



California State Board of Equalization
450 N Street, Sacramento, California

Mold Remediation – 7th Floor
June 23 – July 16, 2010
Closure Report
Project No. 2372.02-572



Prepared for:
State of California Department of General Services
707 Third Street, 3-305
Sacramento, California 95605

Prepared by:
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Report Date:
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1.0 Introduction

On July 2, 2008, LaCroix Davis LLC (LCD) was contracted by the State of California, Department of General Services (DGS), Real Estate Services, Project Management Branch (RES, PMB) to provide building and environmental forensic services at the Board of Equalization (BOE) building located at 450 N Street, Sacramento, California. The BOE building was substantially completed in December 1992 and has experienced a variety of water-related events throughout its history.

On October 29, 2009 LCD's original contract was amended to include the following activities to support the Mold Remediation Project for the BOE Building:

- Designate a project team;
- Conduct BOE staff interviews;
- Review photographs taken during the McGinnis-Chen Associates (MCA) Spandrel Panel Survey in 2005;
- Perform a supplemental water damage assessment (WDA);
- Provide onsite monitoring for the project;
- Compile all relevant project documents in a closure report for each floor.

Under the project management of Mr. Chris Corpuz, Senior Manager, the LCD field project team was staffed by personnel from various LCD offices:

- Stephen Davis, Principal;
- Benjamin Heckman, Senior Manager;
- Theodore Ice, Senior Associate.

2.0 BOE Staff Interviews

Prior to Floor 7 being released to the DGS Mold Remediation Project Team for remediation, BOE staff currently and previously working on Floors 7 and 8 were interviewed regarding historic events on the floors. Many of the interviewed BOE staff members have worked on the same floor since the building was placed in operation in 1993. BOE staff participation in the interviews was strictly voluntary. The interviews were performed by LCD staff on May 18, 2010. Table 1 in the Table Section summarizes the interview findings. Water and mold-related findings are depicted in Figure 1 in the Figure Section.

3.0 Photograph Review – MCA Spandrel Panel Survey

LCD reviewed photographs taken by MCA during their 2005 Spandrel Panel Survey. There are approximately 15-25 photographs for each spandrel panel. The north and south sides of the building each have 30 spandrel/vision glass panels. The east and west sides of the building each have 24 spandrel/vision glass panels. Floor M has no spandrel panels; and Floors 22, 23, and 24 have fewer panels because the floor size decreases for these upper floors. LCD reviewed photographs of only the spandrel panels on each floor to determine whether these photographs showed evidence of water staining, mold growth, or no issues on the exterior side of the

building perimeter wall. A summary of these conditions is shown in Table 2, Photograph Review – McGinnis-Chen Associates Spandrel Panel Survey.

The Spandrel Panel Survey information was used to help interpret any water staining or material damage that was observed during the supplemental WDA of the curtain wall and punch-out windows. When interior wall surface water staining was corroborated by similar water staining in the spandrel panel photographs for the same wall area, the area was subjected to additional investigation and testing. This was done to ensure that no visible mold growth (VMG) had developed as a result of the observed historical water staining.

4.0 Supplemental Water Damage Assessment

LCD performed a supplemental WDA to inspect areas of the building that had been visually obscured during LCD's initial assessment by a variety of furniture, wall hangings, cubicle walls, personal belongings, supplies, and equipment. The WDA for Floor 7 included a more detailed assessment of the carpet found on this floor that was performed in accordance with the Carpet Removal Remediation Protocol (Appendix A). The protocol was developed during the assessment and removal of carpet on Floor 21.

JLS Environmental Services Inc. (JLS) prepared the floor by moving furniture and cubicle components away from walls, taking supplies out of storage rooms, and removing sections of carpet and cove base. The preparation allowed LCD to visually inspect areas that were obscured from view during LCD's initial assessment in late 2008 and early 2009.

On receiving Floor 7 for remediation from the BOE Management Team, LCD conducted a walk-through of the floor to locate areas of concern. The findings were used to corroborate the information compiled from the BOE staff interviews and the MCA photograph review. This process allowed the LCD team to identify areas to be addressed by additional investigation, mold mitigation, or remediation work.

Identified areas were subjected to sampling. Using a combination of surface tape lift and bulk samples, LCD tested stains on walls and other building materials to determine if the stains were indicative of VMG. The sample locations are depicted in Figure 2.

Surface tape lift and bulk samples were submitted to EMLab P&K (EMLab) for direct microscopic examination. EMLab is accredited by the American Industrial Hygiene Association for mold analyses. The laboratory reports were reviewed by the LCD team. Laboratory findings of "mold growth, minimal mold growth, and mold growth in vicinity" were classified as mold growth and the tested surfaces/areas were considered actionable.

Areas and materials that were identified to contain mold growth were subsequently placed under containment and subjected to an appropriate mitigative or remedial action. Ceiling areas above the rooms (e.g., men's restroom and storage rooms) located in the building core (adjacent to the northwest stairwell) showed large areas of VMG. These areas of above ceiling VMG are believed to be interstitial moisture that resulted from the Floor 9 flood that occurred in March 2009. These actions were taken to eliminate or minimize potential exposures to

VMG by personnel that may later access the subject area. The containment locations are shown in Figure 2.

5.0 Onsite Project Monitoring

On behalf of DGS, the LCD team of industrial hygienists provided on-site monitoring of the mold remediation activities in the form of:

- Testing and identifying areas for subsequent mold mitigation or remediation;
- Inspecting JLS-constructed containment structures prior to disturbance of any mold-contaminated materials by JLS;
- Providing periodic area air monitoring to confirm the protective efficacy of JLS containment structure and work practices;
- Inspection of the mitigated/remediated areas, prior to collecting final clearance air samples to confirm that the contaminated areas/materials within the containment had been adequately cleaned.

6.0 Closure Report Documents

The Closure Report was compiled from site monitoring and testing data prepared and accumulated during the mold remediation activities for this floor. Figures 1 through 3 identify findings from a revised WDA, carpet inspection locations, sample and containment locations, and areas where mold growth may potentially exist. Figure 3 should be consulted before walls or ceilings in these areas are penetrated for any reason in the future. Tables 1 through 3 summarize findings from BOE staff interviews, a review of photographs from the MCA Spandrel Panel Survey, and the revised WDA.

The following documents, as applicable to Floor 7 are included in the Closure Report appendices:

- **Protocols** – Provide the procedures for conducting mold-related activities on the subject floor (Appendix A);
- **Daily Logs** – Summarize the daily mold-related activities pertaining to the subject floor (Appendix B);
- **Laboratory Reports** – Present the analytical results for mold-related samples collected on the subject floor (Appendix C);
- **Correspondence** – Document communications between the LCD and the DGS project teams (Appendix D);
- **DGS Meeting Minutes** – Summarize the progress of scheduled and unplanned project activities as discussed in weekly meetings (Appendix E).

7.0 Limitations and Qualifications

The assessment performed by LCD does not include or cover the following matters: Matters that are subsequently discovered that could not have been reasonably foreseen or detected, using industry standards, during the performance of the assessment; matters that could not have

been discovered by LCD because of barriers, lack of access or other matters affecting accessibility; matters that were not disclosed to LCD prior to, during, or after the performance of the assessment; any new deficiency that arose after the completion of the assessment by LCD.

To the extent that additional information becomes available to LCD, LCD reserves the right (without any obligation to do so) to modify its evaluation and/or this report at any time, based upon further review and analysis of any such additional information or data.

Certain items mentioned in the report were performed by others not involving the supervision of, or management by, LCD, but were relied upon by LCD in making its evaluation and assessment.

The assessment performed by LCD is not meant or intended to supplement, modify, or extinguish any warranty or representation made or given by third parties performing any of the recommended corrective work.

When consultation involves microbiological growth, or any assessment thereof, such microbiological growth may reoccur if the source of the growth is not remedied. All remediation of fungi in indoor environments can be inherently limited in the sense that conclusions are drawn and recommendations developed from information obtained from limited research and site evaluation. Except as may be noted in the assessment performed by LCD, subsurface areas, latent defects, or non-accessible areas and conditions were not field investigated and may differ from the conditions implied by the surface observations. Additionally, the passage of time may result in a change in the environmental characteristics at the subject property and the surrounding properties. No investigation or assessment can absolutely rule out the existence of any microbiological growth at any given site. LCD does not remediate or remedy sources of microbiological growth.

This Report and the assessment/survey conducted by LCD is prepared, and was performed, solely for the use and benefit of the client identified at the beginning of this report. No other party may rely on this report for any other purpose.

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Report reviewed by,



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FIGURES

Figure 1 Water Damage Assessment Revised

Figure 2 Containment and Sample Locations

Figure 3 Suspect Mold – July 2010

KEYED SHEET NOTES

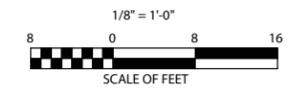
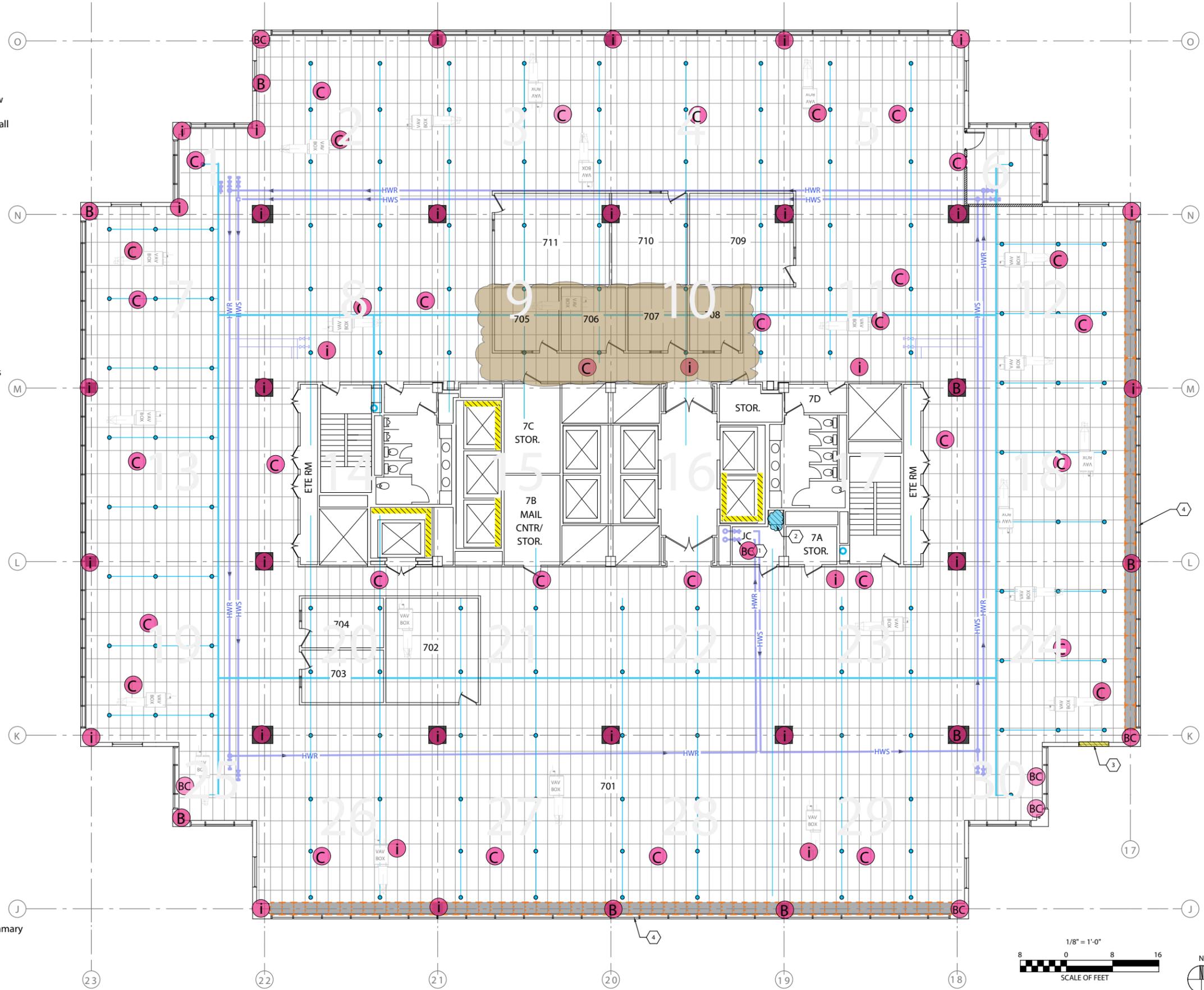
- ① Rusty valve, water stain (current)
- ② Standing water on floor
- ③ Water stain on punch-out window
- ④ Water intrusion prior to curtain wall repair in 2005

GENERAL NOTES

- ① LCD inspection locations are approximate.
- ② The locations of LCD inspections and VAVs (terminal units) are approximate.
- ③ Carpet replaced in 2000.

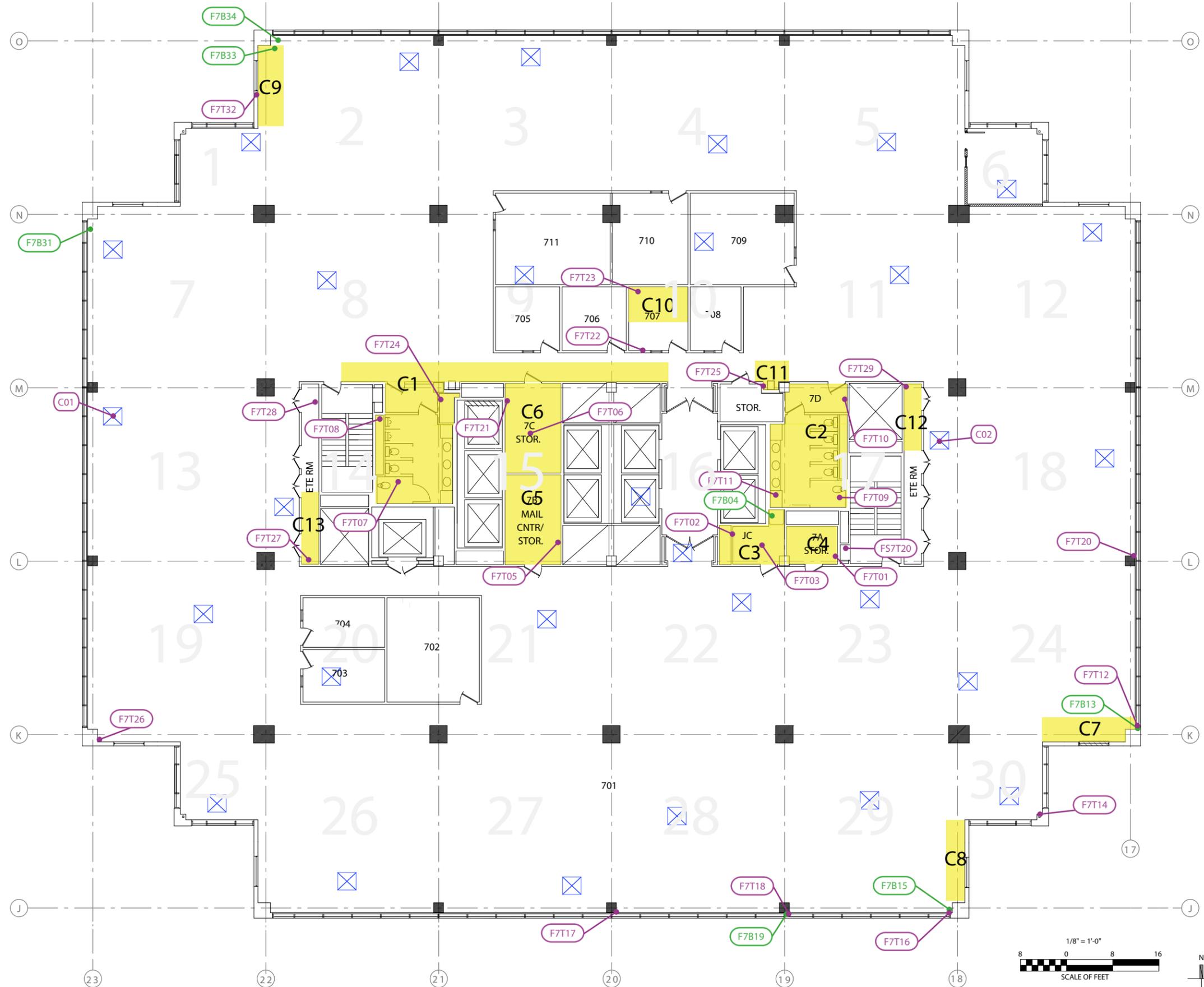
LEGEND

- Active water leak
- Current water stained surface
- Historic water leak/stained surface
- Current mold growth
- Historic mold growth
- Current water on floor
- Historic water on floor
- Destructive testing location (historic)
- 325 Room number
- LCD inspection location no findings
- LCD inspection location active leak
- LCD inspection location water stain
- LCD inspection location other notation - see WDA summary
- LCD inspection location with multiple findings "A", "B", or "C" as indicated



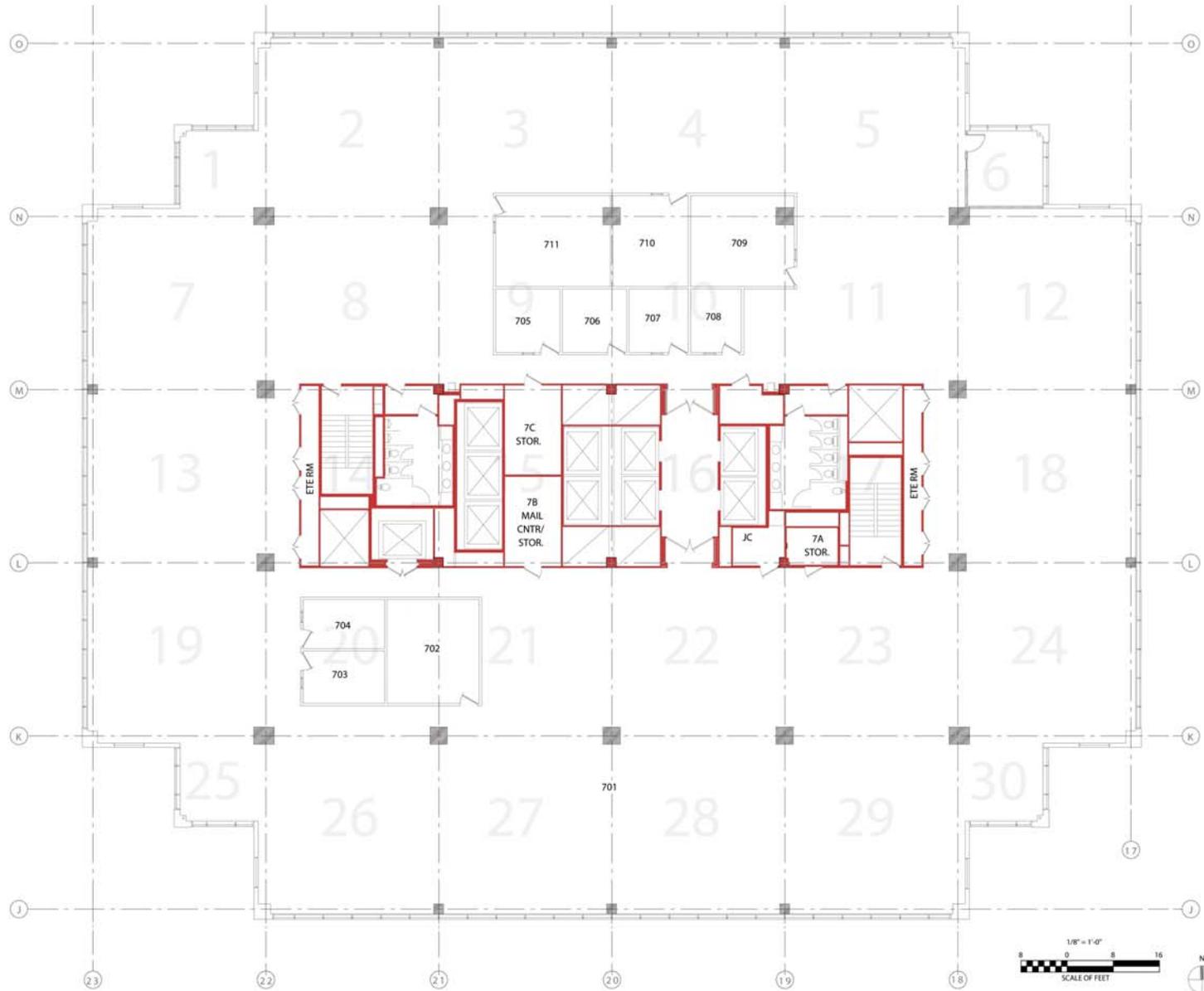
LEGEND

-  Carpet inspection location
-  Containment location
-  Bulk sample location
-  Tape lift sample location



LEGEND

■ Suspect mold location



State of California
Department of General Services
(DGS No. 125828)
(AGMT. No. 3126150)
(LCD No. 2372.02-572)

Suspect Mold - July 2010
Board of Equalization Building, Mold Remediation
450 N Street, Sacramento, California

7th Floor

Figure 3

TABLES

- Table 1** **BOE Staff Interviews – Historical Observations**
- Table 2** **Photograph Review – McGinnis-Chen Associates
Spandrel Panel Survey**
- Table 3** **Revised BOE Water Damage Assessment Summary**



Table 1: BOE Staff Interviews - Historical Observations Floor 7
Conducted by Ted Ice on May 18, 2010

LCD No. 2372.02-572
 BOE Assessment

Name	Position	Time with BOE	Time on Floor	When	Location on Floor	Observations	Other Floors Worked on	Other Comments Related to this Floor
Larry Mischeli		18 yrs.	18 yrs.	1992	Cube 007	Significant water intrusion on East side during heavy storm (before curtain wall work). No problems observed on West side.		Storage room was remediated after the curtain wall.
Wayne Anderson			6 yrs.			Used buckets under ceiling on South side to collect water.	Floor 6	
Crystal Butler		9 yrs.		2001	South side	Lots of leaks, every storm before curtain wall repair. Needed bucket to collect water. No problems noticed since curtain wall replacement.		Carpet was replaced around 2000.
Cheryl Walls		17 yrs.	10 yrs.	1994-1998 2004-2010		Same as above.	Floors 6, 15, 21	

Table 3: Revised BOE Water Damage Assessment Summary

Location			Above Ceiling Tiles				Below Ceiling Tiles / Room Area		
Floor	Grid / Column	Room	Tiles (left above ceiling)	Fiberglass insulation (left above ceiling)	Ceiling (visible issues)	Comments	Observer	Comments	Observer
Floor 7									
7	1	701	Y	Y	N	Clumps of fiberglass and dust balls.	TMI		
7	1	701	N	N	Y	Water stain on GB above punch-out window.	TMI		
7	1	701	N	N	N		TMI		
7	1	701	N	N	N		TMI		
7	1	701	N	N	N		TMI		
7	2	701	N	Y	N	Clumps of fiberglass and dust balls.	TMI		
7	2	701	N	Y	Y	Oil stain on ceiling tile. Fiberglass insulation debris.	TMI		
7	3	701	N	Y	N	Clumps of fiberglass and dust balls.	TMI		
7	4	701	N	Y	N	Clumps of fiberglass and dust balls.	TMI		
7	5	701	N	Y	N	Clumps of fiberglass and dust balls.	TMI		
7	5	701	N	N	Y	Oil stain on ceiling tile. Heavy dust and debris.	TMI		
7	6	701	N	Y	N	Clumps of fiberglass and dust balls.	TMI		
7	6	701	N	N	N		TMI		
7	7	701	Y	Y	N	Clumps of fiberglass and dust balls.	TMI		
7	7	701	N	N	Y	Oil stain on ceiling tile. Some dust and debris.	TMI		
7	8	701	N	Y	N	Clumps of fiberglass and dust balls.	TMI		
7	8	701	N	Y	Y	Oil stain on ceiling tile. Fiberglass insulation debris.	TMI		
7	8	701	N	N	N		TMI		
7	9	705	N	N	N		TMI		
7	9	706	N	N	N		TMI		
7	9	701	Y	Y	N	Clumps of fiberglass insulation and dust balls. fiberglass insulation over offices.	TMI		
7	10	701	N	Y	N	Clumps of fiberglass and dust balls. fiberglass insulation over offices.	TMI		
7	10	707	N	N	N			Stains on GB of cove base on N and S walls of room.	TMI
7	10	N-Hall	N	N	N		TMI		
7	11	701	N	Y	N	Clumps of fiberglass and dust balls.	TMI		
7	11	701	N	N	Y	Stained FP at deck.	TMI		
7	11	701	N	N	Y	Oil stain on ceiling tile. Little dust and debris.	TMI		
7	11	N-Hall	N	N	N		TMI		
7	12	701	N	Y	N	Clumps of fiberglass & dust balls.	TMI		

Table 3: Revised BOE Water Damage Assessment Summary

Location			Above Ceiling Tiles					Below Ceiling Tiles / Room Area	
Floor	Grid / Column	Room	Tiles (left above ceiling)	Fiberglass insulation (left above ceiling)	Ceiling (visible issues)	Comments	Observer	Comments	Observer
7	12	701	N	N	Y	Oil stain on ceiling tile. Some dust and debris.	TMI		
7	13	701	N	Y	N	Square air filter in rectangle duct with 2" gap. Clumps of fiberglass and dust balls.	TMI		
7	14	W ETE	N	N	Y	Stains on GB near deck.	TMI		
7	16	Janitor Room	N	N	Y	Water stains on ceiling tiles. Heavy construction debris.	TMI		
7	17	E ETE	N	N	Y	Stains on GB near deck.	TMI		
7	18	701	N	Y	N	Clumps of fiberglass and dust balls.	TMI		
7	19	701	N	Y	N	Clumps of fiberglass and dust balls.	TMI		
7	19	701	N	N	Y	Some dust and debris. Dust balls.	TMI		
7	20	701	N	Y	N	Fiberglass insulation over room ceiling. Candy wrappers and rodent droppings above wall in metal trough. Small amounts of fiberglass and dust balls.	TMI		
7	21	701	Y	N	N		TMI		
7	22	701	Y	N	N		TMI	Janitor's closet, water stains and rust below sink.	BJH
7	23	701	N	Y	N	Little fiberglass and little dust balls.	TMI		
7	23	S-Hall	N	N	N		TMI		
7	24	701	Y	Y	N	Clumps of fiberglass and dust balls.	TMI		
7	24	701	N	N	Y	Oil stain on ceiling tile. Little dust and debris.	TMI		
7	25	701	N	Y	N	Water staining on GB at SW corner column. Clumps of fiberglass and dust balls.	TMI		
7	26	701	Y	Y	N	Clumps of fiberglass and dust balls. Multiple water-stained old tiles above ceiling.	TMI		
7	27	701	Y	Y	N	Clumps of fiberglass and dust balls.	TMI		
7	28	701	N	Y	N	Clumps of fiberglass and dust balls.	TMI		
7	29	701	N	Y	N	Clumps of fiberglass and dust balls.	TMI		
7	30	701	N	Y	Y	Water stains on FP at ceiling grid hangers (2' diameter white circles). Water staining on concrete at SE corner column. Clumps of fiberglass and dust balls. (Two openings in this grid.)	TMI	Water staining on punch out window sill, nearest column 17.	BJH
7	O22	701	N	N	Y	Stains on FP, beams and deck.	TMI		
7	O21	701	N	N	N		TMI		
7	O20	701	N	N	N		TMI		



Table 3: Revised BOE Water Damage Assessment Summary

LCD No. 2372.02-572
BOE Mold Remediation

Location			Above Ceiling Tiles				Below Ceiling Tiles / Room Area		
Floor	Grid / Column	Room	Tiles (left above ceiling)	Fiberglass insulation (left above ceiling)	Ceiling (visible issues)	Comments	Observer	Comments	Observer
7	O19	701	N	N	N		TMI		
7	O18	701	N	N	N		TMI		
7	N23	701	N	N	Y	Stains on beam FP.	TMI		
7	N22	701	N	N	N		TMI		
7	N21	701	N	N	N		TMI		
7	N20	710/711	N	N	N		TMI		
7	N19	709	N	N	N		TMI		
7	N18	701	N	N	N		TMI		
7	N17	701	N	N	N		TMI		
7	M23	701	N	N	N		TMI		
7	M22	701	N	N	N		TMI		
7	M18	701	N	N	Y	Stain on FP.	TMI		
7	M17	701	N	N	N		TMI		
7	L23	701	N	N	N		TMI		
7	L22	701	N	N	N		TMI		
7	L18	701	N	N	N		TMI		
7	L17	701	N	N	Y	Stain on GB of column enclosure.	TMI		
7	K23	701	N	N	N		TMI		
7	K22	701	N	N	N		TMI		
7	K21	701	N	N	N		TMI		
7	K20	701	N	N	N		TMI		
7	K19	701	N	N	N		TMI		
7	K18	701	N	N	Y	Stain on deck FP.	TMI		
7	K17	701	N	N	Y	Stain on FP and GB.	TMI		
7	J22	701	N	N	N		TMI		
7	J21	701	N	N	N		TMI		
7	J20	701	N	N	Y	Stain on GB.	TMI		
7	J19	701	N	N	Y	Stain on FP and GB.	TMI		
7	J18	701	N	Y	Y	Clumps of fiberglass and dust balls.	TMI		

Abbreviations: FP = Fireproofing GB = Gypsum Board LF = Linear Feet NA = Not Applicable for WDA NC = North Core NSC = No Suspended Ceiling
 SC = South Core SF = Square Feet VAV = Variable Air Volume
Directions: N = North NE = Northeast NW = Northwest E = East S = South SE = Southeast SW = Southwest W = West