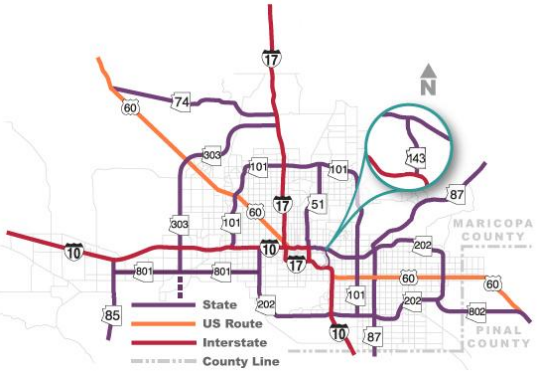
ARIZONA DEPARTMENT OF TRANSPORTATION

# UTILITY AND RAILROAD ENGINEERING (URR)

URR_Billing@azdot.gov
602 712-8161



# URR Mission

URR is responsible for:

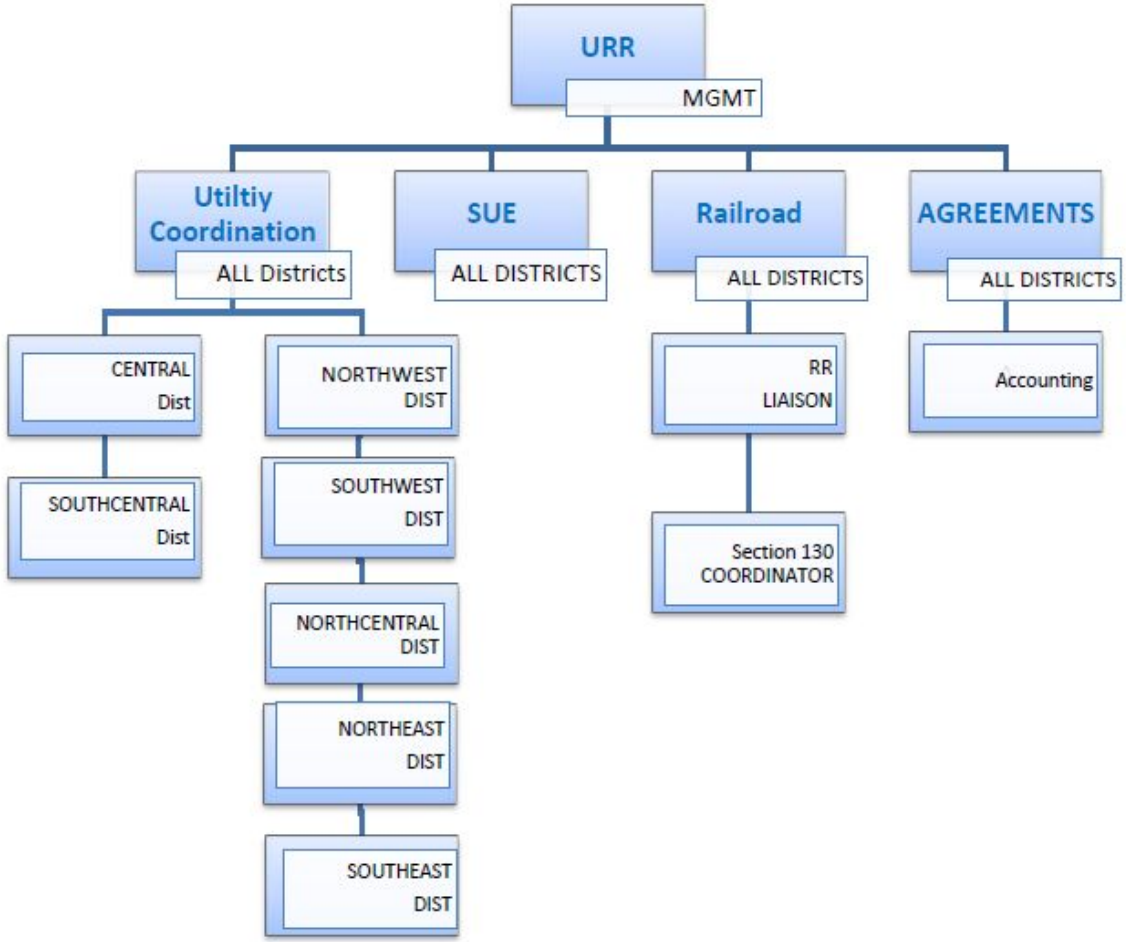
- clearing the right-of-way of utility conflicts in advance of highway construction projects; in a safe, efficient, and cost-effective manner.

- Also, improving safety of public railroad crossings in Arizona, in addition to at grade crossings.

# URR KEY OBJECTIVES

- **Public Safety:** Minimize / Eliminate liability on Hwy CONST projects & Improve safety at public railroad/highway crossings in Arizona
- **Project Schedule:** Support ADOT's Construction Schedule & Service Delivery
- **Project Budget:** Ensure Cost Effective Measures, avoiding unnecessary costs

# URR STRUCTURE



# PRIMARY ROLE

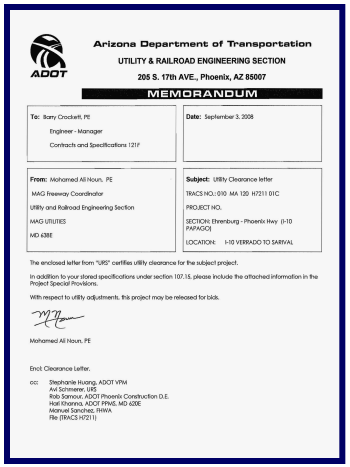
URR Role is integral and critical
to
ADOT's Project Development & Construction

**********

**URR UTILITY CLEARANCE CERTIFICATION**

is required PRIOR to

PROJECT ADVERTISEMENT



Arizona Department of Transportation
UTILITY & RAILROAD ENGINEERING SECTION
205 S. 17th AVE., Phoenix, AZ 85007

MEMORANDUM

To: Barry Crockett, PE
Engineer - Manager
Contracts and Specifications 121F

Date: September 3, 2008

From: Mohamed Ali Noun, PE
MAG Freeway Coordinator
Utility and Railroad Engineering Section
MAG UTILITIES
MD 638E

Subject: Utility Clearance letter
TRACS NO.: 010 MA 120 H7211 01C
PROJECT NO.
SECTION: Ehrenburg - Phoenix Hwy (I-10 PAPAGO)
LOCATION: I-10 VERRADO TO SARIVAL

The enclosed letter from "URS" certifies utility clearance for the subject project.

In addition to your stored specifications under section 107.15, please include the attached information in the Project Special Provisions.

With respect to utility adjustments, this project may be released for bids.

Mohamed Ali Noun, PE

Encl: Clearance Letter.

cc: Stephanie Huang, ADOT VPM
Avi Sommerer, URS
Rob Samour, ADOT Phoenix Construction D.E.
Hail Khanna, ADOT PPMS, MD 620E
Manuel Sanchez, FHWA
File (TRACS H7211)

# Utility Clearance

- All Utility-related concerns and mitigations have been addressed in the Utility Clearance Letter.

- The project Plans, Specifications, & Estimates (PS&E ) contain all the information needed to prevent unforeseen problems involving utility facilities.

# FEDERAL & STATE LAWS

- FHWA 23 CFR
  - Utility Relocations, Adjustments & Reimbursement
  - Accommodation of Utilities
  - Railway/Hwy Crossings (Sec 130)

- Arizona Revised Statutes (ARS):
  - ARS 28-7092: Land acquisition for utility relocation
  - ARS 28-7156: Utility Relocation & Reimbursement

# Stakeholders

## External

- Utility companies, Counties, Cities and Towns
- On-Call Consultants
- Design Consultants
- Railroad Companies
- AZ Corporation Commission
- AZ Attorney General
- FHWA

## Internal

- Executive Mgmt
- PMG
- Contracts & Specifications
- Design & Construction Staff
- Environmental Group
- Right of Way Group
- Financial Services
- Audit & Analysis Office

# Projects Handled by URR

- **PROJECTS:**
  - **All Highway Projects Currently processed through PDO**
  - **About 200 Projects Cleared in a Fiscal Year**

# What are Utilities?

**Utilities are the Veins and Arteries of our Cities and Roads…**

## Utilities:

- Electric Power
- Gas - Oil - Product Lines
- Telecom/Cable TV/Broadband
- Water
- Sanitary Sewer
- Reclaimed Water
- RR (treated as a Utility)

# Utilities

Existing utilities abound!

*…and…*

How do you ever identify and avoid these facilities!!!

# ADOT Utility & Railroad Engineering

## Utility Coordination Process

# Utility Coordination

***Art***

***vs.***

***Engineering***

# Art vs. Engineering

***This kind of Art :***

- Knowledge of the Utility Coordination Process
- Knowledge of State Statutes (ARS) and FHWA regulations (CFR)
- Effective Verbal & Written Communication Skills
- Negotiation & Organizational Skills
- Productive Relationships with Utility Owners
- Also, a personality helps!

# Art vs. Engineering

**Engineering:**

- Plan Reading
- Field Reviews
- Utility Conflict Analysis
- General Utility Design Concepts & Alternatives
- Utility Construction and Inspection
- Principles and Practices of Civil Engineering
- ADOT Standards and Procedures

# Why we need Utility Coordination!

Design in Progress

- Multiple Existing underground facilities.


Traffic Signal foundation is designed right here!

# Why we need Utility Coordination!

Construction in Progress!

Lack of Communication!

# Why we need Utility Coordination!

**Safety … Safety … Safety!!!**


# Why we need Utility Coordination!

- 36” gas line explosion


# Why we need Utility Coordination!

Construction Completed!

Not what we expected!!!

# Why we need Utility Coordination!

**That's Why:**

- Public Safety
- Project Schedule
- Project Budget

***No unexpected delays/expenses occur during construction as a result of conflicts with utility or railroad facilities.

# Utility Coordination

The Process
in
Project Development

# Project Develop. Phases

- Scoping Phase: SL / PA / L-DCR
- Design Phase:
  - Stage II:  30%
  - Stage III:  60%
  - Stage IV: 95%
  - Stage V: 100% ( PS&E)
- Construction Phase

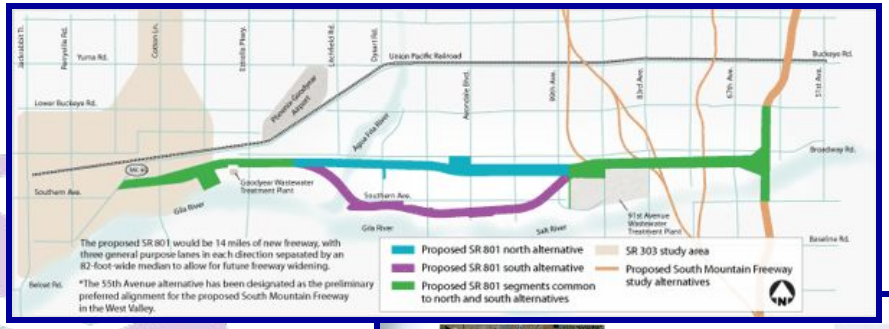
# Scoping Phase
# (SL / PA / L-DCR)

<u>Early Coordination</u>:

- Alignment Selection impacts on utilities

- Utility Relocation impacts on:
  - Environment
  - Right-of-way

***Corridor Studies




# Avoid…Avoid…Avoid Utility Conflicts

- Suggest Alternatives:
  - Move alignment
  - Change grade
  - Widen only one side of highway
  - Move ramps
  - Other design modifications

***Team will re-align Freeway/ modify design to avoid & minimize impact to Utilities

# Design Phase

**URR Milestones**:

1. Identify utilities within project limits
2. Subsurface Utility Engineering (SUE Phase I)
3. Utility Conflicts Analysis
4. Subsurface Utility Engineering (SUE Phase II)
5. Resolve utility conflicts
6. Agreements (Land Rights, Cost, Plans & Sch.)
7. Issue the Utility Clearance Letter

# 1. Identify Utilities (Data Collection)

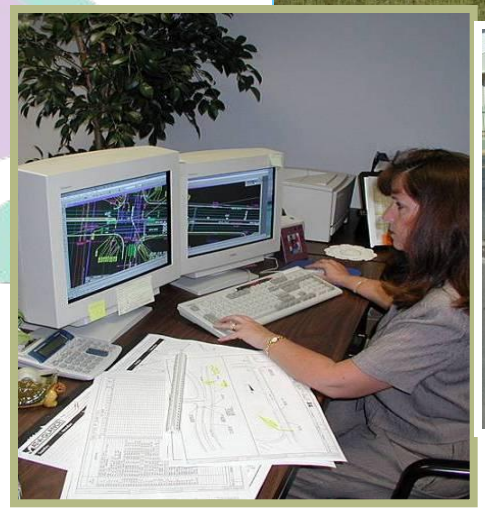
- Contact AZ blue stake center
- Utility owners listing & Field Review
- Obtain As-Builts / Facility maps from Ut.
- Research ADOT Permit Log (Existing & proposed Ut.)
- Review Existing R/W plans

# 2. SUE Phase I
# (Designate utilities)

Surveying/Mapping:

- Request utility designation (horizontal QL-B)

- Map designated utilities in CADD within Project limits

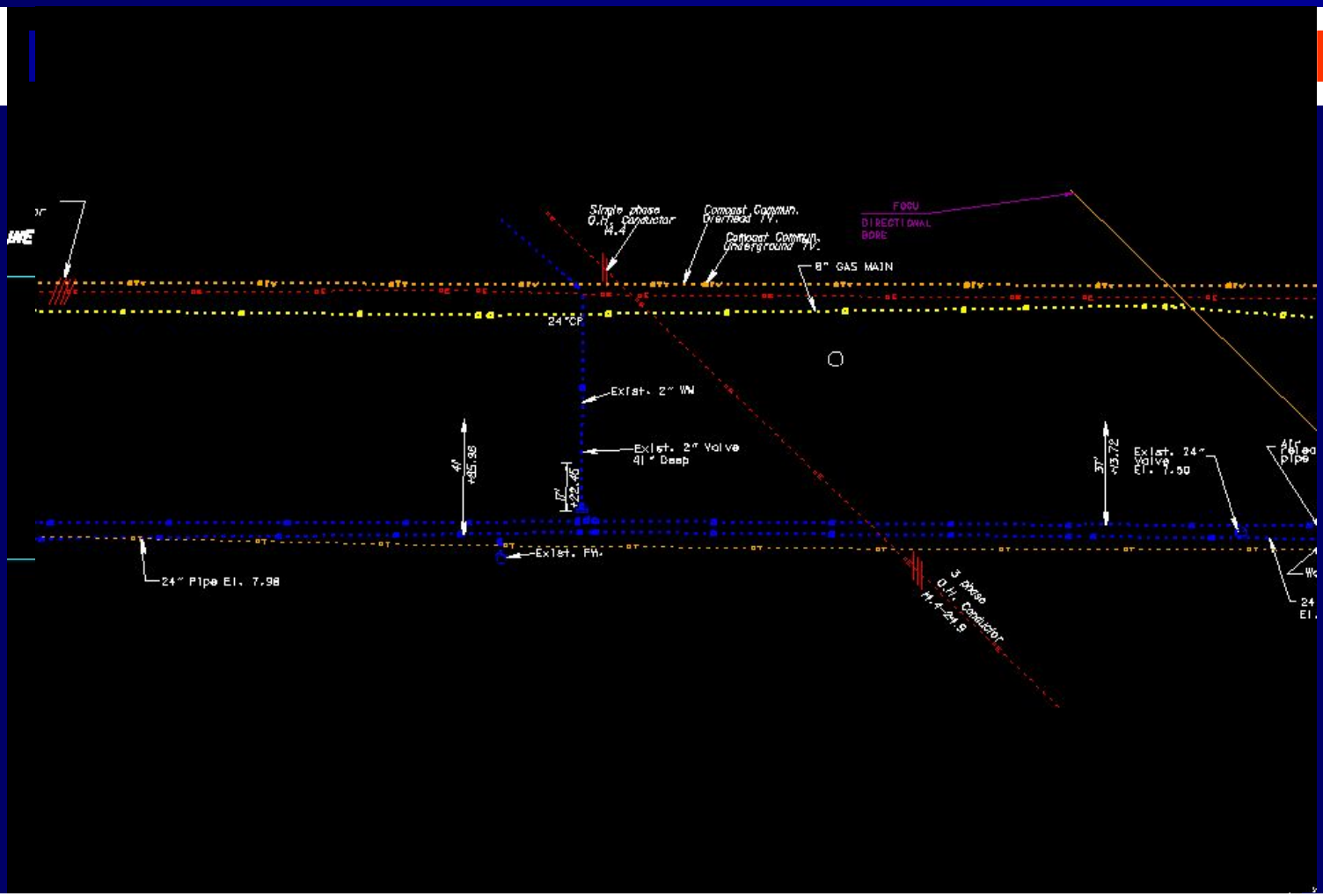


# 3. Utility Conflict Analysis

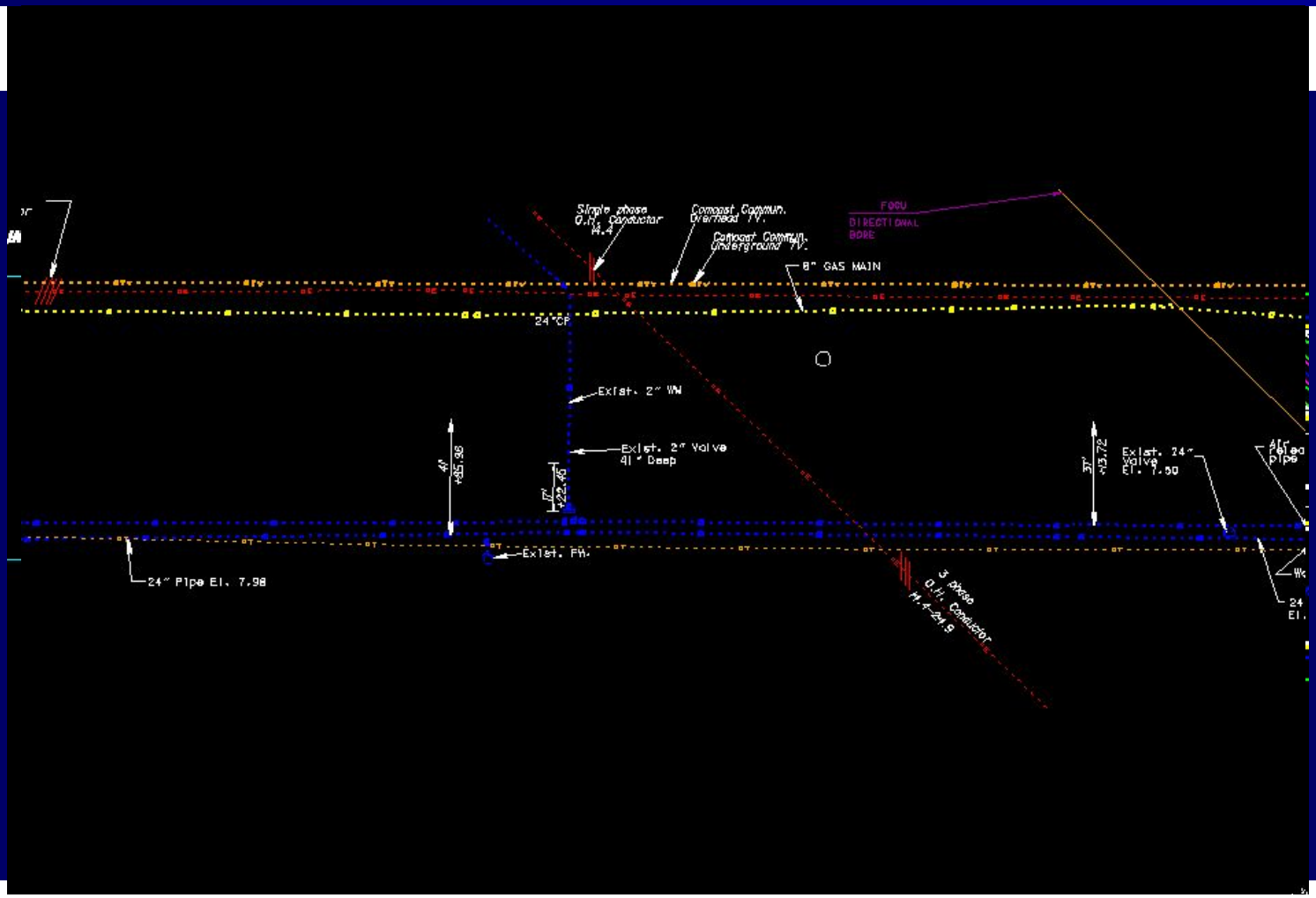
- Lay out horiz. Designated utilities on the design plans (Stage II)
- Determine potential utility conflicts:
  - Review plans
  - Engineering analysis

# Start With the Topography

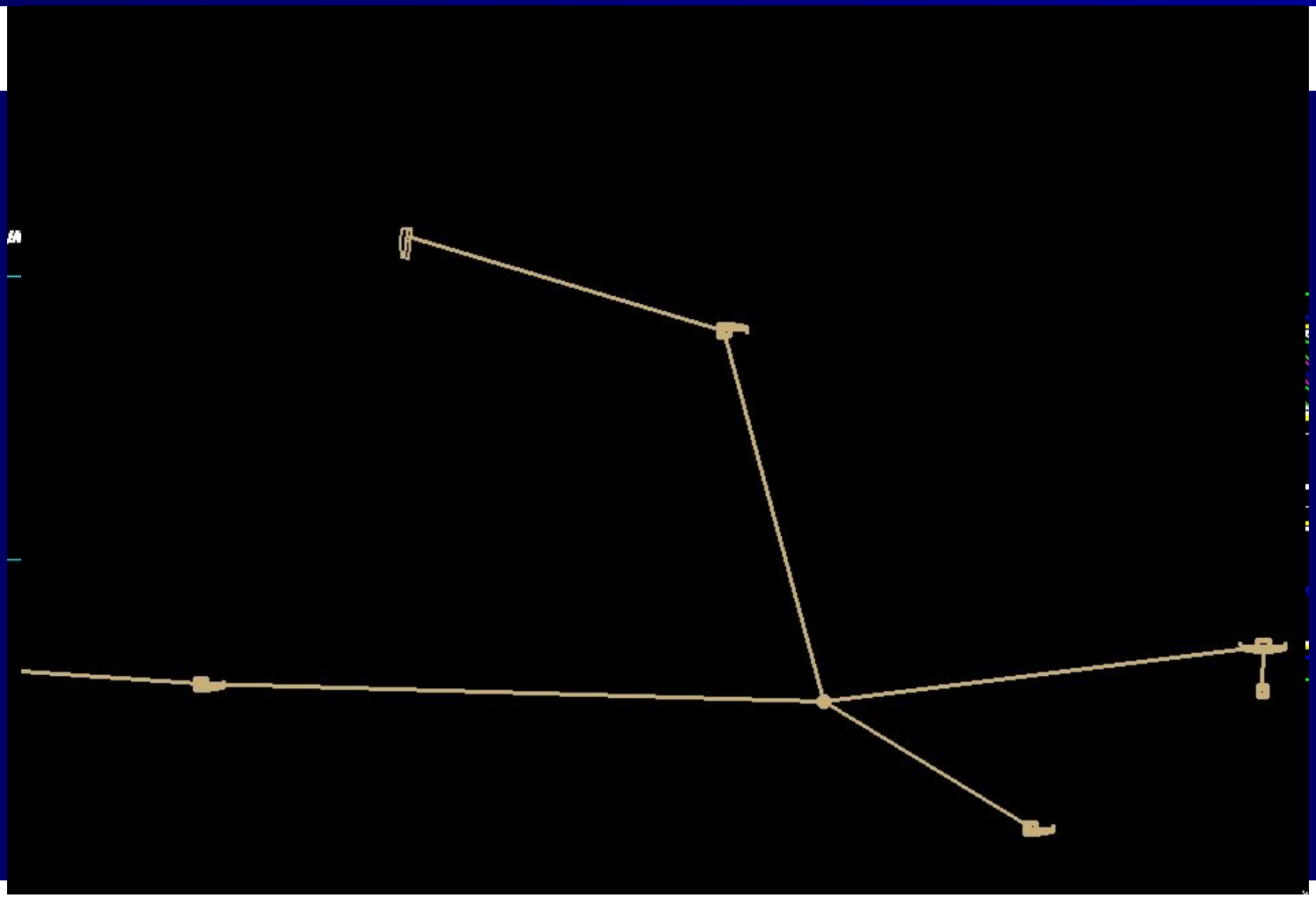
Add I B)



# Add Preliminary Roadway Design

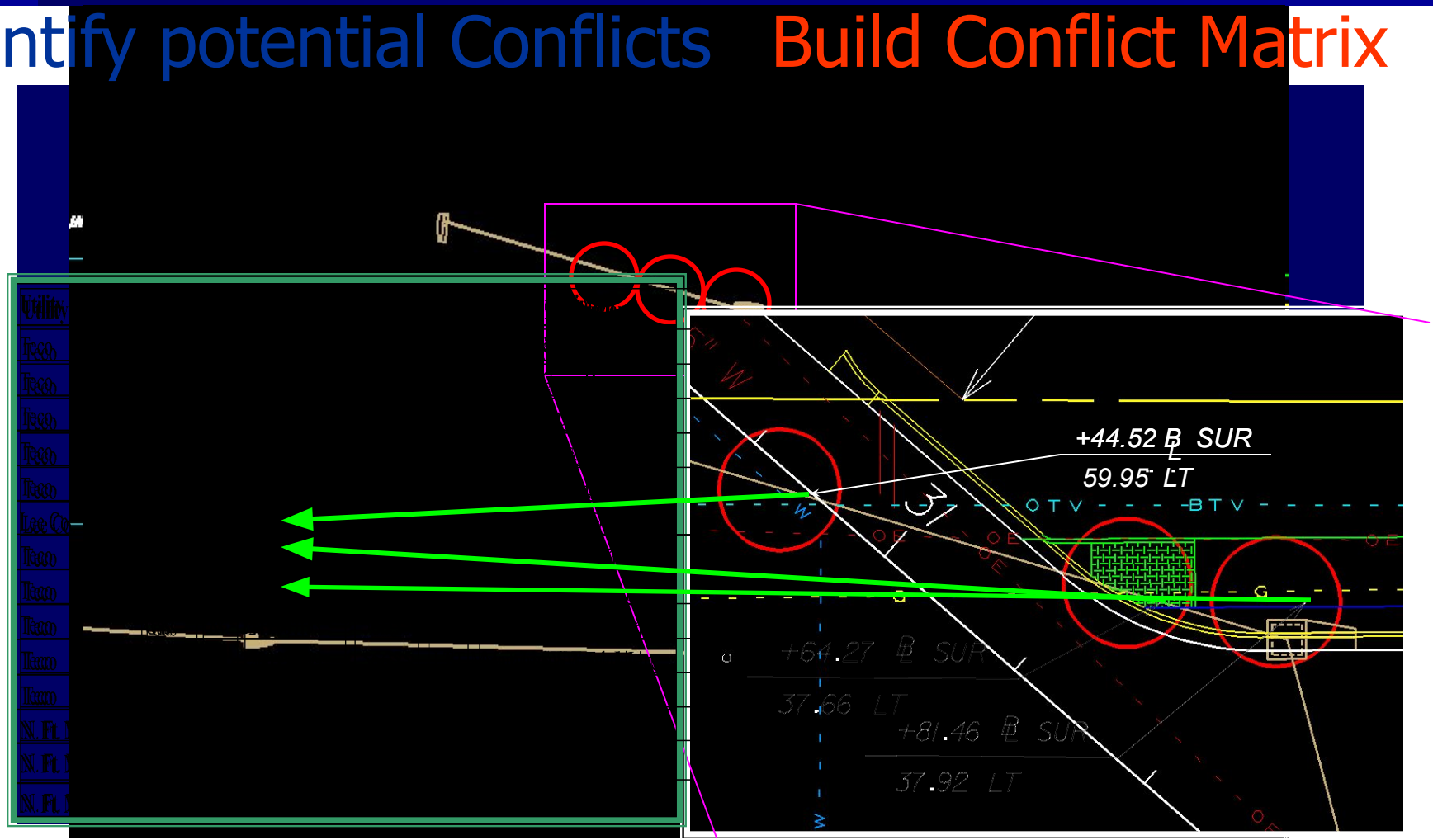


# Add Preliminary Drainage Design



# Analyze Conflicts

Identify potential Conflicts  Build Conflict Matrix



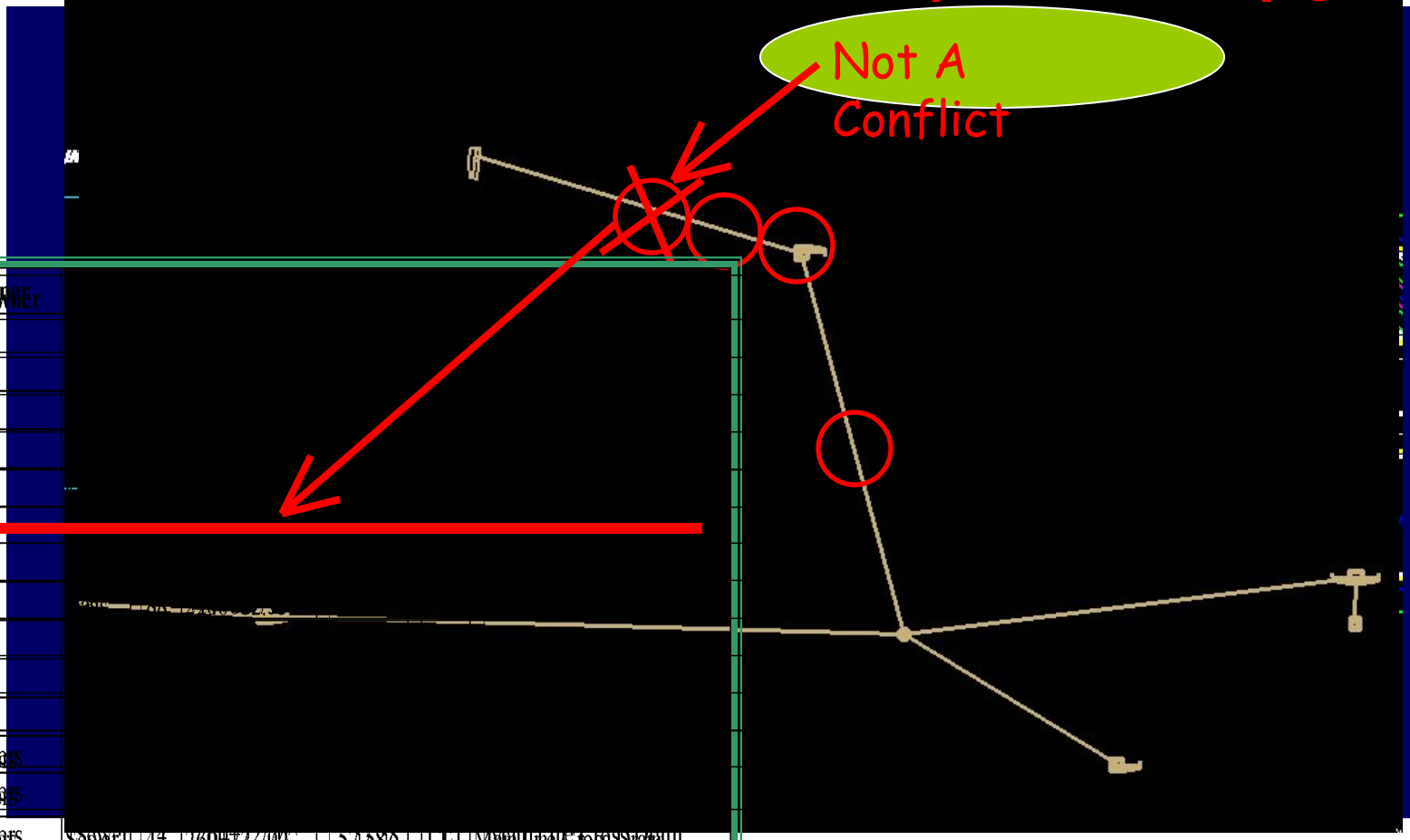
# 4. SUE Phase II (Locate Utilities)

- Request utility vertical locating services (Potholing QL-A) to confirm/rule out potential conflicts.

# Identify Actual Conflicts

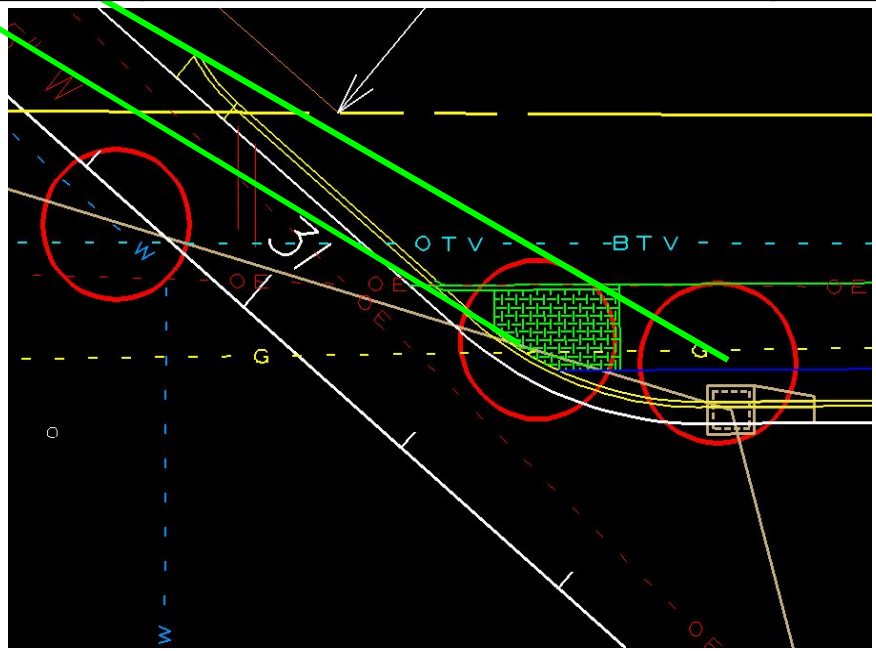
## Update Conflict Matrix

## Analyze Data (QL-A)



# Actual Conflict Matrix

| Station & Offset | Utility | Comments | Action Required |
|---|---|---|---|
| 246+64.27, 37.66 LT (x&y) | Teco | Proposed main line drain in close proximity to 8" gas line | Confirmed 8" gas line at z= 2.67 ft. CONFLICT |
| 246+82.75; 56.25 Lt (x&y) | Teco | Proposed Side street Cross drain on top of 8" gas line | Confirmed 8' gas line at z= 2.65 ft. CONFLICT |



# 5. Resolve Utility Conflicts

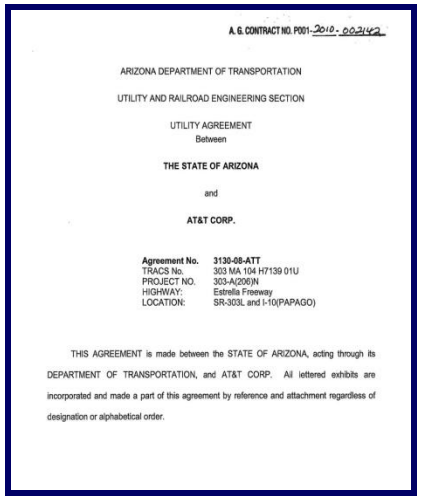
Provide technical guidance to the utility relocation design team:

- Safe option
- Cost effective
- R/W
- Environmental
- Permit
- Multiple Utility Relocations Schedule

# 6. Utility Agreements

Prepare, review and process legal Utility Agreement Contracts:

- Scope of work
- Utility Design Authorization
- Cost Estimates
- Utility Relocation plans
- Land Rights documents
- Schedule of work
- Utility Construction Authorization
- Payments Approval



A. G. CONTRACT NO. P001-2010-002142

ARIZONA DEPARTMENT OF TRANSPORTATION

UTILITY AND RAILROAD ENGINEERING SECTION

UTILITY AGREEMENT
Between

THE STATE OF ARIZONA

and

AT&T CORP.

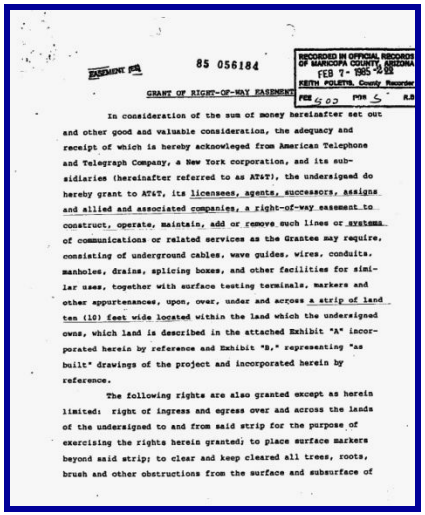
| | |
|---|---|
| **Agreement No.** | **3130-08-ATT** |
| TRACS No. | 303 MA 104 H7139 01U |
| PROJECT NO. | 303-A(206)N |
| HIGHWAY: | Estrella Freeway |
| LOCATION: | SR-303L and I-10(PAPAGO) |

THIS AGREEMENT is made between the STATE OF ARIZONA, acting through its DEPARTMENT OF TRANSPORTATION, and AT&T CORP. All lettered exhibits are incorporated and made a part of this agreement by reference and attachment regardless of designation or alphabetical order.

*** **All components in compliance with ADOT Standards & Policies; and with Federal Requirements.**

# Land Rights

- Evaluate land rights documentation
  - County maps, title reports, Easements, R/W plans, ADOT permit log and other property plans and legal descriptions
- Determine prior rights status
- Validate financial responsibilities for relocations as appropriate.



EASEMENT FEE 85 056184

RECORDED IN OFFICIAL RECORDS OF MARICOPA COUNTY, ARIZONA FEB 7 - 1985 -2:02 KEITH POLETIS, County Recorder FEE 6.00 PGS 5 R.B

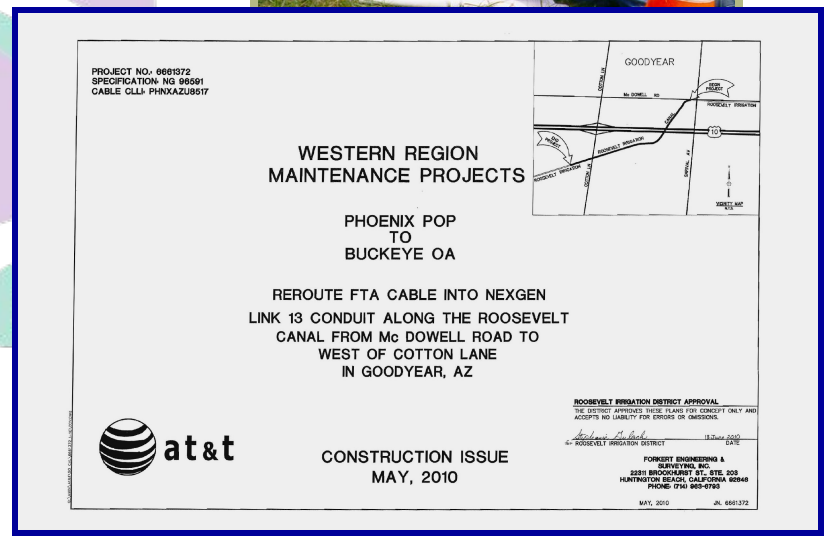
GRANT OF RIGHT-OF-WAY EASEMENT

In consideration of the sum of money hereinafter set out and other good and valuable consideration, the adequacy and receipt of which is hereby acknowleged from American Telephone and Telegraph Company, a New York corporation, and its subsidiaries (hereinafter referred to as AT&T), the undersigned do hereby grant to AT&T, its licensees, agents, successors, assigns and allied and associated companies, a right-of-way easement to construct, operate, maintain, add or remove such lines or systems of communications or related services as the Grantee may require, consisting of underground cables, wave guides, wires, conduits, manholes, drains, splicing boxes, and other facilities for similar uses, together with surface testing terminals, markers and other appurtenances, upon, over, under and across a strip of land ten (10) feet wide located within the land which the undersigned owns, which land is described in the attached Exhibit "A" incorporated herein by reference and Exhibit "B," representing "as built" drawings of the project and incorporated herein by reference.

The following rights are also granted except as herein limited: right of ingress and egress over and across the lands of the undersigned to and from said strip for the purpose of exercising the rights herein granted; to place surface markers beyond said strip; to clear and keep cleared all trees, roots, brush and other obstructions from the surface and subsurface of

# Approve Relocation Plans

- Utility relocation plans and specifications are in compliance with ADOT applicable standards, policies and regulations



PROJECT NO.: 6661372
SPECIFICATION: NG 96591
CABLE CLLI: PHNXAZU8517

GOODYEAR

WESTERN REGION
MAINTENANCE PROJECTS

PHOENIX POP
TO
BUCKEYE OA

REROUTE FTA CABLE INTO NEXGEN
LINK 13 CONDUIT ALONG THE ROOSEVELT
CANAL FROM Mc DOWELL ROAD TO
WEST OF COTTON LANE
IN GOODYEAR, AZ

at&t

CONSTRUCTION ISSUE
MAY, 2010

ROOSEVELT IRRIGATION DISTRICT APPROVAL
THE DISTRICT APPROVES THESE PLANS FOR CONCEPT ONLY AND ACCEPTS NO LIABILITY FOR ERRORS OR OMISSIONS.
ROOSEVELT IRRIGATION DISTRICT — DATE

FORKERT ENGINEERING & SURVEYING, INC.
2231 BROOKHURST ST., STE. 203
HUNTINGTON BEACH, CALIFORNIA 92648
PHONE: (714) 965-6703

MAY, 2010 — JN. 6661372

# 7. Utility Clearance

- Write the Utility Clearance Letter with Special Provisions language to include in the Project Specifications
- State clearly the status of each utility facilities within the project limits.
- Issue the utility clearance letter authorizing project construction

Arizona Department of Transportation

UTILITY & RAILROAD ENGINEERING SECTION

205 S. 17th AVE., Phoenix, AZ 85007

MEMORANDUM

To: Barry Crockett, PE
Engineer - Manager
Contracts and Specifications 121F

Date: September 3, 2008

From: Mohamed Ali Noun, PE
MAG Freeway Coordinator
Utility and Railroad Engineering Section
MAG UTILITIES
MD 638E

Subject: Utility Clearance letter
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Hal Kharma, ADOT PPMS, MD 620E
Manuel Sanchez, FHWA
File (TRACS H7211)

# Construction Phase

- Attend Partnering/Pre-construction Meetings
- Alert Utilities & Contractor to comply with project CNST schedule
- Ensure minimal interruptions to Utility Services during construction
- Resolve any arising utility issues during project construction

# ADOT Utility and Railroad Engineering

*Thank you!*

**Questions?**