

Elgin O'Hare - West Bypass: Retaining Wall Location Study

TO: Illinois Department of Transportation (IDOT) District 1/Illinois Tollway

FROM: CH2M HILL

DATE: April 16, 2012

This memorandum elaborates upon the factors used to determine the need for and approximate location of retaining walls along the various segments of the Elgin O'Hare - West Bypass (EOWB) project. Although full details of the design have not yet been established, the conceptual Elgin O'Hare and West Bypass corridors proposed horizontal and vertical alignments have been determined. In addition, lane configurations, interchange type, and access locations, as well as geometrics have been established to an approximate 15% level of detail. This memorandum is based on the information shown in the current version of the *2040 Full Build Master Plan Set* dated March 1, 2012. These plans are at the 15% design stage and were developed to determine the "footprint" of the EOWB for use in developing the Tier Two Environmental Impact Statement (EIS).

In general, retaining walls are used to contain fills where embankments cannot be utilized due to the following reasons:

- Proximity and/or geometric constraints;
- Protection of existing/proposed detention areas and structures;
- A decrease in the length(s) of specific proposed bridges;
- The limitation/elimination of the need to take additional right-of-way;
- In order to minimize the number of building/property displacements; and
- To provide a tunnel-like structure where below-existing-grade alignments are proposed.

The conditions noted above occur within the EOWB project and have been considered while developing wall recommendations and location details for each.

The EOWB corridor is discussed in five sections (West, Central-Part A, Central-Part B, South and North). The West Section includes the existing Elgin-O'Hare Expressway from Gary Avenue to east of Plum Grove Road. The Central Section is divided into two parts: the first part (Part A) includes the Elgin-O'Hare Expressway from Plum Grove Road to its current terminus at Rohlwing Road (IL 53) and the extension of the Elgin-O'Hare Expressway from IL 53 to Salt Creek; and the second (Part B) extends from Salt Creek to the proposed West Bypass along the Elgin O'Hare corridor.¹ The South Section includes the south leg of the West Bypass from the Elgin O'Hare system interchange to North Avenue (IL 64), while the

¹The Elgin O'Hare corridor refers to the entirety of the east-west corridor of the EO-WB project. The Elgin O'Hare corridor includes both the existing Elgin-O'Hare Expressway from US 20 to its terminus at IL 53 and the proposed extension of the expressway from IL 53 to the O'Hare Airport in place of what is now Thorndale Avenue.

North Section includes the north leg of the West Bypass from the Elgin O'Hare system interchange to I-90 and along I-90 to Arlington Heights Road.

The following includes a discussion of each of these sections and provides an overview of the proposed construction and retaining walls. Tables 1 through 5 at the end of this memorandum provide a description and purpose for each of the proposed retaining walls along the corridor, as well as a guide for the retaining wall locations shown in Exhibits 1 through 10.

Elgin O'Hare Corridor

West Section: Gary Avenue to East of Plum Grove Road

Along the Elgin-O'Hare Expressway from Gary Avenue to Plum Grove Road, the proposed mainline and ramp alignments generally coincide with the current facility. The proposed improvements include: (1) adding a third lane to the inside of the existing pavement in each direction, (2) realigning the westbound lanes near Roselle Road to provide room for a future transit station in a wider median (this is accompanied by a realignment of the interchange ramps), and (3) increasing some entry/exit ramp capacities by adding a lane. Additionally, a fourth lane (added to the outside of the existing eastbound pavement and realigned westbound pavement) is proposed between Roselle Road and the east end of the West Section. Note that no roadway improvements are planned along the Elgin-O'Hare Expressway between Lake Street (US 20) and Gary Avenue.

Within this section, there are twenty-seven (27) proposed retaining walls (see Table 1, Exhibit 1 and 2). A significant number of these walls are required for drainage-related purposes. The reasons include: to protect existing detention areas, to preclude the need for compensatory storage, and/or to maintain existing drainage patterns and flows. Walls have been proposed in other locations to preclude the need for additional right-of-way acquisition associated with the realignment of the ramps (most notably at the Roselle Road interchange and Ramp A4, which provides westbound traffic an exit to Irving Park Road [IL 19]). Finally, two walls are required adjacent to the Plum Grove Road bridge to protect each abutment's foundations in anticipation of construction of a fourth lane in this section.

Central Section – Part A: Plum Grove Road to Salt Creek

Continuing along the Elgin-O'Hare Expressway between Plum Grove Road and Meacham Road/Medinah Road, the proposed improvements include construction of an additional lane to the outside and inside of the existing eastbound pavement and the construction of a four-lane section in the westbound direction on new alignment. East of Meacham Road/Medinah Road, the existing Elgin-O'Hare Expressway pavements and structures cannot typically be salvaged because improvements necessary to accommodate frontage roads in advance of IL 53 result in significant changes to mainline horizontal and vertical alignments. The proposed improvements east of Meacham Road/Medinah Road include: a typical three-lane section in each direction with auxiliary lanes added between interchanges as required; construction of a diamond interchange at IL 53 that includes a new bridge to carry IL 53 over the Elgin-O'Hare Expressway and one tunnel-type structure carrying Ramp G5 beneath IL 53; a semi-directional system interchange with I-290, including access to/from Park Boulevard; a diamond interchange at Prospect Avenue; and new grade

separation structures to carry the Elgin O'Hare corridor over Arlington Heights Road, Prospect Avenue and Salt Creek.

Within this section, there are thirty (30) proposed retaining walls (see Table 2, Exhibit 2 and 3). The majority of these walls are required adjacent to intersections and structures, as well as parallel to roadway alignments where elevation differences and proximity to frontage roads or ramps precludes the use of embankments. Walls located along ramps (G4, G8 and K4), frontage roads (westbound and eastbound EG) and near IL 53 are included specifically to minimize right-of way requirements. The proposed walls near Meacham Road/Medinah Road prevent the infill of existing detention areas on the north side of Elgin-O'Hare Expressway and border critical wetlands found in the Medinah Wetlands Forest Preserve in DuPage County on the south side.

Central Section – Part B: Salt Creek to West Bypass

The proposed improvements east of Salt Creek to the east terminus of the Elgin O'Hare corridor include a typical three-lane section in each direction with auxiliary lanes added between interchanges as required, diamond interchanges at Wood Dale Road and Busse Road (IL 83), and the construction of a semi-directional Y-type interchange at the east terminus with the proposed West Bypass. The Elgin O'Hare corridor will be carried over all local roads with the exception of Wood Dale Road, which will pass over the toll road.

Within this section, there are twenty-eight (28) proposed retaining walls (see Table 3, Exhibits 3 and 4). As in other sections, walls are proposed to contain embankments adjacent to bridge abutments, to facilitate parallel ramp construction next to the mainline, and to minimize right-of-way requirements. As with Central Section – Part A, a number of walls are also proposed in the system interchange for flyover ramps to transition from the bridges to on-grade roadways along severe skews.

West Bypass

South Section

This section includes the south leg of the West Bypass and a section of the Tri-State Tollway (I-294) south of the airport. The proposed improvements to I-294 include adding a fifth, auxiliary lane in both directions between US 20 and the proposed semi-directional system interchange with the West Bypass. The West Bypass would be constructed as a two-lane configuration in each direction with auxiliary lanes as needed between interchanges. The roadway widens to a three-lane configuration in both directions north of IL 19. Interchanges are planned for County Line Road, Green Street and Franklin Avenue (split-diamond configuration) and IL 19. Also included in the project is an extension of Taft Avenue that will connect Franklin Avenue and the relocated IL 19 across the east yard of the Canadian Pacific (CP) railroad Bensenville Yard.

Within this section, there are twenty-five (25) proposed retaining walls (see Table 4, Exhibits 5 and 6). The majority of these walls are required to preclude the need to obtain additional right-of-way and/or avoid displacements. Walls that fall into this category are located along I-294, adjacent to County Line Road, and along Ramps S1, S2 and T1. Retaining walls are also envisioned around bridge abutments where embankment would encroach upon other roads or railroad tracks in the vicinity. Two rather lengthy walls are also required where the West Bypass will pass beneath the existing Union Pacific (UP) railroad tracks located

between Stations 185+00 and 192+00 just north of the CP railroad west yard grade separation.

North Section

This section includes the north leg of the proposed West Bypass and a section of the Jane Addams Memorial Tollway (I-90). The proposed improvements to the I-90 include adding a fifth lane, an auxiliary lane in both directions between Arlington Heights Road and the proposed trumpet system interchange with the West Bypass, and between the railroad spur crossing just west of Wolf Road and the east project limits. The Elmhurst Road interchange will be reconstructed to a full local access interchange, most likely reconfigured as a diverging diamond type interchange. The West Bypass would be construction as a three-lane configuration in both directions with auxiliary lanes as needed between the interchanges. Interchanges are planned for Elmhurst Road/Devon Avenue/Pratt Boulevard (half-diamond configuration) and at Touhy Avenue (IL 72) (partial half-diamond interchange).

Within this section, there are thirty-three (33) proposed retaining walls (see Table 5, Exhibits 7, 8, 9, and 10). Most of the walls are required to preclude the need to obtain additional right-of-way and/or avoid displacements. Walls that fall in this category are located along I-90, adjacent to the southbound lanes of the West Bypass at Elmhurst Road, Ramps X1, X2, X3, X4, Y1, Y2, Y4 and W3 and along IL 72 at the proposed bridge over the UP railroad.

TABLE 1
EOWB West Section Retaining Walls

Wall No.	Description	Exhibit No.	Purpose for Wall
R-101	East side of Ramp B2	1	Prevent embankment on Ramp A2 and protect existing drainage
R-102	South side eastbound Elgin O'Hare west of Springinsguth Road Bridge	1	Prevent embankment on Springinsguth Road and protect existing drainage
R-103	North side Ramp B1	1	Protect existing drainage/wetlands
R-105	North side Ramp B1 between Springinsguth Road and IL 19	1	Protect existing drainage/wetlands
R-106	South side Ramp B2 between Springinsguth Road and IL 19	1	Protect existing drainage/wetlands
R-107	South side eastbound Elgin O'Hare east of IL 19 bridge	1	Prevent embankment on IL 19
R-108	South side eastbound Elgin O'Hare adjacent to Ramp A3	1	Prevent embankment on Ramp A3 and protect existing drainage
R-111	North side westbound Elgin O'Hare adjacent to Ramp A4	1	Prevent embankment on Ramp A4
R-112	North side Ramp A4	1	Prevent embankment on westbound Frontage Road AC
R-113	South side Ramp A3	1	Prevent embankment on eastbound Frontage Road AC
R-114	North side westbound Elgin O'Hare east of Rodenburg Road	1	Protect existing drainage
R-119	South side eastbound Elgin O'Hare west of Wright Boulevard	1	Protect existing drainage
R-120	North side westbound Elgin O'Hare west of Wright Boulevard	1	Protect existing drainage
R-121	North side westbound Elgin O'Hare east of Wright Boulevard	1	Protect existing drainage
R-122	North side westbound Elgin O'Hare west of Mitchell Boulevard	1	Protect existing drainage
R-123	South side eastbound Elgin O'Hare between Mitchell Boulevard and railroad spur	1	Protect existing drainage/wetlands
R-124	North side westbound Elgin O'Hare between Mitchell Boulevard and railroad spur	1	Protect existing drainage/wetlands
R-125	South side eastbound Elgin O'Hare east of railroad spur	1	Potential drainage requirements
R-128	North side westbound Elgin O'Hare/Ramp D1 west of Roselle Road	1	Preclude need for additional right-of-way and protect existing drainage/wetlands
R-129	South side Ramp D2 west of Roselle Road	1	Preclude need for additional right-of-way
R-130	South side Ramp D1 west of Roselle Road	1	Protect existing drainage
R-131	North side westbound Elgin O'Hare at Roselle Road Bridge	2	Stub abutment behind fill-type wall; shorter span
R-134	South side eastbound Elgin O'Hare at Roselle Road Bridge	2	Protect existing bridge abutment foundation
R-135	North side Ramp D3 east of Roselle Road	2	Protect existing drainage
R-138	South side Ramp D3 east of Roselle Road	2	Protect existing drainage

TABLE 1
EOWB West Section Retaining Walls

Wall No.	Description	Exhibit No.	Purpose for Wall
R-145	South side eastbound Elgin O'Hare at Plum Grove Road Bridge	2	Protect existing bridge abutment foundation and drainage concerns
R-146	North side westbound Elgin O'Hare at Plum Grove Road Bridge	2	Protect existing bridge abutment foundation and drainage concerns

TABLE 2
EOWB Central Section – Part A Retaining Walls

Wall No.	Description	Exhibit No.	Purpose for Wall
R-201	South side eastbound Elgin O'Hare west of Meacham Road/Medinah Road	2	Prevent embankment on Ramp E2 and protect existing drainage
R-202	North side westbound Elgin O'Hare west of Meacham Road/Medinah Road	2	Protect existing drainage
R-203	South side eastbound Elgin O'Hare east of Meacham Road/Medinah Road	2	Protect existing drainage
R-204	North side westbound Elgin O'Hare/Ramp E1 west of Meacham Road/Medinah Road	2	Protect existing drainage
R-205	South side eastbound Elgin O'Hare/Ramp E2 west of Meacham Road/Medinah Road	2	Preclude need for additional right-of-way
R-207	North side westbound Elgin O'Hare east of Meacham Road/Medinah Road	2	Prevent embankment on westbound Frontage Road EG and protect existing drainage
R-208	East side IL 53 north of Elgin O'Hare	2	Preclude need for additional right-of-way and protect existing drainage/wetlands
R-209	North abutment for IL 53 over Elgin O'Hare	2	Shorten bridge span length
R-210	North side eastbound Frontage Road EG at IL 53/south abutment IL 53 over Elgin O'Hare/south abutment Ramp K2 over ramp K7/east side IL 53	2	Prevent embankment on Ramp K7 and preclude the need for additional right-of-way
R-213	West side Ramp G5 in southeast quadrant of I-290 interchange	3	Prevent embankment on I-290 westbound
R-215	South side eastbound Frontage Road EG/west side IL 53	2	Preclude need for additional right-of-way
R-216	South side westbound Frontage Road EG	2	Prevent embankment on Ramp G5
R-218	North side Ramp K1 at IL 53/Ramp G5	2	Prevent embankment on Ramp G5
R-219	West side IL 53 north of Elgin O'Hare	2	Preclude need for additional right-of-way
R-220	South abutment of Ramp G6 over Ramp K3 in southeast quadrant of I-290 interchange	3	Prevent embankment on Ramps K3 and K4

TABLE 2

EOWB Central Section – Part A Retaining Walls

Wall No.	Description	Exhibit No.	Purpose for Wall
R-221	East side Ramp K4 in southeast quadrant of I-290 interchange	3	Preclude need for additional right-of-way
R-222	North side Ramp K4 in southeast quadrant of I-290 Interchange	3	Prevent embankment on Ramp K3
R-224	East abutment Ramp G6 over Ramp K3/south side Ramp G6/west abutment Elgin O'Hare over Park Boulevard/north side Ramp G7/west abutment Ramp G7 over Park Boulevard	3	Prevent embankment on lower, adjacent ramps and roadways
R-231	North abutment Ramp K2 over Ramp K7	3	Prevent embankment on Ramp G4 and eastbound Elgin O'Hare
R-233	South side Ramp G4 southwest quadrant of I-290 interchange	3	Preclude need for additional right-of-way
R-234	North side Ramp G8/south side Ramp G7 in northeast quadrant of I-290 interchange	3	Prevent embankment on Ramp K6 and Park Boulevard
R-235	East abutment of Ramp G1 over I-290/north side Ramp G1/south side Ramp K3	3	Prevent embankment on Ramp K3 and eastbound Elgin O'Hare
R-236	North side westbound Elgin O'Hare adjacent to Ramp K5 in northeast quadrant of I-290 interchange	3	Prevent embankment on Ramp K5
R-246	West side Ramp G8 in northeast quadrant of I-290 interchange	3	Prevent embankment on I-290 westbound
R-253	East abutment Elgin O'Hare over Park Boulevard and south side eastbound Elgin O'Hare west of Park Boulevard bridge	3	Prevent embankment on eastbound Frontage Road KL and shorten span length
R-260	North side westbound Elgin O'Hare at Ramp L1	3	Prevent embankment on Ramp L1
R-261	West abutment Elgin O'Hare over Arlington Heights Road	3	Shorten spans
R-262	West abutment Elgin O'Hare over Prospect Avenue/north side westbound Elgin O'Hare	3	Shorten spans and keep embankment off Ramp M1
R-263	East abutment Elgin O'Hare over Arlington Heights Road north side Ramp M1/south side Ramp M2	3	Shorten spans and keep embankment off Frontage Road LM
R-264	East abutment Elgin O'Hare over Prospect Avenue/north side westbound Elgin O'Hare	3	Shorten spans and keep embankment off Ramp M4

TABLE 3

EOWB Central Section – Part B Retaining Walls

Wall No.	Description	Exhibit No.	Purpose for Wall
R-310	North side westbound Elgin O'Hare west of Mittel Road bridge	3	Prevent embankment on westbound Frontage Road NO and drainage
R-312	South side eastbound Elgin O'Hare east of Mittel Road bridge	3 & 4	Prevent embankment on eastbound Frontage Road NO and drainage

TABLE 3

EOWB Central Section – Part B Retaining Walls

Wall No.	Description	Exhibit No.	Purpose for Wall
R-314	West abutment for Elgin O'Hare over Lively Boulevard/south side westbound Elgin O'Hare	4	Shorten spans and keep embankment off eastbound Frontage Road NO
R-317	East abutment for Elgin O'Hare over Lively Boulevard/south side westbound Elgin O'Hare	4	Shorten spans and keep embankment off eastbound Frontage Road NO
R-318	North side Ramp O1	4	Keep embankment off westbound Frontage Road NO
R-320	South side eastbound Elgin O'Hare west of Broadway Road	4	Keep embankment off Ramp O2
R-321	South side eastbound Elgin O'Hare adjacent to Ramp O3	4	Keep embankment off Ramp O3
R-322	West abutment Elgin O'Hare over railroad spur/north side westbound Elgin O'Hare between Broadway Road and railroad spur/south side Ramp O3	4	Shorten span, keep embankment off eastbound & westbound Frontage Road NO
R-330	South side eastbound Frontage Road NO	4	Preclude need for additional right-of-way
R-331	South side eastbound Frontage Road NO	4	Preclude need for additional right-of-way
R-334	East abutment Elgin O'Hare over Supreme Drive/north side Ramp O8/south side eastbound Elgin O'Hare	4	Shorten span, keep embankment off eastbound Frontage Road OQ and Ramp O8
R-335	East abutment Elgin O'Hare over railroad spur/west abutment Elgin O'Hare over Supreme Drive/north & south sides Elgin O'Hare between railroad spur and Supreme Drive	4	Shorten spans and keep embankment off Ramp O8 and eastbound Frontage Road OQ
R-340	West abutment Ramp Q1 over Ramps P1 & O8	4	Shorten spans and keep embankment off Ramp P1
R-343	South side Ramp P2	4	Keep embankment off eastbound Frontage Road OQ
R-344	East abutment Ramp Q1 over Ramps P1 & O8	4	Shorten spans and keep embankment off Ramp O4
R-345	West abutment Ramp P5 over Ramps P1 & O8	4	Shorten span and keep embankment off Ramp P1
R-347	East abutment Ramp P5 over Ramps P1 & O8	4	Shorten span and keep embankment off Ramp O8
R-349	North side Ramp P8 at west end Ramps P2 and P8 leading into O'Hare Airport	4	Keep embankment off Elgin O'Hare A
R-350	South side eastbound Frontage Road OQ in southwest quadrant of Elgin O'Hare/West Bypass interchange	4	Preclude need for additional right-of-way
R-351	North side Elgin O'Hare A in southwest quadrant of Elgin O'Hare/West Bypass interchange	4	Preclude need for additional right-of-way and protect Willow Creek Tributary
R-360	East abutment Ramp P2 over York Road, railroad tracks, etc.	4	Shorten span and keep embankment off railroad right-of-way
R-361	West side Ramp Q6	4	Keep embankment off railroad right-of-way
R-362	East abutment Ramp Q7 and Elgin O'Hare A	4	Shorten span and keep embankment off northbound West Bypass/Ramp P5

TABLE 3

EOWB Central Section – Part B Retaining Walls

Wall No.	Description	Exhibit No.	Purpose for Wall
R-363	West side Ramp P5	4	Keep embankment off Ramp Q3
R-364	South abutment Ramp Q7	4	Keep embankment off Ramp Q6 and southbound West Bypass
R-370	South abutment Ramp Q6 over West Bypass	4	Keep embankment off Ramps P1 & Q7
R-372	North abutment Ramp P8 over Ramp Q3	4	Keep embankment off northbound West Bypass and O'Hare Airport property
R-375	North abutment Ramp P1 over York Road, railroad tracks, etc.	4	Keep embankment off railroad right-of-way and Ramp Q6

TABLE 4

EOWB South Section Retaining Walls

Wall No.	Description	Exhibit No.	Purpose for Wall
R-401	Median wall along centerline I-294 south of Grand Avenue	5	Split profile
R-402	Median wall along centerline I-294 north of Grand Avenue	5	Split profile
R-403	South side US 20 west of bridge over IL 64	5	Keep embankment off IL 64
R-404	North side Connector B east of bridge over IL 64	5	Keep embankment off IL 64
R-405	South side Connector B east of bridge over IL 64	5	Keep embankment off US 20
R-406	West side I-294 north of IL 64	5	Keep embankment off County Line Road
R-407	East side I-294 north of IL 64	5	Keep embankment off Northwest Avenue
R-408	South abutment County Line Road northbound over Ramp R1	5	Shorten span and keep embankment off Ramp R1
R-410	West side County Line Road southbound	5	Preclude need for additional right-of-way
R-412	North abutment County Line Road northbound over Ramp R1	5	Shorten span and keep embankment off Ramp R1 and County Line Road SB
R-413	South abutment I-294 over Grand Avenue/east and west sides I-294	5	Shorten span and keep embankment off roads to sides of mainline
R-421	North abutment I-294 over Grand Avenue/east and west sides I-294/south abutments Ramps S1 & S2	5 & 6	Shorten spans, keep embankment off roads/ramps to sides of mainline and preclude need for additional right-of-way
R-430	Median wall along West Bypass southern end	5 & 6	Split profile
R-434	East side northbound West Bypass/Ramp T2	5 & 6	Drainage considerations between ramp and local road
R-435	West side Ramp T1	6	Keep embankment off railroad right-of-way

TABLE 4
EOWB South Section Retaining Walls

Wall No.	Description	Exhibit No.	Purpose for Wall
R-441	North abutment West Bypass over Franklin Avenue/East abutment West Bypass over Ramp T3	6	Shorten span and keep embankment off railroad right-of-way
R-442	West abutment West Bypass over Ramp T3	6	Shorten span and keep embankment off Ramps T3 & T4
R-450	South abutment Taft Avenue bridge over railroad yard "hour glass"	6	Shorten span and keep embankment off railroad right-of-way
R-452	North abutment Taft Avenue bridge over railroad yard "hour glass"/South abutment Taft Avenue bridge over CP and commuter railroad tracks	6	Shorten span and keep embankment off railroad right-of-way
R-454	North abutment Taft Avenue bridge over CP and commuter railroad tracks	6	Shorten span and keep embankment off railroad right-of-way
R-461	East side northbound West Bypass leading to cut under railroad yard	6	Provide cut to depress mainline below railroad tracks to prevent impinging on aircraft operations envelope
R-462	West side southbound West Bypass leading to cut under railroad yard	6	Provide cut to depress mainline below railroad tracks to prevent impinging on aircraft operations envelope
R-470	South abutment West Bypass over IL 19	6	Shorten span and keep embankment off Ramps U1 & U2
R-473	North abutment West Bypass over IL 19	6	Shorten span and keep embankment off Ramps U3 & U4
R-474	West side Ramp U4/U8, north of IL 19	6	Preclude need for additional right-of-way

TABLE 5
EOWB North Section Retaining Walls

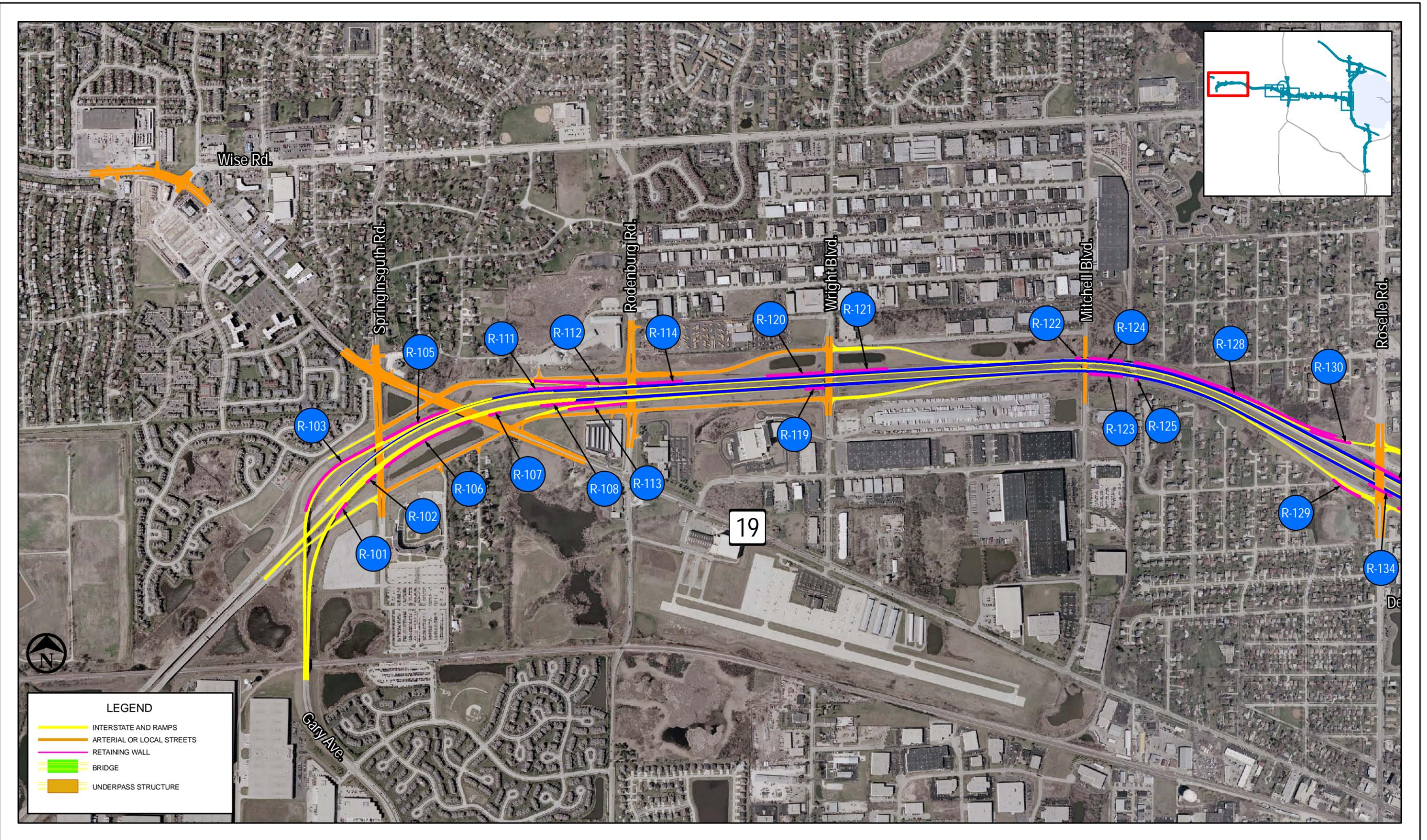
Wall No.	Description	Exhibit No.	Purpose for Wall
R-493	South side eastbound I-90/Ramp Z1	8	Preclude need for additional right-of-way
R-494	North side westbound I-90	8	Preclude need for additional right-of-way
R-495	South side eastbound I-90	8	Preclude need for additional right-of-way
R-496	North side westbound I-90	8 & 9	Preclude need for additional right-of-way
R-497	South side eastbound I-90 between Busse Road and Oakton Street bridges	8 & 9	Preclude need for additional right-of-way
R-499	South side eastbound I-90 east of Oakton Street bridge	8 & 9	Preclude need for additional right-of-way
R-500	North side westbound I-90 between Busse Road and Oakton Street bridges	8 & 9	Preclude need for additional right-of-way

TABLE 5
EOWB North Section Retaining Walls

Wall No.	Description	Exhibit No.	Purpose for Wall
R-501	South side Ramp Y2	9	Preclude need for additional right-of-way/protect existing detention pond
R-502	North side westbound I-90 east of Oakton Street bridge	8 & 9	Preclude need for additional right-of-way/protect Higgins Creek
R-503	South side Ramp X1 trumpet interchange (system to system) eastbound I-90 to southbound West Bypass	9 & 10	Preclude need for additional right-of-way/protect Higgins Creek
R-504	South side Ramp Y1	9	Keep embankment off Ramp X4
R-505	South side Ramp X1	9 & 10	Preclude need for additional right-of-way/protect Higgins Creek
R-506	North side Ramp X4, west of Higgins Creek	9 & 10	Preclude need for additional right-of-way/protect Higgins Creek
R-520	North side Ramp X4, east of Higgins Creek	9 & 10	Preclude need for additional right-of-way
R-527	East side Ramp X2	9 & 10	Preclude need for additional right-of-way/displacement(s)
R-528	North side Ramp X3 west of Mount Prospect Road bridge	9 & 10	Preclude need for additional right-of-way
R-540	North side Ramp X3 between Mount Prospect Road and UP railroad bridges	9 & 10	Preclude need for additional right-of-way
R-541	South side Ramp X2 between Mount Prospect Road and UP railroad bridges	9 & 10	Preclude need for additional right-of-way
R-543	South side eastbound I-90 between UP railroad and railroad spur bridges	9 & 10	Preclude need for additional right-of-way
R-544	North side westbound I-90 between UP railroad and railroad spur bridges	9 & 10	Preclude need for additional right-of-way
R-545	South side eastbound I-90 between railroad spur and Wolf Road bridges	9 & 10	Preclude need for additional right-of-way
R-546	North side westbound I-90 between railroad spur and Wolf Road bridges	10	Preclude need for additional right-of-way
R-547	South side eastbound I-90 between Wolf Road and IL 72 bridges	10	Preclude need for additional right-of-way
R-548	North side westbound I-90 between Wolf Road and IL 72 bridges	10	Preclude need for additional right-of-way
R-549	South side eastbound I-90 between IL 72 and Lee Street bridges	10	Preclude need for additional right-of-way
R-550	North side westbound I-90 east of IL 72 bridge to project limit	10	Preclude need for additional right-of-way
R-564	South abutment West Bypass over UP railroad tracks	7	Shorten span, preclude need for additional right-of-way and keep embankment off railroad right-of-way
R-566	North abutment West Bypass over UP railroad tracks/south abutment West Bypass & Ramp V1 over railroad spur	7	Shorten span, preclude need for additional right-of-way and keep embankment off railroad right-of-way

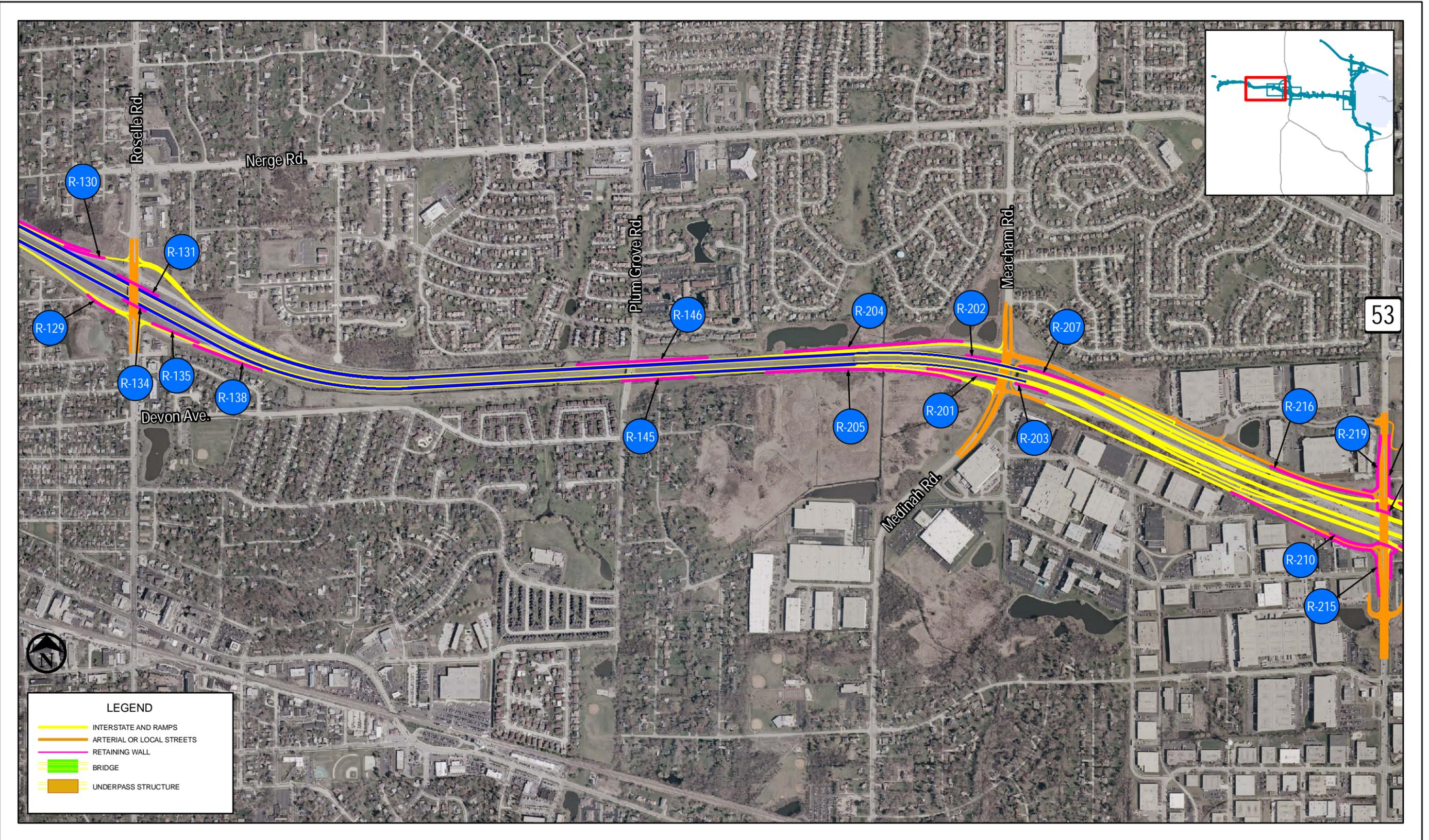
TABLE 5
EOWB North Section Retaining Walls

Wall No.	Description	Exhibit No.	Purpose for Wall
R-568	North abutment West Bypass and Ramp V1 over railroad spur	7	Shorten span, preclude need for additional right-of-way and keep embankment off railroad right-of-way
R-570	West side southbound West Bypass adjacent to Ramp V2	7	Keep embankment off Ramp V2
R-584	Outside shoulder Ramp W3	7, 9 & 10	Preclude need for additional right-of-way
R-586	West abutment IL 72 over UP railroad tracks	7, 9 & 10	Shorten span, preclude need for additional right-of-way and keep embankment off railroad right-of-way
R-588	East abutment IL 72 over UP railroad Tracks	7, 9 & 10	Shorten span, preclude need for additional right-of-way and keep embankment off railroad right-of-way



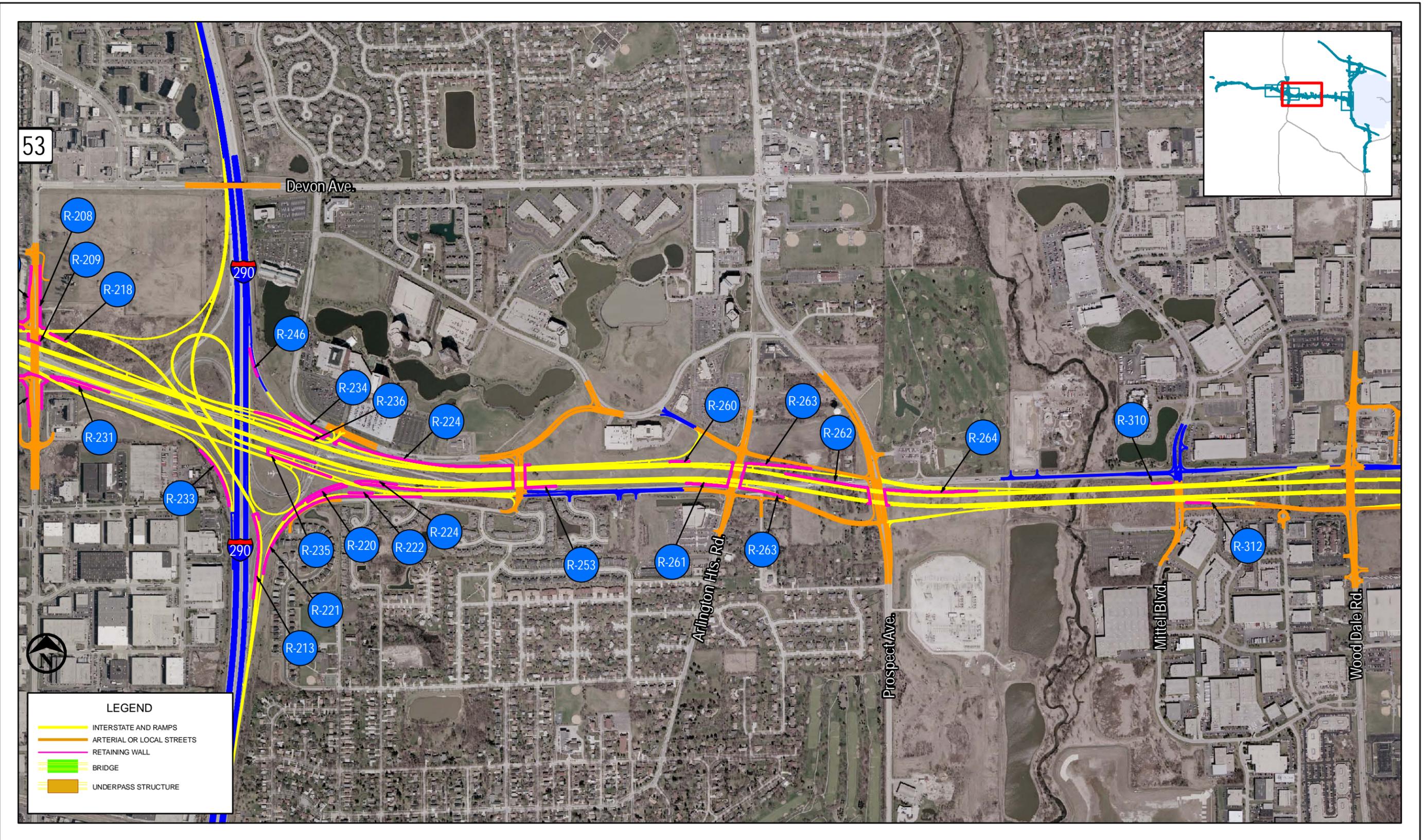
**Elgin O'Hare - West Bypass
Retaining Wall Location Study**

Exhibit 1



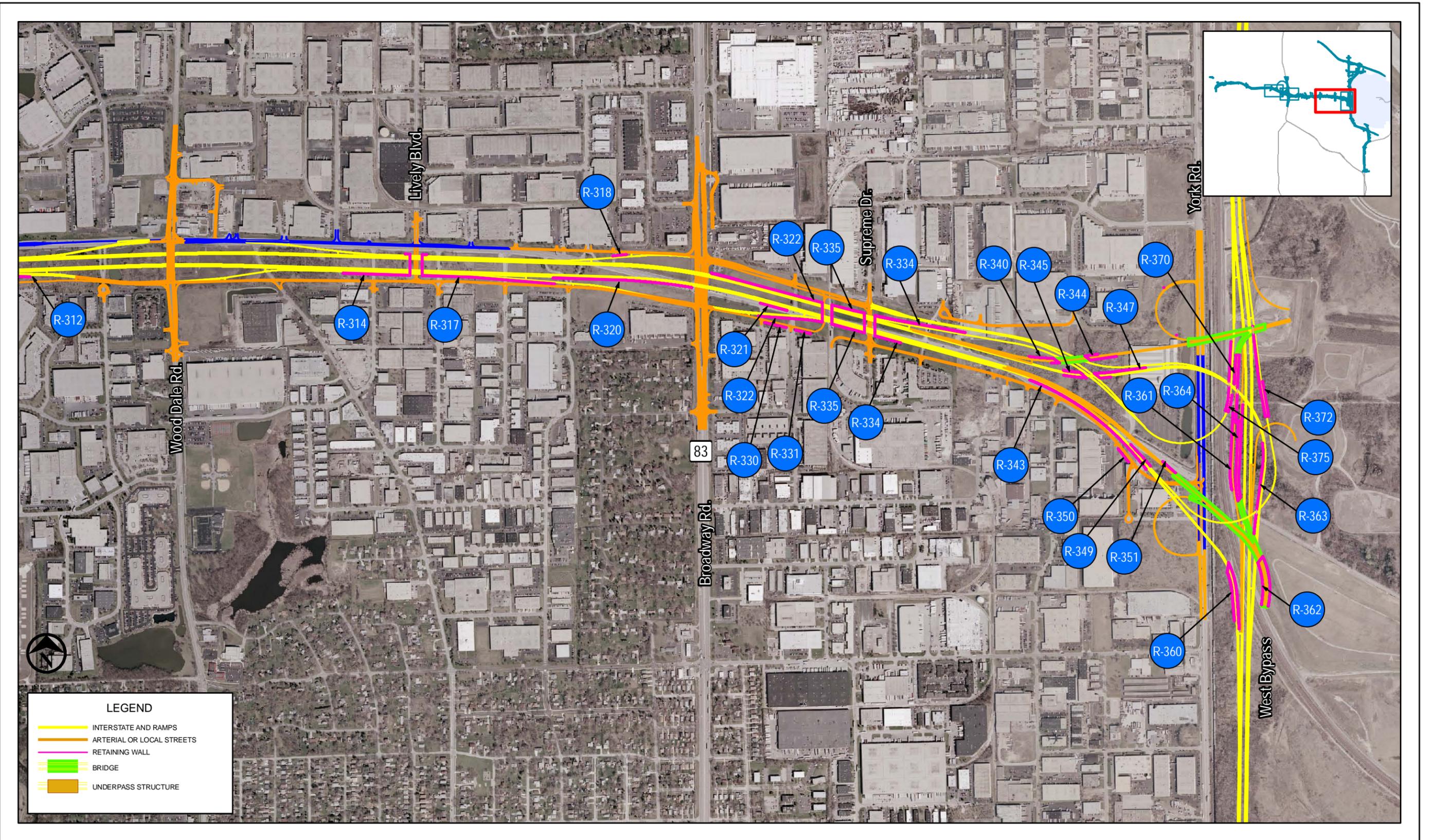
Elgin O'Hare - West Bypass
Retaining Wall Location Study

Exhibit 2



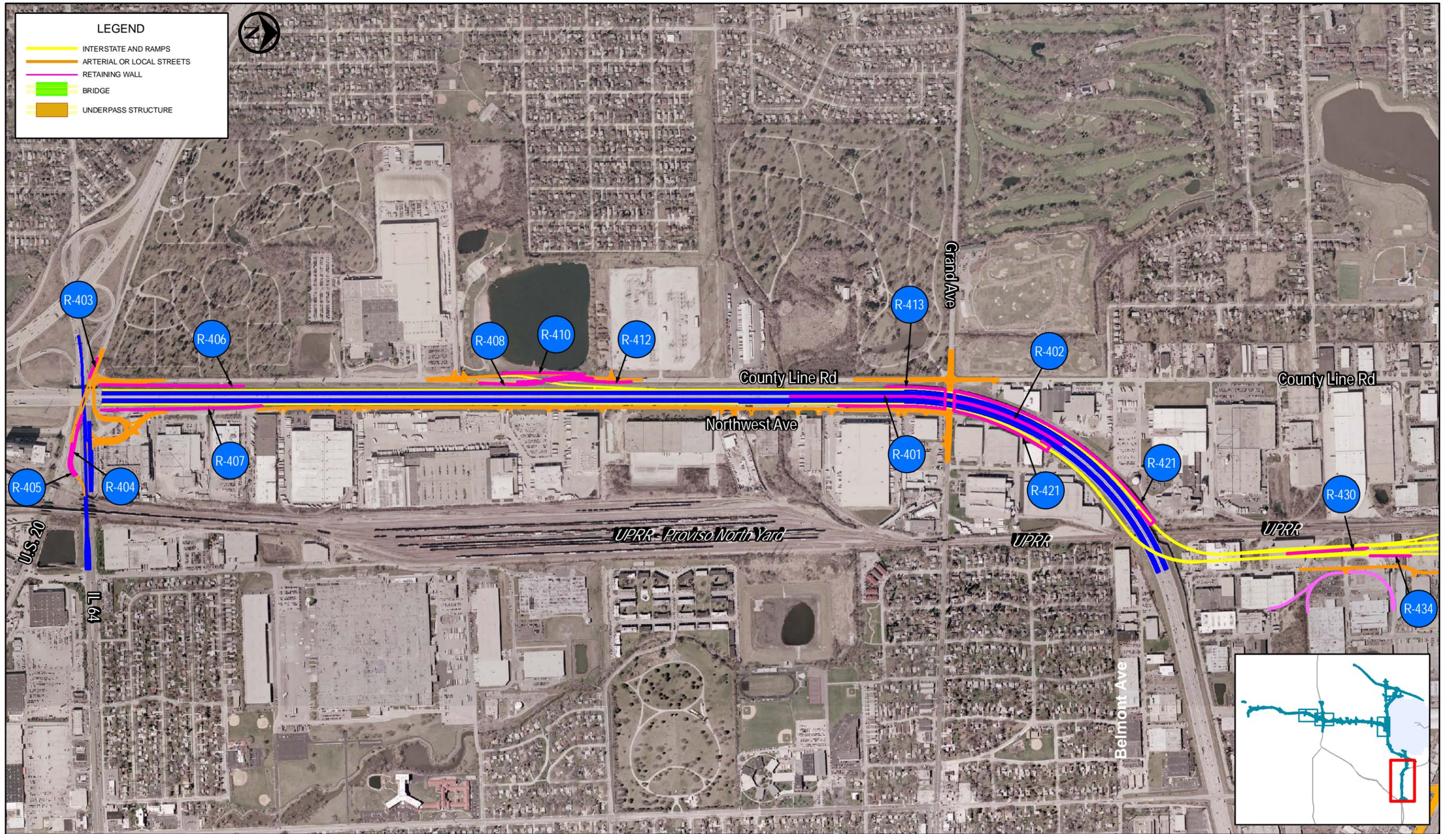
Elgin O'Hare - West Bypass
Retaining Wall Location Study

Exhibit 3



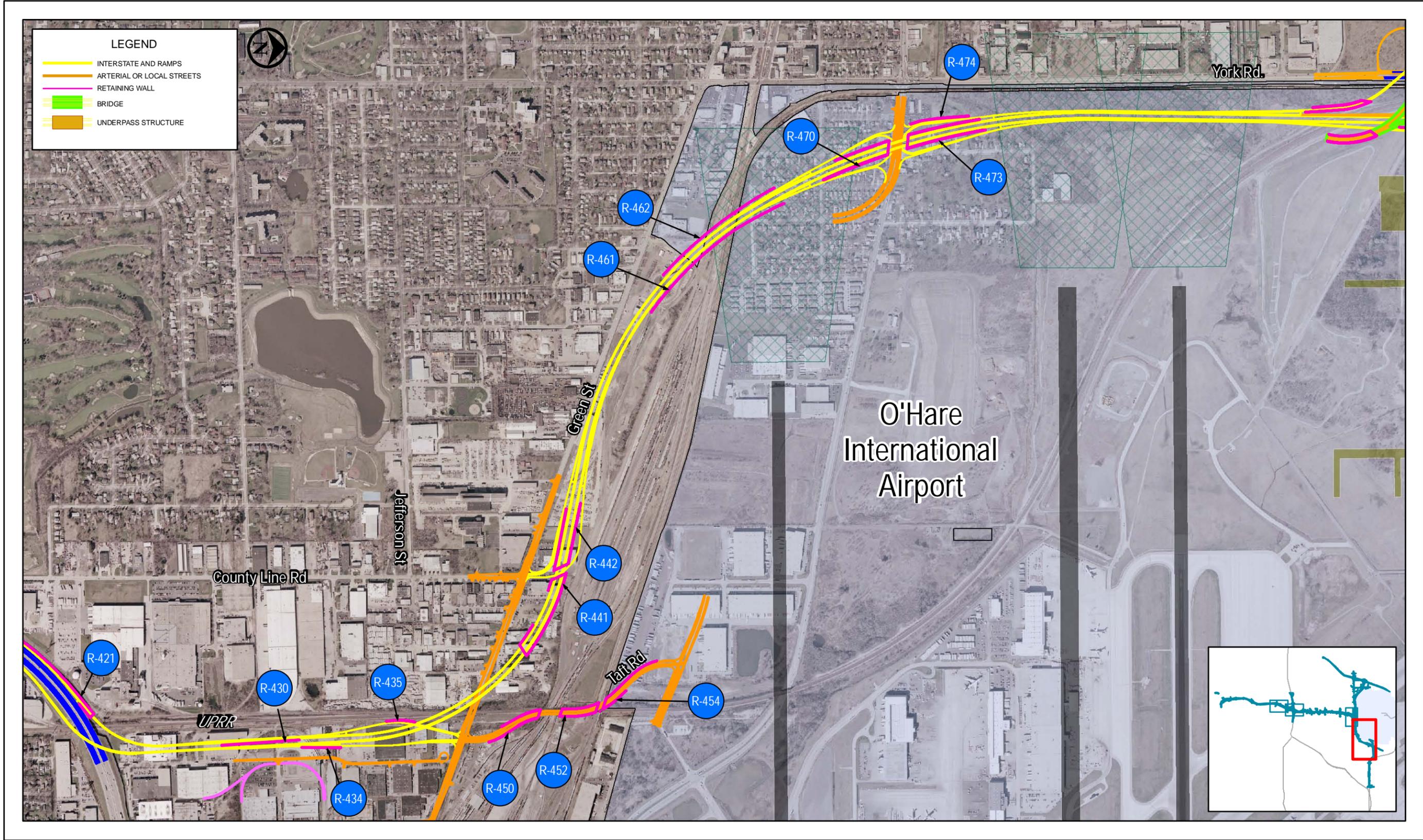
Elgin O'Hare - West Bypass
Retaining Wall Location Study

Exhibit 4



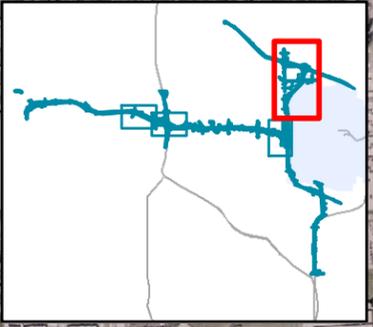
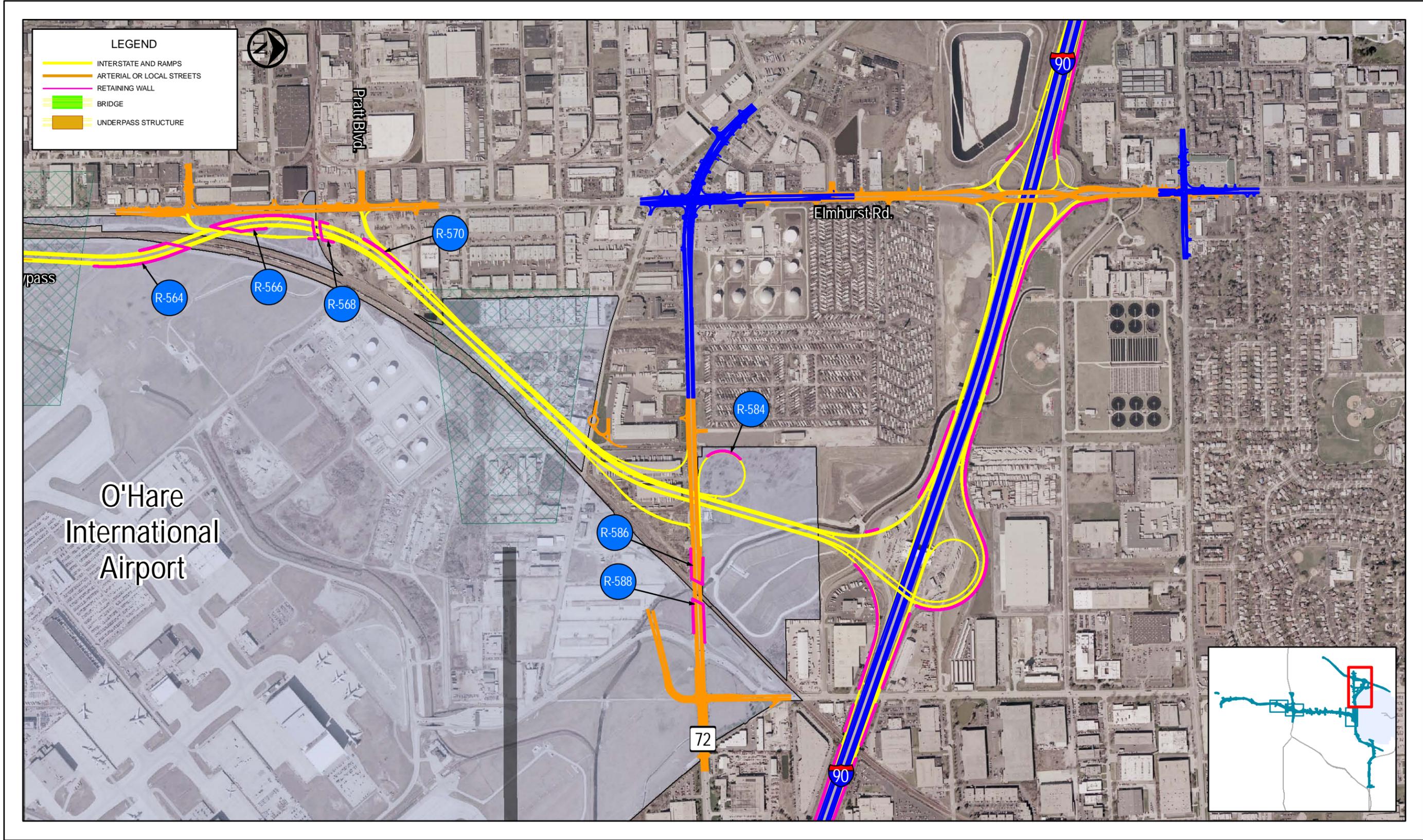
Elgin O'Hare - West Bypass
Retaining Wall Location Study

Exhibit 5



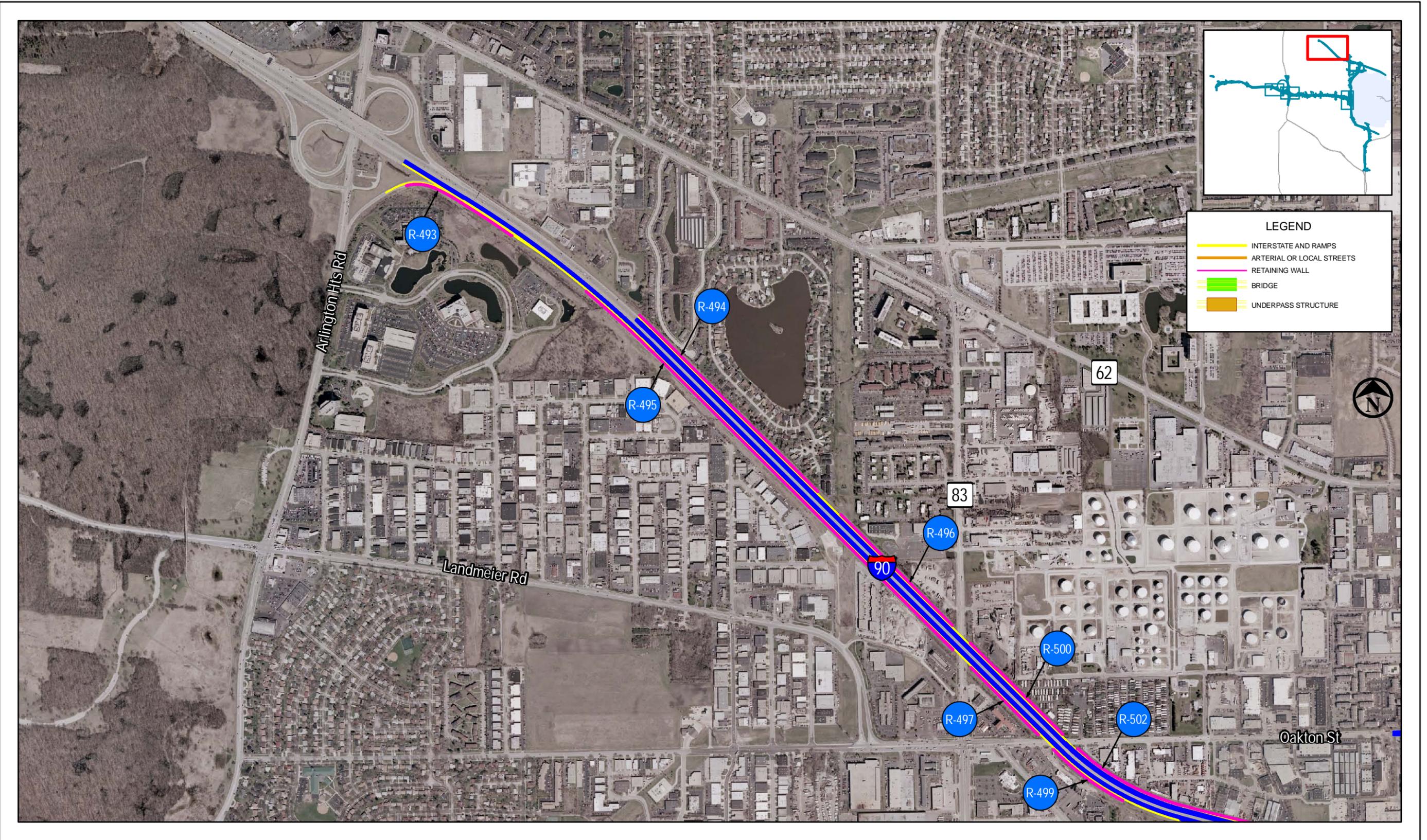
Elgin O'Hare - West Bypass
Retaining Wall Location Study

Exhibit 6



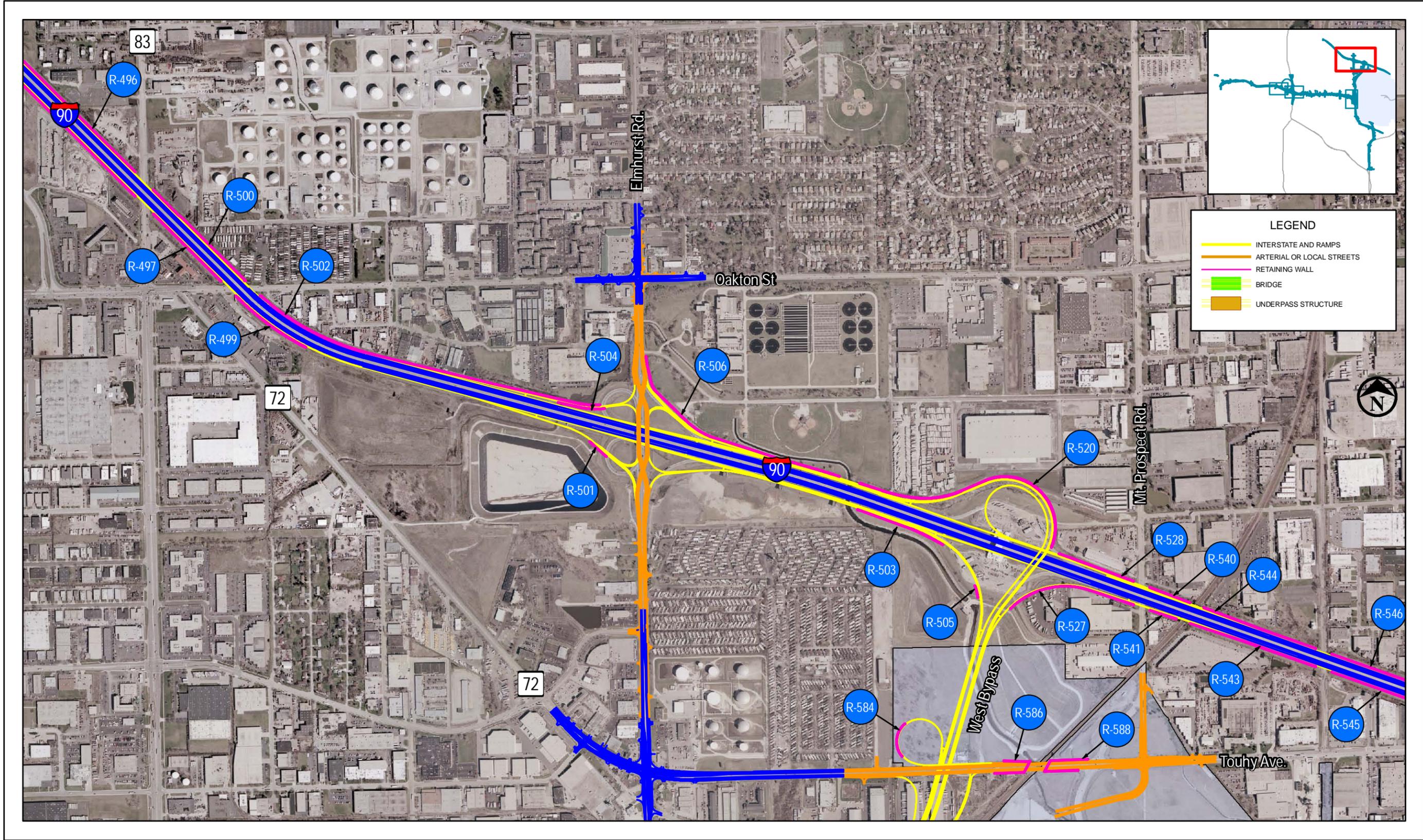
Elgin O'Hare - West Bypass
Retaining Wall Location Study

Exhibit 7



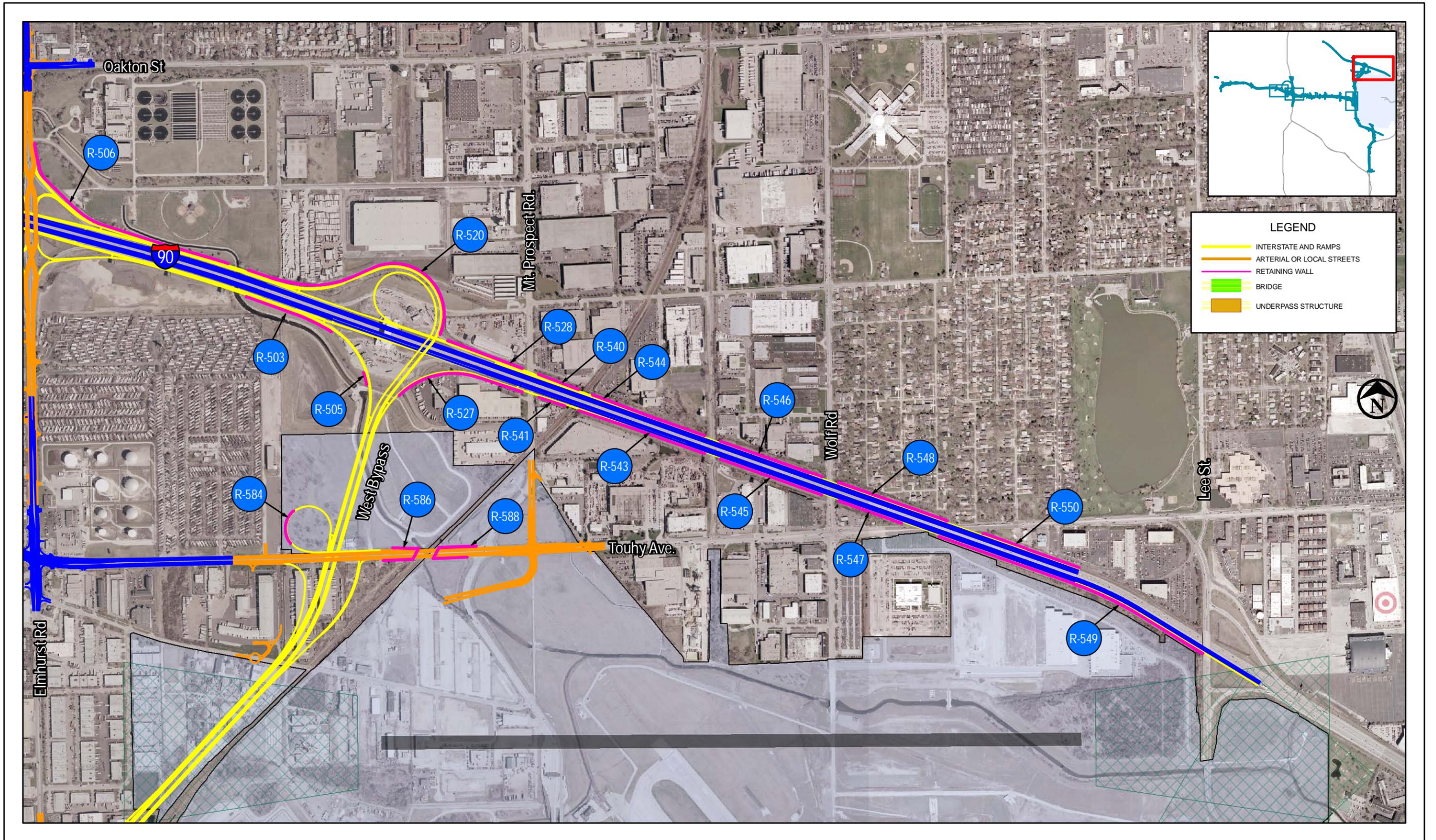
Elgin O'Hare - West Bypass
Retaining Wall Location Study

Exhibit 8



Elgin O'Hare - West Bypass
Retaining Wall Location Study

Exhibit 9



Elgin O'Hare - West Bypass
Retaining Wall Location Study