# Capital Cost Estimates Associated With 3-C Rail Corridor Stations

**Presented to The**

# Ohio Rail Development Commission

**Submitted By**


**R.L. Banks & Associates, Inc.**

**Arlington, VA**

**In Association With**

**Burgess & Niple**

**Columbus, OH**


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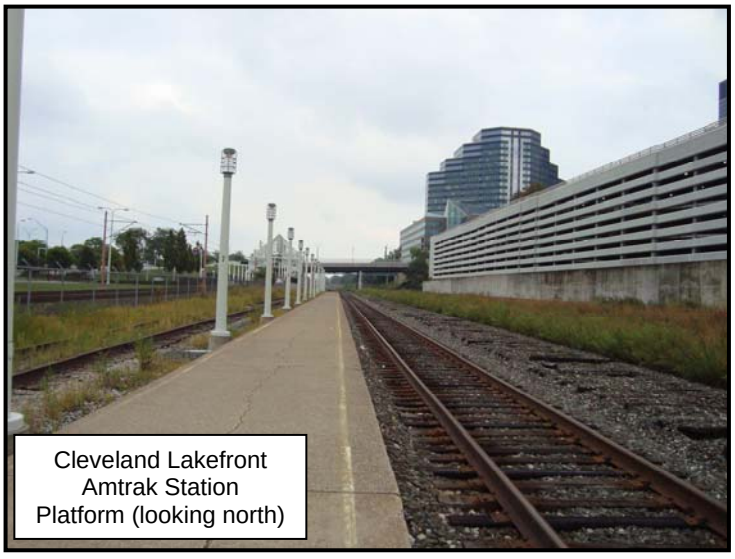
# Capital Cost Estimates Associated With 3-C Rail Corridor Stations

At the request of the Ohio Rail Development Commission (ORDC), R.L. Banks & Associates, Inc. (RLBA) supported by Burgess & Niple, Inc. (B&N) conducted a field investigation and capital construction cost estimation associated with the potential station locations spelled out by the ORDC. Those locations include (geographically from north to south):

- Cleveland – Lakefront Amtrak Station;
- Cleveland – W. 150th Street/Puritas Station;
- Columbus Convention Center;
- Springfield;
- Riverside;
- Dayton – Main Street at the Dayton Union Terminal;
- Sharonville Park 42 and
- Cincinnati.

RLBA's Director, Transportation Engineering, Mr. Gene A. Davis, P.E. and B&N's Chief Rail Engineer, Mr. Richard (Rick) S. Butch, P.E. visited each site (with the exception of the Cincinnati site which was being studied by RLBA under a separate contract with the City of Cincinnati) on September 8 – 10, 2009, accompanied sometimes by local representatives who conveyed the attributes of the envisioned station location and participated in an on-site discussion about the operating characteristics inherent to the specific location.

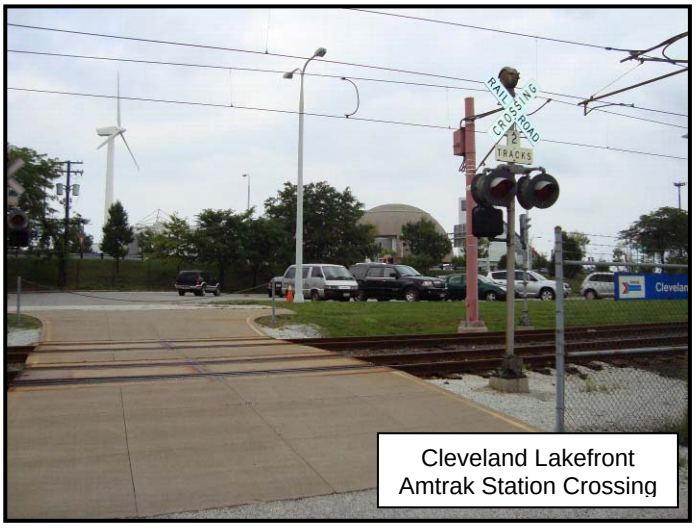
Following is a short description of each potential station location and specific inherent operating characteristics.


Cleveland Lakefront Amtrak Station Platform (looking north)

**Cleveland – Lakefront Amtrak Station (existing)**

After visiting Ms. Maribeth Feke, Director, Programming and Planning and Mr. Ed Taylor, Planner of the Greater Cleveland Regional Transit Authority (GCRTA) at their offices, Messrs. Davis and Butch visited the existing Cleveland Lakefront Amtrak Station which is currently a full service station supporting twice daily service in each direction with all necessary amenities including parking. The

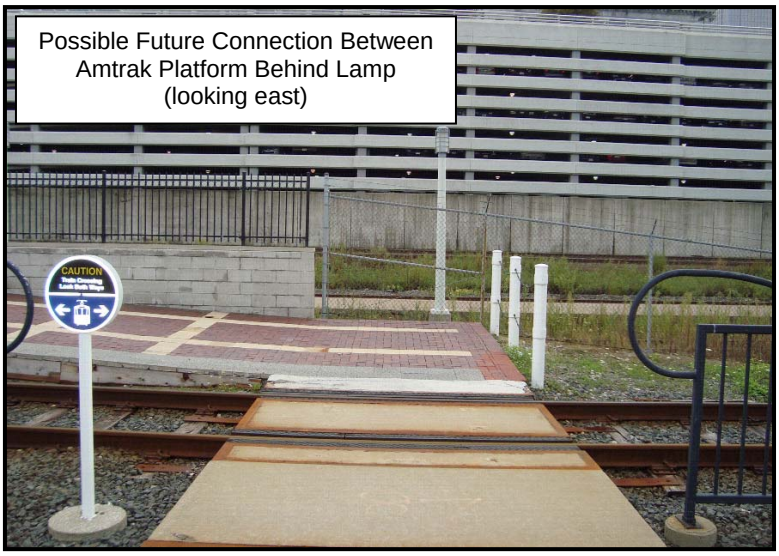
Cleveland Amtrak station is located just south of the GCRTA East Ninth Street Station (seen in the distance in the first photo) on the GCRTA Waterfront Line. The platform is of sufficient length (as it currently hosts Amtrak service) and is well lighted with appropriate signage as seen in the following photo. The platform currently does not support weather shelters and none are included in the estimated costs because of the proximity of the platform to the station building. However, the platform is separated from the Amtrak station by two, active GCRTA light-rail transit tracks which passengers must cross, moving between the station and trains.



Cleveland Lakefront Amtrak Station Crossing

The existing, two track passenger crossings presently have standard railroad flashers with bells (seen in the photo to the right) to warn Amtrak passengers of approaching light-rail trains. It is recommended that positive passenger control gates, integrated with the existing flasher and bell warning system, be installed on both approaches to the two, existing, pedestrian crossings to provide a greater level of protection for passengers boarding and alighting from trains using this station. No other modifications or improvements are anticipated at this site as it is assumed that 3C service would be able to use the existing Amtrak station track and platform with the exception of the addition of some Ticket Vending Machines (TVMs). Cost estimates at this location reflect only the installation of improved crossing protection and amount to about $334,000 as seen in Appendix One.

At the north end of the existing platform, a connection easily could be made between the GCRTA Ninth Street Station platform and the current Amtrak platform, as seen in the photo to the left. It should be noted that this possible expansion was not included in the cost estimate.



Possible Future Connection Between Amtrak Platform Behind Lamp (looking east)

**Cleveland – W. 150th Street/Puritas Station**

This station will be the interface between the 3-C service and GCRTA heavy-rail service providing direct access to/from

the Cleveland Hopkins International Airport. Presently, GCRTA is in the process of constructing a new station on the site of the existing station. A large paved parking lot that is being expanded and repaved is anticipated as being available for joint GCRTA and 3-C use as well as bus, taxi and automobile access directly from local surface streets and a direct on/off ramp to I-71 immediately adjacent. GCRTA tentatively has agreed to the shared use of the site with the proposed 3-C service as an integral component of the new GCRTA station being constructed as depicted in the photo below. GCRTA furnished conceptual plans illustrating how the proposed 3-C platform might be integrated into the new Puritas Station, which are contained in Appendix Two.

The current track layout at this location features five tracks running in a north-south configuration with the two GCRTA tracks being the west, most tracks. Norfolk Southern (NS) maintains and operates over two main line tracks (approximate milepost (MP) 189) immediately to the east of the GCRTA tracks and a third, siding track further east seen on the next page. The new GCRTA station and all major facilities will be east of the NS tracks. GCRTA has a center platform between its two existing tracks that requires a pedestrian bridge structure from the new station over the three NS and the northbound GCRTA track, to access this platform.


It is proposed to locate a 500-foot center platform between the two NS main tracks to support the 3-C service. To accommodate this platform, it will be necessary to move the most easterly NS main track and the siding track east on the right-of-way. Gradual reverse curves both north and south of the site on the relocated tracks will result from this relocation and will be located as far as possible to the north and south to avoid

disrupting NS operational capability and speeds. RLBA believes the main track and siding likely are assigned different track speeds. Distances and curvature will be dictated by physical structures, switches, side tracks and existing NS signal system constraints.

GCRTA has suggested that to access the 3-C platform, vertical transportation in the form of an elevator and steps be constructed linking the 3-C platform to GCRTA's overhead pedestrian bridge system, which would be jointly used to access the station to the east.

The GCRTA station may be large enough to accommodate 3-C service needs but for the purpose of this report, a modified station cost is included that will cover the cost of an addition to the GCRTA station. Additionally, costs are provided to cover the expense of moving the NS tracks and necessary signal modifications, constructing the 3-C center platform, vertical transportation from the platform to the GCRTA pedestrian bridge, lighting of the platform, seating, signage and TVMs at the facility.

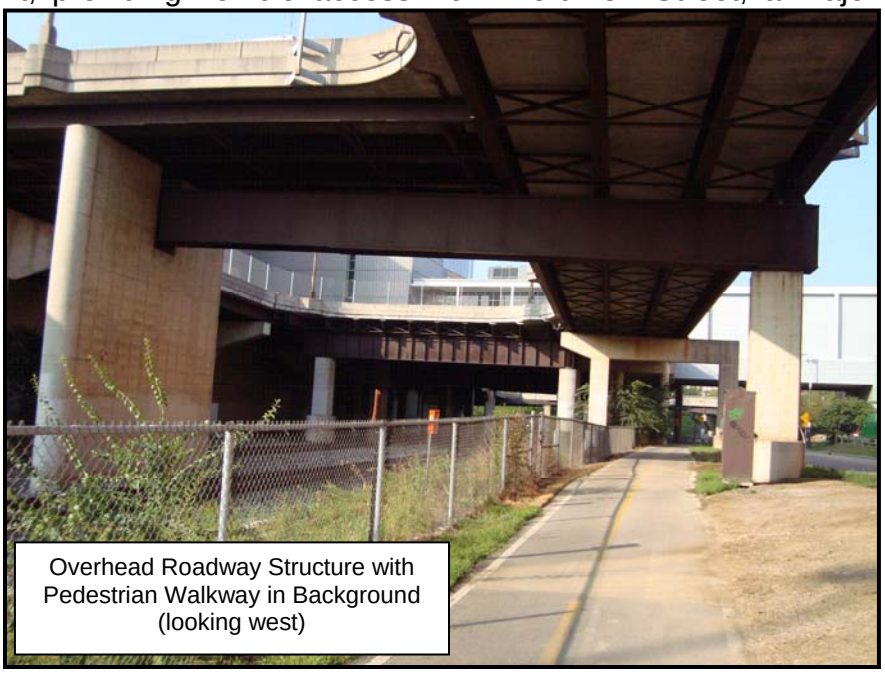

Current Track Configuration
Puritas Station
(looking north)

Since the GCRTA station already includes amenities and extensive parking, bus and taxi access as well as automobile drop-off and pick-up provisions, no costs are included associated with those.

Estimated costs associated with this site approximate $2,196,000 as seen in Appendix One.

**Columbus Convention Center**

Mr. William C. Jennison (Franklin County Convention Center Facilities Authority, Executive Director) and Mr. Jeff Baumann (Turner Construction Company, Project Manger) conducted a field visit discussing potential tie-in locations of the proposed passenger service to the Convention Center. Also participating in the field visit was Don Damron, AICP (ORDC's Rail Transportation Planner). The Columbus Convention Center straddles the existing main line double tracks that NS, CSX Transportation (CSX) and a short line (Columbus and Ohio River Railroad) operate over and is perpendicular to the tracks which run basically east and west at this location. The main Convention Center facilities and adjacent roadway system are elevated with the hotel and some smaller facilities to the south of the tracks while the much larger convention facility is north of the tracks. Those two facilities are connected by a wide, fully enclosed, walkway oriented north-south. To the east of the walkway, an elevated roadway system is present, providing vehicle access from North 3rd Street, a major north-south street. This elevated roadway loops directly adjacent to the enclosed walkway and provides direct access into the convention center as seen in the photo to the right.



Overhead Roadway Structure with Pedestrian Walkway in Background (looking west)

It is expected that the area immediately east of the existing enclosed elevated walkway be built further eastward to host the 3-C station. This is on the elevated roadway section and would occupy what is now a raised curb or waiting area. It would not disturb any of the existing Convention Center facilities or structures which are currently going through renovations.

To accommodate passenger service and allow trains to stop at the station without disturbing freight rail operations, two station pocket tracks are estimated as being constructed, north and south of the existing main tracks. The turnouts for these pocket tracks would be constructed on each main track just to the east of the current turnout on the north most track providing access to the NS Buckeye Line. Both pocket tracks would be constructed eastward to accommodate 500-foot platforms and would continue beyond the platforms around the curve to the east until, again on tangent track and at that point, tying back into the main line tracks. Both pocket tracks are proposed to be constructed on existing roadbed of previously removed tracks which were on the site and threaded through the lines of columns that support the overhead bridge structures.

Each of the two 500-foot platforms would be built to the north and south (outside) of the respective main line tracks as well as their adjacent pocket tracks as seen in the photo below. The north platform will require the removal of the existing bike path over its entire length between the Convention Center and where the trail terminates near I-670 as well as constructing an approximately two-foot tall retaining wall on the north side of the embankment near the adjacent roadway. A security fence also will be required along the wall to secure the railroad operation site.

The south platform is proposed to be constructed immediately between the south - most convention center wall and the column line supporting the overhead roadway structures. If physical constraints such as being able to fit the turnout through the line of columns prevent the optimal alignment, it would be quite feasible to shift the pocket track and associated platform further east, requiring only a longer walkway to the station.

Potential Pocket Track and Platform Locations (looking east)

As neither platform will extend westward under the proposed Station building, walkways will need to be extended westward from the platform to a point under the proposed elevated station building to accommodate stairs, escalators and elevators, which will connect the ground level and the elevated station level. Three openings per platform will need to be cut in the portion of the existing roadway concrete slab that will be encompassed by the station building to accommodate this vertical transportation. The existing roadway structure and substructure include structural members that act as “bays” in this area that appear to easily accommodate such openings.

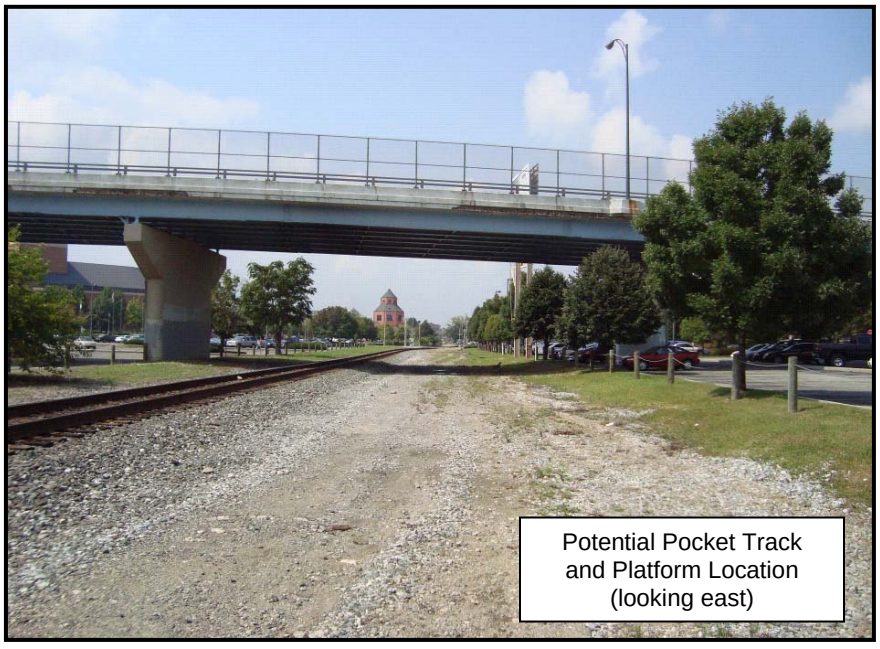
A barrier or “windscreen” will be constructed on the north side of the north escalator from ground elevation up to the underside of the overhead roadway system to protect the escalator and passengers from the elements. The south escalator is adjacent to the building and will need no such weather protection. Both vertical transportation elements are under the existing elevated roadway system, will not require roofing overhead and will be protected fully by the overhead roadway.

To the east of the north track and platform and under the adjacent elevated roadway system there is a large parcel of cleared land that provides access to the adjacent street grid and I-670, which is proposed to host a dedicated 100 car 3-C parking lot.

This report includes costs approximating $7,816,000 to construct this station and waiting area, pocket tracks and related signal expenses, platforms and walkway extensions, vertical transportation (stairs, escalators and elevators), windscreen, TVMs, retaining wall and fencing and the paving of a 100-car parking area as seen in Appendix One.

**Springfield**

An on-site visit of the potential Springfield passenger station location was conducted by Messrs. Davis and Butch as well as by Mr. Jerome M. Strozdas (City of Springfield, Law Director) and Ms. Thea Walsh, Executive Director of the Clark County Transportation Coordinating Committee. A guided tour of the potential station (the former freight office) was conducted by Mr. A.E. “Bud” Asebrook, Jr., the current owner of the building. The Springfield station is proposed to be located on the north side of the NS single track, main through Springfield immediately east of the Spring Street overhead grade separation. A constraint of this proposed site is that it is between two at-grade street crossings and exactly at the location of the turnout to the WESTCO-owned rail line to Washington Courthouse operated by Indiana & Ohio Central Railroad (I&OCR).



Potential Pocket Track and Platform Location (looking east)

Because of the volume of traffic on the NS and the interchange for the I&OCR, it will be necessary to construct a station pocket track north of the NS main from the east road crossing west in the

open area seen in the photo at the bottom of the previous page. It may be necessary to continue the pocket track westward through the Limestone Street at-grade crossing and flatten the NS curve to the west to achieve a smoother transition and better alignment of both tracks as well as to provide sufficient distance needed to host the platform.

A single, 500-foot platform with lighting will be constructed on the north side of the pocket track to serve both north and southbound passenger trains.

Former Freight Office
(existing)

Springfield plans to use the original freight office as the passenger station. A rendering of this is included in this report as Appendix Three and the actual building in its current form can be seen above. The building has restrooms from a former tenant's use and is ideally suited for this purpose. There is a brick parking lot immediately adjacent to and west of the building that would provide limited parking and could serve as the west side of a loop around the building for transit, taxi and automobile drop-off. This will be extended around south of the building and to the east to complete the loop. If needed, the City will negotiate for additional parking in the Community College parking lot that is adjacent and to the west.

This report estimates that improvements including a pocket track and two turnouts as well as necessary signal modifications, a single 500-foot platform with lighting, TVMs and the cost of paving to complete the loop around the station will approximate $2,792,000 (Appendix One).

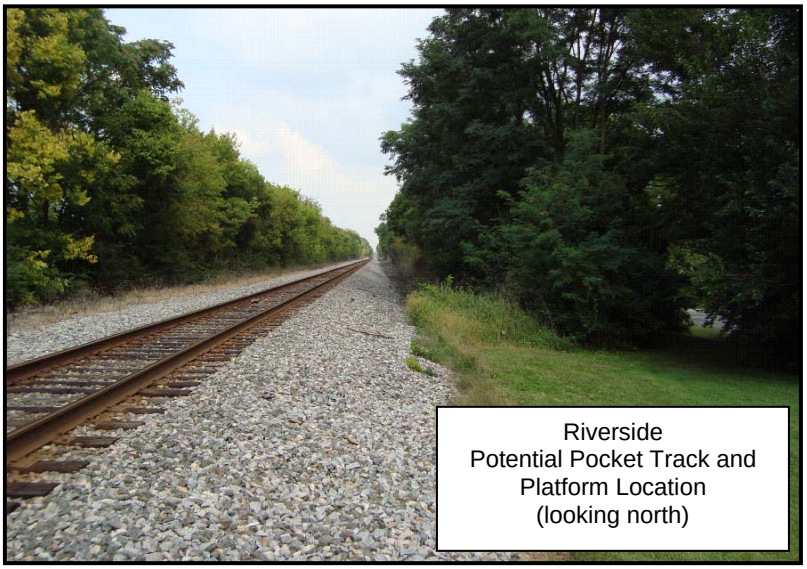
**Riverside**

Messrs. Davis and Butch met with City of Riverside representatives including Mr. Jim Wellman (Deputy Mayor), Mr. Bob Murray (Director of Economic Development & Planning) and Mr. Joe Di Misa, AICP of Woolpert on site to discuss the preferred potential station location. The Riverside station site is located on the NS single main line directly across from the Air Force Museum in Riverside, Ohio. This site presently consists, of cleared land and a large, unused, paved, parking area that is part of a remediated Brownfield site seen in the photo immediately below. With the draw of the Air Force Museum and the other lodging needs of the Air Force Base, the City of Riverside is working with a developer committed to building a large hotel on the site in the near future as well as other project development as depicted in Appendix Four. The City is also working with the Air Force and local transit to provide direct transportation between the site, the Air Force Museum and Wright-Patterson Air Force Base proper.

Parking Area with Air Force Museum in Background

The existing, single, NS main track likely cannot sustain existing freight service and the addition of the proposed passenger service. A second track on the west side of the existing track is proposed and would be dedicated to freight service from north of this site southward through Dayton to the Mad River double track bridge. If that track is not constructed, a pocket track to serve the passenger station is required and likely would be constructed in the area to the right (east) of the existing track in the photo below.

Because of the city's and developer's wishes to incorporate the station into the hotel, this report only will cost out the pocket track and necessary turnouts and related signaling, a single, 500-foot platform with lighting and shelter type-amenities and TVMs along with resurfacing the existing paved area which costs approach $2,820,000 as seen in Appendix One.



Riverside
Potential Pocket Track and Platform Location
(looking north)

**Dayton – Main Street Site at the Dayton Union Terminal**

The entire NS railroad right-of-way through downtown Dayton is elevated to allow the north/south oriented roadway system to be entirely grade separated. Portions of the railroad are on walled embankment while other sections are on traditional bridging.

The City of Dayton's Planning Department, represented by Mr. Tony Kroeger (Planner) and Mr. John Gower (Director of Planning & Community Development), participated in an on-site visit and discussed three locations as potential station sites during the field inspection and later furnished some initial passenger station estimates reproduced in Appendix Five. The first and most eastward site was considered because it was envisioned that it could be connected to an existing city parking facility on the second floor of the garage immediately north of the elevated track system. Concerns regarding this site are: 1) with the proposed passenger track construction on the south, most track would be in a curve which is not desirable for station platforms; 2) an elevated structure south of the existing walled embankment would be required to be built to support the platform and possible station, which would require a curved structure to align with the existing embankment wall and 3) vertical transportation connecting to an elevated pedestrian bridge would be required to access the parking garage from the platform/station spanning the existing tracks on the embankment. The existing, walled embankment is only wide enough to support three tracks at this location, further limiting any future expansion.

The second site (Main Street Site at Dayton Union Terminal) proposed was the area immediately over Main Street which would provide direct access to downtown via Main Street. This site also would require an extensive structural undertaking similar to the first site but without the overhead pedestrian bridge. The structure south of the tracks to host the platform/station would have to span the Main Street thoroughfare right-of-way which is in excess of 100 feet. The existing NS main track also would need to be raised to match the proposed platform elevation. Land acquisition to support a nearby parking facility would be necessary. The site also is burdened by the track expansion restrictions similar to the first site, limiting further expansion.

The third proposed site (and most westward) is that of the Ludlow Street Site at Dayton Union Terminal Station seen at the top of the next page. This site originally featured eight tracks, the north and south most being through tracks and the remaining six being station tracks served by three combined passenger and freight platforms. The entire facility is on an elevated structure which is completely open underneath seen below. Three existing platforms are somewhat deteriorated on top and if one is to be used, it will need to be restored. One positive note about utilizing the existing platforms would be that the original openings built to accommodate the vertical transportation, elevators and stairways, which were closed with metal forming and concrete easily could be re-opened to accommodate new stairs and an elevator to a street level station.


The existing NS track runs along the south side of the structure while CSX operates on a single track along the north side of the bridge/embankment. If the plan for a second NS track from the east (Riverside), strictly dedicated to freight service is advanced, it easily could be placed in one of the former alignments between the existing abandoned platforms where the station tracks originally were located. This configuration will help NS by relieving the tight reverse curve that now exists at the west end of the embankment where CSX and NS tracks converge to pass over the two track river bridge. This location, with only two tracks over the river, has been a consistent bottleneck.

If the planned third freight track is constructed and the existing NS track is dedicated to passenger service, the existing freight track will be shifted northward one track width through the former station area to about the most southern existing/refurbished platform seen at the top of the next page. This configuration would allow a second pocket track to be built immediately north of the dedicated passenger track to serve the same platform if the need for expansion arises or it is deemed necessary to meet and pass passenger trains at this location.

An alternate viable plan if the full, second NS track dedicated to freight is not built, would be to build a portion of this track only in the station area and orienting it to the north, i.e. closer to the existing CSX track. Potentially, it would diverge from the existing NS track immediately to the east as the tracks become tangent to accommodate safe boarding at the station and tie back in just before the river bridge to the west, again

eliminating the restrictive reverse curve over which the NS now operates. As stated above, this would allow the existing NS track to be shifted to the platform for passenger service or accommodate the construction of a second, passenger, pocket track.

Dayton Site
Deteriorated Platforms with
Track Space Between
(looking west)

A third option would leave the existing CSX and NS tracks where they are now located and construct one or two pocket tracks into the former station area to serve a single, middle platform. This would be the least expensive option. Close cooperation with NS and CSX will be necessary to determine the optimal platform location and track alignments.

In all scenarios, the passenger station itself would be located under the structure in the northeast corner, allowing access to Ludlow and Sixth Streets. Access from the platform above would be through the stairs and elevator to the ground level and then by a walkway to the station, all protected by the bridge structure. Access via automobile drop-off would occur from Sixth Street at the northeast corner next to the station and continue south through the bridge structure, then turn right (west) and proceed to an exit on the west end of the structure. This area along the south side, under the structure, would be paved as the roadway and as a parking facility accommodating approximately 100 automobiles.

During the site visit with members of the Dayton Department of Planning, it was mutually agreed that the Ludlow Street Site at Dayton Union Terminal appeared to be the most advantageous from the standpoint of potential future expansion, being the quickest and possibly least expensive to build while meeting the needs of the City.

Costs are estimated at $5,802,000 (Appendix One) associated with the Ludlow Street Site at Dayton Union Terminal station site assuming construction of a new, NS main line track aligned closer to CSX and using the existing line as a passenger pocket track along with rebuilding a single platform. Costing includes track and related signal costs, platform rehabilitation costs including lighting, vertical transportation costs as well as the cost of the walkway to the station, a generic station cost with amenities and TVMs and the cost to pave the proposed driveway and parking places in the facility.

**Sharonville Park 42**

During the on-site meeting with the Mr. Ted J. Mack (City of Sharonville, Safety Service Director) and Mr. Richard Osgood (City of Sharonville, Director of Building, Planning & Zoning), two potential sites were identified and discussed including downtown, where the previous station had been located and the Park 42 development site near I-275.

The potential downtown site would be located adjacent to the existing, northbound NS main track that provides that carrier with the capability of bypassing the Sharonville freight yard. It would be positioned on a curve where a turnout to serve an adjacent industry was located previously. A plan to construct a dedicated, passenger track east of the existing main track through this area likely would allow a 500-foot platform to be constructed northward once the track became tangent. The major drawback of this location is that expansion to a two-track passenger operation would be inhibited greatly unless major track work was performed on the existing Sharonville Yard to accommodate a second, parallel, passenger track along with a second platform. NS operational changes in the Sharonville yard and through this area also would be required were this site selected. A standard passenger station would be located on city property accessible to the platform and parking is already available.

The more northern potential location is in the northwest corner of a triangular development area known as Park 42 and is bounded by Reading Road on the west, Kemper Road on the north and US 42, Lebanon Road, on the east. This site has immediate access to I-275 by traveling eastward on Kemper Road to the US 42 interchange just to the northeast. The potential station site is currently a cleared, gravel lot (seen to the right) with immediate access to Lebanon Road on the north or through the development to US 42.

Sharonville Site
Potential Station/Parking Area

The proposed station would be located just west of the existing rail lubricator seen in the photo below and consist of two, 500-foot platforms with lighting on the outside of both tracks in the photo, an overhead pedestrian bridge over both main line NS tracks, with stairs and elevators from the platforms to the pedestrian bridge, a passenger station with TVMs and necessary amenities, paving for a 100-space parking lot and necessary fencing to provide security. Two pocket tracks could be constructed on existing railroad right-of-way were it deemed necessary that passenger trains clear the main line tracks during station stops. This configuration would require reconstructing the existing at-grade crossing at Sharonville Road and requisite signal modifications; however it is not costed that way in this exercise.

The Park 42 site is estimated to cost approximately $4,700,000 as seen in Appendix One.

Sharonville Site
Platform Locations West of Rail Lubricator
(looking west)

**Cincinnati**

While not visited by Messrs. Davis and Butch during their three day inspection tour, RLBA's Vice President, Mr. Ken Withers, P.E. is working with the City of Cincinnati to evaluate potential passenger station locations. The City of Cincinnati is considering

three, alternative station sites on the Oasis Rail Line, which is owned by Southwest Ohio Regional Transit Authority (SORTA) and operated by Indiana and Ohio Railway, a freight carrier.

The three sites are:

- Riverside Drive Site 1 (1/2 mile from downtown Cincinnati);
- Riverside Drive Site 2 (1 ¼ miles from downtown Cincinnati) and
- Lunken Park Drive Site (5 miles from downtown Cincinnati).

Riverside Drive Site 1 is city-owned property off Riverside Drive, at the Sawyer Point Recreation Area, between the tennis courts and parking facility, on existing track and immediately west of the Montgomery Inn Boathouse Restaurant. This site is in good proximity to I-471, downtown city locations, U.S. Highway 50 and U.S. 52. I-71 and I-75 are a little over one mile to the west.

Riverside Drive Site 2 is undeveloped, privately-owned property off Riverside Drive, lying immediately east of the city's Theodore M. Berry International Friendship Park, and approximately 800 feet northeast of the intersection of Bains Street with Riverside Drive. Like Riverside Drive Site 1, this site is located adjacent to U.S. 50 and U.S. 52 and is somewhat further from the other traffic arteries mentioned above. Use of this property as a station site would require agreement of the owner.

The Lunken Park Drive Site lies on railroad right-of-way (Undercliff Rail Yard) owned by SORTA. In addition, there is an acre of undeveloped City of Cincinnati property immediately across the Lunken Park Drive from the prospective station site. The Lunken Park Drive Site is immediately north of Lunken Airport, which is a relatively small airport, which should not be confused with the Cincinnati/Northern Kentucky International Airport. Although adjacent to U.S. 50, the Lunken Park Drive Site is about five miles from other major traffic arteries and downtown Cincinnati.

The City's plan is to select one of these sites, and construct a 300-foot platform; lighting; a small shelter on the platform; on-site circulation and drop-off for bus, taxi and automobile and parking for at least 100 cars. One site, Riverside Drive Site 1, already enjoys a large parking facility (for more than 200 cars), which parking facility also contains lanes deemed suitable for the on-site circulation and drop-off functions. These would have to be constructed at the other two sites. All three sites would require construction of platform, lighting and weather shelter. The Riverside Drive Site 1 also features rest room facilities available at the adjacent Skating Rink. In all locations, it is possible to expand the length of the platform and add more parking.

A big advantage of the Oasis Rail Line is that there is relatively little freight traffic and layover facility locations are available, according to the Indiana and Ohio Railway.

For purposes of this study, $2,624,000 was estimated, as seen in Appendix One to cover potential station costs.

**Summary**

The table on the next page arrays the estimated costs associated with possible stations supporting passenger service over the 3-C corridor. For a more detailed view, see sheets regarding each location in Appendix One. The estimates do not include any land acquisition costs.

Table One
Summary of 3-C Corridor Station Costs

| Location | Cost |
|---|---|
| Cleveland –Lakefront Amtrak Station | $334,000 |
| Cleveland – W. 150th Street/Puritas Station | 2,196,000 |
| Columbus Convention Center | 7,816,000 |
| Springfield | 2,792,000 |
| Riverside | 2,820,000 |
| Dayton – Main Street at the Dayton Union Terminal | 5,802,000 |
| Sharonville Park 42 | 4,700,000 |
| Cincinnati | 2,624,000 |
| Total | $29,084,000 |

# Appendix One

# Appendix One
## Potential 3C Corridor Station Costs
(Geographically from North to South)

| | Construction Costs | | | | | | | | | Non-Construction Costs | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Location** | Platform | Shelters | Station | Drop-off lanes | Lighting | Signage | Landscaping walkways & benches | Parking | Track/Signal Additions/Changes and/or Other | Design/CM | Contingency | **Total** |
| **Cleveland Lakefront Amtrak Station** | - | - | - | - | - | - | - | - | $240,000 | $38,000 | $56,000 | **$334,000** |
| **Cleveland W. 150th Street /Puritas Station** | $100,000 | $180,000 | $500,000 | - | $83,000 | $15,000 | $50,000 | - | 650,000 | 252,000 | 366,000 | **2,196,000** |
| **Columbus Convention Center** | 200,000 | 360,000 | 750,000 | - | 167,000 | 30,000 | 100,000 | 400,000 | 3,608,000 | 898,000 | 1,303,000 | **7,816,000** |
| **Springfield** | 100,000 | 180,000 | 100,000 | $120,000 | 83,000 | 15,000 | 50,000 | 80,000 | 1,278,000 | 321,000 | 465,000 | **2,792,000** |
| **Riverside** | 100,000 | 180,000 | - | 120,000 | 83,000 | 15,000 | 50,000 | 200,000 | 1,278,000 | 324,000 | 470,000 | **2,820,000** |
| **Dayton (Main Street Site at Dayton Union Terminal)** | 100,000 | 180,000 | 1,000,000 | 120,000 | 83,000 | 15,000 | 50,000 | 400,000 | 2,220,000 | 667,000 | 967,000 | **5,802,000** |
| **Sharonville Park 42** | 200,000 | 360,000 | 1,000,000 | 120,000 | 167,000 | 30,000 | 100,000 | 400,000 | 1,000,000 | 540,000 | 783,000 | **4,700,000** |
| **Cincinnati** | 60,000 | 120,000 | 1,000,000 | 120,000 | 50,000 | 15,000 | 30,000 | 400,000 | 90,000 | 302,000 | 437,000 | **2,624,000** |
| Total | $860,000 | $1,560,000 | $4,350,000 | $600,000 | $716,000 | $135,000 | $430,000 | $1,880,000 | $10,364,000 | $3,342,000 | $4,847,000 | **$29,084,000** |

# Appendix One
# Cleveland Lakefront Amtrak Station Costs

| Description | Cost |
|---|---|
| Simple concrete platform 8" ATR, 12' x 500' | 0 |
| Weather shelters (3) on platform | 0 |
| Enclosed building with restrooms & waiting area | 0 |
| Bus-taxi-auto drop off lane (2 lanes wide x 500') | 0 |
| Lighting | 0 |
| Signage | 0 |
| Landscaping, walkways and benches | 0 |
| Parking (100 spaces) | 0 |
| Pedestrian crossing signal improvements | $150,000 |
| Other (TVMs) | 90,000 |
| Total Construction | $240,000 |
| Design and construction management (16 percent) | 38,000 |
| Contingency (20 percent) | 56,000 |
| **Grand Total** | **$334,000** |

Notes: ATR = Above top of rail

# Appendix One
# Cleveland W. 150th Street/Puritas Station Costs

| Description | Cost |
|---|---|
| Simple concrete platform 8" ATR, 12' x 500' | $100,000 |
| Weather shelters (3) on platform | 180,000 |
| Enclosed building (modification to new Puritas Station) | 500,000 |
| Bus-taxi-auto drop off lane (2 lanes wide x 500') | 0 |
| Lighting | 83,000 |
| Signage | 15,000 |
| Landscaping, walkways and benches | 50,000 |
| Parking (100 spaces) | 0 |
| Two track realignment - approximately 0.5 mile | 100,000 |
| Signal work | 100,000 |
| Other (elevator and stairs) | 360,000 |
| Other (TVMs) | 90,000 |
| Total Construction | $1,578,000 |
| | |
| Design and construction management (16 percent) | 252,000 |
| Contingency (20 percent) | 366,000 |
| **Grand Total** | **$2,196,000** |

Notes: ATR = Above top of rail

# Appendix One
# Columbus Convention Center Station Costs

| Description | | Cost |
|---|---|---|
| Simple concrete platform 8" ATR, 12' x 500' (2) | | $200,000 |
| Weather shelters (3) on each platform | | 360,000 |
| Enclosed building and waiting area (incorporate into Convention Center) | | 750,000 |
| Bus-taxi-auto drop off lane (2 lanes wide x 500') | | 0 |
| Lighting | | 167,000 |
| Signage | | 30,000 |
| Landscaping, walkways and benches | | 100,000 |
| Parking (100 spaces) | | 400,000 |
| Track (2) and turnout (4) construction | | 975,000 |
| Signal work - 4 switch locations | | 1,400,000 |
| Other (walkway, elevator and escalator) - 1 each platform | | 1,120,000 |
| Other (windscreen) | | 15,000 |
| Other (TVMs) | | 90,000 |
| Other (retaining wall) | | 5,000 |
| Other (fencing associated with retaining wall) | | 3,000 |
| | Total Construction | $5,615,000 |
| Design and construction management (16 percent) | | 898,000 |
| Contingency (20 percent) | | 1,303,000 |
| | **Grand Total** | **$7,816,000** |

Notes: ATR = Above top of rail

# Appendix One
# Springfield Station Costs

| Description | | Cost |
|---|---|---|
| Simple concrete platform 8" ATR, 12' x 500' | | $100,000 |
| Weather shelters (3) on platform | | 180,000 |
| Enclosed building and waiting area (modify former Freight Office) | | 100,000 |
| Bus-taxi-auto drop off lane (2 lanes wide x 500') | | 120,000 |
| Lighting | | 83,000 |
| Signage | | 15,000 |
| Landscaping, walkways and benches | | 50,000 |
| Parking (expand existing) | | 80,000 |
| Track and turnout (2) construction | | 488,000 |
| Signal work - 2 switch locations | | 700,000 |
| Other (TVMs) | | 90,000 |
| | Total Construction | $2,006,000 |
| Design and construction management (16 percent) | | 321,000 |
| Contingency (20 percent) | | 465,000 |
| | **Grand Total** | **$2,792,000** |

Notes: ATR = Above top of rail

# Appendix One
# Riverside Station Costs

| Description | | Cost |
|---|---|---|
| Simple concrete platform 8" ATR, 12' x 500' | | $100,000 |
| Weather shelters (3) on platform | | 180,000 |
| Enclosed building and waiting area (modify former Freight Office) | | 0 |
| Bus-taxi-auto drop off lane (2 lanes wide x 500') | | 120,000 |
| Lighting | | 83,000 |
| Signage | | 15,000 |
| Landscaping, walkways and benches | | 50,000 |
| Parking (expand existing) | | 200,000 |
| Track and turnout (2) construction | | 488,000 |
| Signal work - 2 switch locations | | 700,000 |
| Other (TVMs) | | 90,000 |
| | Total Construction | $2,026,000 |
| Design and construction management (16 percent) | | 324,000 |
| Contingency (20 percent) | | 470,000 |
| | **Grand Total** | **$2,820,000** |

Notes: ATR = Above top of rail

# Appendix One
# Dayton Station Costs
# Main Street Site at Dayton Union Terminal

| Description | | Cost |
|---|---|---|
| Simple concrete platform 8" ATR, 12' x 500' (includes rehab) | | $100,000 |
| Weather shelters (3) on platform | | 180,000 |
| Enclosed building and waiting area | | 1,000,000 |
| Bus-taxi-auto drop off lane (2 lanes wide x 500') | | 120,000 |
| Lighting | | 83,000 |
| Signage | | 15,000 |
| Landscaping, walkways and benches | | 50,000 |
| Parking (100 spaces) | | 400,000 |
| Track and turnout (2) construction | | 725,000 |
| Signal work - 2 switch locations | | 700,000 |
| Other (walkway and elevator) | | 360,000 |
| Other (rehab/modifications to bridge for station) | | 250,000 |
| Other (clock tower - City of Dayton request) | | 80,000 |
| Other (TVMs) | | 90,000 |
| Other (fencing) | | 15,000 |
| | Total Construction | $4,168,000 |
| Design and construction management (16 percent) | | 667,000 |
| Contingency (20 percent) | | 967,000 |
| | **Grand Total** | **$5,802,000** |

Notes: ATR = Above top of rail

# Appendix One
# Sharonville Station Costs

| Description | | Cost |
|---|---|---|
| Simple concrete platform 8" ATR, 12' x 500' (2) | | $200,000 |
| Weather shelters (3) on each platform | | 360,000 |
| Enclosed building and waiting area | | 1,000,000 |
| Bus-taxi-auto drop off lane (2 lanes wide x 500') | | 120,000 |
| Lighting | | 167,000 |
| Signage | | 30,000 |
| Landscaping, walkways and benches | | 100,000 |
| Parking (100 spaces) | | 400,000 |
| Other (walkway and elevator) - 1 each platform | | 720,000 |
| Other (overhead pedestrian walkway bridge) | | 175,000 |
| Other (TVMs) | | 90,000 |
| Other (fencing) | | 15,000 |
| | Total Construction | $3,377,000 |
| Design and construction management (16 percent) | | 540,000 |
| Contingency (20 percent) | | 783,000 |
| | **Grand Total** | **$4,700,000** |

Notes: ATR = Above top of rail

# Appendix One
# Cincinnati Station Costs

| Description | Cost |
|---|---|
| Simple concrete platform 8" ATR, 12' x 300' | $60,000 |
| Weather shelters (2) on platform | 120,000 |
| Enclosed building with restrooms & waiting area | 1,000,000 |
| Bus-taxi-auto drop off lane (2 lanes wide x 300') | 120,000 |
| Lighting | 50,000 |
| Signage | 15,000 |
| Landscaping, walkways and benches | 30,000 |
| Parking (100 spaces) | 400,000 |
| Other (TVMs) | 90,000 |
| Total Construction | $1,885,000 |
| Design and construction management (16 percent) | 302,000 |
| Contingency (20 percent) | 437,000 |
| **Grand Total** | **$2,624,000** |

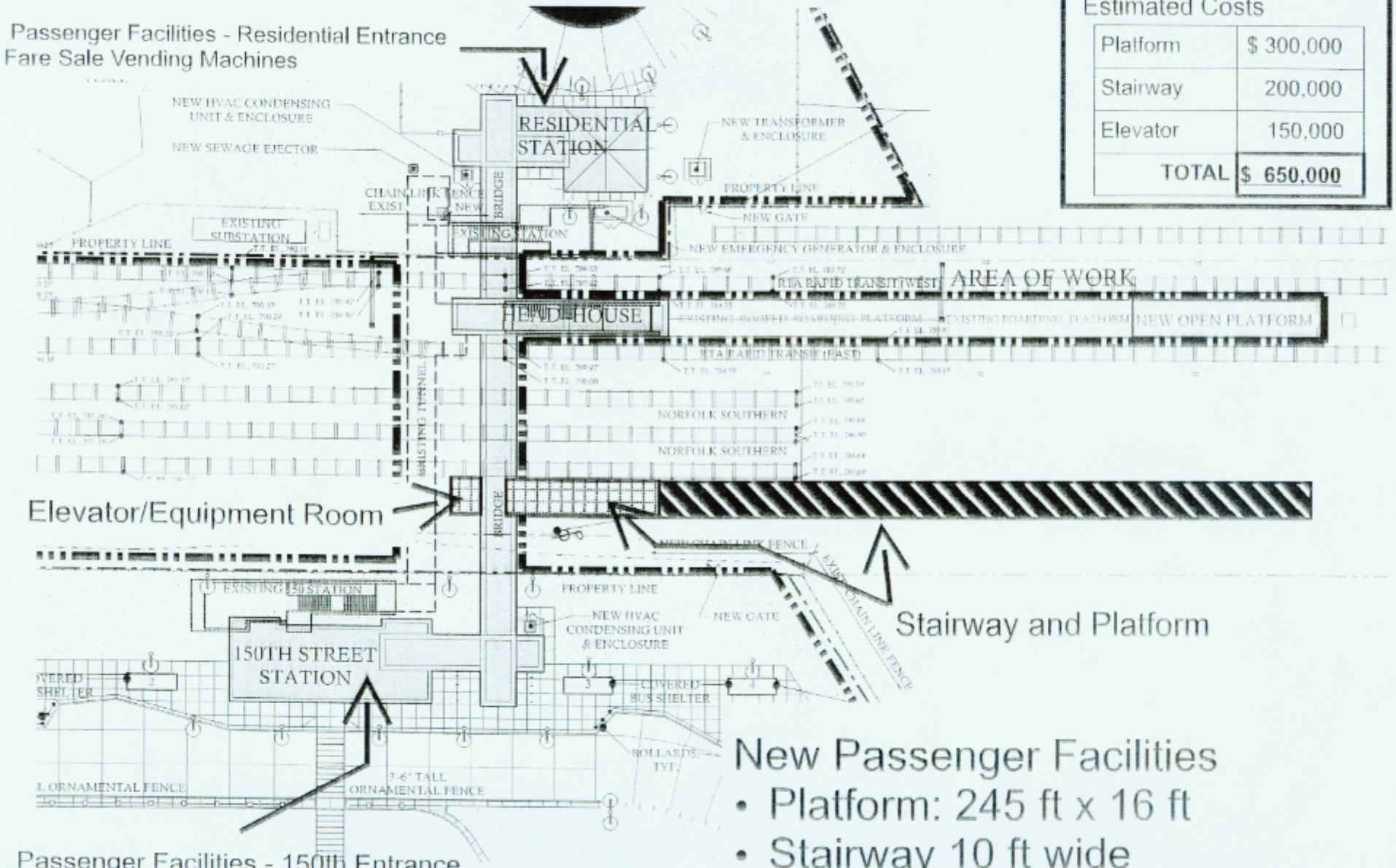
Notes: ATR = Above top of rail

# Appendix Two

# Modifications to the New West 150th - Puritas Station required to accommodate transfers between High Speed Rail Passenger Service

Alt: A

| Estimated Costs | |
|---|---|
| Platform | $ 300,000 |
| Stairway | 200,000 |
| Elevator | 150,000 |
| TOTAL | $ 650,000 |

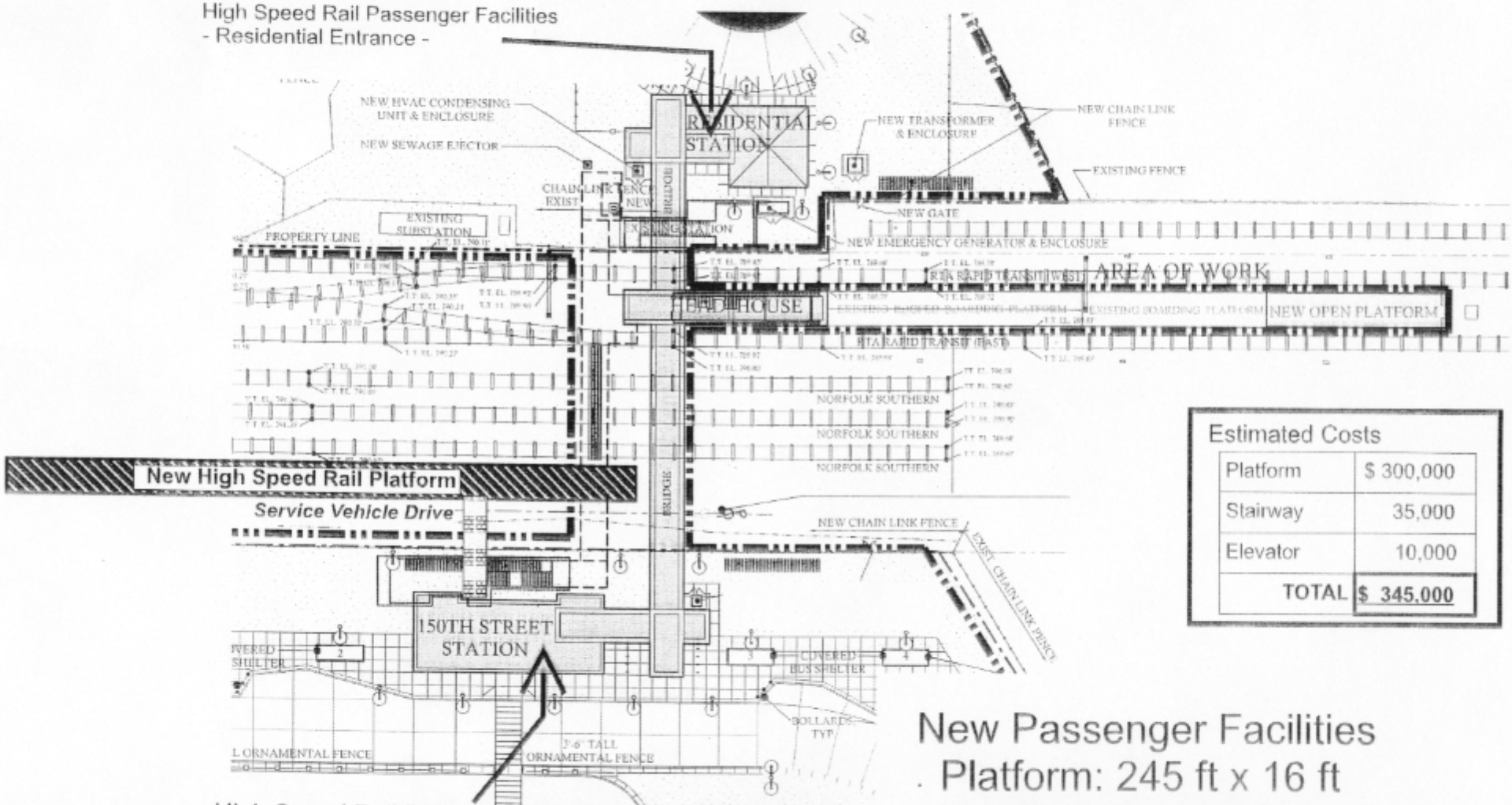



- New Passenger Facilities
  - Platform: 245 ft x 16 ft
  - Stairway 10 ft wide
  - Elevator (1) & Equipment Room
  - Fare Media Sale Machines

RTA Prepared By: Engineering & Project Management
June 2009

# Modifications to the New West 150th - Puritas Station required to accommodate transfers between High Speed Rail service

Alt: B




| Estimated Costs | |
|---|---|
| Platform | $ 300,000 |
| Stairway | 35,000 |
| Elevator | 10,000 |
| TOTAL | $ 345,000 |

New Passenger Facilities

- Platform: 245 ft x 16 ft
- Vestibule and walkway between RTA Station and High Speed Rail Platform

Prepared By: Engineering & Project Management
June 2009

# Appendix Three


Welcome to Springfield, Ohio
Springfield Station
Ohio's 3C is ME

# Appendix Four

# Phase One

Buckeyes Development, LLC

# CENTER OF FLIGHT

riverside, ohio

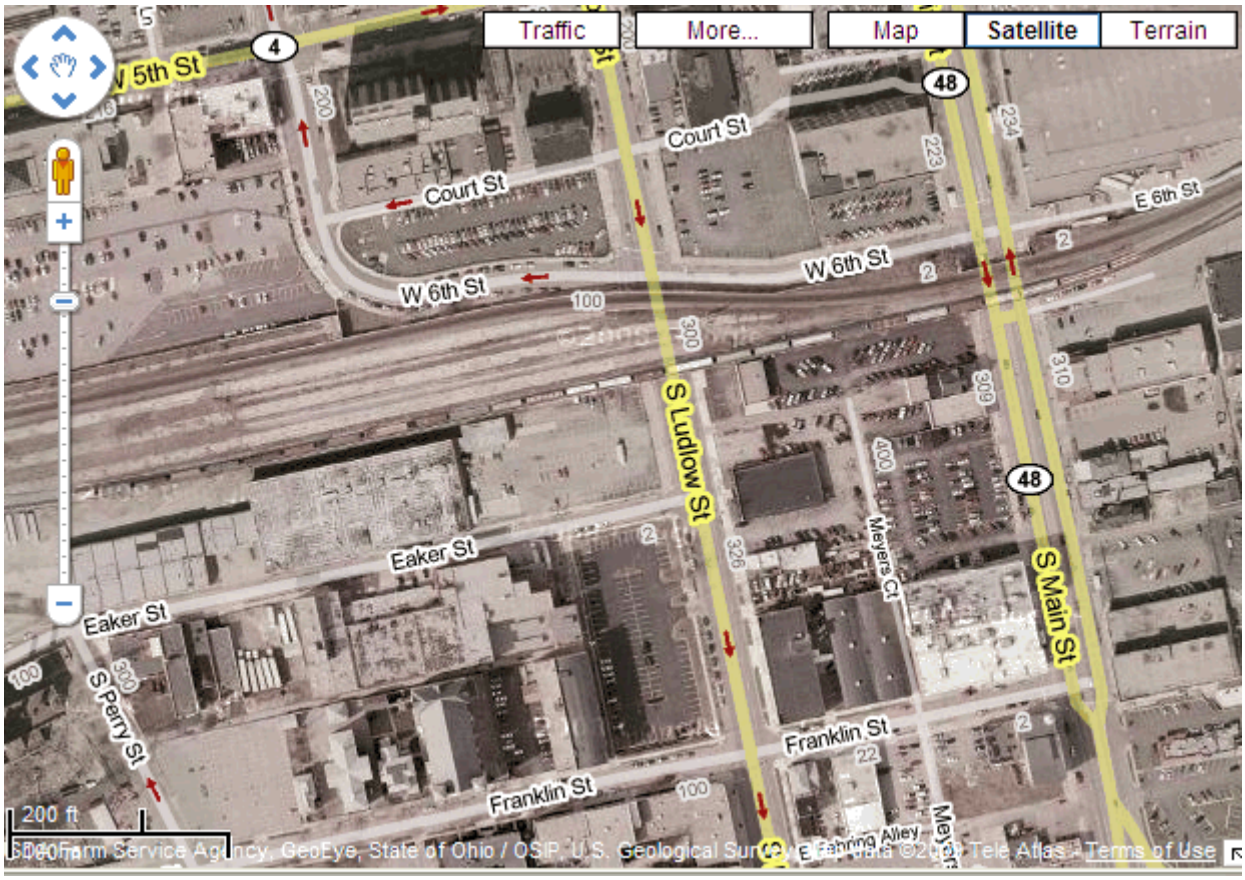
# Overall Concept

Buckeyes Development, LLC

# CENTER OF FLIGHT

riverside, ohio

# Appendix Five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More...
Map
Satellite
Terrain
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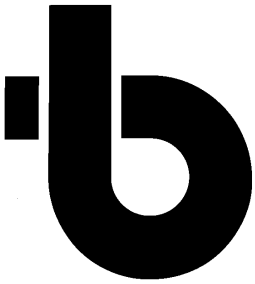
Court St
Court St
W 6th St
W 6th St
E 6th St
S Ludlow St
S Main St
Eaker St
Eaker St
S Perry St
Franklin St
Franklin St
Meyers Ct
Fanning Alley
200 ft
Farm Service Agency, GeoEye, State of Ohio / OSIP, U.S. Geological Survey
Tele Atlas
Terms of Use

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