

**Memorandum**

April 28, 2016

Ders Anderson  
Openlands  
25 E Washington St # 1650  
Chicago, IL 60602Re: Burnham Greenway Gap Trail  
Railroad Comments, Engineering Draft Disposition, and Open Items

Dear Mr. Anderson:

As requested by the Illinois Commerce Commission (ICC) Administrative Law Judge, AECOM is pleased to submit the attached comments and respective dispositions, which were received from:

- ICC staff, dated 2/26/2016
- CSX, dated 1/20/2016
- NICTD/South Shore, dated 3/31/2016, and
- Norfolk Southern (NS), dated 11/30/2015.

AECOM has prepared this disposition of comments, which point to a need for resolution of open items prior to design completion. The attached represent all of the railroad comments received to date. Should you have any questions on the attached or need any additional information, please feel free to contact me anytime.

Sincerely,

Jim LeVan, P.E., P.T.O.E.  
AECOM Project Manager

ICC

April 18, 2016

The following addresses and/or disposes of ICC's design comments in the Staff Response and Position document, dated February 26, 2016. The purpose of AECOM's response is to acknowledge ICC's engineering and design recommendations, particularly in light of the various individual railroad comments, including CSX, NICTD, NS. The following is submitted with AECOM's railroad dispositions in the continued effort to come to consensus among the railroad entities participating in the Burnham Greenway Gap improvements.

1. Comment 1. The proposed scope of work by the Village includes the construction of a pedestrian bridge to carry the Burnham Greenway Trail over the tracks of the IHB, CSX, and NS approximately 600' feet north of State Street. The construction of the trail would then continue north along Commonwealth Edison right-of-way for approximately 4000 feet to a new bridge over the Grand Calumet River. For another 300 feet north the trail would continue to the Green Bay Avenue at-grade crossing with the CSX industry track (designated as AAR/DOT #163651 M, railroad milepost 1.33). Modifications to the sidewalk on the south side of the Green Bay Avenue grade crossing of CSX's track would be made to allow pedestrians using the trail to stay on the sidewalk and allow bicyclists using the trail to transition to an on-street route along Green Bay Road, Entre Avenue, and Chippewa Avenue east to Burnham Avenue where there is an existing sidewalk. The sidewalk would be converted to a wider multi-use trail design and continue north on Burnham Avenue over the three (3) grade crossings with the tracks of the CSX, NS, and CSS/NICTD leading to the intersection with Brainard Avenue.
  - *Response: AECOM concurs with the scope of work as described above. Note the transition from the off street trail to on-street at Green Bay Avenue is being negotiated with CSX at this time. The village is also considering replacing the sidewalk on the north side of Chippewa Ave. with a 10-foot trail, and redesigning the southern terminus of the trail at State Street to turn west to connect with the Cal Sag Trail. Neither of these two options affect railroad properties.*
2. Comment 12. The surface at the Burnham Avenue crossing of CSX's track is in poor condition with respect to the sidewalk, and does not meet the minimum requirements of 92 IAC 1535.203, which states "At crossings where there are sidewalks, either the crossing proper shall include the sidewalk areas or separate sidewalk crossings of a width consistent with that of the sidewalk approaches shall be provided conforming with provisions of this Section as to surface." The roadway portion of the CSX crossing surface consists of rubber panels and meets the minimum requirements of 92 IAC 1535.203, while the sidewalk portion consists of an uneven mix of timber, asphalt, and ends of the rubber crossing panels extending from the roadway.
  - *Response: It is AECOM's understanding that CSX would be responsible for ensuring that the requirements of 92 IAC 1535.203 are met for pedestrian and path crossings.*
3. Comment 13. The catenary pole or railroad warning devices at the Burnham Avenue crossing of the CSS/NICTD tracks should be relocated to allow for a greater path width than

what has been proposed by the Village. NICTD should provide an estimate for this work so that the Village may revise its plans, overall cost estimate, and funding needs.

- *Response: AECOM concurs with the ICC Staff Response. On April 1, 2016, AECOM received the Burnham Avenue Report from NICTD's reviewing engineer. That report proposed an alternate path alignment which would provide adequate width to accommodate the path and would not affect the existing railroad appurtenances (i.e. catenary poles and signals). It should be noted that the alternate path alignment, proposed by NICTD's reviewing engineer, would place a portion of the Burnham Greenway Gap bike path on CSS&SB Railroad property. The Village will follow the NICTD alternative conditioned on the land or an easement in perpetuity be made available to the Village at no cost or condition.*

4. Comment 14. Staff believes that pedestrian gates should be installed at the Burnham Avenue crossings of the CSX, NS, and CSS/NICTD tracks to provide a greater level of safety and reduce confusion as to which track/crossing a train may be on when approaching Burnham Avenue. The operation of the railroad warning devices are described in Exhibit C, attached herein. This exhibit provides for the variations associated with the location of a train, gate activation, and warning time and provides the differences with and without pedestrian gates. The installation of pedestrian gates does not increase the needed warning time, or complexity associated with the roadway warning devices; items which are addressed by the projects identified in Number (8) of this Response.

- *Response: AECOM concurs with the ICC Staff Response, and we understand that the Village will install pedestrian gates as requested, in appropriate locations in consultation with ICC staff and the railroad engineers.*

5. Comment 19. During the course of this proceeding, NICTD hired an engineering firm to study potential alignments for a pedestrian bridge to provide a more direct link north and avoid the Burnham at-grade crossings. Staff has identified that an application may be submitted for such a pedestrian bridge, but that continued coordination with Commonwealth Edison is needed to determine feasibility. While this would account for Burnham Greenway Trail and Hegewisch Station users, Staff does not believe that such a structure would negate the need for pedestrian accommodations along Burnham Avenue over the CSX, NS, and CSS/NICTD at-grade crossings.

- *Response: Noted and agreed.*

STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

Village of Burnham, Cook County, Illinois, an Illinois Municipal Corporation,  
Petitioner,

v.

T14-0067

Indiana Harbor Belt Railroad Company, CSX Transportation, Inc., Norfolk Southern Railway Company, and the Chicago South Shore & South Bend Railroad, Northern Indiana Commuter Transportation District, and the Illinois Department of Transportation,  
Respondents.

Petition for an order of the Illinois Commerce Commission to permit the construction and maintenance of a multi-use trail bridge over the tracks of the Indiana Harbor Belt Railroad, CSX Transportation, Inc., and the Norfolk Southern Railway Company and to permit the construction of an at-grade crossing of a multi-use trail at the track of the CSX Transportation, Inc. at Green Bay Avenue (near CSX AAR/DOT #163651M, railroad milepost 1.33) and to permit the reconstruction of at-grade crossings of tracks of the CSX Transportation, Inc., Norfolk Southern Railway Company, and the Chicago South Shore & South Bend Railroad at Burnham Avenue, all located in the Village of Burnham, Cook County, Illinois.

**STAFF RESPONSE AND POSITION**  
**FEBRUARY 26, 2016**

Now comes the Staff of the Commission (Staff), and in response to the Village of Burnham's (Village) Petition dated, May 27, 2014, respectfully submits the following:

On May 27, 2014, the Village of Burnham filed the above-captioned verified petition with the Illinois Commerce Commission (Commission) naming as Respondents the Indiana Harbor Belt Railroad Company (IHB), CSX Transportation, Inc. (CSX), Norfolk Southern Railway Company (NS), and Chicago South Shore & South Bend Railroad (CSS) seeking authority to construct a pedestrian-rail overpass and modify highway-rail grade crossings in the Village of Burnham, Cook County, to help eliminate what is commonly referred to as the Burnham Greenway Gap, a missing or gapped section of the Burnham Greenway multi-use trail south from State Street north to Avenue O. The Village seeks to extend the Burnham Greenway within its corporate limits from State Street north to Brainard Avenue. At the intersection of Burnham Avenue and Brainard Avenue, an

Illinois Department of Natural Resources (IDNR) project is planned that will continue construction of the trail north to Avenue O to complete the Burnham Greenway multi-use trail (Burnham Greenway Trail).

On August 5, 2014, and November 13, 2014, Status Hearings were held before a duly appointed Administrative Law Judge (ALJ) in the Commission's Chicago office. On January 30, 2015, the Village filed an Amended Petition adding the Northern Indiana Commuter Transportation District (NICTD) and the Illinois Department of Transportation as Respondents (IDOT). Additional Status Hearings were then held on March 10, 2015, May 19, 2015, August 4, 2015, October 8, 2015, December 8, 2015, and January 26, 2016. To provide a summary of Staff's Position and comments provided at the Status Hearing on January 26, 2016, and other Status Hearings, Staff offers the following:

1. The proposed scope of work by the Village includes the construction of a pedestrian bridge to carry the Burnham Greenway Trail over the tracks of the IHB, CSX, and NS approximately 600' feet north of State Street. The construction of the trail would then continue north along Commonwealth Edison right-of-way for approximately 4000 feet to a new bridge over the Grand Calumet River. For another 300 feet north the trail would continue to the Green Bay Avenue at-grade crossing with the CSX industry track (designated as AAR/DOT #163651M, railroad milepost 1.33). Modifications to the sidewalk on the south side of the Green Bay Avenue grade crossing of CSX's track would be made to allow pedestrians using the trail to stay on the sidewalk and allow bicyclists using the trail to transition to an on-street route along Green Bay Road, Entre Avenue, and Chippewa Avenue east to Burnham Avenue where there is an existing sidewalk. The sidewalk would be converted to a wider multi-use trail design and continue north on Burnham Avenue over the three (3) grade crossings with the tracks of the CSX, NS, and CSS/NICTD leading to the intersection with Brainard Avenue.
2. The maps providing the project location and the proposed Burnham Greenway Trail alignment through the Village are included herein as Exhibit A. These documents were previously provided to the parties at the Status Hearing and via e-mail on December 8, 2015.
3. Staff supports the Village's Petition seeking authorization for a pedestrian bridge over the tracks of the IHB, CSX, and NS, and providing the Burnham Greenway Trail connection as presented in Exhibit A.
4. The pedestrian bridge is identified in the Commission's Crossing Safety Improvement Program, and Staff supports the use of Grade Crossing Protection Fund (GCPF) assistance, in an amount not to exceed \$2,000,000, to reimburse the Village for eligible project costs associated with the pedestrian bridge over the IHB, CSX, and NS tracks.
5. The Burnham Avenue grade crossing of CSX's track, designated as

AAR/DOT #163649L, railroad milepost 1.07, consists of a single industry track with up to 2 freight trains per day at a maximum train speed of 5 mph.

6. The Burnham Avenue grade crossing of NS's tracks, designated as AAR/DOT #478708J, railroad milepost 505.82, consists of two mainline tracks with an average of 35 freight trains per day at a maximum train speed of 25 mph.
7. The Burnham Avenue grade crossing of the CSS/NITCD tracks, designated as AAR/DOT #867226H, railroad milepost 70.10, consists of two mainline tracks with 46 passenger trains at a maximum speed of 25 mph and approximately 5 freight trains per day at a maximum speed of 20 mph.
8. Burnham Avenue consists of two lanes in each direction with medians at the aforementioned grade crossings. There are approximately 11,600 vehicles per day.
9. Staff has participated in numerous field reviews for the Village's proposed project, as well as other projects involving the at-grade crossings on Burnham Avenue. The other Burnham Avenue projects, which were funded by IDOT and/or via the Federal Highway Administration's Railway-Highways Crossing (Section 130) Program, include the following:
  - a. Renewal of the surfaces at the NS and CSS/NICTD crossings. The work was completed in the summer and fall of 2015 by the NS and NICTD;
  - b. The addition of roadway gates and upgraded railroad warning devices at the CSX crossing, completed in February 2016;
  - c. Modifications to the warning devices at the NS and CSS/NICTD crossings in conjunction with the improvements at the CSX crossing to allow for interconnection of all the warning devices and interconnection to the traffic signals at the intersection of Burnham Avenue and Brainard Avenue;
  - d. The addition of "Do Not Stop On Tracks" signs with supplemental flashing amber beacons at the NS tracks for northbound motorists, as well as modifying curbing, and reinstating pavement marking on the roadway. This work is has not been started.
10. Attached herein as Exhibit B, is the document titled "Commission Staff Field Inspection - October 1, 2015", providing observations and recommendations related to the existing sidewalk, crossing surfaces, warning devices, rail appurtenances, and vegetation. This document was previously provided to the parties at the October 8, 2015, Status Hearing

and via e-mail on October 15, 2015.

11. Staff is of the opinion that the Village's proposed work along Burnham Avenue will provide a safety and overall improvement as compared to the existing sidewalk. A wider path at the crossings will provide for a better angle of approach over the rails for current and future pedestrians and cyclists, and the project would eliminate the drop offs, damage, and irregularity of the existing sidewalk.
12. The surface at the Burnham Avenue crossing of CSX's track is in poor condition with respect to the sidewalk, and does not meet the minimum requirements of 92 IAC 1535.203, which states "At crossings where there are sidewalks, either the crossing proper shall include the sidewalk areas or separate sidewalk crossings of a width consistent with that of the sidewalk approaches shall be provided conforming with provisions of this Section as to surface." The roadway portion of the CSX crossing surface consists of rubber panels and meets the minimum requirements of 92 IAC 1535.203, while the sidewalk portion consists of an uneven mix of timber, asphalt, and ends of the rubber crossing panels extending from the roadway.
13. The catenary pole or railroad warning devices at the Burnham Avenue crossing of the CSS/NICTD tracks should be relocated to allow for a greater path width than what has been proposed by the Village. NICTD should provide an estimate for this work so that the Village may revise its plans, overall cost estimate, and funding needs.
14. Staff believes that pedestrian gates should be installed at the Burnham Avenue crossings of the CSX, NS, and CSS/NICTD tracks to provide a greater level of safety and reduce confusion as to which track/crossing a train may be on when approaching Burnham Avenue. The operation of the railroad warning devices are described in Exhibit C, attached herein. This exhibit provides for the variations associated with the location of a train, gate activation, and warning time and provides the differences with and without pedestrian gates. The installation of pedestrian gates does not increase the needed warning time, or complexity associated with the roadway warning devices; items which are addressed by the projects identified in Number (8) of this Response.
15. In developing Exhibit C, Staff reviewed various documents detailing the history of the Burnham Avenue crossings and the projects identified above in relation to this proceeding. The main alterations to the crossings over time are as follows:
  - a. 1940's – 1960: the Chicago and Western Railroad Company owned

and operated four additional tracks that were located between the current NS and CSS/NICTD crossing. At the time, a third track was present at the CSS/NICTD crossing for a total of nine (9) tracks. The Burnham Avenue crossing of CSX's track was in its present location with the single industry track 130 feet south, equipped with passive crossbuck signs. The track and roadway layout is presented in Exhibit D, attached herein. The crossing warning devices were manually operated from a tower and consisted of four quadrant gates that covered the entire roadway and sidewalk on the west side of Burnham Avenue. The tower operator would also ring a bell using a rope, and could control the traffic signals at the Burnham Avenue and Brainard Avenue intersection. Total rail traffic at that time was stated at 160 trains per day at a maximum of 50 mph. The average daily traffic on Burnham Avenue was approximately 15,500 vehicles per day.

- b. July 3, 1968 - ICC Order 52638, required the installation of automatic flashing light signals and gates with interconnection to the traffic signals at the Burnham Avenue and Brainard Avenue intersection. All devices were to be controlled by the newest form of circuitry to minimize unnecessary and extended activation of the crossing's warning devices. The warning devices, which treated all tracks as one crossing, were placed in service on August 20, 1970.
- c. February 9, 1987 – removal of three (3) tracks by the Chicago and Western Railroad Company allowed for modification and improvement of the crossing warning devices. The Form 2 and Form 1 under 92 IAC 1535.400 for this work is attached herein as Exhibit E. The maximum train speed identified at any of the crossings is now 25 mph.
- d. August 4, 1993 – Commission Order in Docket T92-0013 allows for the widening of Burnham Avenue by IDOT, relocation of the warning devices, and removal of one CSS/NICTD tracks. The NS and CSS/NICTD are now separated into two (2) but interconnected crossings, each with its own warning devices.
- e. 1999 – modifications to the traffic signal interconnect circuit.
- f. Present – Staff is currently reviewing with NICTD's Engineering Department the design warning time, event logs, operating rules, and any design controls that affect the amount of warning time that can be provided at crossing currently, and as it relates to any proposed increase in train speeds, which was identified as a desire by NICTD.

16. On February 12, 2016, NICTD provided a draft indemnity and insurance

agreement and a license agreement for review by the parties. Staff does not support the use of a license agreement, the purchase of an insurance policy by the Village for the trail, indemnification, or termination clauses that identify closure of the trail. Staff believes the Commission has jurisdiction to set the construction and maintenance terms in this matter to insure immediate and continued public safety and convenience at the Burnham Avenue crossings.

17. Consistent with recent ICC dockets related to sidewalk, multi-use paths, and pedestrian gates, the Village should be responsible for the installation costs for the path and pedestrian gates. The Village should also be responsible for costs associated with damage or vandalism to the pedestrian gates. The railroads should be responsible for the routine maintenance and costs associated the pedestrian gates, consistent with the maintenance requirements for the roadway gates.
18. Staff's position regarding the path and pedestrian gates at the Burnham Avenue rail crossings is further solidified with any future proposals to increase train speed.
19. During the course of this proceeding, NICTD hired an engineering firm to study potential alignments for a pedestrian bridge to provide a more direct link north and avoid the Burnham at-grade crossings. Staff has identified that an application may be submitted for such a pedestrian bridge, but that continued coordination with Commonwealth Edison is needed to determine feasibility. While this would account for Burnham Greenway Trail and Hegewisch Station users, Staff does not believe that such a structure would negate the need for pedestrian accommodations along Burnham Avenue over the CSX, NS, and CSS/NICTD at-grade crossings.
20. In completing this filing, Staff conducted a follow-up field review of the Burnham Avenue grade crossings on February 26, 2016. :
  - a. Pedestrians and cyclists were present, and evidence of additional pedestrian traffic was found with tracks in the snow remaining on the sidewalk from a recent storm.
  - b. Brush clearing is needed in the southwest quadrant of the Burnham Avenue crossing of the CSS/NICTD tracks, as presented in Exhibit E, to provide a sight line for pedestrians, and northbound motorists at the NICTD stop bar and gate.
  - c. NS switching operations and eastbound moves need to be reviewed with Staff's Operating Practices and Rules personnel. Staff witnessed an eastbound freight train moving for 9 minutes over the crossing, and then stopped just east of Burnham Avenue clearing the

traffic lanes. With last car of the train on the crossing island circuit, the warning devices at the crossing remained active/down for five minutes before the train started up. Staff witnessed motorists going around the barrier median, down gates, and in one instance a motorist exited his car to lift the NS southbound gate.

Whereas, Staff respectfully requests the evidentiary hearing be scheduled to address the items above and move towards a Proposed Order.

Respectfully Submitted February 26, 2016,



Brian Vercruyse, P.E.  
Senior Rail Safety Specialist  
312-636-7760 mobile  
bvercruy@icc.illinois.gov

Certificate of Service

I, Brian Vercruysse, Senior Rail Safety Specialist for the Illinois Commerce Commission, hereby certify that the STAFF RESPONSE for T14-0067 was docketed on e-Docket and e-mailed to the parties listed below.

<p>Gregory T. Smith Klein, Thorpe &amp; Jenkins. Ltd. 20 N. Wacker Dr., Suite 1660 Chicago, IL 60606</p>	<p>Joel B. Cornfeld, General Counsel 2721 161st Street Hammond, IN 46323 <a href="mailto:joel.cornfeld@ihbrr.com">joel.cornfeld@ihbrr.com</a></p>
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CSX

February 25, 2016

The following is a disposition to the pre-final plan review comments received from Alfred Benesch & Company (CSX Transportation, Inc.) received 1/20/2016 via email from Mr. Larry Shaw.

PROPOSED OVERHEAD BRIDGE STRUCTURE – To Be Constructed in Accordance with CSXT Criteria for Overhead Bridges (see PPM)

1. Comment: PLAN & PROFILE sheet 12/88 – please add CSXT’s valuation station and the distance from the nearest milepost at the intersection of the centerline of the track and the centerline of the bridge.
  - *Response: CSXT’s valuation station and distance from the nearest milepost at the intersection of the centerline of the track and the centerline of the bridge will be added to the plans based on the best available information available to AECOM.*
2. Comment: Identification of tracks – sheets 12/88 & 22/88
  - a. CSXT track – identify as “CSXT No. 1 Main”
  - b. Northernmost track of the 3 identified as Indiana Harbor Belt appears to be CSXT No. 2 Main. Please confirm with Indiana Harbor Belt that this is a CSXT track and if so confirmed, identify as “CSXT No. 2 Main”
  - c. Please confirm that IHB is responsible for the review associated with the tracks identified as Indiana Harbor Belt, with the possible exception of the northernmost track as indicated in 2.b.

*Response:*

- *a. CSXT track identified as “CSXT No. 1 Main”*
  - *b. Confirmation request sent via email 2/15/2016. If confirmed, track will be identified as “CSXT No. 2 Main” Confirmation received 2/19/2016 via email from Dan Shirley @ IHB RR that the track is CSX.*
  - *c. IHB has been included in the review process and will be providing comment with regards to the tracks identified as Indiana Harbor Belt with the possible exception of the northernmost track as indicated in 2.b.*
3. Comment: GENERAL PLAN sheet 22/88 – please correct reference to measurement of minimum vertical clearance to be consistent with CSXT CRITERIA FOR OVERHEAD BRIDGES (see PPM). It is to be measured at a point 6’-0” either side of the centerline of the track rather than 9’-0” as shown. Adjust minimum vertical clearance as necessary.
    - *Response: GENERAL PLAN sheet 21/88 revised to 6’-0” to be consistent with CSXT CRITERIA FOR OVERHEAD BRIDGES.*
  4. Comment: At least one subsurface exploration boring location and data for each substructure unit adjacent to the track (Pier 7) shall be included on the plans during design submittal. Borings shall provide enough information to design shoring and foundations.
    - *Response: Subsurface exploration borings had not been conducted at the time the Prefinal Plans were submitted for review. A Subsurface Investigation Report (including a boring at Pier 7) was prepared and submitted to AECOM by Applied GeoScience, Inc. dated September 16,*

*2015. The borings contained in the report will be included in the plans and contain sufficient information to design the necessary substructures.*

5. Comment: General Details sheet 23/88, Section Thru Truss – the Prefabricated Truss bridge over CSXT shall be completely enclosed with protective canopy or by other means to prevent users from dropping debris onto CSXT's right-of-way. Please make it clear that the reference to "Railroad Safety Fence, typ." Includes the top as well as both sides of the bridge from the walking surface to the top with no openings AND show the fencing details.
  - *Response: General details sheets 22 & 23 show a fence from the bridge deck to and across the bridge top, which completely encloses the passageway. AECOM requests a detail and/or specification for acceptable fencing from CSXT.*
6. Comment: Please provide design details indicating the proposed bridge storm water collection system and discharge point(s). Drainage from the bridge shall be collected and discharged away from CSXT's right-of-way and ditches.
  - *Response: Storm water runoff will flow along sides of path on the bridge deck before discharging into proposed ditches at the approaches.*
7. Comment: Please advise how Pier No. 7 will be accessed. Temporary construction crossings are generally not permitted.
  - *Response: Access to the location of Pier 7 may be accomplished via the existing access road and at-grade crossing with the Norfolk Southern track located approximately 50 feet to the northwest of Pier 8.*

GREEN BAY AVENUE AT-GRADE CROSSING – CSXT Prefers Grade Separated Crossings – See PPM

8. Comment: Please add a DETAIL VIEW for the proposed at-grade crossing of CSXT at Green Bay Avenue that includes:
  - a. A pedestrian barrier system of fencing on both approaches to the crossing. Show details.
  - b. The width of the trail as it crosses the track
  - c. An "obstruction free zone" must be maintained adjacent and parallel to the track. All roadway elements (e.g. curbs, medians, pedestrian/bike barriers, signage, drainage structures, etc.) must be flush with the surroundings and no closer than twelve (12) feet of the centerline of track
  - d. No Portland cement pavement within twelve (12) feet of the centerline of track
  - e. Crossing surface sections are constructed in lengths of eight (8) feet. CSXT specifications require that the crossing surface extend a minimum of two (2) feet beyond the edge of the pathway section, which includes pavement and any shoulders. CSXT proposes to install concrete crossing panels, which extend five (5) feet either side of centerline of track. Show crossing panels and the distance extending beyond the edge of pathway.
  - f. Crossing to be within the existing roadway right-of-way. Show the CSXT and roadway right-of-way lines
  - g. Please advise if any train activated warning devices are desired or if the Illinois Commerce Commission either has or will provide input or order the installation of train activated warning devices

- *Response: The following option is currently being considered to resolve the comments presented above, due to insufficient space at this location for the installation of a pedestrian barrier system of fencing on both approaches to the crossing:*
  - *Pending additional right-of-way information, realigning the path to fit between the right-of-way of the Norfolk Southern Railway and CSX Transportation, Inc. and omitting any improvement to the existing at-grade pedestrian crossing. This option would outlet the path onto Green Bay Avenue wherein users would cross the CSX track on street.*

#### BURNHAM AVENUE AT-GRADE CROSSING – CSXT Prefers Grade Separated Crossings - (see PPM)

9. Comment: Please add the following to the DETAIL VIEW
- a. Details of pedestrian barrier system of fencing appear to be lacking.
  - b. The width of the trail as it crosses the track
  - c. Distance from roadway to near edge of trail
  - d. An “obstruction free zone” must be maintained adjacent and parallel to the track. All roadway elements (e.g. curbs, medians, pedestrian/bike barriers, signage, drainage structures, etc.) must be flush with the surroundings and no closer than twelve (12) feet of the centerline of track
  - e. No Portland cement pavement within twelve (12) feet of the centerline of track
  - f. Crossing surface sections are constructed in lengths of eight (8) feet. CSXT specifications require that the crossing surface extend a minimum of two (2) feet beyond the edge of the pathway section, which includes pavement and any shoulders. CSXT proposes to install concrete crossing panels, which extend five (5) feet either side of centerline of track. Show crossing panels and the distance extending beyond the edge of pathway.
  - g. Crossing to be within the existing roadway right-of-way. Show the CSXT and roadway right-of-way lines
  - h. Show relocation of power pole with dimension relative to the trail
  - i. Existing warning device cantilever mast shown within footprint of trail must be relocated at project expense OR if previously relocated by a prior signal project

*Response:*

- *a. Details for the pedestrian barrier system added.*
- *b. Width of trail as it crosses track added.*
- *c. The distance from the roadway to the near edge of trail is shown on the Prefinal Plans as 10 feet.*
- *d. “Obstruction free zone” added.*
- *e. Path within twelve (12) feet of the centerline of the track will be constructed of hot-mix asphalt. Plans revised.*
- *f. Crossing panels identified with corresponding distance extending beyond edge of pathway.*
- *g. CSXT and roadway right-of-way lines will be shown based on best available information.*
- *h. Existing power pole relocation will be determined by final path alignment. Dimensioning relative to the trail will be added if relocated.*
- *i. The existing warning device cantilever mast shown within the footprint of trail location will be field verified versus original survey. If mast remains in the footprint of the proposed trail, the trail will be redesigned to avoid mast.*

CSXT PROJECT COORDINATION

10. Comment: Please add a “PROJECT COORDINATION” section into the plan GENERAL NOTES. Include the following (other items will be added as necessary after subsequent reviews):
- Means & Methods of performing the work shall conform to CSXT CONSTRUCTION SUBMISSION CRITERIA and CSXT SPECIAL PROVISIONS (see PPM)
  - Construction clearances to be used shall be subject to approval by CSXT. Typically reductions in clearance for construction are not permitted.
  - CSXT shall be furnished as-built drawings showing actual clearances as constructed.
- Response: Added to the “Coordination” section of the plan’s GENERAL NOTES.*

PROJECT BID DOCUMENTS

11. Comment: To ensure that the prospective bidding contractors are fully aware of the requirements for working within CSXT right-of-way and are able to prepare their bids accordingly, it is requested that the following CSXT documents be incorporated into the Project Bid Documents (see PPM):
- CONSTRUCTION SUBMISSION CRITERIA
  - SPECIAL PROVISIONS
  - INSURANCE REQUIREMENTS
- Response: The CSXT documents will be requested to be included in the Project Bid Documents.*

WIRELINES/PIPELINES/UTILITIES/ETC

12. Comment: This CSXT Public Projects Group review does not address overhead or underground facilities (wires, conduits, pipelines, other) within CSXT right-of-way, other than CSXT’s own facilities. It is the responsibility of owners of such facilities, including the Agency, to coordinate directly with the CSXT Corridor Occupancy Services (COS) Group. This includes all new installations and the adjustment, modification, removal or retirement in place of all existing facilities, including any facilities attached to or within the pedestrian overhead bridge. Application packages are available online ([www.csx.com](http://www.csx.com); Quick Links; Non-Freight Services; Property Services; Property/Real Estate; Permitting; Utility Installations and Rights of Entry). Please ensure that any private utilities that may be affected are notified of this requirement.

To facilitate a thorough project review by CSXT, please provide a listing of all overhead and underground facilities that may be potentially be impacted by this project and require coordination with the CSXT COS Group (include owner, type, plan sheet, station, offset, height/depth from top of rail, how/if impacted). Failure to properly identify facilities could possibly lead to project delays during construction. For project continuity, please copy this office with any communications with the CSXT COS Group. If no such facilities are impacted, please so advise.

- Response: Private utilities affected by the project within the purview of the CSXT Corridor Occupancy Services (COS) Group shall be notified. A listing of all overhead and underground facilities that may be impacted and require coordination with the CSXT COS Group shall be provided with Alfred Benesch & Company copied on communications.*

REAL ESTATE/PROPERTY RIGHTS

13. Comment: This CSXT Public Projects Group review does not address real estate matters. Please complete easement or any other real estate transactions directly with CSXT Real Property, Jennifer

Bryan ([Jennifer\\_Bryan@csx.com](mailto:Jennifer_Bryan@csx.com)). For project continuity, please provide copy of such correspondence.

- *Response: Real estate transactions required for the project will be coordinated directly with CSXT Real Property vis-à-vis Jennifer Bryan.*

#### SUBMITTALS/INFORMATION REQUESTED

14. Comment: Please provide REVISED PLANS or NEXT SUBMITTAL STAGE PLANS that address the railroad comments presented herein directly to this office for CSXT review and handling. Plan submittals should be electronic PDF format (single file containing all plan sheets or all plan sheets potentially pertaining to CSXT's interests). If hard copies are necessary, you will be so advised.
  - *Response: Noted.*
15. Comment: A FORCE ACCOUNT ESTIMATE for Construction Engineering & Inspection, Construction, and Flagging Services will be prepared and coordinated for payment by the Village of Burnham, upon review and acceptance of the project plans by CSXT:
  - a. Please provide an estimate for the duration of construction for the project (months) and the number of days a Railroad Flagman will be necessary to aid in the preparation of the estimate.
  - *Response: Once the Estimate of Time is prepared, based upon the final approved plans, it shall be provided as requested.*
16. Comment: Please provide DISPOSITION OF COMMENTS contained herein
  - *Response: Provided.*
17. Comment: Please provide copy of the Project Bid Document, with the CSXT documents identified in Comment #11 incorporated, for our information/use.
  - *Response: A copy of the Project Bid Documents, with the CSXT documents identified in Comment #11, will be provided if approved by the Agency.*

From: Shaw, Larry <LShaw@benesch.com>  
Sent: Wednesday, January 20, 2016 11:45 AM  
To: Gasiorek, Christopher  
Cc: Landeweer, David; Amanda\_DeCesare@csx.com); pstreicher@rfclaw.com;  
Vicki\_Sowder@csx.com; Van Slyke, Steven  
Subject: IL0439 - Burnham, Lake County, IL - Greenway Trail Extension over & across CSXT  
(Chicago Div, Barr Sub) ICC T14-0067 - CSXT OP# IL0439

Christopher J. Gasiorek, P.E.  
Principal Civil Engineer  
AECOM

Alfred Benesch & Company (Benesch), on behalf of the CSX Transportation, Inc. (CSXT) Public Projects Group, Amanda DeCesare – Project Manager, has performed review of an 89 sheet PDF set of plans as prepared by URS for the subject project. Based upon review of such plans, we offer the following comments and information:

Coordination of this project with CSXT will generally be governed by the CSXT Public Projects Manual (PPM). Link to PPM pasted below for your convenience.

[Click to view CSX's Public Projects Manual](#)

PROPOSED OVERHEAD BRIDGE STRUCTURE – To Be Constructed in Accordance with CSXT Criteria For Overhead Bridges (see PPM)

- 1) PLAN & PROFILE sheet 12/88 - please add CSXT's valuation station and the distance from the nearest milepost at the intersection of the centerline of the track and the centerline of the bridge.
- 2) Identification of tracks – sheets 12/88 & 22/88
  - a) CSXT track – identify as "CSXT No. 1 Main"
  - b) Northernmost track of the 3 identified as Indiana Harbor Belt appears to be CSXT No. 2 Main. Please confirm with Indiana Harbor that this is a CSXT track and if so confirmed, identify as "CSXT No. 2 Main"
  - c) Please confirm that IHB is responsible for the review associated with the tracks identified as Indiana Harbor Belt, with the possible exception of the northernmost track as indicated in 2)a).
- 3) GENERAL PLAN sheet 22/88 – please correct reference to measurement of minimum vertical clearance to be consistent with CSXT CRITERIA FOR OVERHEAD BRIDGES (see PPM). It is to be measured at a point 6'-0" either side of the centerline of track rather than 9'-0" as shown. Adjust minimum vertical clearance as necessary.
- 4) At least one subsurface exploration boring location and data for each substructure unit adjacent to the track (Pier 7) shall be included on the plans during the design submittal. Borings shall provide enough information to design shoring and foundations.
- 5) General Details sheet 23/88, Section Thru Truss - the Prefabricated Truss bridge over CSXT shall be completely enclosed with protective canopy or by other means to prevent users from dropping debris onto CSXT's right-of-way. Please make it clear that the reference to "Railroad Safety Fence, typ." includes the top as well as both sides of the bridge from the walking surface to the top with no openings AND show the fencing details.

- 6) Please provide design details indicating the proposed bridge storm water collection system and discharge point(s). Drainage from the bridge shall be collected and discharged away from CSXT's right-of-way and ditches.
- 7) Please advise how Pier No. 7 will be accessed. Temporary construction crossings are generally not permitted.

GREEN BAY AVENUE AT-GRADE CROSSING – CSXT Prefers Grade Separated Crossings – See PPM

- 8) Please add a DETAIL VIEW for the proposed at-grade crossing of CSXT at Green Bay Avenue that includes:
  - a) a pedestrian barrier system of fencing on both approaches to the crossing. Show details.
  - b) the width of the trail as it crosses the track
  - c) An "obstruction free zone" must be maintained adjacent and parallel to the track. All roadway elements (e.g. curbs, medians, pedestrian / bike barriers, signage, drainage structures, etc.) must be flush with the surroundings and no closer than twelve (12) feet of the centerline of track.
  - d) No Portland cement pavement within twelve (12) feet of the centerline of track.
  - e) Crossing surface sections are constructed in lengths of eight (8) feet. CSXT specifications require that the crossing surface extend a minimum of two (2) feet beyond the edge of the pathway section, which includes pavement and any shoulders. CSXT proposes to install concrete crossing panels, which extend five (5) feet either side of centerline of track. Show crossing panels and the distance extending beyond the edge of pathway.
  - f) Crossing to be within the existing roadway right-of-way. Show the CSXT and roadway right-of-way lines
  - g) Please advise if any train activated warning devices are desired or if the Illinois Commerce Commission either has or will provide input or order the installation of train activated warning devices

BURNHAM AVENUE AT-GRADE CROSSING – CSXT Prefers Grade Separated Crossings – See PPM

- 9) Please add the following to the DETAIL VIEW
  - a) Details of pedestrian barrier system of fencing appear to be lacking.
  - b) The width of the trail as it crosses the track
  - c) Distance from roadway to near edge of trail
  - d) An "obstruction free zone" must be maintained adjacent and parallel to the track. All roadway elements (e.g. curbs, medians, pedestrian / bike barriers, signage, drainage structures, etc.) must be flush with the surroundings and no closer than twelve (12) feet of the centerline of track.
  - e) No Portland cement pavement within twelve (12) feet of the centerline of track.
  - f) Crossing surface sections are constructed in lengths of eight (8) feet. CSXT specifications require that the crossing surface extend a minimum of two (2) feet beyond the edge of the pathway section, which includes pavement and any shoulders. CSXT proposes to install concrete crossing panels, which extend five (5) feet either side of centerline of track. Show crossing panels and the distance extending beyond the edge of pathway.
  - g) Crossing to be within the existing roadway right-of-way. Show the CSXT and roadway right-of-way lines
  - h) Show relocation of power pole with dimension relative to the trail
  - i) Existing warning device cantilever mast shown within footprint of trail must be relocated at project expense OR if previously relocated by a prior signal project, the dimension from center of mast to edge of trail must be shown

CSXT PROJECT COORDINATION

- 10) Please add a "PROJECT COORDINATION" section into the plan GENERAL NOTES. Include the following (other items will be added as necessary after subsequent reviews):
  - a) Means & Methods of performing the work shall conform to CSXT CONSTRUCTION SUBMISSION CRITERIA and CSXT SPECIAL PROVISIONS (see PPM)
  - b) Construction clearances to be used shall be subject to approval by CSXT. Typically reductions in clearance for construction are not permitted.

- c) CSXT shall be furnished as-built drawings showing actual clearances as constructed.

#### PROJECT BID DOCUMENTS

- 11) To ensure that the prospective bidding contractors are fully aware of the requirements for working within CSXT right-of-way and are able to prepare their bids accordingly, it is requested that the following CSXT documents be incorporated into the Project Bid Documents (see PPM):
  - A) *CONSTRUCTION SUBMISSION CRITERIA*
  - B) *SPECIAL PROVISIONS*
  - C) *INSURANCE REQUIREMENTS*

#### WIRELINES / PIPELINES / UTILITIES / ETC

- 12) This CSXT Public Projects Group review does not address overhead or underground facilities (wires, conduits, pipelines, other) within CSXT right-of-way, other than CSXT's own facilities. It is the responsibility of owners of such facilities, including the Agency, to coordinate directly with the CSXT Corridor Occupancy Services (COS) Group. This includes all new installations and the adjustment, modification, removal or retirement in place of all existing facilities, including any facilities attached to or within the pedestrian overhead bridge. Application packages are available online ([www.csx.com](http://www.csx.com); Quick Links; Non-Freight Services; Property Services; Property/Real Estate; Permitting: Utility Installations and Rights of Entry). Please ensure that any private utilities that may be affected are notified of this requirement.

To facilitate a thorough project review by CSXT, please provide a listing of all overhead and underground facilities that may potentially be impacted by this project and require coordination with the CSXT COS Group (include owner, type, plan sheet, station, offset, height/depth from top of rail, how/if impacted). Failure to properly identify facilities could possibly lead to project delays during construction. For project continuity, please copy this office with any communications with the CSXT COS Group. If no such facilities are impacted, please so advise.

#### REAL ESTATE / PROPERTY RIGHTS

- 13) This CSXT Public Projects Group review does not address real estate matters. Please complete easement or any other real estate transactions directly with CSX Real Property, Jennifer Bryan ([Jennifer\\_Bryan@csx.com](mailto:Jennifer_Bryan@csx.com)). For project continuity, please provide copy of such correspondence.

#### SUBMITTALS / INFORMATION REQUESTED

- 14) Please provide REVISED PLANS or NEXT SUBMITTAL STAGE PLANS that address the railroad comments presented herein directly to this office for CSXT review and handling. Plan submittals should be electronic PDF format (single file containing all plan sheets or all plan sheets potentially pertaining to CSXT's interests). If hard copies are necessary, you will be so advised.
- 15) A FORCE ACCOUNT ESTIMATE for Construction Engineering & Inspection, Construction, and Flagging Services will be prepared and coordinated for payment by the Village of Burnham, upon review and acceptance of the project plans by CSXT:
  - a) Please provide an estimate for the duration of construction for the project (months) and the number of days a Railroad Flagman will be necessary to aid in the preparation of the estimate.
- 16) Please provide DISPOSITION of COMMENTS contained herein.
- 17) Please provide copy of the Project Bid Document, with the CSXT documents identified in Comment #11 incorporated, for our information / use.

You may contact Benesch Project Manager, Steve Van Slyke (513-490-7234) directly to discuss any plan review comments contained herein. For general or administrative questions, please contact me. All future submittals to the CSXT Public Projects Group regarding this project should be directed to [LShaw@Benesch.com](mailto:LShaw@Benesch.com) with copy to [SVanSlyke@Benesch.com](mailto:SVanSlyke@Benesch.com) and always reference CSXT OP# IL0439, including the subject line of electronic transmissions.

Thank you

Larry J. Shaw, PE | Senior Project Manager-Rail Division

**Alfred Benesch & Company** | 201 N. Illinois, 16<sup>th</sup> Flr, South Tower, Indianapolis, IN 46204

**P** 317-610-3241 | **C** 317-417-1902 | **E** [lshaw@benesch.com](mailto:lshaw@benesch.com) | **W** [www.benesch.com](http://www.benesch.com)

NICTD/SS

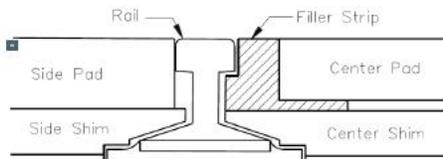
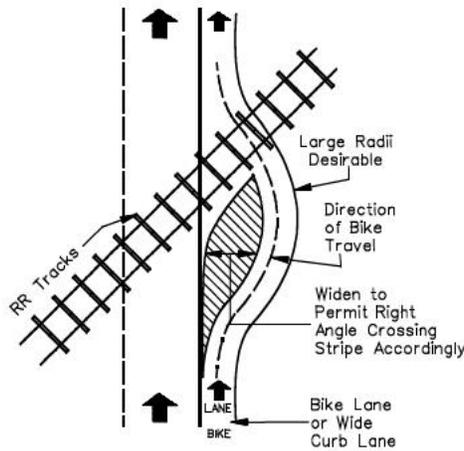
April 18, 2016

The following is a disposition to the pre-final plan review comments received from Signal Systems, John T. Starkey, PE (on behalf of NICTD Railroad) dated 3/31/2016.

1. Comment: The best and safest option is a bridge directly aligned within the right of way for the Burnham Greenway Gap Project that spans the tracks of the NICTD, CSS Freight, and NS railroads. Further, should the Commission choose to order that the Burnham Avenue grade crossing remain available for non-trail cyclists and pedestrians, I recommend the installation of additional pedestrian and cyclist safety.
  - *Response: Noted, however, the Village has not proposed a bridge in this location and is not requesting that such a bridge be placed there at this time.*
2. Comment: In addition to installing an overpass, I recognize from a practical perspective that pedestrians and cyclists will choose the shortest route between two points. Therefore, while I would prefer an absolute closure of the at-grade crossings, I realize that the crossings' continuation in motor vehicle use means that some pedestrians and cyclists will traverse the crossings in the motor vehicle lanes even if such use is prohibited. I therefore recommend a segregated 90-degree pedestrian and bicyclist crossing. My proposed design (Exhibit #2) shortens the time that a person or cyclist is in the railroad track area, which reduces the opportunity for bicyclists to suffer injury or loss of control arising from crossing rails at the present angle of approximately 42 degrees.
  - *Response: The final design will be determined pending the ICC decisions at these combined crossings.*
3. Comment: The location of the barrier and associated fencing shown on page 21 of the Proposed Plan is not to drawn to scale. The distance from the barrier is not specified, however; the fencing as shown relative to the gate is not practical. The fencing, as shown, may interfere with the operation and descent of the gate arm. The fencing will also obstruct maintenance personnel from opening the gate mechanism's door and accessing inside the gate mechanism.
  - *Response: Comment noted. The final plans will ensure that the projected ped barriers are dimensioned, and that the fencing will not conflict with the operation and descent of the gate arm. A plan-in-hand walk-through with NICTD personnel would be ideal for final improvements.*
4. Comment: During an onsite meeting on April 28, 2015 of all parties of interest, the Staff representative from the ICC was adamant that pedestrian gates be used at the grade crossings. The location of the pedestrian gates was not discussed at the time of the meeting. However, the addition of pedestrian gate arms on the roadway gate mechanism should not be considered.
  - *Response: Noted, the Village will add pedestrian gates as noted in AECOM's disposition to ICC Staff's comments.*

5. Comment: The proposed Bike Path grade crossing of the NICTD tracks would be skewed at approximately a 42° in the NW quadrant and does not meet the minimum width recommended by ILDOT. Numerous documents discuss recommendations concerning the width of bike paths and emphasize that bicycle paths cross railroad tracks at close to a right angle.
  - *Response: See comment 2 above.*
  
6. Comment: The Proposed Plan clearly does not meet the IDOT requirements for width or angle for a bike path crossing of a (sic) railroads.
  - *Response: The path width would require a variance from the IDOT requirement if the railroad appurtenances (i.e. the catenary poles and railroad signals) were not relocated to accommodate the minimum 10' width. The alternate path alignment proposed by NICTD's reviewing engineer would be considered an acceptable alternative, provided that railroad right-of-way would be provided for use by perpetual easement and without conditions.*
  - *Response: With regards to the crossing angle, IDOT does not mandate a specific maximum allowed skew. According to the IDOT Bureau of Local Roads & Streets Manual (Chapter 42) and the Bureau of Design and Environment Manual (Chapter 17), when the crossing angle is less than 45° and it is not possible to improve the angle of approach, commercially available compressible flangeway fillers should be used to provide a smooth transition over the rails. (See below figure from IDOT BLRS Manual, Chap. 42).*

Oct 2013 BUREAU OF LOCAL ROADS & STREETS 42-3(17)  
BICYCLE FACILITIES



**BIKE LANE RAILROAD CROSSING TREATMENTS**  
 Figure 42-3I

7. Comment:

ALTERNATE BIKE PATH GRADE CROSSING PLAN

- To minimize the abovementioned concerns with the Proposed Plan and Response, I recommend an alternate grade crossing plan be considered if the ICC orders that an at grade bike path/pedestrian crossing be constructed rather than a grade separation (i.e., bridge) as advocated by NICTD and other affected railroads. The attached Alternate Plan (Exhibit #1) shows the concept and includes:
  - 10' wide 90° crossing of the bicycle path just west of the catenary structure adjacent to Burnham Avenue. (Note if bicycle traffic volumes warrant, a 12' wide pathway—rail grade crossing should be designed). The 90° approach to the crossing reduces the hazard of bicycle wheels or wheel chair wheels being caught in the flangeway. A major concern with the Proposed Plan's angled crossing being adjacent to the roadway is that if the bicycle wheel abruptly turns in the flangeway the cyclist could be thrown into the path of approaching vehicles.
  - Modified pedestrian barriers and pedestrian gates with "Exit Swing Gates" incorporated into the pedestrian barriers. The Exit Swing Gate should be functionally the same as the devices approved by the ICC on the "high speed" corridor. The Exit Swing Gates can take the place of the "projecting barrier", which allows the combination of the pedestrian gate and Exit Swing Gate to fully close access to the grade crossing at a location that is more effective than the Proposed Plan. The pedestrian gates at the NICTD grade crossing would only for trains on the NICTD tracks.
  - The 90° crossing allows pedestrians to clear the tracks in a shorter time. The Staff Response indicated that no additional warning time was needed for the angled crossing; however, all concerned should agree that it is always better to reduce the time that a pedestrian or cyclist is foul of the tracks. Although the Alternate Plan is moving the pathway crossing west, this relocation can be implemented without lengthening the warning time for the existing train detection system
  - Crossbucks, Flashing Light Signals and audible pedestrian device mounted on the pedestrian gate mast.
  - NO BICYCLE regulatory signs installed along the roadway
  - WALK YOUR BIKE signs at the entrance to the pedestrian barriers.
  - Advance warning signs, as required.
  - Appropriate fencing
- *Response: AECOM will defer to ICC's recommendations.*

March 31, 2016

**Proposed Bicycle Path across NICTD Railroad Tracks,  
Burnham, IL**

Prepared for NICTD by John T. Sharkey, P.E. (IL License 062.035855),  
Vice President-Signal Systems  
CTC Inc., Elgin, IL

This report discusses the NICTD's independent engineering analysis of the current proposal to implement a bicycle path on the west side of the highway-rail grade crossing involving Burnham Avenue and two railroad tracks of the Northern Indiana Commuter Transportation District and CSS Freight Railroad, two railroad tracks of the Norfolk Southern (NS), and one railroad track belonging to the CSX Transportation. The proposed bicycle path would basically follow the existing sidewalk alignment. The NICTD/CSS Burnham Avenue grade crossing is designated as DOT# 867-226H; the Norfolk Southern grade crossing is designated as DOT #478708J; and CSX Transportation's grade crossing is designated as DOT# 163649L. There are approximately 80 trains that traverse these three interconnected grade crossings each weekday. Figure 1 shows an aerial view of the three sets of railroad crossings.



Figure 1 - Aerial view of the NICTD Burnham Avenue highway-rail grade crossing taken from Google Maps ©

**EXECUTIVE SUMMARY**

As a professional engineer involved in railroad grade crossing issues for over 43 years, it is my opinion that the best and safest option is a bridge directly aligned within the right of way for the Burnham Greenway Gap Project that spans the tracks of the NICTD, CSS Freight, and NS railroads. Further, should the Commission choose to order that the Burnham Avenue grade crossing remain available for non-trail cyclists and pedestrians, I recommend the installation of additional pedestrian and cyclist safety enhancements at the NICTD/CSS portion of the highway-rail grade crossing.

As discussed in greater detail within this report, my decision to recommend an overpass is based on facts that show how these crossings are already very congested – and likely to become more so in the coming years. The crossings currently serve 80 trains per weekday -- or the equivalent of 1,760 weekday closures in a calendar month. The total time that the crossings are closed for NICTD and CSS Freight trains is approximately 57 to 64 minutes per day. I believe that NS data for its 37 freight trains will add at least the same amount, if not more, time that the crossings are closed given the slower velocity of freight trains and switching movements. Since the NICTD/CSS and NS grade crossings are interconnected with each other, this means that the NICTD and NS crossings are closed on average at least two hours per day.

By the mid-2020's, approximately 108 trains per day are expected to traverse the crossings. Therefore, the time that the crossings are closed for all trains will similarly increase well beyond the current two hours per day. Absent an overpass, retention of an at-grade option will place the existing and expected increases in cyclists and pedestrians in a substantially higher risk of injury or death than if a bridge is installed. An Alternate Bike Path Grade Crossing Plan (Exhibit# 1) is discussed at the end of this report.

In addition to installing an overpass, I recognize from a practical perspective that pedestrians and cyclists will choose the shortest route between two points. Therefore, while I would prefer an absolute closure of the at-grade crossings, I realize that the crossings' continuation in motor vehicle use means that some pedestrians and cyclists will traverse the crossings in the motor vehicle lanes even if such use is prohibited. I therefore recommend a segregated 90-degree pedestrian and bicyclist crossing. My proposed design (Exhibit #2) shortens the time that a person or cyclist is in the railroad track area, which reduces the opportunity for bicyclists to suffer injury or loss of control arising from crossing rails at the present angle of approximately 42 degrees.

## **GENERAL DISCUSSION**

### **The Bridge Option and Rail Congestion Considerations**

In my opinion construction of a bridge to carry bicycle and pedestrian traffic over the NICTD/CSS and Norfolk Southern Railway Company ("NS") tracks is the safest alternative and should be included as part of the Burnham Greenway Gap Project. While I have not received any data from Burnham as to the amount of bicycle and pedestrian traffic that will use the crossings, I accept the assumption that Burnham, IDOT and the ICC would not be proposing to spend \$5.4 million on the Burnham Greenway Gap Project of approximately one-and-a-third miles in length unless a very significant amount of bicycle and pedestrian traffic is expected. Based on the facts explained below, I believe a grade separation is the safest and most reasonable alternative.

These crossings are very congested. The NICTD/CSS and NS interconnected crossings are traversed by approximately 80 trains per weekday – with the potential to increase to 108 trains per weekday in the near future. NICTD and CSS Freight currently operate approximately 43 weekday passenger trains through the northern portion of the interconnected crossings. According to ICC data, Norfolk Southern operates approximately 37 freight trains per day through the southern portion of the interconnected crossings. In addition, NICTD has plans in the near future to add 16 weekday express trains through this crossing, another 6 express trains on Saturdays, and 2 express trains on Sundays, which would increase the weekday daily train traffic to 96 trains. Construction of a proposed West Lake Line (currently in the advanced funding and planning stages with potential start up in the early 2020's) would add another 12 weekday trains, bringing the weekday daily train count to 108 trains.

The train speed is also projected to increase at this location from its current 25 to as high as 45 miles per hour for passenger trains. At present, speed at the crossing is restricted by a nearby track diamond that limits train speed to 25 miles per hour. A new technology replacement diamond will permit a train speed increase to 45 miles per hour for NICTD trains.

Freight operations by the CSS Freight and Norfolk Southern add to the complexity and congestion within these crossings. During a personal site visit, I observed that the NS portion of the crossing is situated near the end of the yard leads for the Ford automobile distribution facility. The switching within that yard triggered the actuation of gates and also resulted in periods of time that the crossing was blocked as trains prepared to enter, leave, or be switched within the yard.

### **Proposed Bike Path Plan**

The term 'Proposed Plan' used in this report refers to the Burnham Greenway Gap Project plan prepared by the URS Corp. apparently for the Illinois Department of Transportation, IDOT, and identified as "Pre-Final Submittal April 27, 2015". Individual pages will be referred to in this report.

Note, on February 26, 2016, the Staff of the ICC submitted a Staff Response and Position, hereafter referred to as Response. The Staff Response also recommends changes to the "Proposed Plan"; therefore, I will comment on the Response near the end of this report.

As discussed below, the warning systems for the NICTD and NS crossings are interconnected. NICTD performed an analysis and summary of the number of times the NICTD warning systems (flashing lights, bells and gates) were activated over a four-month period, from April through July of 2015. According to NICTD's grade crossing data, the NICTD and NS crossings are both closed to vehicular traffic 57 to 64 minutes per day for NICTD and CSS Freight movements. 97.37 percent of the crossing closures are for less than five minutes, but 2.1 percent are for between 5 and 10 minutes, .38 percent are for 10 and 15 minutes, and .16 percent are for 15 minutes or longer. Framed differently, the NICTD crossing is closed anywhere from 1,081 to 1,183 times per month during the summer months that would be representative of likely path usage of the proposed bike path.

In addition to the 43 weekday NICTD and CSS Freight trains that trigger closures, the 37 trains operated by the NS through the crossing also trigger crossing closures. While the data from the NS is not available to me, I would expect that NS's 37 freight trains close the crossing for at least as long as NICTD and CSS Freight movements given that 37 freight trains are longer, slower, and involved in switching operations as opposed to the through movements of NICTD's passenger trains consisting of no more than 8 cars. Thus, it is a fairly straightforward conclusion that the grade crossings are already presently closed for two or more hours per day. When NICTD's new services start, daily closures of the crossings could easily approach three hours per day. Insertion of additional pedestrians and cyclists into this already busy crossing is unquestionably not the safest approach. Three or more hours of daily closures, with some closures of substantial duration, will give rise to the temptation for bicyclists and pedestrians to attempt to "beat the train" or try to climb over the stopped trains. Almost all of this risk and danger can be avoided by building a pedestrian and cyclist overpass.

### **Existing Warning Devices**

The existing NICTD grade crossing, DOT # 867-226H, is equipped with an active traffic control system. In the NW quadrant, the traffic control devices are cantilever mounted flashing light signals (FLS) and automatic gates mounted on separate masts. In the SE quadrant there are cantilever FLS and gates located

on the right shoulder and left median. The view of the warning devices looking south on the existing sidewalk is shown in Figure 2. NICTD is an electrified railroad and the pole to the right of the sidewalk is a support for the 1500 VDC catenary wires.



Figure 2 – Warning devices and sidewalk looking south along Burnham Ave.

### **Adjacent Track Interconnected Grade Crossing Warning Systems**

In Figure 2 it can also be seen that the NS grade crossing in the distance is occupied with a train and the NICTD warning devices are activated in the direction of traffic towards NS. That is, all the NS FLS and gates are activated for the train, and one set of NICTD FLS and gate are activated. The NICTD FLS and gates on the opposite side of Burnham Ave. are not activated. This practice is covered by AREMA C&S Manual Part 3.1.11, *Recommended Functional/Operating Guideline for Adjacent Track Interconnected Grade Crossing Warning Systems*, Reaffirmed 2015 <sup>1</sup>. The purpose of the interconnection between the adjacent railroad circuitry is to close the access between the far railroad and the occupied railroad to minimize the chance of a queue of vehicles stopping on the far tracks. The remaining NICTD FLS gates on the NB lanes are not activated allowing traffic to clear of the NS tracks. If a NICTD train subsequently approaches the crossing all NICTD warning devices will be activated.

### **Pedestrian Barriers**

The Proposed Plan indicates Pedestrian Barriers in advance of, and on each side of the NICTD grade crossing. One purpose of pedestrian barriers in conjunction with fencing is to restrict straight access toward the grade crossing by causing the user to maneuver around a portion of the barrier that projects into the pathway (projecting barrier). The details of the Proposed Plan's pedestrian barrier are shown in Figures 3 and 4.

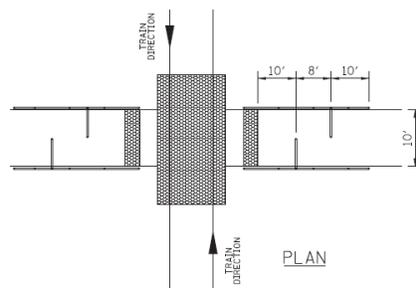


Figure 3 – Proposed Plan's Pedestrian Barrier Details (sheet 19 of 88)

A second, but subtler, purpose of the barrier is to force users to face oncoming trains or dismount bicycles as they zigzag through the barrier. The current design of the pedestrian barrier may not be as effective in

achieving these results because of the narrow width of the pathway and the length of and distance between the projecting barriers. A barrier system that has longer projecting barriers with a shorter distance between the projecting barriers would force a user to physically turn and face oncoming trains and be harder to ride a bicycle through without dismounting.

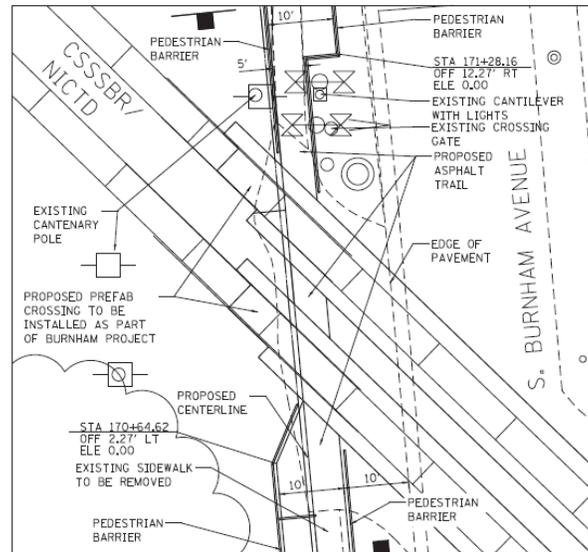


Figure 4 – Proposed Plan’s Pedestrian Barrier Location at NICTD (sheet 21 of 88)

The location of the barrier and associated fencing shown on page 21 of the Proposed Plan is not to drawn to scale. The distance from the barrier is not specified, however; the fencing as shown relative to the gate is not practical. The fencing, as shown, may interfere with the operation and descent of the gate arm. The fencing will also obstruct maintenance personnel from opening the gate mechanism’s door and accessing inside the gate mechanism.

**Automatic Pedestrian Gates**

During an onsite meeting on April 28, 2015 of all parties of interest, the Staff representative from the ICC was adamant that pedestrian gates be used at the grade crossings. The location of the pedestrian gates was not discussed at the time of the meeting. **However, the addition of pedestrian gate arms on the roadway gate mechanism should not be considered.** Specifically, in Section 8D.06 *Active Traffic Control Systems for Pathway Grade Crossings*, the Federal Highway Administration’s (FHWA) *Manual on Uniform Traffic Control Devices*<sub>2</sub> (MUTCD) and through adoption of the MUTCD by IDOT in *Illinois Supplement to the 2009 MUTCD*<sub>3</sub> states: “If a separate automatic gate is used for a sidewalk at a highway-rail or highway-LRT grade crossing, instead of a supplemental or auxiliary gate arm installed as a part of the same mechanism as the vehicular gate, a separate mechanism should be provided for the sidewalk gate to prevent a pedestrian from raising the vehicular gate.” The FHWA’s official interpretation<sub>4</sub> of this section of the MUTCD clarifies the intent. Separate gate mechanisms should be used for the automatic gates on pathways.

(Later in the Response, separate gate mechanisms for the bicycle path were shown on an exhibit)

**Width and Angle of Proposed Bike Path Grade Crossing**

The proposed Bike Path grade crossing of the NICTD tracks would be skewed at approximately a 42° in the NW quadrant and does not meet the minimum width recommended by ILDOT. Numerous documents

discuss recommendations concerning the width of bike paths and emphasize that bicycle paths cross railroad tracks at close to a right angle.

- **IDOT Bureau of Local Roads & Streets Manual** *8*– Chapter 42 Bicycle Facilities:

**42-3.02(a) Bike Paths Versus Sidewalks:**

“Sidewalks are generally not suitable for bicycle travel, primarily because of their narrow width and multiple opportunities for conflicts with driveways and commercial entrances. However, some suburban sidewalks may be preferable to on-road accommodations, particularly if they provide adequate width, do not have excessive number of driveways/conflict points, and are located on both sides of the roadway.”

**42-3.02(b) Width**

“Widths for shared use bicycle paths will vary in accordance with the conditions illustrated in Figure 42-3A. Figure 42-3B illustrates the minimum cross sections for two-way, shared-use paths.”

ANTICIPATED VOLUME	TWO-WAY(2)(3)(4)
< 100 Users per Peak Hour	8 ft (2.4 m)(5)
100 - 300 Users per Peak Hour	10 ft (3.0 m)
> 300 Users per Peak Hour	12 ft (3.6 m)(6)

*“2. Provide a minimum 2 ft (600 mm) wide graded turf or gravel area to both sides of the pavement.*

*3. Desirably, provide a 3 ft (900 mm) or more clear area on each side to trees, poles, walls, fences, guardrails, and other lateral obstructions.*

*4. If signs are installed along the bicycle path, provide a minimum 3 ft (900 mm) to a maximum 6 ft (1.8 m) clear area from the edge of path.*

*5. Use the 5 ft (1.5 m) and 8 ft (2.4 m) width only at locations where there will be low usage, few conflicts among users, good horizontal and vertical alignment providing for safe and frequent passing opportunities, minimal maintenance vehicle traffic which would cause pavement edge damage, and/or right-of-way constraints or physical barriers.*

*6. Where usage exceeds 300 users per hour during the peak periods of usage, separating bicycle and pedestrian travel may be considered. Stripe 4 ft (1.2 m) bike lanes in each direction and a 4 ft (1.2 m) width for pedestrians, as shown in Figure 42-3B. Also, consider constructing a separated pathway for pedestrians.”*

**42-3.04 Bicycle Railroad Crossings**

“Bike lane and path intersections with the railroad are more sensitive to the skew angle than the main highway because of the possibility of bicycle or wheelchair wheels being trapped in the rail flangeway.

“Consider the following to accommodate bicycles across railroads:” **(BOLD added for emphasis)**

1. Width. In general, **the normal width of the bikeway, including shoulders, should be maintained through the grade crossing.**

2. Vertical Alignment. The vertical alignment considerations that apply to mainline roadways are also applicable to bikeways.

3. Crossing Angle. **Bicyclists should be able to cross railroad tracks at or near a right angle to minimize the potential for the bicycle’s front wheel to be trapped in the flangeway.**

When the crossing angle is less than 45°, consider widening the outside lane, shoulder, or bicycle lane to improve the angle of approach (See Figure 42-3I). Where this is not

practical, consider using commercially available compressible flangeway fillers to provide a smooth transition over the rails (See Figure 42-31). Appropriate pavement striping in the widened area can guide users of the bike lane toward the safest alignment across the tracks.

4. Surface. The bicycle portion of the pavement surface should be at the same elevation as the top of the rails. Provide a bicycle-crossing surface that is consistent with the vehicular or bike path-crossing surface.

5. Visibility. **Maximum visibility should be provided to improve the cyclist's awareness of approaching trains.** Post Railroad Advance Warning signs no less than 50 ft (15 m) in advance of the tracks.

6. Signing and Protection. **Crossbuck signs shall be erected at the crossing. All signing should conform to ILMUTCD.** The LPA should **coordinate with the railroad to determine the need for flashing light signals and gates.**

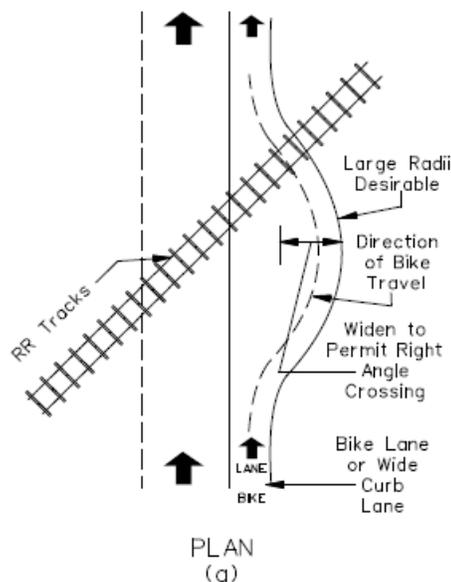
7. Coordination. Contact the railroad early in the development of the project. The ICC may also be involved with bike crossings adjacent to roadways.”

- Further concern about the width and skew of a bike path-railway grade crossing is discuss in the following IDOT manual:

***Bureau of Design and Environment Manual, , IDOT, Chapter 17 Bicycle/Pedestrian Accommodations.***

From **17-2.02(h)** (BOLD added for emphasis)

“Railroad Crossings. Bicyclists should be able to **cross railroad tracks at or near a right angle to minimize the potential for a bicycle's front wheel to become trapped in the flangeway**, which would cause loss of steering control. The potential for a bicyclist's front wheel to be trapped in the rail flangeway increases when the angle of approach deviates greatly ( $20^\circ$ ) from  $90^\circ$ . **When the crossing angle is less than  $45^\circ$ , consider widening the outside lane, shoulder, or bicycle lane to improve the angle of approach (see Figure 17-2.R(a))**”



(Author's Note: The added width and large radii effectively create a nearly 90° grade crossing across the railroad as recommended in my Alternate Bike Path Grade Crossing Plan. However, I would recommend that pavement markings and delineators be added to guide bicyclists to cross the tracks at 90°.)

The Proposed Plan clearly does not meet the IDOT requirements for width or angle for a bike path crossing of a railroads.

Additional documents support bicyclists crossing railroad tracks at 90°:

- The **FHWA's Trails to Rails: Lessons Learned**<sub>6</sub> states, "Another critical issue, particularly for bicyclists and people with disabilities, is the angle of crossing. The AASHTO Bike Guide makes the following statement with respect to the crossing angle of a bikeway at a railroad track: 'Railroad-highway grade crossings should ideally be at a right angle to the rails....The greater the crossing deviates from this ideal crossing angle, the greater is the potential for a bicyclist's front wheel to be trapped in the flangeway, causing loss of steering control. If the crossing angle is less than approximately 45 degrees, an additional paved shoulder of sufficient width should be provided to permit the bicyclist to cross the track at a safer angle, preferably perpendicularly'."
- The FHWA's **Railroad Highway Grade Crossing Handbook**<sub>7</sub> states: The more the crossing deviates from the ideal 90-degree crossing, the greater the potential for a cycle wheel to be trapped in the flangeway. If the crossing angle is less than 45 degrees, consideration should be given to widening the bikeway to allow sufficient width to cross the tracks at a safer angle.
- Operation Lifesaver, Inc. **Bicycle Safety Tips**<sub>5</sub> states: "CROSSING TRACKS ON A BICYCLE REQUIRES CAUTION AND EXTRA ATTENTION! Narrow wheels can get caught between the rails. If possible, walk –don't ride- across. Always cross at a 90-degree angle".

#### **Clearance Distance and Clearance Time**

The *Railroad-Highway Grade Crossing Handbook*<sub>7</sub> also states, "All pedestrian facilities should be designed to minimize pedestrian crossing time, and devices should be designed to avoid trapping pedestrians between sets of tracks". The existing angle of the crossing creates a 52' clearance distance versus a 25' clearance distance for a 90° crossing. Based on the MUTCD's pedestrian speed of 3.5 feet/second, it takes a pedestrian nearly 8 seconds longer to clear the NICTD tracks at the proposed angled crossing.

#### **Comments on STAFF RESPONSE AND POSITION**

On February 26, 2016, *Staff Response and Position* was submitted by Brian Vercruyse, P.E., Senior Rail Safety Specialist, ICC. This document discusses the history of the proposed bicycle path and the history of the various highway-rail grade crossings and warning systems.

As part of this Proposed Plan Staff supports the use of the Grade Crossing Protection Fund (GCPF) in an amount not to exceed \$2,000,000 to reimburse the Village of Burnham to assist in constructing of a pedestrian bridge over the Indiana Harbor Belt Railway, CSX and the NS.

However, the Staff Response also is of the opinion that the pathway-rail grade crossings in the Proposed Plan of the Village "along Burnham will provide safety and overall improvement as compared to the existing sidewalk. A wider path at the crossings will provide for a better angle of approach over the rails for the current and future pedestrians and cyclists, and the project would eliminate the drop offs, damage, and irregularity of the existing sidewalk." I am of the opinion that the Response does not adequately compare the improvement to future use of the pathway. The fact is the path is a two-way path shared with pedestrians and presumably a much larger volume of bicycles. The angle of approach is still

approximately 42° and all a wider path does is give the cyclist a 5' lane to try and maneuver a 90° crossing of the track.

The Staff Response goes on to state that pedestrian gates should be installed to reduce confusion as to which track/crossing a train may be on when approaching Burnham Avenue. The Response does not address the location of the pedestrian gates relative to the pedestrian barriers discussed in the Proposed Plan. I will address the location of the pedestrian gates in my Alternate Plan. I do agree with the Response that the pedestrian gates should only activate for trains on their associated tracks. In other words, the pedestrian gates adjacent to the NICTD tracks will only be activated by trains on the NICTD tracks. The NICTD pedestrian gates will not be activated by trains on the NS or CSX tracks. Only the vehicular gates will be activated as discussed in the above section, Adjacent Track Interconnected Grade Crossing Warning Systems. With respect to NICTD, I agree with the Response that no additional warning time is required for the pedestrian gates.

The Staff Response acknowledged that "NICTD hired an engineering firm to study potential alignments for a pedestrian bridge to provide a more direct route link north and avoid the Burnham Avenue at-grade crossings." Further, "Staff does not believe that a structure would negate the need for pedestrian accommodations along Burnham Avenue over the CSX, NS, NICTD/CSS at-grade crossings." However, the Response does not justify the Staff belief with any data. Existing collision data from the ICC website<sup>10</sup> indicates the Burnham Avenue grade crossing of the NICTD tracks has had one collision involving a pedestrian. That collision was at 3:20 a.m. on August 6, 1977, a rainy Saturday morning, nearly 40 years ago.

#### **ALTERNATE BIKE PATH GRADE CROSSING PLAN**

To minimize the abovementioned concerns with the Proposed Plan and Response, I recommend an alternate grade crossing plan be considered if the ICC orders that an at grade bike path/pedestrian crossing be constructed rather than a grade separation (i.e., bridge) as advocated by NICTD and other affected railroads. The attached Alternate Plan (Exhibit #1) shows the concept and includes:

- 10' wide 90° crossing of the bicycle path just west of the catenary structure adjacent to Burnham Avenue. (Note if bicycle traffic volumes warrant, a 12' wide pathway-rail grade crossing should be designed). The 90° approach to the crossing reduces the hazard of bicycle wheels or wheel chair wheels being caught in the flangeway. A major concern with the Proposed Plan's angled crossing being adjacent to the roadway is that if the bicycle wheel abruptly turns in the flangeway the cyclist could be thrown into the path of approaching vehicles.
- Modified pedestrian barriers and pedestrian gates with "Exit Swing Gates" incorporated into the pedestrian barriers. The Exit Swing Gate should be functionally the same as the devices approved by the ICC on the "high speed" corridor. The Exit Swing Gates can take the place of the "projecting barrier", which allows the combination of the pedestrian gate and Exit Swing Gate to fully close access to the grade crossing at a location that is more effective than the Proposed Plan. The pedestrian gates at the NICTD grade crossing would only be for trains on the NICTD tracks.
- The 90° crossing allows pedestrians to clear the tracks in a shorter time. The Staff Response indicated that no additional warning time was needed for the angled crossing; however, all concerned should agree that it is always better to reduce the time that a pedestrian or cyclist is foul of the tracks. Although the Alternate Plan is moving the pathway crossing west, this relocation can be implemented without lengthening the warning time for the existing train detection system.

- Crossbucks, Flashing Light Signals and audible pedestrian device mounted on the pedestrian gate mast.
- NO BICYCLE regulatory signs installed along the roadway
- WALK YOUR BIKE signs at the entrance to the pedestrian barriers.



- Advance warning signs, as required.
- Appropriate fencing

### **ALTERNATE PEDESTRIAN GRADE CROSSING PLAN**

If the Commission orders that the grade separation (i.e., bridge) as advocated by NICTD and other affected Railroads be installed, certain improvements are recommended at the existing pedestrian crossing of the NICTD/CSS tracks at Burnham Avenue. The attached Alternate Plan (Exhibit #2) shows the concept and includes:

- 90° crossing of the ped-path just west of the catenary structure adjacent to Burnham Avenue.
- Pedestrian barriers
- Crossbucks, Flashing Light Signals and audible pedestrian device
- NO BICYCLE regulatory signs installed along the roadway
- WALK YOUR BIKE signs at the entrance to the pedestrian barriers.
- Advance warning signs, as required
- Appropriate fencing

Respectfully,

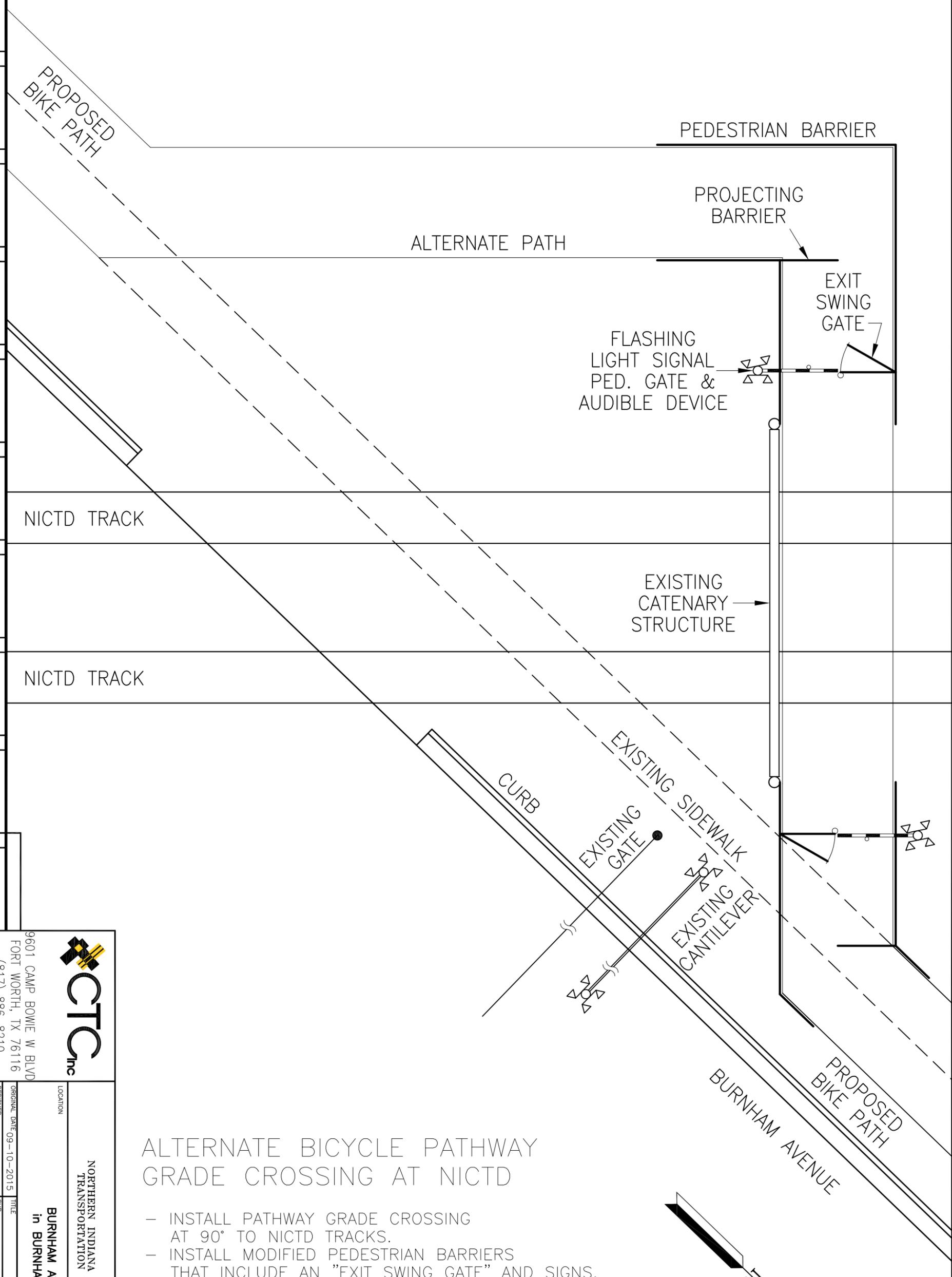
John T. Sharkey, P.E. (IL PE License 062.035855)  
Vice President-Signals  
CTC Inc., Elgin, IL

## DOCUMENTS REVIEWED BY CONSULTANT

1. American Railway Engineering and Maintenance-of-Way Association (AREMA) Communications & Signals Manual (C&S), Part 3.1.11, *Recommended Functional/Operating Guideline for Adjacent Track Interconnected Grade Crossing Warning Systems*, Reaffirmed 2015.
2. *Manual on Uniform Traffic Control Devices*, MUTCD, US DOT Federal Highway Administration (FHWA), 2009.
3. *Manual on Uniform Traffic Control Devices, 2009 Edition, Illinois Supplement to the National Manual on Uniform Traffic Control Devices*, Illinois Department of Transportation, 2011
4. MUTCD Interpretation Letter from FHWA to John T. Sharkey - 8(09)-3(1) – *Use of Single Gate Mechanisms at Grade Crossings*, US DOT FHWA, dated August 24, 2010, [http://mutcd.fhwa.dot.gov/resources/interpretations/8\\_09\\_3.htm](http://mutcd.fhwa.dot.gov/resources/interpretations/8_09_3.htm)
5. *Bicycle Safety Tips*, Operation Lifesaver, Inc., 2015
6. *Rails to Trails : Lessons Learned*, FHWA  
[http://www.fhwa.dot.gov/environment/recreational\\_trails/publications](http://www.fhwa.dot.gov/environment/recreational_trails/publications)
7. *Railroad-Highway Grade Crossing Handbook*, Revised 2<sup>nd</sup> Edition, 2007, FHWA
8. *Bureau of Local Roads and Streets Manual*, IDOT Division of Highways
9. *Bureau of Design and Environment Manual, IDOT, Chapter 17 Bicycle/Pedestrian Accommodations*
10. ICC Grade Crossing Search website:  
<https://www.icc.illinois.gov/railroad/searchCrossingNumber.aspx?>

Exhibit 1  
 ALTERNATE LOCATION OF  
 BICYCLE PATH GRADE CROSSING

REVISION  
 BLOCK  
 A  
 03/30/16  
 ADD NOTES  
 BY: CTC, INC.



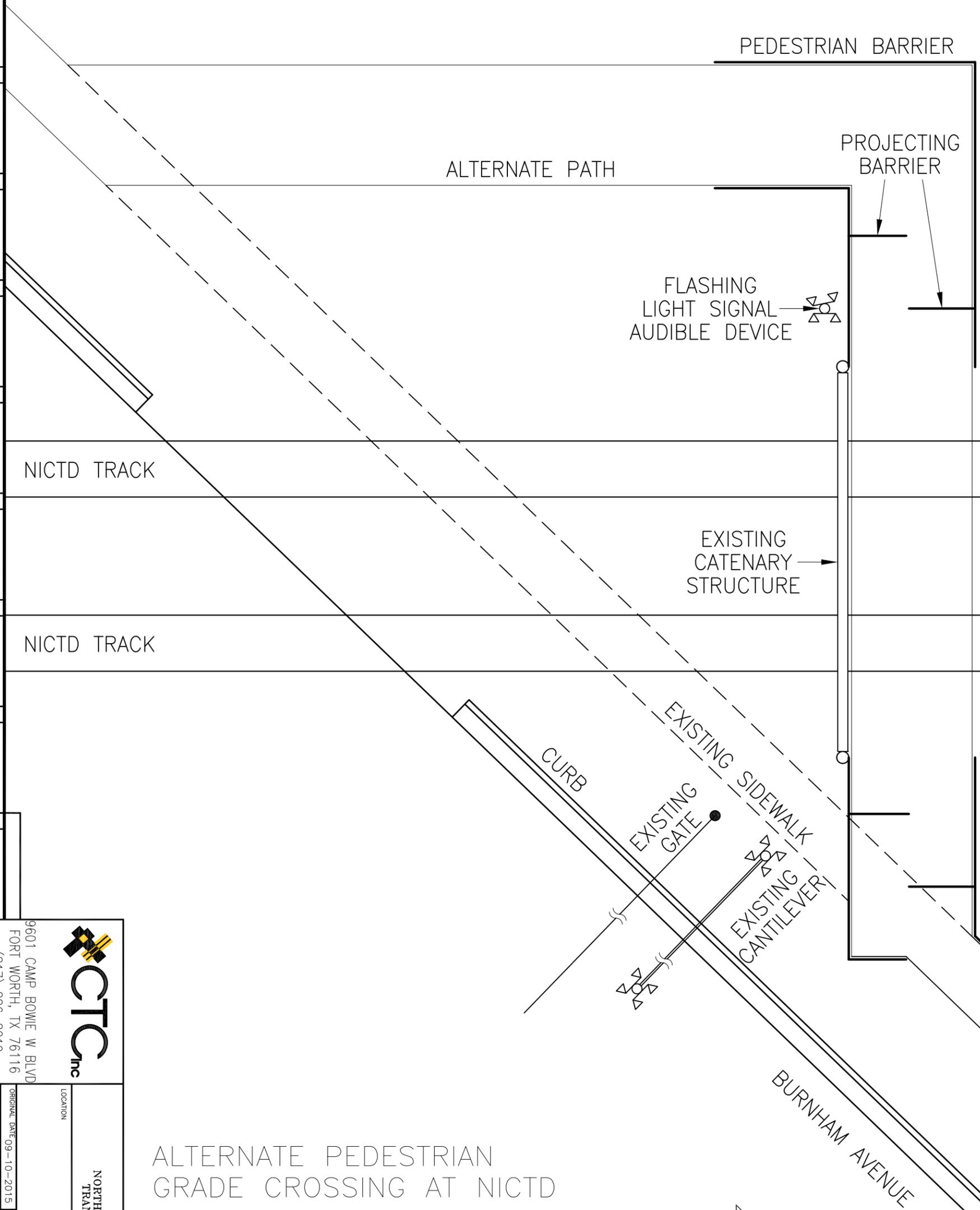
ALTERNATE BICYCLE PATHWAY  
 GRADE CROSSING AT NICTD

- INSTALL PATHWAY GRADE CROSSING AT 90° TO NICTD TRACKS.
- INSTALL MODIFIED PEDESTRIAN BARRIERS THAT INCLUDE AN "EXIT SWING GATE" AND SIGNS.
- INSTALL AUTOMATIC PEDESTRIAN GATES WITH FLS.
- INSTALL "NO BICYCLES" SIGN ON ROADWAY.
- INSTALL "WALK YOUR BIKE" OR ALTERNATE SIGNS.
- INSTALL FENCING TO CHANNEL PEDESTRIAN & CYCLISTS ALONG PATHWAY.

9601 CAMP BOWIE W BLVD  
 FORT WORTH, TX 76116  
 (817) 886-8210  
 WWW.CTCINC.COM

LOCATION: NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT  
 TITLE: BURNHAM AVENUE in BURNHAM, IL  
 ORIGINAL DATE: 09-10-2015  
 DESIGNER: CTC  
 DRAFTSMAN: CTC  
 CHECKER: CTC  
 SUB: SUB  
 RAMP: 7.10  
 DOT NO: 867 226H  
 SHEET: 01 OF 01

Exhibit 2  
 ALTERNATE LOCATION OF  
 PEDESTRIAN GRADE CROSSING



ALTERNATE PEDESTRIAN  
 GRADE CROSSING AT NICTD

- INSTALL PATHWAY GRADE CROSSING AT 90° TO NICTD TRACKS.
- INSTALL PEDESTRIAN BARRIERS
- INSTALL FLS. & AUDIBLE DEVICE.
- INSTALL "NO BICYCLES" SIGN ON ROADWAY.
- INSTALL "WALK YOUR BIKE" OR ALTERNATE SIGNS.
- INSTALL FENCING TO CHANNEL PEDESTRIANS ALONG PATHWAY.

		9601 CAMP BOWIE W BLVD FORT WORTH, TX 76116 (817) 886-8210 WWW.CTCINC.COM	
LOCATION NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT BURNHAM AVENUE in BURNHAM, IL	ORIGINAL DATE 09-10-2015	TITLE 00.00000000,-00.00000000	DESIGNER CTC
DRAFTSMAN CTC	SUB RAMP 7.10	SUB SCALE EGT15110	CHECKER CTC
SHEET 01	DOT NO. 867 226H	SHEET 01	OF 01

NS

February 1, 2016

The following is a disposition to the pre-final plan review comments received from Jacobs Engineering (Norfolk Southern Railway) dated 11/30/2015.

## PLANS

### 1. Comment: Cross Sections

- Add centerline of track and Norfolk Southern right-of-way to cross-sections;
  - *Response: Centerline of track and Norfolk Southern right-of-way will be added to the cross-sections.*
- PreFinal Comment: The profile of the existing top of rail (500 ft. each side of proposed road crossing) should be plotted on the plans. If the track is in a sag at the proposed bridge location, the vertical clearance from the top-of-rail to the bridge should be increased sufficiently to permit raising the track enough to remove the sag. A note should be added to the profile stating: "The elevations of the existing top-of-rail profile shall be verified before beginning construction. All discrepancies shall be brought to the attention of the Norfolk Southern Public Projects Engineer."
  - *Response: A profile of the existing top of rail will be plotted on the plans. The profile will extend to the limit of currently available data. If the track is determined to be in a sag, the vertical clearance from the top-of-rail profile to the bridge will be checked to ensure that the sag could be removed. The note will be added to the track profile sheet as indicated.*

### 2. Comment: Plan and Profile Sheet 6 of 6

- Provide IDOT right-of-way and show that proposed bike path will not extend outside of IDOT right-of-way throughout Norfolk Southern right-of-way at crossing;
  - *Response: Proposed bike path remains outside of NS right-of-way except along S. Burnham Avenue. The bike path deviates onto RR right-of-way at this location in order to avoid existing RR traffic signal gates.*
- PreFinal Comment: IDOT right-of-way has not been added;
  - *Response: IDOT right-of-way is shown on the plans but is aligned with proposed shared-use path alignment and edge of pavement. A callout for the IDOT right-of-way will be added Plan & Profile Sheet 6 of 6.*

### 3. Comment: Plan and Profile Sheet 17 of 47

- Piers constructed on NS right of way need to be pier supported or cast in place. Pier 7 may fall on NS right of way. Clarify and adjust accordingly.
  - *Response: Pier 8 (formally Pier 7) has been dimensioned relative to the NS right-of-way based on the best available information.*
- PreFinal Comment: Matter needs to be addressed prior to construction agreement;
  - *Response: Concur.*

### 4. Comment: Sheet 20

- *Prefinal Comment: Please note, plan set has two (2) page 20's.*

- *Response: Please correct; Sheet numbering will be corrected.*

5. Comment: GENERAL

- *Prefinal Comment: NO PLANS ARE TO BE CONSIDERED FINAL, PENDING REVIEW OF THE CROSSING ALONG BURNHAM AVE. NORFOLK SOUTHERN STRONGLY SUGGESTS A GRADE SEPARATED STRUCTURE. COMMENT CAN BE CLOSED UPON SPONSOR ACKNOWLEDGMENT.*
  - *Response: Noted.*



Norfolk Southern Corporation  
Bridges and Structures  
1200 Peachtree Street NE  
Atlanta, GA 30309-3579  
Telephone (404) 529-1408  
Fax (404) 527-2589

**J. N. Carter Jr.**  
Chief Engineer

**Ellis A. Mays**  
Engineer Public Improvements  
Phone: 404/529-1256  
Fax: 404/527-2769  
Email: Ellis.mays@nscorp.com

Subject: Cook County – Burnham, IL – Burnham Greenway Gap  
Dearborn Division – Milepost B-505.82 & GJ-5.52  
AAR/DOT #478708J (B-505.82)

November 30, 2015  
NS File: CX0130125

Mr. Christopher J. Gasiorek, P.E.  
Principal Civil Engineer  
AECOM  
100 South Wacker Drive, Suite 500  
Chicago, IL 60606-4014

Dear Mr. Gasiorek:

This office and Norfolk Southern's contract engineering firm for this project, Jacobs Engineering Group, have reviewed the **Pre-final** Plan Submittal for the AAR/DOT #478708J, Burnham Greenway Gap project adjacent to Norfolk Southern. Attached is a copy of Jacobs' review comments dated November 17, 2015, with which I am in agreement.

Please review and revise the plans for our approval. NOTE: NO PLANS ARE TO BE CONSIDERED FINAL, PENDING REVIEW OF THE CROSSING ALONG BURNHAM AVE. NORFOLK SOUTHERN STRONGLY SUGGESTS A GRADE SEPARATED STRUCTURE.

Please contact me at (404)529-1256 should you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Ellis A. Mays" followed by the initials "ctb". The signature is written in a cursive, flowing style.

Ellis A. Mays  
Engineer Public Improvements

Cc:  
D. Landeweer (AECOM)  
T. Berry (Jacobs)

## PRELIMINARY ENGINEERING SUBMITTAL REVIEW

NS FILE: CX0130125  
 DEARBORN DIVISION – MILEPOST B-505.82 &GJ-5.52

DOT/AAR# 546038G  
 COOK COUNTY – BURNHAM, IL  
 GREENWAY TRAIL

SUBMITTAL: Preliminary Plans  
 Plans Prepared By AECOM

COMMENTS BY:	<u>T. Berry</u>	DISCIPLINE:	<u>Various</u>
REVIEWED BY:	<u>M. Michalowicz</u>	DATE:	<u>1/21/2015</u>
PROJECT MANAGER:	<u>M. Michalowicz</u>		
RESPONDED BY:	<u>AECOM</u>	DATE:	<u></u>
CHECKED BY:	<u>T. Berry/ R. Finley</u>	DATE:	<u>11/17/2015</u>

ITEM NO.	SHEET/ CALC	COMMENT	Status
1	Sheet 2 of 47	<p>Under Utility Notes add a line item for Norfolk Southern Railway Contact:</p> <p>Ellis A. Mays            Engineer Public Improvements            Phone 404-529-1256</p> <p><b>Sponsor's Response: Added.</b></p> <p><b>Jacob's Response: No exception taken.</b></p>	<b>CLOSED</b>
2	Sheet 2 of 47	<p>A comment requiring PPE on Norfolk Southern right-of-way shall be added to the general notes.</p> <p><b>Sponsor's Response: Added.</b></p> <p><b>Jacob's Response: No exception taken.</b></p>	<b>CLOSED</b>
3	Sheet 17 of 47	<p>Dimension the horizontal clearance between NS centerline of track to the face of Pier 7.</p> <p><b>Sponsor's Response: Added.</b></p> <p><b>Jacob's Response: Dimension of horizontal clearance added on Sheet 21. No exception taken.</b></p>	<b>CLOSED</b>

## PRELIMINARY ENGINEERING SUBMITTAL REVIEW

NS FILE: CX0130125  
 DEARBORN DIVISION – MILEPOST B-505.82 &GJ-5.52

DOT/AAR# 546038G  
 COOK COUNTY – BURNHAM, IL  
 GREENWAY TRAIL

SUBMITTAL: Preliminary Plans  
 Plans Prepared By AECOM

4	Plan and Profile Sheets 1-6	<p>As per Norfolk Southern Public Projects Manual, Section 5 – Project Types, “In rare circumstances where a path and NS rail lines parallel each other, safety measures such as signage and fencing will be required. Installation and future maintenance costs of these signs are the responsibility of the trail sponsor or agency and are essential to the safety of those using the railroad and the path.”</p> <p>Add required protective fencing to all sheets. Fencing is required when trail comes within 25’ of NS right-of-way. And dimension of minimum horizontal clearances.</p> <p><b>Sponsor’s Response: Added fencing in areas where the edge of trail comes within 25’ of NS right-of-way.</b></p> <p><b>Jacob’s Response: Protective fencing details have been added to Plan and Profile Sheets.</b></p>	CLOSED
5	Plan and Profile Sheets 1-6	<p>Add and label Norfolk Southern right-of-way lines to all sheets.</p> <p><b>Sponsor’s Response: Added and labeled.</b></p> <p><b>Jacob’s Response: Norfolk Southern ROW label and lines have been added.</b></p>	CLOSED
6	Plan and Profile Sheets 1-6	<p>Dimension location of minimum horizontal clearances, from the nearest edge of bike path to the centerline of NS tracks.</p> <p><b>Sponsor’s Response: Dimensioned.</b></p> <p><b>Jacob’s Response: Horizontal clearance dimension added to Plan and Profile Sheets were applicable.</b></p>	CLOSED

## PRELIMINARY ENGINEERING SUBMITTAL REVIEW

NS FILE: CX0130125  
 DEARBORN DIVISION – MILEPOST B-505.82 &GJ-5.52

DOT/AAR# 546038G  
 COOK COUNTY – BURNHAM, IL  
 GREENWAY TRAIL

SUBMITTAL: Preliminary Plans  
 Plans Prepared By AECOM

7	General	<p>Label all NS tracks throughout plans, as “Norfolk Southern Railway”.</p> <p>At crossing label southern track as Norfolk Southern Main 1 and northern track as Norfolk Southern Main 2.</p> <p><b>Sponsor’s Response: Labeled.</b></p> <p><b><i>Jacob’s Response: NS tracks labeled on all applicable sheets. Main 1 and Main 2 labeled on sheet 17.</i></b></p>	<b>CLOSED</b>
8	General	<p>Include protective fencing details in plans.</p> <p><b>Sponsor’s Response: Included.</b></p> <p><b><i>Jacob’s Response: Protective fencing details provided in Sheet 20.</i></b></p>	<b>CLOSED</b>
9	General	<p>Include protective signage details in plans.</p> <p><b>Sponsor’s Response: Included.</b></p> <p><b><i>Jacob’s Response: Sign placement detail shown on sheet 20.</i></b></p>	<b>CLOSED</b>
10	General	<p>Include drainage details for proposed bridge over NS. Norfolk Southern will not allow any water to drain off of a structure onto NS right-of-way.</p> <p><b>Sponsor’s Response: Storm water runoff will flow along sides of path on the bridge deck before discharging into proposed ditches at the approaches.</b></p> <p><b><i>Jacob’s Response: No exception taken.</i></b></p>	<b>CLOSED</b>

## PRELIMINARY ENGINEERING SUBMITTAL REVIEW

NS FILE: CX0130125  
 DEARBORN DIVISION – MILEPOST B-505.82 &GJ-5.52

DOT/AAR# 546038G  
 COOK COUNTY – BURNHAM, IL  
 GREENWAY TRAIL

SUBMITTAL: Preliminary Plans  
 Plans Prepared By AECOM

11	General	<p>Include drainage details for proposed trail along NS right-of-way. Norfolk Southern will not allow any water to drain onto NS right-of-way.</p> <p><b>Sponsor's Response: Storm water runoff will flow off of path into proposed side swales and ditches.</b></p> <p><i>Jacob's Response: No exception taken</i></p>	CLOSED
12	Plan and Profile Sheet 1 & 2 of 6 & Sheet 17 of 47	<p>Dimension minimum horizontal clearance between Norfolk Southern center of track to MSE wall. If less than 25'-0", a crashwall will be required.</p> <p><b>Sponsor's Response: Dimension exceeds 25'0" as shown in plans.</b></p> <p><i>Jacob's Response: MSE wall greater than 25' from NS track centerline.</i></p>	CLOSED
13	Plan and Profile Sheet 1 & 2 of 6	<p>Show limits of MSE wall on plan view.</p> <p><b>Sponsor's Response: Limits of MSE wall added.</b></p> <p><i>Jacob's Response: MSE wall limits added to all applicable sheets.</i></p>	CLOSED
14	Plan and Profile Sheet 6 of 6	<p>A pedestrian/cyclist warning barrier needs to be incorporated into the crossing. See detail as an example.</p> <p><b>Sponsor's Response: Pedestrian barrier added to each at-grade crossing as suggested in the example detail.</b></p> <p><i>Jacob's Response: Pedestrian warning barrier has been incorporated and detailed on sheet 19.</i></p>	CLOSED

## PRELIMINARY ENGINEERING SUBMITTAL REVIEW

NS FILE: CX0130125  
 DEARBORN DIVISION – MILEPOST B-505.82 &GJ-5.52

DOT/AAR# 546038G  
 COOK COUNTY – BURNHAM, IL  
 GREENWAY TRAIL

SUBMITTAL: Preliminary Plans  
 Plans Prepared By AECOM

15	Cross Sections	<p>Add centerline of track and Norfolk Southern right-of-way to cross sections.</p> <p><b>Sponsor's Response: Centerline of track and Norfolk Southern right-of-way will be added to the cross-sections.</b></p> <p><b>Jacob's Response: The profile of the existing top of rail (500 ft. each side of proposed road crossing) should be plotted on the plans. If the track is in a sag at the proposed bridge location, the vertical clearance from the top-of-rail to the bridge should be increased sufficiently to permit raising the track enough to remove the sag. A note should be added to the profile stating: "The elevations of the existing top-of-rail profile shall be verified before beginning construction. All discrepancies shall be brought to the attention of the Norfolk Southern Public Projects Engineer."</b></p>	OPEN
16	General	<p>Include sidewalk/crossing detail. Railroad crossing No. 3 detail missing.</p> <p><b>Sponsor's Response: Sidewalk/crossing detail included and railroad crossing No. 3 added.</b></p> <p><b>Jacob's Response: Crossing detail added, Sheet 20 of 88.</b></p>	CLOSED
17	Plan and Profile Sheet 6 of 6	<p>Provide IDOT right of way and show that proposed bike path will not extend outside of IDOT right of way throughout Norfolk Southern right of way at crossing.</p> <p><b>Sponsor's Response: Proposed bike path remains outside of NS right-of-way except along S. Burnham Avenue. The bike path deviates onto RR right-of-way at this location in order to avoid existing RR traffic signal gates.</b></p> <p><b>Jacob's Response: IDOT right-of-way has not been added.</b></p>	OPEN

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18	Plan and Profile Sheet 1 of 6 & Sheet 17 of 47	<p>Clarify whether a wing wall or MSE wall construction will be used at the north abutment.</p> <p><b>Sponsor's Response: MSE wall construction will be use at the abutments for the proposed bridge over the railroads.</b></p> <p><b>Jacob's Response: No exception taken.</b></p>	CLOSED
19	Sheet 17 of 47	<p>Piers constructed on NS right of way need to be pier supported or cast in place. Pier 7 may fall on NS right of way. Clarify and adjust accordingly.</p> <p><b>Sponsor's Response: Pier 8 (formally Pier 7) has been dimensioned relative to the NS right-of-way based on the best available information.</b></p> <p><b>Jacob's Response: Matter needs to be addressed prior to construction agreement.</b></p>	OPEN
20	Sheet 20	<p>Please note, plan set has two (2) page 20's. Please correct.</p>	OPEN
21	GENERAL	<p><b>NO PLANS ARE TO BE CONSIDERED FINAL, PENDING REVIEW OF THE CROSSING ALONG BURNHAM AVE. NORFOLK SOUTHERN STONGLY SUGGESTS A GRADE SEPARATED STRUCTURE.</b></p> <p><b>COMMENT CAN BE CLOSED UPON SPONSOR ACKNOWLEDGMENT.</b></p>	OPEN