



# Construction Update

February 13, 2014

## Transbay Transit Center

**TJPA**





Transbay Transit Center

## Period Summary

- A lost time incident occurred on February 6<sup>th</sup>. Prior to this incident there was a recordable incident in November involving two lacerated fingers.
- Since our last construction update the micropile work re-started in the eastern portion of the project. All zone 3 micropiles are now complete with 50% complete in zone 4.
- There have been over 965,000 craft hours completed, excluding demolition, through January 31, 2014. An increase of more than 80,000 since our last construction update in November.
- The AWSS Work continues. In order to coordinate with SFMTA – MUNI, the AWSS work continues to proceed at night along Mission Street and will continue westward through June.



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## Period Summary

- All bracing installation and mass excavation has been completed. There remains approximately 500 cubic yards of material to be removed which includes fine grading and pit excavation.
- Bracing removal and rebracing following wall pours continues in the western area of the project, zones 1 and 2.
- Grounding, Geothermal, Mud Slab, Waterproofing and Protection Slab installation has been completed in all available areas. It has now re-started in zone 3 where micropiles have been completed.
- The initial 9 of 15 mat foundation slab pours have been completed (over 34,000 cyd's of concrete).
- In the western area, zones 1 and 2 Wall and Column placement is underway.



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## Mass Excavation Completed

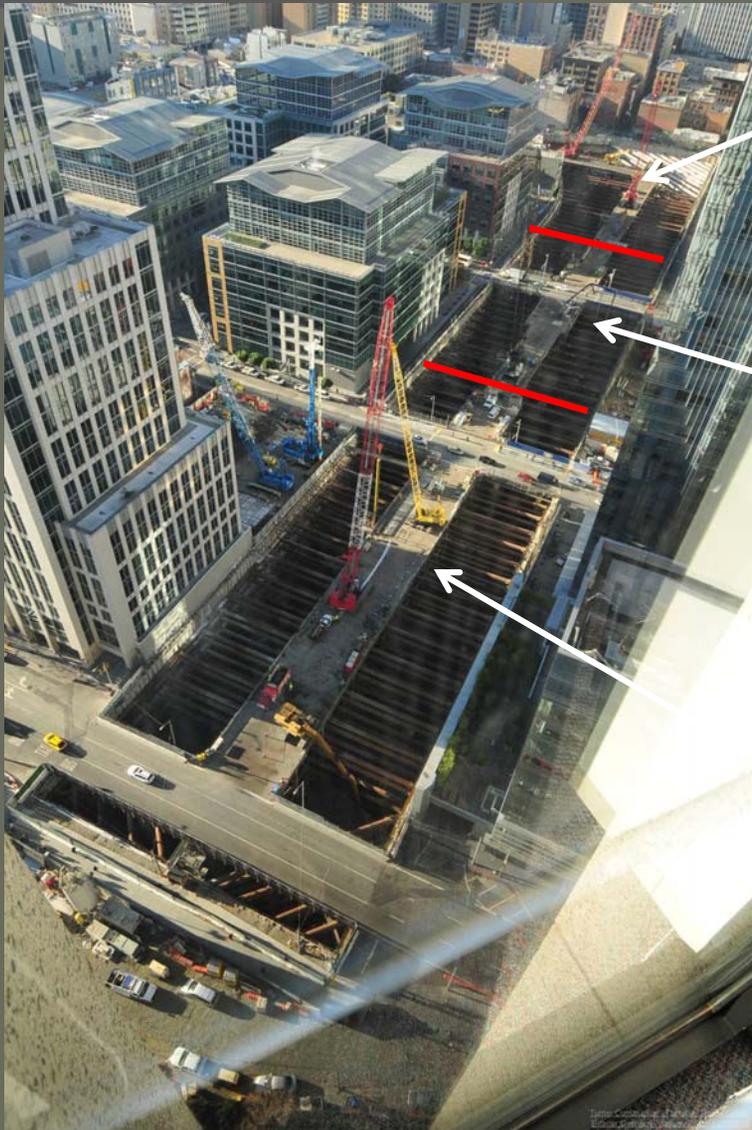
- Over 640,000 cubic yards of material removed.
- Enough material to fill nearly 120 Olympic sized pools.
- Two years time to complete.
- Much of the excavated soil was recycled and used for clean fill.





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# Current Project Overview



Western Zone – Gridlines 1 to 10

Central Zone – Gridlines 10 to 20

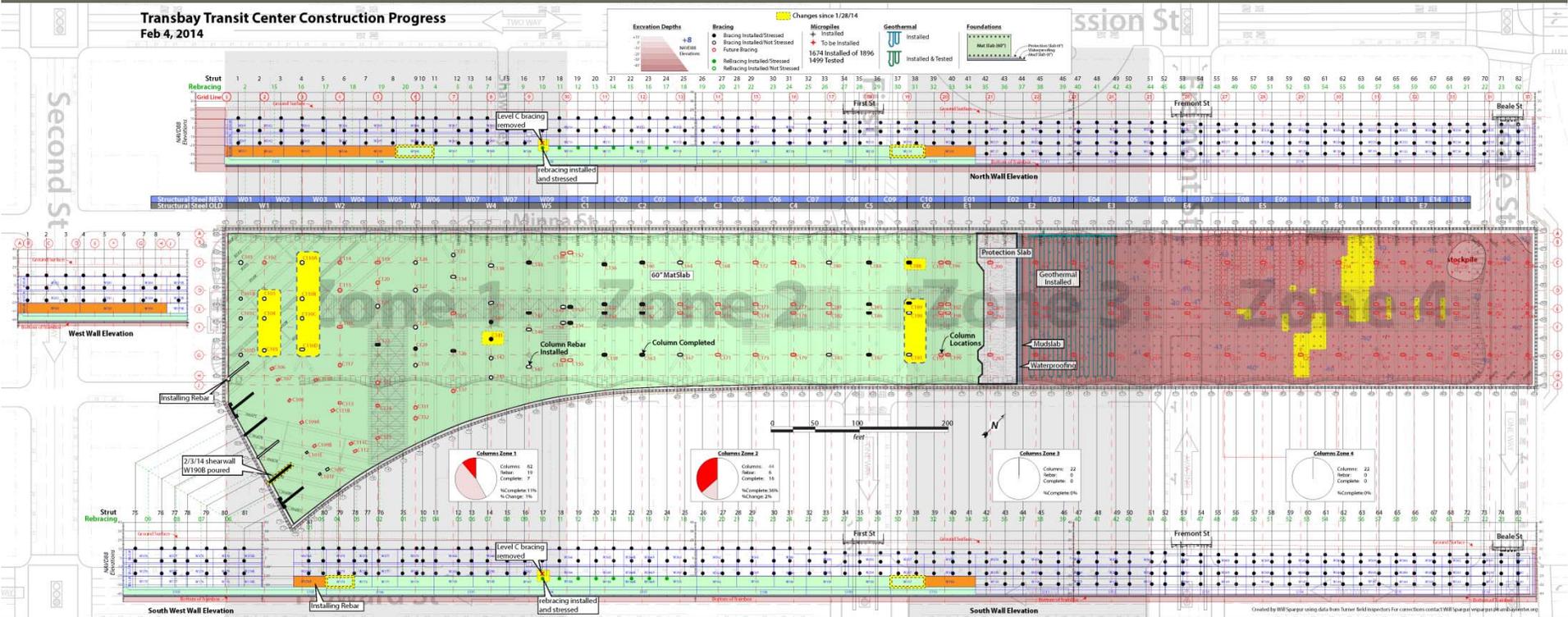
Eastern Zone – Gridlines 20 to 35



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# Below Grade Project Status as of February 4, 2014

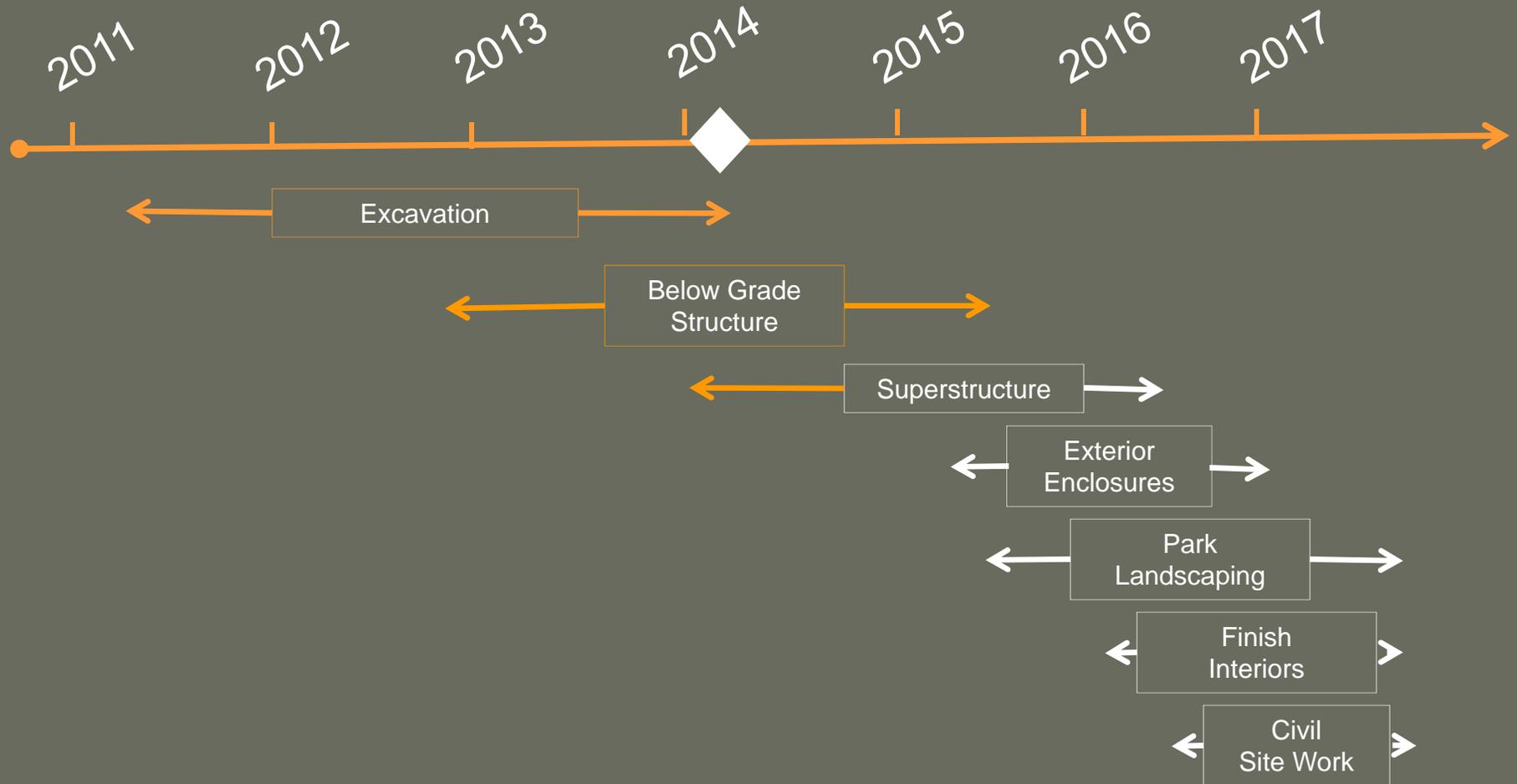
Transbay Transit Center Construction Progress  
Feb 4, 2014





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# Construction Timeline Summary





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## Construction Milestones

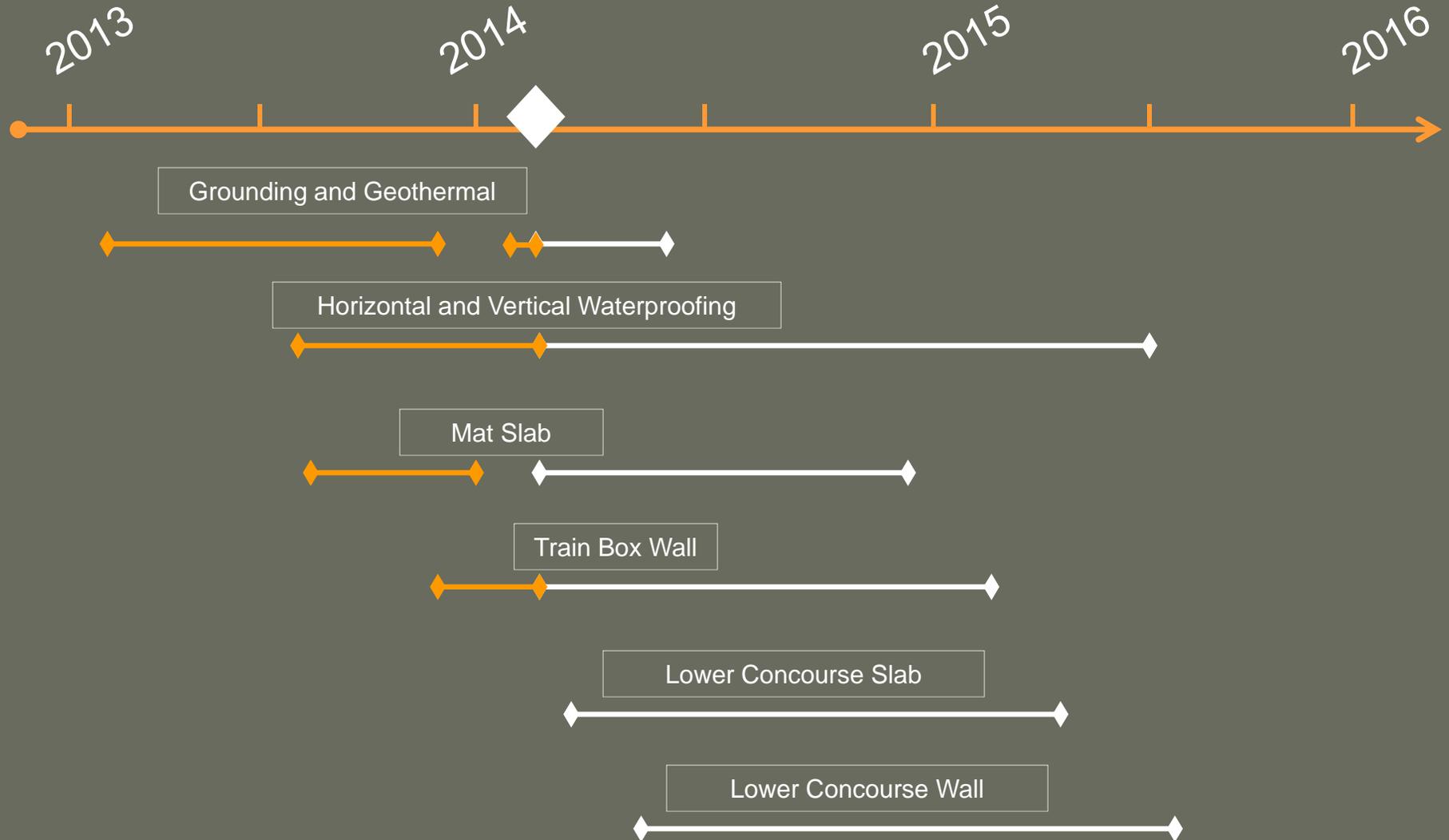
Key Schedule Dates	Baseline	25-Nov-13		Float
Complete Utility Relocations	8-Jul-13	7-May-14		857
Complete First Mat Pour	8-Jul-13	9-Sep-13	A	
Complete Zone 2 Mat Pour	27-Aug-13	24-Nov-13	A	
Complete Excavation	6-Jan-14	14-Feb-14		72
Complete Zone 1 Concourse Level Deck	7-Mar-14	8-Oct-14		8
Begin Steel Erection	6-Jun-14	18-Jul-14		0
Complete Steel Superstructure	19-Nov-15	1-Dec-15		0
Connect Bus Ramps to Transit Center	1-May-16	25-Aug-16		44
Complete Rough Interiors	17-Aug-16	1-Dec-16		11
Complete Exterior Curtain Wall	5-Jan-17	23-Nov-16		35
Complete Finish Interiors	25-Jul-17	25-Jul-14		11
Begin Bus Operations	23-Oct-17	23-Oct-17		0
Final Completion	28-Mar-18	21-Jan-18		0

A = Actual Completion Date



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# Below Grade Concrete Timeline Summary





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## Western Zone Activity (zones 1 and 2)

Re-bracing in progress



Wall reinforcing steel





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# Western Zone Activity (zones 1 and 2)



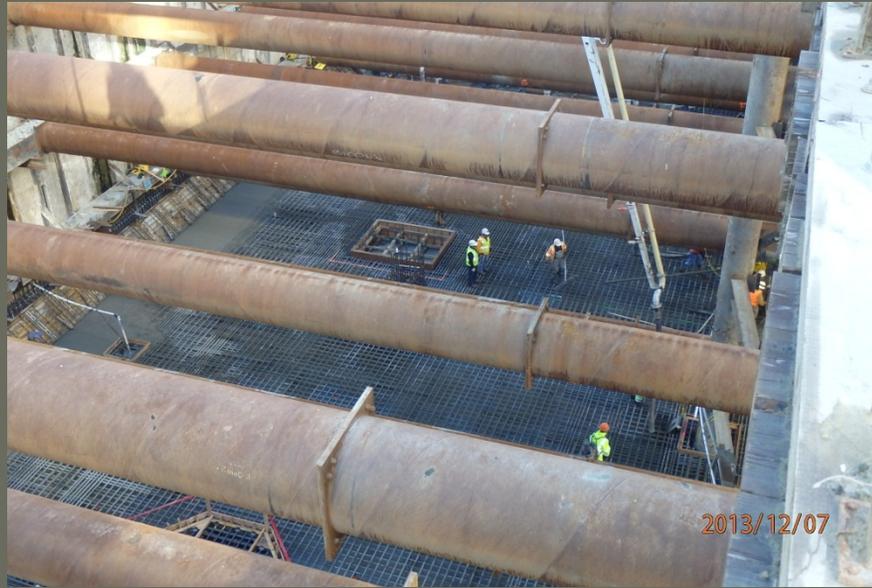
Wall reinforcing, northwest corner





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# Central Zone Activity (zones 2 and 3)



Final Mat Slab pour of first group





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# Central Zone Activity (zones 2 and 3)

Waler and cross lot  
bracing removal





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# Central Zone Activity (zones 2 and 3)



Column and Wall  
formwork in progress





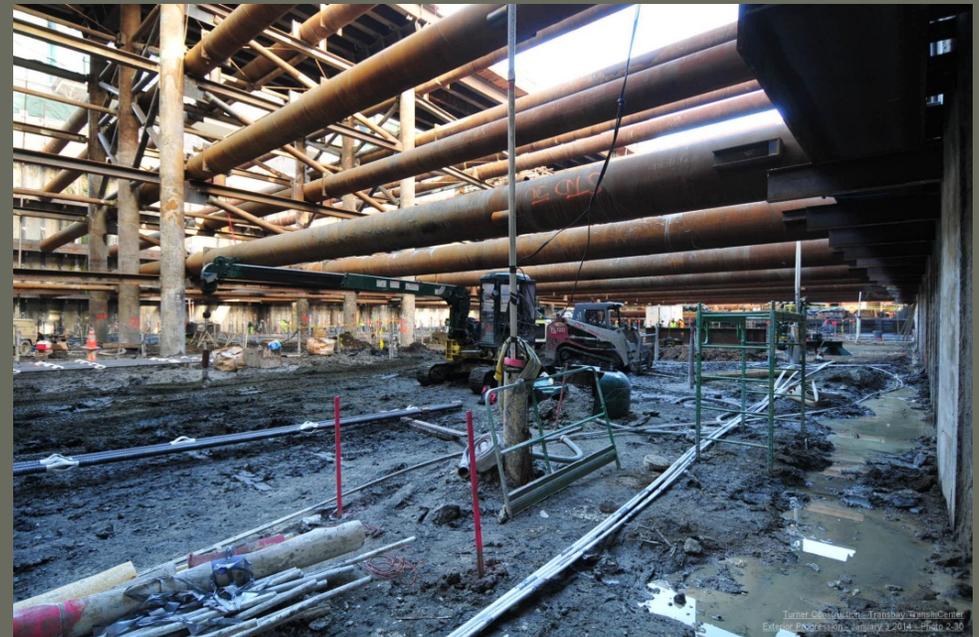
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# Eastern Zone Activity (zones 3 and 4)

## Completing Excavation



Micropiles in Progress





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# Eastern Zone Activity (zones 3 and 4)



Geothermal in Progress





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# Cast Node Fabrication as of January 24, 2014

Cast Nodes	Bradken Casting Totals	In-Process Pattern Completion	In-Process Casting Machining	Shipped to Skanska (6 Shipments)
Ground Level	35	9	14	0
Bus Deck Level	75	18	6	0
Roof Level	138	2	12	0
Light Columns	56	19	13	0
Total Cast Nodes	304	48	45	0

Note: The project QA/QC Team is visiting both Bradken Foundries (Kansas and Louisiana) the week of 2/10/14



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# Cast Node Fabrication

Pattern Development  
and Molding





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# Cast Node Fabrication



Heat Treatment



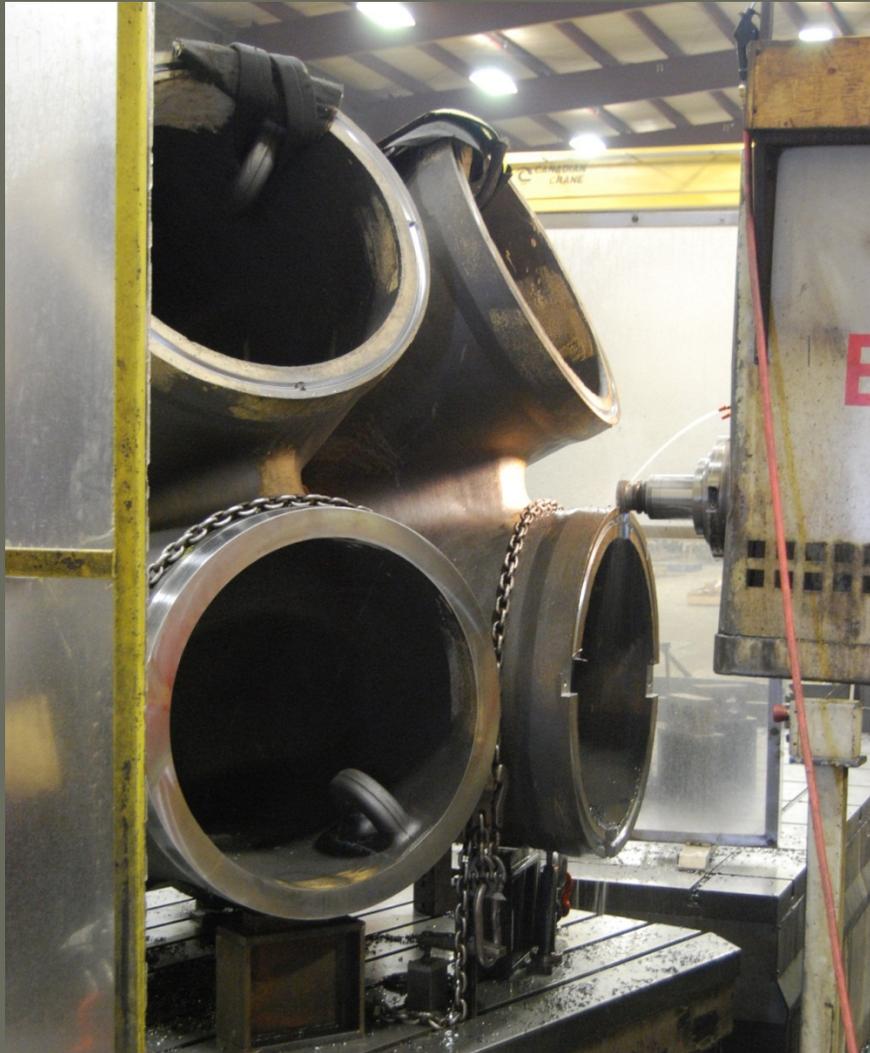
Casting





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# Cast Node Fabrication



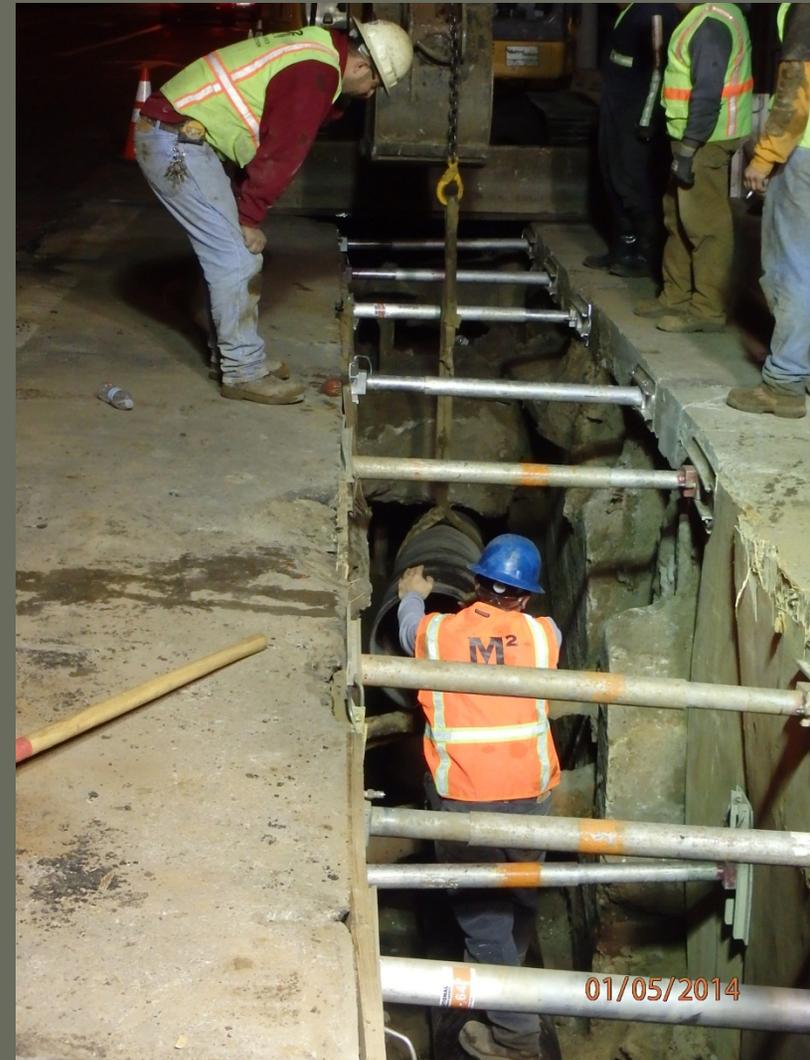
Machining in progress



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# Utility Relocation - AWSS Installation Update

- AWSS work continues at night to accommodate bus traffic.
- Work continues on Mission Street working west from Main to Beale Streets.





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# Construction The Next 90 Days

- Next 30 Days (February)
  - Complete fine grading and pit excavation.
  - Continue foundation walls in Zones 1 and 2.
  - Complete Zone 4 micropiles.
  - Complete Zone 3 grounding and geothermal installation.
  - Continue Cast Node fabrication.
  - Continue AWSS work along Mission Street.
  - Begin work on Lower Concourse slab in the western zone.
- In 60 Days (March)
  - Complete Zone 3 mud slab, waterproofing and protection slab installation.
  - Continue Zone 4 micropiles.
  - Continue foundation walls, columns and re-bracing in West & Central zones.
  - Place mat slab 11 in Zone 3.
- In 90 Days (April)
  - Continue work on Lower Concourse slab, Zone 2.
  - Pour mat slab 12 in Zone 3.
  - Continue work on walls, column, and lower concourse slab in western zone.



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# Contingency Tracking

(\$millions)

Trend	Design Contingency	Construction Contingency	CM/GC Contingency	Program Reserve	Escalation	Total Contingency & Reserve
Remaining Baseline Budget Amounts (Nov 2013)	\$8.2	\$60.2	\$36.4	\$87.3	\$30.3	\$222.4
Utility Relocation Change Orders						
BSE Change Orders		\$0.6				\$0.7
Below Grade Change Orders		\$0.2				\$0.2
Permanent Utilities		\$1.7				\$1.7
Design Budget Changes						
<b>Total Draws (Feb 2014)</b>	<b>\$0</b>	<b>\$2.5</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$2.5</b>
<b>Remaining Balances</b>	<b>\$8.2</b>	<b>\$62.7</b>	<b>\$36.4</b>	<b>\$87.3</b>	<b>\$30.3</b>	<b>\$224.9</b>



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# Bay Area Regional Labor Breakdown

Labor by Area	Through January 2014	
Location	Total Hours Completed	Hours Percent
East Bay (Alameda, Contra Costa, Solano)	318,933	33%
North Bay (Marin, Napa, Sonoma)	30,422	3%
South Bay (San Mateo, Santa Clara)	89,971	9%
San Francisco	172,269	18%
Other*	354,482	37%
<b>Totals</b>	<b>966,077**</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

Location	Through January 2014	
	Total Apprentice Hours	Percent of Total
East Bay (Alameda, Contra Costa, Solano)	37,559	27%
North Bay (Marin, Napa, Sonoma)	4,854	3%
South Bay (San Mateo, Santa Clara)	23,314	17%
San Francisco	49,410	35%
Other*	24,947	18%
<b>Totals</b>	<b>140,084</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 January 2014

Classification	TTC Building and RUP's*
Inspectors – Soils / Material Test	42
Carpenters and Related Trades	110
Cement Mason	48
Electrical – Utility Lineman	26
Electrician	43
Field Surveyor	27
Iron Worker	186
Laborer and Related Trades	569
Operating Engineer	339
Pile Drivers	137
Plumber	13
Rofer and Waterproofer	25
Sheet Metal	5
Teamsters	166
Tile Setters / Finishers	7
Water Well Driller	9
<b>Totals</b>	<b>1,752</b>

\* Relocation of Utilities Project



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Questions?