Utility Operations Management

Day 3 – December 4th
Track Rm 1, Session 2
2:30PM – 3:15PM

Presenter: Harsh Doshy, P.E.

Harsh Doshy currently serves as a Lead Worker in the Field Engineering group at MNT Division. After earning his Bachelors in Civil Engineering from Texas A&M University in 2009 and a Masters in Civil Engineering from Southern Methodist University in 2014.

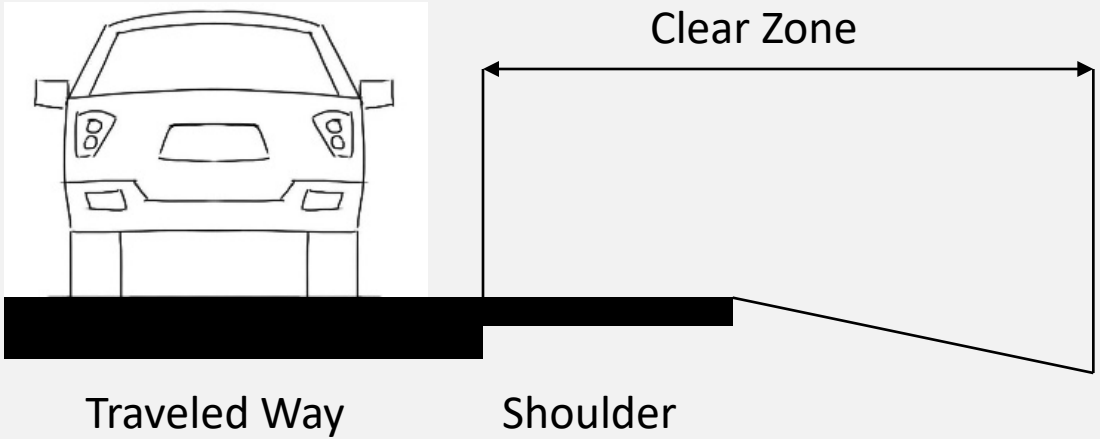
He began his TxDOT career in the Bryan District working out of the Bryan Area Office. During his time in the Bryan Area Office overseeing field inspection for roadway projects, pavement repair projects as well as design for change orders. Since then, Harsh has worked with ROW Division, Austin District engaged in various aspects of utility coordination. He currently serves as the Lead Worker in the Field Engineering group of the MNT Division working on aspects of ROW Agreements, Utilities, Spec Review, Approving CO's and Emergency Contracts.

His professional memberships include the American Society of Civil Engineers and he volunteer with the Central Texas food Bank.

TOPICS

- UTILITY POLES
- WORK ZONE SAFETY
- SHORT TERM CONSTRUCTION TCP’S

Clear Zone and Fixed Objects



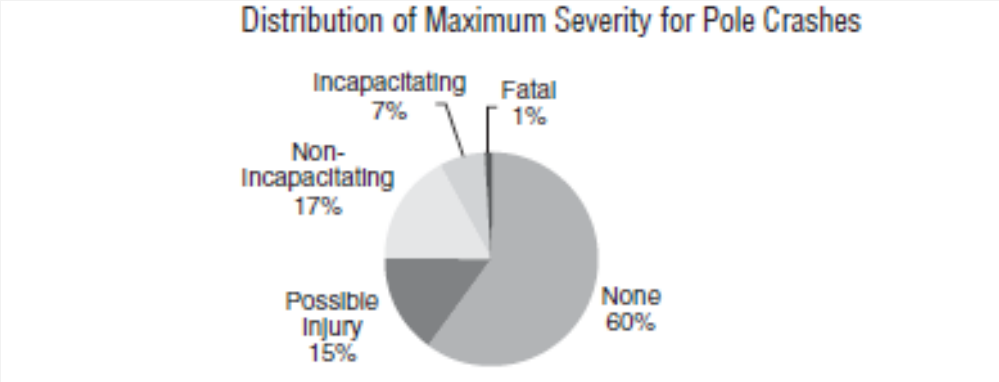
- The unobstructed, traversable area provided beyond the edge of the through traveled way for the recovery of errant vehicles. The clear zone includes shoulders, bike lanes, and auxiliary lanes, except those auxiliary lanes that function like through lanes.

Clear Zone Factors

- Design Speed
- Traffic Volume
- Curvature and Slope
- Highway Classification

Utility Poles

- Review Crash Data
- Analyze Accident Patterns
- Treat High Risk Locations
- 1608 Fatal Crashes Involving Poles in 2018



Strategies

- Relocate poles in hazardous locations
- Shield drivers from poles in high-risk areas
- Apply traffic operation measures
- Use breakaway poles

Low Impact Strategies

- Relocate poles in high-crash locations
- Install traffic barriers
- Breakaway poles in the clear zone
- Traffic calming measures

Breakaway Devices

- No alternate to location in clear zone
- Reduce hazards for pedestrians, vehicles, property owners
- Safe recovery area behind the pole

Traffic Modifications

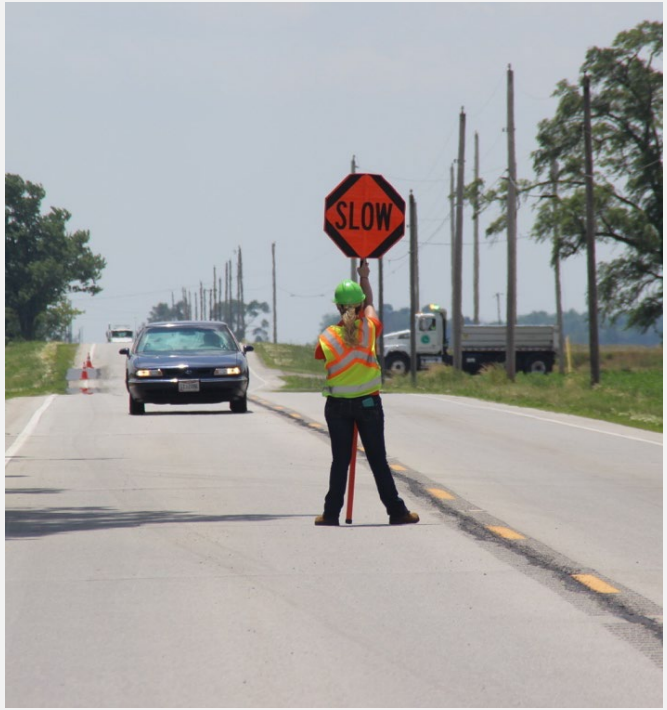
- Guard Rails
- Crash Cushions
- Improve Visibility

Moderate to High Impact Strategies

- Relocate poles along the corridor farther from pavement
- Decrease the number of poles

Work Zones

- Typically have black letters or symbols on an orange background
- Tell drivers what to do
- Tell drivers how soon they will encounter the work zone
- Tell drivers the work zone's speed limit



Risk Factors

- Impaired Drivers
- Cell Phones
- Disabled Vehicles
- Lost Drivers

Common Work Zone Signs

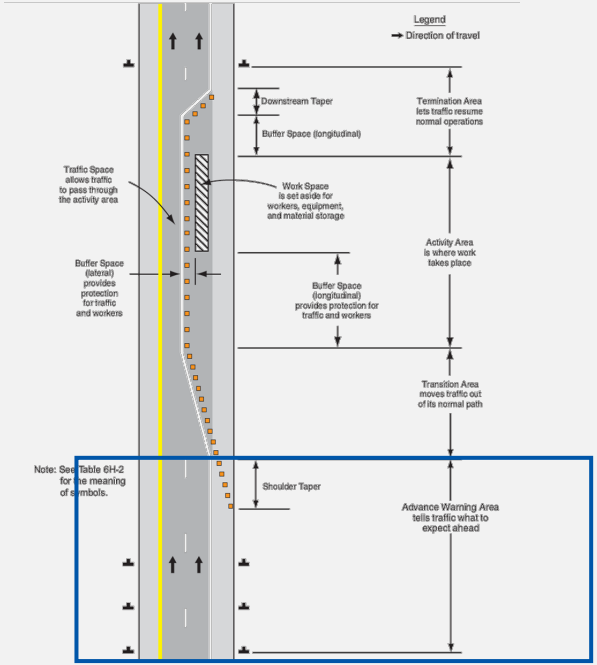
Common Work Zone Signs

Common Work Zone Signs

Components of a Work Zone

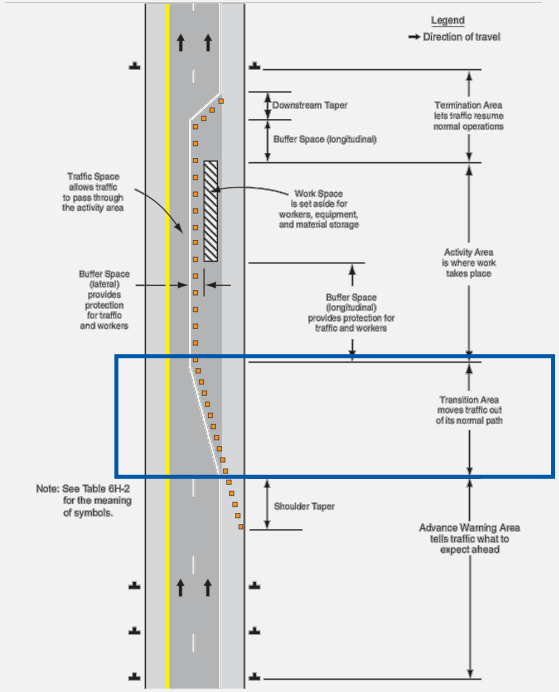
ADVANCE WARNING AREA:

Tells traffic what to expect ahead



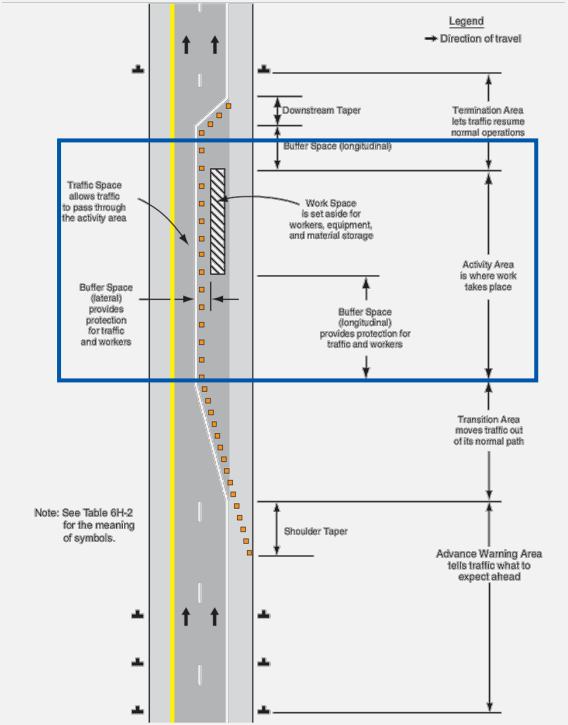
Components of a Work Zone

- Transition Area
  - Moves Traffic out of the routine flow



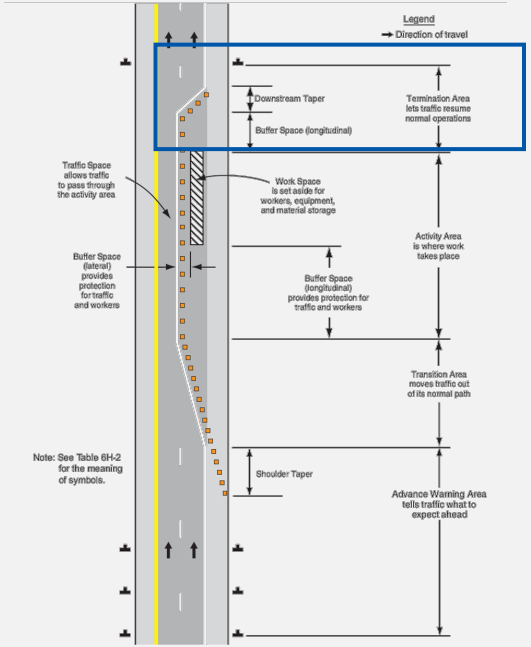
Components of a Work Zone

- **ACTIVITY AREA:**
- Where work takes place, composed of:
  - Longitudinal Buffer
  - Lateral Buffer
  - Work Space
  - Traffic Space



Components of a Work Zone

- **TERMINATION AREA:**
- Lets traffic resume normal operations, may include:
  - Downstream longitudinal buffer
  - Downstream taper
  - END ROAD WORK sign

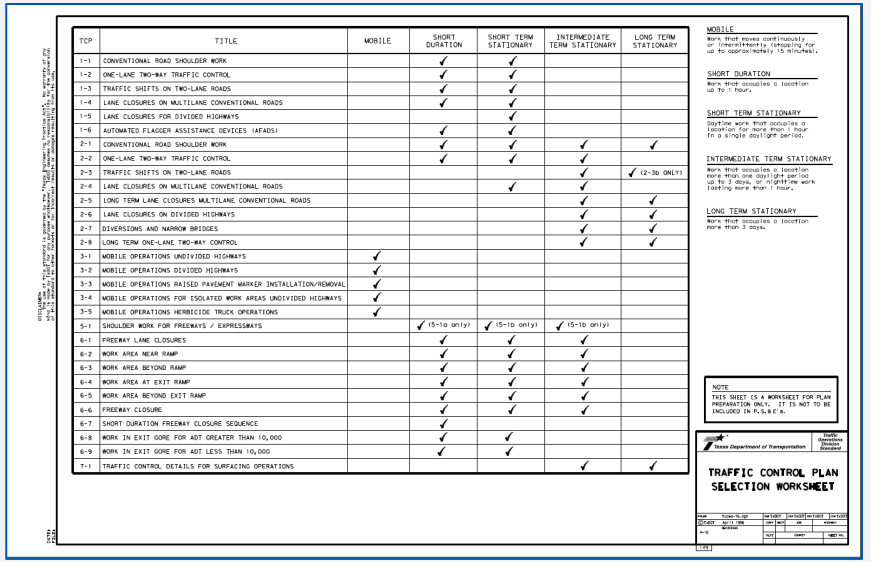


Traffic Control Plans

- TCPs are standard sheets prepared by TxDOT
- Generally go “above and beyond” their counterpart Typical Application
- May be used in maintenance activities

Traffic Control Plans Selection

- Duration of work
- Location of Work Zone
- Nature of Work



TCP	TITLE	MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
1-1	CONVENTIONAL ROAD SHOULDER WORK		✓	✓		
1-2	ONE-LANE TWO-WAY TRAFFIC CONTROL		✓	✓		
1-3	TRAFFIC SHIFTS ON TWO-LANE ROADS		✓	✓		
1-4	LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS		✓	✓		
1-5	LANE CLOSURES FOR DIVIDED HIGHWAYS			✓		
1-6	AUTOMATED FLAGGER ASSISTANCE DEVICES (AFADS)		✓	✓		
2-1	CONVENTIONAL ROAD SHOULDER WORK		✓	✓	✓	✓
2-2	ONE-LANE TWO-WAY TRAFFIC CONTROL		✓	✓	✓	
2-3	TRAFFIC SHIFTS ON TWO-LANE ROADS				✓	✓ (2-3b ONLY)
2-4	LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS			✓	✓	
2-5	LONG TERM LANE CLOSURES MULTILANE CONVENTIONAL ROADS				✓	✓
2-6	LANE CLOSURES ON DIVIDED HIGHWAYS				✓	✓
2-7	DIVERSIONS AND NARROW BRIDGES				✓	✓
2-8	LONG TERM ONE-LANE TWO-WAY CONTROL				✓	✓
3-1	MOBILE OPERATIONS UNDIVIDED HIGHWAYS	✓				
3-2	MOBILE OPERATIONS DIVIDED HIGHWAYS	✓				
3-3	MOBILE OPERATIONS RAISED PAVEMENT MARKER INSTALLATION/REMOVAL	✓				
3-4	MOBILE OPERATIONS FOR ISOLATED WORK AREAS UNDIVIDED HIGHWAYS	✓				
3-5	MOBILE OPERATIONS HERBICIDE TRUCK OPERATIONS	✓				
5-1	SHOULDER WORK FOR FREEWAYS / EXPRESSWAYS		✓ (5-1a only)	✓ (5-1b only)	✓ (5-1b only)	
6-1	FREEWAY LANE CLOSURES		✓	✓	✓	
6-2	WORK AREA NEAR RAMP		✓	✓	✓	
6-3	WORK AREA BEYOND RAMP		✓	✓	✓	
6-4	WORK AREA AT EXIT RAMP		✓	✓	✓	
6-5	WORK AREA BEYOND EXIT RAMP		✓	✓	✓	
6-6	FREEWAY CLOSURE		✓	✓	✓	
6-7	SHORT DURATION FREEWAY CLOSURE SEQUENCE		✓			
6-8	WORK IN EXIT GORE FOR ADT GREATER THAN 10,000		✓	✓		
6-9	WORK IN EXIT GORE FOR ADT LESS THAN 10,000		✓	✓		
7-1	TRAFFIC CONTROL DETAILS FOR SURFACING OPERATIONS				✓	✓

MOBILE
Work that moves continuously or intermittently stopping for up to approximately 15 minutes.

SHORT DURATION
Work that occupies a location up to 1 hour.

SHORT TERM STATIONARY
Daytime work that occupies a location for more than 1 hour in a single daylight period.

INTERMEDIATE TERM STATIONARY
Work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than 1 hour.

LONG TERM STATIONARY
Work that occupies a location more than 3 days.

NOTE
THIS SHEET IS A WORKSHEET FOR PLAN PREPARATION ONLY. IT IS NOT TO BE INCLUDED IN P,S,&E's.

Texas Department of Transportation

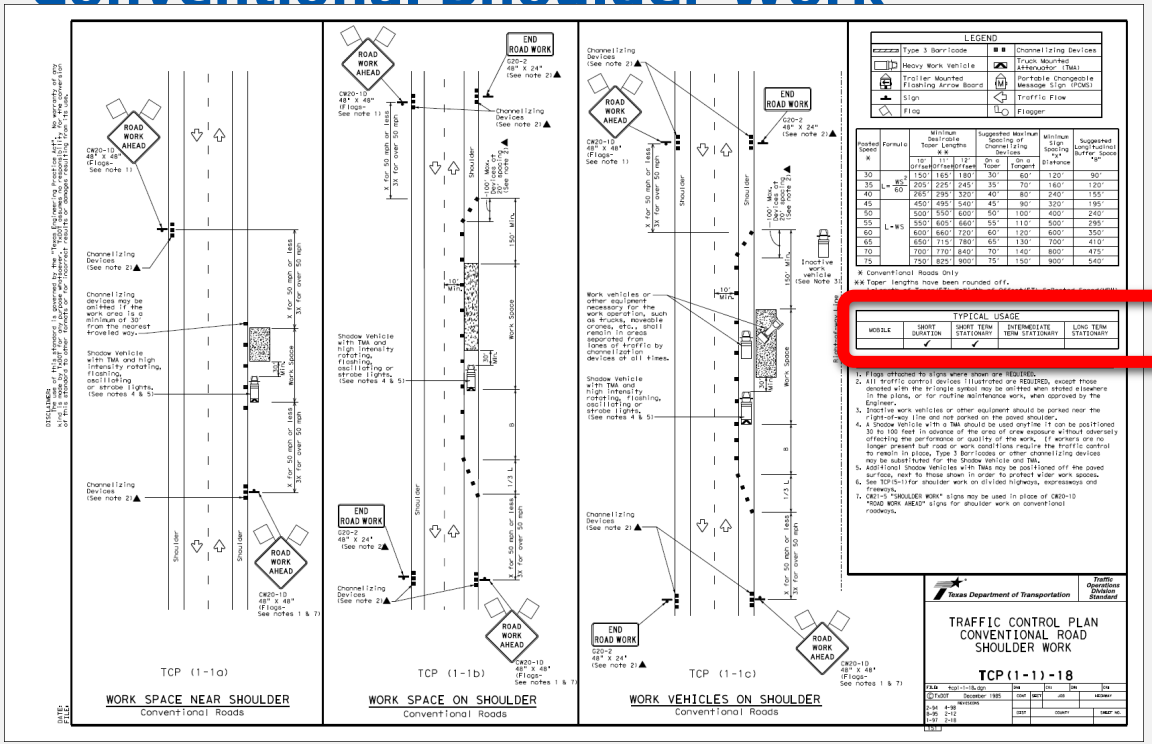
TRAFFIC CONTROL PLAN SELECTION WORKSHEET

TCPs

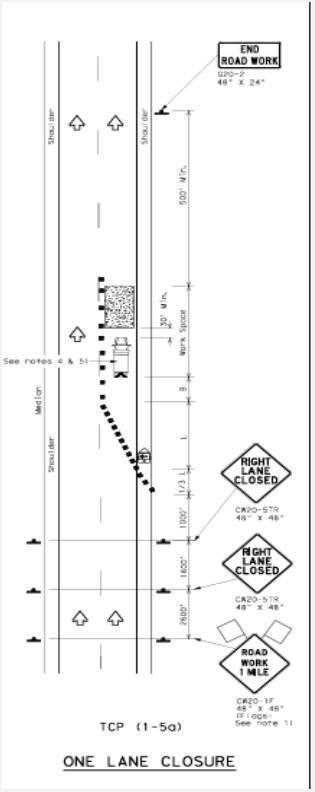
The **(2) Series TCP (2-1) through TCP (2-8)**

- Short Duration to Long Term Stationary
- Work On & Near the Shoulder
- One-Lane, Two-Way Roadways
- Two Lane Roads
- Multilane Conventional Roads

Conventional Shoulder Work

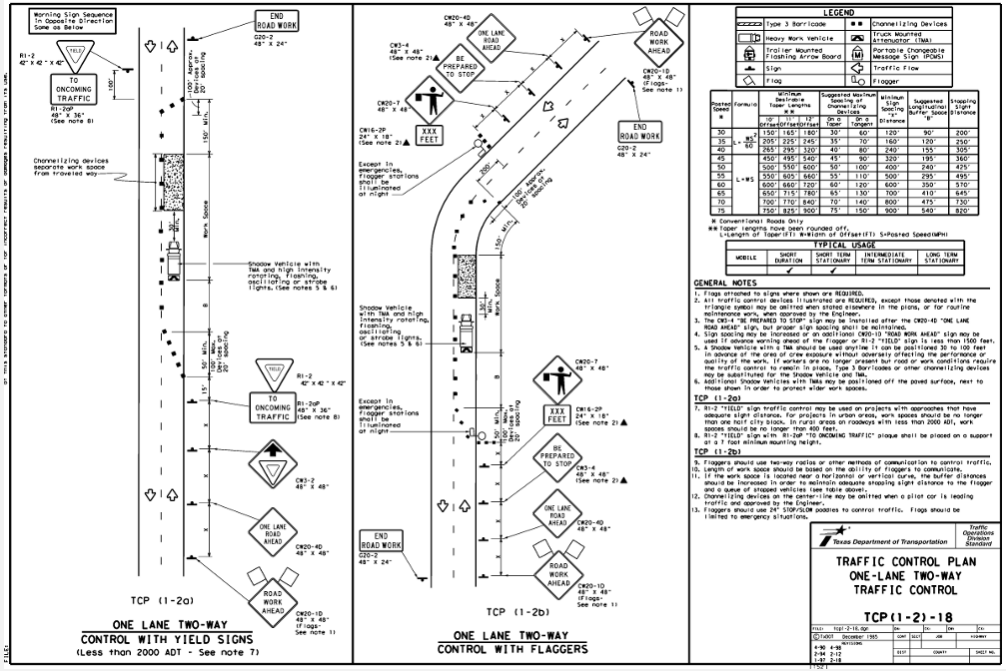


TCP 1-5 or 2-6

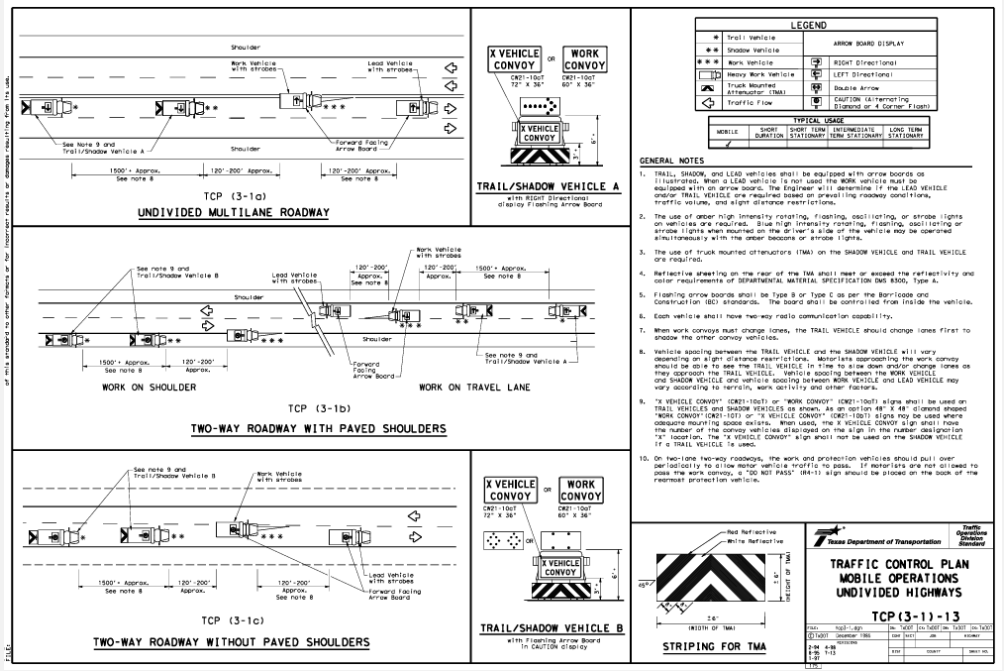

END ROAD WORK
RIGHT LANE CLOSED
RIGHT LANE CLOSED
ROAD WORK 1 MILE
TCP (1-5a)
ONE LANE CLOSURE


END ROAD WORK
RIGHT LANE CLOSED
1000FT
RIGHT LANE CLOSED
½ MILE
ROAD WORK 1 MILE
TCP (2-6a)
ONE LANE CLOSURE

One Lane Two Way Traffic



Mobile Operations



Work Zone Remedies

- Increased smart work zone technologies
- Targeted Improvements
  - Coordination with law enforcement
  - Improve lighting

Traffic Products

Products must meet:

- Manual for Assessing Safety Hardware (MASH) (2016)
- NCHRP 350 (if no MASH Equivalent)
  - Recommended Procedures for the Safety Evaluation of Highway Features
- Current TMUTCD

Questions


Thank You!