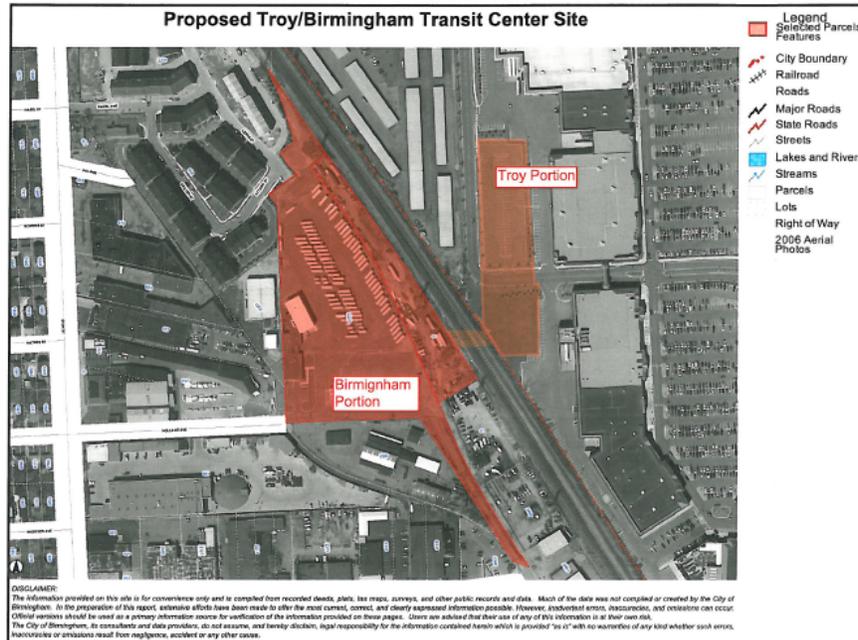


**SPECIAL JOINT MEETING OF THE
TROY PLANNING COMMISSION &
BIRMINGHAM PLANNING BOARD
WEDNESDAY, JULY 14, 2010
7:00PM**

CONFERENCE ROOM, DEPARTMENT OF PUBLIC SERVICES
BUILDING, 851 S. ETON, BIRMINGHAM, MICHIGAN

- A. Roll Call –Troy Planning Commission
Birmingham Planning Board
- B. Chairpersons' Comments & Introduction of Guests
- C. Review & Approval of the Minutes of the Joint Meeting of **January 27, 2010**
- D. Review & Approval of the Agenda
- E. Meeting Open to the Public for Items not on the Agenda
- F. Preliminary Site Plan Review
 - 1. **See map below with legal descriptions* for property within Birmingham, MI:** Construction of Amtrak platform, public plaza, parking, pedestrian tunnel and sidewalks to access the rail platform in Birmingham and to link to the Transit Center building in Troy.



Notice: Due to Building Security, public entrance during non-business hours is through the Police Department—Pierce St. Entrance only. Individuals with disabilities requiring assistance to enter the building should request aid via the intercom system at the parking lot entrance gate on Henrietta St.

People with disabilities needing accommodations for effective participation in this meeting should contact the City Clerk's Office at (248) 644-1800 ext. 282 (voice) or (248) 644-5115 (TDD) at least one day in advance to request mobility, visual, hearing or other assistance.

***Property within Birmingham:**

- (a) **All of Parcel ID Number:** 2031203024:
Legal Description: T2N, R11E, SEC 31 PART OF NE 1/4 BEG AT PT DIST S 31-18-02 E 1442.06 FT FROM N 1/4 COR, TH S 30-34-07 E 416.60 FT, TH S 28-10-17 E 385.25 FT, TH S 62-42-03 W 134.00 FT, TH N 18-59-17 W 272.01 FT, TH ALG CURVE TO LEFT, RAD 1907.31 FT, CHORD BEARS N 25-02-57 W 402.78 FT, DIST OF 403.53 FT, TH N 31-06-37 W 126.48 FT, TH N 59-25-23 E 57.75 FT TO BEG 1.49 A.
- (b) **Portion of Parcel ID Number:** 2031203034:
Legal Description: T2N, R11E, SEC 31 BIRMINGHAM GARDENS PART OF LOT 164 & PART OF LOT 224, ALSO PART OF NE 1/4 ALL DESC AS BEG AT PT DIST S 01-59-10 W 702.05 FT & S 88-11-20 E 36.09 FT & S 01-59-10 W 1278.14 FT & S 88-14-42 E 604.04 FT & N 01- 51-11 E 621.01 FT FROM N 1/4 COR, TH ALG CURVE TO LEFT, RAD 22661.83 FT, CHORD BEARS N 30-57-17 W 44.05 FT, DIST OF 44.05 FT, TH N 58-29-24 E 98.60 FT, TH N 31-30-36 W 80.48 FT, TH N 57-33-35 E 53.46 FT, TH N 11-58-26 W 114.50 FT, TH N 18-54.
2. **1251 Doyle Drive, Troy, MI:** Construction of multi-modal transit center, parking facility, pedestrian tunnel and sidewalks to access the rail platform in Birmingham and to link to the Transit Center building in Troy.

G. Meeting Open to the Public for items on the Agenda

H. Adjournment

**SPECIAL JOINT MEETING OF THE CITY OF BIRMINGHAM
PLANNING BOARD AND CITY OF TROY PLANNING COMMISSION
ACTION ITEMS OF WEDNESDAY, JANUARY 27, 2010**

Item	Page
No motions on action items were made at this meeting.	

DRAFT

**SPECIAL JOINT MEETING OF THE CITY OF BIRMINGHAM
PLANNING BOARD AND CITY OF TROY PLANNING COMMISSION
WEDNESDAY, JANUARY 27, 2010**

Conference Room, Department of Public Services Building
851 S. Eton, Birmingham, Michigan

Minutes of the special joint meeting of the Birmingham Planning Board and Troy Planning Commission held January 28, 2010. Birmingham Vice-Chairperson Gillian Lazar convened the meeting at 6:01 p.m.

Birmingham Planning Board

Present: Board Members Scott Clein, Carroll DeWeese, Gillian Lazar, Janelle Whipple-Boyce, Bryan Williams

Absent: Chairman Robin Boyle; Board Member Bert Koseck

Birmingham Administration: Matthew Baka, Planning Intern
Sheila Bashiri, City Planner
Jana Ecker, Planning Director
Carole Salutes, Recording Secretary

Troy Planning Commission

Present: Chairman Michael Hutson; Commission Members Donald Edmunds, Mark Maxwell, Robert Schultz, John Tagle

Absent: Commission Members Philip Sanzica, Thomas Strat, Lon Ullmann, Mark Vleck

Troy Administration: Christopher Forsyth, Asst. City Attorney
Brent Savidant, Acting Planning Director

01-13-10

CHAIRPERSON'S COMMENTS AND INTRODUCTION OF GUESTS

Chairperson Lazar announced that tonight will not be as advertised the Preliminary Site Plan Review, but rather a conceptual review to gather resident input.

01-14-10

**REVIEW AND APPROVAL OF THE MINUTES OF THE JOINT MEETING OF
AUGUST 26, 2009**

**Motion by Mr. Schultz
Seconded by Mr. Maxwell to approve the Minutes of August 26, 2009.**

Motion carried.

01-15-10

REVIEW AND APPROVAL OF THE AGENDA (no changes)

01-16-10

MEETING OPEN TO THE PUBLIC FOR ITEMS NOT ON THE AGENDA (no one spoke)

01-17-10

CONCEPTUAL SITE PLAN REVIEW

100 Doyle Drive

Construction of multi-modal transit center to serve Birmingham and Troy

Ms. Ecker offered background information. The two city staffs have been working with the consulting teams of Hubbell Roth and Clark (“HRC”) and Carlisle/Wortman. The teams have taken into consideration the comments that were made at the last special joint meeting and incorporated them into the most recent plans.

Ms. Ecker introduced HRC representatives Wally Alix, Partner; Larry Ancypa, Architect for Building Design, Canopy, and Platform; Mike MacDonald, Project Manager; and Jim Surhigh, Sr. Project Engineer. She also introduced representatives Sally Elmiger and Tony Sterick from Carlisle/Wortman. Mr. Surhigh, the first presenter, went through a PowerPoint presentation and a set of boards which showed key elements of the project on both the Troy and Birmingham sides.

Ms. Elmiger highlighted changes that have been made to the landscape plan on the Troy and Birmingham sides. Both retaining walls will be able to accommodate and light public art. The site furnishings will use Michigan products as much as possible. She went on to show examples of the plant materials that are proposed.

Mr. Ancypa began by talking about the four bus shelters which are very similar to those that are presently being used in Birmingham, except that the colors will be complimentary to the building. The canopy over the train platform will have the same curve as the roof of the building. That will unify all of the elements on both sides of the site into a transit facility. There is very good lighting throughout the site, which will make it easier for pedestrians to find their way, and for the Police Depts. to have a good view of the transit area.

The gross square footage of the building is 2,544 sq. ft. and the floor plan hasn't changed much since the last joint meeting. They are looking at the building as being Leadership in Energy and Environmental Design ("LEED") Silver Certified through the Green Building Institute. The major green initiative items proposed to be included are:

- Green roof;
- Rainwater harvesting for flushing restroom fixtures;
- Geothermal heating and cooling;
- LED lighting;
- Bike racks that promote alternative transportation;
- Storm water quality and quantity control;
- Optimized building energy to reduce it by 20 percent;
- Construction waste management;
- Use of re-cycled materials in construction;
- Use of low emitting adhesives, paint and flooring; and finally,
- Community connectivity.

At this time the meeting opened up for questions and discussion.

Ms. Ecker confirmed that initially there will be no charge for parking. Mr. Ancypa noted informational kiosks will be available in the bus shelters and inside the building to provide train and bus schedules. Alternative covered bike racks can be added later.

Mr. Surhigh went through the traffic flow for busses and taxis through the site. In response to further questions he noted the stained concrete surface will provide some resistance to graffiti. Mr. DeWeese thought it would be useful to include for the next meeting a photometric that extends out into the parking area in Troy.

Mr. Surhigh stated in regard to questions about the circulation that it is not yet known when the major truck deliveries occur that serve the shopping center. They think sufficient traffic calming is being implemented for traffic that will not stop at the Transit Center but is, in fact, headed into the mall area. Advance signing and lights will alert the drivers. Once the lanes are striped the cars will tend to move closer together and slow down. A speed hump is planned. If there is not a bike rack on the Birmingham side, it can be added.

A previous traffic study has concluded there will not be a major impact at Maple Rd. and Coolidge from the additional traffic.

Mr. Ancypa said at this time they will not look at any significant changes to the overall architecture on the building. The site is unified through the rooflines. Ms. Ecker agreed the design of the building is now pretty much set in stone.

Mr. Williams advised that some thought should be given to the pick-up area on the Troy side because traffic may get backed up when trains are due to arrive.

With respect to land acquisition for the Birmingham access road, Ms. Ecker informed that everything is set in place for the Birmingham Schools and they are working to get that document fully executed. As well, as this moves along they will continue to meet with Mr. Erb. Those are the only two property owners that are involved.

Discussion followed about changing materials on the clock tower from glass to an opaque element. Mr. Ancypa said they could take a look at metal panels as another option.

01-18-10

FUNDING UPDATE

Mr. Alan Canedy from Clark Hill described the funding efforts and indicated they are very pleased with the progress. Congressman Gary Peters was successful in obtaining a \$1.3 million appropriation that has been signed into law by the president. Further, they have just received word of a \$250,000 grant awarded by the State Dept. of Labor and Economic Growth as a result of the environmental lighting systems that are planned.

Several other options are pending. They will request an additional \$3-5 million for the 2011 budget year. Still outstanding is their application for US Secretary of Transportation's Discretionary Grants ("TIGER GRANTS"). They are also in the process of completing an application for the bus livability grant awards. As well, MDOT has requested almost \$8.5 million from the high speed rail award on the project's behalf.

So, there are several outstanding requests for the project. The fact that Michigan is viewed nationally as a distressed state is in their favor. One other political angle is that because Congressman Gary Peters is up for re-election this year, and he is a person that the democratic majority in the House would like to keep, that gives him a little leg up in terms of being able to bring home another appropriation for the coming year. Therefore they remain guardedly optimistic about being on the way to achieving full funding by June 2010.

Mr. Savidant spoke about the property on the Troy side. It is approximately three acres and the deed is currently held in escrow as a result of a consent judgment that the City of Troy entered into with Grand Sakwa regarding the development of Mid-Towne Square. The consent judgment requires that the project be funded by June 2010. If they are successful in obtaining funding from the TIGER grant, the project as designed will be essentially funded. If they are not successful with their grant application efforts, they may have to either phase the project appropriately or scale it back. Ms. Ecker added they have alternate plans based on the funding they receive so something can be built in any event.

01-19-10

MEETING OPEN TO THE PUBLIC FOR ITEMS ON THE AGENDA

Chairperson Lazar opened discussion to the public at 7:05 p.m.

Ms. Dorothy Conrad from Birmingham received confirmation there will still be a boulevard at Maple Rd. and Doyle Dr. Ms. Ecker acknowledged the pedestrian walkway going east and west is difficult to cross but is not part of the scope of this project. Hopefully the communities can work together to develop a better plan for that crossing.

Mr. Terry Adams who lives in Birmingham asked if his property would be needed for the Cole St. driveway area and was advised that it would not.

Ms. Barb Quincy from Troy asked what will happen to the bump at the intersection of Maple Rd. and Doyle Dr. Ms. Ecker answered that it is not within the scope of this project. Ms. Quincy said she is one of the closest residents. Presently a lot of employees from the shopping center who use the busses come through the condo property. Ms. Ecker explained that will change because the bus stop will be repositioned so it is closer for them to catch the bus and they will no longer cut across the condo property. Ms. Quincy was very pleased to hear that. Ms. Quincy cautioned bike lanes along Doyle Dr. will be dangerous because of the truck traffic coming through.

Mr. Ted Wilson, a resident of Bloomfield, asked if the designers have compared the cost of the ramp to an elevator. Ms. Ecker replied the two cities do not want to add an elevator. With elevators being added they would still need to keep the ramp system in place because the elevators may be out of service from time to time. They want a non-motorized connection between Troy and Birmingham.

01-20-10

ADJOURNMENT

No further business being evident, meeting adjourned at 7:15 p.m.

Respectfully submitted,

Jana Ecker
Planning Director, City of Birmingham

Brent Savidant
Acting Planning Director, City of Troy

Back-in/Head-out Angle Parking



Nelson\Nygaard Consulting Associates
785 Market Street, Suite 1300
San Francisco, CA 94103

January 2005

Back-in/Head-out Angle Parking

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Introduction

In recent years the use of back-in/head-out angle parking has increased steadily in cities across North America. There are several reasons for this development. Kulash and Lockwood (2003) state that:

“Back-in/head-out diagonal parking is superior to conventional head-in/back-out diagonal parking. Both types of diagonal parking have common dimensions, but the back-in/head-out is superior for safety reasons due to better visibility when leaving. This is particularly important on busy streets or where drivers find their views blocked by large vehicles, tinted windows, etc., in adjacent vehicles in the case of head-in/back-out angled parking. In other words, drivers do not back blindly into an active traffic lane. The back-in maneuver is simpler than a parallel parking maneuver. Furthermore, with back-in/head-out parking, the open doors of the vehicle block pedestrian access to the travel lane and guide pedestrians to the sidewalk, which is a safety benefit, particularly for children. Further, back-in/head-out parking puts most cargo loading (into trunks, tailgates) on the curb, rather than in the street.”

The growing presence on American streets of sport utility vehicles (SUVs), with their bulky rear ends and (frequently) tinted windows may have spurred the trend toward back-in/head-out angle parking: when using conventional angle parking, drivers increasingly find themselves beside an SUV, with more difficult sightlines.

This report briefly discusses the design and benefits of back-in/head-out angle parking and shows where the design has already been implemented.

Some examples

In Tucson, AZ, two blocks of reverse diagonal parking have been installed along the University Boulevard Bikeway (see Figure 1), which leads into the west entrance of the University of Arizona (~36,000 students). In the two years of reverse diagonal parking, there have been no accidents along the segment, despite the large number of cyclists using the bikeway.

Figures 2-4 illustrate some of the benefits of back-in/head-out angle parking. In Figure 2 the driver is able access her trunk from the curb rather than from the street. Figures 3 and 4 show that the driver can have eye contact with oncoming traffic, in this case a bicyclist.

Figure 5 shows typical signage used to introduce drivers to back-in/head-out angle parking. For more examples on back-in/head-out angle parking, see Appendices A and B.

Back-in/Head-out Angle Parking

Figure 1 Back-in/Head-out parking in Tucson, AZ.



Source: T. Boulanger, Transportation Services, City of Vancouver, WA.

Figure 2 With back-in angle parking you can load your car on the curb, rather than in the street (Vancouver, WA).



Source: T. Boulanger, Transportation Services, City of Vancouver, WA.

Back-in/Head-out Angle Parking

Figure 3 An 'eye-to-eye' line of sight between parker and approaching road-user (Vancouver, WA).



Source: T. Boulanger, Transportation Services, City of Vancouver, WA.

Figure 4 The parker's view of the on-coming traffic (Vancouver, WA).



Source: T. Boulanger, Transportation Services, City of Vancouver, WA.

Back-in/Head-out Angle Parking

Figure 5 A traffic sign showing the three steps of back-in angle parking, in Kelowna, BC, Canada.



Source: City of Kelowna, British Columbia, Canada.

Advantages

Back-in/head-out angle parking is similar to both parallel and standard angle parking. As with parallel parking, the driver enters the stall by stopping and backing, but need not maneuver the front of the vehicle against the curb. When leaving the stall, the driver can simply pull out of the stall, and has a better view of the oncoming traffic.

Bicyclists

This type of parking provides a safer environment for bicyclists using the roadways. The driver is able to see the cyclist easily when exiting the stall. Several cities where back-in angle parking has been implemented have seen a reduction in number of accidents compared to the number of accidents at regular parallel parking schemes. Matt Zoll at

Back-in/Head-out Angle Parking

Tucson-Pima County Bicycle Advisory Committee says that after implementing the back-in/head-out angle parking scheme in Tucson they “went from an average of 3-4 bike/car accidents per month to no reported accidents for 4 years following implementation.”

Visibility

In contrast to standard angle parking the visibility while exiting a back-in/head-out angle parking into traffic is much improved. When the driver is backing up (into the stall), the driver is in control of his lane: traffic behind either waits, or changes lanes.

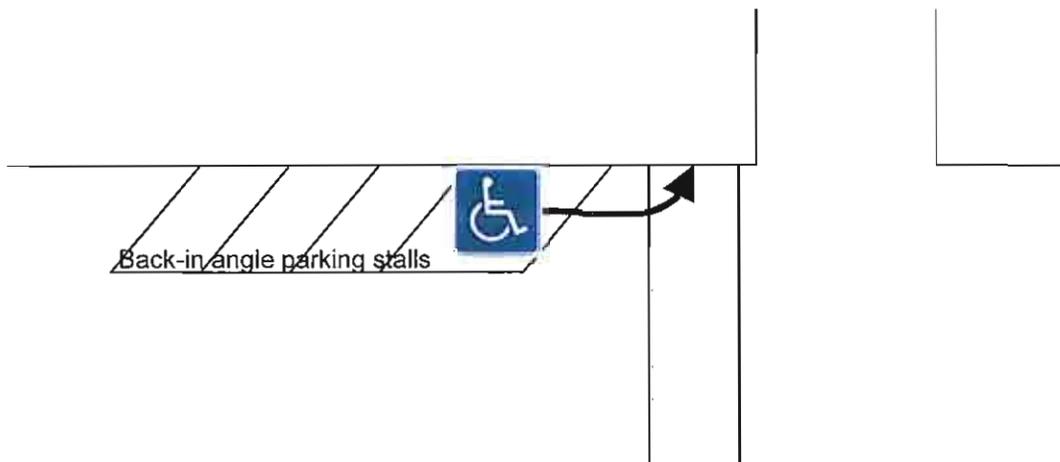
Steep terrain

Back-in angle parking can also be useful on steep terrain: if used on the correct side of the street, it causes drivers to automatically curb their wheels, which in turn prevents runaway autos. Used on the wrong side of a steep street, however, it is likely to cause more runaways.

Disabled parking

In Pottstown, PE, a 13-foot wide handicap accessible stall has been incorporated into the angle parking as the last space, intersection nearside, of each block. This places each disabled parking stall close to the existing curb ramps, and allows the wheelchair-using drivers to unload out of the way of traffic (see Figure 6). By contrast, the street’s previous parallel parking arrangement could not be safely used for disabled parking, and conventional angle parking raised safety concerns for the street’s proposed bicycle lanes.

Figure 6 A disabled parking stall located right next to the pedestrian crossing and the curb ramp.



Safety

As SLCTrans (2004) states, “one of the most common causes of accidents is people backing out of standard angled parking without being able to see on-coming traffic. Reverse angled parking removes this difficulty.” It also improves safety for cyclists, and for loading/and unloading the trunk of the car. Similarly, the *Urban Transportation Monitor's* recent article on back-in angle parking reported reduced accidents and benefits for bicyclists in several communities. In all, back-in/head-out angle parking is a good choice when compared to conventional head-in angle/back-out parking and parallel parking.

Cities using back-in/head-out angle parking

The list of cities in North America that use back-in/head-out angle parking is growing. Figure 7 lists some of these communities.

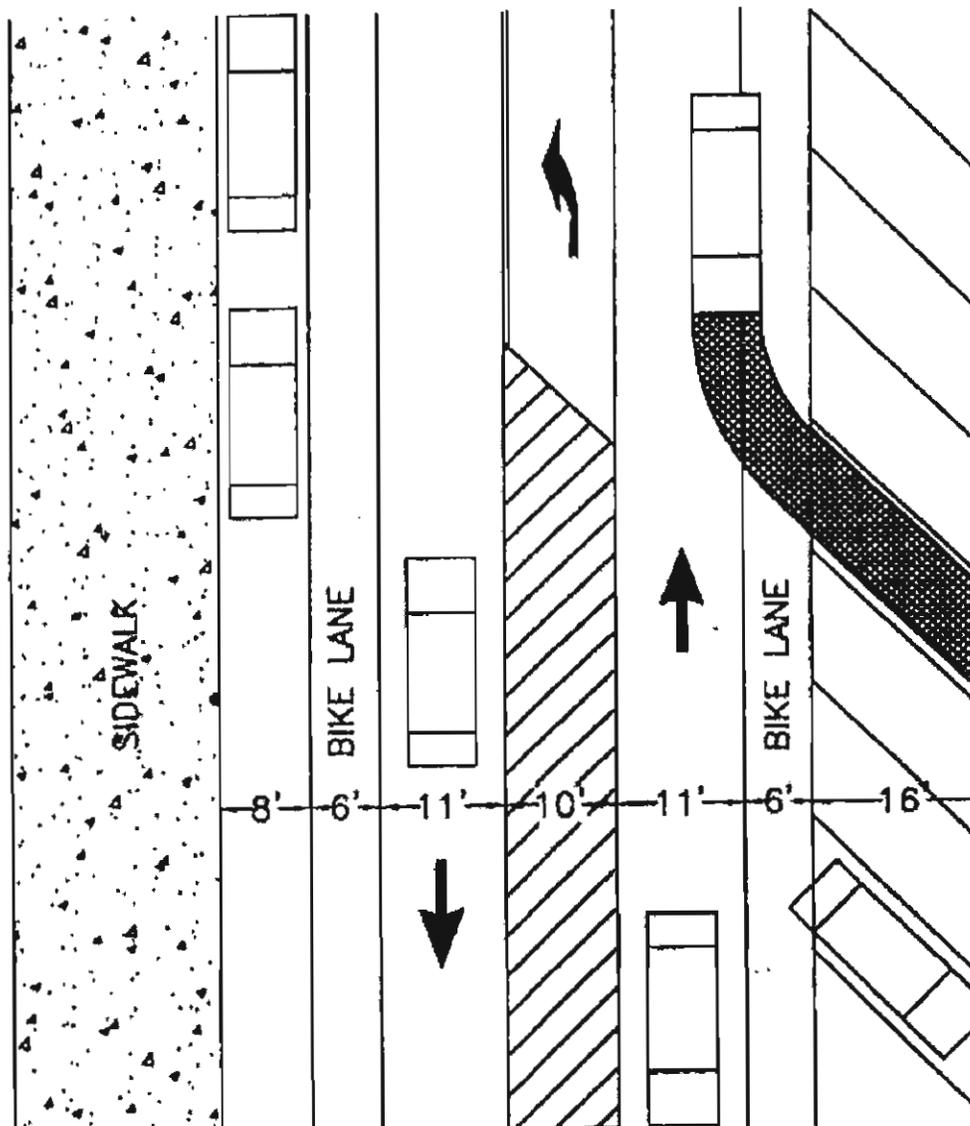
Figure 7 **Cities using back-in/head-out angle parking.**

City	Source	
Arlington, VI	Dan Burden	Walkable Communities, Inc.
Birmingham, AL	Russ Soyring	City of Traverse City, MI
Burnaby, Canada	Dan Burden	Walkable Communities, Inc.
Charlotte, NC	Dan Burden	Walkable Communities, Inc.
Chico, CA	Patrick Siegman	Nelson\Nygaard
Everett, WA	Michael M. Moule	Livable Streets, Inc
Honolulu, HI	Dan Burden	Walkable Communities, Inc.
Indianapolis, IN	Michael M. Moule	Livable Streets, Inc
Knoxville, TN	Michael M. Moule	Livable Streets, Inc
Marquette, MI	Russ Soyring	City of Traverse City, MI
Montreal, Canada	Michael M. Moule	Livable Streets, Inc
New York, NY	Dan Burden	Walkable Communities, Inc.
Olympia, WA	Dan Burden	Walkable Communities, Inc.
Plattsburgh, NY	Dan Burden	Walkable Communities, Inc.
Portland, OR	Michael M. Moule	Livable Streets, Inc
Pottstown, PA	Michael M. Moule	Livable Streets, Inc
Salem, OR	Todd Boulanger	City of Vancouver, WA
Salt Lake City, UT	Dan Burden	Walkable Communities, Inc.
San Francisco, CA	Michael M. Moule	Livable Streets, Inc
Seattle, WA	Dan Burden	Walkable Communities, Inc.
Tacoma, WA	Dan Burden	Walkable Communities, Inc.
Tucson, AZ	Michael M. Moule	Livable Streets, Inc
Vancouver, WA	Todd Boulanger	City of Vancouver, WA
Ventura, CA	Todd Boulanger	City of Vancouver, WA
Washington, DC	Dan Burden	Walkable Communities, Inc.
Wilmington, DE	Michael M. Moule	Livable Streets, Inc

Typical dimensions

Particularly when accommodating bike lanes within the roadway, back-in/head-out angle parking is useful. Figure 8 shows the cross-section of such a roadway in Pottstown, PA. Appendix C and D shows Vancouver's, WA, and Seattle's, WA, choices of dimensions for this type of parking.

Figure 8 Cross-section of a roadway accommodating both bike lanes and back-in/head-out angle parking.



Source: City of Pottstown (2001) Proposed High Street Traffic Calming Plan.

APPENDIX A

NAWN, J.A. (2003) CENTRAL BUSINESS DISTRICT BACK IN ANGLE PARKING. *PE REPORTER*, NOVEMBER/DECEMBER ISSUE, P. 11-13.

Central Business District Back In Angle Parking

John A. Nawn, P.E., PTOE



In August 2003, the Pottstown borough completed back in angle parking along the main street through its central business district (CBD). This is the first such application of back in angle parking in the Commonwealth of Pennsylvania.

In many community's central business districts, lack of parking close to retail and commercial establishments is seen as a deterrent to continued retail development and reinvestment into the CBD. In many instances, the CBD is also bisected by an urban arterial, or "Main Street." Competing needs of parking versus efficient vehicle movement can impede mobility and sometimes compromise safety.

Since the middle 1990's, the Borough of Pottstown, Montgomery County, Pennsylvania, has struggled to revitalize and reinvigorate its downtown core. The Borough's 1994 Downtown Comprehensive Plan identified several goals for revitalization, specifically dealing with creation of a pedestrian friendly, multi-modal environment while maximizing the amount of parking and its proximity to retail establishments that line the downtown core. Through leveraging of and improvement to the existing transportation infrastructure, the community attempted to realize these goals.

Located in the Philadelphia, Pennsylvania metropolitan area and situated on the Schuylkill River, the Borough of Pottstown traces its routes to 1752. As the Borough developed, the CBD developed

centered along High Street, making High Street the Borough's main street. At 5.5 square miles, Pottstown population is 21,859 (2000 census). Following the increase in automobile traffic after World War II, the High Street cross section was reconfigured to maximize automobile mobility. With 68 feet available between the curb lines, two 11-foot through lanes and a 7-foot parallel

parking lane were created in each direction along with a 10-foot wide center turn lane/painted median. Combined with a 16-foot sidewalk on each side, the face of the buildings on each side of the street are 100 feet apart, creating a very wide corridor through the CBD. The width of the corridor is visually perceived by some to be a deterrent to downtown redevelopment.

In 1972, a four lane, grade separated, limited access freeway, U.S. Route 422, was constructed along the opposite side of the river from the Borough, essentially bypassing the CBD and drawing large amounts of the existing through traffic volume from High Street. High Street quickly became an underutilized transportation asset.

As a highway facility, High Street was an operational success. The 85th percentile

speeds were within 5 miles per hour of the posted speeds and an attractive level of service was maintained for vehicles. However, High Street was failing to meet

As a highway facility, High Street was an operational success... however, High Street was failing to meet more recent and progressive economic development and transportation goals.

more recent and progressive economic development and transportation goals endorsed at local, state, and national levels.

Increasing pedestrian traffic is one of the key objectives in the

Borough's efforts to revitalize the CBD. However, High Street's configuration impeded these efforts. With four lanes of rapidly moving traffic, it was neither pedestrian nor shopper friendly. High Street's 68-foot cross-section was intimidating and discouraged pedestrians and shoppers from crossing the street. Pedestrian injuries and deaths were not uncommon. In addition, vehicle traffic along High Street moved too quickly to allow passengers adequate time to identify shopping opportunities and find a parking space.

Downtown business owners identified a perceived lack of parking as a concern. Although metered, parallel parking was available on both sides of High Street throughout the CBD, it was generally 50%

"Back-in" continued on p. 12

"Back-in" continued from p. 11

utilized and, therefore, considered to be insufficient in addressing the potential needs of the downtown businesses, considering the number of vacancies. While a number of small surface lots had been created along High Street, the linear nature of the CBD makes this parking convenient to only adjacent businesses with long walks necessary for all other businesses.

One of the region's transportation goals is to encourage the use of bicycles as an alternative to the automobile. High Street had been designated by Montgomery County

as an official Bicycle Route connecting Pottstown with other communities along the Schuylkill River corridor. But, in its former configuration, High Street was not conducive to bicycle travel with no dedicated bike lanes and swiftly moving vehicular traffic.

State and regional plans recognize the connection between revitalizing older communities and solving the problems of traffic congestion on our roads and highways. Encouraging people to live, work and shop in denser, walkable communities fosters the use of existing public transportation, helps reduce sprawl and relieves the pressure on our road system. Creating vibrant downtowns in our cities and smaller urban communities ensures a growing demand for public transportation. Therefore, the general thinking was that reconfiguring and calming traffic on High Street would address Pottstown's own economic development goals and have a positive impact on regional transportation and growth issues.

Clearly if the Borough was to increase pedestrian traffic and attract new business to the CBD, while not reducing available parking, the existing automobile and truck traffic would have to be calmed. The CBD study area generally encompassed a 1.1-mile corridor centered along High Street. Within this corridor, there are 10 signalized intersections. Of those, only two were

equipped with pedestrian push buttons; side streets were not actuated; and all signals were uncoordinated, operating on fixed time cycles with side street phases sufficient to also support lengthy pedestrian times required to cross High Street. Improvements would include coordination of the signals and the addition of pedestrian push buttons to improve mobility and support the thorough



lane reduction necessary to support additional angle parking.

One method used to provide more parking is creation of traditional, pull-in angle parking. However, in order to properly implement

traditional angle parking, a substantial amount of right-of-way is necessary to provide the proper maneuver space for vehicles to back out of the spaces without impeding traffic flow on the adjacent roadway. With traditional angle parking in place on both sides of a main street, the width of the street and subsequently pedestrian crossing distances become excessive, creating a non-unified downtown unattractive to pedestrians; pedestrians who are critical to the success of the retail and commercial establishments in the CBD. At signalized intersections, pedestrian crossing times can be excessive, leading to decreased vehicle mobility and progression. More

typically, the width of available right-of-way is insufficient to support angle parking. While the angle of the parking can be reduced to narrow the required width of street, as the parking angle becomes more acute, the angle-parking yield becomes not much more than that with parallel parking. Ideally, angle parking without the wide maneuver space would address the problem.

It was clear that if the Borough wished to leverage additional parking and a

friendlier pedestrian environment as a means to revitalize the downtown area, that conventional methods and thinking would not likely meet those goals. The concept of employing reverse angle or back in angle parking was initiated by the Borough's Planning Commission and upon request from the Commission, the Borough commissioned a new study to evaluate the appropriateness of back in angle parking on High Street.

The initial plan was to establish minimum required lane widths for the conventional elements of the roadway cross-section. In accordance with PennDOT's criteria for an urban arterial, the minimum acceptable width for through lanes is 11 feet. The center median/turn lane would remain, as it was critical to maintaining the necessary levels of service. PennDOT's minimum criterion for auxiliary lanes is 10 feet, therefore leaving 36 feet of the 68-foot width available to support the parking and bicycle lanes.

PennDOT has detailed regulations governing implementation of angle parking on state highways and specifies a minimum width for parking and maneuver space. With 36 feet available, it would be possible to implement angle parking on one side of the street only, with 6 feet available for a single bike lane. Downtown stakeholders were not



inclined to limit parking to one side of the street. Furthermore, with parking provided on only one side of the street, the question was raised as to how drivers proceeding in the opposite direction would be able to utilize the spaces. There was little interest in reducing the angle of the spaces as the additional yield, as noted previously, was not sufficient to justify the installation of the angled spaces.

Having determined that angle parking would likely only be possible on one side of the street, the decision was made retain parallel parking on the opposite side. It was also determined at this point to set a minimum width for the bicycle lane, in accordance with AASHTO criteria, which

recommend a width for two directional travel of 12 feet. This width was also consistent with PennDOT's criteria. With all the other minimum widths established and agreed upon, this left 18 feet for angle parking.

In order to maximize the amount of parking, it was decided to utilize an 8 foot, 6 inch (2.59 meter) wide space, which is consistent with National Parking Association (NPA) criteria for a 45-degree angle space. The available 18-foot width, however did not meet PennDOT's minimum criteria. The design team, lead by John A. Nawn, P.E., PTOE, in meetings with the Department, pointed out that PennDOT standards did not specify whether the angle parking criteria applied to traditional pull in or back in angle parking, and since there were no examples of back in angle parking in Pennsylvania, it was clear that the PennDOT criteria only applied to pull in angle parking. It was agreed that a maneuver area was necessary for traditional pull in angle spaces so vehicles can re-enter the roadway safely. When backing up from a pull in angle space, an operator temporarily has no view of approaching traffic dependent upon the length of his or her vehicle and the length and composition of the vehicle to the right. The maneuver area is necessary to provide the operator a safe place to back into during this essentially blind reverse maneuver. However, with back in angle parking, it was argued that no such maneuver area was necessary since vehicles exit forward.

The human biomechanical motion necessary to enter a back in angle parking space is similar too, if not easier than entering a parallel parking space. The prescribed method for entering a parallel parking space entails three distinct steps. First, the operator pulls past the parking space. Second, the operator proceeds in reverse into the space, on a diagonal, as far as possible. Third, the operator pulls forward while turning toward the right to bring the vehicle parallel to the curb. The second step, wherein the operator pulls backwards into the parallel space, typically places the vehicle at an approximate 45-degree angle with the travel lane. For a 45 degree back in angle space therefore, the operator only needs to complete the first two

steps of the typical parallel parking maneuver wherein the operator pulls past the space, than proceeds in reverse into the space, completing the move. When leaving the space to re-enter the highway, the back in angle space has a clear advantage over the parallel parking space. When exiting a parallel parking space, an operator must turn his or her field of vision up to 180 degrees and look backward to be able to view approaching vehicles and identify gaps in which to re-enter the traffic stream. In pulling out from a 45 degree angle space, the maximum that the operator must turn his field of vision is 135 degrees to be able to see approaching vehicles from his left. This movement requires only that the operator turn sideways, not backwards presenting a slightly more 'comfortable' position for the operator.

Based on the above discussion, it was successfully presented to the Department that given the fact that it is theoretically easier to enter and exit a back in angle parking space than a parallel parking space, and no maneuver area is typically required for parallel parking lanes in an urban zone, accordingly, no additional maneuver area would be necessary nor should be required for back in angle parking.

The proposed layout was approved by the Borough Council and endorsed by three local, downtown organizations, and the County. The plan was also conditionally approved by PennDOT. Design of the project was funded partially by a grant from the Delaware Valley Regional Planning Commission (DVRPC), through their competitive Transportation and Community Development Initiative (TCDI) program. Implementation of the re-designed striping was carefully orchestrated to follow a planned maintenance resurfacing of High Street.

The decision as to which side of the street to locate the back in angle parking on was cause for much discussion among the stakeholders. Ultimately, the decision was based entirely on which side would yield the biggest increase in parking, and that was found to be the north side of High Street. The additional parking yield over the existing

parallel parking, per block, varied greatly depending on the location of driveways, no parking zones and the like, with some blocks gaining as many as 23 spaces and some blocks as few as 2 spaces. Overall, the downtown area gained a total of 95 new spaces, a 21% increase over existing conditions.

In addition to parking changes, existing electromechanical signal controllers were replaced with new, solid state controllers and coordinated with each other to accommodate the through lane reduction necessary to accommodate the new parking and bike lane.

This context sensitive solution demonstrates that back in angle parking can be effectively integrated into the downtown environment and co-exist along an arterial highway employing current, minimum design standards. In addition to creating more parking over traditional parallel parking, back in angle parking can also be used as a traffic calming/street narrowing tool, can enhance pedestrian functionality and walk-ability within the downtown area and can work harmoniously with bicycle lanes, all resulting in a more attractive and intimate downtown corridor enhancing the downtown experience and leading to increased economic investment. ■

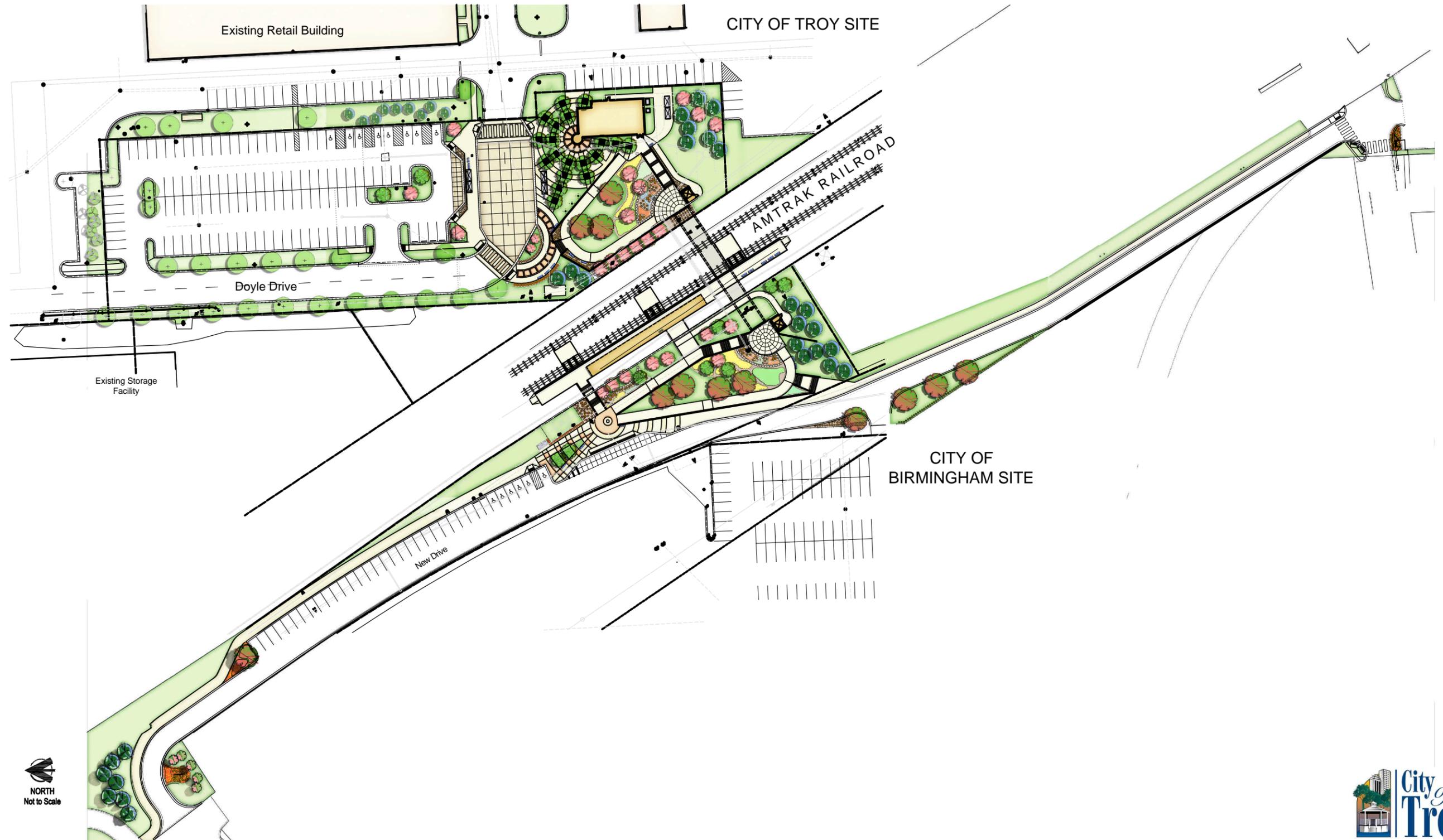
John A. Nawn, P.E., PTOE was the Project Manager for the Back In Angle Parking design and installation and had been associated with the project and the Borough's efforts since 1995. Mr. Nawn holds a Bachelor of Science Degree from Drexel University, and is currently employed by URS Corporation the Branch Manager of their Philadelphia Office. John, a licensed professional engineer in four states and a certified professional traffic operations engineer, has over 16 years experience in traffic engineering and has been a member of PSPE since 1990. John is currently the President of the Delaware County Chapter of the Pennsylvania Society of Professional Engineers.

The project was presented at and appears in the proceedings of both the Second Urban Street Symposium (a Transportation Research Board conference) and the 2003 Institute of Transportation Engineers Annual Conference.

For more information please contact Mr. Nawn at, 215-587-9000 x3000 or john_nawn@urscorp.com.

INTERMODAL TRANSIT FACILITY

CITIES OF TROY & BIRMINGHAM, MICHIGAN



NORTH
Not to Scale



CARLISLE/WORTMAN ASSOCIATES, INC.
Community Planners / Landscape Architects



July 9, 2010

INTERMODAL TRANSIT FACILITY

CITIES OF TROY & BIRMINGHAM, MICHIGAN



NORTH
Not to Scale



CARLISE/WORTMAN ASSOCIATES, INC.
Community Planners / Landscape Architects



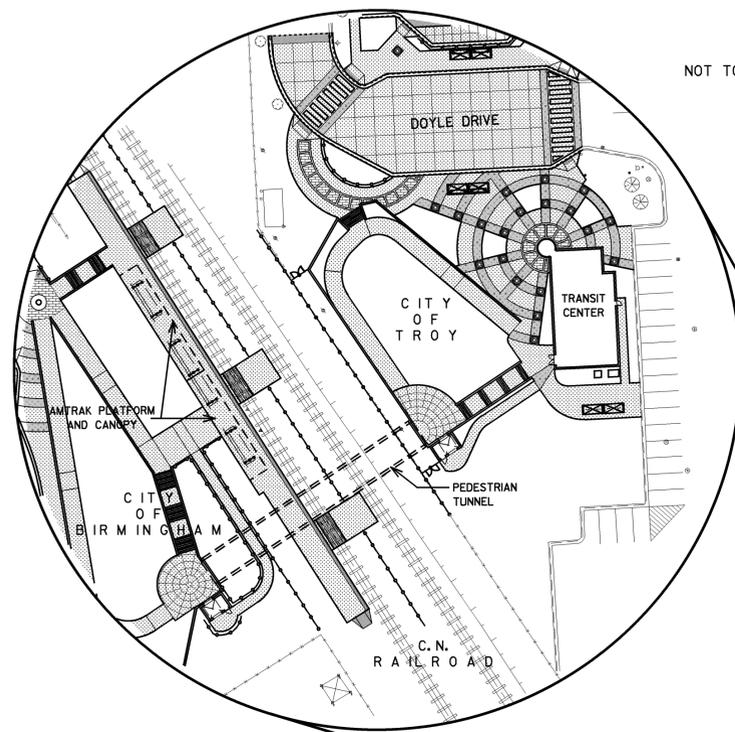
July 9, 2010

CITY OF TROY CITY OF BIRMINGHAM OAKLAND COUNTY, MICHIGAN

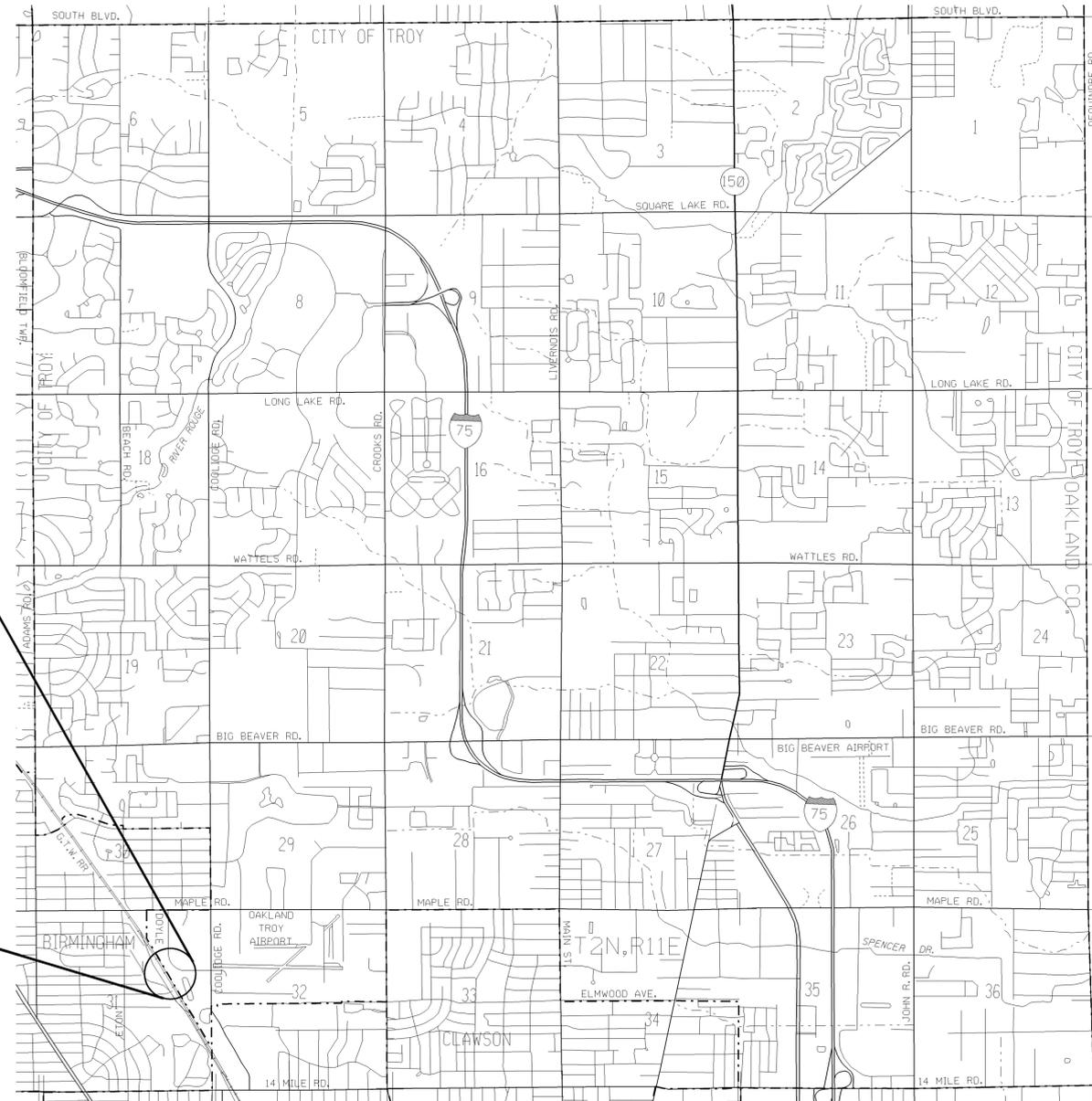
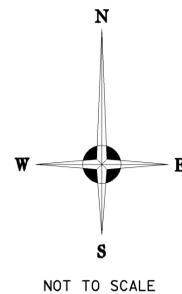
INTERMODAL TRANSIT FACILITY

LIST OF DRAWINGS:

- COVER SHEET
- C-01 SITE PLAN
- C-02 UTILITY PLAN
- C-03 GRADING PLAN
- C-04 TUNNEL PROFILE & SECTIONS
- C-05 TROY WALL ELEVATIONS
- C-06 BIRMINGHAM WALL ELEVATIONS
- C-07 OVERALL PLAN
- C-08 BIRMINGHAM ACCESS DRIVE 1 of 4
- C-09 BIRMINGHAM ACCESS DRIVE 2 of 4
- C-10 BIRMINGHAM ACCESS DRIVE 3 of 4
- C-11 BIRMINGHAM ACCESS DRIVE 4 of 4
- C-12 EXISTING SITE CONDITIONS
- A-2 FLOOR PLAN & NORTH ELEV. OPTION 4
- A-3 FLOOR PLAN SECTIONS
- A-4 CANOPY SITE LAYOUT, ELEV. & SECTION
- A-5 CANOPY SITE LAYOUT & SECTION
- A-6 BUILDING ELEVATIONS
- L-01 OVERALL LANDSCAPE LAYOUT
- L-02 CITY OF TROY LANDSCAPE LAYOUT
- L-03 CITY OF BIRMINGHAM LANDSCAPE LAYOUT
- L-04 CITY OF BIRMINGHAM FEATURE AREAS LANDSCAPE LAYOUT/NOTES & DETAILS
- E-01 ELECTRICAL SITE PLAN
- E-02 ELECTRICAL PHOTOMETRIC PLAN



PROJECT LOCATION
N.T.S.



HUBBELL, ROTH & CLARK, INC.
Consulting Engineers

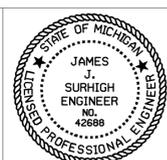
555 HULET DRIVE P.O. BOX 824
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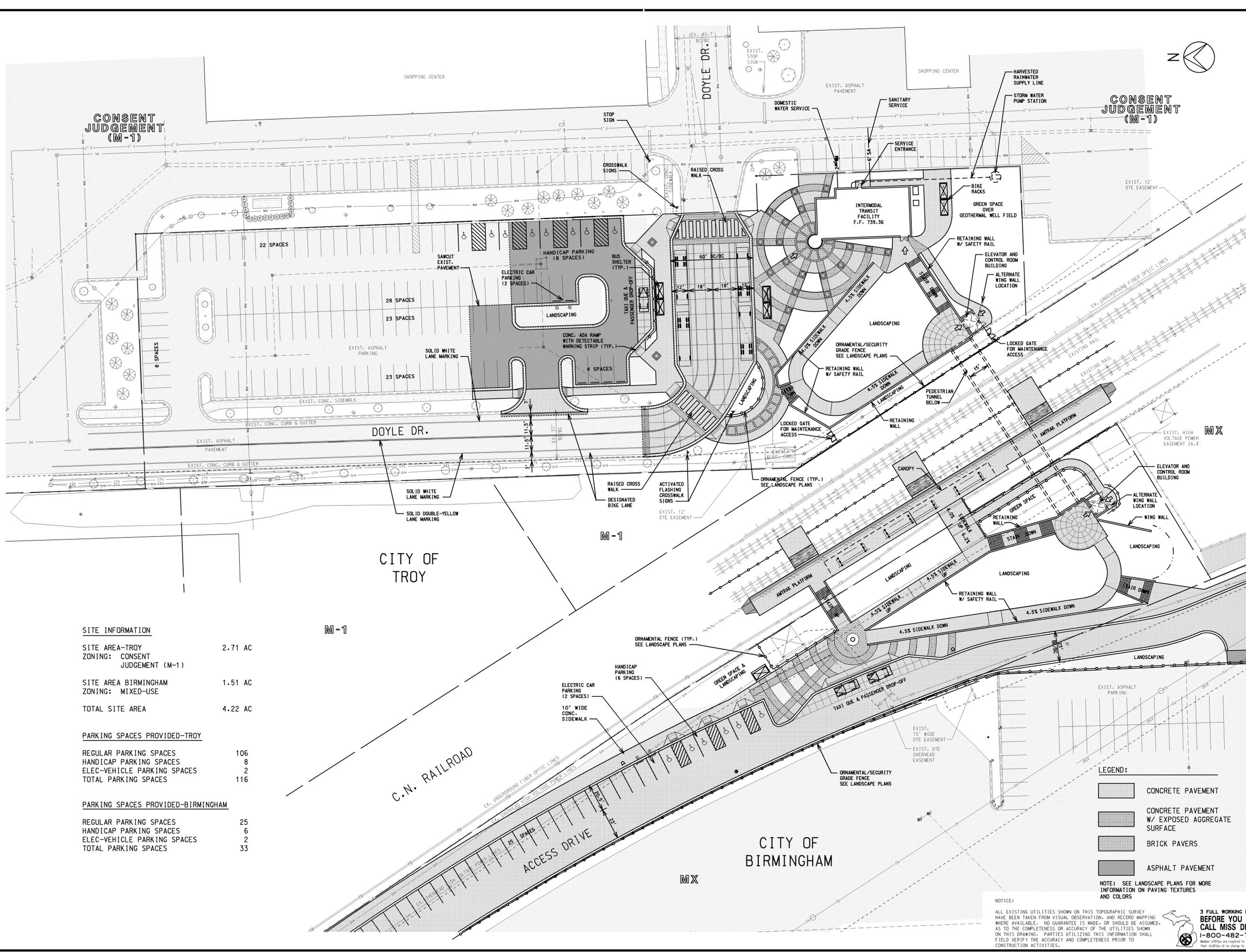
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fax 734-662-1935
6401 Citation Drive, Suite E
Clarkston, MI 48346
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fax 248-625-8655



LAWRENCE R. ANCYPA, R.A. JAMES J. SURHIGH, P.E. MICHAEL C. MACDONALD, P.E.

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CONSENT JUDGEMENT (M-1)

CONSENT JUDGEMENT (M-1)

CITY OF TROY

CITY OF BIRMINGHAM

SITE INFORMATION

SITE AREA-TROY	2.71 AC
ZONING: CONSENT JUDGEMENT (M-1)	
SITE AREA BIRMINGHAM	1.51 AC
ZONING: MIXED-USE	
TOTAL SITE AREA	4.22 AC
PARKING SPACES PROVIDED-TROY	
REGULAR PARKING SPACES	106
HANDICAP PARKING SPACES	8
ELEC-VEHICLE PARKING SPACES	2
TOTAL PARKING SPACES	116
PARKING SPACES PROVIDED-BIRMINGHAM	
REGULAR PARKING SPACES	25
HANDICAP PARKING SPACES	6
ELEC-VEHICLE PARKING SPACES	2
TOTAL PARKING SPACES	33

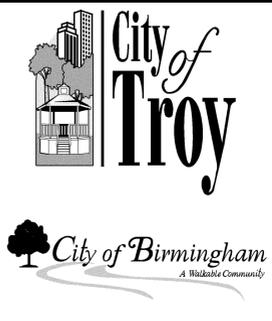
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	CONCRETE PAVEMENT
	CONCRETE PAVEMENT W/ EXPOSED AGGREGATE SURFACE
	BRICK PAVERS
	ASPHALT PAVEMENT

NOTE: SEE LANDSCAPE PLANS FOR MORE INFORMATION ON PAVING TEXTURES AND COLORS

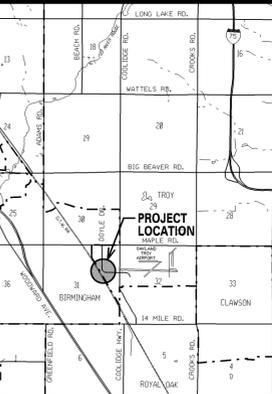
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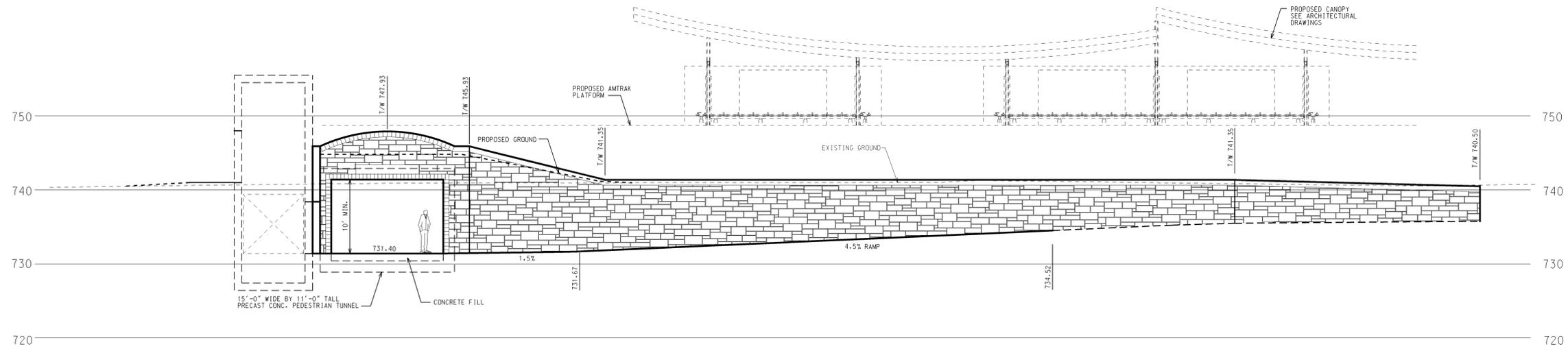
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7-8-10	PRELIMINARY SITE PLAN SUBMITTAL
6-30-10	PRELIMINARY SITE PLAN SUBMITTAL
1-11-10	PRELIMINARY SITE PLAN SUBMITTAL
10-14-09	UPDATED SITE PLAN
9-11-09	REVISED SITE PLAN
8-21-09	JOINT PLANNING COMM. STUDY SESSION
DATE	DESIGNED J.J.S.
	DRAWN J.A.R.
	CHECKED J.J.S.
	APPROVED W.H.A.

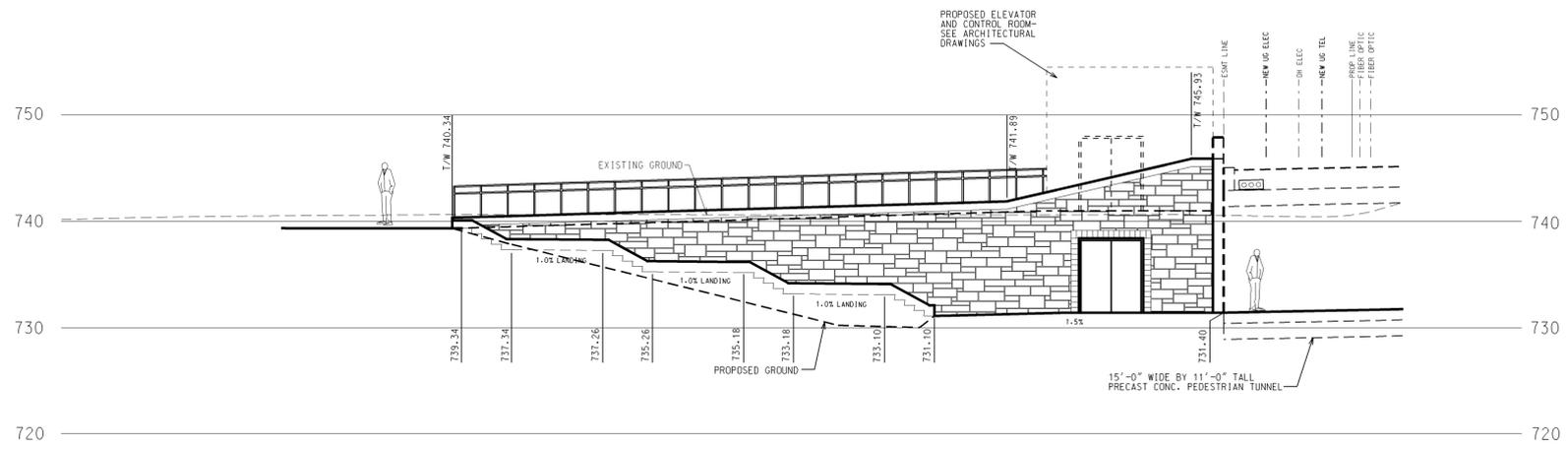


CITIES OF TROY & BIRMINGHAM	
INTERMODAL TRANSIT FACILITY	
OKLAND COUNTY	MICHIGAN
SITE PLAN	
HRC JOB NO. 20090078	SCALE 1" = 30'
DATE AUGUST 2009	SHEET NO. C-01

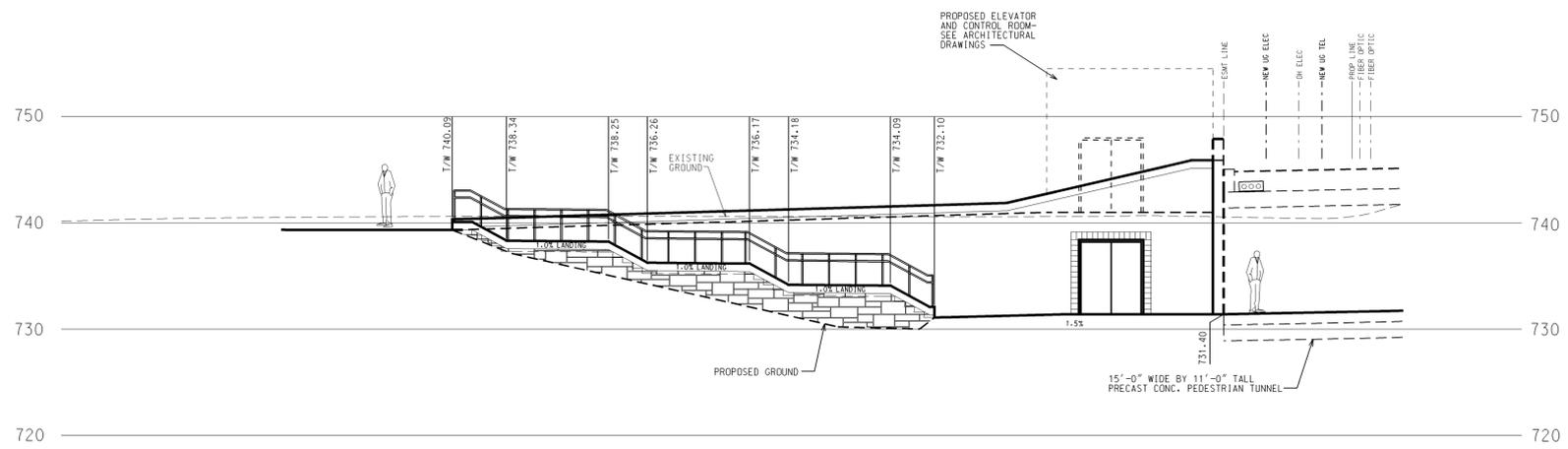
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WALL ELEVATION LOOKING WEST ON TROY SIDE
PATTERN No.1220 - TOLLWAY ASHLAR



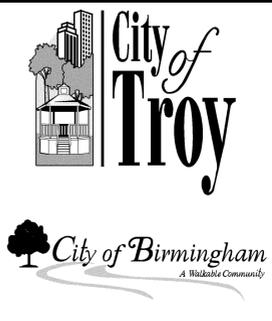
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PATTERN No.1220 - TOLLWAY ASHLAR



WALL ELEVATION LOOKING SOUTH ON TROY SIDE
PATTERN No.1220 - TOLLWAY ASHLAR

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6-30-10	PRELIMINARY SITE PLAN SUBMITTAL
8-21-09	JOINT PLANNING COMM. STUDY SESSION

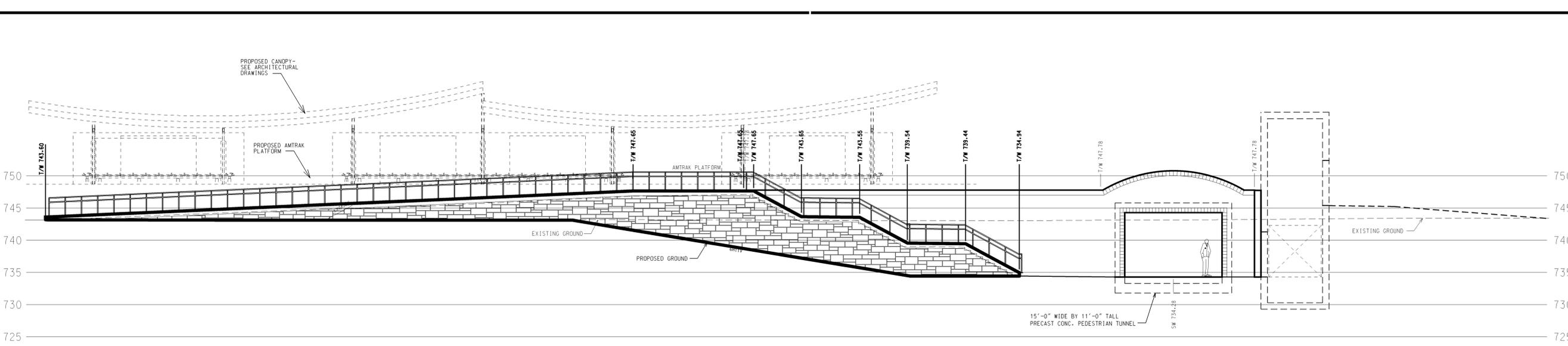
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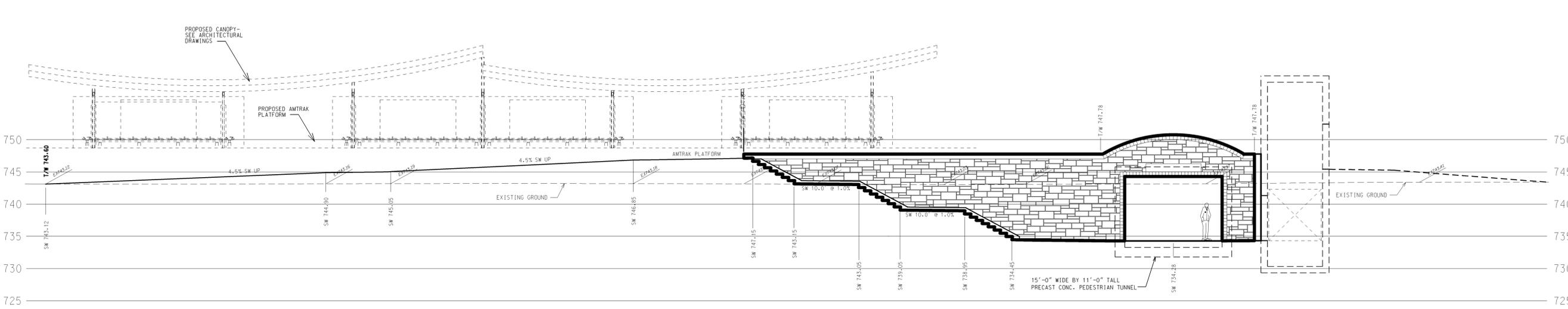
CITIES OF
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**INTERMODAL
 TRANSIT FACILITY**
 OAKLAND COUNTY MICHIGAN
 TROY WALL
 ELEVATIONS

HRC JOB NO. 20090078	SCALE 1" = 8'
DATE AUGUST 2009	SHEET NO. C-05

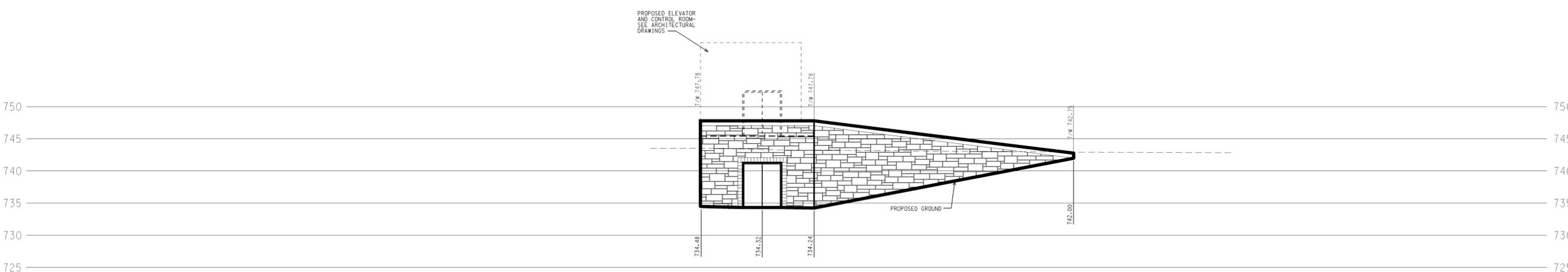
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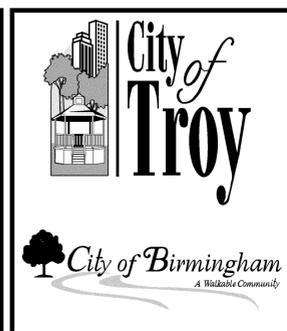
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 ALONG RETAINING WALL
 PATTERN No. 1220 - TOLLWAY ASHLAR



SECTION LOOKING EAST ON BIRMINGHAM SIDE
 THROUGH STAIRS & SIDEWALK
 PATTERN No. 1220 - TOLLWAY ASHLAR



SECTION LOOKING SOUTH ON BIRMINGHAM SIDE
 AT ELEVATOR WALL
 PATTERN No. 1220 - TOLLWAY ASHLAR



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8-21-09	JOINT PLANNING COMM. STUDY SESSION
DATE	ADDITIONS AND/OR REVISIONS
DESIGNED	J.J.S.
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APPROVED	W.H.A.
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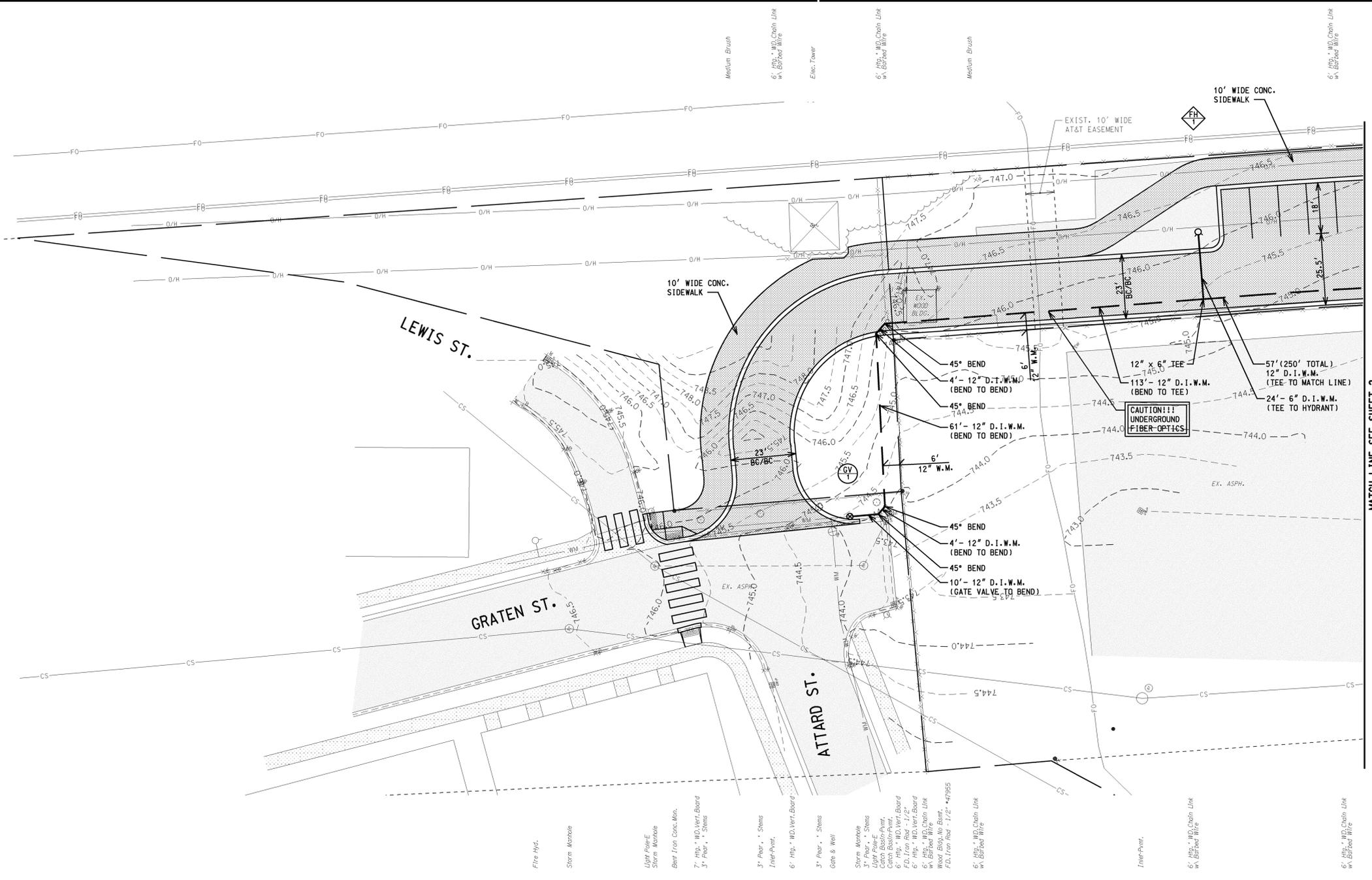


CITIES OF
 TROY & BIRMINGHAM
 INTERMODAL
 TRANSIT FACILITY
 BIRMINGHAM
 WALL ELEVATIONS

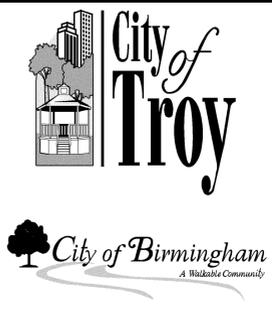
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AUGUST 2009	C-06

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MATCH LINE SEE SHEET 2



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6-30-10	PRELIMINARY SITE PLAN SUBMITTAL
1-11-10	PRELIMINARY SITE PLAN SUBMITTAL
8-21-09	JOINT PLANNING COMM. STUDY SESSION
DESIGNED	J.J.S.
DRAWN	J.A.R.
CHECKED	J.J.S.
APPROVED	W.H.A.



ALL WATER MAIN SHALL BE CLASS 54, DUCTILE IRON WATER MAIN, CEMENT LINED (DOUBLE THICKNESS) WITH POLYWRAP, STANDARD BEDDING TRENCH 'A' (COMPACTED SAND) BACKFILL.

NO.	DESCRIPTION	UNIT	QTY.
1	12" D.I. CL54 WATER MAIN W/ POLYWRAP, TRENCH 'A'	LF	249
2	6" D.I. CL54 WATER MAIN W/ POLYWRAP, TRENCH 'A'	LF	24
3	12" GATE VALVE & BOX	EA	1
4	FIRE HYDRANT ASSEMBLY, COMPLETE	EA	1

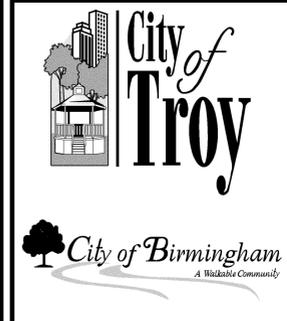
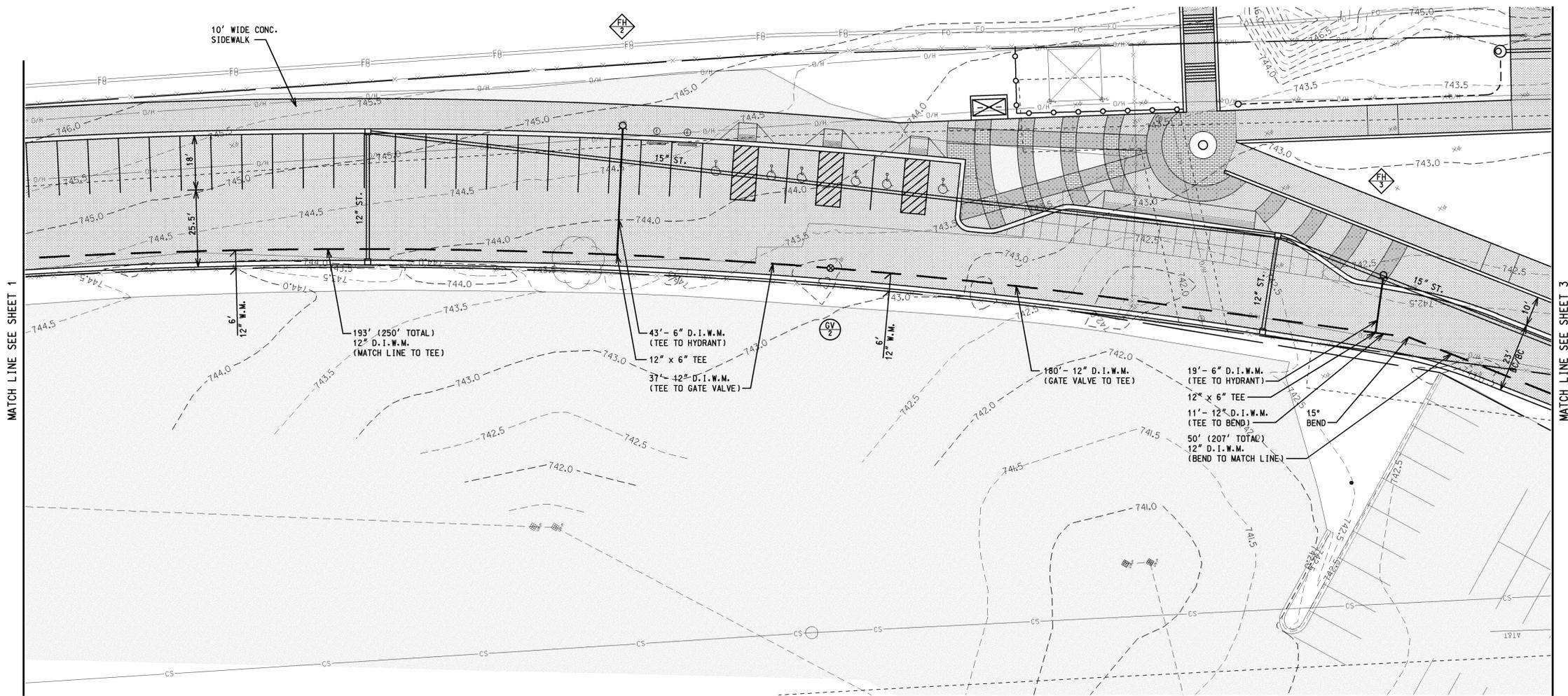
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INTERMODAL TRANSIT FACILITY
 OAKLAND COUNTY MICHIGAN
BIRMINGHAM ACCESS DRIVE
 1 of 4

HRC JOB NO. 20090078	SCALE 1" = 20'
DATE AUGUST 2009	SHEET NO. C-08

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1-11-10	PRELIMINARY SITE PLAN SUBMITTAL
8-21-09	JOINT PLANNING COMM. STUDY SESSION
DATE	ADDITIONS AND/OR REVISIONS
DESIGNED	J.J.S.
DRAWN	J.A.R.
CHECKED	J.J.S.
APPROVED	W.H.A.
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NO.	DESCRIPTION	UNIT	QTY.
1	12" D.I. CL54 WATER MAIN W/ POLYWRAP, TRENCH 'A'	LF	471
2	6" D.I. CL54 WATER MAIN W/ POLYWRAP, TRENCH 'A'	LF	62
3	12" GATE VALVE & BOX	EA	1
4	FIRE HYDRANT ASSEMBLY, COMPLETE	EA	2

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INTERMODAL TRANSIT FACILITY

OAKLAND COUNTY MICHIGAN

BIRMINGHAM ACCESS DRIVE
 2 of 4

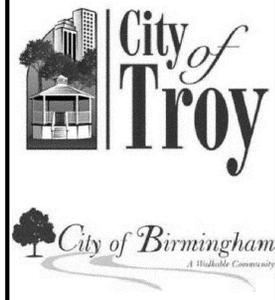
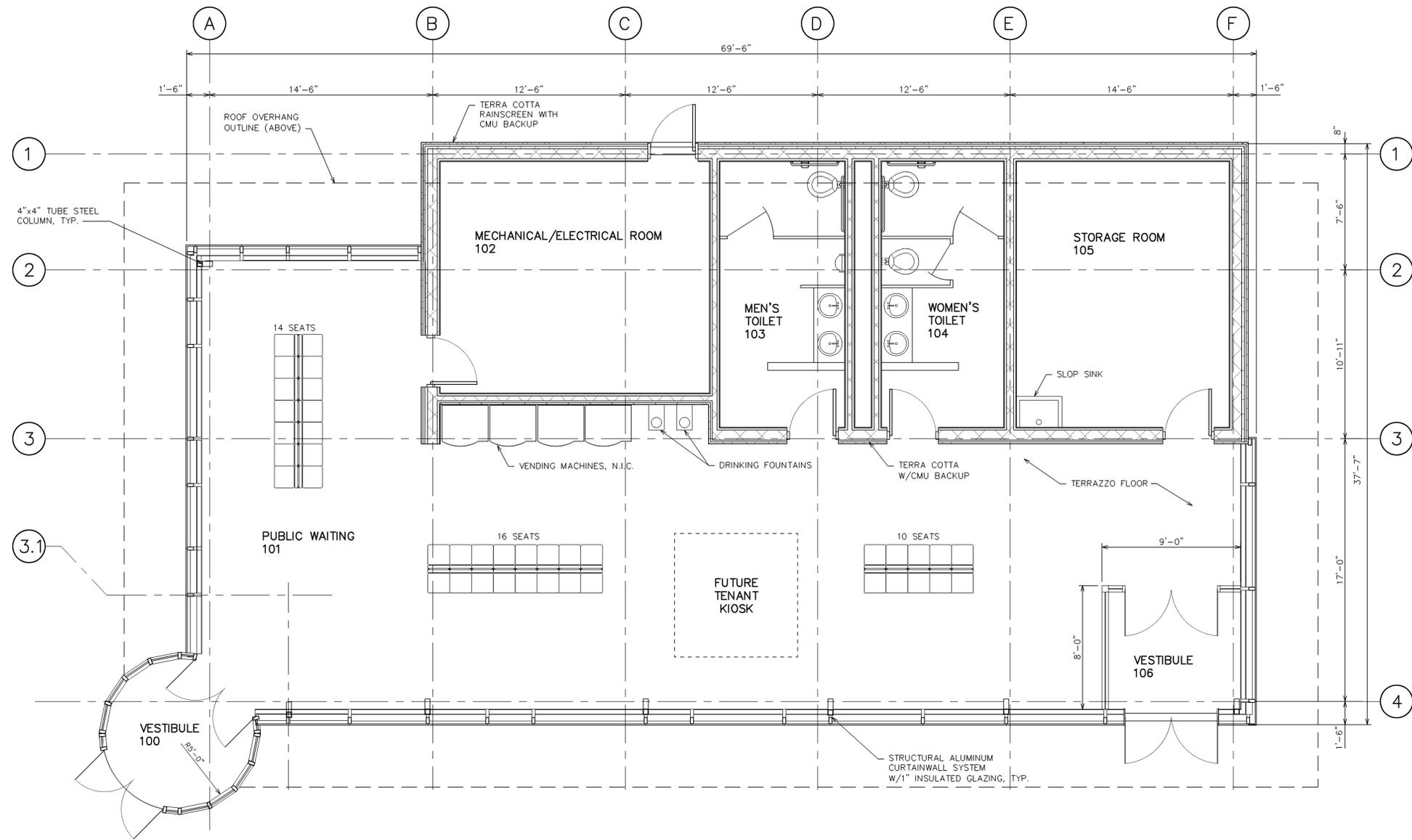
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Alic. Roland



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7-9-10	PRELIMINARY SITE PLAN SUBMITTAL
DATE	ADDITIONS AND/OR REVISIONS
DESIGNED	LRA
DRAWN	MTM
CHECKED	LRA
APPROVED	LRA

DESIGNED	LRA
DRAWN	MTM
CHECKED	LRA
APPROVED	LRA

CITY OF TROY INTERMODAL TRANSIT FACILITY	
FLOOR PLAN OPTION 4	

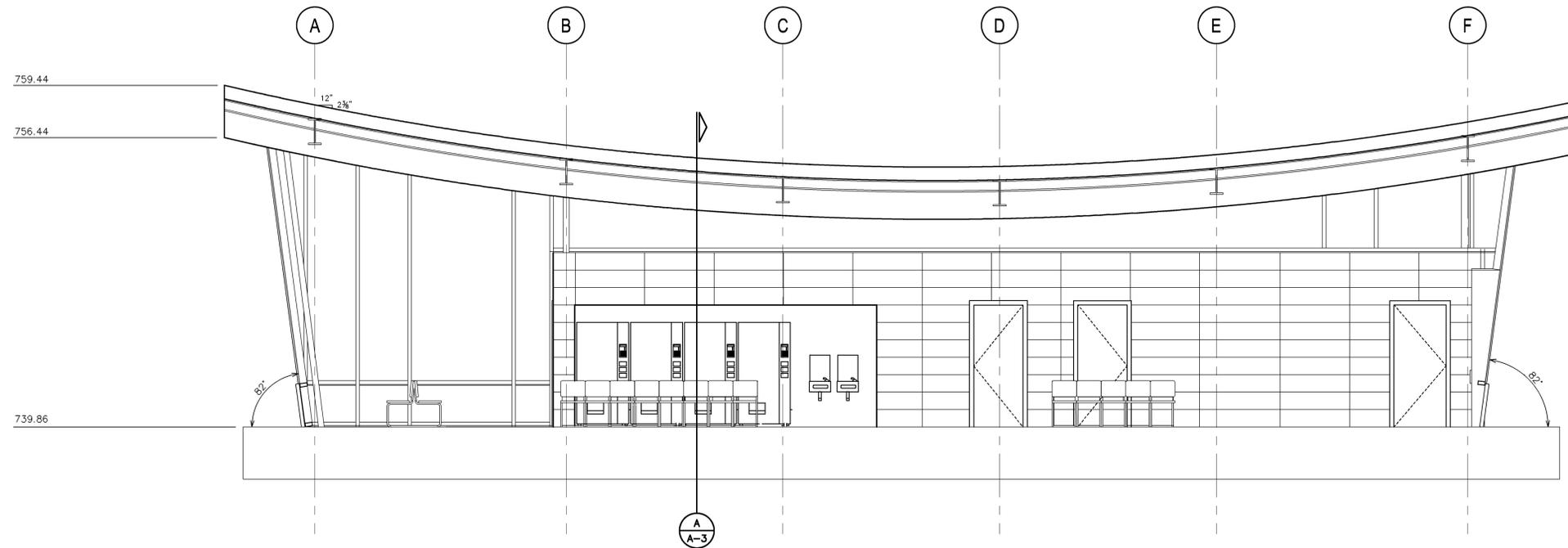
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DATE AUGUST 2009	SHEET NO. A-2 OF

7/6/2010 4:04 PM

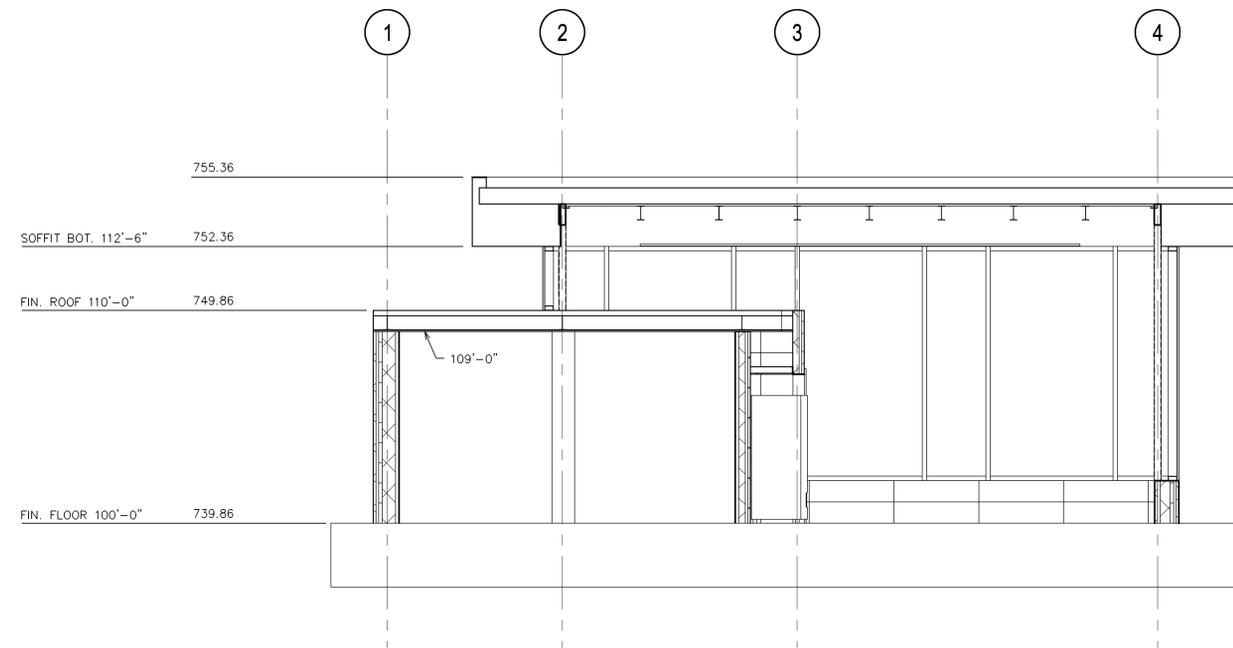
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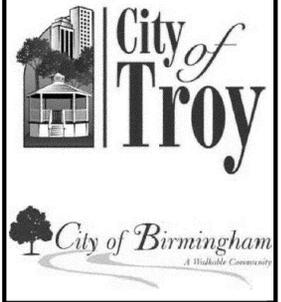
Alc. Roland



LONGITUDINAL SECTION
1/4"=1'-0"



CROSS SECTION
1/4"=1'-0"



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8-21-09	JOINT PLANNING COMM. STUDY SESSION
DATE	ADDITIONS AND/OR REVISIONS
DESIGNED	LRA
DRAWN	MTM
CHECKED	LRA
APPROVED	LRA

**CITY OF
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 INTERMODAL
 TRANSIT FACILITY**

FLOORPLAN
 SECTIONS

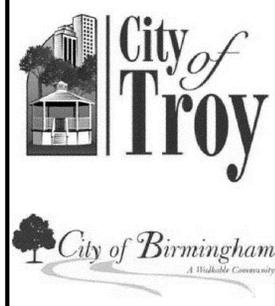
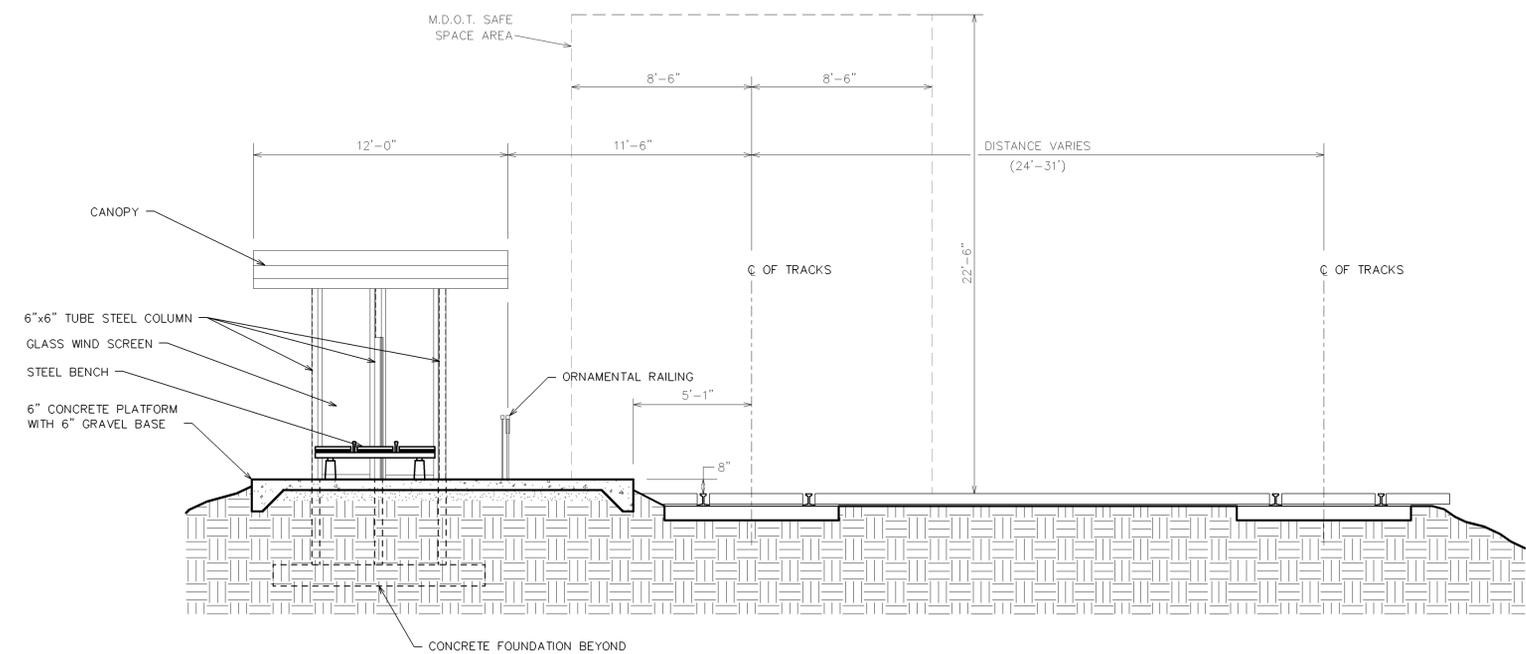
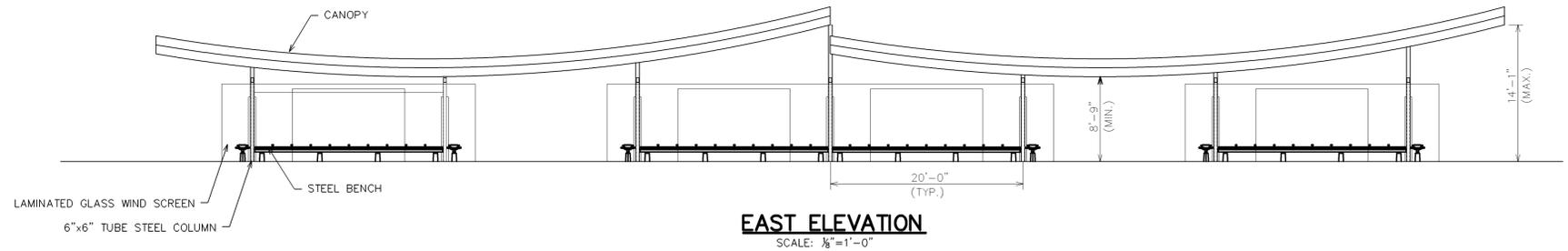
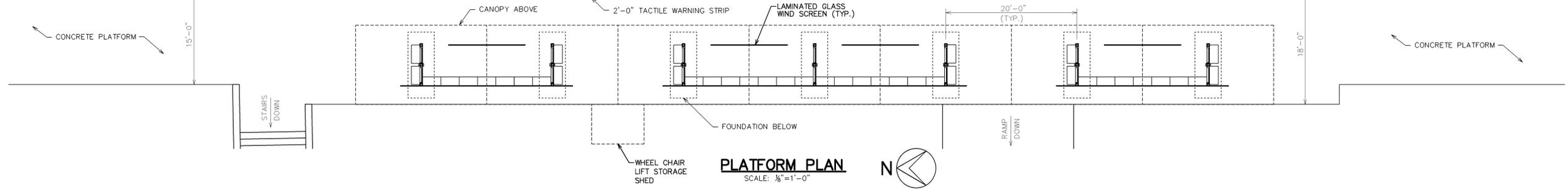
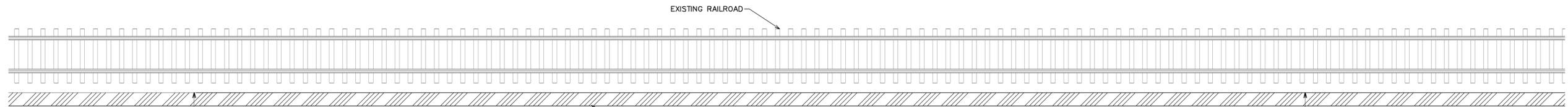
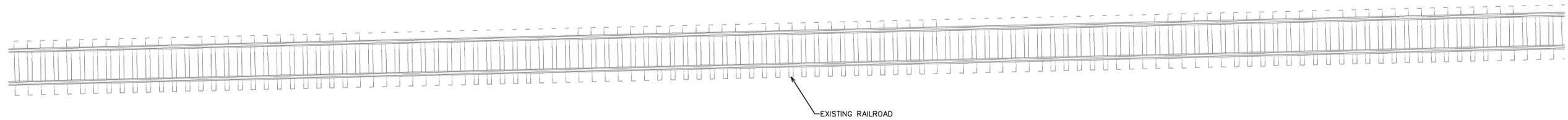
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DATE AUGUST 2009	SHEET NO. A-3 OF

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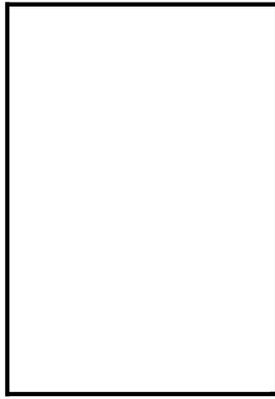


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48305-0824

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WEB SITE: [http:// www.hrc-engr.com](http://www.hrc-engr.com)

7-9-10	PRELIMINARY SITE PLAN SUBMITTAL
4-14-10	SUBMITTED FOR AMTRAK REVIEW
1-11-10	PRELIMINARY SITE PLAN SUBMITTAL
DATE	ADDITIONS AND/OR REVISIONS
DESIGNED	LRA
DRAWN	MTM
CHECKED	LRA
APPROVED	LRA



CITY OF TROY

INTERMODAL TRANSIT FACILITY

CANOPY SITE LAYOUT, ELEVATION AND SECTION

HRC JOB NO. 20090078	SCALE AS NOTED
DATE AUGUST 2009	SHEET NO. A-4 OF

7/8/2010 4:01 PM

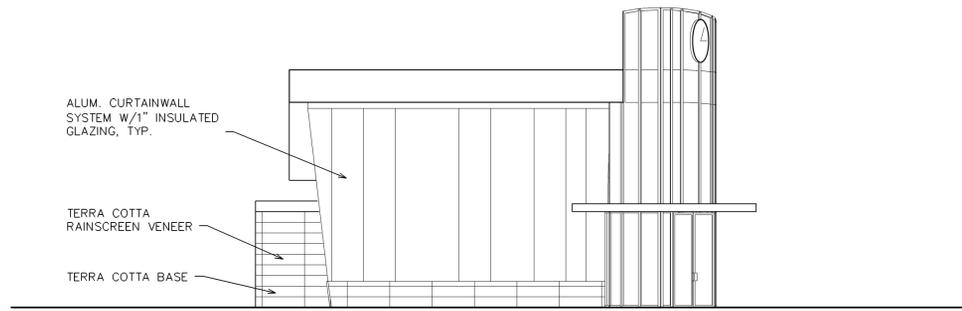
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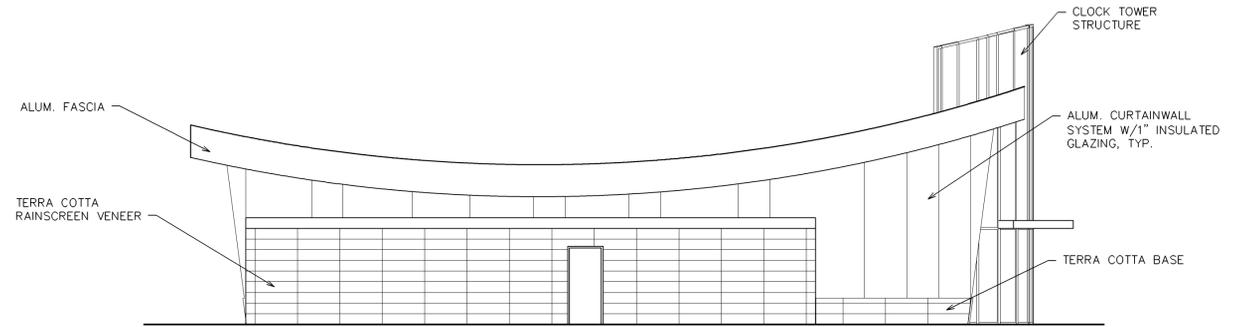
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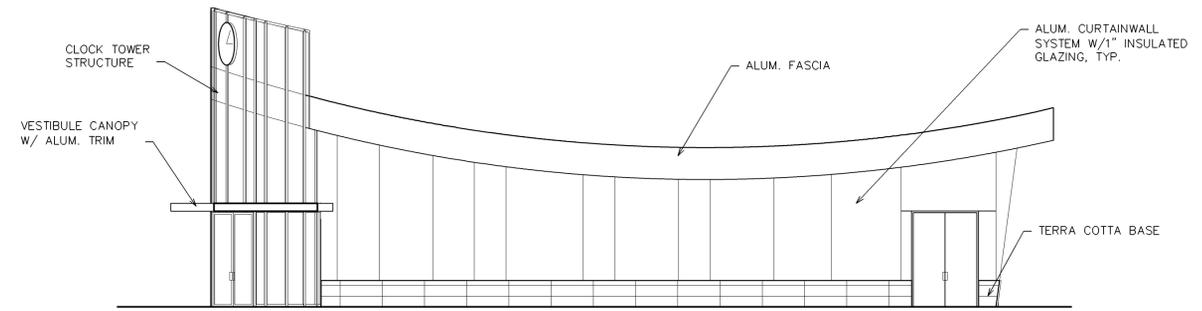
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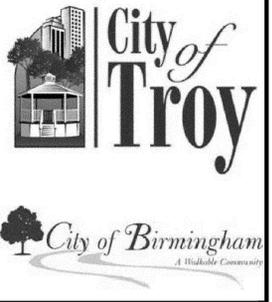
EAST ELEVATION
SCALE: 1/8"=1'-0"



SOUTH ELEVATION
SCALE: 1/8"=1'-0"



NORTH ELEVATION
SCALE: 1/8"=1'-0"



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DATE	ADDITIONS AND/OR REVISIONS
7-9-10	PRELIMINARY SITE PLAN SUBMITTAL
DESIGNED	LRA
DRAWN	JMG
CHECKED	LRA
APPROVED	LRA

**CITY OF
TROY**
**INTERMODAL
TRANSIT FACILITY**

**BUILDING ELEVATIONS
FLOOR PLAN OPTION 4**

HRC JOB NO. 20090078	SCALE AS NOTED
DATE AUGUST 2009	SHEET NO. A-6 OF



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PARTNERS INC**

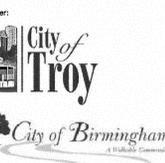
Urban Retail Design
Landscape Architecture
Traditional Town Planning
39 South Main Street Suite 22
Clarkston, Michigan 48346
248.922.0416 fax
248.922.0789

605 South Main St
Suite 1
Ann Arbor, MI 48104
tel. 734-662-2200

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Community Planners / Landscape Architects

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Project:
**Intermodal
Transit Facility**
Cities of Troy and Birmingham, MI



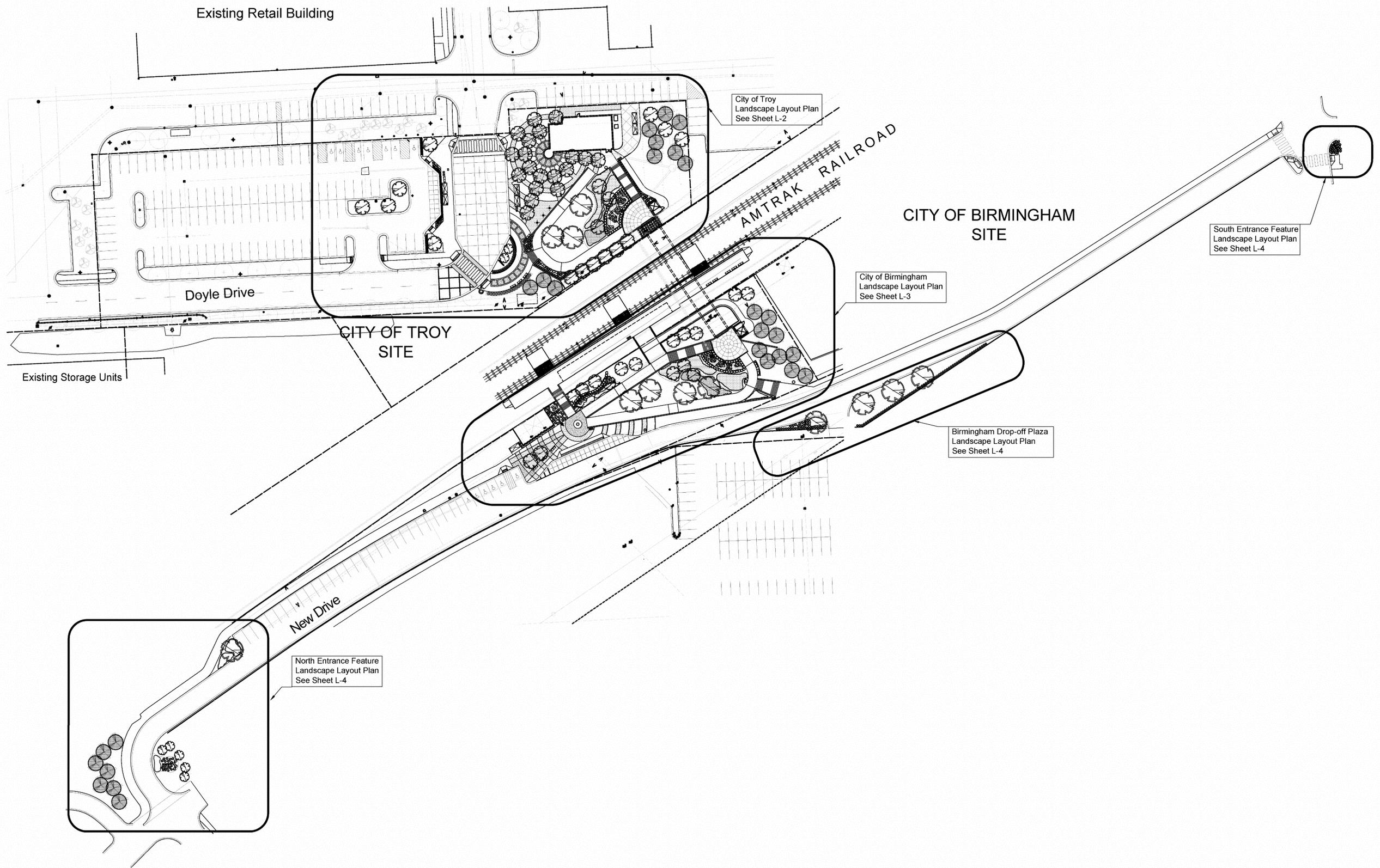
Title:
**OVERALL
LANDSCAPE
LAYOUT**

Issues / Revisions

Review	01-05-10
Site Plan Submission	01-11-10
Site Plan Submission	06-30-10
Preliminary Site Plan Submittal	07-09-10

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ADS
Checked By:
JTE
Date:
January 5, 2010
Scale:
As Noted
Sheet:

L-01





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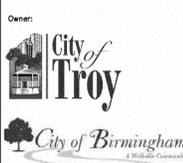
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Project:
Intermodal Transit Facility

Cities of Troy and Birmingham, MI



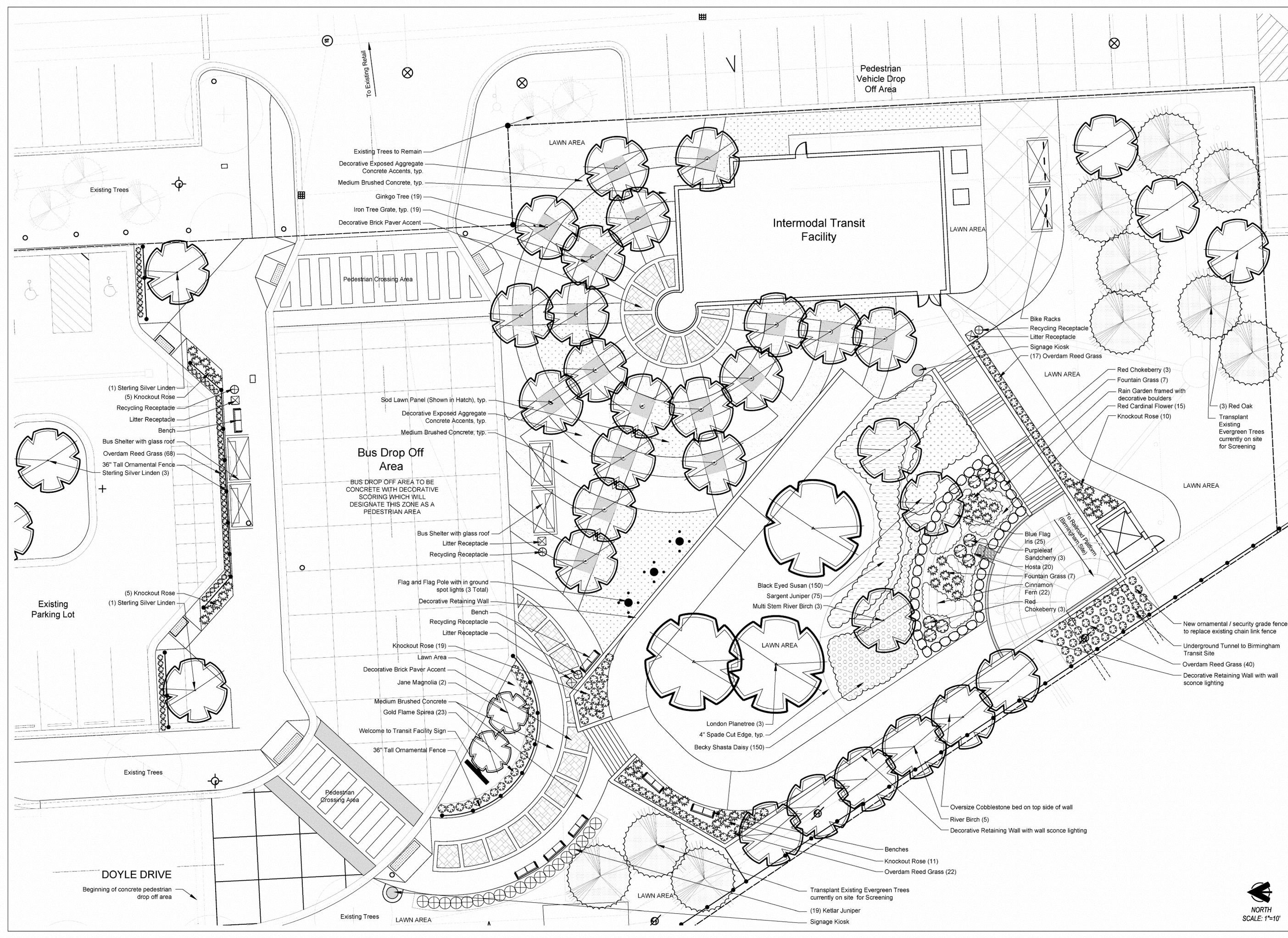
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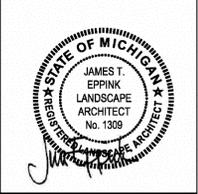
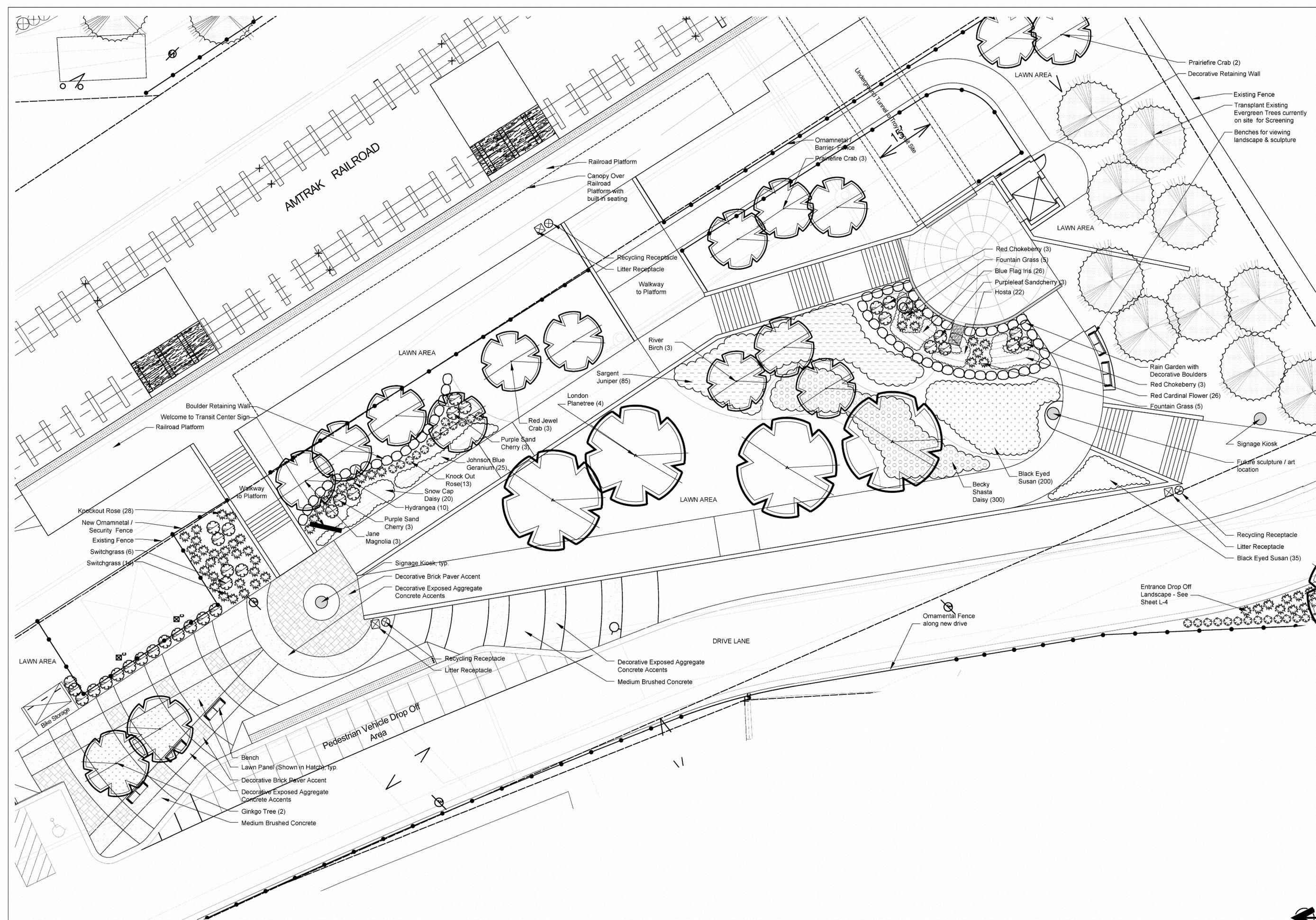
Issues / Revisions

Review	01-05-10
Site Plan Submission	01-11-10
Site Plan Submission	06-30-10
Preliminary Site	07-09-10
Plan Submittal	

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ADS
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JTE
Date:
January 5, 2010
Scale:
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Sheet:

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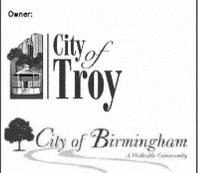
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Project:
Intermodal Transit Facility
Cities of Troy and Birmingham, MI



Title:
CITY OF BIRMINGHAM LANDSCAPE LAYOUT

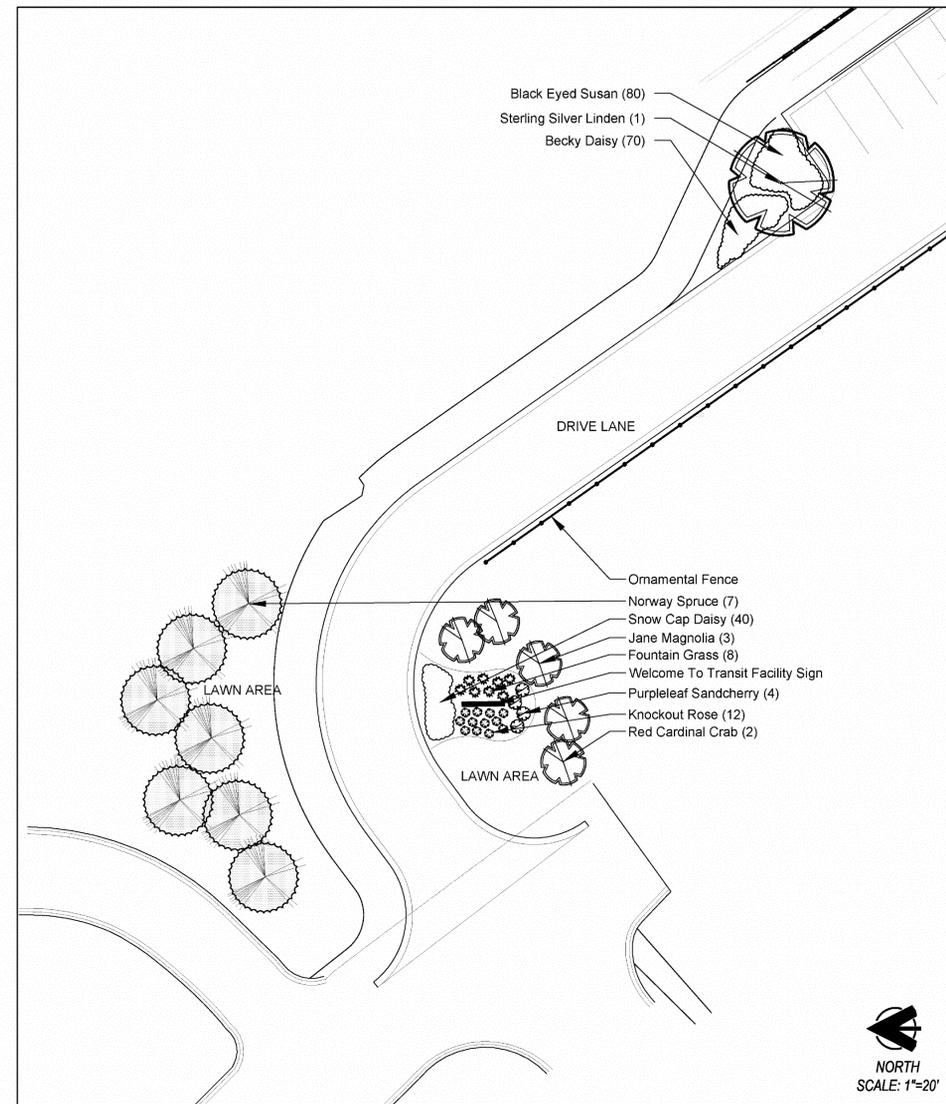
Issues / Revisions

Review	01-05-10
Site Plan Submission	01-11-10
Site Plan Submission	06-30-10
Preliminary Site	07-09-10
Plan Submittal	

Drawn by:
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Checked By:
JTE
Date:
January 5, 2010
Scale:
As Noted
Sheet:
L-03

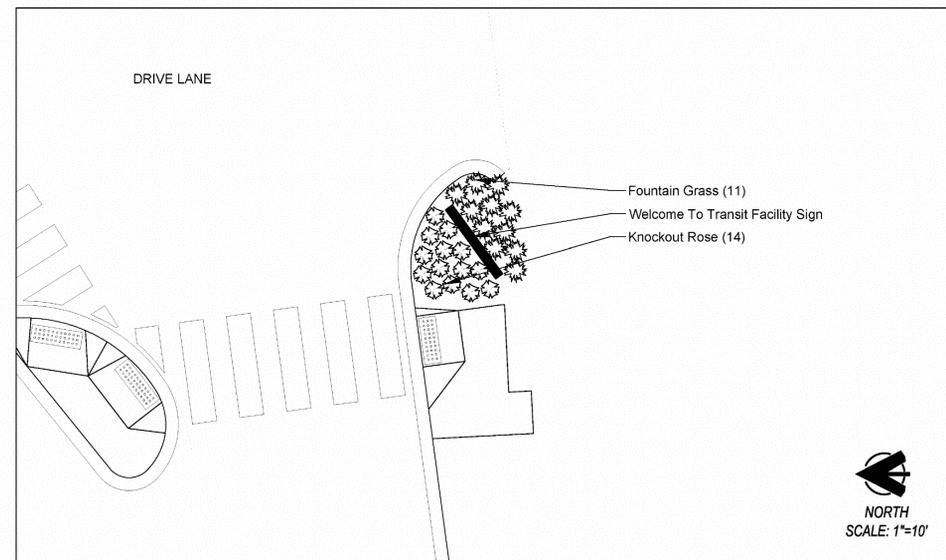


North Entrance Feature (Birmingham)



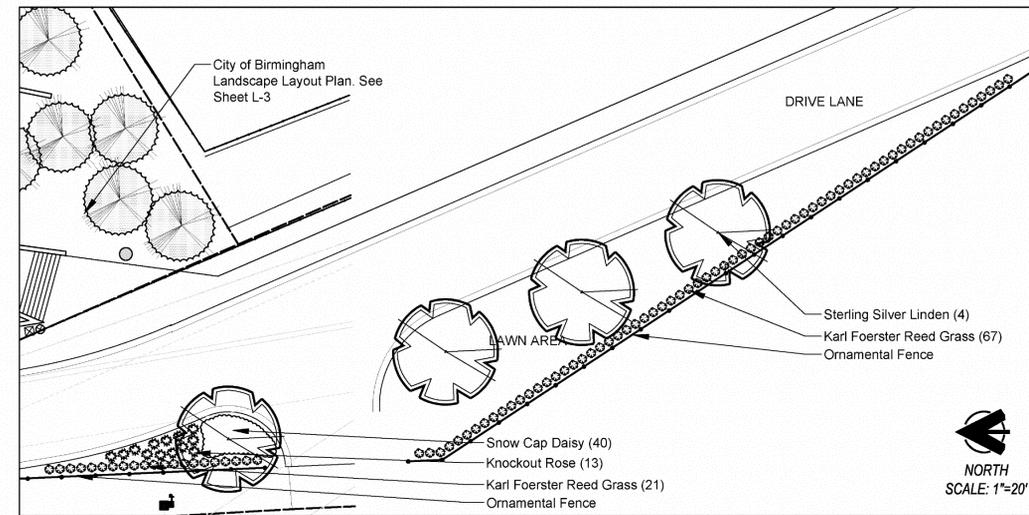
NORTH
SCALE: 1"=20'

South Entrance Feature (Birmingham)



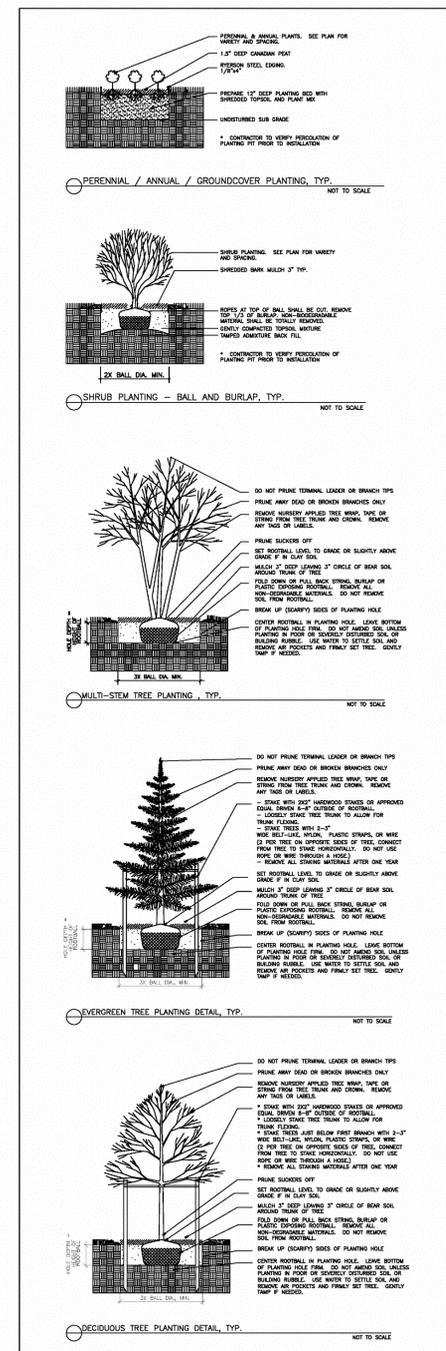
NORTH
SCALE: 1"=10'

Birmingham Drop - Off Plaza (Birmingham)



NORTH
SCALE: 1"=20'

Planting Details: Not to Scale



PLANTING NOTES:

- Contractor shall be responsible for contacting and coordinating with all pertinent utility companies 72 hours in advance of any digging to make themselves familiar with all underground utilities, pipes and structures. Contractor shall take sole responsibility for any cost incurred due to damage of said utilities or structures.
- Contractor shall not willfully proceed with construction as designed when it is obvious that unknown obstructions and/or grade differences exist. Such conditions shall immediately be brought to the attention of the Owner's Representative. The contractor shall assume full responsibility for all necessary revisions due to failure to give such notification.
- Any discrepancies between dimensioned layout and actual field conditions shall be reported to the Owner's Representative. Failure to make such discrepancies known will result in contractor's responsibility and liability for any changes and associated costs.
- Contractor shall be responsible for any coordination with subcontractors as required to accomplish construction installation operations.
- Contractor shall provide and maintain positive surface drainage.
- Contractor shall be responsible for any existing materials that are damaged during construction.
- See Plant & Material List and Planting Details for planting requirements, materials and execution.
- All trees shall have a clay loam or clay root ball. Trees with sand root balls will not be accepted.
- All tree varieties and substitutions to be approved by the Owner prior to being delivered to site. Any plant material delivered to site not previously approved may be rejected and are the sole responsibility of the contractor.
- The location of all plant material shall be scaled from drawings or interpreted from plant list. Final location of all plant material shall be subject to approval from the Owner's Representative.
- The contractor shall "water in" and fertilize all plants immediately after planting.
- HydroSeed all disturbed and new lawn areas as noted on drawings.
- Contractor shall install 3" depth Shredded Hardwood Mulch in all shrub and tree planting beds unless otherwise indicated. Peat Moss is to be installed in all annual flower, perennial flower and ground cover planting beds. Such beds shall have no shredded mulch, typ.
- Contractor shall coordinate lawn repair and planting bed construction in conjunction with the timing of other building construction and improvements.
- The contractor shall guarantee all trees, shrubs, ground cover and other plant materials for one year from the date of installation, including labor and removal and disposal of dead material. Project owner shall be responsible maintenance program which includes replacing all dead or diseased material by the end of the following planting season.
- All plant material shall be nursery grown. All trees and plant material shall meet the current standards of the American Society of Nurseryman.
- All diseased, damaged, or dead material shown on the site plan shall be replaced by the end of the following growing season. Property owner shall be responsible to maintain plant material in healthy condition and/or replace dead plant material for the life of the project.

PLANT LIST:

QTY.	DESCRIPTION	COMMENTS
12	Aronia arbutifolia Red Chokeberry, 5 gal.	Container
12	Betula nigra River Birch, 14'	B&B
88	Calamagrostis acutifolia 'Karl Foerster' Karl Foerster Feather Reed Grass, 1 gal.	Container
147	Calamagrostis acutifolia 'Overdam' Overdam Reed Grass, 1 gal.	Container
25	Geranium x 'Johnson Blue' Johnson Blue Geranium, 1 gal.	Container
23	Ginkgo biloba Ginkgo Tree, 4" cal.	B&B
44	Hosta spp Hosta spp, 1 gal.	Container
10	Hydrangea 'Endless Summer' Endless Summer Hydrangea, 5 gal.	Container
51	Iris 'Blue Flag' Blue Flag Iris, 1 gal.	Container
19	Juniperus keteleeri Ketair Juniper, 4' ht	B&B or Container
160	Juniperus chinensis 'Sargent' Sargent Juniper, 3 gal.	Container
500	Leucanthemum superbum 'Becky' Becky Shasta Daisy, 1 gal.	Container
100	Leucanthemum superbum 'Snow Cap' Snow Cap Shasta Daisy, 1 gal.	Container
41	Lobelia cardinalis Red Cardinal Flower, 1 gal.	Container
8	Magnolia x 'Jane' Jane Magnolia, 7-8'	B&B
5	Malus 'Prairiefire' Prairiefire Crab, 2" cal.	B&B
2	Malus 'Red Cardinal' Red Cardinal Crab, 2" cal.	B&B
3	Malus 'Red Jewel' Red Jewel Crab, 2" cal.	B&B
22	Osmunda cinnamomea Cinnamon Fern, 1 gal.	Container
20	Panicum virgatum Switchgrass, 3 gal.	Container
43	Pennisetum alopecuroides Fountain Grass, 1 gal.	Container
7	Picea abies Norway Spruce, 16'	B&B / Spade Truck
7	Platanus x acerifolia London Plane Tree, 3" cal.	B&B
17	Prunus x cistena Purpleleaf Sandcherry, 4-5'	B&B
3	Quercus rubra Red Oak, 3" cal.	B&B
130	Rosa 'Knockout' Knockout Rose, 3 gal.	Container
465	Rudbeckia Black Eyed Susan, 1 gal.	Container
22	Spirea japonica 'Gold Flame' Gold Flame Spirea, 3 gal.	Container
10	Tilia cordata 'Sterling Silver' Sterling Silver Linden, 3" cal.	B&B



J EPPINK PARTNERS INC

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248.922.0789

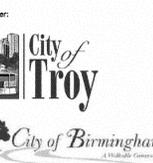
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Suite 1
Ann Arbor, MI 48104
tel. 734-662-2200

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Intermodal Transit Facility

Cities of Troy and Birmingham, MI



CITY OF BIRMINGHAM FEATURE AREAS LANDSCAPE LAYOUT / NOTES & DETAILS

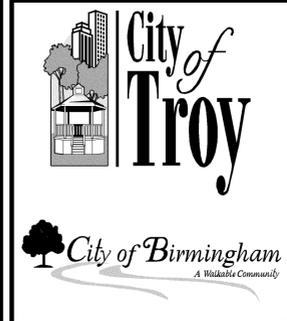
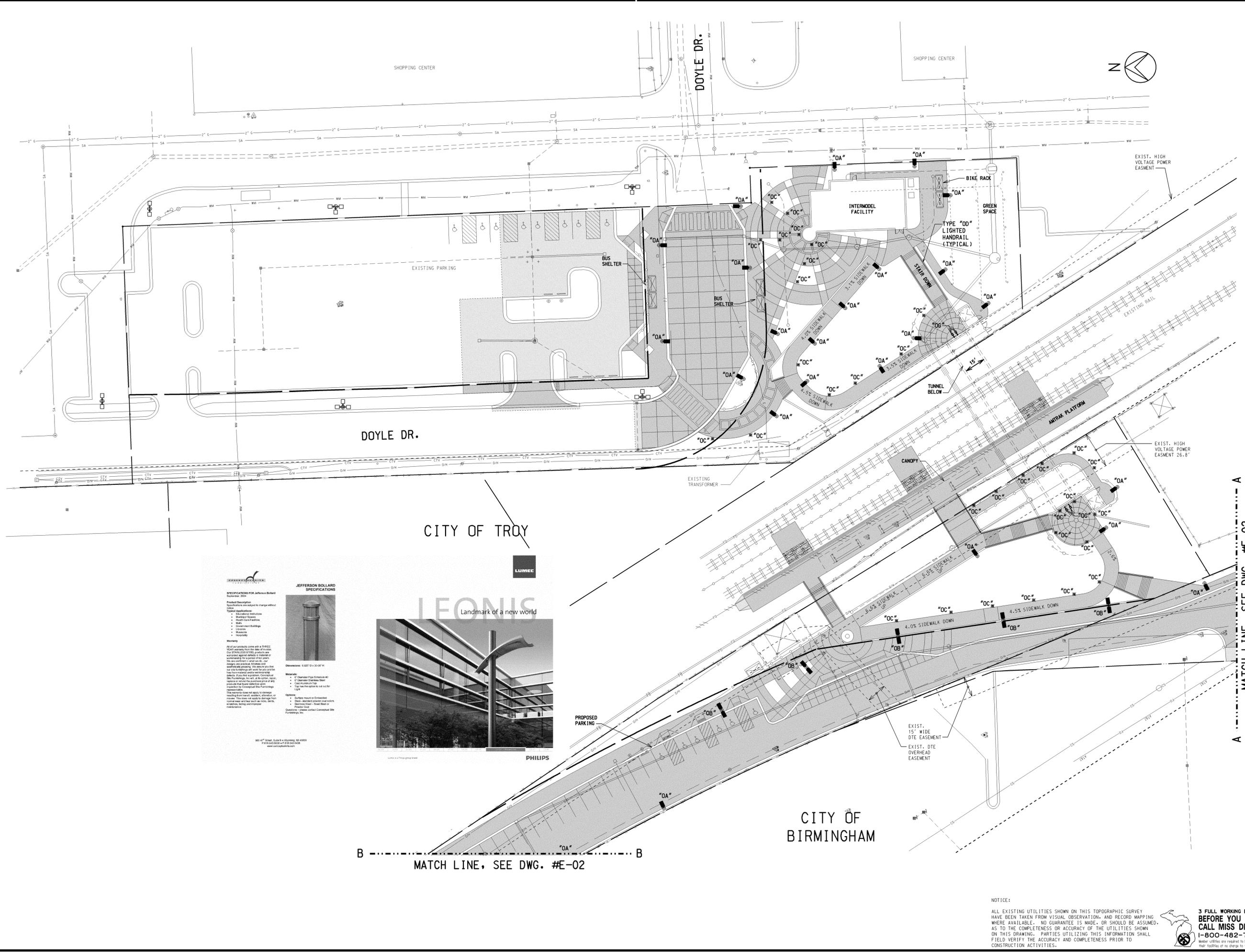
Issues / Revisions

Review	01-05-10
Site Plan Submission	01-11-10
Site Plan Submission	06-30-10
Preliminary Site Plan Submittal	07-09-10

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Checked by:
JTE
Date:
January 5, 2010
Scale:
As Noted
Sheet:

L-04

TIME - 08-JUL-2010 12:34
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 CDR_TBL_*TAMSV8VdneVrccoloz2.tbl
 OUEUE - V:\Bldg\TFFB\B
 DESIGN FILE - V:\200900\20090078\E-W\01.dwg
 USER NAME - bletcher



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 HUBBELL, ROTH & CLARK, INC.
 Consulting Engineers
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 FAX (2nd. Floor): (248) 338-2592
 WEB SITE: <http://www.hrc-engr.com>

DATE	ADDITIONS AND/OR REVISIONS
7-9-10	PRELIMINARY SITE PLAN SUBMITTAL
6-30-10	PRELIMINARY SITE PLAN SUBMITTAL
1-11-10	PRELIMINARY SITE PLAN SUBMITTAL
8-21-09	JOINT PLANNING COMM. STUDY SESSION

DESIGNED	D.D. Kelley
DRAWN	B.B. Hetchler
CHECKED	D.D. Kelley
APPROVED	L.R. Anypa



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CITY OF TROY
 LANDMARK OF A NEW WORLD
 PHILIPS

CITIES OF TROY & BIRMINGHAM
INTERMODAL TRANSIT FACILITY
 OAKLAND COUNTY MICHIGAN
 ELECTRICAL SITE PLAN
 HRC JOB NO. 20090078 SCALE 1" = 30'
 DATE AUGUST 2009 SHEET NO. E-01 OF

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