Agenda
Village of Glen Ellyn
Special Workshop Meeting
Monday, January 12, 2015
6:00 PM
Glen Ellyn Civic Center, Room 301

Village Board Workshop Procedures Statement

Visitors are most welcome to attend all meetings of the Village Board and can find copies of the Agenda on their chairs or online at www.glenellyn.org prior to the meeting. Any individual with a disability requiring a reasonable accommodation in order to participate in a meeting should contact Harold Kolze, Village of Glen Ellyn ADA Coordinator, 630-469-5000, at least five (5) business days in advance of the next scheduled meeting. All matters on the Agenda may be discussed, amended, and acted upon.

A. Call to Order

B. Roll Call

C. Pledge of Allegiance

D. Audience Participation

1. Open: Members of the public are welcome to speak to any item *not* specifically listed on tonight's agenda for up to three minutes. For those items which are on tonight's agenda, the public will have the opportunity to comment at the time the item is discussed. In either case, please complete the Audience Participation form and turn it in to the Village Clerk. It is requested that, if possible, one spokesman for a group be appointed to present the views of the entire group. Speakers who are recognized are requested to step to a microphone and state their name, address and the group they are representing prior to addressing the Village Board.

E. Proposed Fire Alarm System Requirements within the C5A Central Business District: (Presented by Planning and Development Director Hulseberg)

F. Feasibility Project Assessment of the Pedestrian and Vehicular Over/Under Passes in the Central Business District: (Presented by Professional Engineer Minix)

1. Over/Under Passes Feasibility Study Final Report Presentation Overview and discussion of the final report by HDR Engineering on the project to assess the feasibility of pedestrian and vehicular over/underpass alternatives in the Central Business District and Taylor Avenue.

G. Other Items

H. Adjournment

Glen Ellyn Village Board
535 Duane Street
Glen Ellyn, IL 60137

Meeting: 01/12/15 06:00 PM
Department: Planning & Development
Department Head: Staci Hulseberg
Category: Discussion Item
Prepared By: Caroline Conlon

SCHEDULED

AGENDA ITEM (ID # 1579) DOC ID: 1579

Proposed Fire Alarm System Requirements within the C5A Central Business District.

Background

The Village Board requested that we prepare an amendment to the Fire Code that would require all buildings within the C5A Central Business District (CBD) to be provided with an automatic fire alarm system. The amendment would exceed the Fire Code requirements and apply to some buildings that are not currently required by code to have a fire alarm system. A few buildings in the CBD have a code compliant fire alarm system, some have no system, and some have something in-between.

The majority of the buildings in the CBD were constructed in the early 1900's prior to the development and implementation of current building and fire codes. The buildings are typically two or three stories, constructed of masonry exterior load bearing walls and wood roof and interior structural framing. While the exterior walls provide significant fire protection between buildings, the numerous door and window openings and combustible roof structures generate a significant risk of fire exposure and spread between buildings.

The downtown CBD is densely developed and these building were planned and constructed without adequate space behind and around the structures to allow for deliveries, trash storage and removal, maintenance, and parking. This restricts access for fire vehicles and complicates fire suppression for these properties.

These existing CBD buildings do not meet many of our current building, fire and zoning codes, however, the codes permit the continued use of these buildings without improvements and compliance with the new codes provided they generally remain as originally legally constructed, and remain occupied and used as originally legally approved.

Issues

In the CBD, the primary building occupancy and use is composed of small restaurants and retail stores. The current 2009 ICC Fire Code and the new 2015 edition do not require a fire alarm system for this type of use and building.

In 2001 the Village amended the building code to require an automatic fire alarm system in any commercial building without a fire sprinkler system when the existing building is significantly remodeled or altered or an addition is constructed. The requirement is triggered when the hard cost of the work exceeds $15,000. This code provision does not require the hard cost of each individual project to be tracked over time, accumulated, and applied to the $15,000 trigger. Therefore many small tenants move in and out of the same tenant space, with minimal tenant improvement costs, and do not trigger the requirement for a fire alarm system.

This building code amendment is successful in the C3 Service Commercial District (Roosevelt Road) and has required many fire alarm systems to be added in commercial buildings. However, the tenant improvement work typically associated with CBD buildings generally does not reach the scope and magnitude of this trigger. New tenants will often intentionally limit the extent of their proposed improvements, or make their improvements in phases under separate permits, to avoid the need to install a fire alarm system.

The cost of installing an automatic fire alarm system in CBD buildings will be highly variable based on the type of occupancy and size of the protected area and if any type of fire alarm system currently exists in the building. For larger buildings the cost may be in the range of $2 to $4 per square foot. For a small restaurant or store of 2,000 square feet or less, the cost would likely be in the range of $2,000 to $4,000. Another cost factor would be the scope of the fire alarm system requirements and standards established by the Village. These costs can be reduced utilizing new wireless technology that eliminates the high cost of running wiring to all devices within existing finished spaces. To further reduce costs, building owners could provide one fire alarm system capable of protecting the entire building that can be zoned for each tenant within the building. This will avoid the need for each tenant to provide a complete independent fire alarm system at a higher total building cost.

To insure that all building occupants and these properties are adequately protected from fire, and to compensate for the increased fire risk that results from these existing building conditions, the Village could require that all existing buildings without a fire sprinkler system in the CBD be provided with an automatic fire alarm system. The Village could establish minimum required standards for the installation and operation of the automatic fire alarm system that is appropriate to the conditions in these buildings. The Village standards will aid in the design and engineering of the system and insure that the minimum required fire safety provisions are provided. The existing buildings that currently have some type of fire alarm system may be required to make improvements, if necessary, to meet the Village standards.

To allow property owners reasonable time to plan, engineer, contract and complete this work, the Fire Code amendment may include these proposed future compliance dates:

January 31, 2015 - Fire Code amended to require an automatic fire alarm system in all existing and new buildings in the C5A CBD.
June 31, 2016 - Deadline for Building Permit Applications to be submitted to the Planning & Development Department for review and approval.

January 31, 2017 - Automatic fire alarm system to be completed, tested, inspected and approved in all C5A CBD buildings.

The Village Fire Official and Building Official recognize that the construction of a new automatic fire alarm system in an existing building may result in practical difficulties in some older landmarked buildings. Village officials will consider these conditions and where appropriate allow alternative means of compliance with equivalent fire protection features. The Planning & Development Department will apply and interpret the codes and standards in a consistent and reasonable manner

to insure that the requirements are met to the maximum practical extent.

The Village of Glen Ellyn Fire Prevention Award Program provides monetary awards to property and business owners in the CBD who install a fire alarm system that meets the Village standards. The award can be as much as 50% of the cost of the fire alarm system, but not more than $15,000 per business unit subject to the discretion of the Village Board and available funds. The installation of a fire alarm system also satisfies an eligibility requirement for the Downtown Retail Interior Improvement Award Program. This program provides monetary awards to new property and business owners and existing property and business owners who expand their facility.

PROS: An automatic fire alarm system within a building is a beneficial factor in attracting quality new businesses and preserving the unique historical buildings in the CBD. Property insurance costs can also be reduced with the addition of a building fire alarm system. However, the primary benefit and objective is to reduce the fire and life safety risk within these buildings and insure that the CBD is a safe and secure environment for the public to work, shop, dine, and live.

CONS: The initial cost of an automatic fire alarm system and the monthly monitoring fee places a burden on the property owners and their tenants. Current businesses that are marginally successful may be significantly impacted and may choose not to continue their business operations in the CBD.

Action Requested

Given the potential benefits to public safety and the costs to the property and business owners**,** please provide staff with direction on whether or not to proceed with the preparation of a Fire Code amendment to Village Code.

Glen Ellyn Village Board
535 Duane Street
Glen Ellyn, IL 60137

Meeting: 01/12/15 06:00 PM
Department: Public Works
Department Head: Julius Hansen
Category: Presentation
Prepared By: Bob Minix

SCHEDULED

AGENDA ITEM (ID # 1572) DOC ID: 1572

Over/Under Passes Feasibility Study Final Report Presentation Overview and discussion of the final report by HDR Engineering on the project to assess the feasibility of pedestrian and vehicular over/underpass alternatives in the Central Business District and Taylor Avenue.

In January 2014, the Village Board authorized HDR Engineering, Inc. to conduct feasibility studies of alternatives to surface crossings of the Union Pacific Railroad tracks for both pedestrians and vehicles in the Glen Ellyn Central Business District. In addition, the consultant was to develop concepts to improve pedestrian accommodation at the existing Taylor Avenue underpass. The consultant completed preliminary studies, prepared a draft report, made a Board presentation in May 2014, developed additional alternatives for vehicular crossings as part of a brainstorming committee that included Trustees Ladesic and Elliott, and finalized their findings. The completed report, "Feasibility Project Assessment of the Pedestrian and Vehicular Over/Under Passes in the Central Business District", is attached. The report includes an Executive Summary. On January 12, 2015 a special Board workshop will be conducted where the consultant team will present their findings, costs, recommendations and implementation timelines, with most of the new information pertaining to the vehicular over/under pass topic.

The scope of the Over / Underpass Feasibility Study was divided into three main components:

- Evaluate possible corridors and locations for alternatives to vehicular railroad grade crossings in the Central Business District - Locations west of Main Street appear to offer the only opportunities for non-grade crossings in the CBD. Curvilinear alignment options from Glenwood to west of Lorraine were developed in the summer and fall of 2014 to mitigate traffic impacts, minimize land takes, and to dove-tail with future development. While no alternate is deemed as preferred, a grade-separation project is considered feasible. The currently estimated construction cost is about $21 million for a vehicular grade separation

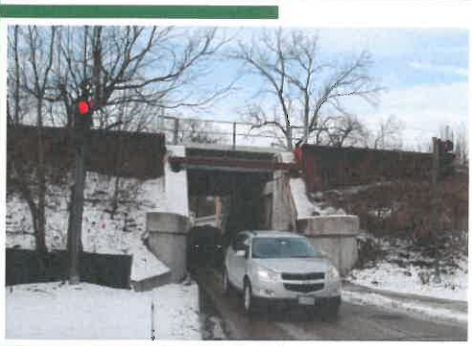
- Develop and assess alternates to the current pedestrian sidewalk configuration at the Taylor Avenue underpass - The report recommends a new pedestrian underpass located to the east of the existing opening, suitable for a 10-ft wide paved surface between Walnut and Willis. As a result of an application made in August 2014 using the HDR recommended configuration, the Village has been awarded an STP grant to fund 75% of the estimated $2.4 million construction cost.

- Assess possible configurations and costs for implementation of a pedestrian underpass near the Glen Ellyn train station - Multiple alternatives were examined and assessed against criteria such as cost, tunnel length, loss of parking, Prairie Path impacts, multiple user access and travel pattern changes. The Western Alternative, estimated to cost $6.6 million and

featuring a spiral ramp on the south side of the railroad tracks, appears to offer the best combination of price and limited impacts, particularly related to parking loss.

ATTACHMENTS:

- HDR Feasibility Study Final Report (PDF)



Village of Glen Ellyn

Feasibility Project Assessment of the Pedestrian and Vehicular Over/ Under Passes in the Central Business District

December 2014

Executive Summary

The Village of Glen Ellyn Downtown Business District is bisected by the Union Pacific freight and Metra commuter rail. Train traffic commonly blocks the at-grade crossings within the downtown. Vehicles and pedestrians are often held up resulting in poor circulation within the downtown. The Village is investigating the ability to improve pedestrian and vehicular access across the railroad. Three types of projects were evaluated: 1) improve Taylor Avenue pedestrian access, 2) pedestrian underpass crossing in the vicinity of the train station, and 3) vehicular grade separation between Park Boulevard and Lorraine Avenue.

Taylor Avenue is an existing grade separated crossing. It has limited horizontal clearance under the railroad which limits vehicles to one direction at a time and is controlled by a traffic signal. A very narrow sidewalk exists but is also limited to one direction at a time. The sidewalk is not wide enough for bicyclists to safely pass through. Improvements considered for Taylor Avenue include new tunnel west of roadway, new tunnel east of roadway, improve existing tunnel. A new tunnel to the east of the roadway was selected. The tunnel can be constructed within existing right of way, set back from the roadway to allow future widening, minimizes costs, and can add access to the east side of the Illinois Prairie Path. The tunnel is estimated to cost $2,400,000 to construct.

In the vicinity of the train station an at-grade crossing is provided to the east at Park Boulevard and to the west at Main Street. An alternative to the existing at-grade crossings is to provide a pedestrian underpass. On the north side of the railroad, underpass access was evaluated east and west of the train station. While each side would result in parking impacts, the west side north of the railroad would have less parking impacts. On the south side of the railroad access was evaluated east, west, and central to the train station. The alternatives looked at long ramps, switchback ramps, and spiral ramps. The alignment of the ramps paralleled the north side of the parking lots, south side of the parking lots, or parallel to Forest Avenue, extending away from the parking lots. The central location with a spiral ramp resulted in the lowest parking impacts. While there are pros and cons to each location, it was generally agreed that it was feasible to place a pedestrian underpass in the vicinity of the train station. The alternatives ranged from $5.6 million to $9.8 million to construct.

Vehicular grade separation was initially evaluated at the three existing at-grade locations of Prospect Avenue, Main Street, and Park Boulevard, and as a new crossing location from Lorraine Avenue to Western Avenue. The existing at-grade locations were evaluated as underpasses and the Lorraine – Western connection was an overpass. To provide underpasses and also account for pedestrian accommodations resulted in extensive roadway lowering, inclusion of retaining walls, and property access restrictions. As with the underpasses, an overpass connection from Lorraine Avenue to Western Avenue resulted in raising roadways, inclusion of retaining walls, and property access restrictions. Conversion of the existing at-grade crossings to grade separation were deemed un-feasible; however, other alternatives were brainstormed and further

evaluated. The alternatives were located from Glenwood Avenue to west of Lorraine Avenue. The alignments were curvilinear in nature and included alternative intersection controls such as roundabouts. The alignments were created to minimize impact to traffic flow along Pennsylvania Avenue, minimize property acquisitions, and to complement future land development. As with the pedestrian underpass, while no one alternative was selected as a preferred it was determined that a grade-separation could be feasible. The present day estimated construction cost is approximately $21 million for the vehicular grade separation.

In addition to determining that there are feasible improvements that can be made at each location it has been further determined that each location would be eligible for funding programs. The programs vary from Surface Transportation, to Congestion Mitigation, to Rail Protection Funds. Each program has differing percentage participations and requirements. The villages has begun coordination toward securing funds for the Taylor Avenue improvement.

Introduction

As stated in the Village's "Eras of Change" the railroad was an early influence on the development of the community. The railroad provided access to the many amenities Glen Ellyn had to offer. Over time, Glen Ellyn has evolved from a resort community to the vibrant suburb it is today. Through time and with other regional influences the strength of downtown has ebbed and flowed. In some regard, the development of the Downtown Business District (Downtown) is closely related to the railroad. While the success of the downtown is not solely related to the windfall derived from the presence of commuter trains, the Union Pacific railroad has had a strong influence on the evolution of, and impacts to the Downtown, for better and for worse.

The Village of Glen Ellyn in recent years has performed a market analysis of the downtown. Responses to the merchant and public surveys indicate that parking is not convenient, the one-way streets are confusing, and the rail crossing is a hindrance. The resulting Downtown Strategic Plan identifies many opportunities and on the converse, challenges. One such challenge is the parking and circulation within the downtown. It is desired to enrich the downtown and one aspect of enrichment is to improve vehicular, parking, and pedestrian access. One way to improve the access is to consider grade separation facilities for pedestrians and vehicles.

The Village of Glen Ellyn wishes to improve pedestrian and vehicular movements within the Downtown. First, there are three existing at-grade rail crossings in the Downtown at Prospect Avenue, Main Street, and Park Boulevard, each have the potential to be developed into a grade-separated vehicular and pedestrian underpass. Second, east of the Downtown, there is a grade-separated crossing of the Union Pacific Railroad at Taylor Avenue. While the underpass itself serves vehicular and pedestrian crossings east of the Downtown, the pedestrian accommodation is insufficient. Third, in the Downtown, improved pedestrian access is desired at the Metra Station, particularly to provide cross access of the rail line.

This Feasibility Study is an early and continuing step toward enabling the Village to implement its Downtown Strategic Plan and reach its long term goals. In the short term, the results of this Feasibility Study will enable Village staff to address frequent resident and customer complaints about downtown congestion caused by a high frequency of passenger and freight train activity through town. This study will evaluate the feasibility to:

I) Improve the pedestrian crossing at Taylor Avenue
II) Identify a most suitable location for a pedestrian underpass in the vicinity of the Metra Commuter Rail Station and
III) Identify a most suitable location for a vehicular grade-separated rail crossing within the Downtown

The following details the purpose and need of each location, the evaluation criteria, a summarization of impacts, and a recommended action. It is important to note that each

location, Taylor Avenue, the Pedestrian Underpass, and the Vehicular Grade Separation are three separate projects that were all evaluated independently of each other.

Taylor Avenue

Taylor Avenue is an existing grade separation where Taylor Avenue is an underpass of the UP tracks. The cross section of the roadway is 10 feet wide with a raised 3 foot sidewalk on the east side. The sidewalk is too narrow, does not meet ADA policy, and does not permit a safe set back from traffic. The narrow cross section only allows for one vehicle to pass through at a time with traffic signal control. The pedestrian approach from the south does not allow a clear sight line through the underpass. The pedestrian way is not controlled by traffic signals, similar to the vehicles. Therefore, opposing conflict occurs for pedestrians and bicyclists. A safer pedestrian underpass is needed at Taylor Avenue.

Figure 1 Taylor Avenue Looking North

The surrounding area is residential with local streets. The Illinois Prairie Path (IPP) is also grade separated from Taylor Avenue and is parallel to the UP. A ramp connection between Taylor Avenue and the IPP is located to the west of Taylor Avenue. Sidewalk exists on the east side of Taylor Avenue and crosses west with a marked crosswalk to the west side of Taylor Avenue.

The following items were taken into consideration for locating the new underpass:

- Minimize changes to railroad structure
  The railroad structure has sheet pile that extends approximately 16 feet of east and west of the underpass itself. The location of the path was selected to be outside this area to maintain the current integrity of the rail structure.
- Continuity of existing travel ways
  The existing paths/sidewalks are on the east side of Taylor Avenue. Reuse of existing facilities leads to less impacts with utilities.
- Minimize right of way
  Due to the angle of Taylor Avenue and the clearance needed between the roadway and the pedestrian way, additional right of way would be needed to be purchased on the west side of Taylor Avenue.
- Consideration of future roadway widening
  Based on the alignment of the roadway, the existing roadway configuration and the associated right of way, it appears an easterly widening of the roadway would be the most feasible.

For these reasons, an alignment of the pedestrian underpass is located to the east. Exhibit 1 reflects a plan view of the proposed pedestrian underpass alignment. It is recommended to improve the paved surface to a 10-foot width along Taylor Avenue from the Walnut Avenue north to Willis Street. An estimated cost to construct the Taylor Avenue pedestrian underpass is approximately $2,400,000.

Other enhancements for future consideration include a ramp connection to the IPP on the east side of Taylor Avenue. This is represented in dotted line on Exhibit 1. Way-finding signing would be beneficial between the IPP and Taylor Avenue. These topics could be addressed in subsequent phases of the project.

Renderings of what the future pedestrian underpass would look like from the users' viewpoint are shown on the next page.

The proposed alignment of the Taylor Avenue pedestrian underpass was presented at a Village Board Workshop on May 19, 2014. At this workshop, the Village Board reviewed the findings and concurred that the alignment was feasible.

Figure 2 Taylor Avenue Looking North at New Pedestrian Underpass

Figure 3 Taylor Avenue Looking South at New Pedestrian Underpass

Pedestrian Underpass

A pedestrian underpass in the vicinity of the Metra commuter station is an important component of the Downtown Strategic Plan. As was previously stated, common complaints about the downtown are the proximity of parking and the ability to cross the tracks when trains are present. The ability to cross the tracks is a problem for all users: commuter, merchant, student, bicyclist, and consumer. A safe and time saving passageway to assist in crossing the tracks would enhance the accessibility to the Downtown and would generate additional trips.

An underpass was evaluated versus an overpass for many reasons. The first being, as shown in the picture below, the railroad has overhead signal controls. The signal controls are at an elevation 23 feet above the rails. The 23 foot elevation permits clearance of the double stacked rail cars. A pedestrian overpass would also need to provide a 23 foot clearance, but because of the overhead signal control would need to be higher. The pedestrian bridge would need to be high enough to also provide clear sight lines of the overhead signal control. The elevation required to pass over the rail would result in longer ramps than for the vertical clearance of an underpass. This elevation is perceived to be obtrusive to the character of the downtown district. For these reasons only underpasses were evaluated.

Figure 4 Pedestrians Waiting for Freight Train at Park Boulevard

The criteria used to identify a reasonable location for the pedestrian underpass include:

- Ability to Serve Multiple Users
  While the general area considered for a pedestrian underpass is the Metra commuter station, the underpass would be used by multiple users, i.e. bicyclists, students, merchants, and commuters. Therefore, the access should be centrally located and highly visible.

- Minimize Parking Impacts
  Since the availability and proximity of parking is of concern to the Downtown users, minimizing the number of spaces impacted is an important factor.

- Travel Pattern Changes
  A travel pattern change could be either a change in space layout resulting in one-way travel or access drive realignments. If vehicular changes are made that deter trips to the Downtown, then the underpass will be perceived as a hindrance versus a benefit.

Five alternatives were evaluated for the pedestrian underpass. Three alternatives are located east of the train station and two alternatives are located west of the train station. The differences between alternatives all occur south of the tracks. The ramp and stair connections on the north side of the tracks were constant for the three alternatives east of the station and constant for the two alternatives west of the station.

The north side connection east of the station is a switchback ramp with access from the tunnel to track level. ADA routes would lead from the track level to the east at Park Boulevard or west around the station to the existing ramp. Stairs are also available to get to both street level and track level. The north-east ramp is shown to be compatible with the future Crescent Avenue parking changes.

The north side connection west of the station is a switchback ramp with access to street level and track level. The ADA route is accommodated via the switchback ramp. Stairs are available leading only to track level. Parking loss and a change in parking layout is associated with the north-west side.

East Alternative A is located between the IPP and the commuter parking lot. The ramp extends from Park Boulevard toward Forest Avenue. Stairs are located near Forest Avenue. This alternative results in a 110-foot long tunnel, a loss of parking, a change in parking layout to one-way westbound with diagonal parking, and modifications to the IPP alignment. Alternative A is shown in Exhibit 2 and is estimated to cost $8,200,000.

East Alternative B is located in the same general location between the IPP and the commuter parking; however, it includes a switchback ramp encroaching on the commuter parking lot. This alternative has the similar impacts as Alternative A, except it impacts more parking spaces. Alternative B is shown as Exhibit 3 and is estimated to cost $7,100,000.

East Alternative C is a similar layout of Alternative B, except it is located between the tracks and the commuter parking. The tunnel length is shorter than Alternative B at 65-feet long. This alternative, like A and B, changes the parking layout to one-way with diagonal parking and has more parking impacts. However, it does not change the alignment of the IPP. Alternative C shown as Exhibit 4 and is estimated to cost $5,600,000.

The West Alternative is a circular ramp located south of the tracks between the commuter lots at Forest Avenue. The West Alternative results in a 75-foot tunnel, a loss of parking spaces, and a change in the location of the exit drives. Parking is retained as parallel parking and the exit drives are retained as one-way out. The West Alternative is shown as Exhibit 5 and is estimated to cost $6,600,000.

The Forest Avenue Alternative is a switchback ramp north-south along Forest Avenue. This alternative results in a 145-foot tunnel with a kink to pass under the railroad and to pass under the exit drive. This alternative has a loss of parking and alignment changes to the IPP. The Forest Avenue Alternative is shown as Exhibit 6 and is estimated to cost $9,800,000.

A summary of the impacts of each alternative is provided as Table 1. Generally, all alternatives provide access to all users. All Alternates all have centrally located stairs near the Forest Avenue / Commuter Lot intersection. The ramp entrance, which would be ADA compliant and used by pedestrians and bicyclists, varies with each alternative. Alternate A has the furthest east entrance while the remaining alternate ramp entrances are centrally located near the Forest Avenue / Commuter Lot intersection.

Table 1: DOWNTOWN Pedestrian Underpass Impact Summary

	EAST ALT A	EAST ALT B	EAST ALT C	WEST ALT	FOREST ALT
Parking Loss	22	39	42	7	3
Multiple User Access		X		X	X
Travel Pattern Change	X	X	X	X	
IPP Impact	X	X		X	X
Length of Tunnel	110'	110'	65'	75'	145'
Cost ($M)	8.2	7.1	5.6	6.6	9.8

Comparing the three key items which are parking impacts, multiple-use access, and travel pattern changes, the Western and Forest Alternatives have the least impact to parking, serve multiple users, and have the least impact to travel pattern change. When adding in the length of tunnel and the associated cost, the Western Alternative is a shorter tunnel and costs less than the Forest Alternative.

Renderings of what the Western Alternative could look like from the user's perspective are shown on the next page.

The five alignments for the pedestrian underpass at the Metra Station were presented at a Village Board Workshop on May 19, 2014. At this workshop, the Village Board reviewed the findings and discussed the merit and functionality of each alternative. One design aspect that was not shown, but was discussed, was the use of elevators instead of ramps. Elevators could save space and minimize impacts to adjacent properties. Elevators are also about the same cost to construct as the ramp with retaining walls. There is a maintenance and upkeep cost to the elevators that would not be associated with the ramps. A key aspect of the pedestrian underpass is the ability for all users: bicyclist, merchant, student, and commuter to use the facility. Bicyclists are not likely to wait for or utilize an elevator. In general there were different design aspects of each alternative that were liked and could be mixed and matched, including the elevator concept, to determine the preferred alternative in subsequent phases of the project. While a specific location was not selected, it was determined that a pedestrian underpass is feasible between Main Street and Park Boulevard.

Figure 5 Western Alternative Looking North along Forest Avenue

Figure 6 Western Alternative Looking East from Parking Lot

DOWNTOWN Grade Separation

To address frequent complaints/requests about downtown congestion in relation to the passenger and freight train activity through the town, the Village Board has asked about the feasibility of road grade separations. Three primary routes within the Downtown were evaluated as railroad underpasses including (from east to west) Park Boulevard, Main Street, and Prospect Avenue. In addition to the three underpass alternatives, a fourth route evaluated is an overpass between Lorraine Street from south of the tracks to Western Avenue on the north side of the tracks. The plan layout of each alternative location: Park Boulevard, Main Street, Prospect Avenue, and Lorraine/Western with the associated summarized impacts as discussed below are provided as Exhibits 7 through 10.

Figure 7 Cars Waiting for Freight Train at Park Boulevard

The criteria used to identify a reasonable location for the roadway grade separation included:

- Parking Impacts
  Since the availability and proximity of parking is of concern to the Downtown users, minimizing the number of spaces impacted is an important factor.

- Pedestrian Access
  While the improvement is for the mobility of vehicles, pedestrian access must be maintained to the adjacent properties.

- Retaining Walls
  It is understood that the roadways will be lowered/raised to go under/over the railroad. Retaining walls will need to be utilized to accommodate the change in roadway elevation and contain the elevation changes within the roadway right of way to minimize impacts to adjacent properties.

- Community Character / Context
  Will the use of retaining walls and lowered streets change the character of the community?

The key design aspects of the roadway grade separation are:

- The roadway will need to be lowered 18.5 feet to 22.5 feet to go under the railroad. At the Lorraine/Western location the road will need to be raised 23 feet to cross over the railroad.
- To minimize longitudinal impacts, the roadway grade is 7.5%. To meet ADA requirements, the sidewalk grade is 5%. The difference in percentage of grade results in the sidewalk and roadway at the low point, under the railroad, to be at different elevations as reflected in Figure 8

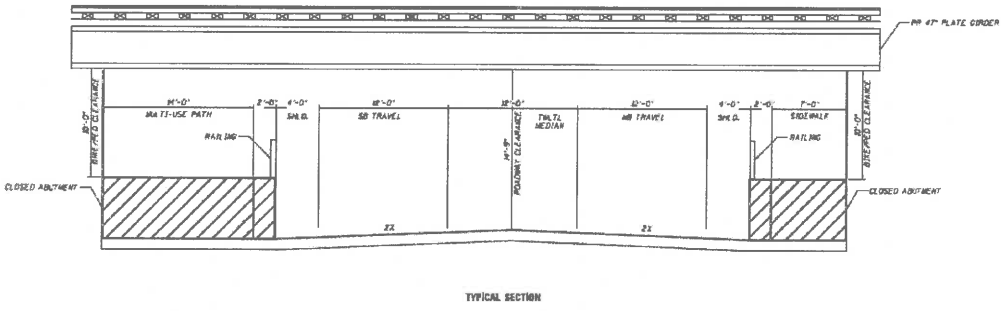


Figure 8 Typical Section for Underpasses

- Each alternative results in tiered sidewalks to maintain street access and building access.
- With each alternative an additional bike bridge is needed to maintain a safe crossing for the IPP.
- The Main Street alternative results in a bridge crossing of Duane Street over Main Street resulting in no access between Duane and Main.
- The extent of pavement impacts range from 3,700 linear feet of pavement to 5,300 linear feet of pavement.
- Each road with a profile adjustment has retaining walls. Retaining walls range in in height from 2 feet to 23 feet.
- Many parking lots need to be re-graded with retaining walls on-site to maintain vehicular access.
- Many private driveways are closed and homes lose access.
- The Lorraine/Western alternative results in closure of Western Avenue.

- The Lorraine/Western Alternative appears to have many site redevelopment opportunities; however, the timing of site redevelopment may not coincide with the roadway improvement.

As can be seen with the plan views and the generalized summary of impacts, there are many design and operational considerations associated with the grade separations. The grade separation may provide improved mobility for the vehicular traffic, yet, the intent of improving vehicular mobility is to improve accessibility and enhance the Downtown. The impact of lowering/raising roadways and the associated access impacts does not improve accessibility of the Downtown. The need for tiered sidewalks to provide access down at street level and at store level does not enhance visibility of the Downtown. The character of the community changes with the extent of the retaining walls, lowered streets, and modified parking lots.

The four alternatives for vehicular grade separation were presented at a Village Board Workshop on May 19, 2014. At this workshop, the Village Board reviewed the findings and concurred that the impacts at the Park Boulevard and Main Street crossings were too great to the downtown. Park Boulevard and Main Street are determined to not be feasible. It was decided that the Prospect Avenue and the Lorraine/Western alternatives were viable and a subcommittee was created to evaluate vehicular grade separation alternatives further.

Sub Committee Coordination

A sub-committee of Trustee Elliott and Trustee Ladesic, the Village Engineer, the Village Manager, and HDR met three times: June 20, September 24, and November 19, 2014.

June 2014

At the June meeting the alternatives were reviewed and the likes/dislikes of each discussed. It was once again stated that the Park Boulevard and Main Street alternatives were not feasible because there were too many impacts to the adjacent properties. The focus became west of Main Street. From a general topography standpoint, with Pennsylvania Avenue elevated to the north of the tracks and Hillside Avenue elevated to the south of the tracks, it appeared that an overpass would be viable. The western alignment of Lorrain/Western was also liked in the context that it did not interfere with the operations of the downtown. However, closure of Western Avenue and raising Pennsylvania Avenue was not desired. It was noted how the underpasses previously evaluated had impacts two to three blocks away from the rail crossing. It is desired to keep impacts to a more confined area. It was also noted that there are redevelopment opportunities between Prospect Avenue and Main Street and it would be interesting to see how a grade separation could work with a redevelopment. From these points HDR was asked to provide profiles for the alignments, evaluate other non-traditional alignments for the Lorraine/Western overpass to try to minimize impacts and to evaluate an overpass crossing at Glenwood Avenue.

September 2014

The new overpass alternatives were presented at the September meeting. Overpass Alternative A through Overpass Alternative E are included as Exhibit 11 through Exhibit 15. With these and future alternatives, the impacts were not summarized, but were visually portrayed. The alternatives were evaluated on functionality and implied visual impacts to the surrounding properties.

Alternative A is a curving alignment from Pennsylvania Avenue over the tracks to Duane Street. While Pennsylvania Avenue is elevated above the railroad track, the bridge crossing still needs to be elevated 20+ feet to provide the railroad clearance. A ramp is proposed within the existing roadway of Pennsylvania Avenue. The ramp would utilize much of the existing roadway, thus only allowing westbound through traffic on Pennsylvania Avenue. Eastbound through traffic would follow a diverted route from the intersection of Western Avenue along the bank entrance continuing through to intersect with Prospect Avenue at Crescent Avenue.

Alternative B is a ninety-degree turning alignment beginning at the Prospect Avenue / Crescent Avenue intersection. The ramp would proceed upward toward the Western Avenue intersection following the alignment of the bank driveway. Elevated above Pennsylvania Avenue the alignment turns 90 degrees south to cross the railroad and commuter parking lot. Two-way traffic would be maintained on Pennsylvania Avenue under the overpass structure.

With both Alternative A and B the roadway grade is between 8 and 9%. The pedestrian way which has an allowable maximum grade of 5%, has to be provided on separate alignment from the roadway structure. The pedestrian routes are shown in blue on the Exhibits.

Both Alternative A and B terminate on the south side of the tracks in the same manner. Again, a ramp is located in the center of Duane Street. In this location two-way traffic is maintained with a one-way travel lane on either side of the ramp. The roadway would be widened north and south to accommodate this design.

The Committee liked the general curving alignment but did not like the impacts along Pennsylvania Avenue and Duane Street. The Village suggested keeping the same type of alignment and moving it west of Western Street. The Village further asked to keep Pennsylvania Avenue as the through movement, i.e. not change the routing of traffic, and to keep the Western Avenue intersection open.

Overpass C provided an alignment that started at the Pennsylvania/Western intersection, traversed south and east parallel to the railroad tracks to the Prospect/Crescent Avenue intersection and then turned south over the tracks and aligned with Glenwood Avenue. This alignment results in Glenwood Avenue closed to through traffic and the closure of parking lot driveways. This general alignment was not looked at favorably.

Overpass D is located at Glenwood Avenue. Due to geometric policies with sight distance over the bridge and vertical curve lengths, the intersection of Pennsylvania Avenue would need to be raised to meet the bridge alignment. The profile of this alternative was compared to a recent developers' proposal for the Glenwood / Pennsylvania / Prospect / Crescent block. The bridge would be crossing within the sight lines of the users of the building. This would not be a desirable selling point. It also appeared that the redevelopment site in the northeast quadrant of Hillside Avenue and Glenwood Avenue would not be conducive to access. For these reasons this alternative was not looked at favorably. However, it was requested to see if an underpass would be feasible and work with a developer's access plan.

Overpass E is also located at Glenwood and is different on the south side of the tracks. Instead of continuing on tangent alignment toward Hillside Avenue, the ramps extend east and west toward Main Street and Prospect Avenue. This would allow for a one-way eastbound at-grade segment for through traffic between Prospect Avenue and Main Street. This was not a favorable alternative due to the 28 foot high ramps along Duane Street.

At this meeting HDR indicated that with any new alignment, i.e. Lorraine/Western versus a grade separation at an existing road crossing, it is expected for the railroad to request closure of the nearest at-grade crossing. The closest crossing would be Prospect Avenue.

From the discussions at this meeting HDR was tasked with further evaluating an overpass and underpass at Lorraine/Western, further evaluate an underpass at Prospect Avenue, and evaluate an underpass at Glenwood Avenue.

November 2014

The new alignments were presented in November. The alternatives were labeled Alt 1 through Alt 4 and are included as Exhibit 16 through Exhibit 19.

Alt 1 is an overpass at Lorraine/Western Avenue. This alternative maintains the at-grade intersection of Western Avenue and Pennsylvania Avenue. The intersection is currently three-legged with the bank driveway as the fourth leg. With this alternative it is proposed to create a roundabout at the intersection, shift the west leg of Pennsylvania Avenue northward and create a ramp between Pennsylvania Avenue and the railroad right of way. The alignment curves west and south in the vicinity of Newton Avenue. South of the railroad the alignment meets at the Lorraine/Duane Avenue intersection. Duane Avenue would be closed west of the ramp. In concept, this alignment was well received but the committee members asked if it was possible to further minimize impacts to adjacent properties.

Alt 2 is an underpass at Lorraine/Western. This alternative is different in that the entrance to the ramp is located at the Prospect/Pennsylvania Avenue intersection, again with a roundabout. This alternative provides a better connection to the underpass for the

eastbound traffic. This alignment also brings the impacts back to the east, which is not desired. The village questioned if this underpass concept could be combined with the Alt 1 alignment and combined with an entrance at the Prospect/Crescent Avenue intersection. HDR concurred with the probability of an underpass alignment and the ramp entrance location.

Alt 3 is an underpass at Prospect Avenue. The purpose of the re-evaluation was to compare what the effect of different bridge deck depths would have. It was determined that if the bridge deck depth was two feet less, then the length of impact would be reduced by approximately 50 feet. A discussion was held regarding the maximum grade of the roadway; a steeper grade reduces the length of impact. It was noted that all the alternatives maximize the grade based on policy and known surrounding land elevations. It was discussed as to how these are the same impacts to Alt 4, which is an underpass at Glenwood Avenue.

Alt 4 is similar to Overpass 3 presented in September. As previously noted, if the alignment were to extend south on tangent alignment the impacts would extend to Hillside Avenue. With the alignment as shown, the east/west ramps would be below ground and maintain a one-way eastbound through lane. This alternative takes into consideration access needs for development should the block surrounded by Glenwood / Pennsylvania / Prospect / Crescent be re-developed. The vertical alignment was designed to allow Crescent Avenue to be maintained over Glenwood Avenue. The effect of lowering Glenwood Avenue in a shorter distance than the railroad tracks is that Pennsylvania Avenue would too need to be lowered. Again, this is due to maximum grades, vertical curve lengths, and sight distance requirements.

Many of the alignment requests at this meeting focused around adjustments of where intersections were located or the ability to minimize impacts. HDR then focused the conversation toward the goal of the study which is feasibility. HDR pointed out that the September meeting and the November meeting focused on alignments west of Glenwood Avenue. With the goal of the study to determine feasibility, has the Sub-Committee determined that an alignment located west of Glenwood Avenue could be feasible? It was noted that the process of determining the actual location, the look of it, and the public coordination would occur in the next step of the project. Understanding the next step, the Sub-Committee concurred that an alternative west of Glenwood Avenue could be feasible.

Funding Opportunities

Based on the proposed types of improvements and the intended purpose of the improvements a matrix of potential funding sources was identified. The funding opportunities are listed in Exhibit 20. There are many opportunities for funding. Generally, funding sources can be combined to offset the local match. HDR is able to assist the Village of Glen Ellyn in grant writing and identifying further the best funding scenarios. Since this feasibility study has been initiated, the Village of Glen Ellyn has submitted and been selected for TCM (Transportation Control Measures) funding from

the DuPage County Council of Mayors and Managers. The TCM funding is for construction of the Taylor Street underpass improvement. Additionally, coordination has occurred with the ICC (Illinois Commerce Commission) in which they recommend submitting a GPF (Grade Protection Fund) application for each project.

Summary

A feasibility study was preformed for three different projects in the Village of Glen Ellyn. The three projects are:

1. Taylor Avenue Pedestrian Underpass
2. Pedestrian Underpass
3. Vehicular Grade Separation

The Taylor Avenue Pedestrian Underpass was deemed feasible. An eastern alignment was preferred that will minimize changes to the existing railroad structure, minimize right of way need, maintain route continuity, and will allow for future improvements to Taylor Avenue if desired. The Taylor Avenue Pedestrian Underpass construction is estimated to cost $2,100,000.

The Pedestrian Underpass was deemed feasible. The Western alignment west of the train station minimizes parking loss, minimizes travel changes, and provides a central location for multiple users. The Forest Avenue Pedestrian Underpass construction is estimated to cost $7,700,000.

For the Vehicular Grade Separation a particular alignment was not selected but it was determined that a vehicular grade separation is feasible west of Glenwood Avenue. Additional studies and public coordination is needed to determine a preferred alignment. An evaluation of the worse case (most costly) alignment studied construction cost is estimated at $21,200,000


TAYLOR ST. PEDESTRIAN TUNNEL ALTERNATIVE
TAYLOR
ELEV. 724'
ELEV. 712.5'
ELEV. 708'
WALNUT
TAYLOR
EXHIBIT 1


EAST PEDESTRIAN
TUNNEL ALTERNATIVE A
PARK
CRESCENT
-6 PARKING SPOTS
TUNNEL FLOOR
17' BELOW GROUND
LENGTH: 110'
-16 PARKING SPOTS
EXHIBIT 2


EAST PEDESTRIAN
TUNNEL ALTERNATIVE B
PARK
CRESCENT
-6 PARKING SPOTS
TUNNEL FLOOR
17' BELOW GROUND
LENGTH: 110'
-33 PARKING SPOTS

EXHIBIT 3


EAST PEDESTRIAN
TUNNEL ALTERNATIVE C
PARK
CRESCENT
-6 PARKING SPOTS
TUNNEL FLOOR
17' BELOW GROUND
LENGTH: 65'
-36 PARKING SPOTS

EXHIBIT 4


WEST PEDESTRIAN TUNNEL ALTERNATIVE
FOREST
CRESCENT
ELEV. 738'
ELEV. 744'
LENGTH: 75'
TUNNEL FLOOR DEPRESSED -17'
-3 PARKING SPOTS
-7 PARKING SPOTS
+3 PARKING SPOTS
DUANE
FOREST
EXHIBIT 5


FOREST AVE. PEDESTRIAN TUNNEL ALTERNATIVE
CRESCENT
ELEV. 738'
ELEV. 744'
LENGTH: 145'
-3 PARKING SPOTS
PARKING MAINTAINED
FOREST
DUANE
EXHIBIT 6


PARK BLVD.
UNDERPASS ALTERNATIVE
PARK
PENNSYLVANIA
CRESCENT
WEST
DUANE
HILLSIDE
PARK
LEGEND
REGRADED ACCESS/PARKING
DEVELOPMENT SITE IMPACT
ACCESS IMPACT
EXISTING RIGHT OF WAY
PROPOSED RETAINING WALL
PROPOSED SIDEWALK
PROPOSED PAVEMENT
EXHIBIT 7

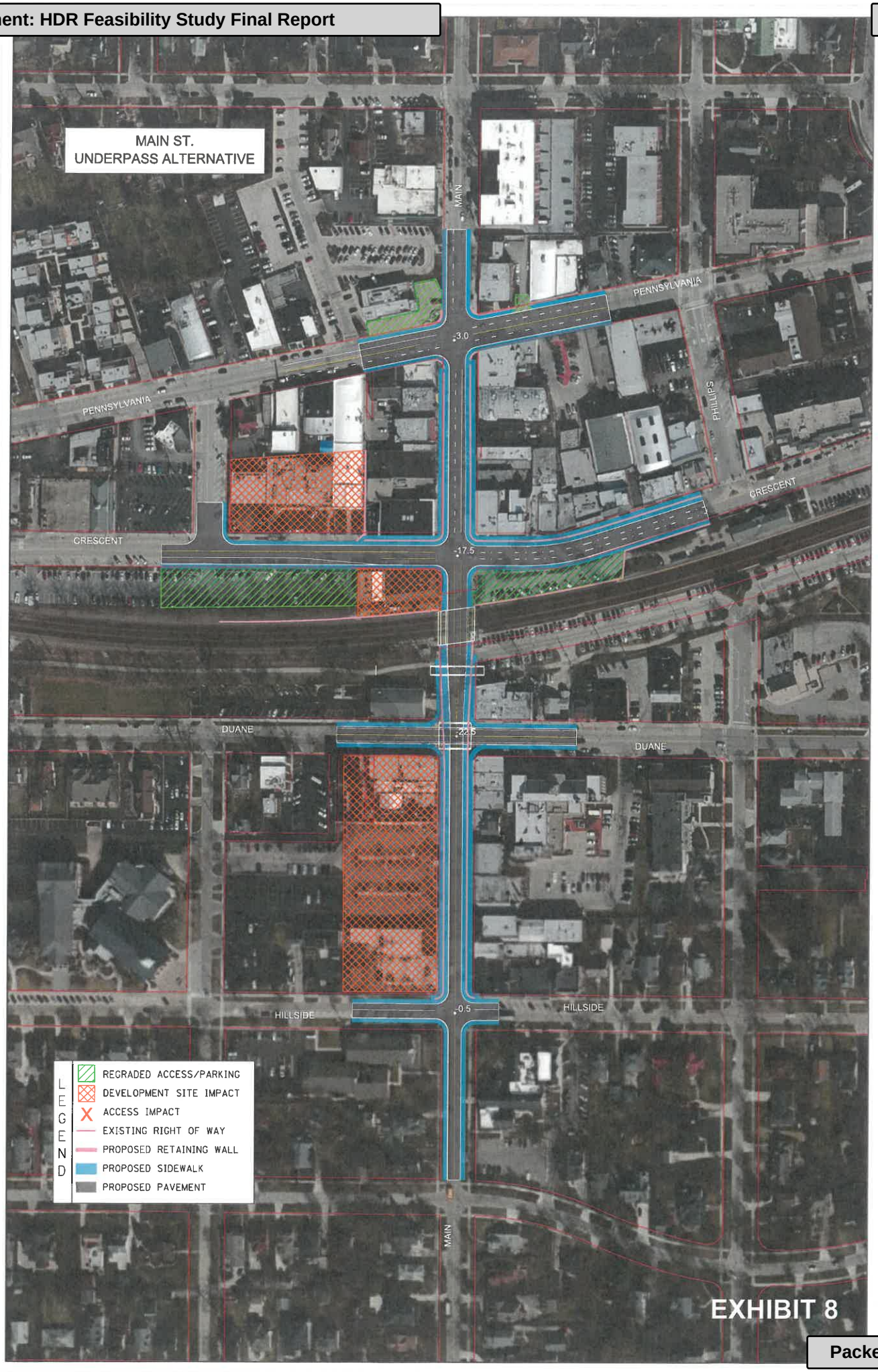
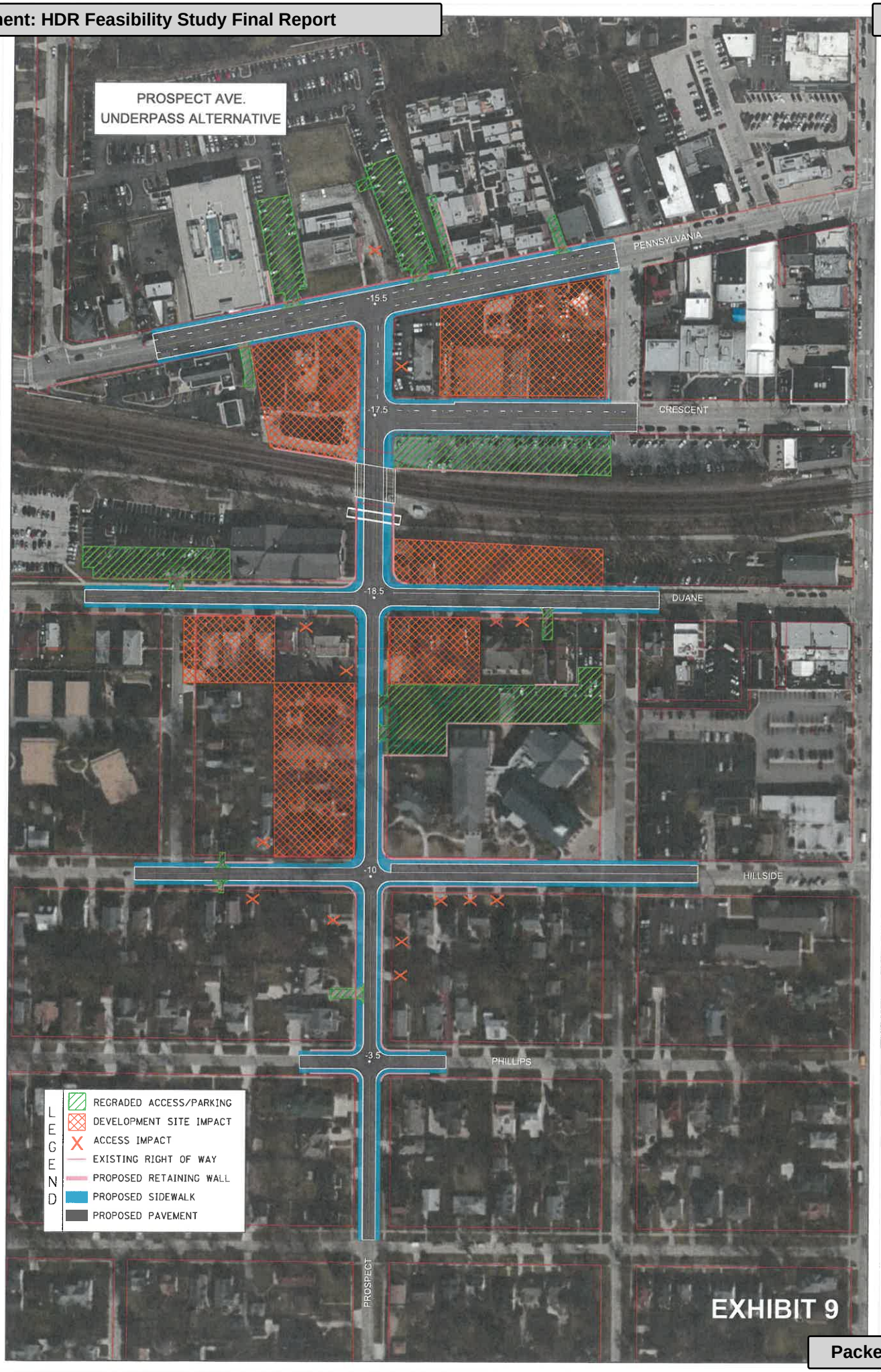

MAIN ST.
UNDERPASS ALTERNATIVE
MAIN
PENNSYLVANIA
PENNSYLVANIA
PHILLIPS
CRESCENT
CRESCENT
DUANE
DUANE
HILLSIDE
HILLSIDE
MAIN
3.0
17.5
22.5
0.5
LEGEND
REGRADED ACCESS/PARKING
DEVELOPMENT SITE IMPACT
ACCESS IMPACT
EXISTING RIGHT OF WAY
PROPOSED RETAINING WALL
PROPOSED SIDEWALK
PROPOSED PAVEMENT

EXHIBIT 8


PROSPECT AVE.
UNDERPASS ALTERNATIVE
PENNSYLVANIA
-15.5
-17.5
CRESCENT
-18.5
DUANE
-10
HILLSIDE
-3.5
PHILLIPS
PROSPECT
LEGEND
REGRADED ACCESS/PARKING
DEVELOPMENT SITE IMPACT
ACCESS IMPACT
EXISTING RIGHT OF WAY
PROPOSED RETAINING WALL
PROPOSED SIDEWALK
PROPOSED PAVEMENT
EXHIBIT 9


OVERPASS ALTERNATIVE
WESTERN
PENNSYLVANIA
+24
DUANE
+16
+23
CENTER
MELROSE
LORRAINE
HILLSIDE
LEGEND
REGRADED ACCESS/PARKING
DEVELOPMENT SITE IMPACT
ACCESS IMPACT
EXISTING RIGHT OF WAY
PROPOSED RETAINING WALL
PROPOSED SIDEWALK
PROPOSED PAVEMENT
EXHIBIT 10

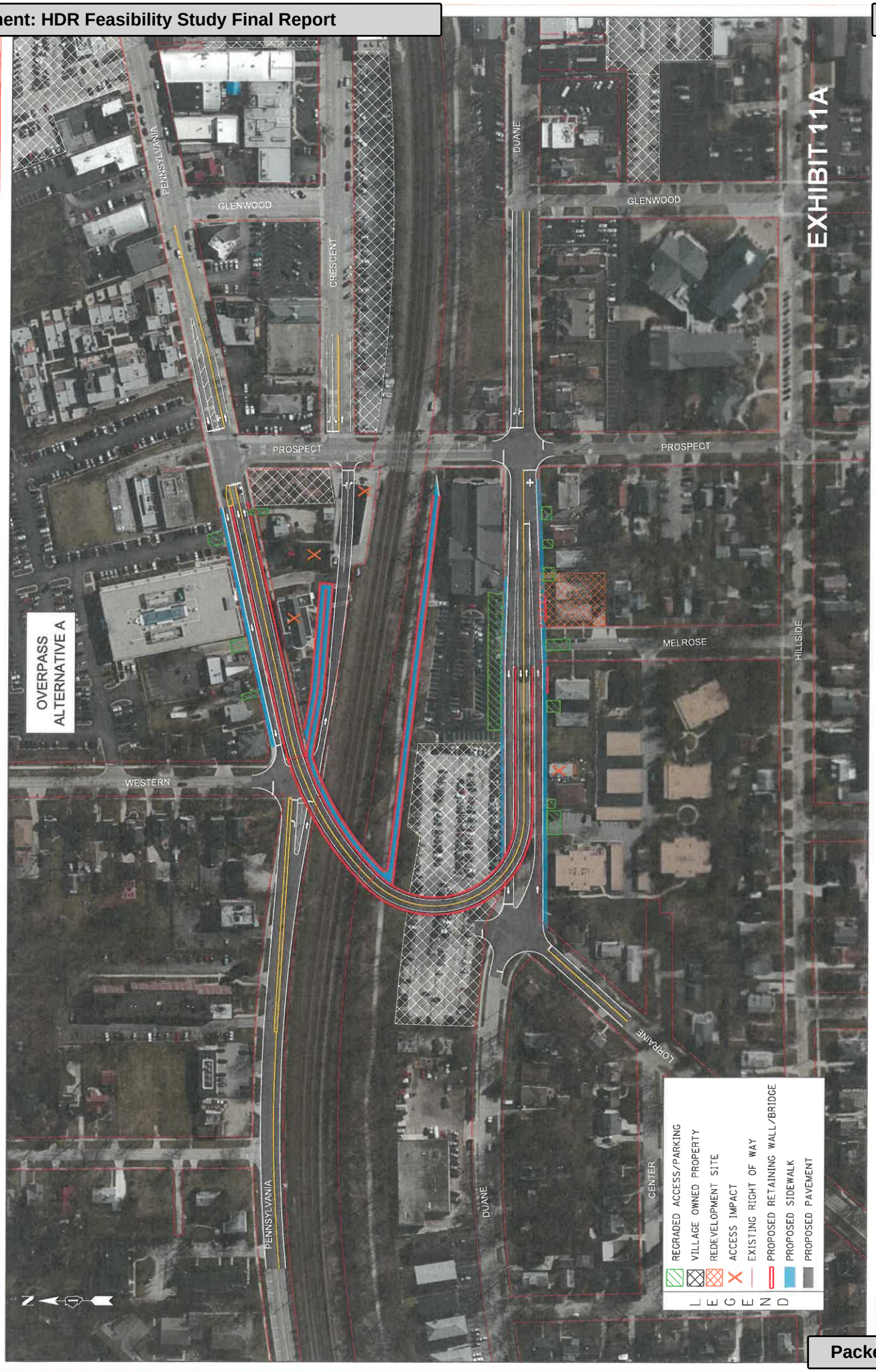
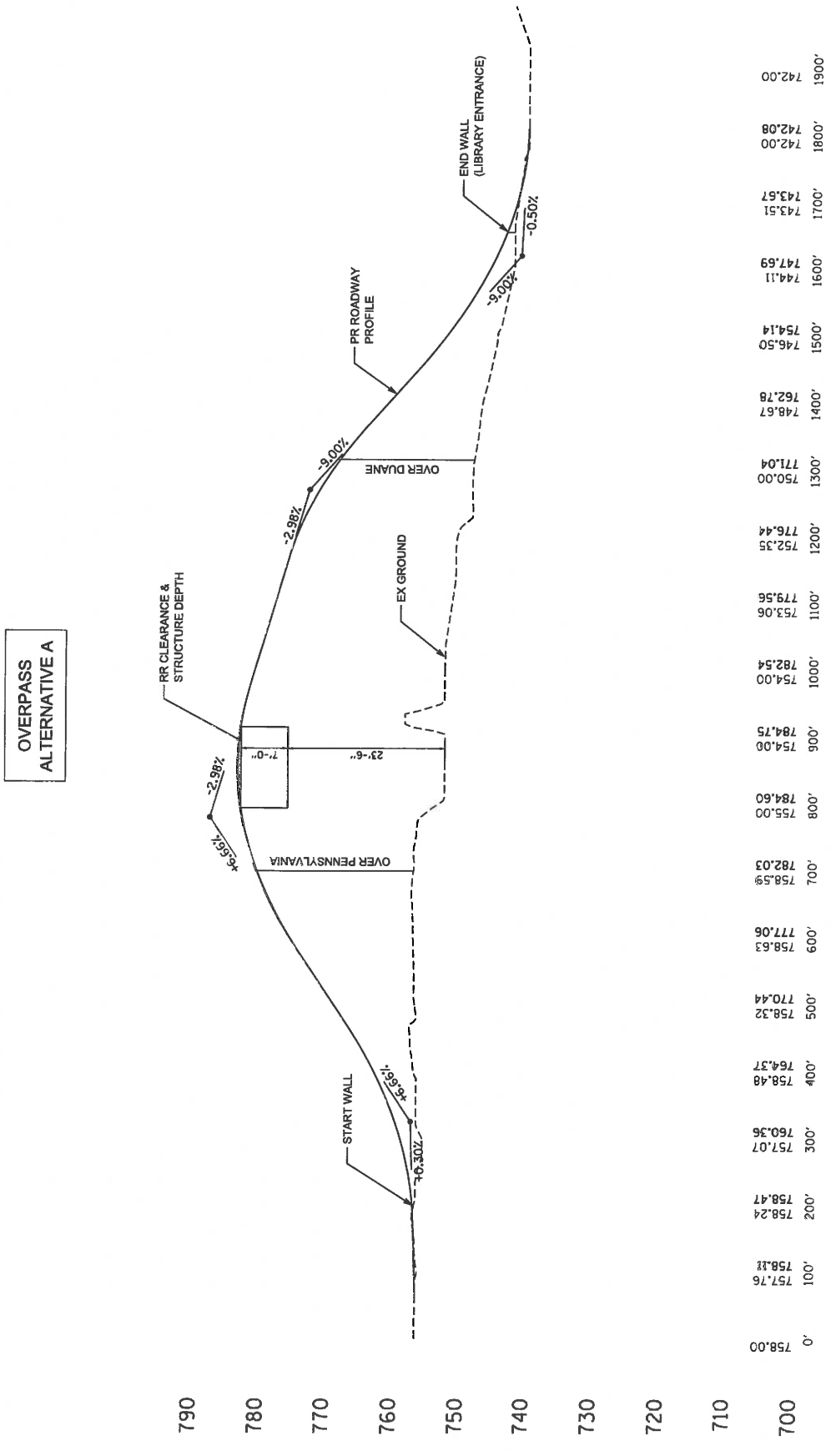


EXHIBIT 11A
OVERPASS ALTERNATIVE A
PENNSYLVANIA
GLENWOOD
CRESCENT
DUANE
PROSPECT
MELROSE
HILLSIDE
WESTERN
LORRAINE
CENTER
LEGEND
REGRADED ACCESS/PARKING
VILLAGE OWNED PROPERTY
REDEVELOPMENT SITE
ACCESS IMPACT
EXISTING RIGHT OF WAY
PROPOSED RETAINING WALL/BRIDGE
PROPOSED SIDEWALK
PROPOSED PAVEMENT

EXHIBIT 11B


OVERPASS
ALTERNATIVE A
RR CLEARANCE &
STRUCTURE DEPTH
EX GROUND
PR ROADWAY
PROFILE
END WALL
(LIBRARY ENTRANCE)
START WALL
OVER PENNSYLVANIA
OVER DUANE
-2.98%
-16.69%
-1.96%
+6.30%
-9.00%
-0.50%
7'-0"
23'-6"
790
780
770
760
750
740
730
720
710
700
0' 758.00
100' 757.76 758.11
200' 758.24 758.47
300' 757.07 760.36
400' 758.48 764.37
500' 758.32 770.44
600' 758.63 777.06
700' 758.59 782.03
800' 755.00 784.60
900' 754.00 784.75
1000' 754.00 782.54
1100' 753.06 779.56
1200' 752.35 776.44
1300' 750.00 771.04
1400' 748.67 762.78
1500' 746.50 754.14
1600' 744.11 747.69
1700' 743.51 743.67
1800' 742.00 742.08
1900' 742.00

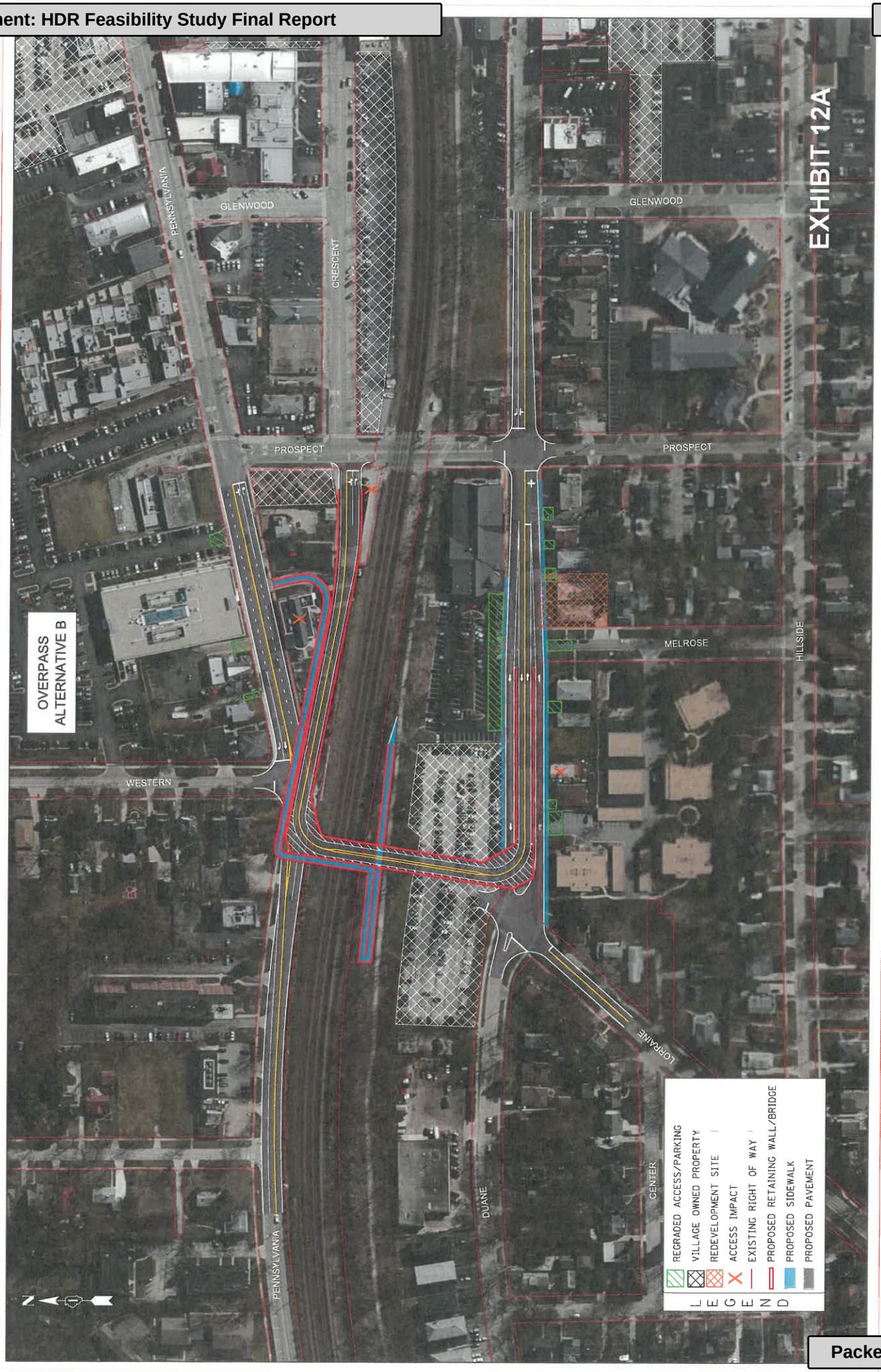


EXHIBIT 12A
OVERPASS ALTERNATIVE B
PENNSYLVANIA
GLENWOOD
CRESCENT
PROSPECT
WESTERN
MELROSE
HILLSIDE
LORRAINE
DUANE
CENTER
LEGEND
REGRADED ACCESS/PARKING
VILLAGE OWNED PROPERTY
REDEVELOPMENT SITE
ACCESS IMPACT
EXISTING RIGHT OF WAY
PROPOSED RETAINING WALL/BRIDGE
PROPOSED SIDEWALK
PROPOSED PAVEMENT

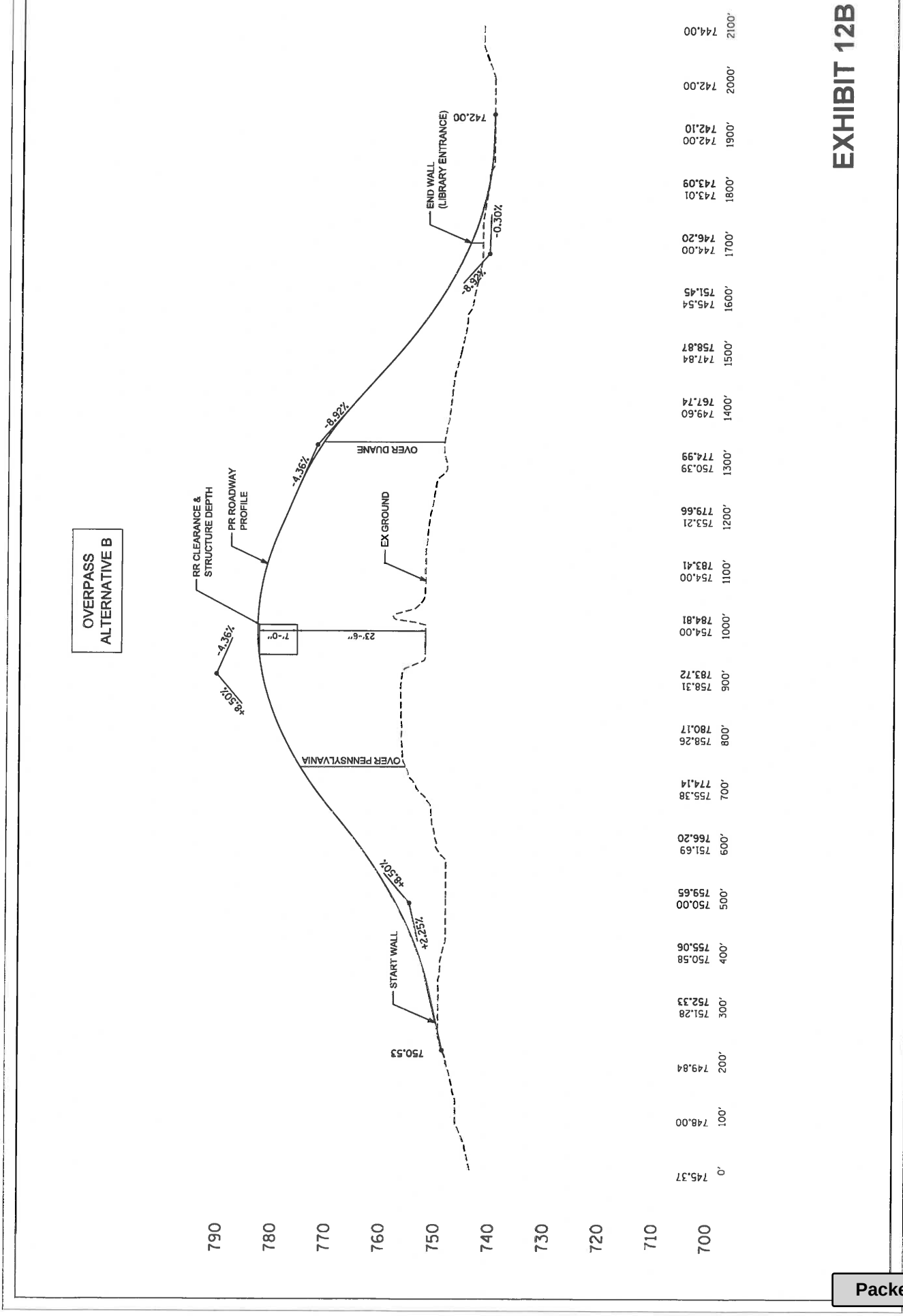
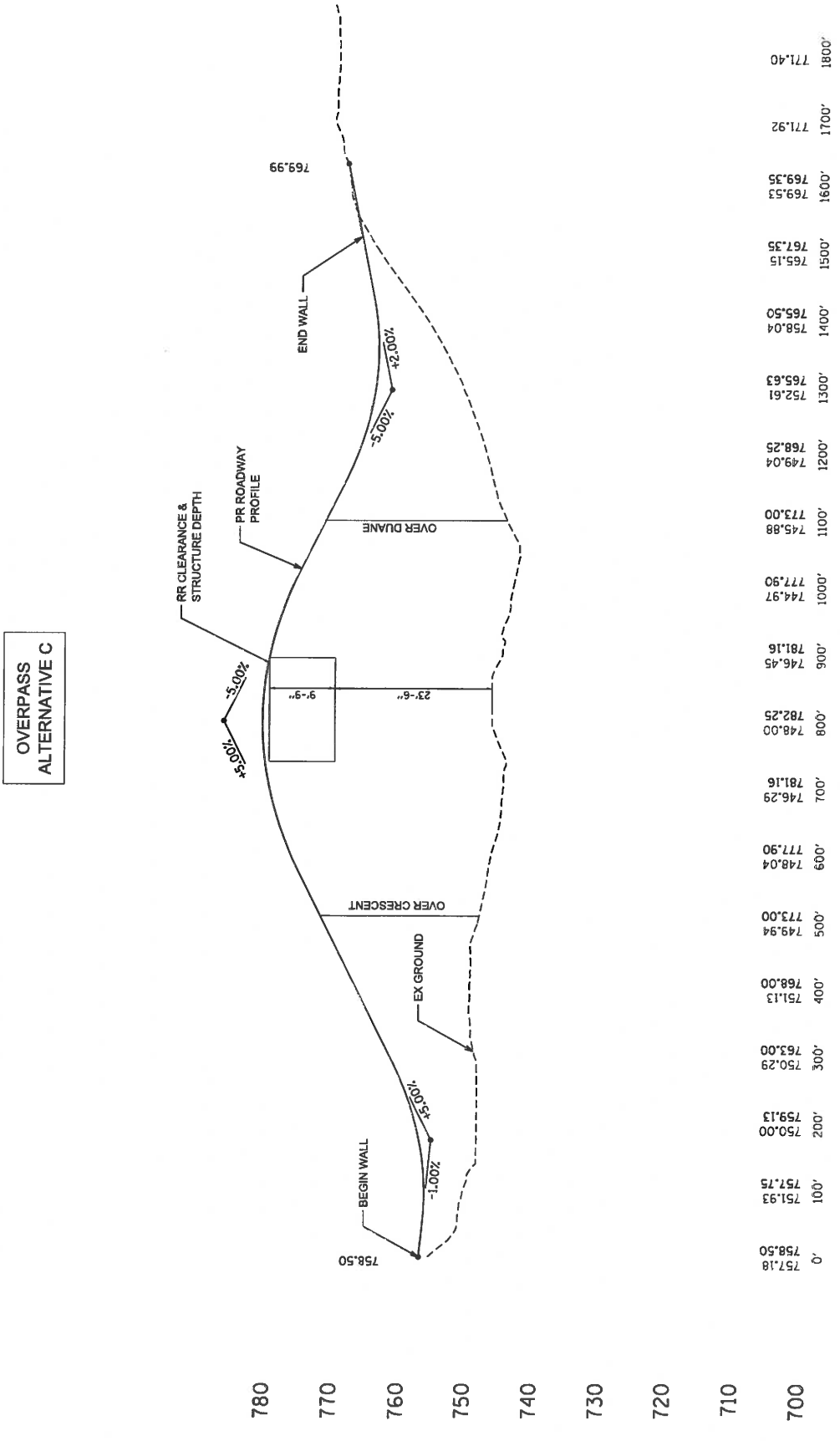


EXHIBIT 12B
OVERPASS
ALTERNATIVE B
RR CLEARANCE &
STRUCTURE DEPTH
PR ROADWAY
PROFILE
EX GROUND
OVER DUANE
OVER PENNSYLVANIA
END WALL
(LIBRARY ENTRANCE)
START WALL
-4.36%
-8.92%
-8.50%
+2.25%
-0.30%
7'-0"
23'-6"
790
780
770
760
750
740
730
720
710
700
745.37
748.00
749.84
750.53
751.28
752.33
750.58
755.06
750.00
759.65
751.69
766.20
755.38
774.14
758.26
780.17
758.31
783.72
754.00
784.81
754.00
783.41
753.21
779.66
750.39
774.99
749.60
767.74
747.84
758.87
745.54
751.45
744.00
746.20
743.01
743.09
742.00
742.10
742.00
742.00
744.00
0'
100'
200'
300'
400'
500'
600'
700'
800'
900'
1000'
1100'
1200'
1300'
1400'
1500'
1600'
1700'
1800'
1900'
2000'
2100'


EXHIBIT 13A
OVERPASS ALTERNATIVE C
GLENWOOD
CRESCENT
PENNSYLVANIA
PROSPECT
DUANE
MELROSE
HILLSIDE
WESTERN
LORRAINE
CENTER
LEGEND
REGRADED ACCESS/PARKING
VILLAGE OWNED PROPERTY
REDEVELOPMENT SITE
ACCESS IMPACT
EXISTING RIGHT OF WAY
PROPOSED RETAINING WALL/BRIDGE
PROPOSED SIDEWALK
PROPOSED PAVEMENT

EXHIBIT 13B

OVERPASS
ALTERNATIVE C




OVERPASS
ALTERNATIVE D
5.5% TIE-IN
GRADE
+8.5
PENNSYLVANIA
PROSPECT
CRESCENT
DUANE
HILLSIDE
GLENWOOD
MAIN
MAIN
PROSPECT
LEGEND
REGRADED ACCESS/PARKING
VILLAGE OWNED PROPERTY
REDEVELOPMENT SITE
ACCESS IMPACT
EXISTING RIGHT OF WAY
PROPOSED RETAINING WALL/BRIDGE
PROPOSED SIDEWALK
PROPOSED PAVEMENT
EXHIBIT 14A

OVERPASS
ALTERNATIVE D

PENNSYLVANIA

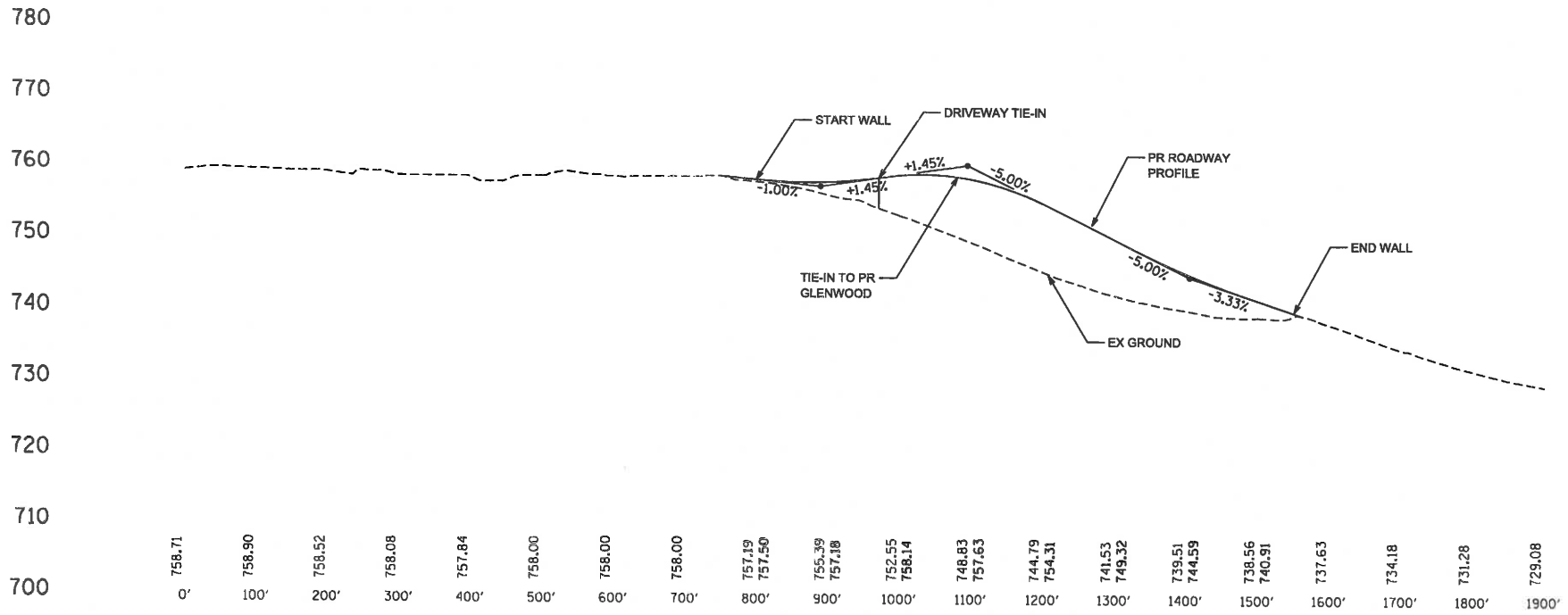


EXHIBIT 14B

OVERPASS
ALTERNATIVE D

GLENWOOD

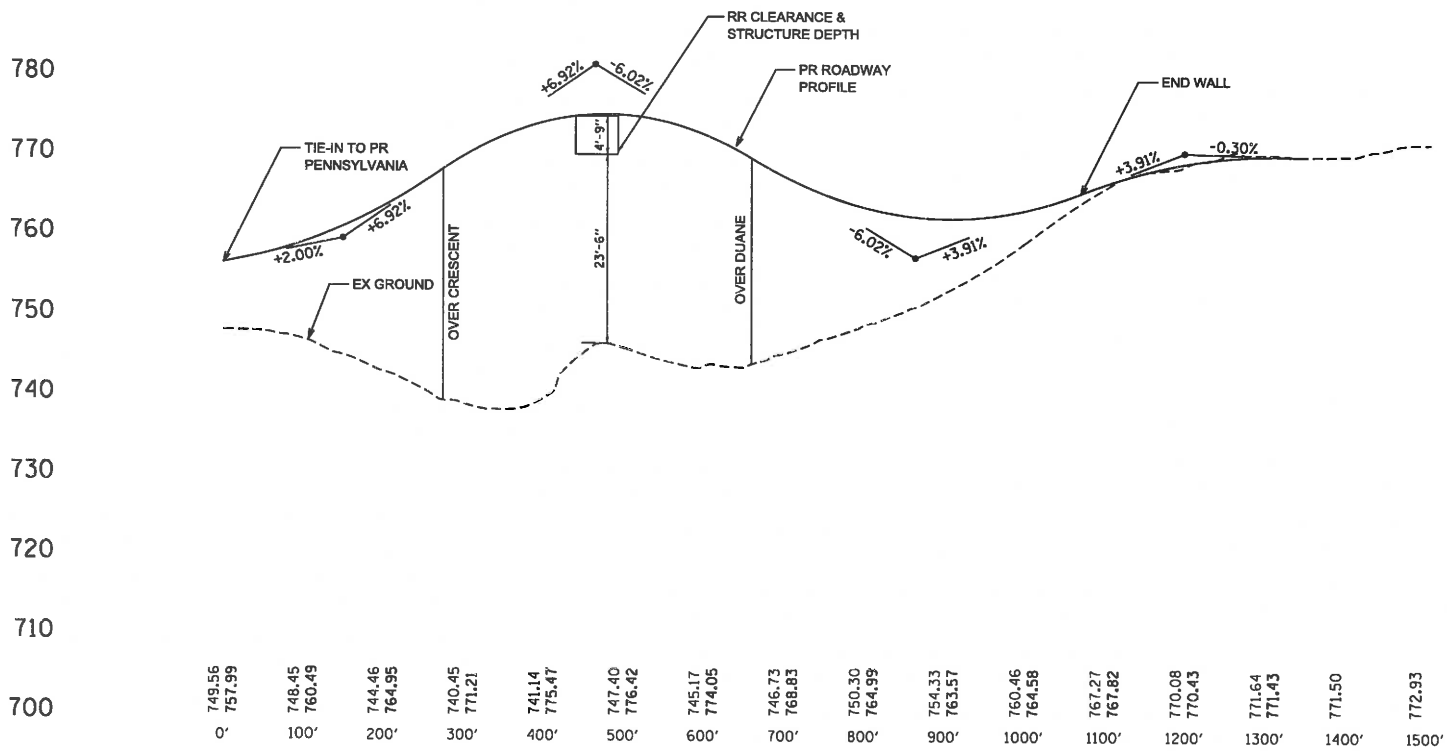
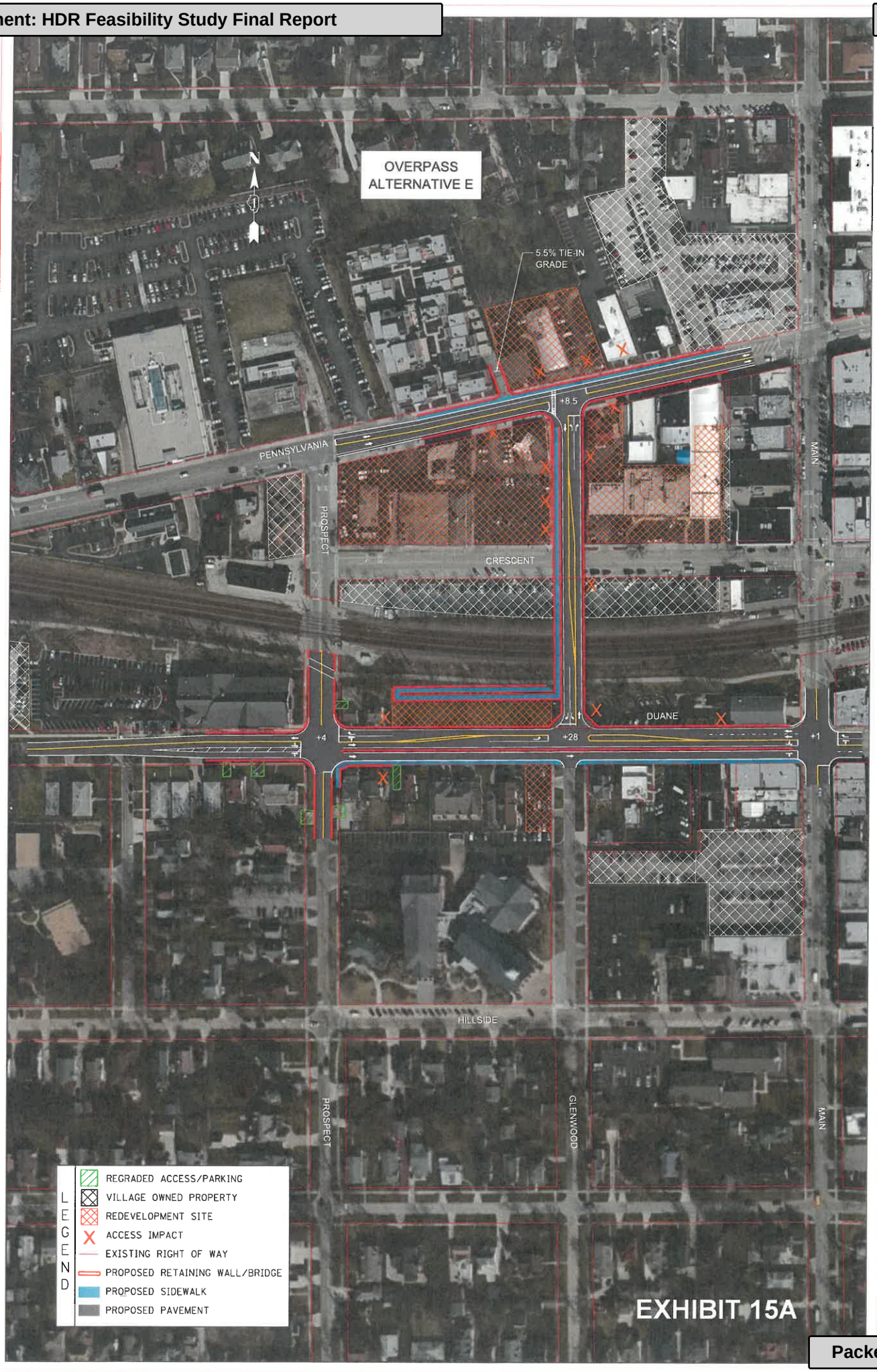


EXHIBIT 14C


OVERPASS
ALTERNATIVE E
N
5.5% TIE-IN
GRADE
+8.5
PENNSYLVANIA
PROSPECT
CRESCENT
MAIN
DUANE
+4
+28
+1
HILLSIDE
PROSPECT
GLENWOOD
MAIN
LEGEND
REGRADED ACCESS/PARKING
VILLAGE OWNED PROPERTY
REDEVELOPMENT SITE
ACCESS IMPACT
EXISTING RIGHT OF WAY
PROPOSED RETAINING WALL/BRIDGE
PROPOSED SIDEWALK
PROPOSED PAVEMENT
EXHIBIT 15A

OVERPASS
ALTERNATIVE E

GLENWOOD

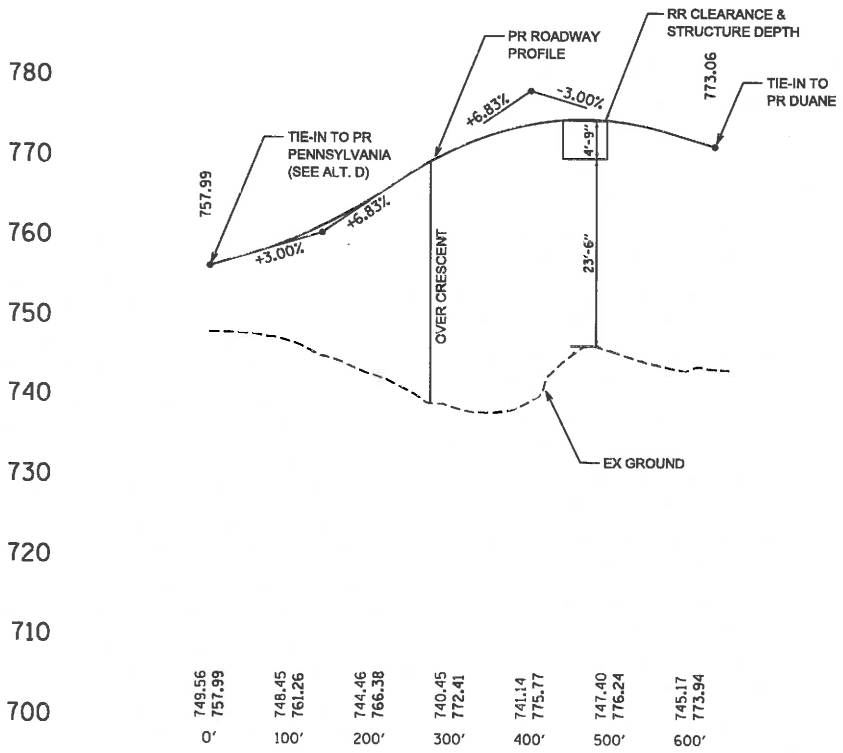


EXHIBIT 15B

EXHIBIT 15C

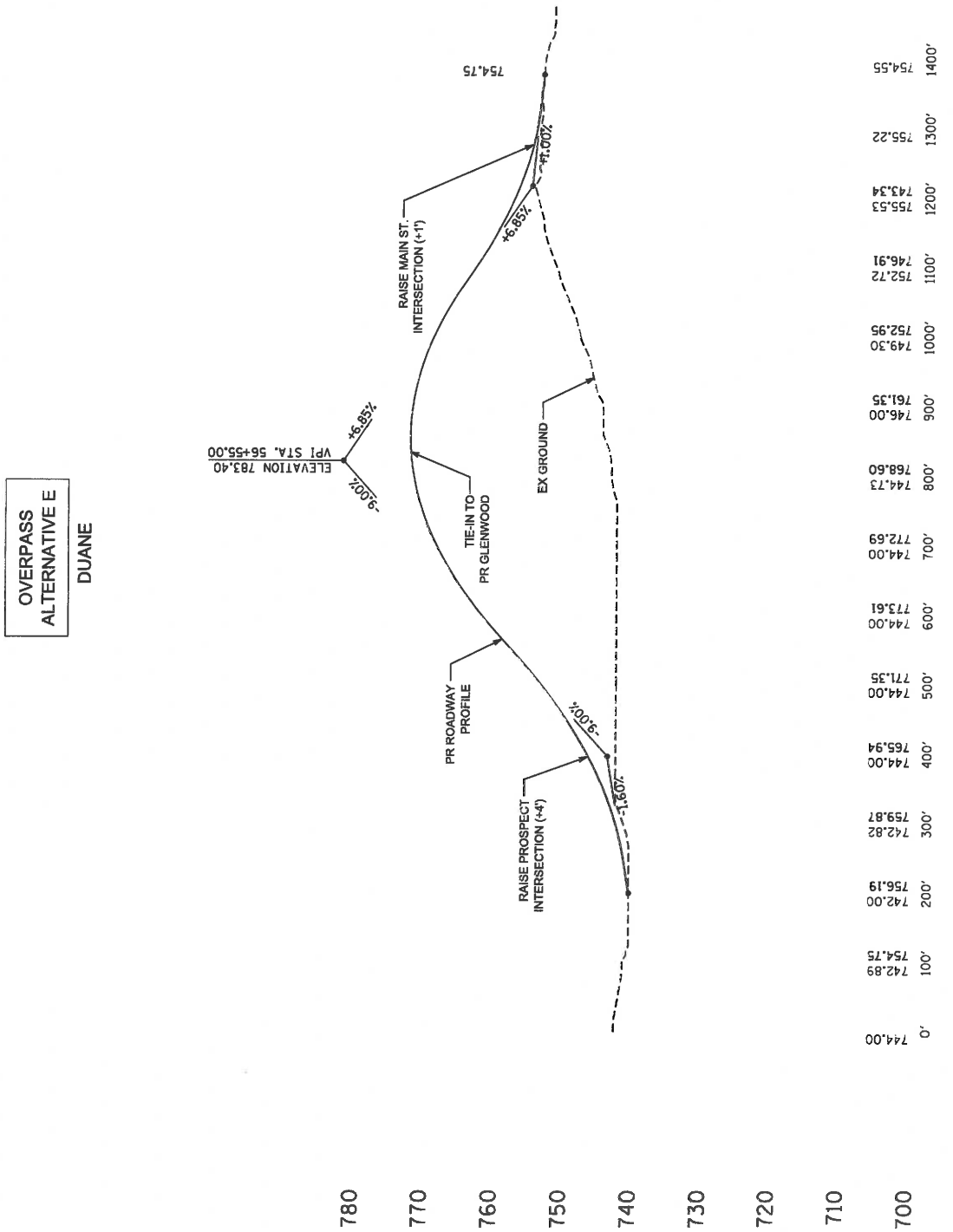
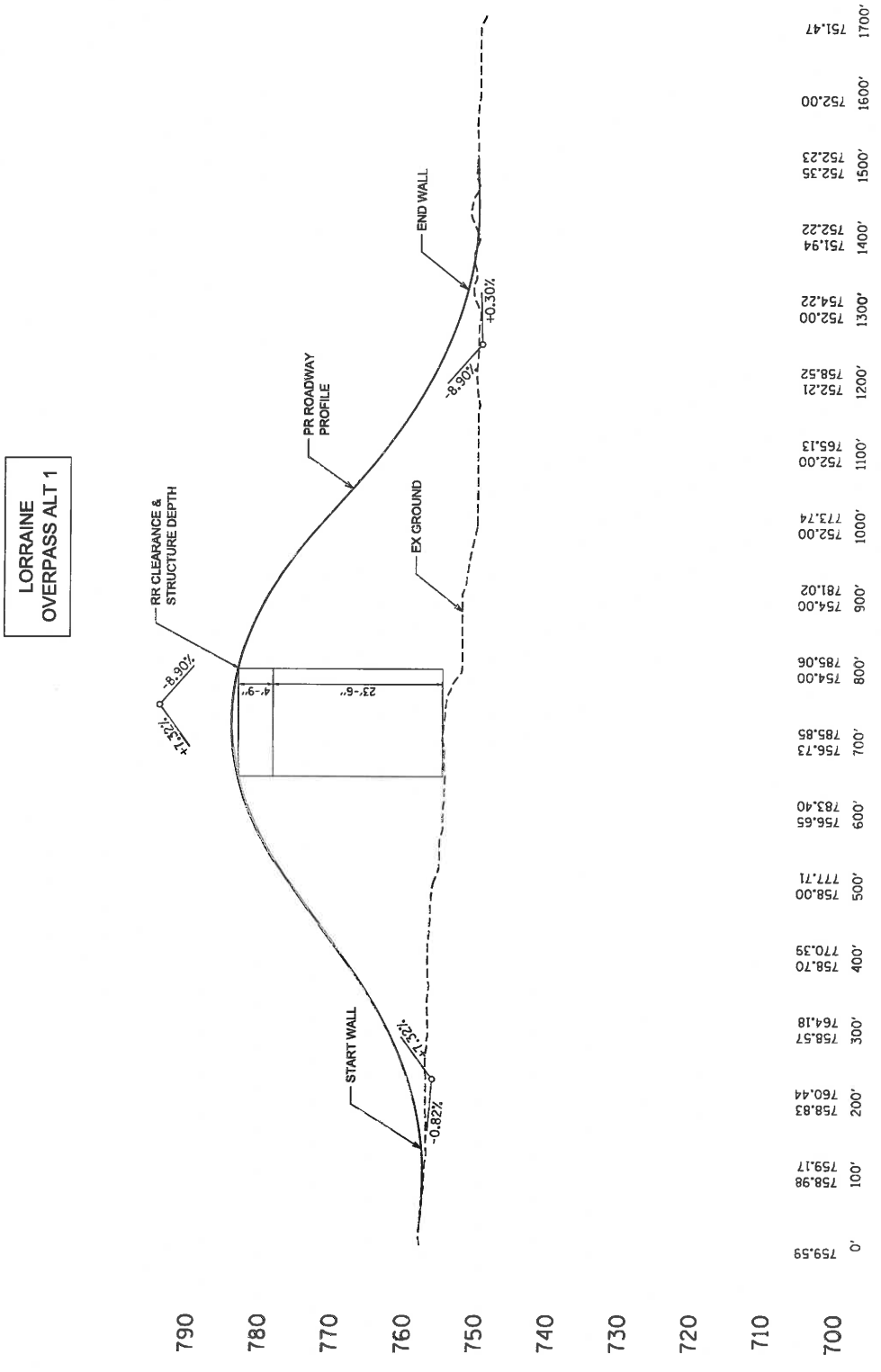

OVERPASS
ALTERNATIVE E
DUANE
ELEVATION 783.40
VPI STA. 56+55.00
+6.85%
-9.00%
754.75
RAISE MAIN ST.
INTERSECTION (+1')
+6.85%
+1.00%
TIE-IN TO
PR GLENWOOD
EX GROUND
PR ROADWAY
PROFILE
-9.00%
RAISE PROSPECT
INTERSECTION (+4')
-1.09%
780
770
760
750
740
730
720
710
700
0' 744.00
100' 742.89 754.75
200' 742.00 756.19
300' 742.82 759.87
400' 744.00 765.94
500' 744.00 771.35
600' 744.00 773.61
700' 744.00 772.69
800' 744.73 768.60
900' 746.00 761.35
1000' 749.30 752.95
1100' 752.72 746.91
1200' 755.53 743.34
1300' 755.22
1400' 754.55

EXHIBIT 16A
LORRAINE OVERPASS ALT 1
GLENWOOD
CRESCENT
PENNSYLVANIA
PROSPECT
WESTERN
MELROSE
HILLSIDE
LORRAINE
CENTER
DUANE
6 PARKING
OVER RR
SKEW: 53° - 57°
LEGEND
REGRADED ACCESS/PARKING
VILLAGE OWNED PROPERTY
REDEVELOPMENT SITE
STRUCTURE IMPACT
EXISTING RIGHT OF WAY
PROPOSED RETAINING WALL/BRIDGE
PROPOSED SIDEWALK
PROPOSED PAVEMENT

EXHBIIT 16B


LORRAINE
OVERPASS ALT 1
RR CLEARANCE &
STRUCTURE DEPTH
PR ROADWAY
PROFILE
EX GROUND
END WALL
START WALL
-8.90%
+12%
4'-9"
23'-6"
+0.30%
-8.06%
-0.82%
+1.42%
790
780
770
760
750
740
730
720
710
700
0' 759.59
100' 758.98 759.17
200' 758.83 760.44
300' 758.57 764.18
400' 758.70 770.39
500' 758.00 777.71
600' 756.65 783.40
700' 756.73 785.85
800' 754.00 785.06
900' 754.00 781.02
1000' 752.00 773.74
1100' 752.00 765.13
1200' 752.21 758.52
1300' 752.00 754.22
1400' 751.94 752.22
1500' 752.35 752.23
1600' 752.00
1700' 751.47

EXHBIIT 17A
LORRAINE UNDERPASS ALT 2
GLENWOOD
PENNSYLVAN
CRESCENT
PROSPECT
MELROSE
HILLSIDE
WESTERN
UNDER PENNSYLVANIA (STRUCTURE 1)
UNDER PENNSYLVANIA (STRUCTURE 2)
UNDER RR (STRUCTURE 3)
PENNSYLVANIA
DUANE
CENTER
LORRAINE
LEGEND
REGRADED ACCESS/PARKING
VILLAGE OWNED PROPERTY
REDEVELOPMENT SITE
STRUCTURE IMPACT
EXISTING RIGHT OF WAY
PROPOSED RETAINING WALL/BRIDGE
PROPOSED SIDEWALK
PROPOSED PAVEMENT

LORRAINE
UNDERPASS ALT 2

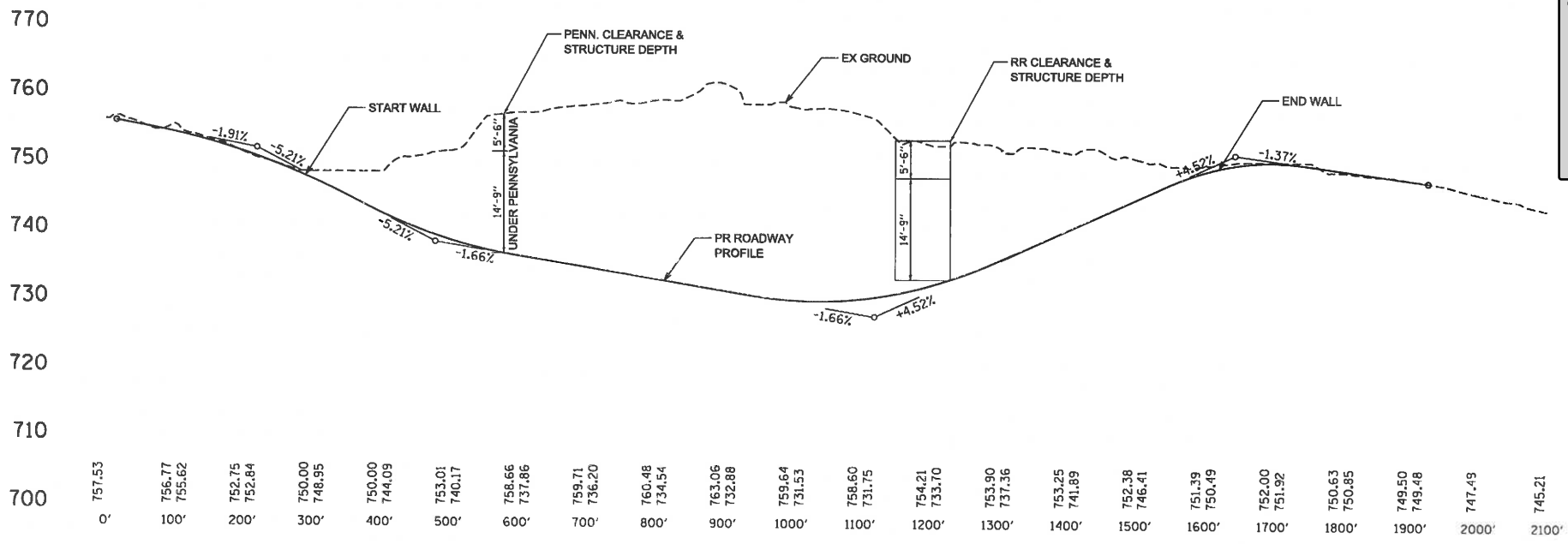
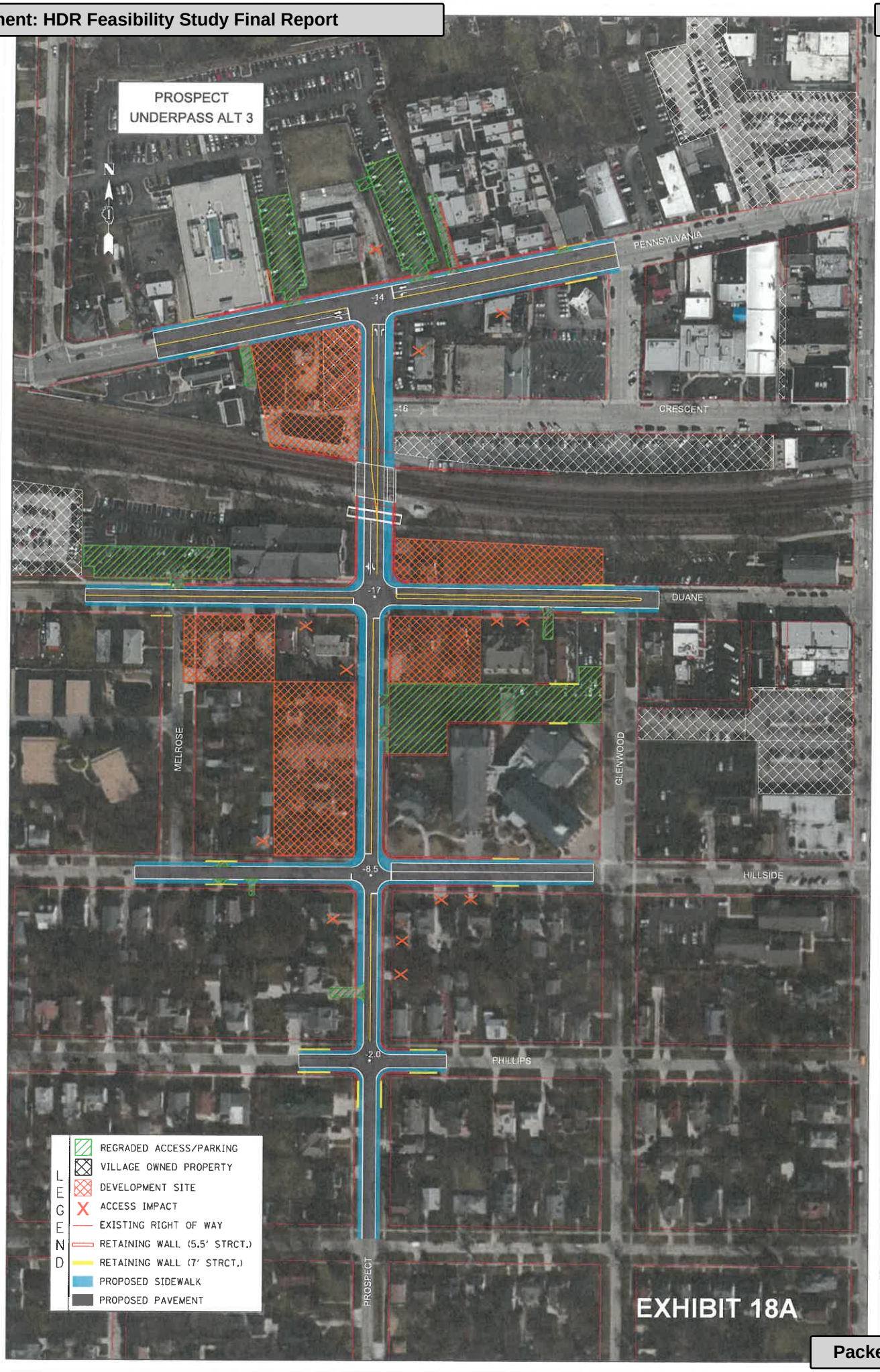


EXHIBIT 17B


PROSPECT
UNDERPASS ALT 3
N
PENNSYLVANIA
-14
-16
CRESCENT
-17
DUANE
MELROSE
GLENWOOD
-8.5
HILLSIDE
-2.0
PHILLIPS
PROSPECT
LEGEND
REGRADED ACCESS/PARKING
VILLAGE OWNED PROPERTY
DEVELOPMENT SITE
ACCESS IMPACT
EXISTING RIGHT OF WAY
RETAINING WALL (5.5' STRCT.)
RETAINING WALL (7' STRCT.)
PROPOSED SIDEWALK
PROPOSED PAVEMENT
EXHIBIT 18A

PROSPECT
UNDERPASS ALT 3

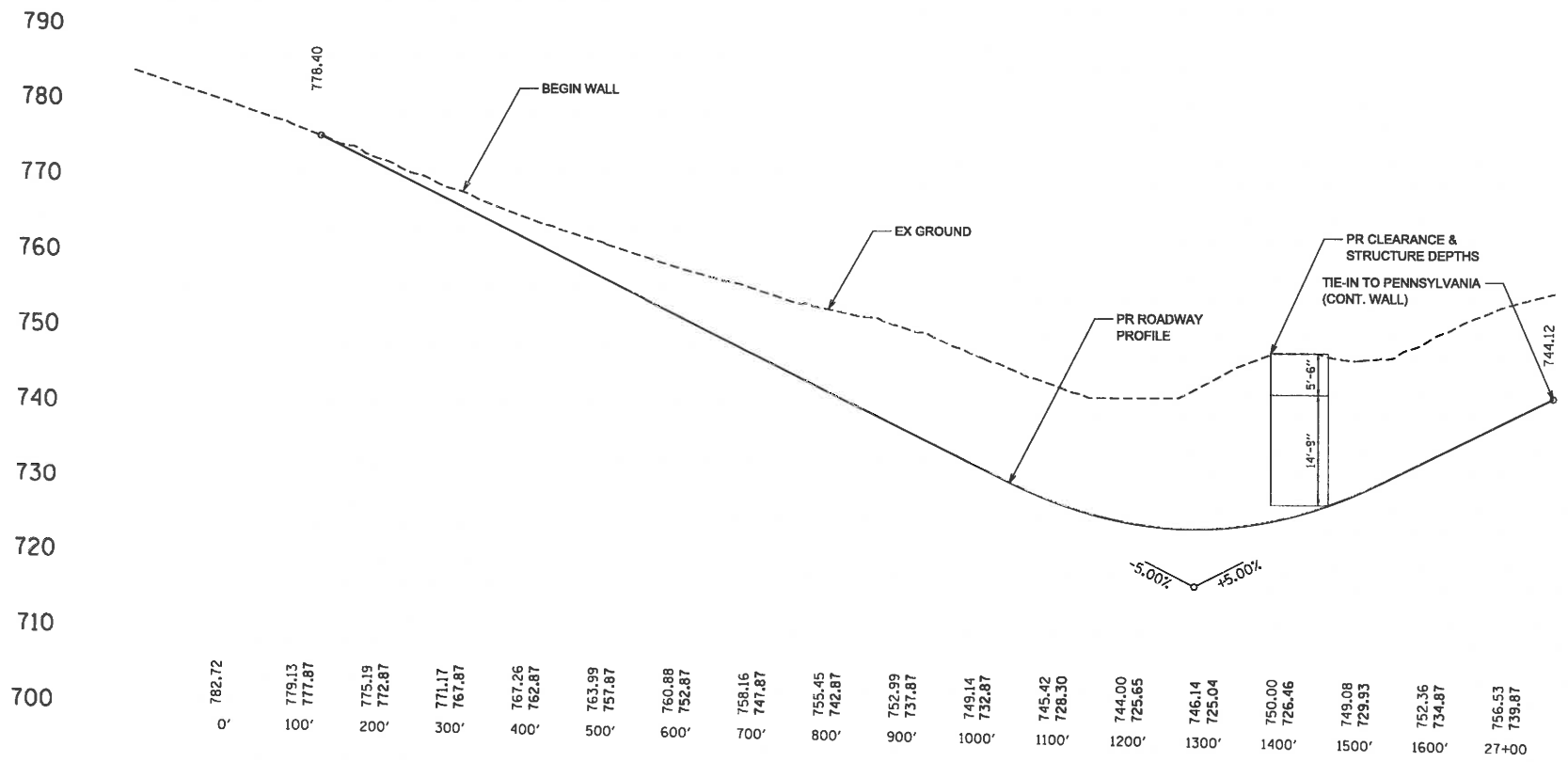


EXHIBIT 18B

PROSPECT
UNDERPASS ALT 3

PENNSYLVANIA

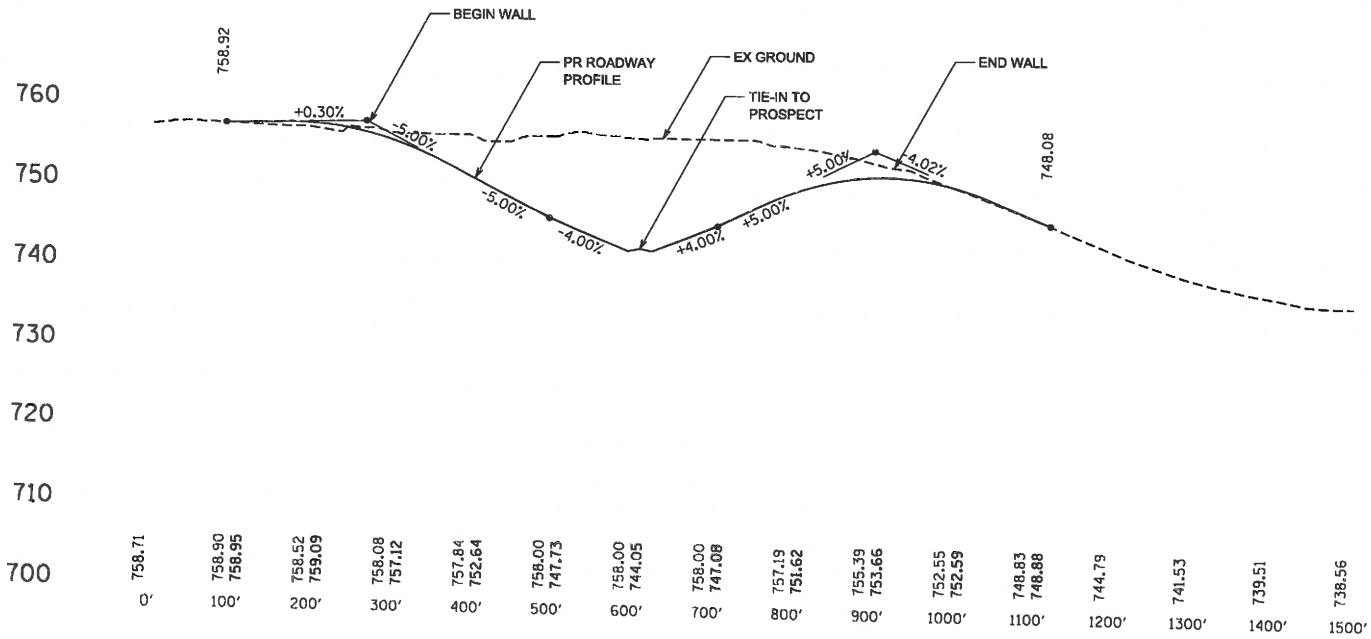


EXHIBIT 18C


GLENWOOD
UNDERPASS ALT 4
N
-10% TIE-IN GRADE
-10
PENNSYLVANIA
PROSPECT
MAIN
CRESCENT
-14.2
1) POSSIBLE PLATFORM FOR DEVEL. DROP-OFF/FIRE ACCESS OVER LOWERED GLENWOOD
2) OR LOWER DEVELOPMENT'S BOTTOM GRADE
DUANE
-12
-3
HILLSIDE
PROSPECT
GLENWOOD
MAIN
LEGEND
REGRADED ACCESS/PARKING
VILLAGE OWNED PROPERTY
REDEVELOPMENT SITE
STRUCTURE/ACCESS IMPACT
EXISTING RIGHT OF WAY
PROPOSED RETAINING WALL/BRIDGE
PROPOSED SIDEWALK
PROPOSED PAVEMENT
EXHIBIT 19A

GLENWOOD
UNDERPASS ALT 4

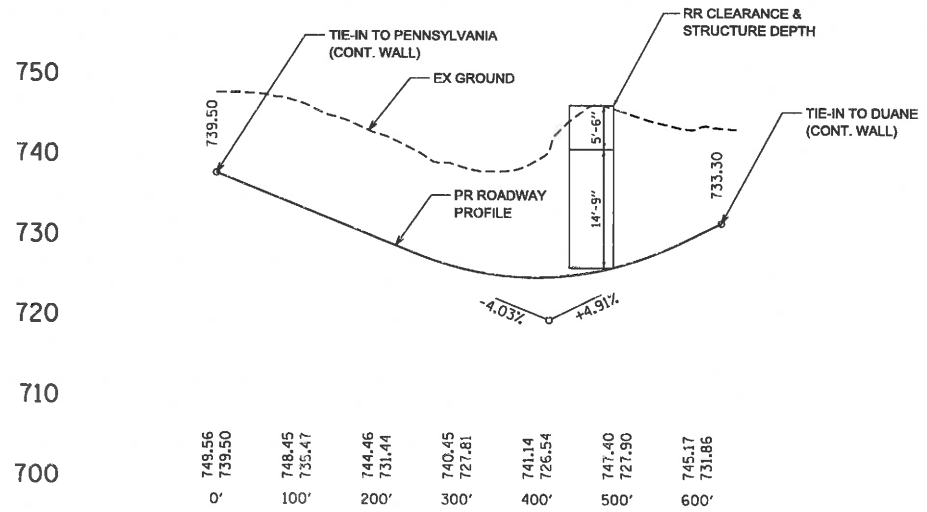


EXHIBIT 19B

GLENWOOD
UNDERPASS ALT 4

DUANE

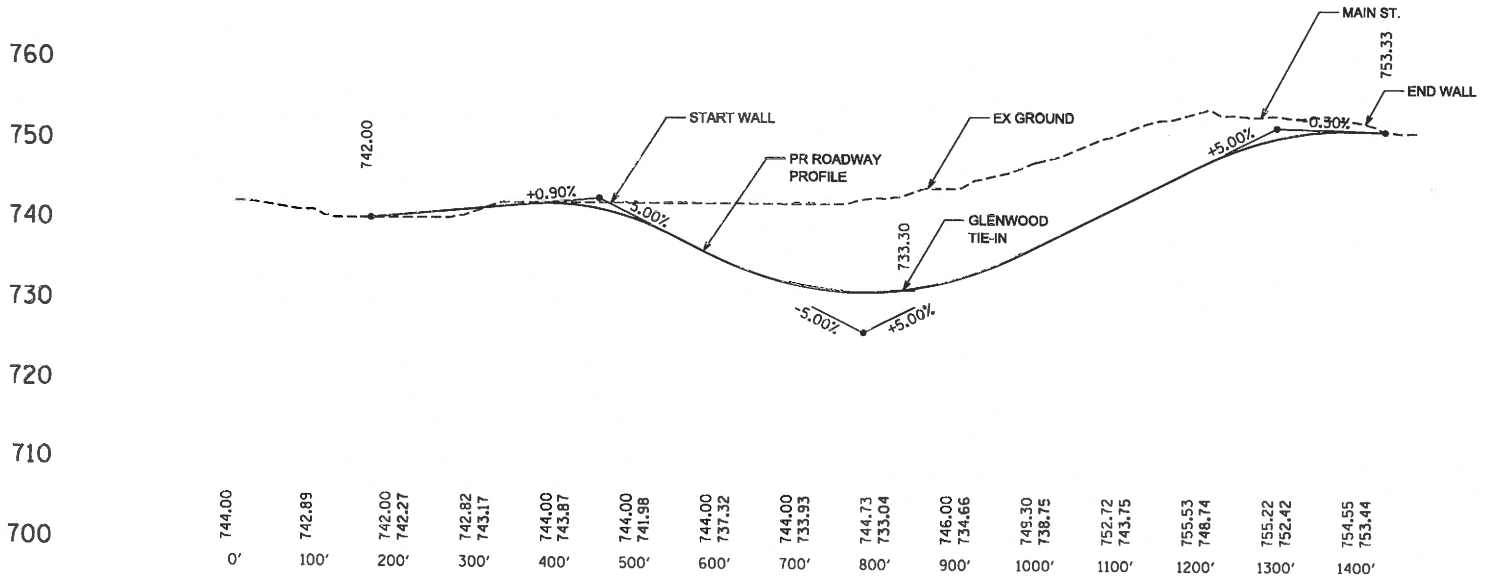


EXHIBIT 19C

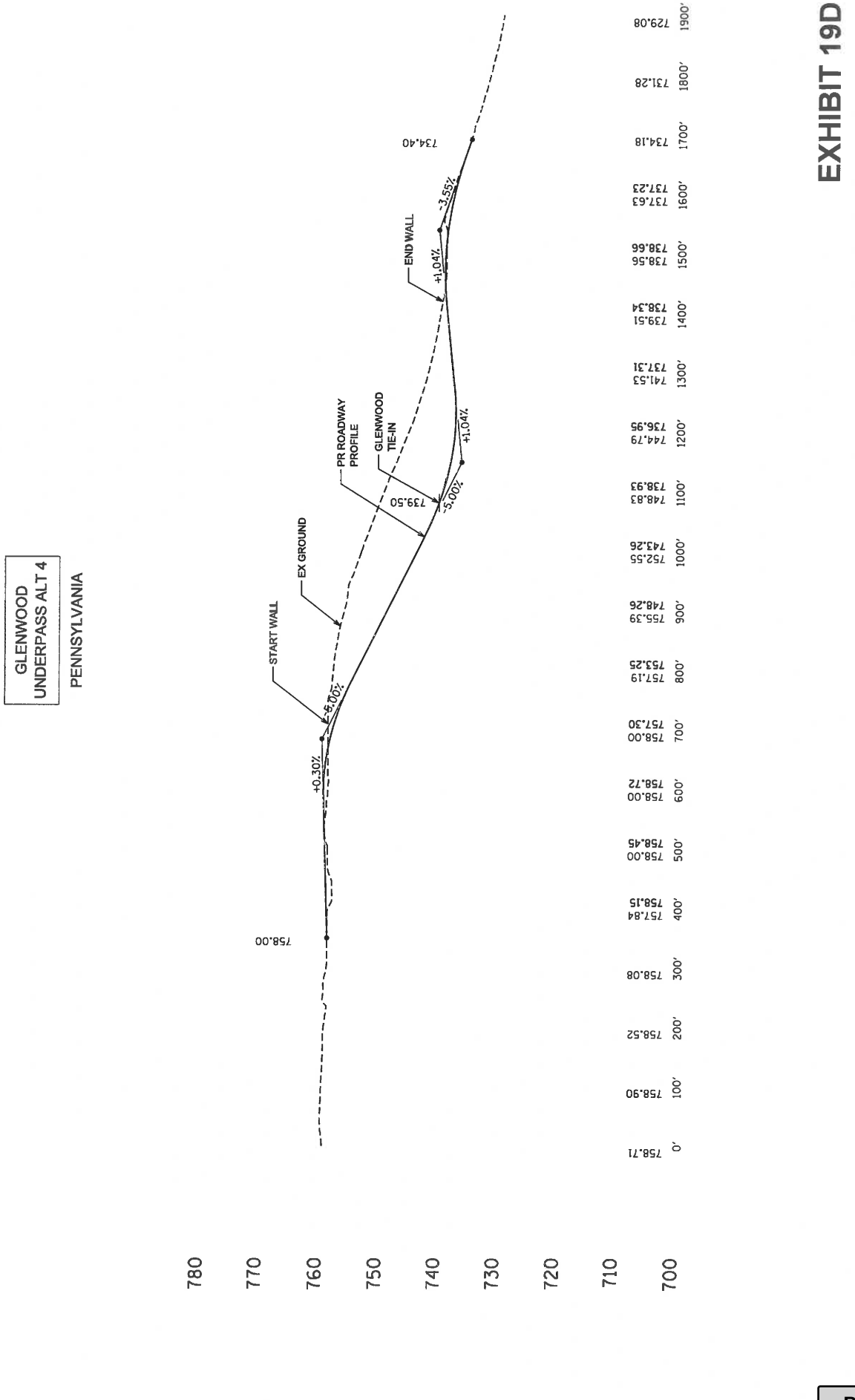


EXHIBIT 19D
GLENWOOD
UNDERPASS ALT 4
PENNSYLVANIA
START WALL
EX GROUND
PR ROADWAY
PROFILE
GLENWOOD
TIE-IN
END WALL
+0.30%
-5.00%
-5.00%
+1.04%
-3.55%
+1.04%
758.00
739.50
734.40
780
770
760
750
740
730
720
710
700
0' 758.71
100' 758.90
200' 758.52
300' 758.08
400' 757.84 758.15
500' 758.00 758.45
600' 758.00 758.72
700' 758.00 757.30
800' 757.19 753.25
900' 755.39 748.26
1000' 752.55 743.26
1100' 748.83 738.93
1200' 744.79 736.95
1300' 741.53 737.31
1400' 739.51 738.34
1500' 738.56 738.66
1600' 737.63 737.23
1700' 734.18
1800' 731.28
1900' 729.08

GLEN ELLYN GRADE SEPARATION FEASIBILITY STUDY
POTENTIAL FUNDING SOURCES

Fund	Objective	Funding Ratios (maximum percentages) (federal / non-federal or state / local)	Eligible Items				Pedestrian Underpass Eligible?	Roadway Grade Separation Eligible?
			ROW	PE	CE	C		
Federal								
Federal Transportation Bill (Currently: MAP-21)								
Transportation Alternatives Program	Competitive application program to fund projects defined as transportation alternatives, including on- and off-road pedestrian and bicycle facilities, infrastructure projects for improving non-driver access to public transportation and enhanced mobility, community improvement activities, and environmental mitigation; recreational trail program projects; safe routes to school projects. Administered through CMAP.	80 / 20		x	x	x	Yes	No
Surface Transportation Program (STP) - DuPage	Program administered by the DuPage Mayors and Managers Conference to allocate federal STP funds to DuPage municipalities. 30% of DuPage STP funds must go to Transportation Control Measure (TCM) projects, which reduce single-occupancy auto travel and/or have a positive impact on air quality, including transit, pedestrian, and bicycle improvements.	70/30 local for highway projects; 75/25 for TCM projects				x	Yes	Yes, but unlikely
Rail-Highway Safety (Section 130) Program	Program to reduce the number of fatalities and injuries at public highway-rail grade crossings through the elimination of hazards and/or the installation/upgrade of protective devices at crossings. Administered by IDOT Central Bureau of Local Roads Rail Unit to Districts and Railroad Companies	90/10		x	x	x	Yes	Yes
Congestion Mitigation and Air Quality (CMAQ)	Provides a flexible funding source to State and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. Funding is available to reduce congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards for ozone, carbon monoxide, or particulate matter (nonattainment areas). Administered by CMAP through an annual call for projects.	80/20		x		x	Yes	Yes
Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grant program	Annual competitive funding program for multi-modal, multi-jurisdictional or other projects that are challenging to fund through existing programs.Applicants must detail the benefits their project would deliver for five long-term outcomes: safety, economic competitiveness, state of good repair, livability and environmental sustainability. USDOT also evaluates projects on their expected contributions to economic recovery, as well as their ability to facilitate innovation and new partnerships. Typical projects have NEPA, design, and ROW completed and are ready for construction.	Standard project: up to 80/20				x	Yes	Yes
Federal Transit Administration (Section 5309)	Federal transit funding program allocated through the Regional Transportation Authority to Metra, CTA and Pace. Requires coordination with eligible grant recipient (Metra, CTA or Pace).	80/20		x	x	x	Yes, at transit station	Yes
Job Access and Reverse Commute (Section 5316)	Federal transit funding program allocated through the Regional Transportation Authority to Metra, CTA and Pace. Requires coordination with eligible grant recipient (Metra, CTA or Pace). Address transportation challenges faced by welfare recipients and low-income persons seeking to obtain and maintain employment.	80/20		x	x	x	Yes, at transit station if need is shown and met	Yes, if need is shown and met
U.S. Dept. of Housing and Urban Development	Local Technical Assistance Program, administered by CMAP and Community Planning Program, administered by RTA. Both programs provide assistance to communities to undertake planning projects that advance principles of GoTO 2040 Plan, transit oriented development, and transit enhancement. Competitive program with annual call for projects in Spring. Programs use same application. Common project types include transporation planning, TOD planning, and bicycle/pedestrian planning.	Up to 100%		x			Yes	No
State								
Illinois Department of Natural Resources Bicycle Path Program	Competitive program that helps with the acquisition, construction and rehabilitation of public, non-motorized bicycle paths and directly related support facilities. Applications must be received by IDNR by March 1 of each calendar year. http://dnr.state.il.us/ocd/newbike2.htm.	50/50; maximum grant award is $200,000	x	x	x	x	Yes	No
Illinois Department of Natural Resources Recreational Trails Program	Competitive program that helps with the acquisition, development, rehabilitation and maintenance of motorized and non-motorized recreation trails. Applications are due March 1 of each calendar year.	80/20	x	x	x	x	Yes	No
High Growth Cities Assistance Program	Program administered by IDOT Bureau of Local Roads. For municipalities over 5,000 residents that have experienced at least a 5-percent increase in population between two decennial censuses or between a decennial census and a special census. Funding is based on population and relative per capita population increase.	up to 100%	x	x	x	x	Yes	Yes

EXHIBIT 20

GLEN ELLYN GRADE SEPARATION FEASIBILITY STUDY
POTENTIAL FUNDING SOURCES

Fund	Objective	Funding Ratios (maximum percentages) (federal / non-federal or state / local)	Eligible Items				Pedestrian Underpass Eligible?	Roadway Grade Separation Eligible?
Illinois Grade Crossing Protection Fund	To help defray the cost of installing necessary improvements and reduce accidents at railroad/highway and railroad/pedestrian crossings	60% ICC/State, 40% local; up to $12 million	x	x	x	x	Yes	Yes. The Illinois Commerce Commission accepts applications on a continual basis. Applicants may reapply every year. Project evaluation is based on crash criteria. Separate applications are required for each project type. Applicants are notified when the Five Year Plan is published, generally in the Spring.
Motor Fuel Tax - State	Motor Fuel Tax provides funds for the purpose of improving, maintaining, repairing, and constructing highways	up to 100%	x	x	x	x	No	Yes. IDOT Local Planning and Programming Unit to Local Agencies
General Obligation Bonds	Bonds authorized through general purpose units of government for capital improvements		x	x	x	x	Yes	Yes

EXHIBIT 20

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