Self-perform Concrete and Revit Structure

Jake Koelliker
BIM Engineer

Robert W. Fout
BIM Engineer

Class Summary

Class Summary

Key Learning Objectives

Plan A Workflow

Develop Company Standards

Revit for Lift Drawing Production

Job Specific Examples

We will go through a dynamic workflow that you can tailor to each job and demonstrate how we use Revit software to incorporate specific information and produce concrete lift drawings.

Key Learning Objectives

Class Summary

Key Learning Objectives

Plan A Workflow

Develop Company Standards

Revit for Lift Drawing Production

Job Specific Examples

At the end of this class, you will be able to:

- Plan a workflow for concrete lift drawings
- Develop company standards in self-perform concrete
- Use Revit for concrete lift drawing production
- Identify the required information to be provided in job-specific concrete lift drawings

How to plan a workflow for Concrete Lift Drawings

Concrete Lift Drawing Estimate

Class Summary

Key Learning Objectives

Plan A Workflow

Estimate

Checklist

BXP/Kick-off Meeting

Tracker

Develop Company Standards

Revit for Lift Drawing Production

Job Specific Examples

Galleria & Dave Wood Elementary School		60% Design Development Submittal				Total Hours	Rate	Total
						870		$ -
		Model Hours	Drafting Hours	Number of Drawings	Total Hours (with 20% Admin Time)			
Multi-Purpose 'A' (includes Central Plant)								
	Foundation Plan	10	16	2	31			
	Concrete Tilt-up Wall Panels	40	150	50	228			
	SOG	14	24	3	46			
Administration 'B'								
	Foundation Plan	4	8	1	14			
	Elevator Pit	4	8	1	14			
	Elevator Shaft Tilt-up Wall Panels	8	12	4	24			
	Concrete Tilt-up Wall Panels	12	45	15	68			
	SOG	4	8	1	14			
Classrooms 'C' / 'F'								
	Foundation Plan	6	10	2	19			
	Concrete Tilt-up Wall Panels	14	63	21	92			
	SOG	6	12	2	22			
	2nd Floor Framing Plan 'F'	8	16	2	29			
Classroom 'D' / 'G' & 'E'								
	Foundation Plan 'D'	6	12	2	22			
	Foundation Plan 'E'	4	8	1	14			
	Concrete Tilt-up Wall Panels 'D'	18	81	27	119			
	Concrete Tilt-up Wall Panels 'E'	10	30	10	48			
	SOG 'D'	6	12	2	22			
	SOG 'E'	4	8	1	14			
	2nd Floor Framing Plan 'G'	8	16	2	29			
Overall Total		186	539	149	870			

Estimate does not include the following:

- Project specific items not accounted for in the above breakout, i.e. hardscape, planters, equipment pads, rebar location, etc.
- Any RFIs, ASIs, Field Changes, or changes in level of detail or development.
- Any additional desired project work flows.

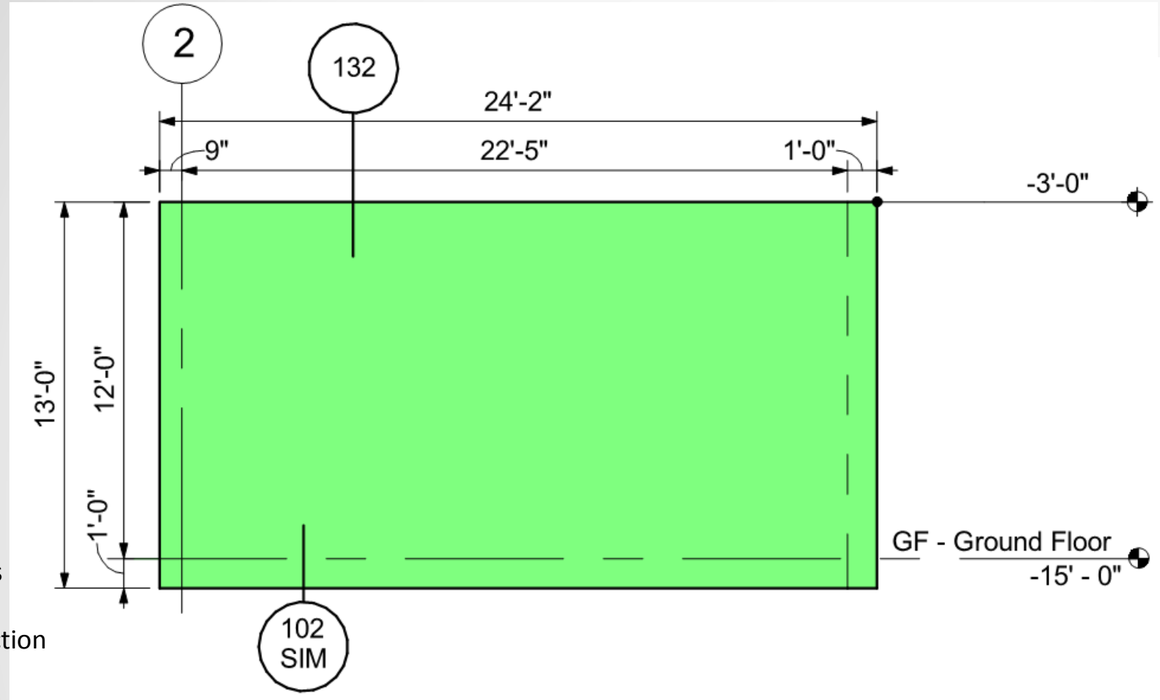
Any additional items including, but not limited to the items listed above that impact time spent on the concrete model or concrete lift drawings will be billed accordingly to the jobsite team, therefore increasing the concrete lift drawing budget.

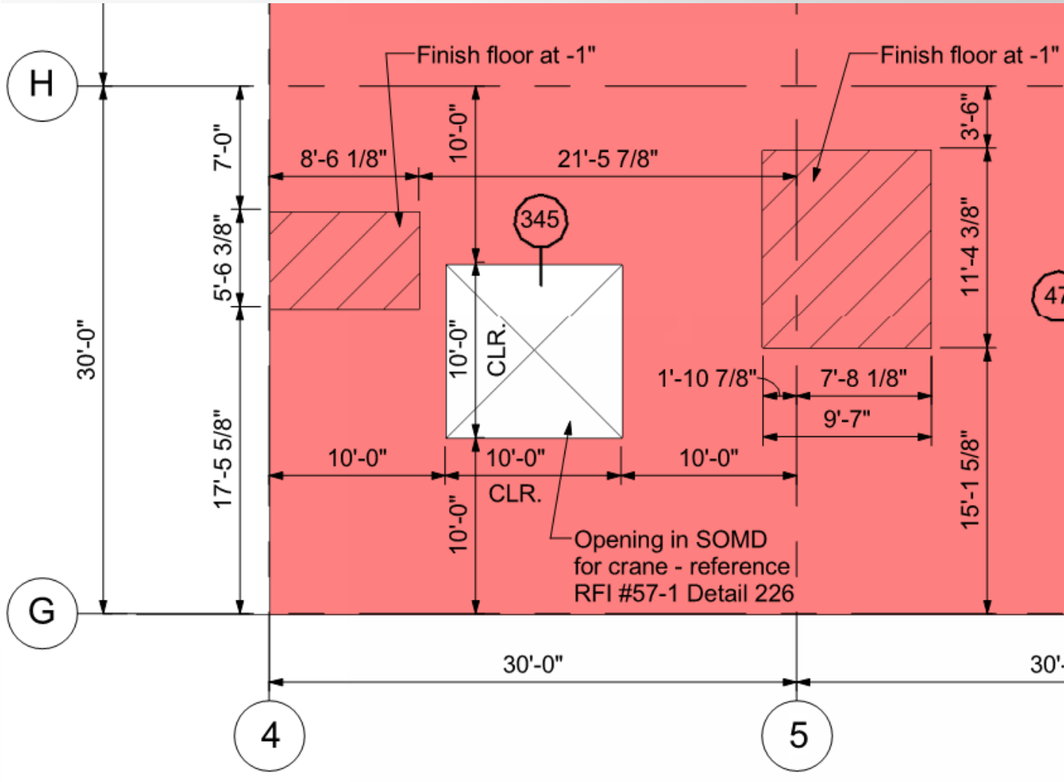
Administrative time is any time used to enhance communication with jobsite team including, but not limited to emails, daily updates, schedule updates, phone conversations, etc. 20 percent is the average time consumed for all projects, so it could increase or decrease depending on the complexity of the project and the level of communication with the jobsite team.

This estimate assumes that BIM Department will receive all coordination models, i.e. Steel, Architectural, MEP, etc. by specified date of Kick-off Meeting and will not have to do any additional modeling or rework due to delays in coordination model procurement.

Concrete Lift Drawing Estimate

- Class Summary
- Key Learning Objectives
- **Plan A Workflow**
  - **Estimate**
  - Checklist
  - BXP/Kick-off Meeting
  - Tracker
- Develop Company Standards
- Revit for Lift Drawing Production
- Job Specific Examples





Concrete Lift Drawing Estimate

Class Summary

Key Learning Objectives

Plan A Workflow

Estimate

Checklist

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Tracker

Develop Company Standards

Revit for Lift Drawing Production

Job Specific Examples

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Concrete Lift Drawing Checklist

Class Summary

Key Learning Objectives

Plan A Workflow

- Estimate
- **Checklist**
- BXP/Kick-off Meeting
- Tracker

Develop Company Standards

Revit for Lift Drawing Production

Job Specific Examples



- Concrete Superintendent
- Concrete Foreman
- Structural Project Engineer
- Project Manager

BXP/Kick-off Meeting

Class Summary

Key Learning Objectives

Plan A Workflow

- Estimate
- Checklist
- **BXP/Kick-off Meeting**
- Tracker

Develop Company Standards

Revit for Lift Drawing Production

Job Specific Examples



Concrete Lift Drawing Tracker

Class Summary

Key Learning Objectives

Plan A Workflow

- Estimate
- Checklist
- BXP/Kick-off Meeting
- Tracker

Develop Company Standards

Revit for Lift Drawing Production

Job Specific Examples

McCARTHY®

Dwg #	Description	Issue for MCC Review Date	Actual IFR Date	MCC Returned Redlines Date	Issued for Construction Date	Actual IFC Date	Status
FPP1	Parking Level Elevator Pit Slab / Walls A1 #4, #5	1/28/2015	1/9/2015	1/12/2015	1/28/2015	1/30/2015	IFC
FPPV1	Parking Level Wall Pours 1 / 3 / 5 Crew A	1/29/2015	1/9/2015	1/12/2015	1/29/2015	1/21/2015	IFC
FPPV2	Parking Level Wall Pours 2 / 4 / 6 / 12 Crew B	1/30/2015	1/9/2015	1/12/2015	1/30/2015	1/21/2015	IFC
FPP2	Parking Level South Footing - Green	2/2/2015	1/19/2015	1/21/2015	2/2/2015	1/21/2015	IFC
FPPV3	Parking Level South Columns	2/3/2015	1/20/2015	1/21/2015	2/3/2015	1/21/2015	IFC
FPPV4	Parking Level Wall Pours 7 / 9 Crew A	2/6/2015	1/22/2015	2/2/2015	2/6/2015	2/3/2015	IFC
FPPV5	Parking Level Wall Pours 8 / 10 / 14 Crew B	2/9/2015	1/23/2015	3/4/2015	2/9/2015	3/5/2015	IFC
FPPV6 / FPPV6.1	Parking Level Wall Pours 11 / 13 / 15 Crew A	2/13/2015	1/30/2015	2/4/2015	2/13/2015	2/9/2015	IFC

How to develop company standards in self-perform concrete

Class Summary

Key Learning Objectives

Plan A Workflow

Develop Company Standards

- **BIM 360 Glue**
- Required Signatures
- Review Time
- Team Buy In

Revit for Lift Drawing Production

Job Specific Examples



AUTODESK

BIM 360 GLUE

Required Signatures

Class Summary

Key Learning Objectives

Plan A Workflow

Develop Company Standards

- BIM 360 Glue
- **Required Signatures**
- Review Time
- Team Buy In

Revit for Lift Drawing Production

Job Specific Examples

NOT FOR CONSTRUCTION

Review Team	Initials	Date
Concrete Sup.		
Concrete GF		
Structural PE		
PM		

McCARTHY

6225 North 24th Street, Suite 200
Phoenix, AZ 85016
480-449-4700 480-449-4747 Fax
www.mccarthy.com



Review Time

Class Summary

Key Learning Objectives

Plan A Workflow

Develop Company Standards

- BIM 360 Glue
- Required Signatures
- **Review Time**
- Team Buy In

Revit for Lift Drawing Production

Job Specific Examples



Get the team bought in

- Class Summary
- Key Learning Objectives
- Plan A Workflow
- **Develop Company Standards**
  - BIM 360 Glue
  - Required Signatures
  - Review Time
  - **Team Buy In**
- Revit for Lift Drawing Production
- Job Specific Examples



How to use Revit for Concrete Lift Drawing production

Revit Template

Class Summary

Key Learning Objectives

Plan A Workflow

Develop Company Standards

Revit for Lift Drawing Production

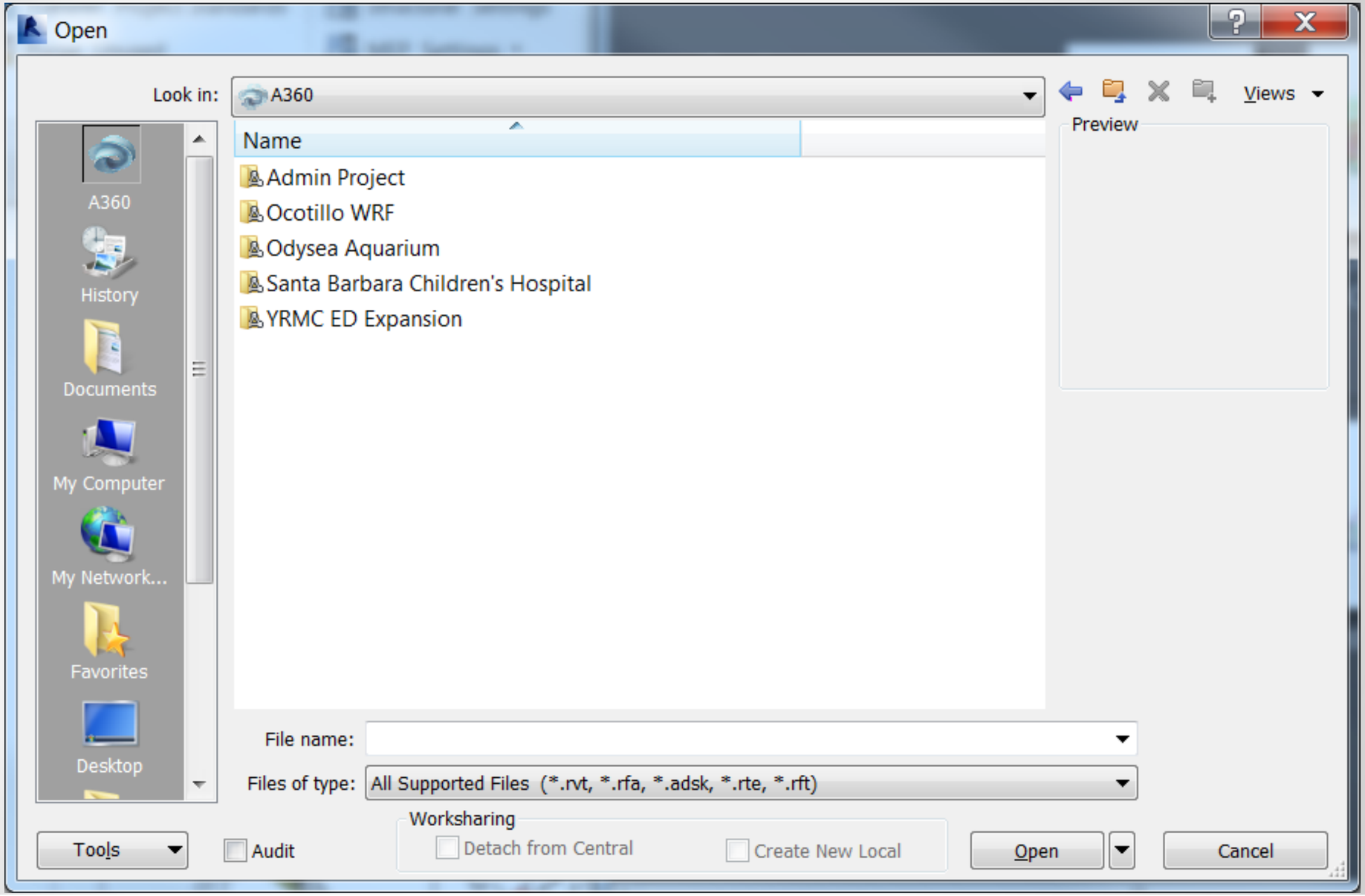
- **Revit Template**
- C4R
- Linking Files
- Revit Demonstration

Job Specific Examples



Collaboration for Revit (C4R)

- Class Summary
- Key Learning Objectives
- Plan A Workflow
- Develop Company Standards
- **Revit for Lift Drawing Production**
  - Revit Template
  - C4R
  - Linking Files
  - Revit Demonstration
- Job Specific Examples



Linking files to Revit Concrete Model

Class Summary

Key Learning Objectives

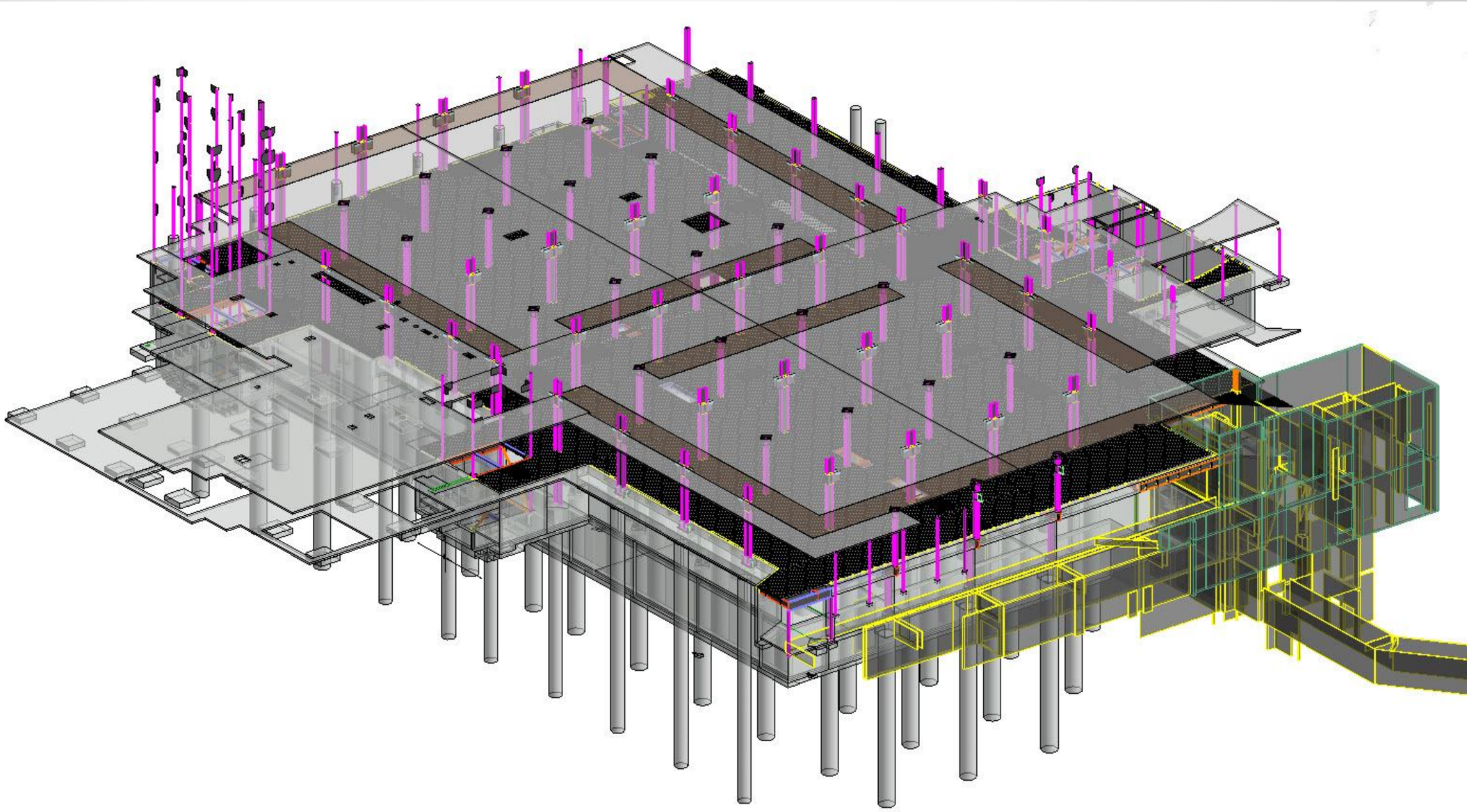
Plan A Workflow

Develop Company Standards

Revit for Lift Drawing Production

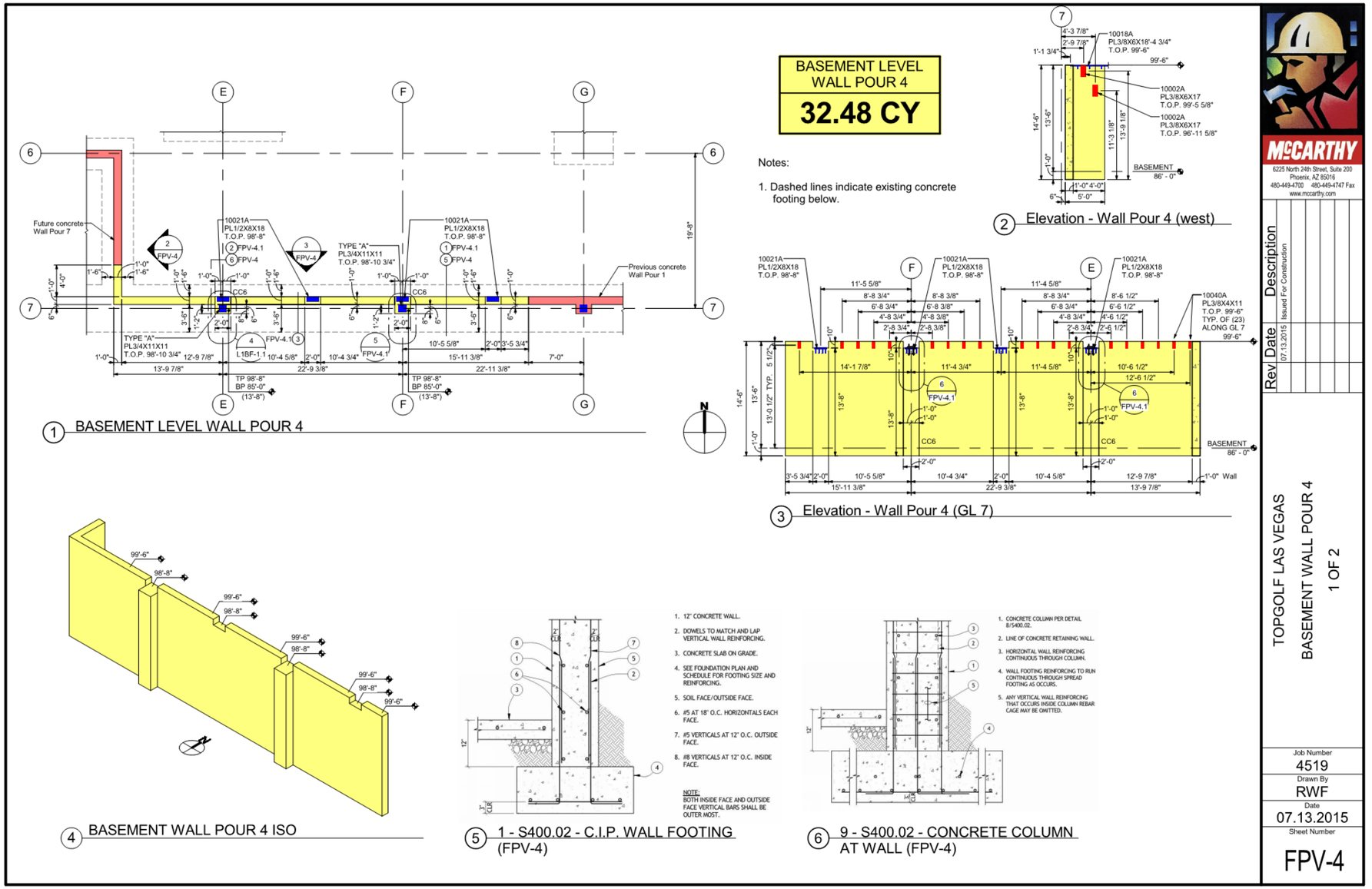
- Revit Template
- C4R
- **Linking Files**
- Revit Demonstration

Job Specific Examples



Revit Demonstration

- Class Summary
- Key Learning Objectives
- Plan A Workflow
- Develop Company Standards
- **Revit for Lift Drawing Production**
  - Revit Template
  - C4R
  - Linking Files
  - **Revit Demonstration**
- Job Specific Examples



How to identify the required information to be provided in job specific Concrete Lift Drawings

Banner Estrella Medical Center

Class Summary

Key Learning Objectives

Plan A Workflow

Develop Company Standards

Revit for Lift Drawing Production

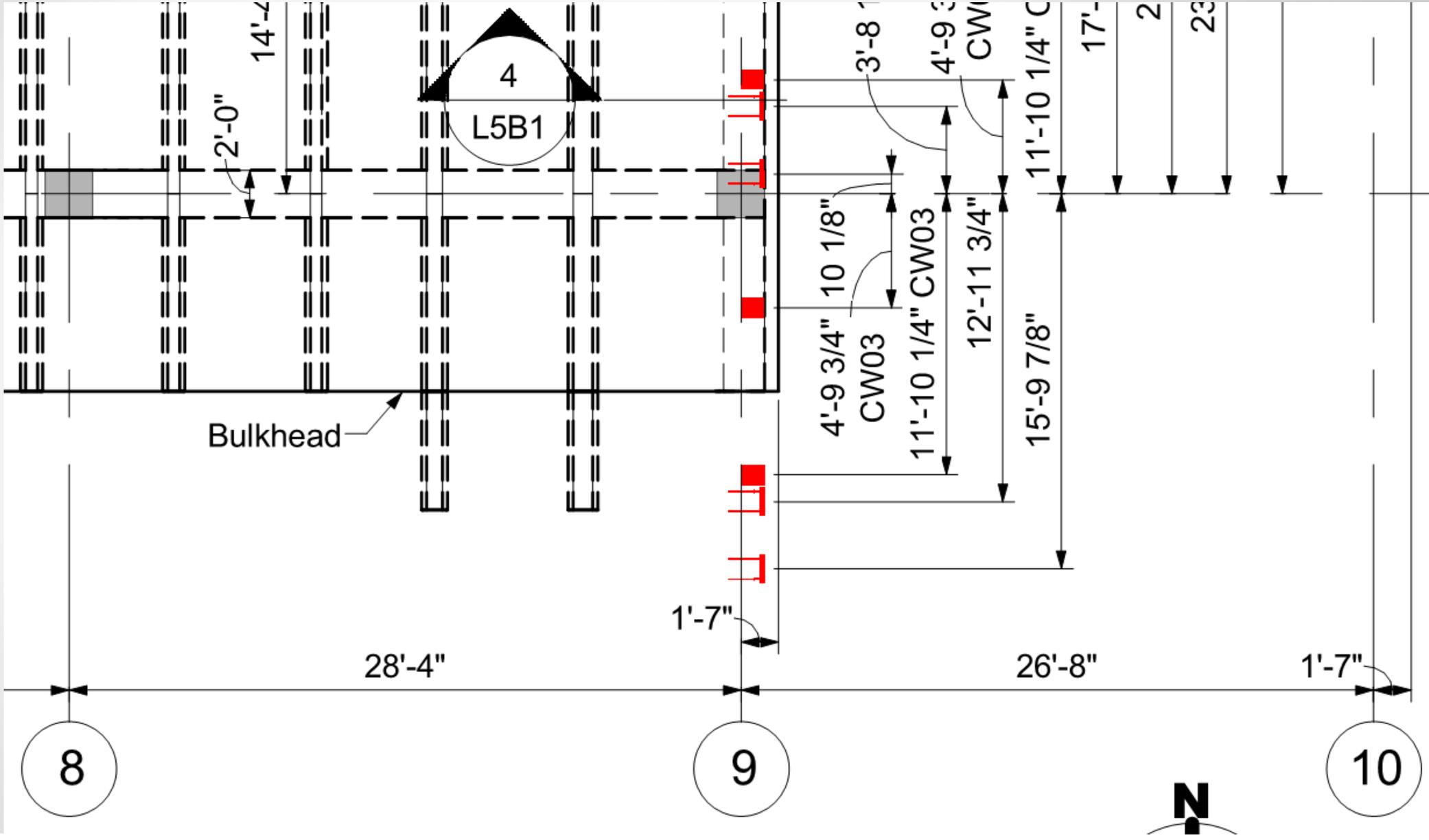
Job Specific Examples

- **Healthcare**
- Public
- Entertainment
- Parking



Banner Estrella Medical Center

- Class Summary
- Key Learning Objectives
- Plan A Workflow
- Develop Company Standards
- Revit for Lift Drawing Production
- **Job Specific Examples**
  - **Healthcare**
  - Public
  - Entertainment
  - Parking



Banner Estrella Medical Center

Class Summary

Key Learning Objectives

Plan A Workflow

Develop Company Standards

Revit for Lift Drawing Production

Job Specific Examples

- **Healthcare**
- Public
- Entertainment
- Parking





Presbyterian Rust Medical Center

Class Summary

Key Learning Objectives

Plan A Workflow

Develop Company Standards

Revit for Lift Drawing Production

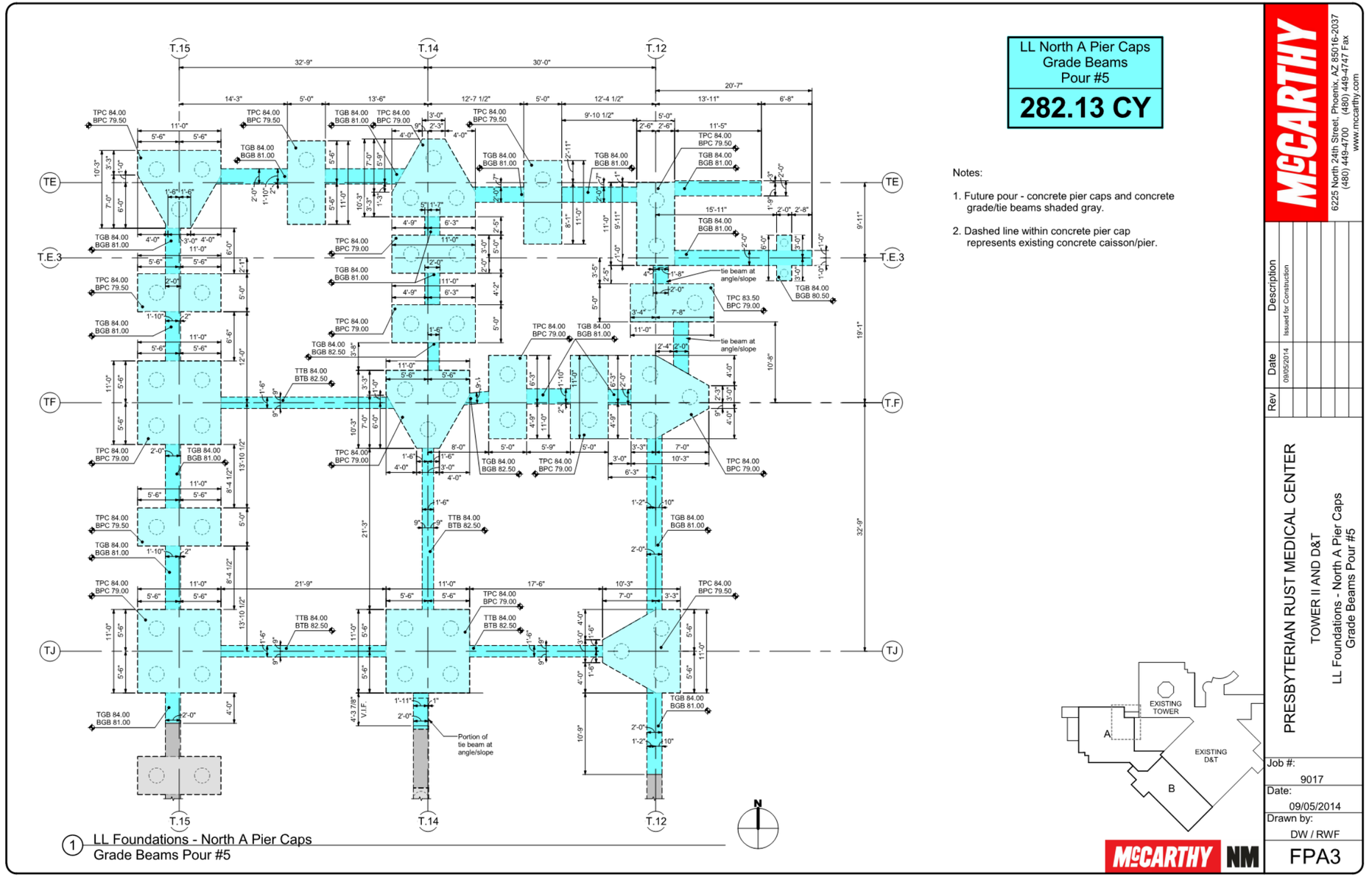
Job Specific Examples

- **Healthcare**
- Public
- Entertainment
- Parking



Presbyterian Rust Medical Center

- Class Summary
- Key Learning Objectives
- Plan A Workflow
- Develop Company Standards
- Revit for Lift Drawing Production
- **Job Specific Examples**
  - Healthcare
  - Public
  - Entertainment
  - Parking



Presbyterian Rust Medical Center

Class Summary

Key Learning Objectives

Plan A Workflow

Develop Company Standards

Revit for Lift Drawing Production

Job Specific Examples

- **Healthcare**
- Public
- Entertainment
- Parking





Arizona Fallen Firefighter Memorial

Class Summary

Key Learning Objectives

Plan A Workflow

Develop Company Standards

Revit for Lift Drawing Production

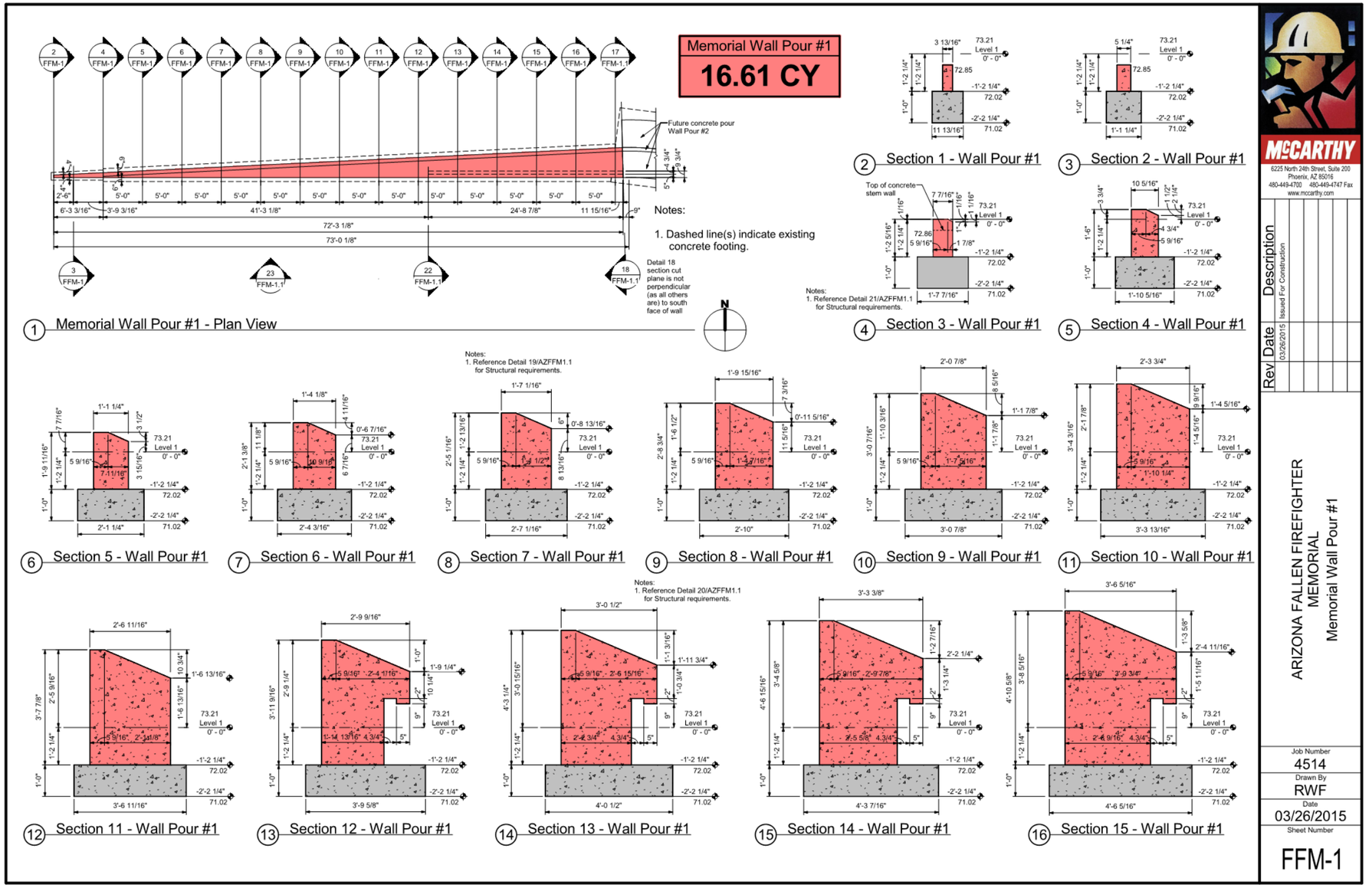
Job Specific Examples

- Healthcare
- **Public**
- Entertainment
- Parking



Arizona Fallen Firefighter Memorial

- Class Summary
- Key Learning Objectives
- Plan A Workflow
- Develop Company Standards
- Revit for Lift Drawing Production
- **Job Specific Examples**
  - Healthcare
  - **Public**
  - Entertainment
  - Parking



Arizona Fallen Firefighter Memorial

Class Summary

Key Learning Objectives

Plan A Workflow

Develop Company Standards

Revit for Lift Drawing Production

Job Specific Examples

- Healthcare
- **Public**
- Entertainment
- Parking





Odysea Aquarium

Class Summary

Key Learning Objectives

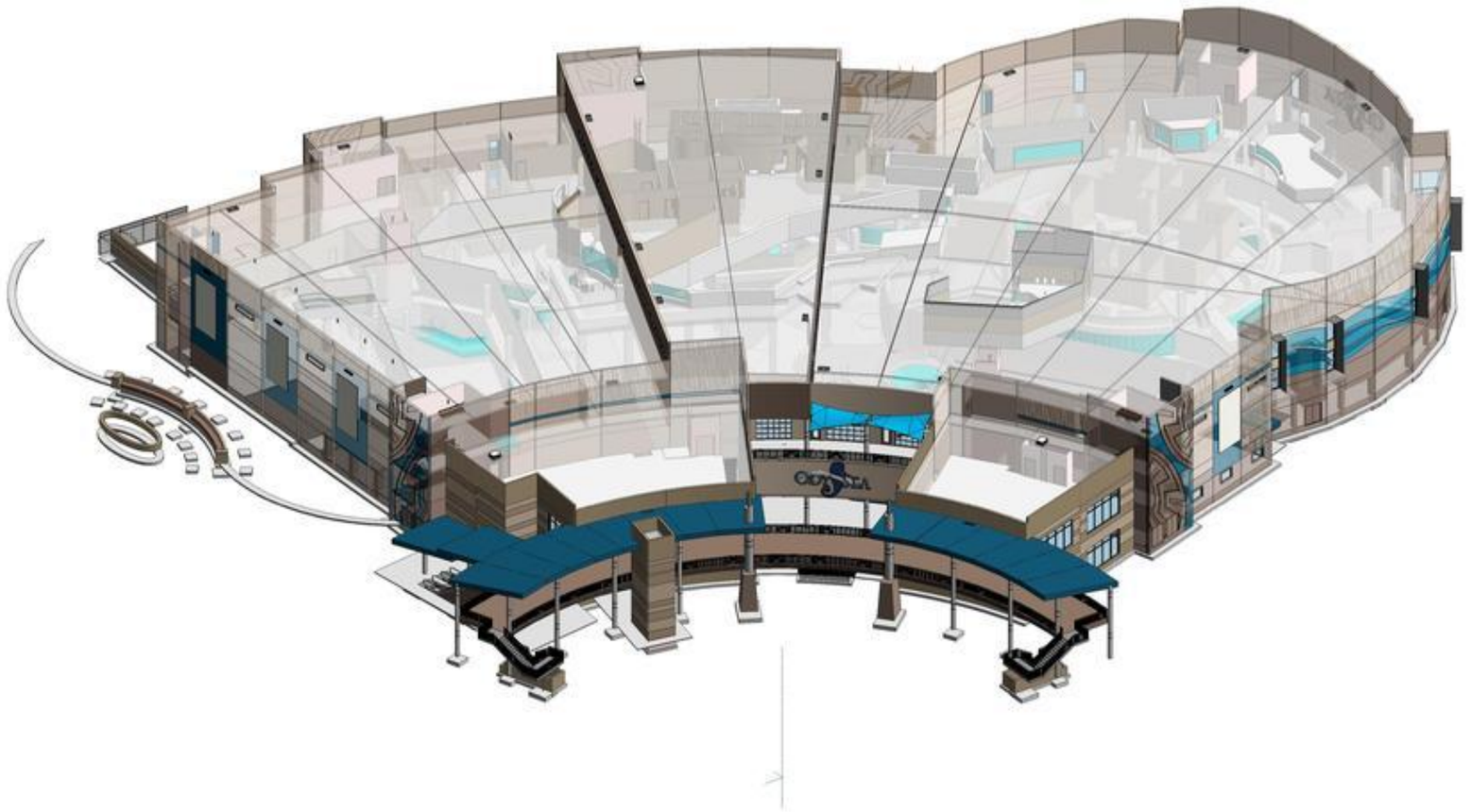
Plan A Workflow

Develop Company Standards

Revit for Lift Drawing Production

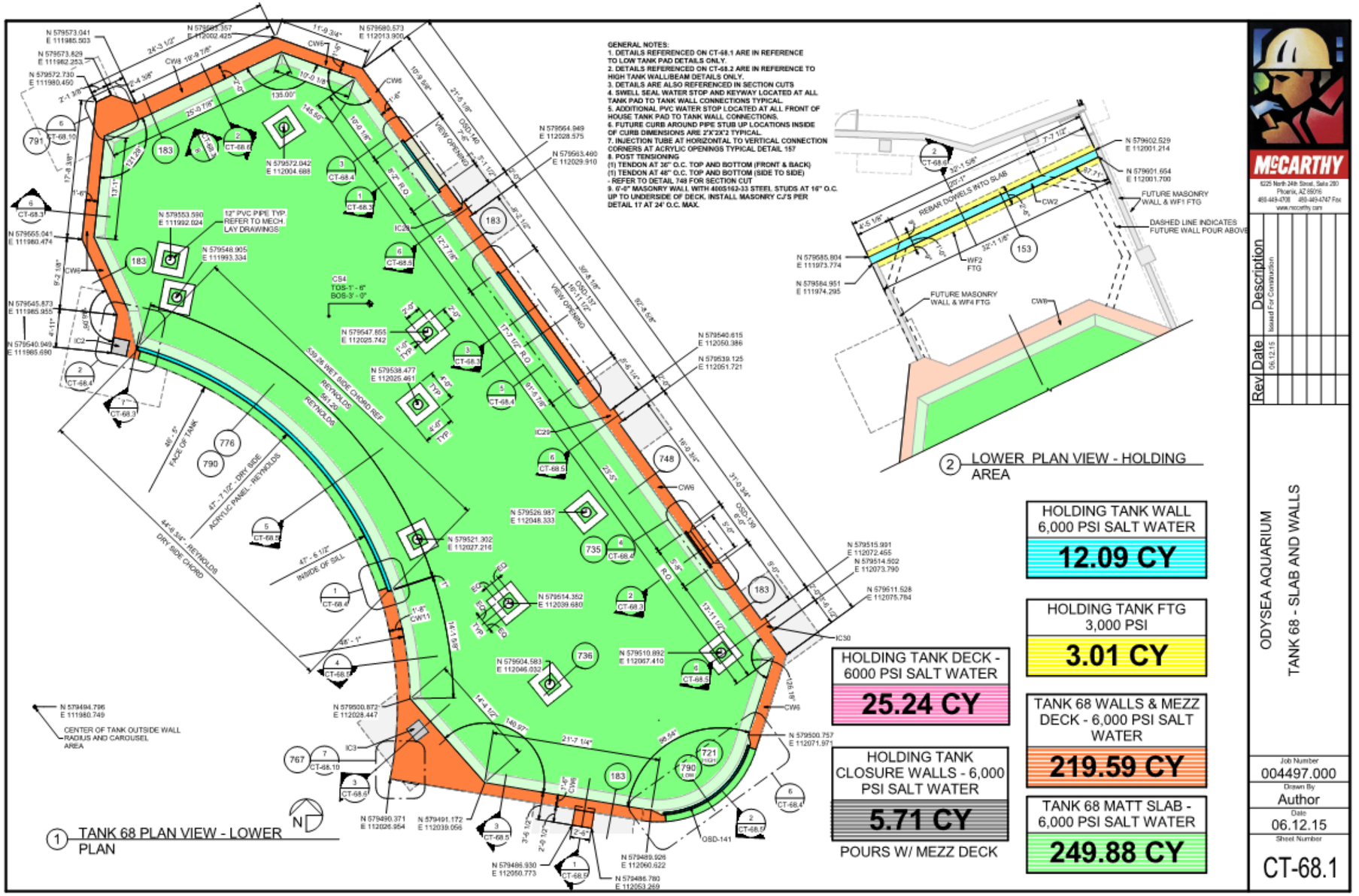
Job Specific Examples

- Healthcare
- Public
- **Entertainment**
- Parking



Odysea Aquarium

- Class Summary
- Key Learning Objectives
- Plan A Workflow
- Develop Company Standards
- Revit for Lift Drawing Production
- **Job Specific Examples**
  - Healthcare
  - Public
  - **Entertainment**
  - Parking



Odysea Aquarium

Class Summary

Key Learning Objectives

Plan A Workflow

Develop Company Standards

Revit for Lift Drawing Production

Job Specific Examples

- Healthcare
- Public
- **Entertainment**
- Parking



Town of Gilbert Vaughn Avenue Parking Structure

Class Summary

Key Learning Objectives

Plan A Workflow

Develop Company Standards

Revit for Lift Drawing Production

Job Specific Examples

- Healthcare
- Public
- Entertainment
- **Parking**



Town of Gilbert Vaughn Avenue Parking Structure

Class Summary

Key Learning Objectives

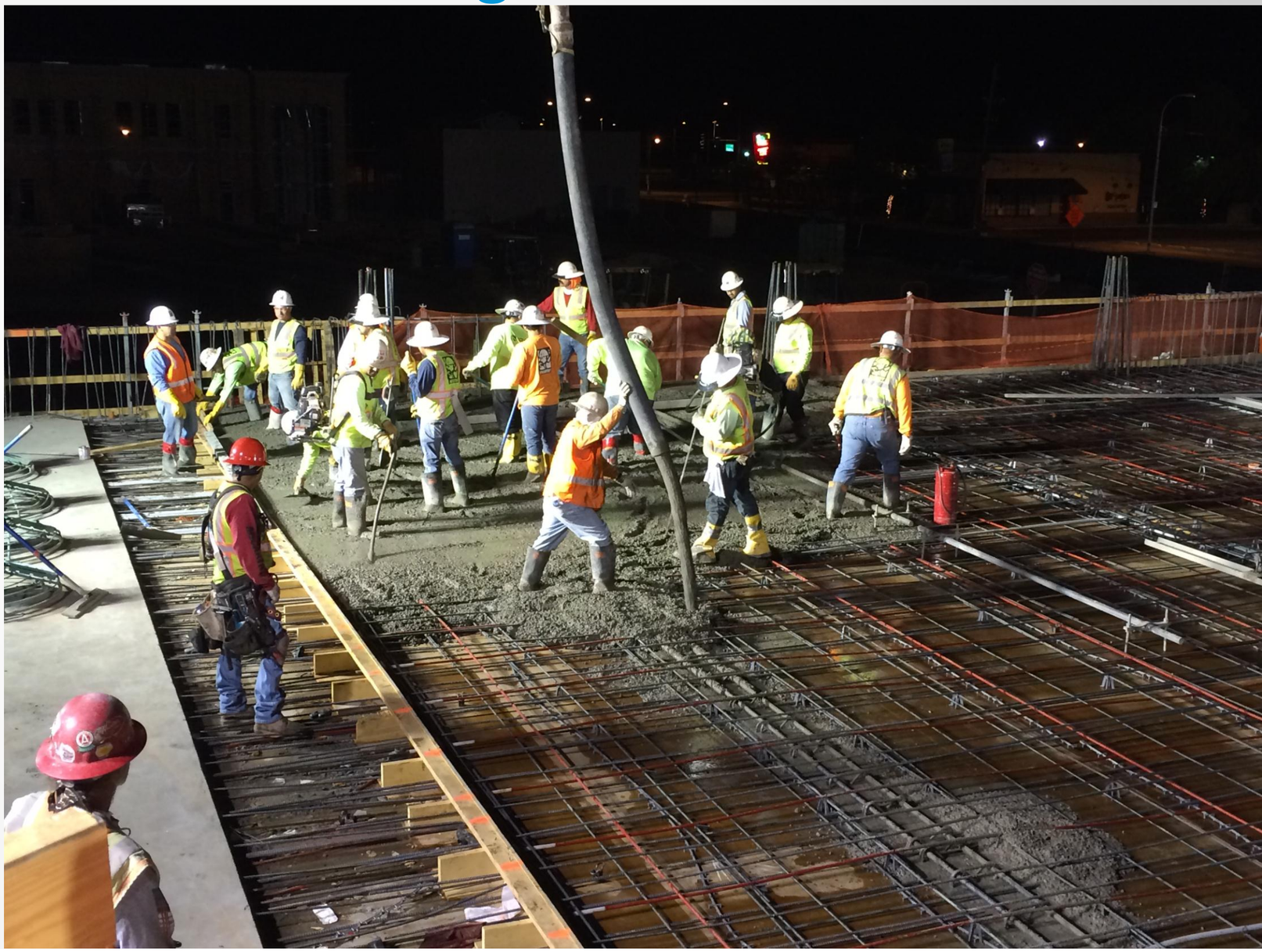
Plan A Workflow

Develop Company Standards

Revit for Lift Drawing Production

Job Specific Examples

- Healthcare
- Public
- Entertainment
- **Parking**



Town of Gilbert Vaughn Avenue Parking Structure

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Key Learning Objectives

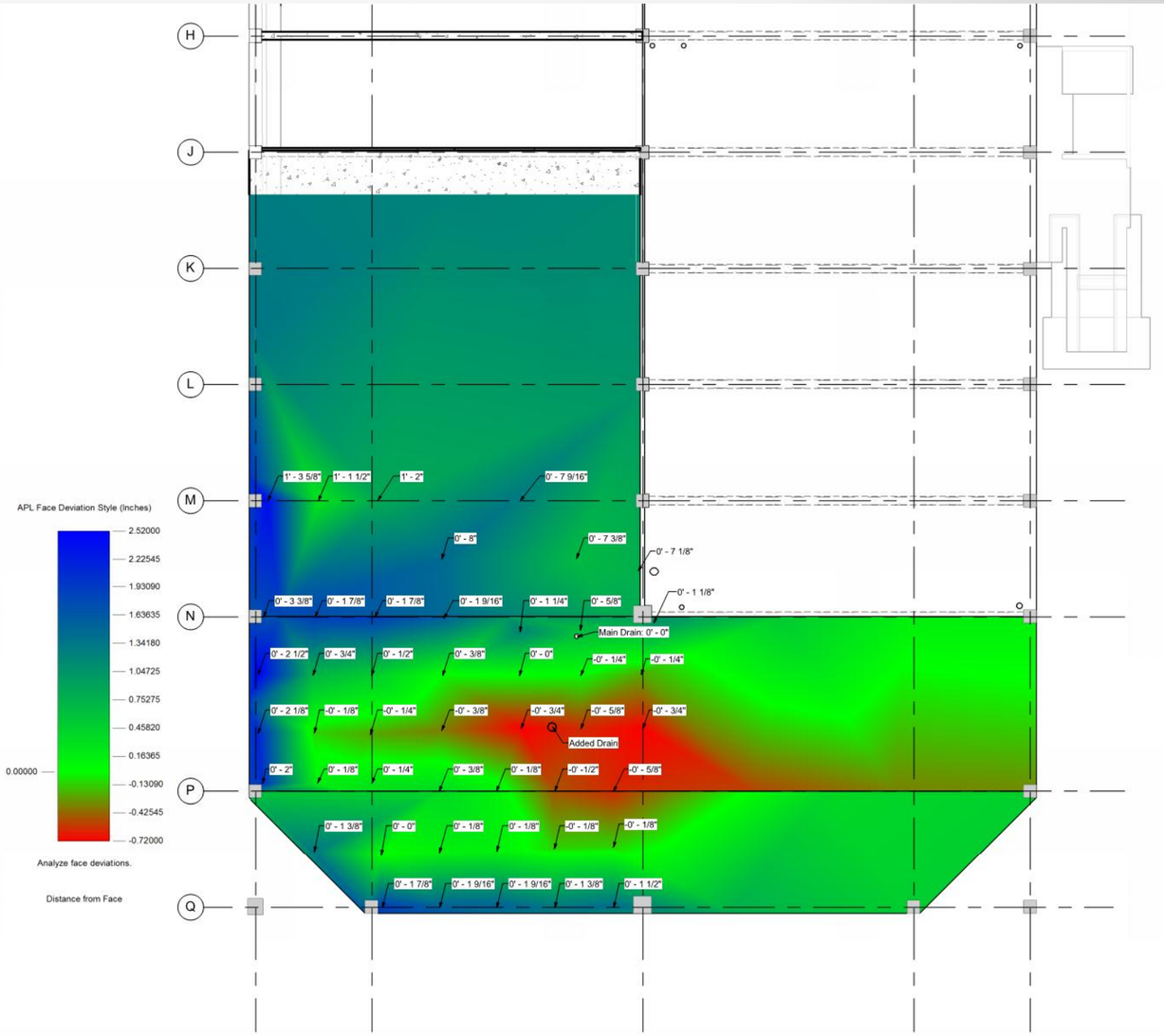
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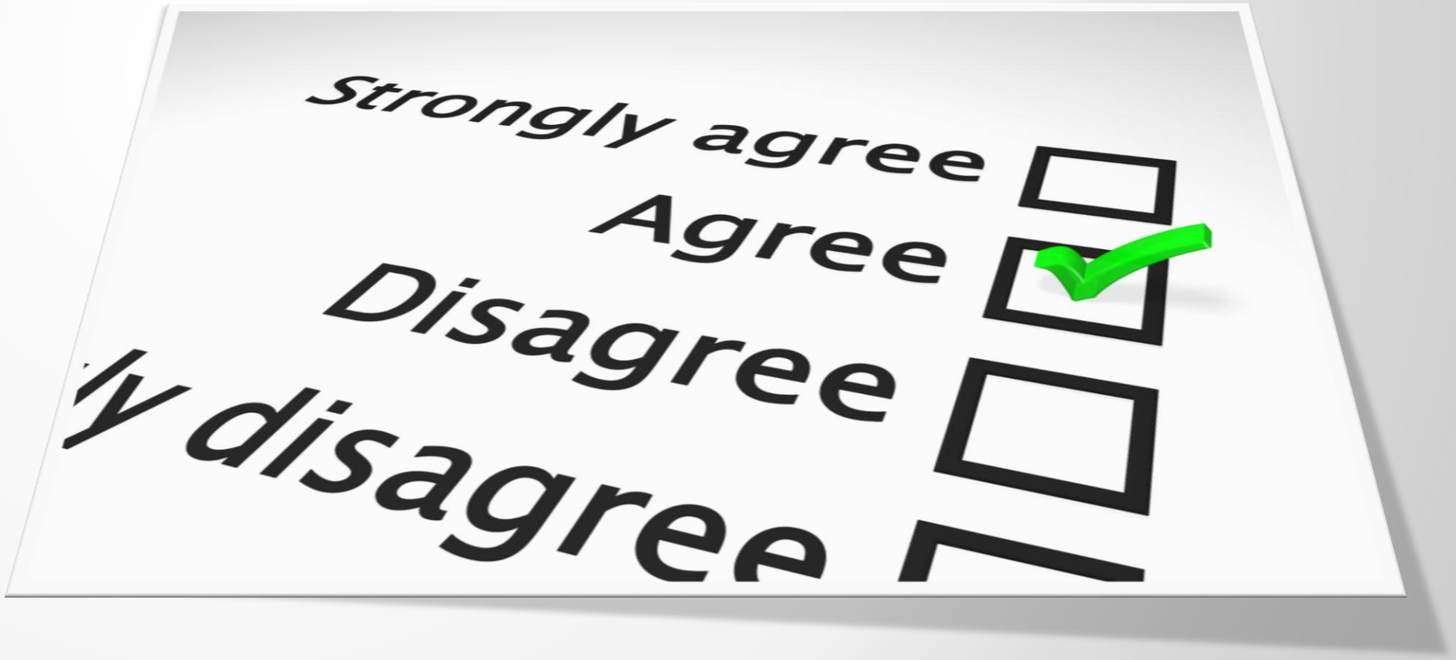
Job Specific Examples

- Healthcare
- Public
- Entertainment
- **Parking**



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