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## STAFF MEMORANDUM

To: THE COMMISSION

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Arizona Corporation Commission

DOCKETED

From: Steven M. Olea  
Interim Director  
Safety Division

2010 JUN 22 P 4: 22

JUN 22 2010

Date: June 23, 2010

ORIGINAL

AZ CORP COMMISSION  
DOCKET CONTROL

DOCKETED BY	
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RE: IN THE MATTER OF THE APPLICATION OF DRAKE CEMENT, LLC TO ESTABLISH A NEW RAILROAD CROSSING ON YAVAPAI COUNTY ROAD 71 NEAR DRAKE, YAVAPAI COUNTY, ARIZONA, USDOT NO. 933-885-T.

DOCKET NO. RR-20736A-10-0140

**Background**

On April 9, 2010, Drake Cement, LLC ("Company" or "Drake") filed with the Arizona Corporation Commission ("Commission") an application for the establishment of a new public at-grade railroad crossing on Yavapai County Road (CR) 71 (also known as Drake Road) in the vicinity of Drake, Yavapai County ("County"), Arizona, USDOT No. 933-885-T. The construction of the rail spur across CR71 will serve the Company's cement operations.

**Drake Cement, LLC**

The Company has entered into an agreement with the Burlington Northern Santa Fe Railway ("BNSF") to bring coal to the Drake site. Coal is needed to fuel the new plant's kiln that will convert the necessary raw materials (e.g. limestone, bauxite, iron ore, etc.) into clinker, which will eventually lead to the production of cement. The Company has projected the production of approximately 660,000 short tons of cement annually, and to complete this, it will be necessary to transport approximately 800 cars of coal per annum, or 15 rail cars per week. In order to move the coal cars onto its premises, Drake will operate a railcar mover and will move a maximum of seven railcars at a time (**see Exhibit A**). The Company has the capacity of holding 12 railcars at a time within its plant site, meaning that only 2 transits through the crossing will be necessary per week to handle the inbound raw materials. While the Company does not have immediate plans to ship cement out of the plant by rail, in the event that the economics support using rail to ship cement out, it is possible that another 2 transits for the outbound cement sold would occur each week. In full production, the Company will operate 24 hours, 7 days per week. The Company predicts in today's economy that they will operate for 3 months, and then will cease operations for 4 months. During the months of no operations, the crossing would be inactive.

**Drake Switching Company, LLC**

In order to best serve the Company's railroad and switching needs, the Company purchased additional land and rail infrastructure from the Arizona Central Railroad ("AZCR"), adjacent to the cement plant operation. In February, 2010 the Company filed for an acquisition exemption with the Surface Transportation Board ("STB") to be considered as a non-railroad

company purchasing railroad right-of-way along with existing track owned by AZCR. A second filing was made by Drake Switching, LLC at the same time, requesting that the STB grant Drake Switching, LLC, an exemption for its switching operations as a non-carrier. In March, 2010, the STB granted the Company and Drake Switching, LLC the two exemptions as requested.

### **BNSF Interchange**

After the land was acquired from the AZCR, a connection to the nearby BNSF tracks was constructed so that rail shipments could be easily interchanged. Additionally, storage tracks were constructed to allow the Company to store loaded and empty rail cars to use as needed. The rail cars will be moved about using a railcar mover rather than a conventional locomotive.

### **Drake Switching Company, LLC Personnel**

Railroad Industries Incorporated, a rail consulting firm was hired to help the Company with its rail and switching operations. The primary consultant working with the Company is Gary V. Hunter who has 34 years of experience in railroad operations that includes positions as transportation director for a Class I railroad. Additionally, he has prior experience in terminal and switching operations as well as a director for a shortline railroad. Although the consultant will not be an employee, he will be consulting the Company on all facets of railroad operation and compliance.

The daily rail operations will be overseen by the Company's traffic manager. The traffic manager has a background in planning, coordinating and scheduling railcar shipments to meet the customer's needs. Including the traffic manager, Drake employs a total of five personnel trained in the federal Railroad Worker Protection ("RWP") regulations along with railcar mover certification. The railcar certification is awarded by the manufacturer of the railcar mover after rigorous training. Among the employees working under the supervision of the traffic manager, is the traffic operator whose main responsibility will be the operation of the railcar mover. He has 7 years of experience as a locomotive engineer for a Class I railroad, along with a strong background in railroad operating rules. In addition to training in RWP regulations and certification as an operator of a railcar mover, he still maintains his federal locomotive engineer certification.

The remaining three other employees that will work in the rail operations serve as secondary operators of the railcar mover, flagman and as track maintenance personnel. All three of these employees have been trained and certified in RWP regulations and railcar mover operations. While all three employees have been recently trained and certified they have no prior rail experience.

### **Geographical Information**

The following is a break down of the proposed new crossing in this application, including information about the crossing that was provided to the Commission's Railroad Safety Section Staff ("Staff") by the County and the Company. The proposed railroad crossing will be located on CR 71 approximately 2 miles northeast of State Highway Route (SR) 89 in the northeast corner of the County which is surrounded by the Prescott National Forest. Drake is an unincorporated community located within the County (**see Exhibit B**). As of 2007, the County's

population was estimated to be 212,635, an increase of 45,118 people since the 2000 census count of 167,517. Drake's economy is based on the mining and shipping of decorative flagstone.

### **CR71 (Drake Road)**

From SR89 traveling east about 1.8 miles, CR71 is a paved two lane roadway; it then becomes an unimproved gravel and dirt roadway that extends the entire length of the roadway, approximately 40 miles. The proposed new at-grade crossing will cross CR71 approximately .4 of a mile east of an existing BNSF at-grade crossing. The Company proposes the installation of the following passive warning devices at the proposed new at-grade crossing:

- railroad cross bucks along with Yield signs posted for both directions of travel at the crossing per the Manual on Uniform Traffic Control Devices (“MUTCD”) (see **Exhibit C**)
- advanced railroad crossing warning signs, per MUTCD posted on the roadway in both directions
- skewed angle warning signs per MUTCD posted on the roadway in both directions indicating the skewed angle in which the tracks will cross the roadway
- asphalt paving on the east and west approaches to the proposed new crossing that will include pavement markings indicating a railroad crossing per MUTCD
- two flagman, one for each direction of travel stationed at the crossing during travel through the crossing
- posting of the USDOT inventory number at the crossing

The proposed measures are consistent with safety measures employed at similar rural at-grade crossings in the State. The estimated cost of the proposed new at-grade railroad crossing is \$500,000. The Company will fund the entire crossing project.

In addition, a gate will be constructed just off the right-of-way of CR71 on the Company's site, situated perpendicular to the rail spur as it enters the cement plant site. The gate will be 24 feet wide and 6 feet high and when closed and locked will block rail access into and out of the plant (see **Exhibit D**).

### **FHWA Guidelines Regarding The Consideration for Automatic Warning Devices**

The Federal Highway Administration (“FHWA”) Railroad-Highway Grade Crossing Handbook (Revised Second Edition August 2007) provides nine criteria for determining whether a highway-rail crossing should be considered for automatic gates and lights. The Crossing Handbook indicates that automatic gates and lights should be considered whenever one or more of the nine conditions are met.

The nine criteria are applied to this crossing application as follows:

Inadequate clearing sight distance exists in one or more approach quadrants	Proposed new crossing would meet the criteria	No
Regularly scheduled passenger trains operate in close proximity to an industrial facility, e.g. stone quarries, cement plants, oil refineries, chemical plants	Proposed new crossing would meet the criteria	No
In close proximity to schools or industrial plants where there is substantially higher than normal usage by school buses or trucks carrying hazardous materials	Proposed new crossing would meet the criteria	No
Multiple main or running tracks through the crossing	Proposed new crossing would meet the criteria	No
In close proximity to a highway intersection or other highway-rail crossing and the traffic control devices at the nearby intersection cause traffic to queue across the tracks	Proposed new crossing would meet the criteria	No
An average of 20 or more trains a day	Proposed new crossing would meet the criteria	No
Posted highway speed exceeds 40 mph in urban areas or exceeds 55 mph in rural areas	Proposed new crossing would meet the criteria	No
Annual Average Daily Traffic (AADT) exceeds 2,000 in urban areas or 500 in rural areas	Proposed new crossing would meet the criteria	No
The crossing exposure (number of trains x number of AADT) exceeds 5,000 in urban areas or 4,000 in rural areas.	Proposed new crossing would meet the criteria	No

It should be noted that the criteria identified in the FHWA material are not mandates, but guidelines established by the FHWA. Staff has utilized the FHWA Guidelines to determine the need for automatic warning devices at this crossing. Based on proposed conditions, the crossing in this application would meet none of the nine criteria for consideration of automatic warning devices.

### **Traffic Data**

Traffic data for CR71 was provided by the County. The County last took traffic counts on March 3, 2010. They performed counts at two different locations close to the new Company facility. The first Average Daily Traffic ("ADT") count was taken between SR 89, and the new facility, encompassing the area of the proposed new grade crossing which was 1,336 vehicles per day ("vpd"). The second count was taken to the northeast of the proposed new grade crossing and was 221 vpd. Staff believes that the discrepancy in traffic counts stems from the present increased amount of construction traffic coming and going from the cement plant. Staff believes that once the plant is completed the ADT from the March 3, 2010 count will be greatly reduced. A traffic count taken in June 2006 in the same vicinity produced a count of 516 vpd. Due to the low traffic volumes no Level of Service ("LOS") was provided.

The posted speed limit on CR71 is 25 mph. There are no alternative routes from this crossing. Continuing east from the proposed crossing on CR71 the roadway goes to Perkinsville and then onto Jerome a total of approximately 40 miles. Traveling west about 2 miles on CR71 from the proposed crossing a motorist would return to SR89.

### **Train Data**

Data provided by Drake Cement regarding train movements through the new crossing are as follows:

*Drake anticipates there will be up to 4 train movements through the crossing per week with a maximum of 7 railcars per movement. The speed will be 5 miles per hour (walking speed) and the type of movements will be all freight.*

### **Schools and Bus Routes**

There are no schools located within a three mile radius of the proposed new crossing. There will be no school buses crossing daily at the proposed crossing.

### **Hospitals**

There are no hospitals located within three miles of the proposed crossing. As such, the crossing is not expected to be used extensively by emergency service vehicles.

### **Hazardous Materials**

The Company gave the following response when asked about hazardous materials crossing this crossing:

*No vehicles that carry hazardous materials will utilize the proposed crossing, except fuel deliveries. Fuel deliveries will occur approximately once per month.*

### **Zoning**

Staff requested the Company provide information regarding the type of zoning in areas adjacent to the crossing. The following was its response:

*Prescott National Forest surrounds Drake's property within the 3 miles (see attached). This area is zoned by the County as RCU2A – residential lots more than 2 acres.*

### **Spur Lines**

No spur lines have been removed from within a three mile radius of the proposed new grade crossing within the last five years.

### **FHWA Guidelines Regarding Grade Separation**

The FHWA Railroad-Highway Grade Crossing Handbook (Revised Second Edition August 2007) provides nine criteria for determining whether highway-rail crossings should be considered for grade separation or otherwise eliminated across the railroad right of way. The

Crossing Handbook indicates that grade separation or crossing elimination should be considered whenever one or more of the nine conditions are met. The nine criteria are applied to this crossing application as follows:

		CR71
The highway is a part of the designated Interstate Highway System	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
The highway is otherwise designed to have full controlled access	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
The posted highway speed equals or exceeds 70 mph	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
AADT exceeds 100,000 in urban areas or 50,000 in rural areas	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
Maximum authorized train speed exceeds 110 mph	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
An average of 150 or more trains per day or 300 million gross tons/year	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
Crossing exposure (trains/day x AADT) exceeds 1M in urban or 250k in rural; or passenger train crossing exposure exceeds 800k in urban or 200k in rural	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
Expected accident frequency for active devices with gates, as calculated by the US DOT Accident Prediction Formula including five-year accident history, exceeds 0.5	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	N/A <sup>1</sup>
Vehicle delay exceeds 40 vehicle hours per day	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No

<sup>1</sup> N/A = Not Applicable

### Vehicular Delays at Crossings

Due to the low ADT's and the minimal train traffic, no traffic delay was performed. Another commonly used measure outlined in the FHWA Guidelines; the so-called Crossing Exposure Index (which is simply the product of the number of trains per day multiplied by the number of vehicles crossing daily) is not currently met at this crossing. It should be noted that the criteria identified in the FHWA material are not mandates, but guidelines established by the FHWA, which serve to alert those having jurisdiction that potential problems may arise.

## Grade Separation

With regard to grade separating this crossing, the Company gave the following response:

*Grade separation was not considered when discussed with Yavapai County officials. Due to the relatively low ADT, as well as the configuration of the crossing to the cement plant and surrounding industrial buildings, a grade separated crossing would be virtually impossible to design and construct.*

Staff has utilized the FHWA Guidelines to determine the potential need for grade separation at this crossing. Based on proposed conditions, the crossing in this application would meet none of the nine criteria for consideration of grade separation.

## Additional Staff Findings

On October 13, 2009, a Staff inspector was performing a routine track inspection on the BNSF railroad adjacent to the Company facility. The inspector noticed a new at-grade crossing across CR71, just east of the existing BNSF mainline at-grade crossing. Photos of the newly constructed crossing were taken and the Railroad Safety Section supervisor was notified of the discovery (**see Exhibit E**). Staff was also notified by telephone that same day by the County's assistant engineer whose staff also discovered the new crossing. Staff was informed at that time by the County that the Company had submitted preliminary engineering for construction of a new crossing on CR71. After reviewing the preliminary engineering, the County returned comments to the Company stating that the County did not agree to the alignment of the proposed new crossing and would not approve the project at that time.

On October 20, 2009, Staff met on-site at Drake with representatives from the Company, County and Mountain States Rail Contracting, a firm hired by the Company to construct the subject crossing. The Company stated it was not aware of an approval from the Commission in order to construct the crossing, until the County informed Drake of the requirement. Staff presented a hand-out outlining the approval process at the Commission. The Company stated that an application for approval would be submitted in the near future.

Staff believes that the Company or its contractor constructed an at-grade crossing through CR71 without Commission approval, or County consent. On May 13, 2010, Staff issued its first set of data requests to the Company. Question BL 1.5 asks: Has the crossing being applied for in this application already been constructed? If yes why was Commission approval not obtained prior to the installation of the new crossing?

*Response:*

*Rail has been constructed across the County road, but it will have to be relocated in order to accommodate plans approved by the County. Applicant will finalize construction of the crossing pursuant to plans approved by both Yavapai County and the Arizona Corporation Commission ("Commission"). Drake had been working with Yavapai County, during which time Drake became aware of the Commission's jurisdiction over public highway-rail crossings. Once it became aware that it required Commission approval for the establishment of a public crossing, Drake took the steps necessary to get the application for approval filed.*

On May, 26, 2010, Staff issued a second set of data requests in order to clarify questions asked in Staff's first set of data requests. Question BL 2.1 asks:

With reference to the response provided to BL 1.4 please clarify the following "There is no active crossing other than the one being applied for."

- a. Is there an inactive crossing at the location proposed for the current application?
- b. If yes, was the existing crossing approved by a Commission order and if not, by whom was the existing crossing constructed?
- c. If there is an existing crossing at the location, is Drake requesting approval for the construction of that crossing?

*Response:*

- a. *No, there is no inactive crossing located at the area proposed for the spur crossing included in the application. Due to a redesign in the realignment of CR71, the existing rail will be part of the overall rail spur leading to the cement plant. Because CR71 will be realigned, the new crossing will be located in an area where currently no rail line exists. However, there is existing rail that crosses CR71, which was constructed in conjunction with County approvals that has never been used.*
- b. *If the question is whether construction of the existing rail that crosses CR71 was ever approved by the Commission, the answer is no. As set forth in the background above, the rail and cement guards were constructed by Drake in conjunction with a realignment of CR71. It was not until after construction that Drake was informed by the County that Commission approval was necessary in order to construct and operate a public highway rail crossing for the spur.*
- c. *Drake is not requesting approval of the existing rail across CR71 because as set forth in the County Agreement, CR71 will be realigned. The crossing included in the application has not yet been constructed. The existing rail will become part of the overall rail spur once CR71 is realigned, and will no longer be an 'inactive' crossing as that term is used in these data requests.*

Staff has determined through data requests and on-site visits that the Company or a contractor for the Company constructed a new at-grade highway-rail crossing across CR71. Staff is uncertain of the exact date the construction took place but believes it was in the first or second week of October, 2009. Staff has further determined that the subject crossing was constructed without a Commission order. Arizona Revised Statute §40-337, gives the Commission exclusive power over railway crossings. Staff believes that the Company was not aware of the approval needed from the Commission when the subject crossing was constructed. The Company has never owned or operated a railroad company in Arizona. However, Staff does not believe that ignorance of Commission powers and requirements excuses the non-compliant actions.

Because of the non-compliant actions of the Company and/or its contractor, Staff is recommending the Company be required to do one of the following:

Make a donation in the amount of \$5,000 to the nonprofit organization Arizona Operation Lifesaver. Operation Lifesaver is a nationwide, non-profit public safety education and outreach program designed to eliminate collisions, deaths and injuries at rail crossings and railroad rights-of-way. Staff believes that a \$5,000 donation to Arizona Operation Lifesaver would have a meaningful impact on railroad safety in Arizona.

or

In the event that the Commission believes that a civil penalty would be more appropriate under the circumstances, Staff would recommend a penalty no greater than \$5,000 in light of this being a first violation by the Company.

**Staff Conclusions**

Staff believes that due to the low traffic volumes, and the small number of train crossings per week across the proposed crossing that the proposed signage and the passive warning devices along with flagman stationed on the roadway for each direction of travel will adequately protect the motoring public.

Staff has concluded that the rail crossing constructed across CR71 was constructed without Commission approval and it would be appropriate that the Company submit a donation of \$5,000 to Arizona Operation Lifesaver or pay a civil penalty in the amount of \$5,000.

Having reviewed all applicable data, Staff supports Drake Cement, LLC's application. Staff believes that the measures proposed by Drake Cement are consistent with other similar at-grade crossings in the State and will provide for the public's safety. Therefore, Staff recommends approval of the Drake Cements application.



Brian H. Lehman  
Railroad Safety Supervisor  
Safety Division

Originator: BHL

# **Exhibit A**



# **Exhibit B**



Imagery Date: Jun 8, 2007

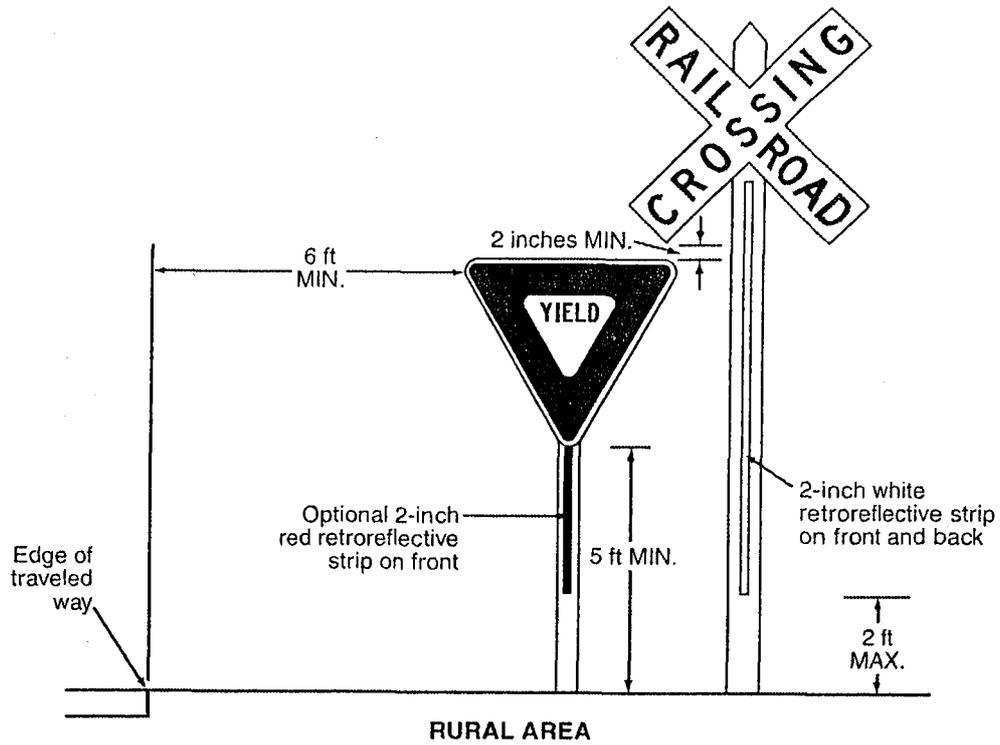
34°58'58.58" N 112°22'31.65" W elev. 4660 ft

© 2010 Google  
Image: USDA Farm Service Agency

2005  
Google  
Eye alt: 9851 ft

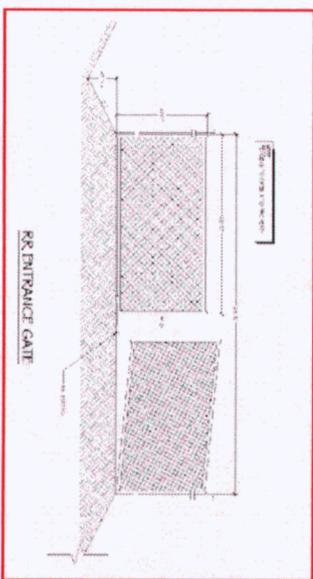
# **Exhibit C**

Figure 8B-3. Crossbuck Assembly with a YIELD or STOP Sign on a Separate Sign Support (Sheet 1 of 2)



# **Exhibit D**

NO. 10-04	CONSTRUCTION PLANS 0253.dwg
DATE	4/22/10
BY	PROJECT BR
APP	MP
PROJECT	08-101



RR ENTRANCE GATE

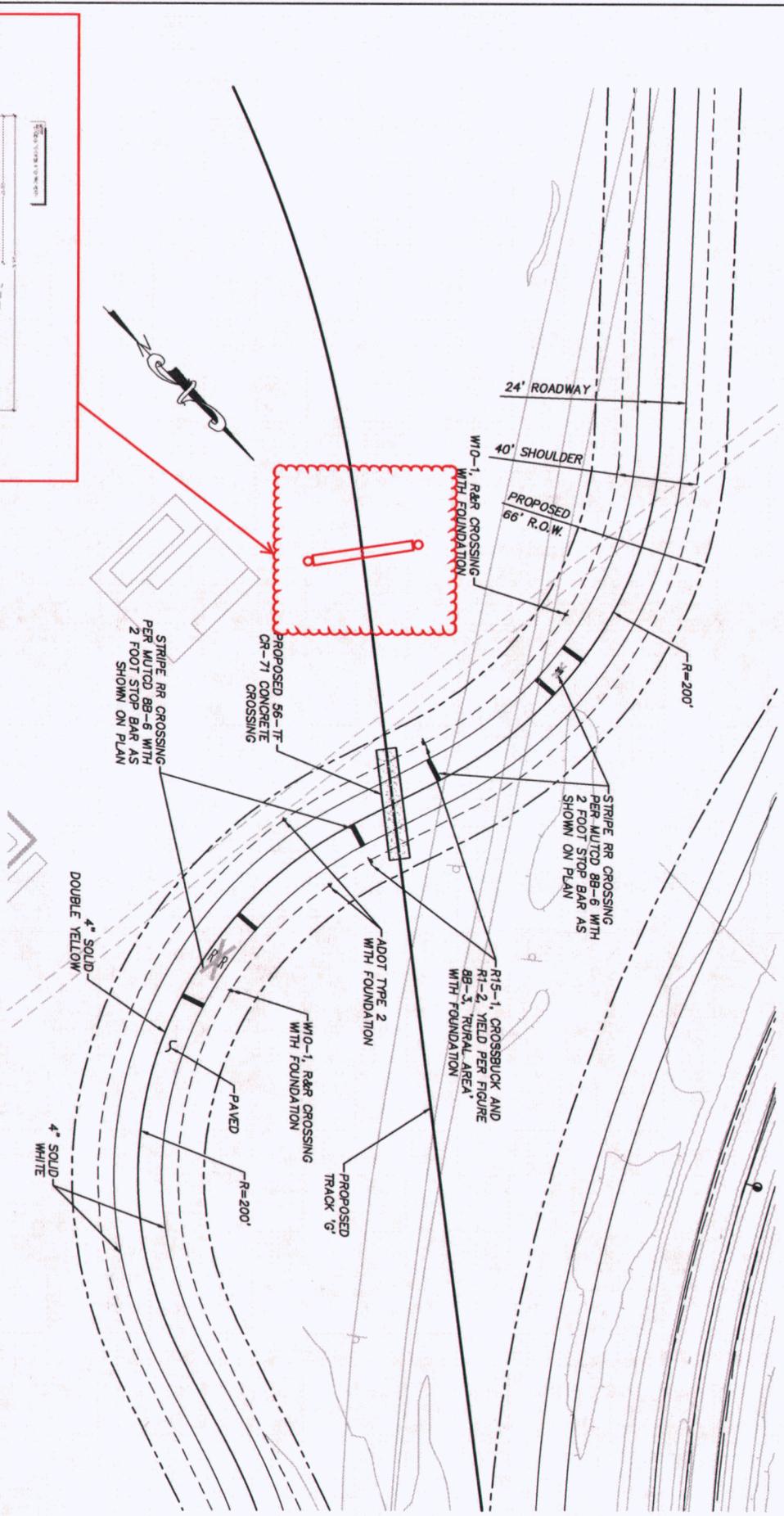
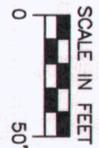


**PROPOSED TRACKS  
PROPOSED TRACK LAYOUT**  
DRAKE CEMENT  
DRANKI, AZ

BURLINGTON NORTHERN SANTA FE RAILWAY  
PHOENIX SUPERVISION - LINE SEGMENT 7208  
DRAKE VALLEJO CO., AZ

MOUNTAIN  
CONTRACTING  
800-875-2745  
PHOENIX, AZ 85018  
5010 W. PINE ST., CHANDLER, AZ 85226

3007 NUMBER  
**R-6**



# **Exhibit E**

# New road crossing on CR71. Track is not in service.



COPIES of the foregoing mailed  
this 23rd day of June, 2010 to:

Docket No. RR-20736A-10-0140

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