APPENDIX K
BLM PLANS OF DEVELOPMENT

PLAN OF DEVELOPMENT FOR PROPOSED TAILINGS DELIVERY, RECLAIMED WATER, FRESH WATER PIPELINES, AND TEMPORARY CONSTRUCTION WATER PIPELINE ON BLM-ADMINISTERED LANDS

ASARCO LLC - RAY OPERATIONS
RIGHT-OF-WAY APPLICATION FOR PROPOSED TAILINGS DELIVERY, RECLAIMED WATER, FRESH WATER PIPELINES, AND TEMPORARY CONSTRUCTION WATER PIPELINE ON FEDERAL LANDS WITHIN SECTION 12, TOWNSHIP 4 SOUTH, RANGE 13 EAST, G&SR Mer., PINAL COUNTY, ARIZONA

ITEM 7 – PROJECT DESCRIPTION

(a) Type of system or facility

ASARCO LLC (Asarco) proposes to construct a pipeline corridor and operate two (2) tailings delivery pipelines, a reclaim water pipeline, and a fresh water pipeline for the Ripsey Wash Tailings Storage Facility in support of ongoing operations at Ray Mine near Kelvin, Pinal County, Arizona. Asarco also proposes a temporary pipeline to supply water for dust suppression measures during the construction phase of the Ripsey Wash TSF project.

The tailings delivery pipelines will begin at the Ray Mine thickeners and terminate at the discharge point at the Ripsey Wash Tailings Storage Facility (**Figure 1** and Option 5 on **Figure 4**). The reclaimed water pipeline will begin at the main and east reclaim ponds downstream from the Ripsey Wash Tailings Storage Facility embankment and terminate at the Ray Mine for use in processing. The fresh water pipeline will begin at the Ray Mine's main fresh water line at a location north of the Gila River and south-east of the Florence Kelvin Highway and terminate at the office and day shop facilities located next to the main reclaim pond downstream from the Ripsey Wash Tailings Storage Facility embankment. The temporary construction water pipeline will follow the same alignment as the tailings delivery and reclaimed water pipelines and terminate at the TSF embankment.

The estimated length of the pipeline corridor is approximately 16,011 feet (3.0 miles) of which approximately 2,035 feet will cross federal lands managed by the Bureau of Land Management (BLM) south of the Gila River within Section 12, T4S, R13E in Pinal County, Arizona. In general a 22-foot-wide Pipeline Project ROW is requested within the two segments along the south and east sides of Florence-Kelvin Highway (hereinafter called the "BLM Project Area"). A Plan of Development for the Project is provided with this right-of-way (ROW) application as **Attachment 1**.

The pipeline corridor on BLM land is south and east of the existing paved Florence-Kelvin Highway, a Pinal County-maintained road, which crosses BLM lands in two separate locations (**Figures 2A**). Segment 1 is approximately 1,275 feet in length and covers about 0.636 acres and is located between a privately-owned parcel identified as the Eagle No. 5 patented mining claim on the eastern boundary and the Arizona State Trust Land on the western boundary **(Figure 3A)**.

Segment 2 is approximately 760 feet in total length and covers about 0.367 acres (**Figure 3B**). It is split into two sections by the private property Riverside MS 3136B. The north section is about 186 feet in length and covers about 0.094 acres while the south section is about 573 feet in length and

covers about .273 acres. To account for encompassing the remaining sliver of BLM land into the ROW along the private property boundary of Riverside MS 3136B, the south section ROW is atypical in its width along the east length L28 and L29. This ROW segment includes approximately 250 feet of a 650-foot-long pipeline bridge (**Figure 5**) as more fully described in the **Attachment 1**.

(b) Related structures and facilities

The tailings delivery, reclaim water, and fresh water pipelines will be buried in a pipeline trench other than the portion crossing the Gila River, which will require the construction of a bridge to support the pipelines. The temporary water pipeline for construction purposes will be placed on the surface and anchored every 50 to 100 feet. The new pipeline bridge will be constructed immediately upstream from and adjacent to the Pinal County Kelvin Bridge, currently under construction (**Figure 5**). The existing historic Florence-Kelvin bridge will remain in place for pedestrian use and may eventually provide access to the Arizona Trail.

The design of the proposed pipeline bridge mirrors Pinal County's Kelvin Bridge in span length and pier location, but does not include a curve like the Pinal County alignment. An approximately 14-foot-wide by 650-foot-long pipeline bridge is proposed (**Figure 5**), 250 feet of which cross BLM lands (**Figure 5**).

In addition to the ROW applied for herein, the Ripsey Wash TSF will require an overhead powerline with a fiber optic communication cable, and a second fiber optic communication cable will be buried beside the pipelines to provide for redundancy in communication systems. The powerline would be placed along the same alignment and are subject to a concurrently filed BLM right-of-way application (**Figure 4**). Access to the pipelines on BLM land will be provided by the existing Florence-Kelvin Highway. No new access roads are required for construction or maintenance of the pipeline corridor on BLM land. A portion of the pipeline trench will be located within the highway ROW requested under separate application (**Figure 2D**). The three ROWs together will create a 110-foot wide road and utility corridor.

(c) Physical specifications

The Pipeline Project on BLM land requires the construction of an approximately 20-foot-wide by 6-foot-deep trench for the subsurface placement of two up to 30-inch pipelines constructed of steel that will transport tailings materials, one up to 12-inch pipe constructed of high-density polyethylene (HDPE) to transport fresh water, and one up to 30-inch pipe constructed of steel or HDPE to transport reclaim water (**Figure 3C**). Up to two feet of spacing will be provided between the pipelines within the trench. The pipelines will be constructed in areas where it is not buried and in other sections as required to include a secondary containment system; engineering designs are currently under development to determine the appropriate system. The temporary pipeline to supply water for dust suppression during TSF embankment constructions would be 10 inches in diameter and HDPE and removed once project water line is complete. This temporary water pipeline would be placed on the surface and anchored every 50 to 100 feet.

(d)Term of years needed

Asarco is requesting a right-of -way term for 30 years, the expected life of active operations at the Ripsey Wash TSF is 50 years.

(e) Time of year of use of operation

The pipeline corridor will be utilized daily in support of daily, year-round mining operations.

(f) Volume or amount of product to be transported

The Ripsey Wash TSF is designed to contain 750 million tons of tailings, and a production rate of up to 45,000 tons per day is anticipated to be required to support the ongoing operations of the mine, therefore, the tailings delivery pipelines will be designed for that capacity. The reclaim water pipeline will be designed to transport approximately 9,000 to 14,500 gallons per minute and the fresh water pipeline will be designed to transport approximately 1,500 gallons per minute. The temporary water pipeline for dust suppression during construction will be deigned to transport 1,000 to 1,500 gallons per minute.

(g) Duration and timing of construction

Construction of the pipeline corridor is proposed to commence in 2019 and will continue for duration of three years.

(h) Temporary work areas needed for construction

Temporary work areas on BLM land during construction and installation of the proposed pipelines and bridge will be limited to areas within the 110-foot wide ROW requested between this ROW application and the powerline and roadway ROW applications.

The foundations for the pipeline bridge will consist of drilled shaft foundations extending to below the scour line or socketed into the underlying bedrock. The diameter of the drilled shaft foundations will be about 5 feet. Casing or slurry stabilization will be required to construct the foundations. It is anticipated that the drilled shaft foundation construction will be specified to meet the requirements of Arizona Department of Transportation Standard Specification Section 609. A work area for the construction of the pipeline bridge will be required for the foundation drill rig and temporary placement of drill cuttings, which will be removed from the site. The drilled shaft foundation will be staged with a reinforcing steel cage in this area, which will be placed by a crane. Concrete will be placed with a concrete pump truck and tremie system. A mud tank to mix stabilizing slurry for the drilled shaft excavation will also be needed. It is estimated that a 100-foot by 100-ft area will be needed as a temporary work area. Those work areas will occur within the requested 22-foot BLM ROW corridor and within the ROW currently held by Pinal County for the Kelvin Bridge Project (AZA 35391). Access to the bridge construction work area will be gained mostly form the north side of the river on privately owned lands, and only a portion of the temporary work area will be placed on BLM lands on the south side of the Gila River.

ITEM 13A – DESCRIPTION OF REASONABLE ALTERNATIVE ROUTES AND MODES CONSIDERED

Asarco has evaluated five powerline/pipeline route alternatives for the Ripsey Wash TSF (Options 1-5, **Figure 4**). Option 5 is the preferred route and represents the project described herein. Option 2 runs along the north side of the Gila River within the Copper Basin Railway (CBRY) easement and crosses at the existing CBRY bridge and involves the realignment of the existing Florence-Kelvin Highway north of the proposed Ripsey Wash TSF prior to powerline construction; Option 3 traverses undeveloped lands west of the Florence-Kelvin Highway and crosses the Gila River at the existing CBRY bridge. Option 4 traverses undeveloped lands west of the Florence-Kelvin Highway and crosses the Gila River at a new location upstream from the existing CRBY bridge.

ITEM 13B – REASONS WHY THESE ALTERNATIVES WERE NOT SELECTED

The preferred alternative, Option 5 (**Figure 4**), was selected because it proposes construction along the Florence-Kelvin Highway, an existing and improved roadway, and allows for gravity flow of the tailings slurry delivery system north of the river.

Option 1 was not selected because it would involve the realignment of the existing Florence-Kelvin Highway north of the proposed Ripsey Wash TSF prior to construction, which poses logistical and cost constraints. Option 2 was not selected because of additional impacts along the Gila River and associated higher costs. Options 3 and 4 were also not selected as preferred routes because they would involve additional impacts to undeveloped areas and associated higher costs.

ITEM 13C – EXPLANATION AS TO WHY IT IS NECESSARY TO CROSS FEDERAL LANDS

The pipeline corridor is proposed for construction along the existing Florence-Kelvin Highway and Pinal County Kelvin Bridge alignment to minimize disturbance to state, private, and federal lands between the Ripsey Wash TSF and the Ray Mine. The Florence-Kelvin Highway and Pinal County Kelvin Bridge cross BLM land along the pipeline corridor; therefore, following this alignment necessitates the crossing of BLM land.

ITEM 14 – AUTHORIZATION AND PENDING APPLICATIONS FILED FOR SIMILAR PROJECTS WHICH MAY PROVIDE INFORMATION TO THE AUTHORIZING AGENCY

A Clean Water Act (CWA) Section 404 individual permit application was submitted to the US Army Corps of Engineers on June 7, 2013 by Asarco and is currently under review. The Corps is preparing an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA), for which BLM is a cooperating agency. The Corps' EIS will provide the required NEPA review for this ROW grant.

The BLM has approved an amended ROW grant (No. AZA-35391) for the Kelvin Bridge Project, which occurs immediately downstream from Asarco's planned pipeline and powerline corridor where it crosses the Gila River.

ITEM 15 – STATEMENT OF NEED FOR PROJECT, INCLUDING THE ECONOMIC FEASIBILITY AND ITEMS:

The purpose of the proposed Project is to transport tailings slurry from the mill to the proposed tailings impoundment for deposition, transport reclaim water from the tailing impoundment back to the Ray Mine, and transport fresh water to the day shop and office facilities at the Ripsey Wash TSF. Current mine plans require additional tailings storage to support up to approximately 750 million tons of mill tailings and associated embankments through the remaining life of the Ray Mine. The deposition of tailings is needed to allow for the full utilization of the mineral resource at the Ray Mine.

(a) Cost of proposal (construction, operation, and maintenance)

Not applicable

(b) Estimated cost of next best alternative

Not applicable

(c) Expected public benefits

The primary expected public benefit for the construction of the pipelines is economic in nature. The Project is proposed in support of ongoing mining operations at the Ray Mine, one of the largest sources of Asarco's copper production. Current world copper demand averages approximately 2.2 kilograms (5 pounds) of copper per capita per year requiring approximately 15.9 Mt of production each year worldwide. Predictions of growing demand indicate that the increase in per capita consumption over the next 20 years will require the production of between 36.6 and 42.1 Mt of copper per year, an increase of 2.3 to 2.65 times current production. Despite higher production yields from new technologies, the extensive time involved in developing new mines, including exploration, environmental impact studies, and permitting, requires the full utilization of known resources in existing mines to help meet the predicted national and global demand. The benefits include assisting local communities grow, providing new jobs and supporting the continuation of job stability for Asarco employees in rural Arizona. The granting of this ROW would be consistent with BLM's and the current administration's priorities to streamline ROWs processing for pipelines and transmission lines, streamline permitting for hard rock mining, improve and streamline land use planning to support minerals development, create new jobs, and support existing jobs.

ITEM 16 – DESCRIPTION OF PROBABLE EFFECTS ON THE POPULATION IN THE AREA, INCLUDING THE SOCIAL AND ECONOMIC ASPECTS, AND THE RURAL LIFESTYLES

The probable effects on the population in the area are primarily economic. As previously described, utilization of the full mineral resource at Ray Mine allows Asarco to help meet predicted copper demand at a national and global scale. Locally, construction of the pipeline corridor to support ongoing mining operations of Ray Mine provides a source of well-paying employment to the surrounding communities via hired contractors and permanent mine employees. Regarding social aspects and rural lifestyles,

adverse impacts are not expected because the pipeline corridor will be constructed along existing development and disturbed property currently utilized by the general public.

ITEM 17 – DESCRIPTION OF LIKELY ENVIRONMENTAL EFFECTS THAT THE PROPOSED PROJECT WILL HAVE ON:

(a) Air quality

The Pipeline Project is not expected to have adverse impacts on air quality. The pipeline corridor will be constructed and operated in conformance with applicable Federal, State, and local air quality regulations. The expansion and paving of the Florence-Kelvin Highway within the southern segment of the BLM ROW Area will improve dust emissions in the area.

(b) Visual impact

The Pipeline Project will not pose significant adverse visual impacts on the surrounding landscape. The pipeline corridor will be buried and will be adjacent to or within the existing Florence-Kelvin Highway within areas that are already partially disturbed. No additional access roads on BLM land for operation and maintenance of the pipelines will be required. The pipeline bridge will be constructed up stream of the Pinal County Kelvin bridge within an area already disturbed and will be reclaimed as further described in Attachment 1.

(c) Surface and ground water quality and quantity

A ROW granted for the BLM Project Area will not contribute to the degradation of surface water or groundwater quality and/or quantity. Asarco will operate in accordance with a Stormwater Pollution Prevention Plan (SWPPP) during the construction phase of the pipeline corridor as required by an Arizona Department of Environmental Quality (ADEQ) Construction General Permit (CGP). The SWPPP will detail the installation and maintenance of site-specific Best Management Practices (BMPs) to be implemented. A complete and accurate Notice of Intent (NOI) will be submitted to ADEQ prior to commencement of activity.

(d) The control of the structural change on any stream or other body of water

There will be no structural change of the Gila River as a result of the pipeline bridge construction. The bridge will be constructed in alignment with the proposed Pinal County Kelvin Bridge to span the Gila River, and no piers will be constructed within the streambed. Surface disturbance will be minimized during construction, and BMPs for sediment control will be implemented in accordance with the SWPPP. Any disturbed areas will be restored to its natural contours upon completion of the work.

(e) Existing noise levels

The proposed construction within the BLM Project Area may result in temporary increased noise levels. Construction of the pipelines and associated bridge will be conducted in accordance with Pinal County Ordinance No. 050306-ENO as Amended by 031611-ENO-01.

(f) The surface of the land, including vegetation, permafrost, soil, and soil stability

The pipeline corridor and bridge will be constructed within the existing Florence-Kelvin Highway alignment, an area that is already partially disturbed.

ITEM 18 – DESCRIPTION OF THE PROBABLE EFFECTS THAT THE PROPOSED PROJECT WILL HAVE ON:

(a) Populations of fish, plantlife, wildlife, and marine life, including threatened and endangered species

The Pipeline Project crosses a reach of the Gila River that is currently designated critical habitat for the endangered southwestern willow flycatcher (SWFL; *Empidonax traillii extimus*) and is proposed designated critical habitat for the threatened yellow-billed cuckoo (YBC; *Coccyzus americanus*). WestLand Resources, Inc. (WestLand) has completed surveys during multiple seasons along the reach of the Gila River adjacent to the Project, and SWFL and YBC have been recorded from the vicinity of the existing Florence-Kelvin Highway bridge in proximity to the northern segment of the BLM Project Area.

Vegetation disturbance will be minimized to the extent practicable. The US Army Corps of Engineers is in the process of consulting with the US Fish and Wildlife Service (USFWS) regarding the potential impacts to individual SWFL and YBC and their proposed/designated critical habitat as part of the Ripsey Wash Tailings Storage Facility Project Clean Water Act Section 404 permitting process. Vegetation clearing required for pipeline bridge construction would be conducted outside the breeding seasons for the SWFL and YBC.

The Sonoran desert tortoise (*Gopherus morafkai*) is also known to occur in the Project vicinity. The Sonoran desert tortoise is not afforded protection under the Endangered Species Act but is considered a BLM sensitive species. Potential Sonoran desert tortoise shelters will be examined during the course of the construction activities to prevent negative impacts. Any individual tortoises encountered will be avoided and allowed to move out of the way prior to ground disturbing activities. Guidelines for handling desert tortoise published by AGFD will be used if it were found absolutely necessary to move individual tortoises.

(b) Marine mammals, including hunting, collecting, or killing these animals

Marine mammals do not occur within the proposed BLM Project Area; therefore, this section is not applicable.

ITEM 19 – HAZARDOUS MATERIALS

The Pipeline Project does not include the use, production, transport, or storage of any hazardous materials within the ROW, or used in the construction, operation, maintenance, or termination of the ROW as defined by Comprehensive Environmental Response Compensation, and Liability Act or the Resource Conservation and Recovery Act. In the unlikely event of a pipeline failure within the pipeline corridor, construction of a drain down pond on Asarco's private land is planned along the pipeline corridor north of the Gila River for containment of tailings and/or reclaim water.

Attachment 1

PLAN OF DEVELOPMENT
RIPSEY WASH TAILINGS STORAGE FACILITY
TAILINGS DELIVERY, RECLAIMED WATER, FRESH WATER, AND TEMPORARY CONSTRUCTION WATER PIPELINES

No. AZA-037391

Prepared for: Bureau of Land Management, Tucson Field Office
Prepared by: ASARCO LLC
Date: August 18, 2017, Revised February 14, 2018
Corps File No.: SPL-2011-1005-MWL

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ATTACHMENTS

1. PURPOSE AND NEED

ASARCO LLC (Asarco) proposes to construct a pipeline corridor and operate two (2) tailings delivery pipelines, a reclaim water pipeline, and a fresh water pipeline for the Ripsey Wash Tailings Storage Facility in support of ongoing operations at Ray Mine near Kelvin, Pinal County, Arizona. Asarco also proposes a temporary pipeline to supply water for dust suppression measures during the construction phase of the Ripsey Wash TSF project.

In addition to the Pipeline Project right-of-way (ROW) application (No. AZA-037391) applied for herein, Asarco has requested two (2) separate ROW authorizations for Roadway Improvements (No. AZA-036430) and a Powerline Corridor (No. AZA-037090) **(Figures 2A).** The three ROWs are along the same alignment and cross BLM lands in two separate locations outlined as Segment 1 **(Figure 2B**) and Segment 2 **(Figure 2C**) which in total occupy a 110-foot-wide corridor **(Figure 2D).** The Roadway Improvement corridor and the Pipeline Corridor are overlapping 7' along the whole length of the ROW's.

The estimated length of the pipeline corridor is approximately 16,011 feet (3.0 miles) of which approximately 2,035 feet will cross federal lands managed by the Bureau of Land Management (BLM) south of the Gila River within Section 12, T4S, R13E in Pinal County, Arizona. In general, a 22-foot-wide Pipeline Project ROW is requested within the two segments along the south side of Florence-Kelvin Highway.

Segment 1 is approximately 1,275 feet in length and covers about 0.636 acres and is located between a privately-owned parcel identified as the Eagle No. 5 patented mining claim on the eastern boundary and the Arizona State Trust Land on the western boundary **(Figure 3A)**.

Segment 2 is approximately 760 feet in total length and covers about 0.367 acres (**Figure 3B**). It is split into two sections by the private property Riverside MS 3136B. The north section is about 186 feet in length and covers about 0.094 acres while the south section is about 573 feet in length and covers about .273 acres. To account for encompassing the remaining sliver of BLM land into the ROW along the private property boundary of Riverside MS 3136B, the south section ROW is atypical in its width along the east length L28 and L29.

The U.S. Army Corps of Engineers (the Corps) is the lead agency permitting the proposed Ripsey Wash Tailings Storage Facility, and the Corps has published a Draft Environmental Impact Statement for the Project. In addition to the BLM, cooperating agencies include the Environmental Protection Agency, and the San Carlos Irrigation Project (SCIP). Interested agencies or parties include U.S. Fish and Wildlife Service (USFWS), Arizona State Land Department, Arizona Game and Fish Department, Pinal County, and the Arizona Trail Association.

2. PIPELINE OVERVIEW

The tailings delivery pipelines will begin at the Ray Mine thickeners and terminate at the discharge point at the Ripsey Wash Tailings Storage Facility (**Figure 1** and Option 5 on **Figure 4**). The reclaimed water pipeline will begin at the main and east reclaim ponds downstream from the Ripsey Wash Tailings Storage Facility embankment and terminate at the Ray Mine for use in processing. The fresh water pipeline will begin at the Ray Mine's main fresh water line at a location north of the Gila River and south-east of the Florence Kelvin Highway and terminate at the office and day shop facilities located next to the main reclaim pond downstream from the Ripsey Wash Tailings Storage Facility embankment. The temporary construction water pipeline will follow the same alignment as the tailings delivery and reclaimed water pipelines and terminate at the TSF embankment.

The Ripsey Wash TSF is designed to contain 750 million tons of tailings, and a production rate of up to 45,000 tons per day is anticipated to be required to support the ongoing operations of the mine, therefore, the tailings delivery pipelines will be designed for that capacity. The reclaim water pipeline will be designed to transport approximately 9,000 to 14,500 gallons per minute and the fresh water pipeline will be designed to transport approximately 1,500 gallons per minute. The temporary water pipeline for dust suppression during construction will be designed to transport 1,000 to 1,500 gallons per minute.

Temporary work areas on BLM land during construction of the overhead powerline would be limited to areas within the 110-foot wide requested ROW's. The temporary construction water pipeline will be placed on the surface. The other pipelines will be constructed within a trench for the majority of their length, with the exception of the portion that will cross the Gila River on a pipeline bridge immediately upstream from the Kelvin Bridge (**Figures 5**). The existing historic Florence-Kelvin bridge will remain for pedestrian use and will eventually provide access to the Arizona Trail.

The design of the proposed pipeline bridge mirrors Pinal County's Kelvin Bridge in span length and pier location. An approximately 14-foot-wide by 650-foot-long pipeline bridge is proposed (**Figure 5**), 250 feet of which will occur on lands administered by the BLM. Portion of the pipeline trench will be located within the highway ROW requested under separate application (**Figure 3C**).

The Pipeline Project requires the construction of an approximately 20-foot-wide by 6-foot-deep trench for the subsurface placement of two up to 30-inch pipelines constructed of steel that will transport tailings materials, one up to 12-inch pipe constructed of high-density polyethylene (HDPE) to transport fresh water, and one up to 30-inch pipe constructed of steel or HDPE to transport reclaim water (**Figure 3C**). Up to two feet of spacing will be provided between the pipelines within the trench. The pipelines will be constructed in areas where it is not buried to include a secondary containment system; engineering designs are currently under development to determine the appropriate system. The temporary pipeline to supply water for dust suppression during TSF embankment constructions would

be 10 inches in diameter and HDPE and removed once project water line is complete. This temporary water pipeline would be placed on the surface and anchored every 50 to 100 feet.

The pipeline bridge requires nine (9) piers or foundations in total (**Figure 5**). Two (2) piers or foundations for the pipeline bridge will be placed on or directly adjacent to BLM lands. The foundations for the pipeline bridge will consist of drilled shaft foundations extending to below the scour line or socketed into the underlying bedrock. The diameter of the drilled shaft foundations will be about 5 feet. Casing or slurry stabilization will be required to construct the foundations. It is anticipated that the drilled shaft foundation construction will be specified to meet the requirements of Arizona Department of Transportation Standard Specification Section 609.

Amec Foster Wheeler performed a preliminary scour analysis for the proposed Gila River Pipeline Bridge. The analysis utilized the hydraulic model and revised scour analysis report developed by Entellus for the proposed replacement Florence-Kelvin Highway Bridge, located directly downstream of the proposed pipeline bridge (*Kelvin Bridge at the Gila River Final Hydraulic and Scour Analysis Report).* This memorandum describes the methods to support the scour analysis for the Pipeline Bridge (**Attachment 1A**).

3. PROJECT CONSTRUCTION, OPERATION, AND MAINTENANCE

3.1. PRE-CONSTRUCTION ACTIVITIES

Engineering Assessment/Survey

Prior to the start of construction activities, civil engineering surveys will identify the centerline of the pipeline and the boundaries of all sides of the approved ROW (herein called edges). Before construction, inspectors hired by Asarco will be responsible for verifying that the centerline and edges are staked with flagging and or painted lath at approximately 200-foot intervals or as required to maintain line of sight. This staking will clearly demark the edges of the ROW area that can be used or accessed by construction personnel. Equipment and vehicles will not be parked or driven beyond these stakes, and no other ground-disturbing activities will be allowed outside the staked boundaries of the work area.

Before earth-moving activities, best management practices (BMPs) established by Asarco will be installed to limit sediment transport and erosion consistent with regulatory approvals. Specific areas requiring BMPs will be designated on alignment sheets. Site-specific BMPs will be developed based on construction site characteristics and weather conditions. BMPs will be inspected routinely and maintained in good working order.

Cultural Resources Survey

Cultural resource surveys have been completed for all areas associated with the Project. No eligible cultural resources occur on BLM lands.

Biological Resources Survey

A biological evaluation and screening for species listed under the Endangered Species Act and BLM-sensitive species have been conducted in support of the Project. Surveys for the endangered southwestern willow flycatcher (SWFL; *Empidonax traillii extimus*) were conducted in 2007 and from 2011 through 2016 and for the threatened yellow-billed cuckoo (YBC; *Coccyzus americanus*) from 2013 through 2016 along the reach of the Gila River where the proposed powerline will cross. Both the endangered SWFL and the threatened YBC are known to occur along the Gila River in this area; breeding SWFL are known to occur in immediate proximity of the proposed powerline crossing. The proposed Project crosses a reach of the Gila River that is currently designated critical habitat for SWFL and is proposed designated critical habitat for YBC.

3.2. CONSTRUCTION ACTIVITIES

Construction of the pipeline corridor is proposed to commence in 2018 and will continue for a duration of three years.

Access for pipeline construction on BLM land will be from the Florence-Kelvin Highway, as the pipelines will be placed either immediately adjacent to or under the Florence-Kelvin Highway. No new access road construction is anticipated for the Project on BLM land.

Up to 15 workers will be involved in the pipeline and pipeline bridge construction activities.

On BLM lands the pipelines will be buried with a minimum of 3 feet of cover. The pipelines will be laid parallel in a common trench with up to 2 feet clear spacing between outside diameters. The trench bottom width will be approximately 15 to 20 feet in width and the top width will vary depending on final depth and trench side slope, but will typically range from 18 feet to 22 feet in width.

The pipelines will be protected from corrosion by a combination of external pipeline protective coatings and, if necessary due to soil conditions, cathodically protected using sacrificial magnesium or zinc anodes.

The buried tailings pipelines will require access ports at 1,000-foot intervals to allow for high pressure waterjet flushing if the line salts up. However, no access ports will be placed on BLM lands.

The pipeline trench will include a buried impervious plug of imported clay material south of the Gila River pipeline bridge on private land (**Figure 3C**). The plug will prevent any unexpected leak discharge from reaching the Gila River.

Pipeline trench construction on BLM land activities will include:

- Drilling and blasting equipment to mine rock when encountered
- Stripping and stockpiling of top soil using a 200 HP bulldozer. No stockpiles will be placed on BLM lands.
- Trench excavation with 1-1/2 cy track hoe excavator.
- Pipe laying with 12 ton hydraulic crane and 300 amp electric welder.
- Trench backfill with 1-1/2 cy track hoe excavator and 2-drum walk behind vibratory roller.
- Finish grading with 1-1/2 cy front end loader and 30,000 # grader.
- Seeding and mulching with hydromulcher.
- Support equipment including multiple light pickup trucks, 2 at 12 cy 400 HP dump trucks, flatbed trailer, 380 HP truck tractor, 1 cy cement mixer and portable generators.

Pipeline Bridge

The proposed Pipeline Bridge is a 4-span weathering steel I-girder superstructure, 680-feet long, 14-feet wide, zero-degree skew.

- Support the following pipe loads:
  - Tailing pipes: two up to 30-inch diameter steel lined pipes with secondary containment.
  - Reclaim water pipe: one up to 30-inch diameter steel lined or HDPE pipe
  - Fresh water pipe: one up to 12-inch diameter HDPE pipe
- It is anticipated the pipes will be supported in between the girder lines and in between the top and bottom girder flanges. A service walkway and railing will be provided above.
- The foundation is anticipated to be 5-foot diameter drilled shafts socketed into rock.
- The abutments and piers will be aligned with the adjacent Florence-Kelvin Highway Bridge to minimize hydraulic impacts.
- The pier geometry will be a single cast-in-place concrete column hammerhead pier cap matching the shape of the adjacent Florence-Kelvin Highway Bridge.

- Minimum vertical clearance requirements will be met over the railroad based on the most recent railroad separation guidelines.

A work area for the construction of the pipeline bridge will be required for the foundation drill rig and temporary placement of drill cuttings, which will be removed from the site. The drilled shaft foundation will be staged with a reinforcing steel cage in this area, which will be placed by a crane. Concrete will be placed with a concrete pump truck and tremie system. A mud tank to mix stabilizing slurry for the drilled shaft excavation will also be needed. It is estimated that a 100-foot by 100-foot area will be needed as a temporary work area. Those work areas will occur within the requested 110-foot roadway and utility corridor BLM ROWs and within the ROW currently held by Pinal County for the Kelvin Bridge Project (AZA-35391). Access to the bridge construction work area will be gained mostly form the north side of the river on privately owned lands, and only a portion of the temporary work area will be placed on BLM lands on the south side of the Gila River.

Traffic Management

Access to the Florence-Kelvin Highway and all adjacent roads and properties will remain open during construction of the Pipeline Project and associated road improvements. At least one lane of traffic will remain open and traffic will be directed as needed for safe travel through construction areas. Informational signs will be used to inform the public of temporary traffic hazards, flaggers will be employed during construction, and traffic cones would be used to identify any temporary changes in lane configuration necessary to minimize traffic impacts. Traffic speeds through construction areas will be limited to no more than 15 miles per hour.

3.3. POST-CONSTRUCTION ACTIVITIES

Clean-up

Construction sites, material storage yards, and access roads will be kept in an orderly condition throughout the construction period. Refuse and trash, including stakes and flags, will be removed from the sites and disposed of in an approved manner. No construction equipment oil or fuel will be drained on the ground. Oils or chemicals will be hauled to an approved site for disposal. No open burning of construction trash will occur on BLM-administered lands.

Reclamation

Following construction and cleanup, reclamation will be completed. The disturbed surfaces will be restored to the original contour of the land surface to the extent determined by the BLM. Appropriate site-specific seed mixes will be used where conditions vary. Salvaged native plants will be used for revegetation, if appropriate, along with seeding using BLM-recommended seed mixes. Preferably, seed will be planted between the months of November and January following pipeline construction. Seed will be planted using drilling, straw mulching, or hydromulching as directed by the BLM.

Operation and Maintenance

Asarco is requesting a right-of -way term for 30 years, the expected life of proposed tailings storage impoundment is 50 years. The pipeline will operate in support of daily, year-round mining operations. Asarco will rotate and replace the pipelines as needed as part of routine maintenance.

Under normal operating conditions, the buried pipelines will require no period-maintenance over the life of the Ripsey Wash Tailings Storage Facility. Should a pipeline rupture, the pressure in the pipeline should manifest itself as a leak visible from the surface. Until repaired, the leaked material would flow back along the trench to the containment plug south of the Gila River pipeline bridge on private land (**Figure 3C**). In the event of a pipeline rupture, the affected line would be taken out of service immediately, and the pipeline drained back to the emergency pipeline drain down pond on Asarco's privately-owned lands on the north bank of the Gila River. Following repairs, the line would be placed back in service and the emergency drain down pond pumped back to the pump station suction sump.

Under normal operating conditions the weathering steel pipeline bridge superstructure and cast-in-place concrete substructure will require minimal maintenance over the life of the structure. Weathering steel performs well in low humidity environments and requires little to no maintenance. Should the bridge require repairs they will be identified during routine inspections and repaired accordingly.

In the unlikely event of a pipeline failure and operations are halted, a drain down pond is planned on private land along the pipeline route north of the Gila River for containment of tailings and/or reclaim water. Asarco is currently evaluating the number of pumping and booster stations on privately owned lands that will be needed to ensure consistent pipeline operation, as well as their optimal location.

4. RESOURCE IMPACTS AND MITIGATION MEASURES

4.1. AIR QUALITY

The proposed Project is not expected to have adverse impacts on air quality. The proposed pipelines will be constructed and will operate in conformance with applicable Federal, State, and local air quality regulations.

4.2. VISUAL IMPACTS

The proposed Project will not pose significant adverse visual impacts on the surrounding landscape. The majority of the pipelines will be constructed subsurface south and east of the Florence-Kelvin Highway, and a portion of the pipelines will be constructed across the Gila River supported by a new bridge. The new pipeline bridge is proposed to be constructed in alignment with the Pinal County proposed Florence-Kelvin bridge and is expected to visually conform to that design.

4.3. SURFACE AND GROUND WATER QUALITY AND QUANTITY

The proposed pipelines will not contribute to the degradation of surface water or groundwater quality and/or quantity. Asarco is seeking a CWA Section 404 Individual Permit for the tailings facility the Project will support. In addition, Asarco will operate in accordance with a Stormwater Pollution Prevention Plan (SWPPP) during the construction phase of the pipeline corridor as required by an Arizona Department of Environmental Quality (ADEQ) Construction General Permit (CGP). The SWPPP will detail the installation and maintenance of site-specific Best Management Practices (BMPs) to be implemented. A complete and accurate Notice of Intent (NOI) will be submitted to ADEQ prior to commencement of activity.

There will be no structural change of the Gila River as a result of the pipeline bridge construction. The bridge will be constructed in alignment with the proposed Pinal County Florence-County bridge to span the Gila River, and no piers will be constructed within the ordinary high water mark of the river. Disturbance will be minimized during construction, and BMPs for sediment control will be implemented in accordance with the SWPPP. Any disturbed areas will be restored to natural contours upon completion of the work.

4.4. NOISE

The proposed Project may result in increased noise levels during construction. Construction of the pipelines and bridge will be conducted in accordance with Pinal County Ordinance No. 050306-ENO as Amended by 031611-ENO-01.

4.5. WILDLIFE

The proposed Project crosses a reach of the Gila River that is currently designated critical habitat for the endangered SWFL and is proposed designated critical habitat for the threatened YBC. WestLand Resources, Inc. (WestLand) has completed surveys during multiple seasons along the reach of the Gila River adjacent to the Project, and SWFL and YBC have been recorded from the vicinity of the existing Florence-Kelvin Highway bridge in proximity to the proposed project area.

Vegetation disturbance will be minimized to the extent practicable. The Corps is in the process of consulting with the USFWS regarding the potential impacts to individual SWFL and YBC and their proposed/designated critical habitat as part of the Ripsey Wash Tailings Storage Facility Project Clean Water Act Section 404 permitting process. Vegetation clearing required for pipeline bridge construction would be conducted outside the breeding seasons for the SWFL and YBC.

The Sonoran desert tortoise (*Gopherus morafkai*) is also known to occur in the Project vicinity. The Sonoran desert tortoise is not afforded protection under the Endangered Species Act but it is considered a BLM sensitive species. Potential Sonoran desert tortoise shelters could be examined during the course of the proposed activities to prevent negative impacts. Any individual tortoises encountered could be avoided and allowed to move out of the way prior to ground disturbing activities. Guidelines for handling desert tortoise published by AGFD could be used if it were found absolutely necessary to move individual tortoises (**Attachment 1B**).

Two additional BLM sensitive species, California leaf-nosed bat (*Macrotus californicus*) and Desert box turtle (*Terrapene ornata luteola*), also have the potential to occur within the Project Area. Activities associated with the Project would not substantially impact habitat for these species. Construction activities may impact individuals of these species, but they are not likely going to result in a trend toward listing or loss of viability of these species.

4.6. VEGETATION

No BLM sensitive or threatened or endangered vegetation species would be impacted by the Project.

Asarco will adhere to the Arizona Native Plant Law for required vegetation clearances within the right-of-way.

The following measure will be taken to avoid the spread of noxious weeds within the Project Area:

- Avoid moving weed-infested gravel, rock and other fill materials to relatively weed-free locations. Gravel and fill should come from weed-free sources. Inspect gravel pits and fill sources to identify weed-free sources.

- Identify existing noxious weeds along access roads and control them before construction equipment moves into relatively weed-free areas.
- Clean off-road equipment (power or high-pressure cleaning) of all mud, dirt, and plant parts before moving into relatively weed-free areas.
- Minimize the removal of roadside vegetation during construction, maintenance and other ground-disturbing activities.
- Use only certified weed-free straw and mulch for erosion control projects and reseeding activities.

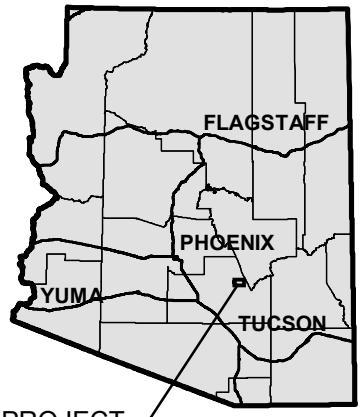
Portions of the Project Area will be seeded with a BLM-approved seed mix at the end of construction activities.

4.7. CULTURAL RESOURCES

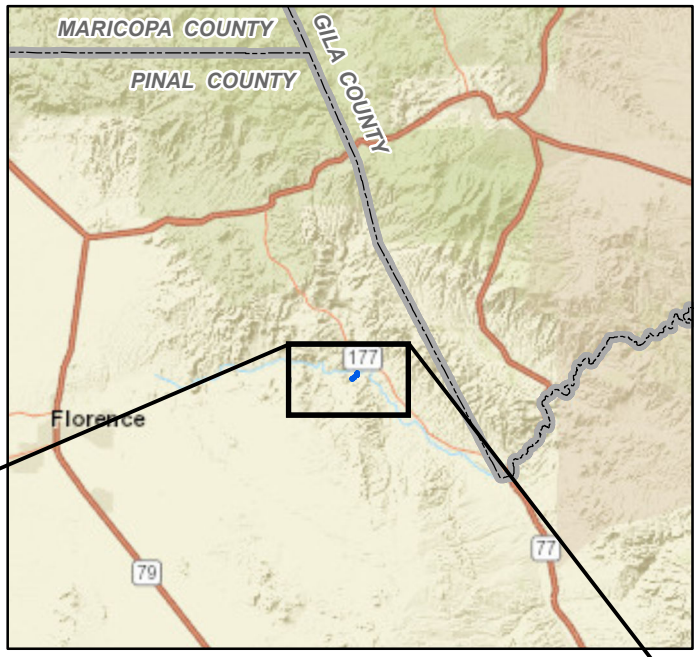
No eligible cultural resources occur on BLM lands subject to this ROW request.

FIGURES

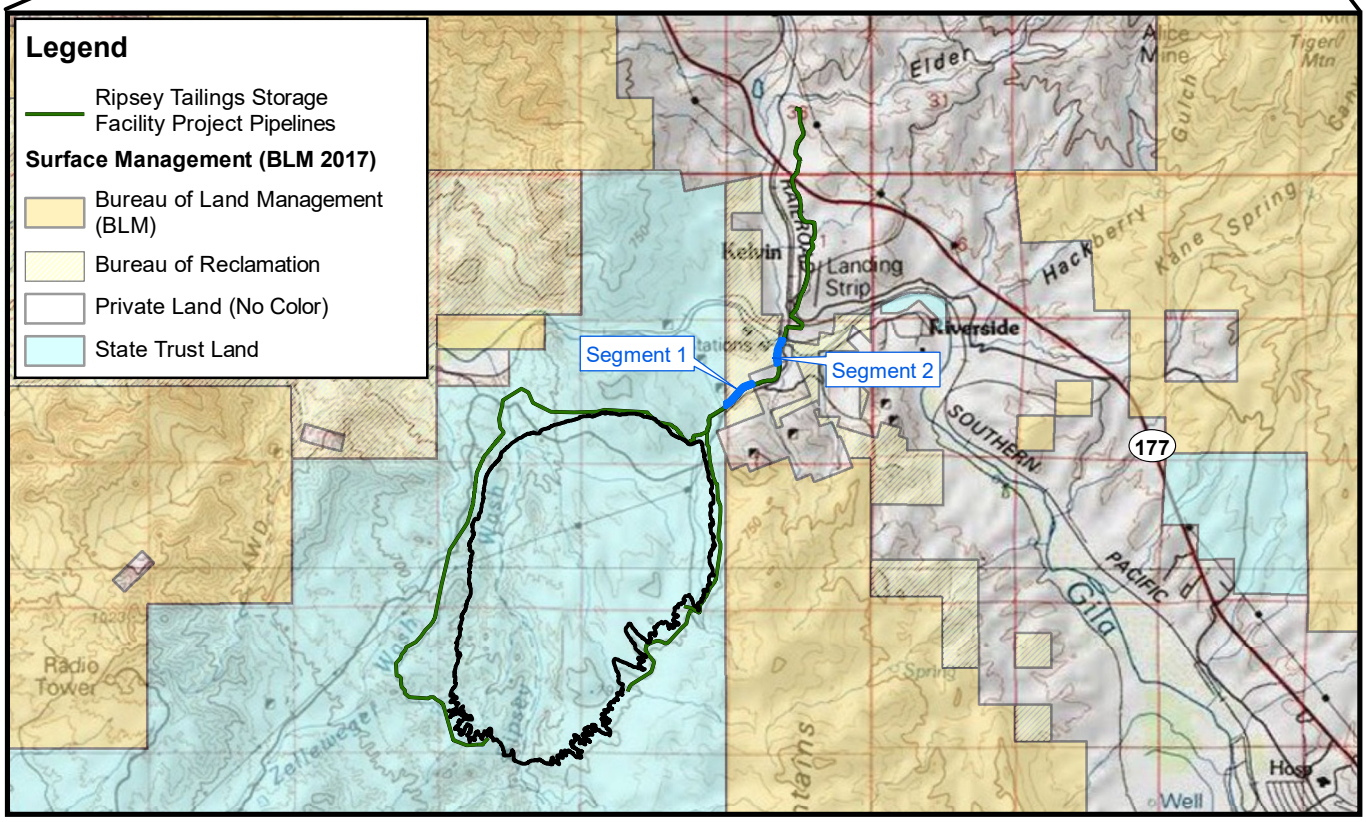
ARIZONA



NORTHEAST PINAL COUNTY



Approximate Scale 1 Inch = 15 Miles



T4S, R13E, Portion of Section 12,
Pinal County, Arizona,
Globe USGS 1:100,000 Quadrangle
Image Source: ArcGIS Online, World Street Map

ASARCO LLC
Ripsey Wash Tailings Storage Facility
BLM Right-of-Way Application/Plan of Development

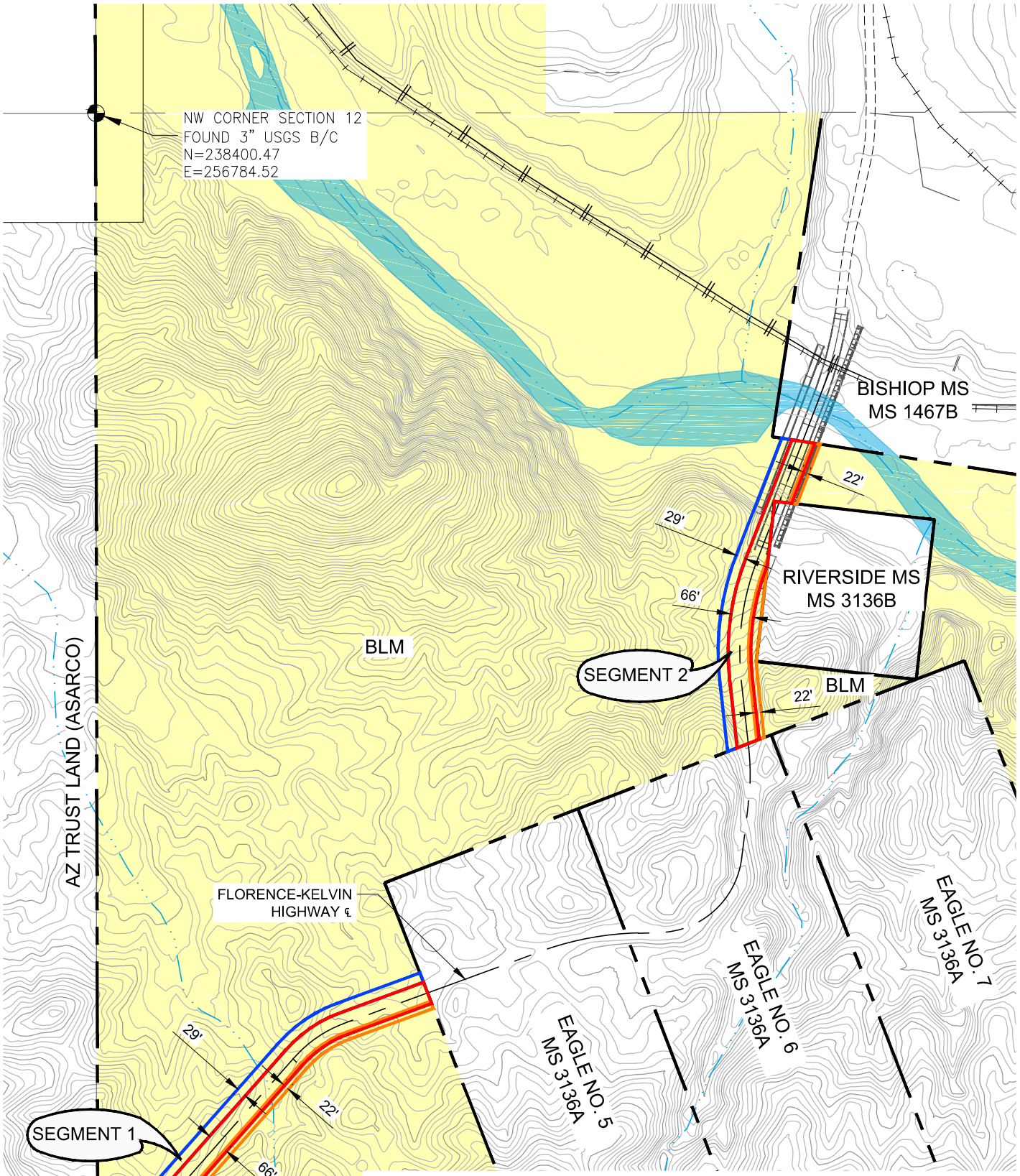
VICINITY MAP
Figure 1

WestLand Resources

N

0 3,500 7,000 Feet

0 1,000 2,000 Meters



CLIENT	ASARCO, LLC				
PROJECT	BLM RIGHT-OF-WAY APPLICATION				
TITLE	RIGHT-OF-WAY OVERVIEW				
DESIGNED BY		CHECKED BY	TJF	DATE	ISSUED FOR
DRAWN BY	HMR	APPROVED BY		02/09/18	DRAFT
FILENAME	4300-ROW	FIGURE No.	2A	REV	A
PROJECT NO.	XX-XXXX-XX				

amec foster wheeler

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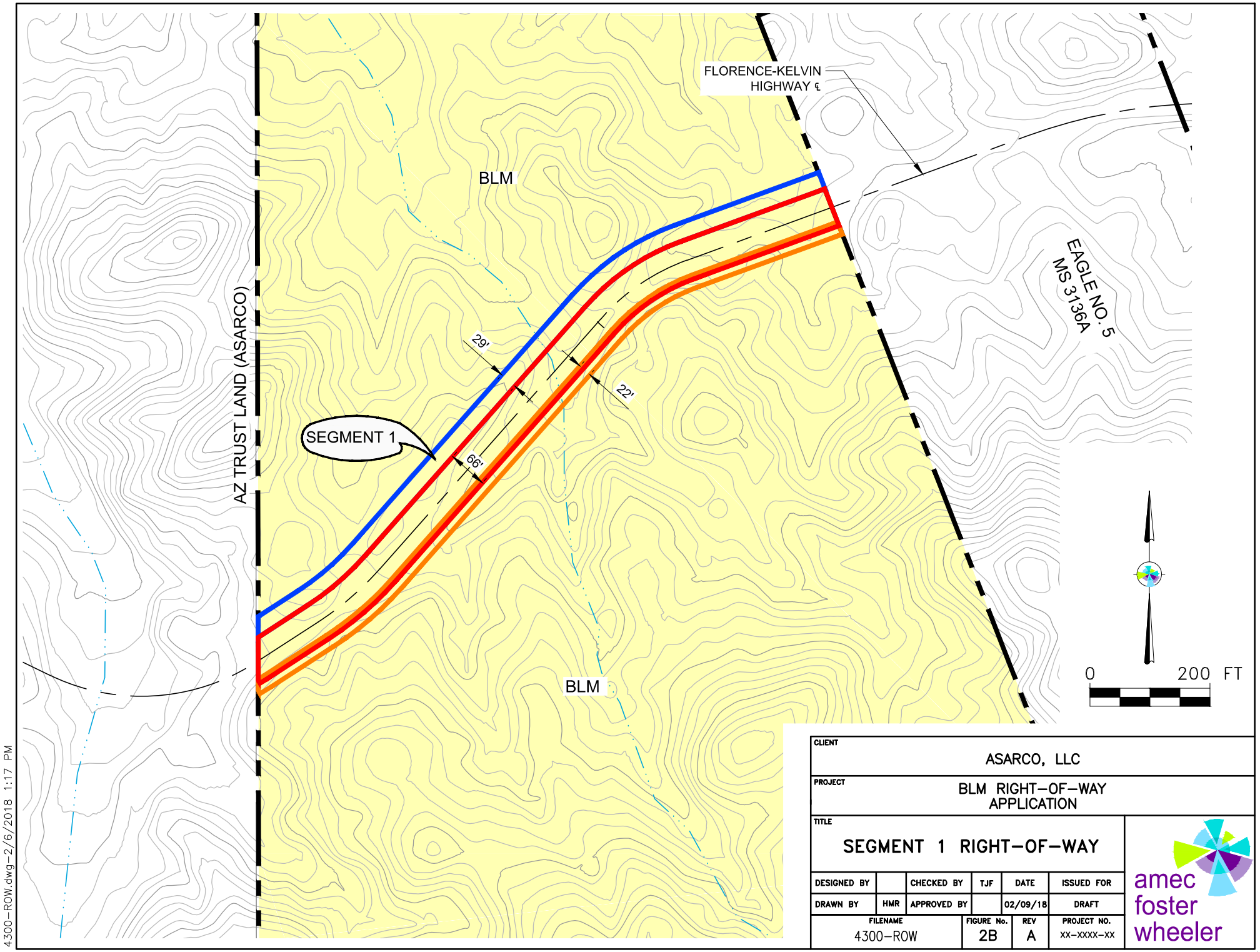

CLIENT	ASARCO, LLC				
PROJECT	BLM RIGHT-OF-WAY APPLICATION				
TITLE	SEGMENT 1 RIGHT-OF-WAY				
DESIGNED BY		CHECKED BY	TJF	DATE	ISSUED FOR
DRAWN BY	HMR	APPROVED BY		02/09/18	DRAFT
FILENAME	4300-ROW	FIGURE No.	2B	REV	A
PROJECT NO.	XX-XXXX-XX				

amec foster wheeler

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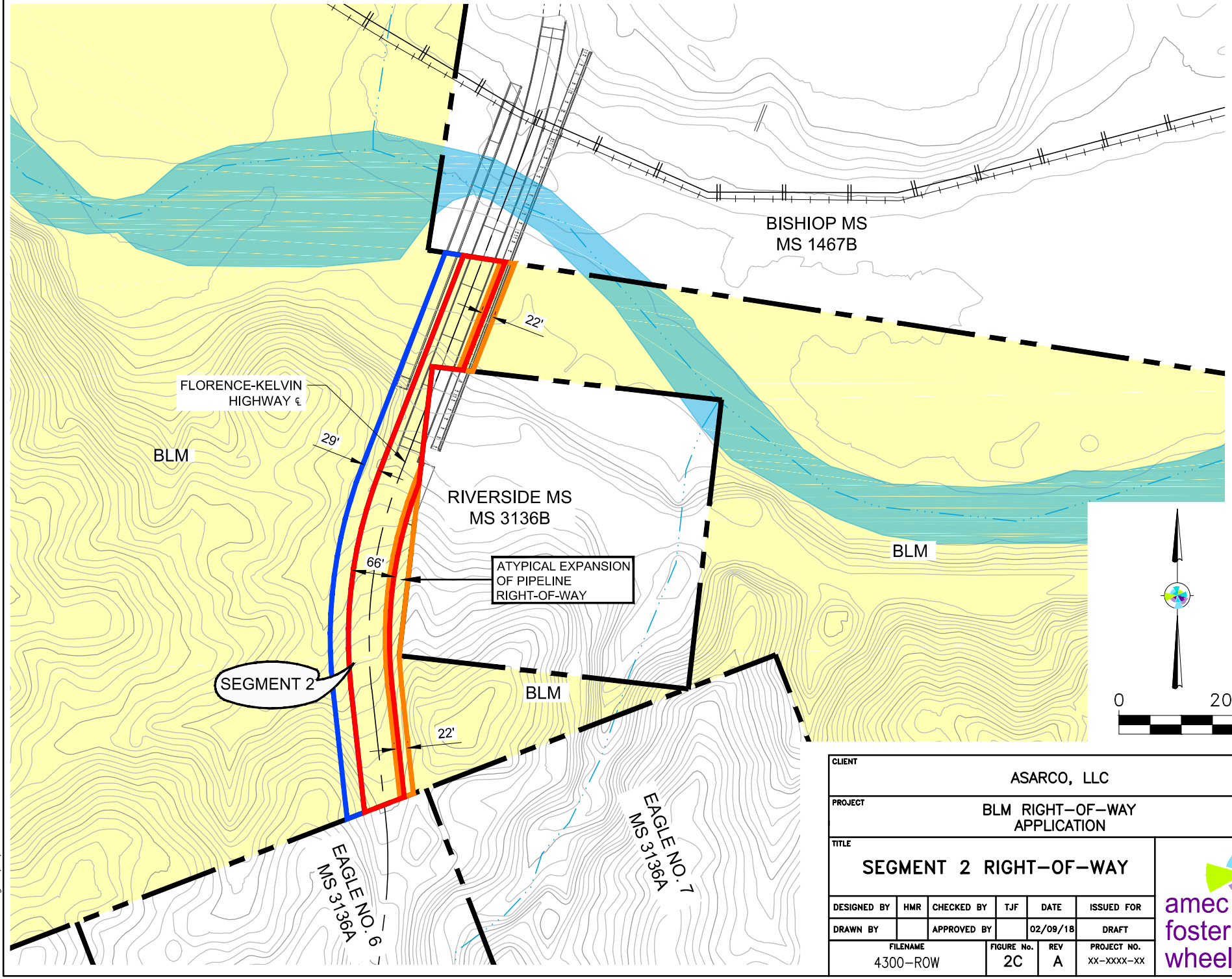

CLIENT	ASARCO, LLC				
PROJECT	BLM RIGHT-OF-WAY APPLICATION				
TITLE	SEGMENT 2 RIGHT-OF-WAY				
DESIGNED BY	HMR	CHECKED BY	TJF	DATE	ISSUED FOR
DRAWN BY		APPROVED BY		02/09/18	DRAFT
FILENAME	4300-ROW	FIGURE No.	2C	REV	A
PROJECT NO.	XX-XXXX-XX				

amec foster wheeler

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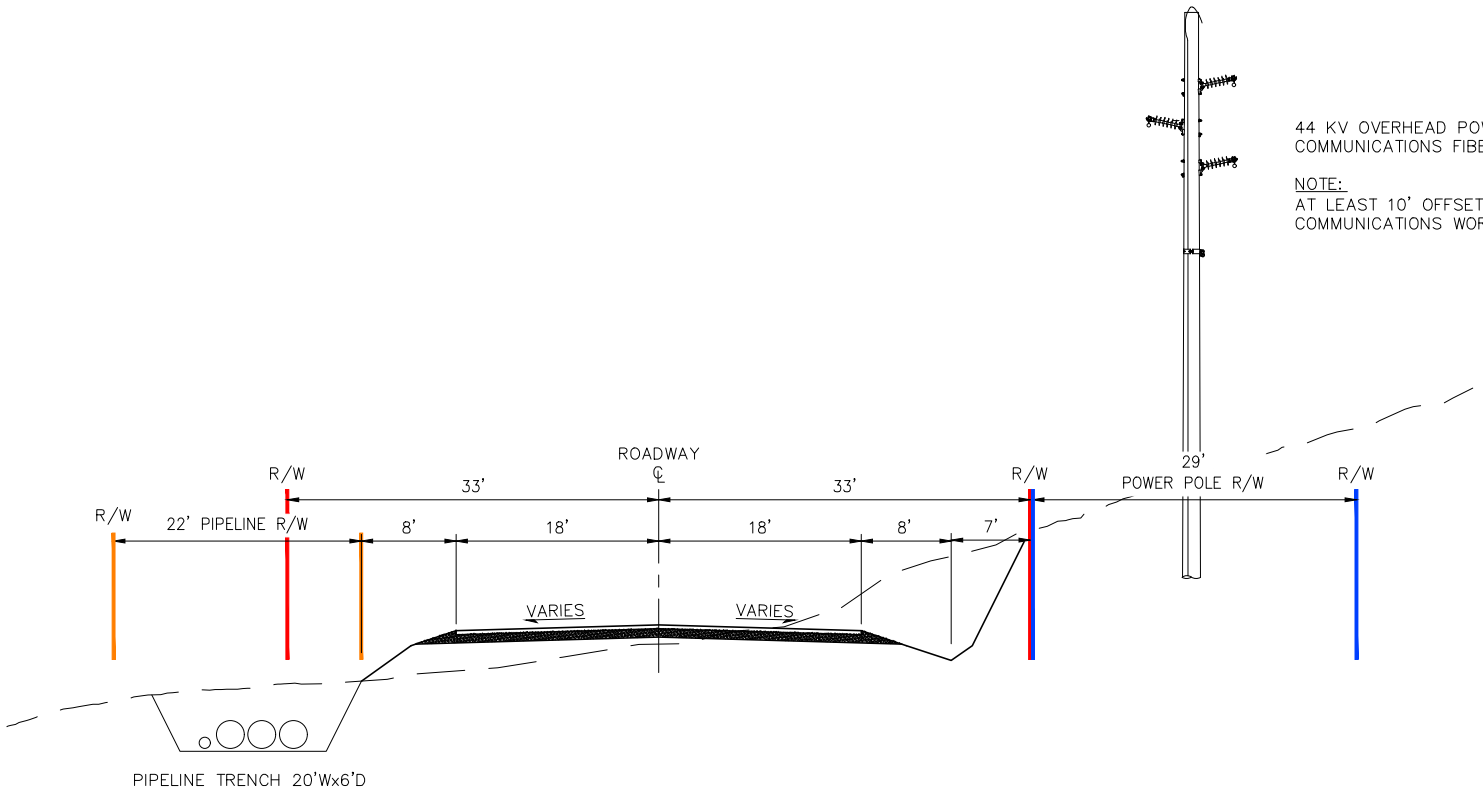

44 KV OVERHEAD POWER & PROCESS CONTROL COMMUNICATIONS FIBER OPTIC CABLE

NOTE:
AT LEAST 10' OFFSET FROM ELECTRICAL WORKINGS FOR COMMUNICATIONS WORKER SAFETY ZONE

PIPELINE TRENCH 20'Wx6'D

POSITION OF TRENCH VARIES UPON EXISTING TOPOGRAPHY

NOTES:

2 UP TO 30" STEEL LINED TAILINGS DELIVERY PIPELINES
1 UP TO 30" STEEL OR HDPE RECLAIMED WATER PIPELINE
1 UP TO 12" HDPE FRESH WATER PIPELINE
1 FIBER OPTIC COMMUNICATION CABLE

UP TO 2' SPACING BETWEEN PIPELINES

CLIENT	ASARCO, LLC				
PROJECT	BLM RIGHT-OF-WAY APPLICATION				
TITLE	OVERALL TYPICAL SECTION				
DESIGNED BY		CHECKED BY	TJF	DATE	ISSUED FOR
DRAWN BY	HMR	APPROVED BY		02/09/18	DRAFT
FILENAME	4300-ROW	FIGURE No.	2D	REV A	PROJECT NO. XX-XXXX-XX

amec foster wheeler

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LEGAL DESCRIPTION

BEGINNING AT A POINT WHOSE NORTHING IS 235062.86 AND WHOSE EASTING IS 256789.76;

THENCE ALONG A CURVE TO THE LEFT, HAVING A RADIUS OF 376.00 FEET, A DELTA ANGLE OF 01° 45' 39", AND WHOSE LONG CHORD BEARS N 57°57'11" E A DISTANCE OF 11.55 FEET;

THENCE BEARING N 57°4'22" E A DISTANCE OF 124.10 FEET;

THENCE ALONG A CURVE TO THE LEFT, HAVING A RADIUS OF 526.00 FEET, A DELTA ANGLE OF 15° 35' 53", AND WHOSE LONG CHORD BEARS N 49°16'26" E A DISTANCE OF 142.75 FEET;

THENCE BEARING N 41°28'29" E A DISTANCE OF 555.75 FEET;

THENCE ALONG A CURVE TO THE RIGHT, HAVING A RADIUS OF 327.15 FEET, A DELTA ANGLE OF 28° 27' 48", AND WHOSE LONG CHORD BEARS N 55°42'23" E A DISTANCE OF 160.85 FEET;

THENCE BEARING N 69°56'17" E A DISTANCE OF 258.00 FEET;

THENCE BEARING S 20°46'53" E A DISTANCE OF 22.00 FEET;

THENCE BEARING S 69°56'17" W A DISTANCE OF 258.28 FEET;

THENCE ALONG A CURVE TO THE LEFT, HAVING A RADIUS OF 305.15 FEET, A DELTA ANGLE OF 28° 27' 48", AND WHOSE LONG CHORD BEARS S 55°42'23" W A DISTANCE OF 150.04 FEET;

THENCE BEARING S 41°28'29" W A DISTANCE OF 555.75 FEET;

THENCE ALONG A CURVE TO THE RIGHT, HAVING A RADIUS OF 548.00 FEET, A DELTA ANGLE OF 15° 35' 53", AND WHOSE LONG CHORD BEARS S 49°16'26" W A DISTANCE OF 148.72 FEET;

THENCE BEARING S 57°04'22" W A DISTANCE OF 124.10 FEET;

THENCE ALONG A CURVE TO THE RIGHT, HAVING A RADIUS OF 398.00 FEET, A DELTA ANGLE OF 03° 38' 59", AND WHOSE LONG CHORD BEARS S 58°53'51" W A DISTANCE OF 25.35 FEET;

THENCE BEARING N 00°06'39" W A DISTANCE OF 25.43 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA A COMPUTED AREA OF 27,713.80 SQUARE FEET OR 0.636 ACRES OF LAND, MORE OR LESS.

NOTE:

P.O.B. COORDINATES BASED
FROM NW CORNER SECTION 12
FOUND 3" USGS B/C
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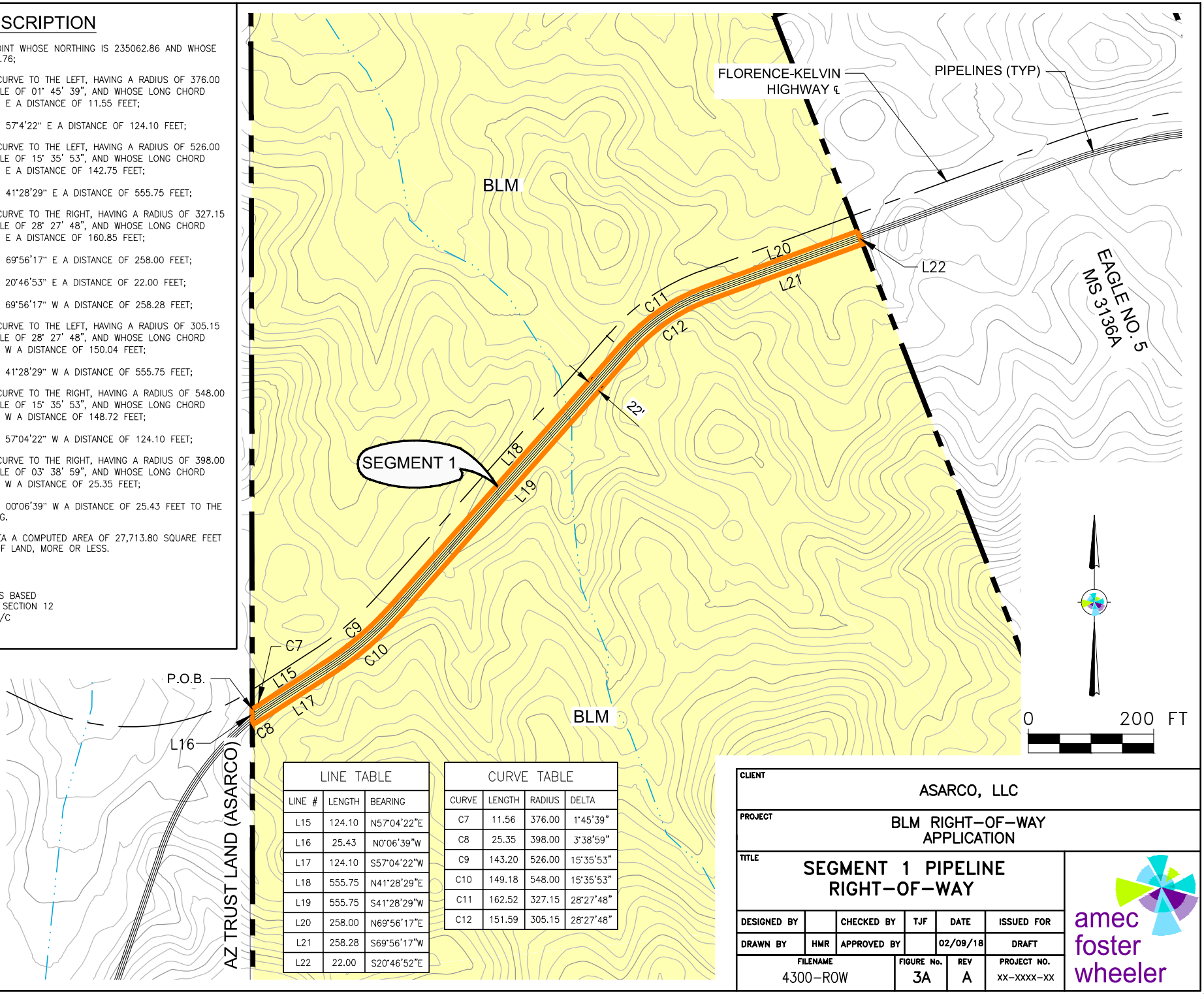
E=256784.52



LINE TABLE		
LINE #	LENGTH	BEARING
L15	124.10	N57°04'22"E
L16	25.43	N0°06'39"W
L17	124.10	S57°04'22"W
L18	555.75	N41°28'29"E
L19	555.75	S41°28'29"W
L20	258.00	N69°56'17"E
L21	258.28	S69°56'17"W
L22	22.00	S20°46'52"E

CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C7	11.56	376.00	1°45'39"
C8	25.35	398.00	3°38'59"
C9	143.20	526.00	15°35'53"
C10	149.18	548.00	15°35'53"
C11	162.52	327.15	28°27'48"
C12	151.59	305.15	28°27'48"

CLIENT	ASARCO, LLC				
PROJECT	BLM RIGHT-OF-WAY APPLICATION				
TITLE	SEGMENT 1 PIPELINE RIGHT-OF-WAY				
DESIGNED BY		CHECKED BY	TJF	DATE	ISSUED FOR
DRAWN BY	HMR	APPROVED BY		02/09/18	DRAFT
FILENAME	4300-ROW	FIGURE No.	3A	REV	A
PROJECT NO.	XX-XXXX-XX				

amec foster wheeler

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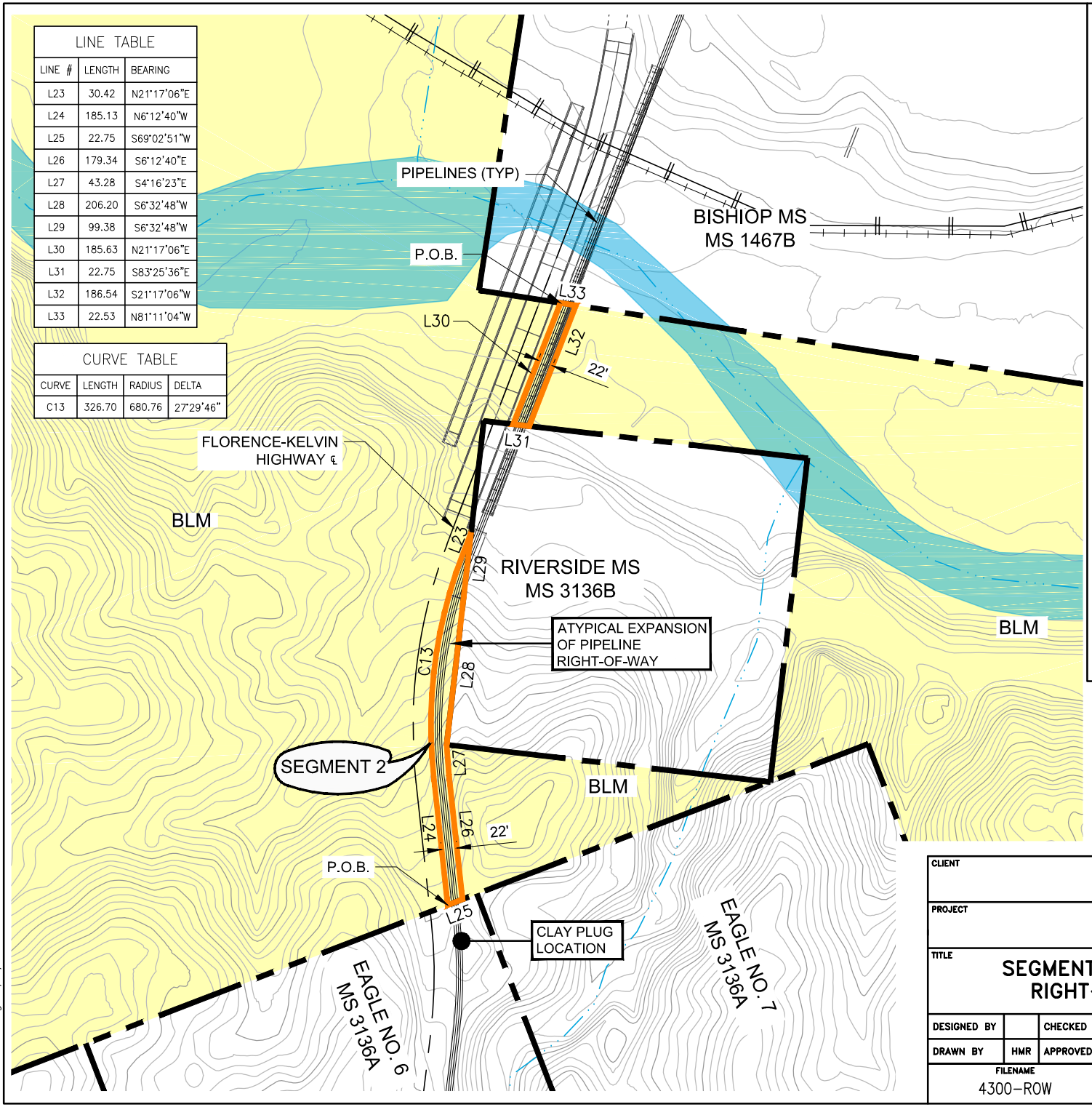

LINE TABLE		
LINE #	LENGTH	BEARING
L23	30.42	N21°17'06"E
L24	185.13	N6°12'40"W
L25	22.75	S69°02'51"W
L26	179.34	S6°12'40"E
L27	43.28	S4°16'23"E
L28	206.20	S6°32'48"W
L29	99.38	S6°32'48"W
L30	185.63	N21°17'06"E
L31	22.75	S83°25'36"E
L32	186.54	S21°17'06"W
L33	22.53	N81°11'04"W

CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C13	326.70	680.76	27°29'46"

LEGAL DESCRIPTION

BEGINNING AT A POINT WHOSE NORTHING IS 236581.84 AND WHOSE EASTING IS 258700.29;

THENCE BEARING N 06°12'40" W A DISTANCE OF 185.13 FEET;

THENCE ALONG A CURVE TO THE RIGHT, HAVING A RADIUS OF 680.76 FEET, A DELTA ANGLE OF 27° 29' 46", AND WHOSE LONG CHORD BEARS N 7°32'13" E A DISTANCE OF 323.57 FEET;

THENCE BEARING N 21°17'6" E A DISTANCE OF 30.42 FEET;

THENCE BEARING S 06°32'48" W A DISTANCE OF 99.38 FEET;

THENCE BEARING S 06°32'48" W A DISTANCE OF 206.20 FEET;

THENCE BEARING S 04°16'23" E A DISTANCE OF 43.28 FEET;

THENCE BEARING S 06°12'40" E A DISTANCE OF 179.34 FEET;

THENCE BEARING S 69°2'51" W A DISTANCE OF 22.75 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA A COMPUTED AREA OF 11,911.25 SQUARE FEET OR 0.273 ACRES OF LAND, MORE OR LESS.

LEGAL DESCRIPTION

BEGINNING AT A POINT WHOSE NORTHING IS 237444.13 AND WHOSE EASTING IS 258861.96;

THENCE BEARING S 81°11'04" E A DISTANCE OF 22.53 FEET;

THENCE BEARING N 21°17'06" E A DISTANCE OF 186.54 FEET;

THENCE BEARING N 83°25'37" W A DISTANCE OF 22.75 FEET;

THENCE BEARING S 21°17'06" W A DISTANCE OF 185.63 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA A COMPUTED AREA OF 4,093.83 SQUARE FEET OR 0.094 ACRES OF LAND, MORE OR LESS.

NOTE:

P.O.B. COORDINATES BASED
FROM NW CORNER SECTION 12
FOUND 3" USGS B/C
N=238400.47
E=256784.52

0 200 FT

CLIENT	ASARCO, LLC				
PROJECT	BLM RIGHT-OF-WAY APPLICATION				
TITLE	SEGMENT 2 PIPELINE RIGHT-OF-WAY				
DESIGNED BY		CHECKED BY	TJF	DATE	ISSUED FOR
DRAWN BY	HMR	APPROVED BY		02/09/18	DRAFT
FILENAME	4300-ROW	FIGURE No.	3B	REV	A
PROJECT NO.	XX-XXXX-XX				

amec foster wheeler

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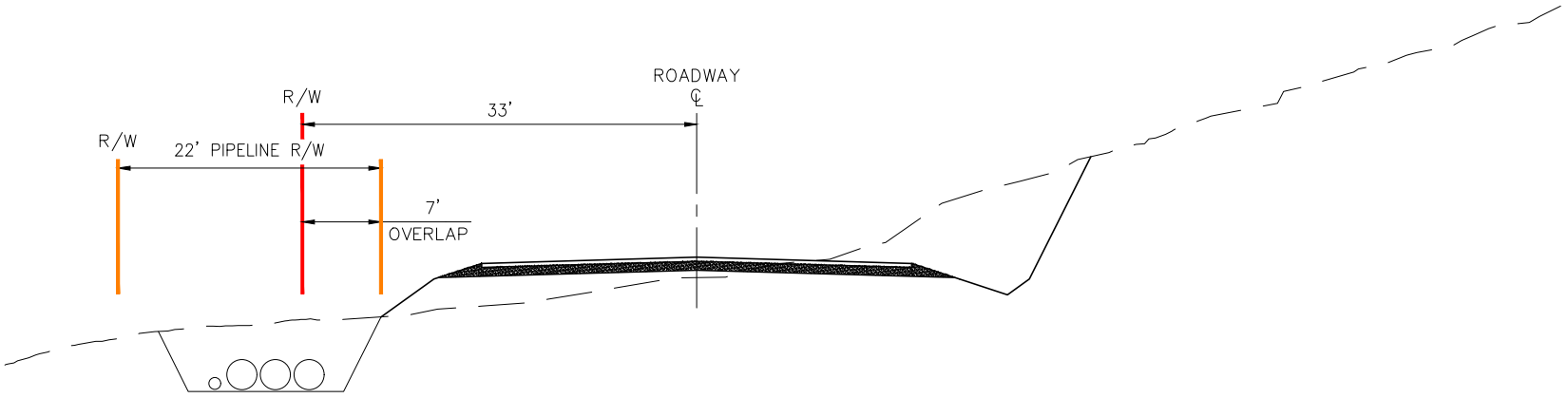

PIPELINE TRENCH 20'Wx6'D

POSITION OF TRENCH VARIES
UPON EXISTING TOPOGRAPHY

NOTES:

2 UP TO 30" STEEL LINED TAILINGS DELIVERY PIPELINES
1 UP TO 30" STEEL OR HDPE RECLAIMED WATER PIPELINE
1 UP TO 12" HDPE FRESH WATER PIPELINE
1 FIBER OPTIC COMMUNICATION CABLE

UP TO 2' SPACING BETWEEN PIPELINES

CLIENT	ASARCO, LLC				
PROJECT	BLM RIGHT-OF-WAY APPLICATION				
TITLE	PIPELINE TYPICAL SECTION				
DESIGNED BY		CHECKED BY	TJF	DATE	ISSUED FOR
DRAWN BY	HMR	APPROVED BY		02/09/18	DRAFT
FILENAME	4300-ROW	FIGURE No.	3C	REV	A
PROJECT NO.	XX-XXXX-XX				

amec foster wheeler

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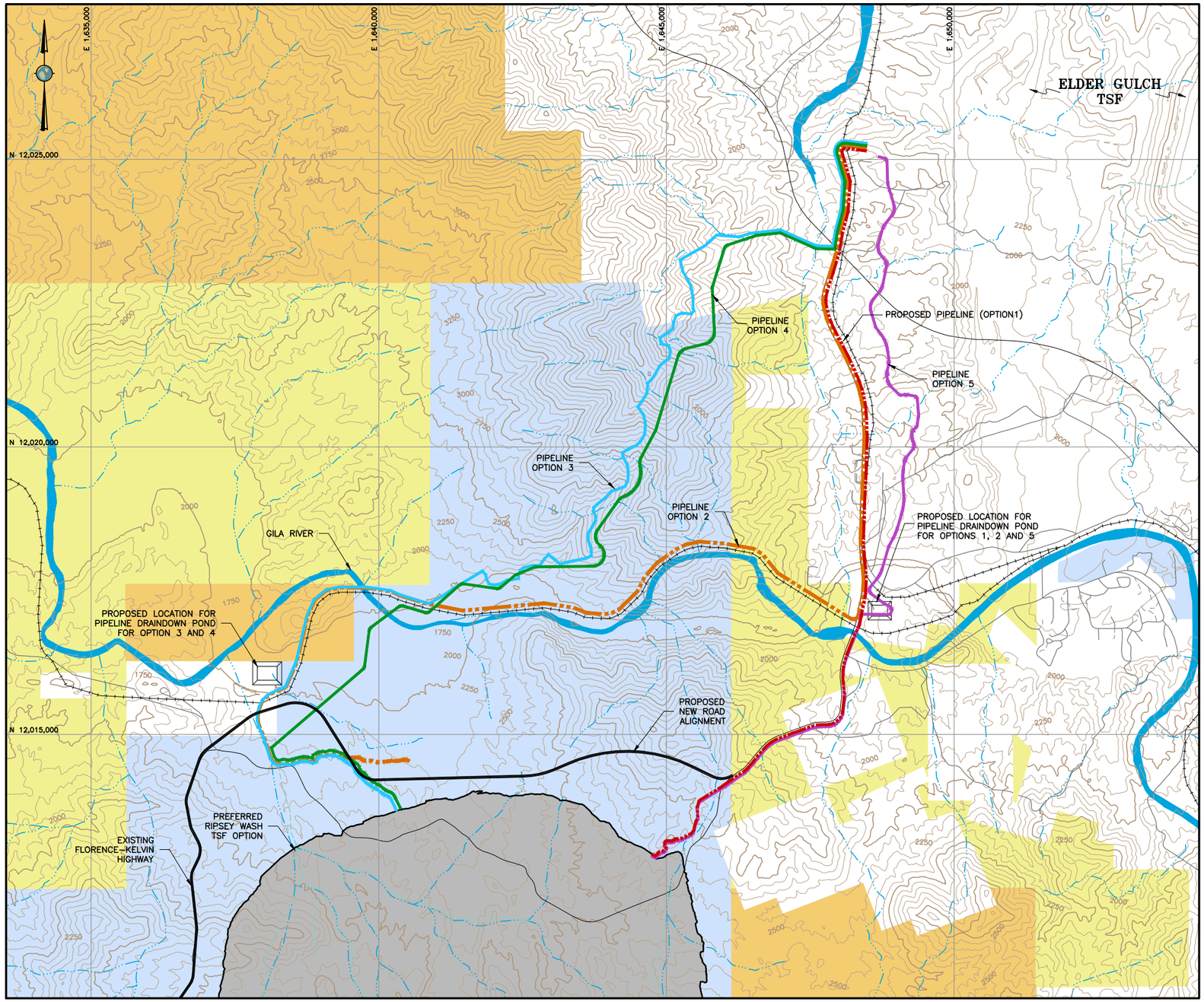


LEGEND:

- EXISTING GROUND SURFACE CONTOUR EL, FEET
- EXISTING DRAINAGES
- EXISTING RAILROAD
- EXISTING ROAD
- EXISTING TRAIL/UNIMPROVED ROAD
- BUREAU OF LAND MANAGEMENT
- BUREAU OF RECLAMATION
- STATE TRUST LAND
- PRIVATE LAND (NO COLOR)
- RIPSEY WASH PROPOSED TAILINGS STORAGE FACILITY

PIPELINE ALTERNATIVES

ALTERNATIVE	LENGTH (FT)
1	15,063
2	25,139
3	23,233
4	21,016
5	16,011

REFERENCE:
TOPOGRAPHIC MAPPING AND EXISTING FEATURE DATA PROVIDED BY AIRBORNE 1, INC.; COORDINATE SYSTEM IS IN UTM ZONE 12 NAD 83 DATUM FOR HORIZONTAL AND NAVD 88 DATUM FOR VERTICAL.

1000 0 1000 2000 FEET

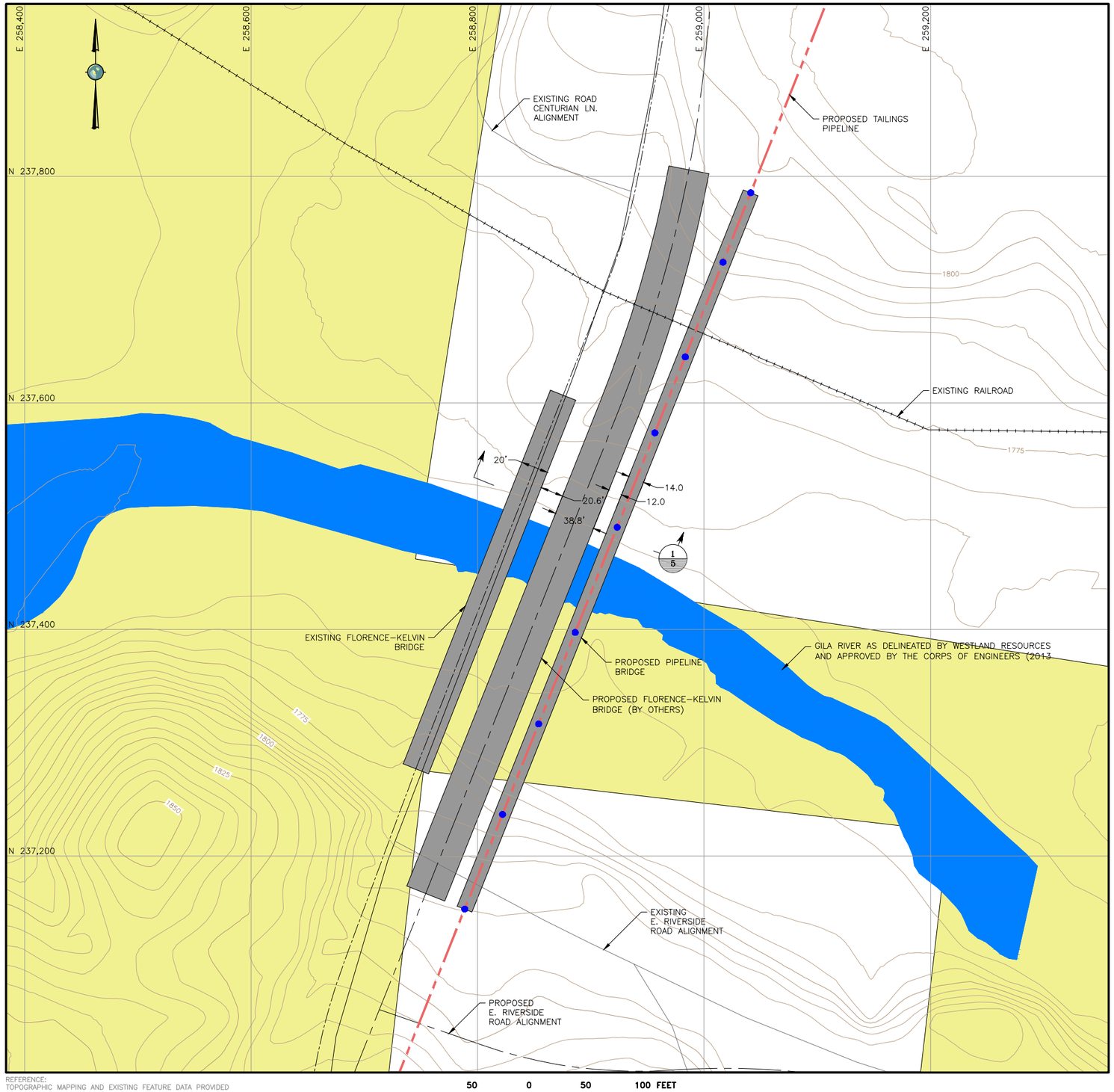
Figure Prepared By: amec

ASARCO LLC
Ripsey Wash Tailings Storage Facility
Corridor Alternatives
BLM Right-of-Way Application/Plan of Development

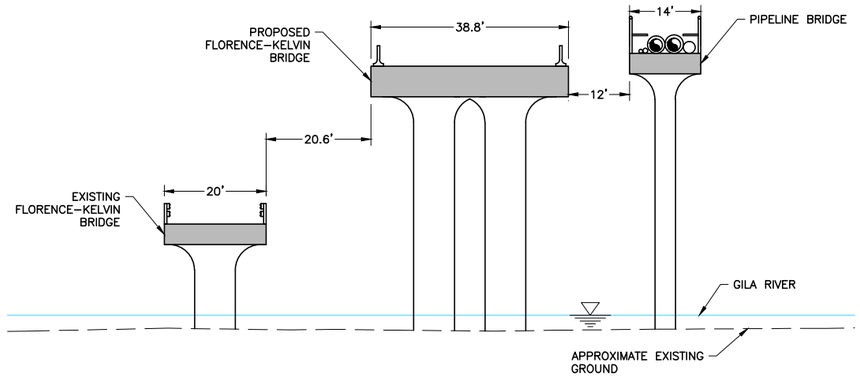
PIPELINE CORRIDOR ALTERNATIVES

Figure 4

M:\Jobs\200's\203.51\ENV\RipseyBLM_ROW_Apps\dwg\RevisedFig2_2018_01-19\Fig4_PipelineCorridorAlts_2_6_2018.dwg-2/6/2018 11:12 AM



REFERENCE:
TOPOGRAPHIC MAPPING AND EXISTING FEATURE DATA PROVIDED BY AIRBORNE 1, INC.; COORDINATE SYSTEM IS IN UTM ZONE 12 NAD 83 DATUM FOR HORIZONTAL AND NAVD 88 DATUM FOR VERTICAL.



1/5 BRIDGE SECTION

LEGEND:

- 100 EXISTING GROUND SURFACE CONTOUR EL, FEET
- EXISTING DRAINAGES
- EXISTING RAILROAD
- EXISTING ROAD
- PROPOSED TAILINGS DELIVERY AND RECLAIM WATER PIPELINES
- PROPOSED PIER
- BUREAU OF LAND MANAGEMENT
- PRIVATE LAND (NO COLOR)

amec

ASARCO LLC

Ripsey Wash Tailings Storage Facility
Project Pipelines
BLM Right-of-Way Application/Plan of Development

Pipeline Bridge Plan View
Figure 5

M:\Jobs\200's\203.25\BLM ROW\BLM_Pipeline_ROW_2017\dwg\Fig5 Pipeline Bridge_3_21_2017.dwg-4/26/2017 4:39 PM

ATTACHMENT 1A

Technical Memorandum: Gila River Pipeline Bridge Scour Analysis

Technical Memorandum

To: ASARCO LLC
From: Amec Foster Wheeler Environment and Infrastructure
Date: July 21, 2017
Re: Gila River Pipeline Bridge Scour Analysis

Amec Foster Wheeler performed a preliminary scour analysis for the proposed Gila River Pipeline Bridge in Pinal County, Arizona. The analysis utilized the hydraulic model and revised scour analysis report developed by Entellus for the proposed replacement Florence-Kelvin Highway Bridge, located directly downstream of the proposed pipeline bridge (*Kelvin Bridge at the Gila River Final Hydraulic and Scour Analysis Report).* This memorandum describes the methods to support the scour analysis for the Gila River Pipeline Bridge.

Background

The pipeline will cross the Gila River approximately 1.5 miles south of the intersection of Highway 177 and the Florence-Kelvin Highway in Pinal County, Arizona. The pipeline bridge will be 14 feet wide, 686 feet long and have 8 spans. The proposed pipeline bridge will parallel the replacement Florence-Kelvin Bridge, 12 feet upstream, and the bridges will share supporting pier locations perpendicular to flow.

Hydraulics

The geometry of the hydraulic model developed by Entellus was modified to incorporate the pipeline bridge by increasing the deck width of the Florence-Kelvin Bridge by 26 feet to account for the 14 foot width of the pipeline bridge and the 12 foot gap between the two bridges. Modeling both bridges as one structure was justified by the bridge's close proximity to one another, the bridges having mirrored pier locations, and the similar bridge deck heights. The abutment of the proposed bridge was also modified to remove the small gap between the sloping abutment and the bridge foundation which was present in the existing model. The #3 upstream face cross section that was originally located at the upstream face of the proposed highway bridge was moved upstream to the upstream face of the pipeline bridge. There was no survey data provided so it was assumed that the channel geometry remained relatively the same so that the station elevation data of the original #3 cross section could be used for the new #3 cross section. However, the elevation of every point was increased by 0.014 feet to keep the same approach channel slope as was present in the existing model. In addition to the bridge geometry modifications, the expansion and contraction coefficients for several cross sections near the structures were modified to align with the standard HEC-RAS bridge modeling routine. There were no other changes made to the original geometry data.

There were no changes made to the 100 year and 500 year design flows determined using a stream gage analysis in Entellus' *Final Design Concept Report for the Florence-Kelvin Bridge.*

Amec Foster Wheeler Environment & Infrastructure, Inc.
2000 S. Colorado Blvd., Suite 2-1000
Denver, CO 80222
Tel: +1 (303) 935-6505
Fax: +1 (303) 935-6575
amecfw.com

Scour Analysis

The proposed pipeline and highway bridge scour was analyzed using HEC-RAS version 4.1.0, the Army Corps of Engineers' riverine hydraulic modeling software. The HEC-RAS procedure is based on methodology from the U.S. Department of Transportation FHWA Hydraulic Engineering Circular No. 18 - "Evaluating Scour at Bridges." The proposed bridges were analyzed for three types of scour:

- Contraction Scour
- Pier Scour
- Abutment Scour

The D_{50} that was used in the scour calculations to represent the soil conditions at the proposed bridge was determined by Entellus in their scour analysis report by conducting a sieve analysis on several bore hole samples.

Comparing the scour results for the combined pipeline-highway bridge structure with the results presented by Entellus for just the highway bridge, the only substantial change in any scour depth was the left abutment scour depth. The left abutment scour increased from 9.04 feet to 11.71 feet for the 100-year flow event (increase of 30%). Every other scour depth was within +/- 5% which was not deemed to be a substantial change which would warrant additional protections above what was recommended by the Entellus report. The increase in the left abutment scour was not caused by the proposed parallel pipeline bridge being added, but was caused by correcting the small gap between the sloping abutment and the bridge foundation. The resulting left abutment scour depth for the existing model which included the highway bridge alone with the small gap corrected was 11.49 ft. This was only a 0.22% difference from the combined pipeline-highway bridge result.

Amec Foster Wheeler recommends that the results and recommendations from the Entellus report for the replacement Florence-Kelvin Highway Bridge be used as a guide for the scour for the Gila River Pipeline Bridge while taking into consideration the increased potential abutment scour discussed above. As the Entellus report states, it is recommended that some form of bank protection be used on the abutment of the pipeline bridge. AMEC Foster Wheeler emphasizes this recommendation especially with the correction to the model which increased the anticipated scour depth on the left abutment.
Amec Foster Wheeler appreciates this opportunity to provide this memorandum to ASARCO LLC for the Gila River Pipeline Bridge. If you have any questions or comments, please contact me at (303) 630-0808.

Sincerely,
Amec Foster Wheeler Environment and Infrastructure, Inc.

Brad Bettag, PE
Hydraulics Engineer

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ATTACHMENT 1B

Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects

GUIDELINES FOR HANDLING SONORAN DESERT TORTOISES ENCOUNTERED ON DEVELOPMENT PROJECTS

Arizona Game and Fish Department
Revised September 22, 2014

The Arizona Game and Fish Department (Department) has developed the following guidelines to reduce potential impacts to desert tortoises, and to promote the continued existence of tortoises throughout the state. These guidelines apply to short-term and/or small-scale projects, depending on the number of affected tortoises and specific type of project.

The Sonoran desert tortoise occurs south and east of the Colorado River. Tortoises encountered in the open should be moved out of harm's way to adjacent appropriate habitat. If an occupied burrow is determined to be in jeopardy of destruction, the tortoise should be relocated to the nearest appropriate alternate burrow or other appropriate shelter, as determined by a qualified biologist. Tortoises should be moved less than 48 hours in advance of the habitat disturbance so they do not return to the area in the interim. Tortoises should be moved quickly, kept in an upright position parallel to the ground at all times, and placed in the shade. Separate disposable gloves should be worn for each tortoise handled to avoid potential transfer of disease between tortoises. Tortoises must not be moved if the ambient air temperature exceeds 40° Celsius (105° Fahrenheit) unless an alternate burrow is available or the tortoise is in imminent danger.

A tortoise may be moved up to one-half mile, but no further than necessary from its original location. If a release site or alternate burrow is unavailable within this distance, and ambient air temperature exceeds 40° Celsius (105° Fahrenheit), contact the Department for guidance. Tortoises salvaged from projects which result in substantial permanent habitat loss (e.g. housing and highway projects), or those requiring removal during long-term (longer than one week) construction projects, may be placed in the Department's tortoise adoption program. *Managers of projects likely to affect desert tortoises should obtain a scientific collecting license from the Department to facilitate handling or temporary possession of tortoises.* Likewise, if large numbers of tortoises (>5) are expected to be displaced by a project, the project manager should contact the Department for guidance and/or assistance.

Please keep in mind the following points:

- Use the Department's Environmental On-Line Review Tool Department during the planning stages of any project that may affect desert tortoise habitat.

- Unless specifically authorized by the Department, or as noted above, project personnel should avoid disturbing any tortoise.

- Take is prohibited by state law.

- These guidelines do not apply to Mojave desert tortoises (north and west of the Colorado River). Mojave desert tortoises are listed as threatened under the Endangered Species Act, administered by the U.S. Fish and Wildlife Service.

- These guidelines are subject to revision at the discretion of the Department.

PLAN OF DEVELOPMENT FOR PROPOSED POWERLINE AND FIBER OPTIC CABLES ON BLM-ADMINISTERED LANDS

ASARCO LLC - RAY OPERATIONS
RIGHT-OF-WAY APPLICATION FOR
PROPOSED POWERLINE AND FIBER OPTIC CABLES ON
FEDERAL LANDS WITHIN SECTION 12, TOWNSHIP 4 SOUTH, RANGE 13 EAST,
PINAL COUNTY, ARIZONA

ITEM 7 – PROJECT DESCRIPTION

(a) Type of system or facility

ASARCO LLC (Asarco) proposes to construct and operate a 44-kilovolt (kV) overhead transmission powerline and fiber optic communications line for the Ripsey Wash Tailings Storage Facility ("Ripsey Wash TSF") in support of ongoing operations at the Ray Mine near the townsite of Kelvin, in Pinal County, Arizona (Vicinity Map; **Figure 1**). The powerline will begin at the Ray Mine electrical substation, be constructed on lands owned by Asarco north of State Route 177 and south of the Florence-Kelvin Highway, and will serve the Ripsey Wash TSF (ROW Overview **Figure 2A**). The estimated length of the powerline and fiber optic cables in their entirety is approximately 20,359 feet (3.9 miles), of which approximately 2,185 feet will cross federal lands managed by the Bureau of Land Management (BLM), south of the Gila River within Section 12, T4S, R13E, Pinal County, Arizona . Six structures will be placed within the BLM Project Area. The structures will also support a fiber optic cable for project process control communications. A second fiber optic communications cable will be buried in the roadway ROW for redundancy in providing communications as a backup communications system. A Plan of Development for the Project is provided with this right-of-way (ROW) application as **Attachment 1**.

The purpose of the Powerline Project is to provide a power and communications source for the operation of the Ripsey Wash TSF and the ability for communicating project process controls.

The proposed Powerline Project follows the existing paved Florence-Kelvin Highway, a Pinal County-maintained road, which crosses BLM lands at two separate locations (**Figures 3A and 3B**). The southern segment of the proposed ROW (Segment 1), approximately 1,275 feet in length, covers about 0.814 acres, and is located between a privately owned parcel identified as the Eagle No. 5 patented mining claim on the eastern boundary and Arizona State Trust land on the western boundary. The northern ROW segment (Segment 2) is approximately 910 feet in length, covers about 0.622 acres and extends from the Gila River south along the Florence-Kelvin Highway to the privately owned parcels identified as the Eagle Nos. 6 and 7 patented mining claims. Segment 2 includes a portion of the powerline where it crosses the Gila River (BLM-administered land lies on the southern side of the Gila River in this area).

(b) Related structures and facilities

The Powerline Project requires the placement of six wooden poles with frames on BLM lands. A typical section of the overhead power and fiber optic cables is provided in **Figure 3C**. The poles would be embedded approximately 7 feet and encased in approximately 3-foot-diameter concrete.

In addition to the ROW applied for herein, the Ripsey Wash TSF will require two tailings delivery pipelines, a reclaimed water pipeline, a fresh water pipeline, and roadway improvements to portions of the Florence-Kelvin Highway. Those facilities would be placed along the same alignment as the Powerline Project (**Figure 2B and 2C**) and are subject to two concurrently filed BLM ROW applications. The pipelines will be buried in an approximately 20-foot-wide pipeline trench. Where the pipeline and second

fiber optic cable cross the Gila River, a pipeline bridge will be constructed, a portion of which will cross lands administered by the BLM . Asarco has requested separate BLM ROW authorizations for the pipeline corridor and associated improvements, including the widening and paving of the Florence-Kelvin Highway. A cross-section is provided in Figure 4, including the pipelines ROW and roadway ROW that are requested under separate application, and together along with the ROW requested herein total a 110-foot-wide road and utility corridor (**Figure 2D**).

Access to the Powerline Project will be provided by the existing Florence-Kelvin Highway. No new access roads are required for construction or maintenance.

(c) Physical specifications

The overhead powerline will support a 44-kV line and a process control fiber optic cable. The utility poles will be wooden single-pole with stand-off construction approximately 44 feet in height and spaced approximately 300 feet apart. A second fiber optic communications cable will be buried in the roadway ROW for redundancy in providing communications. Further details are discussed in the Plan of Development (**Attachment 1**).

(d)Term of years needed

Asarco is requesting a ROW term of 30 years, the expected life of active use of the Ripsey Wash TSF is 50 years.

(e) Time of year of use of operation

The powerline will operate in support of daily, year-round mining operations.

(f) Volume or amount of product to be transported

The powerline will support a 44-kV line and a communications fiber optic cable. A second fiber optic communications cable will be buried in parallel to the powerline for redundancy in providing communications.

(g) Duration and timing of construction

Construction of the Powerline Project is proposed to commence in 2019 and will continue for the duration of approximately three years. The estimated completion date for construction on BLM land is December 2021.

(h) Temporary work areas needed for construction

Temporary work areas on BLM land during construction and installation of the proposed powerline and fiber optic cables will be limited to areas within the 110-foot-wide ROW requested between this ROW application and the pipelines and roadway ROW applications submitted under separate applications.

ITEM 13A – DESCRIPTION OF REASONABLE ALTERNATIVE ROUTES AND MODES CONSIDERED

The powerline is being proposed in support of the proposed Ripsey Wash TSF and associated infrastructure. Asarco has evaluated five powerline/pipeline route alternatives for the Ripsey Wash TSF

(Options 1-5, **Figure 4**). Option 5 is the preferred route and represents the project described herein. Option 2 runs along the north side of the Gila River within the Copper Basin Railway (CBRY) easement and crosses at the existing CBRY bridge and involves the realignment of the existing Florence-Kelvin Highway north of the proposed Ripsey Wash TSF prior to powerline construction; Option 3 traverses undeveloped lands west of the Florence-Kelvin Highway and crosses the Gila River at the existing CBRY bridge. Option 4 traverses undeveloped lands west of the Florence-Kelvin Highway and crosses the Gila River at bridge new location upstream from the at the existing CBRY bridge.

ITEM 13B – REASONS WHY THESE ALTERNATIVES WERE NOT SELECTED

The preferred alternative, Option 5 (**Figure 4**), was selected because it proposes construction along the Florence-Kelvin Highway, an existing and improved roadway and allows for gravity flow of the tailings slurry delivery system north of the river.

Option 1 was not selected because it would involve the realignment of the existing Florence-Kelvin Highway north of the proposed Ripsey Wash TSF prior to construction, which poses logistical and cost constraints. Option 2 was not selected because of additional impacts along the Gila River and associated higher costs. Options 3 and 4 were also not selected as preferred routes because they would involve additional impacts to undeveloped areas and associated higher costs.

ITEM 13C – EXPLANATION AS TO WHY IT IS NECESSARY TO CROSS FEDERAL LANDS

The Powerline Project route is proposed for construction on the east and south side of the existing Florence-Kelvin Highway and the Pinal County Kelvin Bridge to minimize the disturbance to state, private, and federal lands between the Ripsey Wash TSF and the Ray Mine. The Florence-Kelvin Highway and the Pinal County Kelvin Bridge cross BLM land along the route of the powerline; therefore, following this alignment necessitates the crossing of BLM land.

ITEM 14 – AUTHORIZATION AND PENDING APPLICATIONS FILED FOR SIMILAR PROJECTS WHICH MAY PROVIDE INFORMATION TO THE AUTHORIZING AGENCY

A Clean Water Act Section 404 individual permit application was submitted to the U.S. Army Corps of Engineers (Corps) on June 7, 2013, and is currently under review. The Corps is preparing an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA), for which the BLM is a cooperating agency. The Corps' EIS will provide the required NEPA review for this ROW grant.

The BLM has approved an amended ROW grant (No. AZA-35391) for the Kelvin Bridge Project, which occurs immediately downstream of Asarco's planned pipeline and powerline corridor where it crosses the Gila River.

ITEM 15 – STATEMENT OF NEED FOR PROJECT, INCLUDING THE ECONOMIC FEASIBILITY AND ITEMS:

The purpose of the Powerline Project is to provide a power and communications source for the operation of the Ripsey Wash TSF. Current mine plans require additional tailings storage to support up to approximately 750 million tons of mill tailings through the remaining life of the mine. The deposition of tailings is needed to allow for the full utilization of the mineral resource at the Ray Mine.

(a) Cost of proposal (construction, operation, and maintenance)

Not applicable

(b) Estimated cost of next best alternative

Not applicable

(c) Expected public benefits

The primary expected public benefit for the construction of the Powerline Project is economic. The Project is proposed in support of ongoing mining operations at the Ray Mine, one of the largest sources of Asarco's copper production. Current world copper demand averages approximately 2.2 kilograms (5 pounds) of copper per capita per year requiring approximately 15.9 Mt of production each year worldwide. Predictions of growing demand indicate that the increase in per capita consumption over the next 20 years will require the production of between 36.6 and 42.1 Mt of copper per year, an increase of 2.3 to 2.65 times current production. Despite higher production yields from new technologies, the extensive time involved in developing new mines, including exploration, environmental impact studies, and permitting, requires the full utilization of known resources in existing mines to help meet the predicted national and global demand. The benefits also include assisting local communities grow, providing new jobs, and supporting the continuation of job stability for Asarco employees in rural Arizona. The granting of this ROW would be consistent with the BLM's and the current administration's priorities to streamline ROWs processing for pipelines and transmission lines, streamline permitting for hardrock mining, improve and streamline land-use planning to support minerals development, create new jobs, and support existing jobs.

ITEM 16 – DESCRIPTION OF PROBABLE EFFECTS ON THE POPULATION IN THE AREA, INCLUDING THE SOCIAL AND ECONOMIC ASPECTS, AND THE RURAL LIFESTYLES

The probable effects on the population in the area are primarily economic. As previously described, utilization of the full mineral resource at the Ray Mine allows Asarco to help meet predicted copper demand at a national and global scale. Locally, construction of the Powerline Project to support ongoing mining operations at the Ray Mine provides a source of well-paying employment to the surrounding communities via hired contractors and permanent mine employees. Regarding social aspects and rural lifestyles, adverse impacts are not expected because the Powerline Project on public land will be constructed along existing development corridors and disturbed property currently utilized by the general public.

ITEM 17 – DESCRIPTION OF LIKELY ENVIRONMENTAL EFFECTS THAT THE PROPOSED PROJECT WILL HAVE ON:

(a) Air quality

The proposed Project is not expected to have adverse impacts on air quality. The Powerline Project will be constructed and will operate in conformance with applicable federal, state, and local air quality regulations.

(b) Visual impact

The proposed Project will not pose significant adverse visual impacts to the surrounding landscape. The powerline segments on public land will run along the existing Florence-Kelvin Highway corridor.

(c) Surface and ground water quality and quantity

The Powerline Project will not contribute to the degradation of surface water or ground water quality and/or quantity. Asarco will operate in accordance with a Stormwater Pollution Prevention Plan (SWPPP) during the construction phase of the Powerline Project as required by the Arizona Department of Environmental Quality (ADEQ) Construction General Permit. The SWPPP will detail the installation and maintenance of site-specific Best Management Practices (BMPs) to be implemented. A complete and accurate Notice of Intent will be submitted to ADEQ prior to commencement of activity.

(d) The control of the structural change on any stream or other body of water

There will be no structural change to the Gila River as a result of the powerline construction. The powerline will span the Gila River where the existing and new Kelvin Highway Bridge and proposed Project pipeline bridge would cross the river. Surface disturbance will be minimized during construction, and BMPs for sediment control will be implemented in accordance with the SWPPP. Any disturbed areas will be restored to natural contours upon completion of the work.

(e) Existing noise levels

The Powerline Project on federal land may result in temporary increased noise levels during construction. Construction of the powerline will be conducted in accordance with Pinal County Ordinance No. 050306-ENO as amended by 031611-ENO-01.

(f) The surface of the land, including vegetation, permafrost, soil, and soil stability

The proposed powerline will be constructed within the existing Florence-Kelvin Highway alignment, a previously disturbed area.

ITEM 18 – DESCRIPTION OF THE PROBABLE EFFECTS THAT THE PROPOSED PROJECT WILL HAVE ON:

(a) Populations of fish, plantlife, wildlife, and marine life, including threatened and endangered species

The Powerline Project crosses a reach of the Gila River that is currently designated critical habitat for the endangered southwestern willow flycatcher (SWFL; *Empidonax traillii extimus*) and is proposed designated critical habitat for the threatened yellow-billed cuckoo (YBC; *Coccyzus americanus*). WestLand Resources, Inc., has completed surveys during multiple seasons along the reach of the Gila River adjacent to the Project, and SWFL and YBC have been recorded from the vicinity of the existing Florence-Kelvin Highway bridge in proximity to the northern segment of the Powerline Project.

Vegetation disturbance will be minimized to the extent practicable. The Corps is in the process of consulting with the U.S. Fish and Wildlife Service regarding the potential impacts to individual SWFL and YBC, and their proposed/designated critical habitat as part of the Ripsey Wash Tailings Storage Facility Project Clean Water Act Section 404 permitting process. Vegetation clearing required for pipeline bridge construction would be conducted outside the breeding seasons for SWFL and YBC.

Asarco will install an “avian-safe” power pole configuration designed to minimize bird electrocution risk by providing sufficient separation between phases and between phases and grounds to accommodate the wrist-to-wrist and head-to-foot distances of a bird. Consequently, 60 inches of horizontal separation, which can accommodate the wrist-to-wrist distance of an eagle (which has a wingspan of approximately 54 inches), is used as the standard for raptor protection. Likewise, vertical separation of at least 48 inches can accommodate the height of an eagle from its feet to the top of its head (which is approximately 31 inches).

The Sonoran desert tortoise (*Gopherus morafkai*) is also known to occur in the vicinity of the Powerline Project. The Sonoran desert tortoise is not afforded protection under the Endangered Species Act but is considered a BLM-sensitive species. Potential Sonoran desert tortoise shelters will be examined during the course of construction activities to prevent negative impacts. Any individual tortoises encountered will be avoided and allowed to move out of the way prior to ground-disturbing activities. Guidelines for handling desert tortoise published by the Arizona Game and Fish Department will be used if it were found to be absolutely necessary to move individual tortoises.

(b) Marine mammals, including hunting, collecting, or killing these animals

Marine mammals do not occur within the Powerline Project area; therefore, this section is not applicable.

ITEM 19 – HAZARDOUS MATERIALS

The Powerline Project does not include the use, production, transport, or storage of any hazardous materials within the ROW or in the construction, operation, maintenance, or termination of the ROW as defined by the Comprehensive Environmental Response, Compensation, and Liability Act or the Resource Conservation and Recovery Act.

Attachment 1

PLAN OF DEVELOPMENT
44-kV OVERHEAD POWERLINE AND PROCESS CONTROL COMMUNICATIONS FIBER OPTIC CABLES FOR THE RIPSEY WASH TAILINGS STORAGE FACILITY

No. AZA-0307390

Prepared for: Bureau of Land Management, Tucson Field Office
Prepared by: ASARCO LLC
Date: August 18, 2017, Revised February 09, 2018
Corps File No.: SPL-2011-1005-MWL

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1. PURPOSE AND NEED

ASARCO LLC (Asarco) proposes to construct and operate a 44-kilovolt (kV) overhead powerline and two communications fiber optic lines for the Ripsey Wash Tailings Storage Facility in support of ongoing operations at the Ray Mine near Kelvin, Pinal County, Arizona (the Powerline Project, **Figure 1**). Current mine plans require additional tailings storage to support up to approximately 750 million tons of mill tailings and associated embankments through the remaining life of the mine. Up to 45,000 tons of tailings are anticipated to be transported per day to support the ongoing operations of the mine. The deposition of tailings is needed to allow for the full utilization of the mineral resource at the Ray Mine. The Powerline Project will provide a power source and communications fiber optic cables for the operation of the tailings storage facility and associated infrastructure. Asarco will be the only major powerline user along this route.

A Bureau of Land Management (BLM) ROW (No. AZA-0307390) has been requested for the portions of the powerline and fiber optic cables that will cross federal lands administered by the BLM.

The U.S. Army Corps of Engineers (the Corps) is the lead agency permitting the proposed Ripsey Wash Tailings Storage Facility, and the Corps has published a Draft Environmental Impact Statement for the Project. In addition to the BLM, cooperating agencies include the Environmental Protection Agency and the San Carlos Irrigation Project. Interested agencies or parties include the U.S. Fish and Wildlife Service, the Arizona State Land Department, the Arizona Game and Fish Department, Pinal County, and the Arizona Trail Association.

2. POWERLINE OVERVIEW

The proposed powerline begins at the Ray Mine electrical substation and would be constructed on the east and south sides of the Florence-Kelvin Highway (an existing Pinal County-maintained road), and would serve the Ripsey Wash Tailings Storage Facility. The estimated total length of the powerline is approximately 16,011 feet (3.0 miles), of which approximately 2,185 feet or 1.436 acres are proposed to cross federal lands managed by the BLM south of the Gila River within Section 12, Township 4S, Range 13E in Pinal County, Arizona

In addition to the Powerline (ROW) application (No. AZA-037390) applied for herein, Asarco has requested two (2) separate ROW authorizations for a Pipeline Corridor (No. AZA-037391) and a Roadway Improvement Corridor (No. AZA-036430) **(Figures 2A).** The three ROWs are along the same alignment and cross BLM lands in two separate locations outlined as Segment 1 **(Figure 2B**) and Segment 2 **(Figure 2C**) which in total occupy a 110-foot-wide corridor **(Figure 2D).**

A 29-foot-wide powerline ROW is requested within the two segments along the Florence-Kelvin Highway.

Segment 1 is approximately 1,275 feet in length and covers about 0.814 acres and is located between a privately-owned parcel identified as the Eagle No. 5 patented mining claim on the eastern boundary and the Arizona State Trust Land on the western boundary **(Figure 3A)**.

Segment 2 is approximately 910 feet in total length and covers about 0.622 acres (**Figure 3B**).

Six pole structures will be placed on BLM lands. The structures will also support a fiber optic cable for project process control communications. A second fiber optic cable will be buried in the pipeline ditch in the Pipeline ROW as a backup communications system. The 44-foot-tall wooden power poles will support a communications line and a 44-kV line on stand-off vertical construction (**Figure 3C**).

3. PROJECT CONSTRUCTION, OPERATION, AND MAINTENANCE

3.1. PRE-CONSTRUCTION ACTIVITIES

Engineering Surveys

Prior to construction activities, civil engineering surveys will identify the centerline of the powerline and the boundaries of all sides of the approved ROW (herein called edges). Before construction, inspectors hired by Asarco will be responsible for verifying that the centerline and edges are staked with flagging and or painted lath at approximately 200-foot intervals or as required to maintain line of sight. This staking will clearly demark the edges of the ROW area that can be used or accessed by construction personnel. Equipment and vehicles will not be parked or driven beyond these stakes, and no other ground-disturbing activities will be allowed outside the staked boundaries of the work area.

Before earth-moving activities, best management practices (BMPs) established by ASARCO will be installed to limit sediment transport and erosion consistent with regulatory approvals. Specific areas requiring BMPs will be designated on alignment sheets. Site-specific BMPs will be developed based on construction site characteristics and weather conditions. BMPs will be inspected routinely and maintained in good working order.

Cultural Resources Survey

Cultural resource surveys have been completed for all areas associated with the Project. No eligible cultural resources occur on BLM lands.

Biological Resources Survey

A biological evaluation and screening for species listed under the Endangered Species Act and BLM-sensitive species have been conducted in support of the Project. Surveys for the endangered

southwestern willow flycatcher (SWFL; *Empidonax traillii extimus*) were conducted in 2007 and from 2011 through 2016 and for the threatened yellow-billed cuckoo (YBC; *Coccyzus americanus*) from 2013 through 2016 along the reach of the Gila River where the proposed powerline will cross. Both the endangered SWFL and the threatened YBC are known to occur along the Gila River in this area; breeding SWFL are known to occur in immediate proximity to the proposed powerline crossing. The proposed Project crosses a reach of the Gila River that is currently designated critical habitat for SWFL and is proposed designated critical habitat for YBC.

3.2. CONSTRUCTION ACTIVITIES

Construction of the powerline is proposed to commence in 2019 and will continue for a duration of up to 3 years. The construction of the powerline to occur on BLM land is expected to commence in early 2019. The estimated completion date for construction on BLM land is December 2021.

Asarco anticipates a five-person crew will be required for these construction activities, and equipment will likely include a bucket truck, a line construction truck, a backhoe, a pickup truck, and trailers for transporting and storing equipment.

Physical Specifications

The powerline will support a 44-kV line and a process control fiber optic cable. The utility poles will be wooden single-pole with stand-off construction approximately 44 feet in height and spaced approximately 300 feet apart. A second fiber optic cable will be buried in the pipeline ditch in the Pipeline ROW as a backup communications system.

Traffic Management

Access to the Florence-Kelvin Highway and all adjacent roads and properties will remain open during construction of the Powerline Project. At least one lane of traffic will remain open, and traffic will be directed as needed for safe travel through construction areas. Informational signs will be used to inform the public of temporary traffic hazards, flaggers will be employed during construction, and traffic cones would be used to identify any temporary changes in lane configuration necessary to minimize traffic impacts. Traffic speeds through construction areas will be limited to no more than 15 miles per hour.

3.3. POST-CONSTRUCTION ACTIVITIES

Cleanup

Construction sites, material storage yards, and access roads will be kept in an orderly condition throughout the construction period. Refuse and trash, including stakes and flags, will be removed

from the sites and disposed of in an approved manner. No construction equipment oil or fuel will be drained on the ground. Oils or chemicals will be hauled to an approved site for disposal. No open burning of construction trash will occur on BLM-administered lands.

Reclamation

Following construction and cleanup, reclamation will be completed. The disturbed surfaces will be restored to the original contour of the land surface to the extent determined by the BLM. Appropriate site-specific seed mixes will be used where conditions vary. Salvaged native plants will be used for revegetation, if appropriate, along with seeding using BLM-recommended seed mixes. Preferably, seed will be planted between the months of November and January following construction. Seed will be planted using drilling, straw mulching, or hydromulching, as directed by the BLM.

Operation and Maintenance

Asarco is requesting a ROW term of 30 years, the expected life of the proposed tailings storage impoundment is 50 years. The powerline will operate in support of daily, year-round mining operations.

Ground maintenance patrols will review the powerline periodically. Routine maintenance will include replacing damaged insulators, as needed, and tightening nuts and bolts.

4. RESOURCE IMPACTS AND MITIGATION MEASURES

4.1. AIR QUALITY

The Project is not expected to have adverse impacts on air quality. The proposed powerline will be constructed and will operate in conformance with applicable federal, state, and local air quality regulations.

4.2. EXISTING NOISE LEVELS

The Project may result in increased noise levels during construction. Construction of the powerline will be conducted in accordance with Pinal County Ordinance No. 050306-ENO as amended by 031611-ENO-01.

4.3. VISUAL IMPACTS

The Project will not pose significant adverse visual impacts to the surrounding landscape. The powerline will run along the existing Florence-Kelvin Highway.

4.4. SURFACE AND GROUND WATER QUALITY AND QUANTITY

The Project will not contribute to the degradation of surface water or ground water quality and/or quantity. As previously described, Asarco is seeking a Clean Water Act Section 404 Individual Permit for the Project. In addition, Asarco will operate in accordance with a Stormwater Pollution Prevention Plan (SWPPP) during the construction phase of the powerline as required by the Arizona Department of Environmental Quality (ADEQ) Construction General Permit. The SWPPP will detail the installation and maintenance of site-specific BMPs to be implemented. A complete and accurate Notice of Intent will be submitted to ADEQ prior to commencement of activity.

4.5. WILDLIFE

The proposed Project crosses a reach of the Gila River that is currently designated critical habitat for the endangered southwestern willow flycatcher (SWFL; *Empidonax traillii extimus*) and is proposed designated critical habitat for the threatened yellow-billed cuckoo (YBC; *Coccyzus americanus*). WestLand has completed surveys during multiple seasons along the reach of the Gila River adjacent to the Project, and SWFL and YBC have been recorded from the vicinity of the existing Florence-Kelvin Highway bridge in proximity to the proposed Project Area.

Vegetation disturbance will be minimized to the extent practicable. The Corps will consult with the U.S. Fish and Wildlife Service regarding the potential impacts to individual SWFL and YBC and their proposed/designated critical habitat as part of the Ripsey Wash Tailings Storage Facility Project Clean Water Act Section 404 permitting process. Vegetation clearing within proposed and designated critical habitats would be conducted outside the breeding seasons for SWFL and YBC.

Asarco will install an "avian-safe" power pole configuration designed to minimize bird electrocution risk by providing sufficient separation between phases and between phases and grounds to accommodate the wrist-to-wrist and head-to-foot distances of a bird. Consequently, 60 inches of horizontal separation, which can accommodate the wrist-to-wrist distance of an eagle (which has a wingspan of approximately 54 inches), is used as the standard for raptor protection. Likewise, vertical separation of at least 48 inches can accommodate the height of an eagle from its feet to the top of its head (which is approximately 31 inches).

The Sonoran desert tortoise (*Gopherus morafkai*) is also known to occur in the Project vicinity. The Sonoran desert tortoise is not afforded protection under the Endangered Species Act but is considered a BLM-sensitive species. Potential Sonoran desert tortoise shelters could be examined during the course of the proposed activities to prevent negative impacts. Any individual tortoises encountered could be avoided and allowed to move out of the way prior to ground-disturbing activities. Guidelines for handling desert tortoise published by the Arizona Game and Fish Department could be used if it were found absolutely necessary to move individual tortoises (**Attachment 1a**).

Two additional BLM-sensitive species, the California leaf-nosed bat (*Macrotus californicus*) and the Desert box turtle (*Terrapene ornata luteola*), also have the potential to occur within the Project Area. Activities associated with the Project will not substantially impact habitat for these species. Construction activities may impact individuals of these species but are not likely to result in a trend toward listing or the loss of viability of these species.

4.6. VEGETATION

No BLM-sensitive or threatened or endangered vegetation species would be impacted by the Powerline Project.

Asarco will adhere to the Arizona Native Plant Law for required vegetation clearances within the ROW.

The following measures will be taken to avoid the spread of noxious weeds within the Project Area:

- Avoid moving weed-infested gravel, rock, and other fill materials to relatively weed-free locations. Gravel and fill should come from weed-free sources. Inspect gravel pits and fill sources to identify weed-free sources.

- Identify existing noxious weeds along access roads and control them before construction equipment moves into relatively weed-free areas.

- Clean off-road equipment (power or high-pressure cleaning) of all mud, dirt, and plant parts before moving into relatively weed-free areas.

- Minimize the removal of roadside vegetation during construction, maintenance, and other ground-disturbing activities.

- Use only certified weed-free straw and mulch for erosion-control projects and reseeding activities.

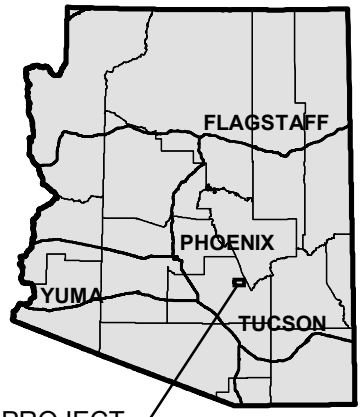
Portions of the Project Area will be seeded with a BLM-approved seed mix at the end of construction activities.

4.7. CULTURAL RESOURCES

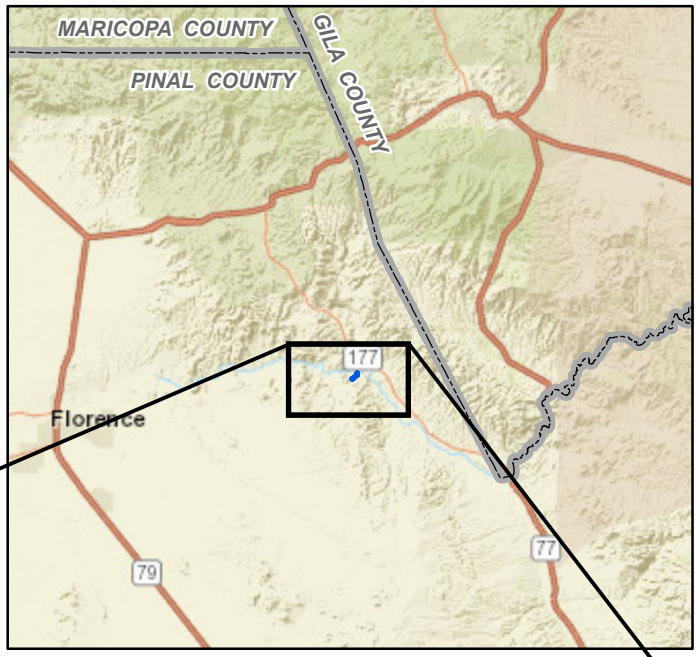
No eligible cultural resources occur on the BLM lands subject to this ROW request.

FIGURES

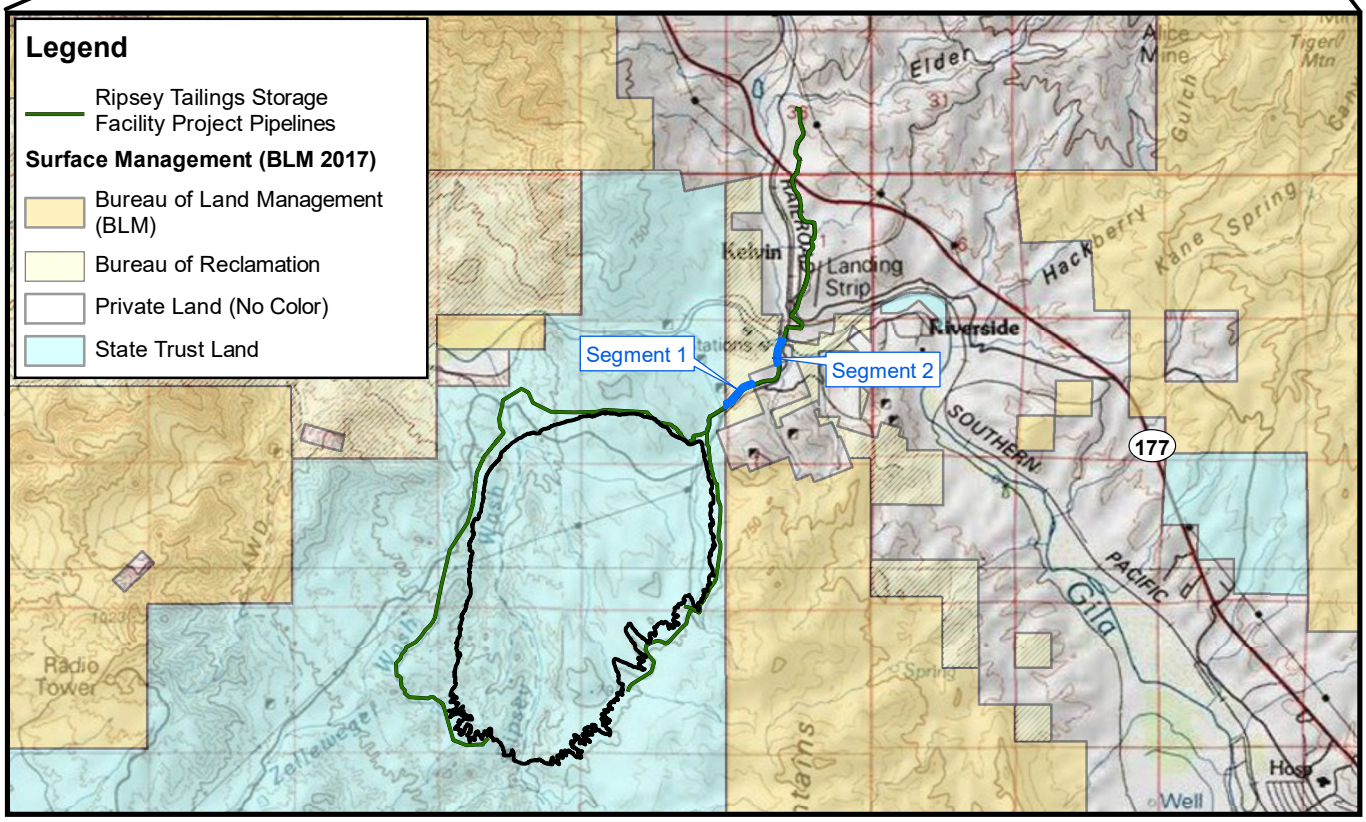
ARIZONA



NORTHEAST PINAL COUNTY



Approximate Scale 1 Inch = 15 Miles



T4S, R13E, Portion of Section 12,
Pinal County, Arizona,
Globe USGS 1:100,000 Quadrangle
Image Source: ArcGIS Online, World Street Map

ASARCO LLC
Ripsey Wash Tailings Storage Facility
BLM Right-of-Way Application/Plan of Development

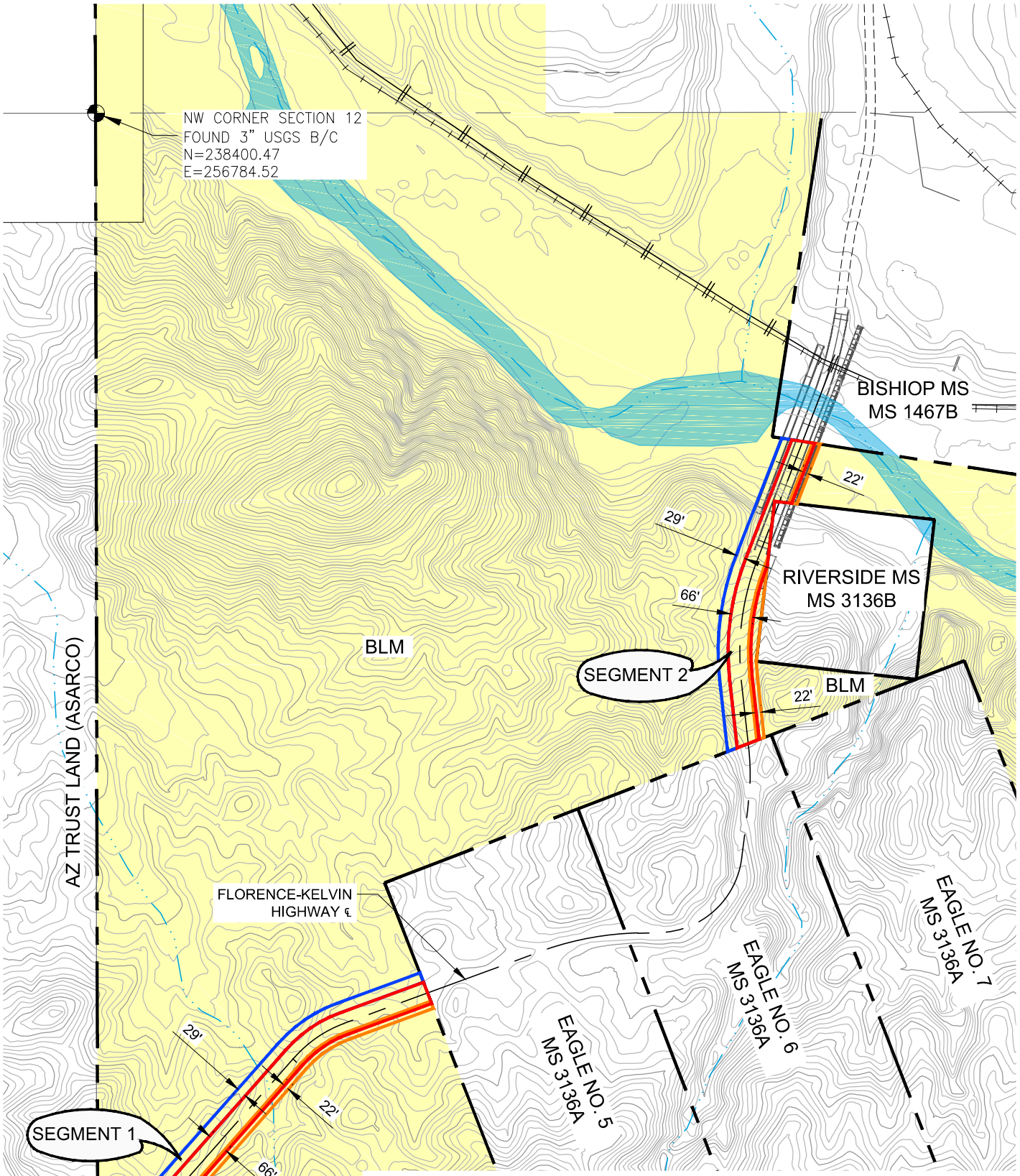
VICINITY MAP
Figure 1

WestLand Resources

N

0 3,500 7,000 Feet

0 1,000 2,000 Meters



CLIENT	ASARCO, LLC				
PROJECT	BLM RIGHT-OF-WAY APPLICATION				
TITLE	RIGHT-OF-WAY OVERVIEW				
DESIGNED BY		CHECKED BY	TJF	DATE	ISSUED FOR
DRAWN BY	HMR	APPROVED BY		02/09/18	DRAFT
FILENAME	4300-ROW	FIGURE No.	2A	REV	A
PROJECT NO.	XX-XXXX-XX				

amec foster wheeler

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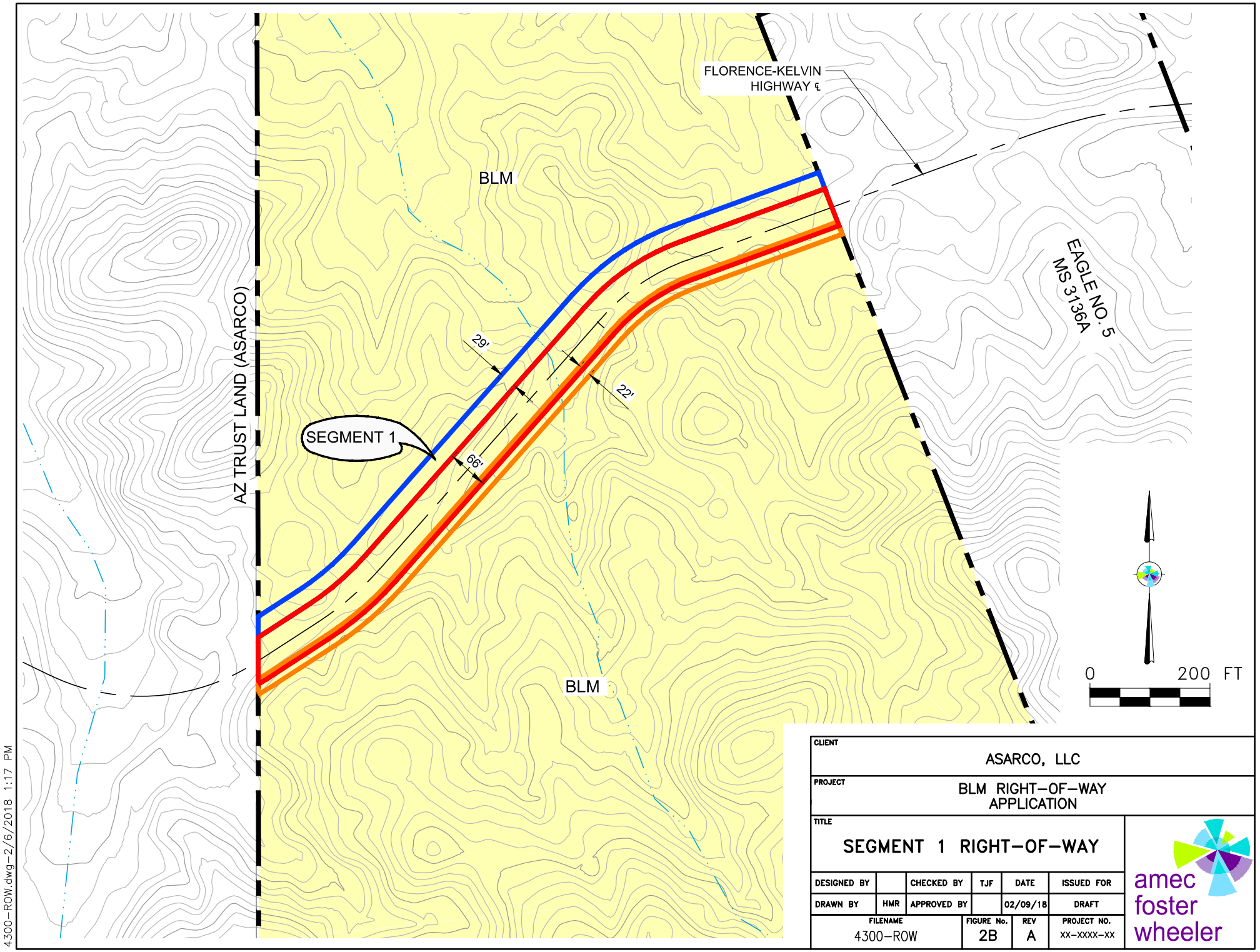

CLIENT	ASARCO, LLC				
PROJECT	BLM RIGHT-OF-WAY APPLICATION				
TITLE	SEGMENT 1 RIGHT-OF-WAY				
DESIGNED BY		CHECKED BY	TJF	DATE	ISSUED FOR
DRAWN BY	HMR	APPROVED BY		02/09/18	DRAFT
FILENAME	4300-ROW	FIGURE No.	2B	REV	A
PROJECT NO.	XX-XXXX-XX				

amec foster wheeler

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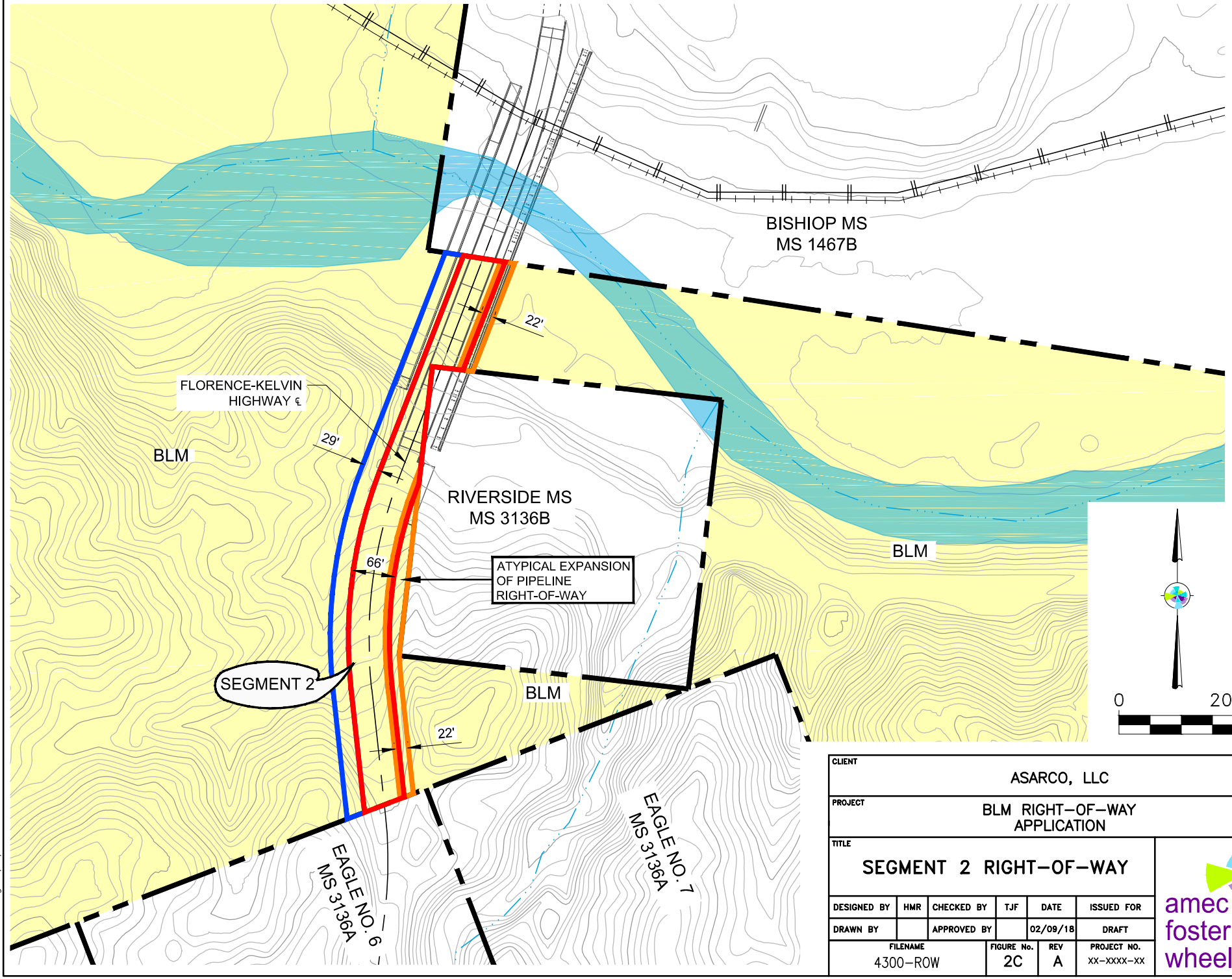

CLIENT	ASARCO, LLC				
PROJECT	BLM RIGHT-OF-WAY APPLICATION				
TITLE	SEGMENT 2 RIGHT-OF-WAY				
DESIGNED BY	HMR	CHECKED BY	TJF	DATE	ISSUED FOR
DRAWN BY		APPROVED BY		02/09/18	DRAFT
FILENAME	4300-ROW	FIGURE No.	2C	REV	A
PROJECT NO.	XX-XXXX-XX				

amec foster wheeler

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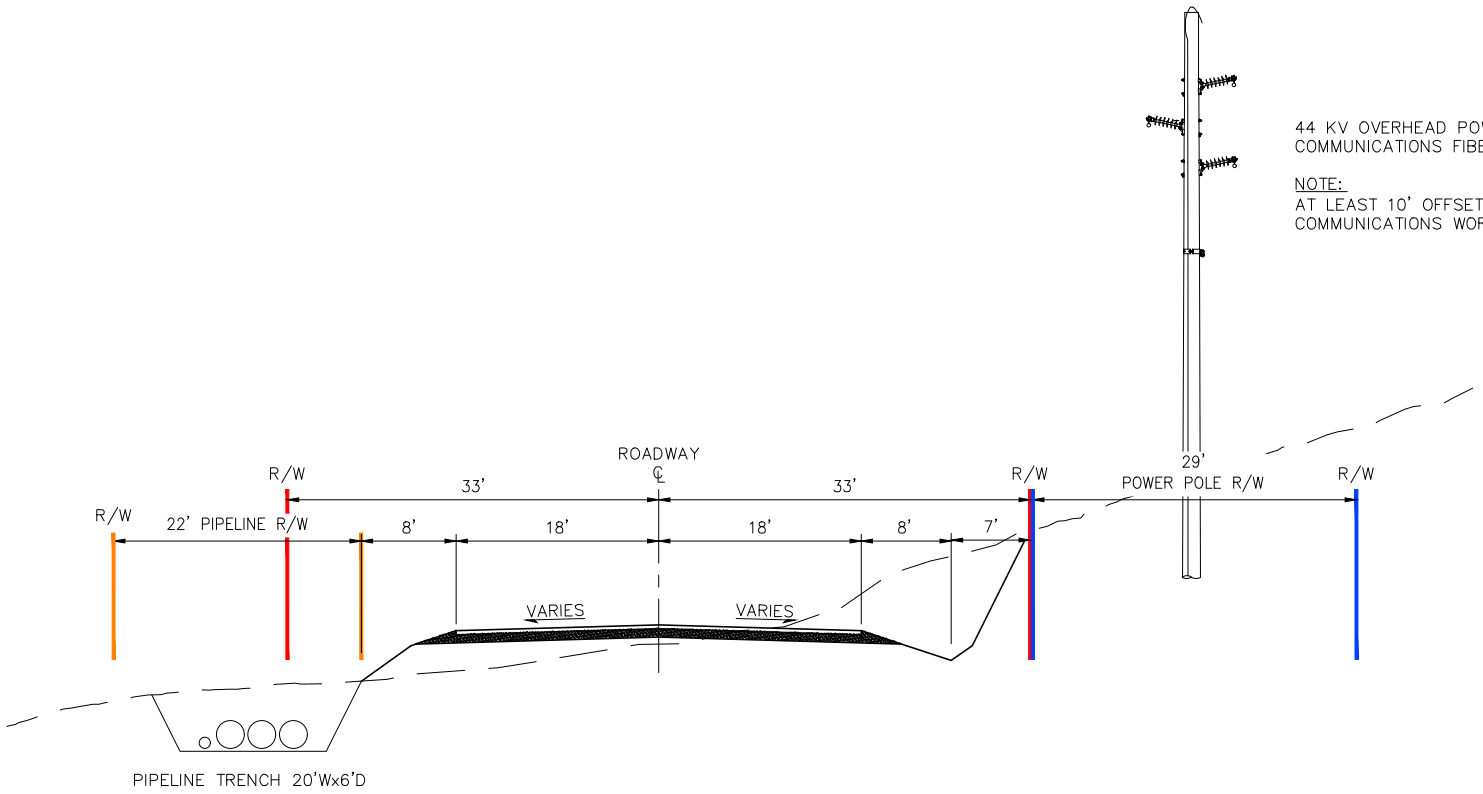

44 KV OVERHEAD POWER & PROCESS CONTROL COMMUNICATIONS FIBER OPTIC CABLE

NOTE:
AT LEAST 10' OFFSET FROM ELECTRICAL WORKINGS FOR COMMUNICATIONS WORKER SAFETY ZONE

PIPELINE TRENCH 20'Wx6'D

POSITION OF TRENCH VARIES UPON EXISTING TOPOGRAPHY

NOTES:

2 UP TO 30" STEEL LINED TAILINGS DELIVERY PIPELINES
1 UP TO 30" STEEL OR HDPE RECLAIMED WATER PIPELINE
1 UP TO 12" HDPE FRESH WATER PIPELINE
1 FIBER OPTIC COMMUNICATION CABLE

UP TO 2' SPACING BETWEEN PIPELINES

CLIENT	ASARCO, LLC				
PROJECT	BLM RIGHT-OF-WAY APPLICATION				
TITLE	OVERALL TYPICAL SECTION				
DESIGNED BY		CHECKED BY	TJF	DATE	ISSUED FOR
DRAWN BY	HMR	APPROVED BY		02/09/18	DRAFT
FILENAME	4300-ROW	FIGURE No.	2D	REV A	PROJECT NO. XX-XXXX-XX

amec foster wheeler

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LEGAL DESCRIPTION

BEGINNING AT A POINT WHOSE NORTHING IS 235167.36 AND WHOSE EASTING IS 256789.56;

THENCE BEARING S 57°04'22" W A DISTANCE OF 97.72 FEET;

THENCE ALONG A CURVE TO THE RIGHT, HAVING A RADIUS OF 467.00 FEET, A DELTA ANGLE OF 15° 35' 53", AND WHOSE LONG CHORD BEARS S 49°16'26" W A DISTANCE OF 126.74 FEET;

THENCE BEARING N 41°28'29" E A DISTANCE OF 555.75 FEET;

THENCE ALONG A CURVE TO THE LEFT, HAVING A RADIUS OF 386.15 FEET, A DELTA ANGLE OF 28° 27' 48", AND WHOSE LONG CHORD BEARS S 55°42'23" W A DISTANCE OF 189.86 FEET;

THENCE BEARING S 69°56'17" W A DISTANCE OF 257.26 FEET;

THENCE BEARING S 20°46'53" E A DISTANCE OF 29.00 FEET;

THENCE BEARING N 69°56'17" E A DISTANCE OF 256.90 FEET;

THENCE ALONG A CURVE TO THE RIGHT, HAVING A RADIUS OF 415.15 FEET, A DELTA ANGLE OF 28° 27' 48", AND WHOSE LONG CHORD BEARS N 55°42'23" E A DISTANCE OF 204.12 FEET;

THENCE BEARING S 41°28'29" W A DISTANCE OF 555.75 FEET;

THENCE ALONG A CURVE TO THE LEFT, HAVING A RADIUS OF 438.00 FEET, A DELTA ANGLE OF 15° 35' 53", AND WHOSE LONG CHORD BEARS N 49°16'26" E A DISTANCE OF 118.87 FEET;

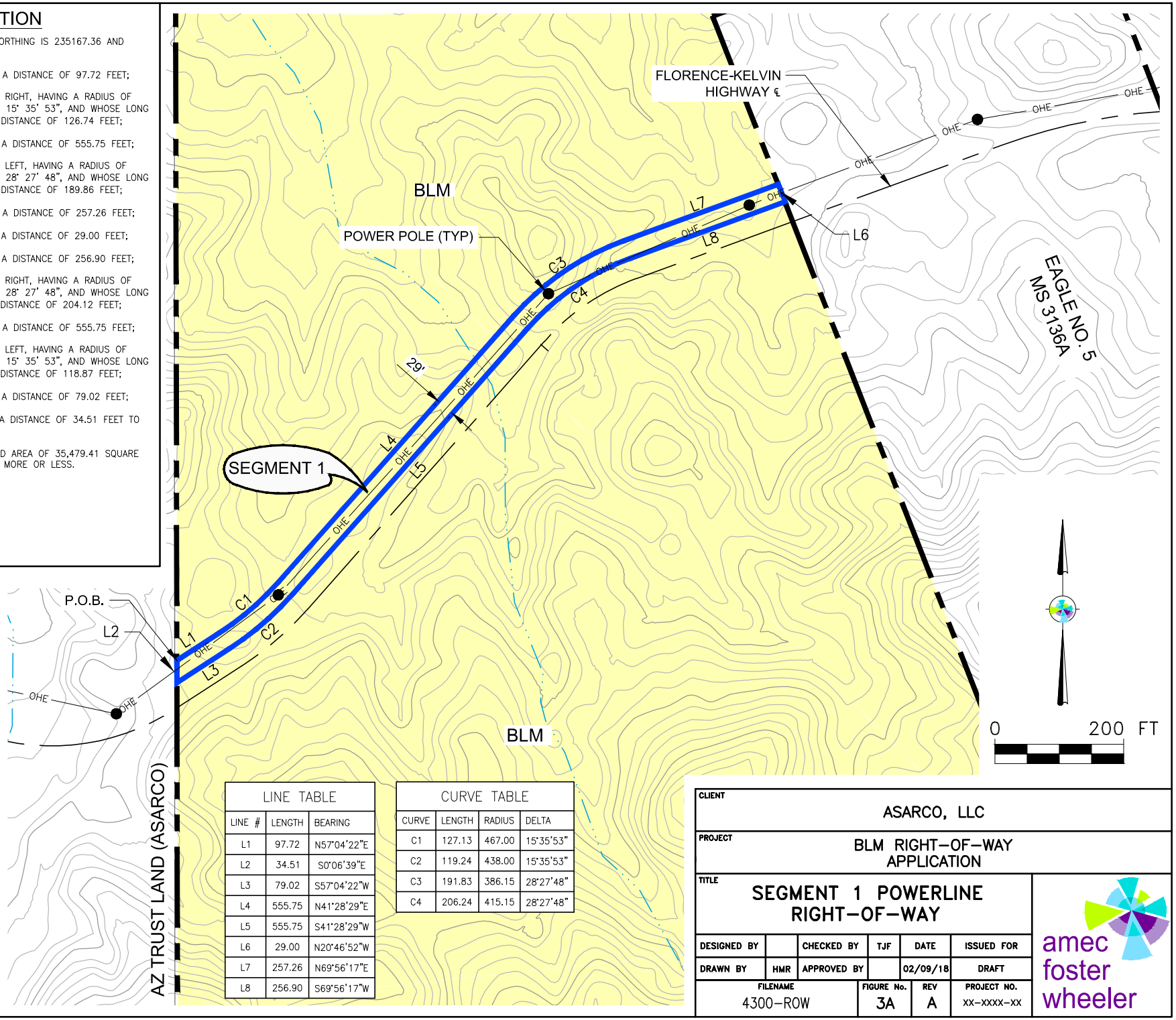
THENCE BEARING N 57°04'22" E A DISTANCE OF 79.02 FEET;

THENCE BEARING N 00°06'39 W A DISTANCE OF 34.51 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA A COMPUTED AREA OF 35,479.41 SQUARE FEET OR 0.814 ACRES OF LAND, MORE OR LESS.

NOTE:

P.O.B. COORDINATES BASED
FROM NW CORNER SECTION 12
FOUND 3" USGS B/C
N=238400.47
E=256784.52



LINE TABLE		
LINE #	LENGTH	BEARING
L1	97.72	N57°04'22"E
L2	34.51	S0°06'39"E
L3	79.02	S57°04'22"W
L4	555.75	N41°28'29"E
L5	555.75	S41°28'29"W
L6	29.00	N20°46'52"W
L7	257.26	N69°56'17"E
L8	256.90	S69°56'17"W

CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C1	127.13	467.00	15°35'53"
C2	119.24	438.00	15°35'53"
C3	191.83	386.15	28°27'48"
C4	206.24	415.15	28°27'48"

CLIENT	ASARCO, LLC				
PROJECT	BLM RIGHT-OF-WAY APPLICATION				
TITLE	SEGMENT 1 POWERLINE RIGHT-OF-WAY				
DESIGNED BY		CHECKED BY	TJF	DATE	ISSUED FOR
DRAWN BY	HMR	APPROVED BY		02/09/18	DRAFT
FILENAME	4300-ROW	FIGURE No.	3A	REV	A
PROJECT NO.	XX-XXXX-XX				

amec foster wheeler

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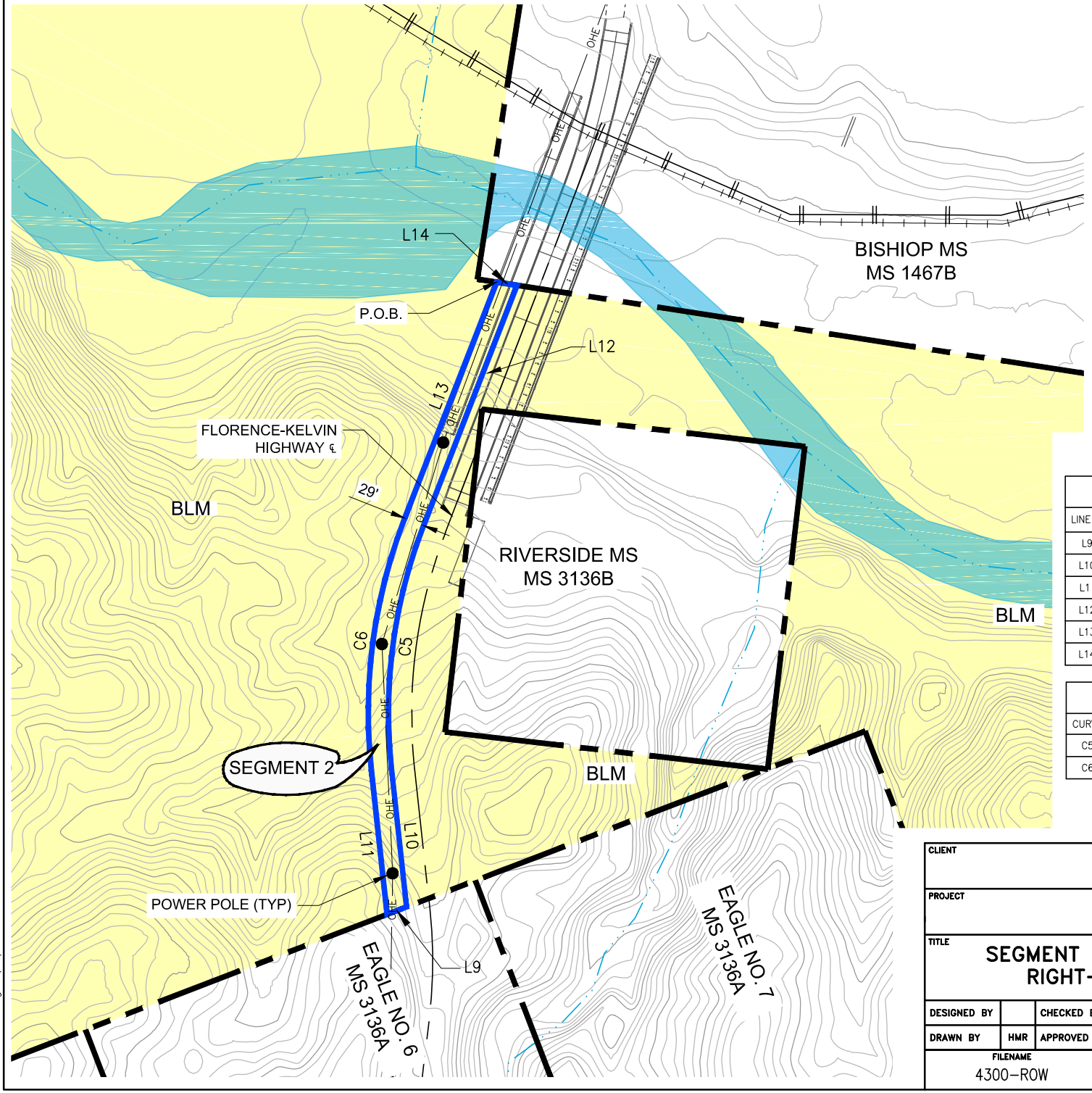

LEGAL DESCRIPTION

BEGINNING AT A POINT WHOSE NORTHING IS 237457.94 AND WHOSE EASTING IS 258772.90;

THENCE BEARING S 81°11'04" E A DISTANCE OF 29.70 FEET;

THENCE BEARING S 21°17'06" W A DISTANCE OF 370.58 FEET;

THENCE ALONG A CURVE TO THE LEFT, HAVING A RADIUS OF 739.76 FEET, A DELTA ANGLE OF 27° 29' 46", AND WHOSE LONG CHORD BEARS S 07°32'13" W A DISTANCE OF 351.61 FEET;

THENCE BEARING S 06°12'40" E A DISTANCE OF 200.66 FEET;

THENCE BEARING S 69°02'51" W A DISTANCE OF 29.99 FEET;

THENCE BEARING N 06°12'40" W A DISTANCE OF 208.29 FEET;

THENCE ALONG A CURVE TO THE RIGHT, HAVING A RADIUS OF 768.76 FEET, A DELTA ANGLE OF 27° 29' 46", AND WHOSE LONG CHORD BEARS N 07°32'13" E A DISTANCE OF 365.40 FEET;

THENCE BEARING N 21°17'06" E A DISTANCE OF 364.17 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA A COMPUTED AREA OF 27,080.65 SQUARE FEET OR 0.622 ACRES OF LAND, MORE OR LESS.

NOTE:

P.O.B. COORDINATES BASED
FROM NW CORNER SECTION 12
FOUND 3" USGS B/C
N=238400.47
E=256784.52

LINE TABLE

LINE #	LENGTH	BEARING
L9	29.99	S69°02'51"W
L10	200.66	S6°12'40"E
L11	208.29	N6°12'40"W
L12	370.58	S21°17'06"W
L13	364.17	N21°17'06"E
L14	29.70	S81°11'04"E

CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA
C5	355.01	739.76	27°29'46"
C6	368.93	768.76	27°29'46"

0 200 FT

CLIENT	ASARCO, LLC				
PROJECT	BLM RIGHT-OF-WAY APPLICATION				
TITLE	SEGMENT 2 POWERLINE RIGHT-OF-WAY				
DESIGNED BY		CHECKED BY	TJF	DATE	ISSUED FOR
DRAWN BY	HMR	APPROVED BY		02/09/18	DRAFT
FILENAME	4300-ROW	FIGURE No.	3B	REV A	PROJECT NO. XX-XXXX-XX

amec foster wheeler

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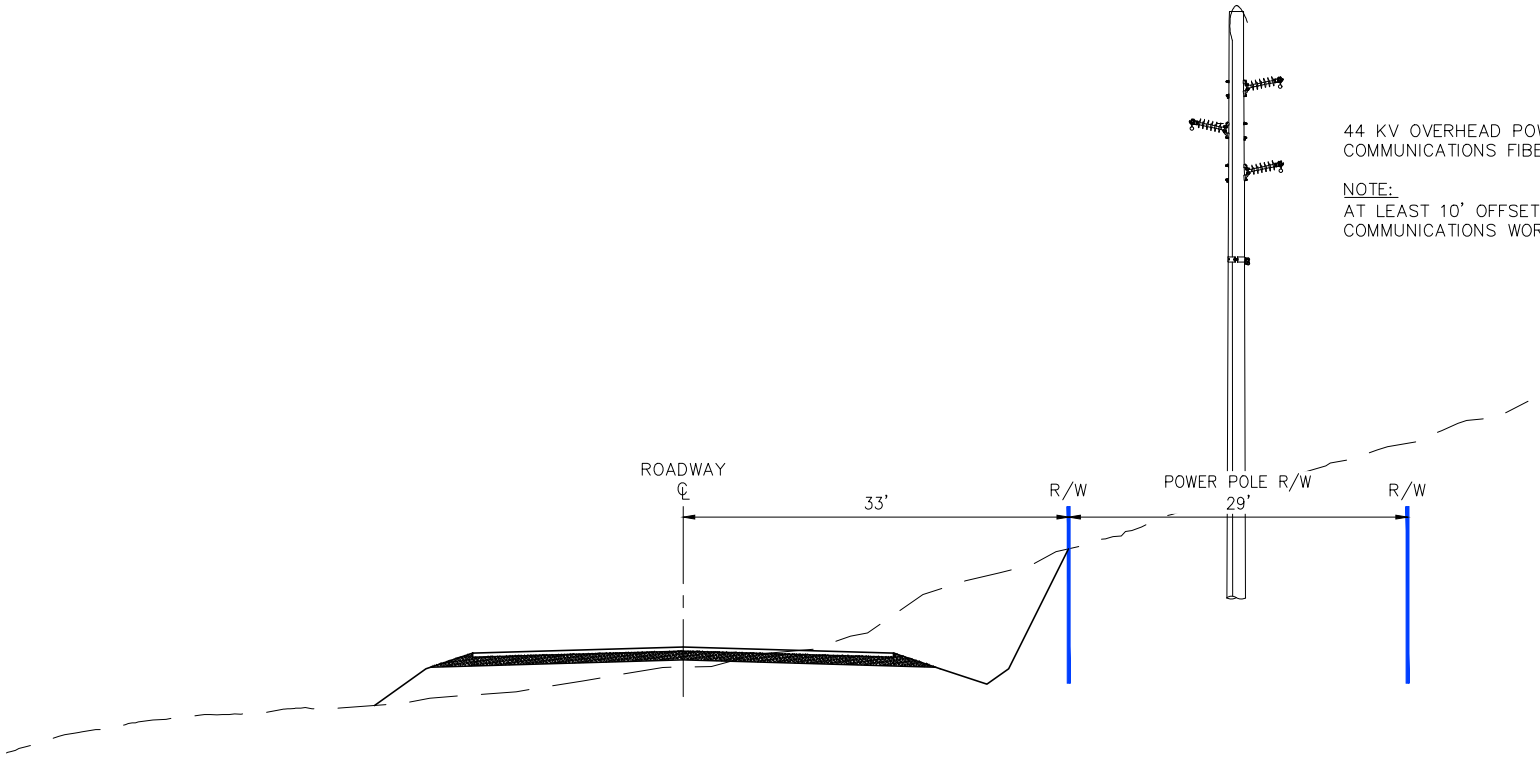

44 KV OVERHEAD POWER & PROCESS CONTROL
COMMUNICATIONS FIBER OPTIC CABLE

NOTE:
AT LEAST 10' OFFSET FROM ELECTRICAL WORKINGS FOR COMMUNICATIONS WORKER SAFETY ZONE

CLIENT	ASARCO, LLC				
PROJECT	BLM RIGHT-OF-WAY APPLICATION				
TITLE	POWERLINE TYPICAL SECTION				
DESIGNED BY		CHECKED BY	TJF	DATE	ISSUED FOR
DRAWN BY	HMR	APPROVED BY		02/09/18	DRAFT
FILENAME	4300-ROW	FIGURE No.	3C	REV	A
PROJECT NO.	XX-XXXX-XX				

amec foster wheeler

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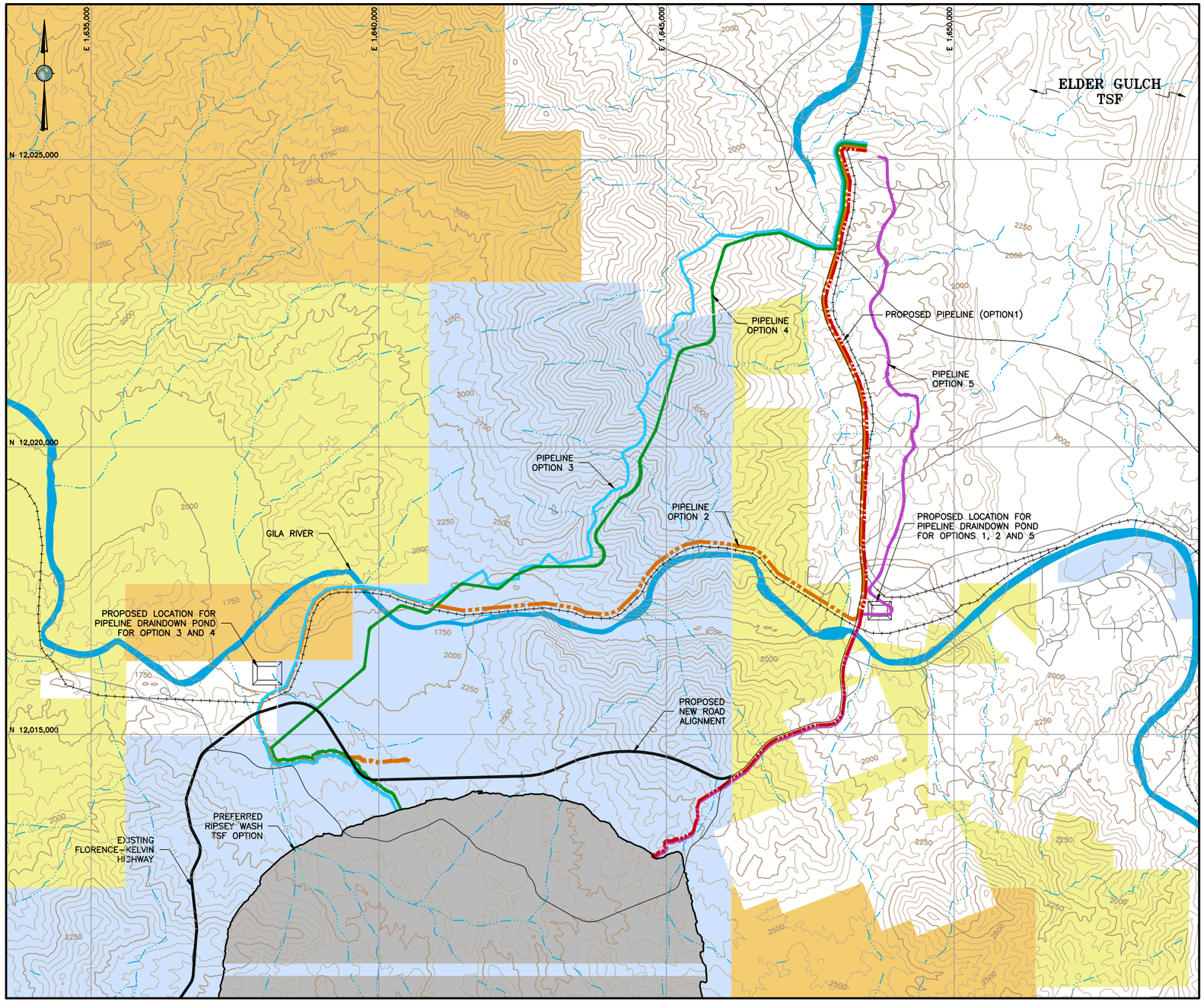


LEGEND:

- EXISTING GROUND SURFACE CONTOUR EL, FEET
- EXISTING DRAINAGES
- EXISTING RAILROAD
- EXISTING ROAD
- EXISTING TRAIL/UNIMPROVED ROAD
- BUREAU OF LAND MANAGEMENT
- BUREAU OF RECLAMATION
- STATE TRUST LAND
- PRIVATE LAND (NO COLOR)

RIPSEY WASH PROPOSED TAILINGS STORAGE FACILITY

PIPELINE ALTERNATIVES

ALTERNATIVE	LENGTH (FT)
1	15,063
2	25,139
3	23,233
4	21,016
5	16,011

REFERENCE:
TOPOGRAPHIC MAPPING AND EXISTING FEATURE DATA PROVIDED BY AIRBORNE 1, INC.; COORDINATE SYSTEM IS IN UTM ZONE 12 NAD 83 DATUM FOR HORIZONTAL AND NAVD 88 DATUM FOR VERTICAL.

1000 0 1000 2000 FEET

Figure Prepared By: amec

ASARCO LLC
Ripsey Wash Tailings Storage Facility
Corridor Alternatives
BLM Right-of-Way Application/Plan of Development

PIPELINE CORRIDOR ALTERNATIVES

Figure 4

M:\Jobs\200's\203.51\ENV\RipseyBLM_ROW_Apps\dwg\RevisedFig2_2018_01-19\Fig4_PipelineCorridorAlts_2_6_2018.dwg-2/6/2018 11:12 AM

Attachment 1A

Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects

GUIDELINES FOR HANDLING SONORAN DESERT TORTOISES ENCOUNTERED ON DEVELOPMENT PROJECTS

Arizona Game and Fish Department
Revised September 22, 2014

The Arizona Game and Fish Department (Department) has developed the following guidelines to reduce potential impacts to desert tortoises, and to promote the continued existence of tortoises throughout the state. These guidelines apply to short-term and/or small-scale projects, depending on the number of affected tortoises and specific type of project.

The Sonoran desert tortoise occurs south and east of the Colorado River. Tortoises encountered in the open should be moved out of harm's way to adjacent appropriate habitat. If an occupied burrow is determined to be in jeopardy of destruction, the tortoise should be relocated to the nearest appropriate alternate burrow or other appropriate shelter, as determined by a qualified biologist. Tortoises should be moved less than 48 hours in advance of the habitat disturbance so they do not return to the area in the interim. Tortoises should be moved quickly, kept in an upright position parallel to the ground at all times, and placed in the shade. Separate disposable gloves should be worn for each tortoise handled to avoid potential transfer of disease between tortoises. Tortoises must not be moved if the ambient air temperature exceeds 40° Celsius (105° Fahrenheit) unless an alternate burrow is available or the tortoise is in imminent danger.

A tortoise may be moved up to one-half mile, but no further than necessary from its original location. If a release site or alternate burrow is unavailable within this distance, and ambient air temperature exceeds 40° Celsius (105° Fahrenheit), contact the Department for guidance. Tortoises salvaged from projects which result in substantial permanent habitat loss (e.g. housing and highway projects), or those requiring removal during long-term (longer than one week) construction projects, may be placed in the Department's tortoise adoption program. *Managers of projects likely to affect desert tortoises should obtain a scientific collecting license from the Department to facilitate handling or temporary possession of tortoises.* Likewise, if large numbers of tortoises (>5) are expected to be displaced by a project, the project manager should contact the Department for guidance and/or assistance.

Please keep in mind the following points:

- Use the Department's Environmental On-Line Review Tool Department during the planning stages of any project that may affect desert tortoise habitat.

- Unless specifically authorized by the Department, or as noted above, project personnel should avoid disturbing any tortoise.

- Take is prohibited by state law.

- These guidelines do not apply to Mojave desert tortoises (north and west of the Colorado River). Mojave desert tortoises are listed as threatened under the Endangered Species Act, administered by the U.S. Fish and Wildlife Service.

- These guidelines are subject to revision at the discretion of the Department.

PLAN OF DEVELOPMENT FOR PROPOSED ROAD IMPROVEMENTS TO THE FLORENCE-KELVIN HIGHWAY ON BLM-ADMINISTERED LANDS

ASARCO LLC - RAY OPERATIONS
RIGHT-OF-WAY APPLICATION FOR
PROPOSED IMPROVEMENTS TO THE FLORENCE-KELVIN HIGHWAY ON FEDERAL LANDS WITHIN SECTION 12, TOWNSHIP 4 SOUTH, RANGE 13 EAST, PINAL COUNTY, ARIZONA

ITEM 7 – PROJECT DESCRIPTION

(a) Type of system or facility

ASARCO LLC (Asarco) proposes to conduct road improvements along a portion of the Florence-Kelvin Highway to provide access to infrastructure for the Ripsey Wash Tailings Storage Facility ("Ripsey Wash TSF") in support of ongoing operations at Ray Mine near the Townsite of Kelvin, in Pinal County, Arizona (Vicinity Map; **Figure 1**). Roadway improvements will occur on a portion of the Florence-Kelvin Highway located south of the Gila River within Section 12, T4S, R13E, Pinal County, Arizona (ROW Overview; **Figure 2A**). The estimated length of the roadway improvements on lands managed by the Bureau of Land Management (BLM) is approximately 2,185 feet (0.23 miles). A Plan of Development for the Project is provided with this right-of-way application as **Attachment 1**.

The purpose of the Roadway Improvements Project is to provide access to infrastructure, including a powerline, two pipelines, and two fiber optic communication cables, for the operation of Ripsey Wash TSF.

The proposed Roadway Improvements Project follows the existing paved Florence-Kelvin Highway, a Pinal County-maintained road, which crosses BLM lands in two separate locations (**Figure 3A and 3B**). A 66-foot-wide right-of-way (**Figure 3C**) is requested for the Roadway Improvements Project within two segments along the Florence-Kelvin Highway. Segment 1 is approximately 1,275 feet in length, covers about 1.89 acres and is located between a privately-owned parcel identified as the Eagle No. 5 patented mining claim on the eastern boundary and Arizona State Trust Land on the western boundary. The northern segment road on BLM land (Segment 2) is 910 feet in length, covers about 1.27 acres and includes an existing portion of the Florence-Kelvin Highway that will not require road improvements.

(b) Related structures and facilities

The Roadway Improvements Project includes the widening and paving of a portion the Florence-Kelvin Highway. No new roads are being requested as part of this Project.

In addition to the ROW applied for herein, the Ripsey Wash TSF will require a 44kv powerline, two (2) tailings delivery pipelines, a reclaimed water pipeline, a fresh water pipeline, a temporary construction water pipeline, a fiber optic communications cable along the powerline, and a buried fiber optic communication cable for redundancy in providing communications. Those facilities would be placed along the same alignment as the Roadway Improvements Project (**Figure 2B and 2C**), and are subject to two concurrently filed BLM right-of-way applications. The powerline is an above-ground powerline that will be constructed immediately adjacent to the Florence-Kelvin Highway. The temporary construction water pipeline will be placed on the surface. The other pipelines will be buried in an approximately 20-foot-wide pipeline trench. A pipeline bridge will be constructed where the pipeline crosses the Gila River; a portion of this bridge will cross lands administered by the BLM. Asarco has requested separate BLM ROW

authorization for the pipeline corridor and a separate BLM ROW authorization for the powerline installation. The three ROWs in total would occupy a 110-ft wide corridor (**Figure 2D**). The Roadway Improvements Project corridor and the Pipeline Project corridor are overlapping 7 feet' along the entire length of the ROW's.

(c) Physical specifications

The Florence-Kelvin Highway is a historical roadway maintained by Pinal County whose width varies between approximately 20 and 66 feet. Asarco proposes to pave a width of up to 36 feet wide and widen the road up to 66 feet in width. Paving would consist of 5 inches of aggregate base with 3 inches of asphalt concrete. Further details are discussed in the Plan of Development (**Attachment 1**).

(d)Term of years needed

Asarco is requesting a right-of -way term of 30 years, the expected life of active-use of the Ripsey Wash TSF is 50 years.

(e) Time of year of use of operation

The road will be in use for daily traffic year-round.

(f) Volume or amount of product to be transported

The Florence-Kelvin Highway will continue to support traffic by the public, as well as traffic associated with the development of the Ripsey TSF.

(g) Duration and timing of construction

Activities associated with the Roadway Improvements Project are proposed to commence in 2019 and will continue for a duration of approximately three years. The estimated completion date for construction on BLM land is December 2021.

(h) Temporary work areas needed for construction

Temporary work areas on BLM land during construction of the proposed roadway improvements will be limited to areas within the herein applied for a 66-foot wide ROW.

ITEM 13A – DESCRIPTION OF REASONABLE ALTERNATIVE ROUTES AND MODES CONSIDERED

The improvements to the Florence-Kelvin Highway are being proposed in support of the proposed Ripsey Wash TSF and associated infrastructure. Asarco has evaluated five powerline/pipeline route alternatives for the Ripsey Wash TSF (Options 1-5, **Figure 4**). Option 5 is the preferred route and represents the project described herein. Option 2 runs along the north side of the Gila River within the Copper Basin Railway (CBRY) easement and crosses at the existing CBRY bridge and involves the realignment of the existing Florence-Kelvin Highway north of the proposed Ripsey Wash TSF prior to powerline construction; Option

3 traverses undeveloped lands west of the Florence-Kelvin Highway and crosses the Gila River at the existing Copper Basin Railway (CBRY) bridge. Option 4 traverses undeveloped lands west of the Florence-Kelvin Highway and crosses the Gila River at a new location upstream from the existing CBRY bridge.

ITEM 13B – REASONS WHY THESE ALTERNATIVES WERE NOT SELECTED

The preferred alternative, Option 5 (**Figure 4**), was selected because it proposes construction along the Florence-Kelvin Highway, an existing and improved roadway and allows for gravity flow of the tailings slurry delivery system north of the river.

Option 1 was not selected because it would involve the realignment of the existing Florence-Kelvin Highway north of the proposed Ripsey Wash TSF prior to construction, which poses logistical and cost constraints. Option 2 was not selected because of additional impacts along the Gila River and associated higher costs. Options 3 and 4 were also not selected as preferred routes because they would involve additional impacts to undeveloped areas and associated higher costs.

ITEM 13C – EXPLANATION AS TO WHY IT IS NECESSARY TO CROSS FEDERAL LANDS

The Roadway Improvements Project route is proposed for improving access along the existing Florence-Kelvin Highway and the Pinal County Kelvin Bridge to minimize the disturbance to state, private, and federal lands between Ripsey Wash TSF and the Ray Mine. The Florence-Kelvin Highway and the Pinal County Kelvin Bridge cross BLM land within the Project Area; therefore, following this alignment necessitates the crossing of BLM land.

ITEM 14 – AUTHORIZATION AND PENDING APPLICATIONS FILED FOR SIMILAR PROJECTS WHICH MAY PROVIDE INFORMATION TO THE AUTHORIZING AGENCY

A Clean Water Act (CWA) Section 404 individual permit application was submitted to the US Army Corps of Engineers on June 7, 2013 and is currently under review. The Corps is preparing an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA), for which BLM is a cooperating agency. The Corps' EIS will provide the required NEPA review for this ROW grant.

The BLM has approved an amended ROW grant (No. AZA-35391) for the Kelvin Bridge Project, which occurs immediately downstream from Asarco's planned pipeline and powerline corridor where it crosses the Gila River.

ITEM 15 – STATEMENT OF NEED FOR PROJECT, INCLUDING THE ECONOMIC FEASIBILITY AND ITEMS:

The purpose of the Roadway Improvements Project is to provide access for the installation of a pipeline, powerline, and communications source for the operation of the Ripsey Wash TSF. Current mine plans require additional tailings storage to support up to approximately 750 million tons of mill tailings through the remaining life of the mine. The deposition of tailings is needed to allow for the full utilization of the mineral resource at the Ray Mine.

(a) Cost of proposal (construction, operation, and maintenance)

Not applicable

(b) Estimated cost of next best alternative

Not applicable

(c) Expected public benefits

The primary expected public benefit for the construction of the Roadway Improvements Project is economic in nature. The Project is proposed in support of ongoing mining operations at the Ray Mine, one of the largest sources of Asarco's copper production. Current world copper demand averages approximately 2.2 kilograms (5 pounds) of copper per capita per year requiring approximately 15.9 Mt of production each year worldwide. Predictions of growing demand indicate that the increase in per capita consumption over the next 20 years will require the production of between 36.6 and 42.1 Mt of copper per year, an increase of 2.3 to 2.65 times current production. Despite higher production yields from new technologies, the extensive time involved in developing new mines, including exploration, environmental impact studies, and permitting, requires the full utilization of known resources in existing mines to help meet the predicted national and global demand. The benefits also include assisting local communities grow, providing new jobs and supporting the continuation of job stability for Asarco employees in rural Arizona. The granting of this ROW would be consistent with BLM's and the current administration's priorities to streamline ROWs processing for pipelines and transmission lines, streamline permitting for hard rock mining, improve and streamline land use planning to support minerals development, create new jobs, and support existing jobs. Additionally, the roadway improvements are being conducted on public roads, and so the public will benefit from the improved road quality.

ITEM 16 – DESCRIPTION OF PROBABLE EFFECTS ON THE POPULATION IN THE AREA, INCLUDING THE SOCIAL AND ECONOMIC ASPECTS, AND THE RURAL LIFESTYLES

The probable effects on the population in the area are primarily economic. As previously described, utilization of the full mineral resource at Ray Mine allows Asarco to help meet predicted copper demand at a national and global scale. Locally, construction of the Road Improvements Project to support ongoing mining operations of Ray Mine provides a source of well-paying employment to the surrounding communities via hired contractors and permanent mine employees. Regarding social aspects and rural lifestyles, adverse impacts are not expected because the Roadway Improvements Project on public land will be conducted along existing development corridors and disturbed property currently utilized by the general public.

ITEM 17 – DESCRIPTION OF LIKELY ENVIRONMENTAL EFFECTS THAT THE PROPOSED PROJECT WILL HAVE ON:

(a) Air quality

The proposed Project is not expected to have adverse impacts on air quality. The Roadway Improvements Project will be conducted and will operate in conformance with applicable Federal, State, and local air quality regulations.

(b) Visual impact

The proposed Project will not pose significant adverse visual impacts on the surrounding landscape. The roadway improvements will run along the existing Florence-Kelvin Highway corridor.

(c) Surface and ground water quality and quantity

The Roadway Improvements Project will not contribute to the degradation of surface water or groundwater quality and/or quantity. Asarco will operate in accordance with a Stormwater Pollution Prevention Plan (SWPPP) during the construction phase of the Roadway Improvements Project as required by an Arizona Department of Environmental Quality (ADEQ) Construction General Permit (CGP). The SWPPP will detail the installation and maintenance of site-specific Best Management Practices (BMPs) to be implemented. A complete and accurate Notice of Intent (NOI) will be submitted to ADEQ prior to commencement of activity.

(d) The control of the structural change on any stream or other body of water

There will be no structural change of the Gila River as a result of the roadway improvements. Surface disturbance will be minimized during road improvement activities, and BMPs for sediment control will be implemented in accordance with the SWPPP. Any disturbed areas will be restored to natural contours upon completion of the work.

(e) Existing noise levels

The Roadway Improvements Project on federal land may result in temporary increased noise levels during construction. Road improvement activities will be conducted in accordance with Pinal County Ordinance No. 050306-ENO as Amended by 031611-ENO-01.

(f) The surface of the land, including vegetation, permafrost, soil, and soil stability

The proposed activities will occur within the existing Florence-Kelvin Highway alignment, a previously disturbed area.

ITEM 18 – DESCRIPTION OF THE PROBABLE EFFECTS THAT THE PROPOSED PROJECT WILL HAVE ON:

(a) Populations of fish, plantlife, wildlife, and marine life, including threatened and endangered species

The Roadway Improvements Project crosses a reach of the Gila River that is currently designated critical habitat for the endangered southwestern willow flycatcher (SWFL; *Empidonax traillii extimus*) and is proposed designated critical habitat for the threatened yellow-billed cuckoo (YBC; *Coccyzus americanus*). WestLand Resources, Inc. (WestLand) has completed surveys during multiple seasons along the reach of the Gila River adjacent to the Project, and SWFL and YBC have been recorded from the vicinity of the existing Florence-Kelvin Highway bridge in proximity to the northern segment of the Roadway Improvements Project.

Vegetation disturbance will be minimized to the extent practicable. The US Army Corps of Engineers is in the process of consulting with the US Fish and Wildlife Service (USFWS) regarding the potential impacts

to individual SWFL and YBC and their proposed/designated critical habitat as part of the Ripsey Wash Tailings Storage Facility Project Clean Water Act Section 404 permitting process.

The Sonoran desert tortoise (*Gopherus morafkai*) is also known to occur in the vicinity of the Roadway Improvements Project. The Sonoran desert tortoise is not afforded protection under the Endangered Species Act but is considered a BLM sensitive species. Potential Sonoran desert tortoise shelters will be examined during the course of the construction activities to prevent negative impacts. Any individual tortoises encountered will be avoided and allowed to move out of the way prior to ground disturbing activities. Guidelines for handling desert tortoise published by the Arizona Game and Fish Department (AGFD) will be used if it were found absolutely necessary to move individual tortoises.

(b) Marine mammals, including hunting, collecting, or killing these animals

Marine mammals do not occur within the Roadway Improvements Project area; therefore, this section is not applicable.

ITEM 19 – HAZARDOUS MATERIALS

The Roadway Improvements Project does not include the use, production, transport, or storage of any hazardous materials within the ROW, or used in the construction, operation, maintenance, or termination of the ROW as defined by Comprehensive Environmental Response Compensation, and Liability Act or the Resource Conservation and Recovery Act.

Attachment 1

PLAN OF DEVELOPMENT
IMPROVEMENTS TO FLORENCE-KELVIN HIGHWAY FOR THE RIPSEY WASH TAILINGS STORAGE FACILITY
No. AZA-036430

Prepared for: Bureau of Land Management, Tucson Field Office
Prepared by: ASARCO LLC
Date: August 18, 2017, Revised Feb 08, 2018
Corps File No.: SPL-2011-1005-MWL

TABLE OF CONTENTS

FIGURES

(follow text)

ATTACHMENT

1. PURPOSE AND NEED

ASARCO LLC (Asarco) proposes to conduct road improvements to a portion of the Florence-Kelvin Highway for access to the Ripsey Wash Tailings Storage Facility and associated infrastructure in support of ongoing operations at the Ray Mine near Kelvin, Pinal County, Arizona (Vicinity Map, **Figure 1**). Current mine plans require additional tailings storage to support up to approximately 750 million tons of mill tailings and associated embankments through the remaining life of the mine. Up to 45,000 tons of tailings is anticipated to be transported per day to support the ongoing operations of the mine. The deposition of tailings is needed to allow for the full utilization of the mineral resource at the Ray Mine.

The U.S. Army Corps of Engineers (the Corps) is the lead agency permitting the proposed Ripsey Wash Tailings Storage Facility, and the Corps has published a Draft Environmental Impact Statement for the Project. In addition to the BLM, cooperating agencies include the Environmental Protection Agency, and the San Carlos Irrigation Project (SCIP). Interested agencies or parties include U.S. Fish and Wildlife Service, Arizona State Land Department, Arizona Game and Fish Department (AGFD), Pinal County, and the Arizona Trail Association.

The Roadway Improvement Project will improve the existing Pinal County maintained Florence-Kelvin Highway where needed in order to support the operation of the tailings storage facility and associated infrastructure and continue to be available for use by the public.

In addition to the Roadway Improvement right-of-way (ROW) application (No. AZA-036430) applied for herein, Asarco has requested two (2) separate ROW authorizations for a Pipeline Corridor (No. AZA-037391) and a Powerline Corridor (No. AZA-037090) **(Figures 2A).** The three ROWs are along the same alignment and cross BLM lands in two separate locations outlined as Segment 1 **(Figure 2B**) and Segment 2 **(Figure 2C**) which in total occupy a 110-foot-wide corridor **(Figure 2D).** The Rodway Improvement corridor and the Pipeline Corridor are overlapping 7' along the whole length of the ROW's.

2. ROADWAY OVERVIEW

The proposed improvements to the section of Florence-Kelvin Highway on BLM land occurs south of the Gila River within Section 12, T4S, R13E, Pinal County, Arizona, and would provide access to infrastructure that would serve the Ripsey Wash Tailings Storage Facility and will be a County-maintained public road that will continue to be available for use by the public.

In general, a 66-foot-wide ROW is requested within the two segments along the Florence-Kelvin Highway.

Segment 1 is approximately 1,275 feet in length and covers about 1.89 acres and is located between a privately-owned parcel identified as the Eagle No. 5 patented mining claim on the eastern boundary and the Arizona State Trust Land on the western boundary **(Figure 3A)**.

Segment 2 is approximately 910 feet in length and covers about 1.27 acres and is an irregular shape because of the intersection of the patented mining claim Riverside MS 3136B (**Figure 3B**).

3. PROJECT CONSTRUCTION, OPERATION, AND MAINTENANCE

3.1. PRE-CONSTRUCTION ACTIVITIES

Engineering Surveys

Prior to construction activities, civil engineering surveys will identify the centerline of the roadway and the boundaries of all sides of the approved ROW working limits (here in called edges). Before construction, inspectors hired by Asarco will be responsible for verifying that the centerline and edges are staked with flagging and or painted lath at approximately 200-foot intervals or as required to maintain line of sight. This staking will clearly demark the edges of the ROW area that can be used or accessed by construction personnel. Equipment and vehicles will not be parked or driven beyond these stakes edges and no other ground-disturbing activities will be allowed outside the staked edges of the work area.

Before earth-moving activities, best management practices (BMPs) established by ASARCO will be installed to limit sediment transport and erosion consistent with regulatory approvals. Specific areas requiring BMPs will be designated on alignment sheets. Site-specific BMPs will be developed based on construction site characteristics and weather conditions. BMPs will be inspected routinely and maintained in good working order.

Cultural Resources Survey

Cultural resource surveys have been completed for all areas associated with the Project. No eligible cultural resources occur on BLM lands.

Biological Resources Survey

A biological evaluation and screening for species listed under the Endangered Species Act and BLM-sensitive species have been conducted in support of the Project. Surveys for the endangered southwestern willow flycatcher (SWFL; *Empidonax traillii extimus*) were conducted in 2007 and from 2011 through 2016 and for the threatened yellow-billed cuckoo (YBC; *Coccyzus americanus*) from 2013 through 2016 along the reach of the Gila River along the existing Florence-Kelvin Highway. Both the endangered southwestern willow flycatcher SWFL and the threatened yellow-billed cuckoo YBC are

known to occur along the Gila River in this area; breeding southwestern willow flycatcher are known to occur in immediate proximity of the Kelvin Bridge.

3.2. CONSTRUCTION ACTIVITIES

Road improvements are proposed to commence in 2019 and may continue for a duration of up to 3 years.

Asarco anticipates a least a five-person crew will be required for these road improvement activities, and equipment will likely include front end loaders, drills, 40 ton haul trucks, compaction rollers, graders, pavers, backhoes, pickup trucks, and trailers for transporting and storing equipment.

Physical Specifications

Asarco proposes to pave and widen Segment 1 of the highway right-of-way to up to 66 feet in width. The paved portion of the road would be up to 36 feet wide, evenly distributed on either side of the centerline point (**Figure 3C**). Paving would consist of 5 inches of aggregate base with 3 inches of asphalt concrete. Embankments located immediately adjacent to the pavement would be up to 8 feet wide on either side of the pavement, and berms located on the outside of the embankment would be up to 7 feet wide each.

Traffic Management

Access to the Florence-Kelvin Highway and all adjacent roads and properties will remain open during construction of the Roadway Improvement Project. At least one lane of traffic will remain open and traffic will be directed as needed for safe travel through construction areas. Informational signs will be used to inform the public of temporary traffic hazards, flaggers will be employed during construction, and traffic cones would be used to identify any temporary changes in lane configuration necessary to minimize traffic impacts. Traffic speeds through construction areas will be limited to no more than 15 miles per hour.

3.3. POST-CONSTRUCTION ACTIVITIES

Cleanup

Construction sites, material storage yards, and access roads will be kept in an orderly condition throughout the construction period. Refuse and trash, including stakes and flags, will be removed from the sites and disposed of in an approved manner. No construction equipment oil or fuel will be drained on the ground. Oils or chemicals will be hauled to an approved site for disposal. No open burning of construction trash will occur on BLM-administered lands.

Reclamation

Following construction and cleanup, reclamation will be completed. The disturbed surfaces will be restored to the original contour of the land surface to the extent determined by the BLM. Appropriate site-specific seed mixes will be used where conditions vary. Salvaged native plants will be used for revegetation, if appropriate, along with seeding using BLM-recommended seed mixes. Preferably, seed will be planted between the months of November and January following construction. Seed will be planted using drilling, straw mulching, or hydromulching as directed by the BLM.

Operation and Maintenance

Asarco is requesting a right-of-way term for 30 years, the expected life of proposed tailings storage impoundment is 50 years. The roadway will be used in support of daily, year-round mining operations and will continue to be available for use by the public.Pinal County currently maintains and will continue to maintain the Florence-Kelvin Highway.

4. RESOURCE IMPACTS AND MITIGATION MEASURES

4.1. AIR QUALITY

The Project is not expected to have adverse impacts on air quality. The proposed roadway improvements will be constructed and will operate in conformance with applicable Federal, State, and local air quality regulations.

4.2. EXISTING NOISE LEVELS

The Project may result in increased noise levels during construction. Construction of the roadway improvements will be conducted in accordance with Pinal County Ordinance No. 050306-ENO as Amended by 031611-ENO-01.

4.3. VISUAL IMPACTS

The Project will not pose significant adverse visual impacts on the surrounding landscape. The improvements will run along the existing Florence-Kelvin Highway.

4.4. SURFACE AND GROUND WATER QUALITY AND QUANTITY

The Project will not contribute to the degradation of surface water or groundwater quality and/or quantity. As previously described, Asarco is seeking a CWA Section 404 Individual Permit for the Project. In addition, Asarco will operate in accordance with a Stormwater Pollution Prevention Plan (SWPPP) during the construction phase of the pipeline as required by an Arizona Department of Environmental Quality (ADEQ) Construction General Permit (CGP). The SWPPP will detail the installation and maintenance of site-specific Best Management Practices (BMPs) to be implemented.

A complete and accurate Notice of Intent (NOI) will be submitted to ADEQ prior to commencement of activity.

4.5. WILDLIFE

The proposed Project crosses a reach of the Gila River that is currently designated critical habitat for the endangered southwestern willow flycatcher (SWFL; *Empidonax traillii extimus*) and is proposed designated critical habitat for the threatened yellow-billed cuckoo (YBC; *Coccyzus americanus*). WestLand Resources, Inc. (WestLand) has completed surveys during multiple seasons along the reach of the Gila River adjacent to the Project, and SWFL and YBC have been recorded from the vicinity of the existing Florence-Kelvin Highway bridge.

Vegetation disturbance will be minimized to the extent practicable. The Corps will consult with the U.S. Fish and Wildlife Service (USFWS) regarding the potential impacts to individual SWFL and YBC and their proposed/designated critical habitat as part of the Ripsey Wash Tailings Storage Facility Project Clean Water Act Section 404 permitting process. Vegetation clearing within proposed and designated critical habitats would be conducted outside the breeding seasons for SWFL and YBC.

The Sonoran desert tortoise (*Gopherus morafkai*) is known to occur in the Project vicinity. The Sonoran desert tortoise is not afforded protection under the Endangered Species Act but it is considered a BLM sensitive species. Potential Sonoran desert tortoise shelters could be examined during the course of the proposed activities to prevent negative impacts. Any individual tortoises encountered could be avoided and allowed to move out of the way prior to ground disturbing activities. Guidelines for handling desert tortoise published by AGFD could be used if it were found absolutely necessary to move individual tortoises (**Attachment 1A**).

Two additional BLM sensitive species, California leaf-nosed bat (*Macrotus californicus*) and Desert box turtle (*Terrapene ornata luteola*), also have the potential to occur within the Project Area. Activities associated with the Project will not substantially impact habitat for these species. Construction activities may impact individuals of these species, but they are not likely going to result in a trend toward listing or loss of viability of these species.

4.6. VEGETATION

No BLM sensitive or threatened or endangered vegetation species would be impacted by the Project.

Asarco will adhere to the Arizona Native Plant Law for required vegetation clearances within the right-of-way.

The following measure will be taken to avoid the spread of noxious weeds within the Project Area:

- Avoid moving weed-infested gravel, rock, and other fill materials to relatively weed-free locations. Gravel and fill should come from weed-free sources. Inspect gravel pits and fill sources to identify weed-free sources.
- Identify existing noxious weeds along access roads and control them before construction equipment moves into relatively weed-free areas.
- Clean off-road equipment (power or high-pressure cleaning) of all mud, dirt, and plant parts before moving into relatively weed-free areas.
- Minimize the removal of roadside vegetation during construction, maintenance, and other ground-disturbing activities.
- Use only certified weed-free straw and mulch for erosion control projects and reseeding activities.

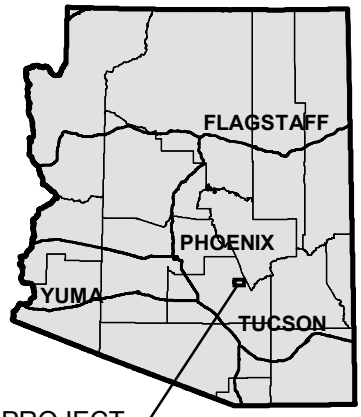
Portions of the Project Area will be seeded with a BLM-approved seed mix at the end of construction activities.

4.7. CULTURAL RESOURCES

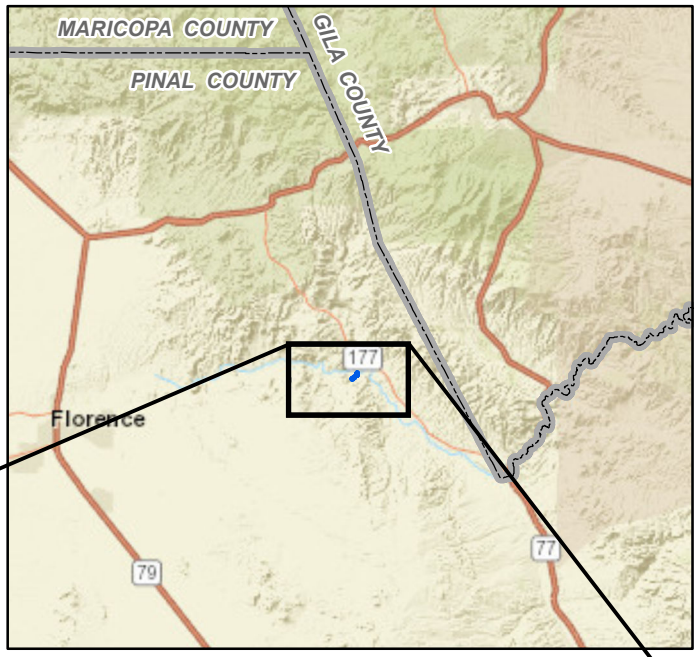
No eligible cultural resources occur on BLM lands subject to this right-of-way request.

FIGURES

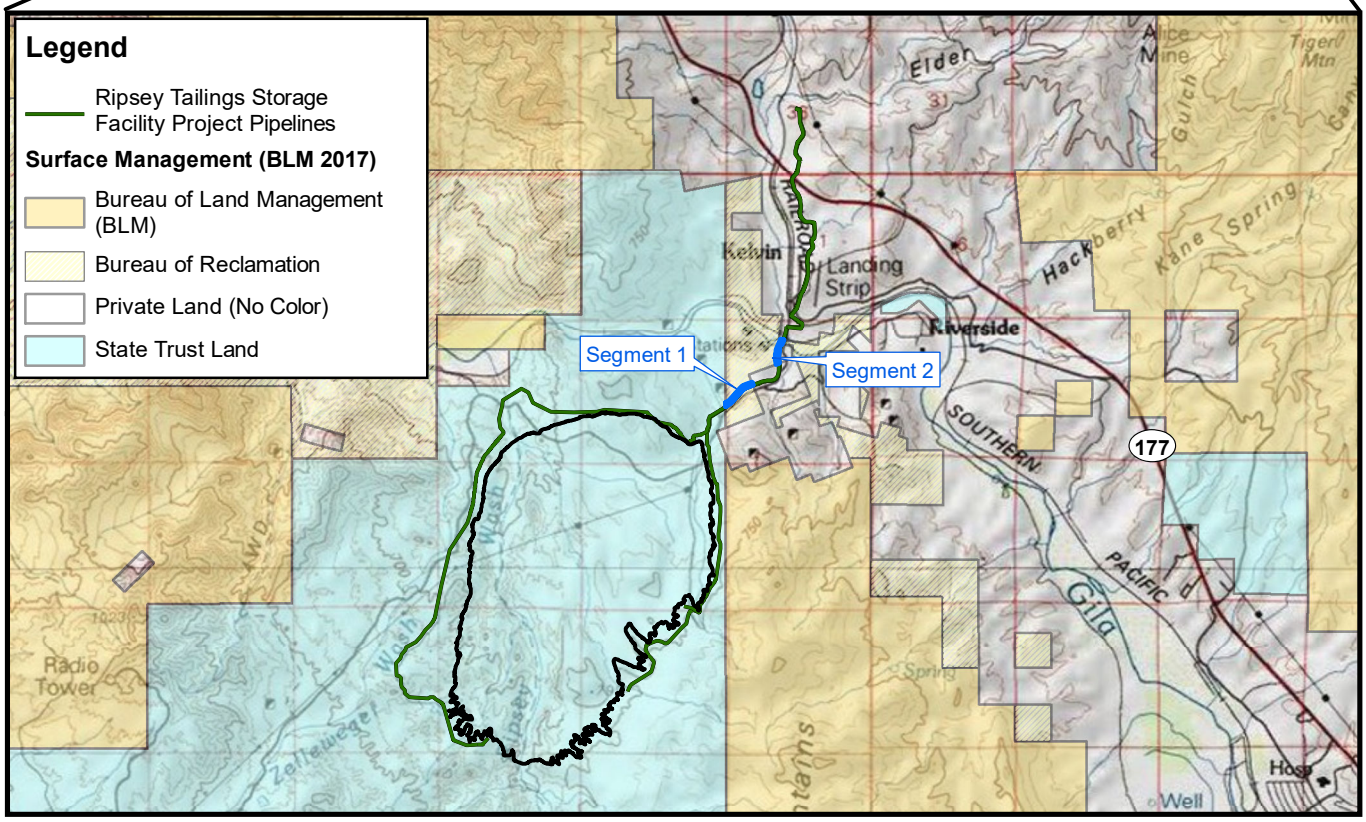
ARIZONA



NORTHEAST PINAL COUNTY



Approximate Scale 1 Inch = 15 Miles



T4S, R13E, Portion of Section 12,
Pinal County, Arizona,
Globe USGS 1:100,000 Quadrangle
Image Source: ArcGIS Online, World Street Map

ASARCO LLC
Ripsey Wash Tailings Storage Facility
BLM Right-of-Way Application/Plan of Development

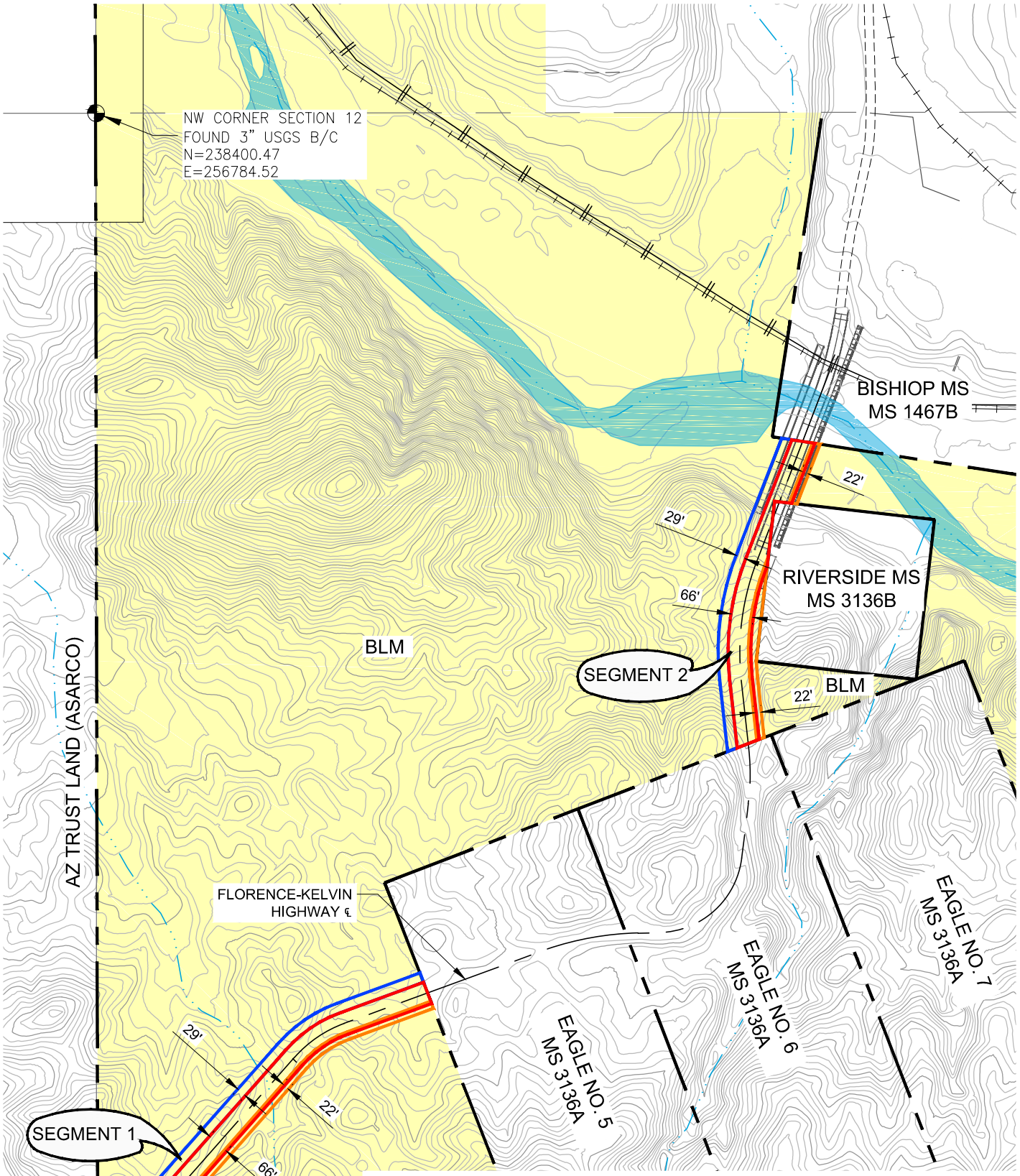
VICINITY MAP
Figure 1

WestLand Resources

N

0 3,500 7,000 Feet

0 1,000 2,000 Meters



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PROJECT	BLM RIGHT-OF-WAY APPLICATION				
TITLE	RIGHT-OF-WAY OVERVIEW				
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DRAWN BY	HMR	APPROVED BY		02/09/18	DRAFT
FILENAME	4300-ROW	FIGURE No.	2A	REV	A
PROJECT NO.	XX-XXXX-XX				

amec foster wheeler

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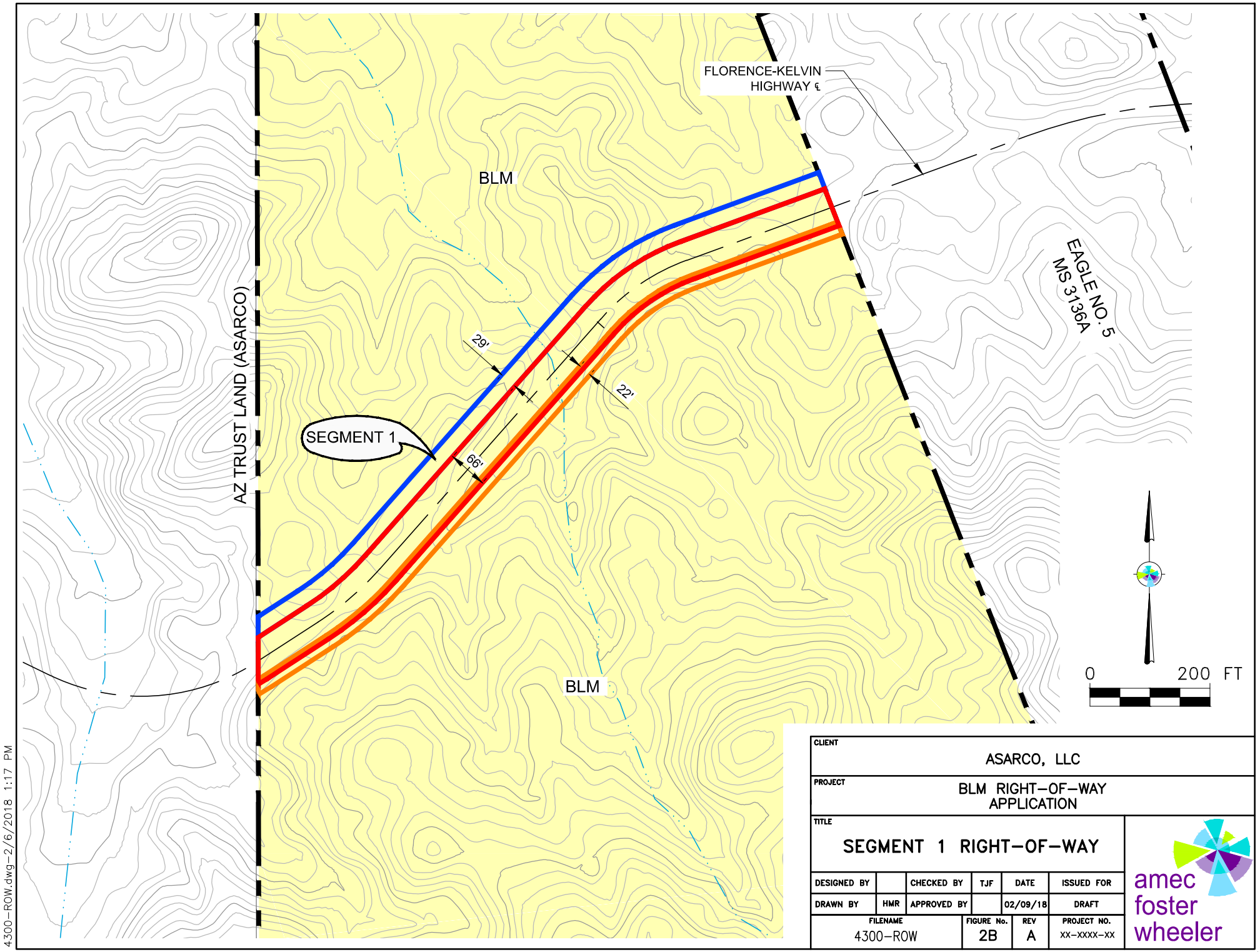

CLIENT	ASARCO, LLC				
PROJECT	BLM RIGHT-OF-WAY APPLICATION				
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DRAWN BY	HMR	APPROVED BY		02/09/18	DRAFT
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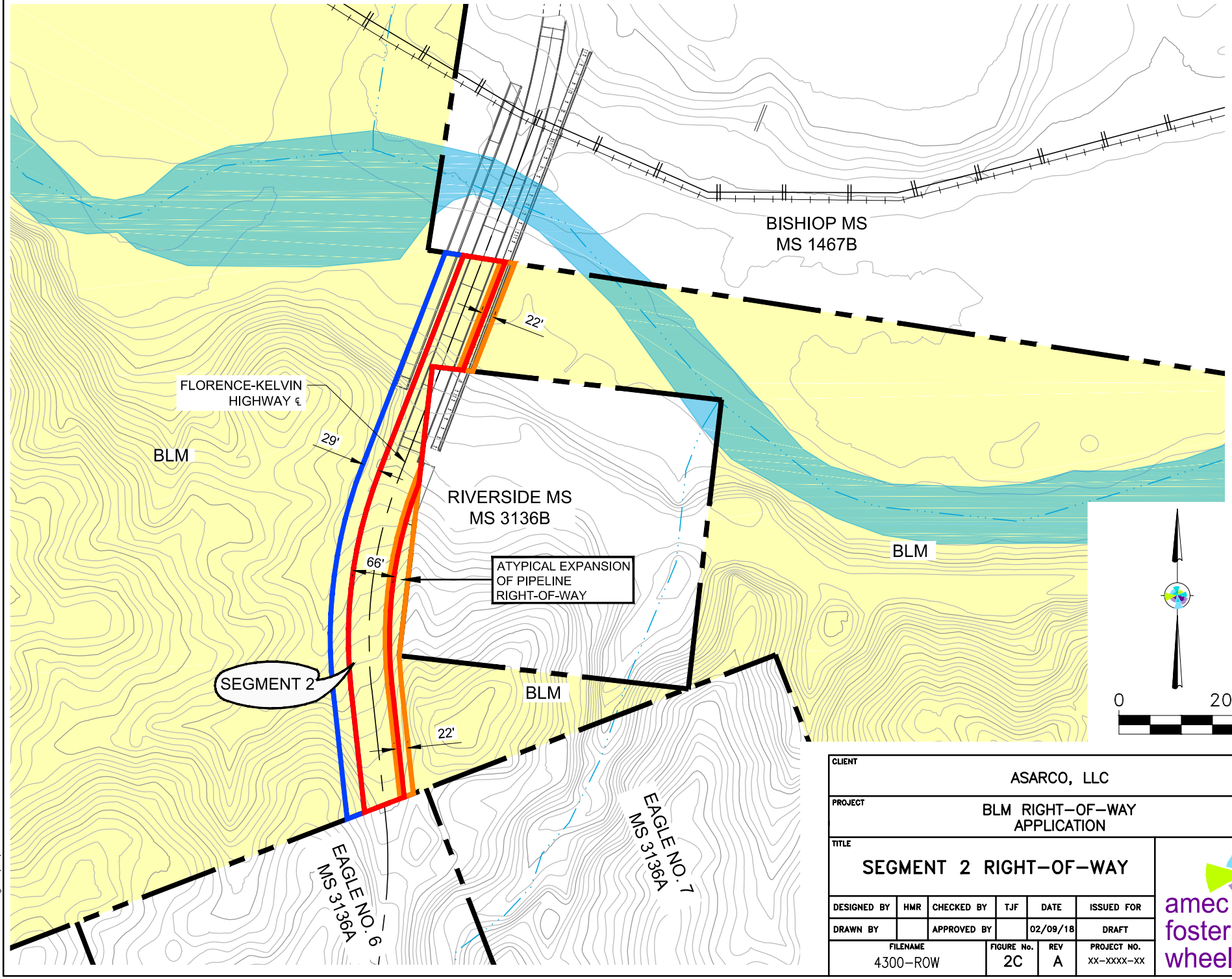

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PROJECT	BLM RIGHT-OF-WAY APPLICATION				
TITLE	SEGMENT 2 RIGHT-OF-WAY				
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DRAWN BY		APPROVED BY		02/09/18	DRAFT
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PROJECT NO.	XX-XXXX-XX				

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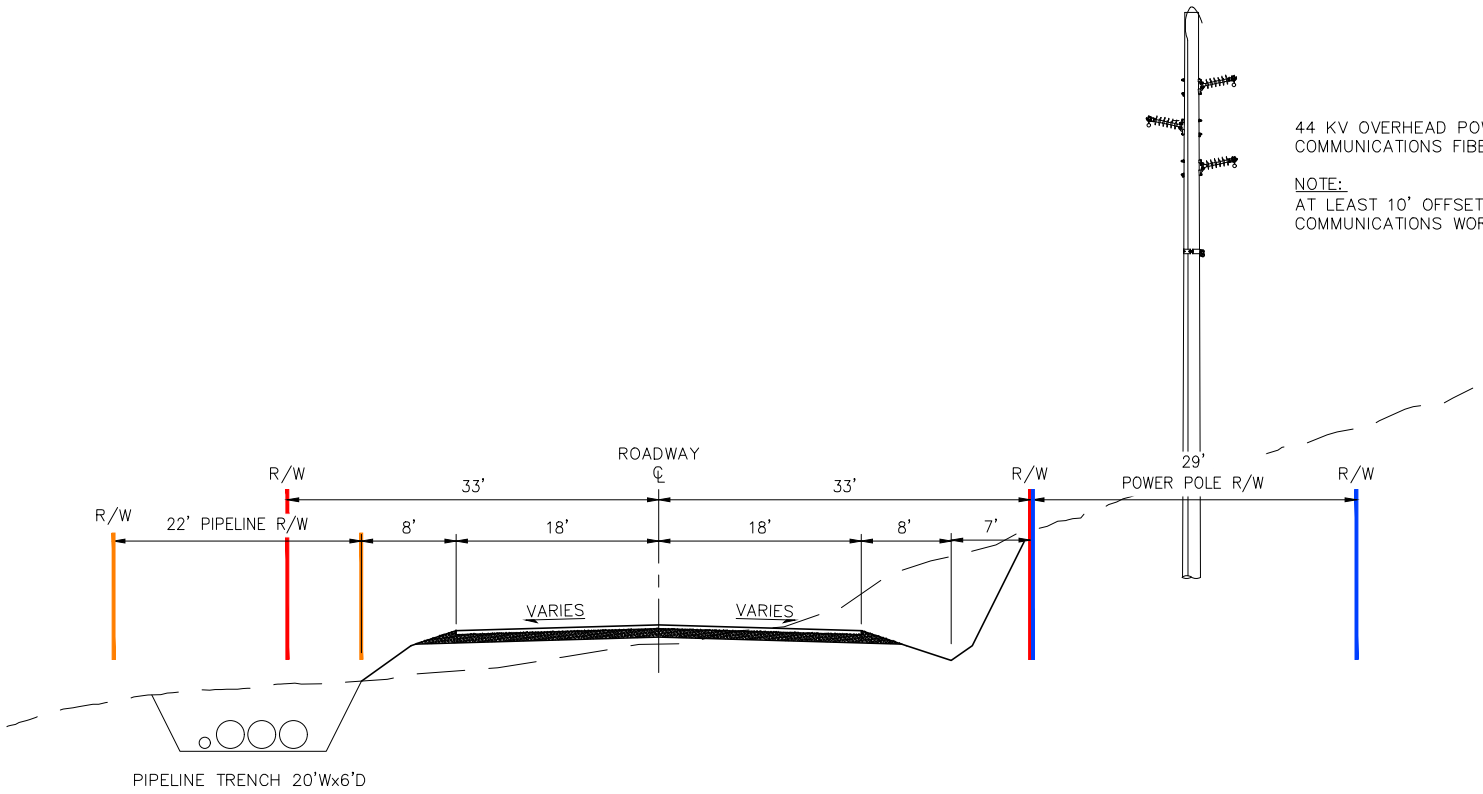

44 KV OVERHEAD POWER & PROCESS CONTROL COMMUNICATIONS FIBER OPTIC CABLE

NOTE:
AT LEAST 10' OFFSET FROM ELECTRICAL WORKINGS FOR COMMUNICATIONS WORKER SAFETY ZONE

PIPELINE TRENCH 20'Wx6'D

POSITION OF TRENCH VARIES UPON EXISTING TOPOGRAPHY

NOTES:

2 UP TO 30" STEEL LINED TAILINGS DELIVERY PIPELINES
1 UP TO 30" STEEL OR HDPE RECLAIMED WATER PIPELINE
1 UP TO 12" HDPE FRESH WATER PIPELINE
1 FIBER OPTIC COMMUNICATION CABLE

UP TO 2' SPACING BETWEEN PIPELINES

CLIENT	ASARCO, LLC				
PROJECT	BLM RIGHT-OF-WAY APPLICATION				
TITLE	OVERALL TYPICAL SECTION				
DESIGNED BY		CHECKED BY	TJF	DATE	ISSUED FOR
DRAWN BY	HMR	APPROVED BY		02/09/18	DRAFT
FILENAME	4300-ROW	FIGURE No.	2D	REV A	PROJECT NO. XX-XXXX-XX

amec foster wheeler

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LEGAL DESCRIPTION

BEGINNING AT A POINT WHOSE NORTHING IS 235132.86 AND WHOSE EASTING IS 256789.63;

THENCE BEARING N 57°04'22" E A DISTANCE OF 97.72 FEET;

THENCE ALONG A CURVE TO THE LEFT, HAVING A RADIUS OF 467.00 FEET, A DELTA ANGLE OF 15° 35' 53", AND WHOSE LONG CHORD BEARS N 49°16'26" E A DISTANCE OF 126.74 FEET;

THENCE BEARING N 41°28'29" E A DISTANCE OF 555.75 FEET;

THENCE ALONG A CURVE TO THE RIGHT, HAVING A RADIUS OF 386.15 FEET, A DELTA ANGLE OF 28° 27' 48", AND WHOSE LONG CHORD BEARS N 55°42'23" E A DISTANCE OF 189.86 FEET;

THENCE BEARING N 69°56'17 E A DISTANCE OF 256.90 FEET;

THENCE BEARING S 21°15'38" E A DISTANCE OF 66.01 FEET;

THENCE BEARING S 69°56'17" W A DISTANCE OF 258.28 FEET;

THENCE ALONG A CURVE TO THE LEFT, HAVING A RADIUS OF 320.15 FEET, A DELTA ANGLE OF 28° 27' 48", AND WHOSE LONG CHORD BEARS S 55°42'23" W A DISTANCE OF 157.41 FEET;

THENCE BEARING S 41°28'29" W A DISTANCE OF 555.75 FEET;

THENCE ALONG A CURVE TO THE RIGHT, HAVING A RADIUS OF 533.00 FEET, A DELTA ANGLE OF 15° 35' 53", AND WHOSE LONG CHORD BEARS S 49°16'26" W A DISTANCE OF 144.65 FEET;

THENCE BEARING S 57°4'22" W A DISTANCE OF 124.10 FEET;

THENCE ALONG A CURVE TO THE RIGHT, HAVING A RADIUS OF 383.00 FEET, A DELTA ANGLE OF 02° 23' 22", AND WHOSE LONG CHORD BEARS S 58°16'03" W A DISTANCE OF 15.97 FEET;

THENCE BEARING N 00°06'39" W A DISTANCE OF 78.14 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA A COMPUTED AREA OF 82,095.70 SQUARE FEET OR 1.885 ACRES OF LAND, MORE OR LESS.

NOTE:

P.O.B. COORDINATES BASED
FROM NW CORNER SECTION 12
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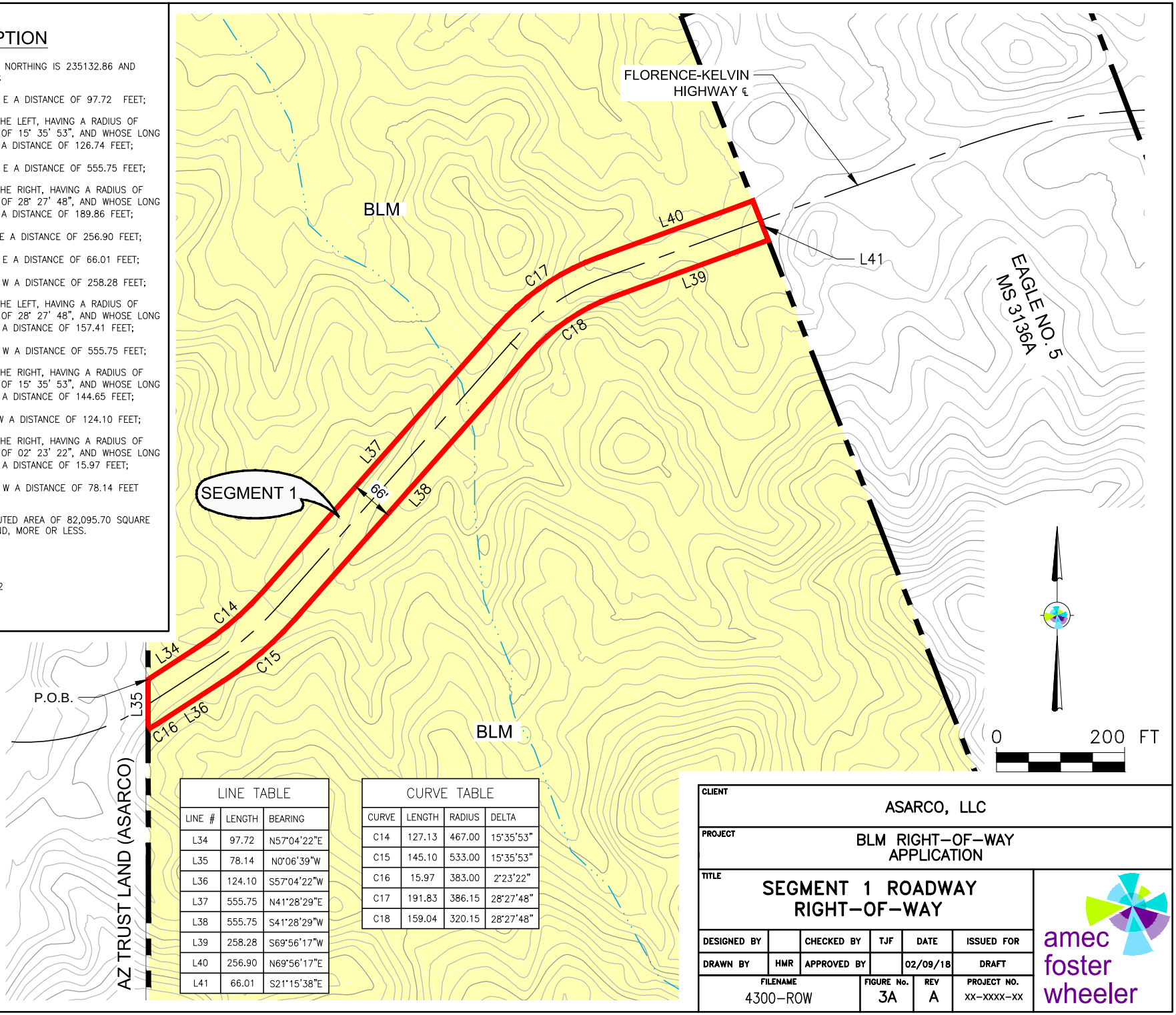
E=256784.52



LINE TABLE		
LINE #	LENGTH	BEARING
L34	97.72	N57°04'22"E
L35	78.14	N0°06'39"W
L36	124.10	S57°04'22"W
L37	555.75	N41°28'29"E
L38	555.75	S41°28'29"W
L39	258.28	S69°56'17"W
L40	256.90	N69°56'17"E
L41	66.01	S21°15'38"E

CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C14	127.13	467.00	15°35'53"
C15	145.10	533.00	15°35'53"
C16	15.97	383.00	2°23'22"
C17	191.83	386.15	28°27'48"
C18	159.04	320.15	28°27'48"

CLIENT	ASARCO, LLC				
PROJECT	BLM RIGHT-OF-WAY APPLICATION				
TITLE	SEGMENT 1 ROADWAY RIGHT-OF-WAY				
DESIGNED BY		CHECKED BY	TJF	DATE	ISSUED FOR
DRAWN BY	HMR	APPROVED BY		02/09/18	DRAFT
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PROJECT NO.	XX-XXXX-XX				

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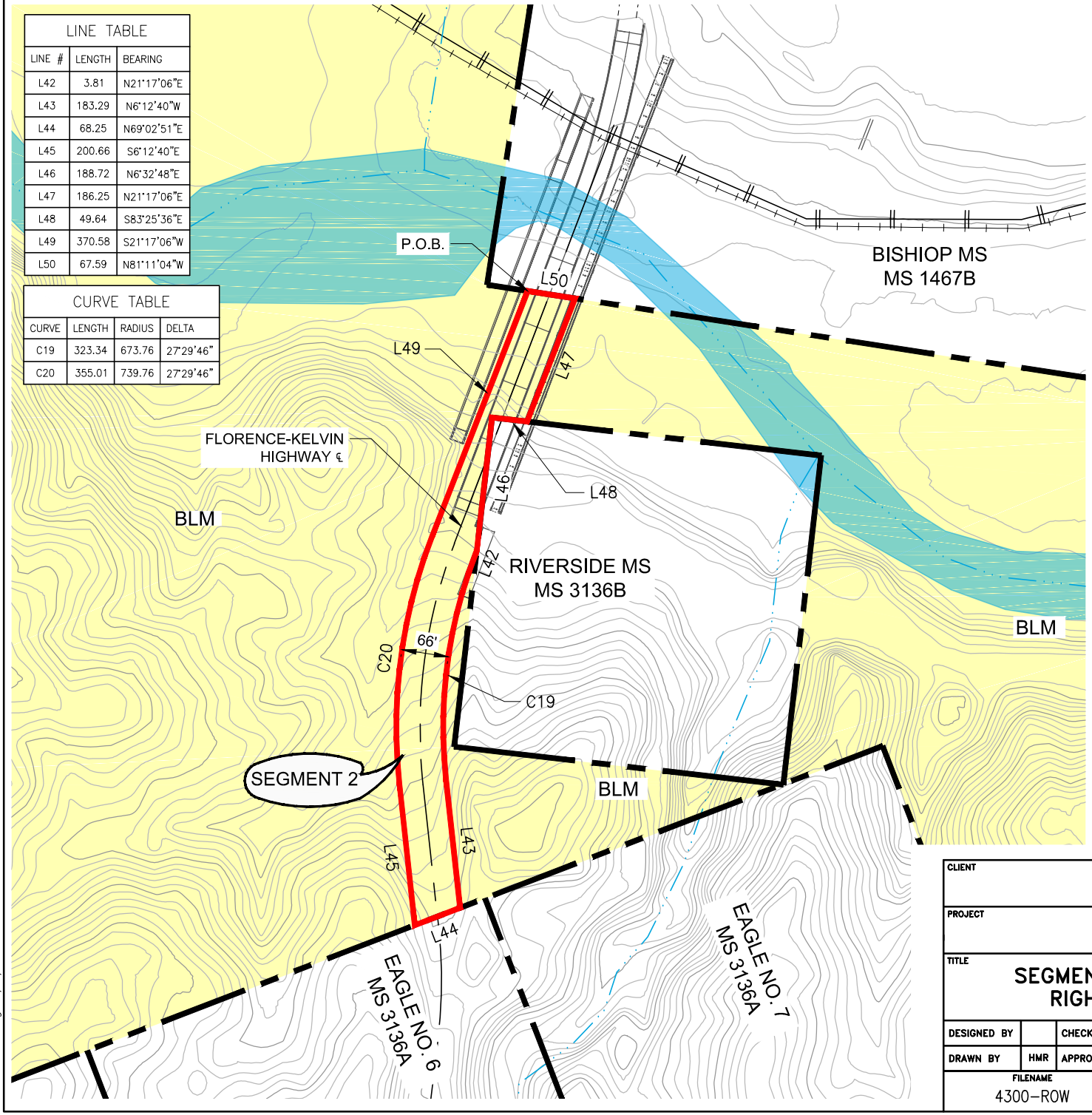

LINE TABLE		
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L43	183.29	N6°12'40"W
L44	68.25	N69°02'51"E
L45	200.66	S6°12'40"E
L46	188.72	N6°32'48"E
L47	186.25	N21°17'06"E
L48	49.64	S83°25'36"E
L49	370.58	S21°17'06"W
L50	67.59	N81°11'04"W

CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C19	323.34	673.76	27°29'46"
C20	355.01	739.76	27°29'46"

LEGAL DESCRIPTION

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THENCE BEARING S 81°11'4" E A DISTANCE OF 67.59 FEET;

THENCE BEARING S 21°17'6" W A DISTANCE OF 186.25 FEET;

THENCE BEARING N 83°25'37" W A DISTANCE OF 49.64 FEET;

THENCE BEARING S 6°32'48" W A DISTANCE OF 188.72 FEET;

THENCE BEARING S 21°17'6" W A DISTANCE OF 3.81 FEET;

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THENCE BEARING S 6°12'40" E A DISTANCE OF 183.29 FEET;

THENCE BEARING S 69°2'51" W A DISTANCE OF 68.25 FEET;

THENCE BEARING N 6°12'40" W A DISTANCE OF 200.66 FEET;

THENCE ALONG A CURVE TO THE RIGHT, HAVING A RADIUS OF 739.76 FEET, A DELTA ANGLE OF 27° 29' 46", AND WHOSE LONG CHORD BEARS N 7°32'13" E A DISTANCE OF 351.61 FEET;

THENCE BEARING N 21°18" E A DISTANCE OF 370.58 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA A COMPUTED AREA OF 55,311.92 SQUARE FEET OR 1.269 ACRES OF LAND, MORE OR LESS.

NOTE:

P.O.B. COORDINATES BASED
FROM NW CORNER SECTION 12
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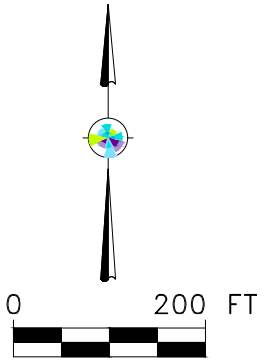
E=256784.52



CLIENT	ASARCO, LLC				
PROJECT	BLM RIGHT-OF-WAY APPLICATION				
TITLE	SEGMENT 2 ROADWAY RIGHT-OF-WAY				
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DRAWN BY	HMR	APPROVED BY		02/09/18	DRAFT
FILENAME	4300-ROW	FIGURE No.	3B	REV	A
PROJECT NO.	XX-XXXX-XX				

amec foster wheeler

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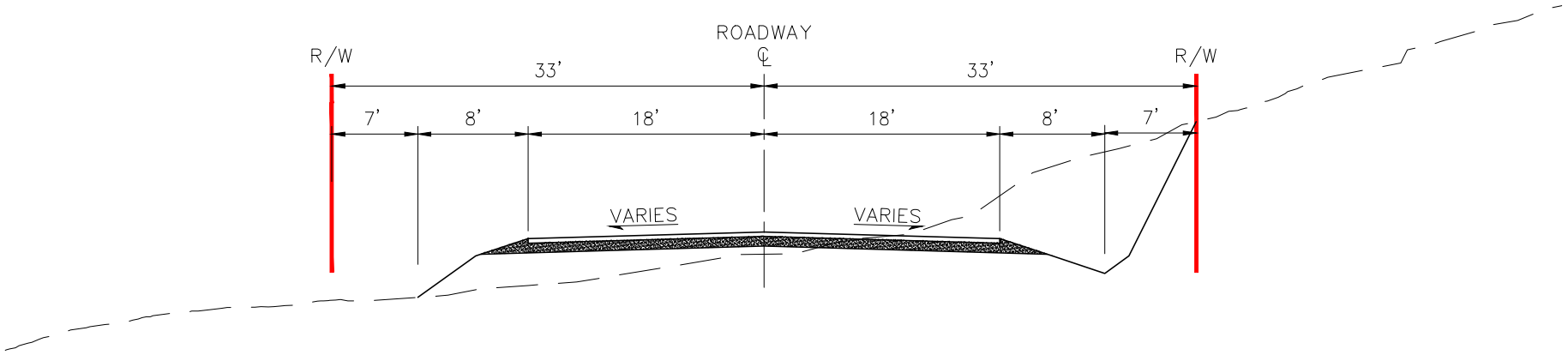

CLIENT	ASARCO, LLC				
PROJECT	BLM RIGHT-OF-WAY APPLICATION				
TITLE	ROADWAY TYPICAL SECTION				
DESIGNED BY		CHECKED BY	TJF	DATE	ISSUED FOR
DRAWN BY	HMR	APPROVED BY		02/09/18	DRAFT
FILENAME	4300-ROW	FIGURE No.	3C	REV	A
PROJECT NO.	XX-XXXX-XX				

amec foster wheeler

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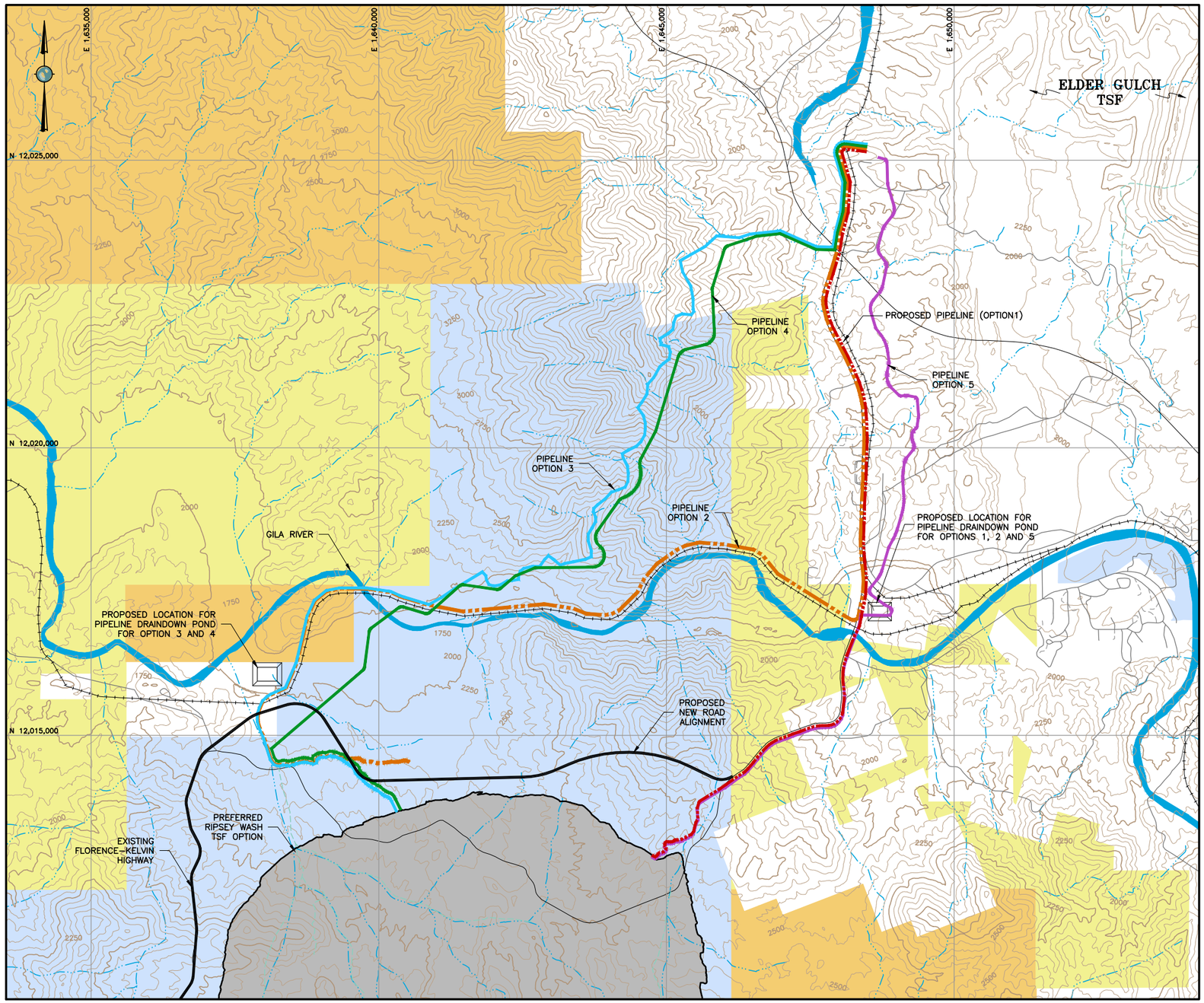

LEGEND:

- EXISTING GROUND SURFACE CONTOUR EL, FEET
- EXISTING DRAINAGES
- EXISTING RAILROAD
- EXISTING ROAD
- EXISTING TRAIL/UNIMPROVED ROAD
- BUREAU OF LAND MANAGEMENT
- BUREAU OF RECLAMATION
- STATE TRUST LAND
- PRIVATE LAND (NO COLOR)
- RIPSEY WASH PROPOSED TAILINGS STORAGE FACILITY

PIPELINE ALTERNATIVES

ALTERNATIVE	LENGTH (FT)
1	15,063
2	25,139
3	23,233
4	21,016
5	16,011

REFERENCE:
TOPOGRAPHIC MAPPING AND EXISTING FEATURE DATA PROVIDED BY AIRBORNE 1, INC.; COORDINATE SYSTEM IS IN UTM ZONE 12 NAD 83 DATUM FOR HORIZONTAL AND NAVD 88 DATUM FOR VERTICAL.

1000 0 1000 2000 FEET

Figure Prepared By: amec

ASARCO LLC
Ripsey Wash Tailings Storage Facility
Corridor Alternatives
BLM Right-of-Way Application/Plan of Development

PIPELINE CORRIDOR ALTERNATIVES

Figure 4

M:\Jobs\200's\203.51\ENV\RipseyBLM_ROW_Apps\dwg\RevisedFig2_2018_01-19\Fig4_PipelineCorridorAlts_2_6_2018.dwg-2/6/2018 11:12 AM

Attachment 1A

Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects

GUIDELINES FOR HANDLING SONORAN DESERT TORTOISES ENCOUNTERED ON DEVELOPMENT PROJECTS

Arizona Game and Fish Department
Revised September 22, 2014

The Arizona Game and Fish Department (Department) has developed the following guidelines to reduce potential impacts to desert tortoises, and to promote the continued existence of tortoises throughout the state. These guidelines apply to short-term and/or small-scale projects, depending on the number of affected tortoises and specific type of project.

The Sonoran desert tortoise occurs south and east of the Colorado River. Tortoises encountered in the open should be moved out of harm's way to adjacent appropriate habitat. If an occupied burrow is determined to be in jeopardy of destruction, the tortoise should be relocated to the nearest appropriate alternate burrow or other appropriate shelter, as determined by a qualified biologist. Tortoises should be moved less than 48 hours in advance of the habitat disturbance so they do not return to the area in the interim. Tortoises should be moved quickly, kept in an upright position parallel to the ground at all times, and placed in the shade. Separate disposable gloves should be worn for each tortoise handled to avoid potential transfer of disease between tortoises. Tortoises must not be moved if the ambient air temperature exceeds 40° Celsius (105° Fahrenheit) unless an alternate burrow is available or the tortoise is in imminent danger.

A tortoise may be moved up to one-half mile, but no further than necessary from its original location. If a release site or alternate burrow is unavailable within this distance, and ambient air temperature exceeds 40° Celsius (105° Fahrenheit), contact the Department for guidance. Tortoises salvaged from projects which result in substantial permanent habitat loss (e.g. housing and highway projects), or those requiring removal during long-term (longer than one week) construction projects, may be placed in the Department's tortoise adoption program. *Managers of projects likely to affect desert tortoises should obtain a scientific collecting license from the Department to facilitate handling or temporary possession of tortoises.* Likewise, if large numbers of tortoises (>5) are expected to be displaced by a project, the project manager should contact the Department for guidance and/or assistance.

Please keep in mind the following points:

- Use the Department's Environmental On-Line Review Tool Department during the planning stages of any project that may affect desert tortoise habitat.

- Unless specifically authorized by the Department, or as noted above, project personnel should avoid disturbing any tortoise.

- Take is prohibited by state law.

- These guidelines do not apply to Mojave desert tortoises (north and west of the Colorado River). Mojave desert tortoises are listed as threatened under the Endangered Species Act, administered by the U.S. Fish and Wildlife Service.

- These guidelines are subject to revision at the discretion of the Department.