



GREAT HALL PROJECT: DECEMBER CONSTRUCTION PROJECT REPORT

February 14th, 2019



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1 PROJECT SCHEDULE

Milestone Schedule and Progress to Date

Task Name	December Schedule	November Schedule	Initial Baseline Completion
Developer Execution Date	July 26 th , 2017	July 26 th , 2017	July 26 th , 2017
Effective Date / Commercial Close	August 24 th , 2017	August 24 th , 2017	August 24 th , 2017
Financial Close	December 21 st , 2017	December 21 st , 2017	December 21 st , 2017
NTP 1 per DA 5.6 - All Administrative Requirements Due	December 27 th , 2017	December 27 th , 2017	December 27 th , 2017
NTP 2 per DA 5.7 - All Administrative Requirements Due	July 6 th , 2018	July 6 th , 2018	June 26 th , 2018
Construction Commencement	July 11 th , 2018	July 11 th , 2018	July 30 th , 2018
PHASE 1- MOD 2	February 27 th , 2020	November 19 th , 2019	May 1 st , 2019
PHASE 2 – MOD 3	November 23 rd , 2020	August 18 th , 2020	January 30 th , 2020
PHASE 3 – MOD 1	August 17 th , 2021	May 13 th , 2021	October 23 rd , 2020
PHASE 4 – MOD 1&3	August 30 th , 2022	May 24 th , 2022	November 3 rd , 2021

The current forecasted delay is 209 business days.

The projected schedule represents the D&C Contractor's preliminary estimates and is subject to further review and analysis as well as an investigation of possible mitigation efforts (e.g., sequencing, construction methods).

The Owner, Developer, and D&C Contractor are collaborating in good faith to further evaluate the preliminary schedule impact.

2 FINANCIALS

2.1 Key Highlights – Great Hall Monthly Expense Report

Great Hall MONTHLY EXPENSE REPORT - NOV 2018
TOTAL TO DATE - ACTUAL PROGRESS

ASSET	PHASE 1 - ACTUAL PROGRESS				PHASE 2 - ACTUAL PROGRESS			PHASE 3 - ACTUAL PROGRESS		PHASE 4 - ACTUAL PROGRESS			TOTAL
	5th Floor	6th Floor	AOB Corridor	Lvl 4 Receiving	5th Floor	6th Floor	AOB Corridor	5th Floor	6th Floor	5th Floor	6th Floor	Lvl 4 Receiving	
BUILDING	11,819,519	15,245,963	4,917,011	3,831,724	1,528,685	2,769,630	447,239	1,588,800	2,036,760	1,709,030	3,627,282	429,571	49,951,215
DEMO	318,729	235,145	63,523	84,373	59,960	52,334	5,778	62,226	50,414	66,758	69,609	15,134	1,083,984
HVAC	3,816,748	3,454,971	977,992	5,995,339	572,579	620,454	88,956	598,605	592,251	650,658	874,276	24,678	18,267,505
CURBSIDE	-	-	-	-	-	-	-	-	-	-	1,633,122	-	1,633,122
CANOPY	-	480,220	-	-	-	86,239	-	-	82,319	-	121,519	-	770,297
TICKET COUNTER	-	4,012,289	-	-	-	851,545	-	-	-	-	-	-	4,863,834
TSA PARTITION	-	-	-	-	-	-	-	-	1,529,649	-	-	-	1,529,649
WAY FINDING SIGNAGE	41,166	41,166	-	-	8,737	8,737	-	8,737	8,737	8,737	8,737	-	134,753
ELECTRONIC SIGNAGE	123,498	123,498	-	-	26,210	26,210	-	26,210	26,210	26,210	26,210	-	404,258
SECURITY SYSTEMS	1,100,448	1,329,429	-	480,271	165,287	238,743	-	172,800	227,891	187,826	336,410	11,112	4,250,219
CONVEYENCE SYSTEMS	444,486	40,965	-	1,338,547	69,179	7,357	-	72,324	7,022	78,613	10,366	105,090	2,173,949
F,F,& E	492,586	49,650	-	-	193,197	193,197	-	193,197	193,197	193,197	193,197	-	1,701,415
CUSTOMER EXPERIENCE	-	-	-	-	-	-	-	-	-	1,135,056	-	-	1,135,056
TOTAL	18,157,179	25,013,296	5,958,526	11,730,254	2,623,834	4,854,446	541,973	2,722,899	4,754,451	4,056,084	6,900,728	585,586	87,899,256
ACTUAL PROGRESS	28.76%	28.76%	28.76%	32.39%	6.10%	6.10%	6.10%	6.10%	6.10%	6.10%	6.10%	6.10%	13.52%

Great Hall MONTHLY EXPENSE REPORT - NOV 2018
TOTAL TO DATE - PLANNED PROGRESS

ASSET	PHASE 1 - PLANNED PROGRESS				PHASE 2 - PLANNED PROGRESS			PHASE 3 - PLANNED PROGRESS		PHASE 4 - PLANNED PROGRESS			TOTAL
	5th Floor	6th Floor	AOB Corridor	Lvl 4 Receiving	5th Floor	6th Floor	AOB Corridor	5th Floor	6th Floor	5th Floor	6th Floor	Lvl 4 Receiving	
BUILDING	24,174,063	31,742,230	7,941,314	10,741,940	1,528,685	2,769,630	447,239	1,588,800	2,036,760	1,709,030	3,627,282	429,571	88,736,545
DEMO	651,886	489,575	102,594	84,373	59,960	52,334	5,778	62,226	50,414	66,758	69,609	15,134	1,710,641
HVAC	7,806,265	7,193,280	1,579,525	7,101,930	572,579	620,454	88,956	598,605	592,251	650,658	874,276	24,678	27,703,456
CURBSIDE	-	-	-	-	-	-	-	-	-	-	1,633,122	-	1,633,122
CANOPY	-	999,822	-	-	-	86,239	-	-	82,319	-	121,519	-	1,289,900
TICKET COUNTER	-	8,353,620	-	-	-	851,545	-	-	-	-	-	-	9,205,166
TSA PARTITION	-	-	-	-	-	-	-	-	1,529,649	-	-	-	1,529,649
WAY FINDING SIGNAGE	84,195	85,708	-	-	8,737	8,737	-	8,737	8,737	8,737	8,737	-	222,324
ELECTRONIC SIGNAGE	252,586	257,124	-	-	26,210	26,210	-	26,210	26,210	26,210	26,210	-	666,972
SECURITY SYSTEMS	2,250,710	2,767,883	-	480,271	165,287	238,743	-	172,800	227,891	187,826	336,410	11,112	6,838,935
CONVEYENCE SYSTEMS	909,093	85,290	-	1,338,547	69,179	7,357	-	72,324	7,022	78,613	10,366	105,090	2,682,880
F,F,& E	1,007,469	103,373	-	-	193,197	193,197	-	193,197	193,197	193,197	193,197	-	2,270,021
CUSTOMER EXPERIENCE	-	-	-	-	-	-	-	-	-	1,135,056	-	-	1,135,056
TOTAL	37,136,266	52,077,905	9,623,433	19,747,061	2,623,834	4,854,446	541,973	2,722,899	4,754,451	4,056,084	6,900,728	585,586	145,624,666
PLANNED PROGRESS	58.83%	59.88%	46.45%	54.52%	6.10%	6.10%	6.10%	6.10%	6.10%	6.10%	6.10%	6.10%	22.40%
ACTUAL - PLANNED	(18,979,087)	(27,064,609)	(3,664,907)	(8,016,807)	-	-	-	-	-	-	-	-	(57,725,410)

2.2 Key Indicators

Certified Amounts:

The D&C Contractor has certified a total cost of \$132,035,315, which includes costs up to the end of November. The invoice for December is currently in progress. The certified amount is divided as follows (find detail of each cost below the breakdown table):

Certified Construction Costs	\$
<i>Early Design Work</i>	10,824,655
<i>Design Amount</i>	4,775,345
<i>Design Amount FC</i>	26,000,000
Total Design	41,600,000
<i>Mobilization Payment 1</i>	23,920,000
<i>Mobilization Payment 2</i>	11,960,000
<i>Mobilization Payment 3</i>	11,960,000
<i>Amortization</i>	(3,703,940)
<i>Permits</i>	2,272,050
<i>Procurement</i>	11,990,259
<i>CMF</i>	1,312,426
<i>Phase 1</i>	18,287,520
<i>Preconstruction Works</i>	12,437,000
Total Construction	90,435,315
Net Amount	132,035,315

Design:

- **Early Design Work** for progress before Financial Close.
- **Design Amount** due at Notice To Proceed 1. It corresponds to 30 % of total design price less any previous Early Design Work payments.
- **Design Amount FC Payment**, which is paid in nine equal monthly statements and add up to 50% of the total Design Amount.

Mobilization Payments:

Criteria for Mobilization Payments 1, 2, & 3 have been met and the D&C Contractor has waived Mobilization Payment 4.

Amortization: It is the amount of Mobilization Payments amortized, calculated at a rate equal to the percentage of Construction Work as compared to the Contract Price.

Construction:

- **Permits:** In relation to the demolition, Central Monitoring Facility, structural packages, architectural, mechanical, electrical, and life & safety.
- **Procurement:** structural steel, kiosks & ticketing counters, vertical transportation, floors, ceilings, and MEP.
- **CMF:** Construction of the Central Monitoring Facilities
- **Phase 1 Construction and Preconstruction works**

Progress Payments:

The amount received from the Owner in payment for design and construction costs is \$66,448,613, which includes costs up to the end of November.

3 DESIGN AND CONSTRUCTION UPDATE

3.1 Key Highlights – Design

December saw a number of submittals to the Owner and the City for their review. The main submissions are noted below.

In Review by the Owner:

3 rd December	North Terminal	100% Issued For Review ¹ Submittal
4 th December	Phase 2	100% Issued For Review Submittal
21 st December	Phase 3	90% ² Submittal
21 st December	Phase 4	90% Submittal

In Review with the City:

7 th December	Phase 1 (Updated BHS only)	100% Issued For Construction ³
12 th December	North Terminal Architectural Demo	100% Issued For Construction

During December, the Owner further developed their new white box standard – this is their turnover requirements for spaces that are provided by the Developer to the Owner and will later be fit out by the airlines or other tenants. All parties had input into the standard which is intended to be issued by Owner for white box spaces in due course.

Development of the Materna ticket counters and self-service kiosks continued with a regular review on Factory Acceptance Test (FAT) outstanding actions, a number of which were closed out during the month. Some small issues still remain but will not hold up manufacturer.

Concessionaire design teams continued to receive permits from the City for their spaces, by the end of December 63% of permits have been approved by the City and County of Denver.

The Executive Design Review (EDR) process that provides the Owner’s leadership team with an opportunity to provide input into finishes alternatives is progressing. All EDR Items affecting Phase 1 have been agreed with the exception of the Furniture Fixtures and Equipment (FF&E), Wayfinding, and final cost for the ticketing equipment and kiosks. Phase 1 ticketing equipment and kiosks are already being manufactured. Some EDR Items for Phases 2, 3 and 4 are still under review and discussion.

¹ IFR = Issued for Review, the IFR submission is submitted to the Owner when the Construction Documents are 100% complete or substantially complete.

² 90% = 90% Progress, the 90% submission is submitted to the Owner following the receipt and integration of Owner comments to previous Construction Documents submittals (e.g. Design Development, Schematic Design Phase) and are deemed to be approximately 90% complete.

³ IFC = Issued for Construction, the IFC submission is submitted to the City and County of Denver Building Department for the purposes of procurement, contracting, and construction, and shall incorporate the final, client-approved solicitation provisions, contract provisions, special provisions, conditions of the contract, and general requirements.

3.2 Key Highlights – Construction

Construction activities are continuing in two areas of the terminal, the Central Monitoring Facility (CMF) and Phase 1 – MOD 2.

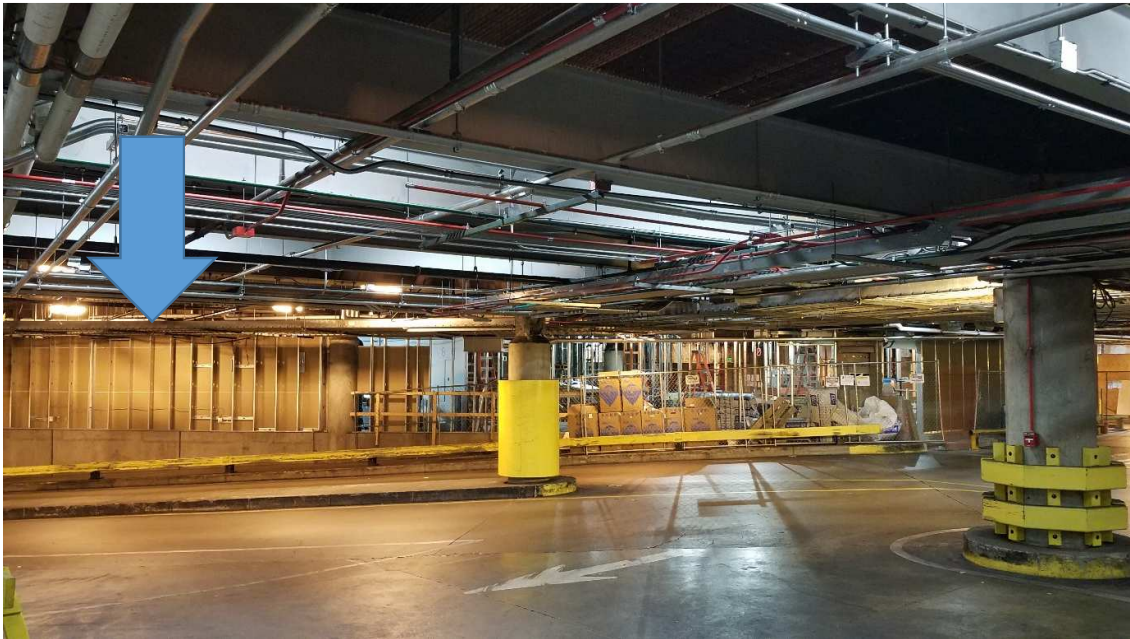
CMF

Work in the CMF continued with concentration on the overhead Mechanical, Electrical, and Plumbing (MEP) systems. Priority framing continued in locations throughout the space.



CMF framing and overhead MEP installation. (12/19/18)

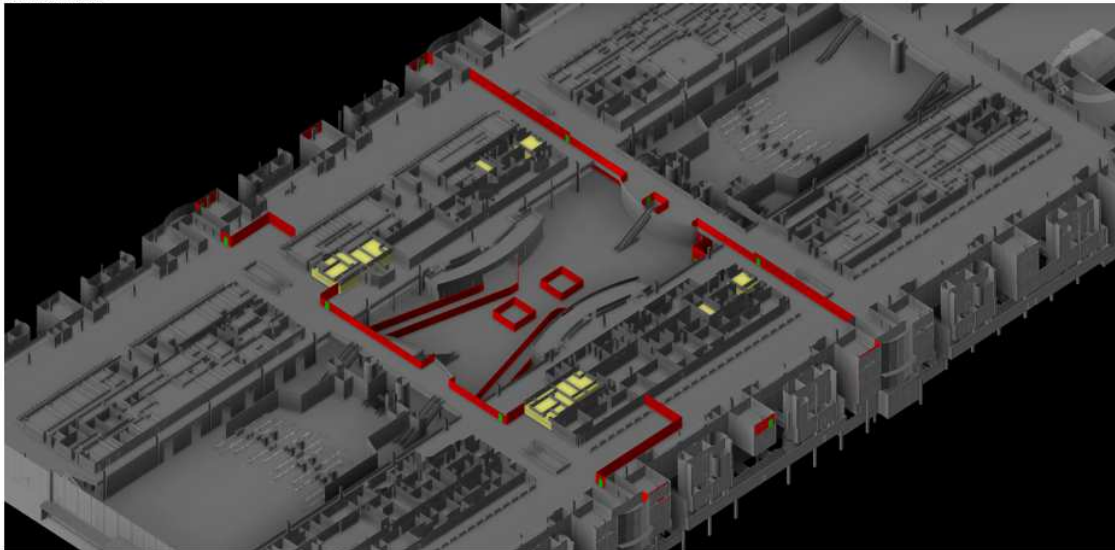
In the electrical/server room, large equipment was brought in and installed including panels and the three-phase transformer. Conduit rough-in to the electrical room is ongoing. In the fan rooms and plenum above the CMF, waterproofing and sealing was completed.



CMF construction site. To the left is the drywall for the electrical/server room. (Looking north, 12/19/18)

Phase 1 – MOD 2

PHASE 1 ISOMETRIC L6



[In Yellow rooms that will not be demoed]

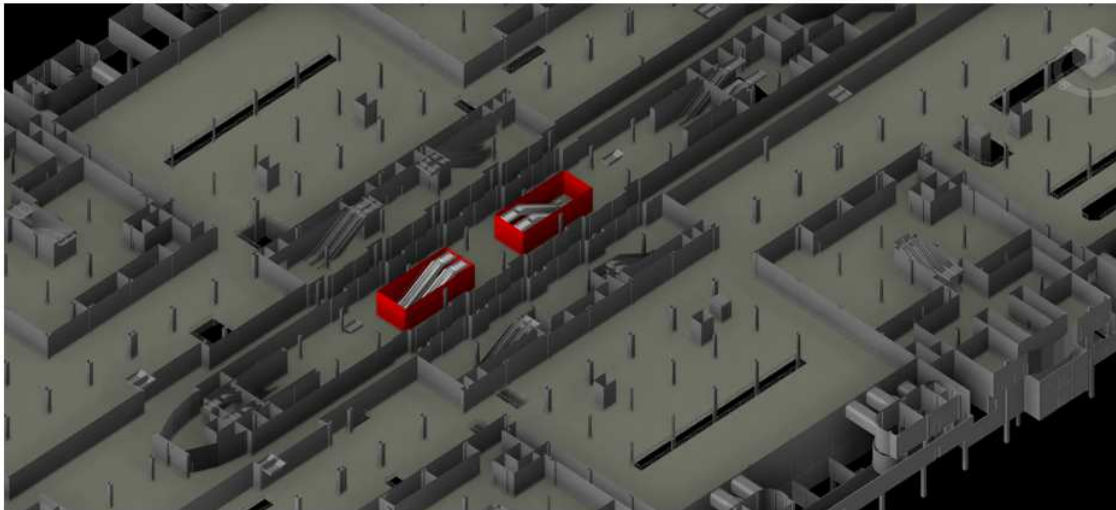
L3: The steel for the escalator pits was brought into the crawl space, and prep work took place throughout December. Beams were laid out, bolted, welded, and angle iron was put in place, all in preparation of the pit erection.



L3 Crawl space with steel for escalator pits. (12/19/18)

L4:

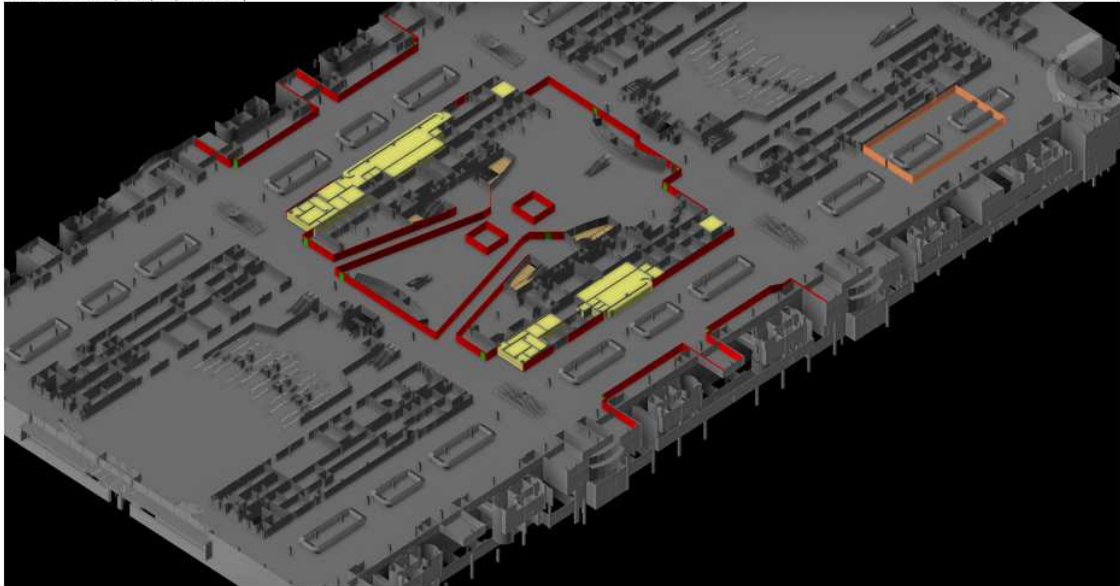
PHASE 1.4 ISOMETRIC LEVEL 4



On the AGTS arrivals platforms, surveying and markups continued, along with selective demolition.

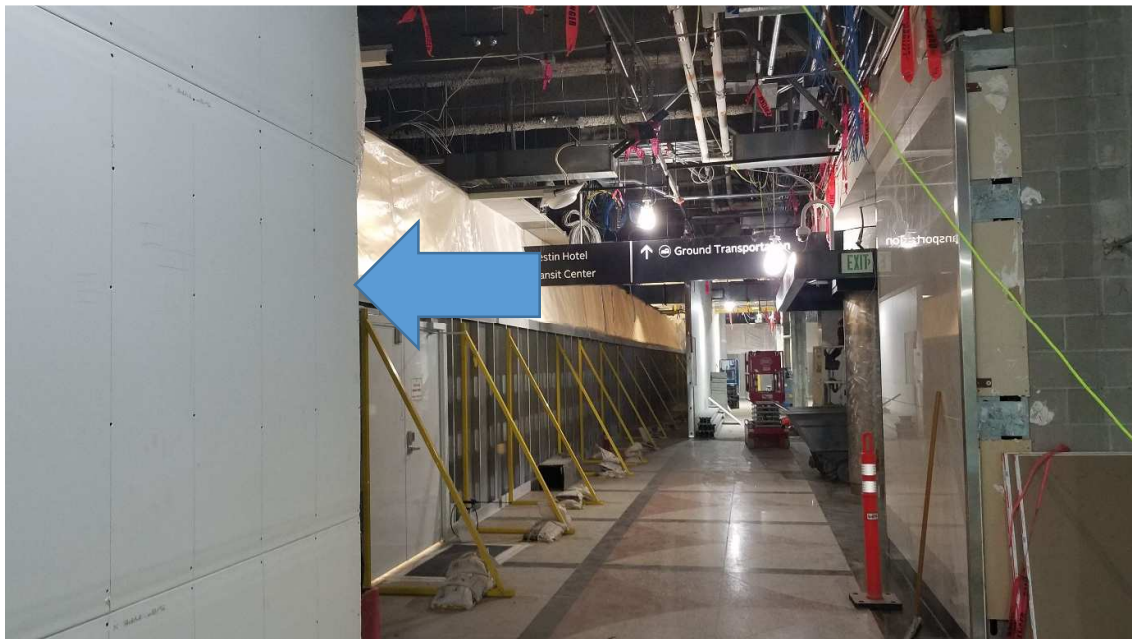
L5:

PHASE 1.3 ISOMETRIC L5 (5.5 temporary walls included)



(In Yellow rooms that will not be demolished 5.5 temporary wall in orange)

Within perimeter work spaces, continued demolition of mechanical rooms, and ceiling Mechanical, Electrical, and Plumbing. Weathertight walls continued on both east and west sides with the closure of new door vestibules.



L5 west, perimeter demolition and weathertight wall construction. (Looking south, 12/18/18)

In the plaza, demolition of the terrazzo and topping slab began, and was carried out to roughly 80% completion.



Plaza flooring demolition and AGTS glass removal. (Looking south, 12/19/18)

Infill of the pit from the former north bridge escalator was completed with the exception of the infill concrete.



L5 plaza, north bridge escalator pit infill. (12/13/18)

Surrounding the Automated Guideway Transit System (AGTS) arrivals escalators, the glass curtain wall demolition was completed in anticipation of the netting installation. Netting and all the necessary hardware was staged on site.

L6:

Temporary relocation cables for the clerestory cables have been hung, but are not tensioned yet. Structural steel demolition is on hold pending the cable relocation. On both east and west sides, McCain walls were erected around the large mechanical shafts, and the architectural demo of those areas was completed.



L6 clerestory cable relocation tie-ins hung. (Looking north, 12/19/18)

Along the perimeter of the west side, railing was constructed in preparation of the curtain wall demo scheduled to begin in January.



L6 west mechanical shaft architectural demolition. (12/19/18)

3.3 Project Change Log⁴

Ongoing Change Events

Type	Description	Status	Date Received	Proposed course of action
Change Directive	Change Directive 005 DEN Restroom Design Revisions	Ongoing	27-Feb-18	Preliminary Change Estimate provided to the Owner, Change Order is expected.
Change Directive	Change Directive 006 Developer concessions office relocation	Ongoing	26-Mar-18	Preliminary Change Estimate provided to the Owner, Change Order is expected.
Change Directive	Change Directive 007 Level 6 AOB corridor program revisions	Ongoing	26-Mar-18	Proceed with change directive, determine impacts and mitigation analysis.
Change Directive	Change Directive 008 - Revised Technical Spec 087100-Door Hardware	Ongoing	28-Mar-18	Proceed with change directive, determine impacts and mitigation analysis.
Change Directive	Change Directive 009 Revs to the TSA Spaces on the 6th level	Ongoing	22-May-18	Proceed with change directive, determine impacts and mitigation analysis.
Change Directive	Change Directive 010 oversized lifts, and restrooms in airline pods	Ongoing	11-May-18	Preliminary Change Estimate provided to the Owner, Change Order is expected.
Change Directive	Change Directive 012 Owner to Modify Out of Scope Lifts	Ongoing	5-Oct-18	Preliminary Change Estimate provided to the Owner, Change Order is expected.
Change Directive	Change Directive 013 Removal of the Hydronic Pumps	Ongoing	19-Sep-18	Preliminary Change Estimate provided to the Owner, Change Order is expected.
Change Directive	Change Directive 014 Security Camera Design Phases 2-4	Ongoing	5-Oct-18	Preliminary Change Estimate provided to the Owner, Change Order is expected.

⁴ Items in the change log that have been withdrawn are not included in the tables provided in this section.

Relief Event	Relief Event 6 – Unknown Structural Condition	Ongoing	02-Nov-18	Proceed with relief event, determine impacts and mitigation analysis.
Change Directive	Change Directive 21 – Restroom Upgrades	Ongoing	5-Dec-18	Proceed with change directive, determine impacts and mitigation analysis.
Change Directive	Change Directive 16 – Level 5 Concession Tenant Swaps	Ongoing	28-Dec-18	Proceed with change directive, determine impacts and mitigation analysis.
Change Directive	Change Directive 17 – Design Guidelines for Airlines in Phase 1	Ongoing	28-Dec-18	Proceed with change directive, determine impacts and mitigation analysis.
Change Directive	Change Directive 18 – Level 6 TSA PET Shop	Ongoing	28-Dec-18	Proceed with change directive, determine impacts and mitigation analysis.
Change Directive	Change Directive 20 – Locations of Artwork	Ongoing	28-Dec-18	Proceed with change directive, determine impacts and mitigation analysis.

Closed Change Events

Type	Description	Status	Date Received	Proposed course of action
Change Request	Change Request 001	Closed	20-Jan-18	Change Order received, no delay to the project.
Change Directive	Change Directive 002 DEN airline assignment update	Closed	09-Feb-18	Change Order received, no delay associated with change.
Change Directive	Change Directive 003 Removal of the Anti-Backtrack doors from LVL 6 to 5	Closed	22-Feb-18	Change Order received, no delay associated with change.
Change Directive	Change Directive 004 – Changes to the BMS system	Closed	27-Feb-18	Change Order received, no delay associated with change.
Change Directive	Change Directive 011 Arriving Passengers Redesign	Closed	5-Oct-18	Change Order received, no delay associated with change.
Relief Event	Relief Event 3 – Black Mold Discovered in West Tenant Spaces	Closed	27-Sep-18	Change Order received, no delay associated with change.
Relief Event	Relief Event 4 - Black Mold Discovered in East Tenant Spaces	Closed	28-Sep-18	Change Order received, no delay associated with change.

3.4 Relief Event 6 – Unknown Structural Conditions

On November 2, 2018, D&C Contractor and Developer provided the Owner with a notice of relief event indicating that preliminary test results of concrete samples taken from Phase 1 – MOD 2 yielded compressive strength results lower than what was specified in the Baseline Structural Conditions specified in the DA.

The D&C Contractor has continued to conduct additional testing of concrete strength and composition in the Phase 1 – MOD 2 area. This testing includes the identification of core locations, extraction of cores, testing of cores, petrographic analysis, and engineering evaluation to determine the concrete strength and composition of areas within the Project. Approximately, half of the cores from Phase 1 - MOD 2 were extracted by the end of December 2018. The test results of some of these cores have also shown compressive strength results lower than what was specified in the Baseline Structural Conditions specified in the DA. Most of the planned Project cores (94%) have been extracted by time of issuing this report.

The Owner provided a report, dated January 14, 2019, from an independently engaged materials testing firm (the “Report”), which, in addition to confirming that some core samples tested displayed lower than the compressive strength specified in the Baseline Structural Documents, indicated that for certain drilling samples, “quartz grains in granitic aggregates show strain effects with varying degree (strained quartz is alkali silica reactive).” An addendum, dated January 28, 2019, to the Report included the following:

“It is mentioned in the report that quartz grains in granitic aggregates show strain effects with varying degree. Strained quartz is alkali silica reactive depending on the degree of strain effects and contents. Certain strain quartz may leads [sic] to ASR provided the strain effects is adequate and texture is favorable. Its [sic] not possible to predict this just based on petrographic information without conducting any ASR testing. The presence of fly ash is detected in both the samples. It is well established that the use of fly is very effective to control ASR if the fly ash content and quality is adequate. This is 25 years [sic] old concrete and no ASR features have been observed in both the samples. Therefore, it looks like the use of fly ash was adequate to make this concrete ASR resistant even though some strained quartz was detected.”

The Owner, Developer, and D&C Contractor will assess the results after all the cores have been taken, tested, and analyzed and are collaborating in good faith to make progress with this Unknown Structural Condition and with the activities of the Project not affected. It is too early to anticipate specific and final impacts into the Project. Preliminary schedule deviations provided by the D&C Contractor are reflected in the Project Schedule.

While construction activities not impacted by the relief event continued, this relief event has caused a reduction in construction activities impacts by this event, e.g. steel erection.