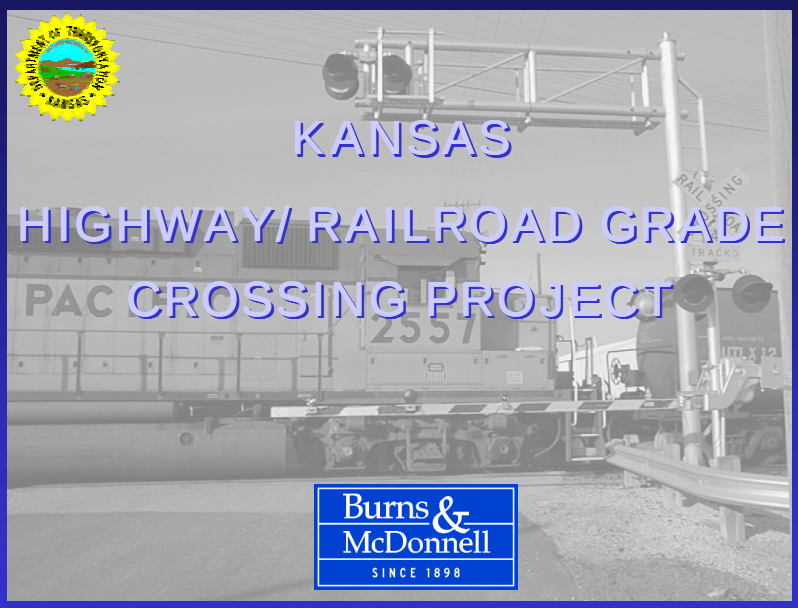


KANSAS

HIGHWAY/ RAILROAD GRADE CROSSING PROJECT

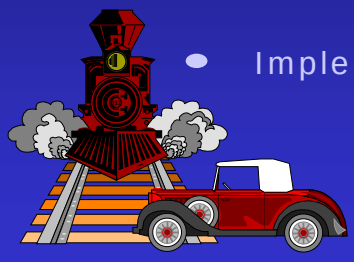
Burns & McDonnell
SINCE 1898

April 9, 2001

GIS-T Symposium 2001
Arlington, VA

OPPORTUNITIES

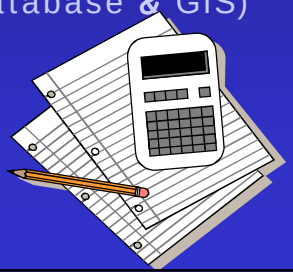
- Safety Incentive Funds
- Advances in Data Collection Technology
- Implementation of New Software



Burns & McDonnell
SINCE 1898

PHASE 1

- Establish Advisory Board
- Ranking Formula Review
- Evaluate Inventory Requirements
- Evaluate Collection Methods
- Evaluate Software (Database & GIS)
- Final Report



Burns & McDonnell
SINCE 1898

PHASE 2

- Design Database Structure
- Collect Data
- Develop GIS Software
- Implementation
- Training

Burns & McDonnell
SINCE 1898

FIELD STAFF

- Primary Crews - 26 workers,13 teams
- ADT Crews - 6 workers, 3 teams
- Crew Chiefs - 3 Supervisors

Burns & McDonnell
SINCE 1898

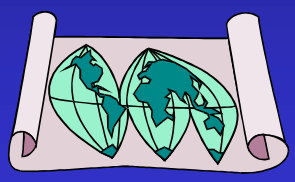
TRAINING

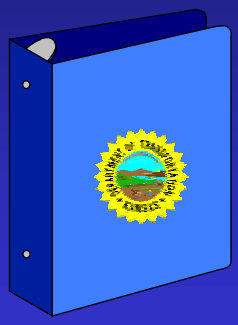
- BNSF RR Safety Program
- UP RR Safety Program
- Operation Lifesaver
- Advanced Defensive Driving
- Red Cross First Aid

Burns & McDonnell
SINCE 1898

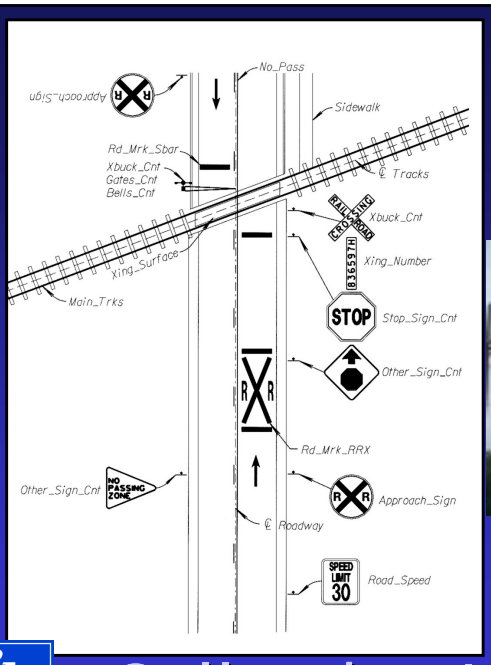
FIELD DOCUMENTS

- Field Manual
- Workflow Plan
- County/City Maps



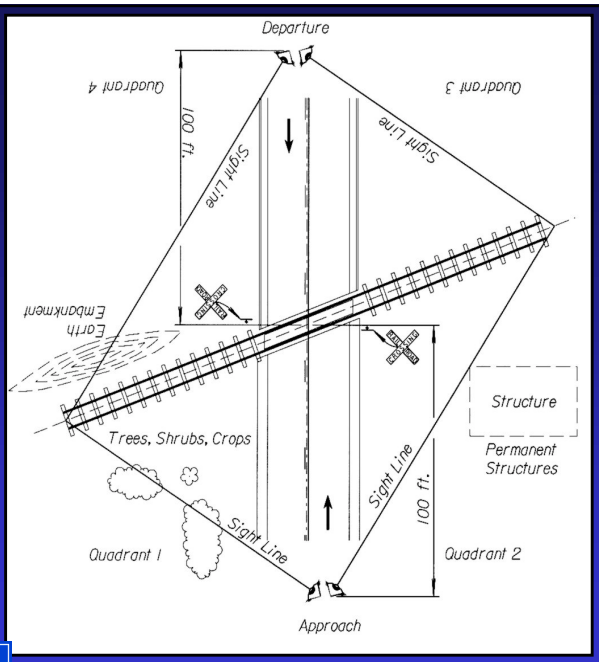


Burns & McDonnell
SINCE 1898



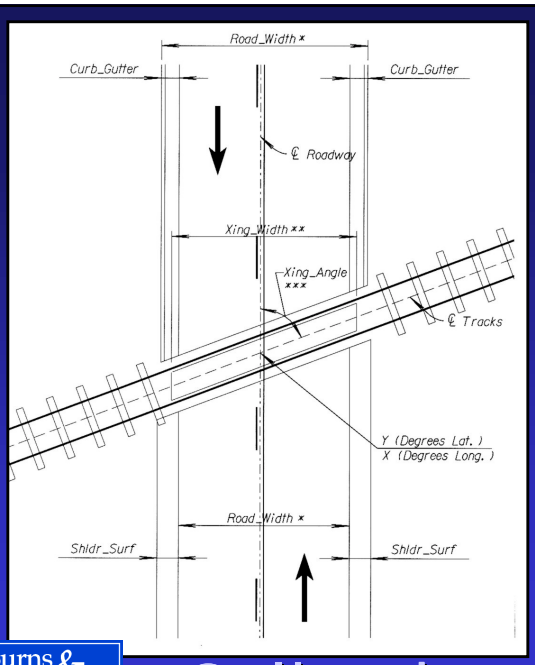
Burns & McDonnell
SINCE 1898

Collection Items



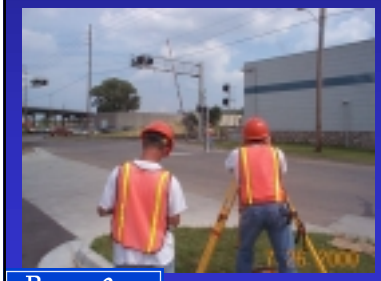
Burns & McDonnell SINCE 1898

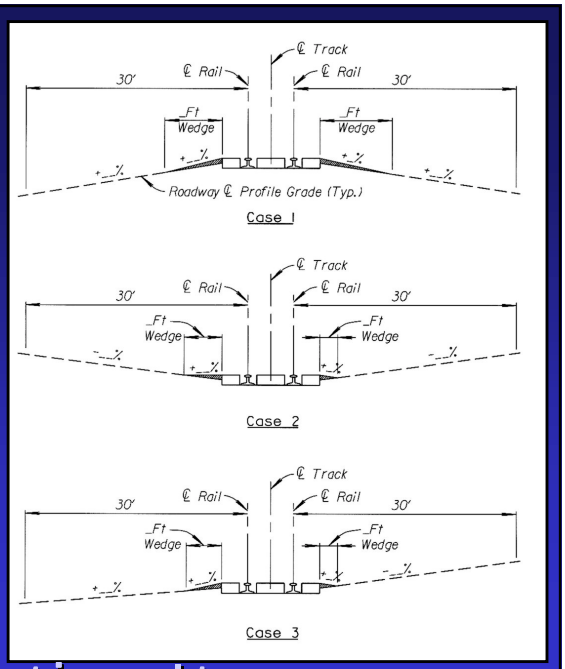
Collection Items



Burns & McDonnell SINCE 1898

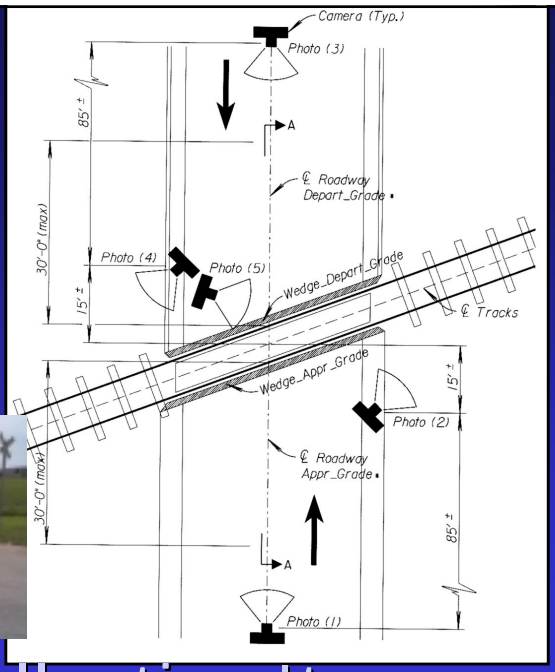
Collection Items





Burns & McDonnell
SINCE 1898

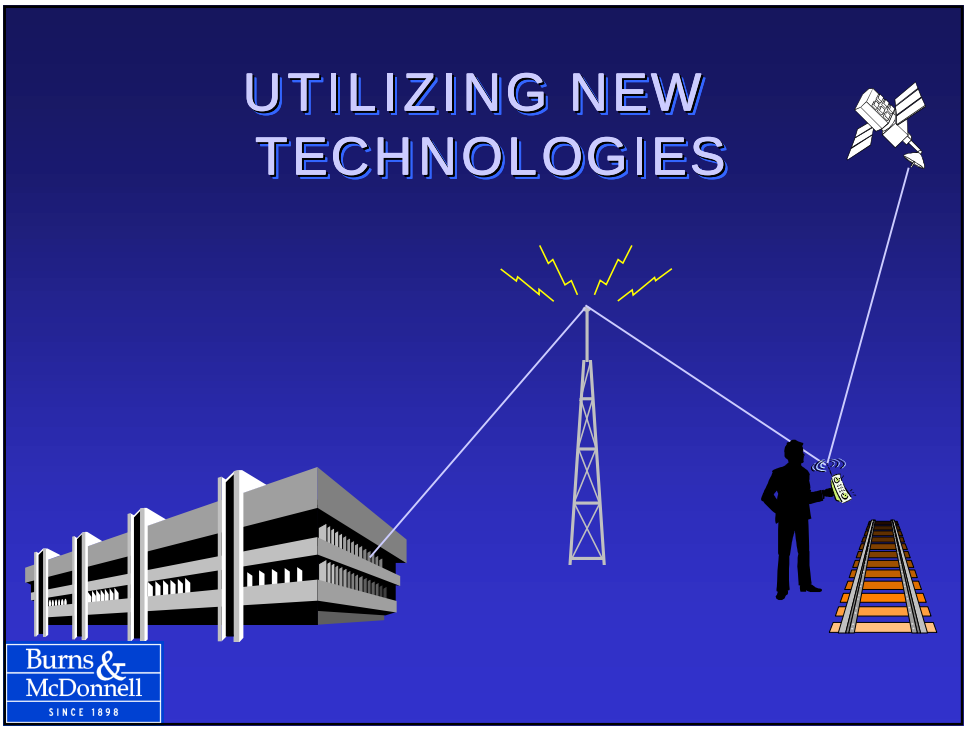
Collection Items



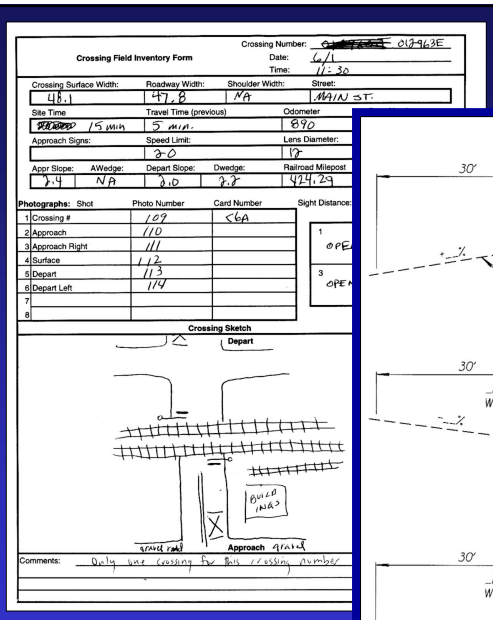
Burns & McDonnell
SINCE 1898

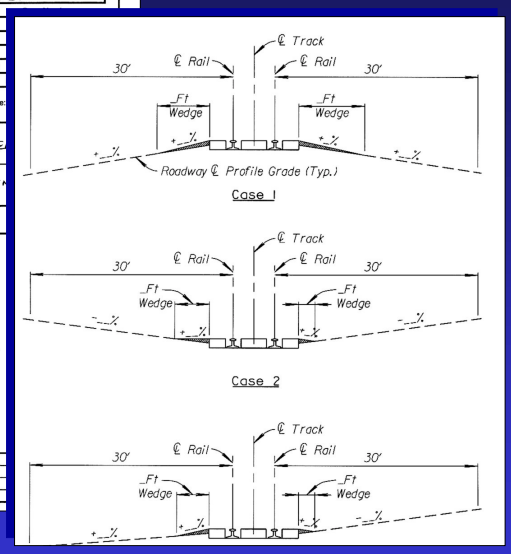
Collection Items

2
5
6
3
4
Crossing Photos
Burns & McDonnell
SINCE 1898

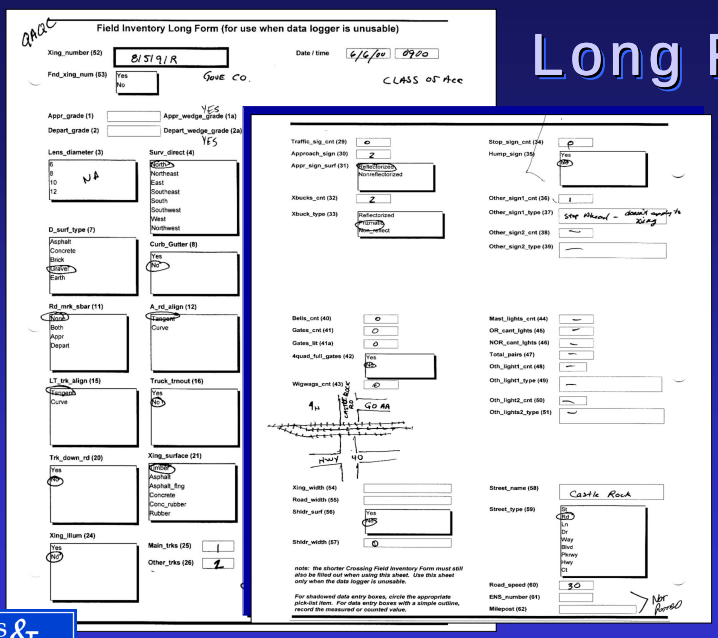

UTILIZING NEW TECHNOLOGIES
Burns & McDonnell
SINCE 1898

Short Form



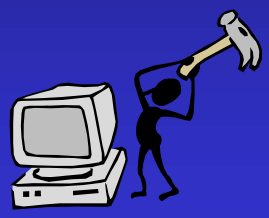


Long Form



Project Challenges

- Weather
- Identifying Location
- Consistency Between Teams

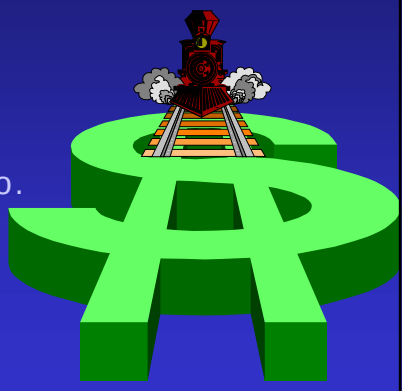


- GPS Equipment
- Data Transfer
- Vehicle Problems

Burns & McDonnell
SINCE 1898

INVENTORY COST

- 6,500 crossings
- 103 counties
- Over 200,000 miles
- >400,000 pieces of info.
- $190 per crossing
  (Equipment & labor)



Burns & McDonnell
SINCE 1898

CIIMS Overview

Crossing
Inventory
Information
Management
System

Burns & McDonnell
SINCE 1898

CIIMS Overview

- Visual Basic API
- Intergraph GeoMedia Controls
- Oracle 8.1.6 database
  - Inventory data
  - Spatial data
- MS Access local database

Burns & McDonnell
SINCE 1898

10

Data Sources

- Crossing Locations - GPS Inventory
- Railroad basemap - National Transportation Atlas (Bureau of Trans. Statistics)
- LRS Data - KDOT & Kansas Data Access Support Center
- Streets - TIGER (Census Bureau)

Burns & McDonnell
SINCE 1898

CIIMS Demonstration

Burns & McDonnell
SINCE 1898

11

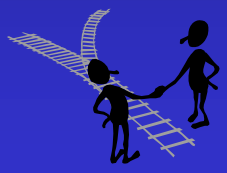
Final Thoughts

Include Impacted Organizations Statewide

Planning Is Essential

Assess Needs of End-users

Utilize Mainstream Technologies



Burns & McDonnell
SINCE 1898

QUESTIONS

Burns & McDonnell
SINCE 1898

12