CAC Presentation

June 10, 2014

Transbay Transit Center

TJPA

Transbay Transit Center

Transbay Transit Center Program

1. New Intermodal Bus and Rail Station
2. Downtown Extension for Caltrain and CAHSR
3. New Neighborhood


Mission St.
Minna St.
Natoma St.
Howard St.
Folsom St.
Harrison St.
Bryant St.
Brannan St.
Townsend St.
King St.
Berry St.
Transbay Transit Center
Steuart St.
Tehama St.
Clementina St.
Temporary Terminal
Downtown Rail Extension
Bus Ramp
Essex St.
First St.
Fremont St.
Beale St.
Main St.
Spear St.
Second St.
Third St.
Fourth St.
Fifth St.
Sixth St.
Seventh St.
Bus Storage (Under Freeway)
Perry St.
Stillman St.
Taber Pl.
S. Park St.
Federal St.
De Boom St.
Delancey St.
Embarcadero
Colin P. Kelly Jr. St.
Ritch St.
Stanford St.
Clarence Pl.
Tunnel Portal
Fourth & Townsend Station
Tracks at Grade
280
80
Pier 26
Pier 28
Pier 30
Pier 32
Pier 36
Pier 38
Pier 40
Image © 2011 TerraMetrics
Transbay Transit Center

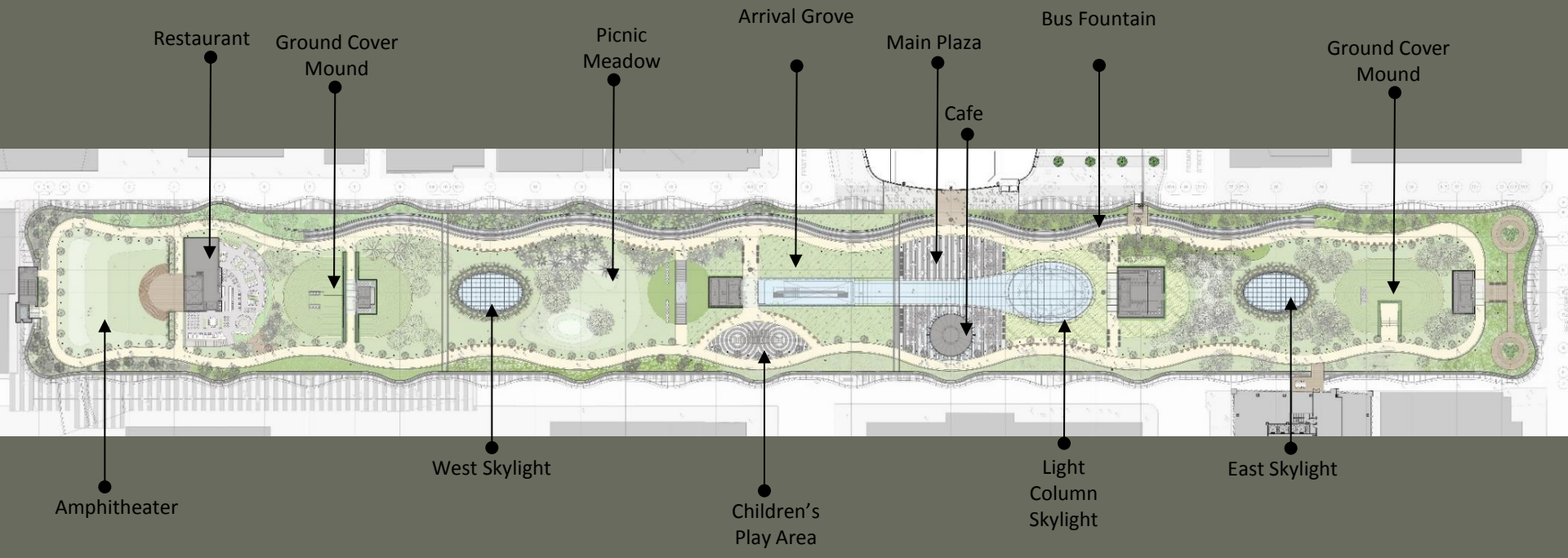
Transbay Transit Center Program

Phase 1
Transit Center

BUILDING SECTION

Transbay Transit Center

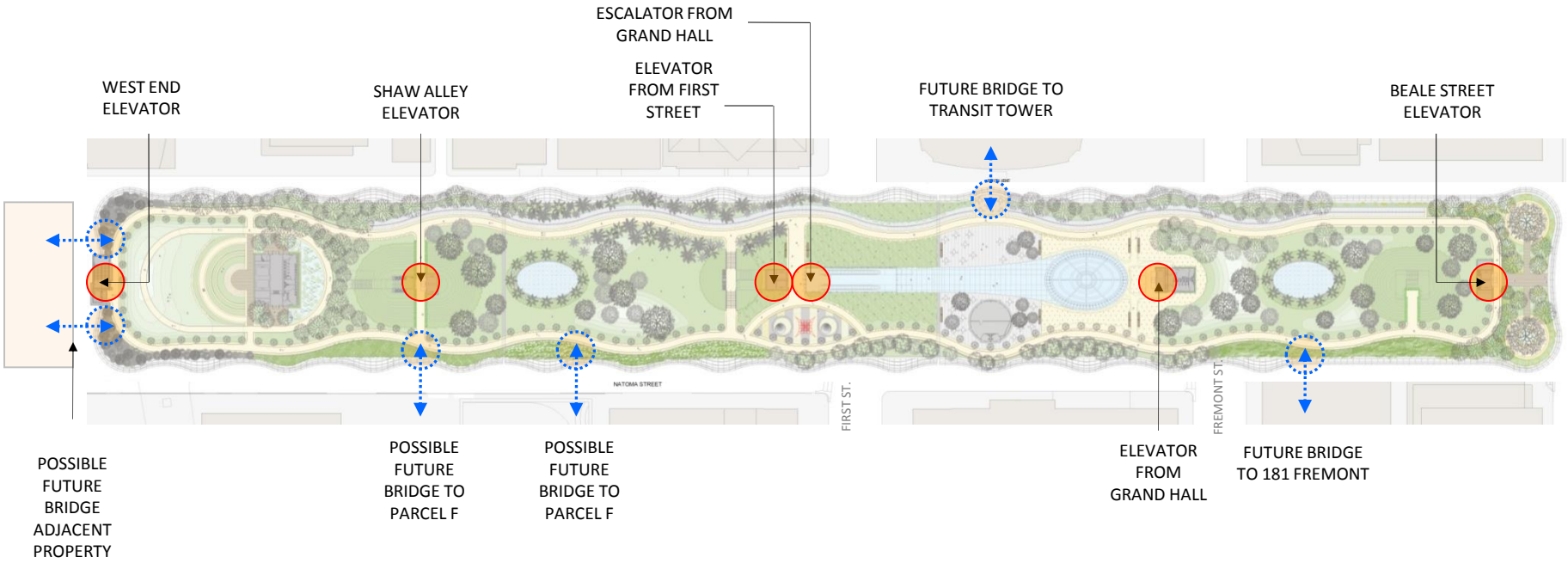
Rooftop Park



ROOF PARK LEVEL PLAN

Transbay Transit Center

Rooftop Park



ROOF PARK

Transbay Transit Center

Roof Park

Transbay Transit Center

Roof Park

Transbay Transit Center

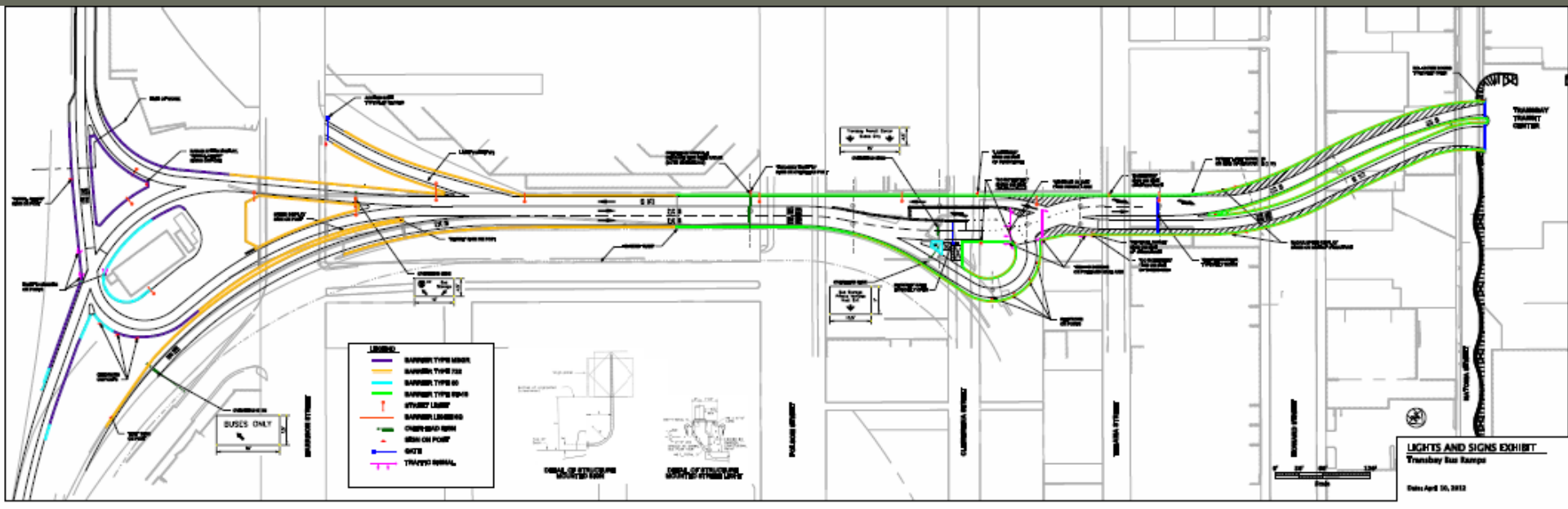
Roof Park

Transbay Transit Center

Roof Park Cafe

Transbay Transit Center

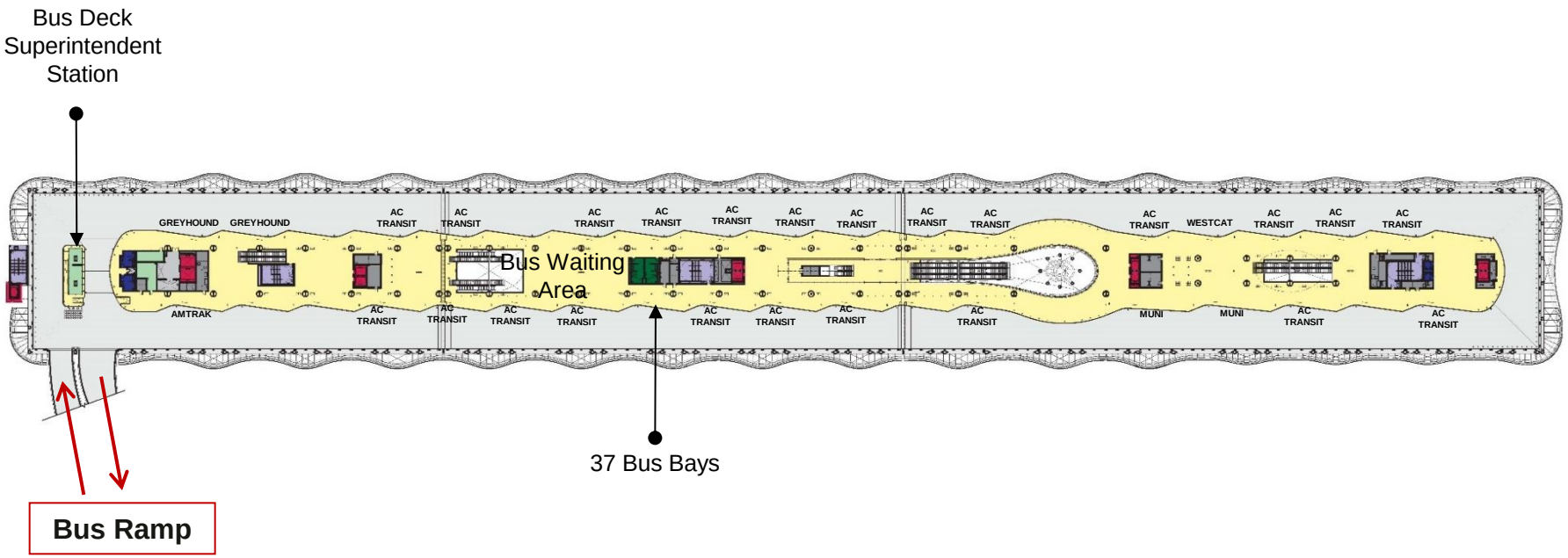
Bus Ramps
Scope of Work



Bus Ramps Overall Site Plan

Transbay Transit Center

Bus Deck



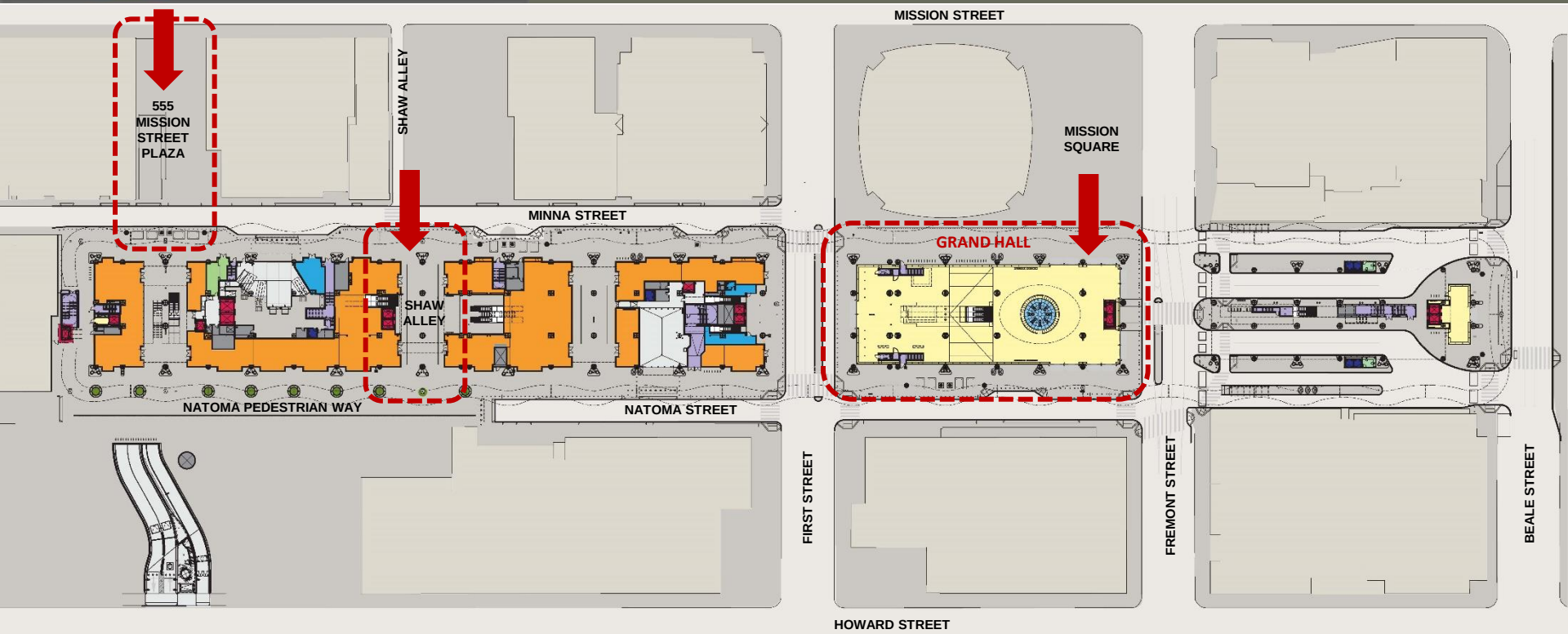
BUS DECK

BUS DECK

BUS DECK

Transbay Transit Center

Ground & Mezzanine Levels

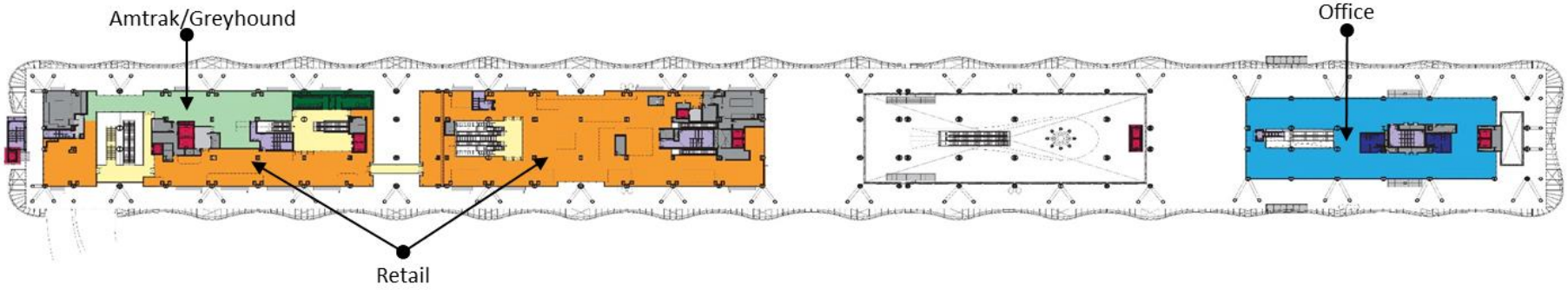


Total Building Area: Over 1 million SF
Total Retail Area: Over 100,000 SF

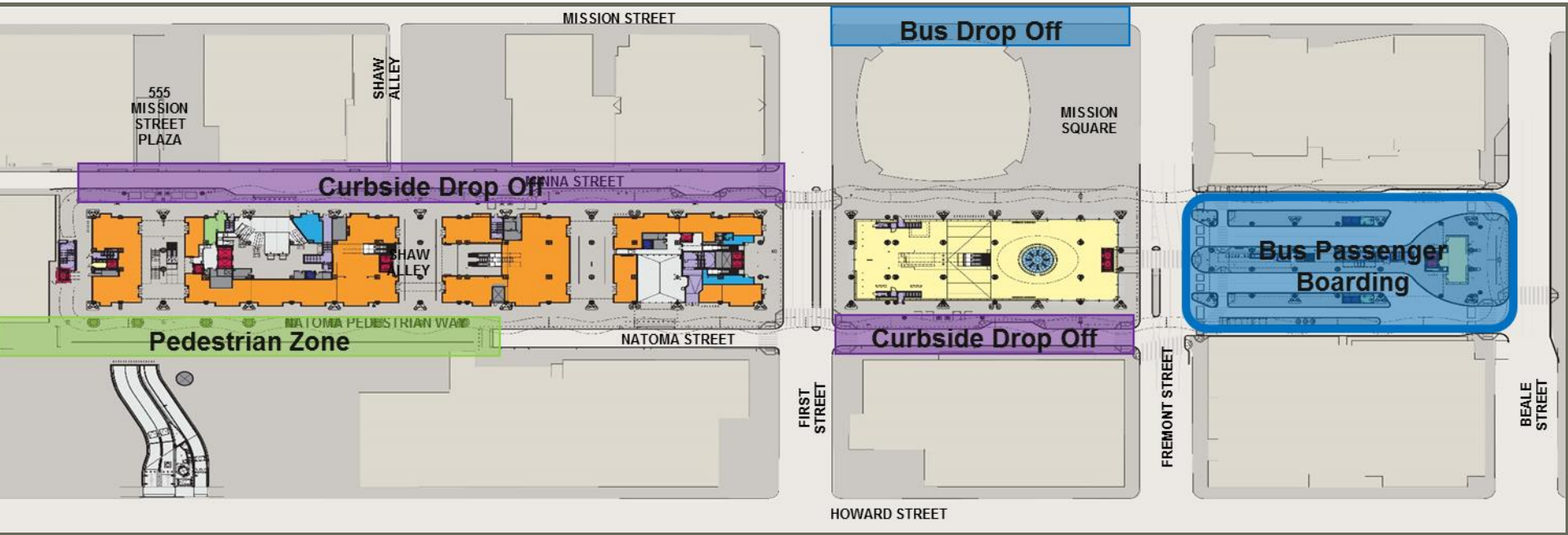
GROUND LEVEL PLAN

Transbay Transit Center

Ground & Mezzanine Levels



Second Level



GROUND LEVEL & SECOND LEVEL PLANS

GRAND HALL

Transbay Transit Center

GRAND HALL

Transbay Transit Center

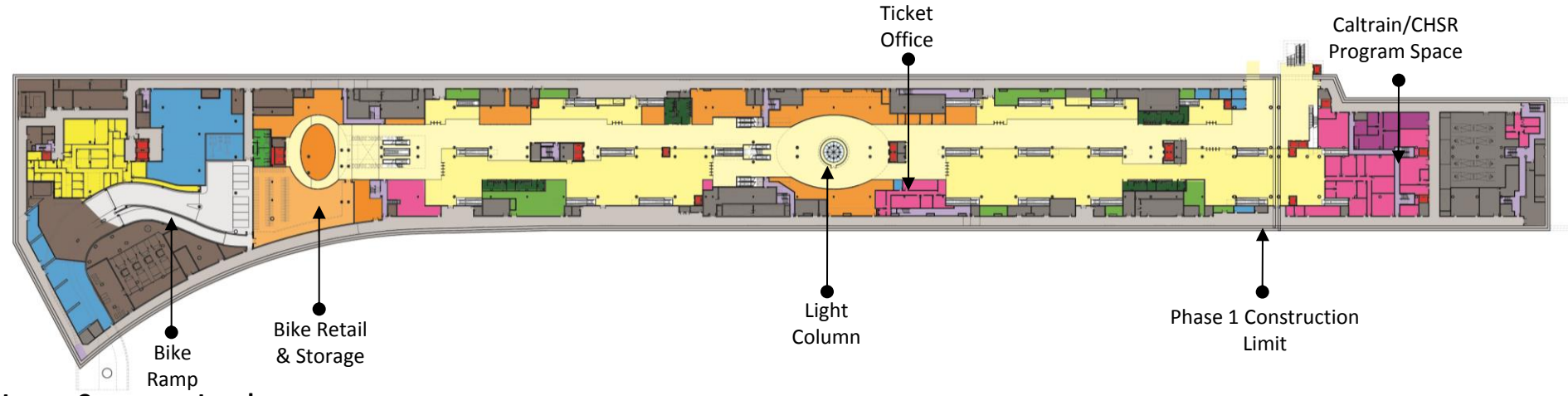
GRAND HALL

Transbay Transit Center

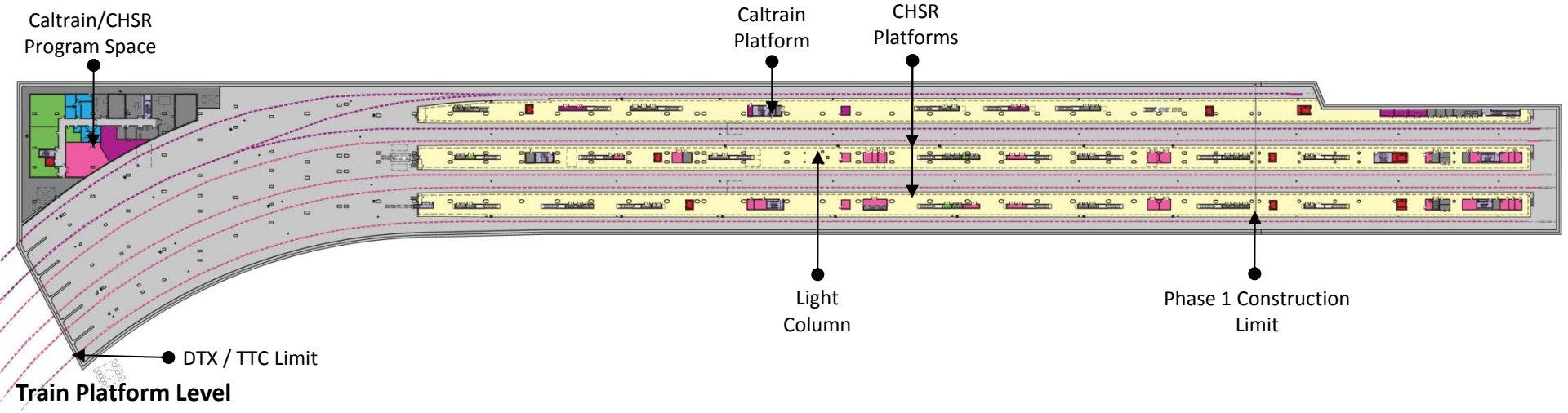
GRAND HALL

Transbay Transit Center

Lower Concourse & Train Platform Levels



Lower Concourse Level



Train Platform Level

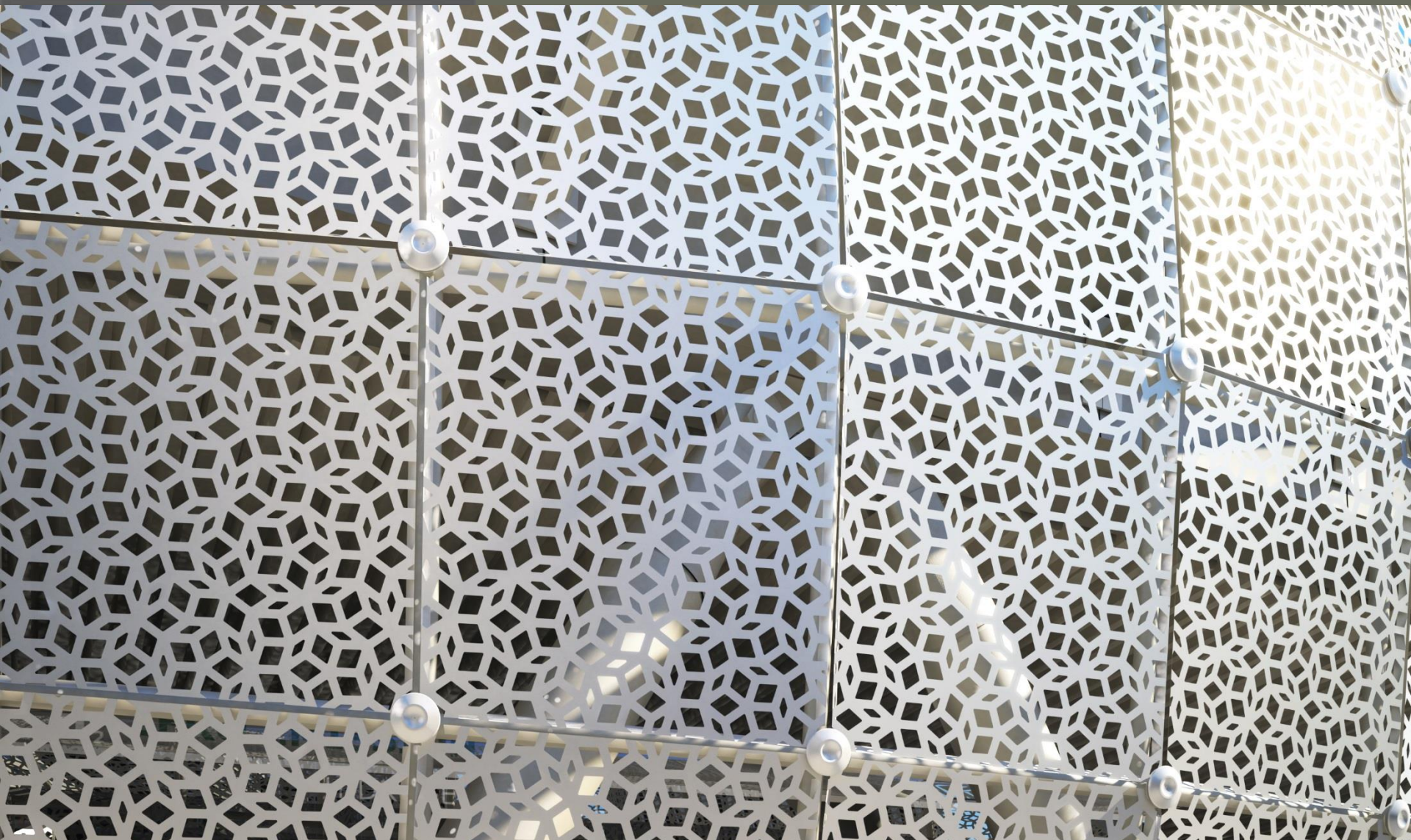
LOWER CONCOURSE LEVEL & TRAIN PLATFORM LEVEL PLANS

LOWER CONCOURSE

TRAIN PLATFORM

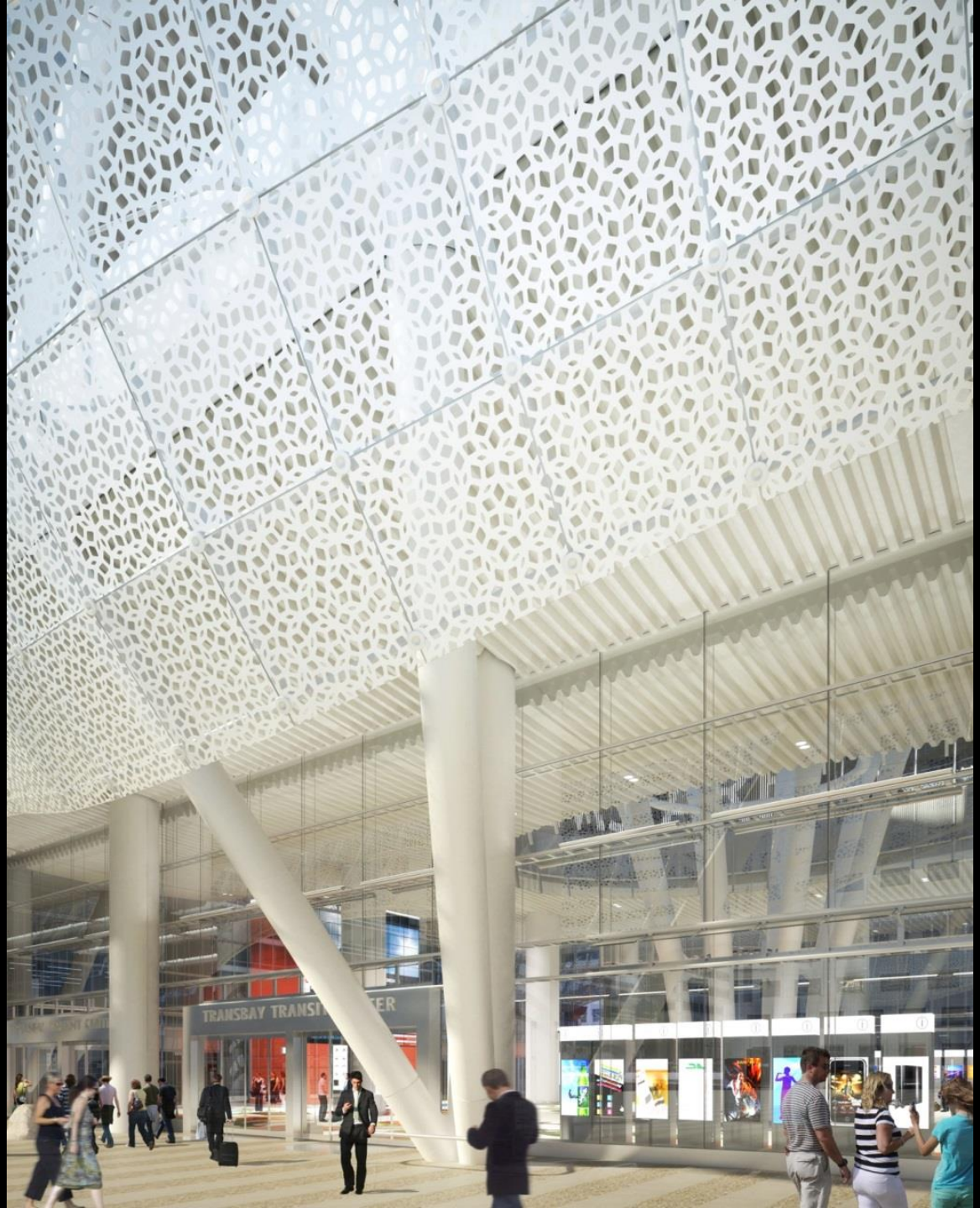
Transbay Transit Center

Transit Center Exterior



Transbay Transit Center

Natoma Pedestrian Way View


TRANSBAY TRANSI


Levi's

First Street View

Transbay Transit Center

Beale Street View

Transbay Transit Center

West End View

Transbay Transit Center

Natoma Pedestrian Way at Dusk

Transbay Transit Center

View From The East

Transbay Transit Center

View From The West

Transbay Transit Center

Salesforce Tower

Transbay Transit Center Program

Phase 2
Downtown Extension (DTX)

Transbay Transit Center

DTX Phase 2

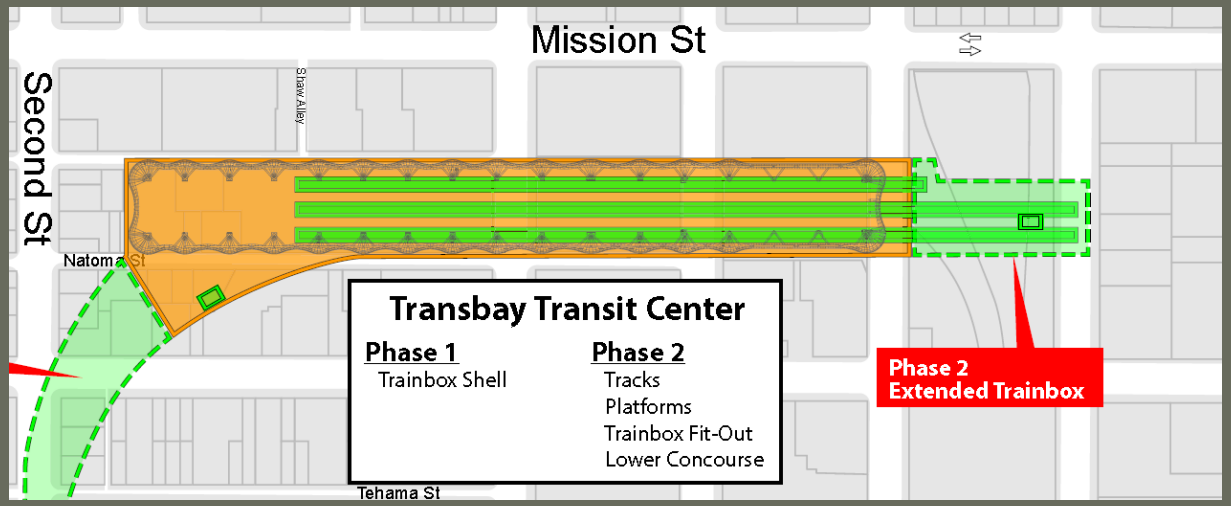
Transit Center

Station Fit-out :

- Six tracks
- Three center platforms
- Lower Concourse facilities
- Ventilation shaft

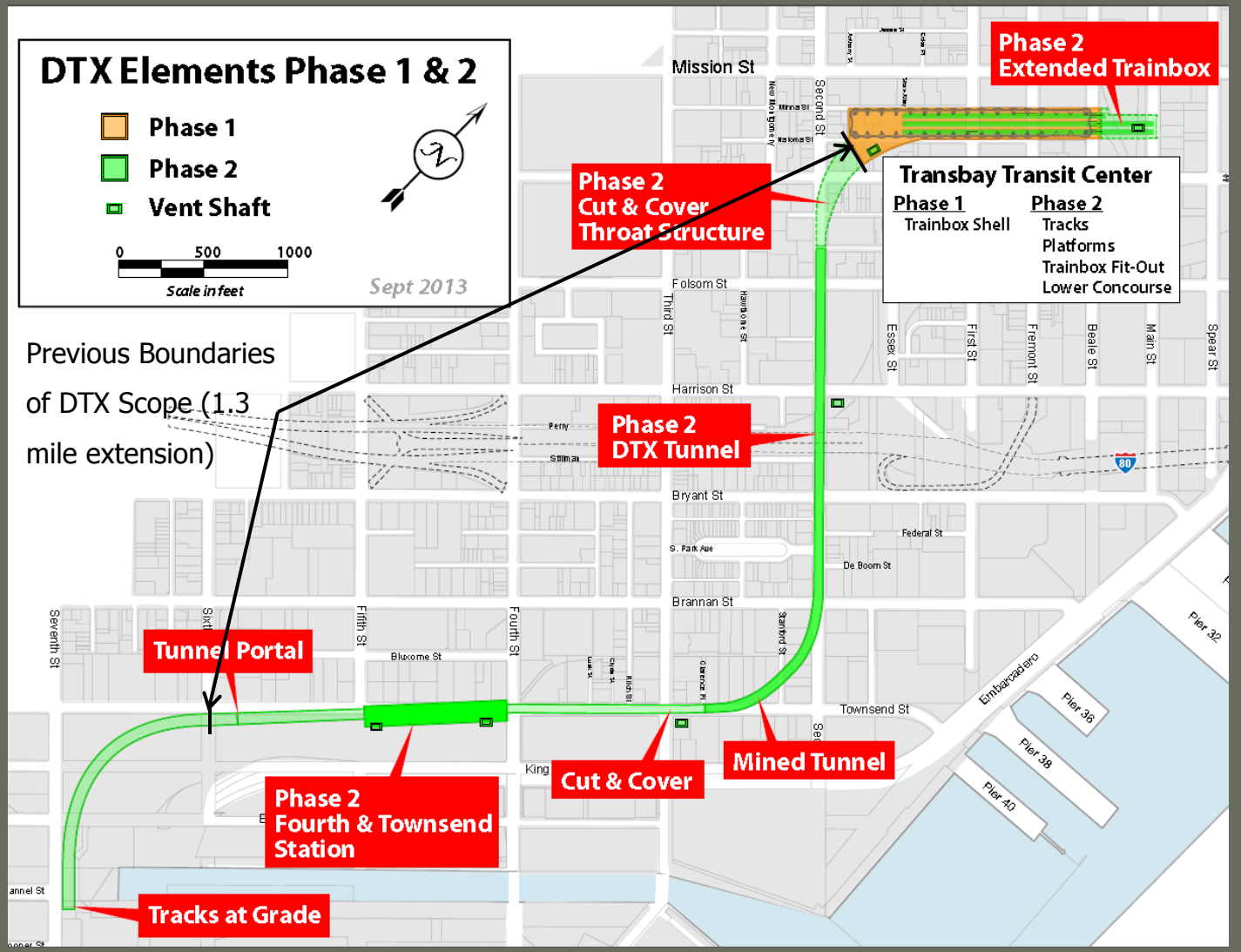
Trainbox Extension:

- Underground extension of trainbox to accommodate full length high speed rail trains
- Includes ventilation shaft
- Intercity bus facility above



Transbay Transit Center

DTX Elements



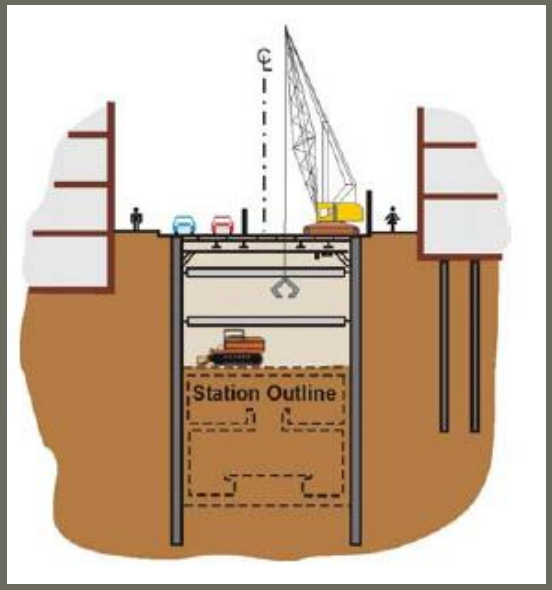
Transbay Transit Center

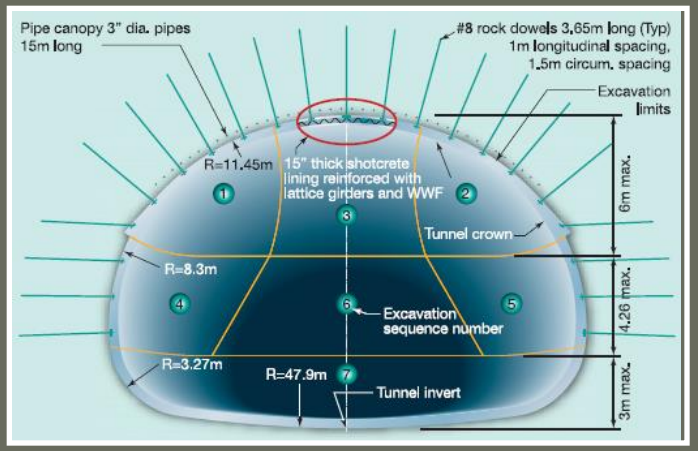
Tunneling Methods

Transbay Transit Center

Tunneling Methods

- Cut and Cover excavation in areas of soft bay fill
- Sequential Mining in more competent soils
- TBM impractical for 3-track alignment and short mined tunnel length

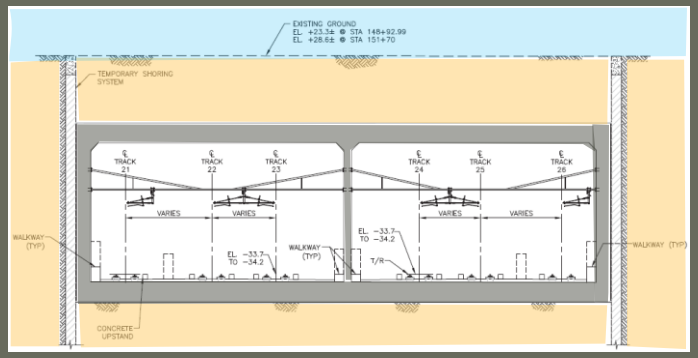




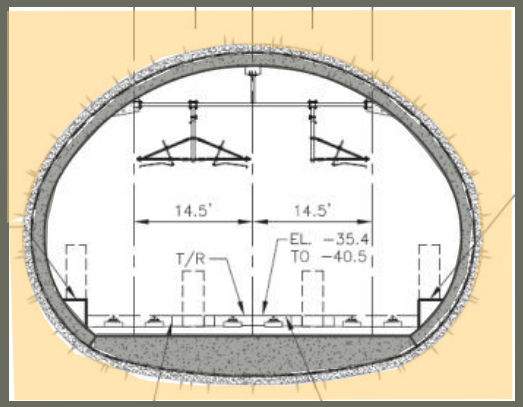
Transbay Transit Center

DTX Phase 2
Tunnel

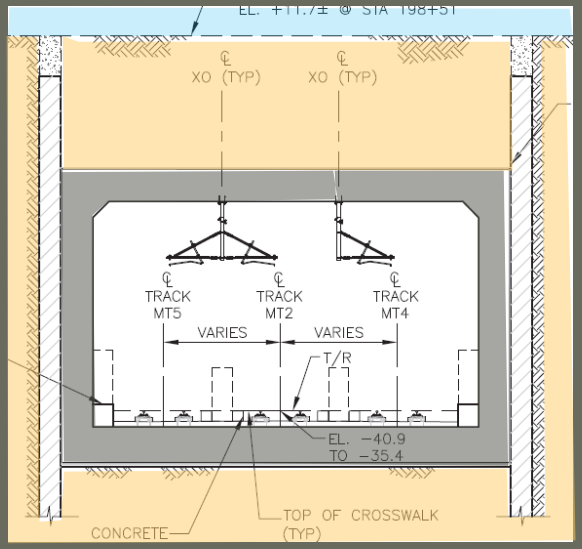
Cut-and-Cover
Throat Structure
Narrows from six to three tracks



Mined Tunnel
(sequential excavation method)
Three tracks



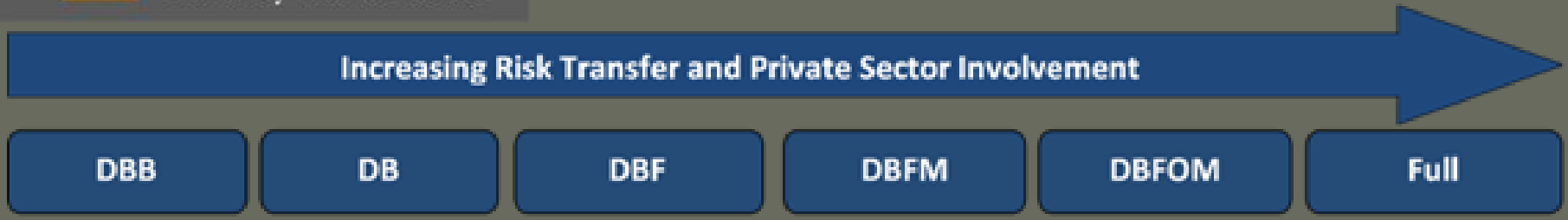
Cut-and-Cover
in Townsend Street
Narrows from three to two tracks



** Also includes rail systems, trackwork and utility relocations*

Transbay Transit Center

DTX Delivery Options



Design-Bid-Build (DBB) Proposed Budget $3.004B

- Train operations 2024

Design-Build (DB) Budget $2.832B

- 4% less than DBB for design and construction
- 50% less unallocated contingency than DBB
- Train operations 2024

P3/Design-Build-Finance-Maintain (DBFM) Budget $2.584B

- 8% less than DBB for design, construction, and programwide
- 75% less unallocated contingency than DBB
- Train operations 2022

Transbay Transit Center Program

New Neighborhood

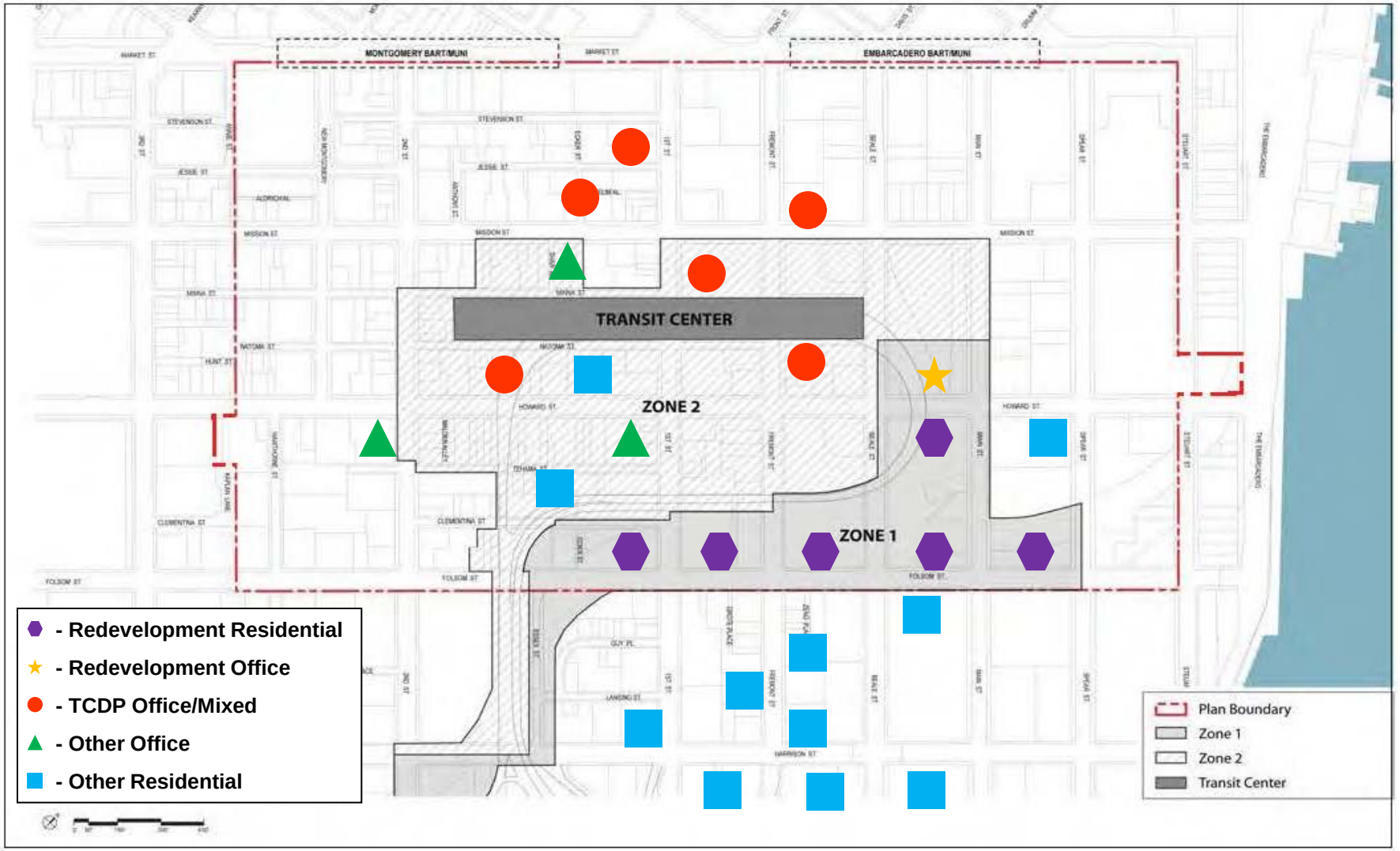
Transbay Transit Center

Transbay Project Area


New Neighborhood

Transbay Transit Center

Development Projects Pipeline



Transbay Transit Center

Economic Benefits of Transbay Program

- Creates more than 125,000 jobs directly and indirectly
- Increases surrounding property values by $3.9 billion
- Generates $87 billion in Gross Regional Product and $52 billion in personal income through 2030

Transbay Transit Center

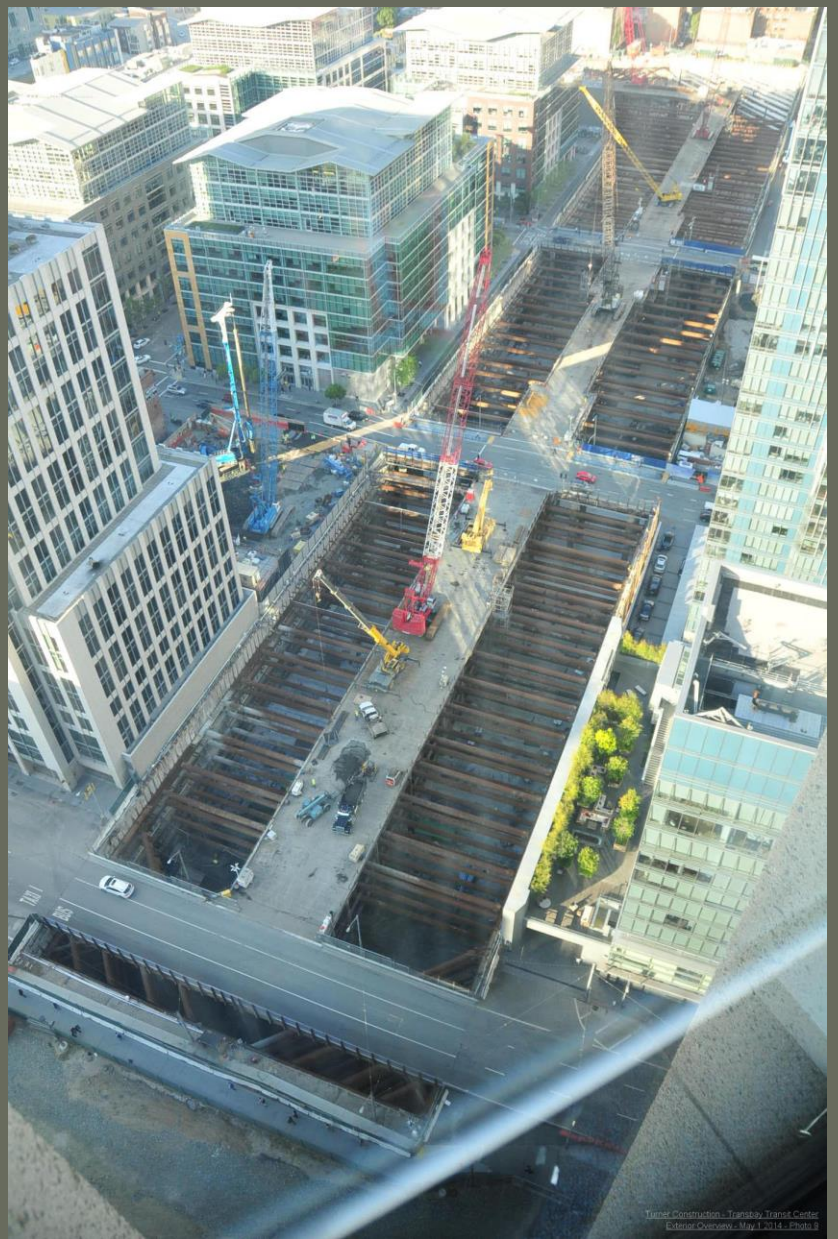
Benefits of Transbay Program

Transbay Program will improve access to transit for:

- Jobs – 180,000 jobs within ½ mile
- Housing – 8,000 new units in vicinity
- Hotels – new hotel capacity
- Ridership – increase Caltrain riders into SF by more than 50%

Transbay Transit Center

Phase 1 Construction Progress

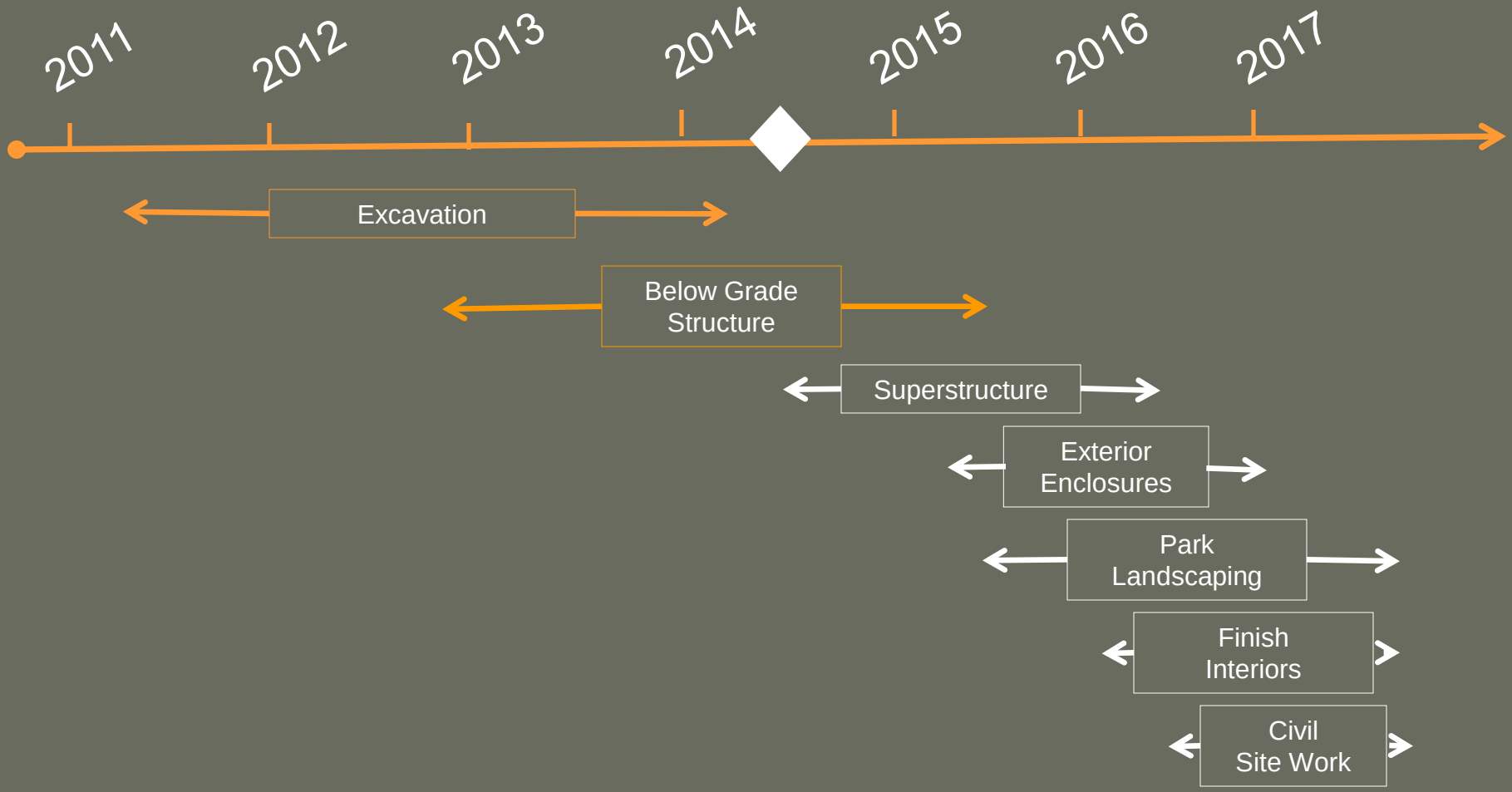


Transbay Transit Center

Temporary Bridges Video

Transbay Transit Center

Construction Timeline Summary



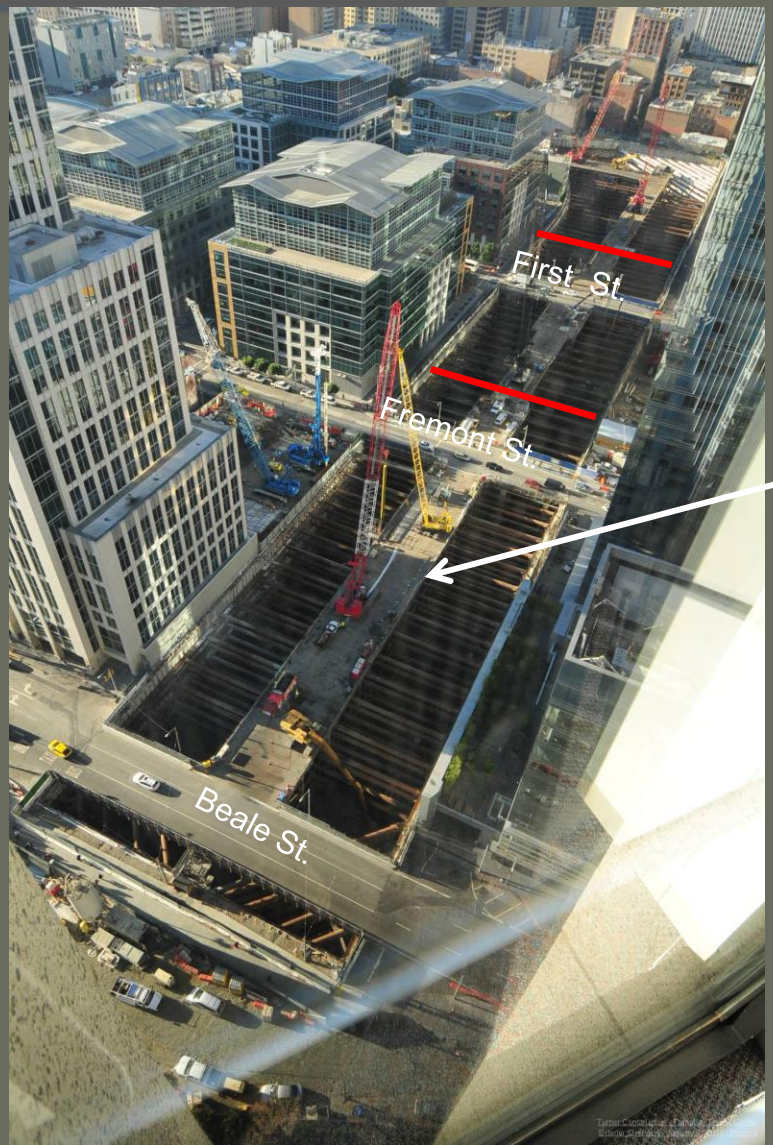
Transbay Transit Center

CDSM Shoring Wall Perimeter is 3560 feet long

- Cement Deep Soil Mix is Cement, Bentonite and in-situ sands.
- Mixed with a large triple auger drilling 130 feet deep.
- Steel soldier beams are 120 feet long and gravity set into the CDSM with a large crane.
- CDSM Shoring Wall Allows dewatering our site for excavation of soils.

September 2011

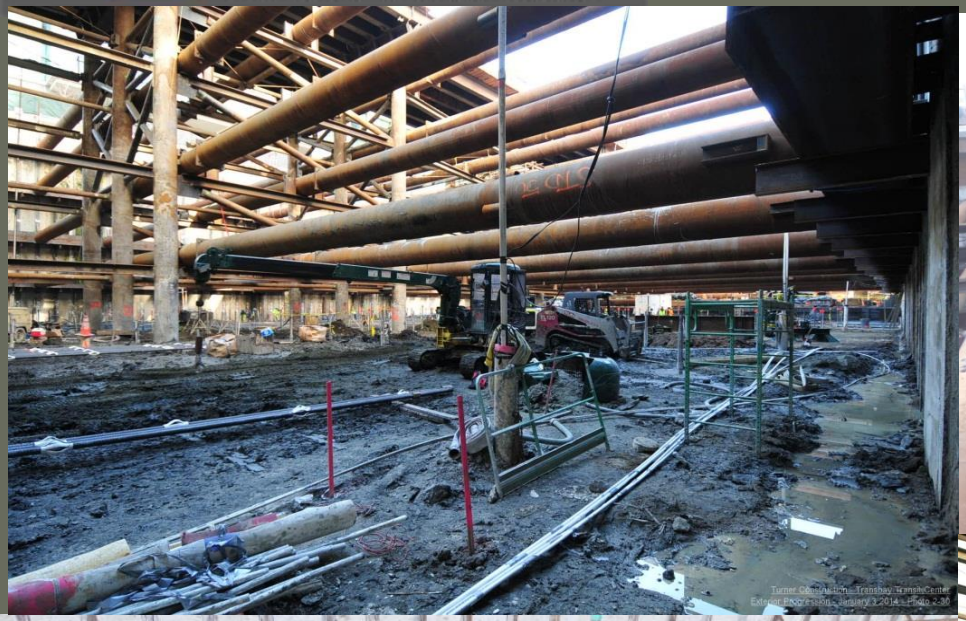
Transbay Transit Center



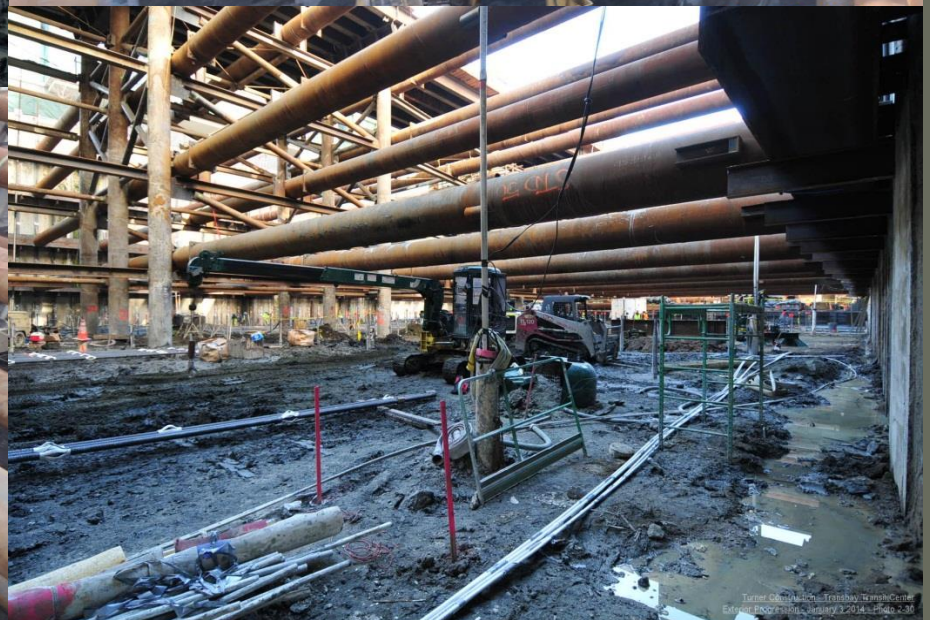
Construction Trestle

Transbay Transit Center

Excavation and Shoring System/Bracing Complete



Construction Trestle.



Transbay Transit Center

History of Transit Center site
Soil excavated down to 65 feet deep:

1. Fill - Earthquake Debris
0’ -10 **’deep 1906-Present**

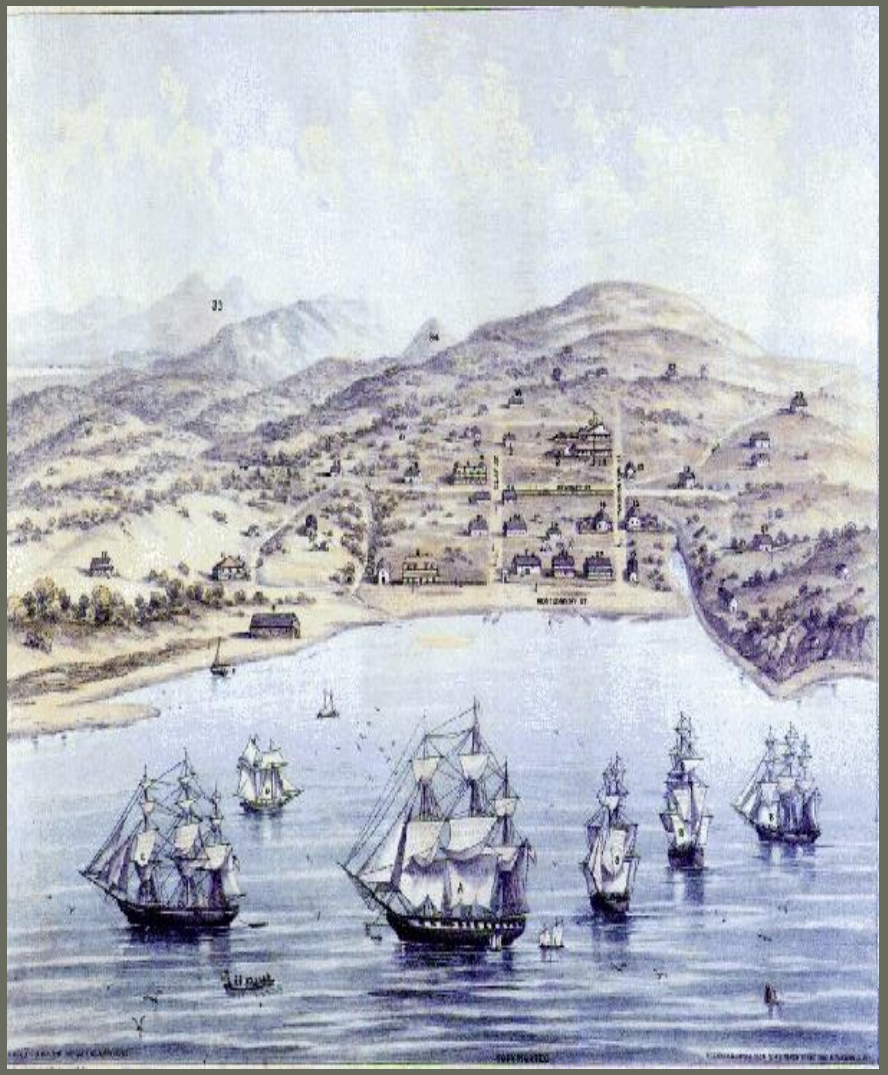
2. Dune Sand - Gold Rush era
10’ to 20’ deep 1849 – 1906

3. Bay Mud > 20’ deep
1849 – 6000 B.C.

4. Marine Sand > 30’ deep
6000 - 12,000 B.C.

5. Colma Sand > 40 feet deep
2,000 B.C. - 100,000 (Ice Age)

6. Old Bay Clay > 95 feet deep
100,000 – 130,000 (Before the last Ice)




PARK LEVEL
BUS DECK LEVEL
GROUND LEVEL
GRAND HALL
MISSION SQUARE
RETAIL
PUBLIC CONCOURSE & WAITING AREA
RETAIL
LOWER CONCOURSE LEVEL
CHSR PLATFORM
CHSR PLATFORM
CALTRAIN PLATFORM
TRAIN PLATFORM LEVEL

Transbay Transit Center

Main Structure

Transbay Transit Center

Micropile Installation Completed

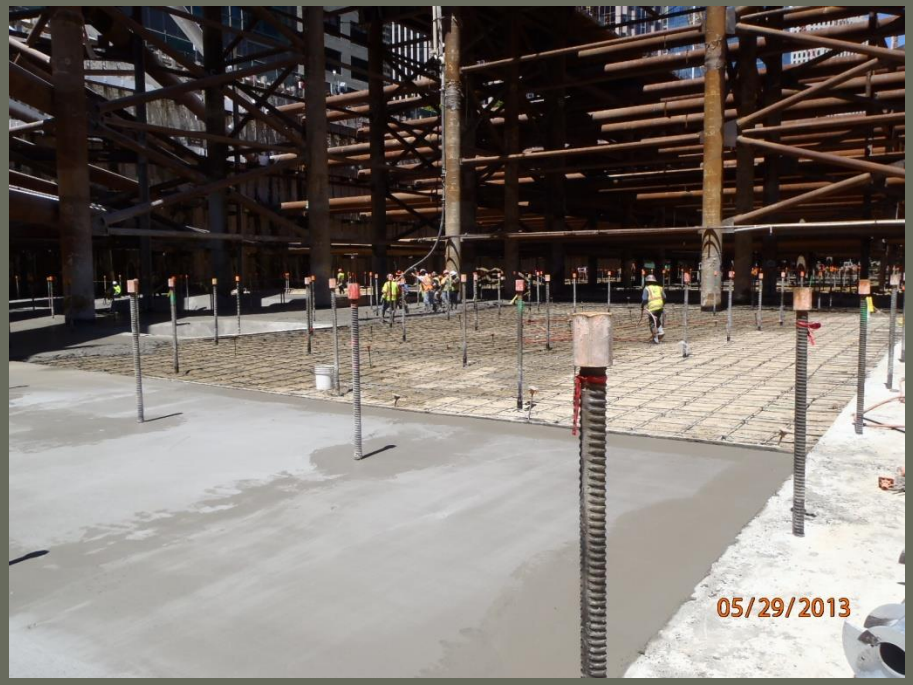
- A total of 1,896 micropiles have been installed throughout the project.
- The work was completed in two mobilizations:
  - Oct. 2012 to Jul. 2013; 1258 piles installed in 35 weeks, ave. rate of 36/wk
  - Dec. 2013 to Feb. 2014; 638 piles installed in 13 weeks, ave. rate of 49/wk (included a night shift)
- All piles continue to pass load testing, 45 remain to be tested, mid-April completion is anticipated.

Transbay Transit Center

Geothermal Piping Completed

Transbay Transit Center

Mud Slab Placement Completed



Transbay Transit Center

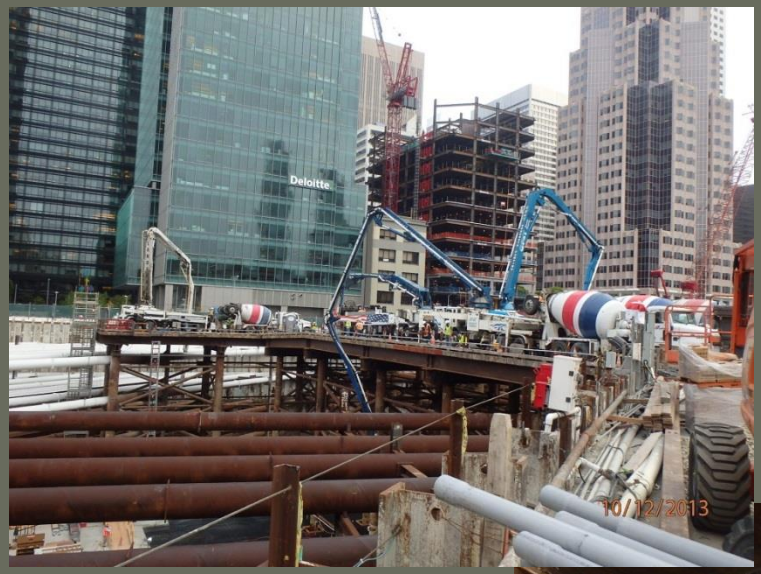
Waterproofing

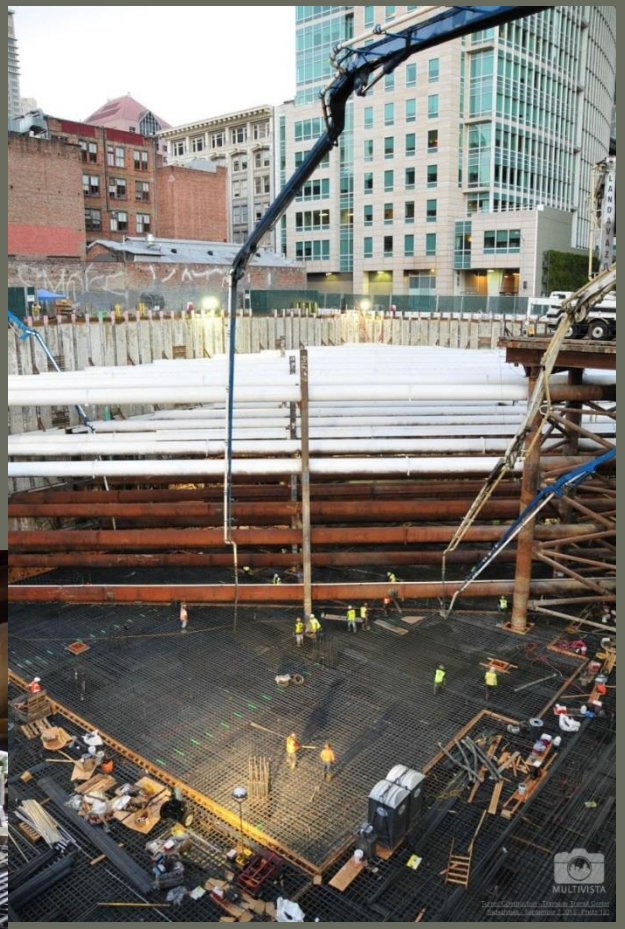
Transbay Transit Center

Foundation Waterproofing Protection Slab

Transbay Transit Center

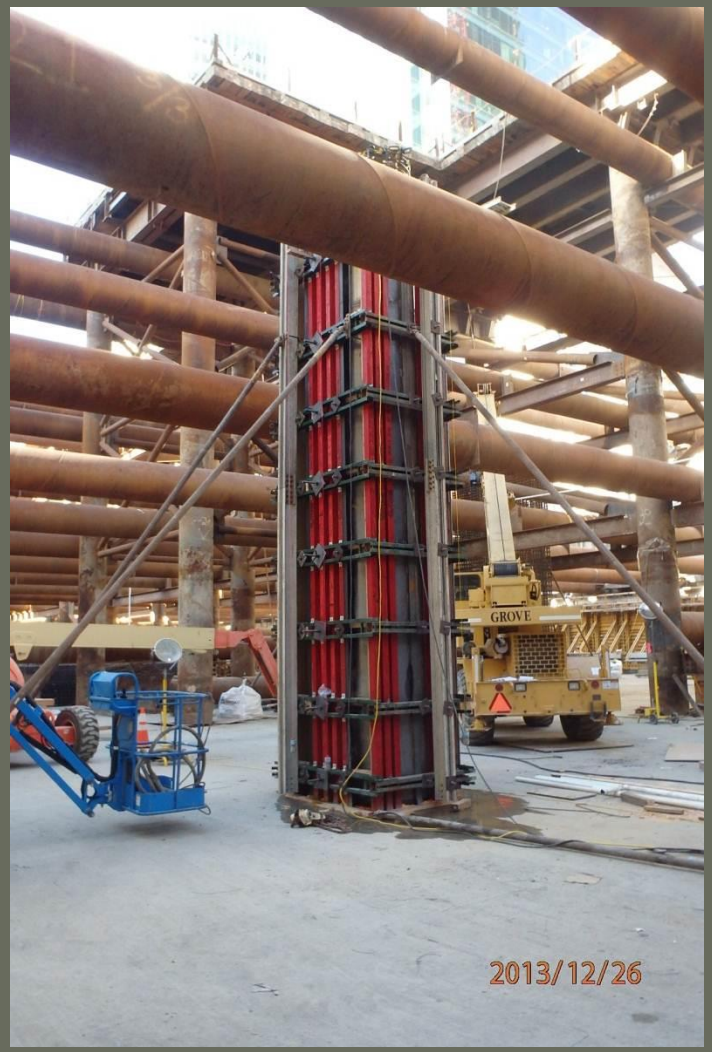
Mat Foundation Slab Placement





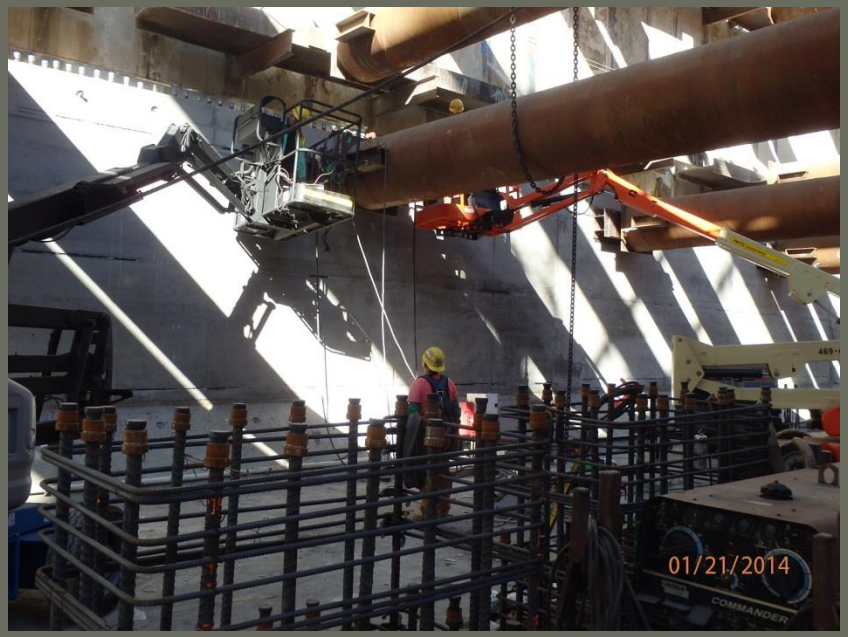
Transbay Transit Center

Train Box Walls and Columns



Transbay Transit Center

Re-bracing and Wall

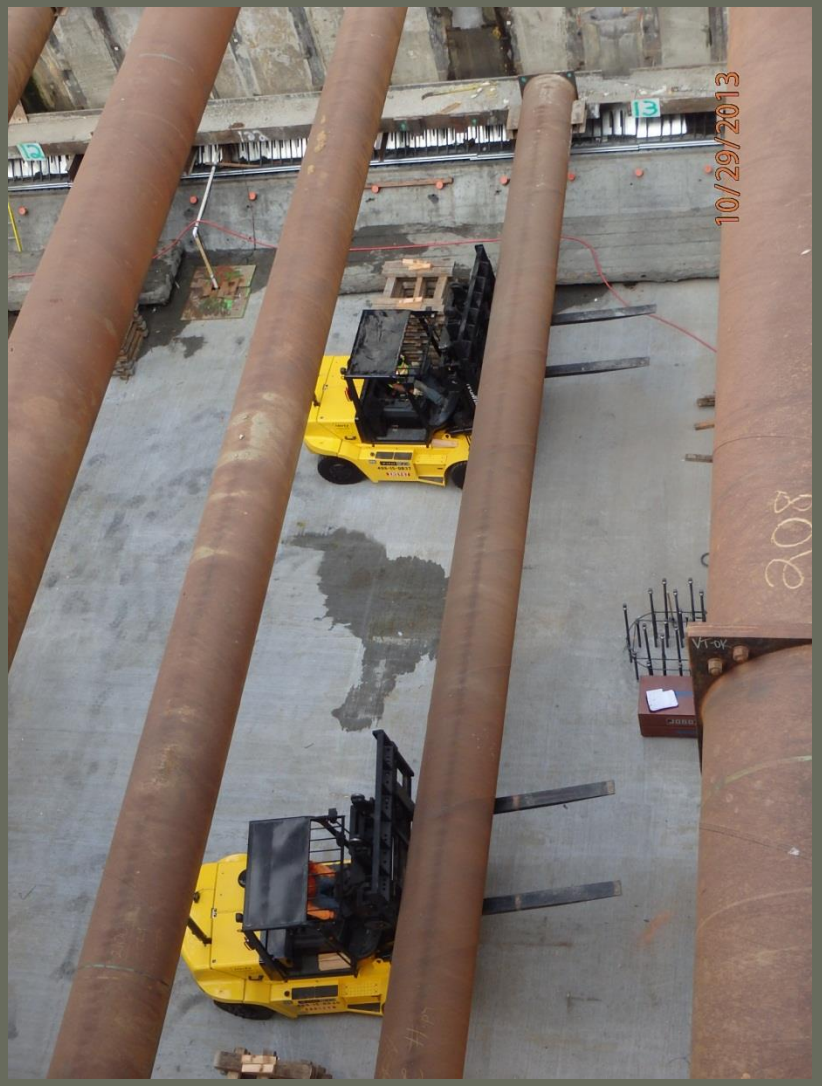


Re-bracing in progress

Wall reinforcing steel

Transbay Transit Center

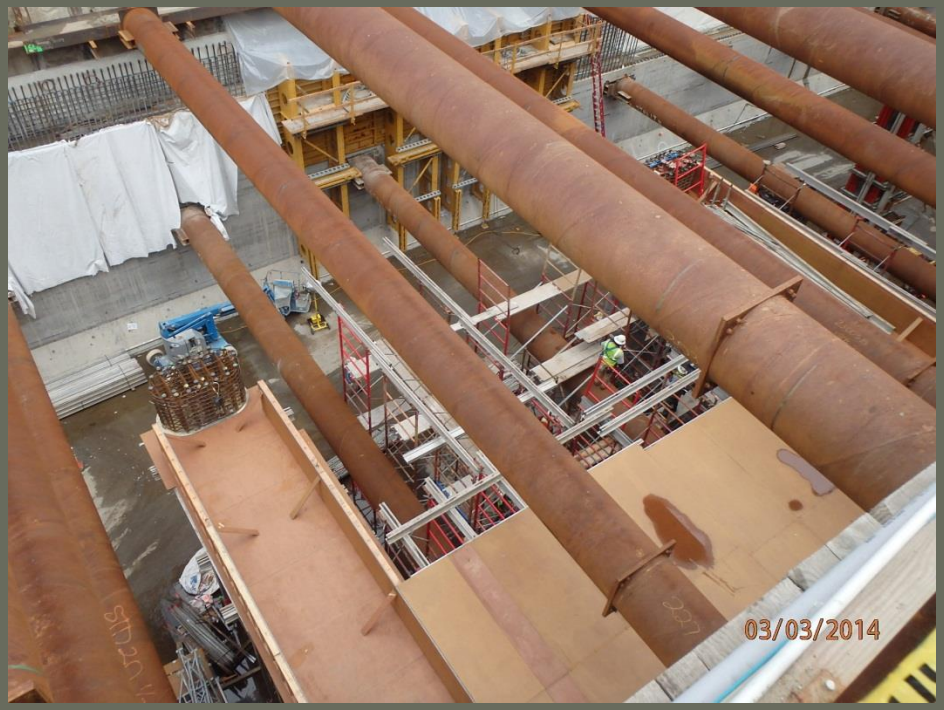
Bracing Removal



Transbay Transit Center

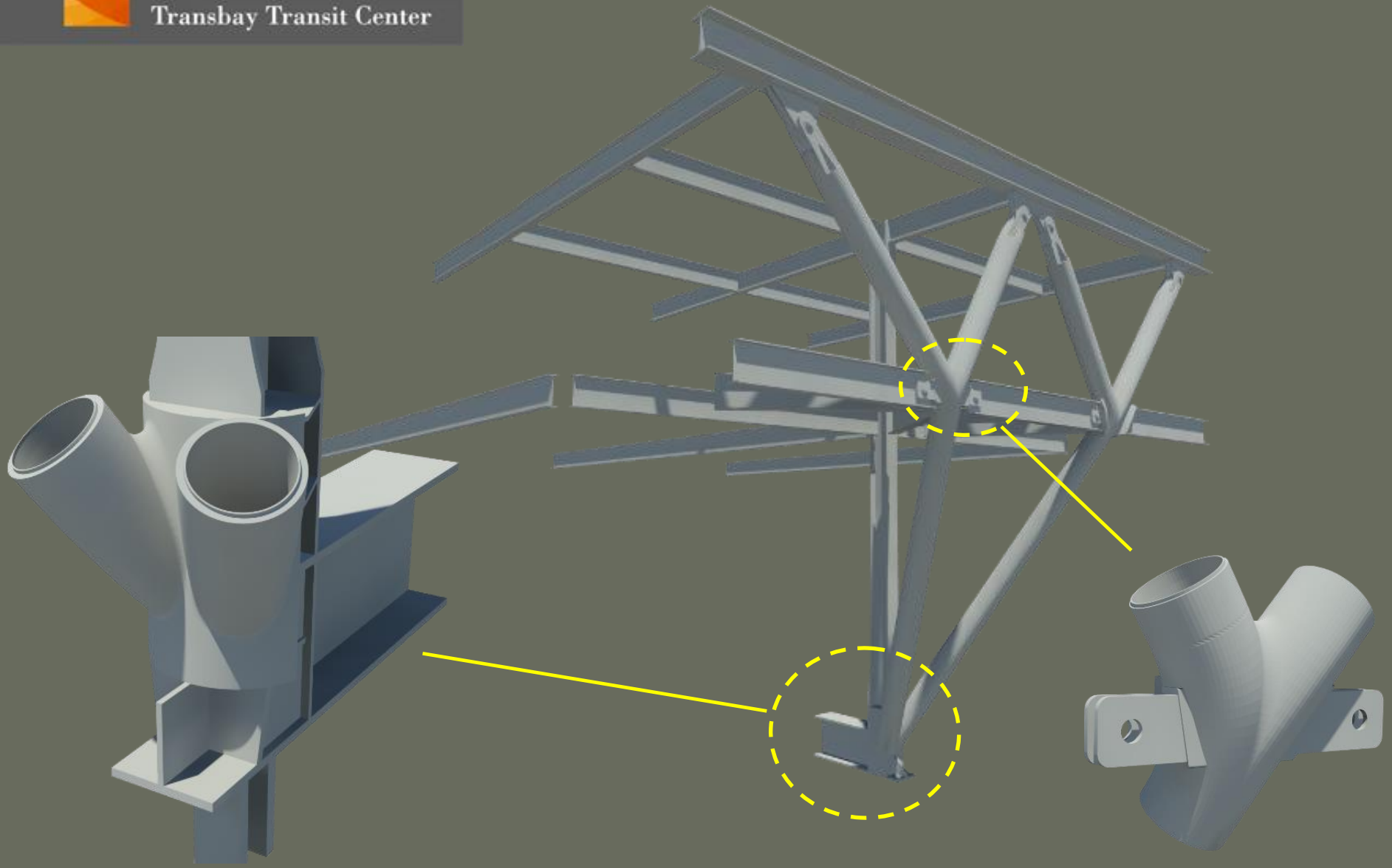
Lower Concourse

Started forming for Lower Concourse



Transbay Transit Center

Cast Node Connections



Transbay Transit Center

Cast Node Fabrication

Pattern Development and Molding

Transbay Transit Center

Cast Node Fabrication

Heat Treatment

Casting

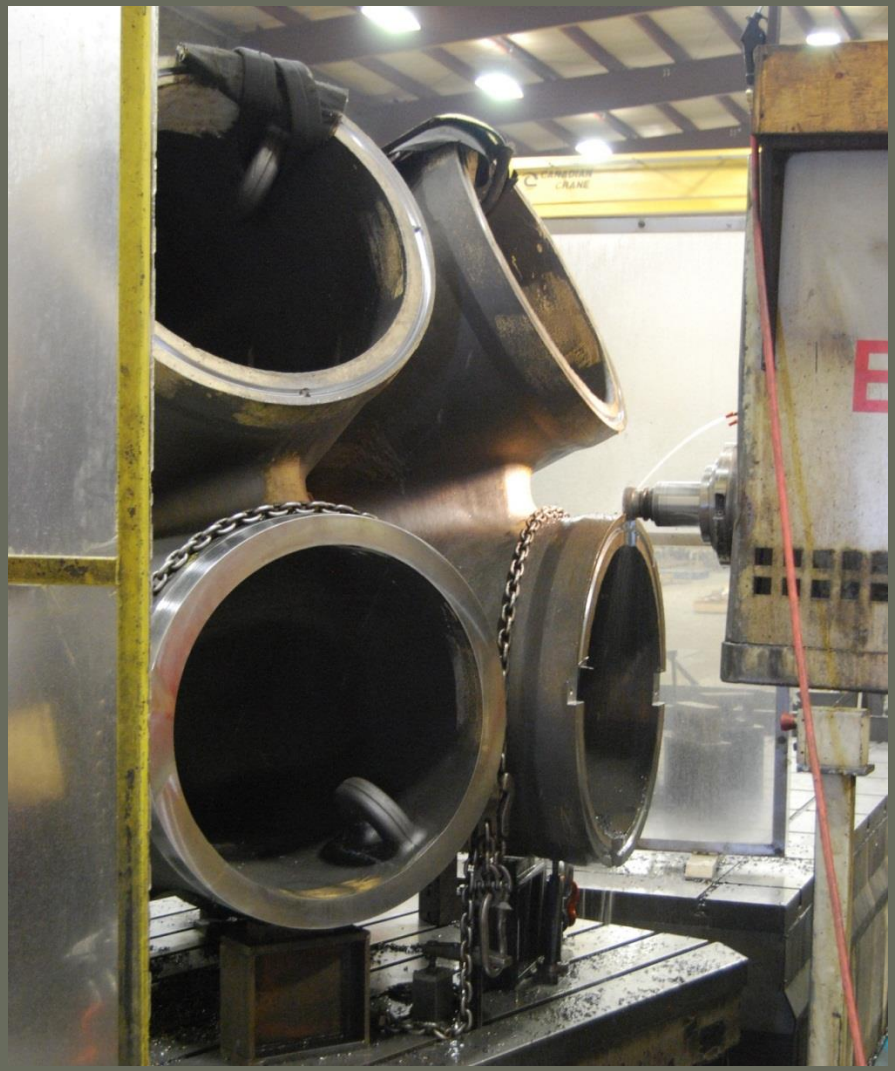
Transbay Transit Center

Cast Node Fabrication

Nodes ready for machining

Transbay Transit Center

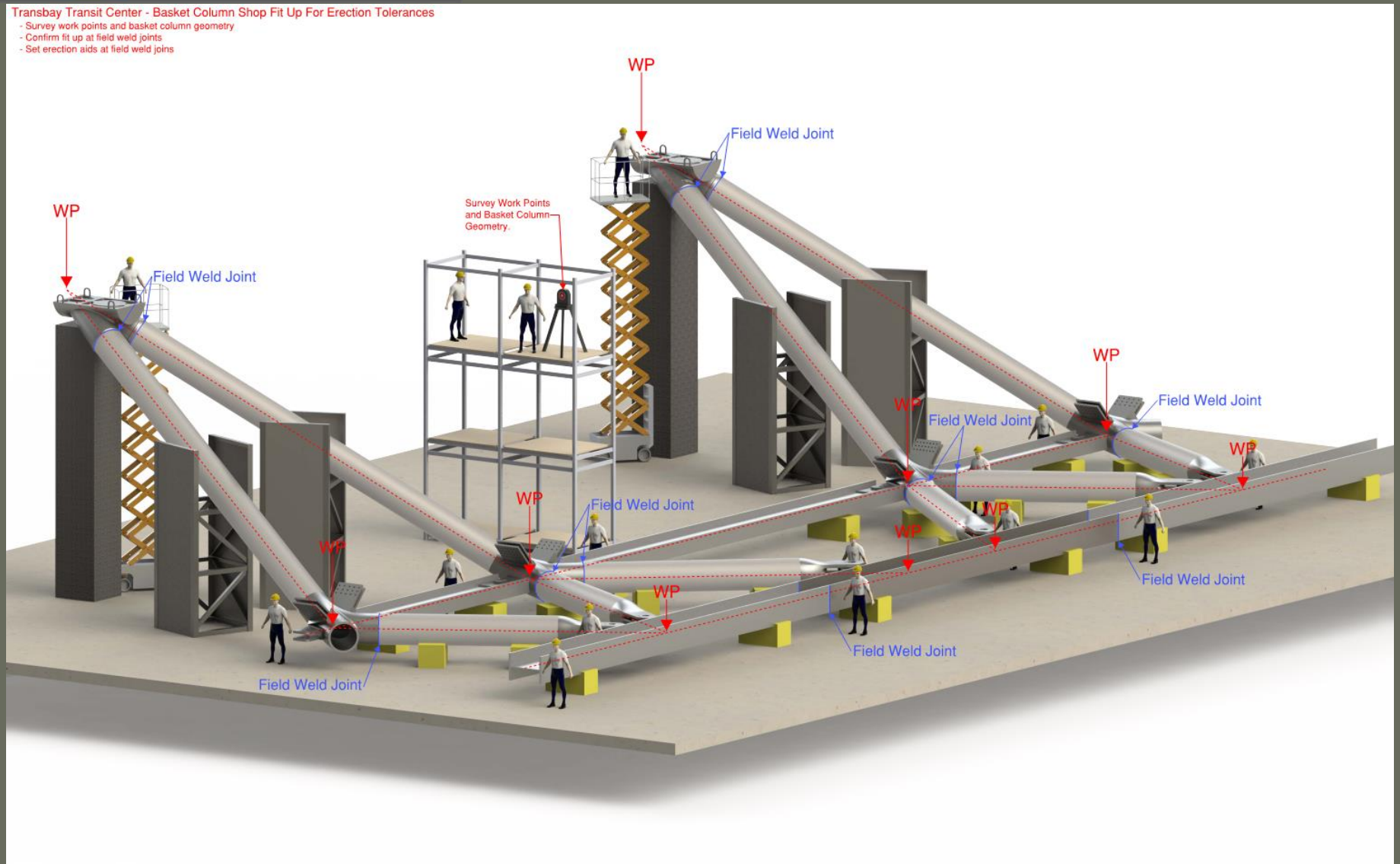
Cast Node Fabrication



Machining in progress

Transbay Transit Center

OIW – Basket Column Trial Assembly Schedule and Location



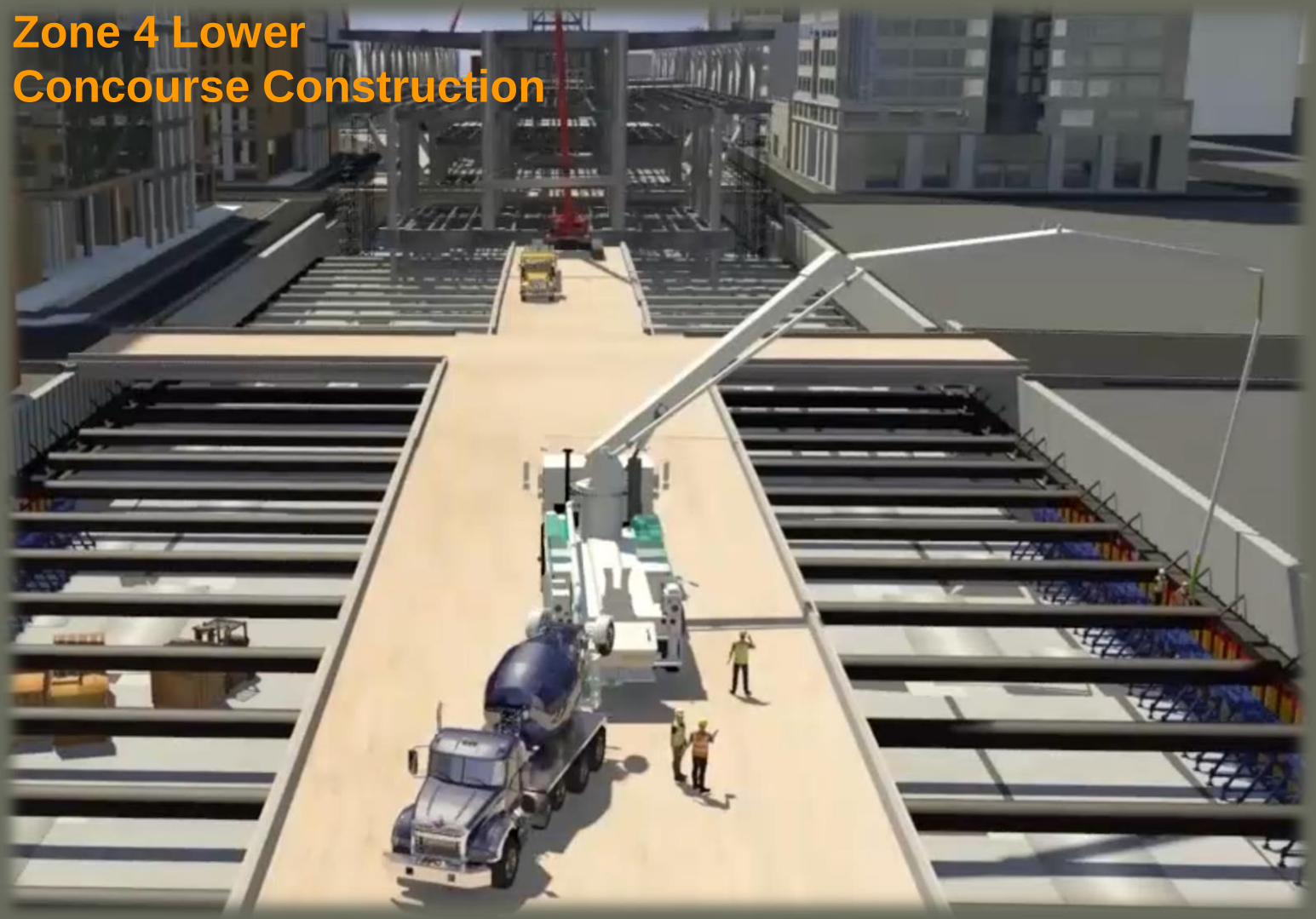
Transbay Transit Center

Activity at Adjacent Sites

Transbay Transit Center

2015

Zone 4 Lower Concourse Construction



Transbay Transit Center

2015

Zone 1 Ground Level Slab Construction

Transbay Transit Center

Economic Benefits of Transbay Program - Jobs