DMJM HARRIS • ARUP
A Joint Venture

MTA Capital Construction

SECOND AVENUE SUBWAY PROJECT

Community Board Eight

Second Avenue Subway Task Force

June 17th , 2008

Proposed Revisions to Track Alignment

June 17th, 2008

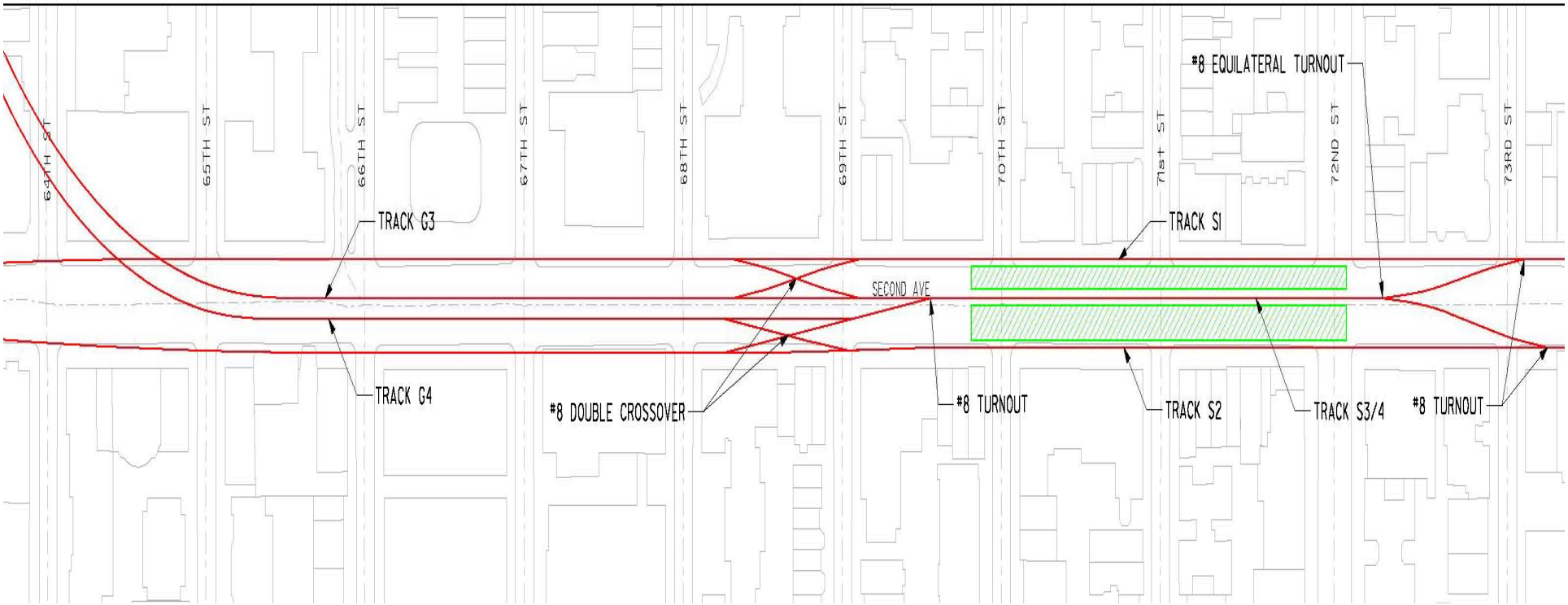
BACKGROUND

- Station Designs in Final Design Phase
  - *86th Street - 2 track station cavern (one platform)*
  - *72nd Street - 3 track station cavern (two platforms)*

- Decision made to change alignment
  - *Lower station track levels*
  - *Reduce number of tracks and platforms at 72nd Street*
  - *Reduce construction cost and risk*

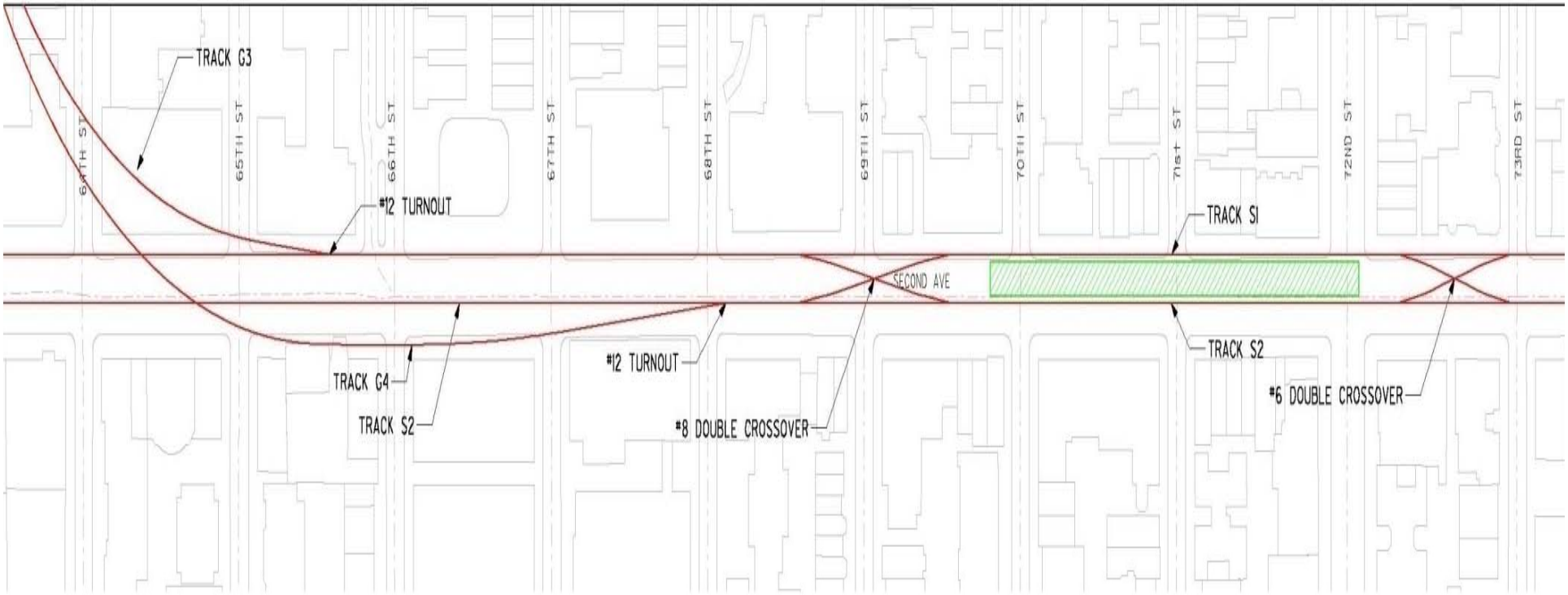
- New proposal for Station Designs (June 08)
  - *86th Street - 2 track station cavern (one platform)*
  - *72nd Street - 2 track station cavern (one platform)*

THREE TRACK TO TWO TRACK



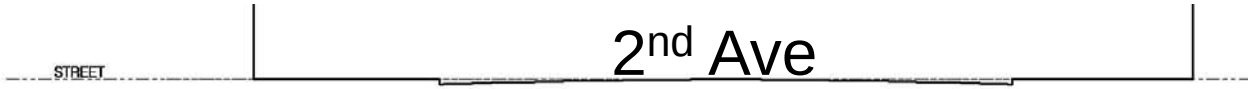
Three Track alignment plan

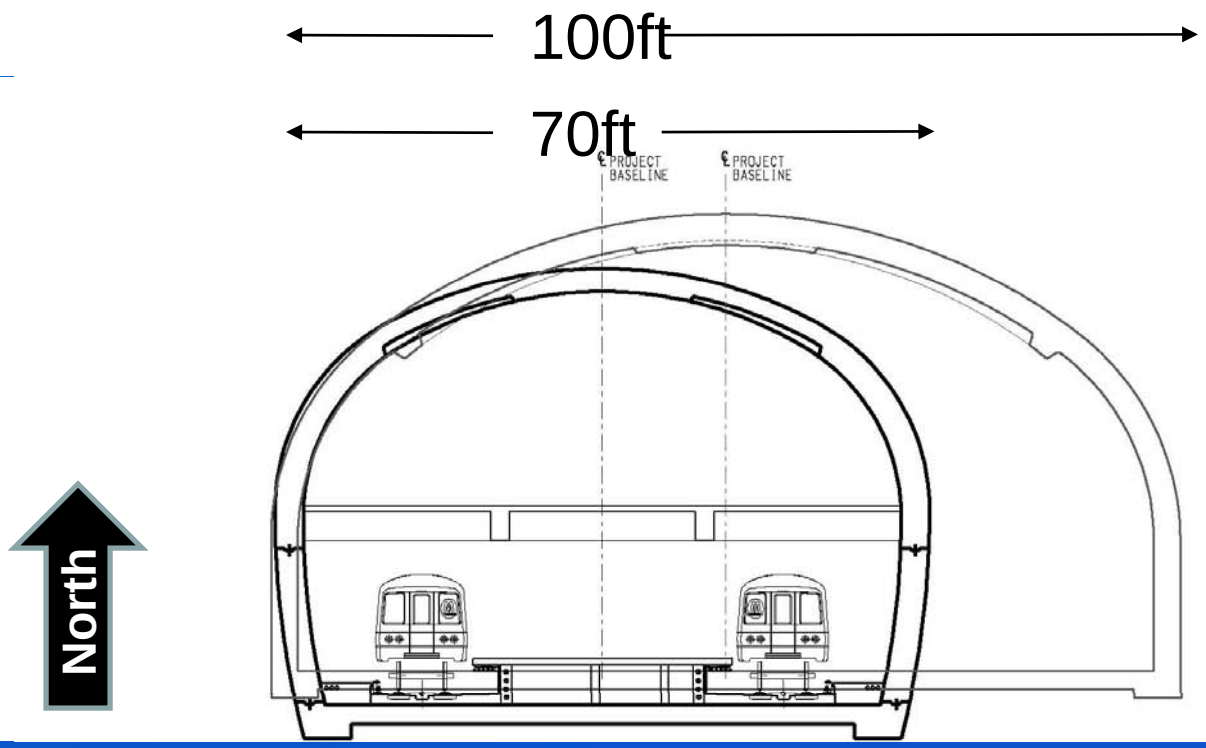
THREE TRACK TO TWO TRACK



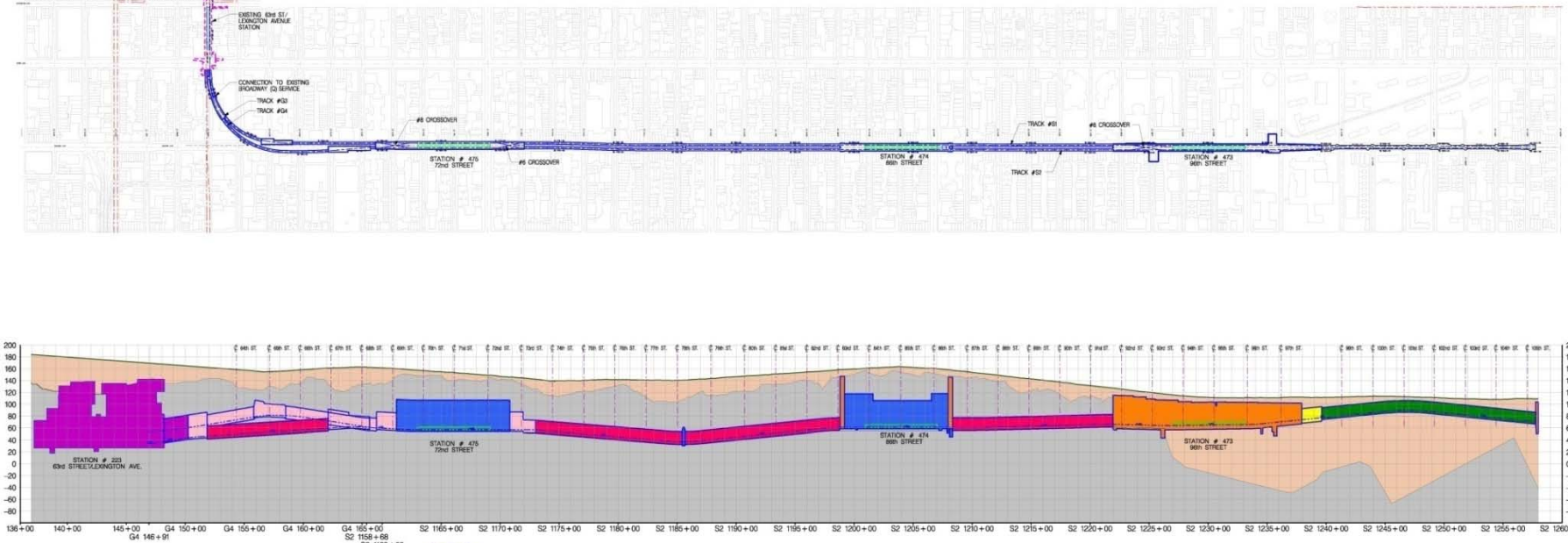
Two Track alignment plan

THREE TRACK TO TWO TRACK





SECOND AVENUE SUBWAY
PLAN & PROFILE
PHASE 1
JUNE 2008



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NEW YORK CITY TRANSIT

BENEFITS/IMPACTS

- Benefits
  - *Reduction in construction cost*
  - *Reduction in excavated material and truck trips*
  - *Reduction in temporary deep subsurface easements in 72nd Street area*

- Impacts
  - *New deep subsurface easements required in 63rd Street area*

NEXT STEPS

- *Environmental review*

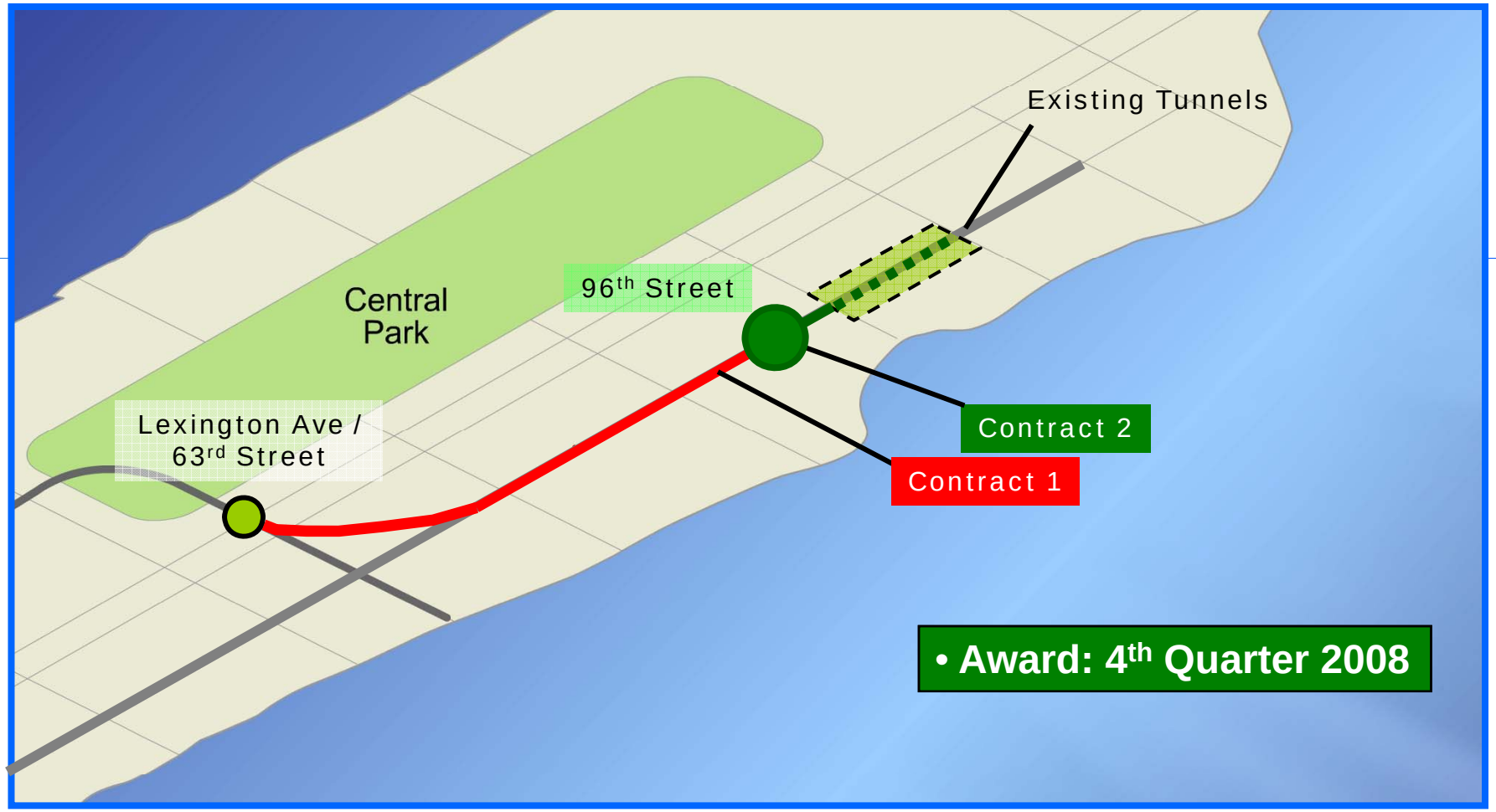
- *Review design opportunities created by narrower cavern at 72nd Street*

- *Commence Real Estate Acquisition process for modified subsurface easements*

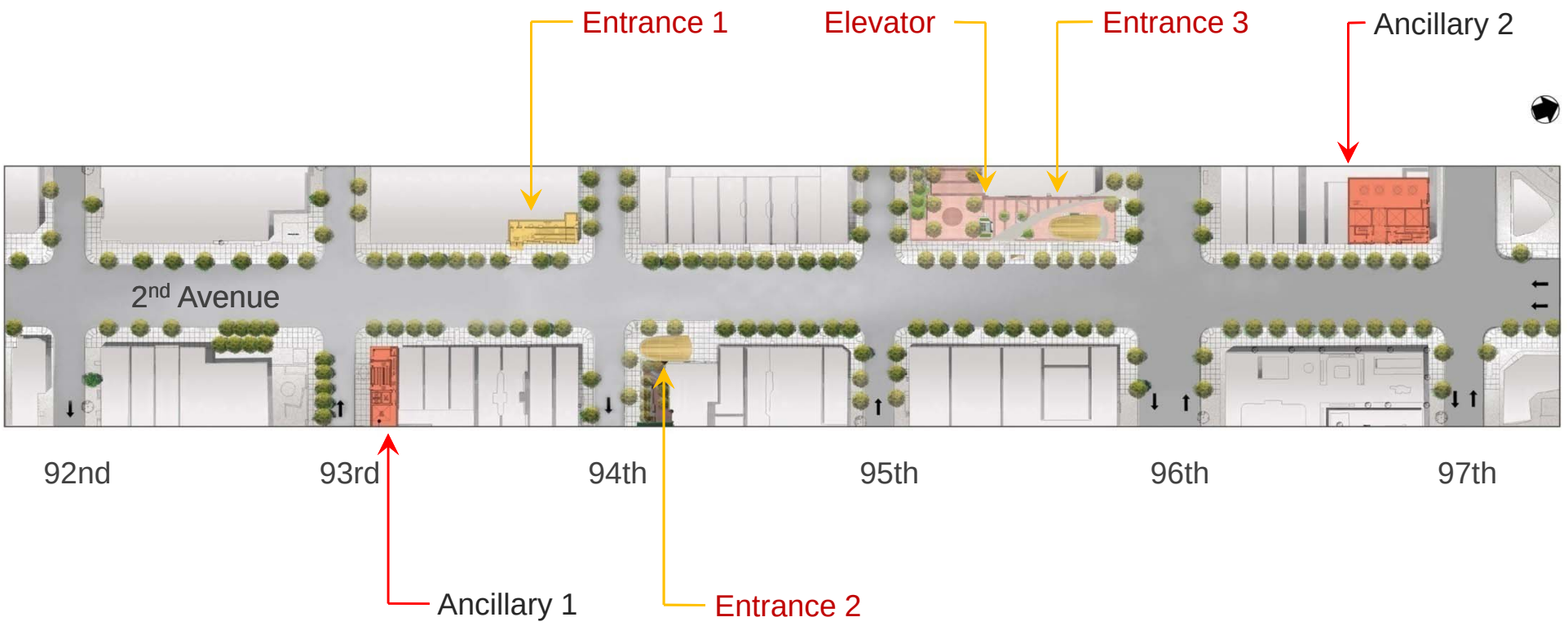
Maintenance and Protection of Traffic (MPT)

June 17th, 2008

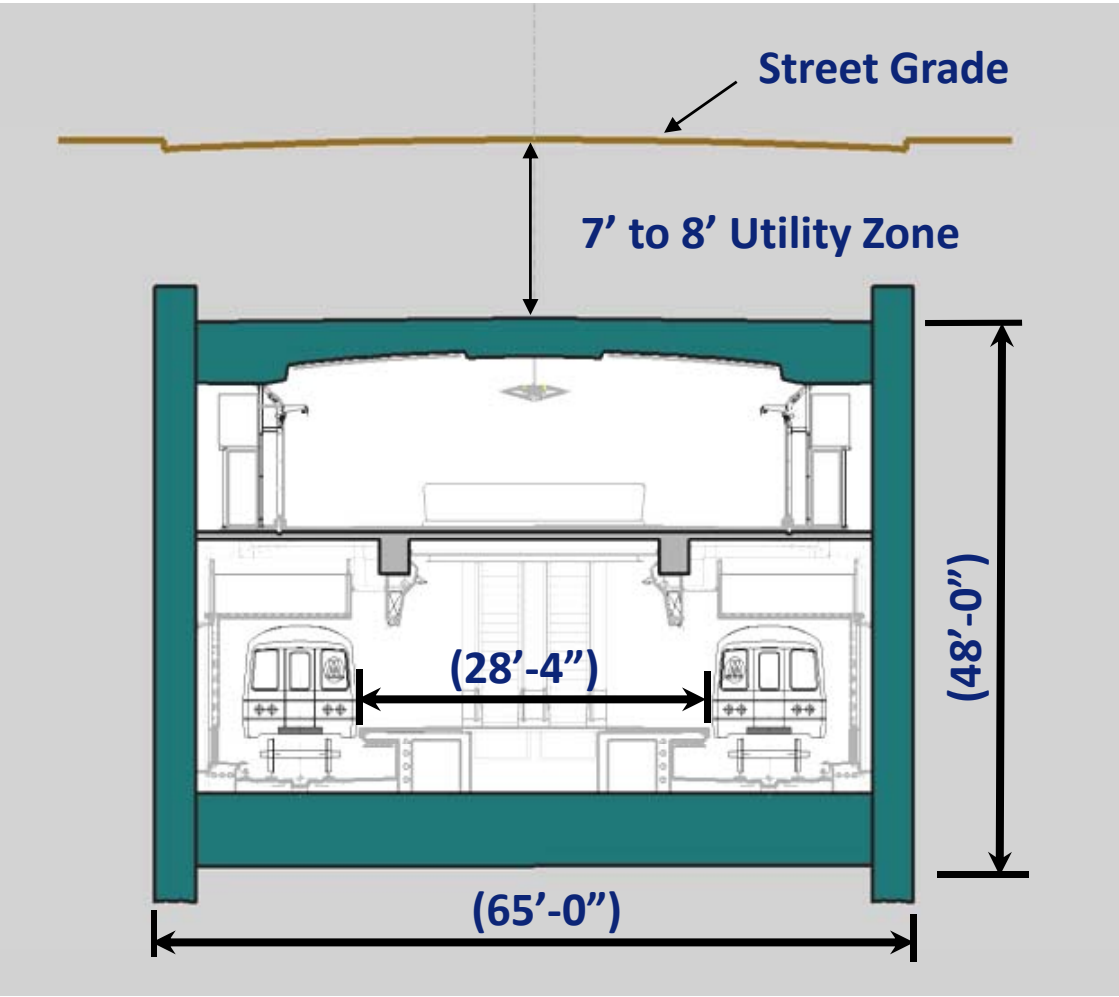
96TH STREET STATION



96TH STREET STATION



96TH STREET STATION



SCOPE OF WORK

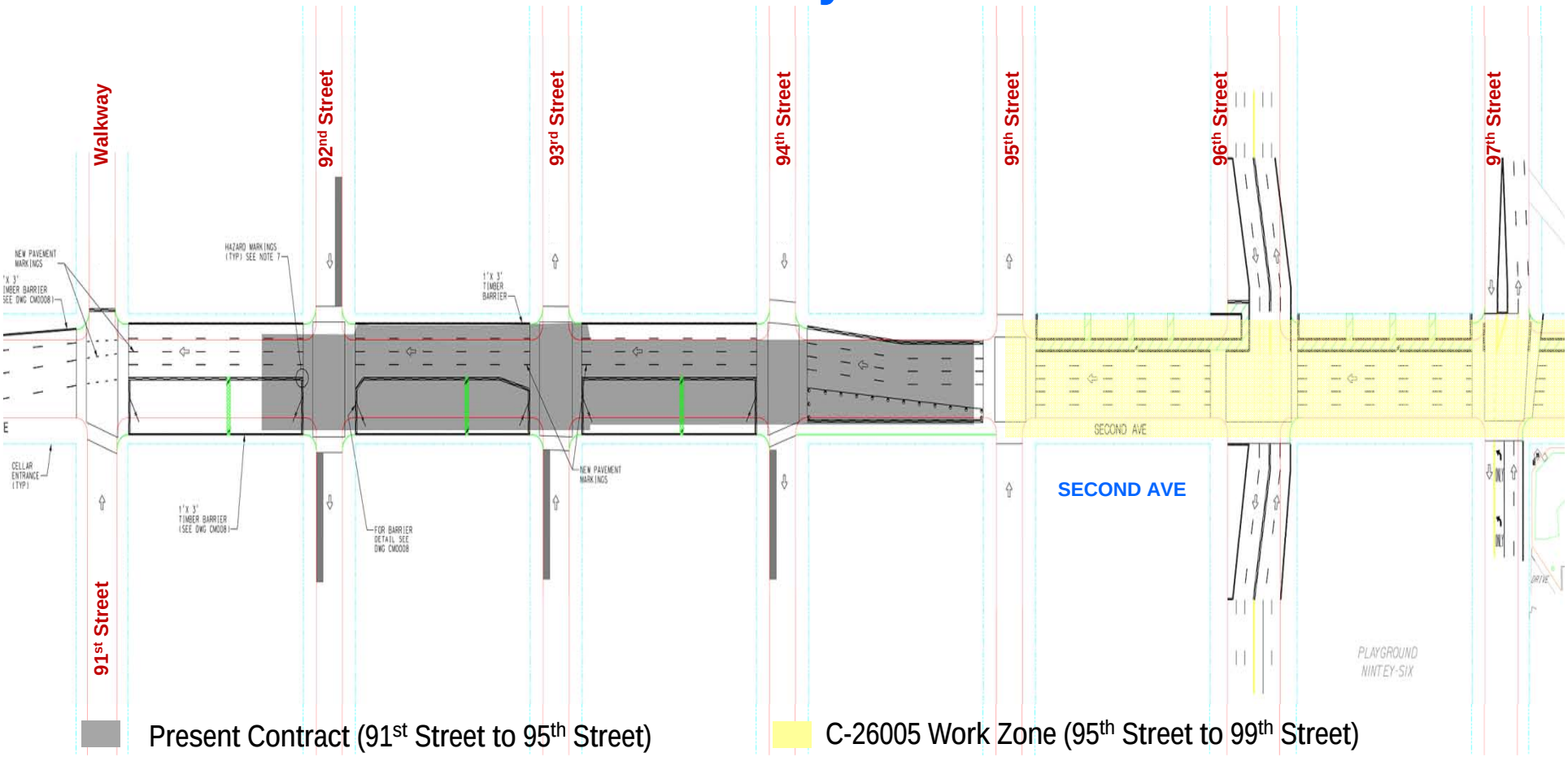
- ***Utility Relocation between 95th Street and 99th Street***
- ***Slurry Walls & Decking between 95th street and 99th Street***
- ***Excavation between 95th Street and 99th Street***
- ***SOE Walls and Excavation for Entrances & Ancillaries***
- ***Construction of 96th Street Station Base Slab from 92nd Street to 99th Street***

MPT PLAN DEVELOPMENT

CRITICAL ISSUES DURING MPT PLAN DEVELOPMENT

- *Interface with Ongoing TBM Launch Box Contract 26002*
- *Construction staging is developed to maintain two block buffer*
- *Maintain Access to Metropolitan Hospital*
- *Temporary closure of Side Streets to Build Walls for Entrances and Ancillaries*
- *Maintenance of Left turn operation at 96th /97th Street*
- *Maintain 5 lanes of traffic on 96th St. when work is being done at 97th St.*
- *Maintain 3 lanes of traffic on 97th St. when work is being done at 96th St.*
- *Maintain 4 lanes of traffic on Second Avenue*
- *Maintain 7' sidewalks*

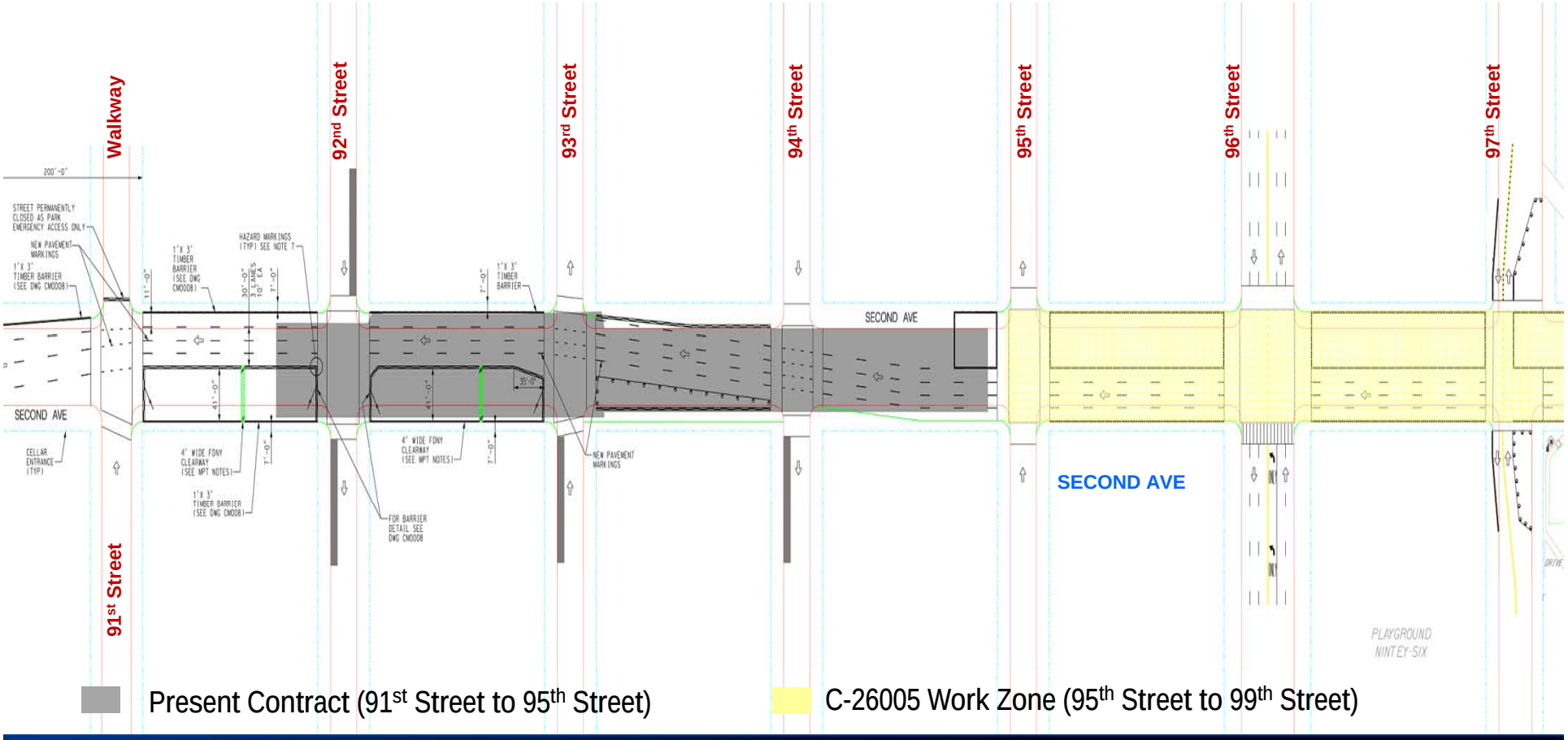
West Side Utility Relocation



Present Contract (91st Street to 95th Street)

C-26005 Work Zone (95th Street to 99th Street)

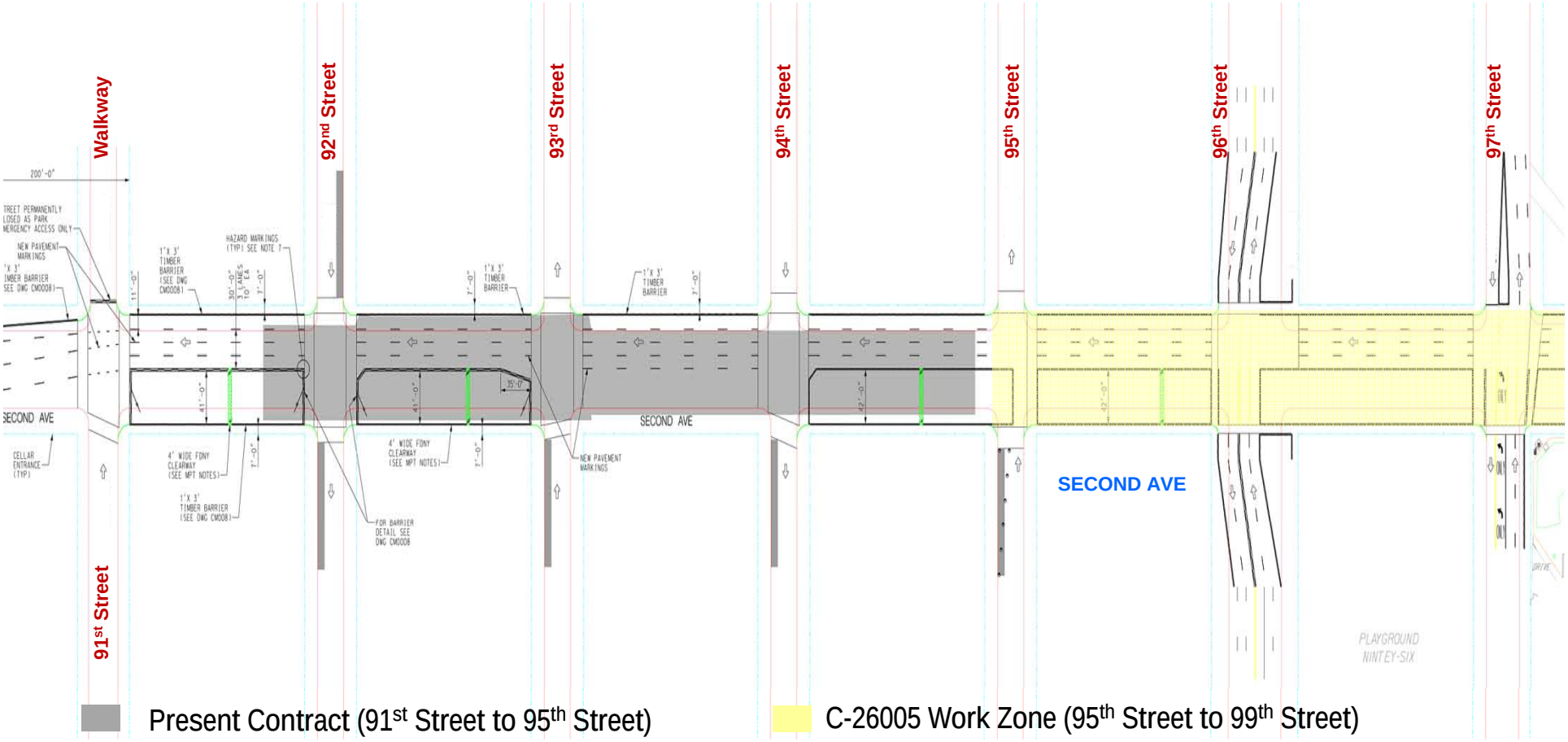
West Side Slurry Wall Installation, Decking & Excavation



Present Contract (91st Street to 95th Street)

C-26005 Work Zone (95th Street to 99th Street)

East Side Slurry Wall Installation, Decking & Excavation



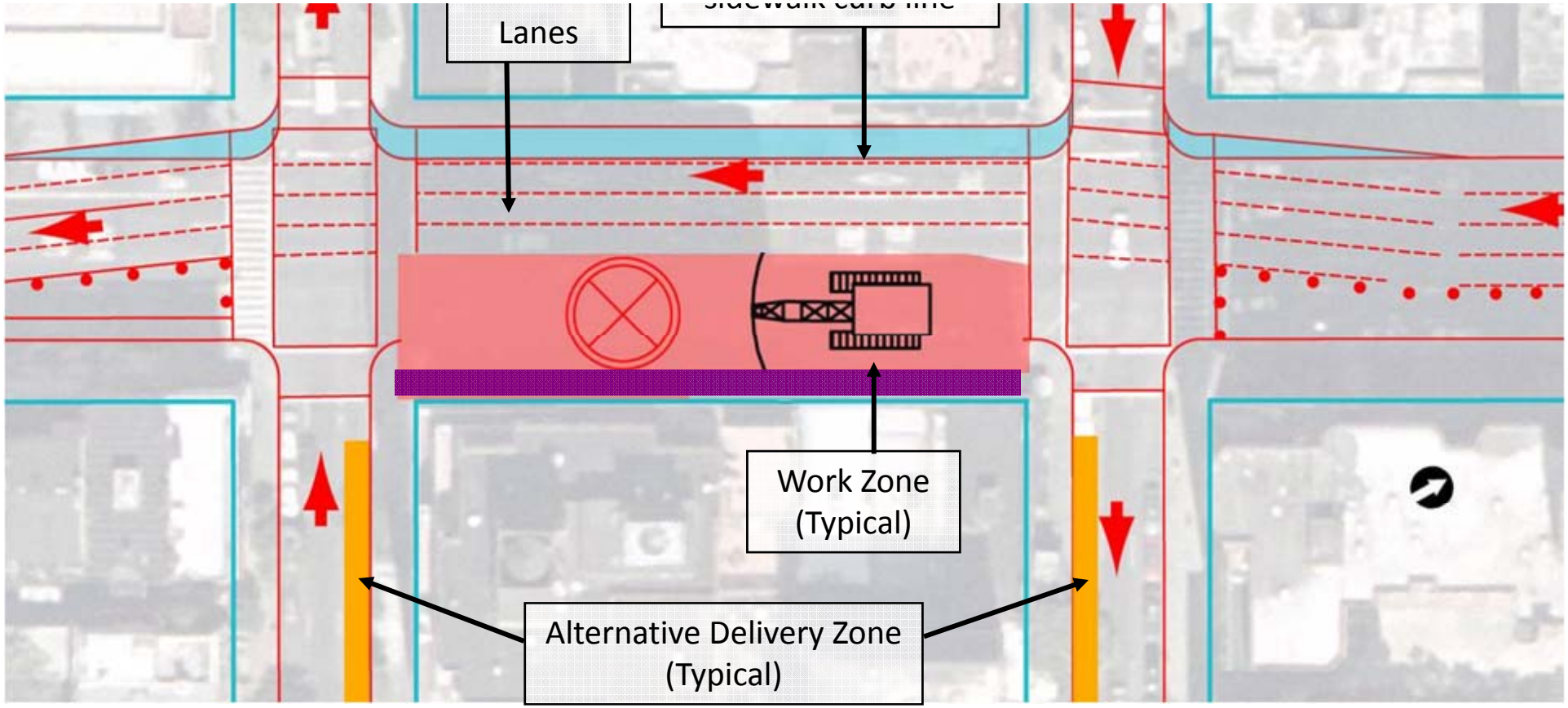
MITIGATIONS

- ***Additional Variable Message Signs***
- ***Additional CCTVs***
- ***Additional Traffic Agents***
- ***Signal Timing Modifications at 2nd Avenue /96th St., Third Avenue / 96th St., First Avenue/ 97th St., 2nd Avenue/ 97th St.***
- ***Extend right turn restriction time period at First Avenue onto 96th St. EB to start at 1pm to 7pm from current 4pm to 7pm***
- ***Improvements in traffic operations at 96th St. and 97th St near FDR Drive***
- ***Monitoring of construction zones via NYCDOT TMC at Long Island City***

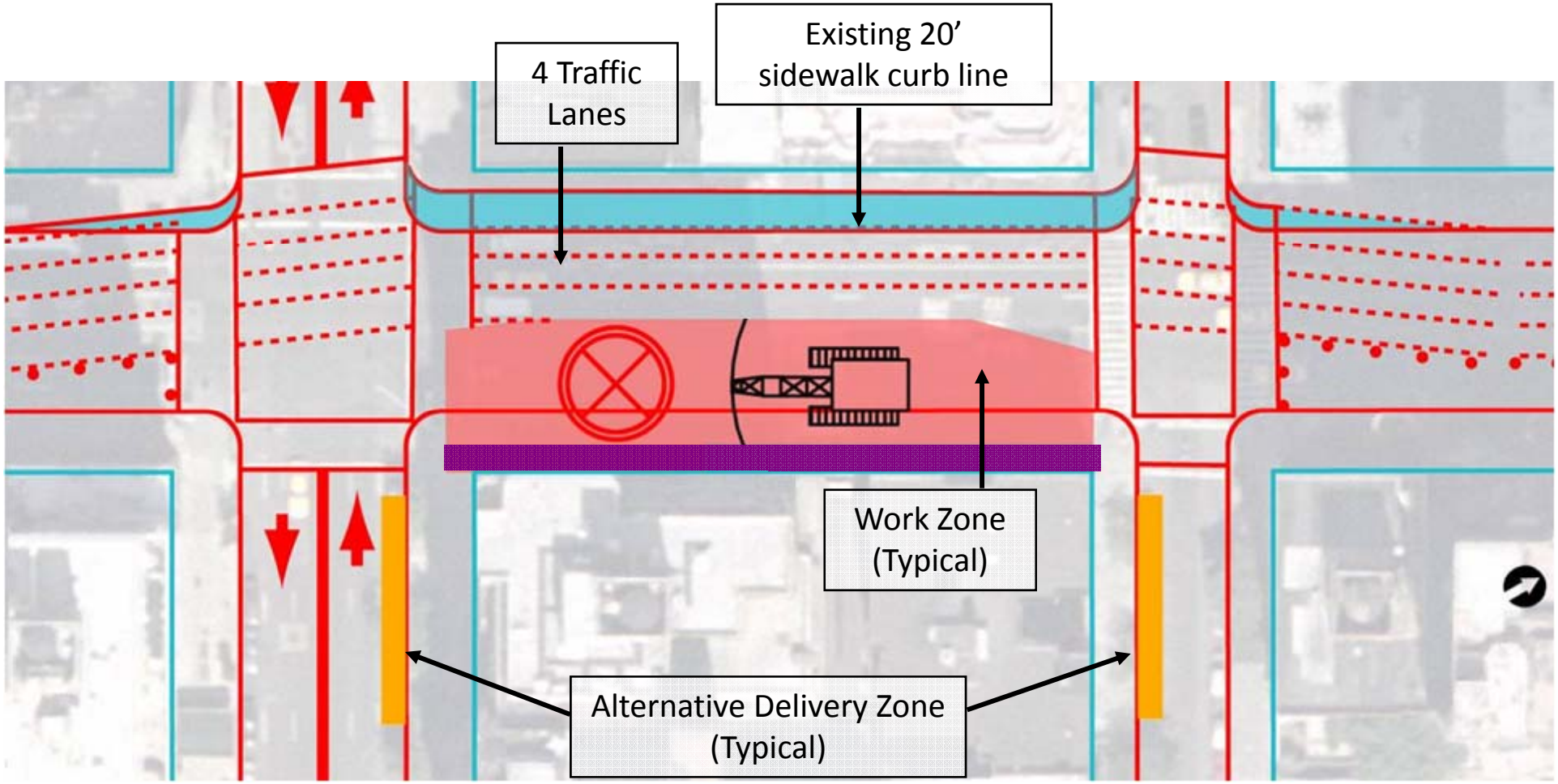
69th STREET & 72nd STREET SHAFTS

June 17th, 2008

69th Street Work Shaft



72nd Street Work Shaft



69th & 72nd Street Construction Shafts

Shafts will be used by Contractors to excavate the station cavern & muck removal

SIDEWALK ENCROACHMENTS

- ***Vaults, Cellar doors, Utility vaults, etc***
- ***Sidewalk Cafes***
- ***Canopies and Awnings***
- ***Sidewalk retail areas***
- ***Public telephones, Bike racks etc***
- ***Steps, Ramps, Oil fill valves***

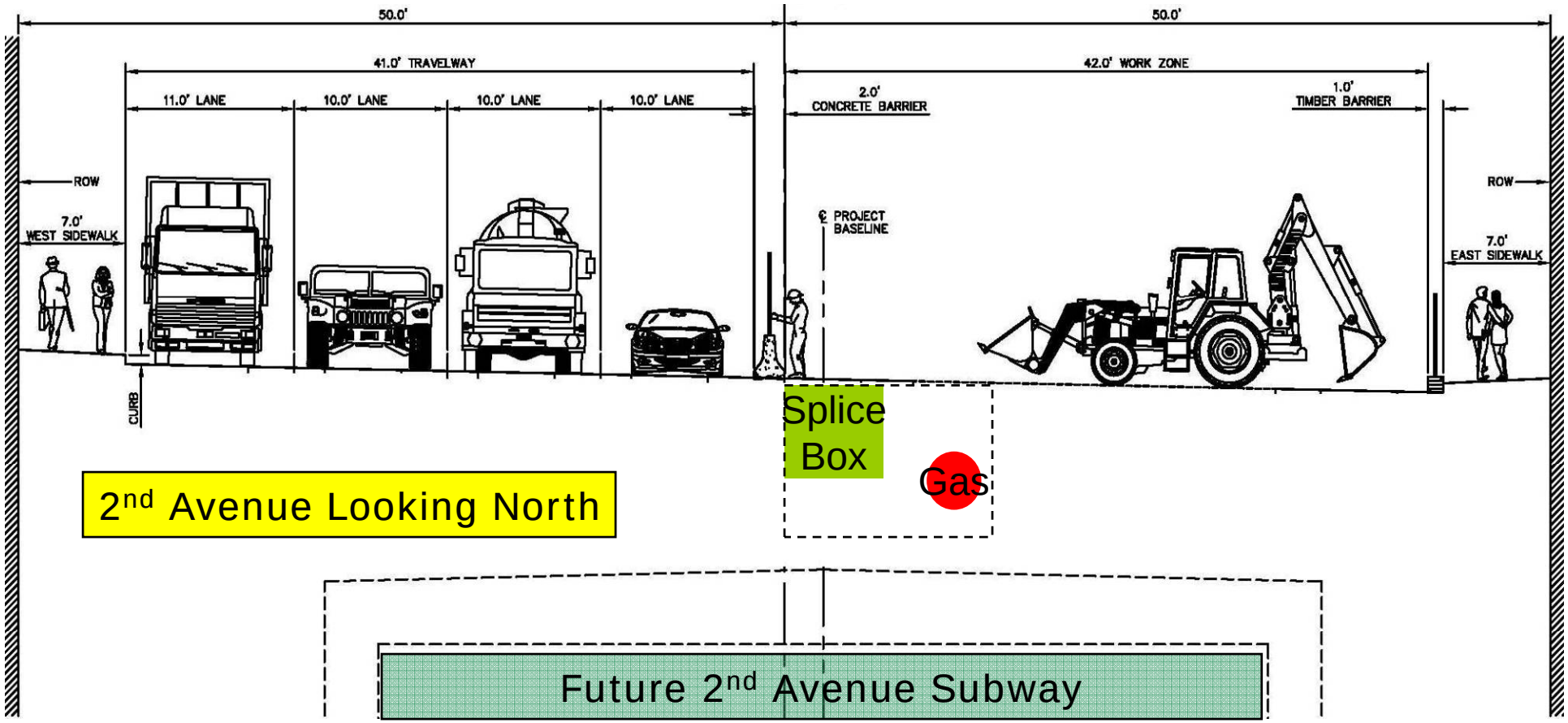
Second Avenue Subway Construction Progress Update (March to June)

Presented by
S3 Tunnel Constructors
June 17, 2008

Topics Covered

- **Progress update (March to June)**
- **Secant Pile Walls**
- **Slurry wall equipment and steps**

“Gas Trench” + splice boxes



Excavation for Gas Trench

View of

March 2008

Install Sheeting for Gas Trench

View of April 2008

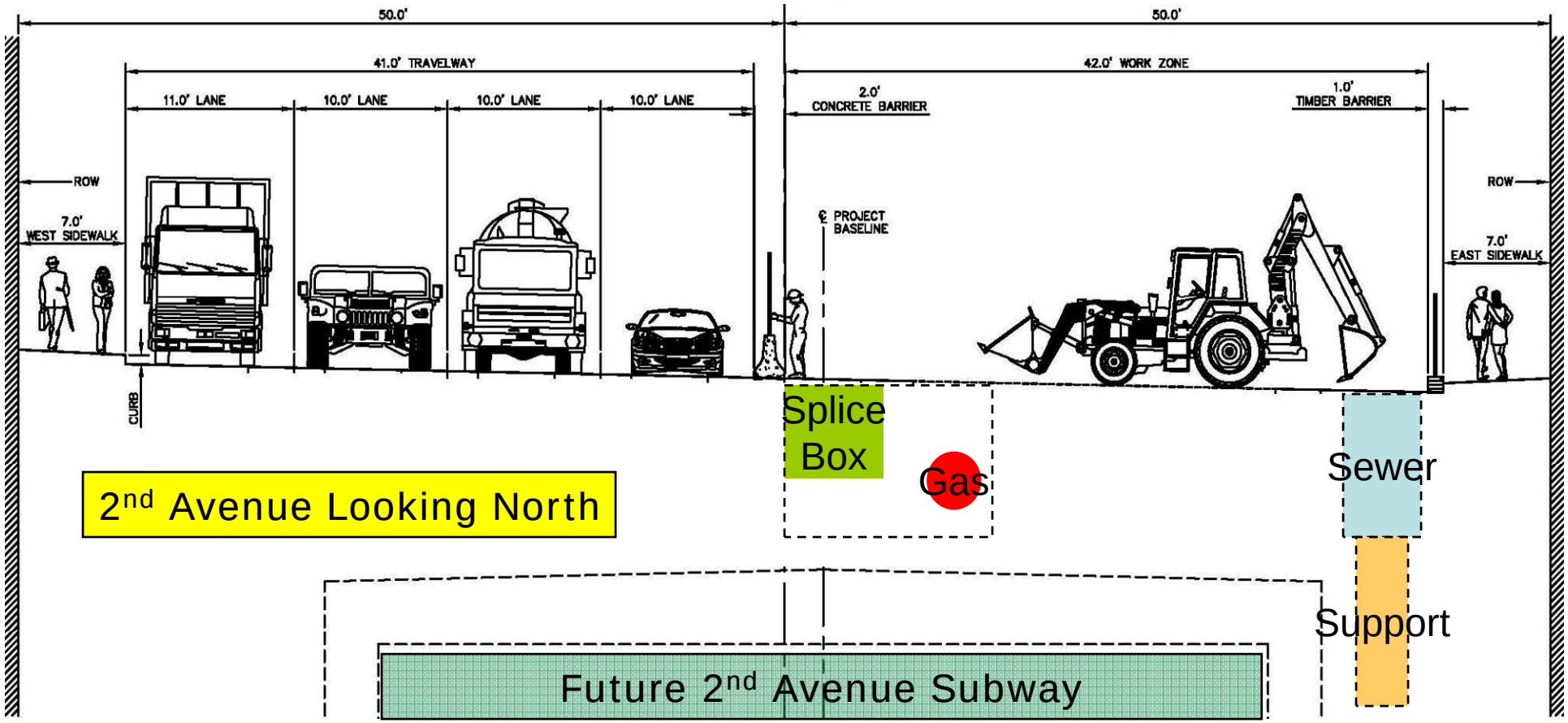
Install Gas Pipe in Trench

View of May 2008

30” Gas Main Inside 42” Carrier Pipe

Place Splice Boxes For Deck Beams & Backfill

“Sewer Trench” + other utilities



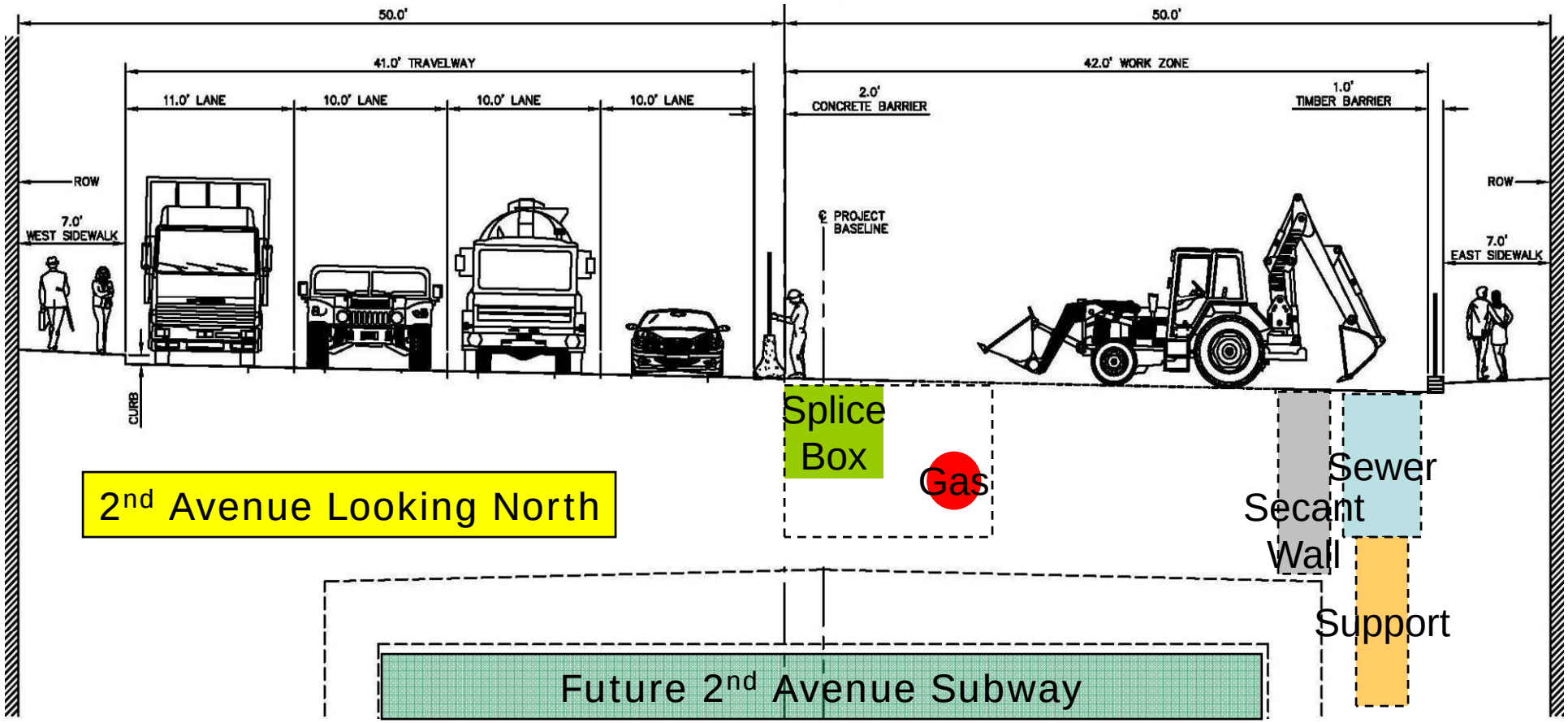
Installed Mini Piles at 92nd to 93rd Str.

Construction of Drilled Shafts- 93rd to 95th Str.

Pour Concrete for Drilled Shafts

Construct Sewer in Trench

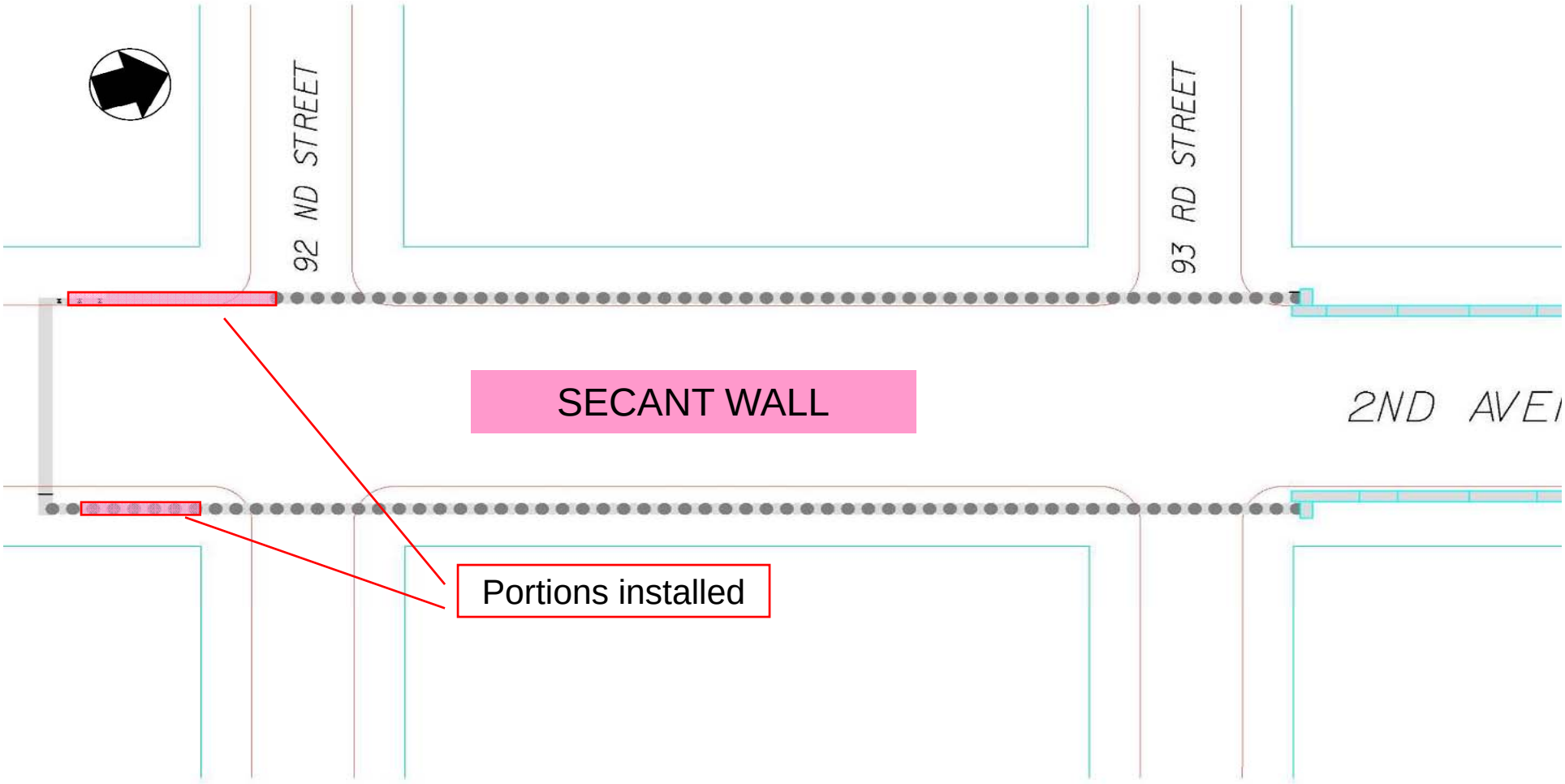
Secant Wall at selected location



Topics Covered

- **Progress update (March to June)**
- **Secant Pile Walls**
- **Slurry wall equipment and steps**

Location for Secant walls



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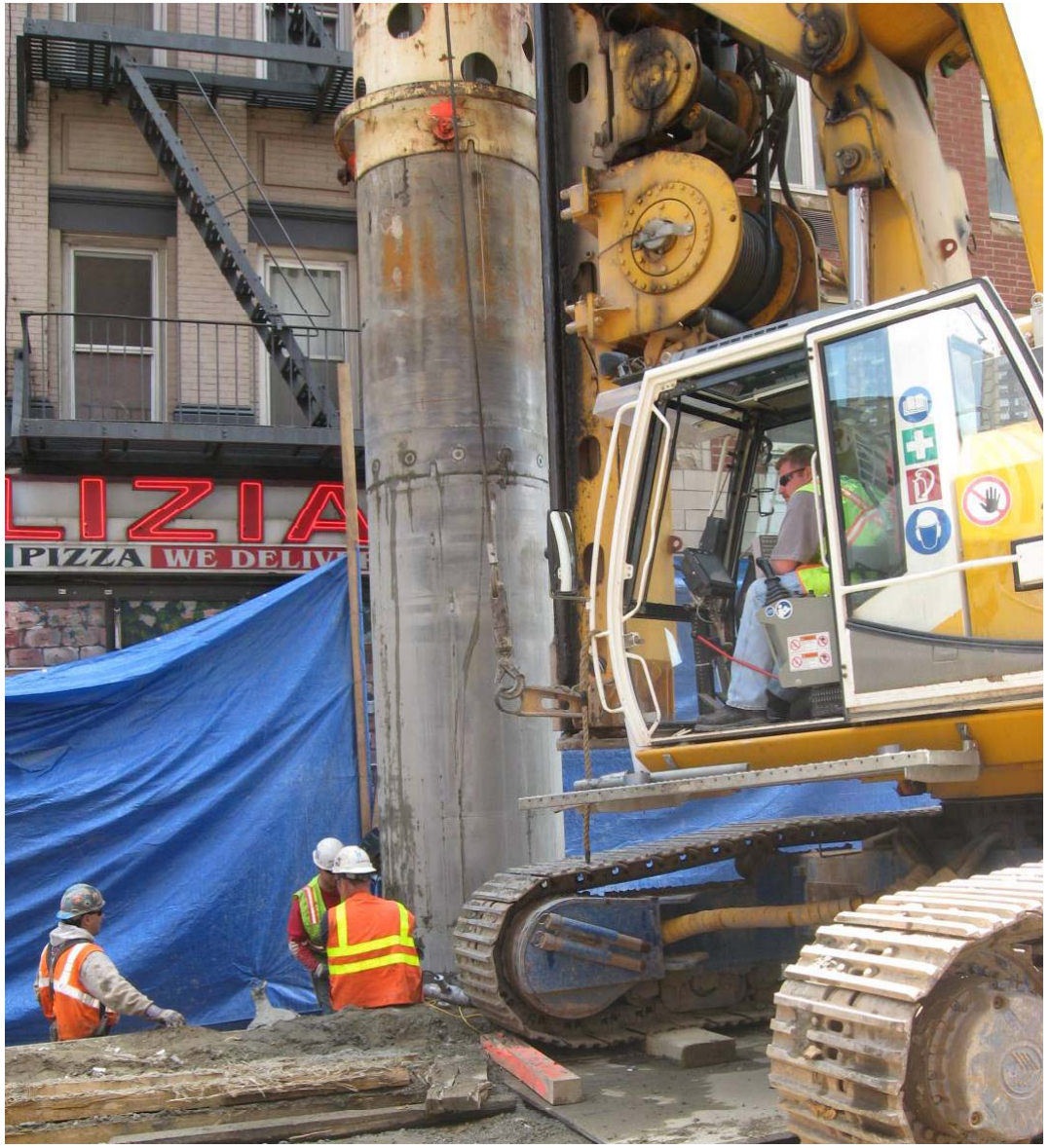
Secant Pile Wall Construction- 91st to 92nd Str



Secant Pile Wall Construction- 91st to 92nd Str

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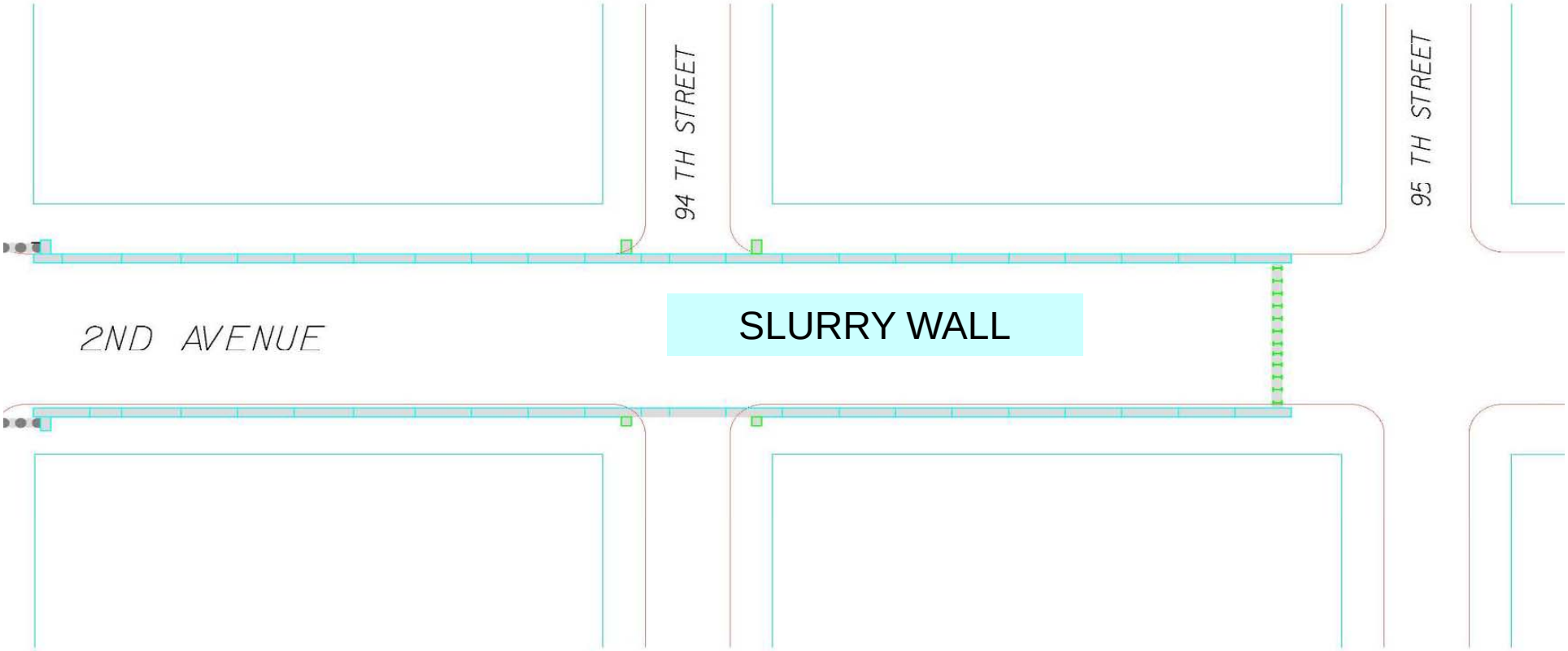
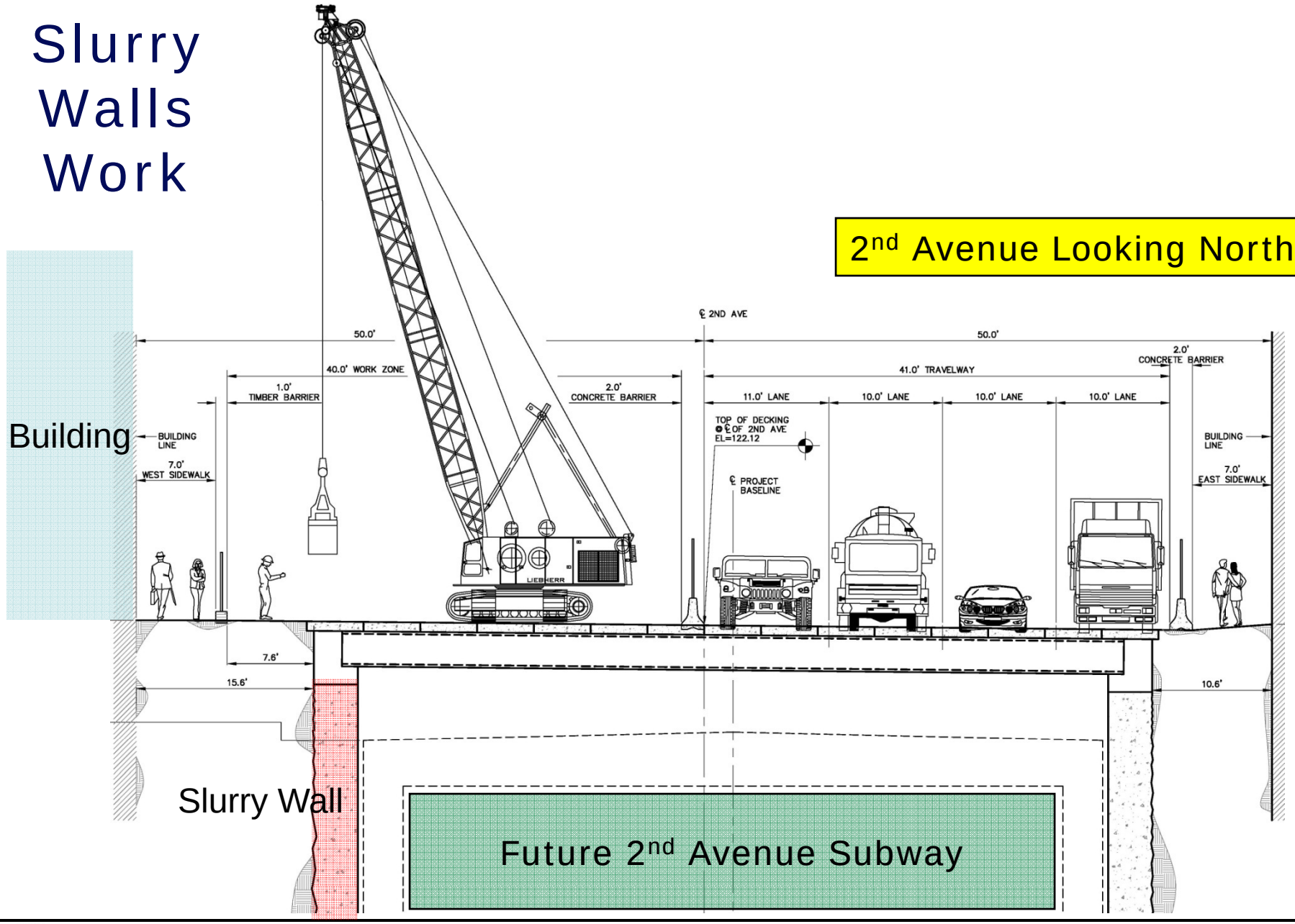
Topics Covered

- **Progress update (March to June)**
- **Secant Pile Walls**
- **Slurry wall equipment and steps**

Location for Slurry walls



Slurry Walls Work



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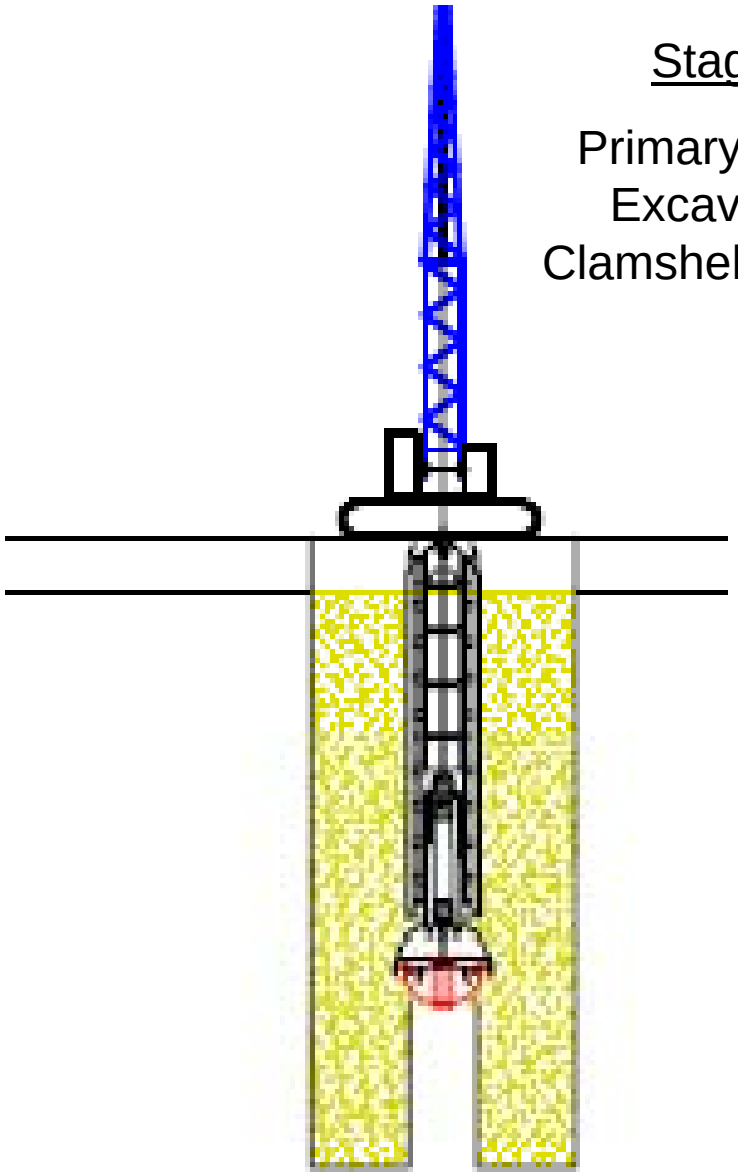
6/18/2008

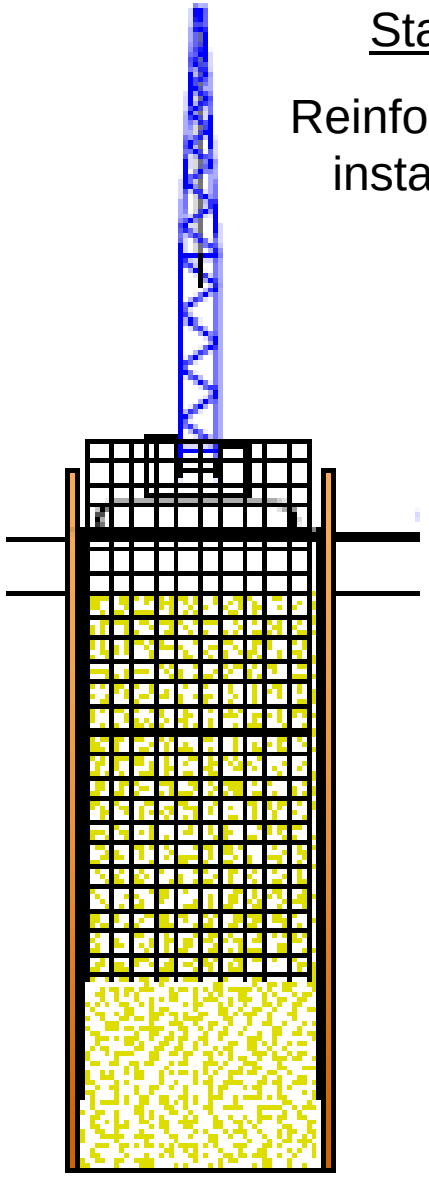
Slurry Wall Excavation in Steps



Stage1

Primary Panel
Excavation
Clamshell Bucket

Slurry Walls Reinforcement Steel Installation



Stage2

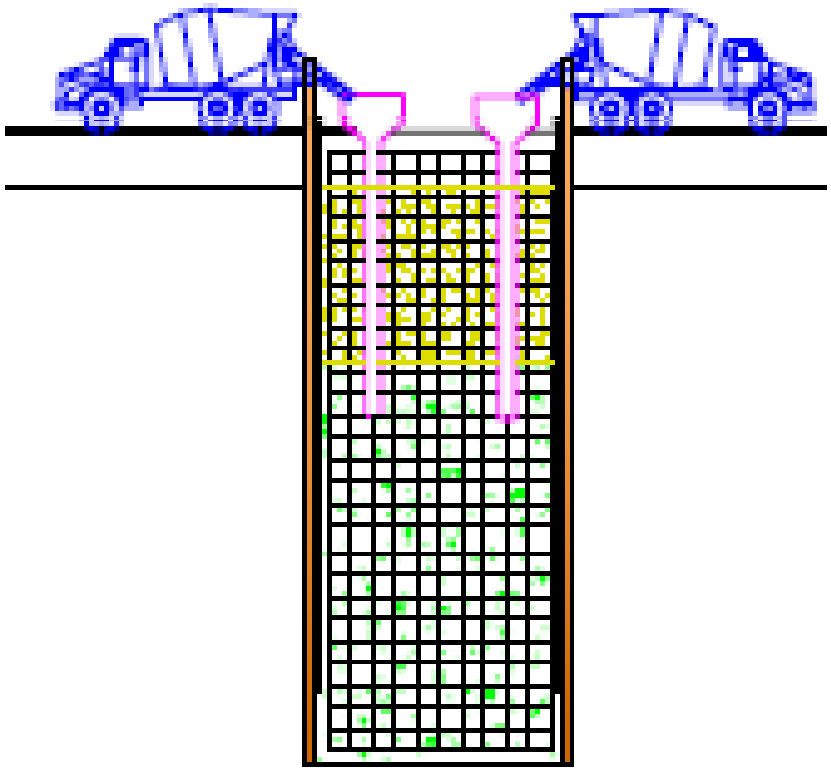
Reinforcement installation

Stage2

Slurry Walls
Pour Concrete

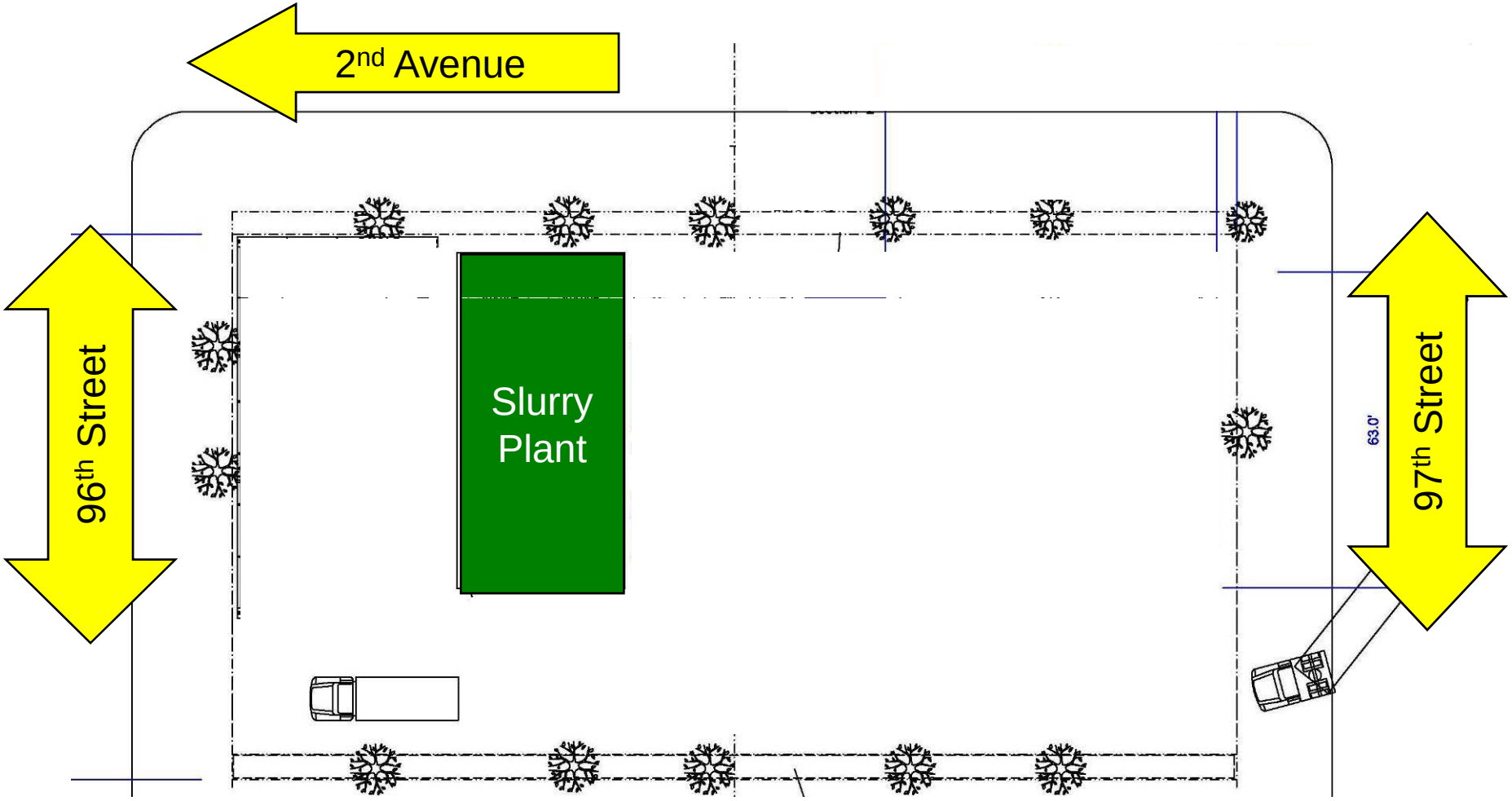
Stage3

Concreting



Stage3

Slurry Plant Setup at 96th Street Yard



Setup Slurry Wall Plant- 96th Street Yard

Setup Slurry Wall Plant- 96th Street Yard

Slurry Wall - Guide Wall Installation

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Slurry Wall Machine During Wall Excavation

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Reinforcing Steel Cage Lifting

T-Panel / Corner Panel Rebar Cage Installation

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Crane Safety and Inspections

All the cranes used on this project would go through the following inspection and Safety steps:

- NY City Building Department Crane and Derricks (CD) Inspection and Certifications Prior to Arrival on Site.
- NY City DOT Permits.
- NY State Licensed Professional Engineer Conducts Stability, Rigging, and Load Analysis
- All Cranes will be Operated ONLY by NYC Licensed Operators with type A Crane Operator's License.
- All Cranes will be Operated by Union Operators with 4 Years of Training Program.
- Daily Operators check of all crane systems and components.
- MTA Overall Oversight

Excavation Between Slurry Walls Under Deck Panels