Amtrak

Track and Platform Conceptual Design

Intercity Rail Passenger Service at TF Green Airport Station

INITIAL DESIGN CONCEPT TECHNICAL MEMO

Introduction

In 2017 Amtrak and RIDOT along with the FRA developed the Feasibility Study for Intercity Rail Service to T.F. Green Airport (the TF Green Feasibility Report). The report evaluated several alternatives to increase service to the TF Green Airport Station in Warwick RI, one of which involved the construction of an eastbound Platform along with a new station track for use by Amtrak Northeast Regional service along with the electrification of proposed track 4 and the existing Track 3 which provides diesel access only to the north side platform constructed in 2010 by RIDOT for MBTA service. In January 2018, Amtrak and RIDOT agreed to further analyze the costs associated with the design and construction of the track and platform work needed at the TF Green Airport Station to provide electrified service by Amtrak to both east and west bound platforms. RIDOT seeks to maximize investments in the Northeast Corridor (NEC) for commuter rail purposes at TF Green Airport as it is one of the most direct air-to-rail intermodal connections in the country.

AECOM is evaluating three (3) alternatives from a conceptual design perspective to investigate track configurations, OCS and signal requirements, as well as architectural options for platform and station access at the existing TF Green airport garage facility. The following sections of this technical memo will summarize the alternatives to date as well as the factors to be considered for each alternative.

On May 22-23, 2019 a field view was performed by AECOM Track, OCS and Civil Engineers accompanied by the AECOM Transit Architects to gather preliminary field information and confirm data on the as-built and record drawings. Based on the field views, AECOM confirmed there is limited availability of the lateral clearance for a platform expansion beneath the overbuild garage.

Track Summary

Existing track conditions in the study area include the following:

- Track 1 and 2 form the electrified double track mainline between "Packard" and "Post" Interlockings
- Track 3 is the adjacent non-electrified P&W freight and MBTA commuter track
- Track 1 and 2 Maximum Authorized Speed (MAS) of 150mph
- TF Green Airport commuter rail station with existing 850' platform servicing Track 3
- Existing track centers between Track 1 and Track 2 vary from 12'-10" at "Packard" to 12'-3" through the station
- Existing track centers between Track 3 and Track 1 vary from 17'--6" in the station area to 14'-2" outside of the station

The main objective of this conceptual design project is to develop a design to upgrade the existing tracks between "Packard" and "Post" Interlockings to provide access to the TF Green Airport Station with intercity Amtrak regional service in both directions. This is to be achieved by:

- Constructing a new track (Track 4) and station platform with MAS of 110mph
- Maintaining Plate H clearances on Track 3 while providing for electrification
- Electrification of existing Track 3 and increasing the MAS from 50mph to 80mph
- Interlocking modifications for station service and operational flexibility of train movements

Maintaining and/or improving the existing horizontal and vertical clearances will be a critical factor for this project. Some of the key clearance criteria and conditions include:

- Existing horizontal clearance from the centerline of Track 2 to Coronado Road center pier is 22'- 4"
- New railroad infrastructure is to meet current standards and improvements to existing track centers will be required
- An Amtrak Design Exception Request (DER) would be required for any horizontal track centers under 16'-0 in electrified territory (Amtrak Dwg. No.: 70050.001.08)
- Any structures in the Right of Way (ROW) under the current Rhode Island State minimum clearances of 8'-6" (Rhode Island Dock 608) would potentially require modifications
- Existing ROW fence lines appear to be 20-25' from the centerline of Track 2 in several locations. Note based on the Amtrak Val Maps the actually property line should be 40' to 43' from centerline of Track 2
- Required vertical clearance improvements of Track 3 will be limited over and adjacent to the Lincoln Ave under-grade bridge and by the existing Route 37 overhead bridge piers

- Lowering the existing track may also impact the existing drainage conditions and retaining structures

Proposed track designs for the Track 4 alignment and modifications to the existing tracks and interlockings will be in accordance with the requirements of Amtrak Specification #63 and relevant Amtrak Standard Plans.

- Amtrak standard vertical clearance of 23'-6" to overhead structures is preferred with and absolute minimum of 19'6" for electrified track requiring a waiver from Amtrak Track and ET Departments
- A preferred platform length of 1050 feet will be proposed with an absolute minimum length of 850 feet for Regional Rail service
- The Track 4 configuration will be developed according to Amtrak's standards including the "80mph Diverge Station" concept
- The alternatives avoid realigning Track 3 through the station to minimize modifications required to the existing Track 3 platform
- Horizontal clearances for the overhead bridges at Main Ave, Connector Road, TF Green Parking Structure, and Coronado Road will be less than 25' for any proposed Track 4 alignment alternative. In general, crash walls will be suggested for any realigned or proposed track with a centerline less than 25' from an adjacent structure as required by AREMA.

The proposed track and interlocking enhancements will include:

<u>"Packard" Interlocking Extension (MP 174.9 to MP-175.6))</u>

- Locate the proposed eastbound Track 1 to 2 crossover (#20 MPF) to the west of TF Green Connector Road OHB
- Locate the proposed eastbound Track 2 to 4 turnout (#32.7 MPF) 240' min to the east of the Track 1 to 2 crossover

<u>"Barden" Interlocking (MP 177.2 to MP 177.4))</u>

- Locate the proposed eastbound Track 4 to 2 turnout (#24 RBM) east of Warwick Paralleling Station
- Locate the proposed eastbound Track 2 to 1 crossover (#20 MPF) 135' min to the east of the 42 turnout

<u>"Post" Interlocking (MP 178.3 to MP 178.6)</u>

- Locate proposed eastbound Track 1 to 2 crossover (#20 MPF) to the east of the existing Track 3 to 1 crossover
- Raise Track 2 by 16 inches Further investigation will be required to determine if this vertical difference would impact the adjacent Pawtuxet River Bridge

- Vertical track realignment will be required for track construction at “Post,” which includes a new crossover between Tracks 1 and 2. Track 2 is currently up to 16” lower than Track 1 and will need to be made level for construction of the crossover.
- Tie-in to existing before Pawtuxet River Bridge

Three (3) alternatives have been developed and are outlined in the Alternative Summary Matrix and the concept drawings. A brief summary of each is as follows:

1. Alternative 1

This option maintains the existing Track 1 and Track 3 alignments with an existing track center of 17’-5” through the station. While this alternative limits realignment of the existing tracks, this design alternative does deliver current minimum track centers of 16’-0” for 150 mph adjacent tracks. To achieve this standard, the Track 1 to Track 2 center is widened by realigning Track 2 between “Packard” and “Barden.” This alternative will result in the widest proposed ROW and necessitate offsetting the proposed platform relative to the existing platform on track 3. This alternative will also require modifications to the parking structure and the addition of crash walls to several overhead bridges.

2. Alternative 2

This approach intends to limit the impact of new Track 4 on the existing parking structure while improving existing mainline track centers. To accomplish this, Track 1 is lowered to reduce the TOR elevation difference between Track 1 and Track 3 which will allow a reduction in track centers (from 17’-5” to 16-6”). While this approach results in a widened track center between Track 1 and Track 2 a set of reverse curves are required on each end of the station. These curves roughly follow the existing shift of Track 3 to shift Track 1 relative to Track 3. This does not achieve a 16’-0” main track center throughout; however, provides an improved condition without necessitating structural modification to the existing parking garage. Offset station platforms will be required and if the existing gauntlet alignment on Track 3 is brought into service, a DER may be required for a reduced Track 3 to Track 1 center as the gauntlet track centerline would be less than 16’-0” from proposed Track 1.

3. Alternative 3

This approach seeks to limit modifications to the existing tracks and the existing parking structure by locating the proposed Track 4 and platform within the existing structure’s footprint. Several as-built catenary portals under the existing parking structure were designed to accommodate the future construction of Track 4 at an offset of 14’-0” from the existing Track 2 alignment. This alternative would also widen the mainline track centers at the proposed interlocking locations to provide 13’-0” minimum for the new #20 crossovers.

However, it would reduce project impact on train operations during construction, limit the scope of required overhead bridge modifications and possibly eliminate a parking structure crash wall because of the presence of the station platform between the structure and track 4.

OCS Summary

The Electric Traction system within the project limits was installed in 1999-2000 as part of Amtrak's Northend Electrification Project. Components include the Overhead Catenary System (OCS), ancillary conductors, sectionalizing switches, power huts and commercial utility connections, switch heater equipment and interlocking lighting.

- The OCS is comprised of the typical Northend simple autotension system covering both tracks 1 and 2, each with an accompanying aerial feeder (FDR) and static wire (SW).
- Support and registration assemblies are standard arrangements and the support structures are generally two-track cantilevers, with occasional portals, comprised of tubular steel poles and beams.
- Three portal structures were installed within and as part of the T.F. Green Station in 2010, with wide flange beams. Buried telecom resides on the roadway side of track 2.
- Most of the conductors are attached to the overhead bridges

It should be noted that based on the field investigation, the existing overhead bridge vertical clearances will not accommodate both OCS and AAR Plate H equipment on track 3, and an analysis of a combination of potential track 3 undercutting and bridge modifications will be required .

OCS design will be governed by applicable Amtrak and AREMA criteria, including AED-1 and 2, C.E.500B and the Amtrak Northend Electrification (NEE) standards. Key design considerations include:

- Contact wire gradient limits per NEE standards are maintained at all overhead bridges and T.F. Green Station.
- Avoid utilizing track 3 & 4 overhead bridge attachments
- Utilize tunnel arm assemblies where limited vertical clearances dictate the use of low profile OCS
- Minimum horizontal clearance to the face of new OCS columns where practical is 12'-0" plus allowance for curved track, per AED-1
- Minimum electrical clearances are 10" static and 8" passing, per NEE standards

Track 3 Electrification – Packard and Barden to Post

Electrification of track 3 between the two segments of Packard will require installation of single track cantilever structures based on Amtrak Northend Electrification standards (with standard

systemwide foundations), with the exception of the Main Avenue overhead bridge, described below. An approximately 600' long retaining wall is adjacent to track 3 at Packard. This wall is comprised of steel H-piles with precast concrete panels, and sufficient space will permit the installation of new OCS foundations, as demonstrated by existing portal structure 175-9 / 175-10. East of Barden, single track cantilever structures as previously described may be installed, with certain exceptions described below.

Track 3 & 4 Electrification – Packard Extension to Barden

The addition of track 4 will impact 110 OCS poles (42 two-track cantilever and 34 portals). To support an electrified four-track railroad, these structures may be replaced with new four-track portals based on Amtrak NEE standards (with standard systemwide foundations). These portals will also support the track 3 OCS. While the existing portals may be modified in lieu of replacement, operational impacts must be considered. Specific constraints to be addressed are described below.

OCS considerations at existing overhead bridges within the project limits will require evaluation according to the following

Main Avenue Overhead Bridge

- Horizontal clearance precludes new OCS foundations, although this abutment's exposed footing may accommodate pedestals for new stub poles
- The minimum track 3 vertical clearance for this bridge is the east fascia, at 21.41'.

Airport Connector Overhead Bridge

- Horizontal clearance to the track 3 and 4 sides will accommodate new stub poles, although impacts to the abutments will require investigation
- The minimum track 3 vertical clearance for this bridge is the east fascia, at 21.26'.

TF Green Station

- Track Alternatives 1 and 2 will impact the track 4 poles of the three existing portal structures. Solutions for OCS supports through the station include:
- Removal of the portal beams and installation of drop tubes from the overbuild T-beams, potentially in combination with installation of track 3 cantilevers on the remaining poles, and garage wall-mounted track 4 brackets.

Coronado Road Overhead Bridge

- The existing horizontal clearance to the tracks 3 and 4 side abutment and pier precludes new OCS foundations, although the exposed footing of track 3 side may accommodate pedestals for new stub poles

- The minimum track 3 vertical clearance for this bridge is the east fascia, at 21.66'.

Warwick Paralleling Station

- New track 4 will impact four existing track 2 feeder poles and three portals which carry feeder and OCS sectionalizing equipment

Lincoln Avenue Undergrade Bridge

- A set of retaining wall panels may be modified with integrated OCS foundations at the necessary locations

RI 37 / Lincoln Freeway Overhead Bridges

- The existing horizontal clearance is 6'-7 ½", which precludes OCS foundations along track 3 piers
- The minimum track 3 vertical clearances for these bridges are 21.30' (east fascia northbound bridge) and 21.58' (west fascia southbound bridge)
- Based on observation, these bridges may be candidates for replacement.

Signaling Summary

Although the three alternative track designs being proposed may impact existing signal system facilities in different ways (expected to be cableway, equipment enclosure or wayside signal structure impacts, as yet to be determined), the signal system block design and signal layout to serve the alternatives are similar.

- The new and modified signaling proposed in support of new Track 4 at the TF Green Airport station will be based on the concepts shown in the schematic drawing "Typical 80 MPH Diverge Station Siding" provided with the Task Order Scope of Services.
- Regardless of either an extended interlocking or an entirely new interlocking at Packard being established, operationally there appears to be no meaningful difference (except perhaps for the movement of Track Cars). The separate interlocking approach, however, is expected to be more ACSES compatible, appearing as a standard nested signal application for Positive Train Stop at the second home signal (both eastward and westward).
- New eastward home signals will be provided on Tracks 1 and 2
- New westward home signals on Tracks 1, 2 and 4, for the new switches of the extended "Packard"
- New "Barden" Interlocking east of the station will be provided with eastward home signals on Tracks 1, 2 and 4 and westward home signals on Tracks 1 and 2
- Existing "Post" Interlocking will be modified to add an eastward home signal on Track 2 and a new westward home signal bridge or cantilever placed east of the new #20 crossover

- Present westward distant signals to “Packard” on tracks 1 and 2 (1767-1 and 1767 -2), and the eastward distant signal to Post on Track 1, are expected to retire, with the new home signals between Packard and Post providing appropriate distant aspects instead. Only the respective distant signals on Track 3 are expected to remain, since there are no new interlocking home signals being added on Track 3 in this section.

Alternatives Summary Matrix

Criteria	Alternative 1	Alternative 2	Alternative 3
Existing Track Centers	Realigned to meet current Amtrak standards	Realigned to meet current Amtrak standards	No change
Proposed Track Centers	Meets current Amtrak standards	Meets current Amtrak standards	DER Required - 14'-0"
Horizontal Clearances (Existing)			
Connector Road (31'-0")	DER Required - 11'-3" (+/-)	DER Required - 12'-3" (+/-)	16'-10" (+/-)
Parking Structure (27'-3")	Structural modification	DER Required - 8'-7" (+/-)	DER Required - 13'-3" (+/-)
Coronado Road (22'-4")	Bridge Replacement	Bridge Replacement	DER Required - 8'-4" (+/-)
Vertical Clearances	No change	Improved	No change
Track work on existing Main Tracks	Moderate (Shift Track 2)	Significant (Undercut and align Track 1 and 2)	Minimized (Interlockings only)
Station Platform Location	Offset	Offset	Parallel
Interlocking Track Centers	Meets current Amtrak standards	Meets current Amtrak standards	Realign mains to 13'-0 min (DER Required)
OCS Structures	Significant replacement	Significant replacement	Significant replacement
OCS Structure Attachment Impacts	Station portal mods or replacement and attachment modifications at 3 OHBs	Station portal mods or replacement and attachment modifications at 3 OHBs	Limited modifications
Crashwall Scope	3+ Locations	3+ Locations	2+ Locations

Architecture Summary

The proposed new TF Green Station platform is located at the TF Green Car Rental / parking garage facility in Warwick, Rhode Island. Three sets of tracks run through the garage at grade level. The right of way through the garage is +-76'w x 300' long. The western most track - track (3) has a 850' long high level platform that facilitates diesel MBTA commuter rail service. The platform has a vertical circulation core up to the third level of the garage where passengers have access to an elevated and enclosed walkway (Skywalk) to TF Green Airport. The circulation core has a 48" wide stair and a single elevator. The existing garage and Skywalk were constructed in 2010.

Based on the currently proposed track alternatives, the diagram below summarizes the relationship between the structural columns and the various track alternatives. This lay-out drawing at a preliminary level indicates that a platform suitable for level boarding cannot fit below the garage and accommodate the minimum width necessary for passenger circulation and flow for alternates 1 and 2.

For track alternates 1 and 2, the platform would start at the south edge of the existing garage. In this case we have a condition where the primary entrance is at one end of the platform with a minimum of two additional emergency exits or egress points required per code, NFPA 130. Easements or land acquisitions may be necessary to get the public to a point of safety and still meet the 6 min egress requirements.

For track alternate 3, the platform would start 100' north of the northern edge of the garage and pass through/under the garage. This scenario would have the primary entrance around the mid point of the platform which is preferred. An emergency exit will also be required at each end of the platform. On the north side it appears that land is part of the garage already. On the southern end, an easements or land acquisitions may be necessary to get to a public way and still meet the 6 min egress requirements.

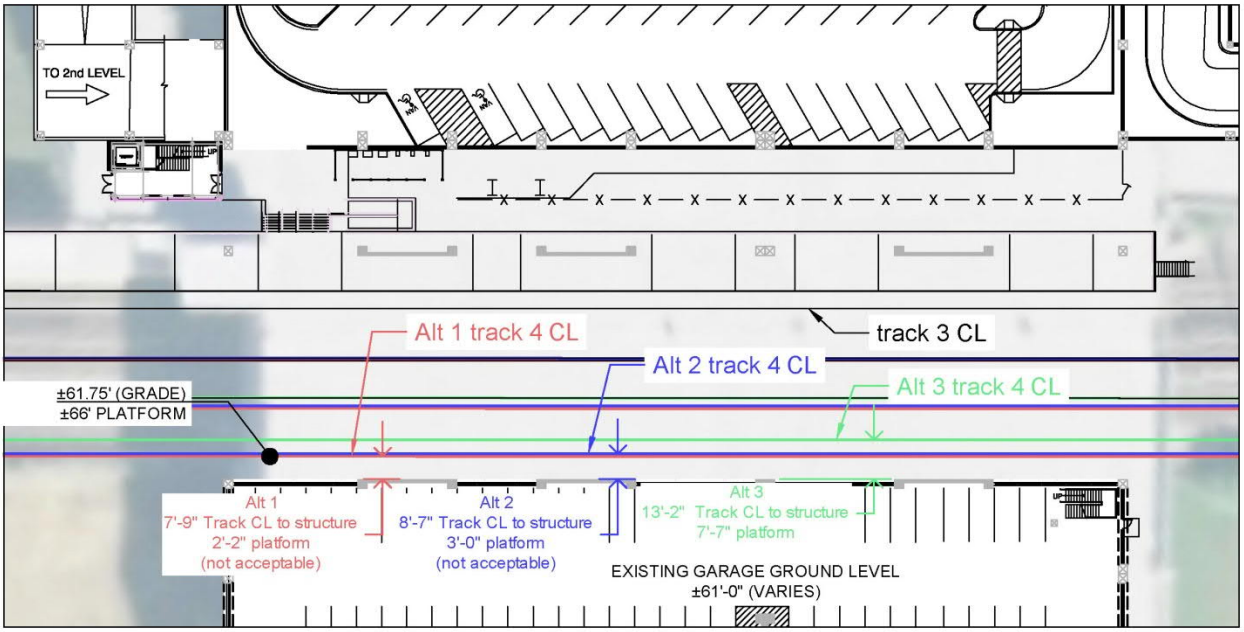


Figure 1: Proposed Track Alternatives at Garage

A new station lobby and vertical circulation core is proposed directly adjacent the new platform. The station lobby would contain any Amtrak ticketing and office space as well as a comfortable place for passengers to wait. A retail and/or restaurant component is encouraged as well for passenger convenience. A minimum of one elevator and approximately 5' stair will be required to get passengers from the platform level up to level three of the garage. The vertical rise between the platform and level 3 of the garage is approximately 29' so escalators should be considered, depending on the anticipated ridership.

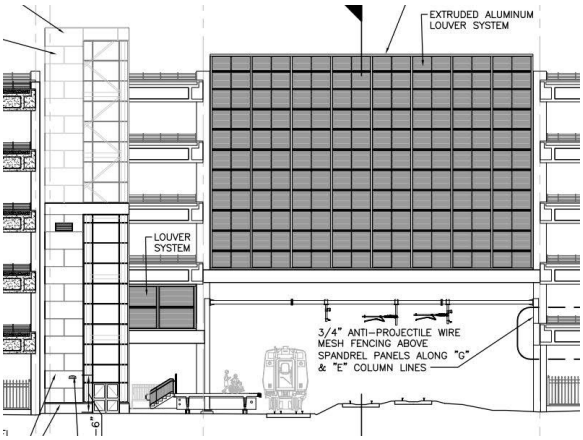
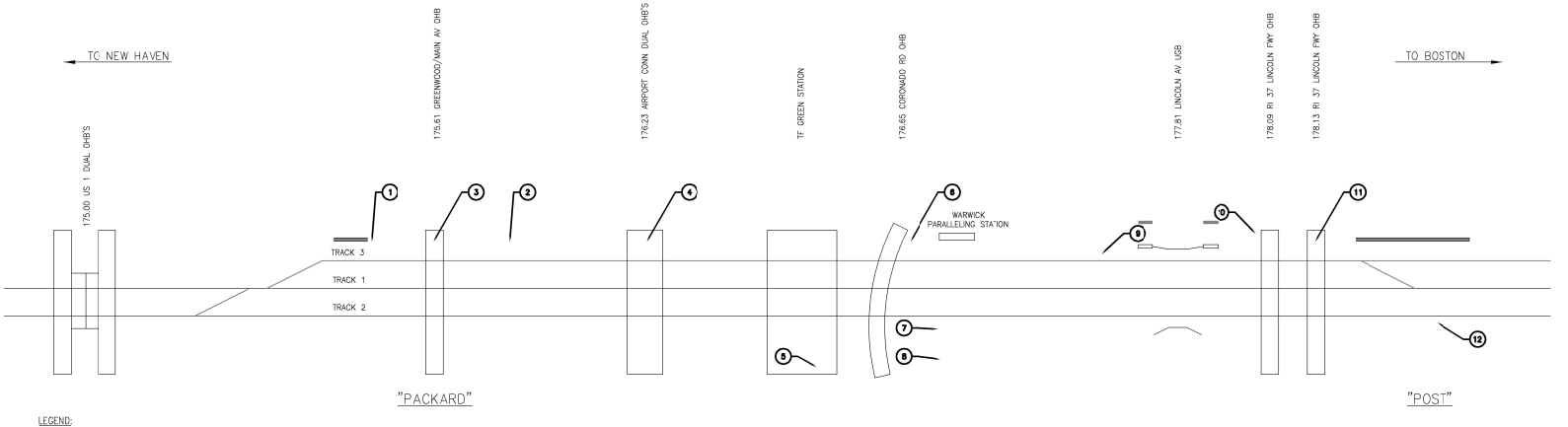


Figure 2: Existing Garage Elevation

We have two options for locating the new lobby and circulation core. The first option is to build a new stand-alone structure directly adjacent the garage. This option gives us the flexibility to put whatever vertical circulation and program required as well as set the floor level at the platform level. The second option is to utilize some portion of the ground level of the garage as well as possibly its elevators. This option has a significant flaw in that passengers would have to go down stairs/ramp off the platform to get down to the ground level of the garage (approximately 5' below platform). Elevating the floor of the garage to make a level transition between the platform and lobby is an option and plausible since the bottom of the garage beam's is approximately 16.5' above the floor today. Pertaining utilizing the existing elevators, this also is problematic since passengers would have to walk through the garage and cross a vehicular entrance.

SITE PHOTOS



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 V.P., Chief Engineer is prohibited.

No	Revisions	Date	By

AMTRAK

OFFICE OF
V.P., Chief Engineer
Engineering
National Railroad Passenger Corporation
30TH Street Station–Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL. 215-735-0832

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
EXISTING CONDITIONS
PHOTO KEY SHEET

Designed: RJR | Drawn: RJR | Checked: MJA | Date: 06/14/2019

File No.:
Ref. No.:
Sheet No:

PL-0

Jun, 20 2019 03:05 pm \\usphl1fp002\data\Projects\60605010 Amtrak Warwick Station 10% Design\900-CAD-GIS\910-CAD\20-SHEETS\OCS\TF Green OCS Schematic.dwg By: rookr

Photo 1: Looking West within Packard I/L

Photo 2: Looking East within Packard Extension

Photo 3: Looking West Main Ave OHB

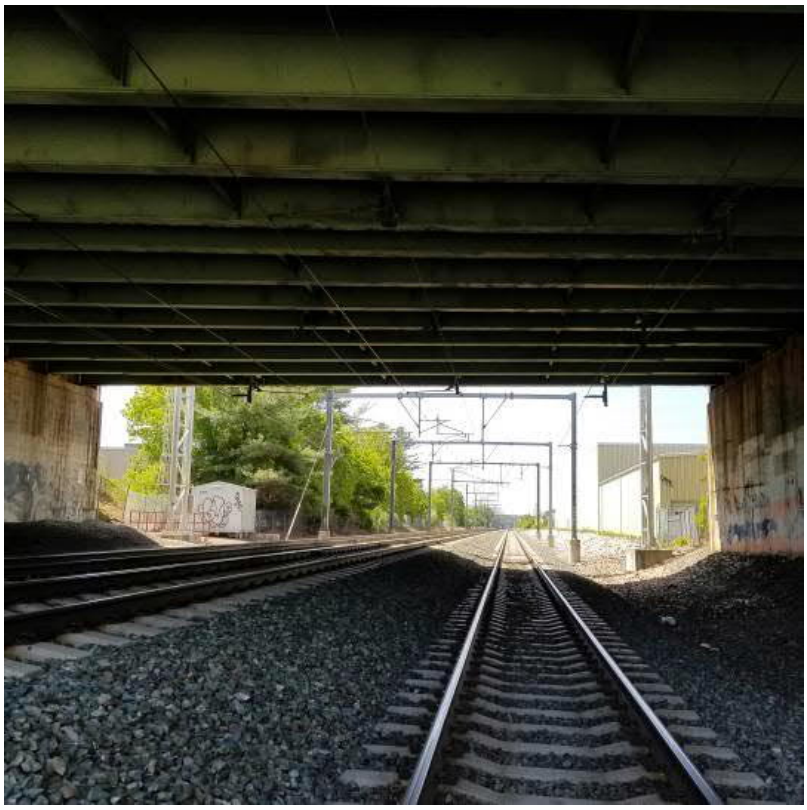


Photo 4: Looking West Airport Connector Road

Photo 5: Looking East TF Green Station

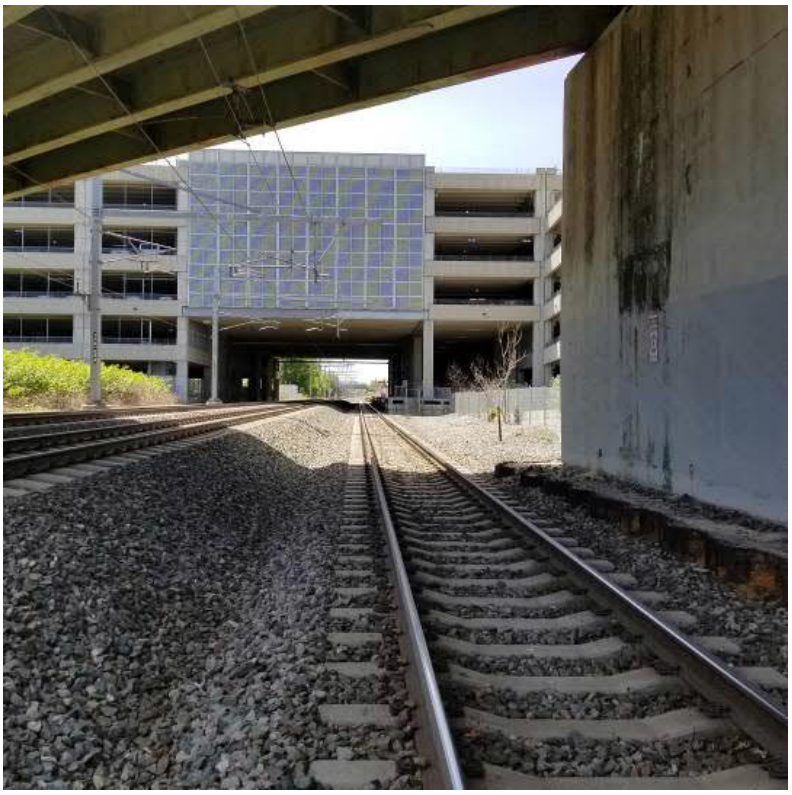


Photo 6: Looking West Coronado Rd OHB

Photo 7: Looking East at Warwick Paralleling Station

Photo 8: Looking West Warwick Paralleling Station

Photo 9: Looking West Lincoln Ave UGB

Photo 10: FDR on north face RI 37 Pier Track 3

Photo 11: Looking West RI 37 SBOHB

Photo 12: Looking West within Post Interlocking

CONCEPT DRAWINGS

TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN

CONCEPT DESIGN

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

No.	Revisions	Date	By
	Bid# 7611810		

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
COVER SHEET

T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design & EA

Designed: AL | Drawn: GN | Checked: ZG | Date: 06/21/2019

File No.:
Ref No.:
Sheet No.: 1 OF 19
Drg. No. G-000

\\usphl1fp002\data\Projects\60605010 Amtrak Warwick Station 10% Design\900-CAD-GIS\910-CAD\20-SHEETS\TRACK\ALTERNATIVE SHEETS\000-WAR-TK-COVER SHEET.dgn
6/21/2019 6:07:15 PM

TO NEW HAVEN

TO BOSTON

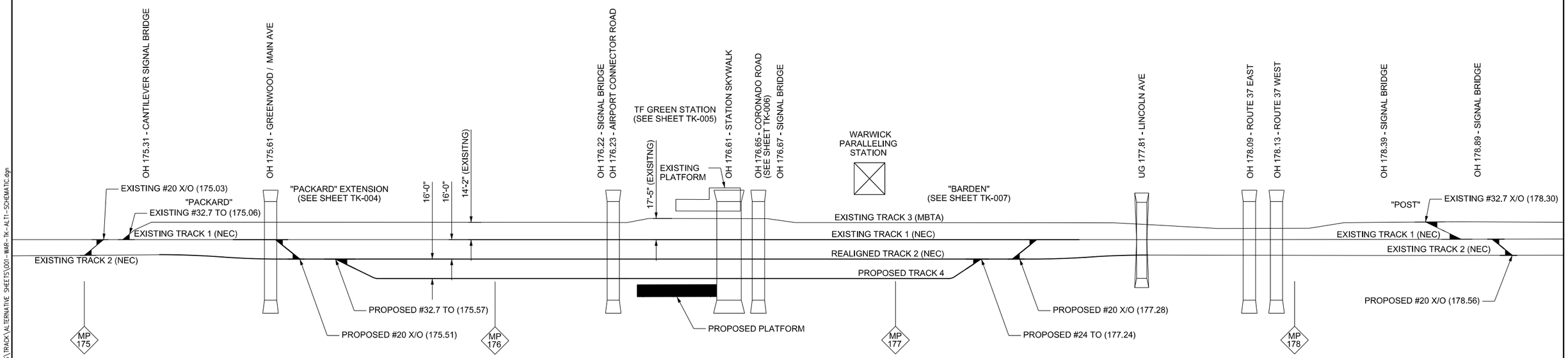
ALTERNATIVE 1 SUMMARY

ALTERNATIVE 1 MAINTAINS THE EXISTING TRACK 1 AND TRACK 3 ALIGNMENTS WITH AN EXISTING TRACK CENTER OF 17'-5"(+/-) THROUGH THE STATION.

WHILE THIS ALTERNATIVE LIMITS REALIGNMENT OF THE EXISTING TRACKS, IT PROVIDES CURRENT MINIMUM TRACK CENTERS OF 16'-0" FOR 150 MPH ADJACENT TRACKS.

TRACK 1 TO TRACK 2 CENTERS ARE WIDENED BY REALIGNING TRACK 2 BETWEEN "PACKARD"AND "BARDEN."
THIS ALTERNATIVE WILL RESULT IN THE WIDEST PROPOSED RIGHT OF WAY, REQUIRING STAGGERING THE END OF THE NEW PLATFORM FROM THE EXISTING PLATFORM ON TRACK 3.

POTENTIAL MODIFICATIONS, SUCH AS CRASH WALLS TO THE EXISTING PARKING STRUCTURE AND MODIFICATIONS AND/OR PARTIAL REPLACEMENT OF OVERHEAD BRIDGES ARE REQUIRED FOR SAFETY AND CLEARANCES.



STATION EQUALITIES	
MILEPOST	STATION
175	2726+25.00
176	2779+02.00
177	2831+71.00
178	2884+65.00
179	2937+52.00

ALTERNATIVE 1

NTS

NOTES:

1. STATIONING BASED ON REALIGNED TRACK 1, MATCHING STATIONING FROM AMTRAK 1980 AS BUILT PLANS.

2. STATION EQUALITIES BASED ON AS BUILT PLANS AND MILEPOST 178 TO 179 LENGTH OBTAINED FROM AMTRAK'S AB-SHORE LINE TRACK CHART.

CONCEPT DESIGN

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

No.	Revisions	Date	By
	Bid# 7611810		

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

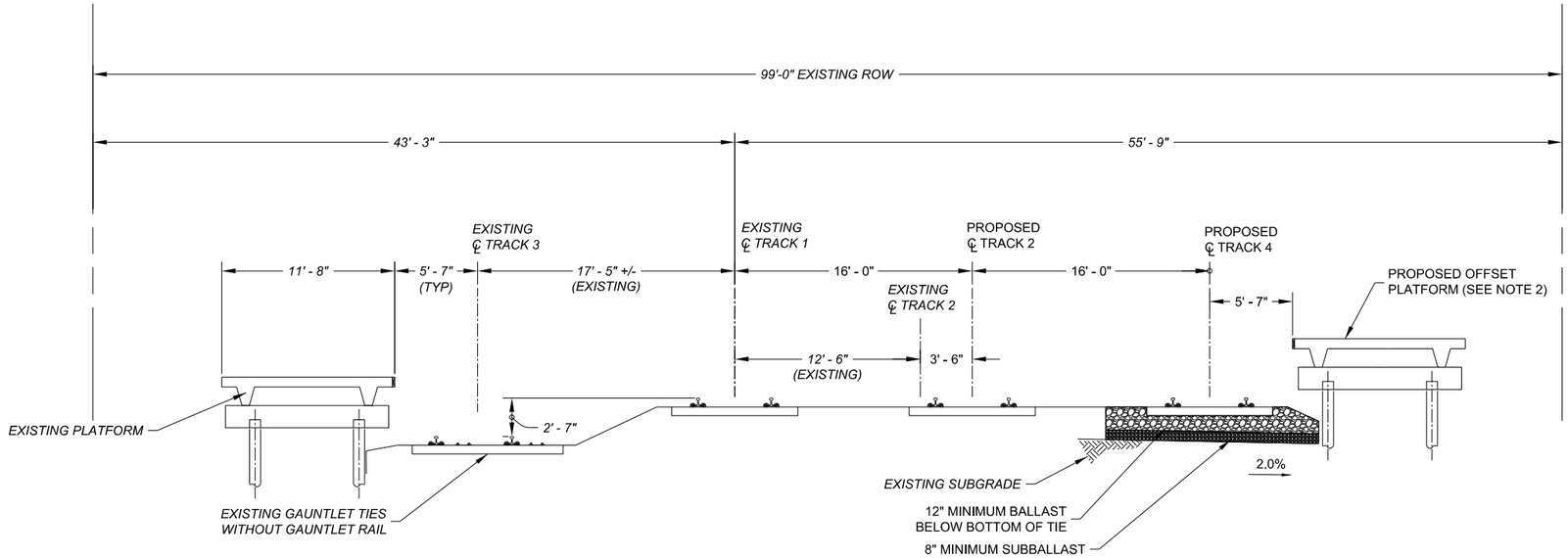
AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TRACK SCHEMATIC-ALTERNATIVE 1

T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design & EA

Designed: AL | Drawn: GN | Checked: ZG | Date: 06/21/2019

File No.: ALT1-SC
Ref No.:
Sheet No.: 2 OF 19
Drawing No. SC-002

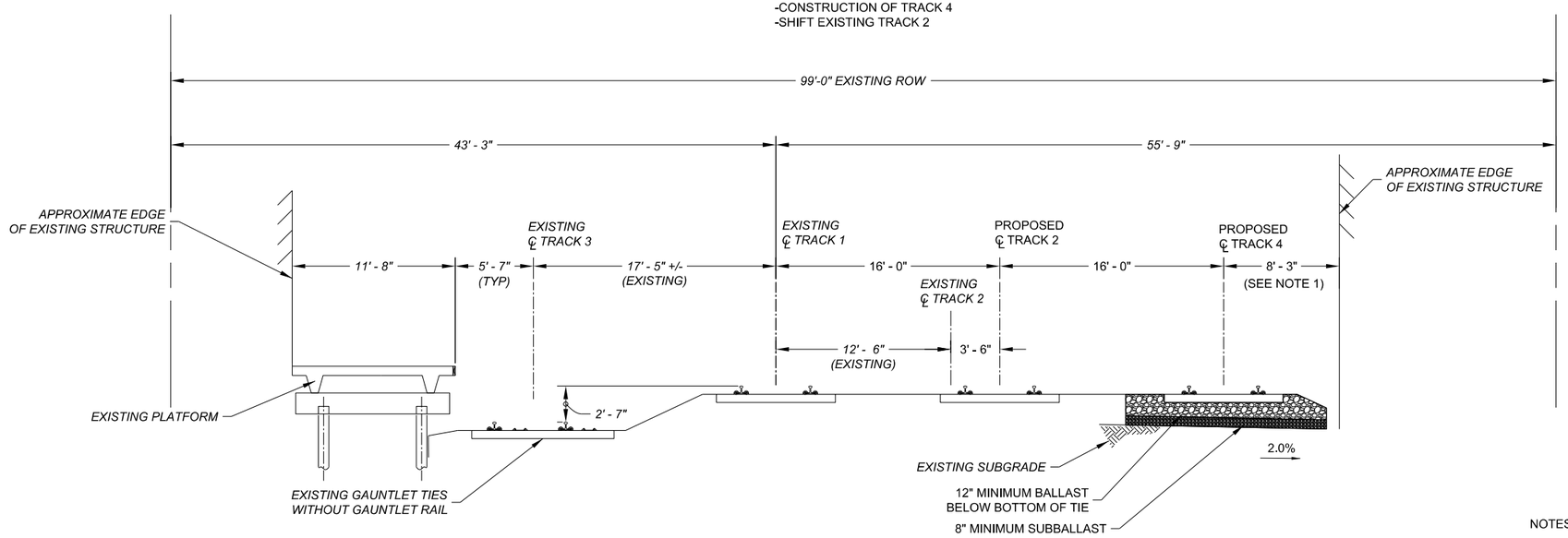
\\usphl1fp002\data\Projects\60605010 Amtrak Warwick Station 10% Design\900-CAD-GIS\910-CAD\20-SHEETS\TRACK\ALTERNATIVE SHEETS\001-WAR-TK-ALT1-SCHEMATIC.dgn
6/21/2019 6:07:19 PM



ALTERNATIVE 1 - SECTION AT PLATFORM

SCOPE OF TRACK WORK:

-CONSTRUCTION OF TRACK 4
-SHIFT EXISTING TRACK 2



ALTERNATIVE 1 - SECTION AT PARKING STRUCTURE

SCOPE OF TRACK WORK:

-CONSTRUCTION OF TRACK 4
-SHIFT EXISTING TRACK 2

NOTES:

1.STRUCTURAL MODIFICATIONS TO EXISTING PARKING STRUCTURE MAY BE REQUIRED

2. PROPOSED OFFSET PLATFORM LOCATED WEST OF EXISTING PARKING STRUCTURE

3. RIGHT OF WAY OBTAINED FROM VAL MAPS.

CONCEPT DESIGN

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

No.	Revisions	Date	By
	Bid# 7611810		

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM

1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TYPICAL SECTION - ALTERNATIVE 1

T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design &

Designed: AL | Drawn: GN | Checked: ZG | Date: 06/21/2019

File No.: ALT1-TYP
Ref No.:
Sheet No.: 3 OF 19
Drawing No. ATYP-003

\\usphl1p002\data\Projects\60605010 Amtrak Warwick Station 10% Design\900-CAD-GIS\910-CAD\20-SHEETS\TRACK\ALTERNATIVE SHEETS\002-WAR-TK-ALT1-TYP.dgn
6/21/2019 6:07:27 PM

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

No.	Revisions	Date	By

Bid# 7611810

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TRACK PLAN - ALTERNATIVE 1
STA 2749+67 TO 2764+67
T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design & EA

Designed: AL | Drawn: GN | Checked: ZG | Date: 06/21/2019

File No.: ALT1-PLAN
Ref No.:
Sheet No.: 4 OF 19
Drawing No. TK-004

\\usphil1fp002\data\Projects\60605010 Amtrak Warwick Station 10% Design\900-CAD-GIS\910-CAD\20-SHEETS\TRACK\ALTERNATIVE SHEETS\003-WAR-TK-ALT1-PACKARD.dgn
6/21/2019 6:10:02 PM

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

\\usphil1fp002\data\Projects\60605010 Amtrak Warwick Station 10% Design\900-CAD-GIS\910-CAD\20-SHEETS\TRACK\ALTERNATIVE SHEETS\004-WAR-TK-ALT1-STATION.dgn

6/21/2019 6:12:12 PM

No.	Revisions	Date	By
	Bid# 7611810		

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TRACK PLAN - ALTERNATIVE 1

T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design & EA
STA 2795+32 TO 2811+32

Designed: AL | Drawn: GN | Checked: ZG | Date: 06/21/2019

File No.: ALT1-PLAN
Ref No.:
Sheet No.: 5 OF 19
Drawing No. TK-005

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

\\usphil1p002\data\Projects\60605010 Amtrak Warwick Station 10% Design\900-CAD-GIS\910-CAD\20-SHEETS\TRACK\ALTERNATIVE SHEETS\005-WAR-TK-ALT1-CORONADO ROAD.dgn

6/21/2019 6:14:08 PM

No.	Revisions	Date	By
	Bid# 7611810		

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TRACK PLAN - ALTERNATIVE 1
STA 2811+32 TO 2827+32
T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design & EA

File No.:	ALT1-PLAN
Ref No.:	
Sheet No.:	6 OF 19
Drawing No.	TK-006

Designed: AL	Drawn: GN	Checked: ZG	Date: 06/21/2019

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

\\usphil1p002\data\Projects\60605010 Amtrak Warwick Station 10% Design\900-CAD-GIS\910-CAD\20-SHEETS\TRACK\ALTERNATIVE SHEETS\006-WAR-TK-ALT1-BARDEN.dgn

6/21/2019 6:16:46 PM

No.	Revisions	Date	By
	Bid# 7611810		

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design & EA

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TRACK PLAN - ALTERNATIVE 1
STA 2837+54 TO 2853+54

Designed: AL | Drawn: GN | Checked: ZG | Date: 06/21/2019

File No.:	ALT1-PLAN
Ref No.:	
Sheet No.:	7 OF 19
Drawing No.	TK-007

TO NEW HAVEN

TO BOSTON

ALTERNATIVE 2 SUMMARY

ALTERNATIVE 2 LIMITS THE IMPACT OF NEW TRACK 4 ON THE EXISTING PARKING STRUCTURE WHILE IMPROVING EXISTING MAINLINE TRACK CENTERS.

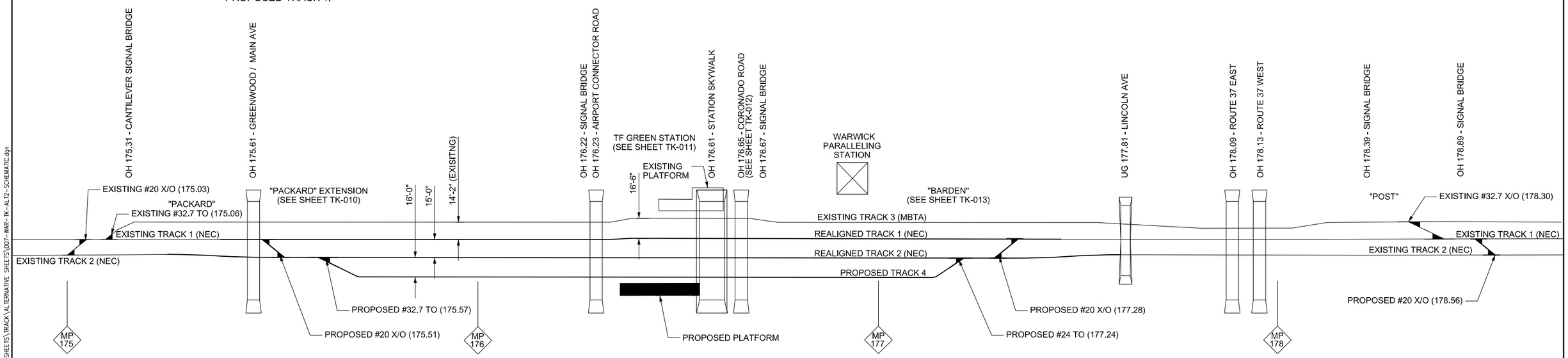
TRACK 1 TOP OF RAIL IS LOWERED TO REDUCE THE VERTICAL DIFFERENCE BETWEEN TRACK 1 AND TRACK 3, WHICH ALLOW FOR A REDUCTION OF THEIR TRACK CENTERS FROM 17'-5"+/- TO 16-6"+/-.

ALTHOUGH IT WIDENS MAIN TRACK CENTER BETWEEN TRACK 1 AND TRACK 2 WITH A SET OF REVERSE CURVES REQUIRED ON EACH SIDE OF THE STATION TO SHIFT TRACK 1 RELATIVE TO TRACK 3. THIS DOES NOT ACHIEVE DESIRED 16'-0"MAIN TRACK CENTERS.

ALTERNATIVE 2 DOES NOT REQUIRE STRUCTURAL MODIFICATION TO THE EXISTING PARKING GARAGE.

THE NEW PLATFORM WILL BE STAGGERED FROM THE EXISTING PLATFORM ON TRACK 3.

IF THE EXISTING GAUNTLET ALIGNMENT ON TRACK 3 IS BROUGHT INTO SERVICE, A DESIGN EXCEPTION REQUEST MAY BE REQUIRED SINCE THE GAUNTLET TRACK CENTERLINE WOULD BE LESS THAN 16'-0"FROM PROPOSED TRACK 1.



STATION EQUALITIES	
MILEPOST	STATION
175	2726+25.00
176	2779+02.00
177	2831+71.00
178	2884+65.00
179	2937+52.00

ALTERNATIVE 2

NTS

NOTES:

1. STATIONING BASED ON REALIGNED TRACK 1, MATCHING STATIONING FROM AMTRAK 1980 AS BUILT PLANS.

2. STATION EQUALITIES BASED ON AS BUILT PLANS AND MILEPOST 178 TO 179 LENGTH OBTAINED FROM AMTRAK'S AB-SHORE LINE TRACK CHART.

CONCEPT DESIGN

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

No.	Revisions	Date	By
	Bid# 7611810		

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

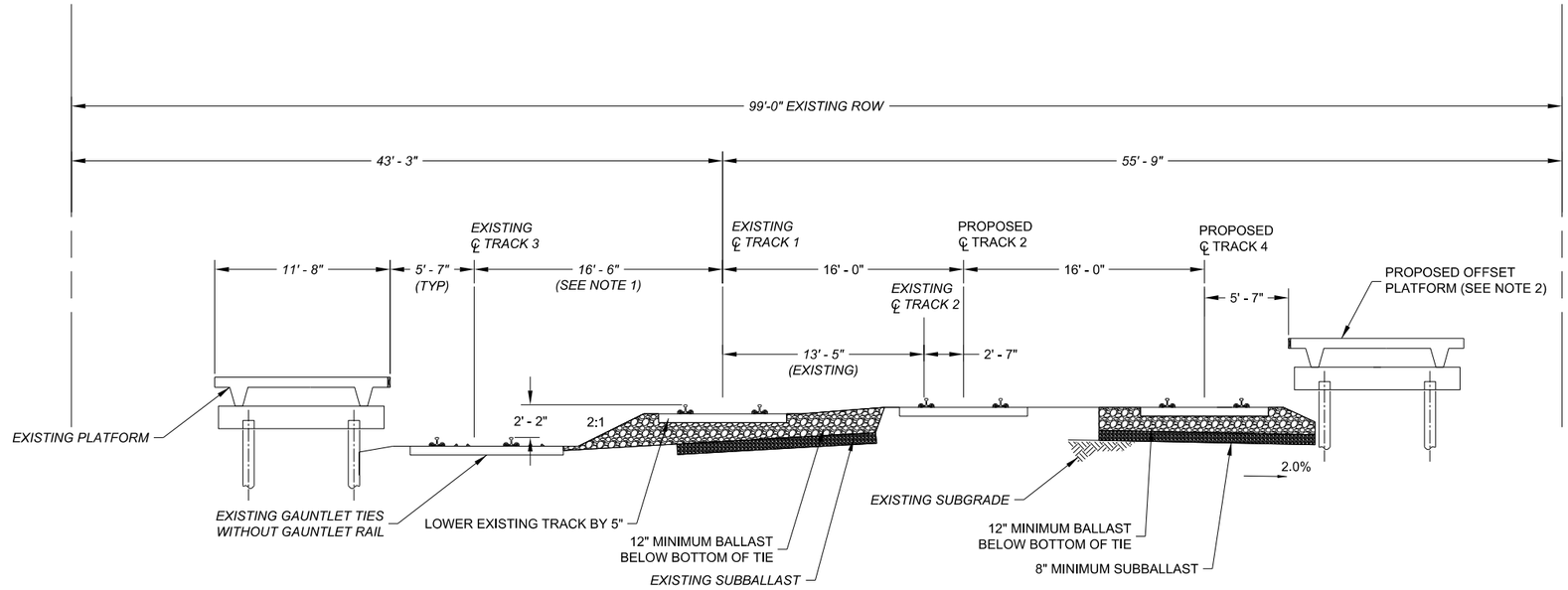
T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design & EA

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TRACK SCHEMATIC - ALTERNATIVE 2

Designed: AL | Drawn: GN | Checked: ZG | Date: 06/21/2019

File No.: ALT2-SC
Ref No.:
Sheet No.: 8 OF 19
Drawing No. SC-008

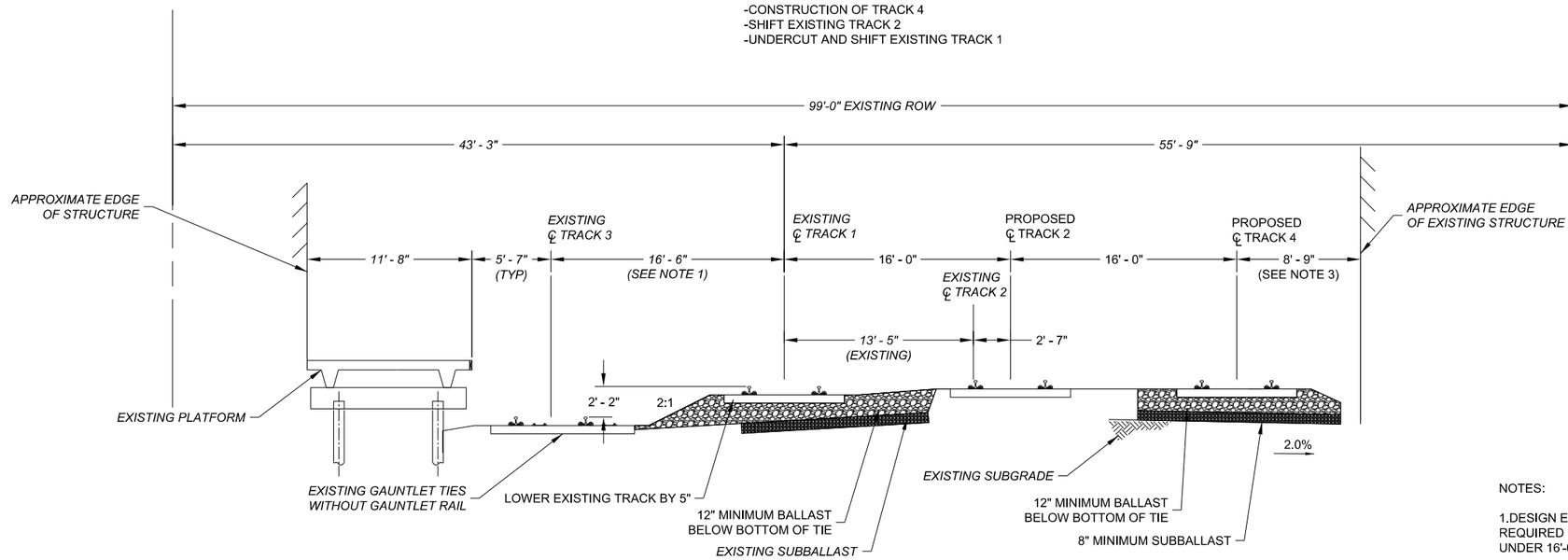
\\usphl1fp002\data\Projects\60605010 Amtrak Warwick Station 10% Design\900-CAD-GIS\910-CAD\20-SHEETS\TRACK\ALTERNATIVE SHEETS\007-WAR-TK-ALT2-SCHEMATIC.dgn
6/21/2019 6:16:48 PM



ALTERNATIVE 2 - SECTION AT PLATFORM

SCOPE OF TRACK WORK:

-CONSTRUCTION OF TRACK 4
-SHIFT EXISTING TRACK 2
-UNDERCUT AND SHIFT EXISTING TRACK 1



ALTERNATIVE 2 - SECTION AT PARKING STRUCTURE

SCOPE OF TRACK WORK:

-CONSTRUCTION OF TRACK 4
-SHIFT EXISTING TRACK 2
-UNDERCUT AND SHIFT EXISTING TRACK 1

NOTES:

1.DESIGN EXCEPTION REQUEST WILL BE REQUIRED FOR FUTURE GAUNTLET TRACK UNDER 16'-0" TRACK CENTERS

2. PROPOSED OFFSET PLATFORM LOCATED WEST OF EXISTING PARKING STRUCTURE

3.DESIGN EXCEPTION REQUEST FOR RESTRICTED CLEARANCE

4. RIGHT OF WAY OBTAINED FROM VAL MAPS.

CONCEPT DESIGN

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

No.	Revisions	Date	By
	Bid# 7611810		

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design &

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TYPICAL SECTION - ALTERNATIVE 2

Designed: AL | Drawn: GN | Checked: ZG | Date: 06/21/2019

File No.: ALT2-TYP
Ref No.:
Sheet No.: 9 OF 19
Dwg No. ATYP-009

6/21/2019 6:16:56 PM \\usphl1fp002\data\Projects\60605010 Amtrak Warwick Station 10% Design\900-CAD-GIS\910-CAD\20-SHEETS\TRACK\ALTERNATIVE SHEETS\008-WAR-TK-ALT2-TYP.dgn

CONCEPT DESIGN

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

No.	Revisions	Date	By

Bid# 7611810

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TRACK PLAN - ALTERNATIVE 2
STA 2749+90 TO 2764+90

T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design & EA

Designed: AL | Drawn: GN | Checked: ZG | Date: 06/21/2019

File No.:	ALT2-PLAN
Ref No.:	
Sheet No.:	10 OF 19

DWG No. TK-010

\\usphilfp002\data\Projects\60605010 Amtrak Warwick Station 10% Design\900-CAD-GIS\910-CAD\20-SHEETS\TRACK\ALTERNATIVE SHEETS\009-WAR-TK-ALT2-PACKARD.dgn

6/21/2019 6:19:45 PM

CONCEPT DESIGN

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

No.	Revisions	Date	By
	Bid# 7611810		

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TRACK PLAN - ALTERNATIVE 2
T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design & EA
STA 2795+32 TO 2811+32

Designed: AL | Drawn: GN | Checked: ZG | Date: 06/21/2019

File No.: ALT2-PLAN
Ref No.:
Sheet No.: 11 OF 19
Dwg No.: TK-011

6/21/2019 6:23:01 PM \\usph1fp002\data\Projects\60605010 Amtrak Warwick Station 10% Design\900-CAD-GIS\910-CAD\20-SHEETS\TRACK\ALTERNATIVE SHEETS\010-WAR-TK-ALT2-STATION.dgn

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

No.	Revisions	Date	By
	Bid# 7611810		

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design & EA

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TRACK PLAN - ALTERNATIVE 2
STA 2811+32 TO 2827+32

File No.:	ALT2-PLAN
Ref No.:	
Sheet No.:	12 OF 19
Dwg. No.	TK-012

Designed: AL | Drawn: GN | Checked: ZG | Date: 06/21/2019

\\usphilfp002\data\Projects\60605010 Amtrak Warwick Station 10% Design\900-CAD-GIS\910-CAD\20-SHEETS\TRACK\ALTERNATIVE SHEETS\011-WAR-TK-ALT2-CORONADO ROAD.dgn
6/21/2019 6:26:09 PM

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

\\uspnh1fp002\data\Projects\60605010 Amtrak Warwick Station 10% Design\900-CAD-GIS\910-CAD\20-SHEETS\TRACK\ALTERNATIVE SHEETS\012-WAR-TK-ALT2-BARDEN.dgn

6/21/2019 6:29:12 PM

No.	Revisions	Date	By

Bid# 7611810

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design & EA

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TRACK PLAN - ALTERNATIVE 2
STA 2837+54 TO 2853+54

Designed: AL Drawn: GN Checked: ZG Date: 06/21/2019

File No.:	ALT2-PLAN
Ref No.:	
Sheet No.:	13 OF 19

Drawing No. TK-013

TO NEW HAVEN

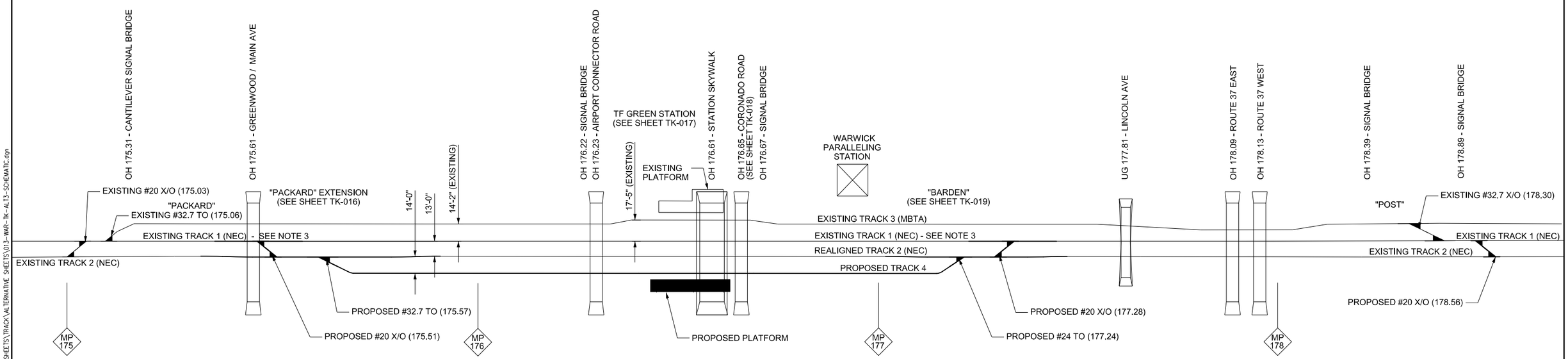
TO BOSTON

ALTERNATIVE 3 SUMMARY

ALTERNATIVE 3 LIMITS MODIFICATIONS TO THE EXISTING TRACKS AND PARKING STRUCTURE BY LOCATING THE PROPOSED TRACK 4 AND NEW PLATFORM WITHIN THE EXISTING PARKING STRUCTURE'S FOOTPRINT. THIS SHOULD MINIMIZE TRAIN OPERATIONS IMPACTS DURING CONSTRUCTION.

PROPOSED TRACK 4 TO EXISITNG TRACK 2 TRACK CENTERS WILL BE 14'-0"UNDER THE PARKING STRUCTURE AND EXISITNG TRACK CENTERS BETWEEN TRACKS S 1 AND 2 ARE WIDENED TO 13'-0"AT THE NEW TRACK 1 TO TRACK 2 INTERLOCKING #20 CROSSOVERS.

SEVERAL EXISTING CATENARY PORTAL STRUCTURES UNDER THE EXISTING PARKING STRUCTURE WILL ALREADY ACCOMMODATE THE PROPOSED TRACK 4 WITHOUT MODIFICATION.



STATION EQUALITIES	
MILEPOST	STATION
175	2726+25.00
176	2779+02.00
177	2831+71.00
178	2884+65.00
179	2937+52.00

ALTERNATIVE 3

NTS

NOTES:

1. STATIONING BASED ON REALIGNED TRACK 1, MATCHING STATIONING FROM AMTRAK 1980 AS BUILT PLANS.

2. STATION EQUALITIES BASED ON AS BUILT PLANS AND MILEPOST 178 TO 179 LENGTH OBTAINED FROM AMTRAK'S AB-SHORE LINE TRACK CHART.

3. EXISTING TRACK 1 AND TRACK 2 TRACK CENTERS REALIGNED TO 13'-0" THROUGH PROPOSED INTERLOCKING LIMITS FOR PROPOSED #20 CROSSOVER INSTALLATION

CONCEPT DESIGN

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

No.	Revisions	Date	By

Bid# 7611810

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM

1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

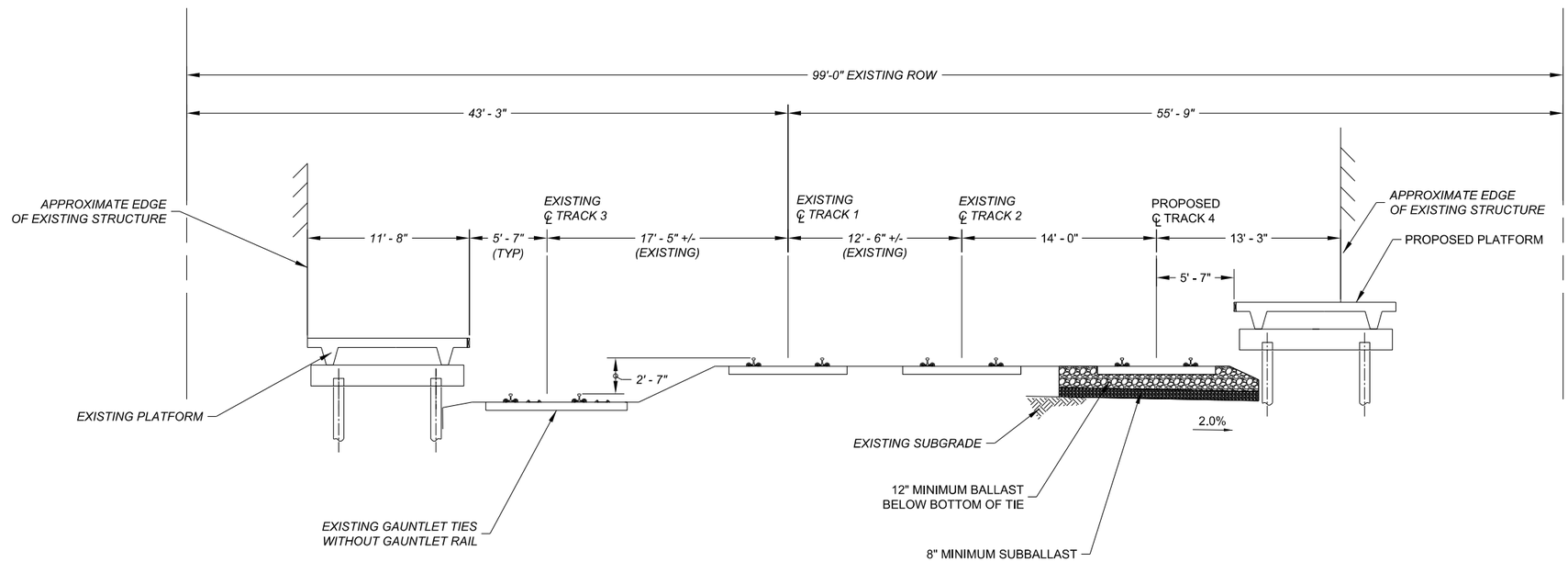
T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design & EA

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TRACK SCHEMATIC - ALTERNATIVE 3

Designed: AL | Drawn: GN | Checked: ZG | Date: 06/21/2019

File No.: ALT3-SC
Ref No.:
Sheet No.: 14 OF 19
Dwg. No. SC-014

\\usphlfp002\data\Projects\60605010 Amtrak Warwick Station 10% Design\900-CAD-GIS\910-CAD\20-SHEETS\TRACK\ALTERNATIVE SHEETS\013-WAR-TK-ALT3-SCHEMATIC.dgn
6/21/2019 6:29:14 PM



ALTERNATIVE 3 - SECTION AT PLATFORM / PARKING STRUCTURE

SCOPE OF TRACK WORK:

-CONSTRUCTION OF TRACK 4

NOTES:

1. RIGHT OF WAY OBTAINED FROM VAL MAPS.

CONCEPT DESIGN

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

No.	Revisions	Date	By
	Bid# 7611810		

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design &

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TYPICAL SECTION - ALTERNATIVE 3

Designed: AAL | Drawn: GN | Checked: ZG | Date: 06/21/2019

File No.: ALT3-TYP
Ref No.:
Sheet No.: 15 OF 19
Dwg No.: ATYP-015

\\usphil1p002\data\Projects\60605010 Amtrak Warwick Station 10% Design\900-CAD-GIS\910-CAD\20-SHEETS\TRACK\ALTERNATIVE SHEETS\014-WAR-TK-ALT3-TYP.dgn
6/21/2019 6:29:21 PM

NOTES:

1. EXISTING TRACK 2 REALIGNED TO PROVIDE 13'-0" TRACK CENTER TO TRACK 1 THROUGH PROPOSED INTERLOCKING LIMITS FOR PROPOSED #20 CROSSOVER INSTALLATION

CONCEPT DESIGN

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

No.	Revisions	Date	By
	Bid# 7611810		

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design & EA

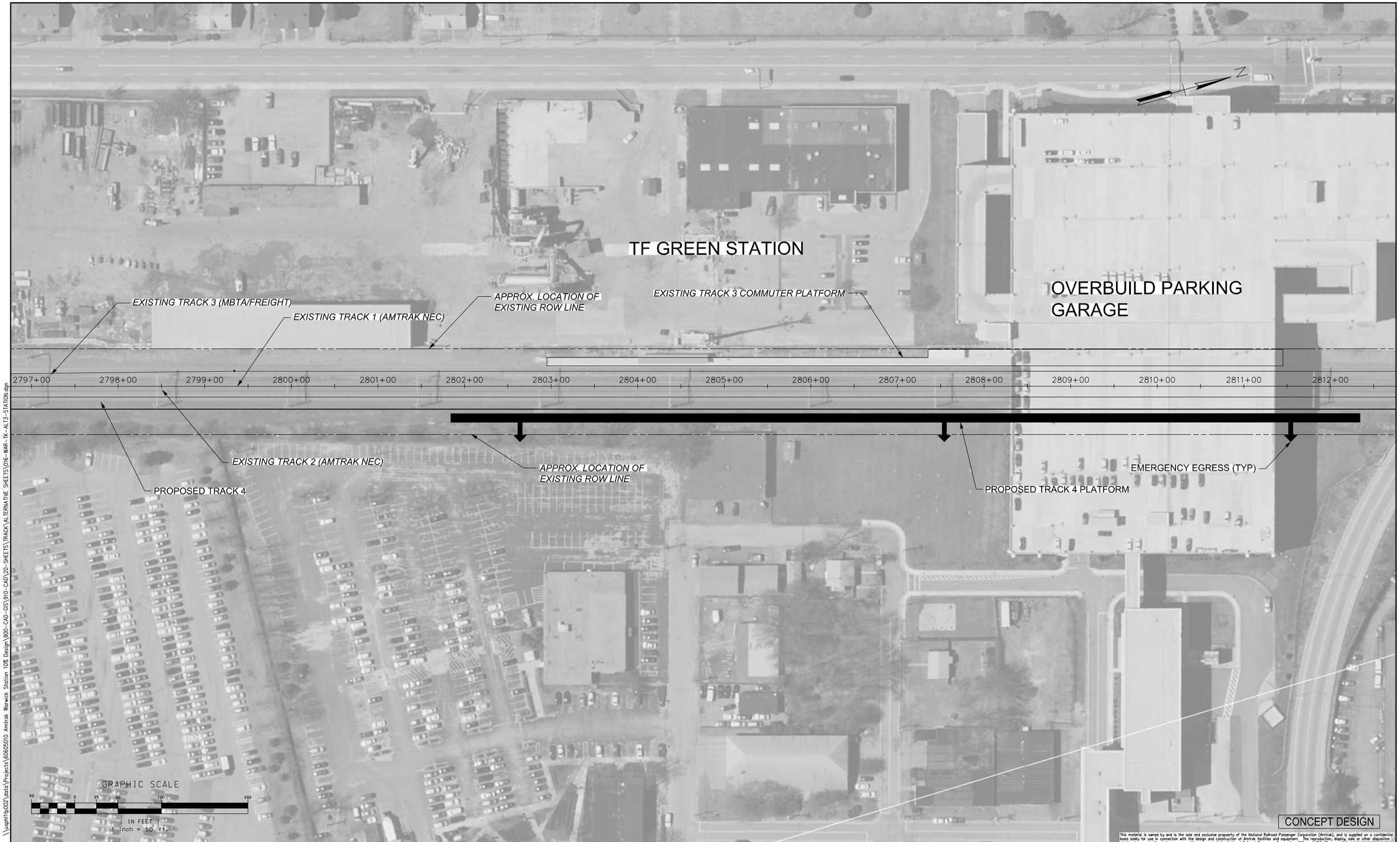
AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TRACK PLAN - ALTERNATIVE 3
STA 2748+94 TO 2764+94

Designed: AAL	Drawn: GN	Checked: ZG	Date: 06/21/2019

File No.:	ALT3-PLAN
Ref No.:	
Sheet No.:	16 OF 19
Drawing No.	TK-016

\\usphtlfs002\data\Projects\60605010 Amtrak Warwick Station 10% Design\900-CAD-GIS\910-CAD\20-SHEETS\TRACK\ALTERNATIVE SHEETS\015-WAR-TK-ALT3-PACKARD.dgn

6/21/2019 6:31:43 PM



CONCEPT DESIGN

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

No.	Revisions	Date	By
	Bid# 7611810		

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design & EA

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TRACK PLAN - ALTERNATIVE 3
STA 2798+75 TO 2812+75

File No.:	ALT3-PLAN
Ref No.:	
Sheet No.:	17 OF 19
Drawing No.	TK-017

Designed: AL	Drawn: GN	Checked: ZG	Date: 06/21/2019

\\usphilfp002\data\Projects\60605010 Amtrak Warwick Station 10% Design\900-CAD-GIS\910-CAD\20-SHEETS\TRACK\ALTERNATIVE SHEETS\016-WAR-TK-ALT3-STATION.dgn
6/21/2019 6:34:08 PM

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

No.	Revisions	Date	By
	Bid# 7611810		

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design & EA

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TRACK PLAN - ALTERNATIVE 3
STA 2814+75 TO 2827+75

Designed: AL | Drawn: GN | Checked: ZG | Date: 06/21/2019

File No.: ALT3-PLAN
Ref No.:
Sheet No.: 18 OF 19
Drawing No. TK-018

6/21/2019 6:37:09 PM \\usphilfp002\data\Projects\60605010 Amtrak Warwick Station 10% Design\900-CAD-GIS\910-CAD\20-SHEETS\TRACK\ALTERNATIVE SHEETS\017-WAR-TK-ALT3-CORONADO ROAD.dgn

NOTES:

1. EXISTING TRACK 2 REALIGNED TO PROVIDE 13'-0" TRACK CENTER TO TRACK 1 THROUGH PROPOSED INTERLOCKING LIMITS FOR PROPOSED #20 CROSSOVER INSTALLATION

CONCEPT DESIGN

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

No.	Revisions	Date	By

Bid# 7611810

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TRACK PLAN - ALTERNATIVE 3

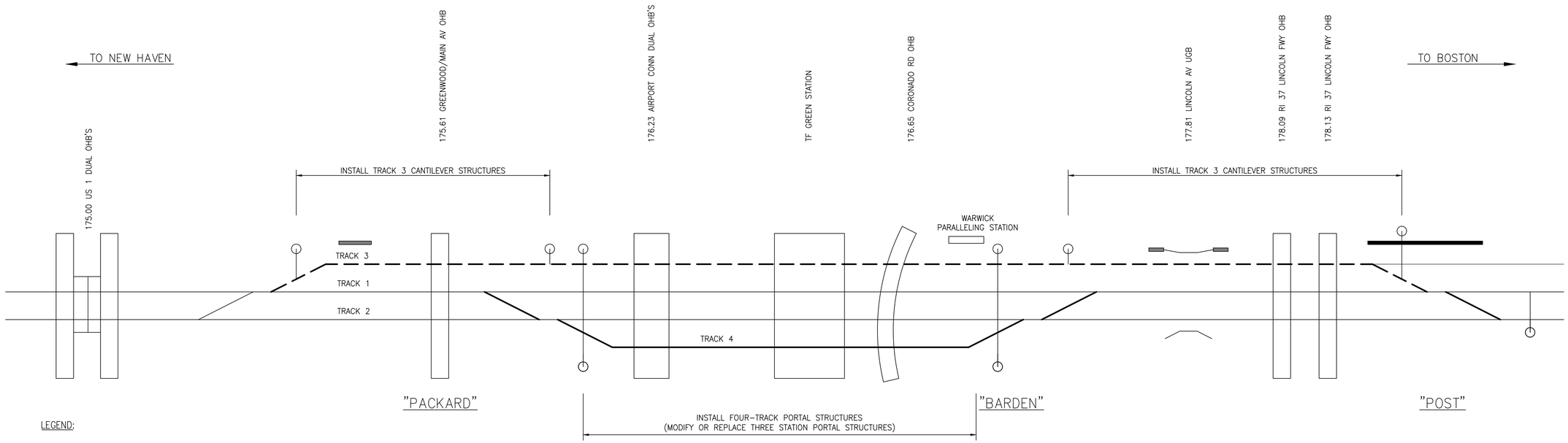
T.F. Green Airport Station - Proposed Interlocking Layout Preliminary Design & EA

STA 2837+54 TO 2853+54

Designed: AL | Drawn: GN | Checked: ZG | Date: 06/21/2019

File No.: ALT3-PLAN
Ref No.:
Sheet No.: 19 OF 19
Drawing No. TK-019

\\usphil1p002\data\Projects\60605010 Amtrak Warwick Station 10% Design\900-CAD-GIS\910-CAD\20-SHEETS\TRACK\ALTERNATIVE SHEETS\018-WAR-TK-ALT3-BARDEN.dgn
6/21/2019 6:39:01 PM



LEGEND:

- EXISTING OCS
- EXISTING TRACK UNWIRED
- EXISTING TRACK WITH NEW OCS
- PROPOSED TRACK WITH OCS
- EXISTING RETAINING WALL

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 V.P., Chief Engineer, is prohibited.

No	Revisions	Date	By

AMTRAK

OFFICE OF
V.P., Chief Engineer
Engineering
National Railroad Passenger Corporation
30TH Street Station–Philadelphia, Pennsylvania 19104

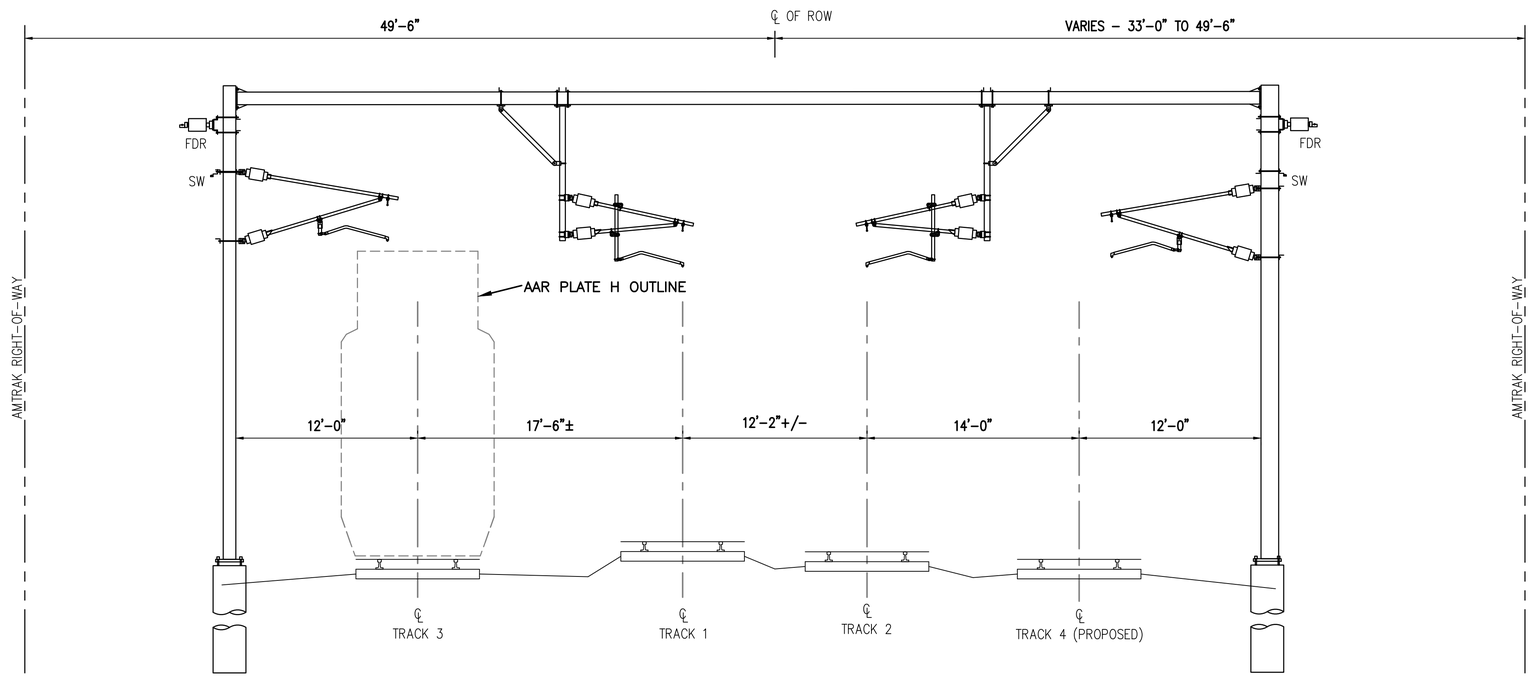
Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
OCS SCHEMATIC

Designed: RJR | Drawn: CSM | Checked: MJM | Date: 06/14/2019

File No.:
Ref. No.:
Sheet No:
ET-1



TYPICAL PORTAL STRUCTURE
BETWEEN PACKARD EXTENSION AND BARDEN
(ALTERNATIVE 3 SHOWN)
LOOKING TOWARDS BOSTON
SCALE: 1" = 1'-0"

NOTE:

TRACK CENTERS VARY. REFER TO TRACK DRAWINGS TK-003 THROUGH TK-005 FOR SPECIFIC LOCATIONS.

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 V.P., Chief Engineer, is prohibited.

No	Revisions	Date	By

AMTRAK

OFFICE OF
V.P., Chief Engineer
Engineering
National Railroad Passenger Corporation
30TH Street Station–Philadelphia, Pennsylvania 19104

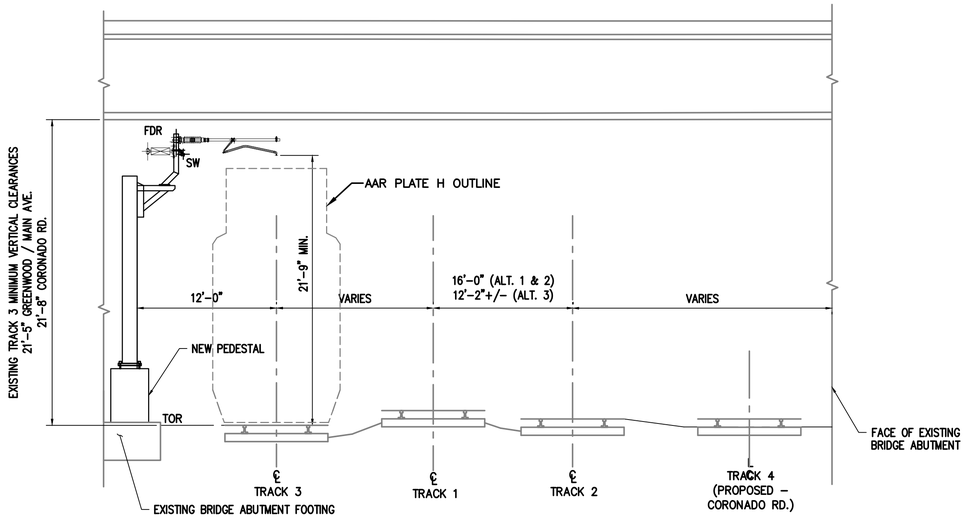
Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

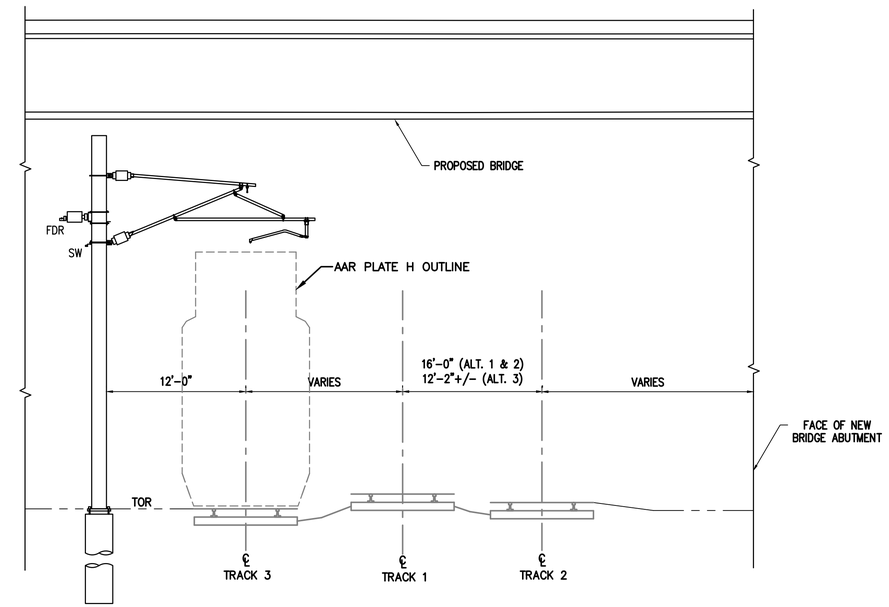
AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TYPICAL PORTAL STRUCTURE
IN 4-TRACK TERRITORY

Designed: RJR | Drawn: CSM | Checked: MJM | Date: 06/14/2019

File No.:
Ref. No.:
Sheet No:
ET-2



STUB POLE AT GREENWOOD/MAIN AVE. & CORONADO RD. OVERHEAD BRIDGES
LOOKING TOWARDS BOSTON
SCALE: NTS



STUB POLE UNDER TYPICAL OVERHEAD BRIDGE REPLACEMENT
LOOKING TOWARDS BOSTON
SCALE: NTS

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 V.P., Chief Engineer, is prohibited.

No	Revisions	Date	By

AMTRAK

OFFICE OF
V.P., Chief Engineer
Engineering
National Railroad Passenger Corporation
30TH Street Station–Philadelphia, Pennsylvania 19104

Approved	Date

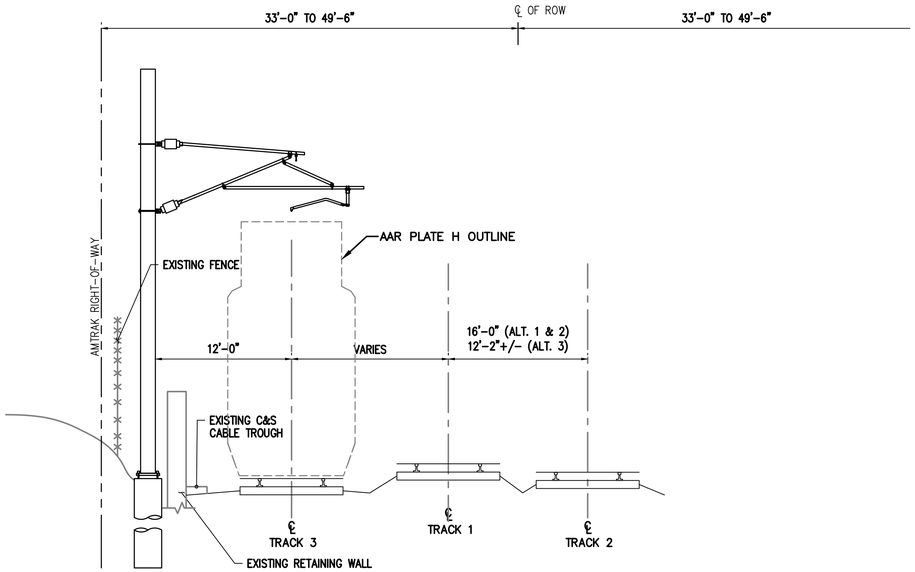
AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TYPICAL TRACK 3 OCS STRUCTURES
AT OVERHEAD BRIDGES

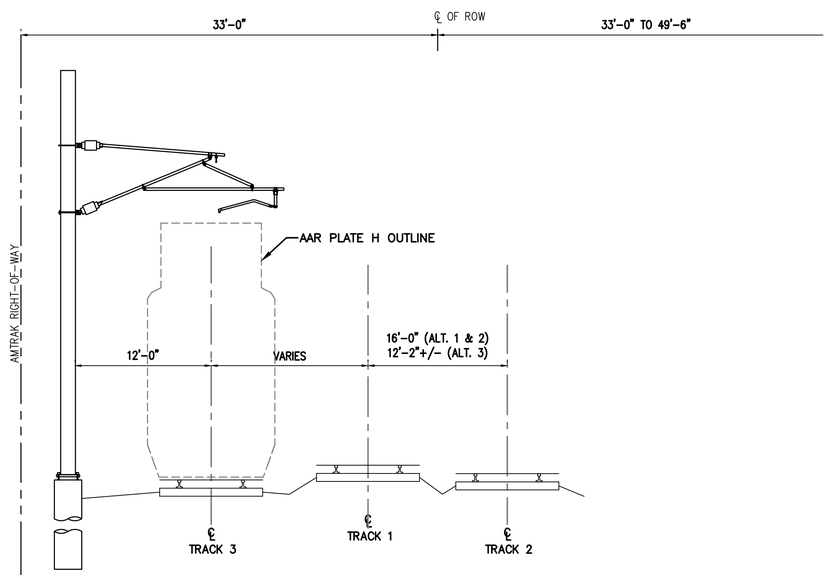
Designed: RJR | Drawn: CSM | Checked: MJM | Date: 06/14/2019

File No.:
Ref. No.:
Sheet No:
ET-3

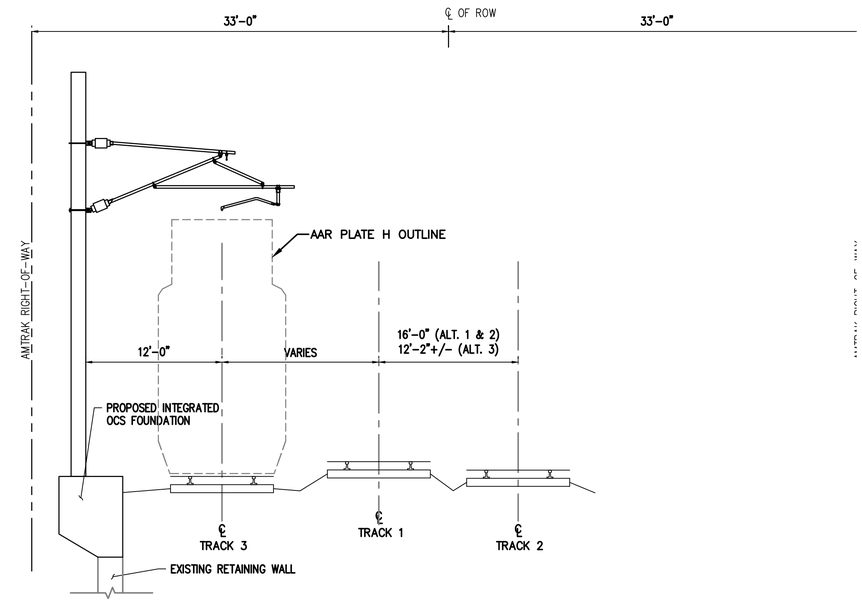
Bid# 7611810
Jun, 20 2019 11:20 am \\usphl1fp002\data\Projects\60605010 amtrak warwick station 10% design\900-cad-gis\910-CAD\20-sheets\OCS\Typ. Sec – Track 3 Options.dwg By: rookr



STRUCTURE AT POST INTERLOCKING
LOOKING TOWARDS BOSTON
SCALE: NTS



TYPICAL TRACK 3 CANTILEVER STRUCTURE
BETWEEN PACKARD AND PACKARD EXTENSION AND BETWEEN BARDEN AND POST
LOOKING TOWARDS BOSTON
SCALE: NTS



RETAINING WALL AT LINCOLN AVE. UNDERGRADE BRIDGE
LOOKING TOWARDS BOSTON
SCALE: NTS

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 V.P., Chief Engineer, is prohibited.

No	Revisions	Date	By

AMTRAK

OFFICE OF
V.P., Chief Engineer
Engineering
National Railroad Passenger Corporation
30TH Street Station–Philadelphia, Pennsylvania 19104

Approved	Date

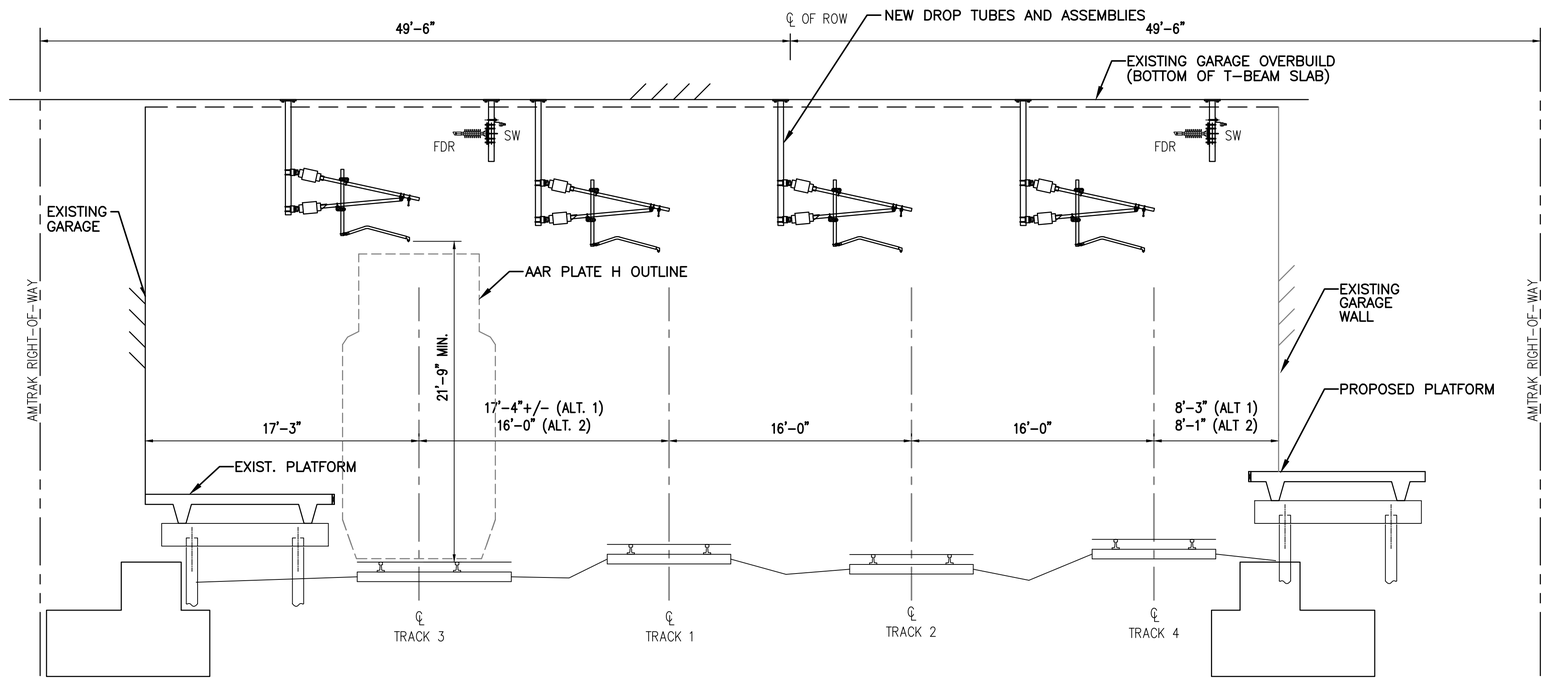
AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TYPICAL TRACK 3 OCS STRUCTURES
IN 3-TRACK TERRITORY

Designed: RJR | Drawn: CSM | Checked: MJM | Date: 06/14/2019

File No.:
Ref. No.:
Sheet No:
ET-4

Bid# 7611810
Jun, 20 2019 11:20 am \\usphl1fp002\data\Projects\60605010 amtrak warwick station 10% design\900-cad-gis\910-CAD\20-sheets\OCS\Typ. Sec – Track 3 Options.dwg By: rookr



TYPICAL STATION ARRANGEMENT
(ALTERNATIVE 1 & 2 SHOWN)
LOOKING TOWARDS BOSTON
SCALE: 1" = 1'-0"

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 V.P., Chief Engineer, is prohibited.

No	Revisions	Date	By

AMTRAK

OFFICE OF
V.P., Chief Engineer
Engineering
National Railroad Passenger Corporation
30TH Street Station–Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

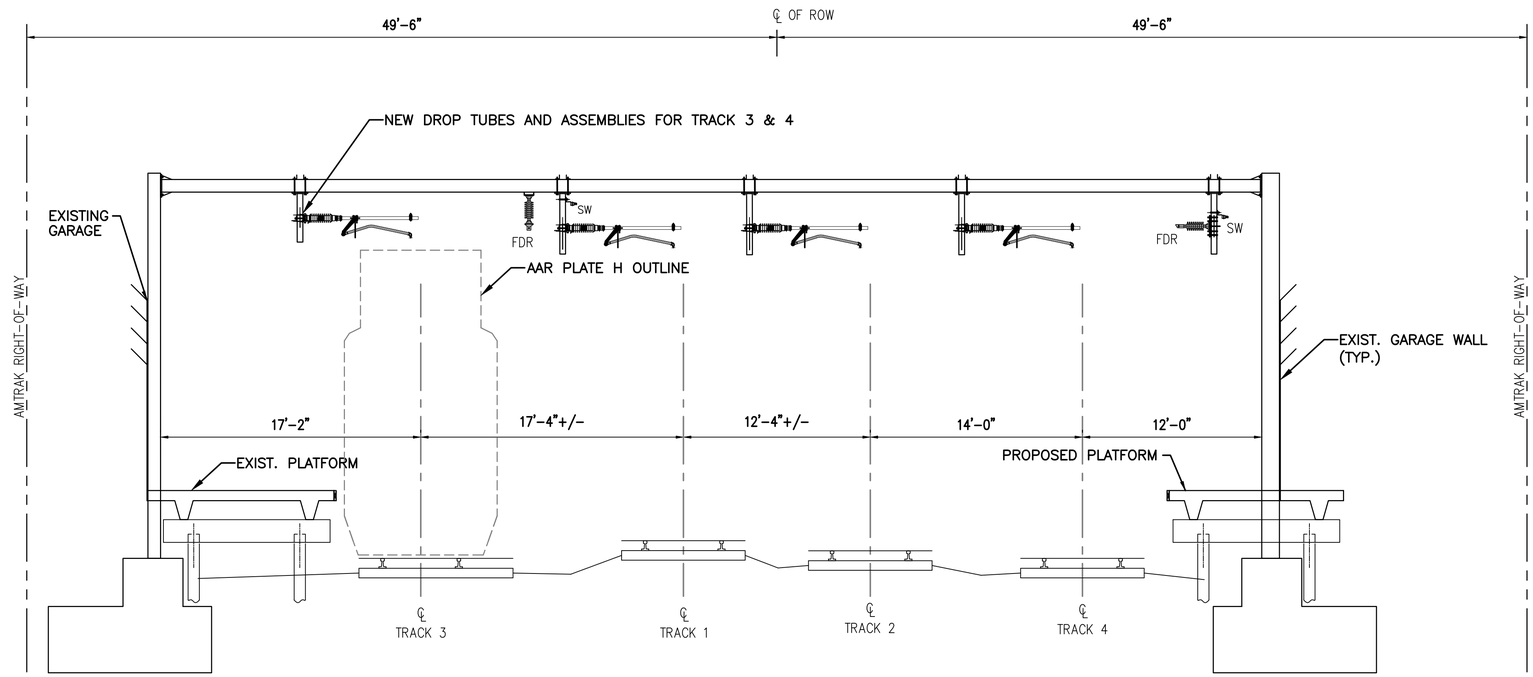
AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TYPICAL STATION ARRANGEMENT
ALTERNATIVE 1 & 2

Designed: RJR | Drawn: RJR | Checked: MJM | Date: 06/14/2019

File No.:
Ref. No.:
Sheet No:
ET-5

T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design & EA

Bid# 7611810
Jun, 20 2019 11:20 am \\usphl1fp002\data\Projects\60605010 amtrak warwick station 10% design\900-cad-gis\910-CAD\20-sheets\OCS\Typical Section - Station.dwg By: rookr



TYPICAL PORTAL STRUCTURE
(ALTERNATIVE 3 SHOWN)
LOOKING TOWARDS BOSTON
SCALE: 1" = 1'-0"

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 V.P., Chief Engineer, is prohibited.

No	Revisions	Date	By

AMTRAK

OFFICE OF
V.P., Chief Engineer
Engineering
National Railroad Passenger Corporation
30TH Street Station–Philadelphia, Pennsylvania 19104

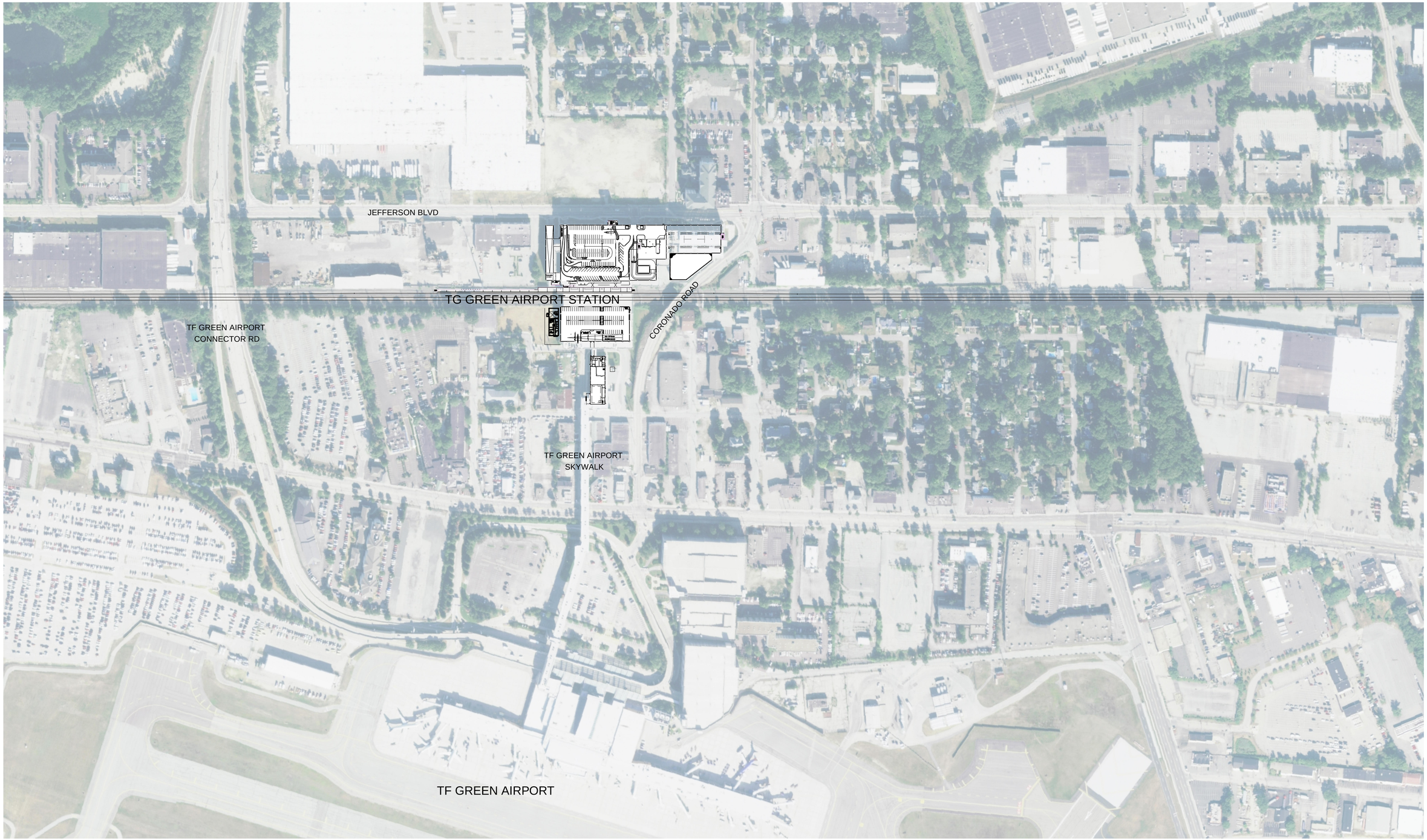
Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

AMTRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
TYPICAL STATION PORTAL STRUCTURE
ALTERNATIVE 3

Designed: RJR | Drawn: RJR | Checked: MJM | Date: 06/14/2019

File No.:
Ref. No.:
Sheet No:
ET-6



0 100' 200' 400'

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

No.	Revisions	Date	By

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1800
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

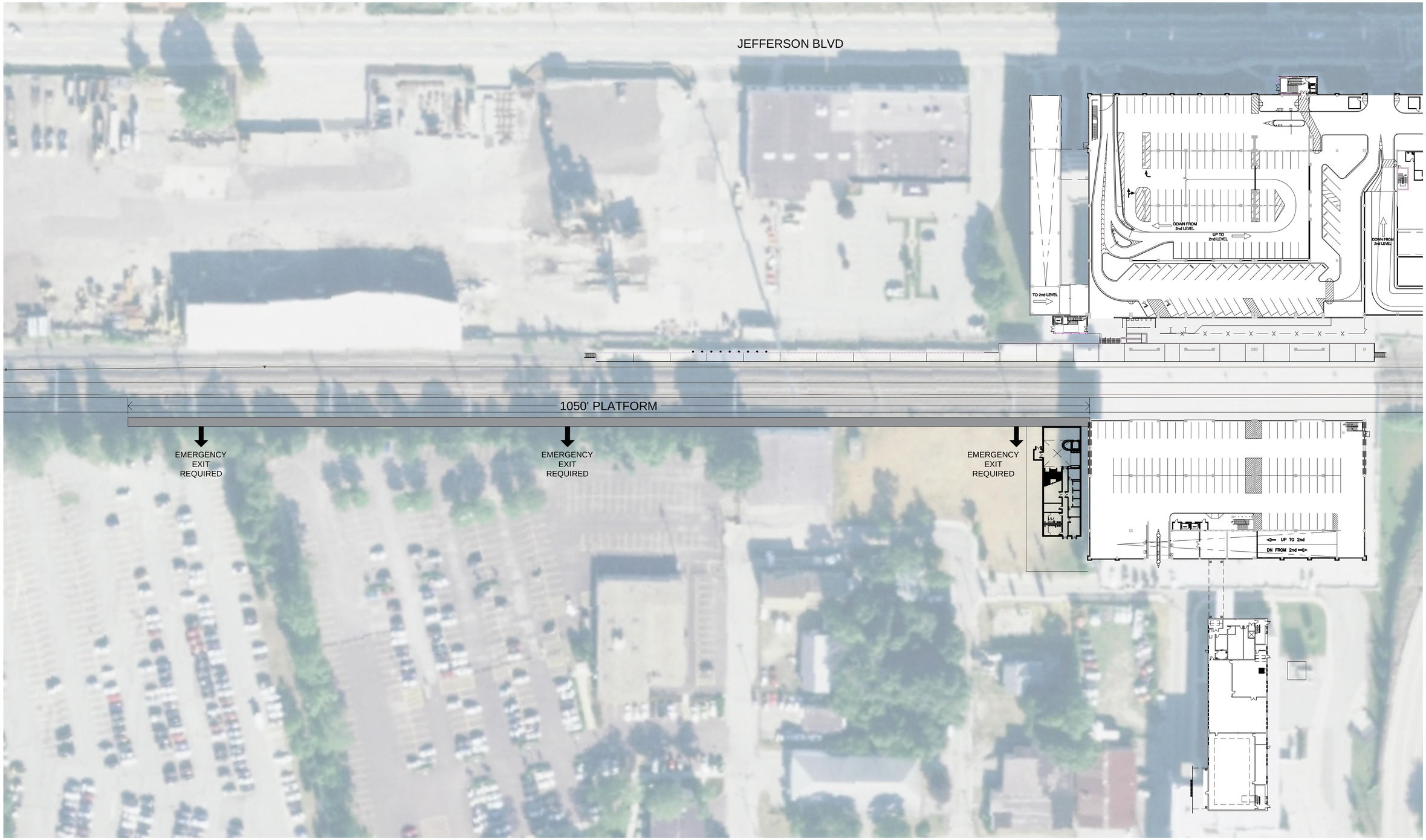
AMRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
EXISTING STATION / SITE PLAN

Designed: MM/MH | Drawn: MM | Checked: MH | Date: 06/19/2019

File No.:
Ref No.:
Sheet No.: OF
Dwg. No. A-100

Bid# 7611810

T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design & EA



This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

No.	Revisions	Date	By

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

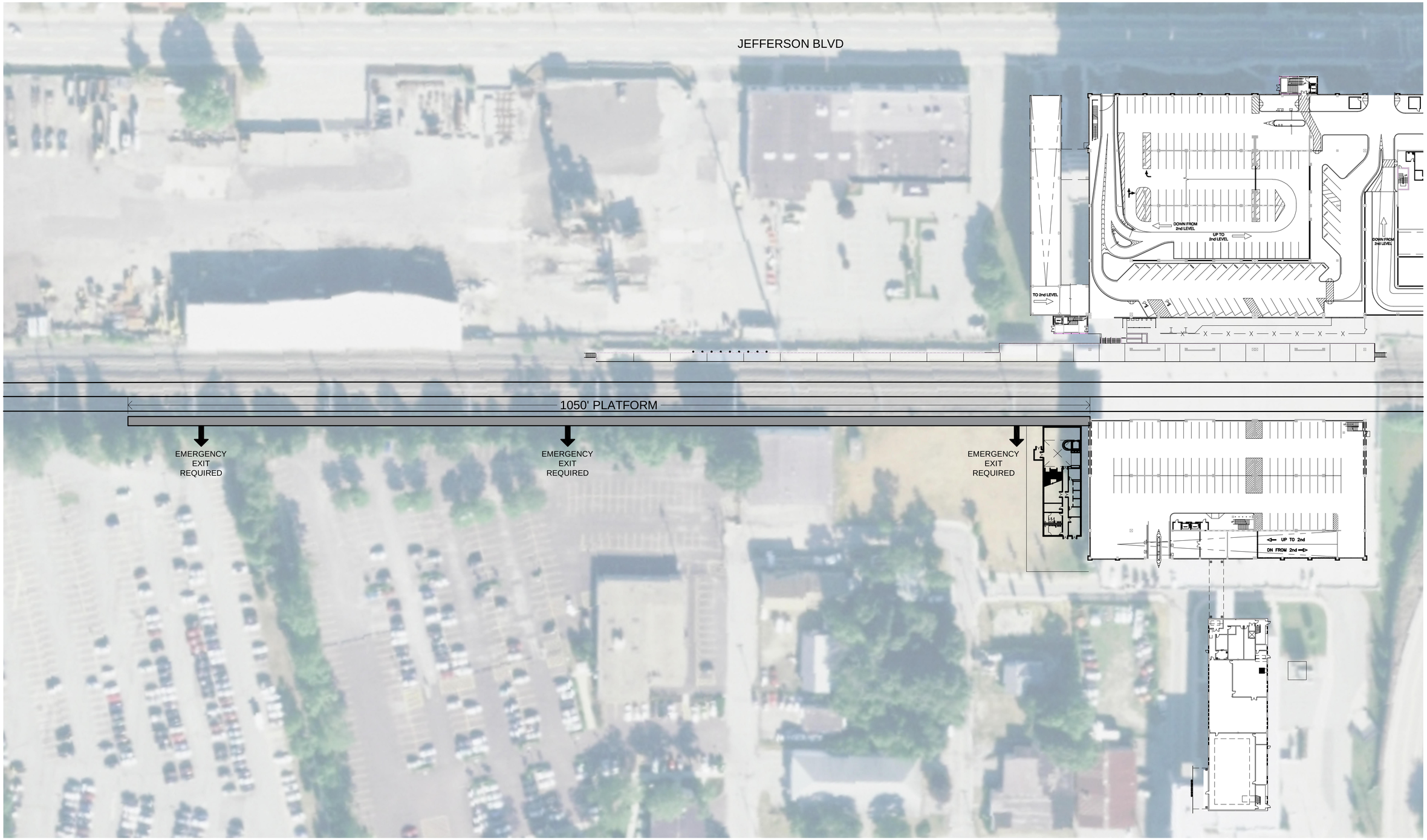
AMRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
ALTERNATE 1 STATION LAYOUT

Designed: MM/MH | Drawn: MM | Checked: MH | Date: 06/19/2019

File No.:
Ref No.:
Sheet No.: OF
Dwg. No. A-101

$FILE$ $TIME$ $DATE$

Bid# 7611810



0 25' 50' 100'

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

No.	Revisions	Date	By

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

AMRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
ALTERNATE 2 STATION LAYOUT

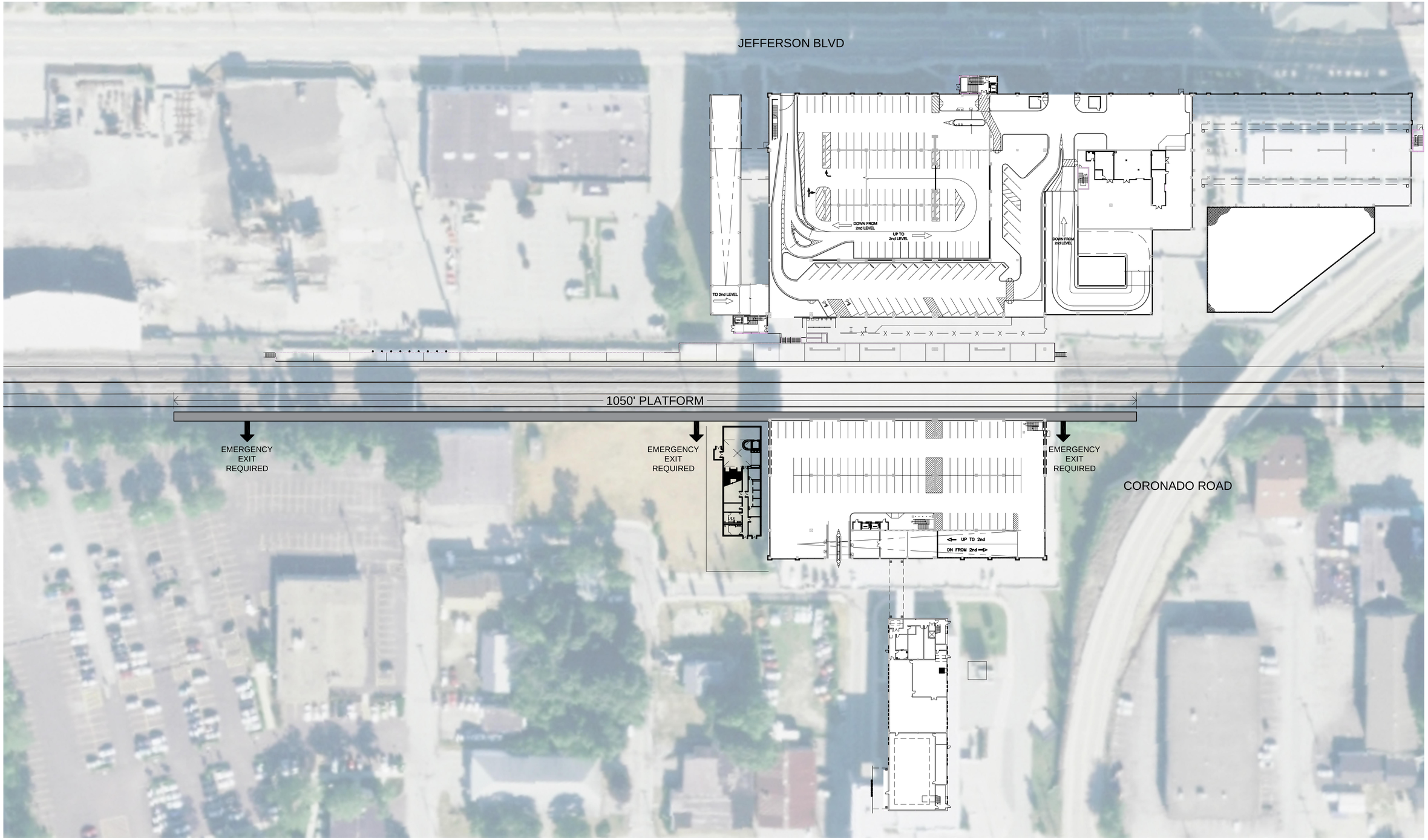
Designed: MM/MH | Drawn: MM | Checked: MH | Date: 06/19/2019

File No.:
Ref No.:
Sheet No.: OF
Dwg. No. A-102

$FILE$
$TIME$
$DATE$

Bid# 7611810

T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design & EA



0 25' 50' 100'

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

No.	Revisions	Date	By

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

AMRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
ALTERNATE 3 STATION LAYOUT

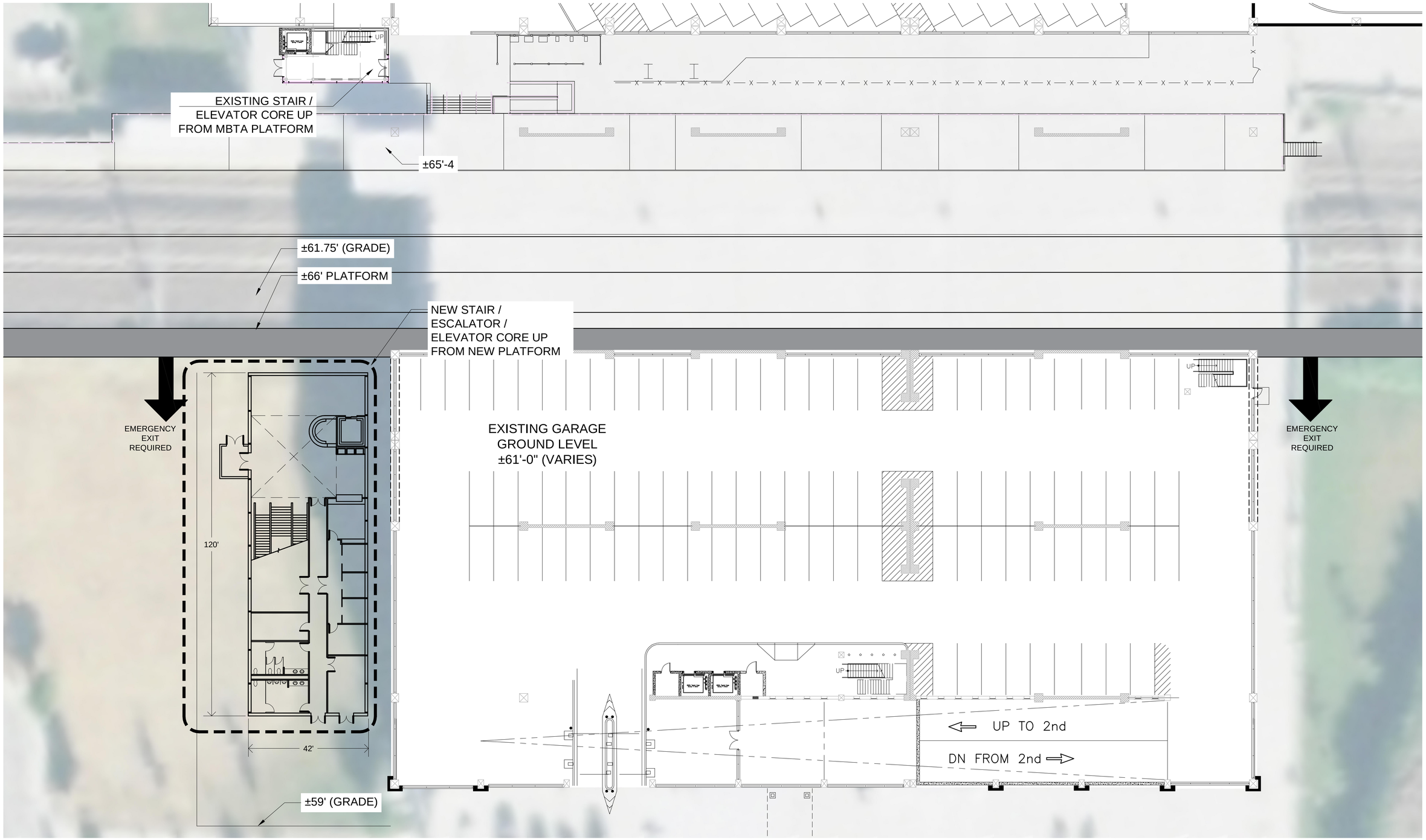
Designed: MM/MH Drawn: MM Checked: MH Date: 06/19/2019

File No.:
Ref No.:
Sheet No.: OF
Dwg. No. A-103

$FILE$ $TIME$ $DATE$

Bid# 7611810

T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design & EA



0 8' 16' 32'

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

No.	Revisions	Date	By

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

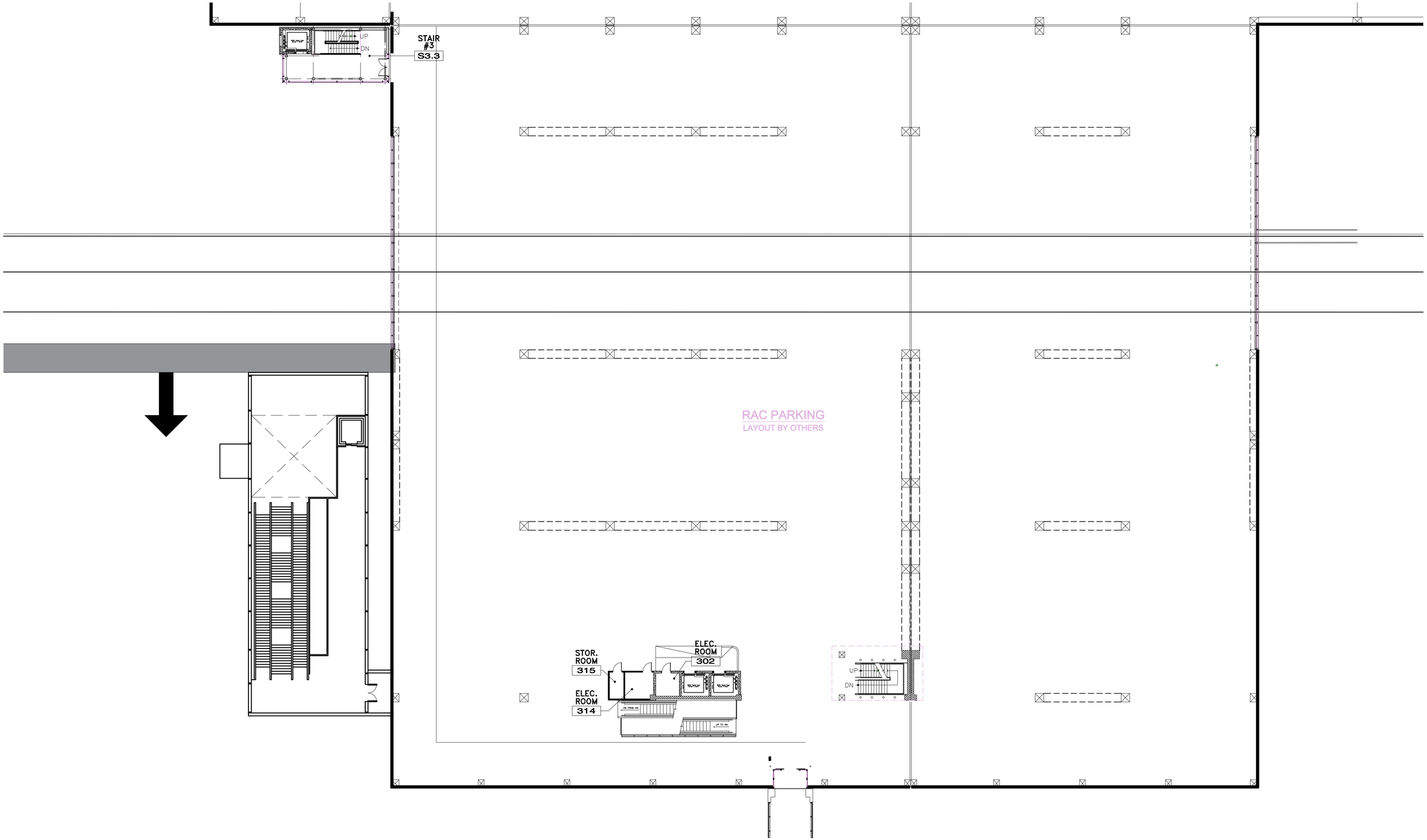
AMRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
STATION HEADHOUSE - PLATFORM LEVEL

Designed: MM/MH Drawn: MM Checked: MH Date: 06/19/2019

File No.:
Ref No.:
Sheet No.: OF
Dwg. No. A-104

Bid# 7611810

T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design & EA



0 8' 16' 32'

This material is owned by and is the sole and exclusive property of the National Railroad Passenger Corporation (Amtrak), and is supplied on a confidential basis solely for use in connection with the design and construction of Amtrak 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 NEC-ID, is prohibited.

No.	Revisions	Date	By

AMTRAK

Office of
Northeast Corridor - Infrastructure and Investment Development
National Railroad Passenger Corporation
30th Street Station - Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1700 MARKET STREET, SUITE 1800
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

AMRAK TF GREEN AIRPORT STATION
TRACK AND PLATFORM CONCEPTUAL DESIGN
STATION HEADHOUSE - THIRD FLOOR

Designed: MM/MH | Drawn: MM | Checked: MH | Date: 06/19/2019

File No.:
Ref No.:
Sheet No.: OF
Dwg. No. A-105

$FILE$ $TIME$ $DATE$

Bid# 7611810

T.F. Green Airport Station - Proposed Intercity Rail Service Preliminary Design & EA