



# Construction Update

September 2015

## Transbay Transit Center

**TJPA**





**Transbay Transit Center**

# Current Project Overview



Western Zone – Gridlines 1 to 10

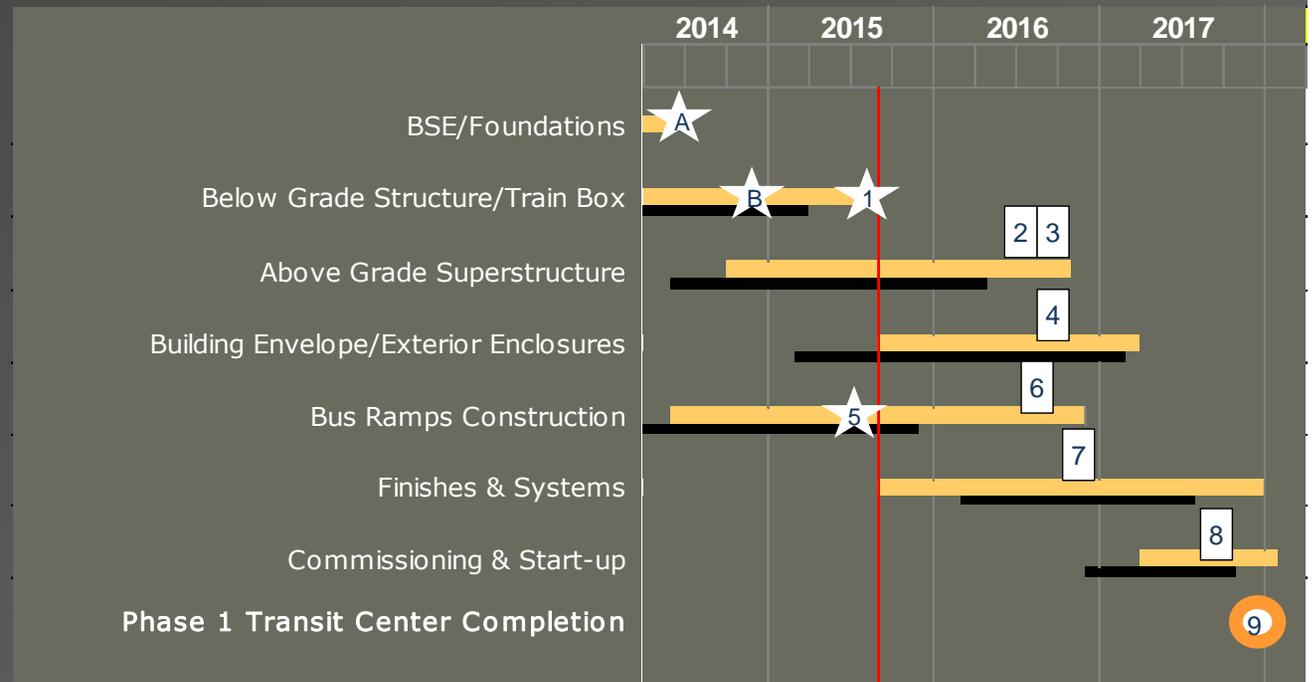
Central Zone – Gridlines 10 to 20

Eastern Zone – Gridlines 20 to 35



# Project Status – Schedule

#	Milestone	Current
1	Complete TG 6.0 Below Grade Concrete	Actual Aug. 2015
2	Complete Structural Steel Erection and Welding	Q2 2016
3	Complete Above Grade Concrete	Q3 2016
4	Building Watertight	Q3 2016
5	Complete Bus Ramp Below Grade Concrete	Actual Jul. 2015
6	Complete Bus Ramp Viaduct and Cable Stay Bridge	Q3 2016
7	Permanent Power to Building	Q4 2016
8	Building Ready for Bus Driver Training	Q3 2017
9	Substantial Completion	Q4 2017



\* The current critical path of the project is as follows; structural steel fabrication, erection and roof (park) level structural concrete slabs and walls.

Current Schedule   
 Baseline Schedule

★ = Completed Work; A) excavation through “rat” slab installation (re-bracing remains). B) mat foundation slabs. 1) TG 6.0 Below Grade Concrete. 5) Bus Ramp below grade concrete.



# **Project Status – Active Milestones**

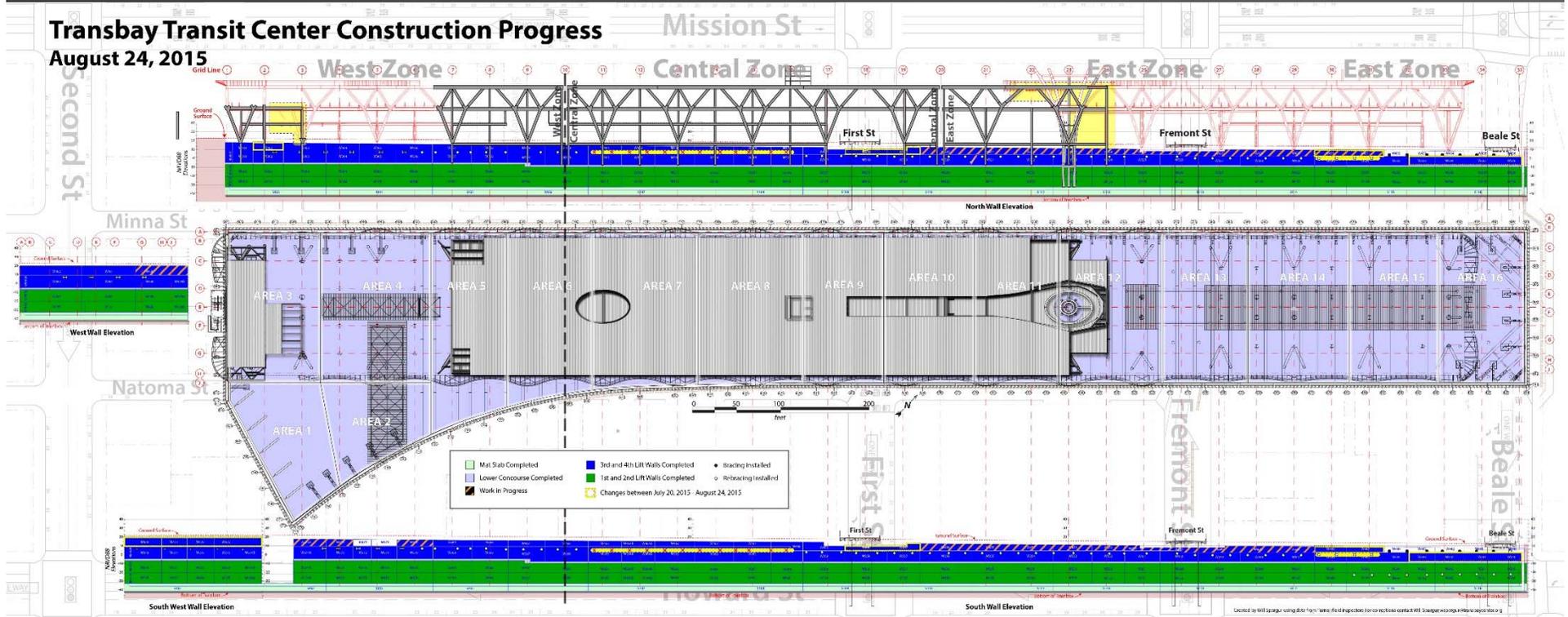
#	Milestone	Planned	Actual / Current
1	Complete TG 6.0 Below Grade Concrete	Q3 2015	Q3 2015
	Milestone Activity Start	March 2013	Jul 17, 2013 (A)
	Milestone Activity Finish (completion of 3 <sup>rd</sup> lift walls)	June 2015	Aug. 10, 2015 (A)
	Percent Complete as of August 31, 2015	100%	99%
2	Complete Structural Steel Erection and Welding	Q1 2016	Q2 2016
	Milestone Activity Start	July 2014	Oct. 29, 2014 (A)
	Milestone Activity Finish	Dec. 2015	June 2016
	Percent Complete as of August 31, 2015	75%	50%



# Transbay Transit Center

## Project Status Diagram

### Transbay Transit Center Construction Progress August 24, 2015



Created by Hill Group using data from Hill Group files. For more information contact Hill Group at 415-778-1234.



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## Project Status – Contingency Tracking (\$millions)

Trend	Design Contingency	Construction Contingency	CM/GC Contingency	Program Reserve	Escalation	Total Contingency & Reserve
Baseline Budget Amounts (July 2013)	\$8.2	\$62.5	\$36.4	\$87.5	\$30.3	\$224.9
Contingency Usage Through Jun 2015	(\$3.5)	(\$26.1)	(\$16.6)	(\$82.0)	(\$13.0)	(\$141.2)
Remaining Baseline Budget Amounts (Jun 2015)	\$4.7	\$36.4	\$19.8	\$5.5	\$17.3	\$83.7
Structural Steel Change Orders		(\$0.1)				(\$0.1)
Structural Concrete Change Orders		(\$0.5)				(\$0.5)
Bus Ramp Change Orders		(\$0.2)				(\$0.2)
Utility Relocation Change Orders		(\$0.3)				(\$0.3)
Below Grade Change Orders		\$0.7	(\$0.8)			(\$0.1)
Metal Cellings Change Orders		(\$1.9)				(\$1.9)
July Trade Package Awards	(\$0.5)			\$1.5	(\$3.0)	(\$2.0)
Right of Way Savings				\$1.5		\$1.5
Total Draws/Adds July & Aug 2015	(\$0.4)	(\$2.4)	(\$0.8)	\$3.0	(\$3.0)	(\$3.6)
Remaining Balances	\$4.2	\$34.0	\$19.0	\$8.5	\$14.3	\$80.1



# Project Status – Safety Statistics

	2010 / 2011 / 2012	2013	2014	2015 (through Aug. 31 <sup>st</sup> )
<b>Total Craft Hours by Year</b>	<b>627,744</b>	<b>315,000</b>	<b>375,615</b>	<b>351,653</b>
<b>Number of Recordable Incidents</b>	<b>9</b>	<b>3</b>	<b>13</b>	<b>7</b>
<b>Number of Lost Time Incidents</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>0</b>
<b>WO Project Annual RIR / National Annual BLS RIR Average / California RIR Average</b>	<b>2.87 / 3.6 / 3.8</b>	<b>1.90 / 3.8 / 4.0</b>	<b>6.92 / tbd / tbd</b>	<b>tbd / tbd / tbd</b>
<b>WO Project Annual LTIR / National Annual BLS LTIR Average / California LTIR Average</b>	<b>0.32 / 1.9 / 1.8</b>	<b>0.00 / 1.8 / 1.7</b>	<b>1.60 / tbd / tbd</b>	<b>tbd / tbd / tbd</b>

NOTES:

RIR = recordable incident rate, LTIR = lost time incident rate.

These rates are calculated as follows: RIR and LTIR = (# of recordable or lost time incidents for the year X 200,000) / actual hours worked.

\* BLS is the Bureau of Labor Statistics, U.S. Department of Labor and State of California, it takes these agencies more than 18 months to produce the statistics after year's end.



# Period Summary for July / August 2015

## Project Wide

- There were four recordable incidents in July and August. WOJV has investigated each incident and corrective measures have been put in place.
- There have been over 1,670,000 craft hours completed, excluding demolition, through August 31, 2015. This is an increase of over 120,000 hours since our last construction update in July.
- Steel fabrication continues in all Structural Steel fabrication shops.

## Western Zone (GL 1-10)

- Structural steel erection and welding in progress from GL 1 to GL 3. Welding and decking is complete from GL 7 to GL 10.
- In the western zone, concrete placement on the vehicle / bike ramp as well as interior partition walls continues.
- 4<sup>th</sup> lift walls complete except at tie in area of vehicle / bike ramps.



# Period Summary for July / August 2015

## Central Zone (GL 10-20)

- MEP trades have begun rough-in work on the metal deck at all levels between GL 10 and GL 19.
- Stair installation continues between GL 10 and GL17. Total of 4 stairs in progress.
- Level 1 and 2 concrete complete between GL 10 and GL17. Bus Deck concrete complete between GL 10 and GL 14. Roof level concrete complete between GL 10 and GL 12. Roof perimeter walls started between GL 10 and GL 12.

## Eastern Zone (GL 20-35)

- Structural steel erection up to and over Fremont Street began August 31<sup>st</sup>. This work requires closure of Fremont Street and is being completed at night. Anticipated completion is mid-October.
- Light column structural steel erection has been completed, welding in progress.
- 3<sup>rd</sup> lift walls were completed on August 10<sup>th</sup>. RA level re-bracing nearing completion, under Beale Street remains. 4<sup>th</sup> lift walls continue east of Fremont Street.



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# Below Grade Concrete Progress Through August 31, 2015

Steel Erection Zones	3rd Lift Walls	3rd Lift Walls Poured	3rd Lift Walls Percent	4 <sup>th</sup> Lift Walls	4 <sup>th</sup> Lift Walls	4 <sup>th</sup> Lift Walls
Western	35	35	100%	27	22	81%
Central	20	20	100%	20	18	90%
Eastern	35	35	100%	35	2	6%
Total	90	90	100%	82	42	51%



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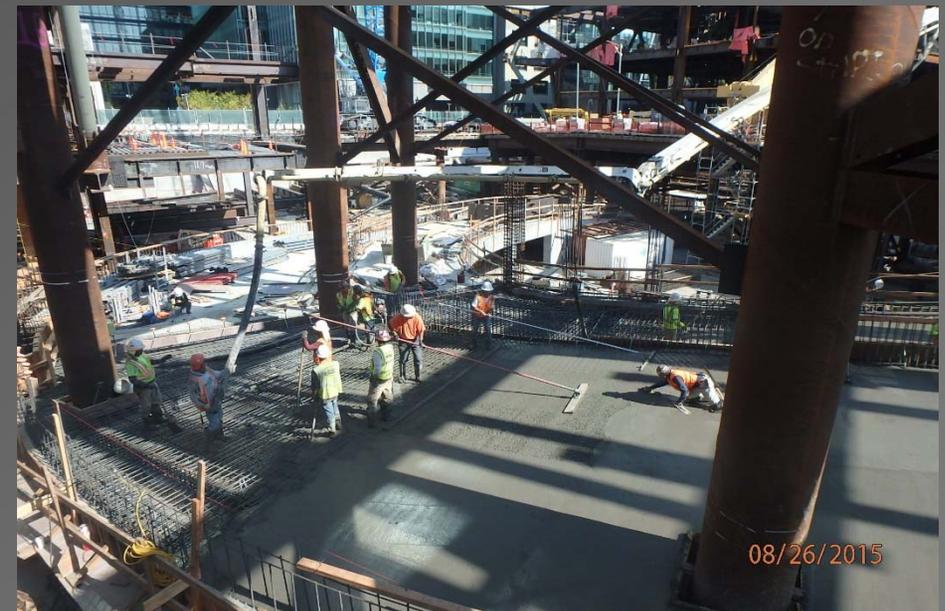
# Western Zone Activity



Above Left : West end steel progress.

Above Right: Formwork and prep for concrete placement on vehicle / bike ramps (note bridge falsework within footprint of ramps).

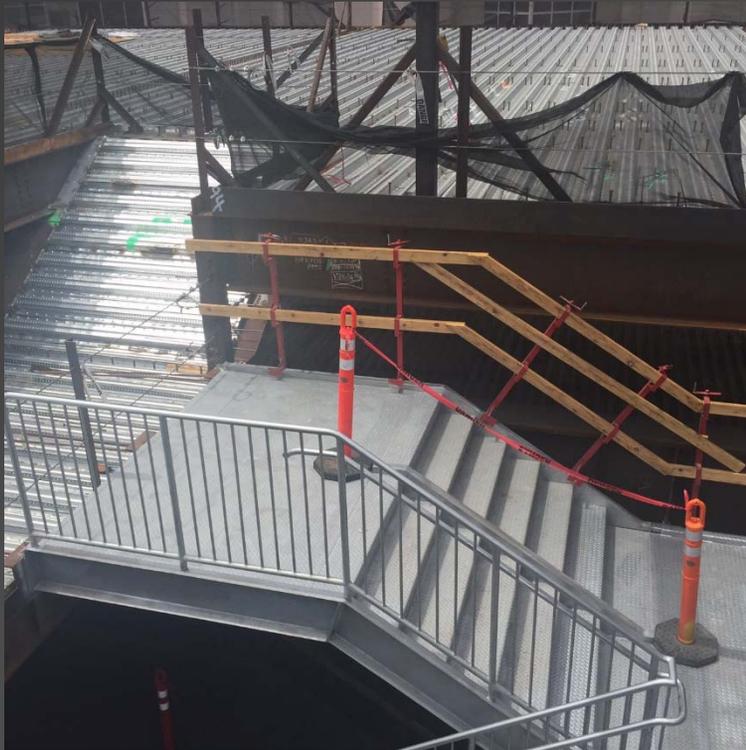
Below Right: Concrete placement at vehicle / bike ramps.



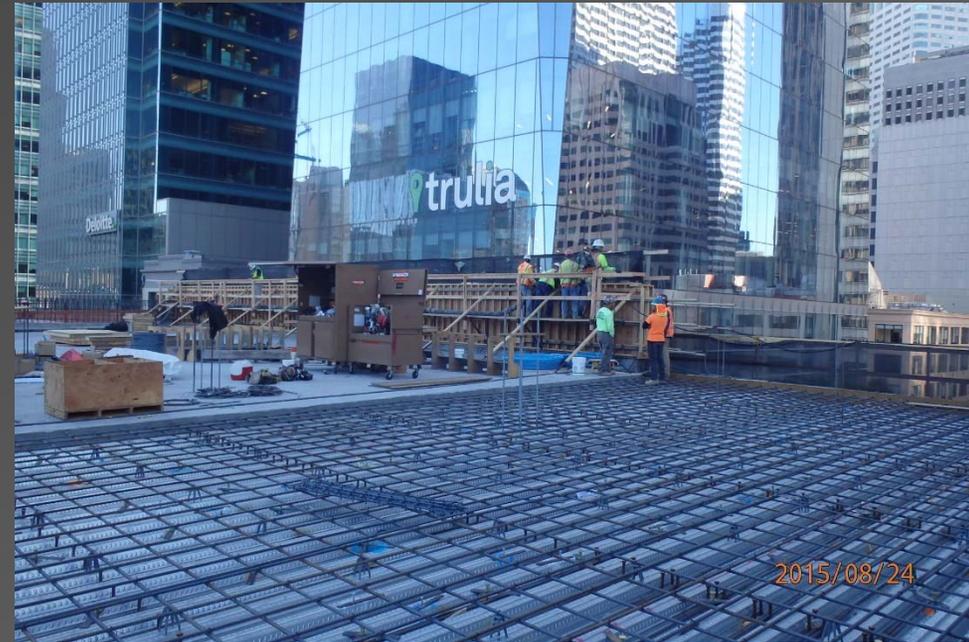


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# Central Zone Activity



Above Left: Ongoing stair installation.



Above Right: Prep for 2<sup>nd</sup> roof deck pour and perimeter wall pour.

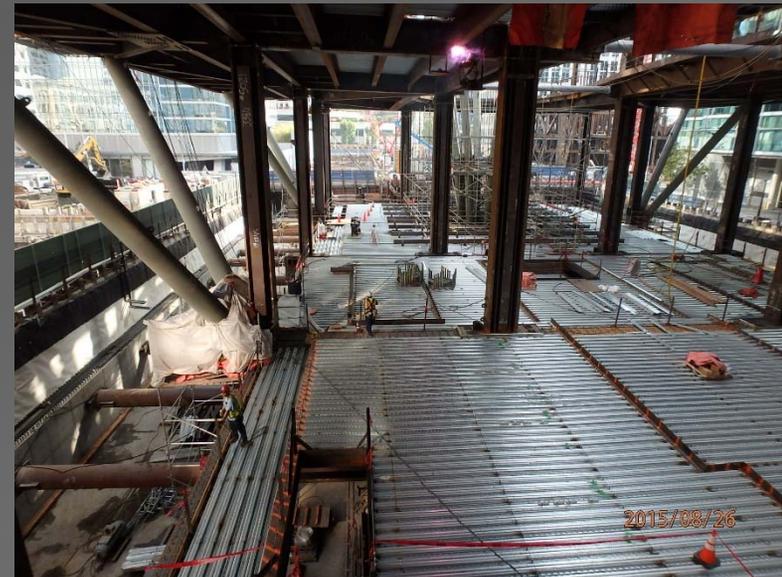
Lower Right: Beginning of final bracing removal.





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# Eastern Zone Activity

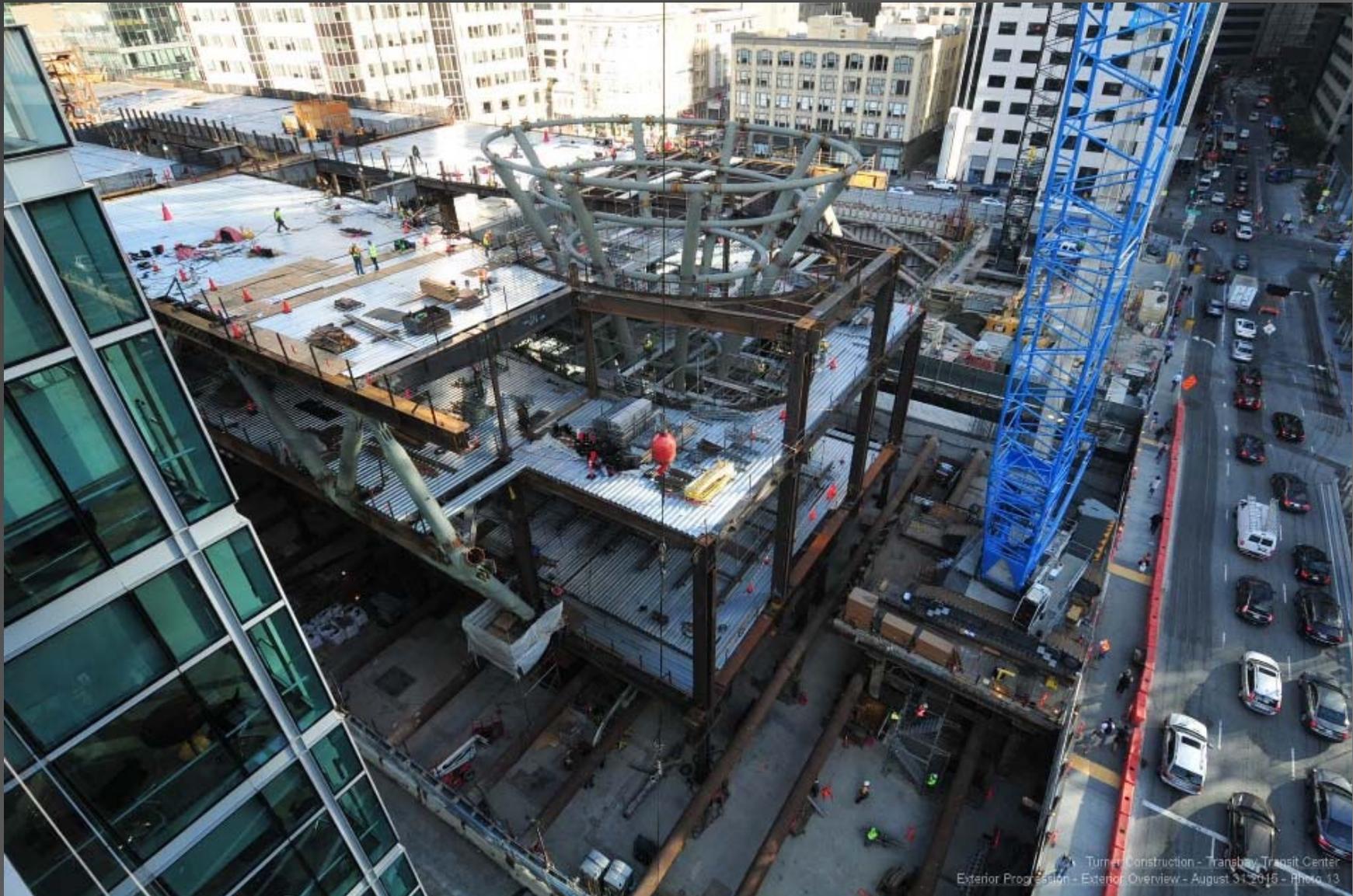


Continued steel erection in the eastern zone.

# Eastern Zone Activity – Light Column



# Eastern Zone Activity – Light Column





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# Eastern Zone Activity



Above: Prep for final 3<sup>rd</sup> lift wall pour.

Above Right: Prep for 4<sup>th</sup> lift wall pour under Fremont Street.

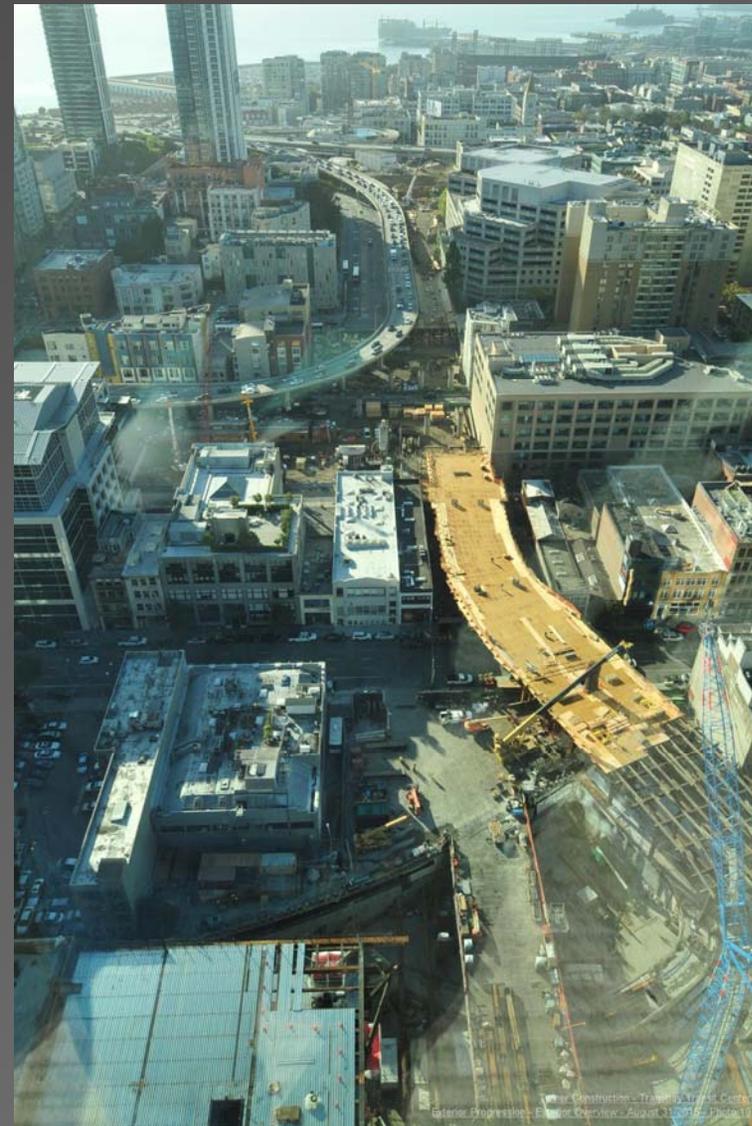
Below Right: 4th lift wall formwork.





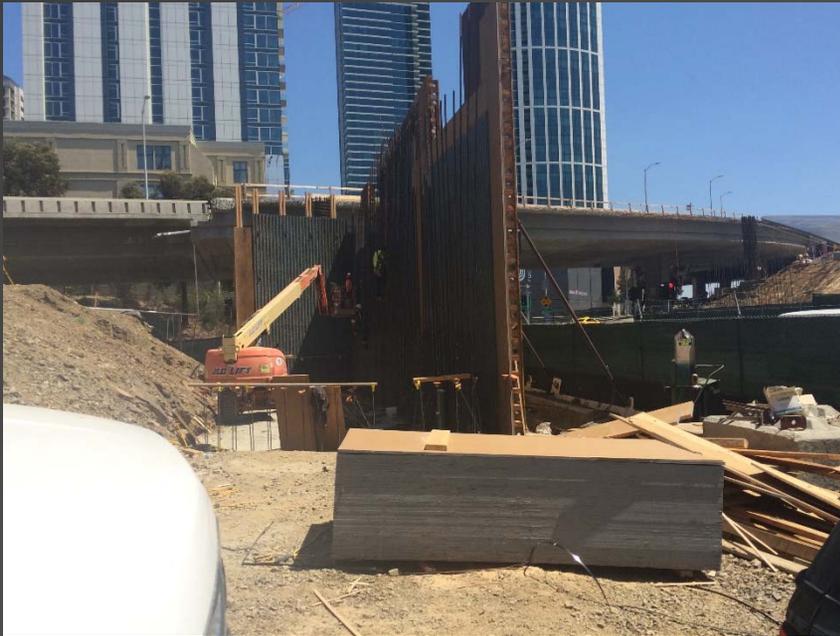
## Bus Ramp and Bridge as of August 31, 2015

- Current Status
  - All columns have been placed.
  - First shipment of Cable Stay Bridge saddles have been delivered to site, remainder are in fabrication.
  - Abutments and retaining walls, near Folsom and Harrison Streets, remain in progress.
  - Falsework continues at Pylon 9 and Bent 8 as well as inside the Transit Center footprint.
  - Street crossings for falsework were completed at Howard, Folsom and Tehama Streets in July and August.





# Bus Ramp and Bridge



Above Left: Abutment walls south side of Harrison Street.



Above and Below Right: Falsework and formwork for Cable Stay Bridge over Howard.





# Construction

## The Next 90 Days

- Next 30 Days (Sep.)
  - Continue 4<sup>rd</sup> lift walls and re-bracing in the eastern zone.
  - Continue structural steel fabrication. Ship final steel for Western Zone.
  - Continue Bus Ramp viaduct soffit and formwork. Start reinforcing steel and concrete over Folsom and Howard Streets.
  - Continue structural steel erection in west and east zones. Continue 4<sup>th</sup> lift walls in east zone.
  - Continue MEPF rough-in for decks in central zone.
  - Continue stair installation in central zone.
  - Continue above grade concrete placement in central zone.
- Next 60-90 Days (Oct. – Nov.)
  - Complete 4<sup>th</sup> lift walls and re-bracing work in eastern zones.
  - Continue Bus Ramp and Bridge formwork, rebar and concrete.
  - Complete steel erection and start deck pours in western zone.
  - Continue structural steel fabrication, delivery and erection in east zone. Complete steel erection over Fremont Street.
  - Continue installation of stairs and ladders.
  - Continue superstructure concrete in central and western zones.
  - Continue MEPF deck rough-in of embeds, blockouts and sleeves.



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# Bay Area Regional Labor Breakdown

	Through August 2015	
Location	Total Hours Completed	Percent of Total
East Bay (Alameda, Contra Costa, Solano)	656,094	39%
North Bay (Marin, Napa, Sonoma)	58,502	3%
South Bay (San Mateo, Santa Clara)	151,134	9%
San Francisco	263,630	17%
Other*	527,725	32%
<b>Totals</b>	<b>1,670,012**</b>	<b>100%</b>

\*Other includes workers from throughout California including the Central Valley as well as workers from out of state who are onsite for specific tasks.

\*\*Total hours are for the Transit Center construction work and do not include the initial Demolition work represented by a total of approximately 55,000 craft hours.



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# Bay Area Regional Apprentice Hours Breakdown

	Through August 2015	
Location	Total Hours Completed	Percent of Total
East Bay (Alameda, Contra Costa, Solano)	100,623	34%
North Bay (Marin, Napa, Sonoma)	13,644	5%
South Bay (San Mateo, Santa Clara)	36,389	12%
San Francisco	81,550	28%
Other*	61,638	21%
<b>Totals</b>	<b>293,844*</b>	<b>100%</b>

\*Other includes workers from throughout California including the Central Valley as well as workers from out of state who are onsite for specific tasks.



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# Labor Breakdown by Trade through August 2015

<b>Classification</b>	<b>TTC Building and RUP's*</b>
Inspectors – Soils / Material Test	43
Carpenters and Related Trades	276
Cement Mason	87
Electrical – Utility Lineman	28
Electrician	75
Field Surveyor	38
Iron Worker	723
Laborer and Related Trades	785
Operating Engineer	468
Pile Drivers	217
Plumber	35
Roofer and Waterproofoer	40
Sheet Metal	8
Teamsters	181
Tile Setters / Finishers	7
Water Well Driller	9
<b>Totals</b>	<b>3,020</b>

\* Relocation of Utilities Project



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# Questions?

