



Second Avenue Subway Construction Progress Update Contract C-26002

**Presented by
S3 Tunnel Constructors
AND
MTACC
October 12, 2010**

Progress Update (June-October 2010)

- **Launch Box Update – 95th to 91st Streets**
- **TBM Tunnel Mining**
- **Shaft Site Work Update – 74th to 69th Streets**
- **Ground Freeze**
- **Building Stabilization Phase II**
- **78th Street Pump Station**
- **Upcoming Work**

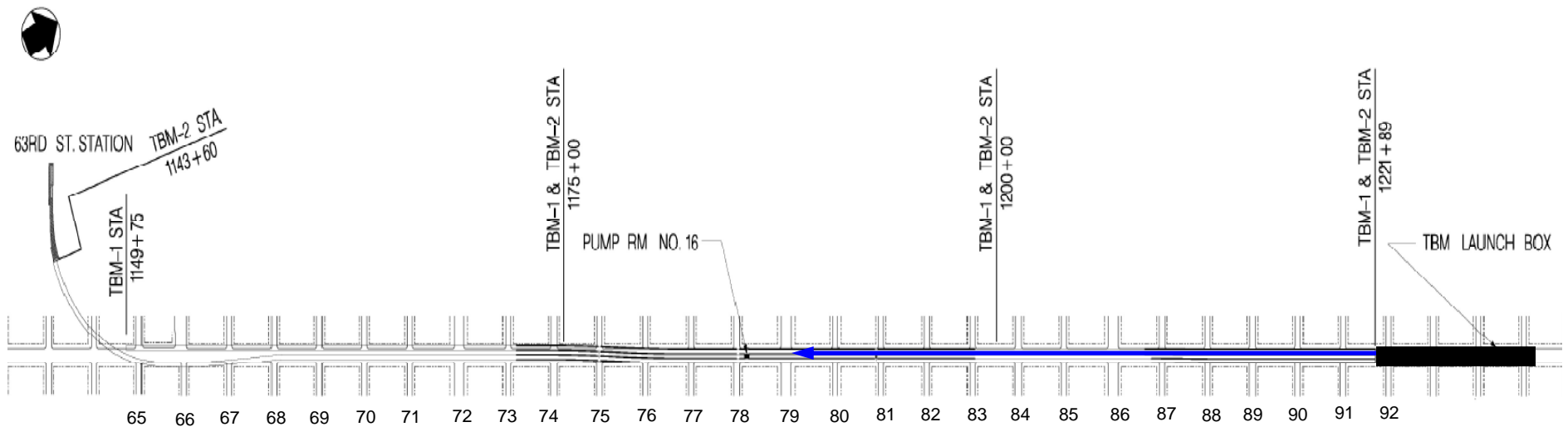
Launch Box Update

95th to 91st Streets

- **Excavation of North End to final invert: Completed**
- **Installation of Tunnel Muck Conveyor System: Completed**
- **Delivery & Assembly of TBM & Trailing Gear: Completed**
- **Building Stabilization Phase II – Completed on the West Side (Buildings 1823 – 1829)**

TBM Tunnel Mining

TBM machine has bored approximately 3,169 ft or up to 79th Street



TBM Mining West Tunnel



Conveyor Above TBM



Dust Control



Launch Box Ready for Mining



Steel Rings for Structural Support



Locomotive Exiting TBM



California Switch



Trains Transport Rock to Transfer Pit



Conveyor Belt Carries Rock from Transfer Pit to Muck Bin



Conveyor Belt Distributes Rock for Storage



Muck Bin – North of Launch Box



Stored Rock is Loaded into Vertical Conveyor System



Vertical Conveyor Transports Rock to Surface



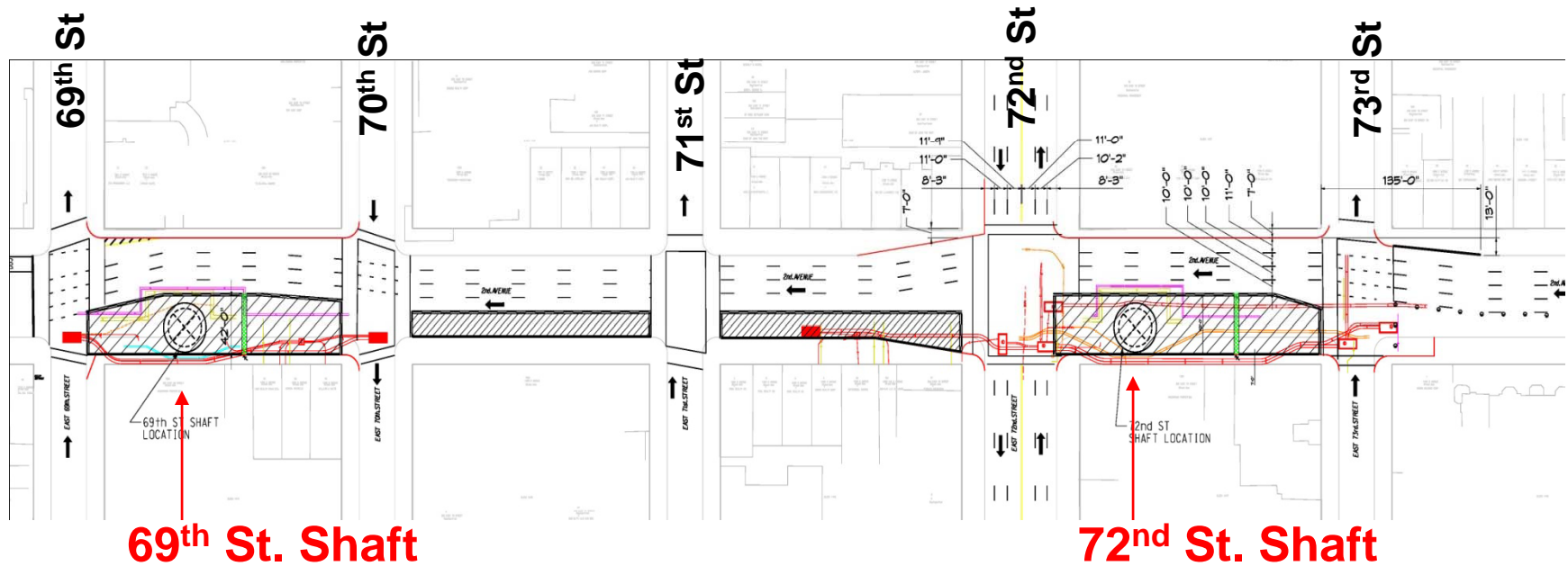
Hopper Loading Truck



Vertical Conveyor Enclosure



69th & 72nd St. Shafts MPT Plan

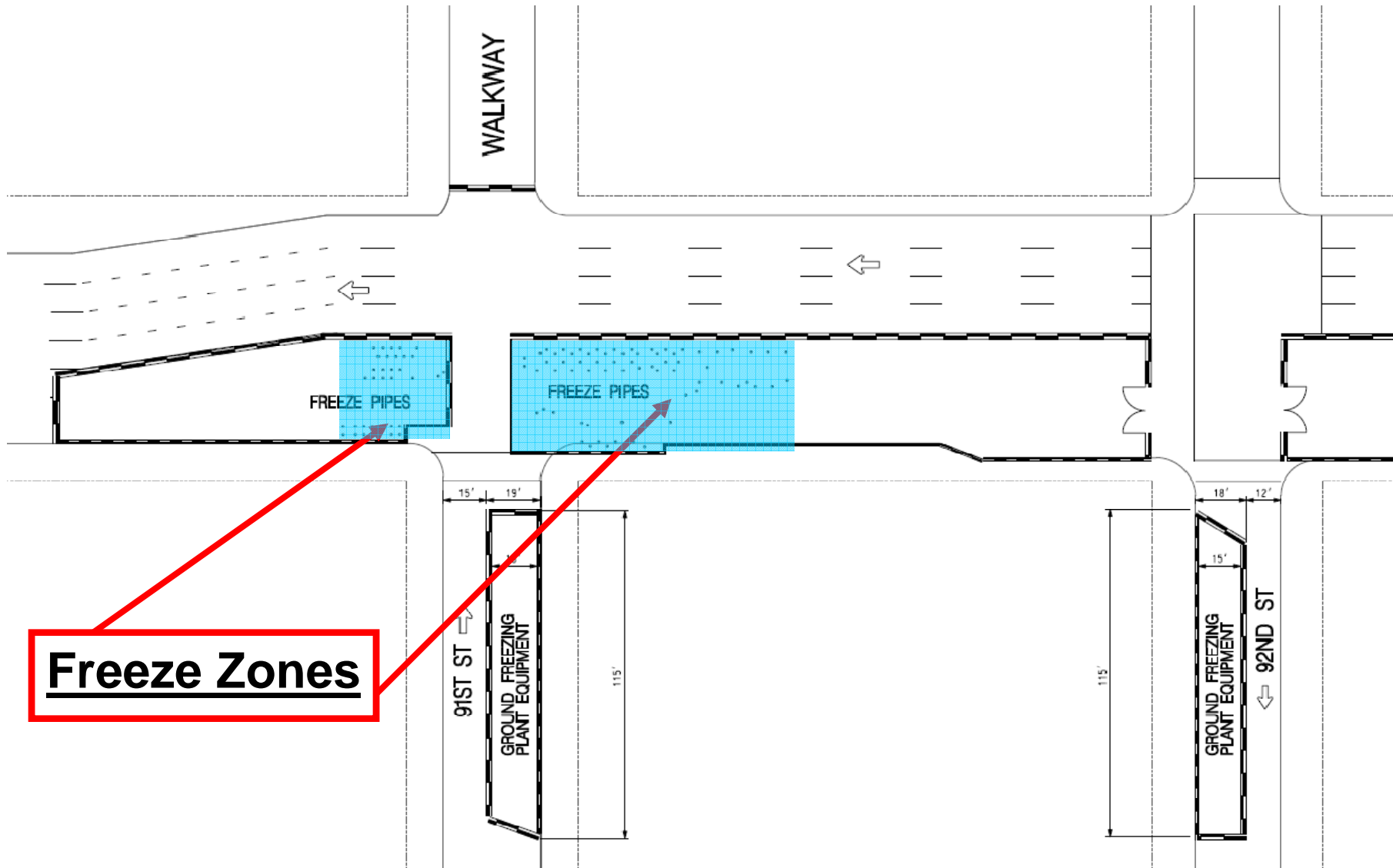


- Drill and Blasting of the Shafts have been completed.
- Concreting of the Shafts has also been finished.
- Work zones are being turned over to the follow-on Contract.

69th & 72nd St Shafts - Completed



Ground Freeze MPT Plan



Ground Freeze - Drill Pipes



Ground Freeze – Install Pipes



Photo from No. 7 Line Subway Project

Freeze Formation



Photo from No. 7 Line Subway Project

Ground Freeze Plant

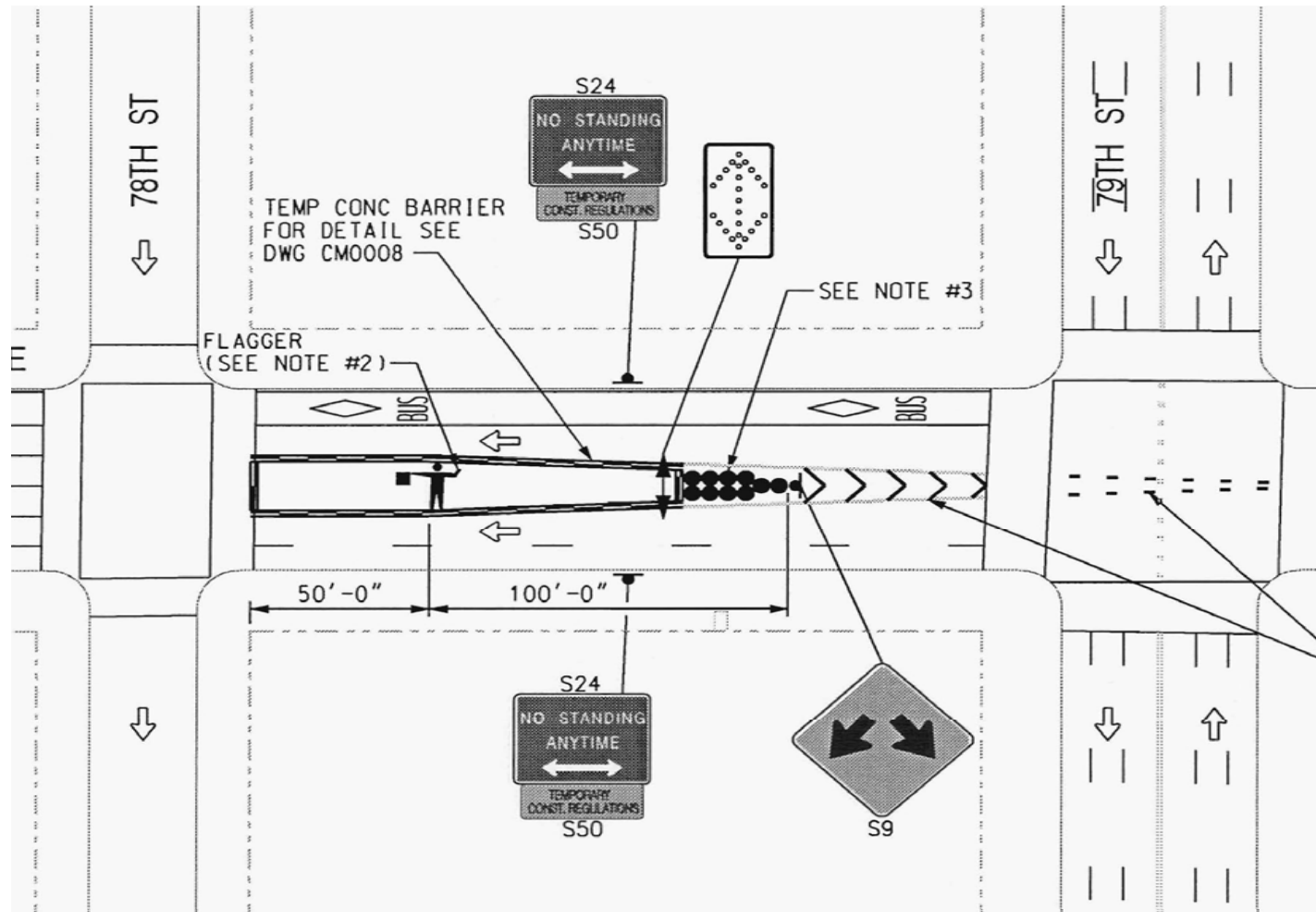


Photo from No. 7 Line Subway Project

Ground Freeze Safety Measures

- The material used inside the Freeze Pipes is Water and Calcium Chloride.
- The material used inside the Freeze Plant is Ammonia.
- Spill Prevention Plan is in Place
- Plan for Potential Material Removal is in Place
- This work has been coordinated with NY City Fire Department - FDNY

78th St Pump Station MPT Plan

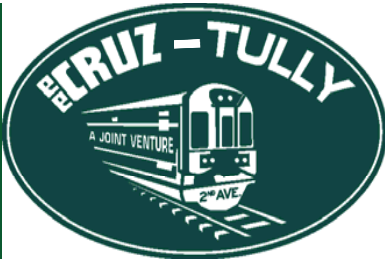


78th St Pump Station MPT Layout



Upcoming Work

- Continue Boring West Tunnel
- Prepare for East Tunnel Bore
- Complete Drilling for Ground Freeze
- Start Ground Freeze Operation (End of November 2010)
- Complete Building Remediation on East Side (1802, 1808, 1814, 1830, 1834)

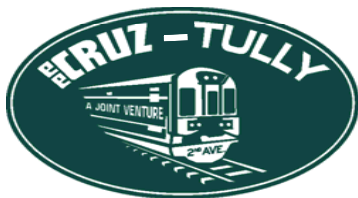
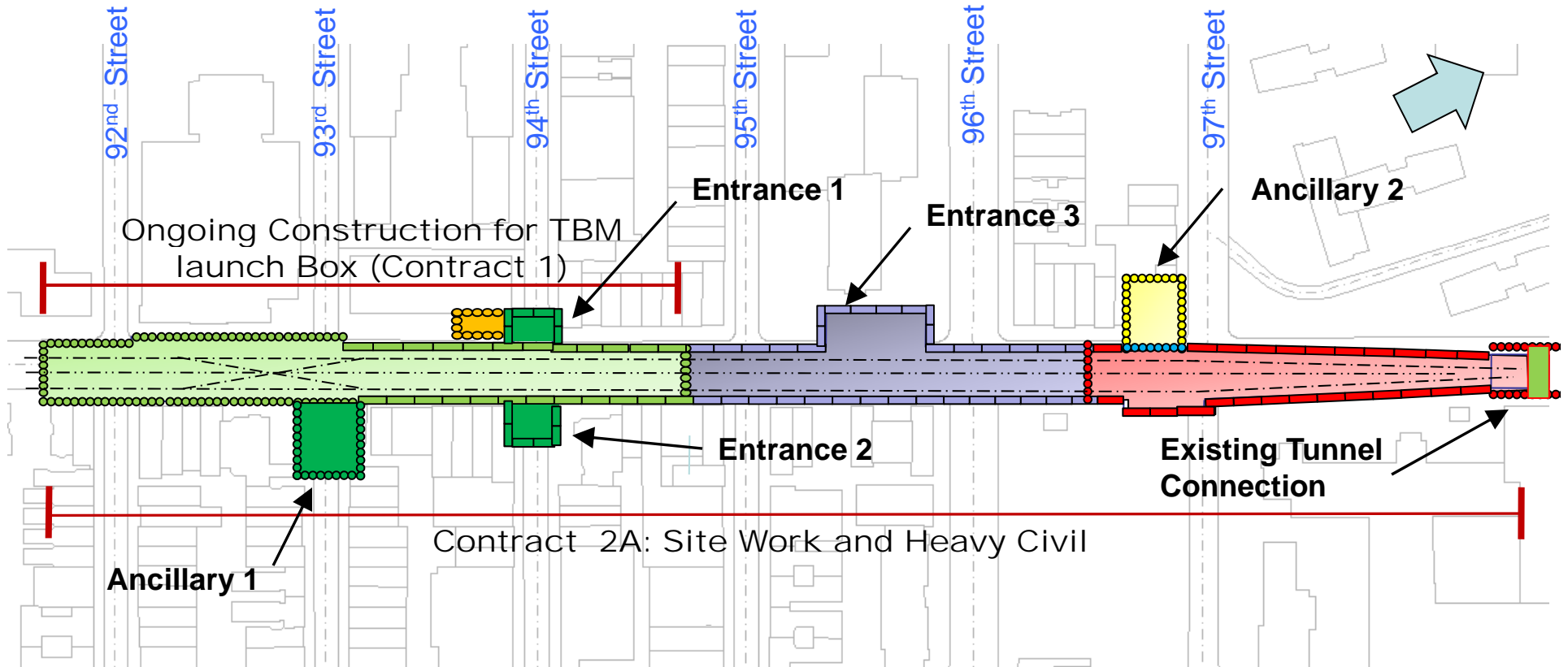


E.E. CRUZ - TULLY CONSTRUCTION JV

MTA Capital Construction
Second Avenue Subway Project
96th St. Station

Contract C-26005:
*Heavy Civil, Structural
and Utility Relocation*

PROJECT OVERVIEW



Contract 2A: 96th Street Station - Site Work & Heavy Civil

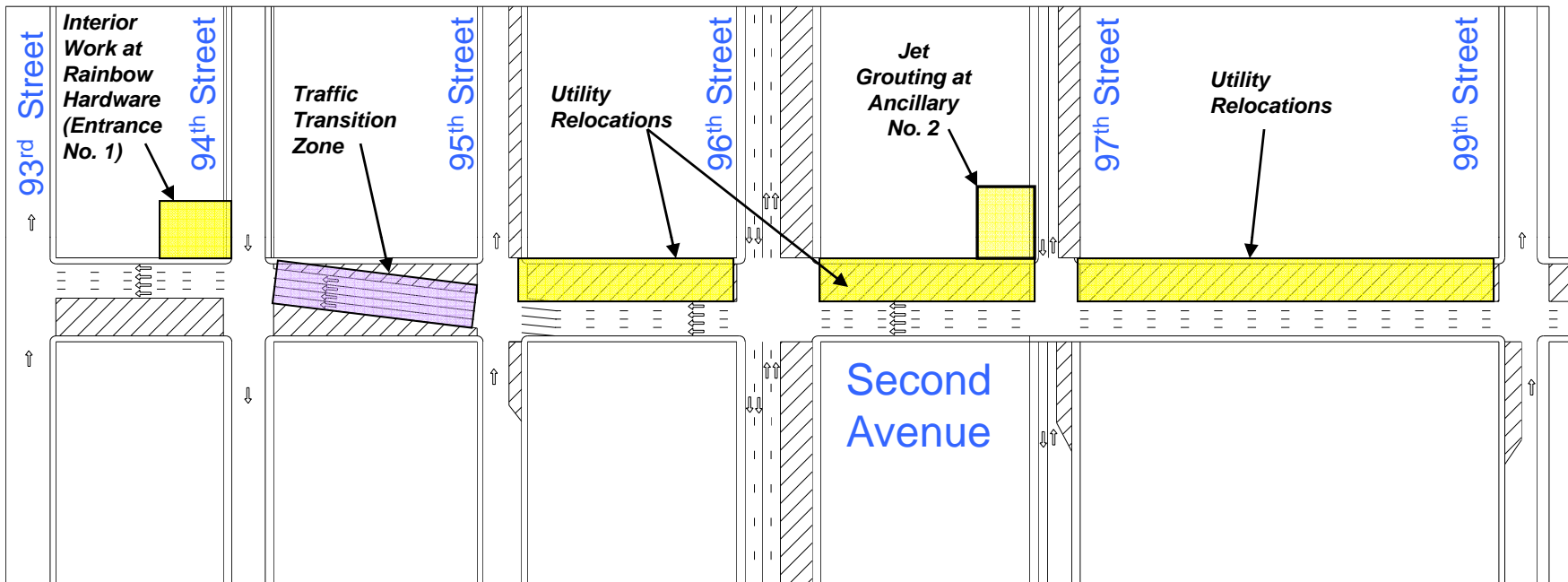
PROGRESS AND UPDATES

- *Progress Update (June 2010 to October 2010)*
 - *Gas Service Relocations along East Side of 2nd Ave. – Completed*
 - *Sewer Relocations along East Side of 2nd Ave. – Completed*
 - *Electrical Services along East Side of 2nd Ave. – Completed*
 - *Installation of Splice Boxes on 2nd Avenue –
Completed North of East 95th Street*
 - *Set up Work Zones on West Side of 2nd Ave / Traffic switched to
East Side - Completed*

PROGRESS AND UPDATES

- *Progress Update (June 2010 to October 2010)*
 - *Utility Work proceeding on West Side of 2nd Ave – Ongoing*
 - *Compaction Grouting at 1867, 1869, 1871, & 1873 2nd Ave – Completed*
 - *Jet Grouting at Ancillary No. 2 (Formerly Century Lumber Building) – Ongoing*
 - *Interior Renovation Work at Entrance No. 1 (94th St) (Formerly Rainbow Hardware Store) - Ongoing*

CURRENT WORK STAGE 2



- *Utility Relocations on West Side of Second Avenue*
- *Interior Work at Rainbow Hardware for future Entrance No. 1*
- *Jet Grouting at Ancillary No. 2*

CONSTRUCTION PROGRESS: 2nd Ave & 95th St



Utility Work: 2nd Avenue – Gas Connection @ 95th Street

CONSTRUCTION PROGRESS: 2nd Ave between 97th and 99th St



Installation of Conduits & Gas Main



Sewer Relocations

CONSTRUCTION PROGRESS: 2ND Ave & 96th St

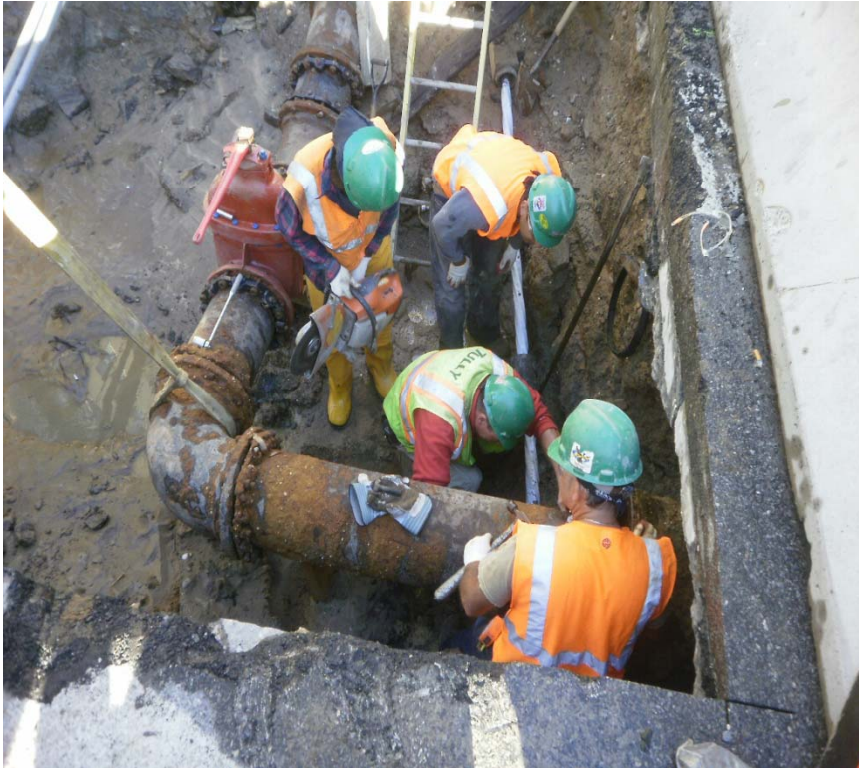


Electrical Manhole Installation –
2nd Avenue at 96th Street



Building Access Ramp

CONSTRUCTION PROGRESS: Utility Installations



Water Main Relocation
96th Street & 2nd Ave

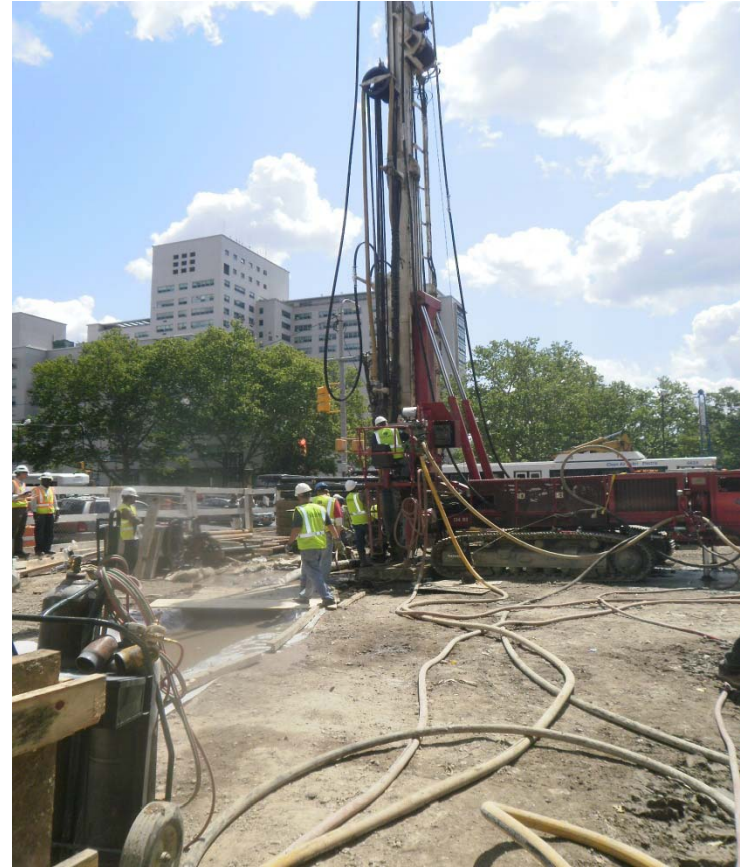


Sewer Relocation
95th Street & 2nd Ave

CONSTRUCTION PROGRESS: Ancillary No. 2



Grouting Silo Installation
– Ancillary No. 2



Jet Grouting at Ancillary No. 2

CONSTRUCTION PROGRESS: Pavement Restoration



Temporary Pavement Restoration

PROGRESS AND UPDATES

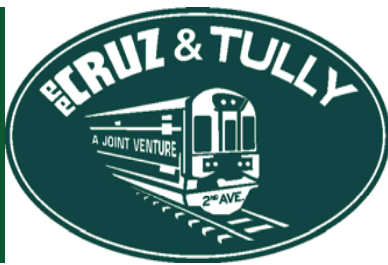
Upcoming Work (Next 3 Months)

- *Sewer Main Relocations along 2nd Avenue – West Side*
- *Gas Main Relocations along 2nd Avenue – West Side*
- *Electrical Relocations along 2nd Avenue – West Side*
- *Utility Installations at 93rd St. & 94th St.*
- *Jet Grouting at Ancillary No. 2 Site (Formerly Century Lumber)*

PROGRESS AND UPDATES

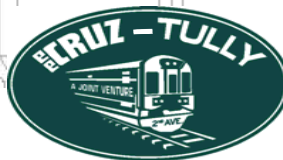
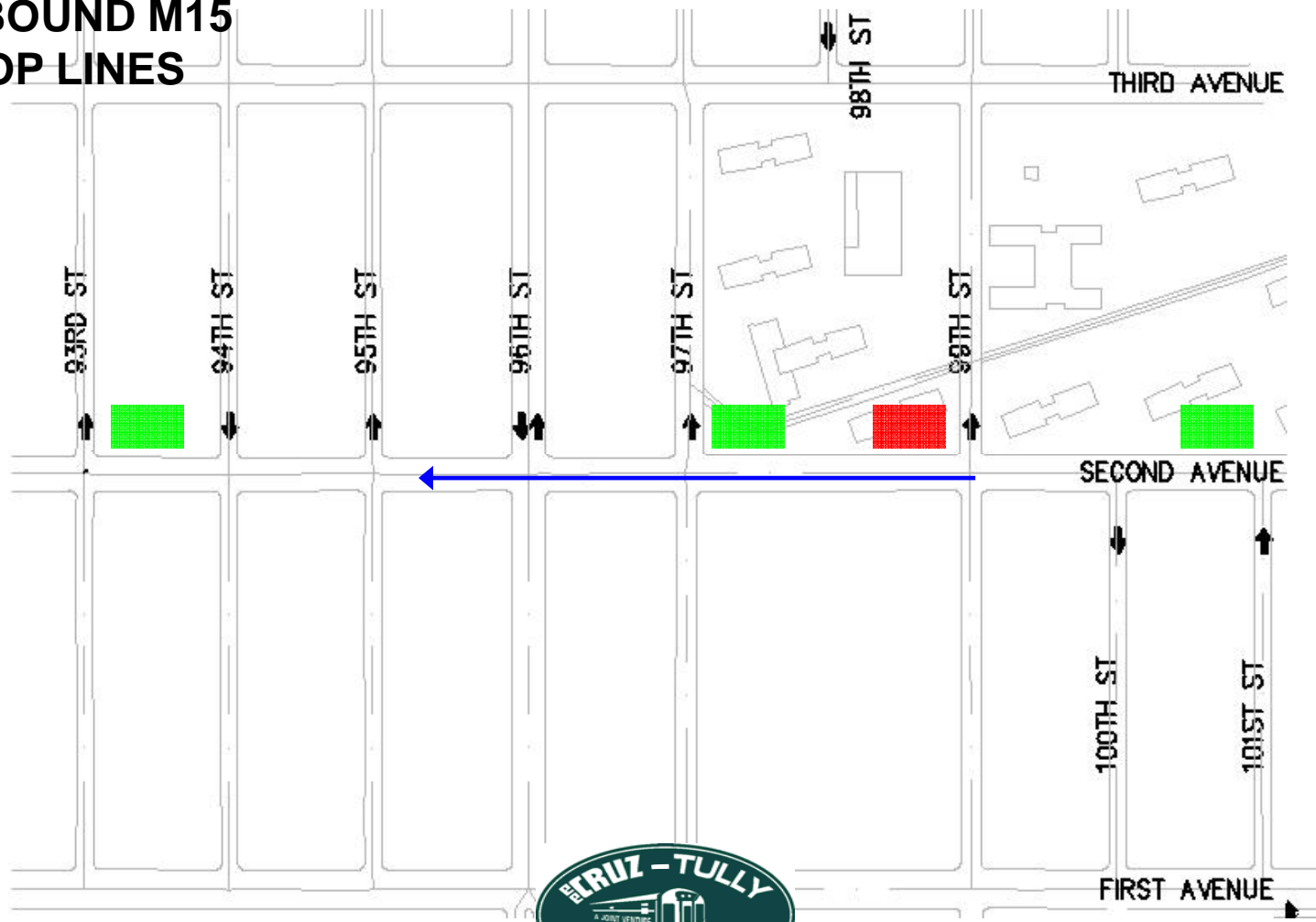
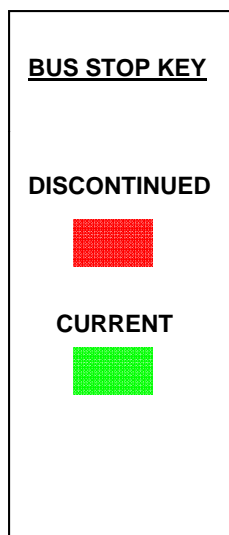
Upcoming Work (Next 3 Months)

- ***Secant Pile Installation at Ancillary No. 2 Site***
- ***Jet Grouting at Entrance No. 1***
- ***Mini Pile Installation at Entrance No. 1 Site***



CONSTRUCTION PROGRESS: Bus Stops (Fall 2010)

SOUTHBOUND M15 BUS STOP LINES



Second Avenue Subway Construction Progress Update

Contract 5A - 82nd to 88th St.

Presented by:
J. D'ANNUNZIO & SONS, INC
October 12, 2010

 **Capital Construction**



Progress Update (June 2010 – Oct 2010)



1. **South Area (Between 84th & 82nd)**
Work Zone on East Side of 2nd Avenue
 - A. **Completed 30" Gas Main Installation**
 - B. **Completed 12" & 20" Water Main Installations @ 83rd Street**
 - C. **Completed all Utility Work on South Side of 83rd**
2. **North Area(Between 88th and 85th Street) – In Progress**
Work Zone on East Side of 2nd Avenue -
 - A. **Completed 30" Gas Main Installation**
 - B. **Completed Electrical Work @86th Street**
 - C. **Complete Utility Work @87th Street - Across 2nd Avenue**

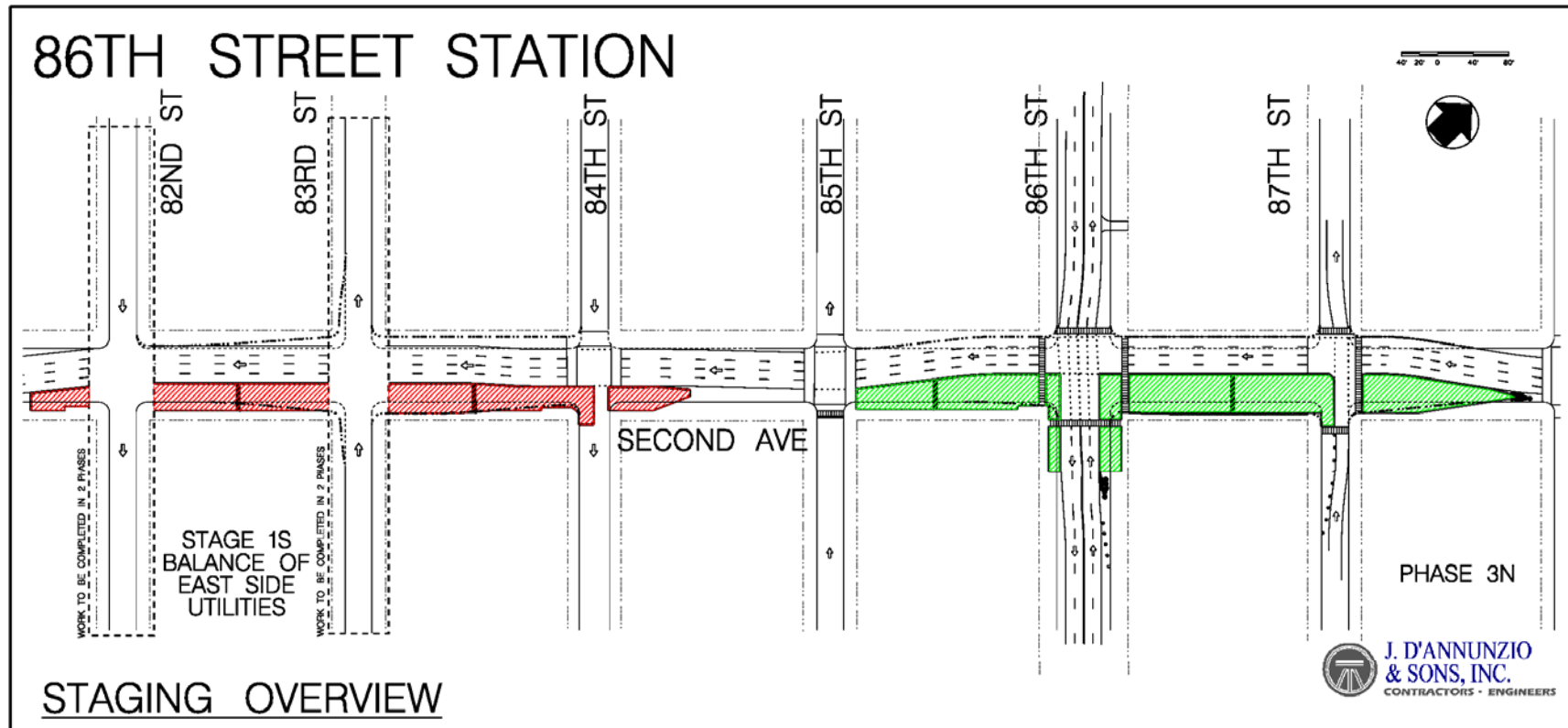
J. D'Annunzio Work Performing Utility Work at South East Corner of 83rd Street



MTA Capital Construction



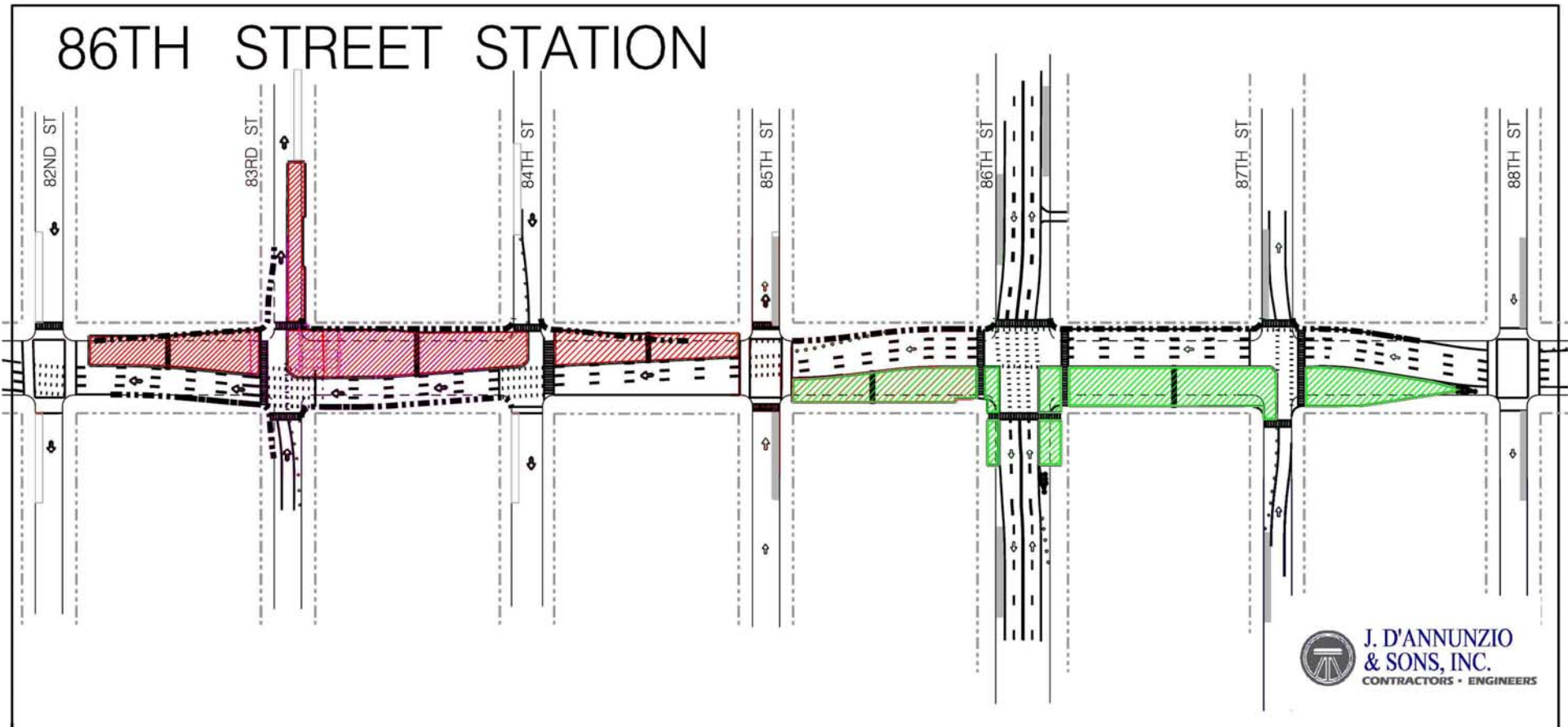
MPT STAGE: Current



J. D'ANNUNZIO & SONS, INC.

MTACC Second Avenue Project - 86th Street Station
Contract C-26013: Utility Relocation , Open Excavation and Road Decking

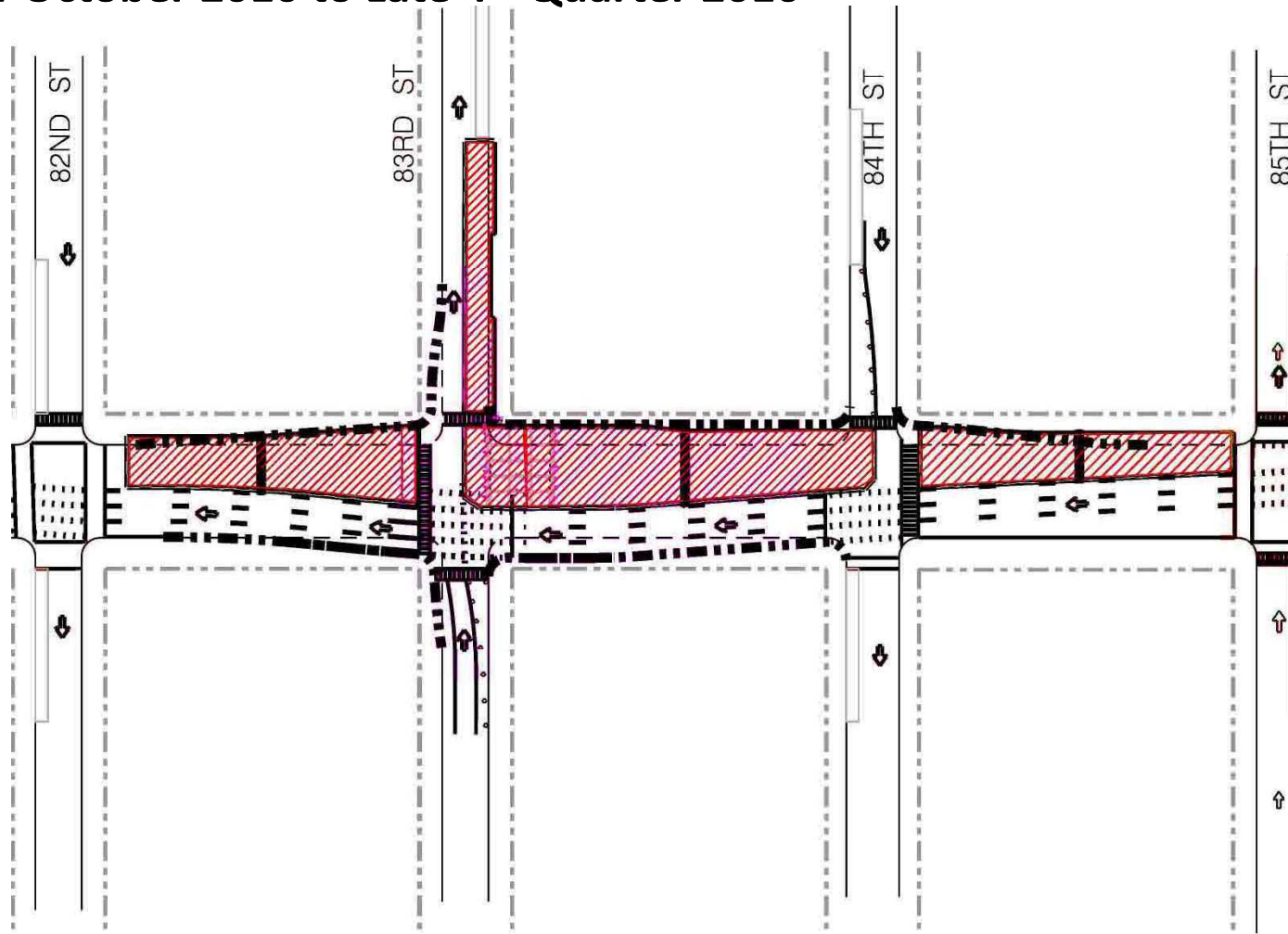
**Next MPT STAGE South - Switch to West Side:
Mid-October 2010 to Late 4th Quarter 2010**



MTA Capital Construction



Next MPT STAGE South – 3 Lanes of Traffic for Sewer Replacement: Mid-October 2010 to Late 4th Quarter 2010



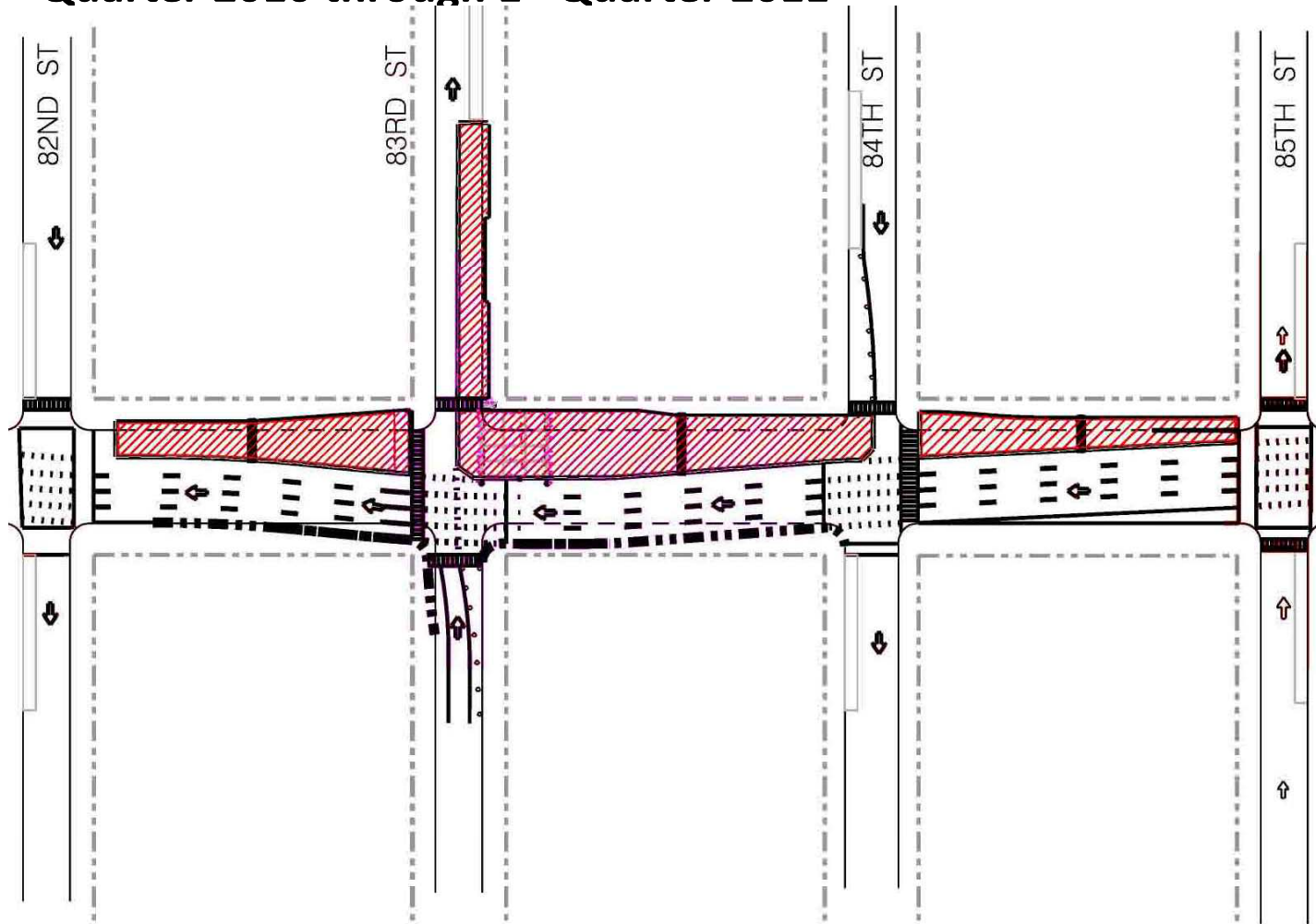
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J. D'ANNUNZIO & SONS, INC.

MTACC Second Avenue Project - 86th Street Station
Contract C-26013: Utility Relocation , Open Excavation and Road Decking

Upcoming MPT STAGE South - Reduce Work Zone & Restore 4 Lanes of Traffic: Late 4th Quarter 2010 through 1st Quarter 2011



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J. D'ANNUNZIO & SONS, INC.

MTACC Second Avenue Project - 86th Street Station
Contract C-26013: Utility Relocation , Open Excavation and Road Decking

Progress Update (June 2010 – Oct 2010)

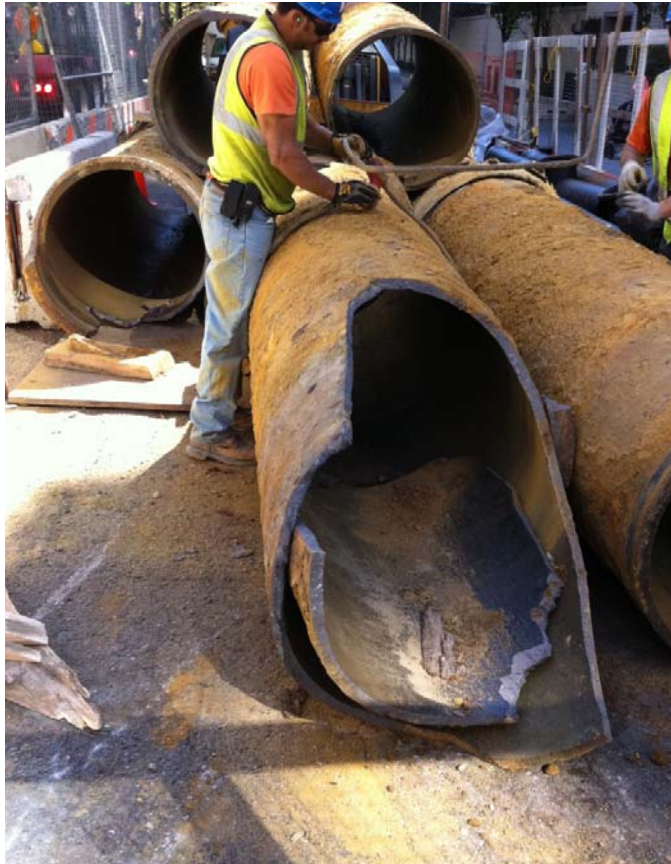


1. South Area (Between 84th & 82nd)
Work Zone on East Side of 2nd Avenue
 - A. Completed 30" Gas Main Installation
 - B. Completed 12" & 20" Water Main Installations @ 83rd Street
 - C. Completed all Utility Work on South Side of 83rd

2. North Area(Between 88th and 85th Street) – In Progress
Work Zone on East Side of 2nd Avenue -
 - A. Completed 30" Gas Main Installation
 - B. Completed Electrical Work @86th Street
 - C. Complete Utility Work @87th Street - Across 2nd Avenue

J. D'Annunzio Work

**Removing Exist. 130 Year Old – Thirty Inch (30") Cast Iron Gas Main (Left)
Installing New Thirty Inch (30") Welded Steel Gas Main at 87th Street (Right)**



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Contract C-26013: Utility Relocation , Open Excavation and Road Decking

Con Edison Work
Tie-In Connection of Thirty (30") Inch Gas Main North of 87th Street



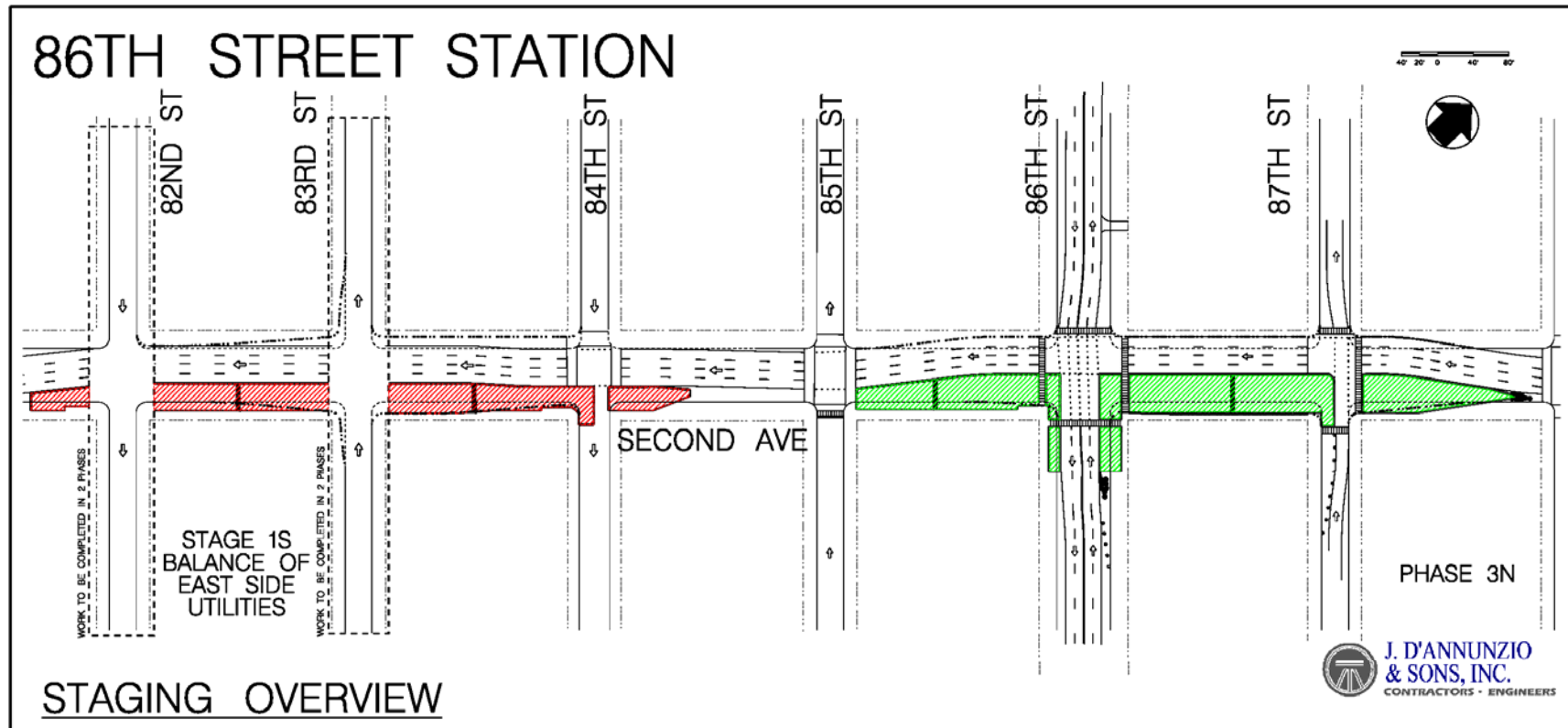
MTA Capital Construction



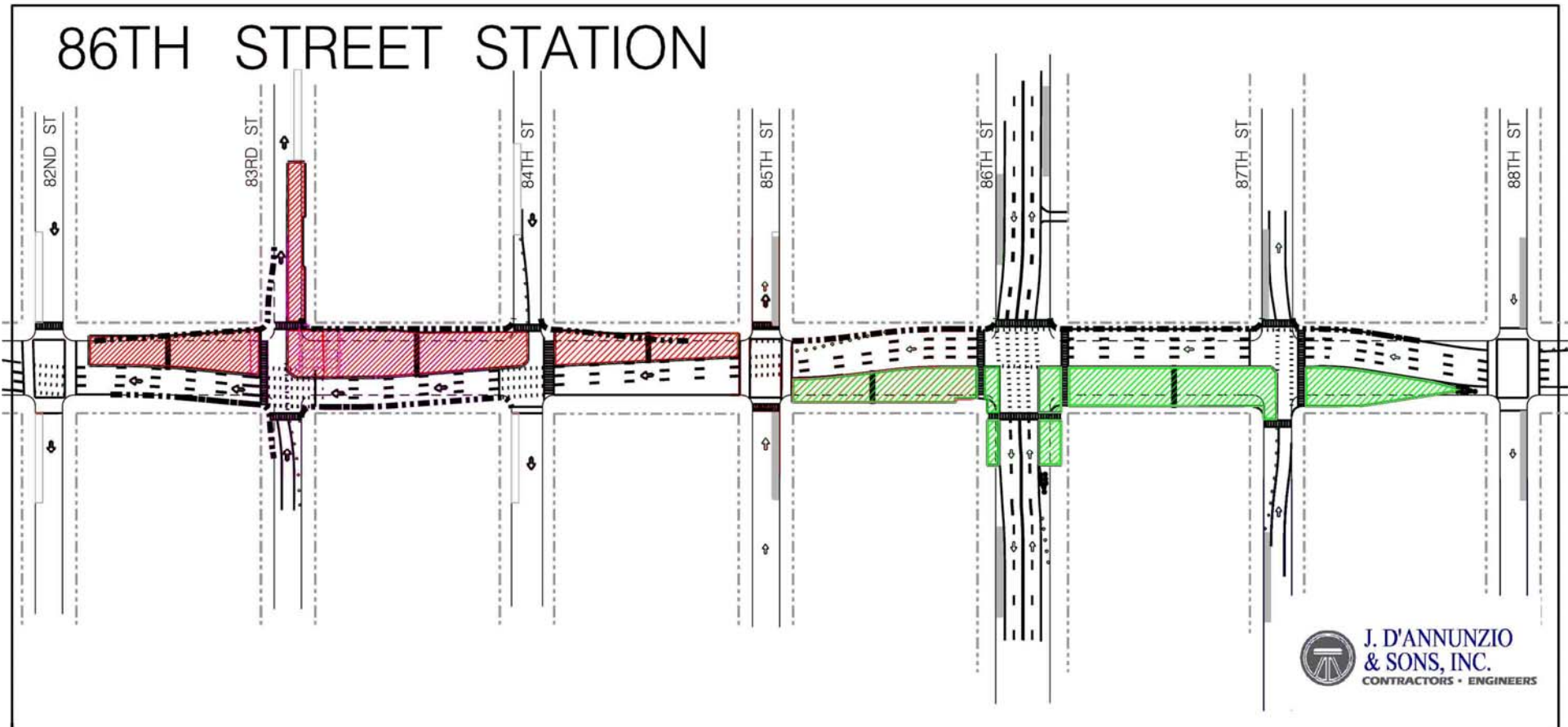
J. D'ANNUNZIO & SONS, INC.

MTACC Second Avenue Project - 86th Street Station
Contract C-26013: Utility Relocation , Open Excavation and Road Decking

MPT STAGE: Current



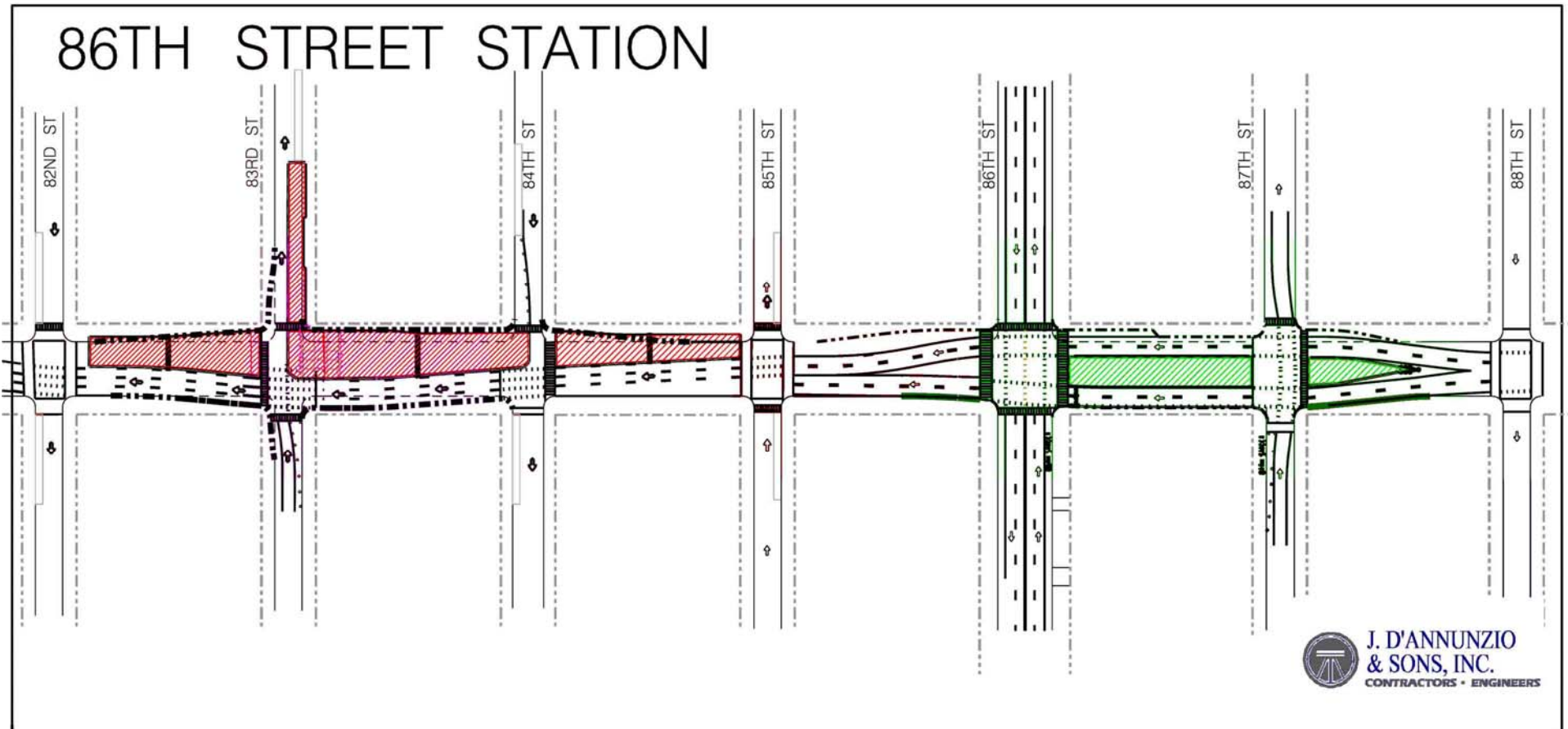
**Next MPT STAGE South - Switch to West Side:
Mid-October 2010 to Late 4th Quarter 2010**



MTA Capital Construction



**Upcoming MPT STAGE North - Switch to Center Configuration:
Mid-4th Quarter 2010 Through Late 4th Quarter 2010**



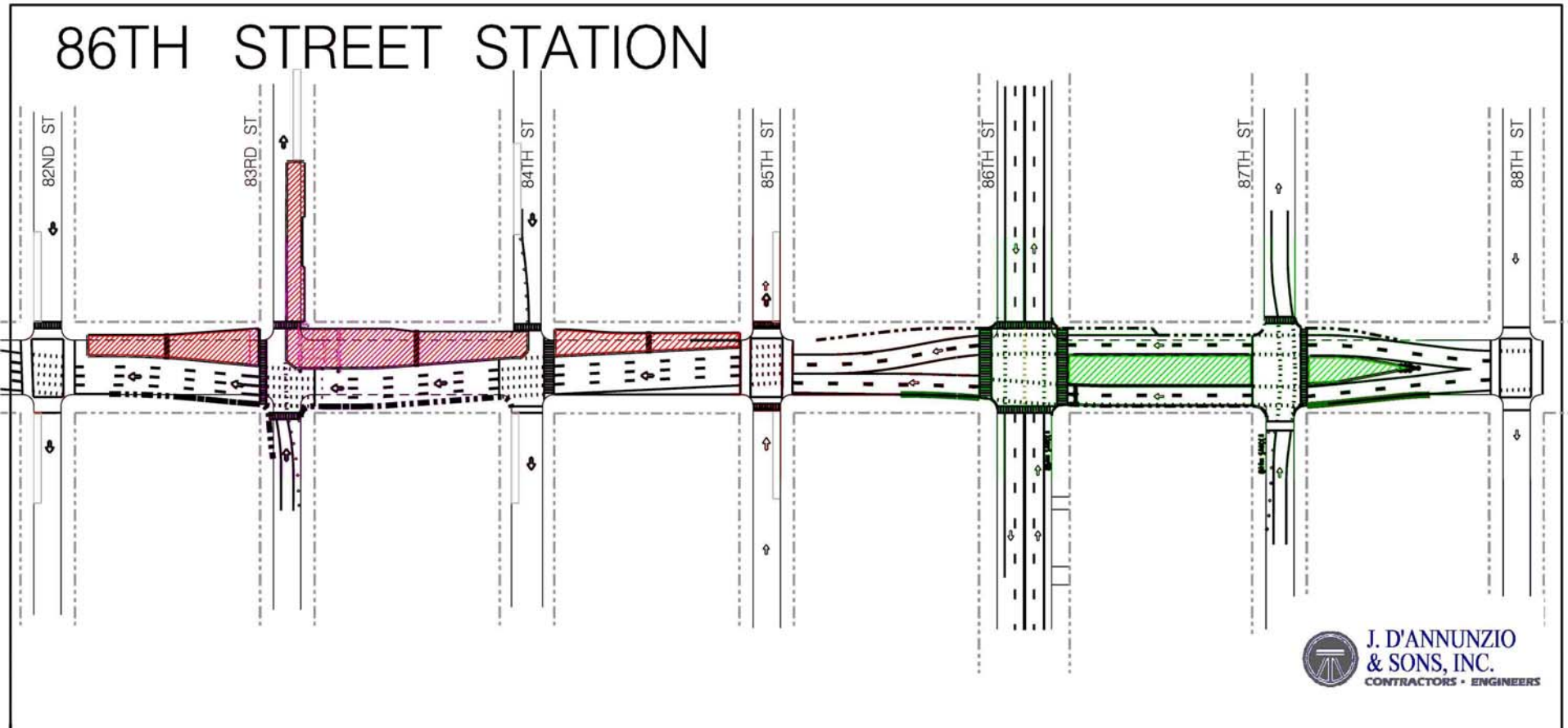
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MTACC Second Avenue Project - 86th Street Station
Contract C-26013: Utility Relocation , Open Excavation and Road Decking

**Next MPT STAGE – South Reduce Work Zone & Restore 3 Lanes :
Late 4th Quarter 2010 through 1st Quarter 2011**



Upcoming Work: Next 3 Months

South Area (82nd – 84th)

- Return to West Side to perform Sewer Replacement in widened work zone (~ 2 Months)
- Narrow Work Zone to Complete Balance of Utility Work, Between 84th & 82nd Streets and Begin Shaft Excavation

North Area (86th – 88th)

- Switch to Center Configuration, Between 85th & 88th Streets for Utility Work
- Electric Utility Relocation Along 87th, Between 2nd & 3rd Avenues
- Storm Sewer (Catch Basin) Relocation on 87th, between 2nd & 3rd Avenues



Community Board 8 Meeting October 12, 2010

MTA Capital Construction Second Avenue Subway 72nd St. Station Project Contract C-26007 (4B)

*Station Cavern Mining, G3/G4 Tunnels and
Heavy Civil Structural*





SSK Joint Venture

Contract Value: \$431,180,260

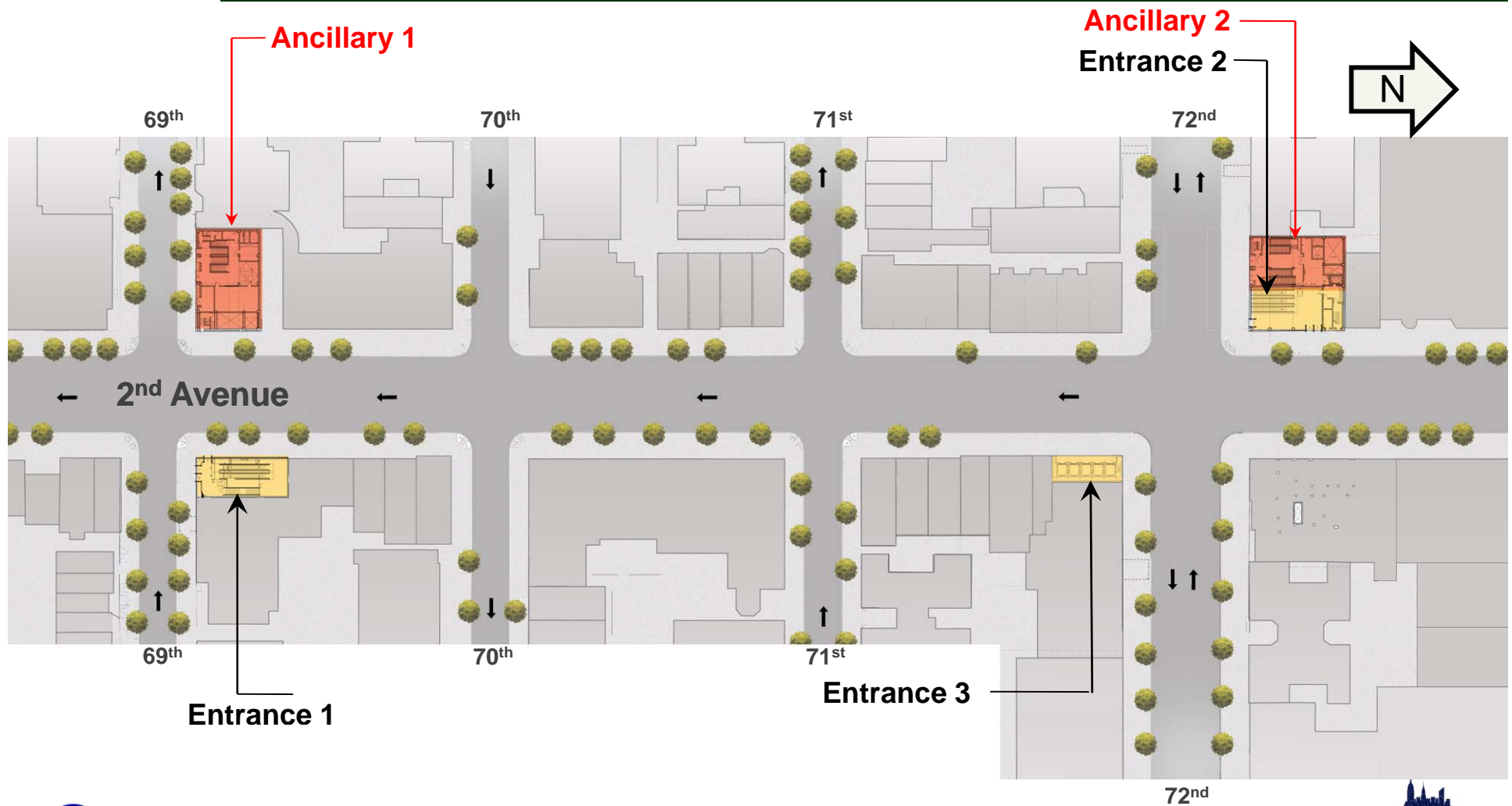
Award Date: October 1, 2010

Duration: 37 Months

*Joint Venture: Schiavone Construction Co
JF Shea Construction Co
Kiewit Infrastructure Co*



SITE PLAN





SCOPE OF WORK

- Construction of:
 - *72nd Street Station Cavern and tunnel lining*
 - *Temporary support of excavation (SOE) structures*
 - *Structural shell of entrances*
- Demolition of Buildings for future ancillary facilities
- Utility relocation

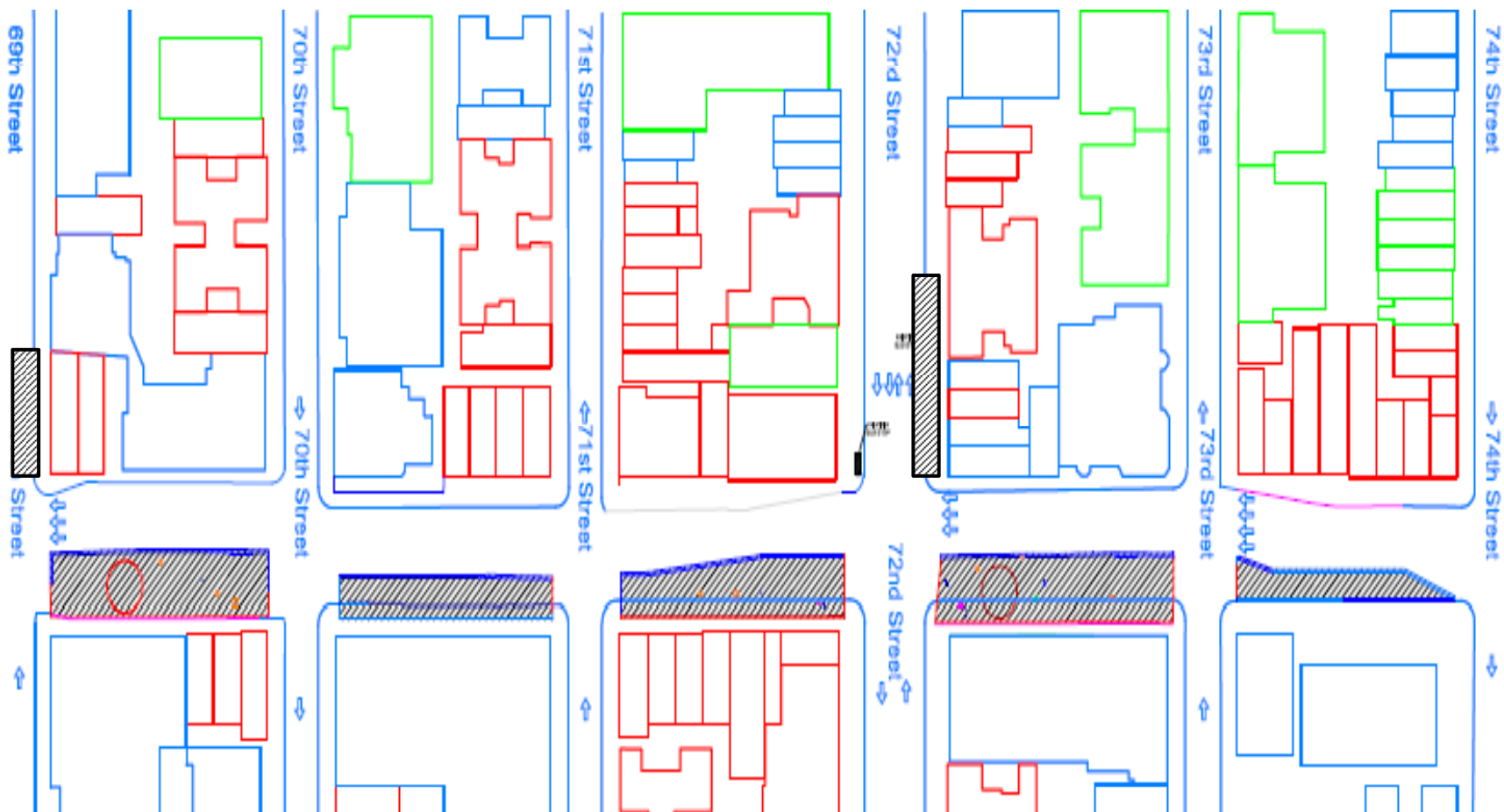


3 MONTH LOOK AHEAD (October – December 2010)

- Contractor Mobilization
- Street Furniture & Tree Removals
- Bus Stop Relocations
- Layout and survey
- Pre-construction Building Survey & Instrumentation

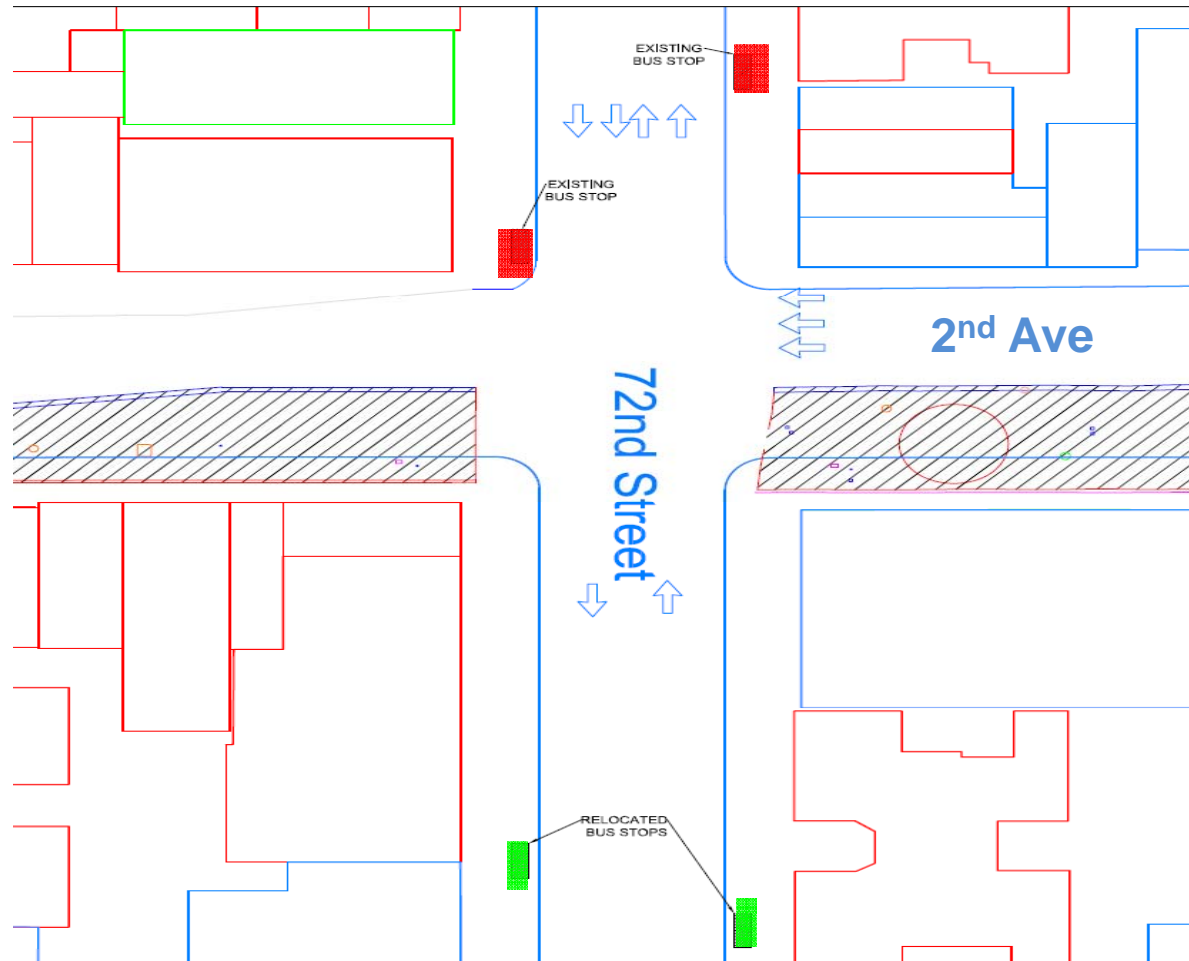
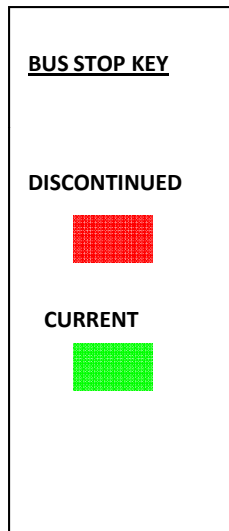


INITIAL MPT & SITE LAYOUT





BUS STOPS





INSTRUMENTATION FOR BUILDING MONITORING





CONSTRUCTION ACTIVITIES & WORK HOURS

Surface Work and Utility Relocation

- Monday – Friday: 7:00 am to 10:00 pm
- Saturday: 10:00 am to 7:00 pm

Trucking & Deliveries

- Monday – Friday: 7:00 am to 10:00 pm
- Saturday: 10:00 am to 7:00 pm
- Some night deliveries for large equipment

Traffic

- **Traffic monitoring program integrated with NYCDOT**
- **Maintain 4 lanes through construction zones**
- **Keep cross streets open**
- **Relocate bus stops to outside of construction zones**



CONSTRUCTION ACTIVITIES & WORK HOURS

Pedestrians

- Minimum 7 foot wide sidewalks
- Three crosswalks open at a time at all intersections
- Provide flagmen for equipment movements

Local Access

- Maintain pedestrian access to all buildings
- Maintain emergency vehicle access at all times
- Maintain special zones for deliveries
- Provide designated areas for garbage disposal

Noise

- Comply with NYCDEP noise limits
- Noise and Vibration Monitoring Plan
- Dampers on equipment





CONSTRUCTION ACTIVITIES & WORK HOURS

Vector Control (Rodents)

- Vector control plan to cover 1,000 foot wide area
- Licensed Pesticide Control Company to monitor and implement Vector Strategies

Building Demolition Dust, Noise and Air Quality

- Monday – Friday: 8:00 am to 6:00 pm
- Noise and Air Quality Monitoring Plan
- Use of Low Sulfur Fuels
- Dust control methods

Settlement or Movement

- Install continuous instrumentation and monitoring equipment

2nd Avenue Subway

CB #8 Presentation - October 12, 2010

Ancillary Facilities



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96th Street Station

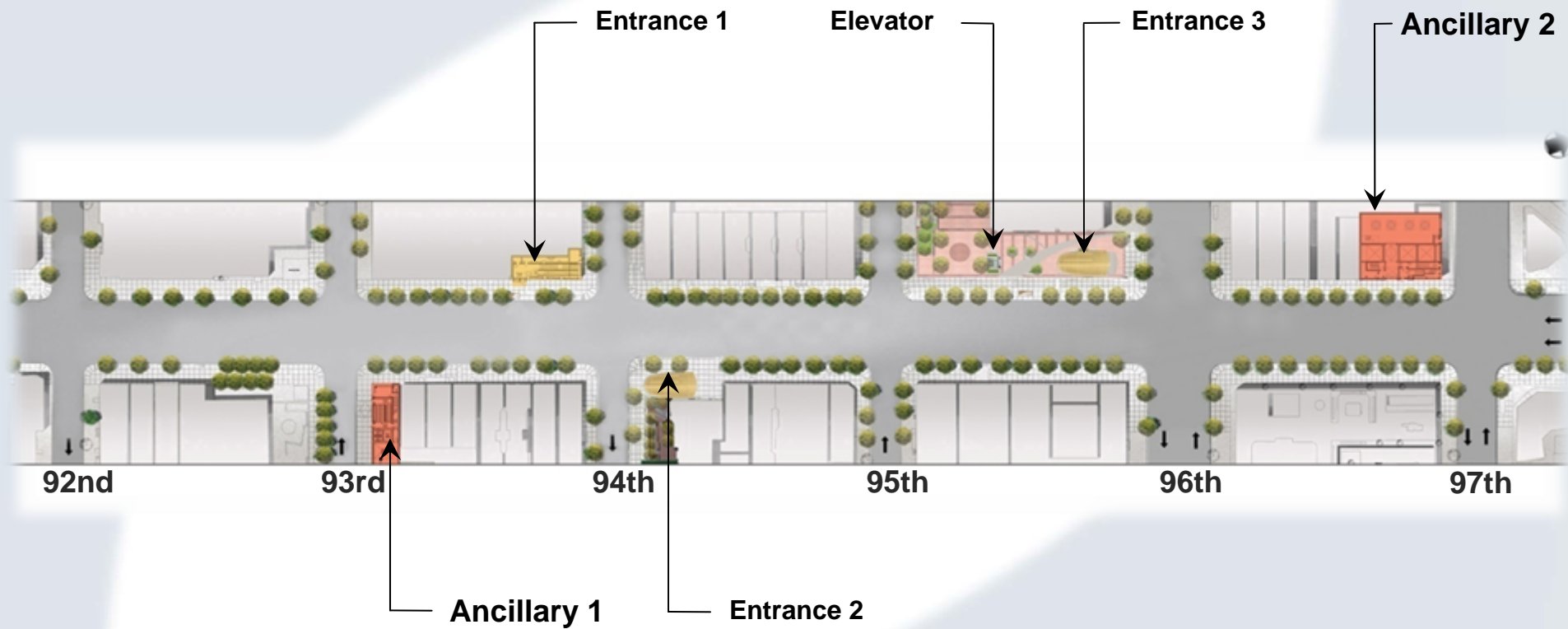


Capital Construction

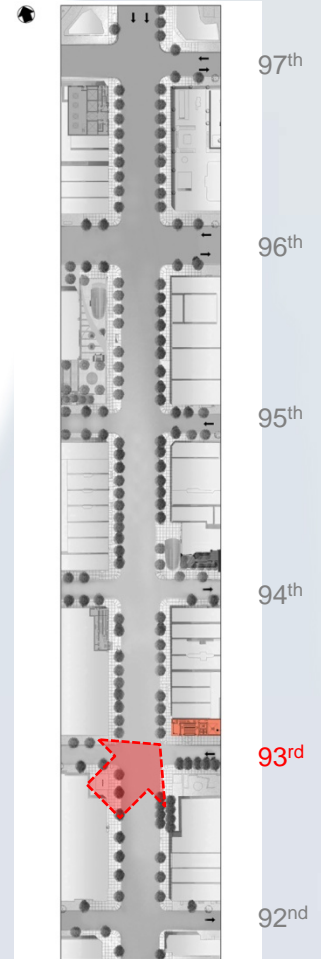
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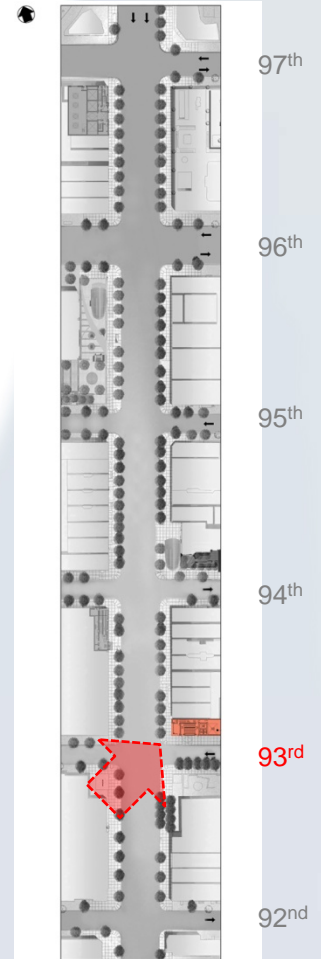
96th Street Station – Site Plan



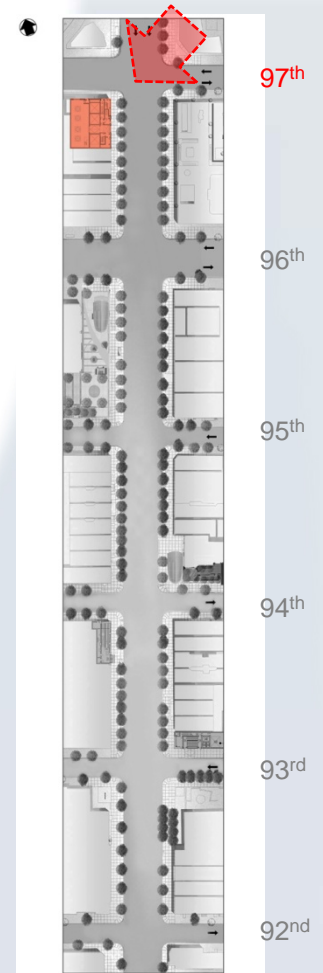
96th Street Station Ancillary 1 - NE Corner of 93rd Street



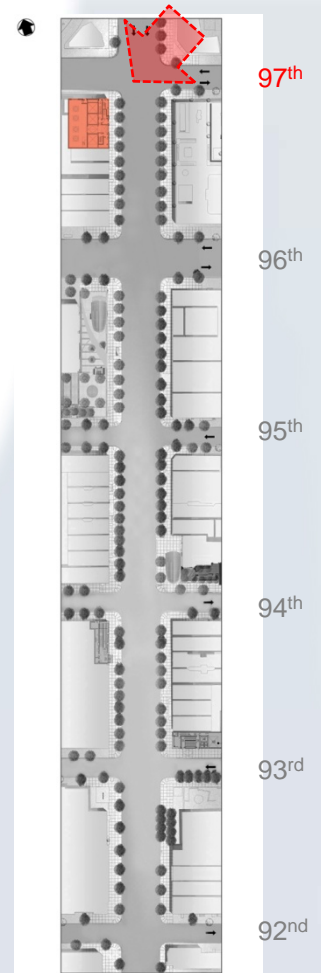
96th Street Station Ancillary 1 - NE Corner of 93rd Street



96th Street Station Ancillary 2 - SW Corner of 97th Street



96th Street Station Ancillary 2 - SW Corner of 97th Street





86th Street Station

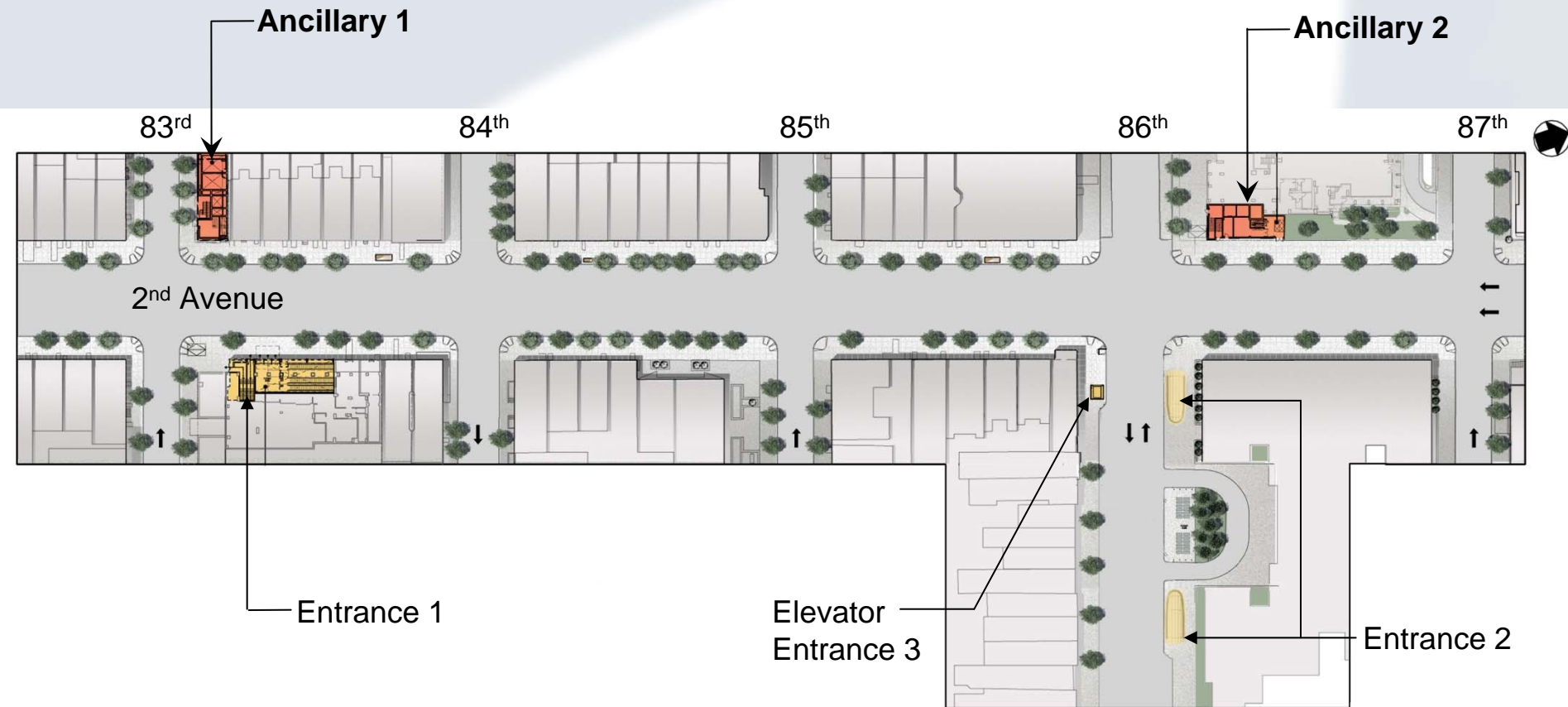


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86th Street Station – Site Plan

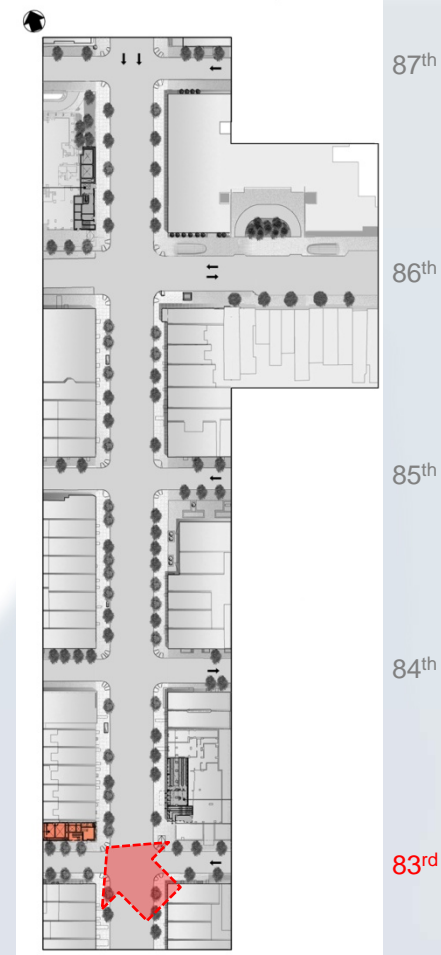


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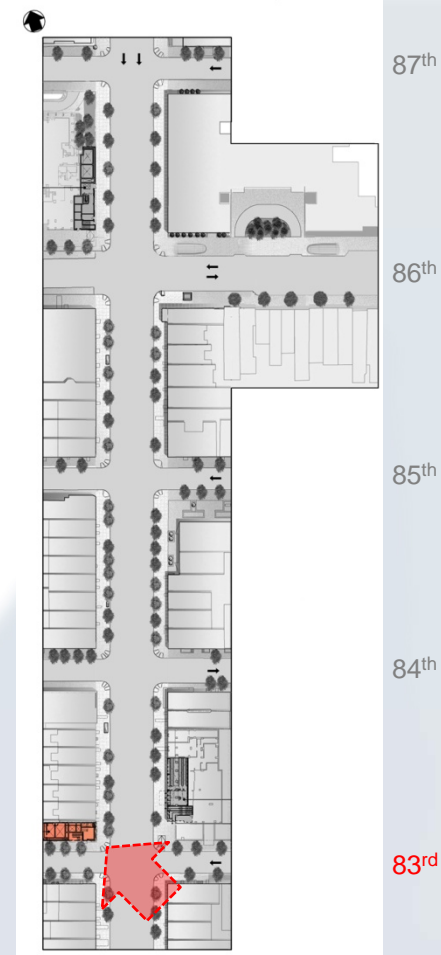
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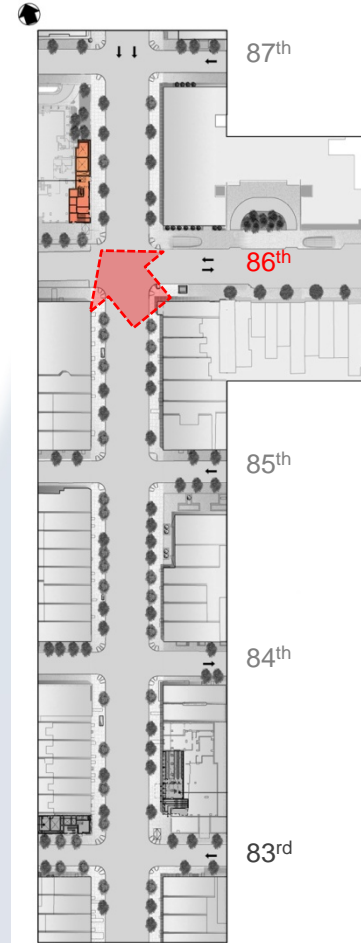
86th Street Station Ancillary 1 - NW Corner of 83rd Street



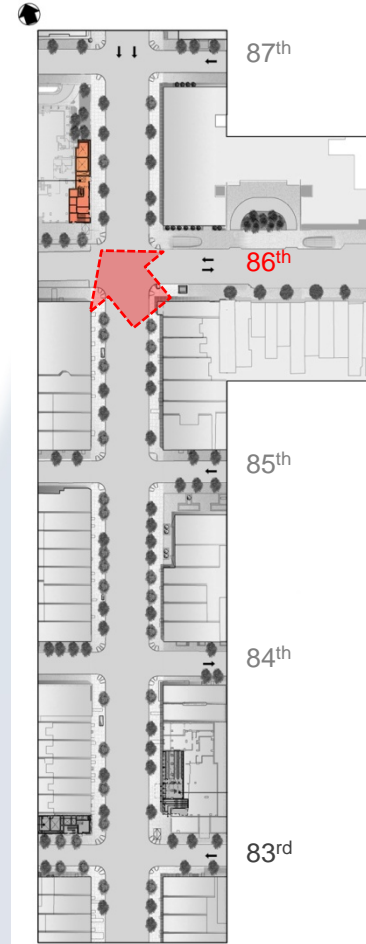
86th Street Station Ancillary 1 - NW Corner of 83rd Street



86th Street Station Ancillary 2 - NW Corner of 86th Street



86th Street Station Ancillary 2 - NW Corner of 86th Street



A blurred image of a subway train moving along tracks, with the front car visible on the left.

72nd Street Station

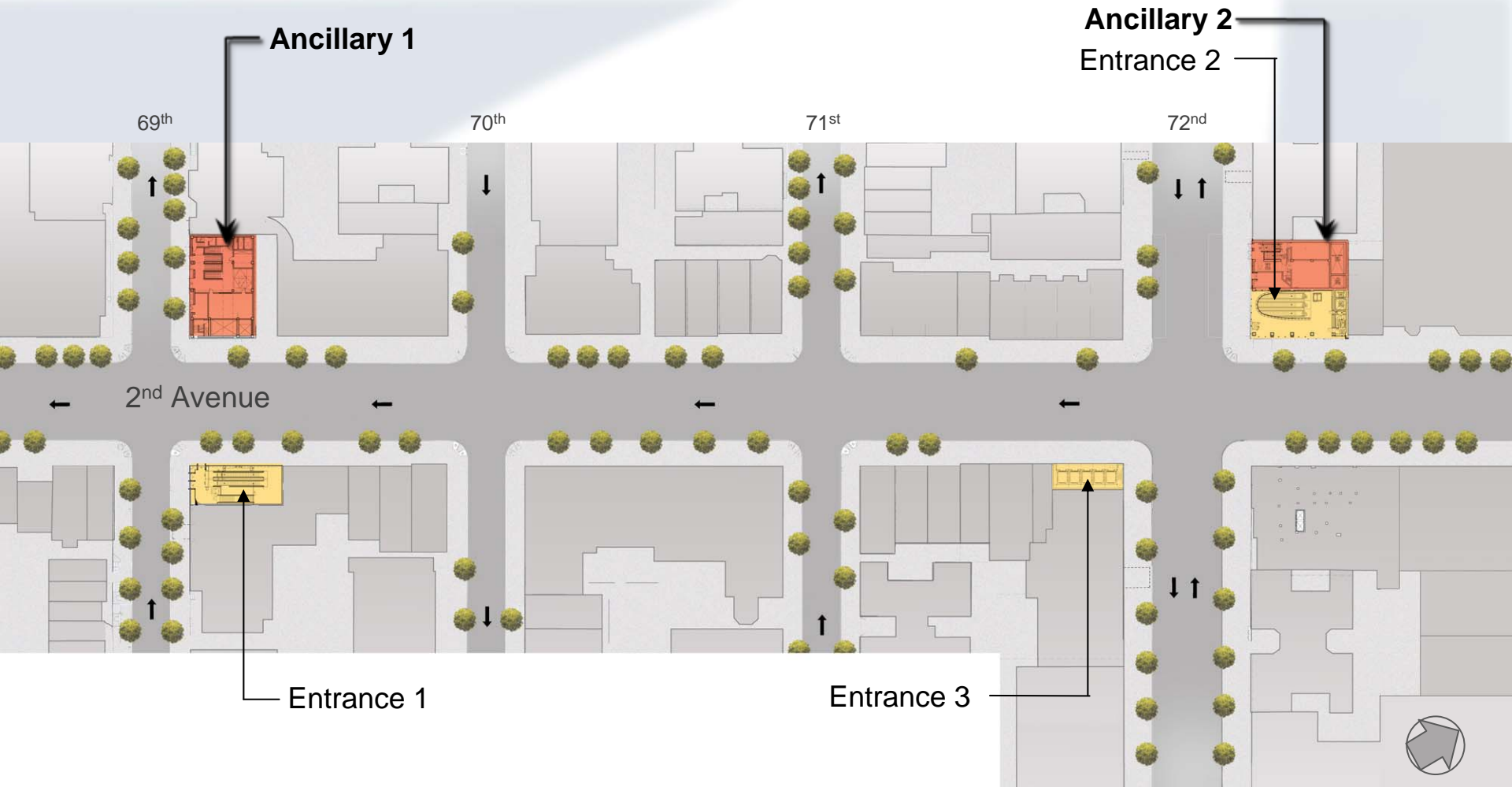


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72nd Street Station – Site Plan

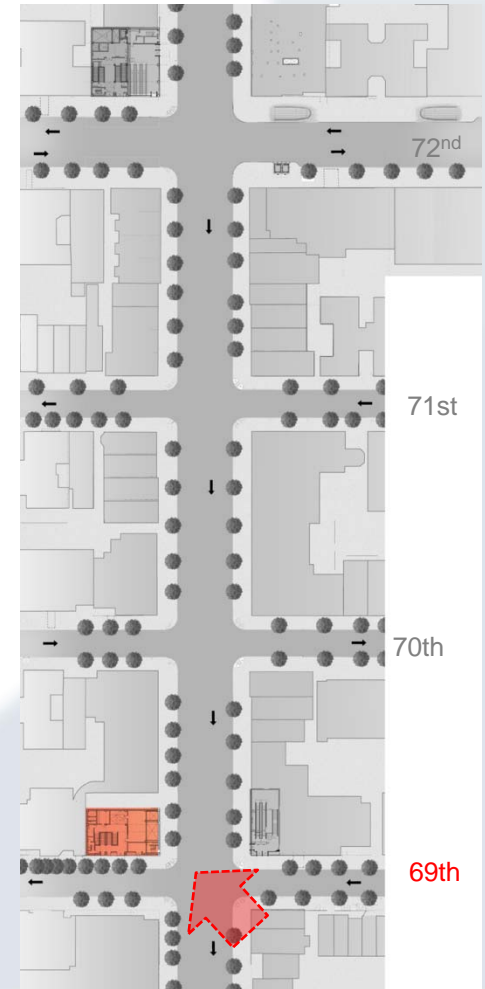


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72nd Street Station Ancillary 1 - NW Corner of 69th Street

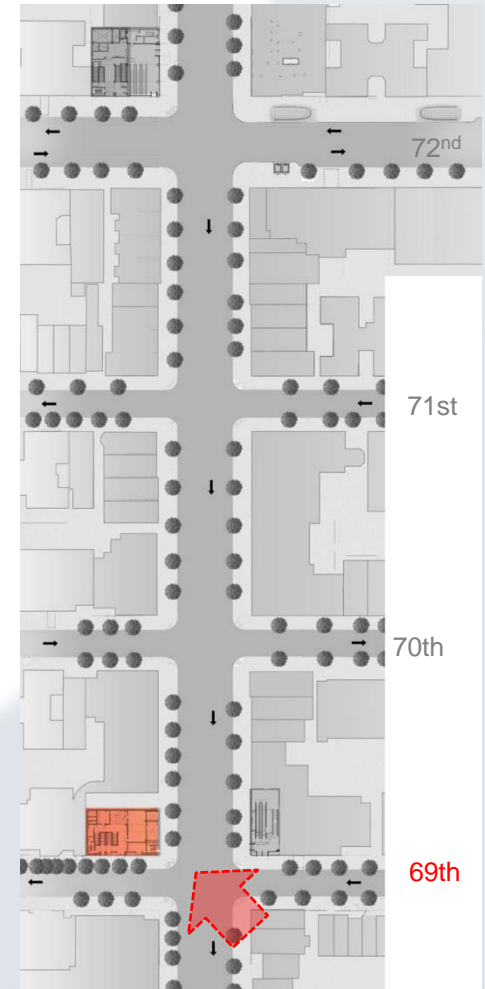


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72nd Street Station Ancillary 1 - NW Corner of 69th Street

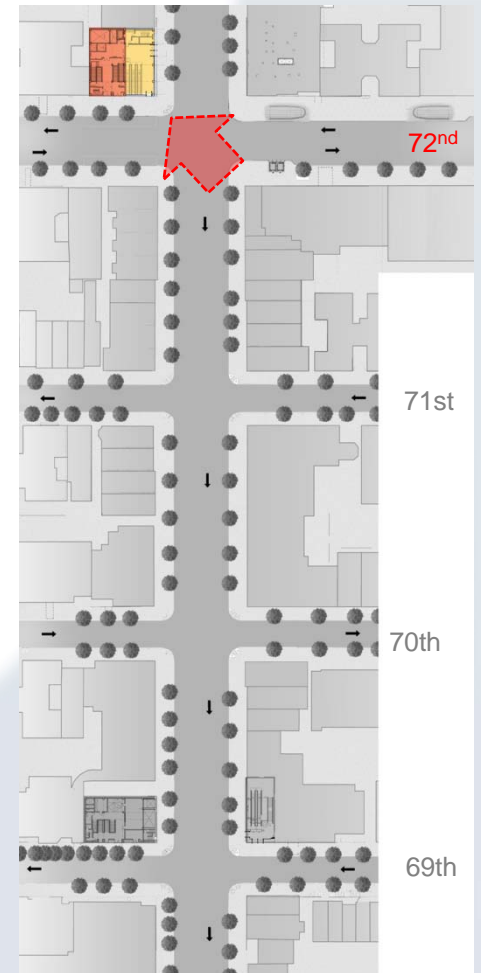


Capital Construction

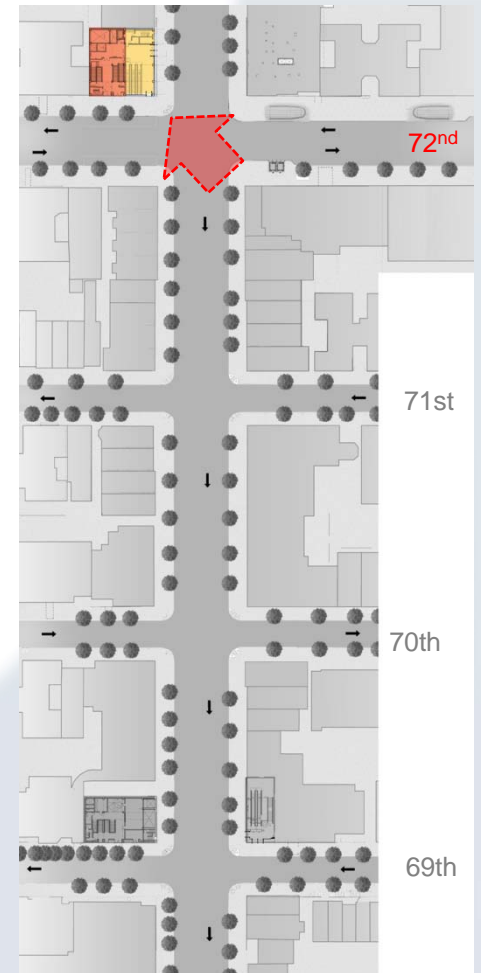
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72nd Street Station Ancillary 2 - NW Corner of 72nd Street



72nd Street Station Ancillary 2 - NW Corner of 72nd Street





63rd Street Station

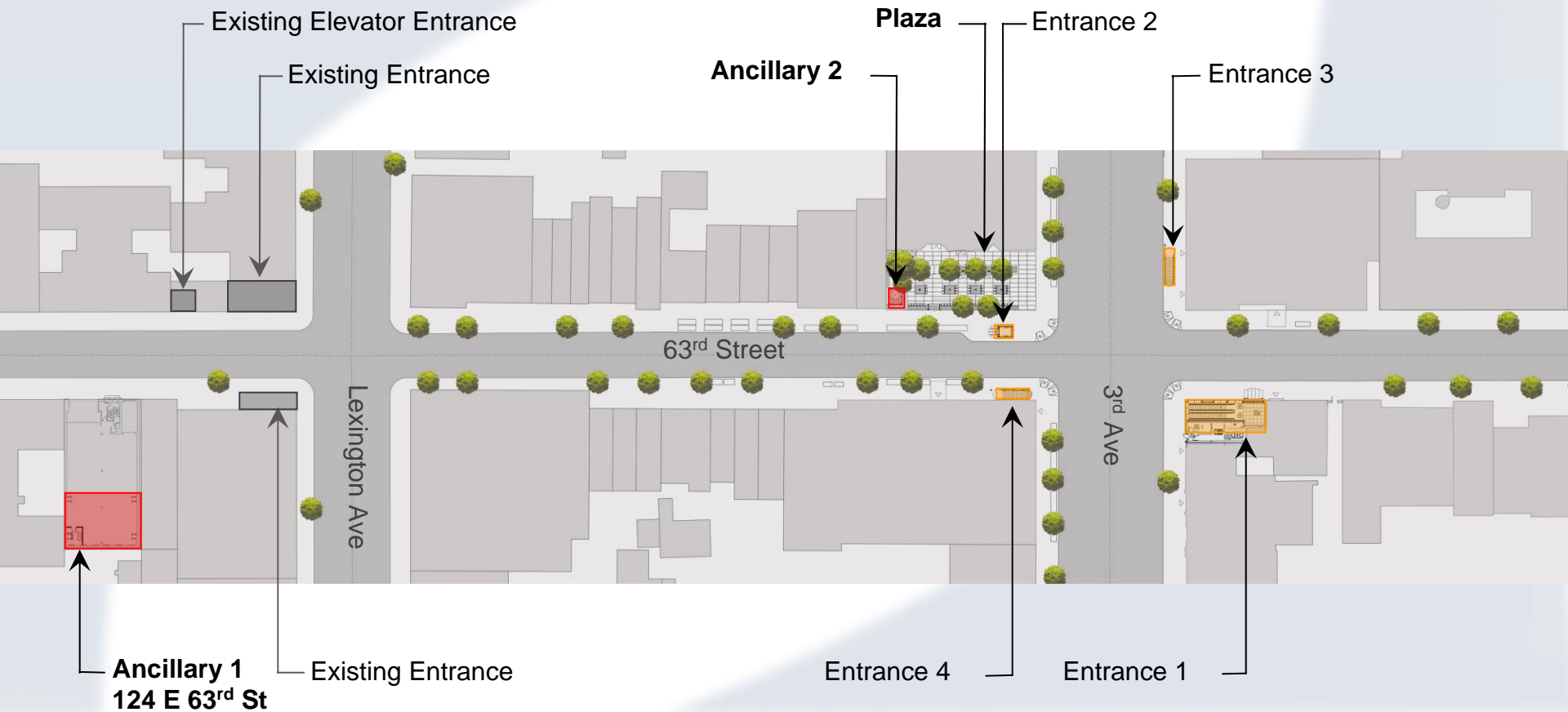


Capital Construction

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63rd Street Station – Site Plan

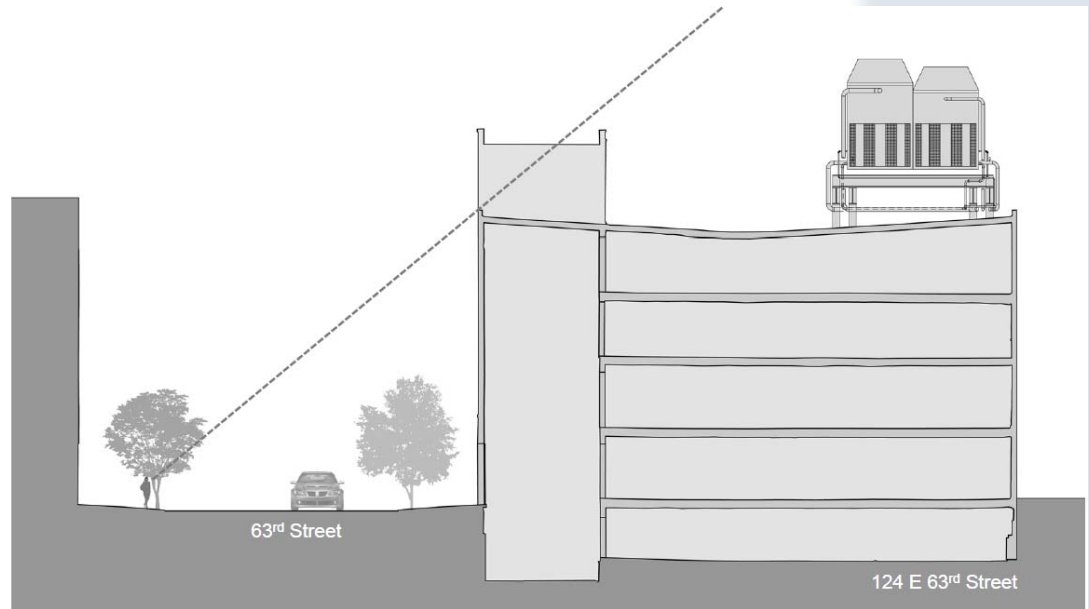


Capital Construction

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63rd Street Station Ancillary 1 – 124 East 63RD Street

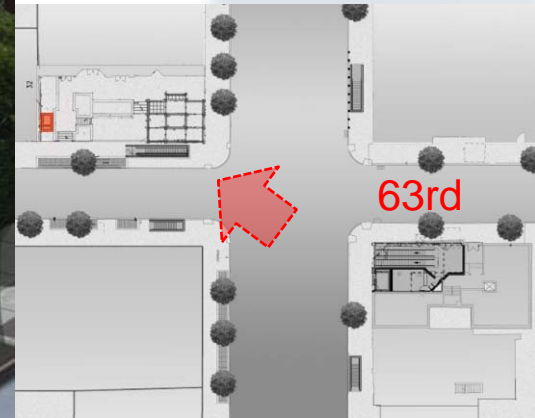


Capital Construction

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63rd Street Station Ancillary 2 - NW Corner of 63RD Street



63rd Street Station Ancillary 2 – NW Corner of 63RD Street Elevation



Capital Construction

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86th Street Ancillary 2



Capital Construction

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86th Street Station – Site Plan

Ancillary 2

83rd

84th

85th

86th

87th

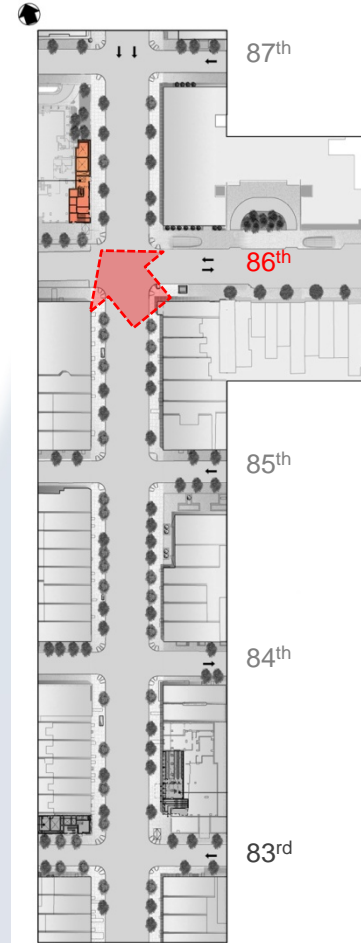


Capital Construction

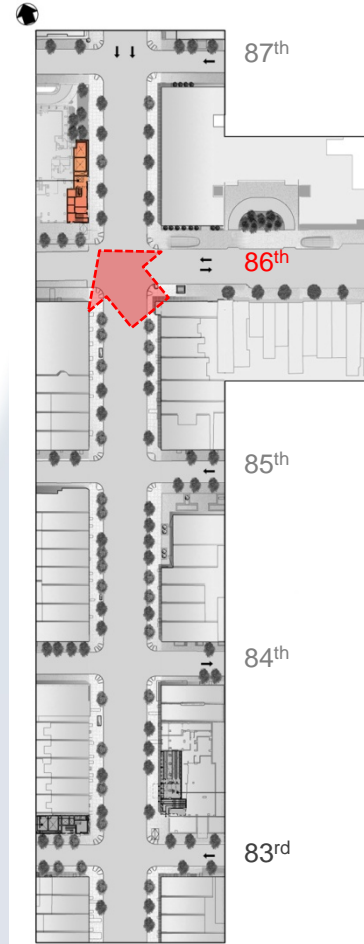
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86th Street Station Ancillary 2 - NW Corner of Ancillary



86th Street Station Ancillary 2 - NW Corner of Ancillary



86th Street Station Ancillary 2 – North Elevation



86th Street Station Ancillary 2 – North Elevation



86th Street Station Ancillary 2 – NE Corner of Ancillary



Capital Construction

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86th Street Station Ancillary 2 – NE Corner of Ancillary



Capital Construction

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72nd Street Station Entrance 3

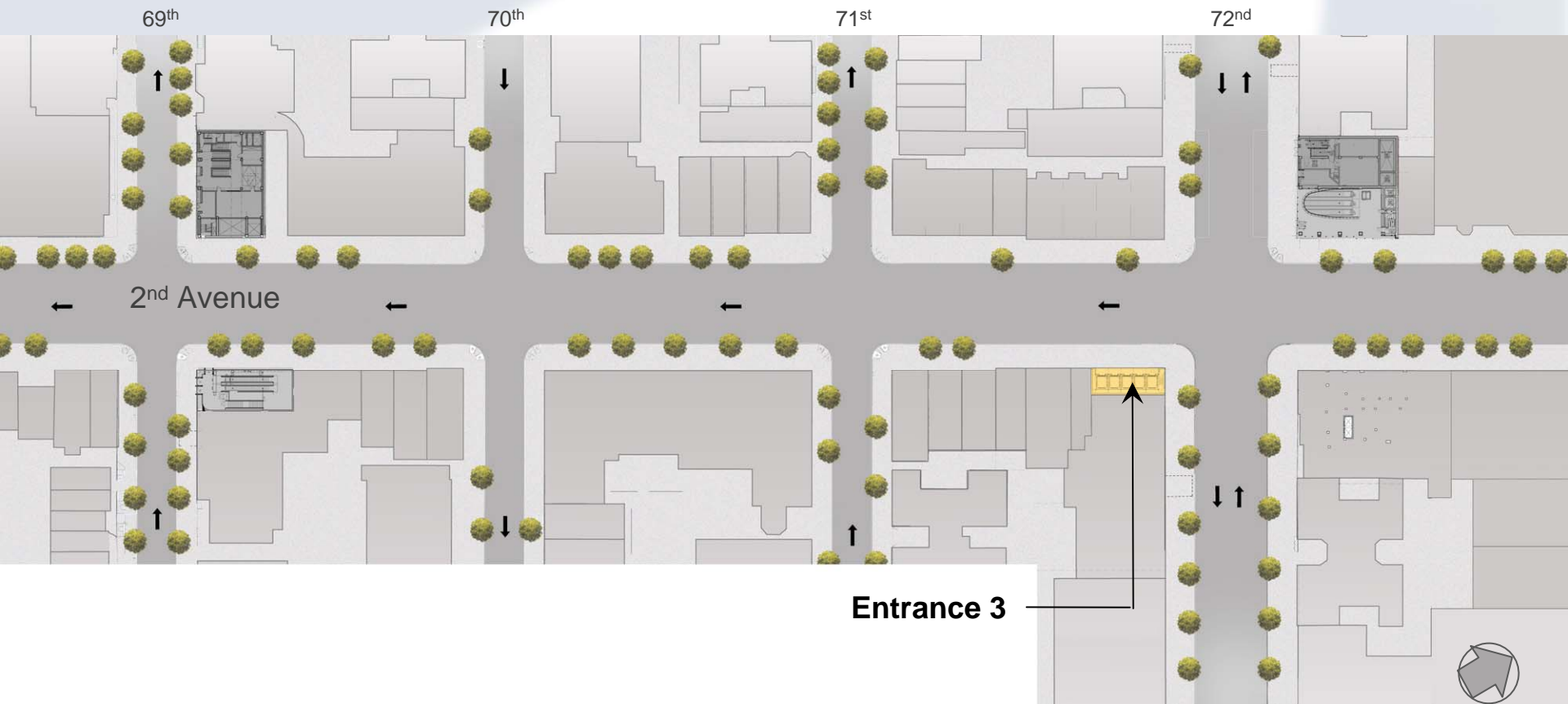


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72nd Street Station – Site Plan



72nd Street Station – SE corner of 72nd Street



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72nd Street Station Entrance 3 – SE corner of 72nd Street



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Ancillary Facilities Equipment Screens

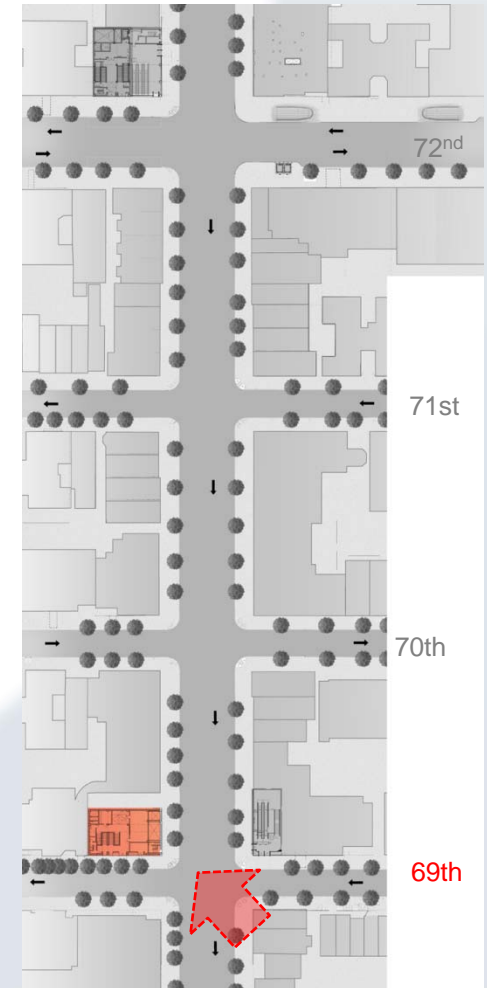


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72nd Street Station Ancillary 1 - NW Corner of 69th Street

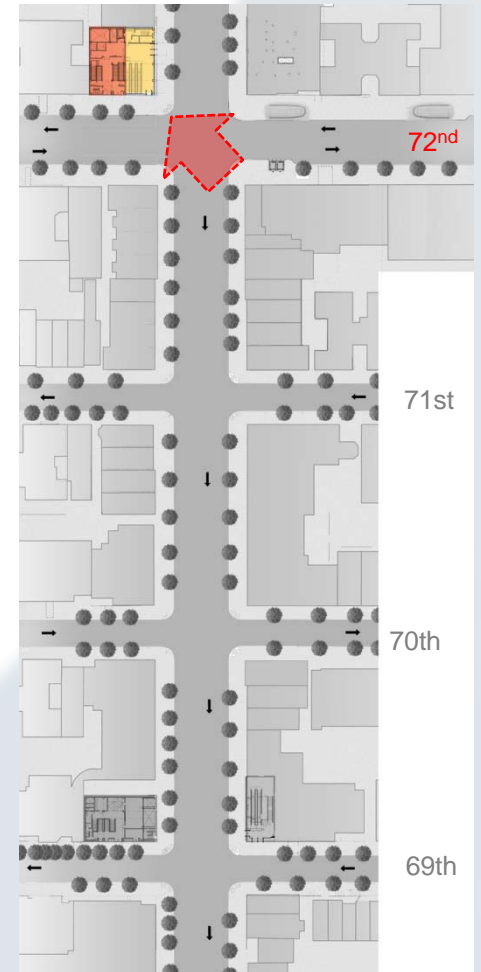


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72nd Street Station Ancillary 2 - NW Corner of 72nd Street



Equipment Screen – Option 1



EQUIPMENT SCREEN:

- **PROVIDES COHESIVE BUILDING COMPOSITION**
- **VISUALLY HIDES MECHANICAL EQUIPMENT**
- **PROVIDES REQUIRED AIR FLOW THROUGH WALL OPENINGS**



Equipment Screen – Option 2



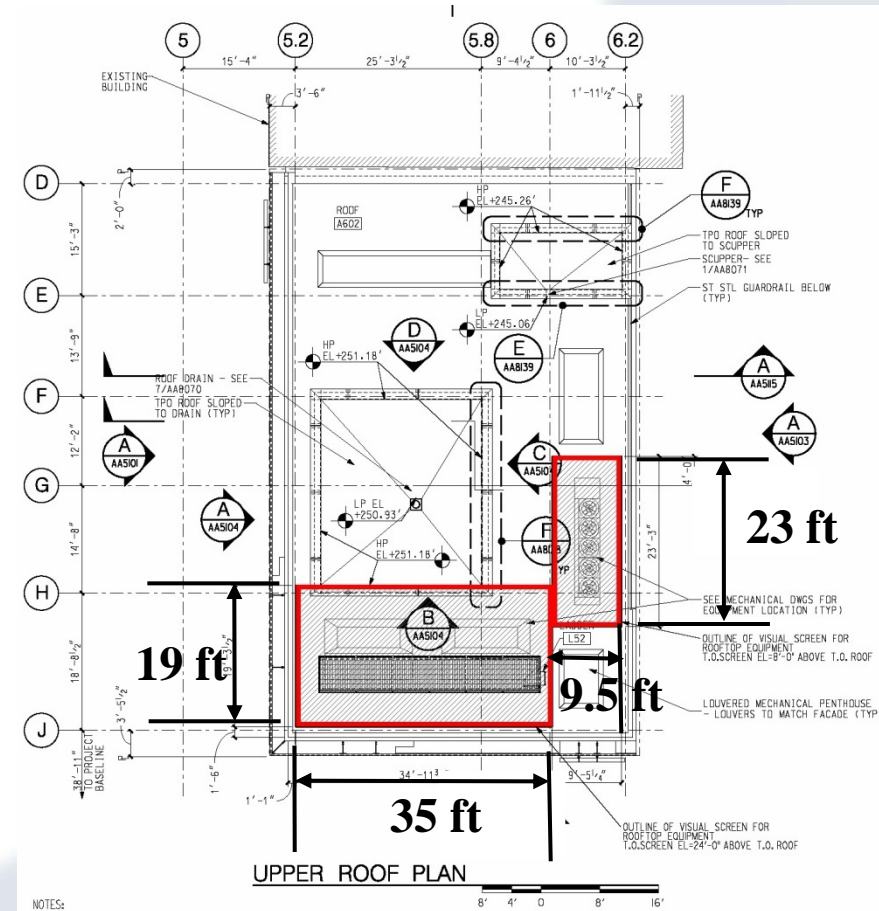
WIRE MESH:

- PROVIDES SEMI-OPEN SCREEN AROUND ROOF EQUIPMENT
- LOW MAINTENANCE STAINLESS STEEL MESH PANELS
- EXTENSION OF CURTAINWALL SYSTEM



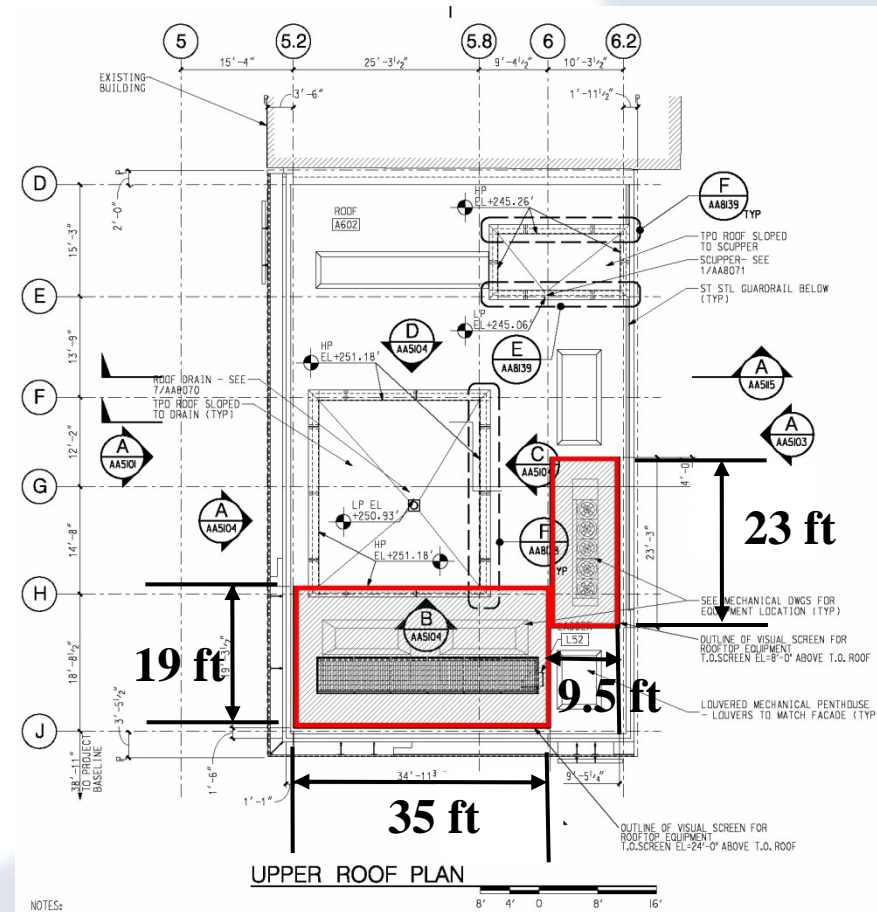
72nd Street Station Ancillary 1 – NW Corner of 69th Street

Equipment Screens

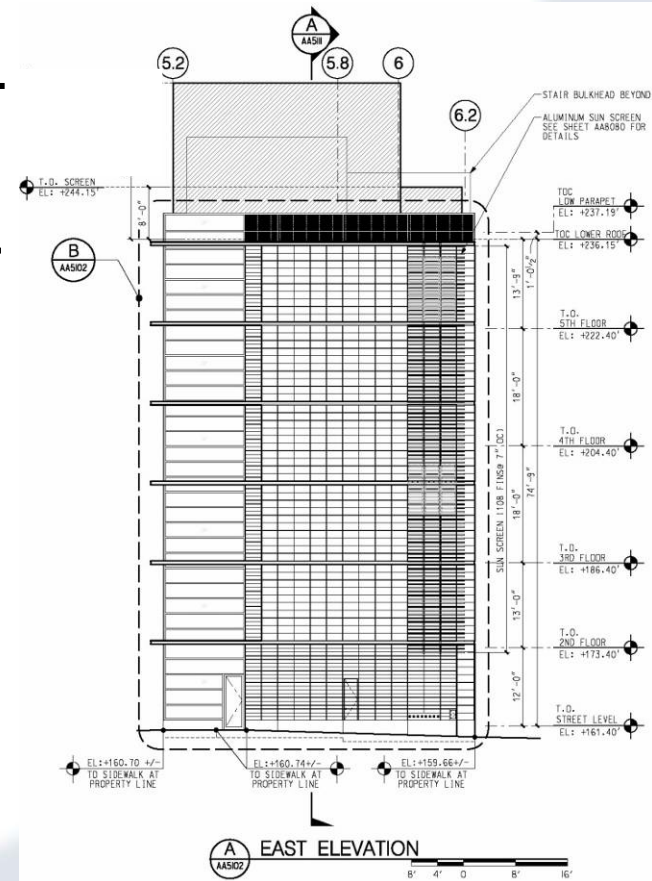
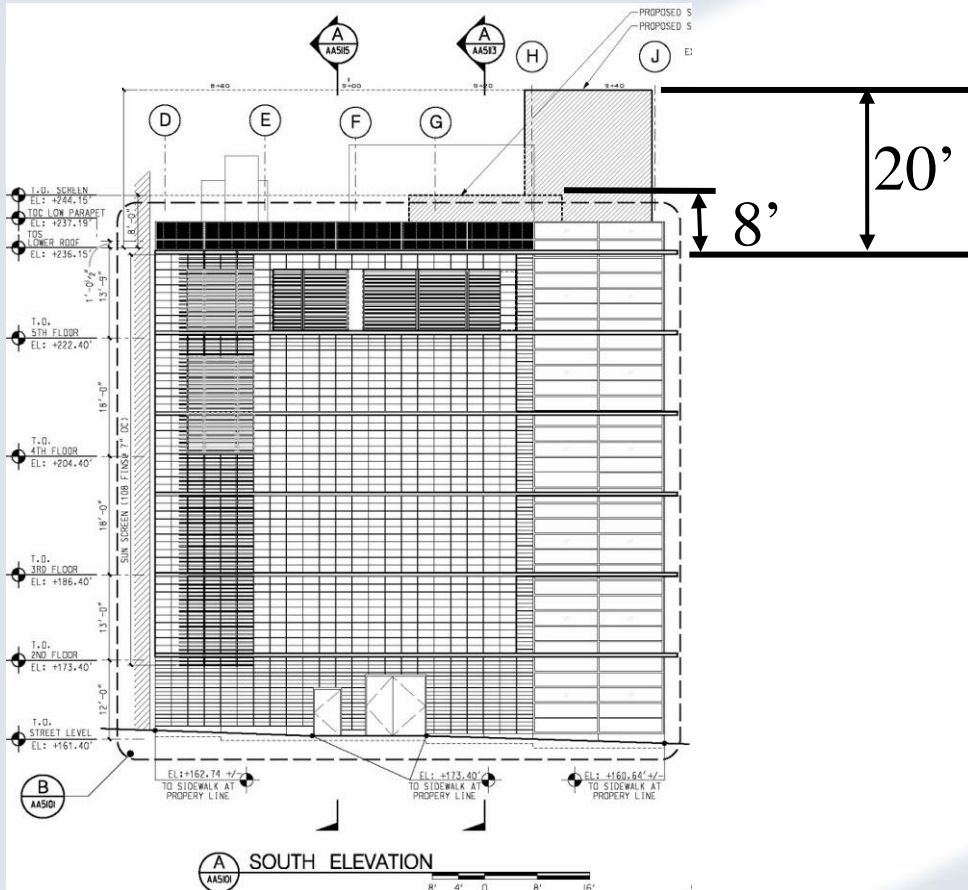




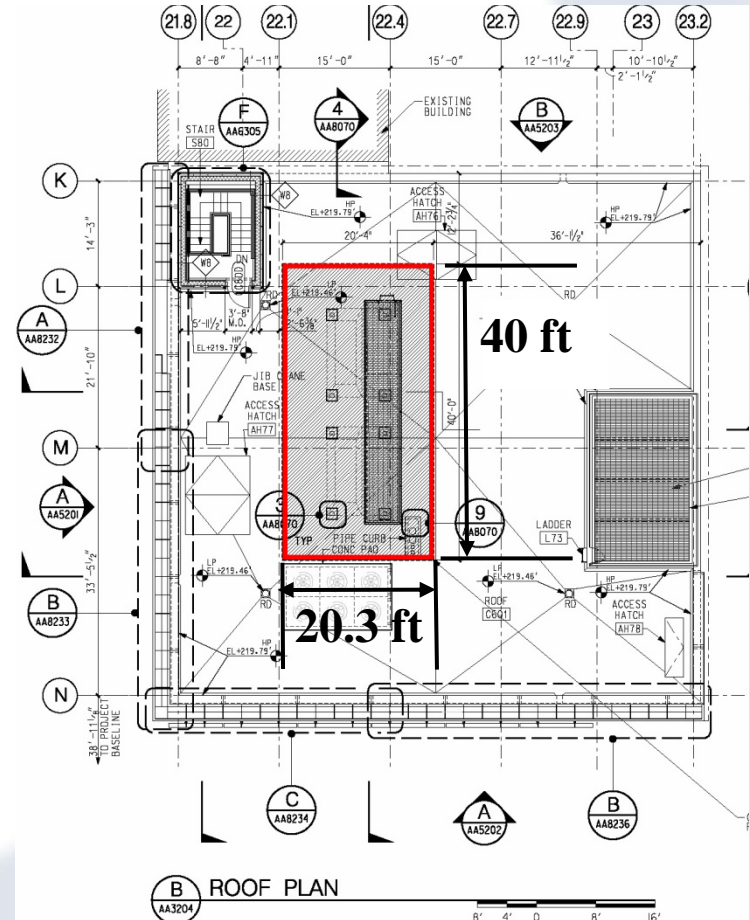
72nd Street Station Ancillary 1 – NW Corner of 69th Street Equipment Screens



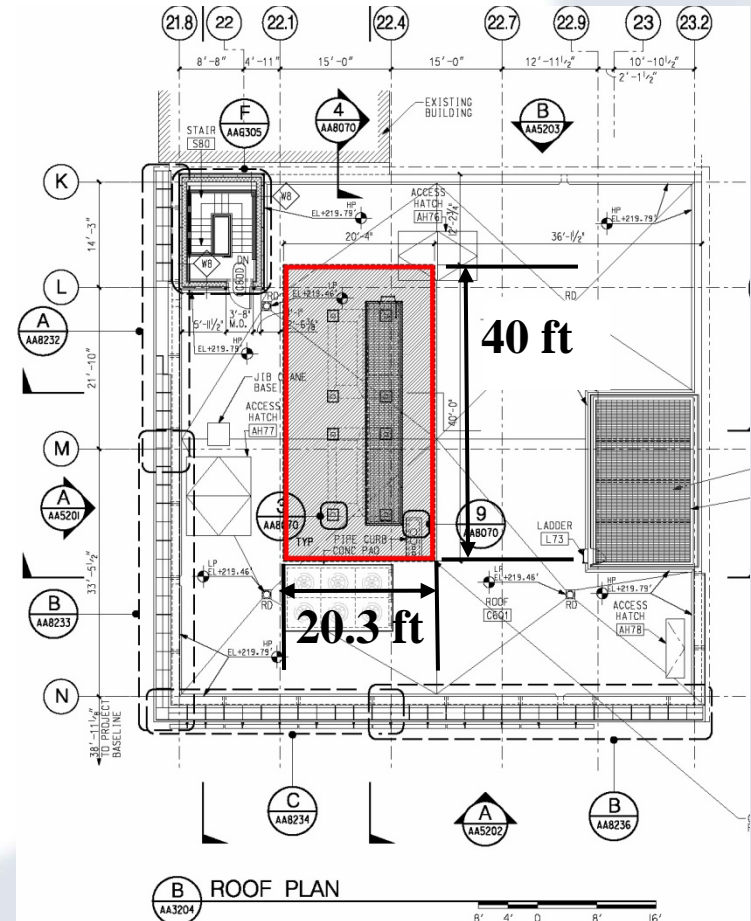
72nd Street Station Ancillary 1 – Equipment Screens Elevations



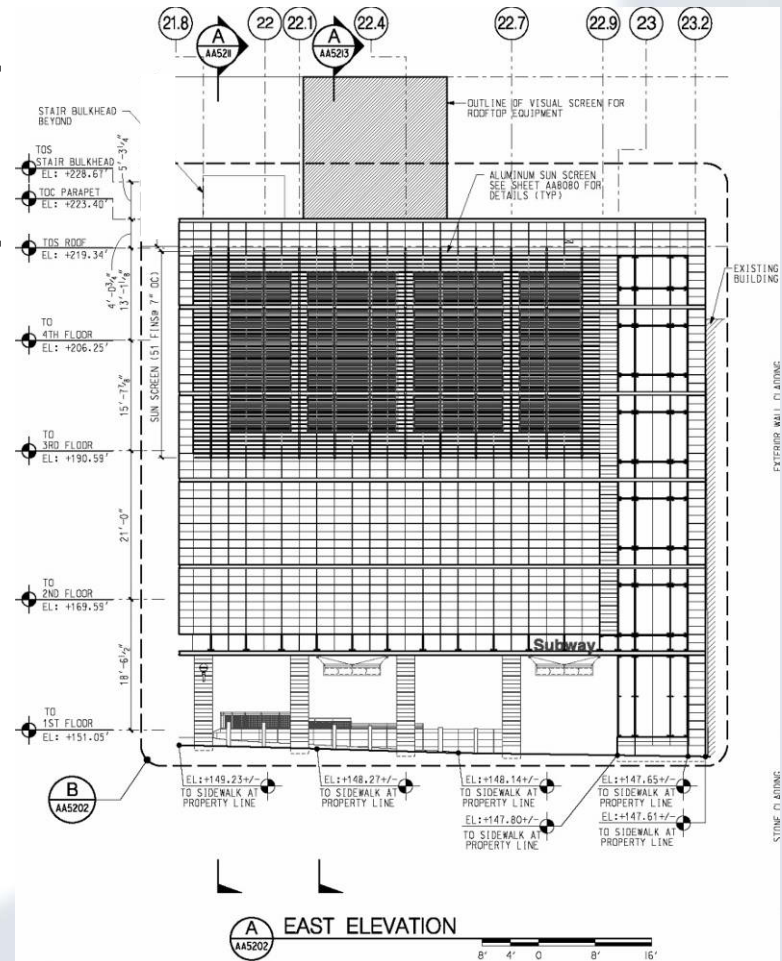
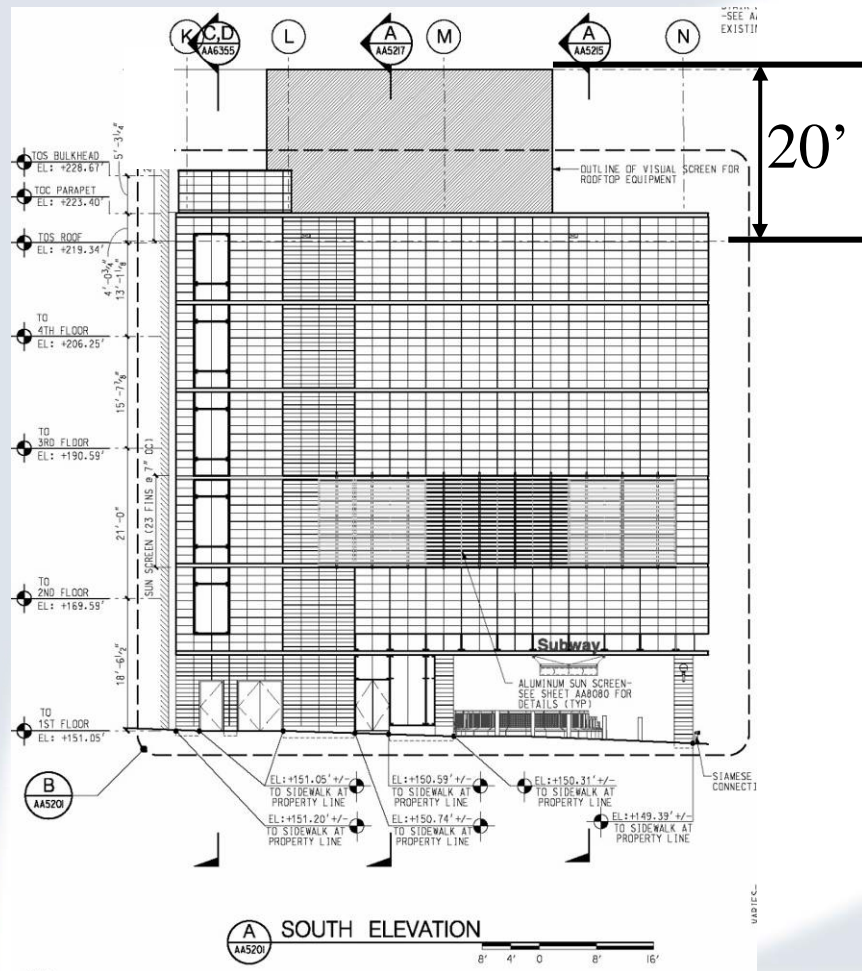
72nd Street Station Ancillary 2 – NW Corner of 72nd Street Equipment Screens



72nd Street Station Ancillary 2 – NW Corner of 72nd Street Equipment Screens



72nd Street Station Ancillary 2 – Equipment Screens Elevations



Ancillary Color Study

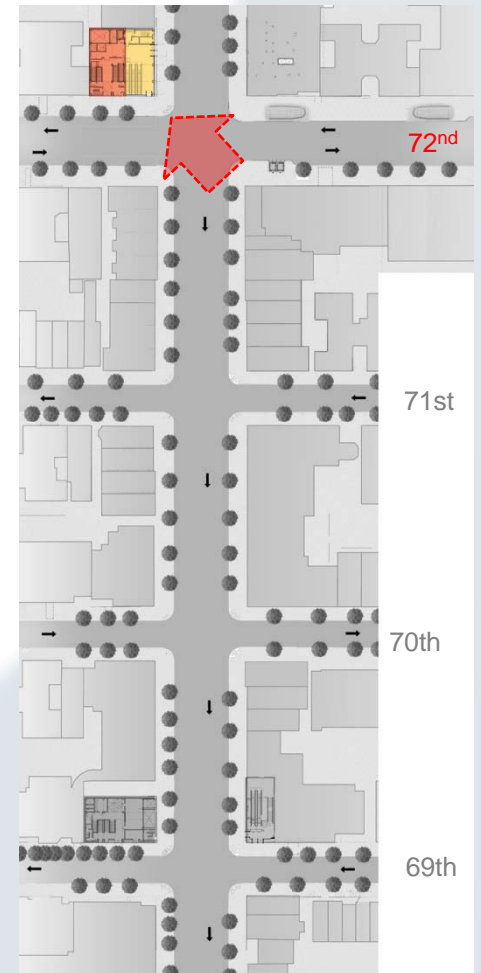


Capital Construction

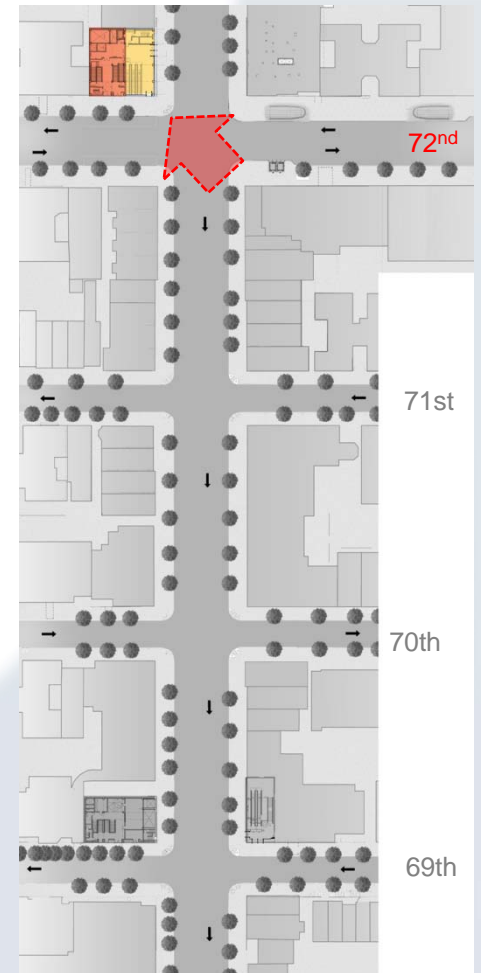
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72nd Street Station Ancillary 2 - NW Corner of 72nd Street



72nd Street Station Ancillary 2 - NW Corner of 72nd Street



72nd Street Station Ancillary 2 - NW Corner of 72nd Street

