



PROVIDING CONSULTING INDUSTRY ENVIRONMENT TO TRAIN COUNTY ENGINEER STAFF: A CASE STUDY

LJB Inc. & Montgomery County Engineer's Office

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FOR MORE INFORMATION

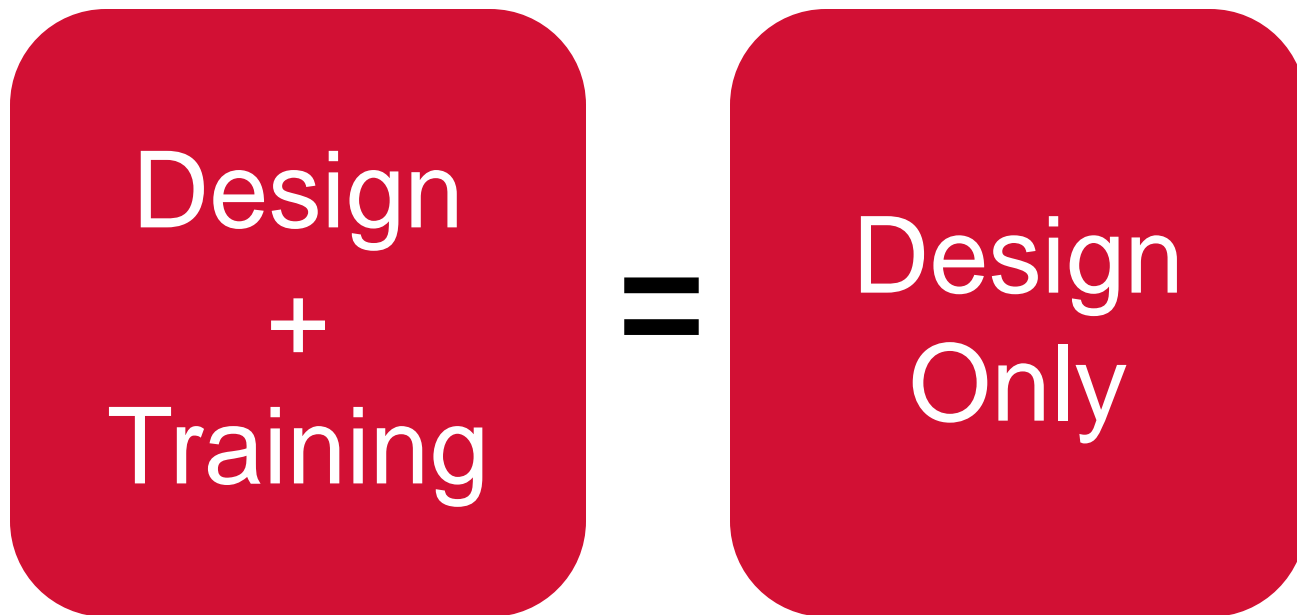


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BOTTOM LINE

- ◉ County received training benefit for no additional cost



PRESENTATION OVERVIEW



- ◉ MCEO Structural General Engineering Services
- ◉ On-site training for MCEO staff
- ◉ MCEO projects
- ◉ Staff experience working one year (+) in consultant's office
- ◉ Summary
- ◉ Q&A

MCEO STRUCTURAL GES



- ◉ Goal of contract
 - > Complete project designs and plans for programmed projects
 - > Provide on-site training
 - In bridge consulting industry learning environment
 - Training on actual MCEO projects



- ◉ Logistics

- > Location – LJB Inc. Office in Miamisburg, Ohio
- > Duration: September 2013 through October 2014 (14 months)

- ◉ Embed staff

- > Treat Cedric like any other LJB bridge engineer
- > Provide phone, workstation, design manuals, and guidance
- > Replicate consulting industry environment for Cedric
(collaboration, communication, work flows)



- ◉ Structural design topics

- > Box Culvert Design (BRASS Culvert)
- > Culvert Head Walls & Wing Walls (Hand Calcs)
- > Cast-in-place Concrete Slabs (ODOT Standard Drawings)
- > Prestressed Concrete Box Beams (Hand Calcs & LEAP Bridge)
- > Simple Span Steel Beams (Hand Calcs & Merlin-Dash)
- > Elastomeric Bearings (Hand Calcs & Spreadsheet)
- > ODOT Bridge Design Manual and AASHTO Specifications



- ◉ Miscellaneous design topics
 - > Bentley MicroStation V8i
 - > Bentley GEOPAK V8i
 - > ODOT Estimator Program
 - > ODOT Location and Design Manuals
 - > ODOT Standard Drawings and Design Data Sheets

MCEO PROJECTS



- ◉ Denlinger Road (MOT-TRT-105-0.53)
 - > Replace corrugated metal culvert with a pre-cast box culvert
- ◉ Dayton-Cincinnati Pike (MSB-99-2.23)
 - > Replace corrugated metal culvert with a pre-cast box culvert
- ◉ Box Beam Superstructure Replacements (thru Stage 1)
 - > Mile Road (JEF-140-1.61), Jamaica Road (MIA-41-0.59) & Chambersburg Road (DAY-CHAMB-55)



MCEO PROJECTS

Cedric performed structural design with LJB guidance

With Cedric's guidance, LJB drafted plan sets

LJB and Cedric compared marked plans

LJB checked Cedric's design and provided feedback

LJB and Cedric reviewed plan sets independently

Final plans sent to MCEO for review & approval



MCEO PROJECTS

◉ Modified Process – Box Beam Replacements (Stage 1)

Bridge 1

- Cedric reviewed plans drafted by LJB

Bridge 2

- Cedric received drafting training

Bridge 3

- Cedric drafted majority of plans



MCEO PROJECTS

- ◉ Coordination and oversight
 - > Cedric attended LJB internal project progress meetings
 - > MCEO conducted monthly coordination meetings at LJB's office





MCEO PROJECTS



◉ Denlinger Road Before & After

CEDRIC'S EXPERIENCE



- ◉ Bridge consulting industry learning environment
 - > Collaboration
 - > Communication
 - > Work flows
 - > Adaptability between public and private industry

CEDRIC'S EXPERIENCE



- ◉ Highlights of the training
 - > What was learned
 - > Plan production
 - > Software applications
 - > Project management skills



CEDRIC'S EXPERIENCE

- ◉ Denlinger Road water main burst
 - > Water main burst 20 feet in the sky
 - > One worker injured





CEDRIC'S EXPERIENCE

- ◉ Denlinger Road box sections
 - > Set on a very cold day
 - > Workers used blow torches to melt the ice off the box sections



CEDRIC'S EXPERIENCE



- ◉ Other construction stories
 - > Gas main was 3 feet off from plan location causing an in-field conflict
 - Vectren emergency relocation required
 - > Despite the challenges, road was opened before Christmas

CEDRIC'S EXPERIENCE



- ◉ You may be wondering....
 - > Why accept the challenge of learning in a different office?
 - > What were the benefits of learning in a different office?
 - > How I am applying what I learned
- ◉ Recommend to other counties

SUMMARY

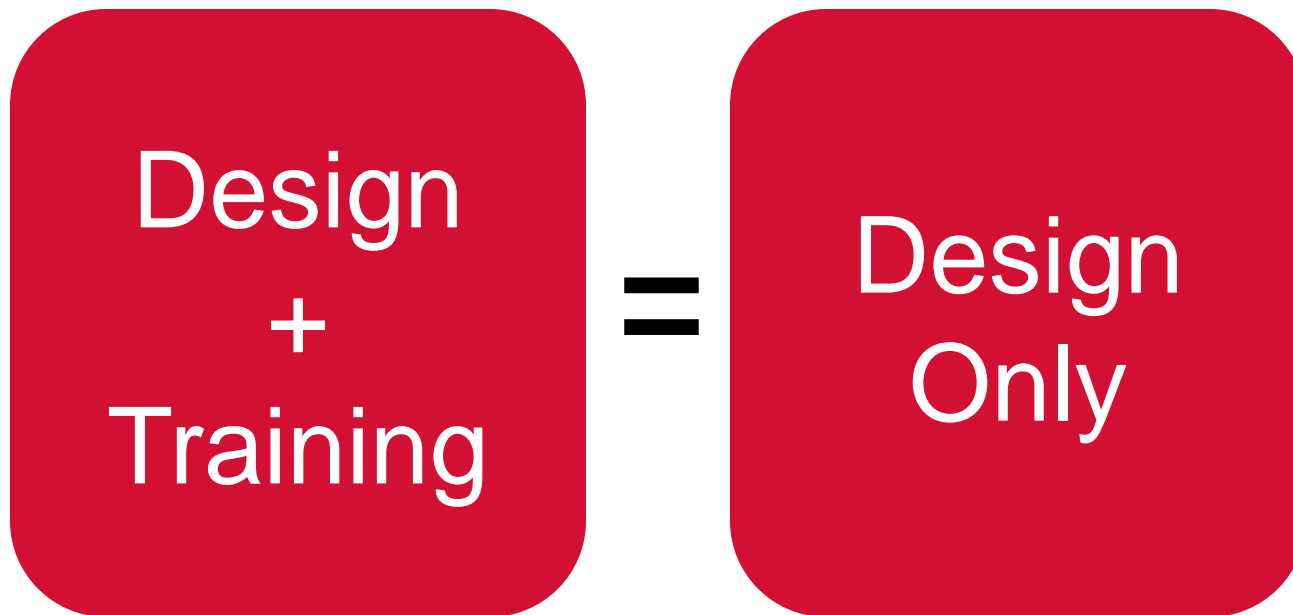


- ◉ Project Design Services Costs
 - > Total GES Contract Amount = \$250,000



SUMMARY

- ◉ County received training benefit for no additional cost





◉ Benefits to the County

- > Completed designs/project plans for 5 programmed projects
- > Trained county employee in design and plan preparation
- > Takes away most of the training burden off of the county
- > Future cost savings by minimizing need for consultant contracts

QUESTIONS?

