

**MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL RAILROAD ADMINISTRATION,
THE NATIONAL RAILROAD PASSENGER CORPORATION,
THE RAILROAD MUSEUM OF PENNSYLVANIA, SOUTHEASTERN PENNSYLVANIA
TRANSPORTATION AUTHORITY, AND THE
PENNSYLVANIA STATE HISTORIC PRESERVATION OFFICE
REGARDING THE AMTRAK ZOO TO PAOLI ELECTRIFICATION
TRANSMISSION LINE PROJECT
IN PHILADELPHIA, MONTGOMERY, DELAWARE, AND
CHESTER COUNTIES, PENNSYLVANIA**

WHEREAS, the National Railroad Passenger Corporation (Amtrak) proposes the Amtrak Zoo to Paoli Electrification Transmission Line Project (Project) to modernize and upgrade the electrification system on a 20-mile section of Amtrak’s Keystone Corridor between the Philadelphia Zoo Substation (Zoo Substation) in Philadelphia and the Paoli Substation in Paoli, extending through portions of Philadelphia, Montgomery, Delaware, and Chester Counties, Pennsylvania; and

WHEREAS, Amtrak has determined that implementation of the Project requires upgrades or replacement of the 80- to-100-year-old system elements with approximately 325 new catenary structures, transmission lines, signal power lines, and replacement of the existing 100-year-old Bryn Mawr Substation; and

WHEREAS, the Federal Railroad Administration (FRA) provided funding for design and review of the Project pursuant to the National Environmental Policy Act (42 U.S.C. § 4321 *et. seq.*) (NEPA), and anticipates providing financial assistance for construction of the Project; and

WHEREAS the Project would be an “Undertaking” under Section 106 of the National Historic Preservation Act, as amended (54 U.S.C. § 306108) (Section 106) if FRA provides financial assistance for construction of the Project; and

WHEREAS, FRA, and Amtrak on behalf of FRA, has consulted with the Pennsylvania Historical and Museum Commission, which acts as the State Historic Preservation Office (PA SHPO), pursuant to authority provided by the Advisory Council on Historic Preservation (ACHP) regulations implementing Section 106 (36 CFR Part 800), including participating in the consultation process; and

WHEREAS, in a letter dated February 9, 2012, FRA and Amtrak invited 41 organizations, institutions, governmental agencies, elected officials, and individuals to participate as Consulting Parties for the purposes of Section 106, including the resolution of adverse effects of the Project, and the following Consulting Parties actively participated in consultation:

Preservation Alliance for Greater Philadelphia
Delaware Valley Association of Rail Passengers, Inc.
Haverford Township Historical Commission
Lower Merion Township Historic Architectural Review Board
Radnor Township Historic Architectural Review Board
National Railway Historical Society, Philadelphia Chapter, Inc.
Haverford Station Historic District Neighborhood Coalition
Railroad Museum of Pennsylvania; and

WHEREAS, in a letter dated August 26, 2015, FRA invited potentially interested Native American Tribes to consult and sought comments from the following Tribes for the purposes of complying with Section 106 and the requirements of government-to-government consultation: Absentee-Shawnee Tribe of Oklahoma; Delaware Nation; Delaware Tribe of Indians; Eastern Shawnee Tribe of Oklahoma; Onondaga Nation; St. Regis Mohawk Tribe; Shawnee Tribe; and the Stockbridge-Munsee Band of the Mohican Nation of Wisconsin; and only the Delaware Tribe provided comments; and

WHEREAS, the Railroad Museum of Pennsylvania (RRMPA) and Southeastern Pennsylvania Transportation Authority (SEPTA), the latter of which is the lessee of the Bryn Mawr Station from Amtrak pursuant to that certain Lease Agreement between National Railroad Passenger Corporation and Southeastern Pennsylvania Transportation Authority dated January 1, 1987, as amended, participated in the consultation and have been invited to be Signatories to this Memorandum of Agreement (MOA) because they will be responsible for executing portions of the mitigation stipulations herein; and FRA, Amtrak, and PA SHPO are also Signatories to this MOA; and

WHEREAS, FRA is the lead federal agency for the Project under NEPA and is preparing an Environmental Assessment for the Project, and under 36 C.F.R. § 800.8 FRA has coordinated the Section 106 and NEPA processes; and

WHEREAS, FRA and Amtrak have established the Area of Potential Effects (APE), as defined in 36 CFR § 800.16(d), to include the segment of the right-of-way (roughly 100 feet in width) from its point of departure from Amtrak's Zoo Substation in Philadelphia, Pennsylvania, to Paoli Substation, in Paoli (Tredyffrin and Willistown Townships), Pennsylvania, for a distance of approximately 20 miles, as described and shown in the report entitled *Historic Resources Study/Determination of Eligibility, Zoo to Paoli Electrification Transmission Line Project, Chester, Delaware, Montgomery, and Philadelphia Counties, Pennsylvania, E.R. #2012-0005-42* dated February 2015, and PA SHPO concurred with Amtrak's efforts to identify historic properties within this APE on April 24, 2015; and

WHEREAS, FRA and Amtrak have identified 27 historic properties in the APE, and the PA SHPO concurred with this identification on March 16, 2015, and April 24, 2015; and

WHEREAS, one of the identified historic properties in the APE is the Pennsylvania Railroad Main Line (Philadelphia to Harrisburg) (Key No. 105675), which was determined eligible for listing in the National Register of Historic Places (NRHP) by the PA SHPO on September 14, 1993, and again on November 16, 2007; and

WHEREAS, the existing catenary structures and the Bryn Mawr Substation building are Contributing Resources to the NRHP-eligible Pennsylvania Railroad Main Line (Philadelphia to Harrisburg); and

WHEREAS, through consultation, FRA determined that the Project will have an Adverse Effect on one historic property within the APE, namely, the Pennsylvania Railroad Main Line (Philadelphia to Harrisburg), because of the removal of the existing catenary structures and the Bryn Mawr Substation building, as discussed in the *Determination of Effects Report*, dated August 2015; and the same report describes the no adverse and no effect findings regarding other historic properties in the APE; and the PA SHPO concurred with these findings on October 8, 2015; and

WHEREAS, through consultation, FRA determined that revisions to the design of certain

catenary structures associated with the Project would have no additional adverse effects on historic properties, as discussed in an *Addendum to the Determination of Effects Report*, dated June 2016, and the PA SHPO concurred with this finding on July 19, 2016; and

WHEREAS, FRA and Amtrak have explored options to avoid the adverse effect to the Pennsylvania Railroad Main Line and concluded that such options are not practicable, as discussed in the August 2015 Determination of Effects Report; and

WHEREAS, all actions necessary to implement the Project will occur in areas disturbed by previous construction, as documented in the *Phase IA Geomorphology/Archaeology Reconnaissance Survey Report* dated December 2012 and in a subsequent letter to PA SHPO dated December 22, 2015; and FRA determined and PA SHPO concurred on January 25, 2013 and January 7, 2016, respectively, that no archaeological investigations are necessary for the Project; and

WHEREAS, FRA and Amtrak conducted public involvement meetings from 2012 through 2015, which included meetings with public officials, general public meetings, and meetings with the Section 106 Consulting Parties; and

WHEREAS, FRA received a request for additional information from the Delaware Tribe of Indians in a letter dated October 2, 2015 and FRA submitted the requested information on December 22, 2015, which included a copy of the *Phase IA Geomorphology/Archaeology Reconnaissance Survey Report*, the Unanticipated Discoveries Plan, and mapping showing the proposed footprint and construction entrance at the Bryn Mawr Substation; and no other tribes provided comments or requested additional information regarding the Project; and

WHEREAS, on June 21, 2016 FRA notified the ACHP of the determination of adverse effect in accordance with 36 CFR § 800.6(a)(1), and in a letter dated June 27, 2016, the ACHP declined to participate in the consultation process;

NOW, THEREFORE, FRA, Amtrak, RRMPA, PA SHPO, and SEPTA, only to the extent these stipulations are applicable to SEPTA, (each, a Signatory and together the Signatories) agree that the Project, if it becomes an Undertaking, will be implemented in accordance with the following stipulations in order to minimize impacts and mitigate adverse effects on historic properties, and that these stipulations will govern the Undertaking and all of its parts until this MOA expires or it is terminated.

STIPULATIONS

FRA will ensure that the following measures are carried out:

I. Applicability

- A. This MOA would apply to FRA's Undertaking and would only bind FRA if FRA provides financial assistance for the construction of the Project.
- B. This MOA may apply should another Federal agency have an Undertaking as part of the Project; that agency may agree to comply with the terms of this MOA and become a Signatory to fulfill its Section 106 responsibilities as provided for in Stipulation V.E.

II. Professional Qualification Standards

Amtrak will ensure that all historic preservation and documentation work carried out pursuant to this MOA will be done by or under the direct supervision of a qualified professional or qualified professionals in the discipline of architectural history who meet[s] the relevant standards outlined in the *Secretary of the Interior's Professional Qualification Standards for Architectural Historians* (48 FR 44738-9).

III. Minimization Measures

- A. As a result of consultation, Amtrak has decreased the proposed catenary structure heights to the extent feasible without adversely impacting railroad safety and operations.
- B. Amtrak commits to a tree trimming program to facilitate Project construction in lieu of removing multiple trees. Selected trees may be removed within Amtrak's right-of-way. Trimming will adhere to the program outlined in tree trimming plans dated March 17, 2016, and appended to this MOA as Attachment 1.
- C. Amtrak commits to the placement of new catenary structures as near as practicable to the existing structures, and that existing catenary structures will be removed, to minimize visual effects.
- D. Amtrak commits to avoiding physical impacts to the following historic train stations located along the Project corridor: Overbrook, Merion, Wynnewood, Haverford, Villanova, Radnor, Wayne, and Stafford.

IV. Mitigation Measures

- A. Documentation
 - 1. Amtrak will record the existing Bryn Mawr Substation and related catenary system to Historic American Engineering Record (HAER) Documentation Level II, as outlined in the publication, *Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation: HABS/HAER Standards*, available at <http://www.nps.gov/hdp/standards/standards.pdf>. Documentation Level II includes a narrative with the history and description of the resource, archival photographs, and copies of selected existing historic drawings. Amtrak's current existing conditions drawings may be supplemented with new measured drawings, to the extent that it is necessary to sufficiently document the resources. The documentation will describe the design of the existing Bryn Mawr Substation as well as the design of the catenary system in the Project APE, including all four types of catenary structures present along the railroad right-of-way. Amtrak will consult with PA SHPO to determine the extent of the documentation (e.g., format and length of narrative, quantity of

photographs, and extent of documentation using historic or new measured drawings) prior to beginning the work. Prior to beginning field documentation, Amtrak will consult with RRMPA to use its collections and expertise as described in Stipulation IV.A.2. Amtrak will provide the draft documentation to PA SHPO for review and comment as described in Stipulation V.B. Amtrak will complete the agreed-upon photographic documentation prior to beginning demolition activities. Amtrak will deposit the final documentation of the existing Bryn Mawr Substation and related catenary system at RRMPA, the State Museum of Pennsylvania, and the Lower Merion Historical Society.

2. RRMPA will provide Amtrak with access to its collections and technical expertise to inform the content of the documentation effort described in Stipulation IV.A.1, including important views or details to capture in photographs and drawings. RRMPA may, at its discretion, provide historic images or drawings to Amtrak for inclusion in the documentation package.

B. Interpretation

1. Interpretive Signage - Amtrak will provide an interpretive sign inside the Bryn Mawr Station building that focuses on the history of the Pennsylvania Railroad Main Line, with particular attention to the importance of the electrification of the route. Amtrak will submit the draft content of the sign to PA SHPO, SEPTA, and Lower Merion Township Historic Architectural Review Board for review and comment as described in Stipulation V.B. Amtrak will address any comments received as described in Stipulation V.B., and circulate the revised draft sign content to the aforementioned parties for review and comment. Once the content of the sign is agreed upon and finalized, Amtrak will provide it in electronic PDF format to FRA, PA SHPO, SEPTA, and Lower Merion Township. Amtrak will install the agreed-upon sign in the Bryn Mawr Station in a specific location that is agreed upon by SEPTA, and Amtrak will be responsible for the maintenance of the sign, and the replacement or repair of the sign should it be damaged for any reason or vandalized after installation for a period of five years after Project construction is complete. SEPTA has no responsibility for sign maintenance or replacement.
2. Equipment Donation - Amtrak will donate materials and elements of the catenary system that Amtrak or its contractors remove from the existing Bryn Mawr Substation to RRMPA for use in their upcoming new exhibits about the history of railroad electrification or for other exhibits, or to achieve other preservation purposes, as RRMPA may determine at its discretion. To the extent available, and at its discretion, Amtrak may also donate other materials, such as a pantograph, hangers, insulators, signage, and digital photographs for use in RRMPA exhibits. Acceptance of materials will be at the discretion of the RRMPA. RRMPA will appropriately credit all photographs and other

donations provided by Amtrak. The donation of documents, photographs, and other corporate records will be governed by Amtrak's Records Management and other applicable policies. Amtrak will accompany RRMPA staff on a tour of the existing Bryn Mawr Substation prior to demolition so that RRMPA can identify materials it would like to receive as donations. Amtrak will make items available and RRMPA will retrieve them from the existing Bryn Mawr Substation property at its own expense. Because the construction schedule for the Project is uncertain, Amtrak will work with RRMPA and FRA to coordinate the timing of Project activities and donations for exhibits to the extent possible. All donated materials will be provided to RRMPA on an "as-is, where-is" basis. Prior to removal of any materials, RRMPA will provide Amtrak with a full release from all claims, suits, damages, costs, etc. for the donated materials.

3. Conservation Allowance - Once the nature and extent of donated materials is determined as set forth in Stipulation IV.B.2 above, FRA, Amtrak, RRMPA, and PA SHPO will consult to determine an appropriate one-time financial contribution from Amtrak to RRMPA dedicated to the conservation of donated materials.
4. Oral History Opportunity - Amtrak will make reasonable efforts to identify and provide to RRMPA contact information for current or former Amtrak Electric Traction Department employees who are willing to participate in oral history interviews. RRMPA will provide to Amtrak a description of the oral history process and proposed discussion topics for Amtrak to share with potential interviewees so that they can make an informed decision about their participation in an interview. Amtrak does not guarantee the participation of any current or former employee in the interviews. Amtrak retains the right to screen contents of the interviews intended for public access to ensure that sensitive security and operations information is not shared with the public. RRMPA will deposit transcripts and other relevant documentation of the interviews, subject to Amtrak security approval, at RRMPA, the PA State Archives, and Amtrak.

C. Design

1. Amtrak will replace the existing Bryn Mawr Substation building with two new substation buildings. Amtrak will design the exterior of these two new buildings with buff brick walls consistent with the brick of the existing Bryn Mawr Substation building. The design will be consistent with the materials, color, and texture of the existing Bryn Mawr Substation building, but will not mimic the historic building to make it clear that the new buildings are non-historic and do not create a false sense of history. Amtrak will submit the proposed design to PA SHPO for review and comment as described in Stipulation V.B. Design documents will be shared at 30%, 60%, and 90% design.

2. Amtrak will incorporate the “Bryn Mawr Substation” sign currently on the existing Bryn Mawr Substation building into a new retaining wall or other landscape feature adjacent to the new Bryn Mawr Substation site. Amtrak will submit its proposed conceptual design to PA SHPO and the Lower Merion Township Historic Architectural Review Board for review and comment, and Amtrak will address any comments received, as described in Stipulation V.B.
3. Amtrak will offer the bricks from the existing Bryn Mawr Substation building for salvage upon removal of the building. Amtrak will notify Consulting Parties and the public when the bricks will be available and will take requests for the materials. Amtrak will not deliver the brick, but will make it available for pick-up for a specified, reasonable period of time. Amtrak cannot guarantee the amount or number of salvageable bricks. Amtrak will provide all materials for salvage on an “as-is, where-is” basis, and will make no warranty as to condition, suitability, serviceability, or degree of contamination for any intended subsequent use. Amtrak will prepare and deliver a written receipt to that effect to every recipient for their review and signature, and the receipts will become a part of the official Project record. Recipients will sign a release indemnifying Amtrak and Signatories of this Agreement against any and all claims arising from the acquisition and use of salvaged materials. At the end of the retention period, Amtrak may sell or dispose of the remaining unused materials in accordance with applicable statutes and regulations.

V. General Provisions

A. Effective Date

This MOA will be effective as of the date of obligation of Federal financial assistance to construct the improvements and upgrades required for the Project following execution of this MOA by all Signatories.

B. Document Review

Unless otherwise stated in the stipulations, the Signatories and Consulting Parties, where applicable, will provide comments on the documents they review as set forth below:

1. The Signatories and Consulting Parties specified in each item under Stipulation IV above will have up to thirty (30) calendar days from the date of receipt to review and provide written comments to Amtrak on documents stipulated in this MOA.
2. Amtrak will ensure any written comments received within the timeframe are considered and incorporated, as appropriate, into the documentation.
3. If the specified Signatories and Consulting Parties do not submit written comments to Amtrak within thirty (30) calendar days of receipt of any document, it is understood the non-responding parties have no comments on the submittal.

4. If the Signatories and Consulting Parties object to or recommend extensive revisions to submissions stipulated in the MOA, Amtrak will work expeditiously to respond to the recommendations and resolve disputes.
5. If Amtrak cannot resolve a dispute, and if further consultation is deemed unproductive by any party, the parties will adhere to the dispute resolution procedures detailed under Stipulation V.G.
6. The Signatories and Consulting Parties acknowledge the timeframes set forth in this MOA will be the maximum allowed under normal circumstances. In exigent circumstances (e.g., concerns over construction suspensions or delays), all parties agree to expedite their respective document review and dispute resolution obligations.

C. Project Changes

If Amtrak proposes changes to the Project that may result in additional or new effects on historic properties, Amtrak will notify FRA and the PA SHPO of such changes. Before Amtrak takes any action that may result in additional or new effects on historic properties, Amtrak, FRA and PA SHPO will consult to determine the appropriate course of action.

D. Amendment

Any Signatory to this MOA may request that it be amended. The amendment will be effective on the date a copy signed by all of the Signatories is filed with the ACHP.

E. Use of this MOA by Other Federal Agencies

In the event that a Federal agency other than FRA is considering financial assistance, permits, licenses, or approvals for the Project, such Federal agency may become a Signatory to this MOA as a means of complying with Section 106. To become a Signatory to this MOA, the agency official must provide written notice to the Signatories that the agency agrees to the terms of the MOA, specifying the extent of the agency's intent to participate in the MOA, and identifying the lead Federal agency for the Undertaking. The participation of the agency is subject to approval by the Signatories, who must respond to the written notice within 30 days or the approval will be considered implicit. Any other modifications to the MOA will be considered in accordance with Stipulation V.D.

F. Termination

If any Signatory to this MOA determines that its terms will not or cannot be carried out, that Signatory will immediately consult with the other Signatories to attempt to develop an Amendment per Stipulation V.D. If within thirty (30) days (or another time period agreed to by all Signatories) an amendment cannot be reached, any Signatory may terminate the MOA upon written notification to the other Signatories.

Once the MOA is terminated, and prior to work continuing or initiating on the Undertaking, FRA must either (a) execute an MOA pursuant to 36 CFR § 800.6 or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. FRA will notify the Signatories as to the course of action it will pursue.

G. Dispute Resolution

Should any Signatory to this MOA object at any time to any actions proposed or the manner in which the terms of this MOA are implemented by providing written notice of such objection to FRA, FRA will consult with the Signatory to resolve the objection. If FRA determines that the objection cannot be resolved, FRA will:

1. Forward all documentation relevant to the dispute, including the FRA's proposed resolution, to the ACHP and request that the ACHP provide FRA with its advice on the resolution of the objection within thirty (30) calendar days of receiving the documentation. FRA will prepare a written response to the objection, which will constitute the FRA's decision regarding the objection, that takes into account any timely advice or comments regarding the dispute from the ACHP and the Signatories and provide the ACHP and Signatories with a copy of this written response. FRA will then proceed according to its decision.
2. If the ACHP does not provide its advice regarding the dispute within the thirty (30) calendar day time period, FRA may make a decision on the dispute and proceed accordingly. FRA will document this decision in a written response to the objection that takes into account any timely comments regarding the dispute from the Signatories and provide the ACHP and Signatories with a copy of such written response.
3. The Signatories remain responsible for carrying out all other actions subject to the terms of this MOA that are not the subject of the dispute.

H. Duration

This MOA will be valid for five (5) years following the Effective Date, or when the Signatories have agreed to terminate the MOA, whichever comes first. If the terms of this MOA have not been implemented within five years of its Effective Date, this MOA will be considered null and void. In such event, FRA or Amtrak will notify the other Signatories to this Agreement, and if FRA chooses to continue with the Undertaking, will reinitiate review of the Undertaking in accordance with 36 CFR Part 800. Prior to such time, FRA may consult with the other Signatories to reconsider the terms of the MOA and amend it in accordance with Stipulation V.D above.

I. Monitoring and Reporting

Each year following the Effective Date of this MOA until it expires or is terminated,

Amtrak will provide all Signatories to this MOA a summary report detailing work undertaken pursuant to its terms. Such report will include any scheduling changes proposed, any problems encountered, and any disputes and objections received in FRA's efforts to carry out the terms of this MOA.

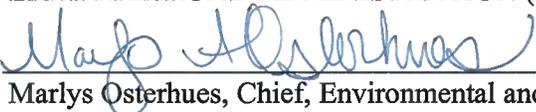
J. Unanticipated Discoveries Plan

In consultation with FRA, Amtrak has developed an Unanticipated Discoveries Plan for human and non-human archaeological resources in the event that any unanticipated archaeological resources are encountered during construction of the Project. The Unanticipated Discoveries Plan is appended to this MOA as Attachment 2. In the event of the Unanticipated Discovery of human or non-human archaeological resources, Amtrak will cease work in the affected area and implement the Unanticipated Discoveries Plan.

EXECUTION of this MOA, and implementation of its terms, evidences that FRA, Amtrak, and PA SHPO have taken into account the effects of the Project on historic properties, and that FRA and Amtrak have satisfied their responsibilities under Section 106 of the Act and implementing regulations codified in 36 CFR Part 800 with regard to a future Undertaking.

**MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL RAILROAD ADMINISTRATION,
THE NATIONAL RAILROAD PASSENGER CORPORATION,
THE RAILROAD MUSEUM OF PENNSYLVANIA, SOUTHEASTERN PENNSYLVANIA
TRANSPORTATION AUTHORITY, AND THE
PENNSYLVANIA STATE HISTORIC PRESERVATION OFFICE
REGARDING THE AMTRAK ZOO TO PAOLI ELECTRIFICATION
TRANSMISSION LINE PROJECT
IN PHILADELPHIA, MONTGOMERY, DELAWARE, AND
CHESTER COUNTIES, PENNSYLVANIA**

FEDERAL RAILROAD ADMINISTRATION (FRA)

By:  Date: 8/21/2017
Marlys Osterhues, Chief, Environmental and Corridor Planning Division

**MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL RAILROAD ADMINISTRATION,
THE NATIONAL RAILROAD PASSENGER CORPORATION,
THE RAILROAD MUSEUM OF PENNSYLVANIA, SOUTHEASTERN PENNSYLVANIA
TRANSPORTATION AUTHORITY, AND THE
PENNSYLVANIA STATE HISTORIC PRESERVATION OFFICE
REGARDING THE AMTRAK ZOO TO PAOLI ELECTRIFICATION
TRANSMISSION LINE PROJECT
IN PHILADELPHIA, MONTGOMERY, DELAWARE, AND
CHESTER COUNTIES, PENNSYLVANIA**

NATIONAL RAILROAD PASSENGER CORPORATION (AMTRAK)

By:  for RHA Date: 8/14/2017

Print Name and Title:
FOR RICHARD H ANDERSON, PRESIDENT & CO-CEO

APPROVED AS TO FORM:

BY: 
Counsel for National Railroad Passenger Corporation

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL RAILROAD ADMINISTRATION,
THE NATIONAL RAILROAD PASSENGER CORPORATION,
THE RAILROAD MUSEUM OF PENNSYLVANIA, SOUTHEASTERN PENNSYLVANIA
TRANSPORTATION AUTHORITY, AND THE
PENNSYLVANIA STATE HISTORIC PRESERVATION OFFICE
REGARDING THE AMTRAK ZOO TO PAOLI ELECTRIFICATION
TRANSMISSION LINE PROJECT
IN PHILADELPHIA, MONTGOMERY, DELAWARE, AND
CHESTER COUNTIES, PENNSYLVANIA

RAILROAD MUSEUM OF PENNSYLVANIA

By: Brenda Reigl Date: 7/31/2017
Brenda Reigl, Director, Bureau of Historic Sites and Museums
Pennsylvania Historical and Museum Commission

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL RAILROAD ADMINISTRATION,
THE NATIONAL RAILROAD PASSENGER CORPORATION,
THE RAILROAD MUSEUM OF PENNSYLVANIA, SOUTHEASTERN PENNSYLVANIA
TRANSPORTATION AUTHORITY, AND THE
PENNSYLVANIA STATE HISTORIC PRESERVATION OFFICE
REGARDING THE AMTRAK ZOO TO PAOLI ELECTRIFICATION
TRANSMISSION LINE PROJECT
IN PHILADELPHIA, MONTGOMERY, DELAWARE, AND
CHESTER COUNTIES, PENNSYLVANIA

SOUTHEASTERN PENNSYLVANIA TRANSPORTATION AUTHORITY (SEPTA)

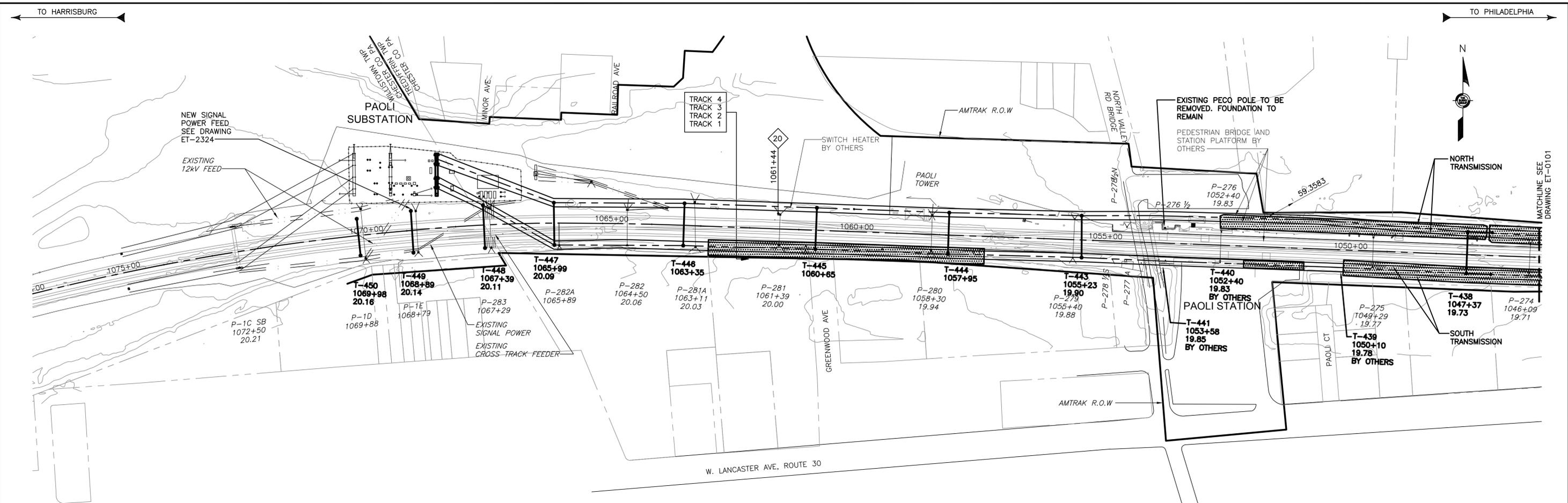
By: *Robert L. Lund for R.L.* Date: *8/1/17*
Robert L. Lund, Assistant General Manager, EM&C

**MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL RAILROAD ADMINISTRATION,
THE NATIONAL RAILROAD PASSENGER CORPORATION,
THE RAILROAD MUSEUM OF PENNSYLVANIA, SOUTHEASTERN PENNSYLVANIA
TRANSPORTATION AUTHORITY, AND THE
PENNSYLVANIA STATE HISTORIC PRESERVATION OFFICE
REGARDING THE AMTRAK ZOO TO PAOLI ELECTRIFICATION
TRANSMISSION LINE PROJECT
IN PHILADELPHIA, MONTGOMERY, DELAWARE, AND
CHESTER COUNTIES, PENNSYLVANIA**

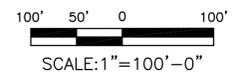
PENNSYLVANIA STATE HISTORIC PRESERVATION OFFICE (PA SHPO)

By:  Date: 8/9/2017
Andrea MacDonald, Director, Pennsylvania State Historic Preservation Office, and
Deputy State Historic Preservation Officer

**ATTACHMENT 1:
TREE TRIMMING PLANS**

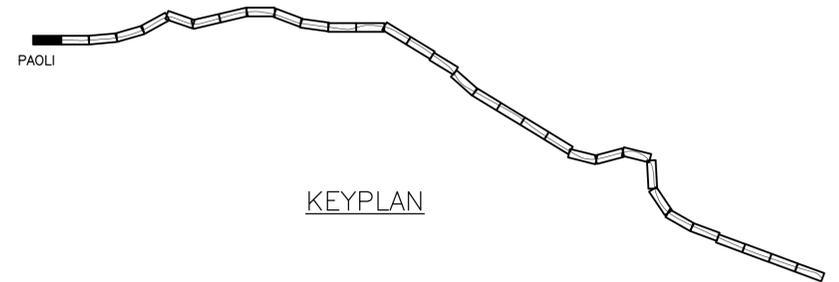


TREE PRUNING SITE PLAN



PROPOSED LIMITS OF TREE TRIMMING. SEE DETAIL ON SHEET C-0232 FOR MORE INFORMATION.

- NOTES:**
1. THE PURPOSE OF THESE PLANS IS TO SHOW THE LOCATION AND LIMITS OF TREE PRUNING AND TREE FELLING TO PROVIDE SAFE ELECTRICAL CLEARANCES TO NEW AERIAL TRANSMISSION LINES.
 2. TWO WEEKS PRIOR TO ANY TREE PRUNING OR TREE FELLING WORK, CONTACT OWNERS OF PROPERTY ADJACENT TO AMTRAK RIGHT-OF-WAY WHERE WORK WILL BE PERFORMED.
 3. PERFORM TREE PRUNING AND TREE FELLING IN ACCORDANCE WITH ANSI-A300, STANDARDS FOR TREE MAINTENANCE. PRUNE TREES FOR ELECTRICAL LINE CLEARANCE BY DIRECTIONAL PRUNING; DO NOT "TOP" OR "ROUND" TREES. PERFORM TREE PRUNING AND TREE FELLING BY MECHANICAL MEANS ONLY, I.E. SAWING OR CLIPPING. DO NOT USE DEFOLIANTS OR HERBICIDES.
 4. ALL WORK IS TO BE PERFORMED UNDER THE DIRECT SUPERVISION OF A FULL-TIME, INTERNATIONAL SOCIETY OF ARBORCULTURE (ISA) CERTIFIED ARBORIST.
 5. ALL DEBRIS GENERATED BY TREE PRUNING AND TREE FELLING OPERATIONS IS TO BE REMOVED FROM AMTRAK'S RIGHT-OF-WAY AND DISPOSED OF LEGALLY OFF AMTRAK PROPERTY.
 6. ALL WORK IS TO BE PERFORMED FROM AMTRAK RIGHT-OF-WAY.
 7. LIMITS SHOWN ON PLAN ARE FOR CLEARANCE TO 138KV TRANSMISSION LINE. TREE PRUNING OR TREE FELLING FOR INSTALLATION OF NEW CATENARY STRUCTURES IS NOT SHOWN.



2:41:51 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings paoli to bryn mawr\civil-c-0200.dwg

No	Revisions	Date	By



OFFICE OF
Chief Engineer
Engineering
National Railroad Passenger Corporation
30TH Street Station-Philadelphia, Pennsylvania 19104

Approved	Date



100% DESIGN SUBMISSION

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

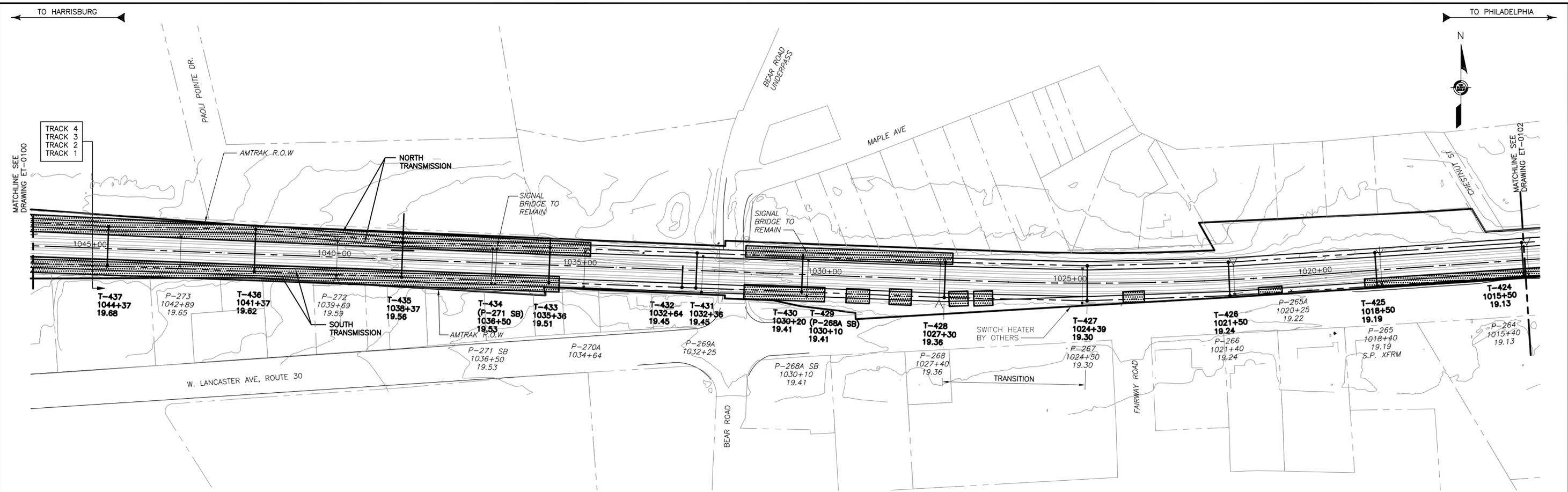
PAOLI TO BRYN MAWR TRANSMISSION ELECTRIFICATION TREE PRUNING STA. 1075+00 TO 1046+00

Recommended: DP Drawn: WJC Checked: MJM Date: 03/17/16

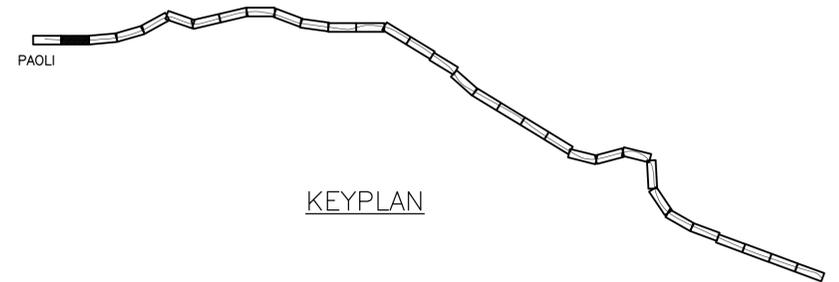
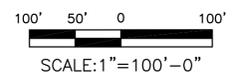
File No.:	C-0200/ING
Ref. No.:	2011-059
Sheet No.:	547 OF 565

C-0200

PHILADELPHIA



TREE PRUNING SITE PLAN



KEYPLAN

2:42:03 PM 3/17/2016 J:\2011\2011-059\Drawings\working drawings\paoli to bryn mawr\civil\c-0201.dwg

No	Revisions	Date	By



OFFICE OF
Chief Engineer
Engineering
National Railroad Passenger Corporation
30TH Street Station-Philadelphia, Pennsylvania 19104

Approved	Date



100% DESIGN SUBMISSION

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

PAOLI TO BRYN MAWR TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 1046+00 TO 1015+45

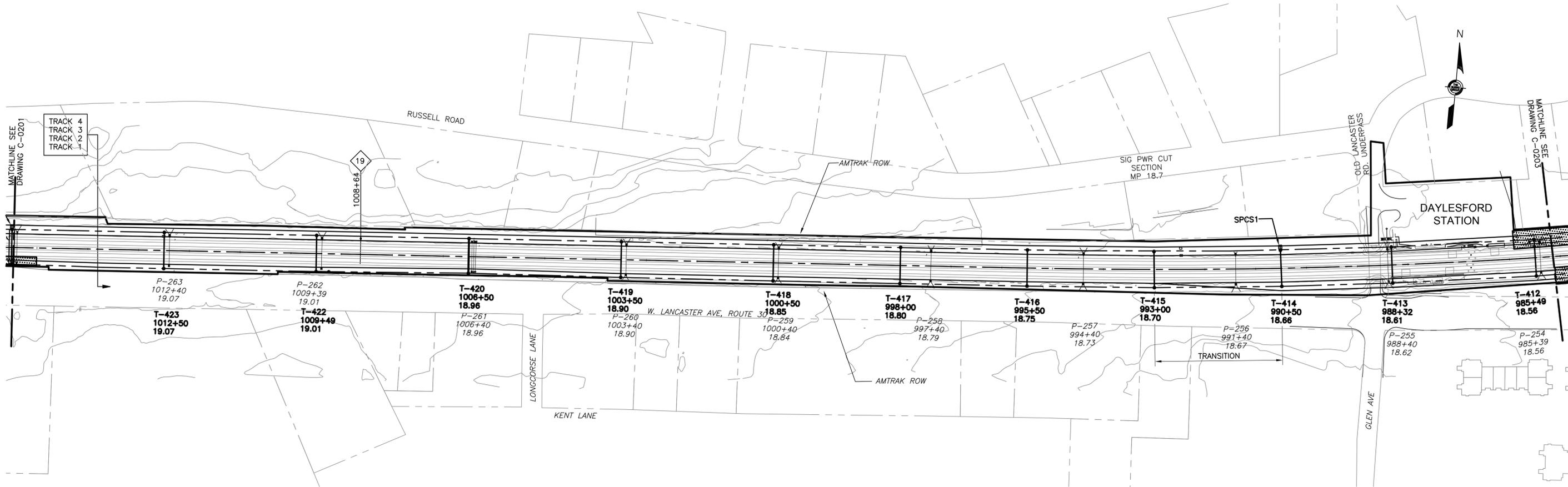
Recommended: DP Drawn: WJC Checked: MJM Date: 03/17/16

File No.:	C-0201.DWG
Ref. No.:	2011-059
Sheet No.:	548 OF 565

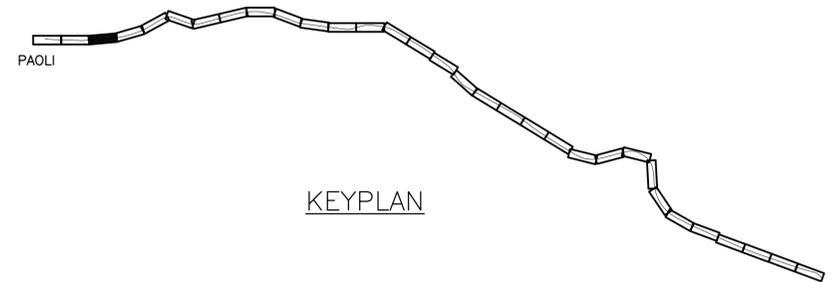
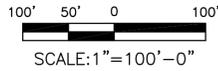
C-0201

TO HARRISBURG

TO PHILADELPHIA



TREE PRUNING SITE PLAN



J:\2011\2011-059\Drawings\working drawings\paoli to bryn mawr\civil-c-0202.dwg 3/17/2016 2:42:15 PM

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**

National Railroad Passenger Corporation
30TH Street Station—Philadelphia, Pennsylvania 19104

Approved	Date



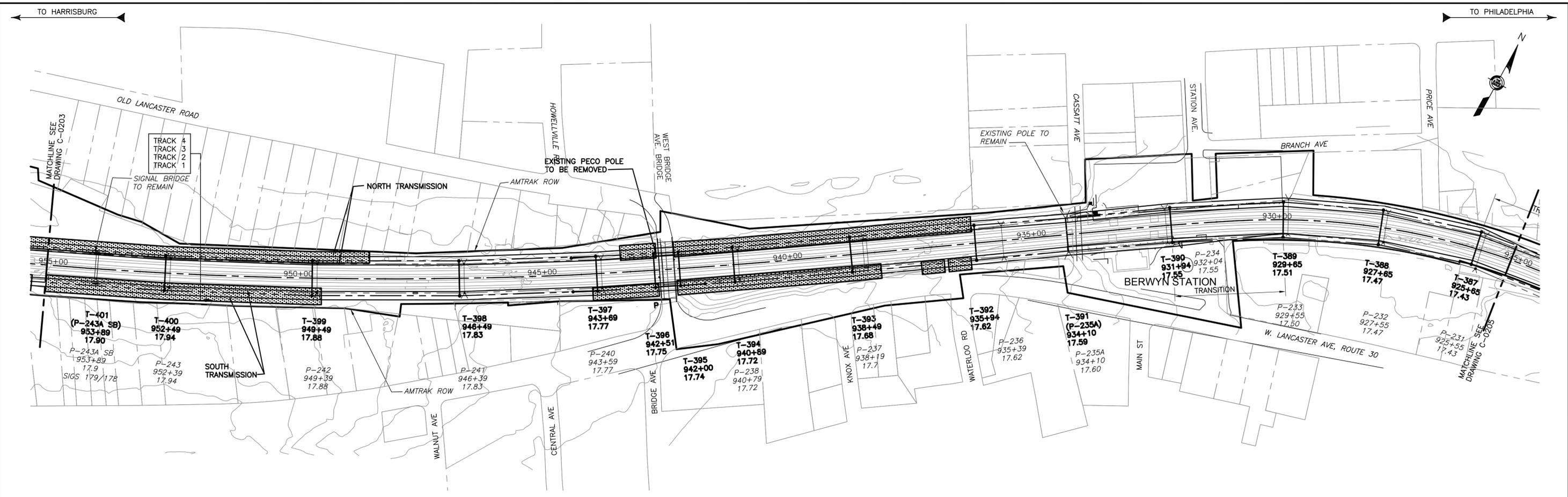
100% DESIGN SUBMISSION

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

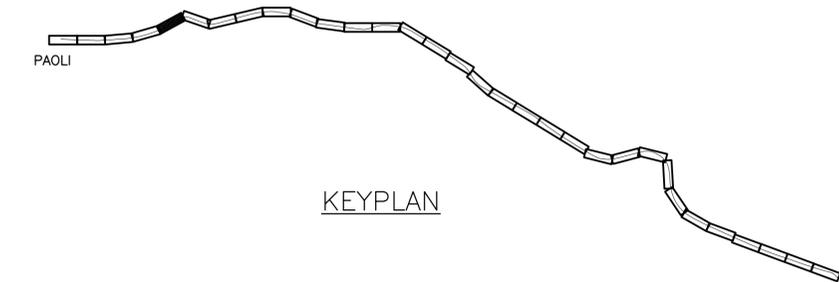
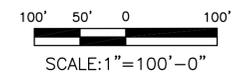
**PAOLI TO BRYN MAWR TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 1015+45 TO 985+00**

Recommended: DP Drawn: WJC Checked: MJM Date: 03/17/16

File No.:	C-0202.DWG
Ref. No.:	2011-059
Sheet No.:	549 OF 565
C-0202	



TREE PRUNING SITE PLAN



2:42:36 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings\paoli to bryn mawr\civil\c-0204.dwg

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**
National Railroad Passenger Corporation
30TH Street Station-Philadelphia, Pennsylvania 19104

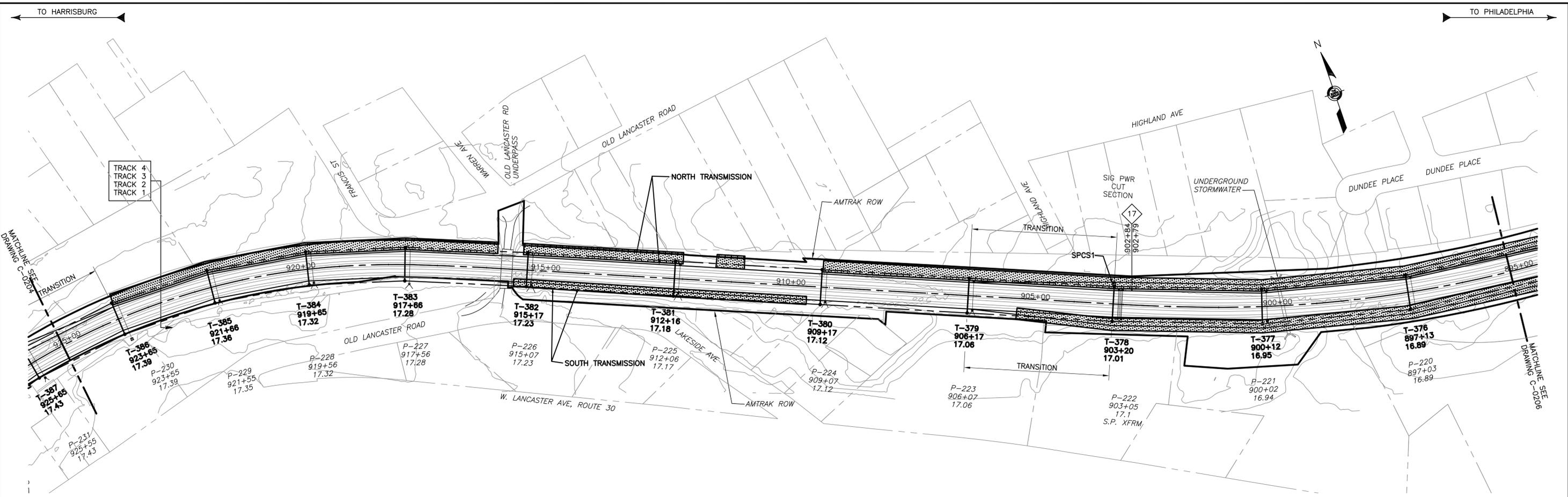
Approved	Date



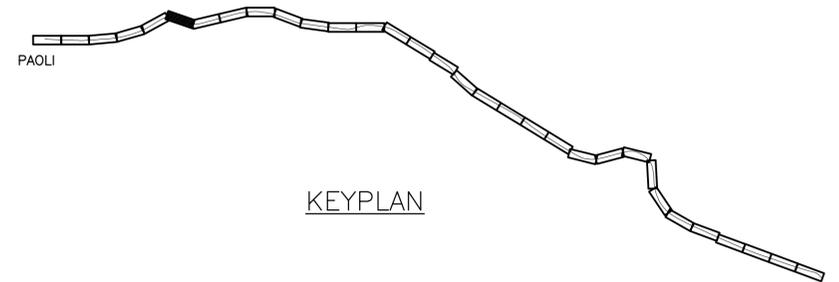
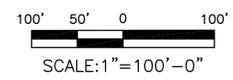
100% DESIGN SUBMISSION
PAOLI TO BRYN MAWR TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 955+00 TO 925+00
Recommended: DP Drawn: WJC Checked: MJM Date: 03/17/16

File No.:	C-0204/ING
Ref. No.:	2011-059
Sheet No.:	551 OF 565
C-0204	

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.



TREE PRUNING SITE PLAN



2:42:47 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings\paoli to bryn mawr\civil-c-0205.dwg

No	Revisions	Date	By

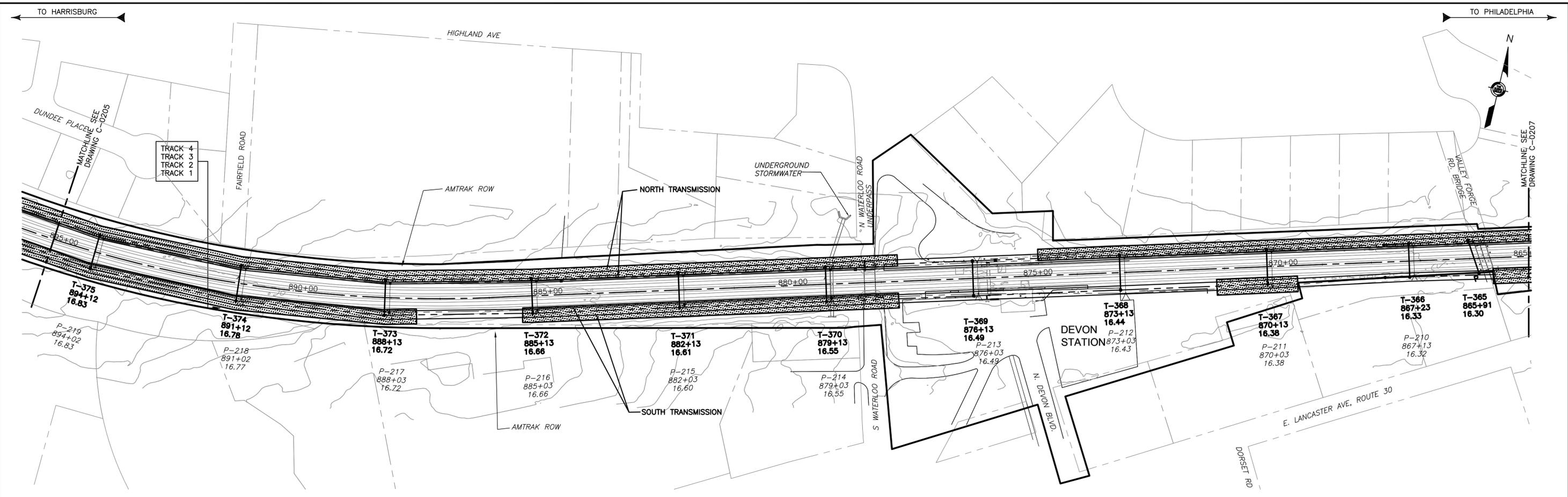


**OFFICE OF
Chief Engineer
Engineering**
National Railroad Passenger Corporation
30TH Street Station—Philadelphia, Pennsylvania 19104

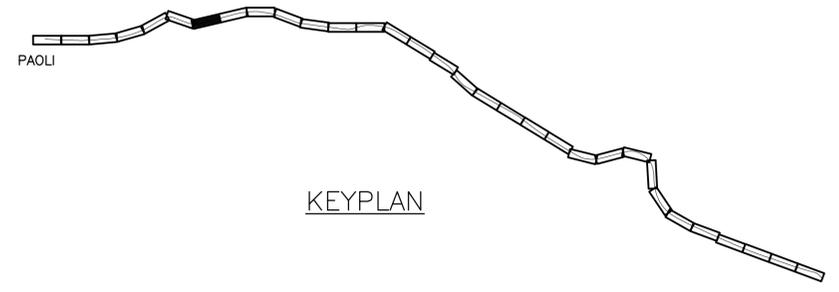
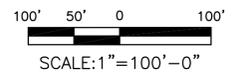
Approved	Date



100% DESIGN SUBMISSION		This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.	
PAOLI TO BRYN MAWR TRANSMISSION ELECTRIFICATION TREE PRUNING STA. 925+00 TO 895+00		File No.:	C-0205.DWG
		Ref. No.:	2011-059
Recommended: DP		Drawn: WJC	Checked: MJM
Date: 03/17/16		Sheet No.:	552 OF 565
		C-0205	



TREE PRUNING SITE PLAN



2:42:59 PM 3/17/2016 J:\2011\2011-059\Drawings\working drawings\paoli to bryn mawr\civil-c-0206.dwg

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**
National Railroad Passenger Corporation
30TH Street Station—Philadelphia, Pennsylvania 19104

Approved	Date

Burns IN ASSOCIATION WITH **Baker**
BURNS ENGINEERING, INC. | 215 979-7700
TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600
PHILADELPHIA, PA 19103

AECOM

100% DESIGN SUBMISSION

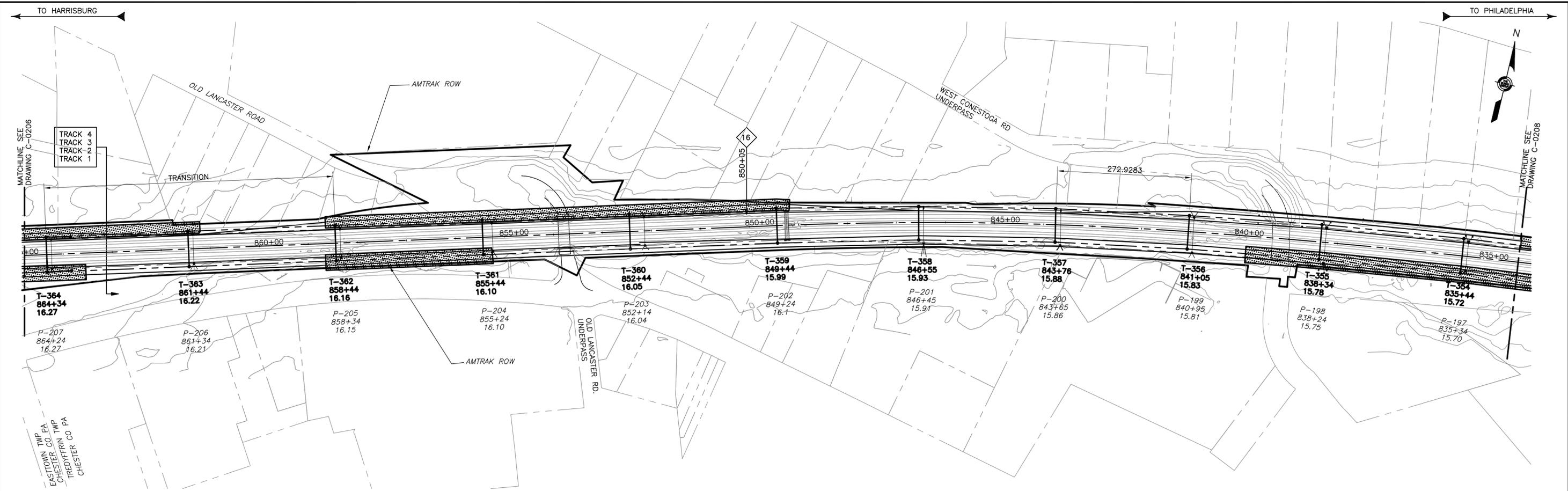
This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

**PAOLI TO BRYN MAWR TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 895+00 TO 865+00**

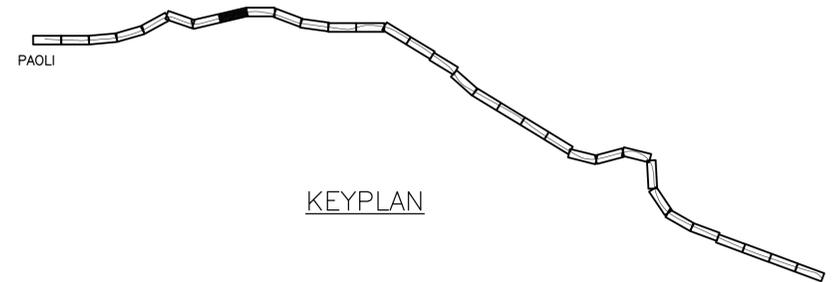
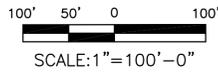
Recommended: DP Drawn: WJC Checked: MJM Date: 03/17/16

File No.:	C-0206.DWG
Ref. No.:	2011-059
Sheet No.:	553 OF 565

C-0206



TREE PRUNING SITE PLAN



KEYPLAN

2:43:09 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings\paoli to bryn mawr\civil\c-0207.dwg

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**
National Railroad Passenger Corporation
30TH Street Station—Philadelphia, Pennsylvania 19104

Approved	Date



100% DESIGN SUBMISSION

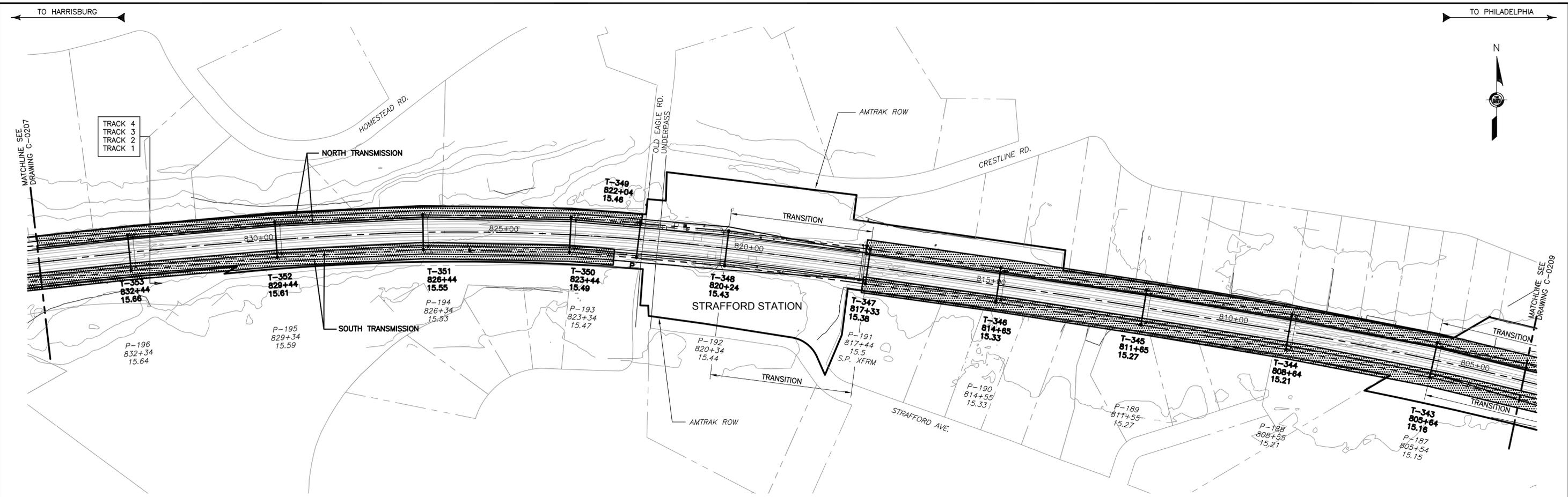
This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

**ZOO TO PAOLI TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 865+00 TO 835+00**

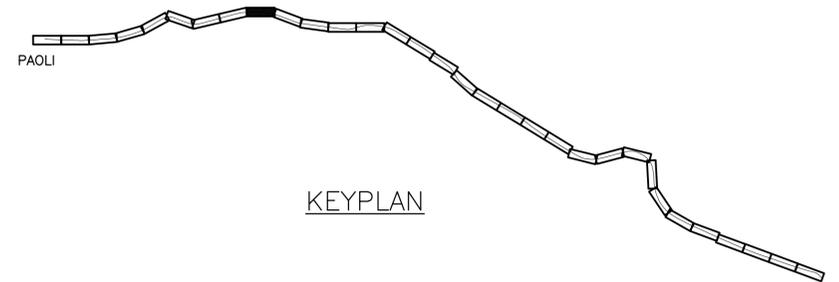
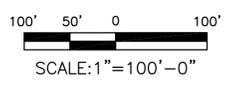
Recommended: DP Drawn: WJC Checked: MJM Date: 12/19/14

File No.:	C-0207.DWG
Ref. No.:	2011-059
Sheet No.:	554 OF 936

C-0207



TREE PRUNING SITE PLAN



KEYPLAN

2:43:20 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings\paoli to bryn mawr\civil-c-0208.dwg

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**
National Railroad Passenger Corporation
30TH Street Station—Philadelphia, Pennsylvania 19104

Approved	Date

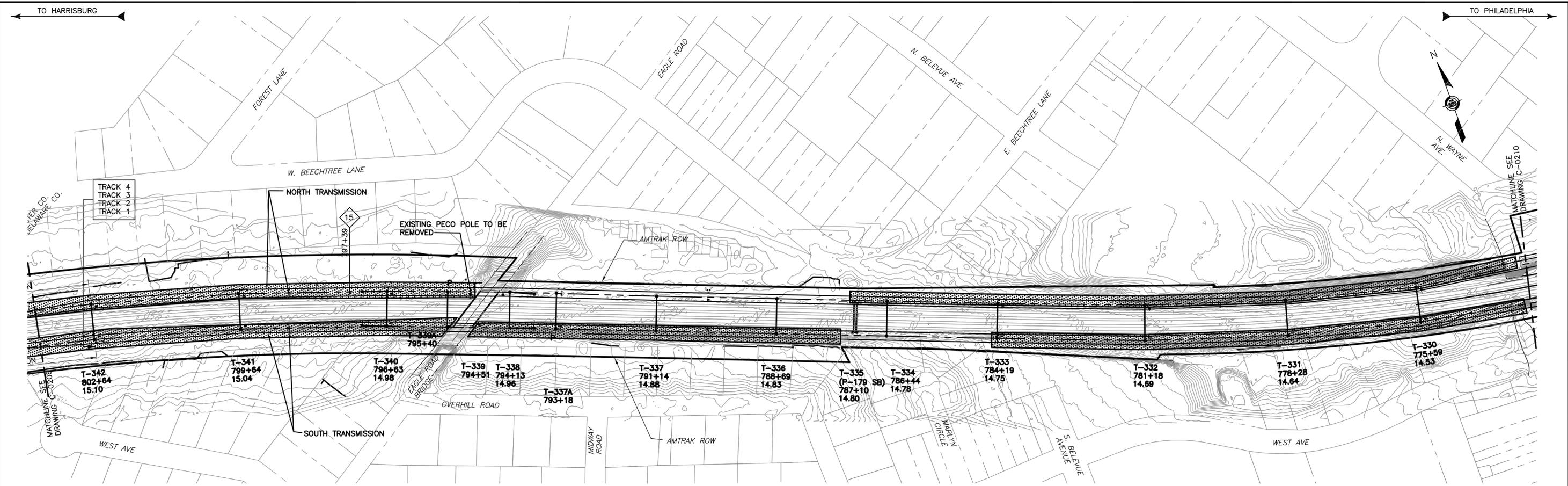


100% DESIGN SUBMISSION

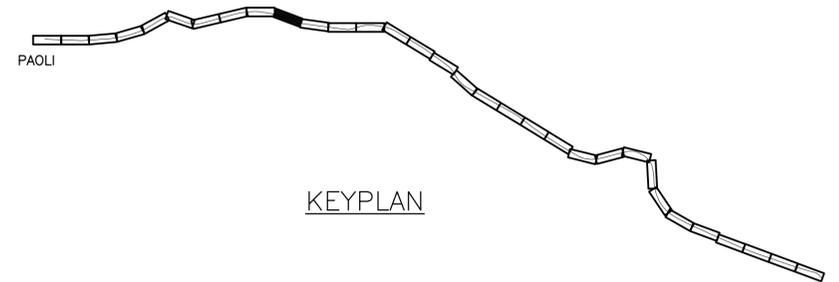
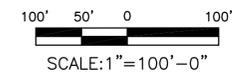
This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

**ZOO TO PAOLI TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 835+00 TO 804+00**
Recommended: DP Drawn: WJC Checked: MJM Date: 12/19/14

File No.:	C-0208.DWG
Ref. No.:	2011-059
Sheet No.:	555 OF 936
C-0208	



TREE PRUNING SITE PLAN



2:43:31 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings\paoli to bryn mawr\civil\c-0209.dwg

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**
National Railroad Passenger Corporation
30TH Street Station—Philadelphia, Pennsylvania 19104

Approved	Date

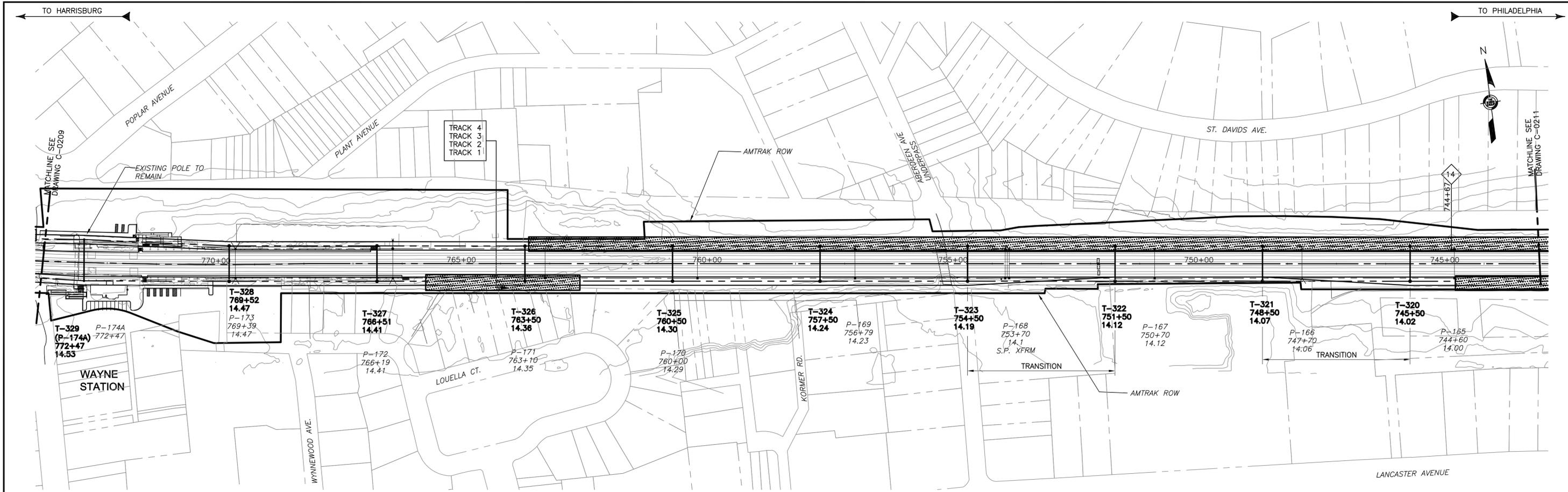


100% DESIGN SUBMISSION

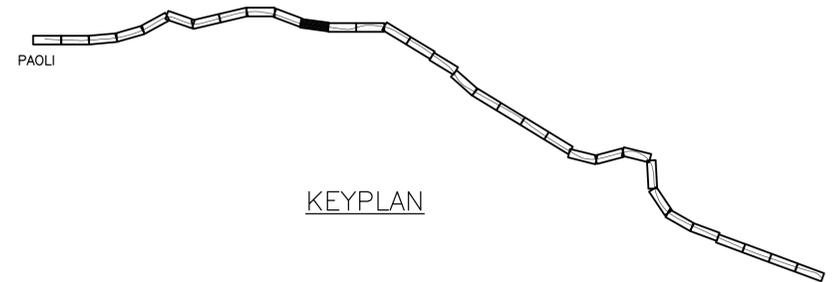
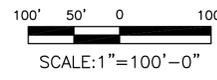
This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

**ZOO TO PAOLI TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 804+00 TO 774+00**
Recommended: DP Drawn: WJC Checked: MJM Date: 12/19/14

File No.:	C-0209.DWG
Ref. No.:	2011-059
Sheet No.:	556 OF 936
C-0209	



TREE PRUNING SITE PLAN



KEYPLAN

2:43:42 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings\paoli to bryn mawr\civil\c-0210.dwg

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**
National Railroad Passenger Corporation
30TH Street Station—Philadelphia, Pennsylvania 19104

Approved	Date

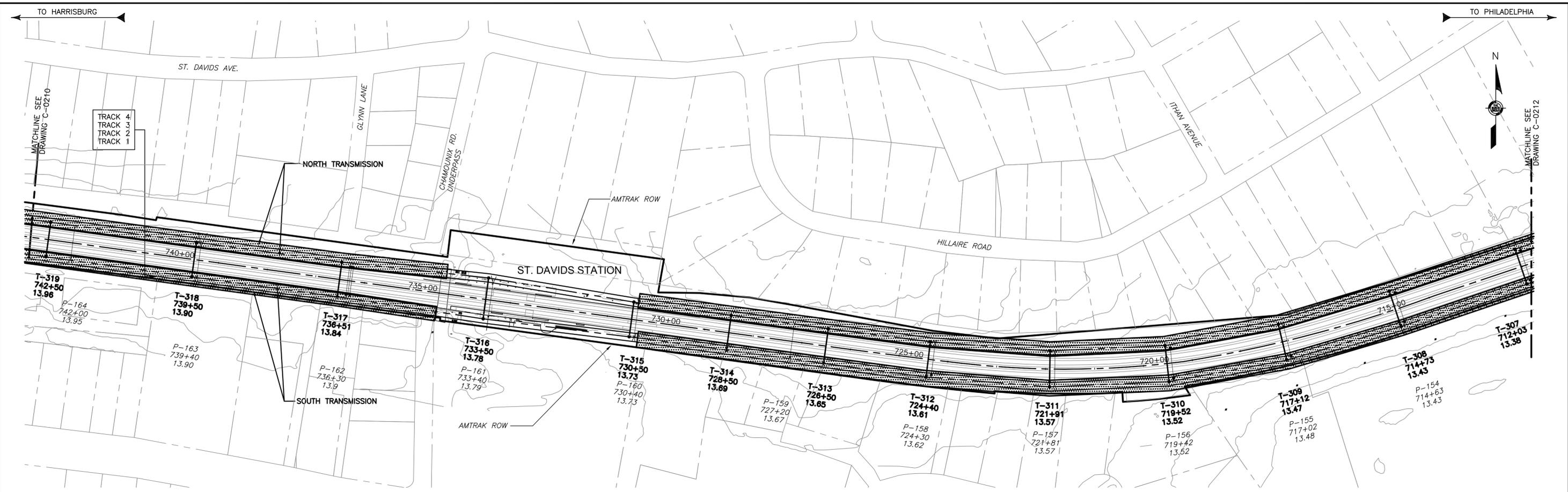


100% DESIGN SUBMISSION

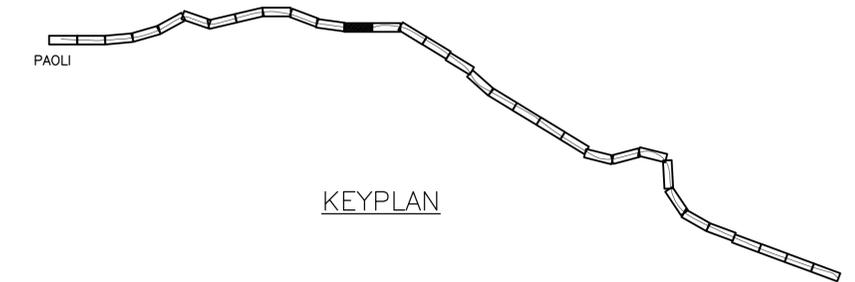
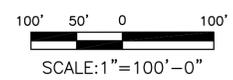
This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

**ZOO TO PAOLI TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 774+00 TO 744+00**
Recommended: DP Drawn: WJC Checked: MJM Date: 12/19/14

File No.:	C-0210.DWG
Ref. No.:	2011-059
Sheet No.:	557 OF 936
C-0210	



TREE PRUNING SITE PLAN



2:43:54 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings\paoli to bryn mawr\civil\c-021.dwg

100% DESIGN SUBMISSION This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**

National Railroad Passenger Corporation
30TH Street Station-Philadelphia, Pennsylvania 19104

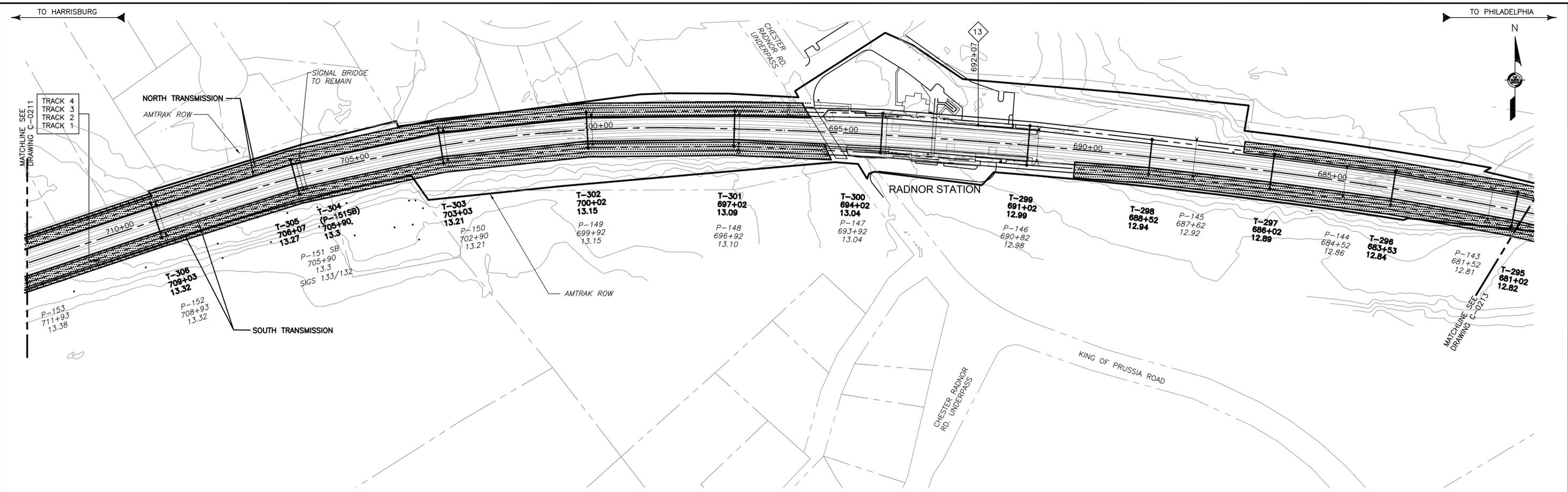
Approved	Date



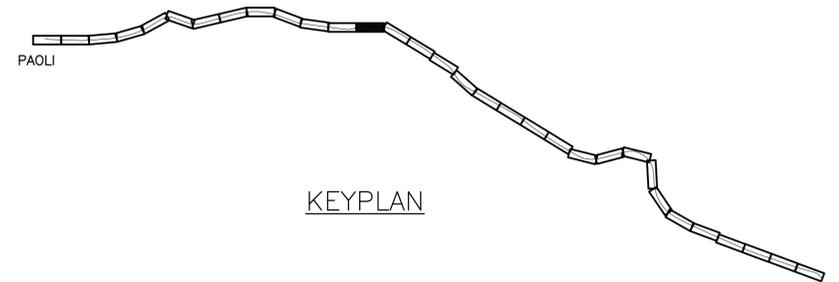
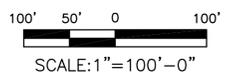
**ZOO TO PAOLI TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 744+00 TO 712+00**

Recommended: DP Drawn: WJC Checked: MJM Date: 12/19/14

File No.:	C-0211.DWG
Ref. No.:	2011-059
Sheet No.:	558 OF 936
C-0211	



TREE PRUNING SITE PLAN



KEYPLAN

2:44:05 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings paoli to bryn mawr\civil-c-0212.dwg

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**

National Railroad Passenger Corporation
30TH Street Station-Philadelphia, Pennsylvania 19104

Approved	Date



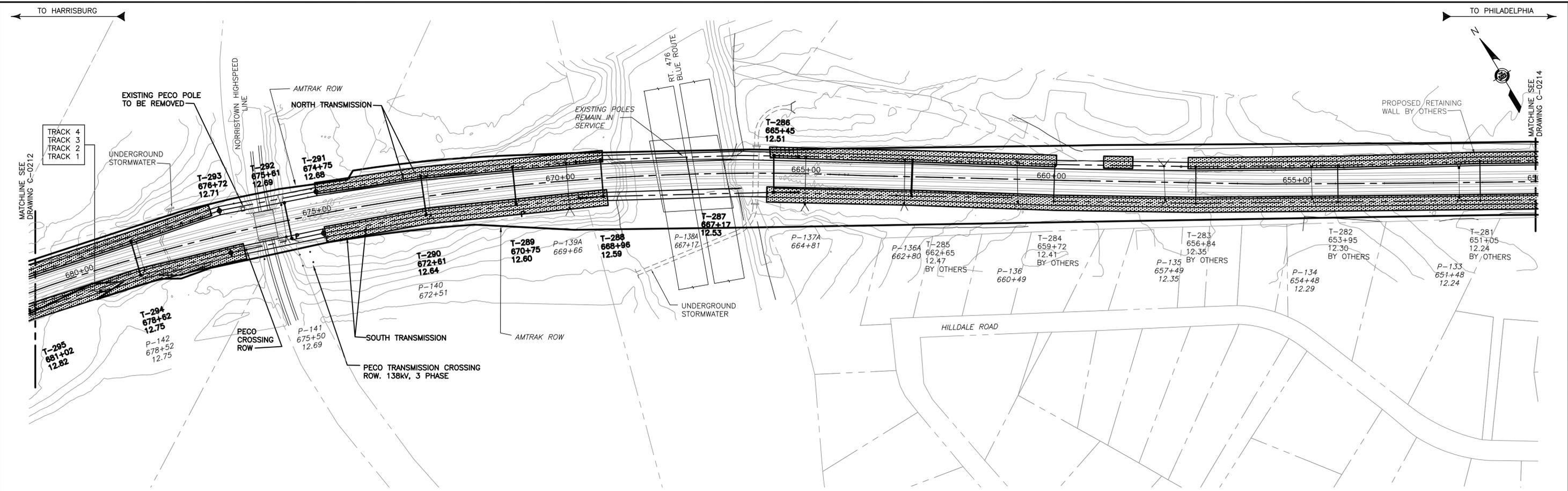
100% DESIGN SUBMISSION

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

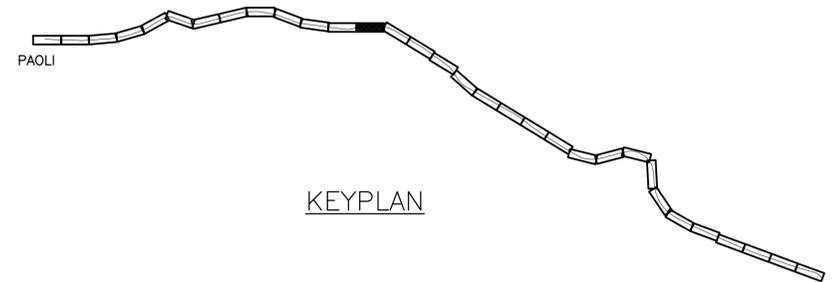
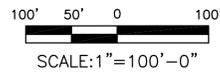
**ZOO TO PAOLI TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 712+00 TO 681+00**

Recommended: DP Drawn: WJC Checked: MJM Date: 12/19/14

File No.:	C-0212.DWG
Ref. No.:	2011-059
Sheet No.:	559 OF 936
C-0212	



TREE PRUNING SITE PLAN



2:44:17 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings\paoli to bryn mawr\civil-c-0213.dwg

No	Revisions	Date	By

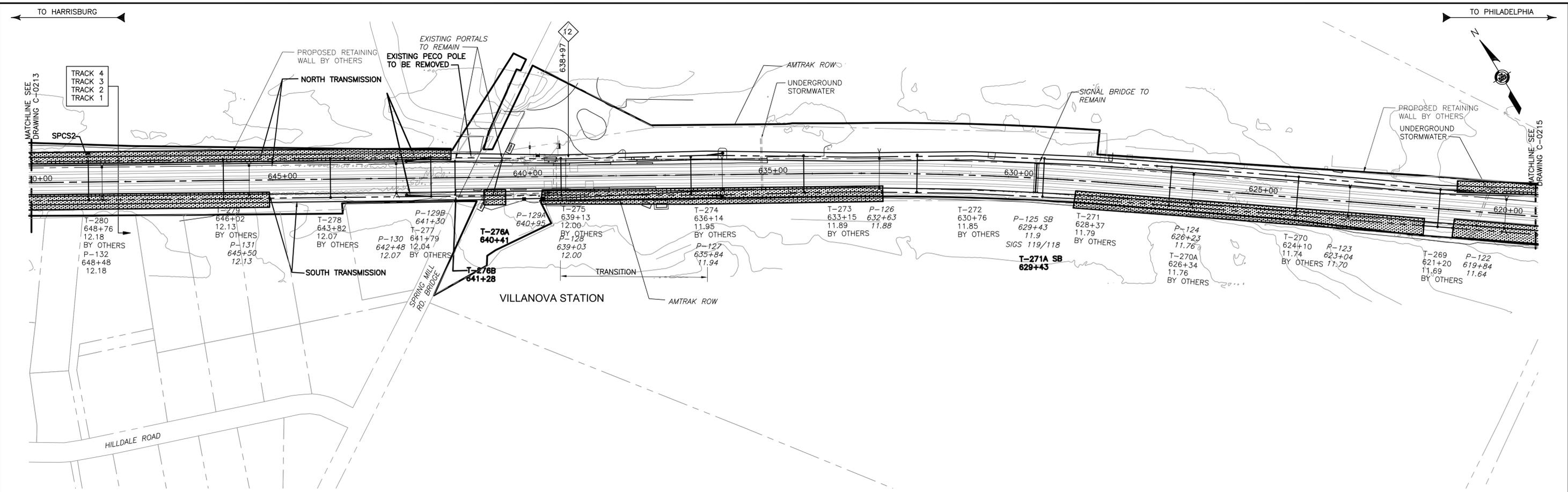


**OFFICE OF
Chief Engineer
Engineering**
National Railroad Passenger Corporation
30TH Street Station—Philadelphia, Pennsylvania 19104

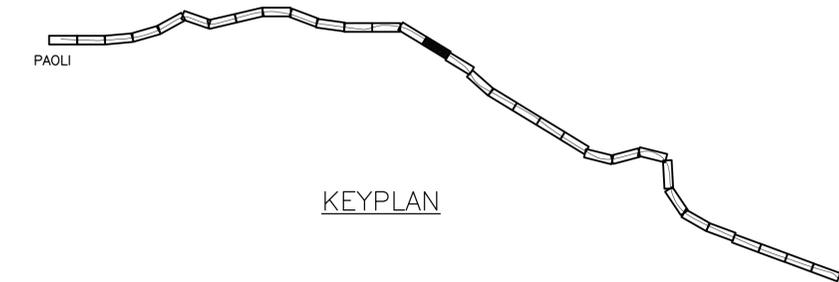
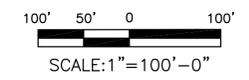
Approved	Date



100% DESIGN SUBMISSION		This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.	
ZOO TO PAOLI TRANSMISSION ELECTRIFICATION TREE PRUNING STA. 681+00 TO 650+00		File No.:	C-0213.DWG
		Ref. No.:	2011-059
Recommended: DP		Drawn: WJC	Checked: MJM
Date: 12/19/14		Sheet No: 560 OF 936	
C-0213		PHILADELPHIA	



TREE PRUNING SITE PLAN



KEYPLAN

2:44:28 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings\paoli to bryn mawr\civil-c-0214.dwg

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**
National Railroad Passenger Corporation
30TH Street Station—Philadelphia, Pennsylvania 19104

Approved	Date



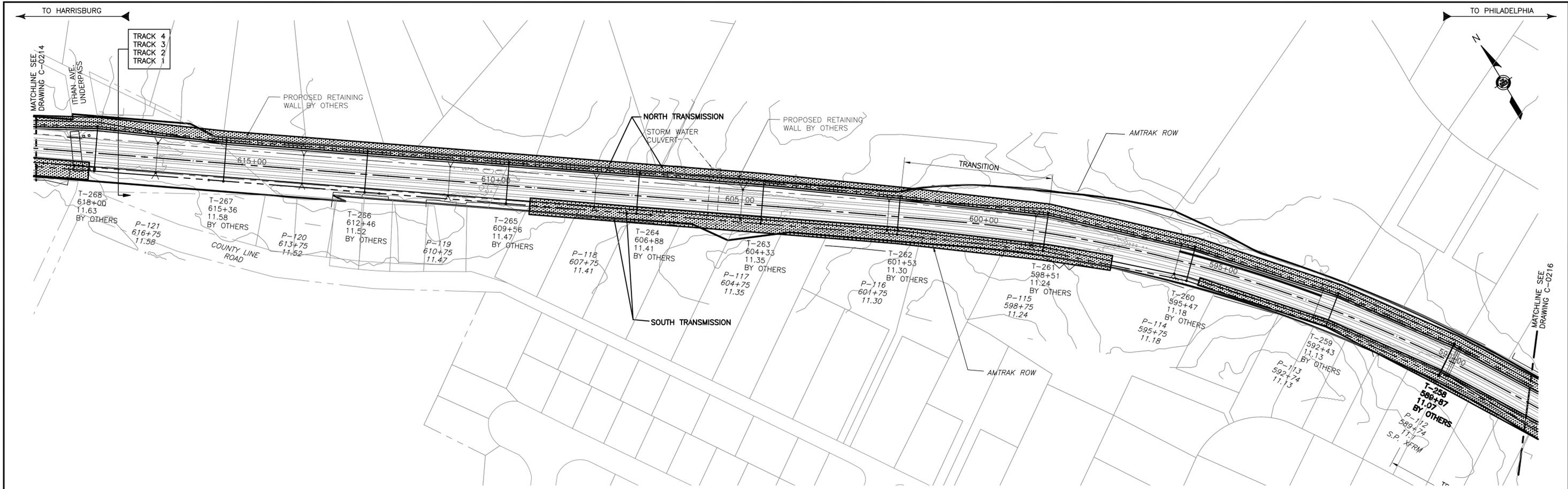
100% DESIGN SUBMISSION

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

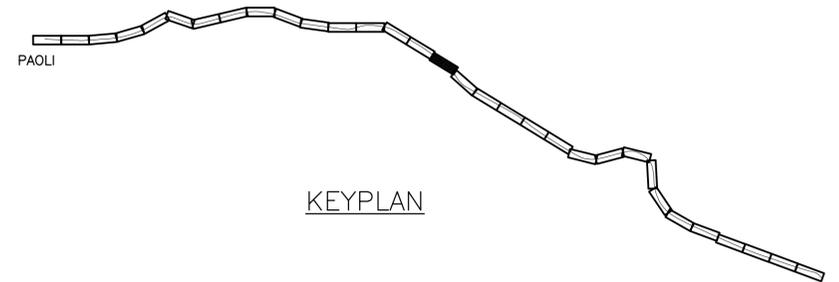
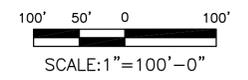
**ZOO TO PAOLI TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 650+00 TO 619+00**

Recommended: DP Drawn: WJC Checked: MJM Date: 12/19/14

File No.:	C-0214/103
Ref. No.:	2011-059
Sheet No.:	561 OF 936
C-0214	



TREE PRUNING SITE PLAN



KEYPLAN

2:44:38 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings\paoli to bryn mawr\civil-c-0215.dwg

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**

National Railroad Passenger Corporation
30TH Street Station-Philadelphia, Pennsylvania 19104

Approved	Date



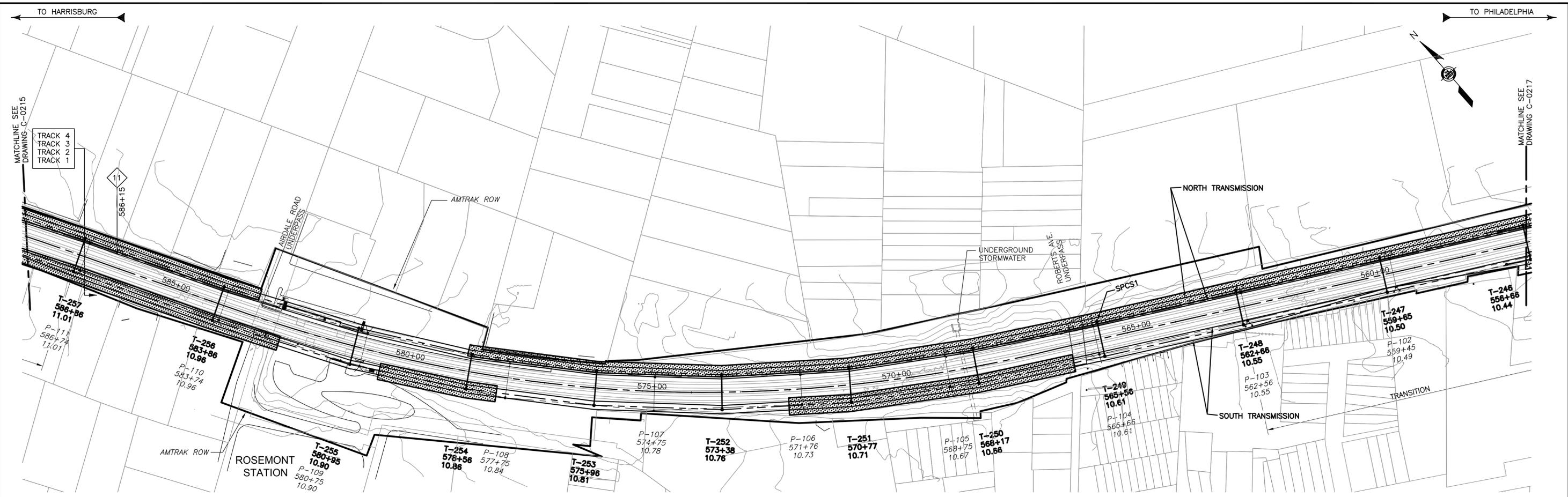
100% DESIGN SUBMISSION

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

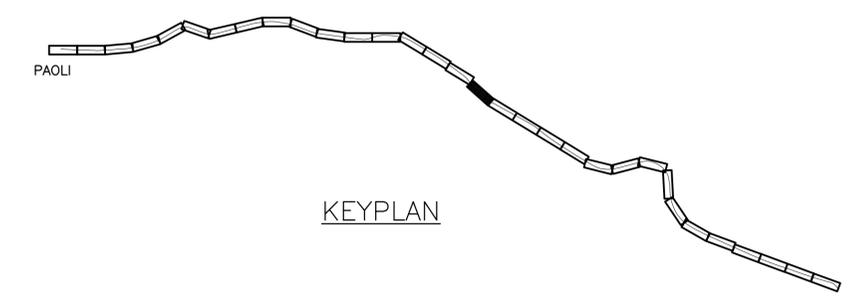
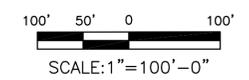
**ZOO TO PAOLI TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 619+00 TO 588+00**

Recommended: DP Drawn: WJC Checked: MJM Date: 12/19/14

File No.:	C-0215.DWG
Ref. No.:	2011-059
Sheet No.:	562 OF 936
C-0215	



TREE PRUNING SITE PLAN



2:44:49 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings\paoli to bryn mawr\civil\c-0216.dwg

100% DESIGN SUBMISSION This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**

National Railroad Passenger Corporation
30TH Street Station—Philadelphia, Pennsylvania 19104

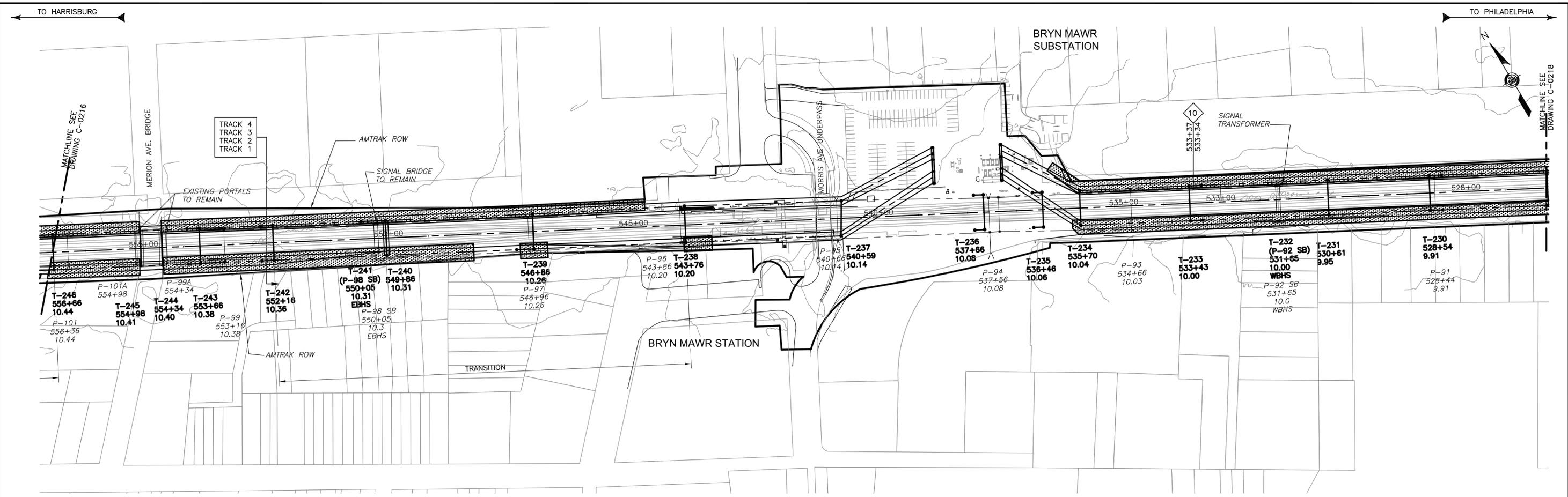
Approved	Date



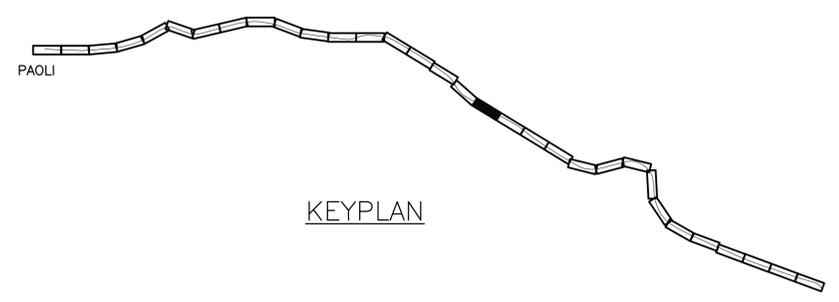
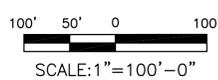
**ZOO TO PAOLI TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 588+00 TO 556+65**

Recommended: DP Drawn: WJC Checked: MJM Date: 12/19/14

File No.:	C-0216.DWG
Ref. No.:	2011-059
Sheet No.:	563 OF 936
C-0216	



TREE PRUNING SITE PLAN



KEYPLAN

2:45:01 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings\paoli to bryn mawr\civil-c-0217.dwg

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**

National Railroad Passenger Corporation
30TH Street Station—Philadelphia, Pennsylvania 19104

Approved	Date



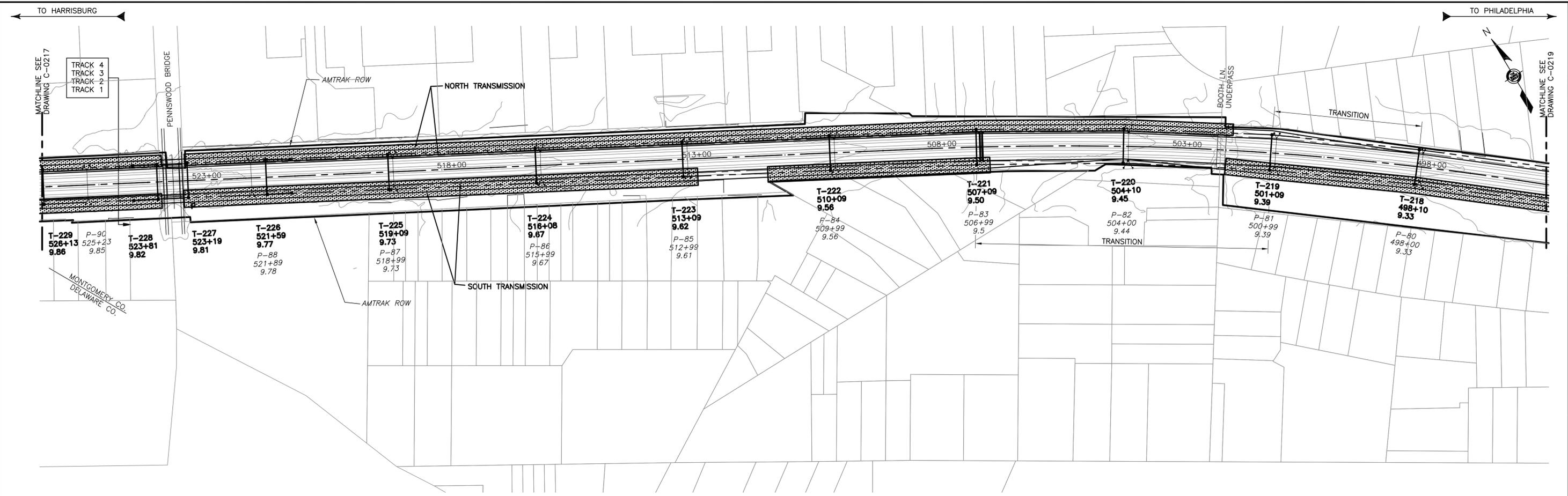
100% DESIGN SUBMISSION

This information is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

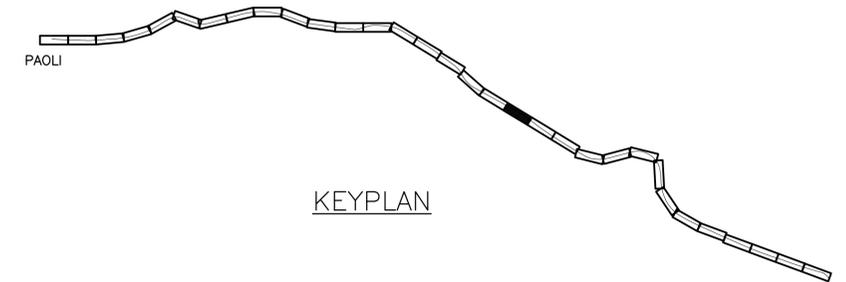
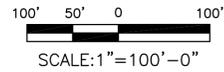
**ZOO TO PAOLI TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 556+65 TO 526+00**

Recommended: DP Drawn: WJC Checked: MJM Date: 12/19/14

File No.:	C-0217.DWG
Ref. No.:	2011-059
Sheet No.:	564 OF 936
C-0217	



TREE PRUNING SITE PLAN



KEYPLAN

4:29:35 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings zoo to bryn mawr\civil-c-0218.dwg

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**

National Railroad Passenger Corporation
30TH Street Station-Philadelphia, Pennsylvania 19104

Approved	Date

100% DESIGN SUBMISSION

Burns IN ASSOCIATION WITH **Baker**
AECOM

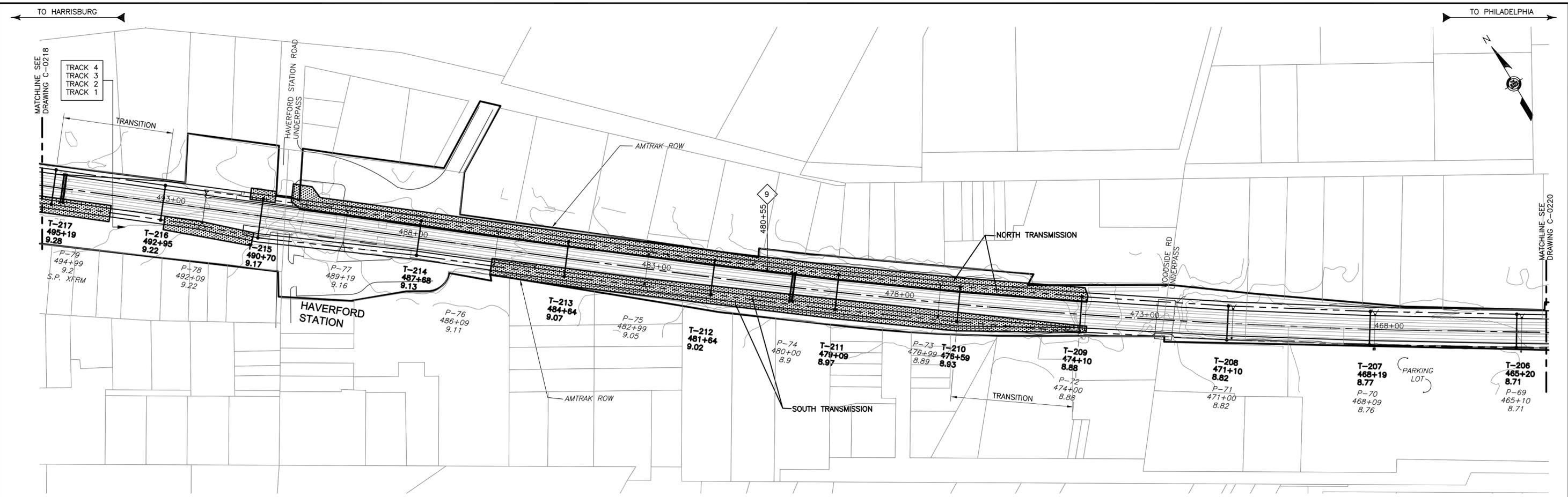
BURNS ENGINEERING, INC. | 215 979-7700
TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600
PHILADELPHIA, PA 19103

**BRYN MAWR TO ZOO TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 526+00 TO 495+50**

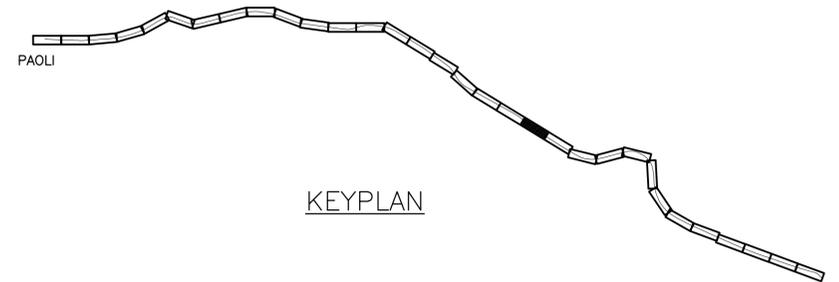
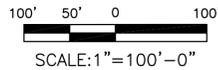
Recommended: DP Drawn: WJC Checked: RSW Date: 03/17/16

File No.:	C-0218.DWG
Ref. No.:	2011-059
Sheet No.:	336 OF 347
C-0218	

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.



TREE PRUNING SITE PLAN



4:29:49 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings zoo to bryn mawr\civil-c-0219.dwg

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**

National Railroad Passenger Corporation
30TH Street Station—Philadelphia, Pennsylvania 19104

Approved	Date



100% DESIGN SUBMISSION

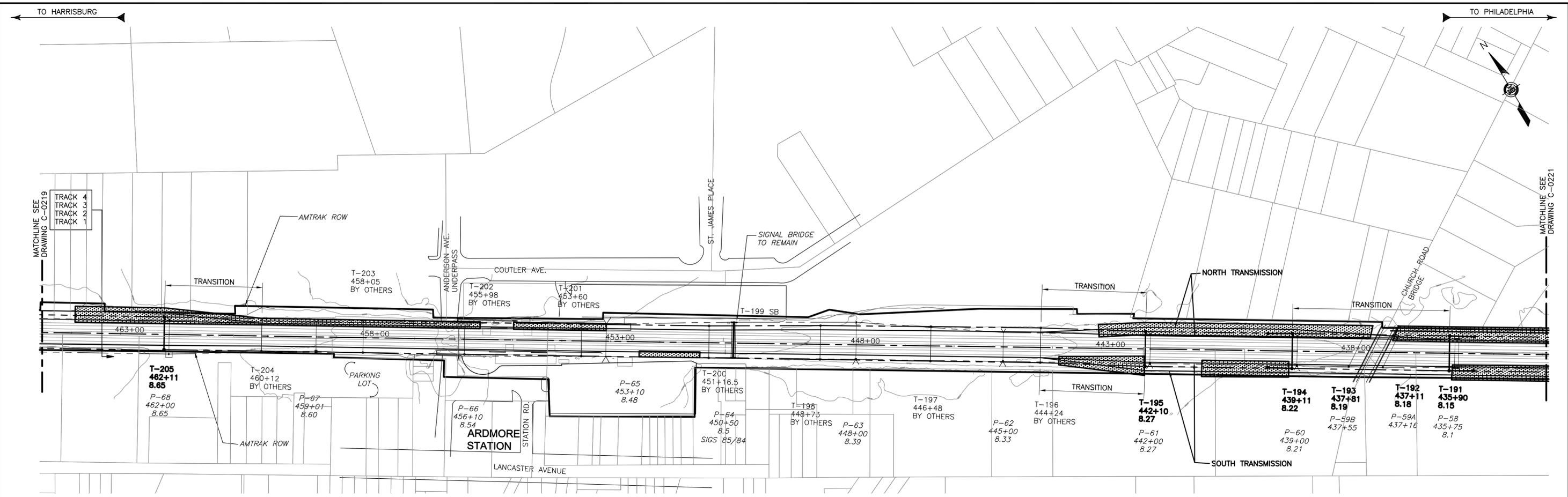
This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

**BRYN MAWR TO ZOO TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 495+50 TO 465+00**

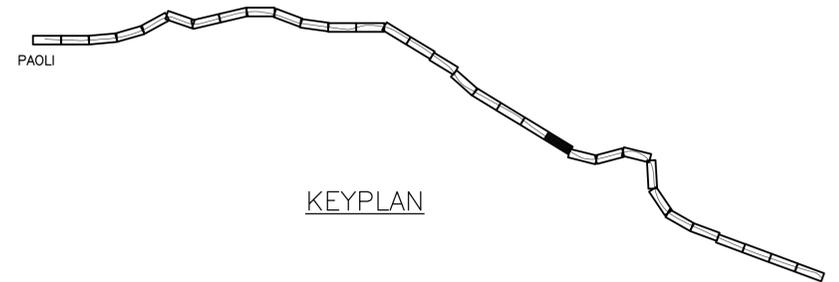
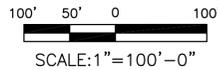
Recommended: DP Drawn: WJC Checked: RSW Date: 03/17/16

File No.:	C-0219.DWG
Ref. No.:	2011-059
Sheet No.:	337 OF 347

C-0219



TREE PRUNING SITE PLAN



4:30:02 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings zoo to bryn mawr\civil-c-0220.dwg

100% DESIGN SUBMISSION This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**

National Railroad Passenger Corporation
30TH Street Station—Philadelphia, Pennsylvania 19104

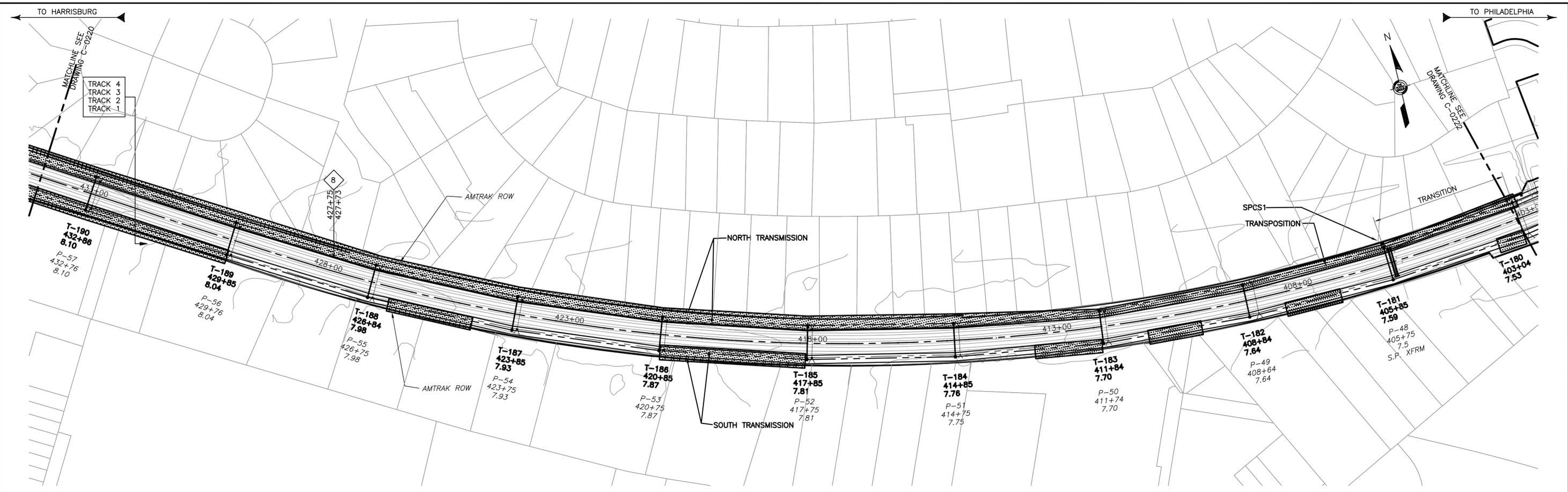
Approved	Date



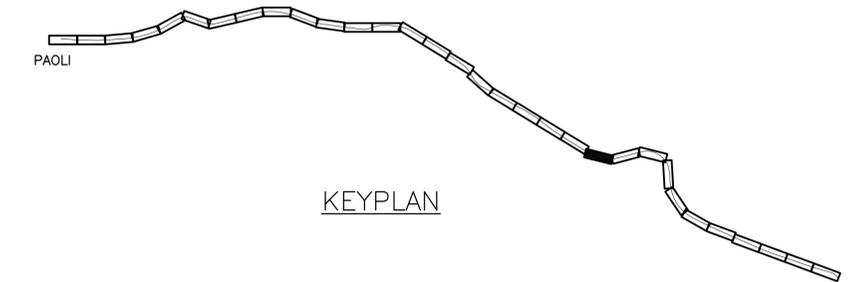
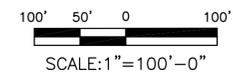
**BRYN MAWR TO ZOO TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 465+00 TO 434+00**

Recommended: DP Drawn: WJC Checked: RSW Date: 03/17/16

File No.:	C-0220.DWG
Ref. No.:	2011-059
Sheet No.:	338 OF 347
C-0220	



TREE PRUNING SITE PLAN



KEYPLAN

4:30:16 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings zoo to bryn mawr\civil-c-0221.dwg

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**

National Railroad Passenger Corporation
30TH Street Station—Philadelphia, Pennsylvania 19104

Approved	Date



100% DESIGN SUBMISSION

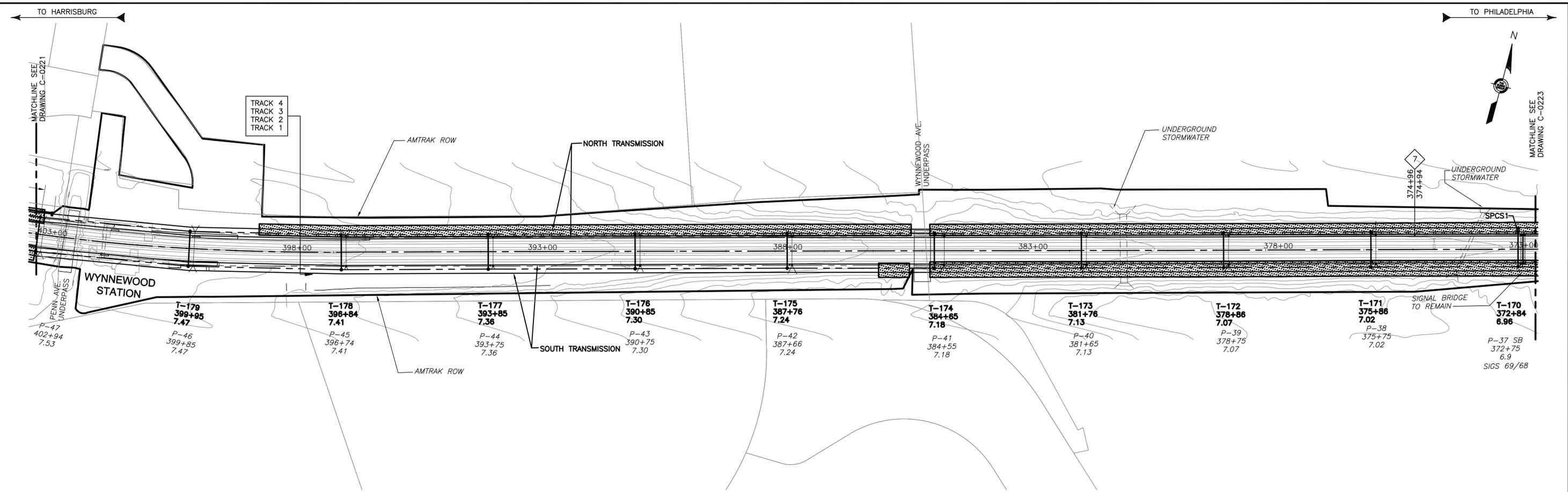
This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

**BRYN MAWR TO ZOO TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 434+00 TO 403+00**

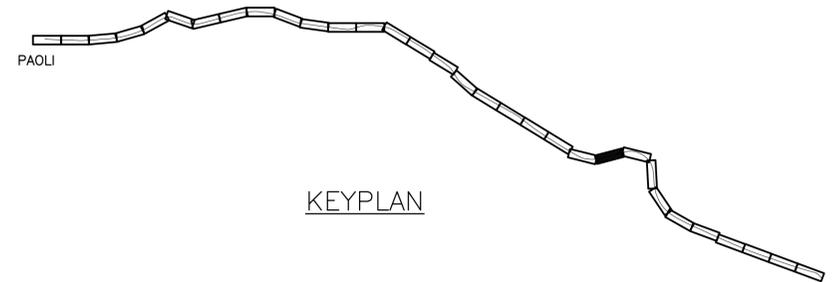
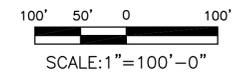
Recommended: DP Drawn: WJC Checked: RSW Date: 03/17/16

File No.:	C-0221.DWG
Ref. No.:	2011-059
Sheet No.:	339 OF 347

C-0221



TREE PRUNING SITE PLAN



KEYPLAN

4:30:33 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings zoo to bryn mawr\civil\c-0222.dwg

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**

National Railroad Passenger Corporation
30TH Street Station-Philadelphia, Pennsylvania 19104

Approved	Date



100% DESIGN SUBMISSION

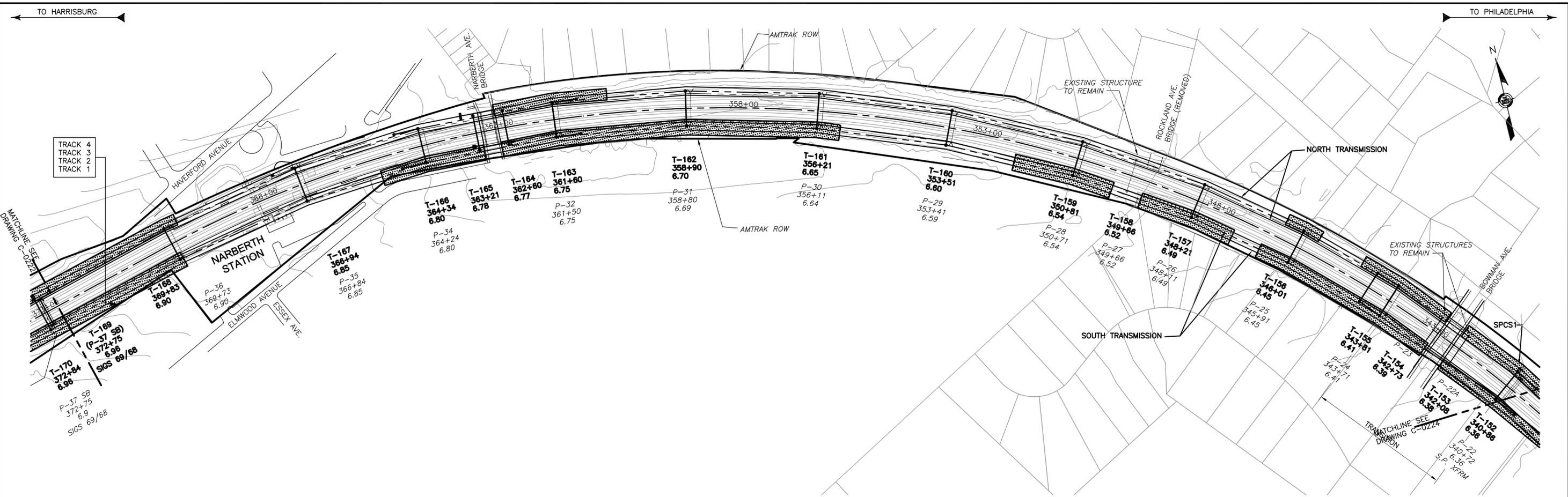
This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

**BRYN MAWR TO ZOO TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 403+00 TO 372+50**

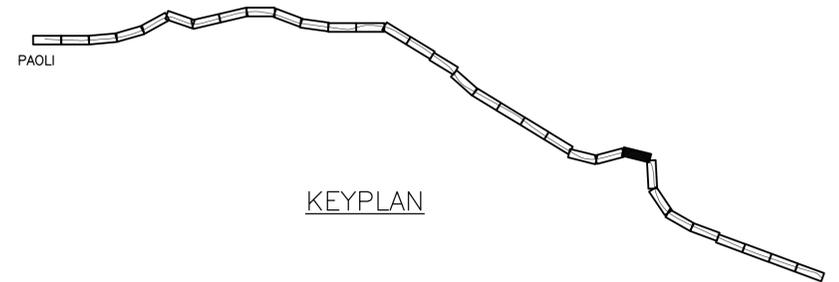
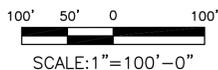
Recommended: DP Drawn: WJC Checked: RSW Date: 03/17/16

File No.:	C-0222.DWG
Ref. No.:	2011-059
Sheet No.:	340 OF 347

C-0222



TREE PRUNING SITE PLAN



KEYPLAN

4:30:48 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings zoo to bryn mawr\civil\c-0223.dwg

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**
National Railroad Passenger Corporation
30TH Street Station—Philadelphia, Pennsylvania 19104

Approved	Date



100% DESIGN SUBMISSION

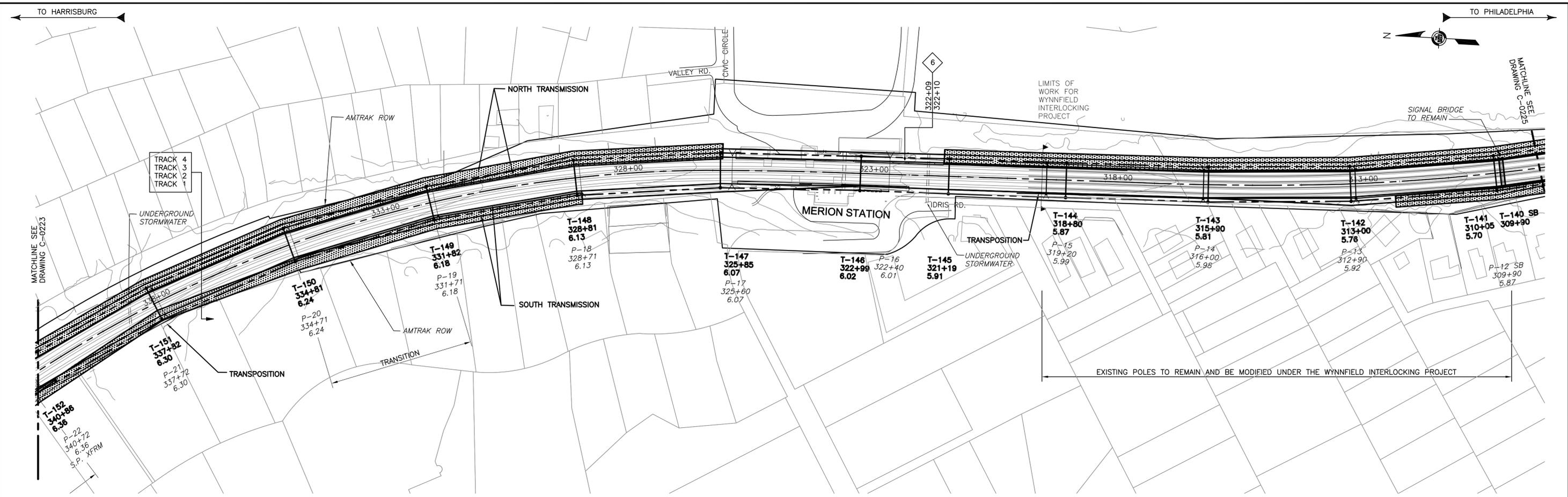
This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

**BRYN MAWR TO ZOO TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 372+50 TO 340+70**

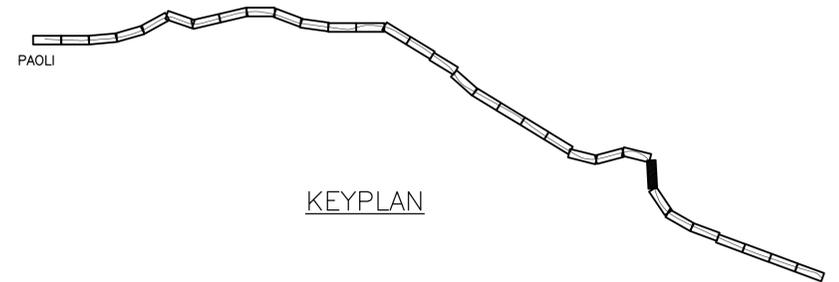
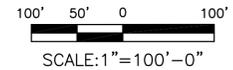
Recommended: DP Drawn: WJC Checked: RSW Date: 03/17/16

File No.:	C-0223.DWG
Ref. No.:	2011-059
Sheet No.:	341 OF 347

C-0223



TREE PRUNING SITE PLAN



4:31:13 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings zoo to bryn mawr\civil-c-0224.dwg

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**

National Railroad Passenger Corporation
30TH Street Station-Philadelphia, Pennsylvania 19104

Approved	Date



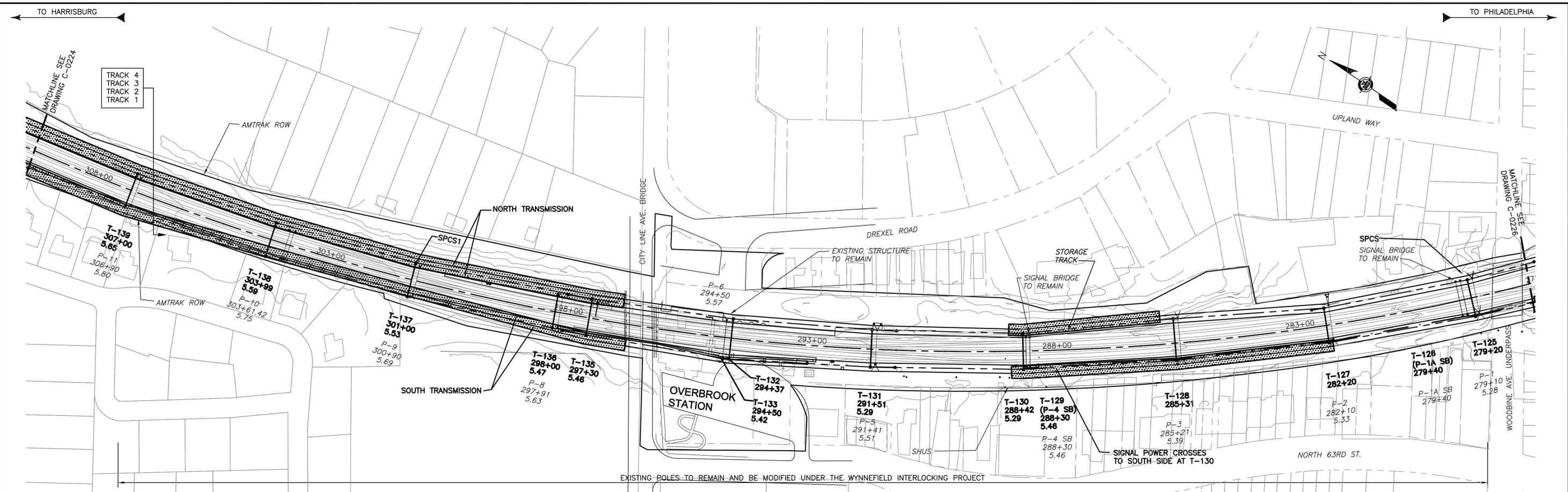
100% DESIGN SUBMISSION

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

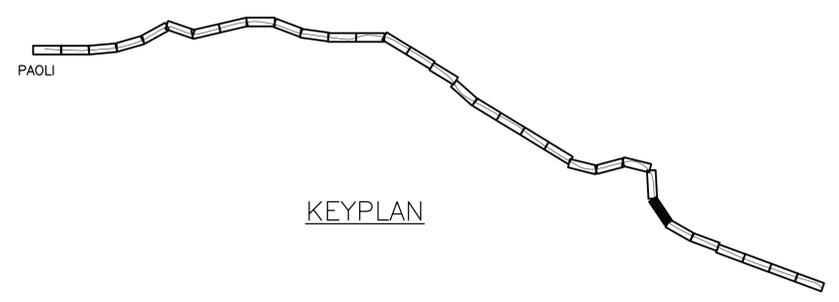
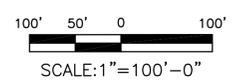
**BRYN MAWR TO ZOO TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 340+70 TO 309+00**

Recommended: DP Drawn: WJC Checked: RSW Date: 03/17/16

File No.:	C-0224/DWG
Ref. No.:	2011-059
Sheet No.:	342 OF 347
C-0224	



TREE PRUNING SITE PLAN



4:31:35 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings zoo to bryn mawr\civil\c-0225.dwg

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**
National Railroad Passenger Corporation
30TH Street Station—Philadelphia, Pennsylvania 19104

Approved	Date

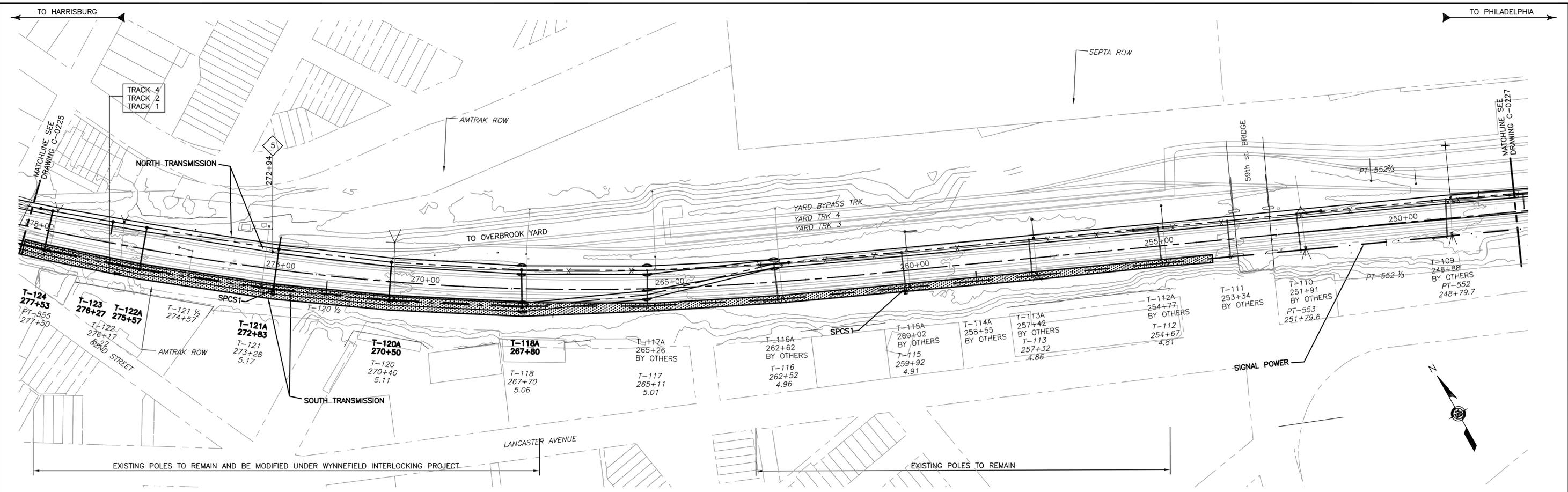


100% DESIGN SUBMISSION

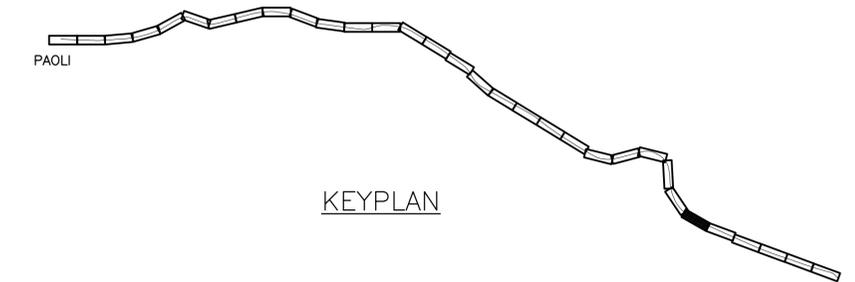
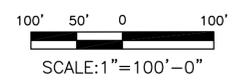
This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

**BRYN MAWR TO ZOO TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 309+00 TO 278+00**
Recommended: DP Drawn: WJC Checked: RSW Date: 03/17/16

File No.:	C-0225.DWG
Ref. No.:	2011-059
Sheet No.:	343 OF 347
C-0225	



TREE PRUNING SITE PLAN



4:31:55 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings zoo to bryn mawr\civillc-0226.dwg

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**
National Railroad Passenger Corporation
30TH Street Station—Philadelphia, Pennsylvania 19104

Approved	Date

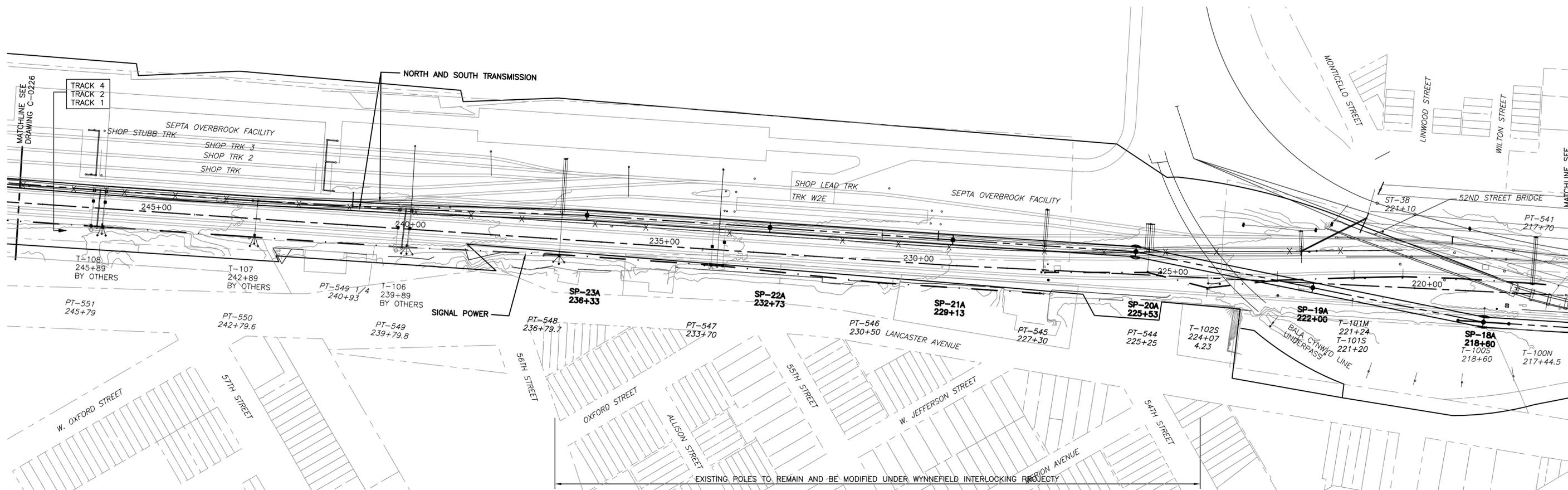


100% DESIGN SUBMISSION
This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

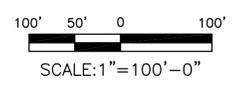
**BRYN MAWR TO ZOO TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 278+00 TO 247+50**

Recommended: DP Drawn: WJC Checked: RSW Date: 03/17/16

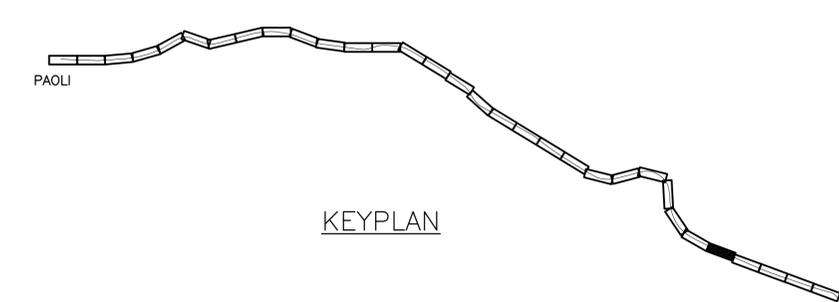
File No.:	C-0226.DWG
Ref. No.:	2011-059
Sheet No.:	344 OF 347
C-0226	



TREE PRUNING SITE PLAN



EXISTING POLES TO REMAIN AND BE MODIFIED UNDER WYNNEFIELD INTERLOCKING PROJECT



KEYPLAN

PHILADELPHIA

100% DESIGN SUBMISSION

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

No	Revisions	Date	By



**OFFICE OF
Chief Engineer
Engineering**

National Railroad Passenger Corporation
30TH Street Station—Philadelphia, Pennsylvania 19104

Approved	Date

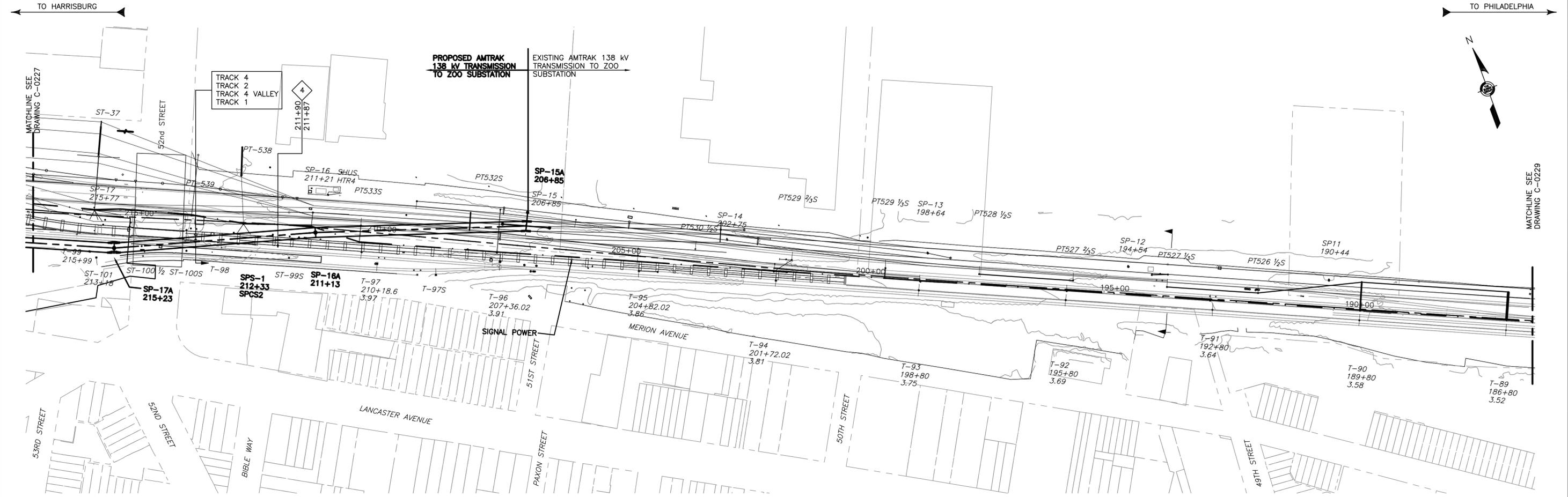


**BRYN MAWR TO ZOO TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 247+50 TO 217+00**

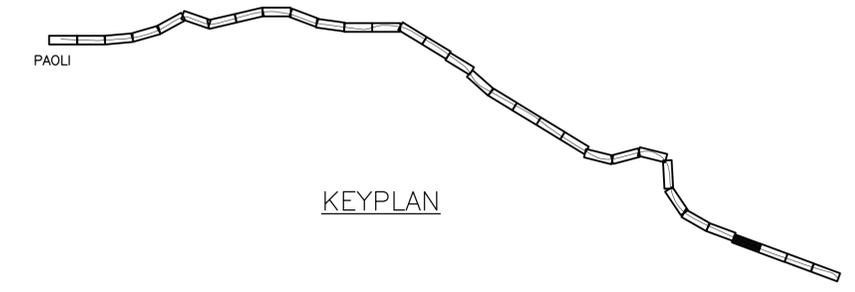
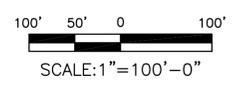
Recommended: DP Drawn: WJC Checked: RSW Date: 03/17/16

File No.:	C-0227/16
Ref. No.:	2011-059
Sheet No.:	345 OF 347
C-0227	

4:32:16 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings zoo to bryn mawr\civil\c-0227.dwg



TREE PRUNING SITE PLAN



KEYPLAN

4:32:40 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings zoo to bryn mawr\civil-c-0228.dwg

No	Revisions	Date	By



OFFICE OF
Chief Engineer
Engineering

National Railroad Passenger Corporation
30TH Street Station—Philadelphia, Pennsylvania 19104

Approved	Date



100% DESIGN SUBMISSION

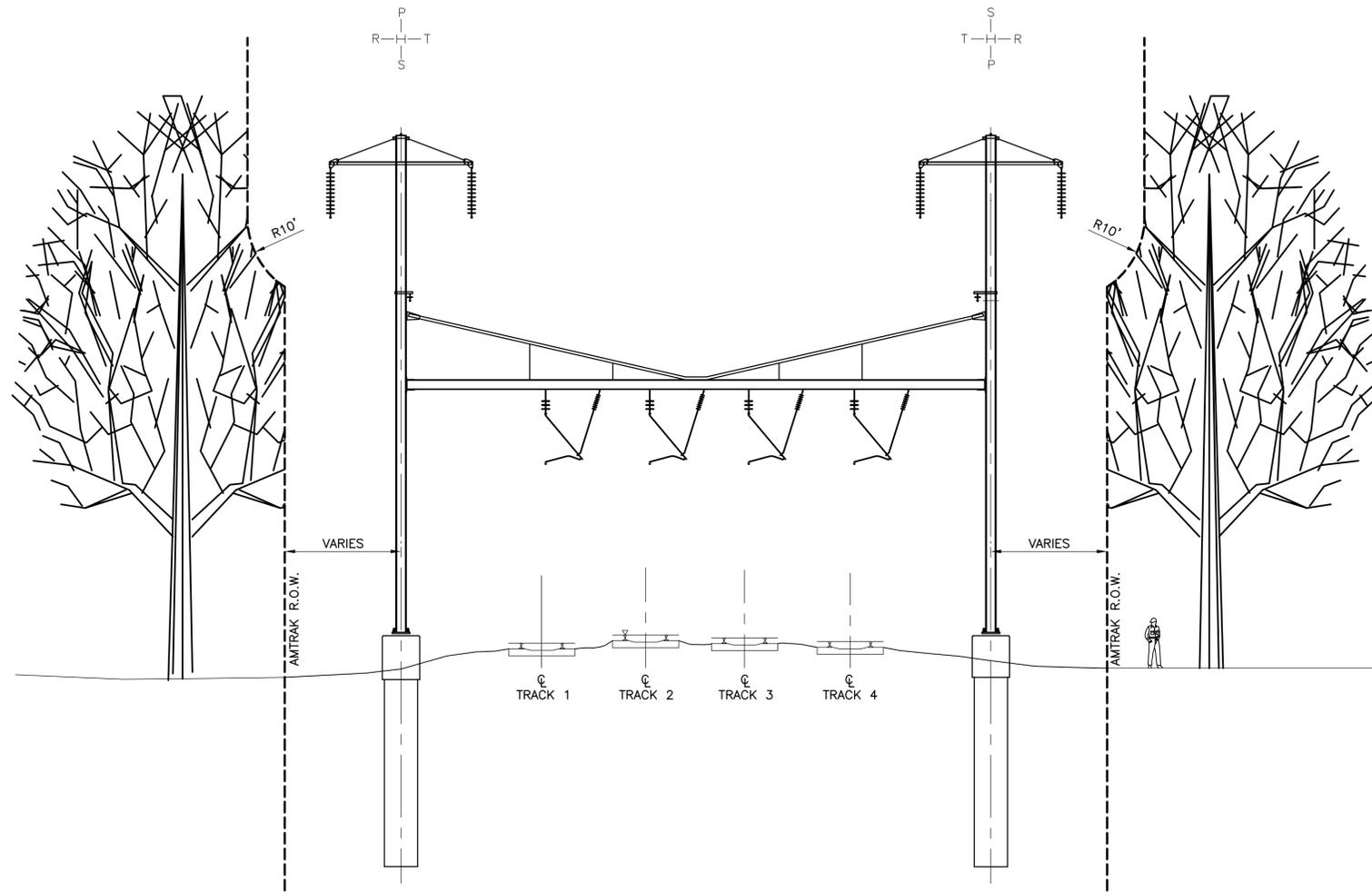
This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office Of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

BRYN MAWR TO ZOO TRANSMISSION
ELECTRIFICATION
TREE PRUNING
STA. 217+00 TO 186+00

Recommended: DP Drawn: WJC Checked: RSW Date: 03/17/16

File No.:	C-0228.DWG
Ref. No.:	2011-059
Sheet No.:	346 OF 347
C-0228	

4:32:47 PM 3/14/2016 J:\2011\2011-059\Drawings\working drawings zoo to bryn mawr\civil\c-0232.dwg



TYPICAL TREE PRUNING DETAIL
LOOKING TOWARDS HARRISBURG

0 10 20
SCALE: 1"=10'-0"

100% DESIGN SUBMISSION

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation, (Amtrak), Office of Engineering, and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak Electric Traction facilities and equipment. The reproduction, display, sale or other disposition of this document without the express written consent of the National Railroad Passenger Corporation, Office of Chief Engineer, is prohibited.

No	Revisions	Date	By



OFFICE OF
Chief Engineer
Engineering

National Railroad Passenger Corporation
30TH Street Station—Philadelphia, Pennsylvania 19104

Approved	Date

Burns IN ASSOCIATION WITH **Baker**
BURNS ENGINEERING, INC. | 215 979-7700
TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600
PHILADELPHIA, PA 19103

AECOM

BRYN MAWR TO ZOO TRANSMISSION
ELECTRIFICATION
TREE PRUNING
TYPICAL TREE PRUNING DETAIL

Recommended: DP Drawn: WJC Checked: MJM Date: 03/17/16

File No.:	C-0232.DWG
Ref. No.:	2011-059
Sheet No.:	347 OF 347
C-0232	

**ATTACHMENT 2:
UNANTICIPATED DISCOVERIES PLAN**

UNANTICIPATED DISCOVERIES PLAN

AMTRAK'S PHILADELPHIA ZOO SUBSTATION TO PAOLI SUBSTATION ON THE PENNSYLVANIA MAIN LINE RAILROAD ELECTRIFICATION TRANSMISSION LINE PROJECT

Chester, Delaware, Montgomery, and Philadelphia Counties,
Pennsylvania

National Railroad Passenger Corporation (Amtrak)
60 Massachusetts Avenue, N.E.
Washington, D.C. 20002

PART 1 - GENERAL

This document is prepared pursuant to the requirements of a Memorandum of Agreement (MOA) among the Federal Railroad Administration (FRA), the Pennsylvania State Historic Preservation Office (PA SHPO), the National Railroad Passenger Corporation (Amtrak), the Southeastern Pennsylvania Transportation Authority (SEPTA), and the Railroad Museum of Pennsylvania (RRMPA).

This document provides the procedure to be followed in the event human or non-human archaeological resources are encountered during construction of the project.

This document pertains to the work of the Contractor, the Contractor's subcontractors, the Contractor's material suppliers, the Contractor's equipment suppliers, and all individuals and companies associated with the Contractor's performance of the project (hereafter collectively referred to as Contractor). Contacts for Amtrak, the Contractor, and other appropriate parties will be provided prior to construction.

This document shall remain in force until the formal completion of the project, or the termination of the MOA, whichever comes first.

PART 2 – IDENTIFICATION OF RESOURCES

The following are considered examples of potential archaeological resources to be included in this Unanticipated Discoveries Plan (Plan):

- Human skeletal remains, including individual bones, groups of bones, bone fragments, dental fragments, etc.
- Articles of clothing, including cloth, leather, shoe leather, buckles, buttons, etc.
- Personal items, including rings, jewelry, beads, toys, coins, gun parts, funerary items, etc.
- Household and kitchen items, including intact or broken pieces of ceramics, glass and metal containers, cutlery, butchered bones and oyster shells, tobacco pipe remnants, etc.

- Architectural items, including window glass, nails, bricks, shaped building stones, etc.
- Possible prehistoric objects, including chipped stone tools (i.e., projectile points, drills, etc.), ceramics, groundstone, lithic debitage, animal bone, personal adornment items, etc.
- Areas of darkened soil that suggest possible cultural features, such as firepits, garbage pits, privies, foundations, postholes, etc.
- Unusual objects not identified herein that suggest human occupation.

It is possible any combination of these resources may be found during earthwork operations at locations where drilling occurs for pole footings, temporary fences, gates, signs and other appurtenances, and at locations where soil is disturbed, removed, relocated, or displaced along the right-of-way, such as at access points, staging areas, and the Bryn Mawr Substation construction location. The Contractor's supervisory personnel present during hours of construction should be provided with minimal training in the identification of archaeological resources.

PART 3 – PROCEDURE FOR IDENTIFYING UNANTICIPATED DISCOVERIES

1. If one or more of the potential archaeological resources (listed above) are encountered by the Contractor during earthwork operation, stop work in the vicinity of the resource immediately and notify the Amtrak Project Manager (to be named prior to construction). Do not resume work in the vicinity of the resource until specifically directed by the Amtrak Project Manager. The Contractor will ensure that any discoveries are protected from destruction, looting, and vandalism during stop-work episodes while a determination is made as to the importance of a find.
2. The Amtrak Project Manager will notify the Project's Environmental Consultant (including a Secretary of the Interior [SOI]-qualified archaeologist and the Project Manager), who, in consultation with the Amtrak Project Manager, will determine if it is necessary to conduct a field visit to inspect the encountered potential archaeological resource.
 - a. Should the Amtrak Project Manager and the Project's Environmental Consultant conclude it is not necessary to investigate the encountered potential archaeological resource any further, the Amtrak Project Manager will authorize work in the area to resume.
 - b. Should the Amtrak Project Manager and the Project's Environmental Consultant conclude it is necessary to further investigate the encountered potential archaeological resource, the SOI-qualified archaeologist with the Project's Environmental Consultant will conduct a field visit within 24 hours.
3. Should the field visit indicate the encountered materials are not potential archaeological resources, the Project's SOI-qualified archaeologist will notify the Amtrak Project Manager, who will authorize work in the area to resume.

4. Should the field visit confirm the encountered materials are potential archaeological resources, the Project's SOI-qualified archaeologist will inform the Amtrak Project Manager and then notify:
- the PA SHPO (Douglas McLearn, Chief, Archaeology and Protection, Bureau for Historic Preservation at 717.772.0925), and
 - FRA (Laura Shick, Federal Preservation Officer at 202.366.0340).
- a. FRA will determine if it is appropriate to notify Native American groups to invite consultation and review of any discovered potential pre-contact human remains. Per PA SHPO guidelines for the treatment of human remains, work will stop and the coroner and SHPO will be notified.
- b. FRA, in consultation with Native American tribe(s), will determine the appropriate treatment of the discovered potential pre-contact human remains and associated funerary objects. The Project's SOI-qualified archaeologist will notify the PA SHPO and Amtrak's Project Manager of the treatment.
- The treatment of all encountered pre-contact human remains and associated funerary objects will be subject to the regulations promulgated in the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3001 *et.seq.*
 - The treatment of all encountered archaeological resources will be subject to the regulations stipulated in the *Guidelines for Archaeological Investigations* by the PA SHPO.
- c. Amtrak's Project Manager will notify the Contractor of any required modifications to the project timetable or aspects of the contract.
- d. FRA will notify the Project's Environmental Consultant when work in the area of the potential archaeological resource may resume. The Project's Environmental Consultant will notify the Amtrak Project Manager, who in turn will notify the Contractor.

- End of Document -