BIM and the Drywall Cover-up = A Case for Division 9

Paul Godwin – BIM Manager @ Marek
Case Study of Current Project Using Typical Process
Bruce,

MAREK BROTHERS SYSTEMS, INC proposes to furnish labor and material necessary to complete Drywall related work on the above referenced project. Our proposal is based on drawings prepared by Gensler Architects dated 2/17/2014 clarifications 1 & 2, and is subject to the following notes:

IGMP Bid including CCIP deduct 11/20/2013 $3,875,228.00
Parapet framing and sheathing at roof using 2-1/2'' 16 ga studs 2/A09.56 $26,641.00
Swing stage for work at 2/A09.56 $25,369.00

The following are adds for changes from IGMP drawings to GMP drawings:

1. Ceiling joist and plywood at rooms 061,062,063 & 064 $9,300.00
2. Parapet columns in typical K-01 units changed furring channel to 2-1/2'' stud  $7,680.00
3. Wall change 24J to 24J at MEP riser in typical units adjacent to corridor  $23,212.00
4. Gypsumboard ceiling under Grand stair 12/A10.20  $6,584.00
5. Infill atop of precast 4/A09.56  $6,907.00
6. Parapet behind precast 11/A09.53  $3,012.00
7. Corridor wall change from A3A to 2B3D at typical rooms 443 and 430  $10,648.00
8. Wall change at column B6 at precast from B3B to 24JD unit K-07 typical  $3,200.00

GMP Base Bid $3,997,781.00

If Thermafiber insulation is required in lieu of R-11 which is in Base Bid add $67,041.00
If slotted top track is required in lieu of standard 2'' deep leg track add $55,437.00

Add for inwall backing $98,853.00

Inclusions:
1) All gypsum board construction complete with a level 4 tape and float.
2) Labor to set door frames in drywall partitions.
3) Cleanup to central location for haul-off by others.
4) Scaffolding for our work.
5) UL rated head of wall assembly at rated walls
6) Material escalation thru 1st quarter 2015
7) Sound batts in drywall partitions using R-11 unfaced batts
8) 1/2'' Cement board at showers
A/E please verify it is acceptable to extend chase wall to encompass plumbing as shown with green dashed line.
A/E please verify it is acceptable to extend chase wall to encompass plumbing as shown with green dashed line.

Photo #3 at Rooms 218 & 220

Photo #4 at Rooms 222 & 224

A/E please verify it is acceptable to extend chase wall to encompass plumbing as shown with green dashed line.
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Request

On Level 7 and 8 (P2.03 attached) drawing indicate Hot Water Return Lines for low zone and high zones routed length of corridors, Architectural (A04-01) and ID drawing (ID5.26) indicate ceiling coffer located width of corridor with no clearance to accommodate these lines, can ceiling be lowered, coffers narrowed or alternate routes on level 7 and 8 be provided?

Suggestion

N/A

Answer

☐ Accept Suggestion

TCI RESPONSE:

ROUTE HOT WATER RETURN LINES ON LEVEL 7 & 8 WITH OFFSETS TO AVOID COFFER AS SHOWN IN SKETCHES PROVIDED BY LETSOS FOR FOLLOWUP ON RFI #60.

HOT WATER RETURN PIPING TO BE LOCATED ON THE OTHER SIDE OF SPRINKLER PIPING AT THE CORRIDOR. COORDINATE WITH SPRINKLER CONTRACTOR FOR THE LOCATION OF HOT WATER RETURN PIPING.

PROVIDE ADEQUATE THERMAL EXPANSION LOOPS TO ACCOMODATE THE THERMAL EXPANSION OF THE CPVC PIPING AT ALL FITTINGS AND WALL PENETRATIONS.

Answered By: T YAMAGUCHI

Date: 01/08/2015

Signed: _______________________________
Request

On Architectural & Plumbing drawings attached, plumbing piping shown and required for connection to plumbing fixture in Presidential Suite (level 12) will be exposed in guest room below on level 11. Can it be verified if area noted on attached drawings can have exposed plumbing piping as shown on contract drawings on Level 11?

Suggestion
N/A

Answer

TCI RESPONSE:

1. LAB PIPING: ROUTE 2" W ABOVE FLOOR TO WALL BELOW AND DROP INTO WALL.
2. TUB PIPING: CEILING TO BE DROPPED AT TUB DRAIN/SUPPLY WATER PIPING. REFER TO REVISED ARCHITECTURAL DWGS FOR CEILING LOCATION AND REVISED TUB CONFIGURATION. COORDINATE EXACT SLAB PENETRATION LOCATIONS WITH FIXTURE AND ACCESSORIES IF USED.

REFER TO SKETCHES SK-P2.11-RFI 305 AND SK-P4.09-RFI 305.

Answered By: T YAMAGUCHI

Date: 01/28/2015

Signed: ________________________________
Request
The 6 inch round fire/smoke damper from the outside air riser for the guest room is not able to be used as a grille access fire/smoke damper. The room side of the damper protrudes from the wall. (See attached cut sheet). To resolve the issue at the guest rooms only, the fire/smoke damper can be raised to be above the ceiling and a 6” flex duct can be connected to the outlet of the fire/smoke damper and connected to the lay in grille in the drywall ceiling. (size of neck on the grille is to be determined by the engineer). Is it acceptable to revise the outside air grilles to 24x24 lay in grilles in the drywall ceiling in lieu of the sidewall grilles in the guest rooms?

Suggestion
To resolve the issue at the guest rooms only, the fire/smoke damper can be raised to be above the ceiling and a 6” flex duct can be connected to the outlet of the fire/smoke damper and connected to the lay in grille in the drywall ceiling. (size of neck on the grille is to be determined by the engineer).

Answer
☐ Accept Suggestion

NOT ACCEPTABLE TO PROVIDE ACCESS PANELS IN THE GUESTROOMS. AFTER FURTHER DISCUSSION AND COORDINATION WITH JED, STRAUS, AND TCI THE RESOLUTION IS TO PROVIDE AN OFSD AT THE GUESTROOMS AND MAINTAIN THE CURRENT FSD, WITH A SHORTHER SLEEVE ON THE SHAFT SIDE, AT THE CORRIDORS. THIS WILL ELIMINATE THE NEED FOR AN ACCESS PANEL IN THE GUESTROOMS AND MOVE THE CORRIDOR SUPPLY TO THE COFFER FASCIA. REFER TO ADDITIONAL COMMENTS ON ATTACHED SKETCHES BELOW. IN ADDITION, THE PROPOSED SOLUTIONS FOR OA 1 AND OA 18 ARE ACCEPTABLE SO THAT ACCESS IS NOT VISIBLE. GEN AND TCI ARE CURRENTLY REVIEWING OPTIONS FOR OA 9A.

Answered By: GEN/TCI

Signed: BE/JP

Date: 3.11.15
Request

A/E confirm this wall will be shifted 2" into the room space in every room; this would give 26" in mechanical closets to make room for the fan coil units. Advise on how this effects the door/frame, fire sprinkler, and overhead light in guest room foyers.

Suggestion

N/A

Answer

☐ Accept Suggestion

Confirmed, an additional 2" has been added to the FCU closet directly in front of the unit per mock up. In addition, this will cause the OA shaft walls to align with this shift. Refer to attached sketches for typical guest room dimensions. Other rooms types will be included in the upcoming bulletin.
Request
The stub column on level 1 is currently not concealed within the walls. See attachments and BIM model view for reference.

Suggestion
Please change partition layout to conceal.

Answer  □  Accept Suggestion

furr out the wall as shown on attached.

hug drywall as tight to column as possible

Answered By:  dona bianchi

Date:  12-22-14
Why should division 9 be included in BIM Process?

What do we have to offer?

What is our value?
Interior Wall Framing
Ceiling Framing
Exterior Framing
MEP Penetrations / Shops
Details

10'-6" A.F.F. (U.N.O.)

3 5/8", 18 GA.
CONT. STUD

16 GA. TRACK

20 GA. TRACK

3 5/8", 20 GA.
CONT. STUD

SCALE: 3/4" = 1'-0"

JC PENNEY DETAIL #06212

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UT Dell Medical School MOB Interior Framing
Process
TCH Maternity, Houston, TX.

Architect          FKP Architects
General Contractor WS Bellows Construction

Scope
Developed Coordination models for Sound Isolated Ceiling Grid.
Isolators were modeled and laid out in a way to meet all requirements and restrictions.
Generated shop drawings for isolator layout.
TCH Maternity
Texas A&M University MSC Renovation, College Station, TX.

Architect: Perkins and Will Architects
General Contractor: Vaughn Construction

Scope: Developed Coordination models for Ceiling Grid. Ceiling grid profile was matched and used for coordination. Project Schedule attached with the model for coordination purposes.
JC Penney Store No. 0179, Fort Worth - Dallas, TX.

Architect        GSR Andrade Architects
General Contractor Whiting-Turner Construction

Scope
Interior and Exterior Drywall Partitions, Gypsum Ceilings and Acoustical Ceilings.
Kickers
Wood Blocking
Exterior walls and details as per engineered shop drawings.
University of Texas – Norman Hackerman Building, Austin, TX.

Architect               CO Architects
General Contractor     The Beck Group

Scope
Proposed to use Joist Ceilings in lieu of taking Walls to 28’ AFF
Developed Coordination models for Joist Ceilings and Ceiling Grid.
Sound Isolator Ceilings in required areas modeled and coordinated.
Coordinated existing mechanical and above ceiling equipment with 4”, 6” and 10” Joist Framing.
DFW Airport Remodel – People Habitrail

Scope
Create a safe passageway for people to move throughout the airport during the multi-year remodel of DFW Airport. The passageway had to be a conditioned space that met all code requirements of a typical corridor (lighting, electrical, sprinkled, etc...).

The main feature of this tunnel was that it had to be portable and reusable as the renovations moved to different areas of the airport.
Section 2

4X4 Tube Steel Framing

4X4X7’-4-5/8” Tube Steel

6X12X4 Angle with 10” Slot
4" 20 Ga. Metal Framing

4" 20 Ga. Stud

4" 20 Ga. Stud

4" 20 Ga. Track

Ceiling Fixtures

Fire Safety Sprinkler

2X4 – Japanese AC Unit

#BIMForumED
5/8” Gypsum Board

1/8” Fiber Reinforced Particle Board

5/8” Gypsum Board

1/8” FRP Board

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Cook Children’s Medical Center – Fort Worth, Texas

Architect: FKP Architects
General Contractor: Linbeck

Scope: Interior and Exterior Drywall Partitions, Gypsum Ceilings, Acoustical Ceilings, Specialty Ceilings

Marek’s main responsibility was to provide the Revit model for the ceilings for this project. All ACT grid was included and all changes to MEP items in grid run through Marek.
Cook Children’s Medical Center
Acoustical Revit Model
Grid w/ 12” No-Fly Zone
Austin Central Library – Austin, TX

<table>
<thead>
<tr>
<th>Architect</th>
<th>LAKE FLATO / Shepley Bulfinch</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Contractor</td>
<td>Hensel Phelps</td>
</tr>
</tbody>
</table>

Scope
- Interior and Exterior Drywall Partitions, Gypsum Ceilings, Acoustical Ceilings, Specialty Ceilings
- Model Interior and Exterior Critical Framing
- Include Kickers for Coordination
- Model ACT grid
- Model gyp ceilings as a spatial object
Sanitary line does not fit into chase wall. It is going to clash with all 6" studs?
Move Sanitary line to be at center of wall.
HVAC in Collision with jamb stud, door header and door frame.
Conduits are in collision with: Jamb Studs, Vertical Drops and Wall.

Conduit has to move out of the wall.

Conduits are below ceiling height.
Sprinkler heads are in collision with Main tee

ACT-3 Layout: 24"x24"
Move the ladder a couple of inches east to avoid collision with vertical drop at light core fixture.

Ref: A942/05

Move duct a couple of inches north out of end stud.
Improving the process:
• Include Division 9
• Bring Us in Sooner
• Clearly Define Expectations
• What You Need - vs – What you want
• Stick with the Plan
• Treat us as an equal partner