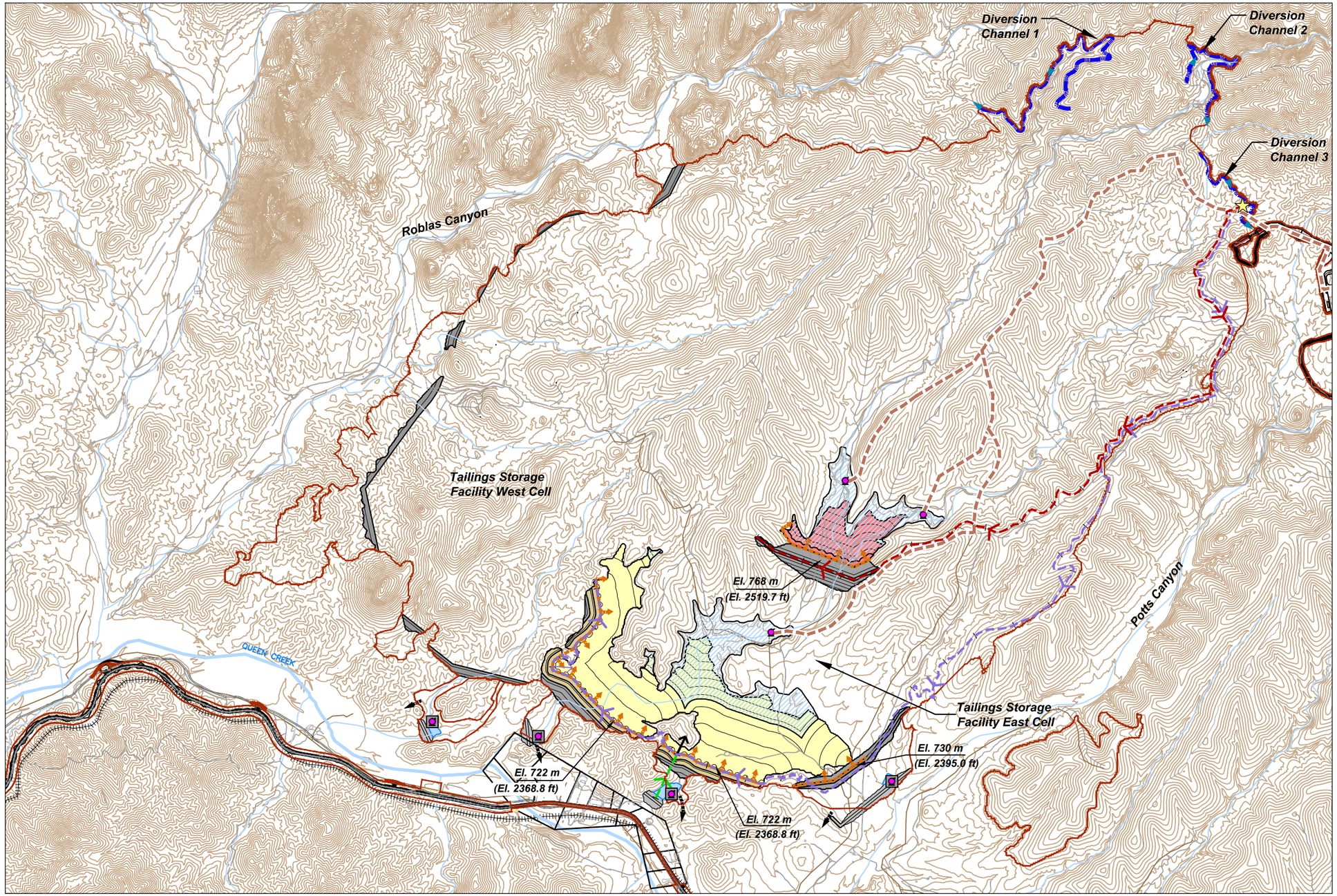

Legend

- Project Area
- Diversion Channel
- Railway
- Existing Road
- Stream
- Tie-in Point
- Scavenger Pipeline
- Cleaner Pipeline
- Seepage Water Pipeline (typical)
- Reclaim Pipeline
- Seepage Collection Pond Pump
- Reclaim Barge
- Seepage Collection Dam (SCD)
- Tailings Discharge
- Spillway
- Upstream Embankment Raise Fill
- Starter Dam
- Thickened Scavenger Tailings
- Thickened Cleaner Tailings
- TSF Reclaim Pond
- Seepage Collection Dam Pond

Topography Based on 1 m (3.3 ft) Interval Contours Received From Resolution January, 2013.

N

0 1,000 2,000 Feet

0 500 Meters

Klohn Crippen Berger
2013

RESOLUTION COPPER
General Plan of Operations

TAILINGS LAYOUT
YEAR 2
Figure 3.3-4

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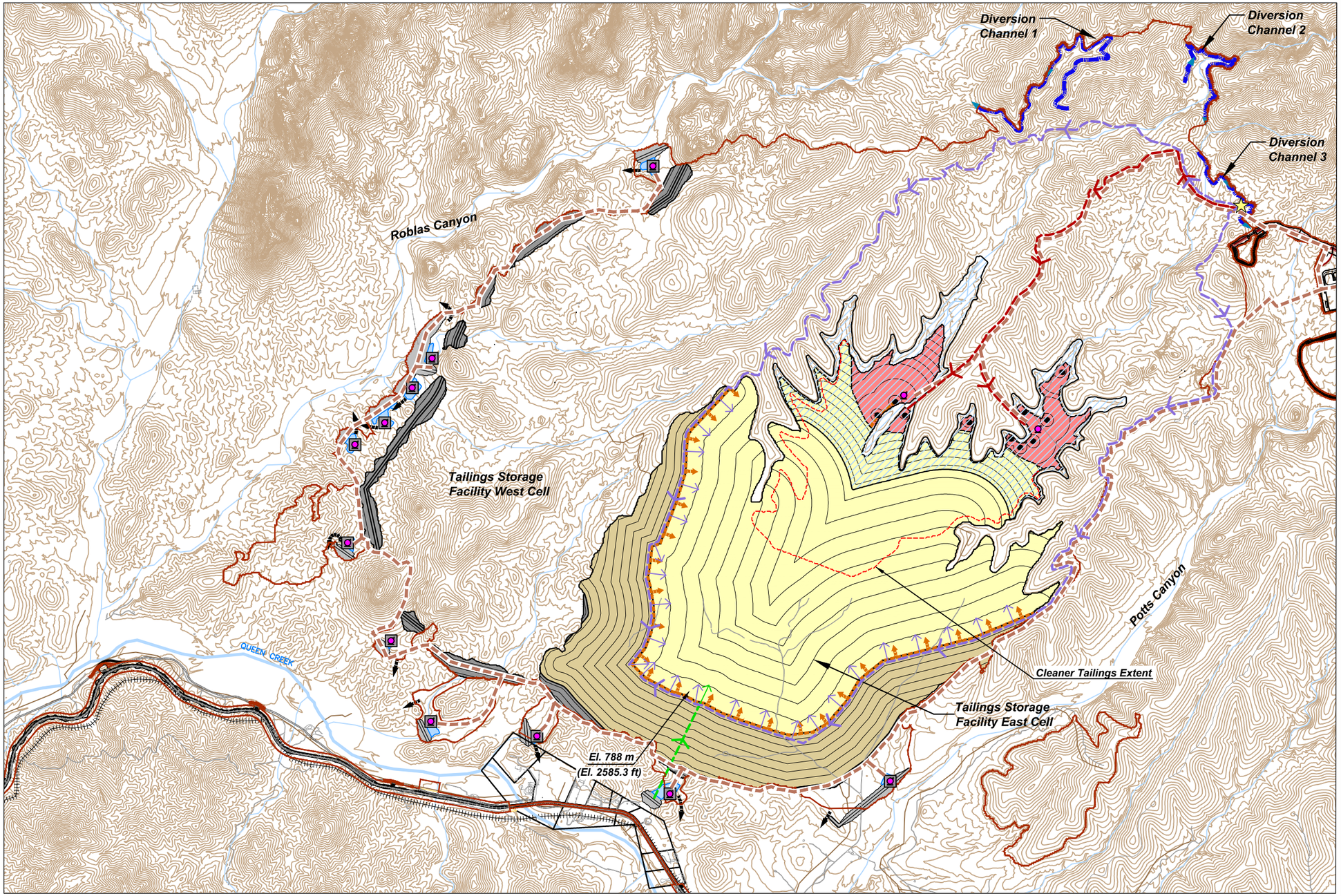

Legend

- Project Area
- Diversion Channel
- Railway
- Existing Road
- Stream
- Tie-in Point
- Scavenger Pipeline
- Cleaner Pipeline
- Seepage Water Pipeline (typical)
- Reclaim Pipeline
- Seepage Collection Pond Pump
- Reclaim Barge
- Seepage Collection Dam (SCD)
- Tailings Discharge
- Cleaner Tailings Spigot
- Spillway
- Upstream Embankment Raise Fill
- Starter Dam
- Thickened Scavenger Tailings
- Thickened Cleaner Tailings
- TSF Reclaim Pond
- Seepage Collection Dam Pond

Topography Based on 1 m (3.3 ft) Interval Contours Received From Resolution January, 2013.

N

0 1,000 2,000 Feet

0 500 Meters

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General Plan of Operations

TAILINGS LAYOUT
YEAR 10
Figure 3.3-5

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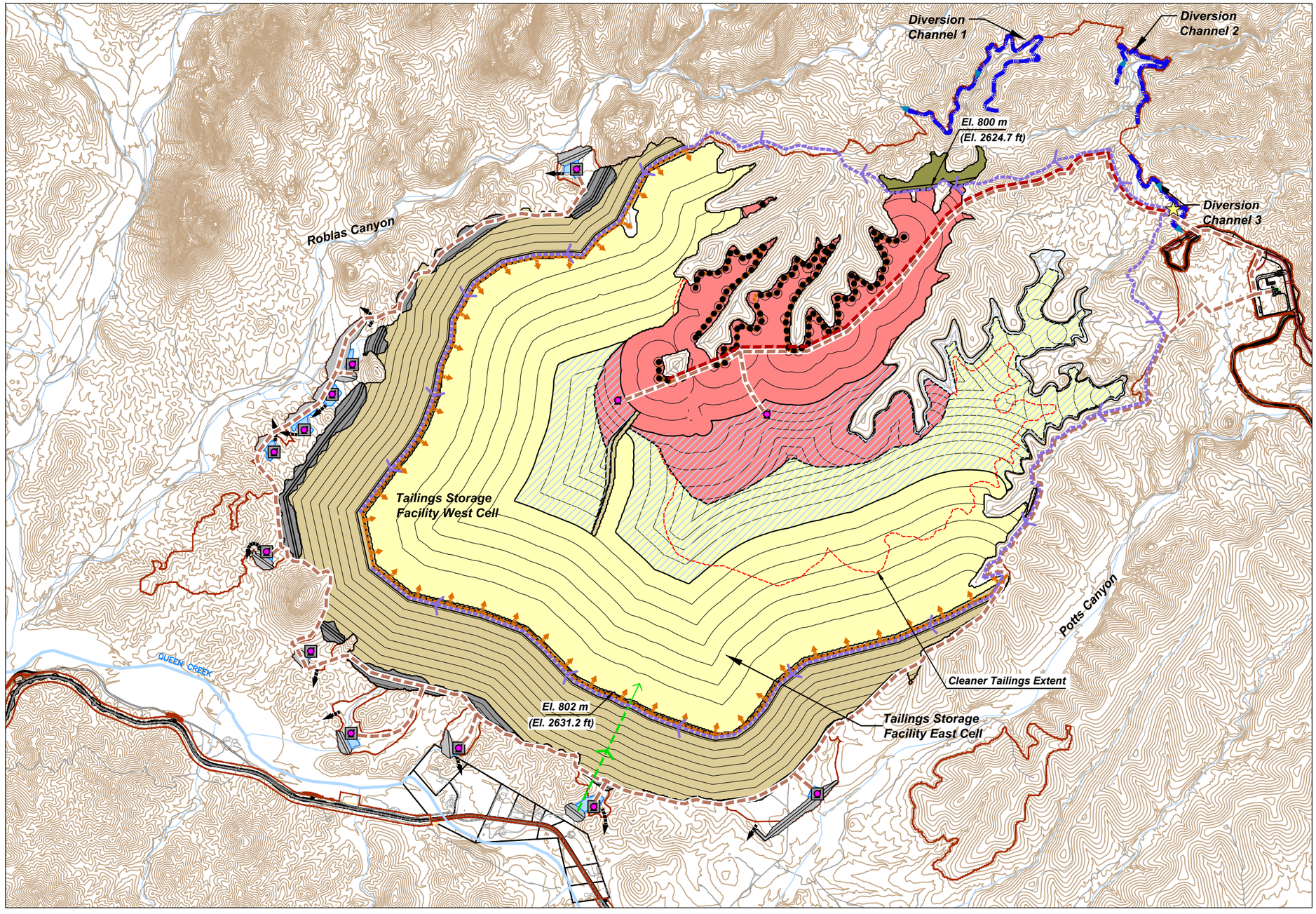

Legend

- Project Area
- Diversion Channel
- Railway
- Existing Road
- Stream
- Tie-in Point
- Scavenger Pipeline
- Cleaner Pipeline
- Seepage Water Pipeline (typical)
- Reclaim Pipeline
- Seepage Collection Pond Pump
- Reclaim Barge
- Seepage Collection Dam (SCD)
- Tailings Discharge
- Cleaner Tailings Spigot
- Spillway
- Upstream Embankment Raise Fill
- Starter Dam
- Thickened Scavenger Tailings
- Thickened Cleaner Tailings
- North Dams
- TSF Reclaim Pond
- Seepage Collection Dam Pond

Topography Based on 1 m (3.3 ft) Interval Contours Received From Resolution January, 2013.

N

0 1,000 2,000 Feet

0 500 Meters

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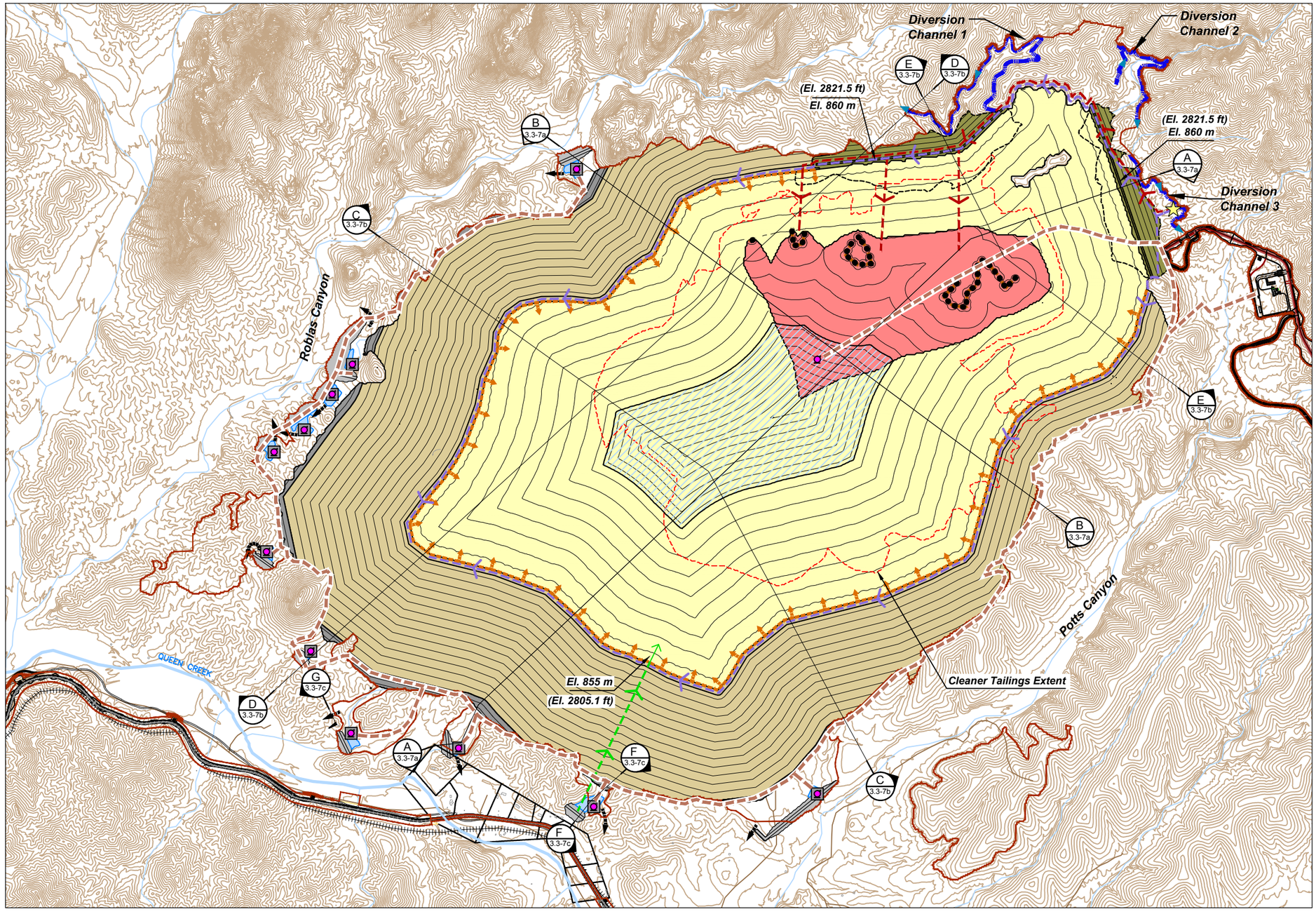
RESOLUTION COPPER
General Plan of Operations

TAILINGS LAYOUT
YEAR 20
Figure 3.3-6

m:\jobs\800's\807.94\env\gpo_responce2tnf\dwg\fig3.3-7_revised_9_4_2014.dwg May 15, 2012 renee witzke



Legend

- Project Area
- Diversion Channel
- Railway
- Existing Road
- Stream
- Tie-in Point
- Scavenger Pipeline
- Cleaner Pipeline
- Seepage Water Pipeline (typical)
- Reclaim Pipeline
- Seepage Collection Pond Pump
- Reclaim Barge
- Seepage Collection Dam (SCD)
- Tailings Discharge
- Cleaner Tailings Spigot
- Spillway
- Upstream Embankment Raise Fill
- Starter Dam
- Thickened Scavenger Tailings
- Thickened Cleaner Tailings
- North Dams
- TSF Reclaim Pond
- Seepage Collection Dam Pond

Topography Based on 1 m (3.3 ft) Interval Contours Received From Resolution January, 2013.

N

0 1,000 2,000 Feet

0 500 Meters

Klohn Crippen Berger
2013

RESOLUTION COPPER
General Plan of Operations

TAILINGS LAYOUT ULTIMATE

Figure 3.3-7

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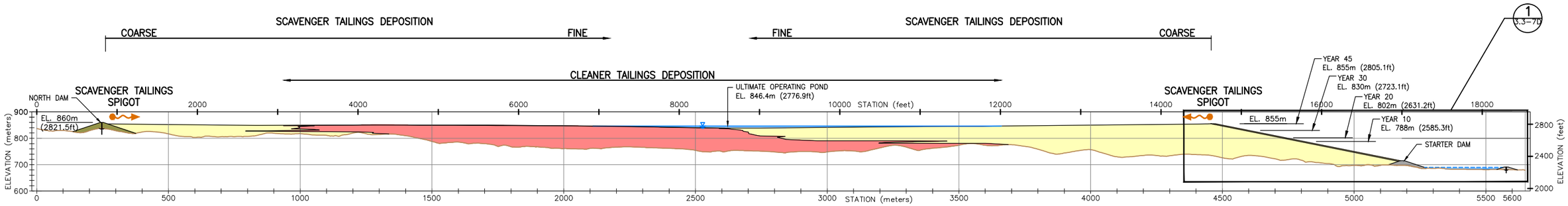
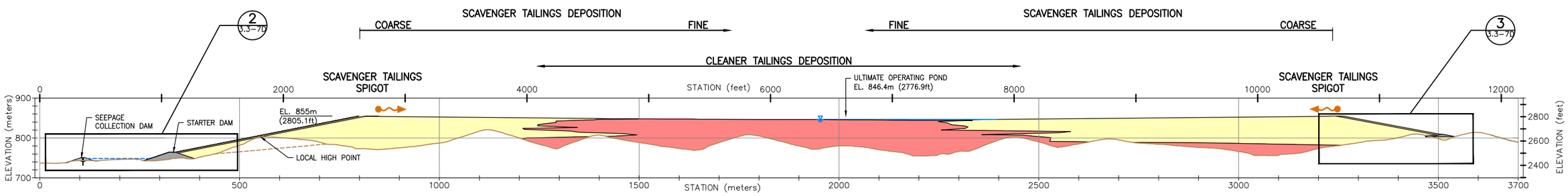


SECTION A 3.3-7

0 1000 Feet

0 300 Meters



SECTION B 3.3-7

0 800 Feet

0 250 Meters

Legend

- Upstream Embankment Raise Fill
- Starter Dam
- Seepage Collection Dam (SCD)
- Thickened Scavenger Tailings
- Thickened Cleaner Tailings
- North Dams

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RESOLUTION COPPER
General Plan of Operations

TAILINGS LAYOUT ULTIMATE SECTIONS

Figure 3.3-7a

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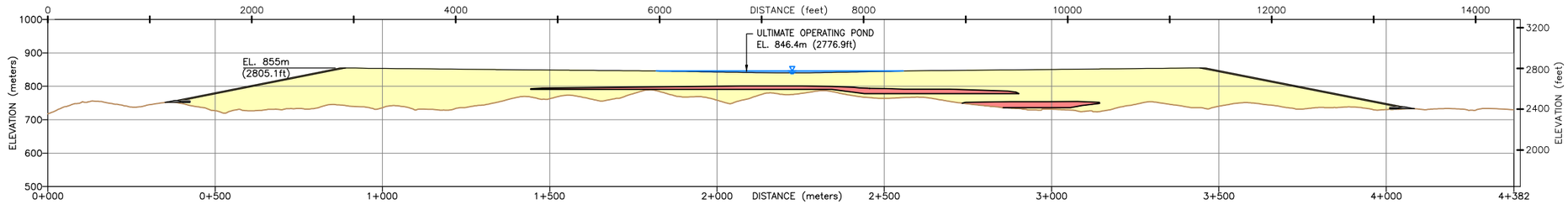
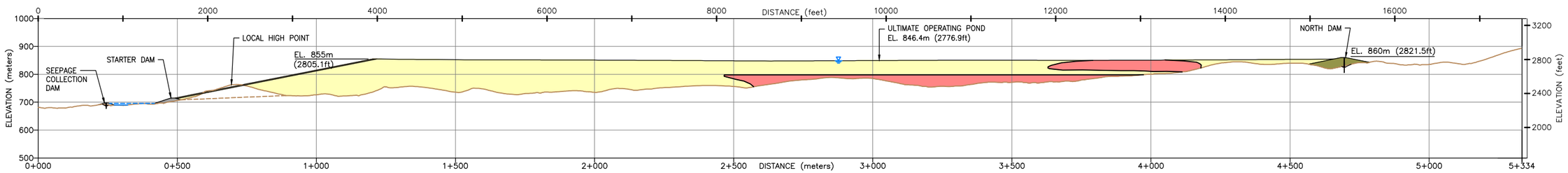


SECTION C 3.3-7

0 1000 Feet

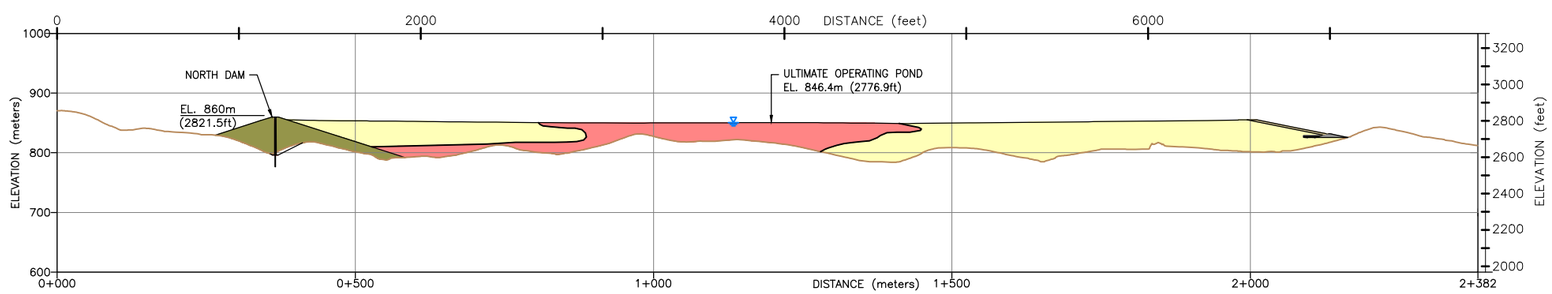
0 300 Meters



SECTION D 3.3-7

0 1000 Feet

0 300 Meters



SECTION E 3.3-7

0 800 Feet

0 250 Meters

Note:

1. **The cleaner tailings extent has been approximated based on the tailings staging plan.**

Legend

- Upstream Embankment Raise Fill
- Starter Dam
- Seepage Collection Dam (SCD)
- Thickened Scavenger Tailings
- Thickened Cleaner Tailings
- North Dams

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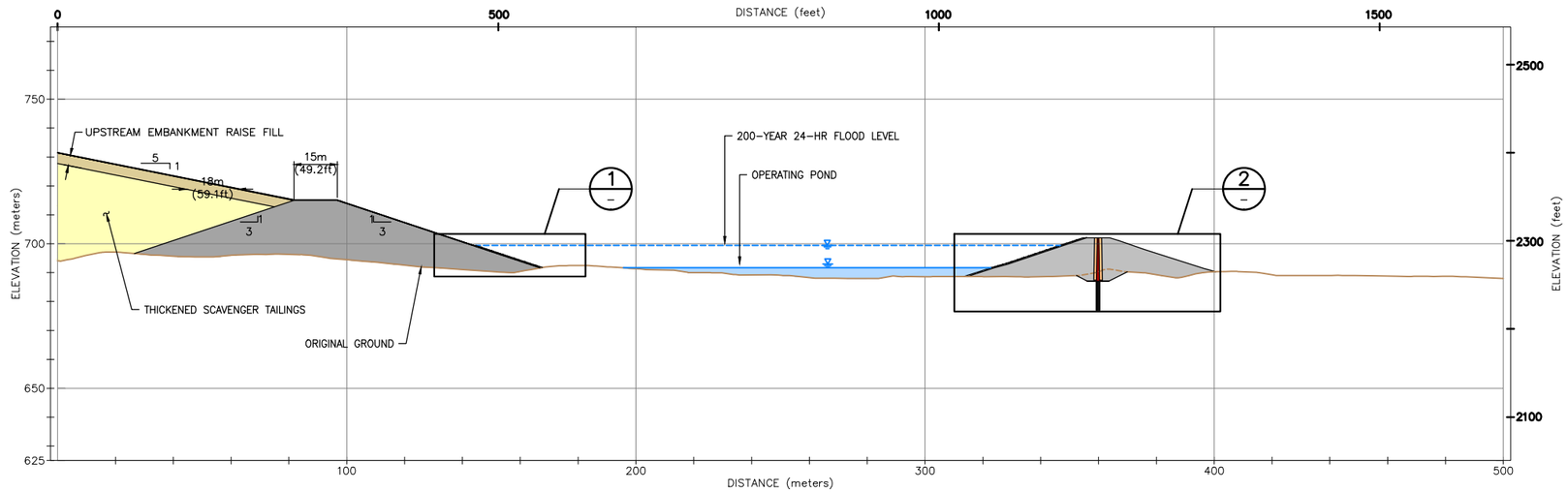
RESOLUTION COPPER
General Plan of Operations

TAILINGS LAYOUT ULTIMATE SECTIONS

Figure 3.3-7b

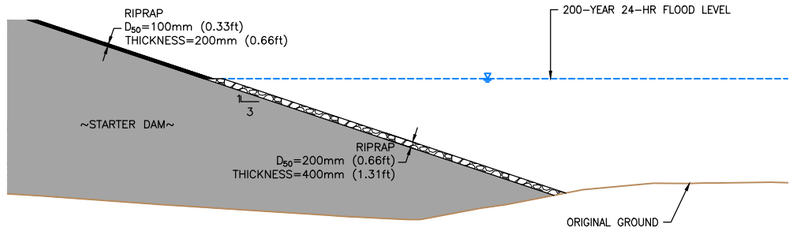


0 150 Feet
0 50 Meters

SECTION F 3.3-7

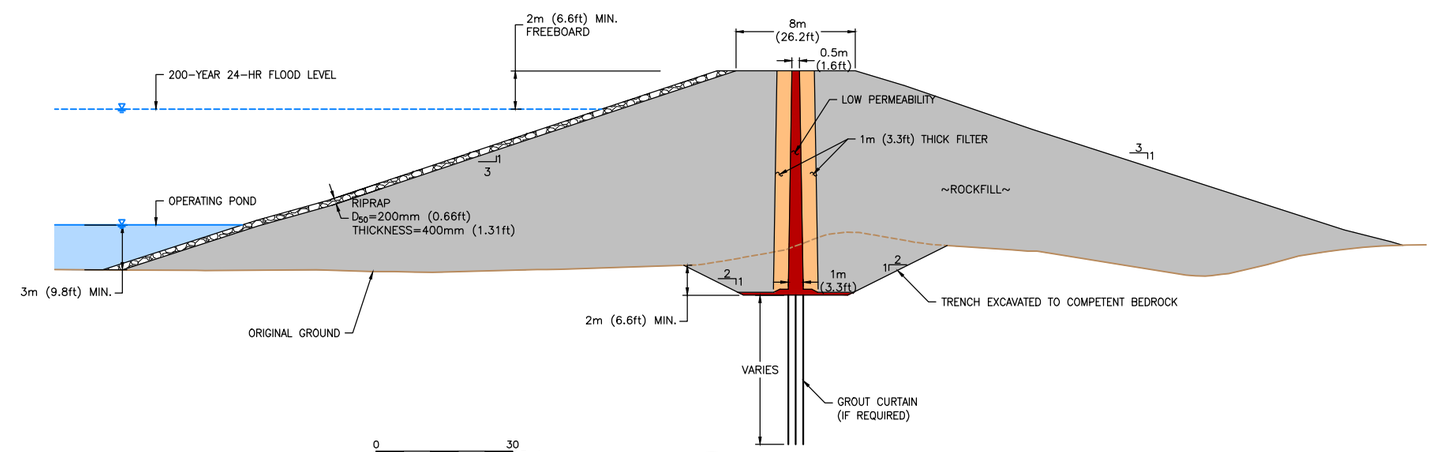
Legend

- Upstream Embankment Raise Fill
- Starter Dam
- Seepage Collection Dam (SCD)
- Thickened Scavenger Tailings



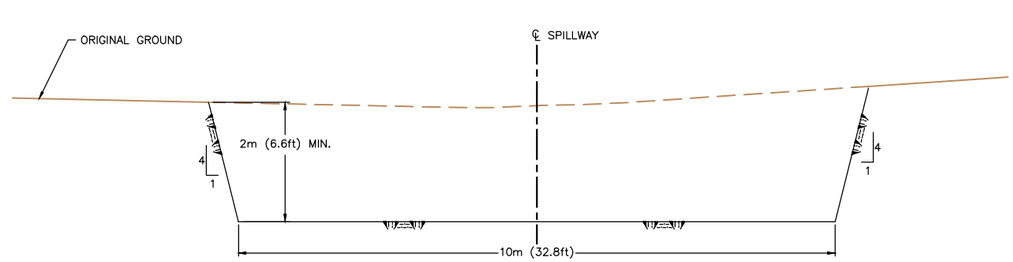
DETAIL 1 TYPICAL STARTER DAM ROCK ARMOUR

0 30 Feet
0 10 Meter



0 30 Feet
0 10 Meter

DETAIL 2 TYPICAL SEEPAGE DAM



SECTION G 3.3-7 TYPICAL SPILLWAY SECTION

0 10 Feet
0 2.5 Meters

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RESOLUTION COPPER
General Plan of Operations

SEEPAGE COLLECTION DAM
TYPICAL CROSS-SECTIONS
Figure 3.3-7c

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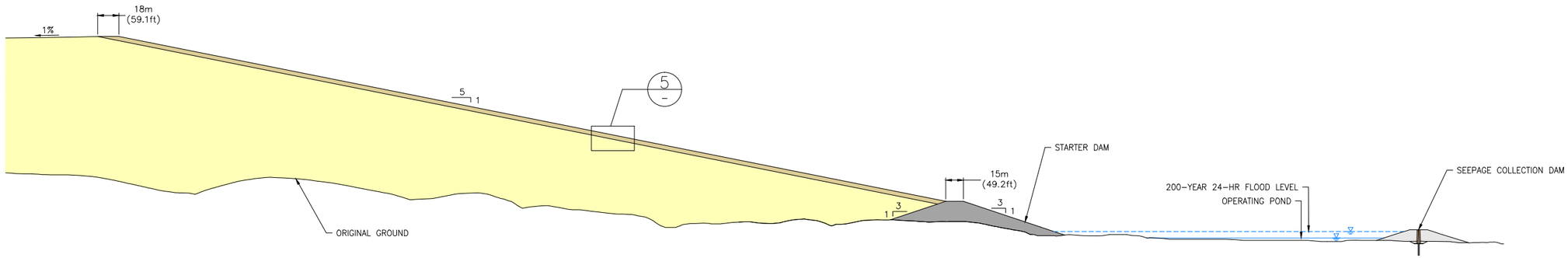
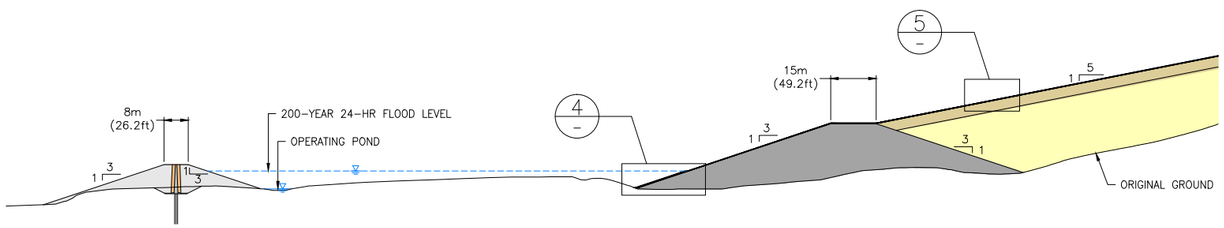


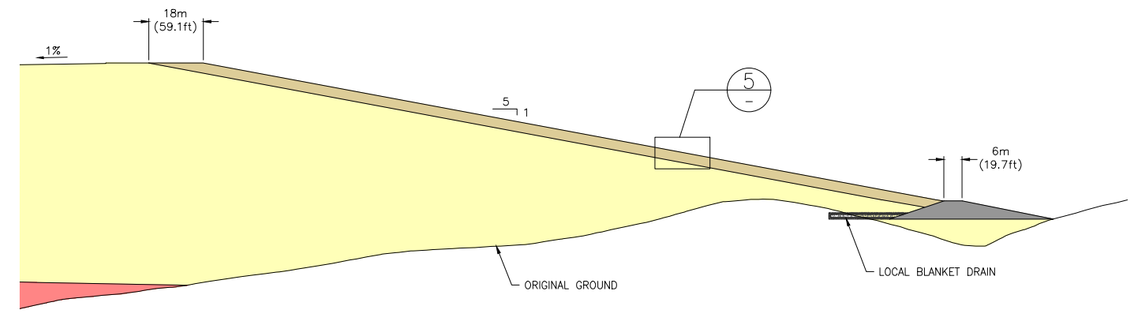
DETAIL 1 / 3.3-7A

0 300 Feet
0 100 Meters



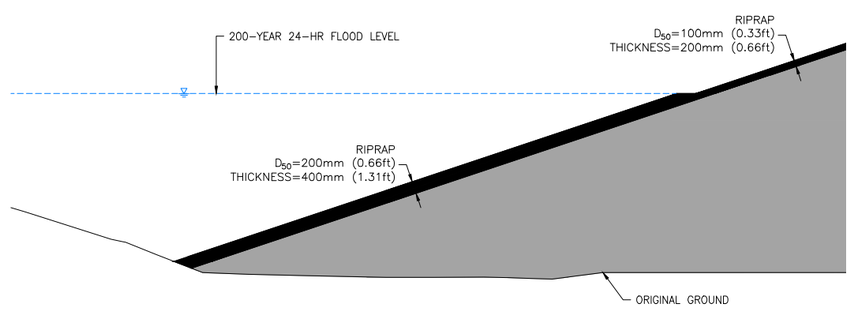
DETAIL 2 / 3.3-7A

0 150 Feet
0 50 Meters



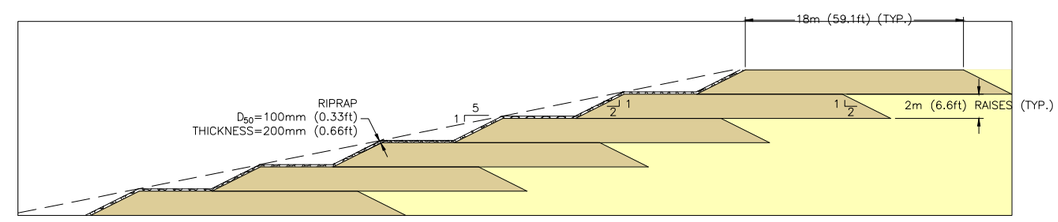
0 150 Feet
0 50 Meters

DETAIL 3 / 3.3-7A



0 20 Feet
0 5 Meters

DETAIL 4 / -



0 30 Feet
0 10 Meter

DETAIL 5 / -

Legend

- Upstream Embankment Raise Fill
- Starter Dam
- Seepage Collection Dam (SCD)
- Thickened Scavenger Tailings
- Thickened Cleaner Tailings

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RESOLUTION COPPER
General Plan of Operations

EMBANKMENT DETAILS

Figure 3.3-7d

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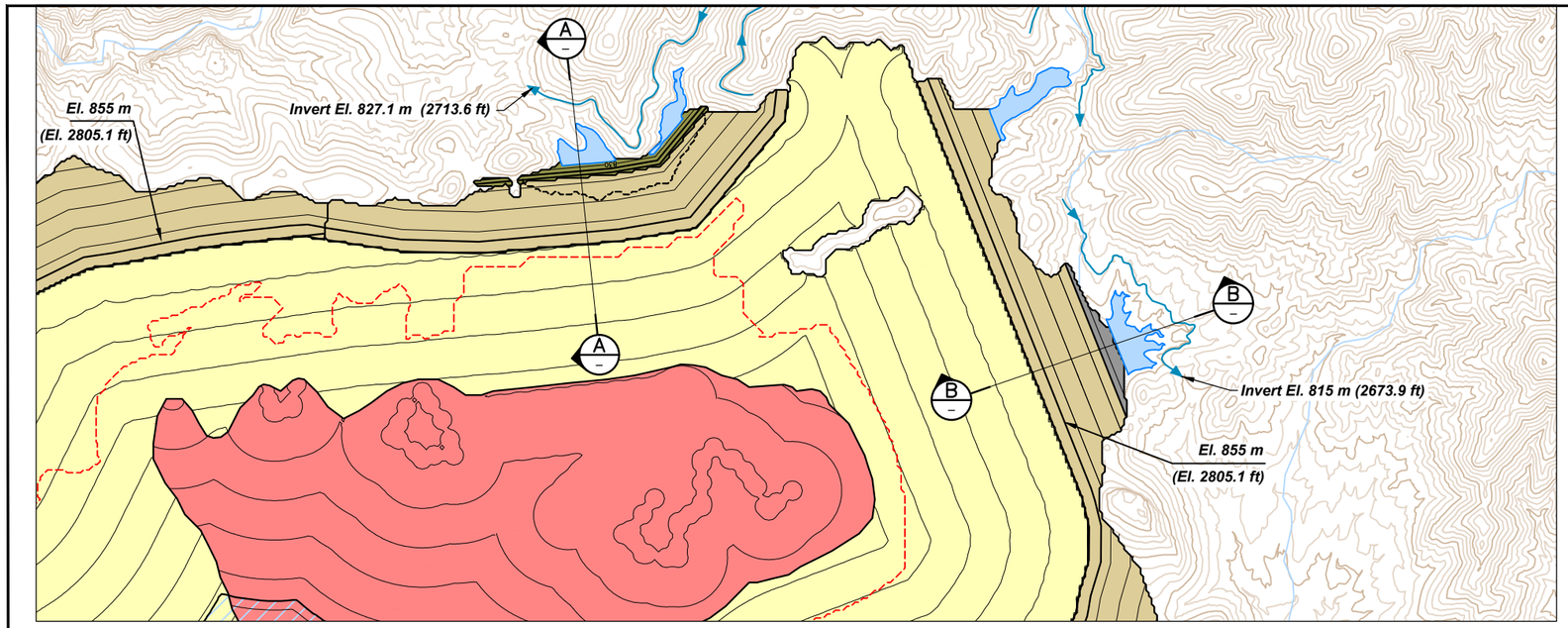


PLAN
SCALE A

N

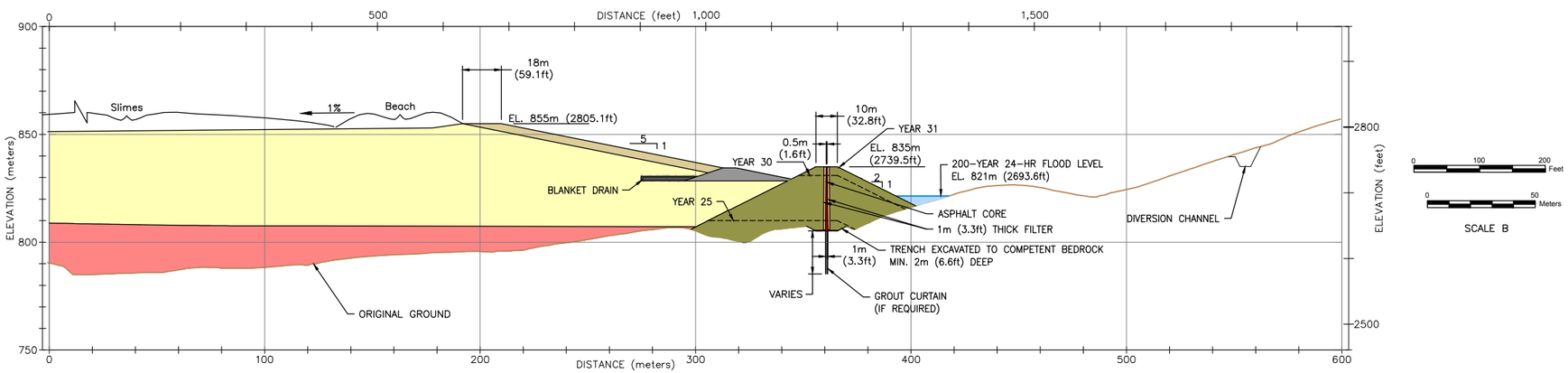
0 600 1,200 Feet

0 300 Meters

Legend

- Upstream Embankment Raise Fill
- Thickened Scavenger Tailings
- Thickened Cleaner Tailings
- North Dams
- Starter Dam

Topography Based on 1 m (3.3 ft) Interval Contours Received From Resolution January, 2013.

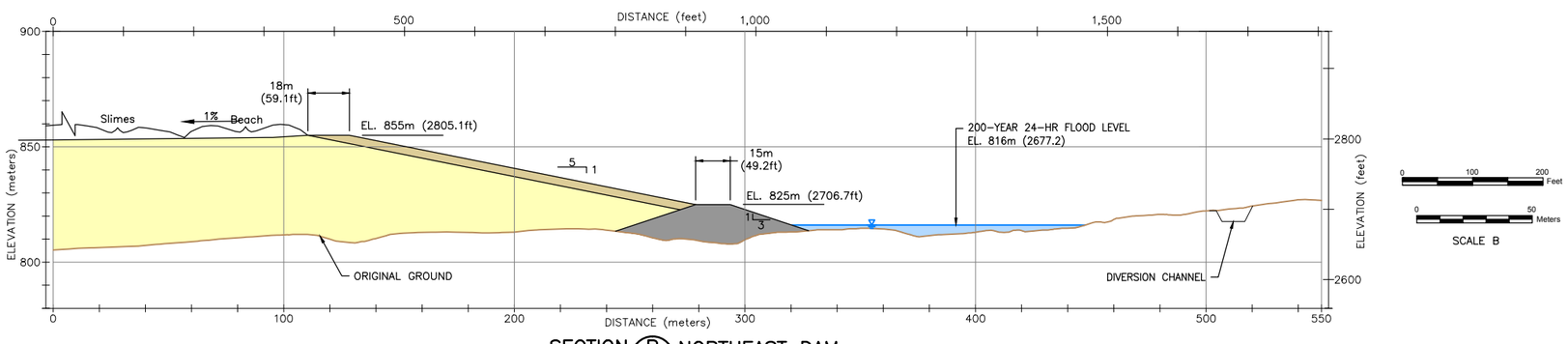


0 100 200 Feet

0 50 Meters

SCALE B

SECTION A NORTHWEST DAM
SCALE B



0 100 200 Feet

0 50 Meters

SCALE B

SECTION B NORTHEAST DAM
SCALE B

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2013

RESOLUTION COPPER
General Plan of Operations

TYPICAL EMBANKMENT SECTIONS
Figure 3.3-8

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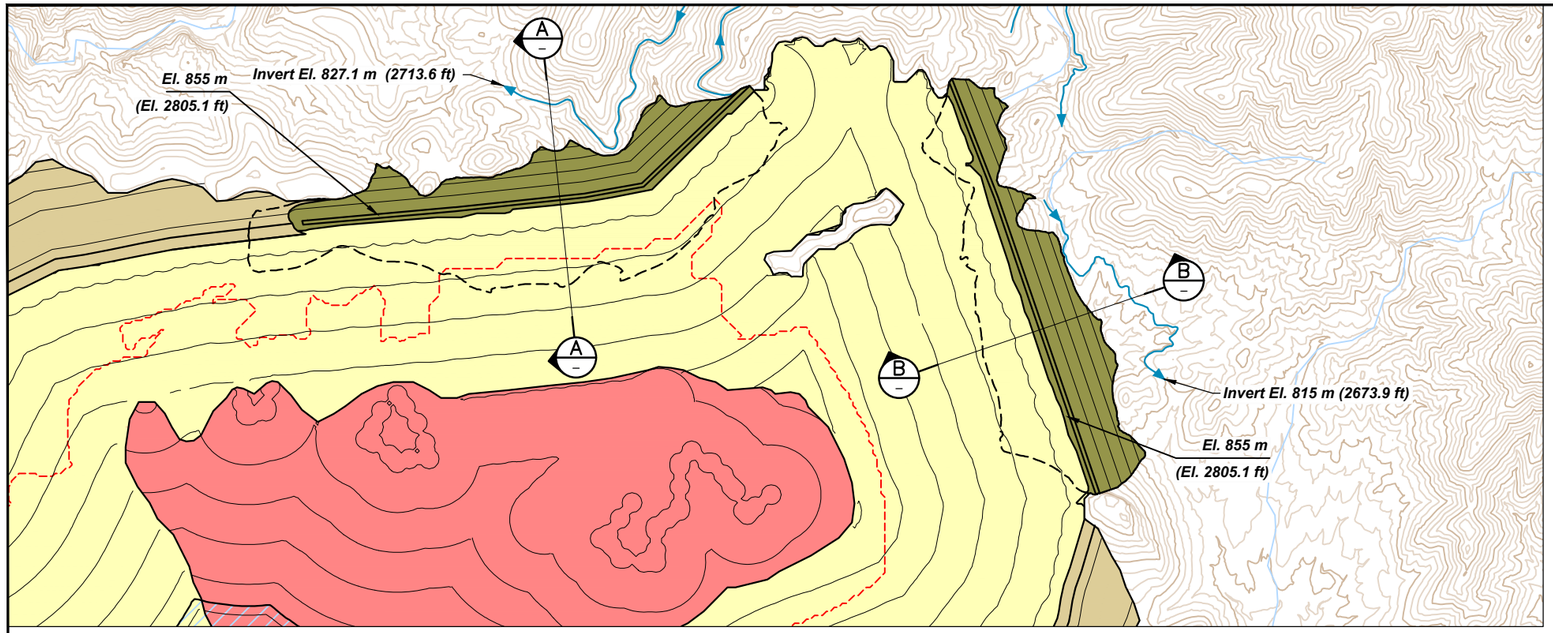


PLAN
SCALE A

N

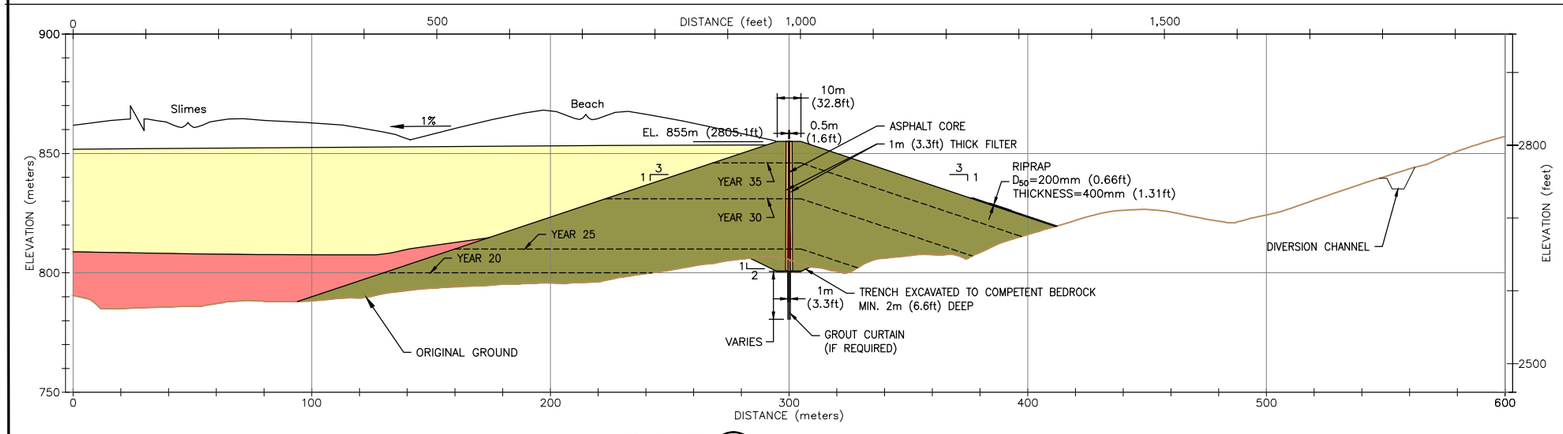
0 600 1,200 Feet

0 300 Meters

Legend

- Upstream Embankment Raise Fill
- Thickened Scavenger Tailings
- Thickened Cleaner Tailings
- North Dams

Topography Based on 1 m (3.3 ft) Interval Contours Received From Resolution January, 2013.

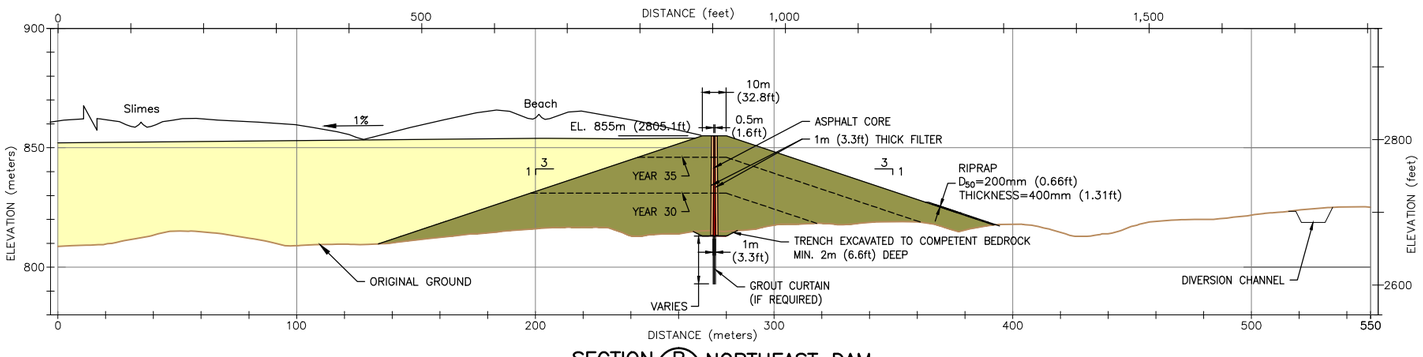


SECTION A NORTHWEST DAM
SCALE B

0 100 200 Feet

0 50 Meters

SCALE B



SECTION B NORTHEAST DAM
SCALE B

0 100 200 Feet

0 50 Meters

SCALE B

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RESOLUTION COPPER
General Plan of Operations

TYPICAL EMBANKMENT SECTIONS
ALTERNATIVE
Figure 3.3-8a

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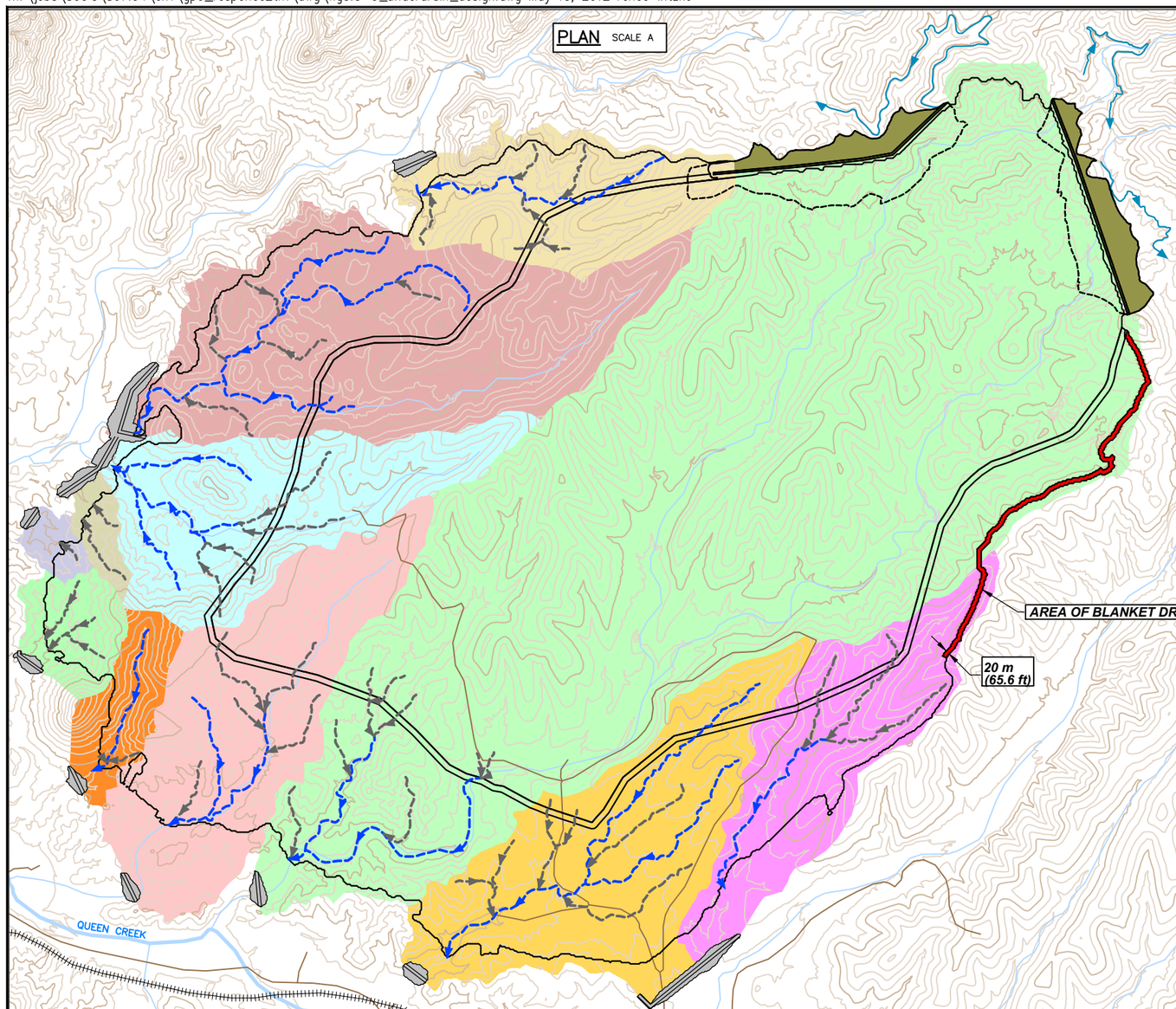


N

0 1,000 2,000 Feet

0 500 Meters

SCALE A

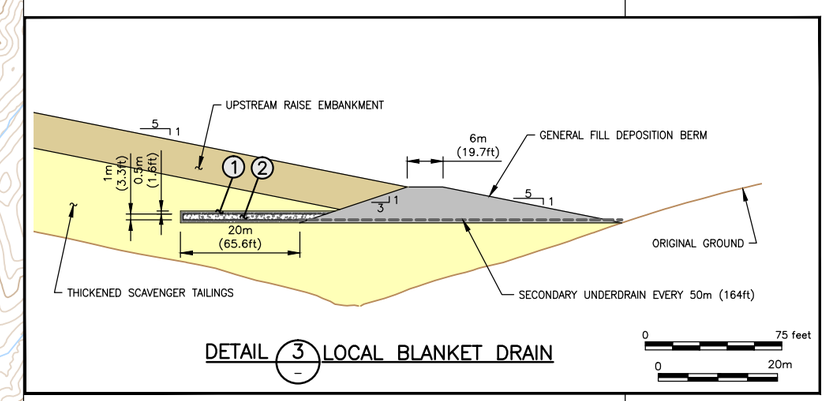
MATERIAL ZONES	
ZONE	MATERIAL TYPE
1	19mm (3/4in) MINUS SAND AND GRAVEL WITH D_{15} BETWEEN 0.6mm (#30) AND 0.2mm (#70). 5% MAXIMUM FINES CONTENT.
2	100mm–20mm (4in–3/4in) DRAIN ROCK

Legend

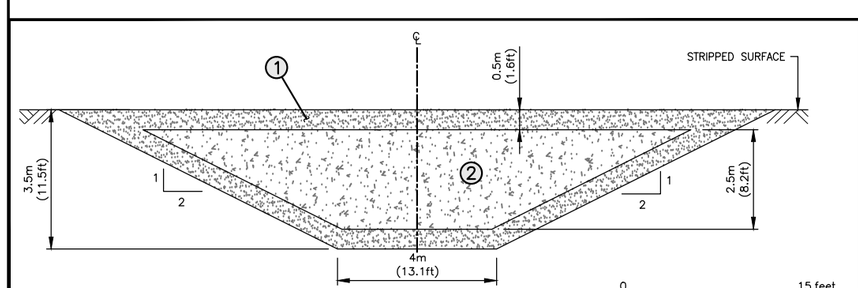
- Diversion Channel
- Primary Underdrain
- Secondary Underdrain
- Railway
- Existing Road
- Stream
- Seepage Collection Dam (SCD)
- North Dams
- Area Of Local Blanket Drain
- Upstream Embankment Raise Fill
- Thickened Scavenger Tailings

Topography Based on 1 m (3.3 ft) Interval Contours Received From Resolution January, 2013.

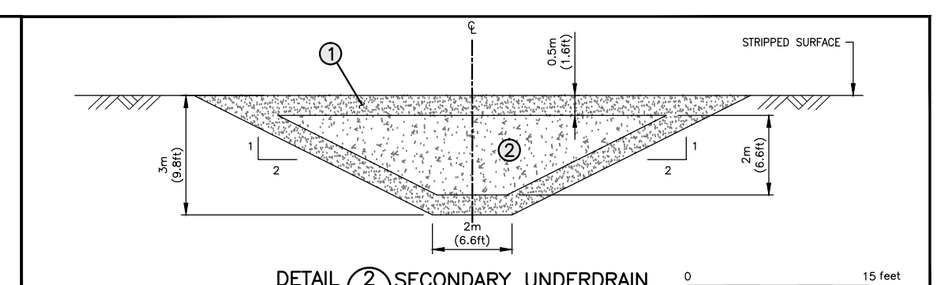
Note: Drainage areas are indicted by shaded areas.



DETAIL 3 LOCAL BLANKET DRAIN



DETAIL 1 PRIMARY UNDERDRAIN



DETAIL 2 SECONDARY UNDERDRAIN

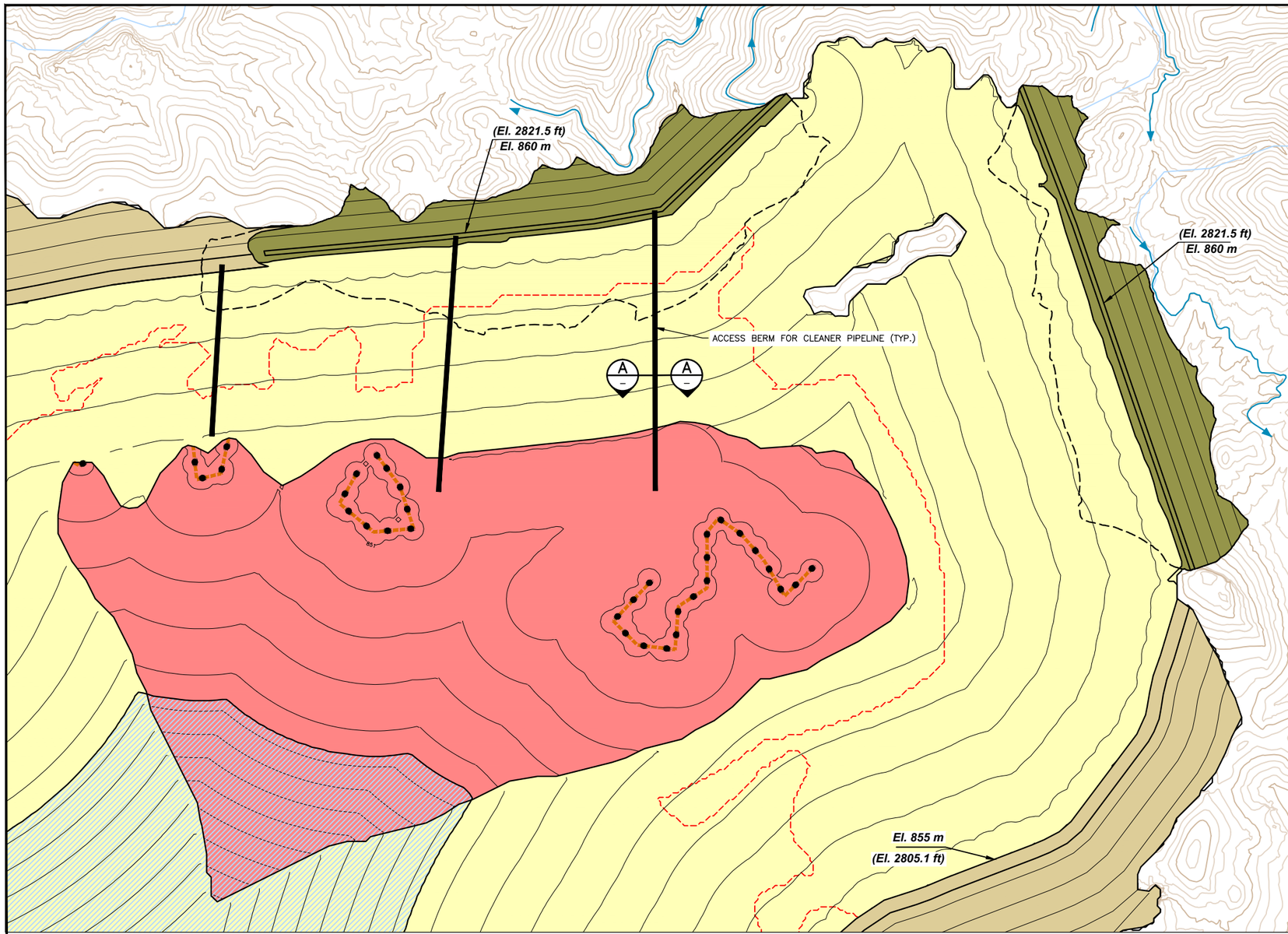
Klohn Crippen Berger
2014

RESOLUTION COPPER
General Plan of Operations

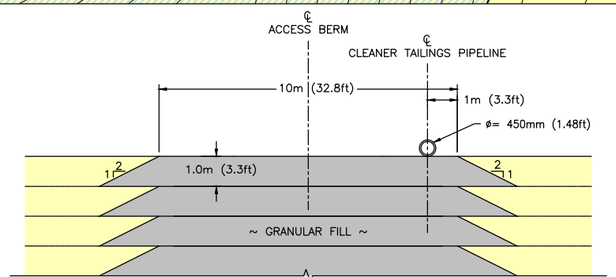
UNDERDRAIN DESIGN

Figure 3.3-9

m:\jobs\800's\807.94\env\gpo_responce2tnf\dwg\fig3.3-9a-cleanerdeposition.dwg May 15, 2012 renee witzke



PLAN



SECTION A
Not To Scale

Legend

- Cleaner Tailings Spigot
- Upstream Embankment Raise Fill
- Thickened Scavenger Tailings
- Thickened Cleaner Tailings
- North Dams
- TSF Reclaim Pond

Topography Based on 1 m (3.3 ft) Interval Contours Received From Resolution January, 2013.

N

0 400 800 Feet

0 200 Meters

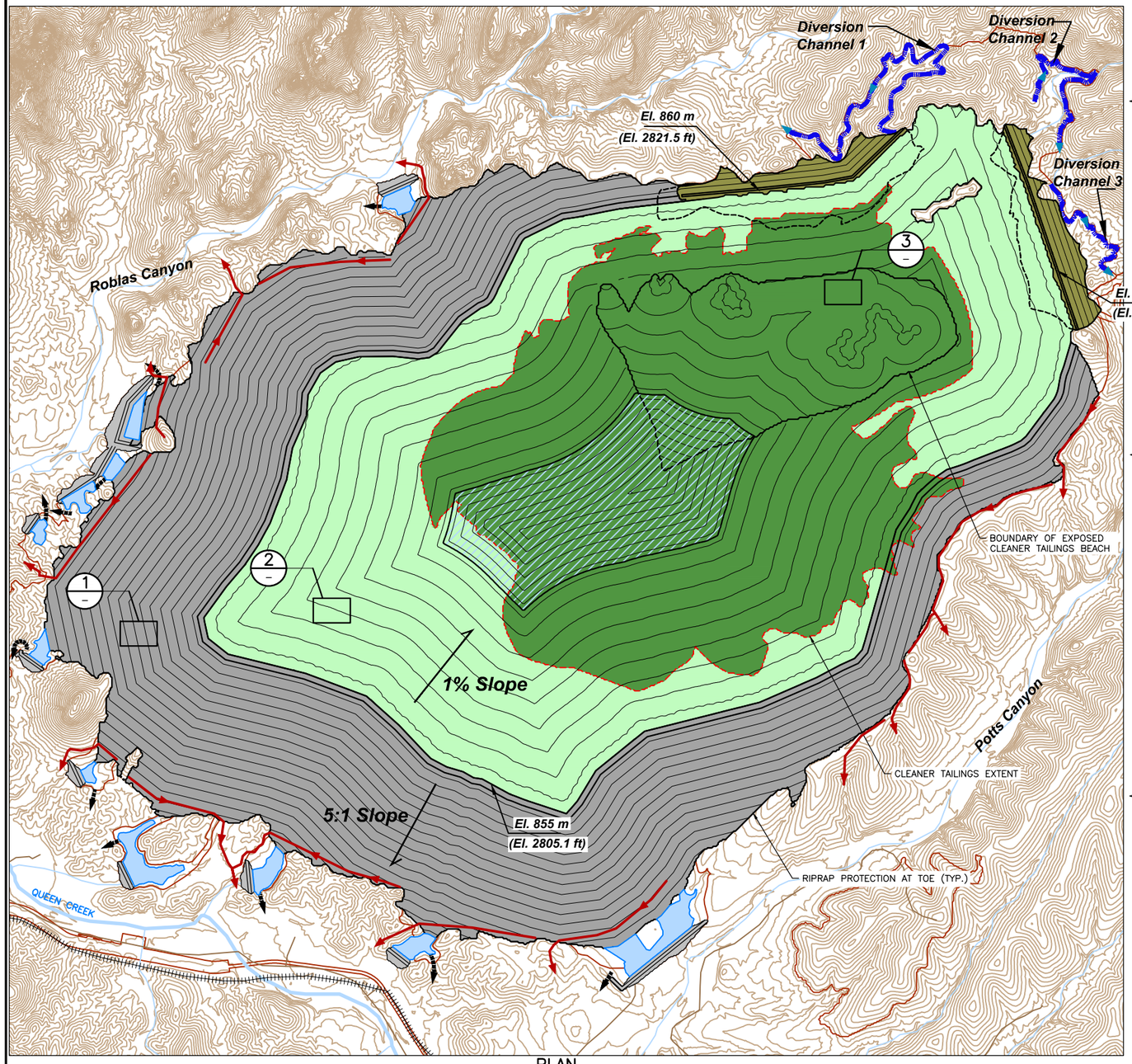
Klohn Crippen Berger
2013

RESOLUTION COPPER
General Plan of Operations

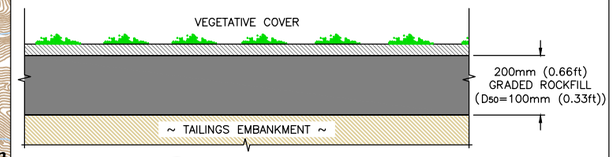
CLEANER DEPOSITION ACCESS BERMS

Figure 3.3-9a

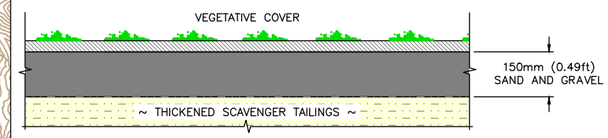
m:\jobs\800's\807.94\env\gpo_responce2tnf\dwg\fig3.3-10.dwg May 15, 2012 renee witzke



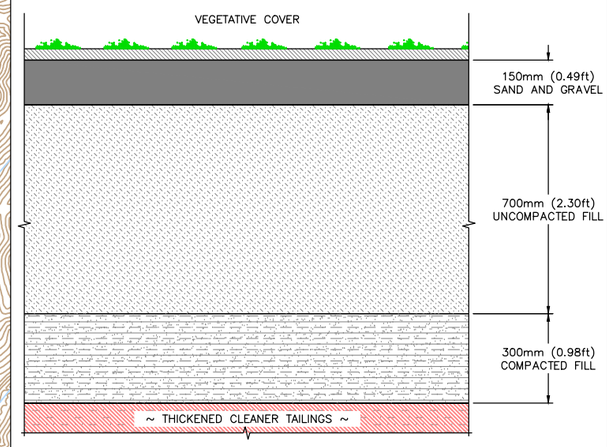
PLAN



DETAIL 1 EMBANKMENT CLOSURE COVER DETAIL
Not To Scale



DETAIL 2 SCAVENGER TAILINGS CLOSURE COVER DETAIL
Not To Scale



DETAIL 3 CLEANER TAILINGS CLOSURE COVER DETAIL
Not To Scale

Legend

- Project Area
- Diversion Channel
- Slope Runoff Diversion Channel
- Spillway
- Railway
- Existing Road
- Stream
- Seepage Collection Dam (SCD)
- Reclaimed Upstream Embankment Raise Fill
- Reclaimed Scavenger Tailings
- Reclaimed Cleaner Tailings
- North Dams
- TSF Reclaim Pond
- Seepage Collection Dam Pond

Topography Based on 1 m (3.3 ft) Interval Contours Received From Resolution January, 2013.

N

0 1,000 2,000 Feet

0 500 Meters

Klohn Crippen Berger
2013

RESOLUTION COPPER
General Plan of Operations

CLOSURE PLAN

Figure 3.3-10

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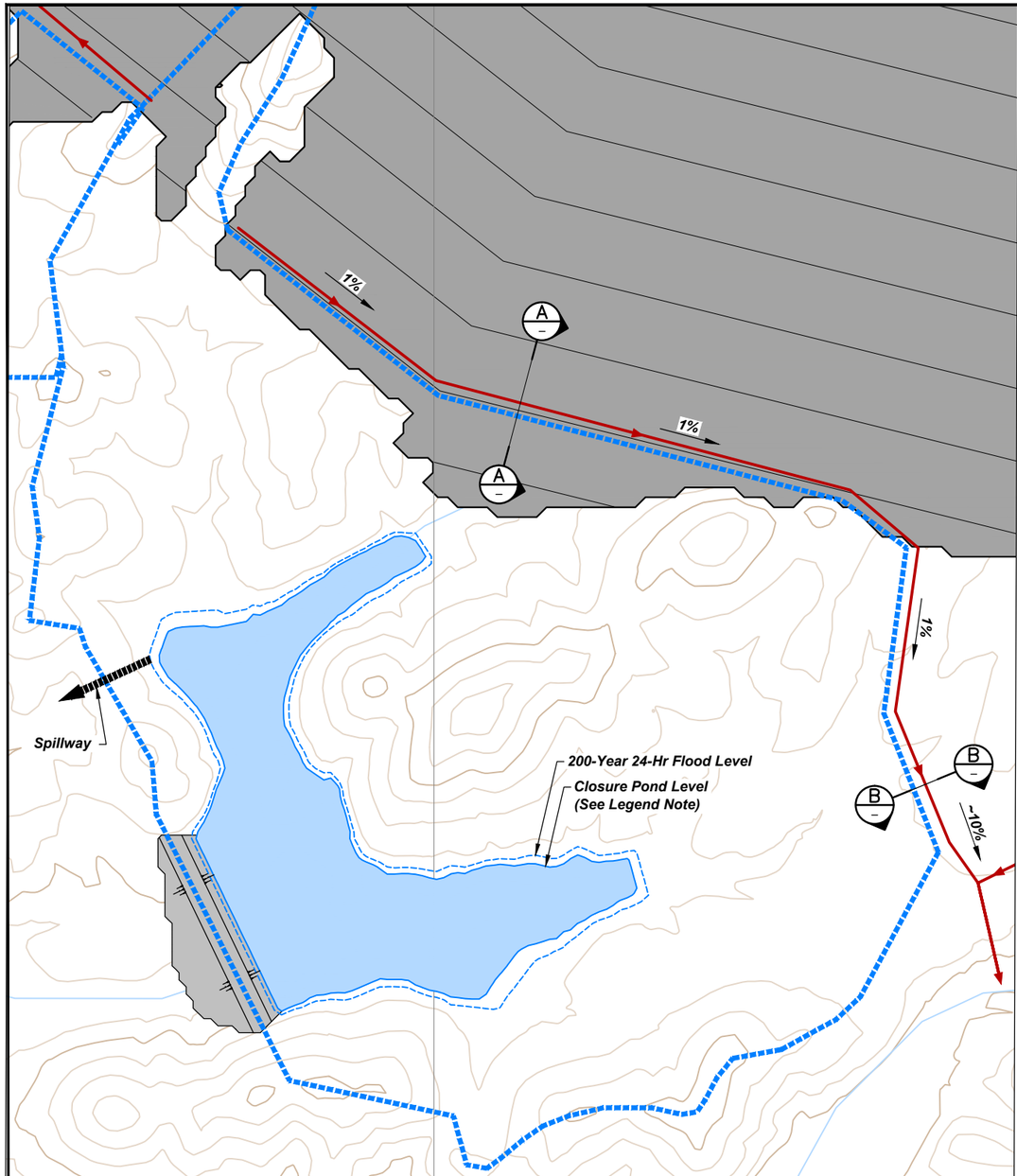
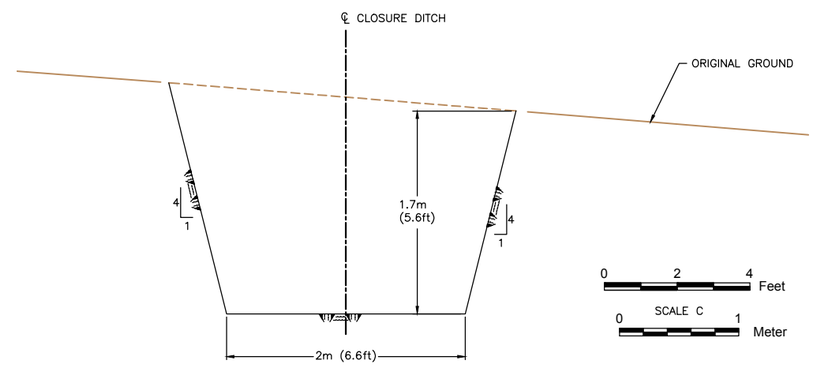
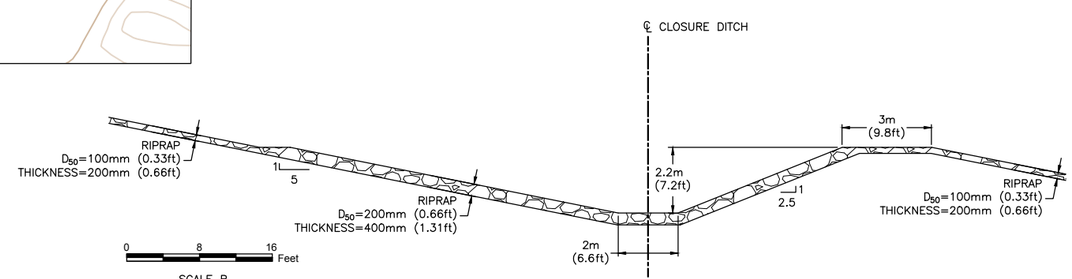


PLAN
SCALE A



SECTION B TYPICAL CLOSURE DIVERSION CHANNEL
SCALE C ON BEDROCK CROSS-SECTION



SECTION A TYPICAL CLOSURE DIVERSION CHANNEL
SCALE B ON EMBANKMENT SLOPE CROSS-SECTION

N

SCALE A
0 150 300 Feet
0 80 Meters

Legend

- Closure Diversion Channel
- Undiverted Catchment Boundary
- Stream
- Seepage Collection Dam (SCD)
- Reclaimed Upstream Embankment Raise Fill
- SCD Closure Pond
- Bedrock

Topography Based on 1 m (3.3 ft) Interval Contours Received From Resolution January, 2013.

Note: Closure Pond Level Determined by Water Surface Area to Evaporate Long Term Seepage from Embankment Toe and Runoff from Average Climatic Year.

Klohn Crippen Berger
2013

RESOLUTION COPPER
General Plan of Operations

SEEPAGE COLLECTION DAM
TYPICAL CLOSURE PLAN
Figure 3.3-10a

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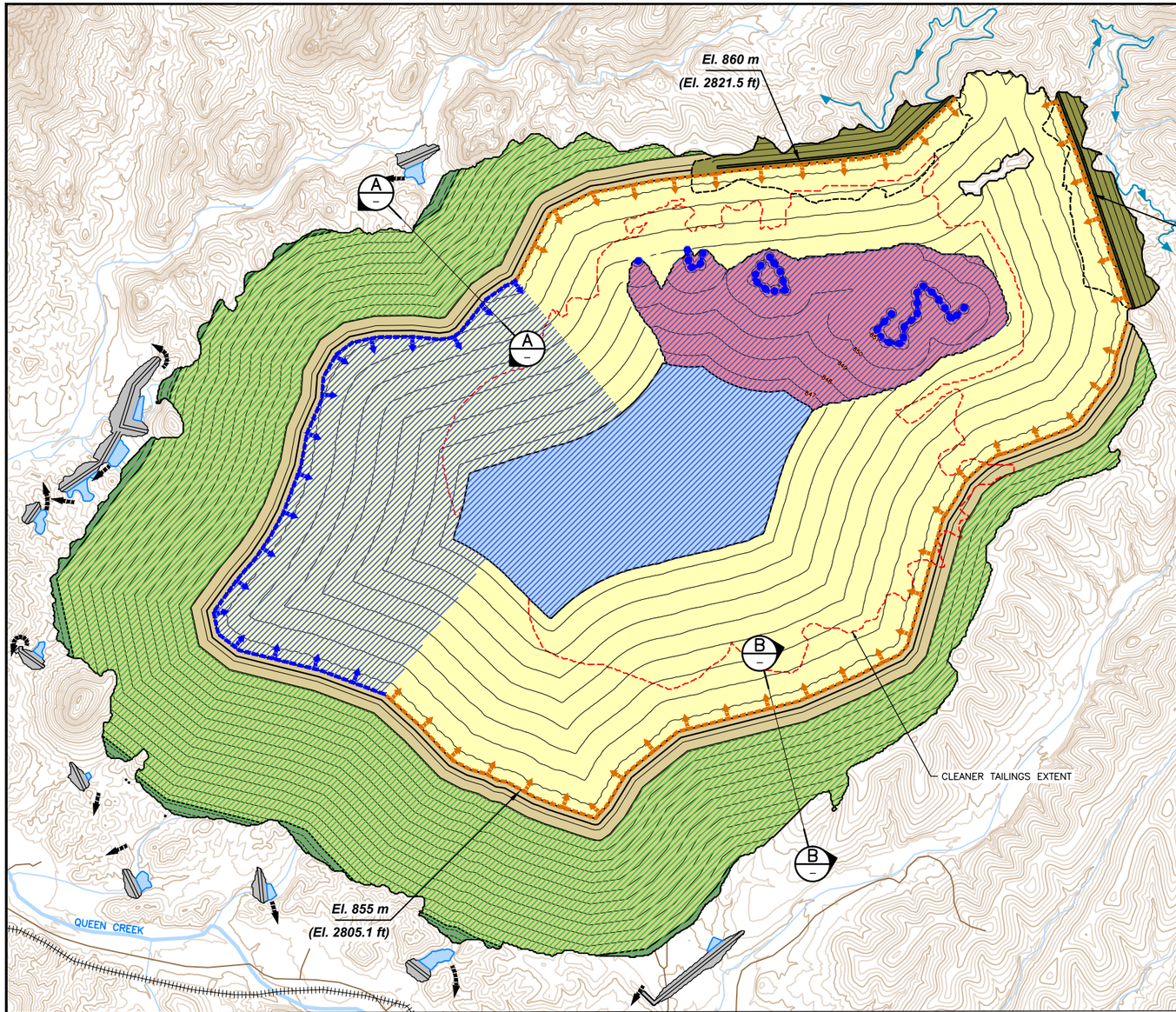


PLAN
SCALE A

N

0 1,000 2,000 Feet

SCALE A

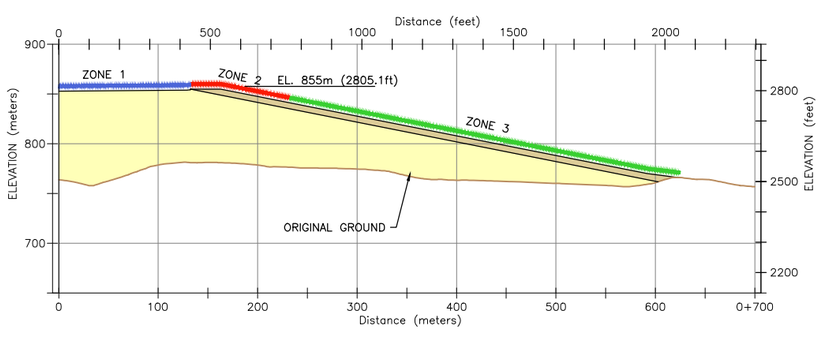
0 500 Meters

ZONE 1	WETTED TAILINGS SURFACE/RECLAIM POND
ZONE 2	ACTIVE SPRINKLER MANAGEMENT
ZONE 3	RECLAIMED SURFACE (COMPACTED SOIL OR GRADED ROCK ARMOUR AND VEGETATION)

Legend

- Diversion Channel
- Railway
- Existing Road
- Stream
- Seepage Collection Dam (SCD)
- Active Spigot
- Inactive Spigot
- Spillway
- Upstream Embankment Raise Fill
- Thickened Scavenger Tailings
- Thickened Cleaner Tailings
- North Dams
- Starter Dams
- Tailings Storage Facility Reclaim Pond

Topography Based on 1 m (3.3 ft)
Interval Contours Received From Resolution
January, 2013.



SECTION A
SCALE B

0 250 500 Feet

0 100 Meters

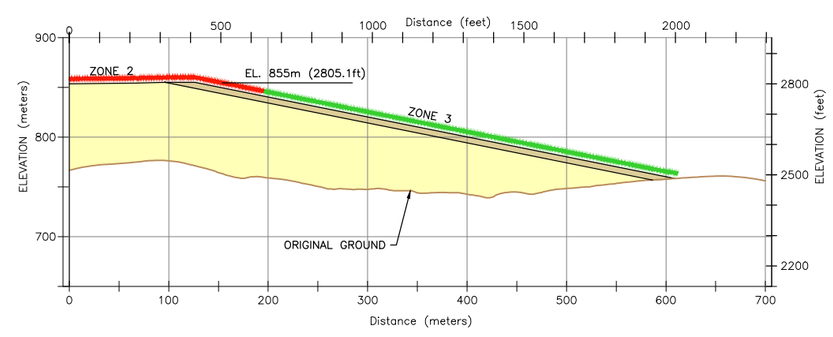
SCALE B

SECTION B
SCALE B

SCALE B

0 250 500 Feet

0 100 Meters

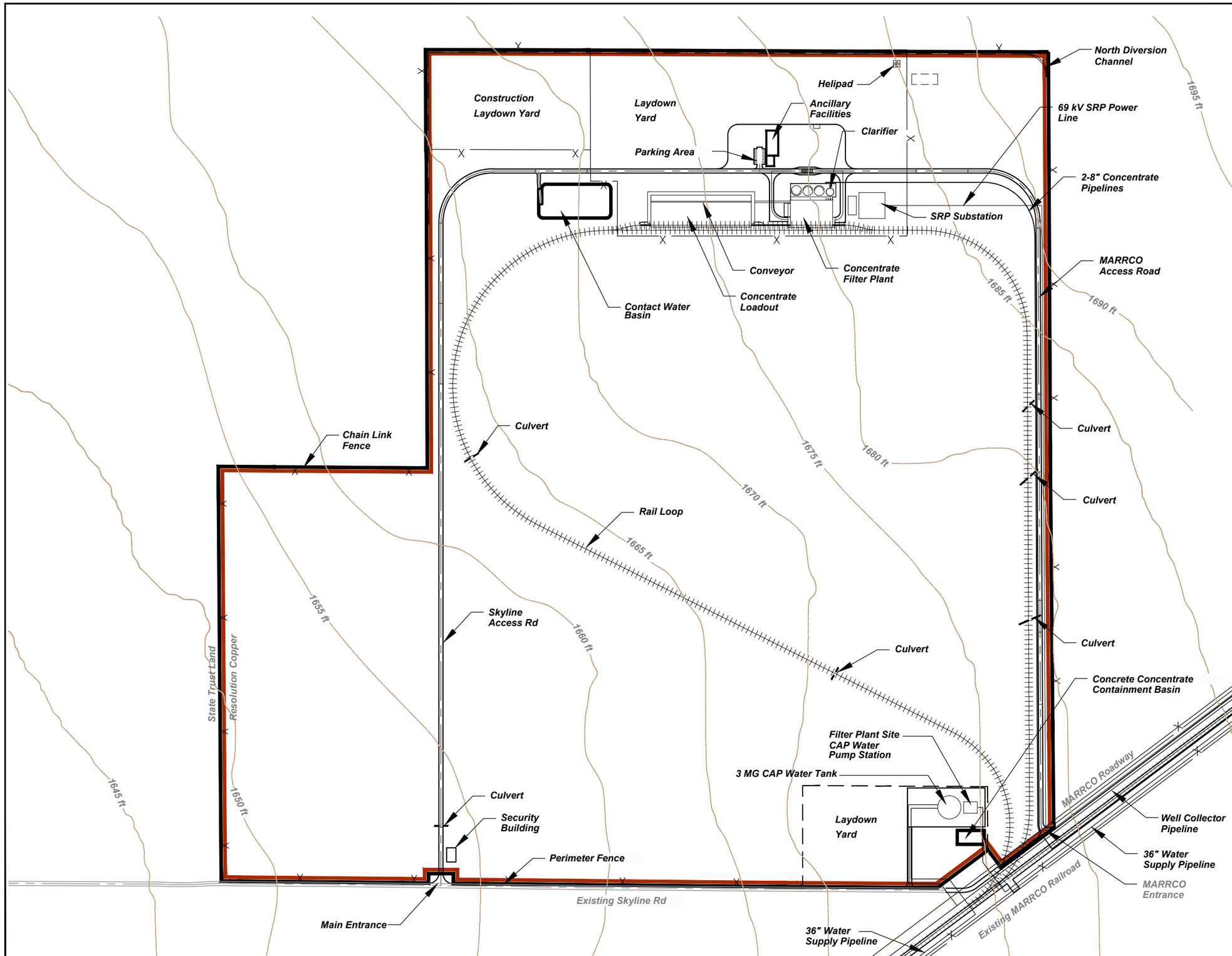


Klohn Crippen Berger
2013

RESOLUTION COPPER
General Plan of Operations

DUST MANAGEMENT PLAN
Figure 3.3-10b

m:\jobs\800's\807.94\env\gpo_responce2tnf\dwg\fig3.3-11_concentrate_load_out_filtration_plant_facilities.dwg



Legend

- Resolution Holdings
- Project Area

N

0 300 600 Feet

0 100 200 Meters

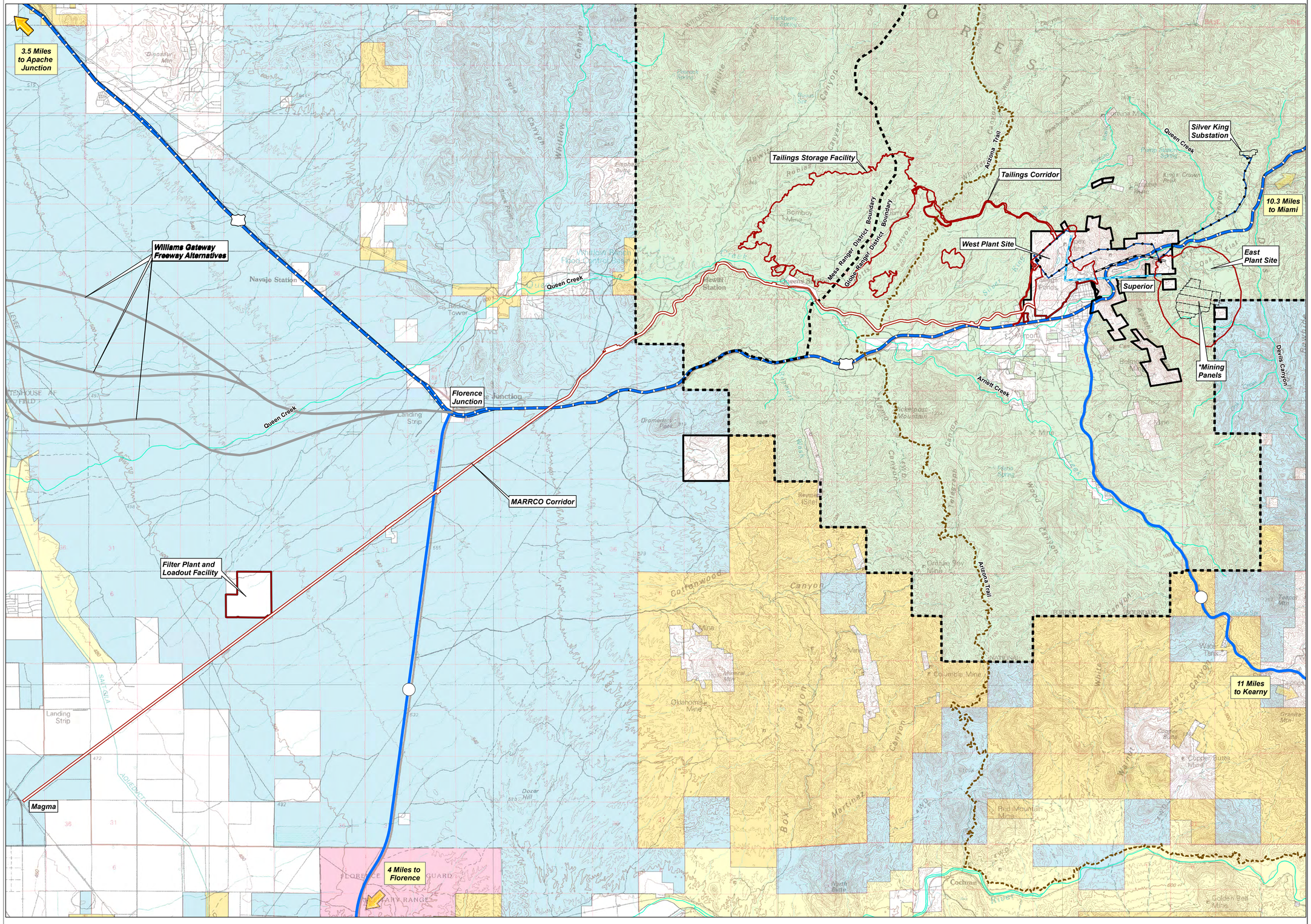
Data Source: Filter Plant and Loadout Facility
Provided by M3 Engineering
April, 2012

Note:
Existing topography to be verified by current survey. All grades shown are subject to change.

RESOLUTION COPPER
General Plan of Operations

FILTER PLANT AND
LOADOUT FACILITY
Figure 3.3-11

Path: M:\Jobs\800's\807.94\ENV\GPO_Response2TNF\MXD\Fig3.4-1_Reg_Trans_Corridor.mxd



Legend

- Resolution Holdings
- Project Area
- Power Line
- Conveyor/Infrastructure Tunnel
- Existing Never Sweat Tunnel
- U.S. Highway
- State Highway
- Proposed Roads
- Arizona Trail (ESRI Online Data)
- Tonto National Forest Ranger District Boundary

* Note: Mine Panel Configuration Subject to Change.

Surface Management (Source: BLM 2011)

- Bureau of Land Management (BLM)
- Bureau of Reclamation
- Military
- Private Land
- State Trust Land
- US Forest Service (USFS)

Image Source: Mesa 1:100,000 USGS Quadrangle

N

0 1 2 Miles

0 2 4 Kilometers

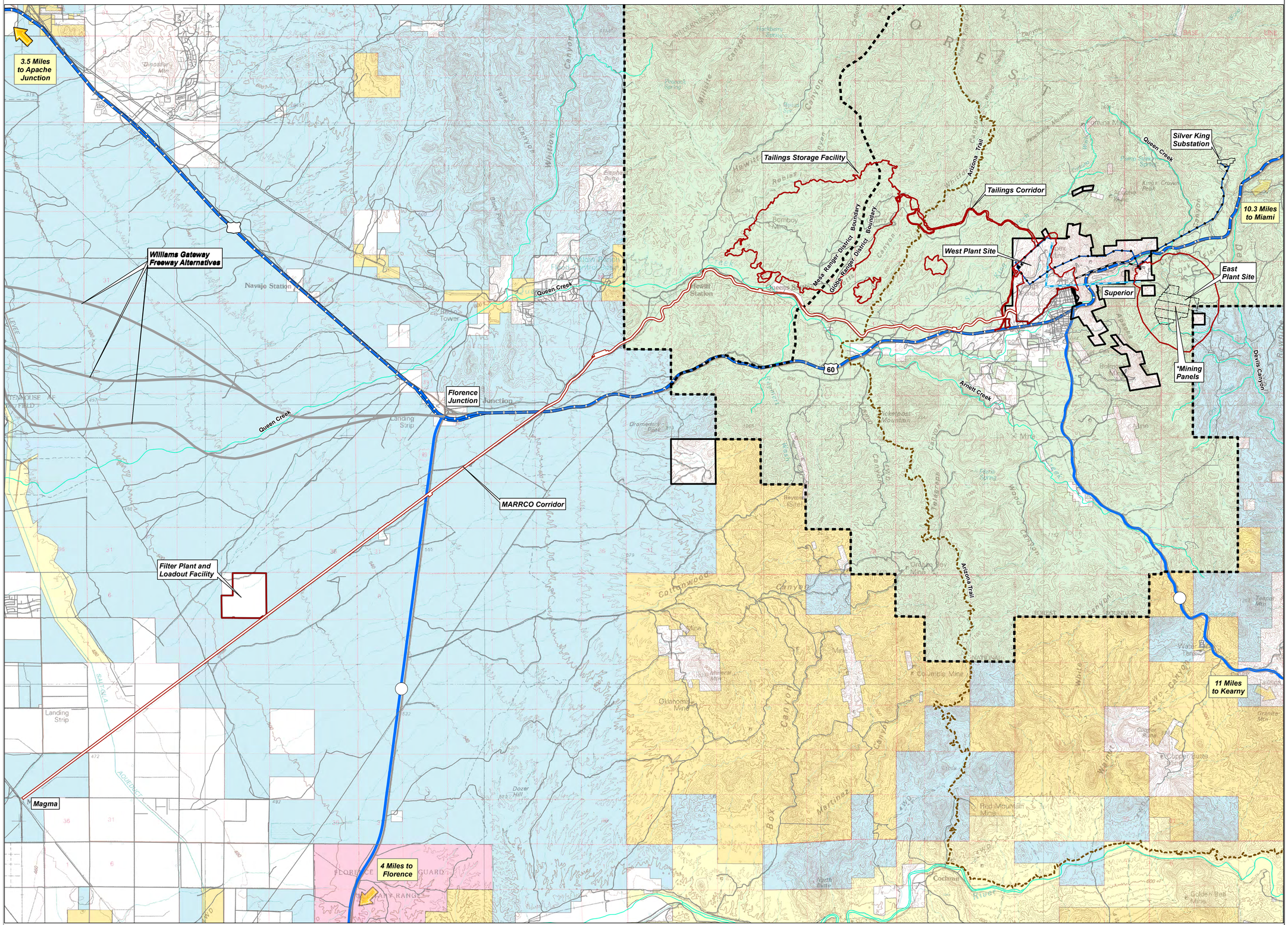
Note: This figure is designed to be plotted at 24" x 36". All map elements may not be legible at other plot sizes.

RESOLUTION COPPER
General Plan of Operations

REGIONAL TRANSPORTATION CORRIDORS

Figure 3.4-1

Path: M:\Jobs\800's\807.94\ENV\GPO_Response2TNF\MXD\Fig3.4-2_Travel_Supplies_Products.mxd



Legend

- Resolution Holdings
- Project Area
- Power Line
- Conveyor/Infrastructure Tunnel
- Existing Never Sweat Tunnel
- U.S. Highway
- State Highway
- Proposed Roads
- Other Roads
- Arizona Trail (ESRI Online Data)
- Tonto National Forest Ranger District Boundary

* Note: Mine Panel Configuration Subject to Change.

Surface Management (Source: BLM 2011)

- Bureau of Land Management (BLM)
- Bureau of Reclamation
- Military
- Private Land (No Color)
- State Trust Land
- US Forest Service (USFS)

Data Source: ALRIS Highways & Pinal County Roads

Image Source: Mesa 1:100,000 USGS Quadrangle

N

0 1 2 Miles

0 2 4 Kilometers

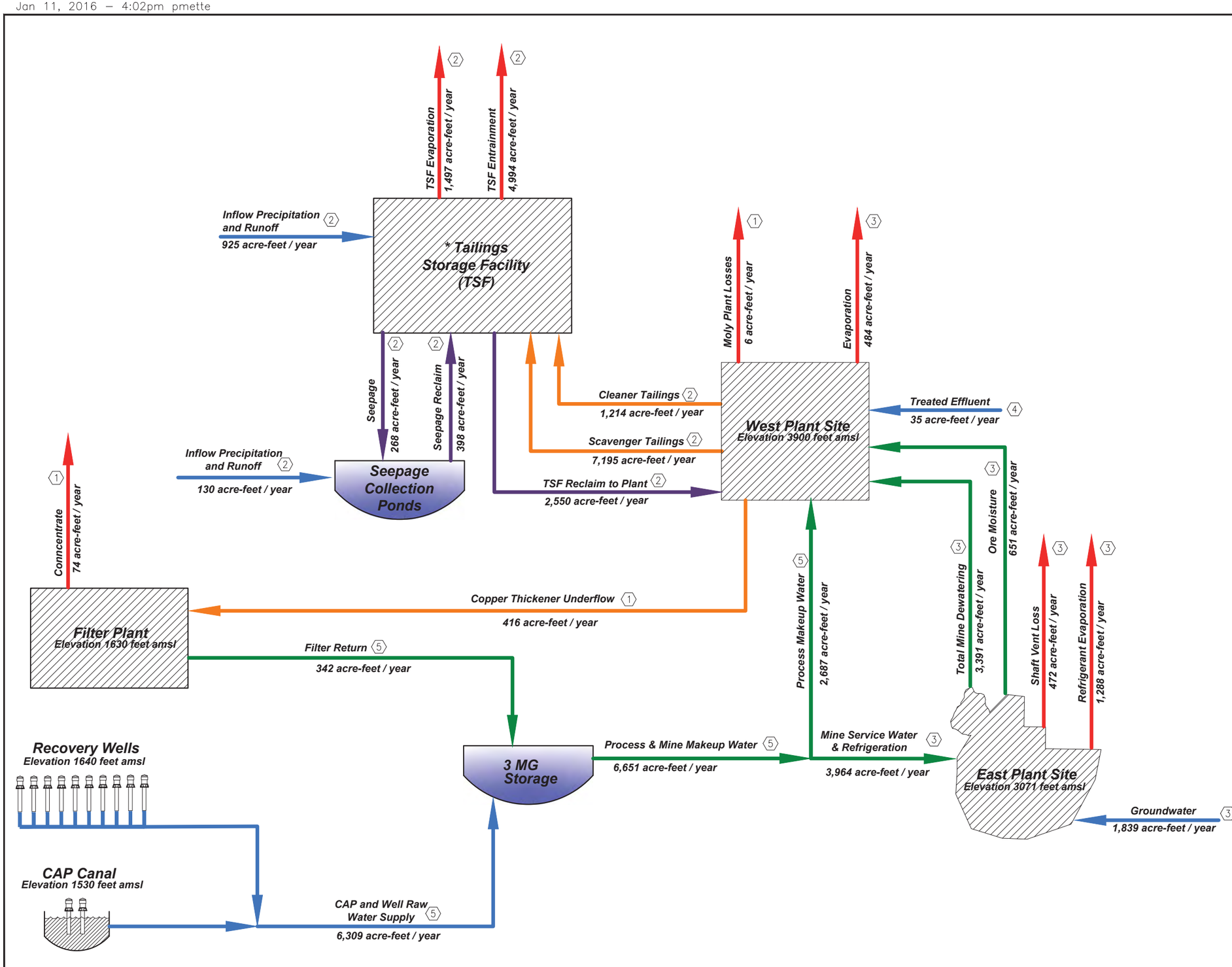
Note: This figure is designed to be plotted at 24" x 36". All map elements may not be legible at other plot sizes.

RESOLUTION COPPER
General Plan of Operations

TRAVEL ROUTES FOR SUPPLIES, PRODUCTS AND PERSONNEL

Figure 3.4-2

Jan 11, 2016 – 4:02pm pmette



LEGEND

- Storage
- Facilities
- Process Water
- Slurry
- Reclaimed Water
- Lost Water
- Inflow/Groundwater

1. Values obtained from M3 Plant Process Flow Sheets dated 03 May 2013
2. Values obtained from Klohn-Crippen-Berger Mine Plan of Operations Study for Near West Tailings Management 2014
3. Values from RCM estimates provided to WestLand
4. Values based on WestLand Resources estimates of wastewater treatment demands
5. Values derived by WestLand from known values

* TSF flows do not balance due to changes in storage volume over time.

Note: Flow values are annualized and do not represent instantaneous flow rates.

amsl = above mean sea level

General Plan of Operations
Initial Submittal: November 2013
Revised: September 23, 2014
Figure 3.6-1a
Page Modified: January 12, 2016

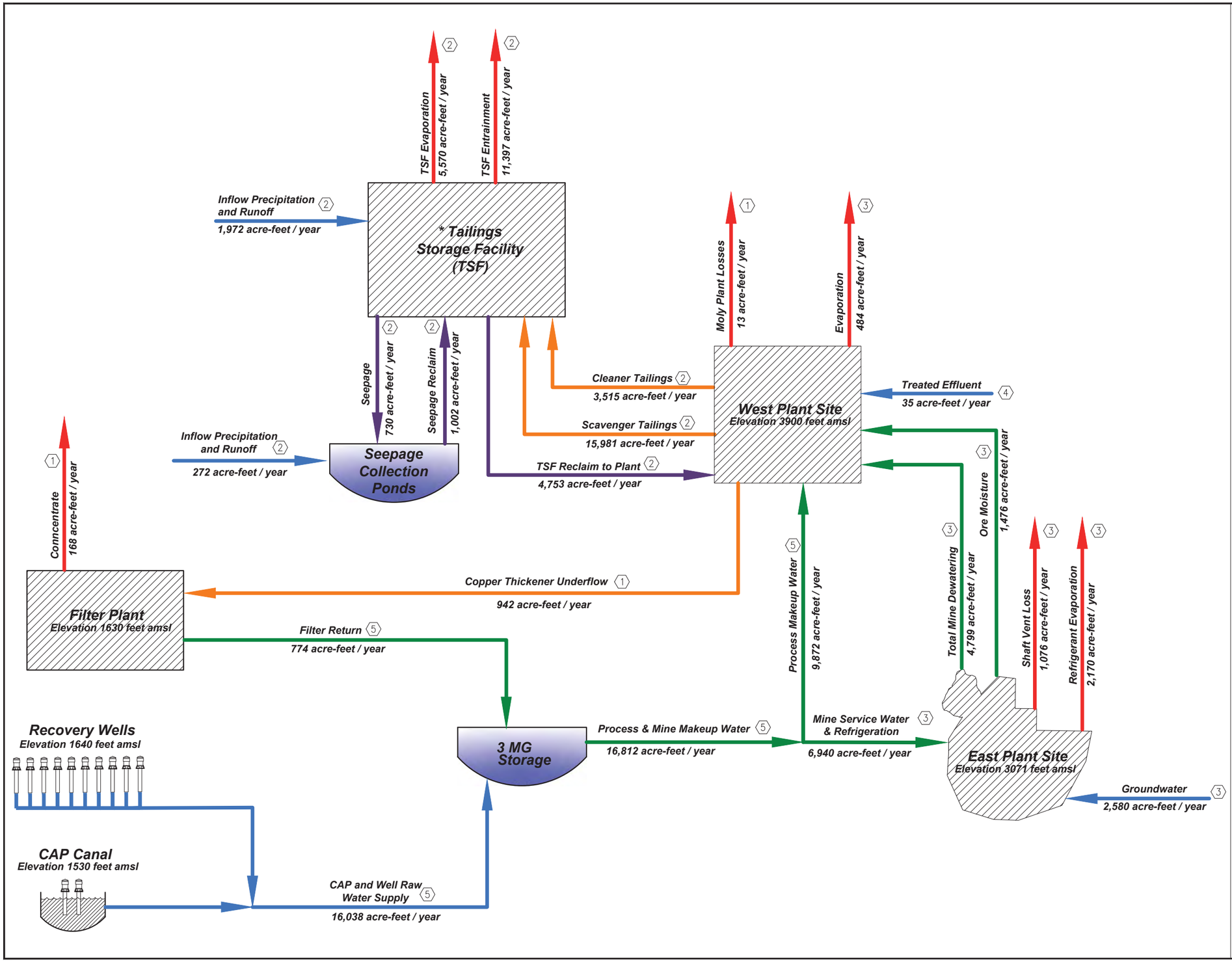
Not To Scale

WestLand Resources, Inc.
Engineering and Environmental Consultants

RESOLUTION COPPER MINING
General Plan of Operations

PROCESS WATER SUPPLY AND BALANCE
YEAR 1-7
Figure 3.6-1a

Jan 11, 2016 – 4:02pm pmette



LEGEND

- Storage
- Facilities
- Process Water
- Slurry
- Reclaimed Water
- Lost Water
- Inflow/Groundwater

1. Values obtained from M3 Plant Process Flow Sheets dated 03 May 2013
2. Values obtained from Klohn-Crippen-Berger Mine Plan of Operations Study for Near West Tailings Management 2014
3. Values from RCM estimates provided to WestLand
4. Values based on WestLand Resources estimates of wastewater treatment demands
5. Values derived by WestLand from known values

* TSF flows do not balance due to changes in storage volume over time.

Note: Flow values are annualized and do not represent instantaneous flow rates.

amsl = above mean sea level

General Plan of Operations
Initial Submittal: November 2013
Revised: September 23, 2014
Figure 3.6-1b
Page Modified: January 12, 2016

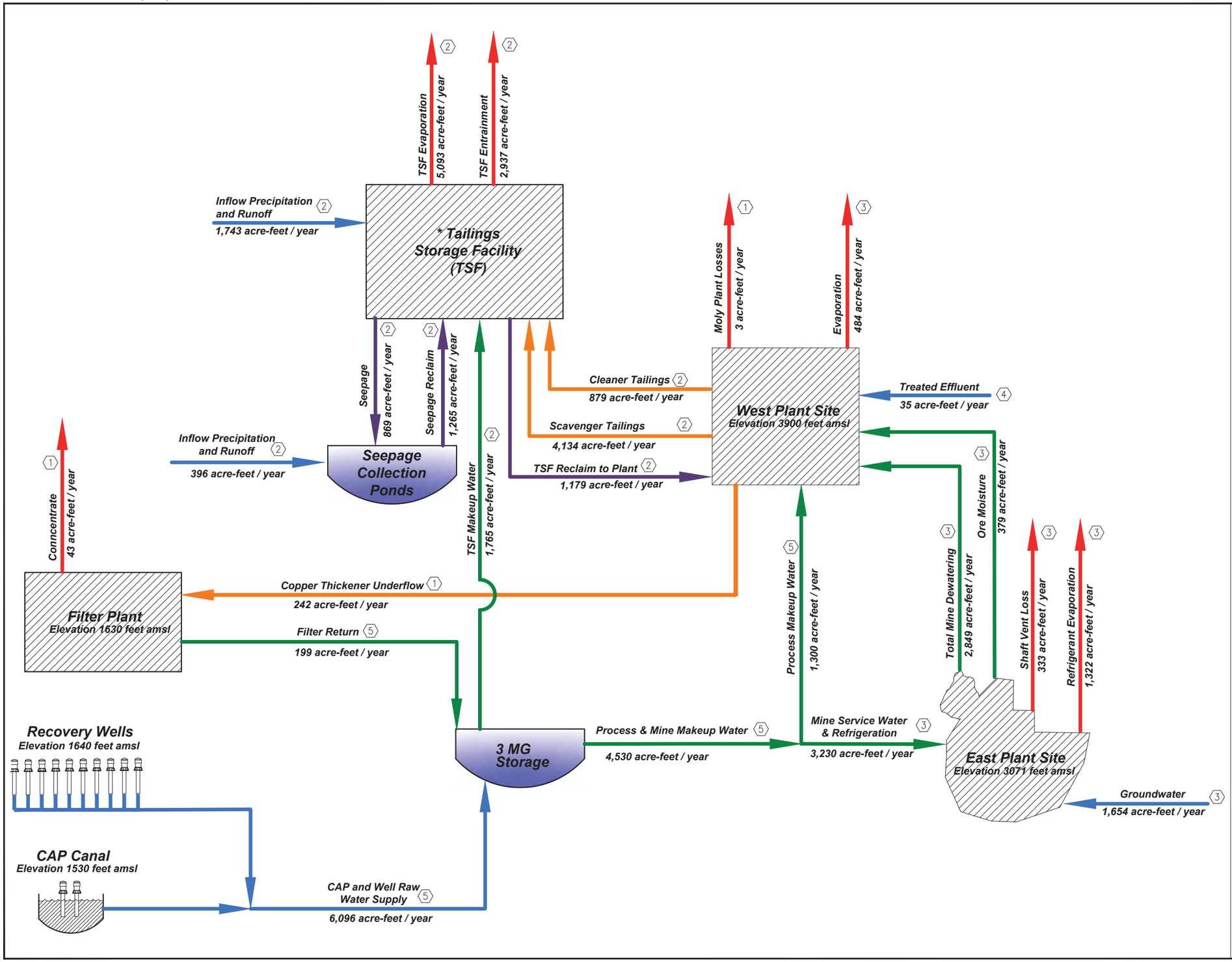
Not To Scale

WestLand Resources, Inc.
Engineering and Environmental Consultants

RESOLUTION COPPER MINING
General Plan of Operations

PROCESS WATER SUPPLY AND BALANCE
YEAR 8-36
Figure 3.6-1b

Jan 11, 2016 – 4:04pm pmette



LEGEND

- Storage
- Facilities
- Process Water
- Slurry
- Reclaimed Water
- Lost Water
- Inflow/Groundwater

1. Values obtained from M3 Plant Process Flow Sheets dated 03 May 2013
2. Values obtained from Klohn-Crippen-Berger Mine Plan of Operations Study for Near West Tailings Management 2014
3. Values from RCM estimates provided to WestLand
4. Values based on WestLand Resources estimates of wastewater treatment demands
5. Values derived by WestLand from known values

* TSF flows do not balance due to changes in storage volume over time.

Note: Flow values are annualized and do not represent instantaneous flow rates.

amsl = above mean sea level

General Plan of Operations
Initial Submittal: November 2013
Revised: September 23, 2014
Figure 3.6-1c
Page Modified: January 12, 2016

Not To Scale

WestLand Resources, Inc.
Engineering and Environmental Consultants

RESOLUTION COPPER MINING
General Plan of Operations

PROCESS WATER SUPPLY AND BALANCE
YEAR 37-45
Figure 3.6-1c

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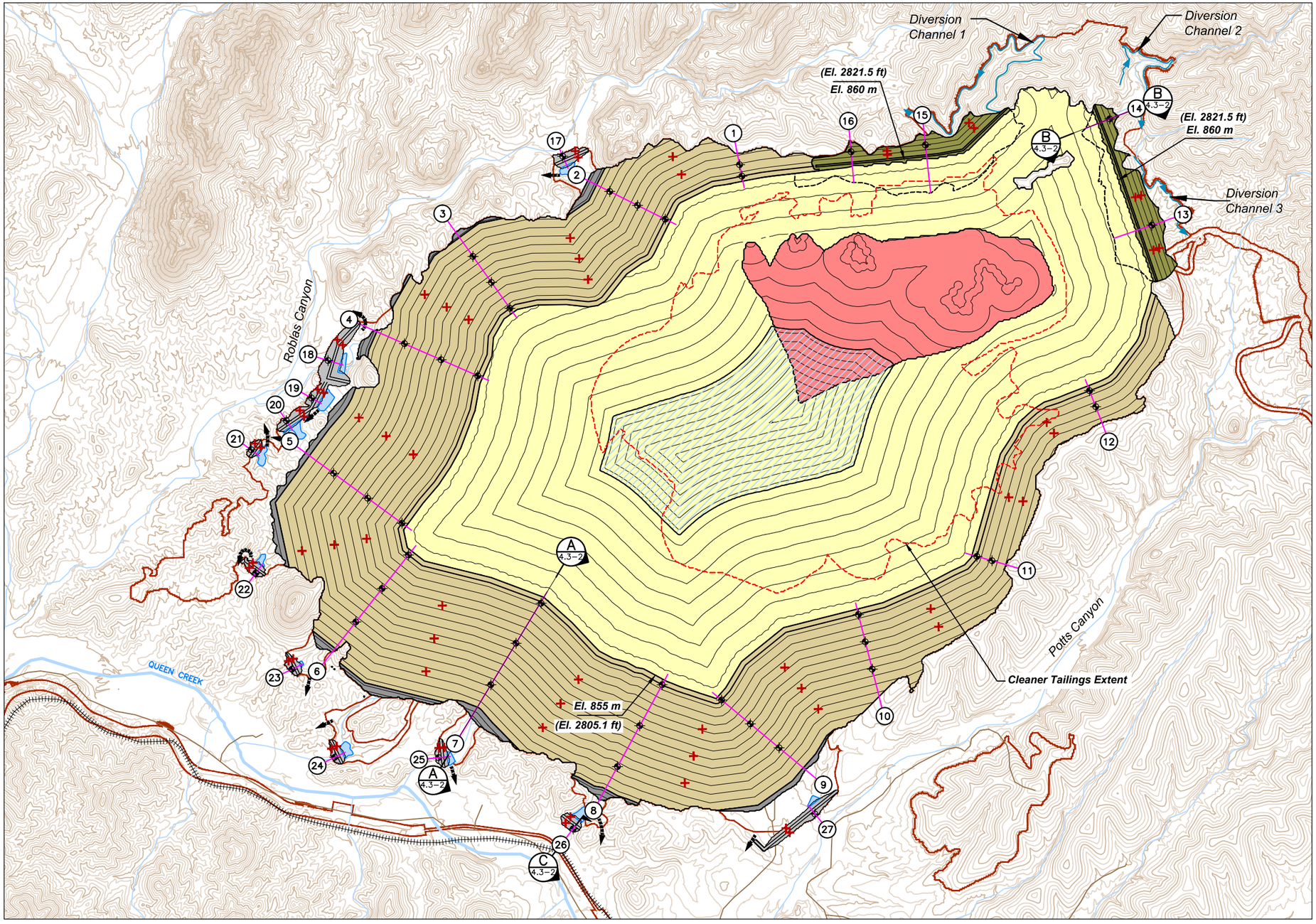

Legend

- Project Area
- Piezometers
- Displacement Survey Pins
- Geotechnical Instrumentation Line
- Diversion Channel
- Spillway
- Railway
- Existing Road
- Stream
- Seepage Collection Dam (SCD)
- Upstream Embankment Raise Fill
- Starter Dam
- Thickened Scavenger Tailings
- Thickened Cleaner Tailings
- North Dams
- TSF Reclaim Pond
- Seepage Collection Dam Pond

Topography Based on 1 m (3.3 ft) Interval Contours Received From Resolution January, 2013.

N

0 1,000 2,000 Feet

0 500 Meters

Klohn Crippen Berger
2014

RESOLUTION COPPER
General Plan of Operations

INSTRUMENTATION PLAN YEAR 45

Figure 4.3-1

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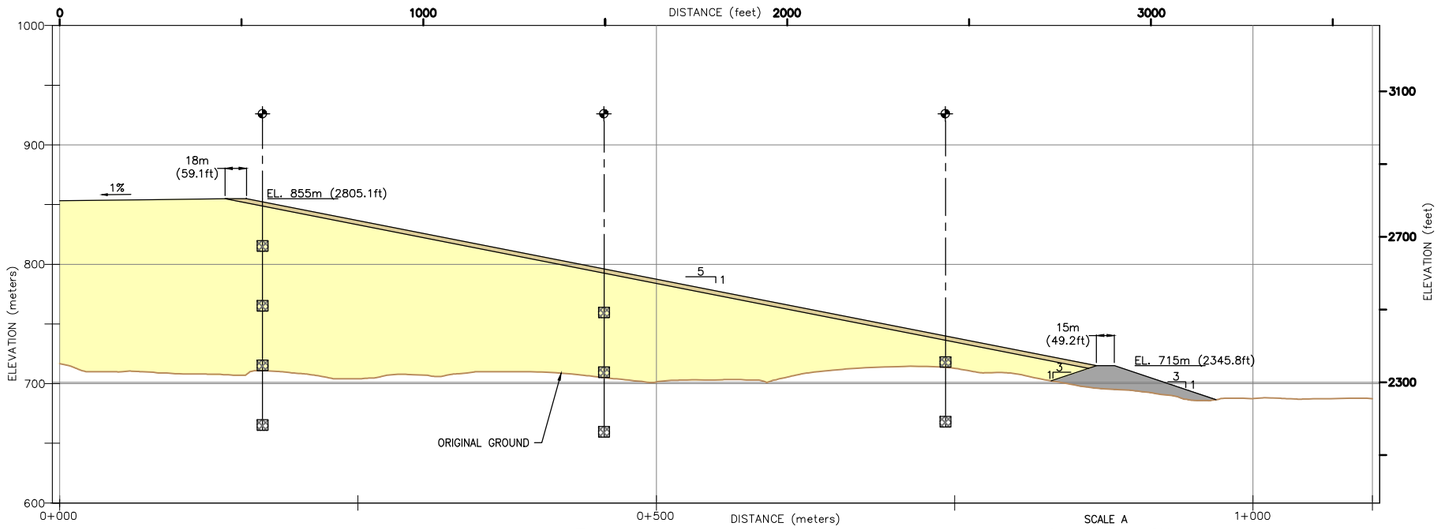
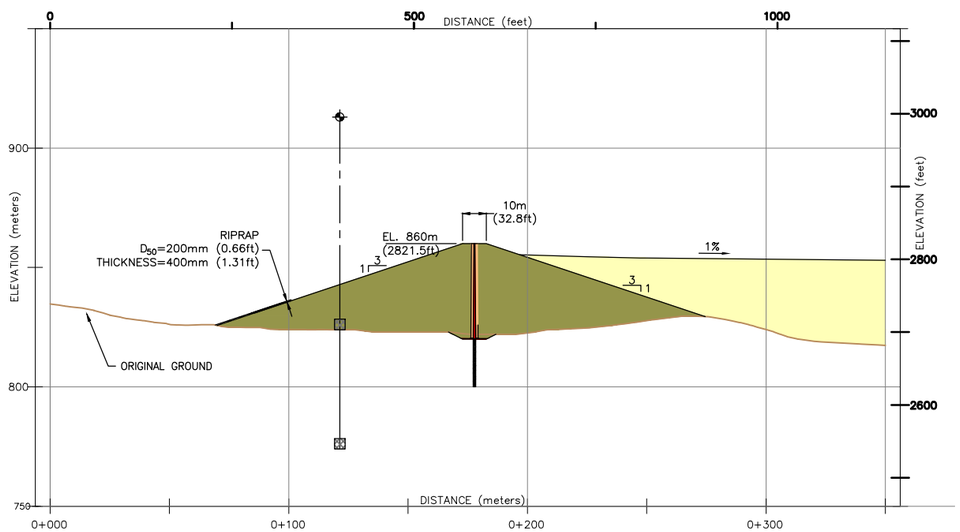


SECTION A 4.3-1 TYPICAL EMBANKMENT SECTION
SCALE A

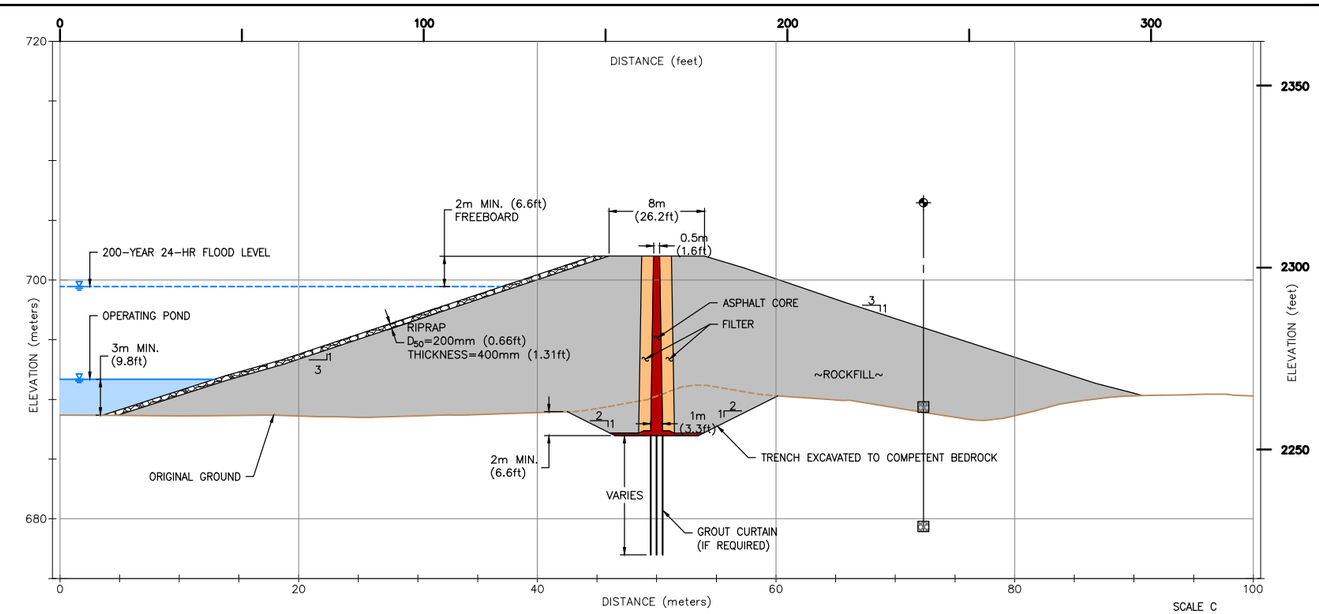
Legend

- Piezometer
- Piezometer Well Screen
- Upstream Embankment Raise Fill
- Starter Dam
- Seepage Collection Dam (SCD)
- Thickened Scavenger Tailings
- North Dam



SECTION B 4.3-1 TYPICAL NORTH DAM SECTION
SCALE B

SCALE B
0 150 Feet
0 50 Meters



SECTION C 4.3-1 TYPICAL SEEPAGE COLLECTION DAM SECTION
SCALE C

0 30 Feet
0 10 Meter

Klohn Crippen Berger
2014

RESOLUTION COPPER
General Plan of Operations

INSTRUMENTATION TYPICAL SECTIONS
Figure 4.3-2

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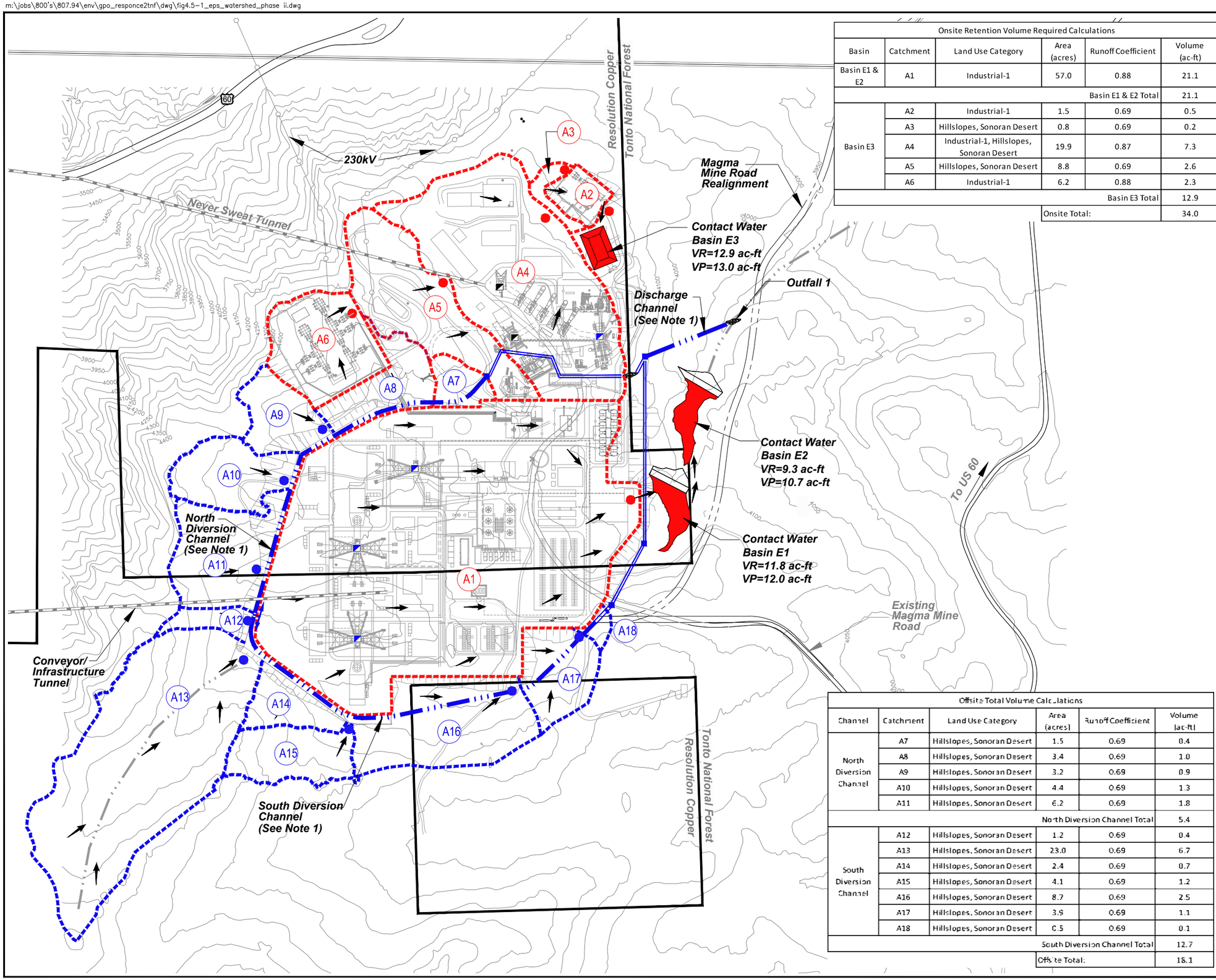

Onsite Retention Volume Required Calculations					
Basin	Catchment	Land Use Category	Area (acres)	Runoff Coefficient	Volume (ac-ft)
Basin E1 & E2	A1	Industrial-1	57.0	0.88	21.1
				Basin E1 & E2 Total	21.1
Basin E3	A2	Industrial-1	1.5	0.69	0.5
	A3	Hillslopes, Sonoran Desert	0.8	0.69	0.2
	A4	Industrial-1, Hillslopes, Sonoran Desert	19.9	0.87	7.3
	A5	Hillslopes, Sonoran Desert	8.8	0.69	2.6
	A6	Industrial-1	6.2	0.88	2.3
				Basin E3 Total	12.9
			Onsite Total:		34.0

Offsite Total Volume Calculations					
Channel	Catchment	Land Use Category	Area (acres)	Runoff Coefficient	Volume (ac-ft)
North Diversion Channel	A7	Hillslopes, Sonoran Desert	1.5	0.69	0.4
	A8	Hillslopes, Sonoran Desert	3.4	0.69	1.0
	A9	Hillslopes, Sonoran Desert	3.2	0.69	0.9
	A10	Hillslopes, Sonoran Desert	4.4	0.69	1.3
	A11	Hillslopes, Sonoran Desert	6.2	0.69	1.8
				North Diversion Channel Total	5.4
South Diversion Channel	A12	Hillslopes, Sonoran Desert	1.2	0.69	0.4
	A13	Hillslopes, Sonoran Desert	23.0	0.69	6.7
	A14	Hillslopes, Sonoran Desert	2.4	0.69	0.7
	A15	Hillslopes, Sonoran Desert	4.1	0.69	1.2
	A16	Hillslopes, Sonoran Desert	8.7	0.69	2.5
	A17	Hillslopes, Sonoran Desert	3.9	0.69	1.1
	A18	Hillslopes, Sonoran Desert	0.5	0.69	0.1
				South Diversion Channel Total	12.7
			Offsite Total:		18.1

Legend

- Resolution Holdings
- Existing Mine Shaft
- Mine Shaft
- Onsite Concentration Point
- Offsite Concentration Point
- A2 Onsite Catchment
- A2 Offsite Catchment
- Onsite Watershed Boundary
- Offsite Watershed Boundary
- Non-Contact Buried Culvert
- Non-Contact Water Channel/Drainage
- Existing Drainage
- Drainage Vault
- VR = Volume Required
- VP= Volume Provided
- Direction of Surface Flow

N

0 250 500 Feet

0 100 200 Meters

Data Source: East Plant Facilities
Provided by AMEC
2012

Note 1: Route Non-Contact Water to Existing Drainage Downstream of Contact Water Basins E1 & E2

RESOLUTION COPPER
General Plan of Operations

EAST PLANT SITE
STORMWATER MANAGEMENT
Figure 4.5-1

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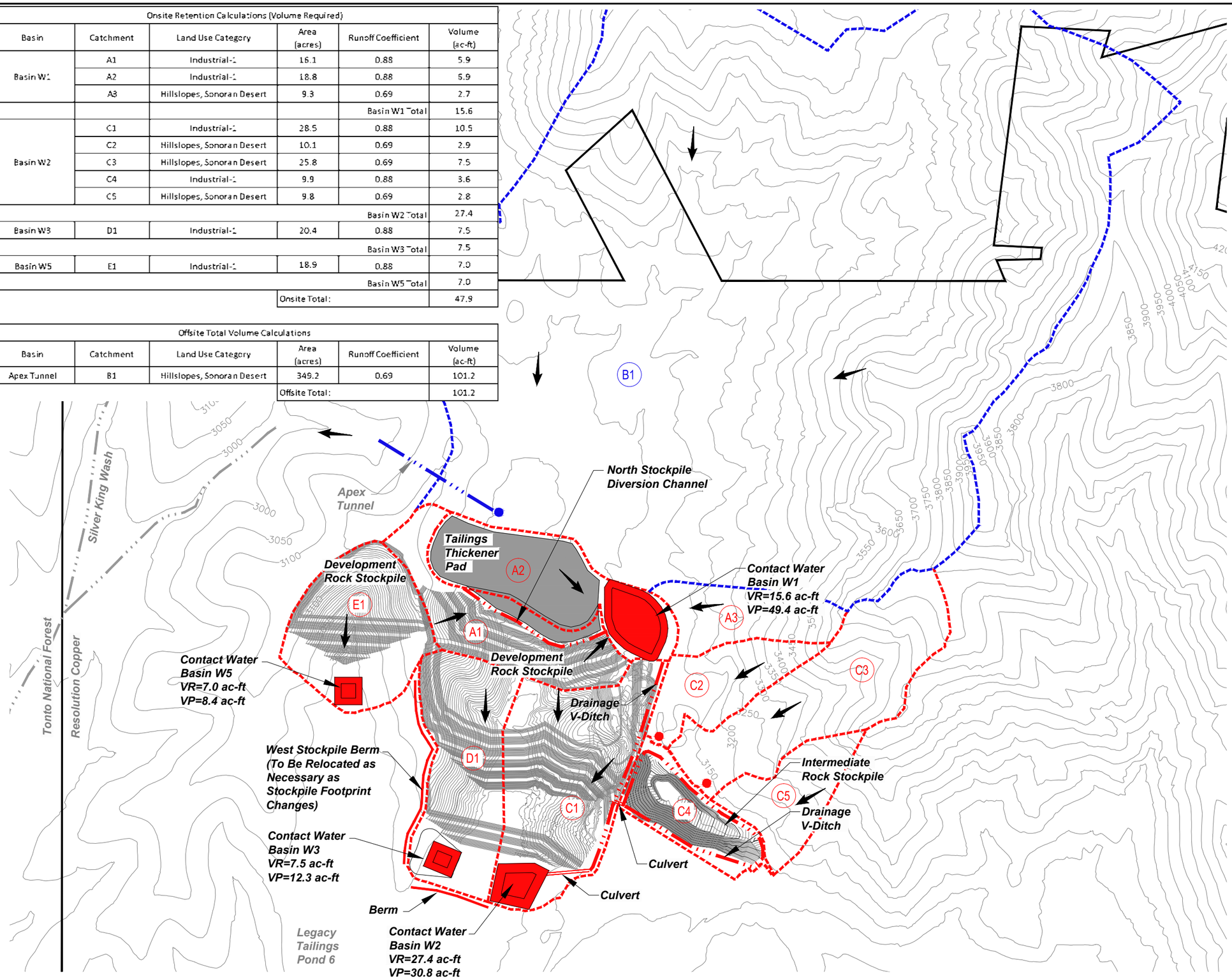
Onsite Retention Calculations (Volume Required)					
Basin	Catchment	Land Use Category	Area (acres)	Runoff Coefficient	Volume (ac-ft)
Basin W1	A1	Industrial-1	16.1	0.88	5.9
	A2	Industrial-1	18.8	0.88	6.9
	A3	Hillslopes, Sonoran Desert	9.3	0.69	2.7
				Basin W1 Total	15.6
Basin W2	C1	Industrial-1	28.5	0.88	10.5
	C2	Hillslopes, Sonoran Desert	10.1	0.69	2.9
	C3	Hillslopes, Sonoran Desert	25.8	0.69	7.5
	C4	Industrial-1	9.9	0.88	3.6
	C5	Hillslopes, Sonoran Desert	9.8	0.69	2.8
				Basin W2 Total	27.4
Basin W3	D1	Industrial-1	20.4	0.88	7.5
				Basin W3 Total	7.5
Basin W5	E1	Industrial-1	18.9	0.88	7.0
				Basin W5 Total	7.0
			Onsite Total:		47.9

Offsite Total Volume Calculations					
Basin	Catchment	Land Use Category	Area (acres)	Runoff Coefficient	Volume (ac-ft)
Apex Tunnel	B1	Hillslopes, Sonoran Desert	349.2	0.69	101.2
			Offsite Total:		101.2



Legend

- Resolution Holdings
- Onsite Concentration Point
- Offsite Concentration Point
- A2 Onsite Catchment
- A2 Offsite Catchment
- Onsite Watershed Boundary
- Offsite Watershed Boundary
- Contact Water Buried Culvert
- Non-Contact Water Channel/Drainage
- Contact Water Channel/Drainage
- Contact Water Berm
- Existing Drainage
- VR = Volume Required
- VP= Volume Provided
- Direction of Surface Flow

N

0 300 600 Feet

0 100 200 Meters

Data Source:
West Plant Facilities
Provided by M3 Engineering
July 10, 2013

Development Rock Stockpile
Provided by Resolution Copper 2013

Intermediate Rock Stockpile
Provided by Golder Associates 2012

RESOLUTION COPPER
General Plan of Operations

WEST PLANT SITE
STOCKPILE STORMWATER MANAGEMENT
Figure 4.5-2

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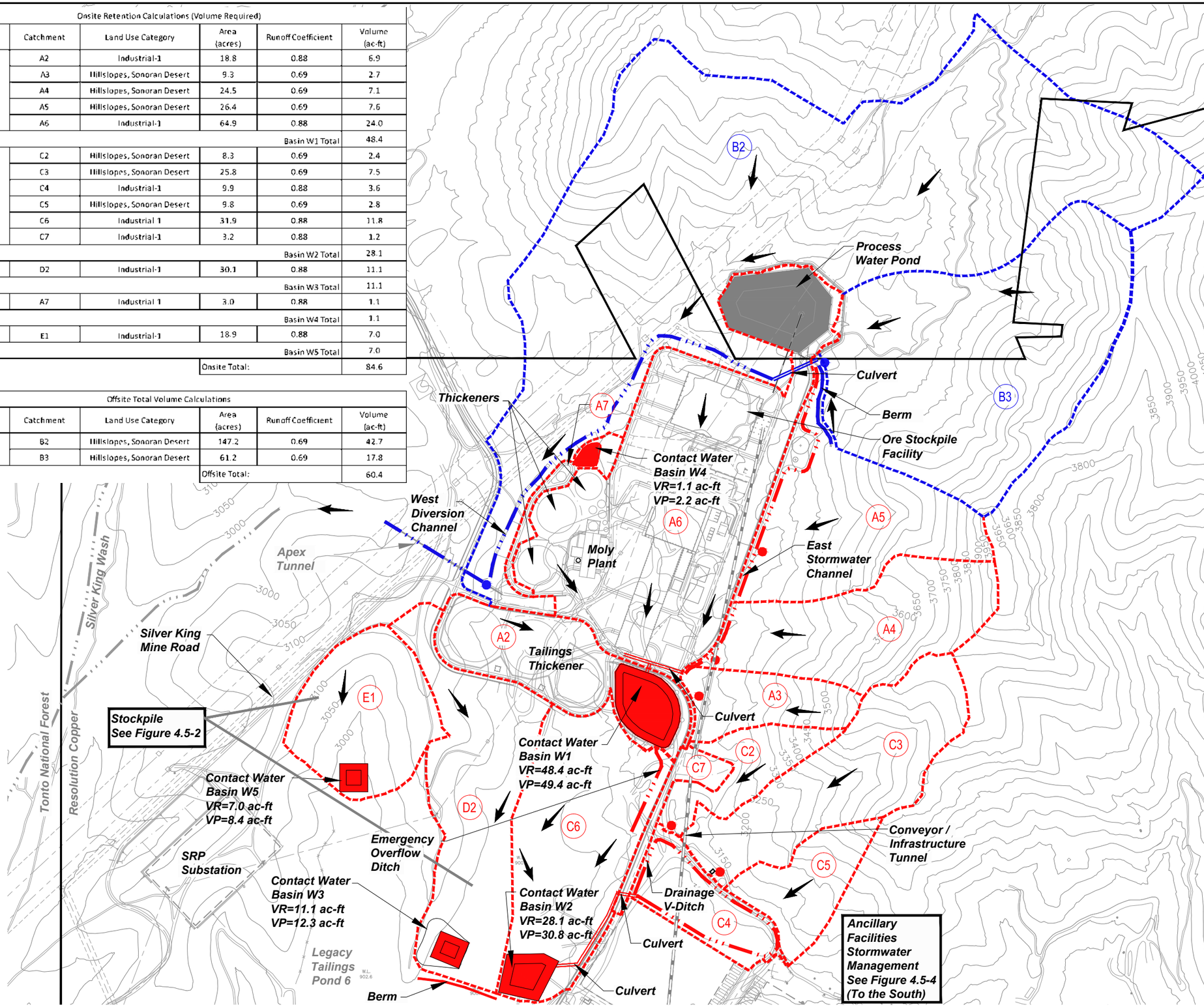
Onsite Retention Calculations (Volume Required)					
Basin	Catchment	Land Use Category	Area (acres)	Runoff Coefficient	Volume (ac-ft)
Basin W1	A2	Industrial-1	18.8	0.88	6.9
	A3	Hillslopes, Sonoran Desert	9.3	0.69	2.7
	A4	Hillslopes, Sonoran Desert	24.5	0.69	7.1
	A5	Hillslopes, Sonoran Desert	26.4	0.69	7.6
	A6	Industrial-1	64.9	0.88	24.0
				Basin W1 Total	48.4
Basin W2	C2	Hillslopes, Sonoran Desert	8.3	0.69	2.4
	C3	Hillslopes, Sonoran Desert	25.8	0.69	7.5
	C4	Industrial-1	9.9	0.88	3.6
	C5	Hillslopes, Sonoran Desert	9.8	0.69	2.8
	C6	Industrial 1	31.9	0.88	11.8
	C7	Industrial-1	3.2	0.88	1.2
				Basin W2 Total	28.1
Basin W3	D2	Industrial-1	30.1	0.88	11.1
				Basin W3 Total	11.1
Basin W4	A7	Industrial 1	3.0	0.88	1.1
				Basin W4 Total	1.1
Basin W5	E1	Industrial-1	18.9	0.88	7.0
				Basin W5 Total	7.0
			Onsite Total:		84.6

Offsite Total Volume Calculations					
Basin	Catchment	Land Use Category	Area (acres)	Runoff Coefficient	Volume (ac-ft)
West Diversion Channel	B2	Hillslopes, Sonoran Desert	147.2	0.69	42.7
	B3	Hillslopes, Sonoran Desert	61.2	0.69	17.8
			Offsite Total:		60.4



Legend

- Resolution Holdings
- Onsite Concentration Point
- Offsite Concentration Point
- A2 Onsite Catchment
- A2 Offsite Catchment
- Onsite Watershed Boundary
- Offsite Watershed Boundary
- Non-Contact Buried Culvert
- Contact Water Buried Culvert
- Non-Contact Water Channel/Drainage
- Contact Water Channel/Drainage
- Non-Contact Water Berm
- Contact Water Berm
- Existing Drainage
- VR = Volume Required
- VP= Volume Provided
- Direction of Surface Flow

N

0 300 600 Feet

0 100 200 Meters

Data Source:
West Plant Site Facilities
Provided by M3 Engineering
July 10, 2013

RESOLUTION COPPER
General Plan of Operations

WEST PLANT SITE
CONCENTRATOR COMPLEX STORMWATER MANAGEMENT
Figure 4.5-3

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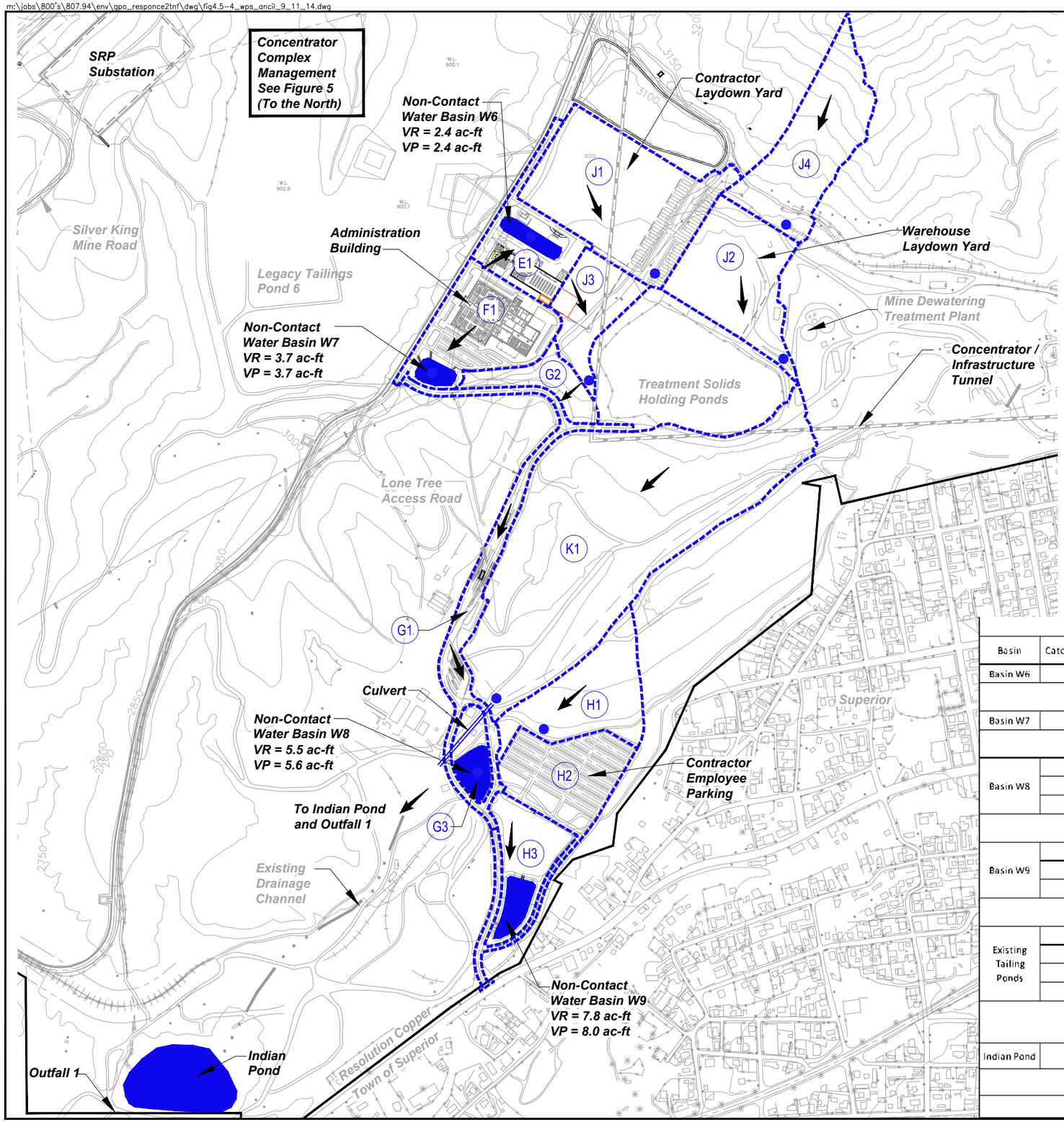

Legend

- Resolution Holdings
- Offsite Concentration Point
- A2 Offsite Catchment
- Offsite Watershed Boundary
- Non-Contact Buried Culvert
- Existing Drainage
- VR = Volume Required
- VP= Volume Provided
- Direction of Surface Flow

N

0 300 600 Feet

0 100 200 Meters

Offsite Retention Calculations (Volume Required)

Basin	Catchment	Land Use Category	Area (acres)	Runoff Coefficient	Volume (ac-ft)
Basin W6	E1	Industrial-1	6.6	0.88	2.4
				Basin W6 Total	2.4
Basin W7	F1	Industrial-1	10.0	0.88	3.6
				Basin W7 Total	3.6
Basin W8	G1	Industrial-1	7.9	0.88	2.9
	G2	Hillslopes, Sonoran Desert	3.4	0.69	1.0
	G3	Hillslopes, Sonoran Desert	2.5	0.69	0.7
				Basin W8 Total	4.6
Basin W9	H1	Hillslopes, Sonoran Desert	8.9	0.69	2.5
	H2	Industrial-1	9.6	0.88	3.5
	H3	Hillslopes, Sonoran Desert	5.9	0.69	1.7
				Basin W9 Total	7.7
Existing Tailing Ponds	J1	Industrial-1	17.1	0.88	6.2
	J2	Industrial-1	10.8	0.88	3.9
	J3	Industrial-1	5.5	0.88	2.0
	J4	Hillslopes, Sonoran Desert	11.6	0.69	3.3
				Existing Tailing Pond Total	15.4
Indian Pond	K1	Hillslopes, Sonoran Desert	42.3	0.69	12.0
				Indian Pond Total	12.0
				Offsite Total:	45.7

Data Source:
West Plant Site Ancillary Facilities
Provided by M3 Engineering
July 10, 2013

RESOLUTION COPPER
General Plan of Operations

WEST PLANT SITE
ANCILLARY FACILITIES STORMWATER MANAGEMENT
Figure 4.5-4

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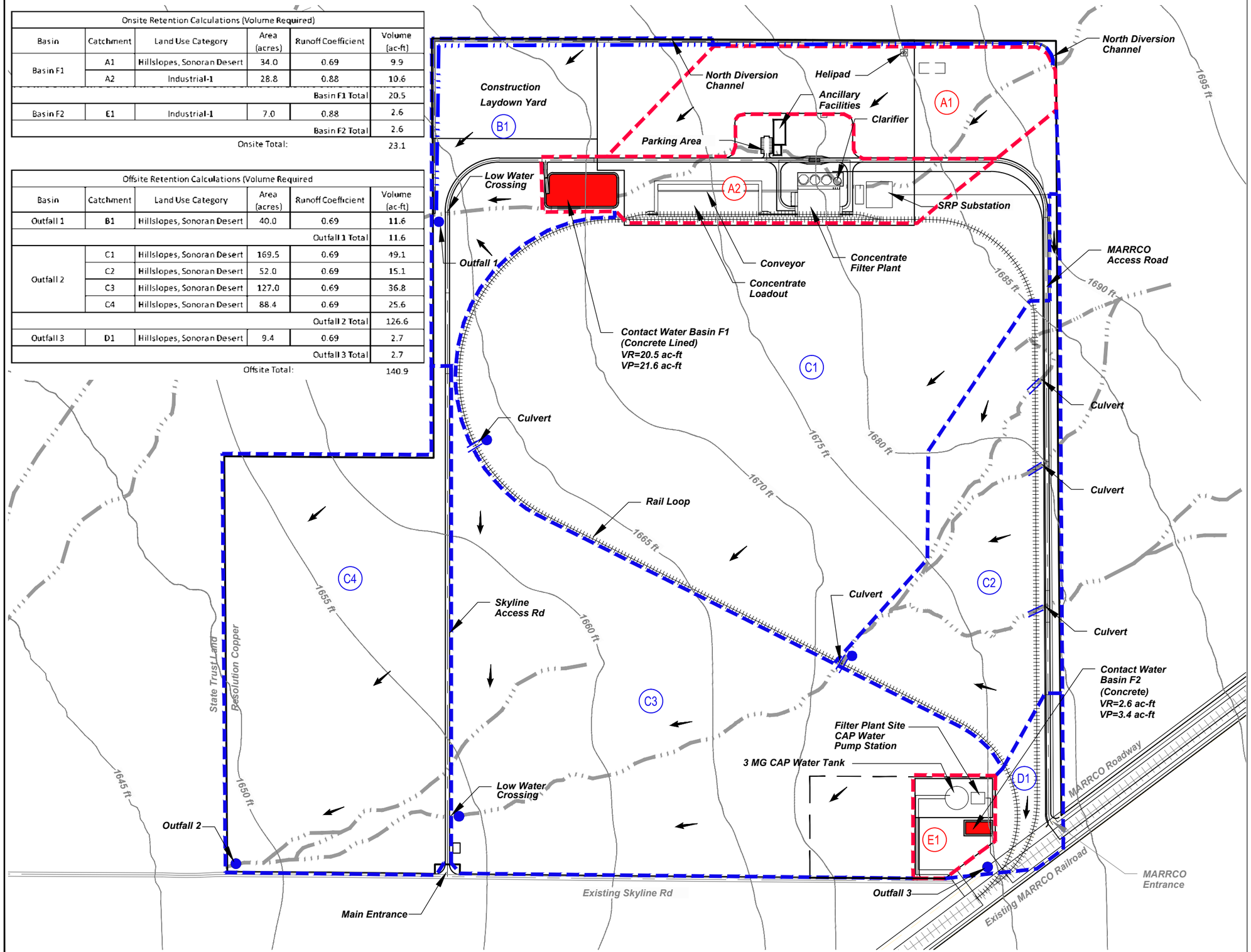
Onsite Retention Calculations (Volume Required)					
Basin	Catchment	Land Use Category	Area (acres)	Runoff Coefficient	Volume (ac-ft)
Basin F1	A1	Hillslopes, Sonoran Desert	34.0	0.69	9.9
	A2	Industrial-1	28.8	0.88	10.6
				Basin F1 Total	20.5
Basin F2	E1	Industrial-1	7.0	0.88	2.6
				Basin F2 Total	2.6
		Onsite Total:			23.1

Offsite Retention Calculations (Volume Required					
Basin	Catchment	Land Use Category	Area (acres)	Runoff Coefficient	Volume (ac-ft)
Outfall 1	B1	Hillslopes, Sonoran Desert	40.0	0.69	11.6
				Outfall 1 Total	11.6
Outfall 2	C1	Hillslopes, Sonoran Desert	169.5	0.69	49.1
	C2	Hillslopes, Sonoran Desert	52.0	0.69	15.1
	C3	Hillslopes, Sonoran Desert	127.0	0.69	36.8
	C4	Hillslopes, Sonoran Desert	88.4	0.69	25.6
				Outfall 2 Total	126.6
Outfall 3	D1	Hillslopes, Sonoran Desert	9.4	0.69	2.7
				Outfall 3 Total	2.7
		Offsite Total:			140.9



Legend

- Resolution Holdings
- Offsite Concentration Point
- A2 Onsite Catchment
- A2 Offsite Catchment
- Onsite Watershed Boundary
- Offsite Watershed Boundary
- Non-Contact Buried Culvert
- Non-Contact Water Channel/Drainage
- Existing Drainage
- VR = Volume Required
- VP= Volume Provided
- Direction of Surface Flow

N

0 300 600 Feet

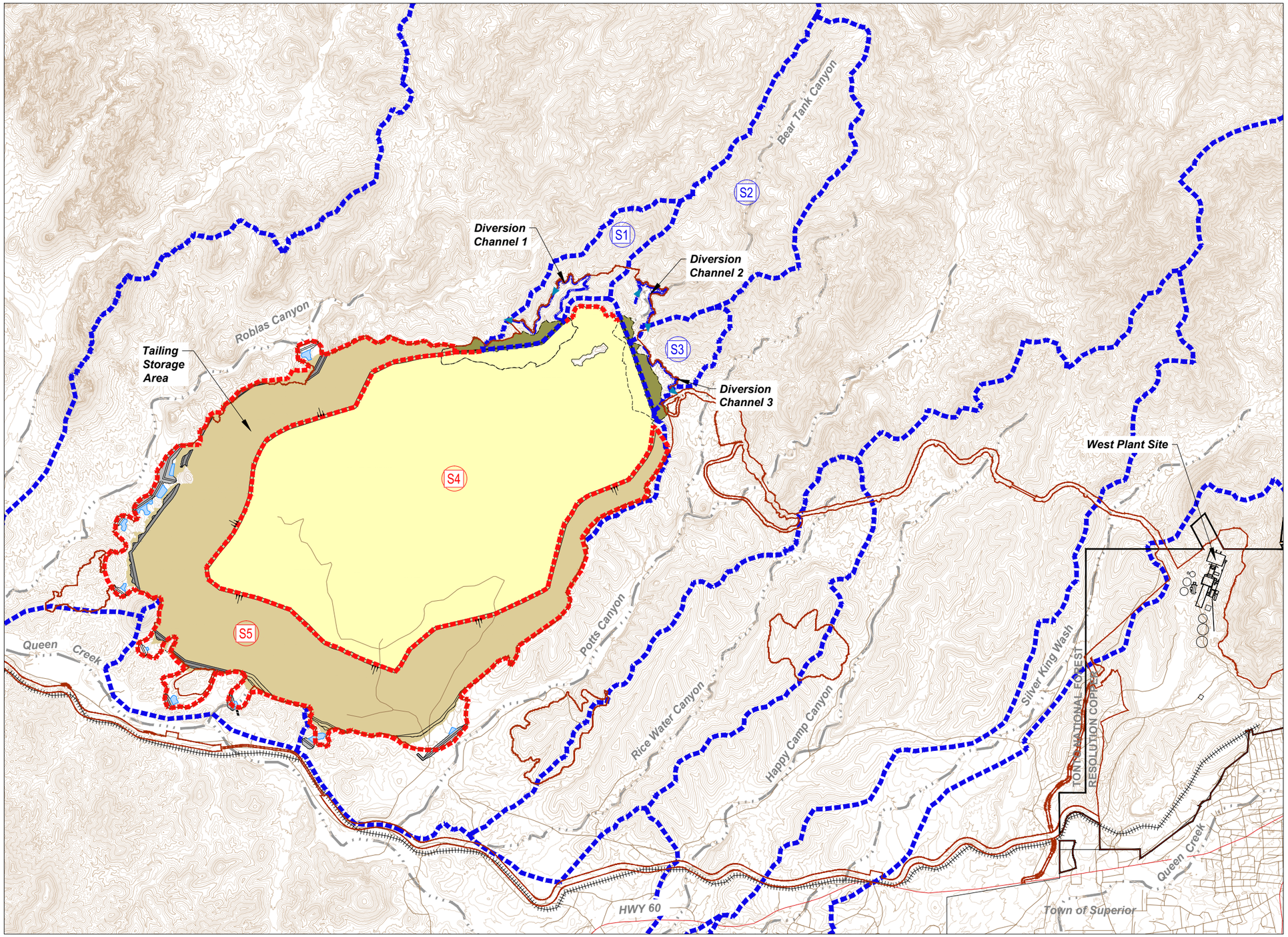
0 100 200 Meters

Note:
Existing topography to be verified by current survey. All grades shown are subject to change.

Data Source:
Filter Plant and Loadout Facility
Provided by M3 Engineering
April, 2012

RESOLUTION COPPER
General Plan of Operations

FILTER PLANT AND LOADOUT FACILITY
STORMWATER MANAGEMENT
Figure 4.5-5



Legend

- Resolution Holdings
- Project Area
- A2 Onsite Catchment
- A2 Offsite Catchment
- Onsite Watershed Boundary
- Offsite Watershed Boundary
- Existing Drainage
- Upstream Embankment Raise Fill
- Starter Dam
- Thickened Scavenger Tailings
- North Dams
- Seepage Collection Dam Pond

Topography Based on 1 Meter (3.3 Foot) Interval Contours Received From Resolution January, 2013.

Sub-Catchments	Area (mi²)
S1	0.33
S2	1.27
S3	0.26

N

0 1,500 3,000 Feet

0 500 1,000 Meters

Klohn Crippen Berger

2013

RESOLUTION COPPER

General Plan of Operations

TAILINGS STORAGE FACILITY
LOCAL CATCHMENT AREAS
Figure 4.5-6

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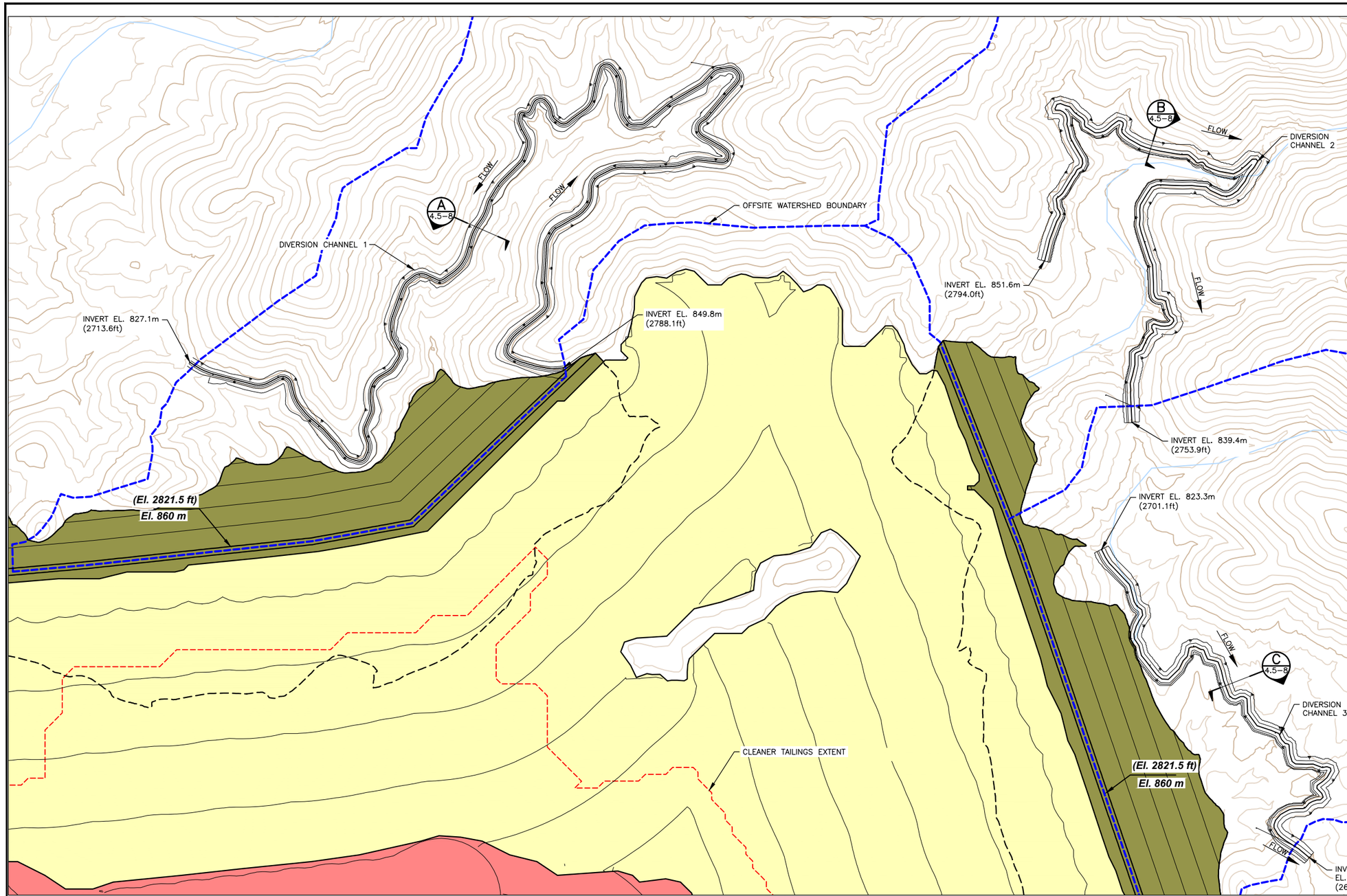


PLAN

Legend

- Thickened Scavenger Tailings
- Thickened Cleaner Tailings
- North Dams

Topography Based on 1 m (3.3 ft) Interval Contours Received From Resolution January, 2013.

N

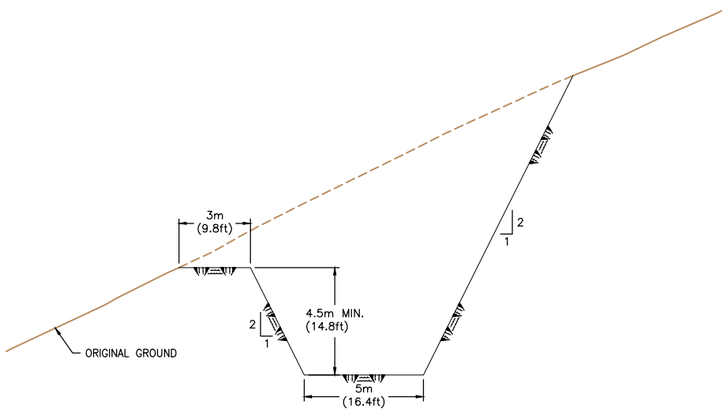
0 250 500 Feet

0 150 Meters

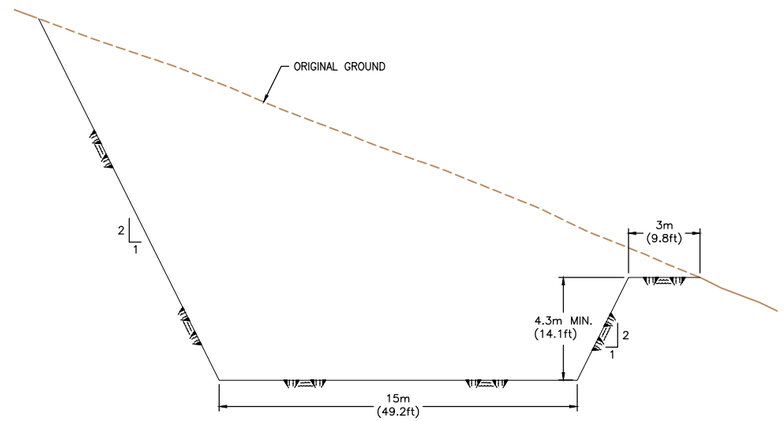
Klohn Crippen Berger
2013

RESOLUTION COPPER
General Plan of Operations

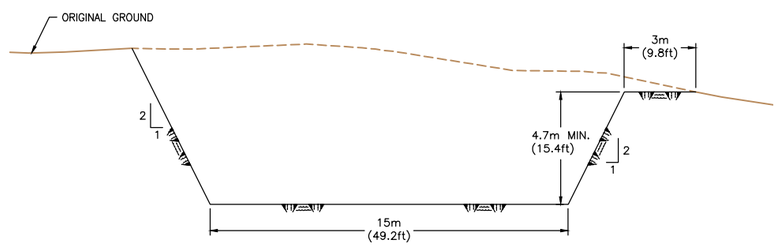
DIVERSION CHANNEL LAYOUTS
Figure 4.5-7



SECTION A (4.5-7) DIVERSION CHANNEL 1
TYPICAL SECTION



SECTION B (4.5-7) DIVERSION CHANNEL 2
TYPICAL SECTION



SECTION C (4.5-7) DIVERSION CHANNEL 3
TYPICAL SECTION

LEGEND

BEDROCK

SCALE

0 10 20 Feet

0 5 Meters

Klohn Crippen Berger
2013

RESOLUTION COPPER
General Plan of Operations

DIVERSION CHANNEL
TYPICAL CROSS-SECTIONS
Figure 4.5-8

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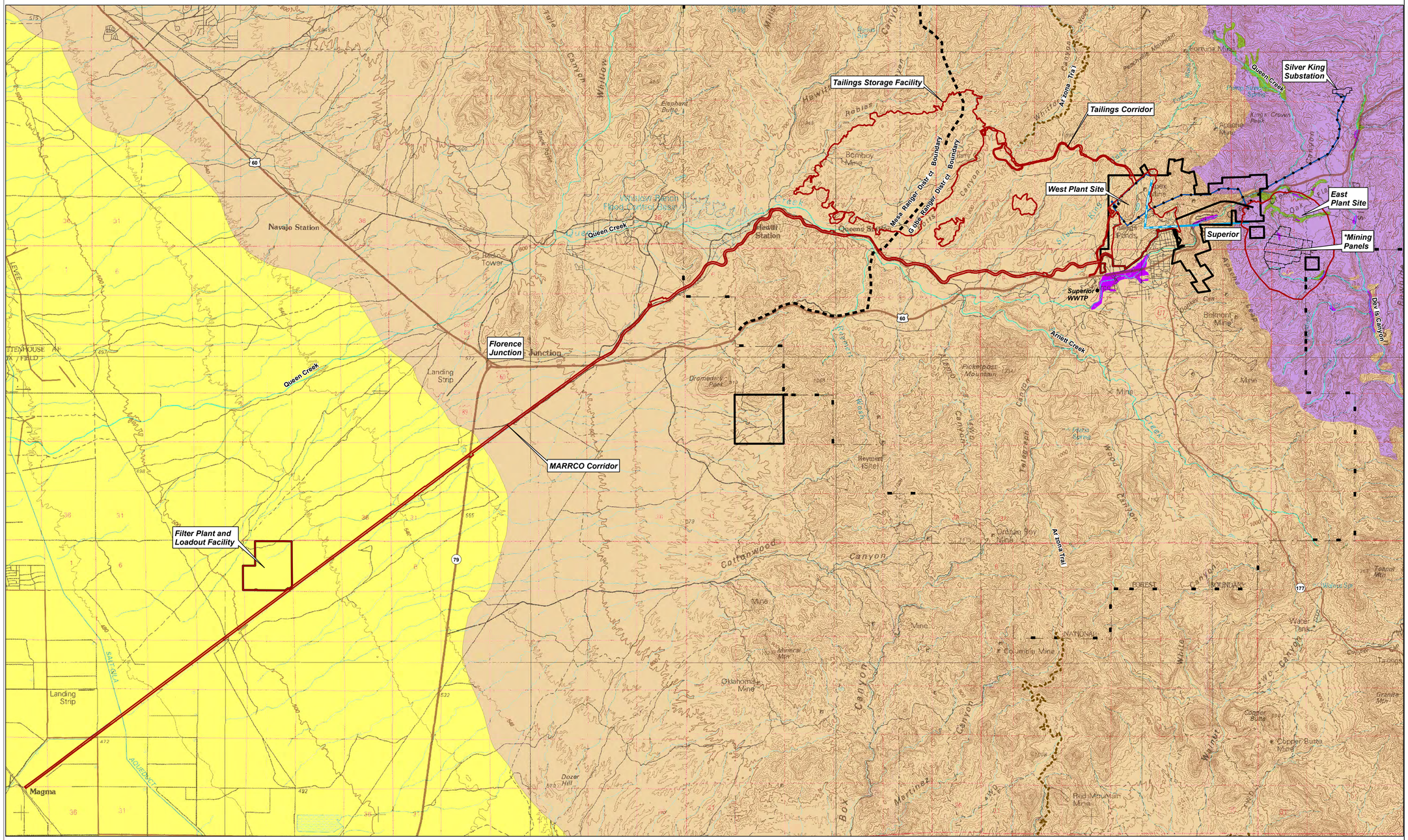
Tailings Storage Facility
Tailings Corridor
Silver King Substation
West Plant Site
East Plant Site
Superior
*Mining Panels
Superior WWTP
Florence Junction
MARRCO Corridor
Filter Plant and Loadout Facility
Navajo Station
Queen Creek
Arnett Creek
Magma
Landing Strip
Mesa Ranger Distr ct Boundary
G ldfield Ranger Distr ct Boundary
Az zona Trail
Tailings Ponds
Belmont Mine
Dev ls Canyon
Cottonwood Canyon
Box Canyon
Martinez Canyon
Oklahoma Mine
Dozer Hill
Red Mountain Mine
Copper Butte Mine
Granite Mtn
Tenpot Mtn
Pickerpost Mountain
Dromedary Peak
Bomboy Mine
Elephant Butte
Hewitt Station
Queens Station
Corona Mine
Apache Mine
Water Tank
Copper Tailings
Copper Butte
Orphan Boy Mine
Equinox Mine
Reymert (Site)
Mineral Mtn
Mine
FOREST
BOUNDARY
NATIONAL
Sahuaro Aqueduct
Salt River
Tilted Rock Trail
Wood Canyon
White Canyon
Walnut Canyon
Hewitt Canyon
Willow Canyon
Pinal Creek
Peachville Mountain
Queen Creek
Superior
Hewitt Station
Landing Strip
Dromedary Peak
Pickerpost Mountain
Oklahoma Mine
Dozer Hill
Red Mountain Mine
Copper Butte Mine
Granite Mtn
Tenpot Mtn
Copper Tailings
Copper Butte
Water Tank
Belmont Mine
Apache Mine
Corona Mine
Bomboy Mine
Elephant Butte
Reymert (Site)
Mineral Mtn
Mine
Equinox Mine
Orphan Boy Mine
Tailings Ponds
Superior WWTP
Navajo Station
Magma
Queen Creek
Arnett Creek
Dev ls Canyon
Pinal Creek
Queens Station
Hewitt Station
Tilted Rock Trail
Az zona Trail
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Filter Plant and Loadout Facility
Navajo Station
Queen Creek
Arnett Creek
Magma
Landing Strip
Landing Strip
Sahuaro Aqueduct
Salt River
Aqueduct
Cottonwood Canyon
Box Canyon
Martinez Canyon

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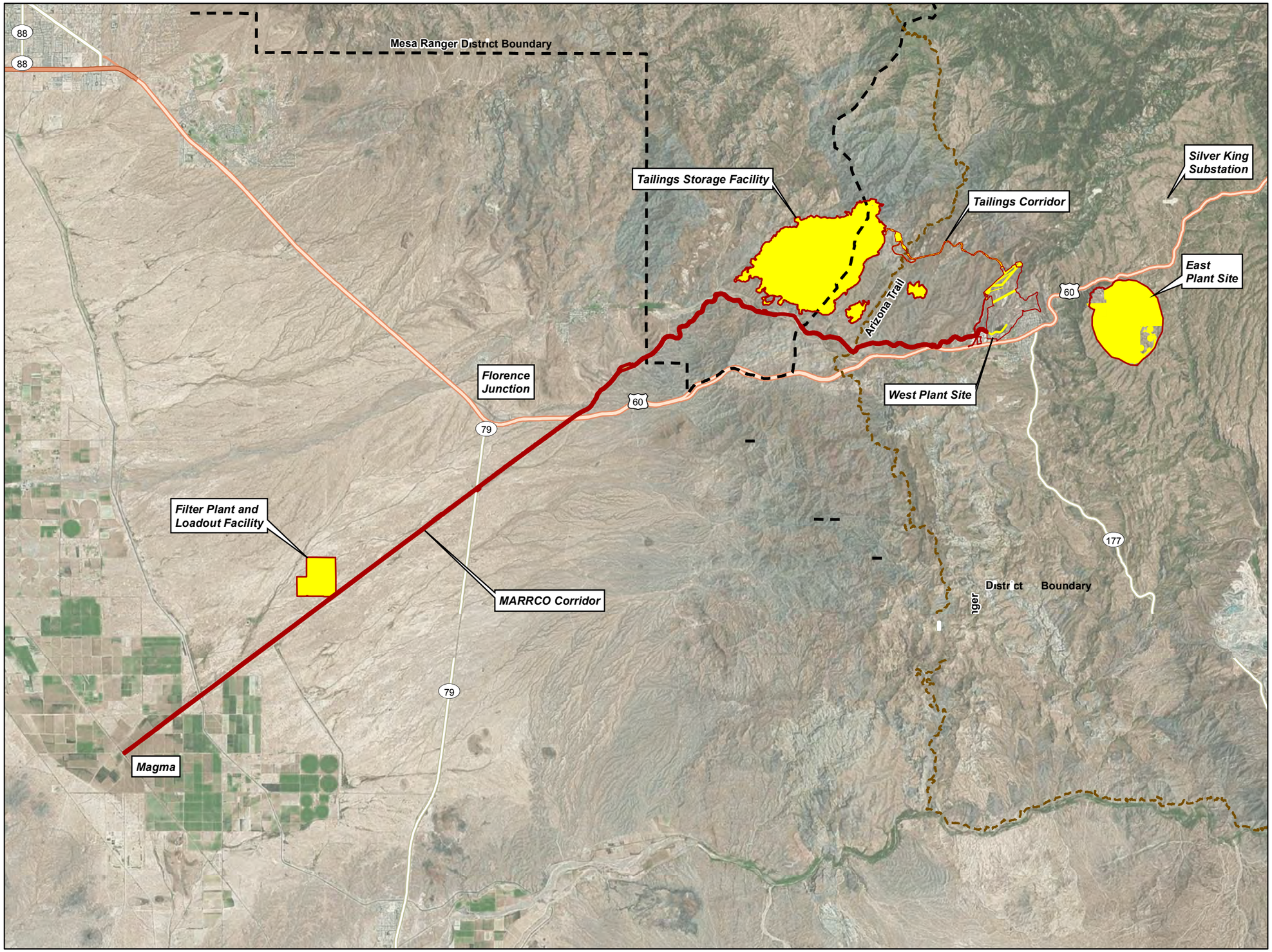

Legend

- Project Area
- Area Surveyed for Cultural Resources Within the Project Area
- Arizona Trail (ESRI Online Data)
- Tonto National Forest Ranger District Boundary

Pinal County, Arizona
Image Source: ESRI Online Microsoft November 2010
ESRI Streetmaps NA

N

0 1 2 Miles

0 2 4 Kilometers

RESOLUTION COPPER
General Plan of Operations

AREA SURVEYED FOR CULTURAL RESOURCES WITHIN THE PROJECT AREA

Figure 4.10-1

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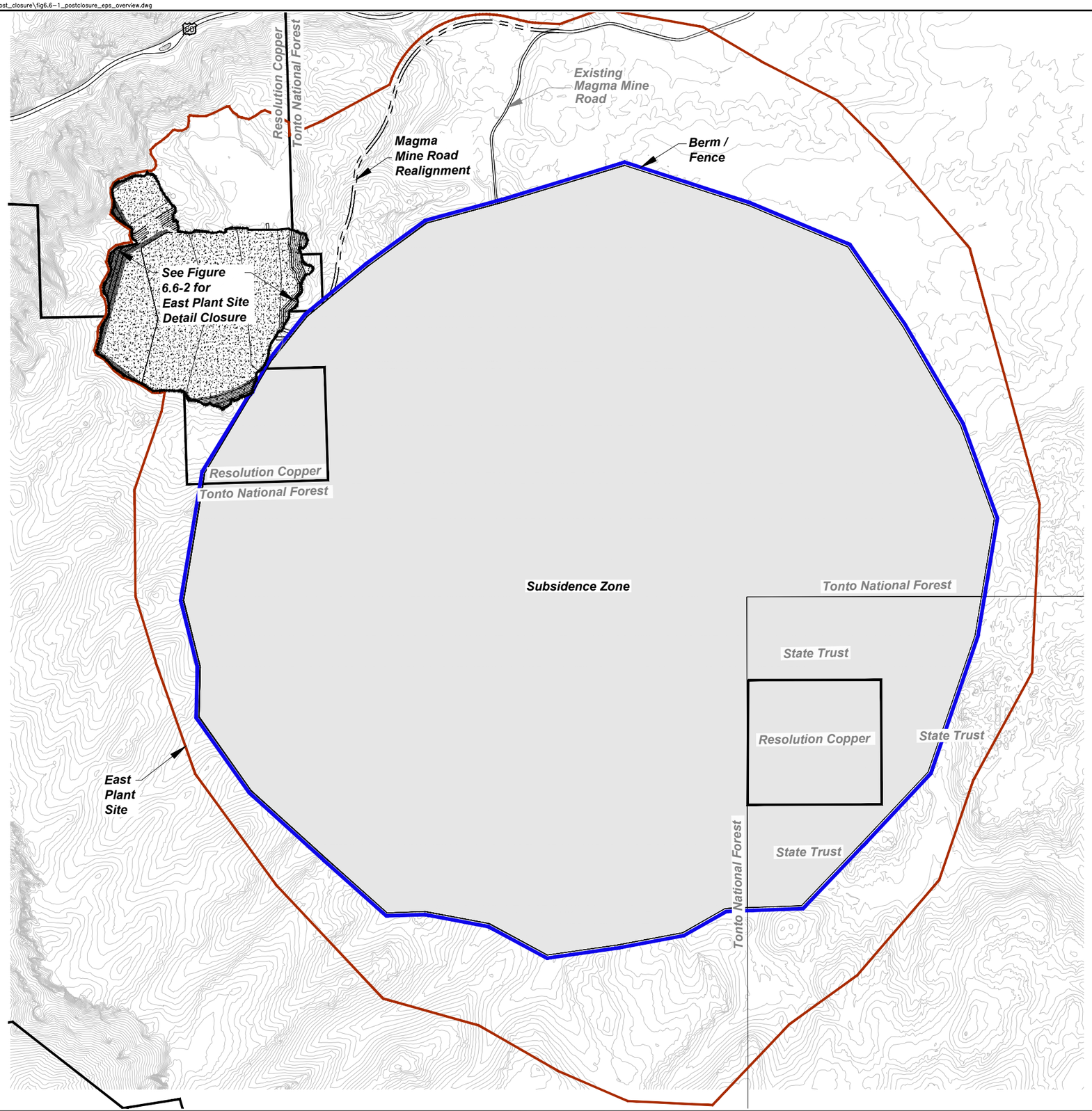

Legend

- Resolution Holdings
- Project Area
- Seeded Area
- Berm / Fence

N

0 500 1,000 Feet

0 150 300 Meters

RESOLUTION COPPER

General Plan of Operations

EAST PLANT SITE OVERVIEW
POST CLOSURE GRADING PLAN

Figure 6.6-1

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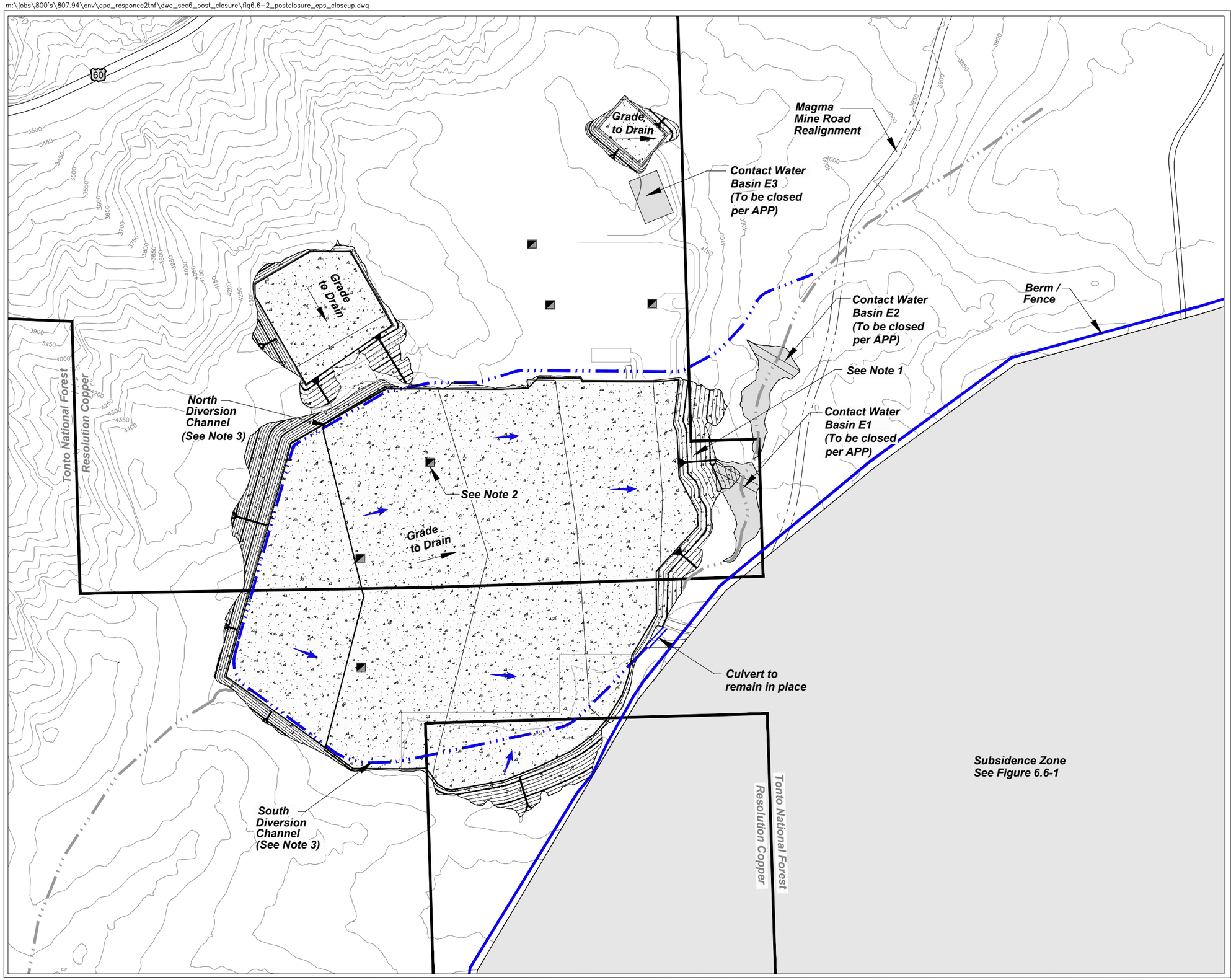

Legend

- Resolution Holdings
- Seeded Area
- Shaft
- Cut
- Fill
- Direction of Flow
- Existing Drainage
- Channel/Drainage
- Berm / Fence
- Buried Culvert

Notes:

1. All fill slopes shall be laid back to a maximum of 2.5:1.
2. Shaft collars and subcollars will be permanently sealed. Shafts will be decommissioned or salvaged as necessary.
3. Relocate North and South Diversion Channels as necessary to route flow to existing drainage.

APP = Aquifer Protection Permit

N

0 200 400 Feet

0 50 100 Meters

RESOLUTION COPPER

General Plan of Operations

EAST PLANT SITE DETAIL
POST CLOSURE GRADING PLAN

Figure 6.6-2

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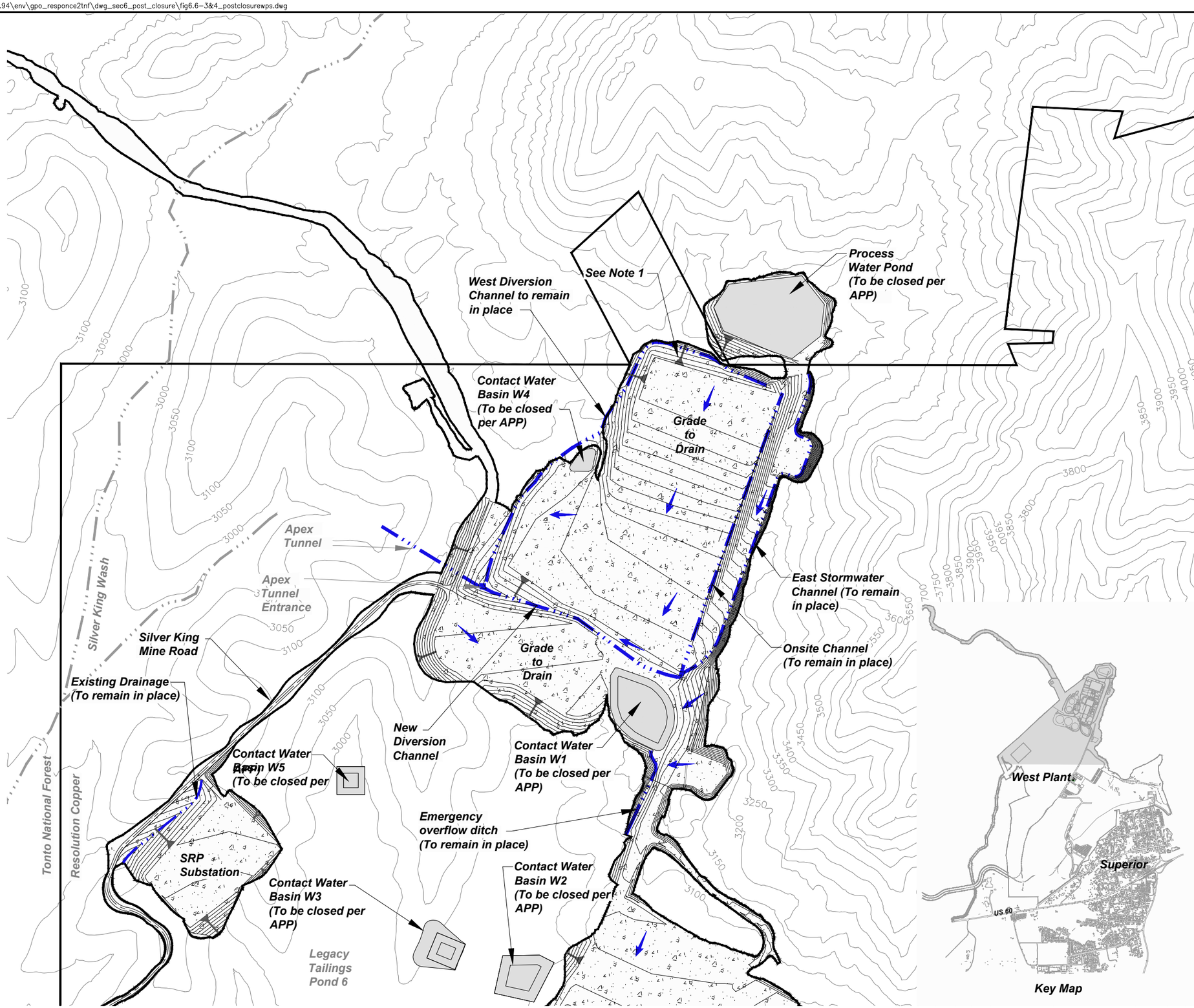

Legend

- Resolution Holdings
- Seeded Area
- Cut
- Fill
- Direction of Flow
- Existing Drainage
- Channel/Drainage

Notes:
1. All fill slopes shall be laid back to a maximum of 2.5:1.

APP = Aquifer Protection Permit

N

0 325 650 Feet

0 100 200 Meters

RESOLUTION COPPER
General Plan of Operations

WEST PLANT SITE NORTH
POST CLOSURE GRADING PLAN

Figure 6.6-3

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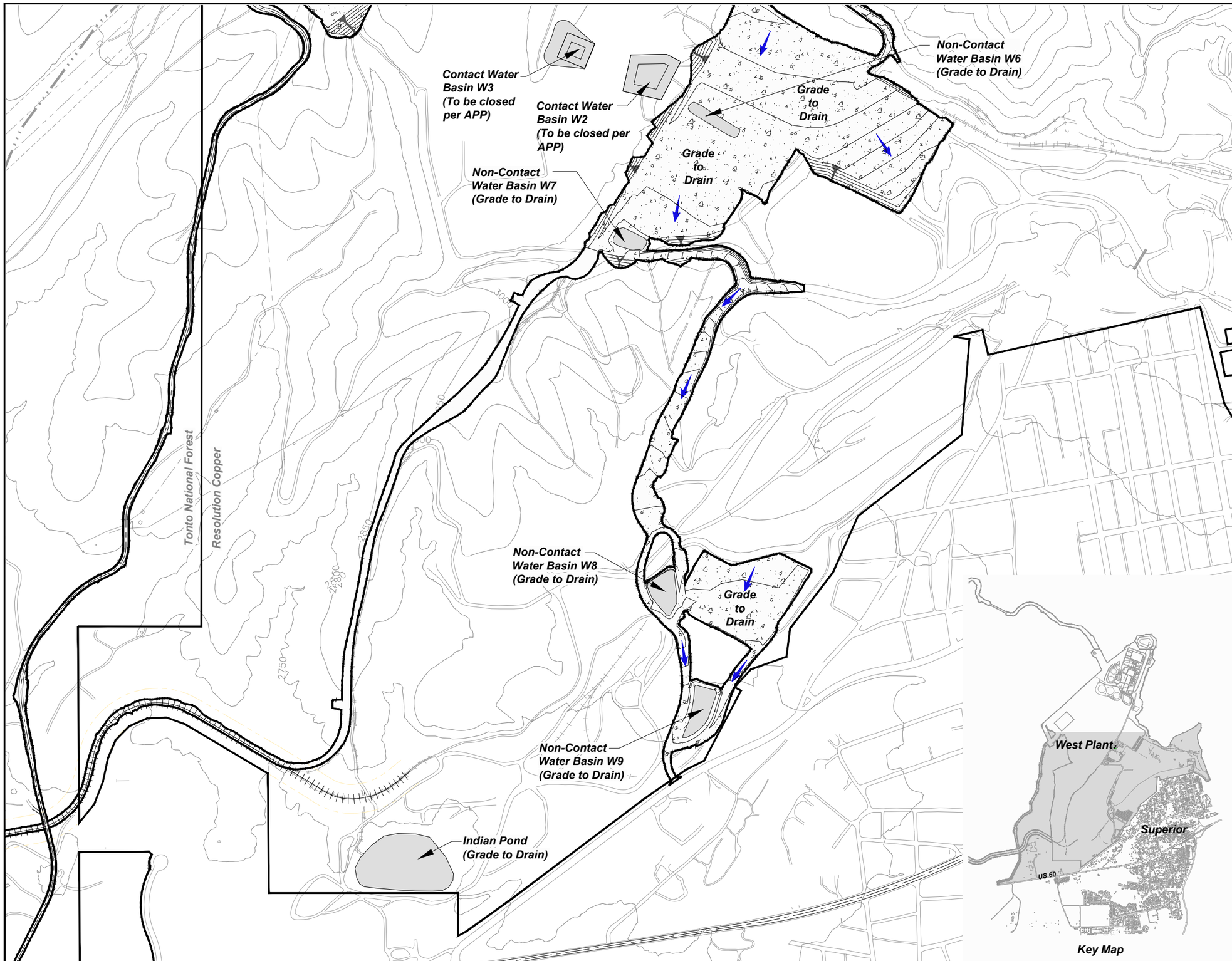

Legend

- Resolution Holdings
- Seeded Area
- Cut
- Fill
- Direction of Flow
- Existing Drainage

Notes:
1. All fill slopes shall be laid back to a maximum of 2.5:1.

APP = Aquifer Protection Permit

N

0 325 650 Feet

0 100 200 Meters

RESOLUTION COPPER
General Plan of Operations

WEST PLANT SITE SOUTH
POST CLOSURE GRADING PLAN
Figure 6.6-4

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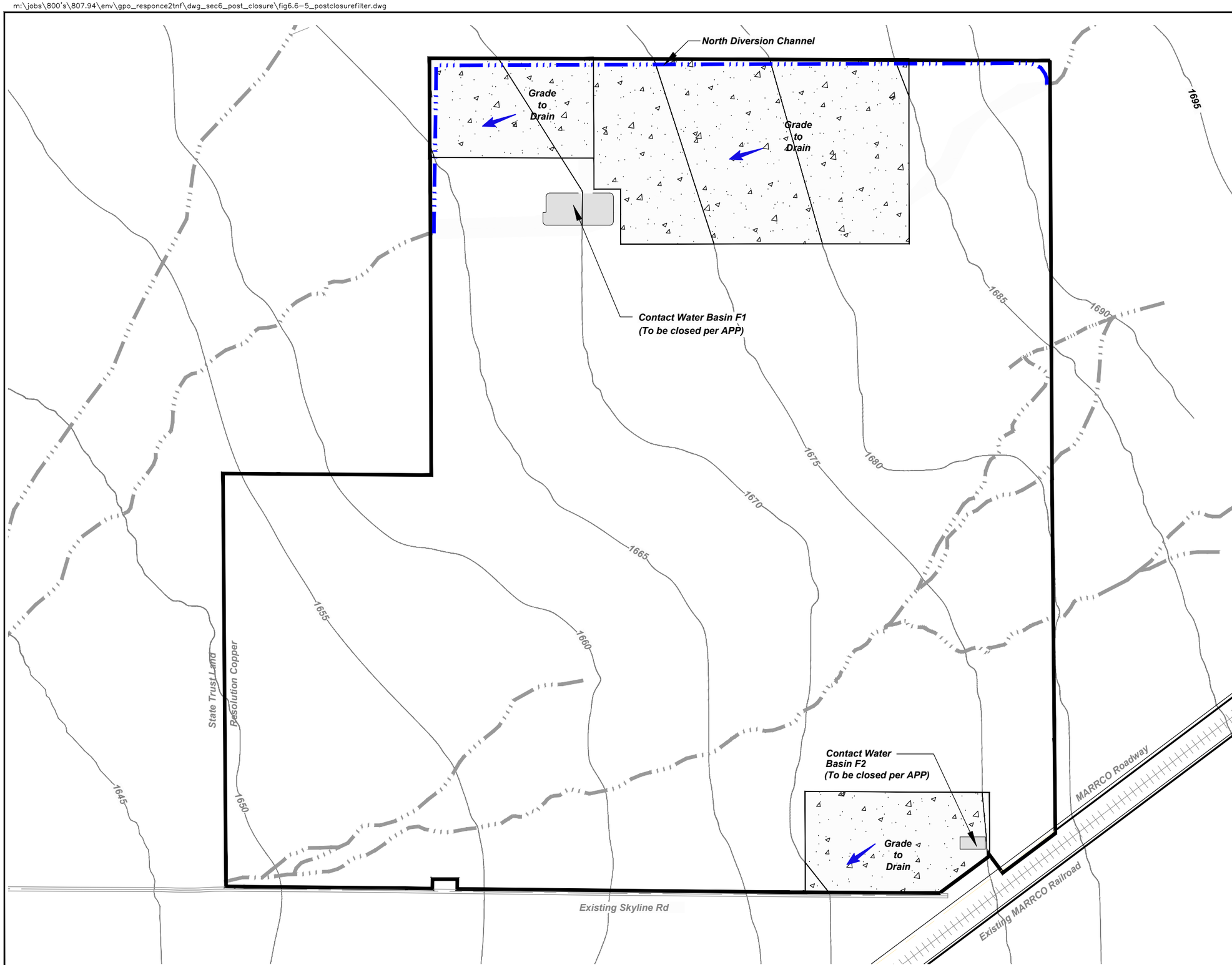

Legend

- Resolution Holdings
- Seeded Area
- Direction of Flow
- Existing Drainage
- Channel/Drainage

APP= Aquifer Protection Permit

N

0 300 600 Feet

0 100 200 Meters

Note:
Existing topography to be verified by current survey. All grades shown are subject to change.

RESOLUTION COPPER
General Plan of Operations

FILTER PLANT AND LOADOUT FACILITY
POST CLOSURE GRADING PLAN
Figure 6.6-5