



# P3 Project Specification Development

## *SHRP2 R07 Performance Specifications Showcase*

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U.S. Department of Transportation  
Federal Highway Administration

AMERICAN ASSOCIATION  
OF STATE HIGHWAY AND  
TRANSPORTATION OFFICIALS

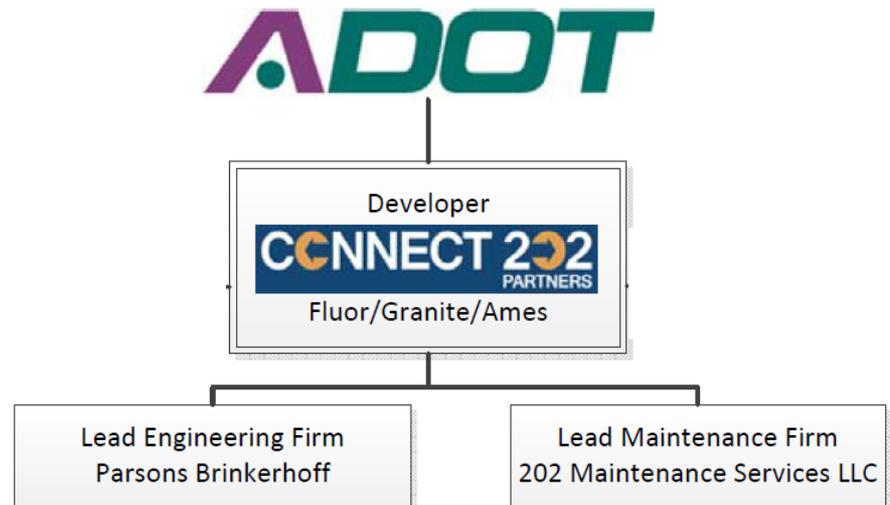
**AASHIO**

# ADOT's SR 202 South Mountain Freeway Project



# The Partnership

- ADOT Responsibility
  - Retains ownership
  - Sets performance standards
  - Oversight
- CCNNECT 202 Partners (C202P) Responsibility
  - Design – build – maintain (30 years)
  - Incentive to build quality
  - Financial penalties
    - If performance and quality standards not met



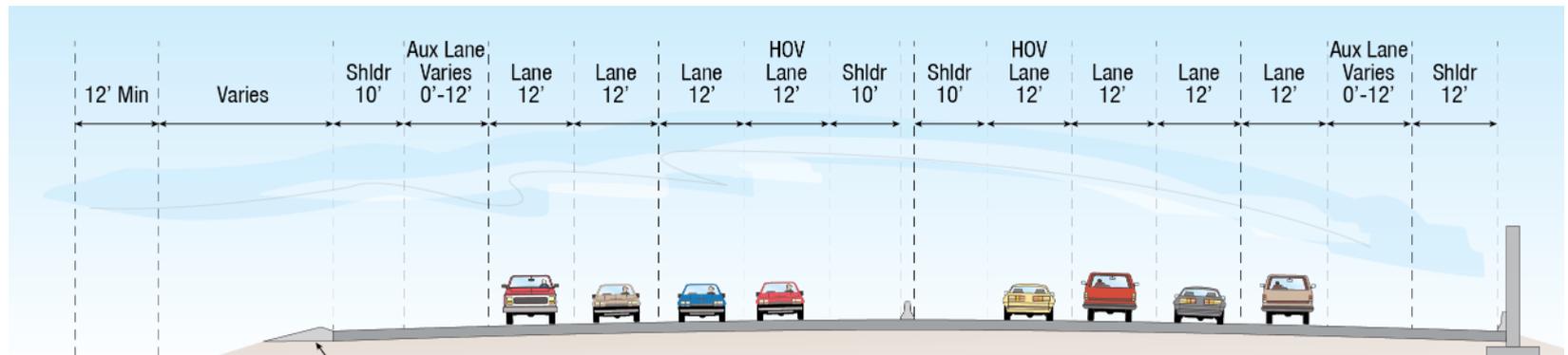


# SR 202 SMF Scope



- 22 new miles
- 4.5 miles of improvements (I-10)
- 40 bridges
- 13 interchanges
  - 1 double roundabout
  - 2 half-diverging diamond
- 11 miles of sound walls
- 6 miles shared-use path
- 5 multi-use crossings
- 1 system interchange
- 1 pedestrian bridge

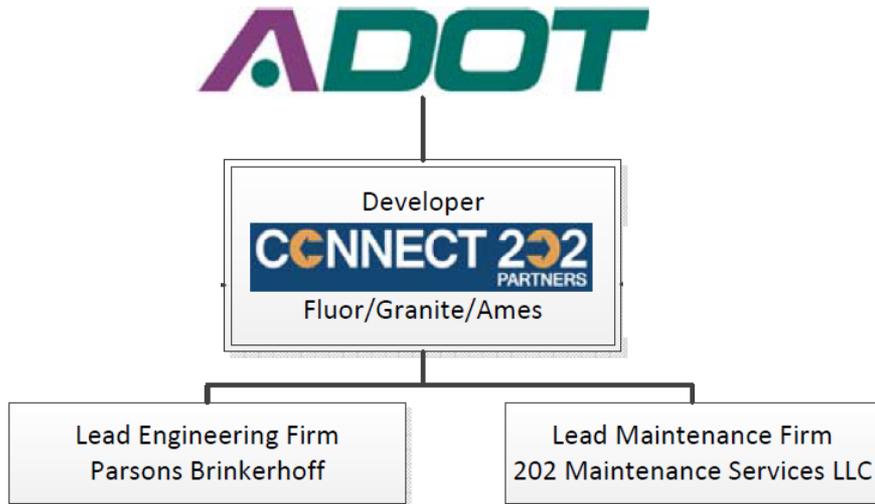
# Roadway Design



*Pecos Road*

- Constructing Ultimate Build-Out
- 8 Lanes
  - 3 general purpose and 1 HOV in each direction
- Median Barrier

# Inter-relationship of Members



- Maintenance
- Design
- Construction
- Owner

# Maintenance Influence



**LANDSCAPING**



**DRAINAGE**



**PAVEMENT**

# Design Influence



## HISTORICAL PERFORMANCE



HMA vs PCCP

|                     |     | High Temperature, °C |       |       |       |       |
|---------------------|-----|----------------------|-------|-------|-------|-------|
|                     |     | 52                   | 58    | 64    | 70    | 76    |
| Low Temperature, °C | -16 | 52-16                | 58-16 | 64-16 | 70-16 | 76-16 |
|                     | -22 | 52-22                | 58-22 | 64-22 | 70-22 | 76-22 |
|                     | -28 | 52-28                | 58-28 | 64-28 | 70-28 | 76-28 |
|                     | -34 | 52-34                | 58-34 | 64-34 | 70-34 | 76-34 |
|                     | -40 | 52-40                | 58-40 | 64-40 | 70-40 | 76-40 |

## MATERIAL SELECTION



TIMING AND SCOPE OF REHAB

# Construction Influence



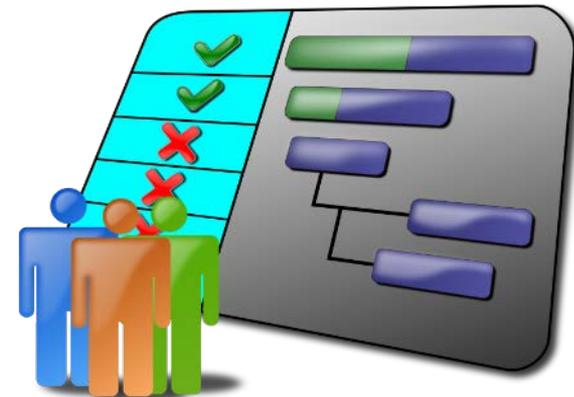
**SELF-PERFORM vs SUBS**



**QUALITY METRICS**



**CONSTRUCTABILITY**



**OPTIMIZATION**

# Owner Influence



ARIZONA DEPARTMENT OF TRANSPORTATION

and

CONNECT 202 PARTNERS, LLC

## TECHNICAL PROVISIONS



## LONG-TERM PERFORMANCE

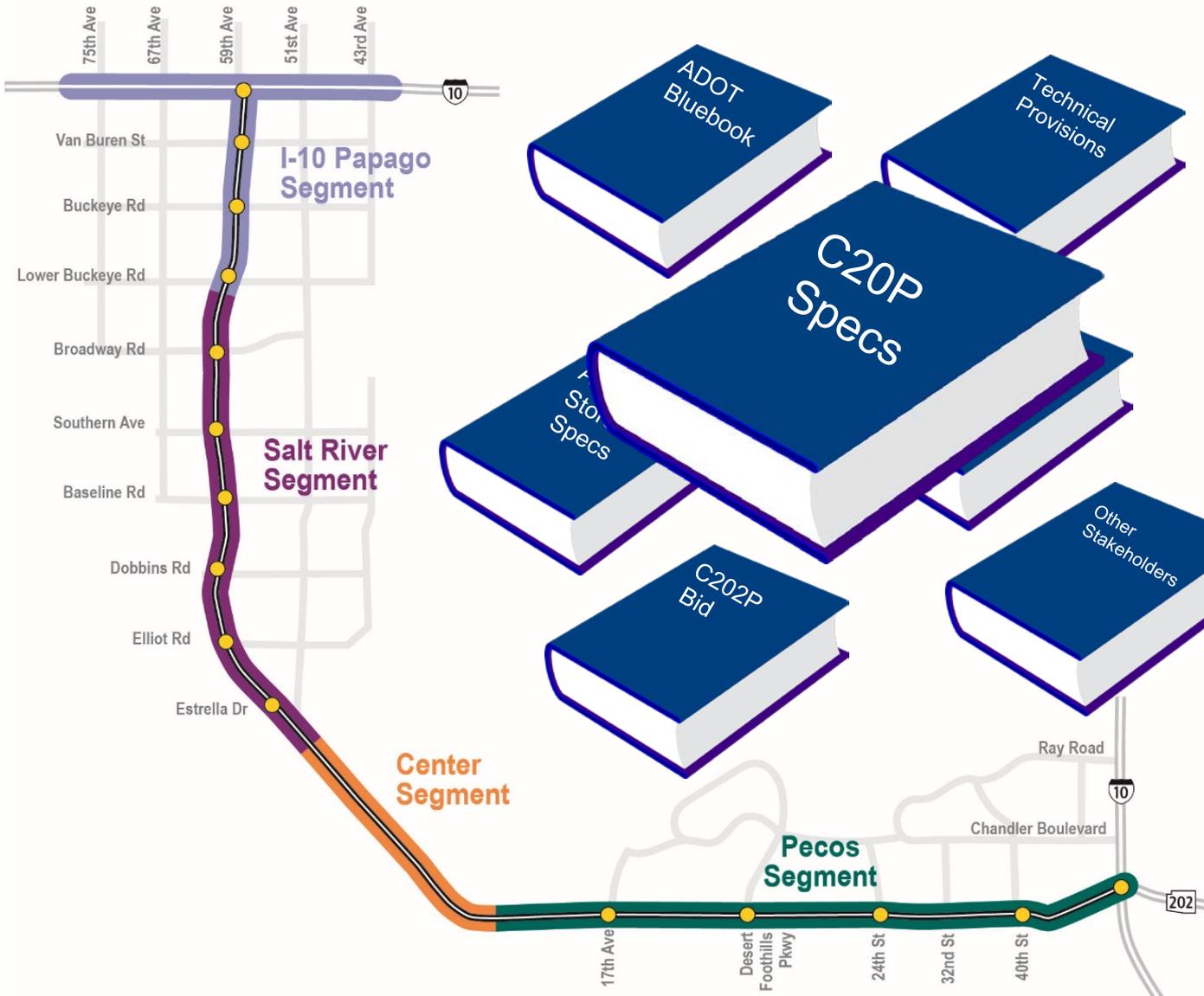


## LOCAL STAKEHOLDERS



## AESTHETIC CORRIDOR

# Specification Sources



# Key Spec Components

- Self performed vs. subcontractor performed
- Local sub and supplier familiarity
- Known Performance
- Incentives –  
Disincentives



**40<sup>th</sup> St Drilled Shafts**

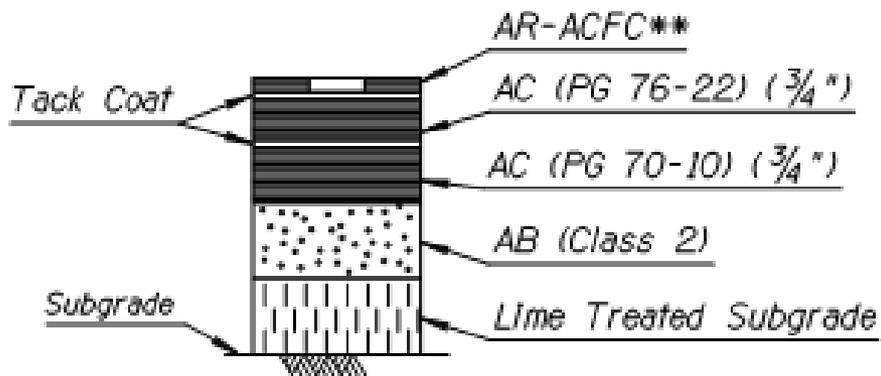
# Key Spec Components

- Percent Within Limits
  - PCCP
    - Ride Quality
    - Compressive Strength
    - Thickness
  - HMA
    - Ride Quality
    - Quality Attributes (Asphalt Content, Voids, etc.)
    - Thickness



**Pecos Segment Box Culvert**

# Pavement Section



**Schematic Pavement Section**

- Overall Thickness
- Pavement Lifts
- PWL Application
- Project Commitments

# HDPE Pipe



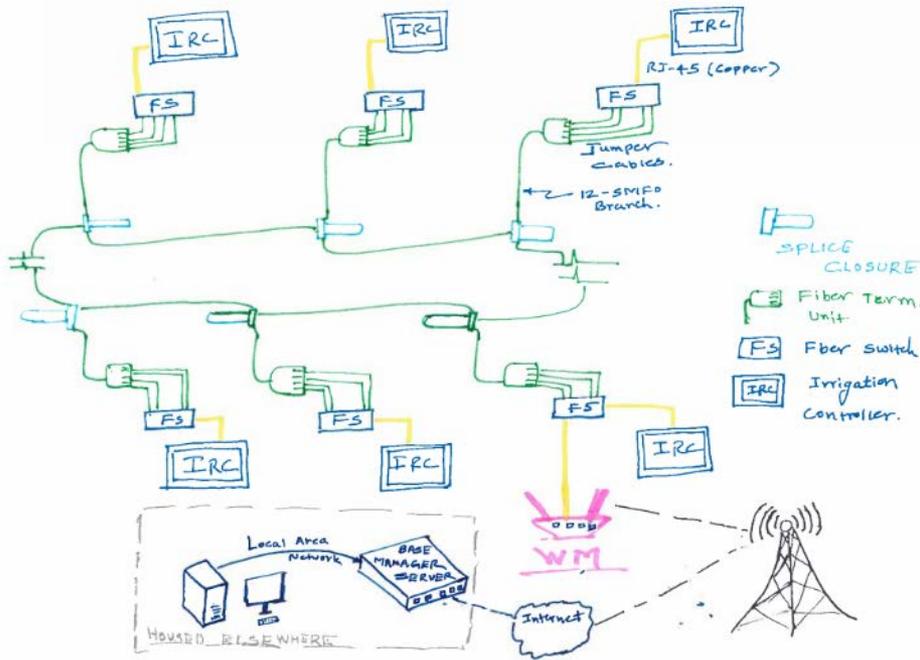
**HDPE Pipe Placement (Contech)**

- Updated current specifications
- Pipe deflection – 5% after 30-days
- Remote inspection for all pipe over 10-foot deep

# Irrigation System

ITS - IRRIGATION CONTROLLER TOPOLOGY

2.1.2017  
Tayeb



- Reviewed by Maintenance
- Standard is for line of sight
- Use fiber optic line
- Spec developed for controllers

**Schematic Irrigation Controllers**

# QUESTIONS



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