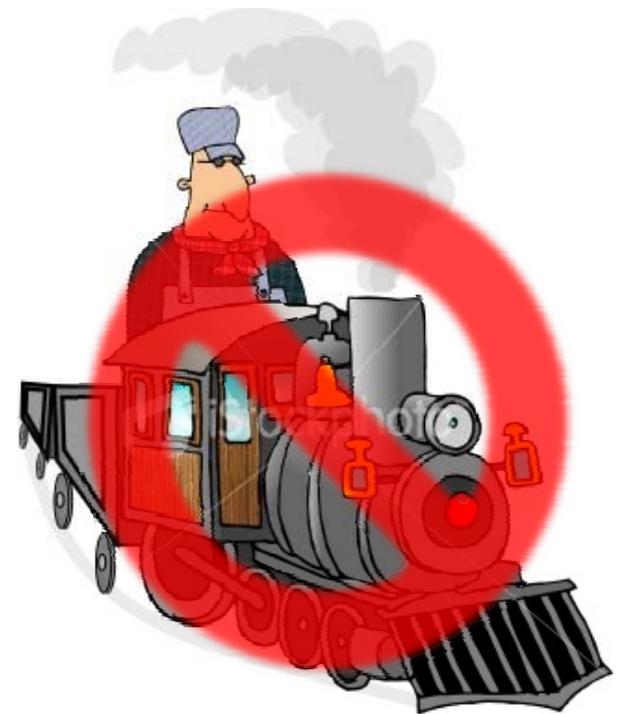
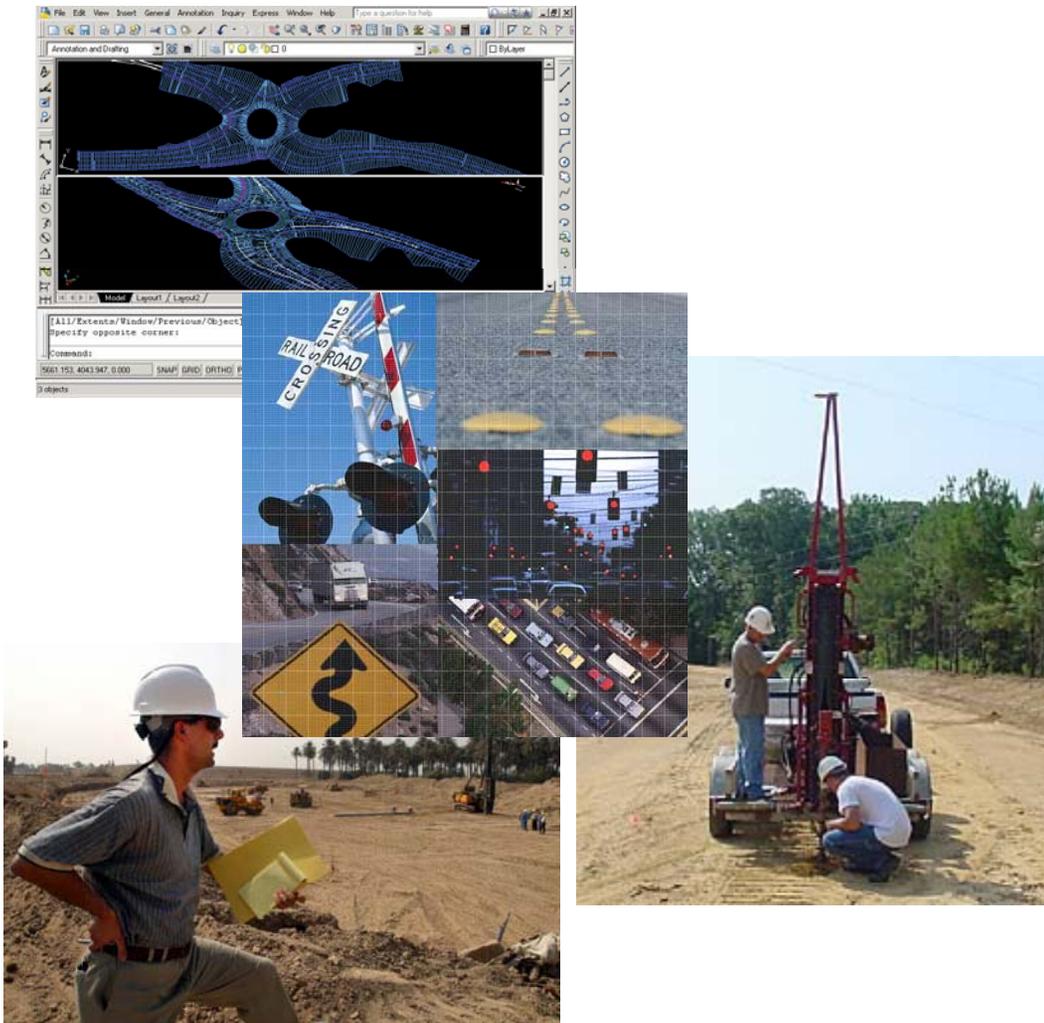


What Is Engineering?

Engineering IS...



Could you be a future Engineer?

- Do you have an Interest in Math and Science?
- Do you have good problem solving skills?
- Do you approach problems in an analytical manner?
- Can you work in a variety of environments, i.e. indoor and outdoor, noisy or quiet.
- Can you communicate effectively with others?
- Are you flexible working with others or on your own?

Engineering Could be for you!!

Disciplines

<u>Discipline</u>	<u>Avg Annual Starting Salary</u>
■ Areospace	\$56,311
■ Bio-Medical	\$54,158
■ Chemical	\$64,902
■ Civil	\$52,048
■ Electrical	\$60,125
■ Industrial	\$58,358
■ Mechanical	\$58,766
■ Nuclear	\$61,610

*Information according National Association of Colleges and Employers, July 2009

What Is Civil Engineering?

■ Design

- CADD
- Plan Review
- Coordinate with other areas to ensure good design

■ Construction

- Inspection
- Material Field Testing
- Interpret Plans

■ Traffic

- Review Plans
- Coordinate Signal Timing & Placement
- Evaluate necessary upgrades

■ Environmental

- Reviews Erosion Control Plans
- Site Visits to ensure projects meet Guidelines

■ Geotechnical

- Soil drilling and sampling
- Test materials to ensure sufficient for construction

■ Structural

- Bridge and Retaining Wall Design
- Consult on project changes

■ Water Resources

- Works with waterways to ensure no pollution and ensure maintained integrity

Where do Civil Engineers work??

- **Private Sector**

- Design Firms
- Consulting Firms
- Construction Companies

- **Public Sector**

- MoDOT
- Local Government
- Federal Government
- Military
- EPA

Where is a Civil Engineer's Job?

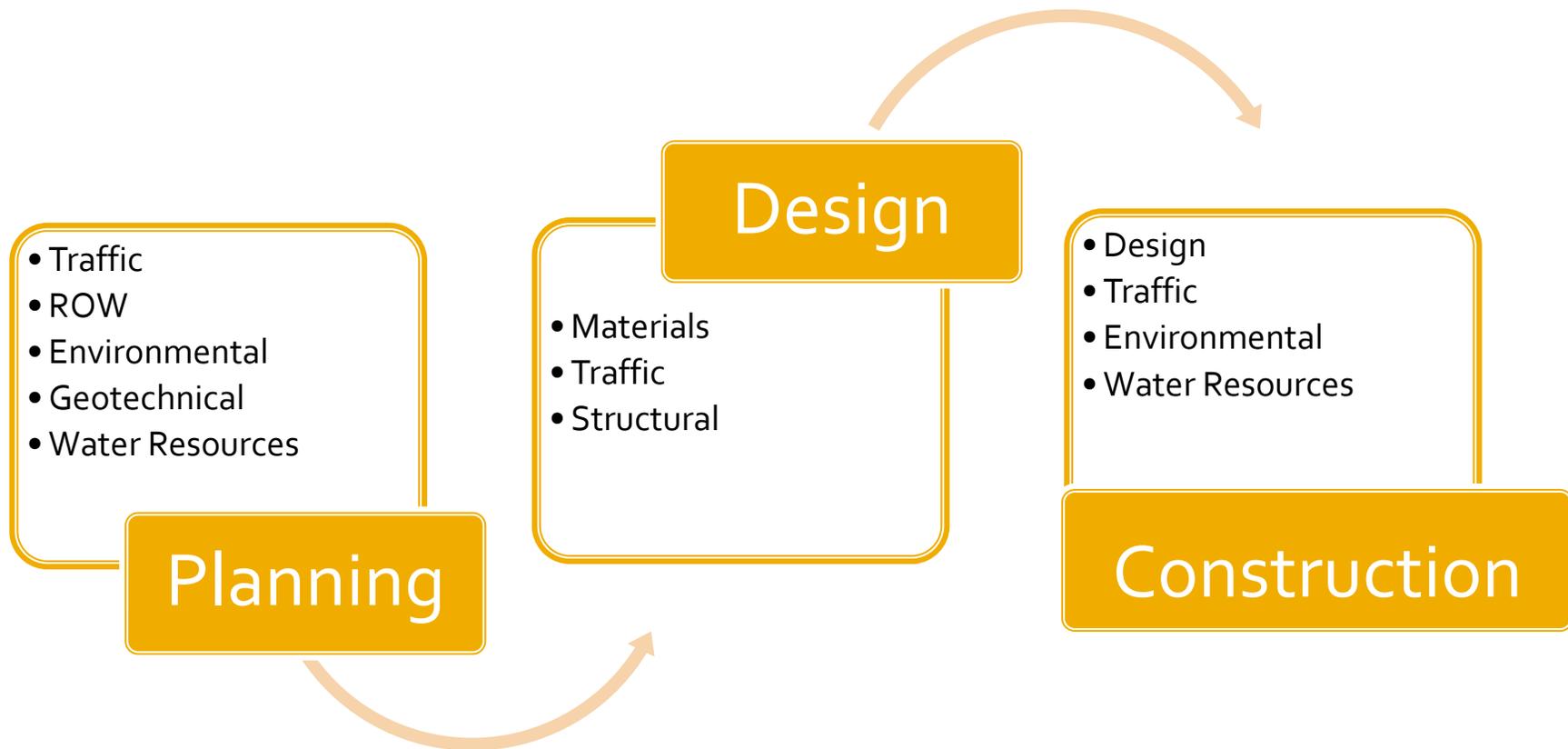
Indoor

- **Design**
 - Computer Aided Drafting
 - Specification Review
 - Plan Review
- **Traffic**
 - Traffic Studies
 - Signal Timing
 - Intersection analysis
- **Materials**
 - Laboratory Testing

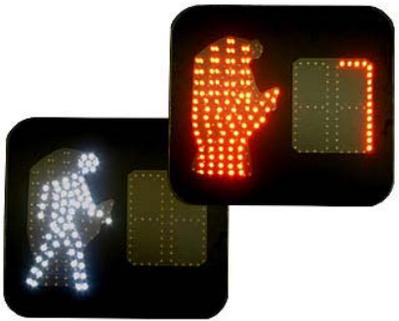
Outdoor

- **Construction**
 - Inspection
 - Field testing
- **Hydraulics**
 - Stream Design
 - Flow Analysis
- **Environmental**
 - Erosion Control Design
 - Specification Review
 - Field evaluation
- **Materials**
 - Gathering samples
 - Field testing

MoDOT Projects from Beginning to End



Traffic

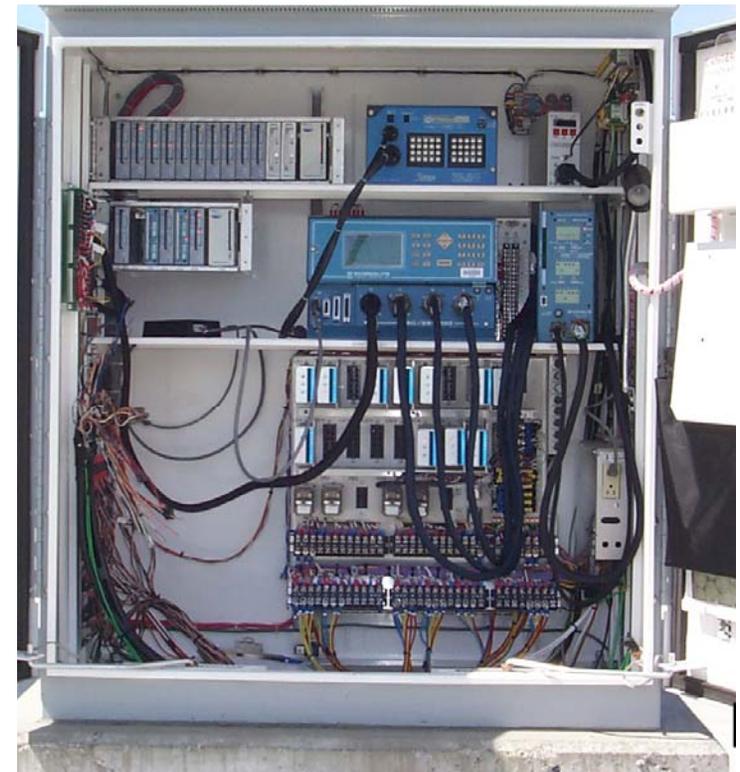


- Lighting, Safety, Signals, Signing, & Striping
- Requires both Field and Office Work
- Communicate directly with citizens and public officials on traffic safety concerns



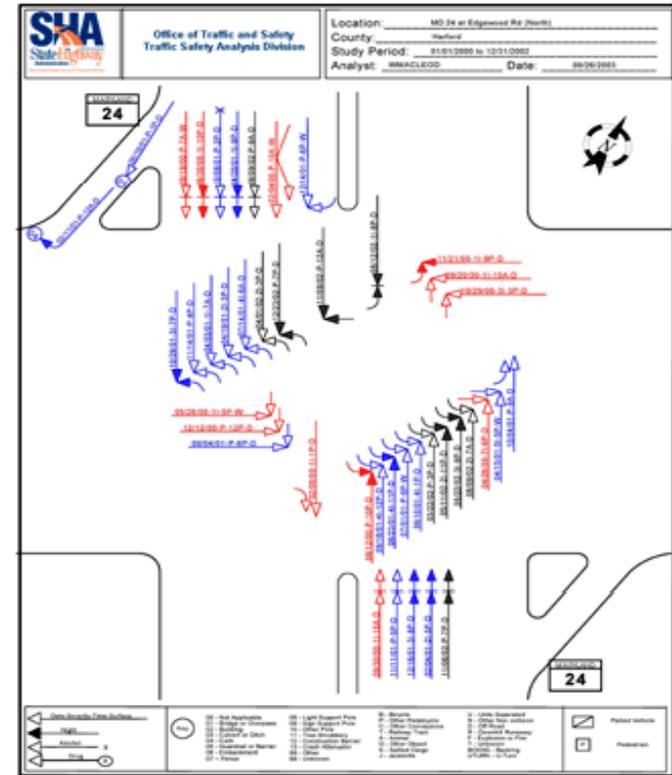
Traffic Signals

- More than just Red = Stop, Green = Go!
- Signal controller, video detection cameras



Traffic Safety

- A crash occurs every 8 minutes in the Kansas City area



- How can we prevent one?
- Is it worth spending millions to build a new road, or can we just put up some new signs?

DESIGN

PREPARE PLANS FOR HIGHWAY IMPROVEMENT PROJECTS THAT “DELIGHTS OUR CUSTOMERS AND PROMOTES A PROSPEROUS MISSOURI”.



QUICK FACTS

- From 2008 to 2012, District 4 programmed to award 85 projects.
- Estimated cost of these projects is over 800 million dollars.



FROM NEED TO CONSTRUCTION

- **Conceptual Plans**
Information gathered and studies completed.
- **Preliminary Plans**
Roadway alignment identified and general plans developed.
- **Right Of Way Plans**
Property impacts identified and r/w plans developed.
- **Final Plans**
Detailed construction documents completed.



TITLE SHEET

DESIGN DESIGNATION
 A.S.T. - 2003 - 2118
 A.S.T. - 2003 - 6108
 D.U.V. - 100
 T - 65
 V - TO M.P.A.
 PARTIAL CEMENTATION = R1701001 R170101

NO RIGHT OF WAY TO BE ACQUIRED

CONVENTIONAL SYMBOLS
 (USED IN PLANS)

	EXISTING	NEW
BUILDINGS AND STRUCTURES	□	■
GRAND BAY	○	●
CONCRETE RIGHT-OF-WAY MARKER	○	●
STEEL RIGHT-OF-WAY MARKER	○	●
LOCATION SURVEY MARKER	○	●
UTILITIES		
FIBER OPTICS	—	—
OVERHEAD TELEPHONE	—	—
UNDERGROUND TELEPHONE	—	—
OVERHEAD POWER	—	—
UNDERGROUND POWER	—	—
GAS	—	—
WATER	—	—
MANHOLE	○	●
FIRE HYDRANT	○	●
WATER VALVE	○	●
WATER METER	○	●
DROP INLET	○	●
SIPOH BLOCK	○	●
GROUND MOUNTED SIGN	○	●
LIGHT POLE	○	●
H-FRAME POWER POLE	○	●
TELEPHONE PEDESTAL	○	●
FENCE	—	—
CHAIN LINK	—	—
WIREN WIRE	—	—
GATE POST	○	●
BOUNDARY	—	—

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION PLANS FOR PROPOSED STATE HIGHWAY PLATTE COUNTY



SHEET	COUNTY	PROJECT
152	MO	4
JOB NO. J4UJ1169		
CONTRACT NO.		
PROJECT NO.		
COUNTY PLATTE		

INDEX OF SHEETS

DESCRIPTION	SHEET NUMBER
TITLE SHEET	1
TYPICAL SECTIONS (3 SHEETS)	2
SUMMARY (2 SHEETS)	2-4
SUMMARY (4 SHEETS)	2-5
PLAN-PROFILE	3-7
REFERENCE POINTS	8
COORDINATE POINTS	9
SPECIAL SHEETS	10-12
TRAFFIC CONTROL SHEETS	13-18
SECTION CONTROL	19-23
LIGHTING	-
SIGNAGE	-
STIPING	24-28
PAVEMENT MARKING	29-31
CULVERT SECTIONS	40-49
BRIDGE DRAWINGS	50-55
CROSS SECTIONS	56-59
COMPUTER DATA	1-26

LENGTH OF PROJECT

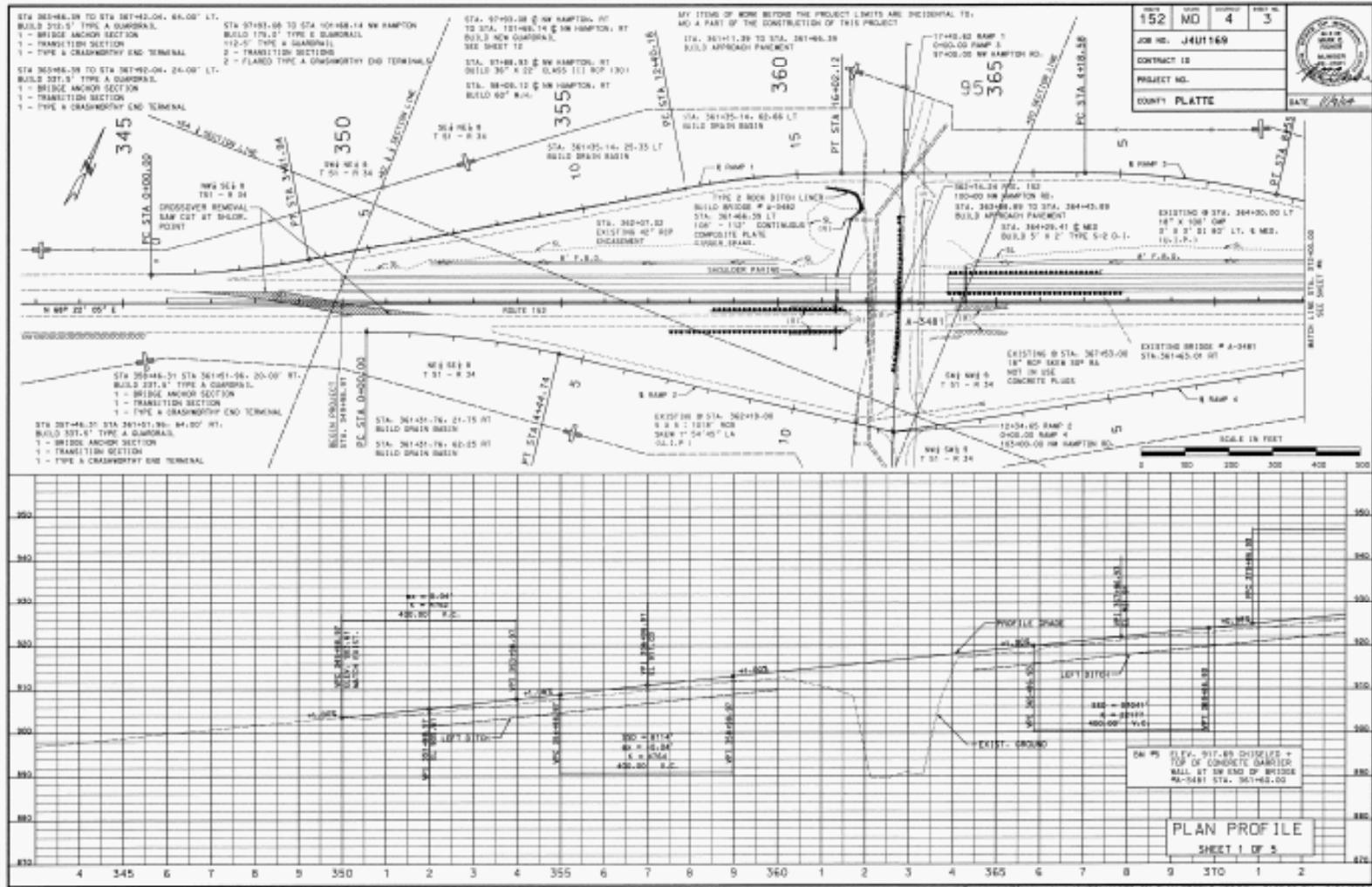
BEGINNING OF PROJECT	STA. 242 + 95.97
END OF PROJECT	STA. 288 + 25.48
APPARENT LENGTH	11901.49 FEET
SHORTINGS AND EXCEPTIONS	
STA. 21446.00 TO	PIVING EXCEPTION
STA. 28847.00	
TOTAL CORRECTIONS	6.90 FEET
NET LENGTH OF PROJECT	11901.49 FEET
STATE LENGTH	2.354 MILES



DATE 10/2004



PLAN AND PROFILE SHEET





PROJECT ELEMENTS

- Earthwork
- Drainage
- Bridges
- Paving
- Signals



DRAINAGE







BRIDGES



Route H





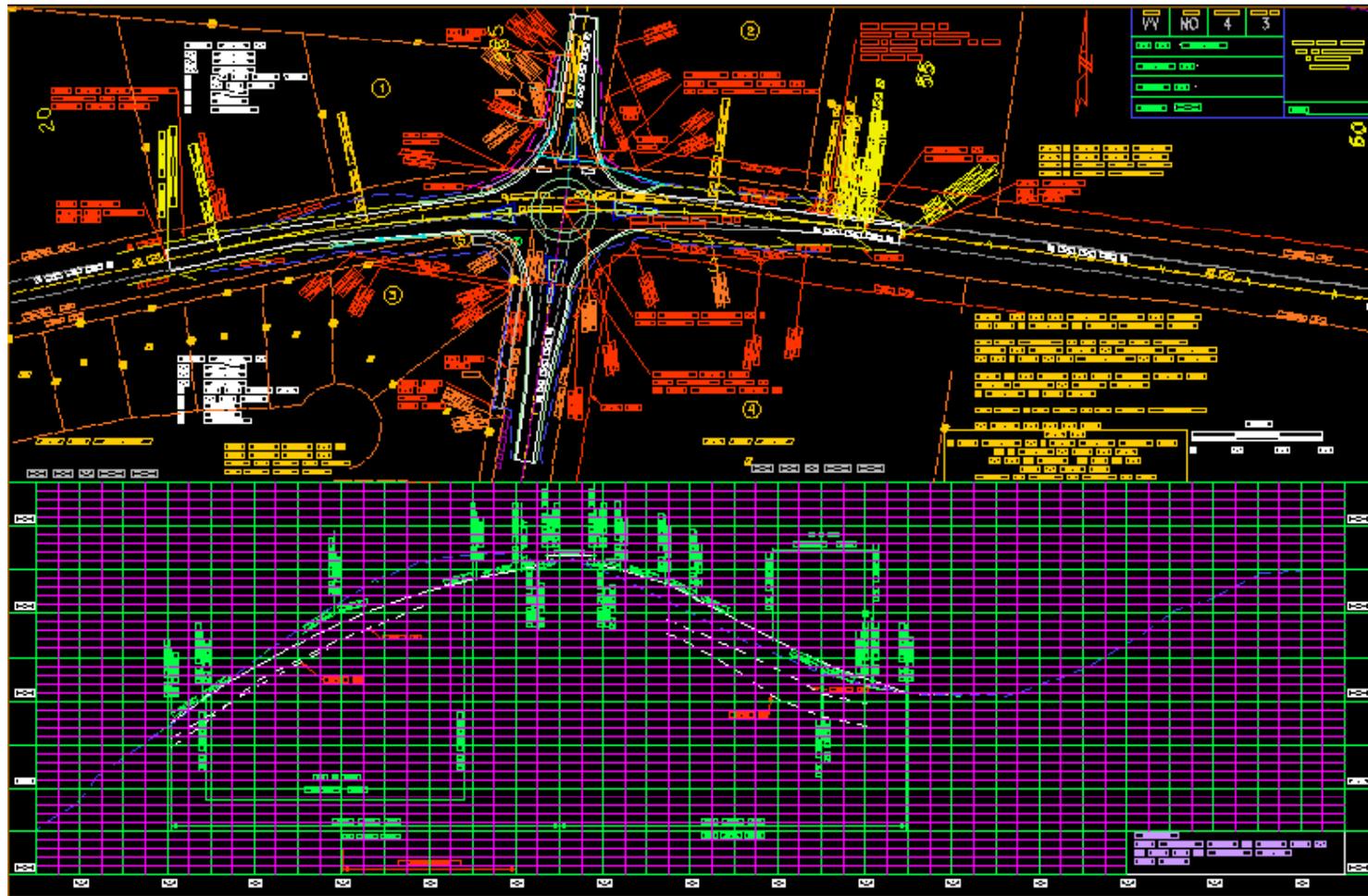
PAVING



Route H



Roadway CAD Plan and Profile



Roadway Final Product



Construction

- Grading
- Pavement
- Drainage - stream crossings, closed systems, open channel
- Resurfacing
- Signals, lighting, signing (include temporary signals)
- Traffic control, detours, etc.
- Guardrail items
- Bridge
- Erosion control (seed and mulch, rock ditch liner, paved ditch, rock blanket)

Construction Tools

- **Contract**
- **Plans**
- **Standards and Specifications**



MoDOT Construction Duties

- Interpret Drawings and Specifications
- Review Shop Drawings
- Inspect, Test, Approve Construction
- Field Material Testing
- Contractor Payments







8 11:01 AM



16 12:53 PM





21 2:15PM





6 9:25 AM



17 10:13 AM





5 7:40AM































