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New York State Electric & Gas Corporation

Jennison Transmission Solution Project

Exhibit 3

Alternatives

Part 1 of 2

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EXHIBIT 3: ALTERNATIVES

The Applicant¹ considered a number of alternatives to the Project proposed in this Application. These included alternative substation siting locations, alternative line routes, alternative structure types and other methods to fulfill the requirements to meet the energy need described in Exhibit E-4 of this Application. Considering the specific purpose and need for the Project and the fact that Existing Lines 946 and 949 have been located on an existing ROW for approximately 80 years, alternatives that would typically be reasonable for a proposed new transmission line on a new ROW would not be reasonable for this Project due to potential environmental and cultural impacts. While the Applicant does not consider entirely new routes on Greenfield ROW to be feasible and therefore did not closely examine them, it has considered a number of micro-reroutes and decided to include several of them in the Project.

3.1 Alternative Project Components

This section summarizes the Applicant's consideration of alternatives to the proposed locations of the Proposed Jennison Substation and the 115kV transmission lines included in the Project.

Figure 3-1 is an overview of the proposed and alternative sites for the Jennison Substation and the 115kV transmission lines. Figures 3-2 through 3-5 provide detailed mapping of the locations of the substation and line segment alternatives considered by the Applicant.

3.1.1 Jennison Substation

Rebuilding the Jennison Substation will include construction of a 115kV yard [REDACTED]

[REDACTED]

[REDACTED] and a new 46kV yard [REDACTED]

[REDACTED]

[REDACTED] A substation of this size is approximately 4.6 acres.

¹ For clarity and consistency, the Application includes a Master Glossary of Terms that defines terms and acronyms used throughout the Application.

The Applicant considered eight substation site alternatives that appeared to have the potential to aid in the mitigation of the reliability and deliverability needs on the Existing Lines and solve the asset condition needs at the Existing Jennison Substation detailed in Exhibit E-4. These alternatives can be broken down into two basic types: a rebuild in place and an off-site rebuild, as described below.

The Applicant conducted a siting assessment and site selection process for the relocation of the Jennison Substation. The process began in 2017 and 2018 as part of its BES Brightline Program.

The Applicant identified parcels in proximity to the Existing Jennison Substation (to minimize the length of the transmission lines that would need to be rebuilt) of sufficient size to accommodate the new substation. The Applicant then assessed parcels based on the following criteria (which are not listed in order of importance):

- Constructability factors (e.g., proximity to roads for delivery of equipment and extent of grading required);
- Consistency with existing land use and zoning;
- Land availability (i.e., parcels currently on market for lease or sale);
- Proximity to existing substation to minimize disturbance and land required for rebuild and relocation of Line 756, Line 919, Line 943, and Line 954;
- Presence of FEMA floodway, floodplains, wetlands and/or waterbodies;
- Proximity to mapped cultural resources;
- Presence of prime farmland soils; and
- Proximity to residences.

A total of eight properties were evaluated for site suitability for the relocation of the Jennison Substation. Figure 3-2 shows the Proposed Jennison Substation and the alternative locations that were considered, and Table 3-1 details the engineering and environmental/permitting constraints of each alternative.

3.1.1.1 Proposed Jennison Substation

As detailed in Exhibits 2, 5 and E-2, the Project as proposed includes a rebuild of the Jennison Substation off-site. The proposed rebuild consists of a full 115/46kV substation rebuild on a site located just north of the Existing Line 919 ROW outside of the flood zone, approximately 0.9 miles west of the site of the Existing Jennison Substation. The proposed site is on a 61-acre parcel owned by NYSEG. Current land use on the site is a mix of forested and vacant land. It includes 24.5 acres of prime farmland and 33.1 acres of soils designated as *Farmland of Statewide Importance* according to the USDA web soil survey mapping; however, the site is not currently in active agricultural production.

As more fully detailed in Exhibit 4, based on a review of desktop mapping, there are no floodplains, wetlands, streams or cultural resources located on the site. The closest residence is approximately 0.5 miles north of the site. Up to 6.9 acres of tree clearing will be required for construction of the substation and necessary access road.

3.1.1.2 Jennison Substation Rebuild Alternative

The Jennison Substation Rebuild Alternative that was considered by the Applicant consists of a rebuild of the substation in its current location. The rebuild would include raising the elevation of the substation to mitigate flood concerns, as the site is a FEMA Special Flood Hazard Area (SFHA).

The Jennison Substation Rebuild Alternative consists of a full substation rebuild [REDACTED]
[REDACTED]
[REDACTED] the 115kV Line 919 would need to be brought in and out of the substation.

NYSEG dismissed this alternative due to the existing space constraints on site, high construction costs, long construction and outage timelines, and the fact that the site is within a FEMA SFHA. There are several construction sequencing complexities that would be required to rebuild this substation in place while also keeping it energized and supplying customer load. For the cost and design deficiency reasons described, this alternative was not pursued further.

3.1.1.3 *Jennison Substation Alternative Site 1*

Jennison Substation Alternative Site 1 is a 199-acre privately owned parcel approximately 0.8 miles southwest of the Existing Jennison Substation. Almost all of the site is either generally forested or is in active agricultural use. No mapped NYSDEC wetlands or streams or NRHP-mapped cultural resources are present on the site, nor is the site located within a FEMA floodway. There are mapped USFWS NWI wetlands within the site. There are residences on adjacent parcels located east of the site. Because of the residential properties to the east of the parcel, extensive forest cover through most of the parcel, and the presence of active agricultural land, this alternative site was not pursued.

3.1.1.4 *Jennison Substation Alternative Site 2*

Jennison Substation Alternative Site 2 is an 85-acre privately owned parcel approximately 0.8 miles northwest of the Existing Jennison Substation that is generally forested and vacant open land. No mapped NYSDEC or NWI wetlands or streams or NRHP-mapped cultural resources are present on the site, nor is the site located within a FEMA Flood Hazard Zone. The closest residence is approximately 400 feet from the northern edge of the parcel. Most of the parcel is steeply sloped and would require a greater length of new ROW and a longer reroute component when compared to the other options. Because of these factors this alternative site was not pursued.

3.1.1.5 *Jennison Substation Alternative Site 3*

Jennison Substation Alternative Site 3 is a 20-acre privately owned parcel approximately 0.3 miles north of the Existing Jennison Substation and Existing Line 919 that is vacant open land. No mapped NYSDEC or NWI wetlands or streams or NRHP-mapped cultural resources are present on the site, nor is the site located within a FEMA Flood Hazard Zone. There are residences on adjacent parcels to the north and south of the site. Most of the parcel is steeply sloped and would require a greater length of new ROW and a longer reroute component when compared to the other options. Because of these factors this alternative site was not pursued.

3.1.1.6 *Jennison Substation Alternative Site 4*

Jennison Substation Alternative Site 4 is a 62-acre privately owned parcel approximately 0.1 miles west of the Existing Jennison Substation. Current land cover includes undeveloped forest land and

hay/pasture fields. Existing ROW intersects the parcel. A farmstand business is present on the site. No mapped NYSDEC wetlands or streams or NRHP-mapped cultural resources are present on the site, nor is the site located within a FEMA Flood Hazard Zone. There are no mapped NWI wetlands within the site. There are residences on adjacent parcels to the east of the site. Due to its proximity to active agricultural land and an active farmstand, and due to Existing ROW constraints, this alternative site was not pursued.

3.1.1.7 *Jennison Substation Alternative Site 5*

Jennison Substation Alternative Site 5 is a 130-acre privately owned parcel approximately 1.1 miles west of the Existing Jennison Substation. Existing Lines 919 and 943 run through the southern edge of the parcel in Existing ROW. The parcel has active agricultural land and undeveloped forested land. No mapped NYSDEC wetlands or streams or NRHP-mapped cultural resources are present on the site, nor is the site located within a FEMA floodway. There are mapped NWI wetlands within the site. Agricultural structures are present on the property. A bridge would potentially be needed to be built to cross a stream located on the property. There would also be other construction accessibility limitations due to the ROW being constrained by the active agricultural fields. Because of these factors this alternative site was not pursued.

3.1.1.8 *Jennison Substation Alternative Site 6*

Jennison Substation Alternative Site 6 is a 101-acre privately owned parcel approximately 1.6 miles west of the Existing Jennison Substation. The majority of the land cover of the parcel is pasture/cropland and forested land, and there is Existing ROW within the parcel. No mapped NYSDEC wetlands or streams or NRHP-mapped cultural resources are present on the site, nor is the site located within a FEMA floodway. There are mapped NWI wetlands within the site. A residence is located on this parcel. There are construction accessibility limitations due to the Existing ROW and active agricultural fields. This alternative would require the longest reroute component. Because of these factors this alternative site was not pursued.

3.1.1.9 *Jennison Substation Alternative Site 7*

Jennison Substation Alternative Site 7 is a 26-acre privately owned parcel that is approximately 0.3 miles south of the Existing Jennison Substation. It is within a FEMA SFHA and regulatory

floodway, and the parcel has active agricultural lands and wetlands within it. It is bound to the west by a CP ROW, State Route 7 and residential parcels and to the east by the Susquehanna River. This alternative has many of the same constructability concerns as the Jennison Substation Rebuild Alternative with no significant advantages over the other substation alternatives; therefore, this alternative site was not pursued.

3.1.1.10 Jennison Substation Alternative Site 8

Jennison Substation Alternative Site 8 is an 11-acre parcel owned by GMMM Jennison, LLC approximately 520 feet south of the Existing Jennison Substation. It is within a FEMA SFHA and regulatory floodway and the parcel has active agricultural lands and wetlands within it. It is bound to the west by a CP ROW and State Route 7 and to the east by the Susquehanna River. This alternative has many of the same constructability concerns as the Jennison Substation Rebuild Alternative with no significant advantages over the other substation alternatives; therefore, this alternative site was not pursued.

3.1.1.11 Jennison Substation Alternatives Conclusion

As a result of the siting assessment, the site of the Proposed Jennison Substation was selected as the best alternative from a cost, complexity, and solution robustness perspective. This solution is also superior in that the offsite rebuild mitigates all identified flooding risks and allows for less complex construction sequencing, since most of the new substation work can be constructed in an off-line or de-energized manner.

Due to the existing space constraints, high construction costs, long construction and outage timelines, and engineering complexity and cost that would be associated with building in a FEMA SFHA at the Existing Substation location, a rebuild at the current location is not the preferred alternative.

All the alternative substation sites considered were within 0.1 to 1.6 miles of the Existing Jennison Substation site. Siting a substation at Jennison Substation Alternative Sites 1 and 2 would require a similar level of tree clearing when compared to the Proposed Jennison Substation, while tree clearing would likely not be needed at Jennison Substation Alternatives 3, 4 and 5. There is active agricultural land within Alternative Sites 1, 4, 5, 6, 7, and 8. Alternatives 1, 2, 3, 4, 5, 6, and 7

have the additional disadvantage of being located closer to residences. There are additional Existing ROW and/or engineering constraints that would negatively impact construction feasibility within Alternative Sites 2, 4, 5, 6, 7, and 8. The Proposed Jennison Substation was sited to avoid mapped wetlands and streams, cultural resources, and active agricultural land, and has minimal visual impact. Because none of the alternative sites that were considered offer significant environmental or engineering advantages to the Proposed Jennison Substation site, the Applicant did not consider any of the Jennison Substation Alternatives to be preferred alternatives to the Applicant's proposed site.

3.1.2 Route Alternatives

NYSEG reviewed maps and aerial photography and conducted field reconnaissance to determine routing and siting constraints and opportunities between the East Norwich Substation in the Town of Norwich, the Proposed Jennison Substation in the Town of Bainbridge, and the Eastern Terminus in the Town of Hamden. Using field and GIS assessments, the Applicant analyzed routes suitable for the Project within identified resource, development, and system constraints. The Applicant also identified several locations where potential conflicts with existing structures may occur.

The result was the Applicant's identification of several Alternative Segments, or reroute alternatives to the Existing ROW, where the Applicant considered deviations from the Existing ROW. The Applicant evaluated the Alternative Segments using impact screening criteria grouped by certain categories, such as land use, land resources, water resources, and cultural resources.

The detailed results of this evaluation are provided in the routing impacts matrices (Tables 3-2 through 3-4), which were developed based on existing publicly available mapped resources² and field investigation data. The significant characteristics of each Alternative Segment are discussed and compared below. To allow for direct comparison between the 115kV transmission routes considered, the analysis is discussed for each of three portions of the Project: Proposed Line 734 from East Norwich Substation to future North Pond Substation; Proposed Line 946 from future North Pond Substation to Proposed Jennison Substation; and Proposed Line 949 from Proposed

² Mapped resources included (but were not limited to) the following: Agricultural District mapping by CUGIR and NYSDAM; freshwater wetlands mapped by NYSDEC; NYSDEC stream classification mapping; USFWS NWI mapping; and FEMA 100-year floodplain and regulated floodway mapping.

Jennison Substation to the Eastern Terminus. Figure 3-1 shows the Proposed Route and the Route Alternatives for each of these three transmission lines.

The Applicant identified three Alternative Segments to Proposed Line 734 between East Norwich Substation and the North Pond Substation. Because of encroachments within the Existing ROW, the Applicant was unable to identify a commensurate “Point A to Point B” alternative for the entirety of the Proposed Route of Proposed Line 734. Figure 3-3 shows the Proposed Route and Alternative Segments for Line 734. The full route of Proposed Line 734 is described more fully in Exhibit 2, section 2.1.1.

The Applicant identified four Alternative Segments to Line 946 between North Pond Substation and Existing Jennison Substation. Because of encroachments within the Existing ROW, the Applicant was unable to identify a commensurate “Point A to Point B” alternative for the entirety of the Proposed Route of Proposed Line 946. Figure 3-4 shows the Proposed Route and Alternative Segments for Line 946. The full route of Proposed Line 946 is described in Exhibit 2, section 2.1.2.

The Applicant identified two Alternative Segments to Proposed Line 949 between the Proposed Jennison Substation and the Eastern Terminus. The Applicant is proposing to build in-place, using a 30-foot offset temporary bypass line in the Existing ROW for nearly the entire route to avoid outages. Figure 3-5 shows the Proposed Route and Alternative Segment for Line 949. The full route of Proposed Line 949 is described in Exhibit 2, section 2.1.5.

3.1.2.1 *Line 734 Segment 1*

Line 734 Proposed Segment 1

Line 734 Proposed Segment 1 is approximately 0.3 miles long, beginning at structure 734/2 directly adjacent to Existing Line 946. In this segment, proposed structure 734/3 is to be relocated approximately 120 feet south of a residential encroachment located on the east side of County Road 32, across from the East Norwich Substation in the Existing Line 946 ROW. This segment returns to a 30-foot offset to the south of Existing Line 946 between proposed structures 734/4 and 734/6. This option is preferred because, unlike Line 734 Alternative Segment 1-A, it avoids the residential encroachment and it requires less tree clearing than Line 734 Alternative Segment 1-B.

Line 734 Alternative Segment 1-A

Line 734 Alternative Segment 1-A is approximately 0.3 miles long, beginning at structure 734/2. This reroute is at a 30-foot offset to the south of the Existing Line 946 between proposed structures 734/2 and 734/6. It would require purchasing an encroaching residence within the Existing ROW located on County Road 32 directly across from the East Norwich Substation. The landowner was not agreeable to selling the property, so this option is not preferred. Environmental impacts are identical to Proposed Segment 1.

Line 734 Alternative Segment 1-B

Line 734 Alternative Segment 1-B is approximately 0.3 miles long, beginning at proposed structure 734/3. This reroute is approximately 120 feet south of the Existing Line 946 from proposed structure 734/3 to a 130-foot offset south of the Existing Line 946. This alternative would have required less new ROW but more tree clearing than Proposed Segment 1. Because of environmental impacts associated with the tree clearing, this option is not preferred.

3.1.2.2 *Line 734 Segment 2*

Line 734 Proposed Segment 2

Line 734 Proposed Segment 2 is approximately 0.4 miles long, beginning at proposed structure 734/10 and ending at proposed structure 734/14. The Proposed Route deviates to the west of a residential property where a residential structure and accessory buildings encroach in the Existing ROW. This route avoids the encroachments, and no outage would be required. Environmental impacts are minimal and the New ROW does not require substantially more tree clearing than Line 734 Alternative Segment 2.

Line 734 Alternative Segment 2

Line 734 Alternative Segment 2 is approximately 0.4 miles long, beginning at proposed structure 734/10 and ending at proposed structure 734/14. This reroute diverts from the Proposed Line 734 centerline at proposed structure 734/10 to avoid the residential encroachment and follows the Existing Line 946 centerline before returning to the Proposed Line 734 centerline at proposed structure 734/14. Building on the Existing Line 946 centerline would require a prolonged outage,

would not avoid encroachments within the Existing ROW, and would result in environmental impacts that are not substantially less than the Proposed Route; therefore, this option is not preferred.

3.1.2.3 *Line 734 Segment 3*

Line 734 Proposed Segment 3

Line 734 Proposed Segment 3 is approximately 1.4 miles long, beginning at proposed structure 734/26, diverting west from Existing Line 946 just north of Glenn Lake, continuing south to proposed structure 734/36 before turning back east to an offset of Existing Line 946 at proposed structure 734/38. This route avoids a residential encroachment south of Pratt Rd in the Existing ROW, as well as Glenn Lake. It requires less New ROW than Alternative Segments 3-A or 3-B and has similar tree clearing requirements as Alternative Segments 3-A, 3-B and 3-C. The lack of engineering restraints along with the minimized environmental impacts make this reroute the preferred alternative.

Line 734 Alternative Segment 3-A

Line 734 Alternative Segment 3-A is approximately 1.4 miles long, beginning at proposed structure 734/26, diverting west from Proposed Line 734 before continuing south to proposed structure 734/36, then turning east and ending at Proposed structure 734/38. This alternative avoids encroachments in the Existing ROW just south of Glenn Lake, and avoids crossing the lake, but would require substantially more New ROW and grading. Because of the resulting environmental impacts and the lack of engineering advantages compared to the Proposed Route, this alternative is not preferred.

Line 734 Alternative Segment 3-B

Line 734 Alternative Segment 3-B is approximately one mile long, beginning at proposed structure 734/29, diverting southwest from Proposed Line 734 before continuing south to proposed structure 734/36, then turning east and ending at Proposed structure 734/38. Like Line 734 Alternative Segment 3-A, this alternative avoids encroachments in the Existing ROW just south of Glenn Lake, and avoids crossing the lake, but would require more New ROW and extensive grading.

Because of the resulting environmental impacts and the lack of engineering advantages compared to the Proposed Route, this alternative is not preferred.

Line 734 Alternative Segment 3-C

Line 734 Alternative Segment 3-C is approximately 0.8 miles long, beginning at proposed structure 734/31 and following almost the same route of Proposed Line 734. The original placement of proposed structure 734/32 for this alternative was shifted north due to an engineering flaw of the original placement. Due to the inability to move forward with this option, the environmental and permitting constraints of this segment were not analyzed further.

Line 734 Alternative Segment 3-D

Line 734 Alternative Segment 3-D is approximately 0.6 miles long, beginning at proposed structure 734/31 and following the Existing Line 946 centerline south across Pratt Road before it zigzags slightly through several residential parcels south of Pratt Road and returning to the Proposed Line 734 centerline at proposed structure 734/38. This alternative avoids the encroachments south of Pratt Road but would require an extensive outage during construction because it follows the Existing Line 946 centerline. This alternative route also crosses more acres of NWI wetlands than the Proposed Route. Because of the engineering constraints and the lack of environmental advantages compared to the Proposed Route, this option is not preferred.

3.1.2.4 *Line 946 Segment 1*

Line 946 Proposed Segment 1

Line 946 Proposed Segment 1 is approximately 0.4 miles long, beginning at proposed structure 946/17 and diverting southwest of Existing Line 946 to avoid residential encroachments in the Existing ROW before returning to an offset of Existing Line 946 at proposed structure 946/20 and maintaining that offset past proposed structure 946/21. This route avoids encroachments in the Existing Line 946 ROW by a residence and accessory structures and requires no outages. It also results in minimal environmental impacts and requires minimal New ROW. Due to the engineering advantages this option is preferred.

Line 946 Alternative Segment 1

Line 946 Alternative Segment 1 is approximately 0.3 miles long and deviates east at an approximate 30-foot offset from the Existing Line 946 centerline at structure 946/17, reconnecting to the Proposed Line 946 centerline at proposed structure 946/21. The alternative avoids the residential encroachment in the Existing Line 946 ROW but does not avoid encroaching accessory structures, and due to having to cross Existing Line 946 it would require an extensive outage during construction. Due to these constraints and the lack of significant environmental or permitting advantages, this alternative is not preferred.

3.1.2.5 ***Line 946 Segment 2***

Line 946 Proposed Segment 2

Line 946 Proposed Segment 2 is approximately 1.3 miles long, diverting west of Existing Line 946 at proposed structure 946/70 and continuing south before rejoining the Existing ROW at an offset of Existing Line 946 at proposed structure 946/81. This route avoids an active lumber yard and associated structures, as well as an area of potential future mining operations. It requires more tree clearing and New ROW than Line 946 Alternative Segment 2, but its avoidance of the lumber yard significantly reduces the complexity of sequencing during construction and avoids outages. Because of this, it is the preferred alternative.

Line 946 Alternative Segment 2

Line 946 Alternative Segment 2 is approximately 0.8 miles long and continues south between the Existing ROW and the Proposed ROW at proposed structure 946/70 before returning to the Existing Line 946 centerline at proposed structure 946/81 just south of the lumber yard. This alternative avoids active areas of the lumber yard, but still crosses the yard and does not avoid an area of potential future mining operations. Building on the Existing Line 946 centerline for part of the route would also require an extensive outage during construction. Due to these constraints, this alternative is not preferred.

3.1.2.6 *Line 946 Segment 3*

Line 946 Proposed Segment 3

Line 946 Proposed Segment 3 is approximately 0.2 miles long, beginning just west of the Existing Jennison Substation at proposed structure 946/119 and ending at proposed structure 946/122. This segment is routed to avoid encroachments in the Existing ROW and will be entirely within the Existing Line 823 ROW.

Line 946 Alternative Segment 3

Line 946 Alternative Segment 3 is approximately 0.2 miles long, beginning at proposed structure 946/119 and heading northwest, crossing Existing Line 823 before turning west for approximately 365 feet, then heading south, crossing Existing Line 823 for a second time before terminating at Proposed structure 946/122. The alternative avoids an agricultural outbuilding encroachment in the Existing ROW, but the need to cross Existing Line 823 twice would reduce reliability. Due to the engineering constraints of this alternative that made it less favorable, environmental impacts were not assessed.

3.1.2.7 *Line 946 Segment 4*

Line 946 Proposed Segment 4

Line 946 Proposed Segment 4 is approximately 480 feet long, beginning at proposed structure 946/127 and heading north before terminating in the Proposed Jennison Substation. This route was developed after final engineering designs of the Proposed Substation were completed and is compatible with the configuration of the proposed substation.

Line 946 Alternative Segment 4-A

Line 946 Alternative Segment 4-A is approximately 420 feet long, diverting northeast from the proposed centerline at proposed structure 946/127 and terminating just outside of the Proposed Jennison Substation boundary. The Applicant considered this alternative at a time when an earlier design of the Proposed Jennison Substation indicated that the optimal site of the line was the Proposed Segment 4 alignment, but that is no longer the case with the current design of the Proposed Jennison Substation.

Line 946 Alternative Segment 4-B

Line 946 Alternative Segment 4-B is approximately 470 feet long, diverting northeast from the proposed centerline at proposed structure 946/127, turning due north approximately 30 feet north of proposed Structure 946/128 and terminating at a proposed takeoff structure inside of the Proposed Jennison Substation. This alternative was not pursued further because, like Line 946 Alternative Segment 4-A, it depended on an earlier design of the Proposed Jennison Substation that was superseded.

3.1.2.8 ***Line 949 Segment 1***

Line 949 Proposed Segment 1

Line 949 Proposed Segment 1 is approximately 0.5 miles long beginning at proposed structure 949/1-7 and heading west before terminating in the Proposed Jennison Substation. This route uses Existing ROW and was developed after the final design of the Proposed Jennison Substation was completed.

Line 949 Alternative Segment 1

Line 949 Alternative Segment 1 is approximately 0.5 miles long and deviates approximately 35-feet south of Proposed Line 949 at proposed structure 949/1-7, terminating outside of the Proposed Jennison Substation approximately 80 feet east of the takeoff point of Proposed Line 949. This alternative was not pursued further due to revisions to the design of the Proposed Jennison Substation; therefore, no further environmental or permitting constraints were evaluated.

3.1.2.9 ***Line 949 Segment 2***

Line 949 Proposed Segment 2

Line 949 Proposed Segment 2 is approximately 0.3 miles long between proposed structures 949/85 and 949/88 with a 30-foot offset relative to Existing Line 949. There is a residential encroachment in the Existing ROW for Existing Line 949 and Existing Line 919, and Alternative Segment 2 would avoid this encroachment by double circuiting Proposed Line 949 with Line 919. Line 949 Proposed Segment 2 is the preferred alternative because homeowner is amenable to selling the

property and the offset of Line 949 Proposed Segment 2 relative to Existing Line 949 is preferred to the less reliable option of double circuiting.

Line 949 Alternative Segment 2

Line 949 Alternative Segment 2 is approximately 0.4 miles long between Proposed structures 949/85 and 949/88. This alternative avoids a residential encroachment in the Existing ROW by double-circuiting Lines 919 and 949 on shared single steel pole structures, reducing the southern ROW edge by approximately 75 feet. Line 919 would likely require two new angle dead end structures, one at each end of the segment, to turn the line northward onto the double circuit structures. This alternative avoids the existing encroachment in the Proposed ROW with use of standard ROW distance from centerline (requiring no unusual carve-out with non-standard ROW width). Line 949 Proposed Segment 2 is preferred over the Alternative Segment due to the decreased reliability of double circuiting the lines.

3.2 Alternative Structure Types

The Applicant proposes to install the Proposed Lines primarily within the Existing ROW, on single circuit monopoles. Proposed Lines 734 and 946 use braced post structures and Proposed Line 949 uses davit arm structures. All new structures will be designed to grade B construction. All new structures will be directly embedded where feasible with guys used to support angles and dead-ends. Where guying is not feasible or economical, self-supporting angle and dead-end structures on reinforced concrete foundations will be utilized. The proposed structure type of braced post insulators for Proposed Lines 734 and 946 are more compact than the alternative davit-arm structure. The use of davit-arm structure types would require a further offset from the Existing Line, and NYSEG rejected shorter span lengths to control conductor motion. The braced post insulator structure type allows for a more one-for-one replacement of existing structures; this requires fewer structures and keeps the ROW width expansion required for the 30-foot offset (and thus the need for New ROW) to a minimum. Additionally, the braced post insulator structure type is lower in cost and has fewer impacts to residential properties and forested lands.

Light duty steel poles were selected over wood poles for the Project because they provide a more durable, longer lasting pole at a minimal impact to the total Project cost. Transmission and distribution industry data indicates that steel poles have a 20 year longer lifespan than wood poles

(60 years for steel vs. 40 years for wood). Additionally, wood poles are susceptible to insects and woodpeckers, where steel poles are not. The NYSEG resiliency standard also states that all dead-end structures shall be steel pole construction. Additionally, the Applicant dismissed wood pole structures because the span lengths and structure heights that would be necessary to provide adequate clearance to ground would have required the use of a number of large and difficult-to-acquire pole classes. This negative can have been mitigated by increasing the total number of structures to decrease span lengths; however, this would result in even greater visual impacts, ground disturbance, construction time, and cost, and would decrease lifespan.

3.3 Alternative Methods to Fulfill Energy Requirements

3.3.1 *No-Action Alternative*

Due to the reliability and deliverability needs identified in the 2020 CLCPA Study and detailed more fully in Exhibit E-4, a no-action alternative for the transmission line rebuild is not feasible.

Due to the [REDACTED] substation breakers and the undesirable configuration of the Existing Jennison Substation that does not allow for Line 919 to be brought into the station, as detailed more fully in Exhibit E-4, a no-action alternative for the substation is not feasible.

3.3.2 *Alternative Transmission Line Technologies*

The Project is comprised of standard overhead single-circuit AC transmission lines. Alternative transmission line technologies such as HVDC were not considered practicable or feasible for the Project. HVDC transmission lines can be a cost-effective technology for transmission lines across long distances, primarily due to reductions in conductors, ROW size, and line power loss. These benefits become feasible only for very long stretches of new transmission line, as high costs are incurred to tie this type of technology into a primarily AC system.

Underground installation of the transmission line was also considered, and rejected, for certain small portions, as well as the entirety, of the Project. The Applicant made these determinations based on a number of factors, including high cost, increased environmental impacts, and increased complexity of operations and maintenance. Therefore, the Applicant did not attempt a more

detailed study of the cost of underground construction or conduct a site-specific analysis of environmental impacts. However, a general review of typical environmental impacts associated with the construction of a transmission line underground is given below. Apart from visual impacts, the negative impacts to environmental resources that result from construction and future maintenance of an underground line tend to be greater than for an overhead line. Such general impacts can include:

- Wetland Impacts: with an overhead line, the Applicant would typically attempt to locate utility poles outside of the wetland and span it. However, installation of an underground line would require significant excavation within the wetland. Any future maintenance would again require disturbance of the wetland.
- Stream Impacts: The Applicant proposes no utility poles to be located in a stream. In addition, the Applicant would attempt to avoid crossing any stream with equipment by approaching work areas from opposite directions. The installation of an underground line, however, might require significant excavation within the stream bed and banks. Any future maintenance might again require disturbance of the stream bed and banks.
- Agricultural Impacts: The Applicant would typically place mats in active agricultural fields for access and structure work locations to avoid soil disturbance and to minimize compaction impacts in active agricultural areas. An underground line would require excavation and potential impacts to the existing soil profile and any existing drainage networks within an agricultural field.
- Other Impacts: The transmission line ROW would need to be cleared regardless of whether construction was underground or overhead. Therefore, vegetation clearing, land usage, and wildlife habitat impacts would remain essentially the same for both methods of construction.

3.3.3 *Non-Wires Alternatives*

After testing the use of energy storage in the Oneonta Division, it was determined that approximately [REDACTED] would need to be distributed throughout the Oneonta area and dispatched [REDACTED]

[REDACTED] that the Applicant proposes the Project to address.

While this energy storage option [REDACTED] if control of the energy storage devices were given to the energy provider, if during light load (the most economical charging period) approximately [REDACTED] of energy storage in Northern Oneonta (the part of the Oneonta Division between East Norwich and Brothertown) [REDACTED]

[REDACTED] In Southern Oneonta (the part of the division between Jennison and Colliers), [REDACTED]

For these reasons, the non-wires option of energy storage was determined to be non-viable.

* * * * *

New York State Electric & Gas Corporation

Jennison Transmission Solution Project

Exhibit 3

Alternatives

Table 3-1

Jennison Substation Alternatives Matrix

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Table 3-1: Jennison Substation Alternatives Matrix

	Proposed	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 8	
Engineering constraints	Size in acres and dimension of substation development	Substation area (within fence line): 4.42 acre Substation size (within fence line) : 368.5ft X 550ft Site development: ±17.2 acres	Substation area (within fence line): 4.42 acre Substation size (within fence line) : 368.5ft X 550ft Site development: N/A	Substation area (within fence line): 4.42 acre Substation size (within fence line) : 368.5ft X 550ft Site development: N/A	Substation area (within fence line): 4.42 acre Substation size (within fence line) : 368.5ft X 550ft Site development: N/A	Substation area (within fence line): 4.42 acre Substation size (within fence line) : 368.5ft X 550ft Site development: N/A	Substation area (within fence line): 4.42 acre Substation size (within fence line) : 368.5ft X 550ft Site development: N/A	Substation area (within fence line): 4.42 acre Substation size (within fence line) : 368.5ft X 550ft Site development: N/A	Substation area (within fence line): 4.42 acre Substation size (within fence line) : 368.5ft X 550ft Site development: N/A	Substation area (within fence line): 4.42 acre Substation size (within fence line) : 368.5ft X 550ft Site development: High complexity to fit.
	Distance from original location	±4,200' (.90 miles)	±3,900' (.74 miles)	±4,200' (.80 miles)	±2,300' (.44 miles)	±2,200' (.42 miles)	±6,100' (1.15 miles)	±8,500' (1.61 miles)	±1,600' (.3 miles)	±520' (.1 miles)
	Minimizing transmission line reroute works and assessing its feasibility	The transmission line reroute works for this option are lower when compared to other analyzed options.	The transmission line reroute works for this option are lower when compared to other analyzed options.	The transmission line reroute works for this option are largest when compared to other analyzed options.	The transmission line reroute works for this option are largest when compared to other analyzed options.	The transmission line reroute works for this option are medium when compared to other analyzed options.	The transmission line reroute works for this option are medium when compared to other analyzed options.	The transmission line reroute works for this option are largest when compared to other analyzed options.	The transmission line reroute works for this option are medium when compared to other analyzed options.	The transmission line reroute works for this option are complex when compared to other analyzed options.
	Maximizing utilization of existing ROWs and minimizing new ROWs	This option requires the shortest new ROW when compared to other analyzed options	This option requires the shortest new ROW when compared to other analyzed options	This option requires largest new ROW when compared to other analyzed options	This option requires largest new ROW when compared to other analyzed options	This option requires the shortest new ROW when compared to other analyzed options	This option requires the shortest new ROW when compared to other analyzed options	This option requires the shortest new ROW when compared to other analyzed options	This option requires medium new ROW when compared to other analyzed options	This option requires the shortest new ROW when compared to other analyzed options
	Topography of terrain and minimizing quantity of earth works	Substation: Cut - 14,777 cu yd , Fill - 7,800 cu yd Access road : Cut: 18,674 cu yd, Fill - 0 cu yd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Site access road feasibility, length and slope including feasibility of transformer transportation	Access road connects to MT. Pleasant Road through neighboring property and goes into Jennison site. Neighbors access road length : 580 ft Neighbor average access road slope: 3.24% Substation access road length : 2,245 ft SS average access road slope: 4.94% Transformer transportation is feasible.	A potential access road to NY-7 (East of Alt location) is feasible. A potential access road to Stumptown Road (West of Alt location) is less likely to allow transformer transportation.	A potential access road to NY-7 (East of Alt location) is less likely to allow transformer transportation.	A potential access road to NY-7 (East of Alt location) is feasible.	A potential access road to NY-7 (East of Alt location) is feasible.	A potential access road to Stumptown Road (West of Alt location) is less likely to allow transformer transportation, with a potential need of a bridge infrastructure	A potential access road to Stumptown Road (East of Alt location) is feasible.	A potential access road to NY-7 (West of Alt location) is less likely to allow transformer transportation, with a new railroad crossing.	A potential access road to NY-7 (West of Alt location) is less likely to allow transformer transportation, with a new railroad crossing.
	Flood hazards	The suggested location is not within a flood hazards zone	The suggested location is not within a flood hazards zone	The suggested location is not within a flood hazards zone	The suggested location is not within a flood hazards zone	The suggested location is not within a flood hazards zone	The suggested location is not within a flood hazards zone	The suggested location is not within a flood hazards zone	Approximately 14.96 acres of the suggested site is within a FEMA floodway and 0.56 acres are within a 500-year floodplain.	Approximately 3.62 acres of the suggested site is within a FEMA floodway and 0.13 acres are within a 500-year floodplain.
	Considering larger parcels and minimizing the number of land parcel owners	Substation is located on a single parcel owned by NYSEG and is proposing to use access through a neighboring property, also located on a single parcel	Potential substation yard and access road could be located on one privately owned parcel.	Potential substation yard and access road could be located on one privately owned parcel.	Potential substation yard and access road could be located on one privately owned parcel.	Potential substation yard and access road could be located on one privately owned parcel.	Potential substation yard and access road could be located on one privately owned parcel.	Potential substation yard and access road could be located on one privately owned parcel.	Potential substation yard and access road could be located on one privately owned parcel.	Potential substation yard and access road could be located on one privately owned parcel.
	Proximity to residences	Residential properties located adjacent on either side of Jennison SS access road. Access road goes through neighboring property, west of the site, to access Jennison site.	Residential properties would be located adjacent on either side of an access road.	Residential properties would be located adjacent on either side of an access road.	Residential properties would be located adjacent on either side of an access road.	Residential properties would be located adjacent on either side of an access road.	Proximity to private residences and accessibility restrictions due to limited ROW and agricultural area	Proximity to private residences and accessibility restrictions due to limited ROW and agricultural area	Residential properties would be located adjacent on either side of an access road.	Residential properties would be located adjacent on either side of an access road.
	Type of Land use	According to the publicly available data, the proposed site is situated on vacant land.	According to the publicly available data, the proposed site is situated on forested lands within a residential property.	According to the publicly available data, the proposed site is situated on forested lands within a residential property.	According to the publicly available data, the proposed site is situated on forested lands, agricultural area within a residential property.	According to the publicly available data, the proposed site is situated on forested lands, agricultural area within a residential property.	According to the publicly available data, the proposed site is situated on forested lands, agricultural area within a residential property.	According to the publicly available data, the proposed site is situated on forested lands, agricultural area within a residential property.	According to the publicly available data, the proposed site is situated on forested lands, agricultural area within a residential property.	According to the publicly available data, the proposed site is situated on forested lands within a residential property.
Any Geotechnical considerations	3' stripping of alluvial soils	N/A	N/A	N/A	N/A	Low depression due to a creek crossing the property	N/A	N/A	N/A	
Environmental/Permitting constraints	T&E Species	Northern long-eared bat habitat; avoid impacts by following seasonal tree clearing restrictions.	Inquiry with the USFWS IPaC identified the potential presence of the endangered Northern Long-Eared Bat, Bald Eagle, Monarch Butterfly, and Green Floater Clam in the project vicinity. Seasonal restrictions may apply. The Susquehanna River is approximately 0.17 miles east of parcel. Critical habitat for Green Floater Clam.	Inquiry with the USFWS IPaC identified the potential presence of the endangered Northern Long-Eared Bat, Bald Eagle, Monarch Butterfly, and Green Floater Clam in the project vicinity. Seasonal restrictions may apply. The Susquehanna River is approximately 0.50 mile east of parcel. Critical habitat for Green Floater Clam.	Inquiry with the USFWS IPaC identified the potential presence of the endangered Northern Long-Eared Bat, Bald Eagle, Monarch Butterfly, and Green Floater Clam in the project vicinity. Seasonal restrictions may apply. The Susquehanna River is approximately 0.05 miles east of parcel. Critical habitat for Green Floater Clam.	Inquiry with the USFWS IPaC identified the potential presence of the endangered Northern Long-Eared Bat, Bald Eagle, Monarch Butterfly, and Green Floater Clam in the project vicinity. Seasonal restrictions may apply. The Susquehanna River is approximately 0.09 mile east of parcel access road. Critical habitat for Green Floater Clam.	Inquiry with the USFWS IPaC identified the potential presence of the endangered Northern Long-Eared Bat, Bald Eagle, Monarch Butterfly, and Green Floater Clam in the project vicinity. Seasonal restrictions may apply. The Susquehanna River is approximately 1.31 miles east of parcel. Critical habitat for Green Floater Clam.	Inquiry with the USFWS IPaC identified the potential presence of the endangered Northern Long-Eared Bat, Bald Eagle, Monarch Butterfly, and Green Floater Clam in the project vicinity. Seasonal restrictions may apply. The Susquehanna River is adjacent to the parcel (directly east). Critical habitat for Green Floater Clam.	Inquiry with the USFWS IPaC identified the potential presence of the endangered Northern Long-Eared Bat, Bald Eagle, Monarch Butterfly, and Green Floater Clam in the project vicinity. Seasonal restrictions may apply. The Susquehanna River is adjacent to the parcel (directly east). Critical habitat for Green Floater Clam.	Inquiry with the USFWS IPaC identified the potential presence of the endangered Northern Long-Eared Bat, Bald Eagle, Monarch Butterfly, and Green Floater Clam in the project vicinity. Seasonal restrictions may apply. The Susquehanna River is approximately 0.90 miles east of parcel. Critical habitat for Green Floater Clam. The parcel also has three mapped-stream crossings that are minor tributaries to the River.
	Permitting	Site Plan review required by Town of Bainbridge Zoning Board, would likely require Special Use Permit and local approval. A7 filing recommended to mitigate local approval.	The parcel is within Chenango County, town of Bainbridge R1 (residential) zone.	The parcel is within Chenango County, town of Bainbridge R1 (residential) zone.	The parcel is within Chenango County, town of Bainbridge R1 (residential) zone.	The parcel is within Chenango County, town of Bainbridge R1 (residential) zone.	The parcel is within Chenango County, town of Bainbridge R1 (residential) zone.	The parcel is within Chenango County, town of Bainbridge R1 (residential) zone.	The parcel is within Chenango County, town of Bainbridge R1 (residential) zone.	The parcel is within Chenango County, town of Bainbridge C1 (Commercial) District. The site is vacant Public Utility land.
	Wetlands	No mapped wetlands or streams within the parcel.	Two NWI-mapped Freshwater Ponds, totaling 0.31 acres in size, and 3 NWI riverine wetlands. Additionally, there are 4 NYSDEC stream crossings.	No mapped wetlands or streams within the parcel.	No mapped wetlands or streams within the parcel.	0.2 acres of NWI open water wetlands within the parcel.	There are 2.5 acres of NWI Open Water wetlands and 2.5 acres of NWI emergent wetlands. Minor tributaries to the Susquehanna River on the western edge of the parcel. Additionally, there are 2 NYSDEC stream crossings.	There are 0.28 acres of NWI open water wetlands. Additionally, there is 1 NYSDEC stream crossing.	There are 0.93 acres of NWI open water wetlands within the parcel. There is a freshwater forested/shrub wetland located on the southern edge of the property.	There are 0.2 acres of NWI open water wetlands within the parcel.
	Land Cover	Undeveloped field, surrounded by wooded area.	The majority of the parcel is pasture/hay vegetation with Deciduous Forest making up the western corner of the Parcel.	The parcel is mostly forested, but has maintained Transmission line ROW on there northern section, with some pasture land to the east.	Mainly low growing vegetation, designated as pasture/hay.	Most of the parcel is undeveloped forestland, with a couple pasture/hay fields near the center of the parcel.	Site is primarily undeveloped forest land, with some agricultural fields on the east side of the parcel.	The majority of the land cover is pasture/cropland for agricultural use, with some PFO at the southern end of the parcel. There is also an NWI-mapped PEM wetland dividing the parcel which enters in from the north, from the existing substation.	Current land cover is mainly agricultural land, with some scattered deciduous forest towards the outskirts of the parcel.	The majority of the land cover is pasture/cropland and scrub/shrub with scattered trees throughout based on the aerial and NLCD data. There is also an NWI-mapped PEM wetland dividing the parcel which enters in from the north, from the existing substation.
	General Site Conditions/Habitat	Site is a vacant field surrounded by forested and agricultural land. It is located 0.9 miles west of the existing substation and is outside of the flood zone.	The proposed site is just west of the Susquehanna River, gently sloping upwards to the west towards Mount Pleasant. The parcel is active Agricultural land, mainly pasture/hay with Deciduous Forest making up the western portion of the parcel.	The parcel slopes up towards the top of Mount Pleasant, already has maintained Transmission Line ROW.	The proposed site is located in a scrub/shrub or pasture/hay habitat. Located at the eastern base of Mount Pleasant and approximately 0.05 miles west of the Susquehanna River. Site is gently sloping up towards Mount Pleasant and down towards the river.	The parcel has relatively steep slopes on the eastern end, but does have some pasture scattered throughout.	The parcel spans Mount Pleasant east to west, with gently sloping sides, forested with mixed canopy and deciduous forest. Site borders Oak Ridge State Forest to the South, 576-acre State managed Park (NYSDEC).	Site is a relatively flat field surrounded by agricultural land with a railroad at the western edge and the Susquehanna River to the east.	The proposed site is situated between two rolling hills, with wetlands located at the lowest point of the parcels. The majority of the parcel is pasture for the Dairy Farm, with deciduous forest towards the edges of the parcel.	The proposed site is relatively flat, and is adjacent to the Susquehanna River. Due to the proximity of the parcel to the River, the site is within a FEMA Special Flood Hazard Area and Regulatory Floodway. The majority of the site is pasture/cropland and scrub/shrub with some scattered trees.
	Cultural Resources	1.65 acres of archaeologically sensitive area	106 acres of archaeologically sensitive area	65.65 acres of archaeologically sensitive area	19.92 acres of archaeologically sensitive area	61.67 acres of archaeologically sensitive area	N/A	N/A	25.81 acres of archaeologically sensitive area	11.36 acres of archaeologically sensitive area
	Agricultural	24.55 acres of prime farmland, 33.08 acres of farmland of statewide importance. No active farmland. Not within an Ag district.	60.22 acres of prime farmland, 73.14 acres of farmland of statewide importance. 9.48 acres of active farmland. Entire parcel is within Ag district.	16.39 acres of prime farmland, 49.3 acres of farmland of statewide importance. No active farmland. 0.14 acres within Ag district.	15.52 acres of farmland of statewide importance. No active farmland. Not within an Ag district.	4.71 acres of prime farmland, 34.82 acres of farmland of statewide importance. No active farmland. Entire parcel is within Ag district.	5.25 acres of prime farmland, 90.24 acres of farmland of statewide importance. 59 acres of active farmland. Entire parcel is within Ag district. 130.4 acres of parcel is classified as agricultural land type use.	21.6 acres of prime farmland, 50.85 acres of farmland of statewide importance. 30.32 acres of active farmland. Entire parcel is within Ag district. 101.28 acres of parcel is classified as agricultural land type use.	25.45 acres of prime farmland, 18.86 acres of active farmland. Entire parcel is within Ag district.	9.36 acres of prime farmland, 0.78 acres of active farmland. Not within an Ag district.

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New York State Electric & Gas Corporation

Jennison Transmission Solution Project

Exhibit 3

Alternatives

Table 3-2

Line 734 Alternative Routing Matrix

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Table 3-2: Line 734 Alternatives

	Segment 1			Segment 2		Segment 3							
	Proposed Segment 1	Alternative Segment 1-A	Alternative Segment 1-B	Proposed Segment 2	Alternative Segment 2	Proposed Segment 3-A	Alternative Segment 3-A	Proposed Segment 3-B	Alternative Segment 3-B	Proposed Segment 3-C	Alternative Segment 3-C	Proposed Segment 3-D	Alternative Segment 3-D
Engineering constraints	None. Avoids existing encroachment.	Alternative ROW would not entirely avoid residential encroachment/accessory buildings.	None. Avoids existing encroachment.	None. Avoids existing encroachment.	Avoids residence in Existing ROW, but building on Existing Line 946 center line would require prolonged outages. Offsetting the center line eastward was not possible due to other structures in Existing ROW.	None. Avoids existing encroachments and crossing Glenn Lake.	None. Avoids existing encroachments and crossing Glenn Lake.	None. Avoids existing encroachments and crossing Glenn Lake.	None. Avoids existing encroachments and crossing Glenn Lake.	None. Avoids existing encroachments and crossing Glenn Lake.	An engineering flaw made the proposed placement of Structure 734/32 and proposed alignment no longer feasible.	None. Avoids existing encroachments and crossing Glenn Lake.	Zig-zagging proposed line throughout the residential neighborhood to avoid existing encroachments would have required complex construction sequencing and prolonged outages.
Environmental/Permitting constraints	Requires 2.51 acres of tree clearing. Requires 4.3 acres of New ROW. No NWI wetlands and no NYSDEC stream crossings. No active farmland. Entire length is within an archaeologically sensitive area.	Purchasing/demolishing residential encroachment would be required, landowner was not amenable. Requires 2.51 acres of tree clearing. Requires 4.3 acres of New ROW. No NWI wetlands and no NYSDEC stream crossings. No active farmland. Entire length is within an archaeologically sensitive area.	Requires 3.21 acres of tree clearing. Requires 3.23 acres of New ROW. No NWI wetlands and no NYSDEC stream crossings. No active farmland. Entire length is within an archaeologically sensitive area.	Requires 4.13 acres of tree clearing. Requires 3.6 acres of New ROW. No NWI wetlands and 1 NYSDEC stream crossing. No active farmland. Entire length is within an archaeologically sensitive area.	Requires 3.75 acres of tree clearing. Requires no New ROW. No NWI wetlands and 1 NYSDEC stream crossing. No active farmland. Entire length is within an archaeologically sensitive area.	Requires 6.93 acres of tree clearing. Requires 11.02 acres of New ROW. Has 0.28 acres of NWI wetlands and 3 NYSDEC stream crossings. No active farmland. No archaeologically sensitive areas.	Requires 4.75 acres of tree clearing. Requires 16.59 acres of New ROW. Has 0.28 acres of NWI wetlands and 4 NYSDEC stream crossings. No active farmland. No archaeologically sensitive areas.	Requires 4.86 acres of tree clearing. Requires 9.71 acres of New ROW. Has 0.28 acres of NWI wetlands and 2 NYSDEC stream crossings. No active farmland. No archaeologically sensitive areas.	Requires 3.25 acres of tree clearing. Requires 11.58 acres of New ROW. Has 0.09 acres of NWI wetlands and 2 NYSDEC stream crossings. No active farmland. No archaeologically sensitive areas.	Requires 4.86 acres of tree clearing. Requires 8.79 acres of New ROW. Has 0.28 acres of NWI wetlands and 2 NYSDEC stream crossings. No active farmland. No archaeologically sensitive areas.	Requires 4.73 acres of tree clearing. Requires no New ROW. Has 0.29 acres of NWI wetlands and 2 NYSDEC stream crossings. No active farmland. No archaeologically sensitive areas.	Requires 4.86 acres of tree clearing. Requires 8.81 acres of New ROW. Has 0.28 acres of NWI wetlands and 2 NYSDEC stream crossings. No active farmland. No archaeologically sensitive areas.	Requires 1.07 acres of tree clearing. Requires 8.71 acres of New ROW. Has 1.68 acres of NWI wetlands and 2 NYSDEC stream crossings. No active farmland. No archaeologically sensitive areas.

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New York State Electric & Gas Corporation

Jennison Transmission Solution Project

Exhibit 3

Alternatives

Table 3-3

Line 946 Alternative Routing Matrix

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Table 3-3: Line 946 Alternatives

	Segment 1		Segment 2		Segment 3		Segment 4		
	Proposed Segment 1	Alternative Segment 1	Proposed Segment 2	Alternative Segment 2	Proposed Segment 3	Alternative Segment 3	Proposed Segment 4	Alternative Segment 4-A	Alternative Segment 4-B
Engineering constraints	None. Avoids existing encroachment.	Avoids residential encroachment but not accessory structures in ROW, and would require prolonged outage.	None. Avoids lumber yard and area of potential future expansions of mining operations.	Does not avoid lumber yard and would require extensive outages during construction.	None. Avoids existing encroachment.	Avoids existing encroachment but would require crossing over Proposed Line 823 twice, which would reduce reliability.	None. Uses Existing ROW.	A change in the earlier designs of the Proposed Jemison Substation made this alignment incompatible with the current Proposed Substation design.	A change in the earlier designs of the Proposed Jemison Substation made this alignment incompatible with the current Proposed Substation design.
Environmental/Permitting constraints	Requires 2.17 acres of tree clearing. Requires 4.21 acres of New ROW. No NWI wetlands and 1 NYSDEC stream crossing. No active farmland. No archaeologically sensitive areas.	Requires 1.63 acres of tree clearing. Requires no New ROW. No NWI wetlands and 1 NYSDEC stream crossing. No active farmland. No archaeologically sensitive areas.	Requires 14.95 acres of tree clearing. Requires 15.49 acres of New ROW. No NWI wetlands and 2 NYSDEC stream crossings. No active farmland. Entire length is within an archaeologically sensitive area.	Requires 7.28 acres of tree clearing. Requires 9.16 acres of New ROW. No NWI wetlands and 2 NYSDEC stream crossings. No active farmland. Entire length is within an archaeologically sensitive area.	<i>A more robust analysis was not performed on this segment due to engineering constraints that made Alternative Segment 3 unfeasible.</i>	<i>A more robust analysis was not performed on this segment due to engineering constraints that made Alternative Segment 3 unfeasible.</i>	<i>A more robust analysis was not performed on this segment due to engineering constraints that made Alternative Segments 4-A and 4-B unfeasible.</i>	<i>A more robust analysis was not performed on this segment due to engineering constraints that made Alternative Segment 4-A unfeasible.</i>	<i>A more robust analysis was not performed on this segment due to engineering constraints that made Alternative Segment 4-B unfeasible.</i>

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New York State Electric & Gas Corporation

Jennison Transmission Solution Project

Exhibit 3

Alternatives

Table 3-4

Line 949 Alternative Routing Matrix

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Table 3-4: Line 949 Alternatives

	Segment 1		Segment 2	
	<i>Proposed Segment 1</i>	<i>Alternative Segment 1</i>	<i>Proposed Segment 2</i>	<i>Alternative Segment 2</i>
Engineering constraints	None. Aligns with current substation design.	A change in the earlier designs of the Proposed Jennison Substation made this alignment incompatible with the current Proposed Substation design.	None. Avoids crossing Existing Line 919.	Double circuiting Existing Line 919 would decrease reliability. Would require reduction of Existing ROW.
Environmental/Permitting constraints	<i>A more robust analysis was not performed on this segment due to engineering constraints that made Alternative Segment 1 unfeasible.</i>	<i>A more robust analysis was not performed on this segment due to engineering constraints that made Alternative Segment 1 unfeasible.</i>	<i>A more robust analysis was not performed on this segment due to engineering constraints that made Alternative Segment 2 unfavorable.</i>	<i>A more robust analysis was not performed on this segment due to engineering constraints that made Alternative Segment 2 unfavorable.</i>

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New York State Electric & Gas Corporation

Jennison Transmission Solution Project

Exhibit 3

Alternatives

Figures

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New York State Electric & Gas Corporation

Jennison Transmission Solution Project

Exhibit 3













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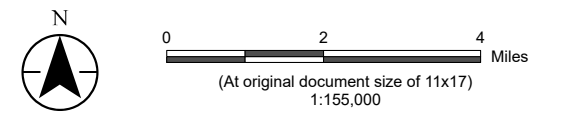
Figure 3-1

Overview of Proposed and Alternative Sites

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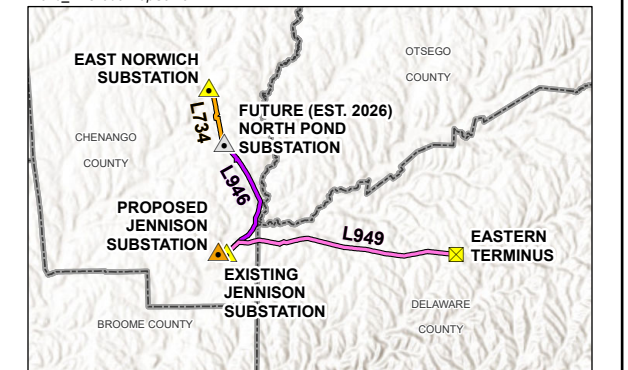
Jennison Transmission Solution Project

-  Eastern Terminus
 -  Substation, Existing
 -  Substation, Future
 -  Substation, Proposed
 -  Proposed Line 734
 -  Proposed Line 946
 -  Proposed Line 949
 -  Jennison Reroute
 -  Alternative Route Area
- Road or Highway**
-  Interstate
 -  U.S. or State Highway
 -  Secondary State or County Highway



Notes

1. Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet
2. Data Sources: NYSEG Data, 2024; Esri North American Detailed Streets, 2012; NYS OITS GIS Program Office (GPO) Civil Boundaries, 2018
3. Background: NYS DOT 1:250,000 Scale County Maps, NYS ITS GIS Program Office; Esri World Hillshade: https://services.arcgisonline.com/arcgis/rest/services/Elevation/World_Hillshade/MapServer



Project Location
Chenango, Delaware, & Otsego Counties, NY

Prepared by DG on 2024-06-24
TR by AB on 2024-10-14
IR by BS on 2024-10-25

Client/Project
Jennison Transmission Solution Project
NYSEG CLCPA Program

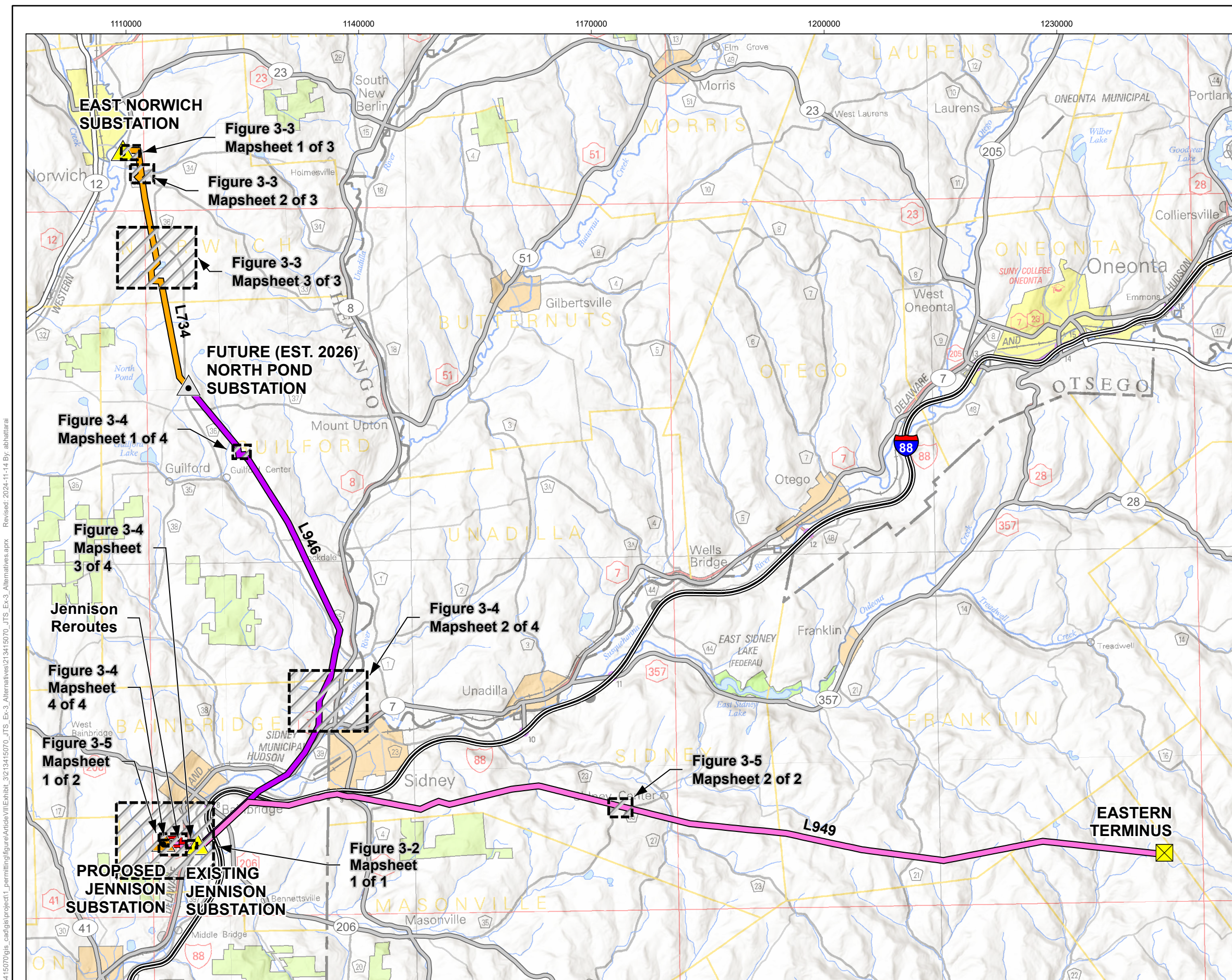
213415070 REVA

Figure No.

3-1

Title

Overview of Proposed and Alternative Sites - Mapsheet 1 of 1



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New York State Electric & Gas Corporation

Jennison Transmission Solution Project

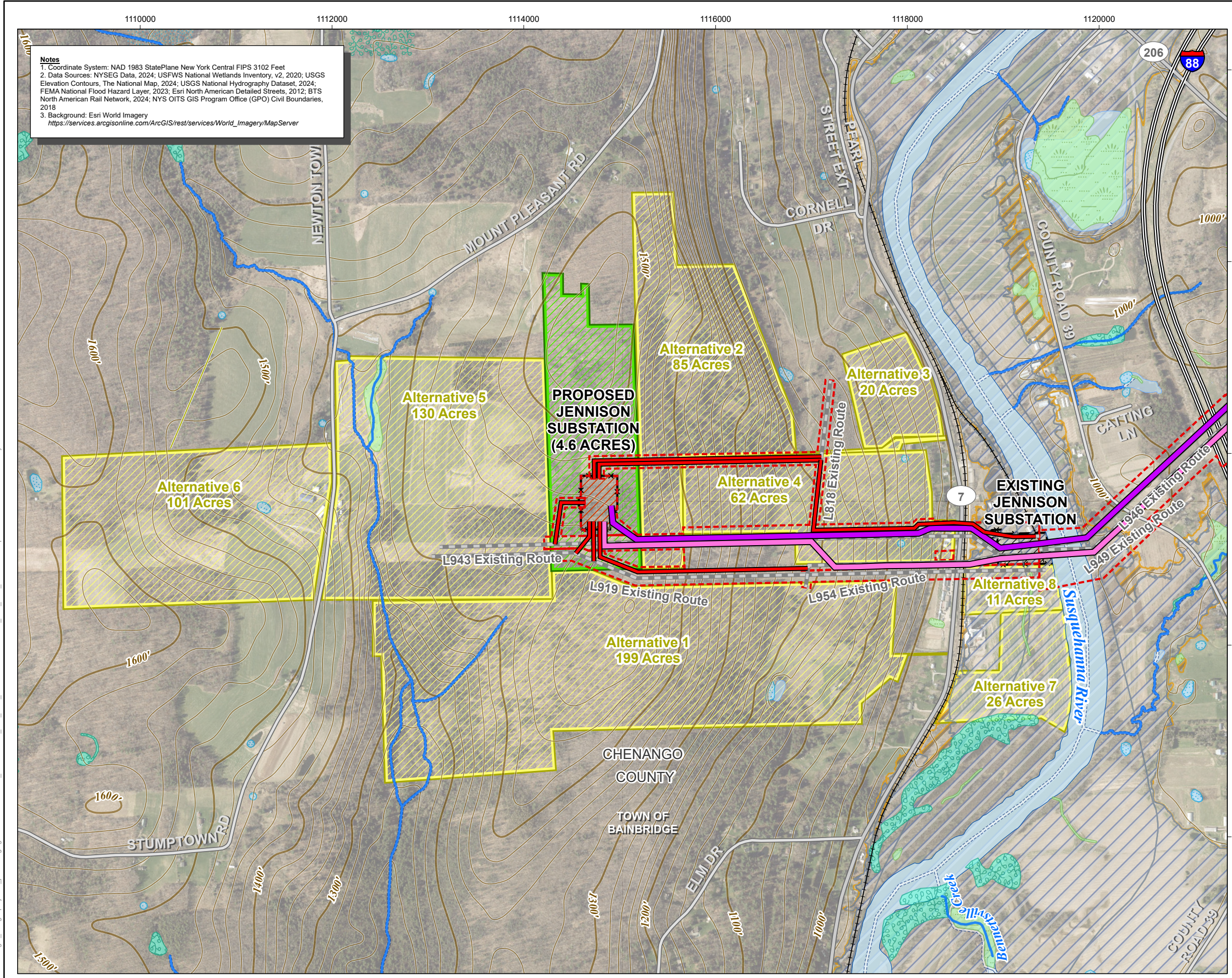
Exhibit 3

Alternatives

Figure 3-2

Jennison Substation Alternatives and Proposed Location

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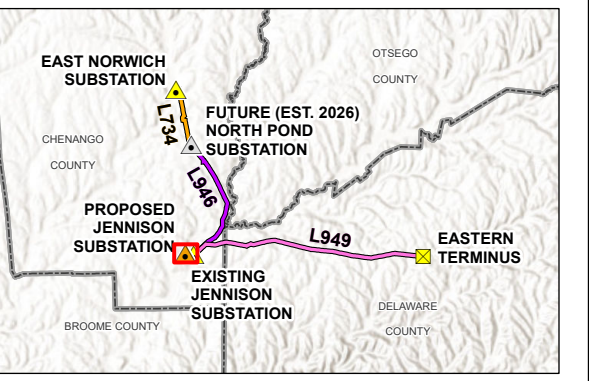
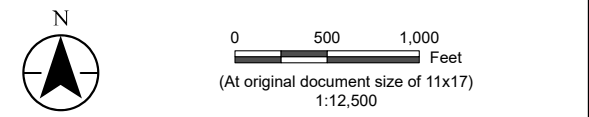


Notes
 1. Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet
 2. Data Sources: NYSEG Data, 2024; USFWS National Wetlands Inventory, v2, 2020; USGS Elevation Contours, The National Map, 2024; USGS National Hydrography Dataset, 2024; FEMA National Flood Hazard Layer, 2023; Esri North American Detailed Streets, 2012; BTS North American Rail Network, 2024; NYS OITS GIS Program Office (GPO) Civil Boundaries, 2018
 3. Background: Esri World Imagery
https://services.arcgis.com/ArcGIS/rest/services/World_Imagery/MapServer



- Jennison Transmission Solution Project**
- Proposed Line 946
 - Proposed Line 949
 - Proposed Jennison Reroute
 - Existing Alignment
 - Proposed Right-of-Way
 - Existing Jennison Substation
 - Proposed Jennison Substation
 - Jennison Substation Proposed Site
 - Jennison Substation Alternative Site

- Elevation Contour**
- 20-ft Contour
 - 100-ft Contour
 - Railroad
- Road or Highway**
- Interstate
 - Secondary State or County Highway
 - Local, Neighborhood, Rural or City Street
- Flood Hazard Area, FEMA**
- 1% Annual Chance of Flood (100-year Flood)
 - 0.2% Annual Chance of Flood (500-year Flood)
- National Wetlands Inventory**
- Freshwater Emergent Wetland
 - Freshwater Forested/Shrub Wetland
 - Freshwater Pond
 - Riverine
- National Hydrography Dataset**
- Lake, Pond, or Reservoir
 - Stream or River



Project Location
 Chenango, Delaware, & Otsego Counties, NY

Prepared by DG on 2024-06-24
 TR by AB on 2024-10-14
 IR by BS on 2024-10-25

Client/Project
 Jennison Transmission Solution Project
 NYSEG CLCPA Program

213415070 REVA

Figure No.
3-2

Title
Jennison Substation Alternatives and Proposed Location - Mapsheet 1 of 1 (Aerial)

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1110000

1112000

1114000

1116000

1118000

1120000

Notes

1. Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet
2. Data Sources: NYSEG Data, 2024; USFWS National Wetlands Inventory, v2, 2020; USGS Elevation Contours, The National Map, 2024; USGS National Hydrography Dataset, 2024; FEMA National Flood Hazard Layer, 2023; Esri North American Detailed Streets, 2012; BTS North American Rail Network, 2024; NYS OITS GIS Program Office (GPO) Civil Boundaries, 2018
3. Background: NYS DOT 1:24,000-scale Raster Quadrangles
Esri World Hillshade: https://services.arcgis.com/arcgis/rest/services/Elevation/World_Hillshade/MapServer

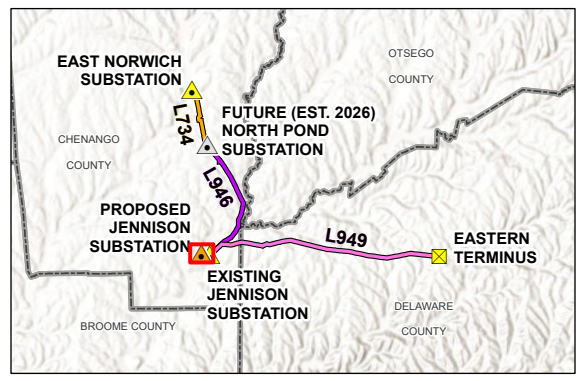
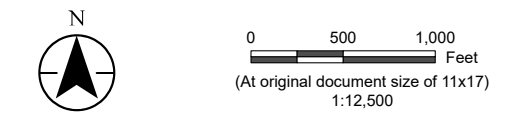
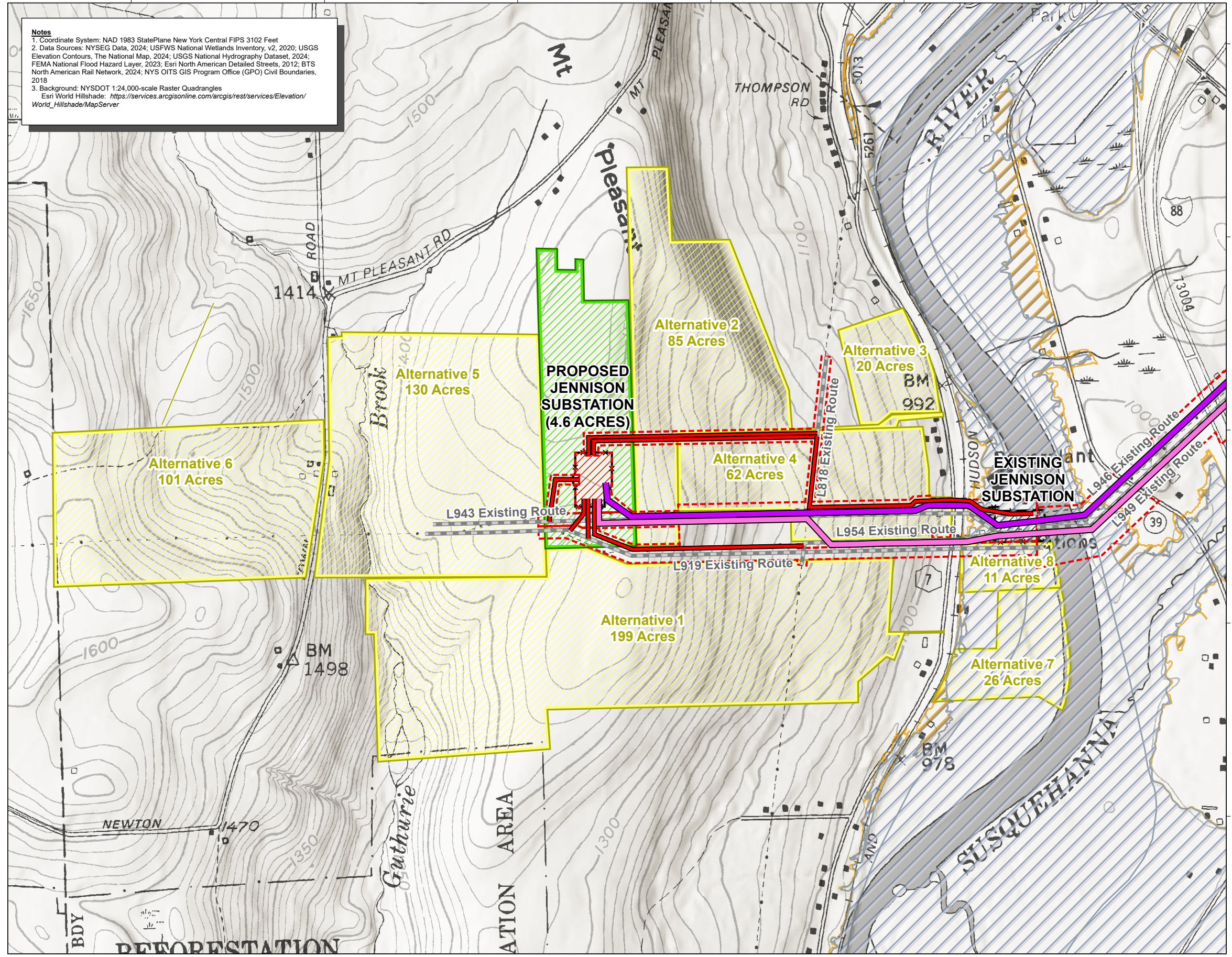


Jennison Transmission Solution Project

- Proposed Line 946
- Proposed Line 949
- Proposed Jennison Reroute
- Existing Alignment
- Proposed Right-of-Way
- Existing Jennison Substation
- Proposed Jennison Substation
- Jennison Substation Alternative Site

Flood Hazard Area, FEMA

- 1% Annual Chance of Flood (100-year Flood)
- 0.2% Annual Chance of Flood (500-year Flood)



Project Location: Chenango, Delaware, & Otsego Counties, NY
 Prepared by DG on 2024-06-24
 TR by AB on 2024-10-14
 IR by BS on 2024-10-25

Client/Project: Jennison Transmission Solution Project
 NYSEG CLCPA Program

Figure No. **3-2**
 Title

Jennison Substation Alternatives and Proposed Location - Mapsheet 1 of 1 (NYS DOT)

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New York State Electric & Gas Corporation

Jennison Transmission Solution Project

Exhibit 3

Alternatives

Figure 3-3

Line 734 Alternatives and Proposed Route

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Jennison Transmission Solution Project

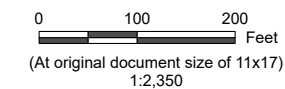
- Structure, Proposed
- Alternative Segment Endpoint
- Existing Line 946
- Proposed Line 734
- Line 734 Alternative
- Existing Right-of-Way
- Proposed Right-of-Way
- Substation, Existing

Elevation Contour

- 20-ft Contour
- 100-ft Contour

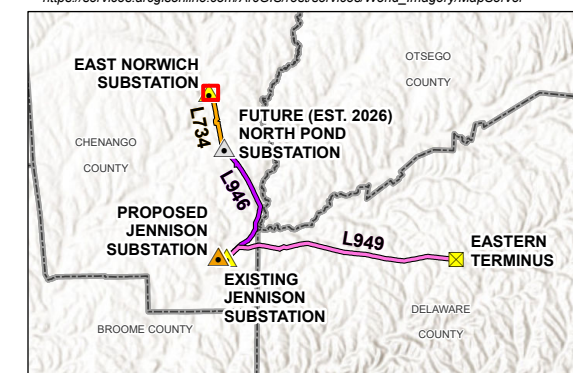
Road or Highway

- Local, Neighborhood, Rural or City Street



Notes

1. Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet
2. Data Sources: NYSEG Data, 2024; Esri North American Detailed Streets, 2012; USGS Elevation Contours, The National Map, 2023; NYS OITS GIS Program Office (GPO) Civil Boundaries, 2018
3. Background: Esri World Imagery
https://services.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer



Project Location
Chenango, Delaware, & Otsego Counties, NY

Prepared by DG on 2024-06-24
TR by AB on 2024-10-14
IR by BS on 2024-10-25

Client/Project
Jennison Transmission Solution Project
NYSEG CLCPA Program

213415070 REVA

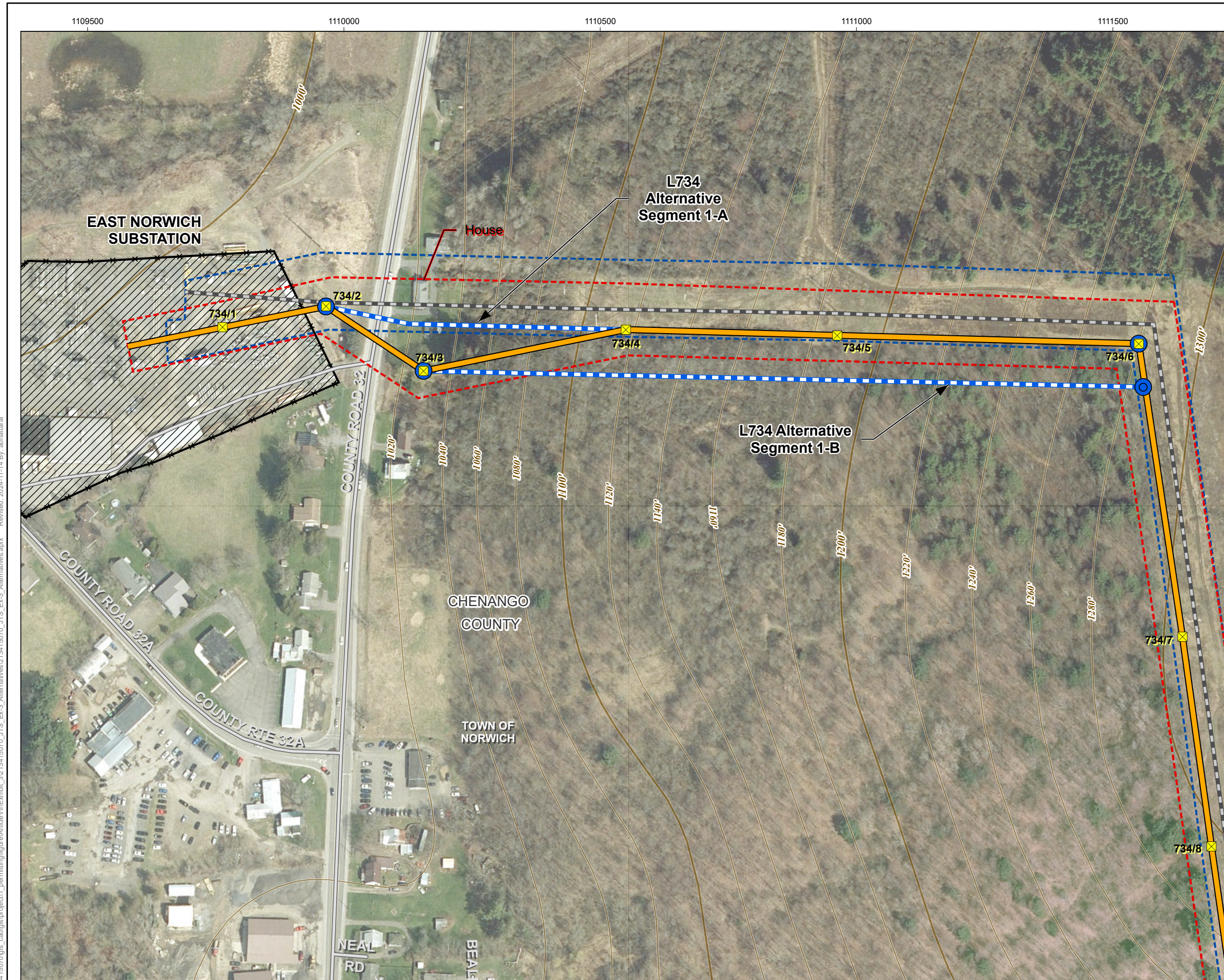
Figure No.

3-3

Title

**Line 734 Alternatives and Proposed Route
Mapsheet 1 - Alternative Segment 1 (Aerial)**

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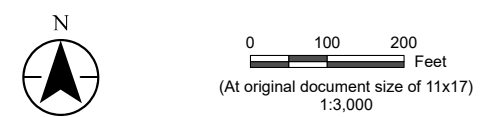
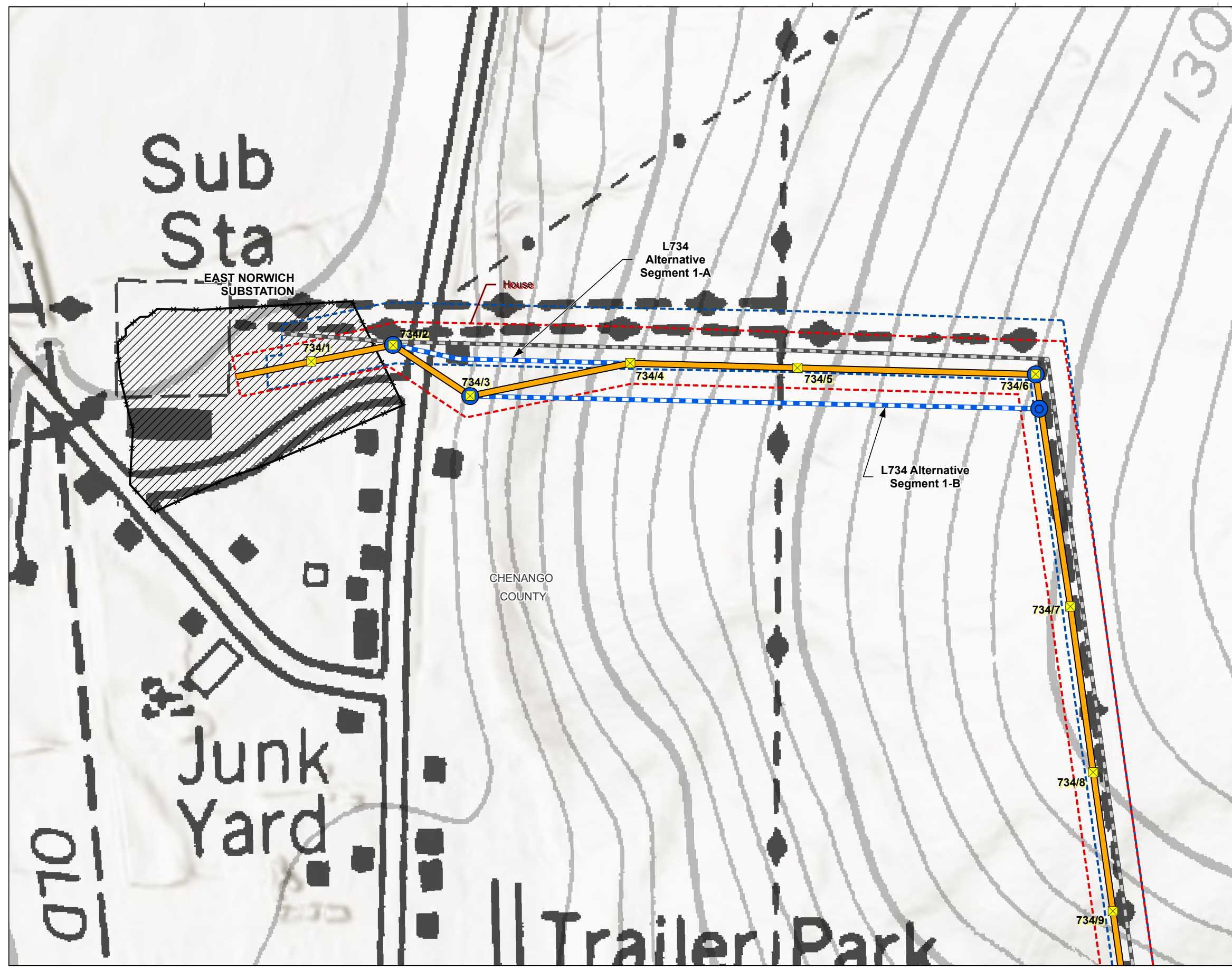
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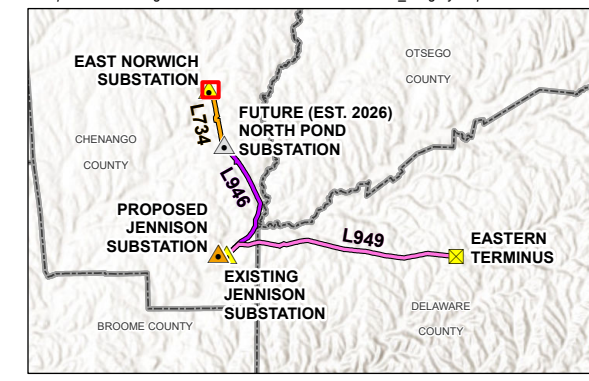
Jennison Transmission Solution Project

- Structure, Proposed
- Alternative Segment Endpoint
- Existing Line 946
- Proposed Line 734
- Line 734 Alternative
- Existing Right-of-Way
- Proposed Right-of-Way
- Substation, Existing

921000
920500
920000
919500



- Notes**
1. Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet
 2. Data Sources: NYSEG Data, 2024; Esri North American Detailed Streets, 2012; USGS Elevation Contours, The National Map, 2023; NYS OITS GIS Program Office (GPO) Civil Boundaries, 2018
 3. Background: Esri World Imagery
https://services.arcgis.com/ArcGIS/rest/services/World_Imagery/MapServer



Project Location
Chenango, Delaware, & Otsego Counties, NY

Prepared by DG on 2024-06-24
TR by AB on 2024-10-14
IR by BS on 2024-10-25

Client/Project
Jennison Transmission Solution Project
NYSEG CLCPA Program

213415070 REVA

Figure No.

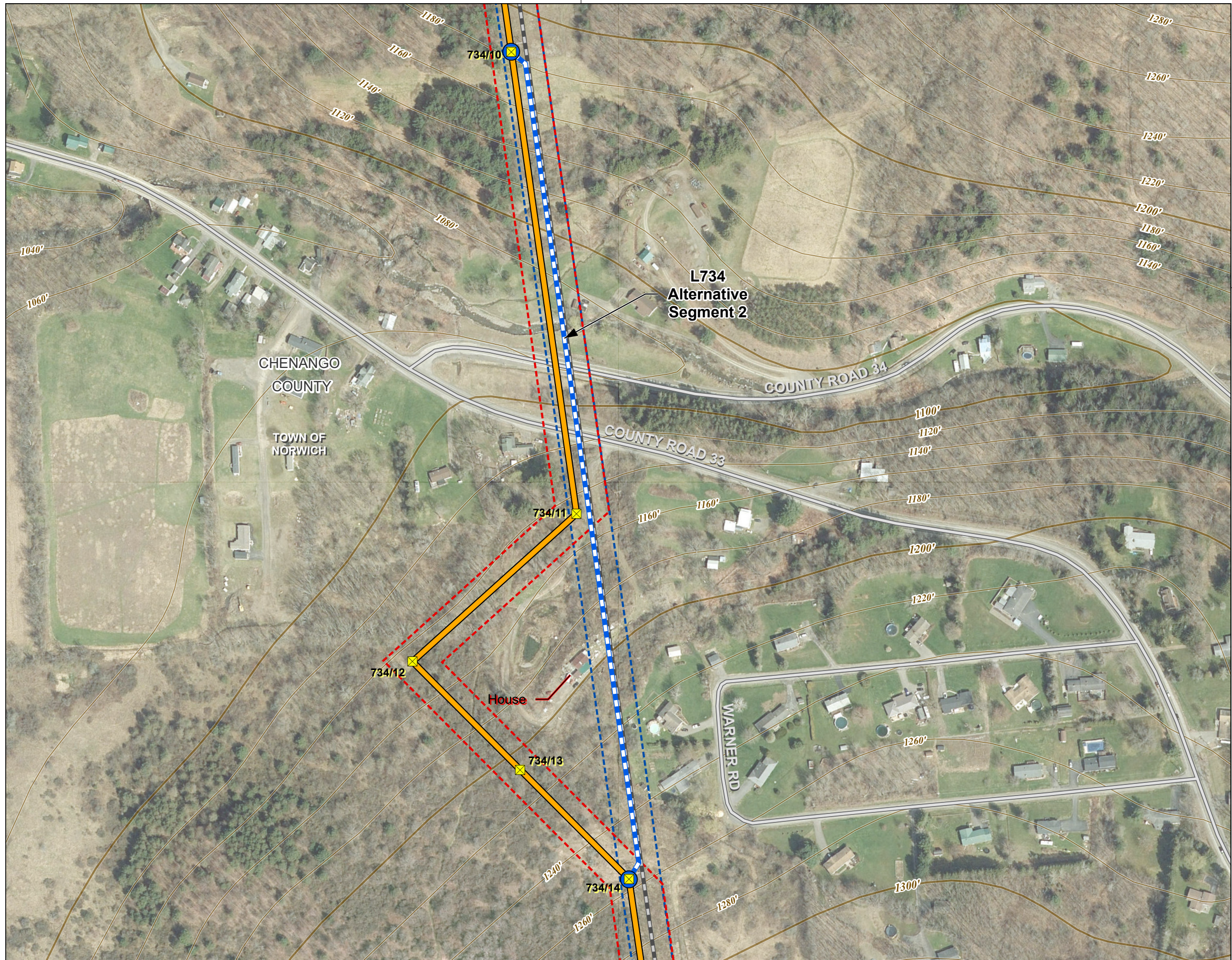
3-3

Title

**Line 734 Alternatives and Proposed Route
Mapsheet 1 - Alternative Segment 1 (NYSDOT)**

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918500
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916500



Jennison Transmission Solution Project

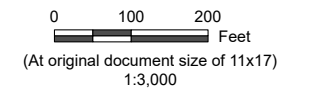
- Structure, Proposed
- Alternative Segment Endpoint
- Existing Line 946
- Proposed Line 734
- Line 734 Alternative
- Existing Right-of-Way
- Proposed Right-of-Way

Elevation Contour

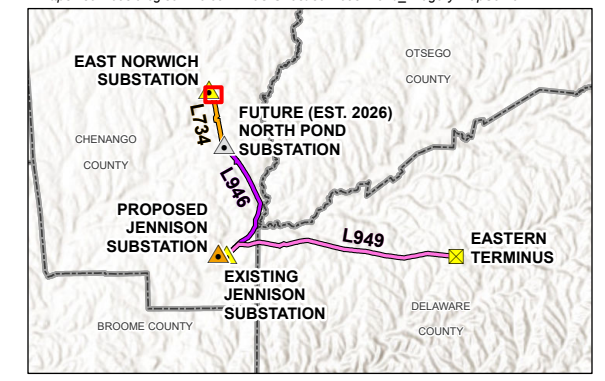
- 20-ft Contour
- 100-ft Contour

Road or Highway

- Local, Neighborhood, Rural or City Street



- Notes**
1. Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet
 2. Data Sources: NYSEG Data, 2024; Esri North American Detailed Streets, 2012; USGS Elevation Contours, The National Map, 2024; NYS OITS GIS Program Office (GPO) Civil Boundaries, 2018
 3. Background: Esri World Imagery https://services.arcgis.com/ArcGIS/rest/services/World_Imagery/MapServer



Project Location: Chenango, Delaware, & Otsego Counties, NY
 Prepared by DG on 2024-06-24
 TR by AB on 2024-10-14
 IR by BS on 2024-10-25

Client/Project: Jennison Transmission Solution Project
 NYSEG CLCPA Program
 213415070 REVA

Figure No.

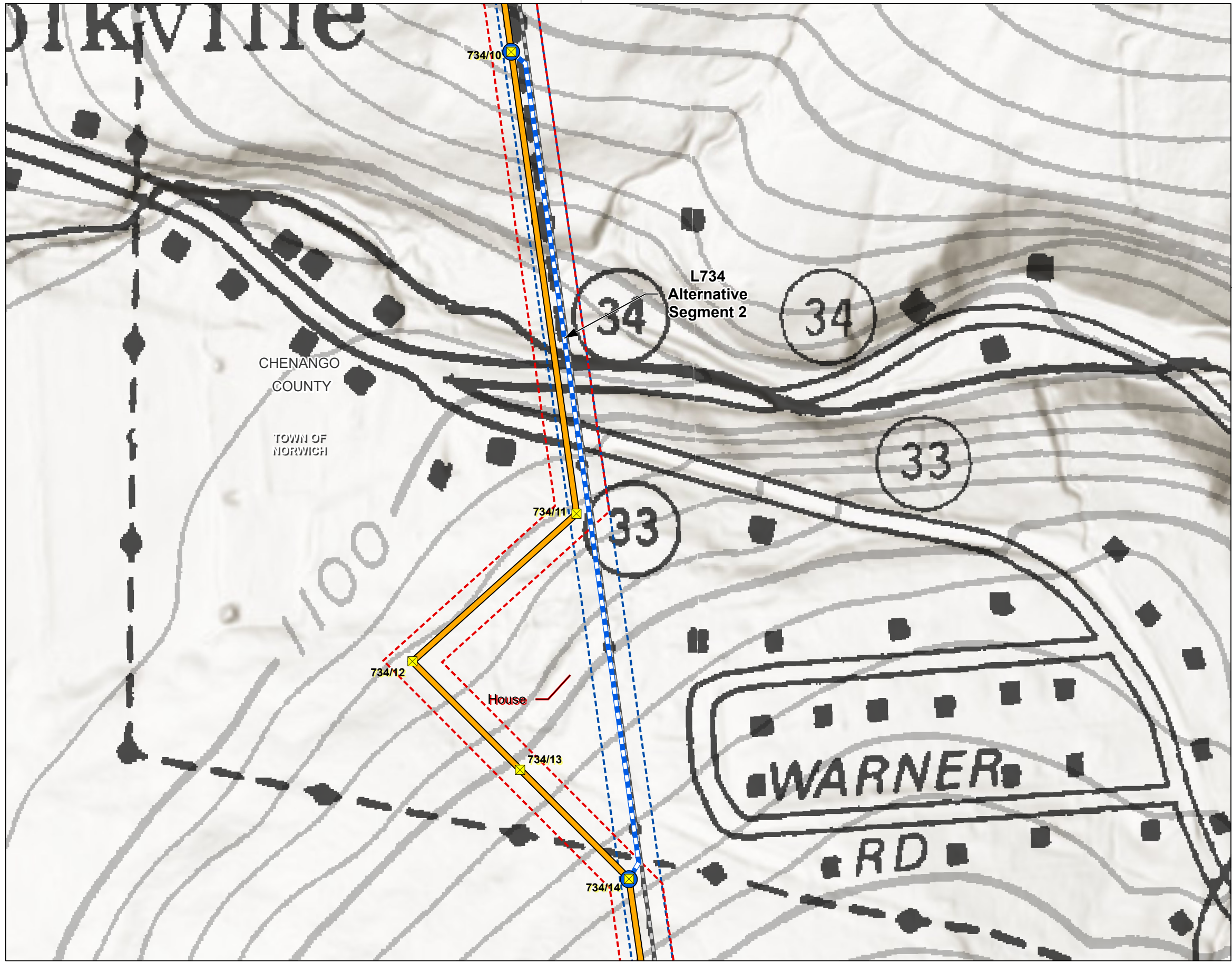
3-3

Title

**Line 734 Alternatives and Proposed Route
 Mapsheet 2 - Alternative Segment 2 (Aerial)**

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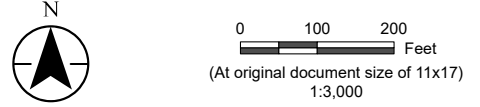


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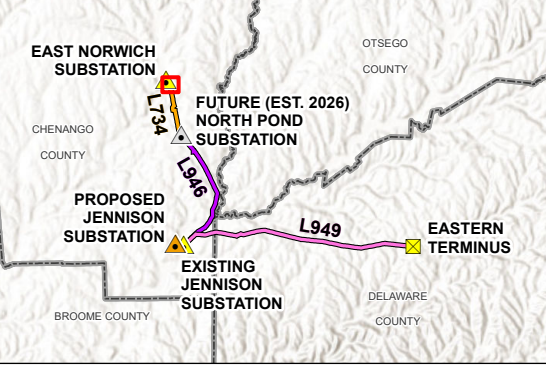


Jennison Transmission Solution Project

- Structure, Proposed
- Alternative Segment Endpoint
- Existing Line 946
- Proposed Line 734
- Line 734 Alternative
- Existing Right-of-Way
- Proposed Right-of-Way



Notes
 1. Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet
 2. Data Sources: NYSEG Data, 2024; Esri North American Detailed Streets, 2012; USGS Elevation Contours, The National Map, 2024; NYS OITS GIS Program Office (GPO) Civil Boundaries, 2018
 3. Background: NYSDOT 1:24,000-scale Raster Quadrangles
 Esri World Hillshade: https://services.arcgis.com/arcgis/rest/services/Elevation/World_Hillshade/MapServer



Project Location: Chenango, Delaware, & Otsego Counties, NY
 Prepared by DG on 2024-06-24
 TR by AB on 2024-10-14
 IR by BS on 2024-10-25

Client/Project: 213415070 REVA

Jennison Transmission Solution Project
 NYSEG CLCPA Program

Figure No. **3-3**

Title
**Line 734 Alternatives and Proposed Route
 Mapsheet 2 - Alternative Segment 2 (NYSDOT)**

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Jennison Transmission Solution Project

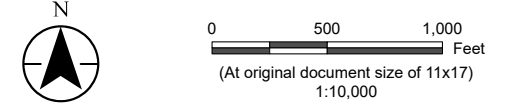
- Structure, Proposed
- Alternative Segment Endpoint
- Existing Line 946
- Proposed Line 734
- Line 734 Alternative
- Existing Right-of-Way
- Proposed Right-of-Way

Elevation Contour

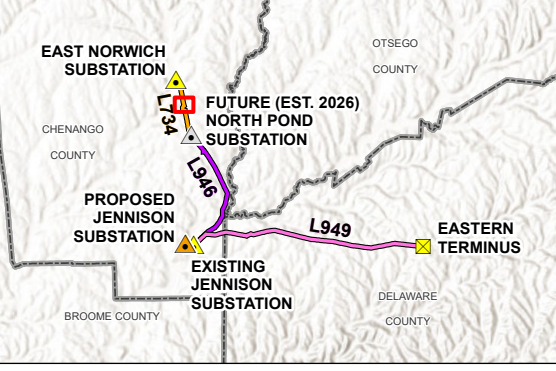
- 20-ft Contour
- 100-ft Contour

Road or Highway

- Local, Neighborhood, Rural or City Street



- Notes**
1. Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet
 2. Data Sources: NYSEG Data, 2024; Esri North American Detailed Streets, 2012; USGS Elevation Contours, The National Map, 2024; NYS OITS GIS Program Office (GPO) Civil Boundaries, 2018
 3. Background: Esri World Imagery https://services.arcgis.com/ArcGIS/rest/services/World_Imagery/MapServer



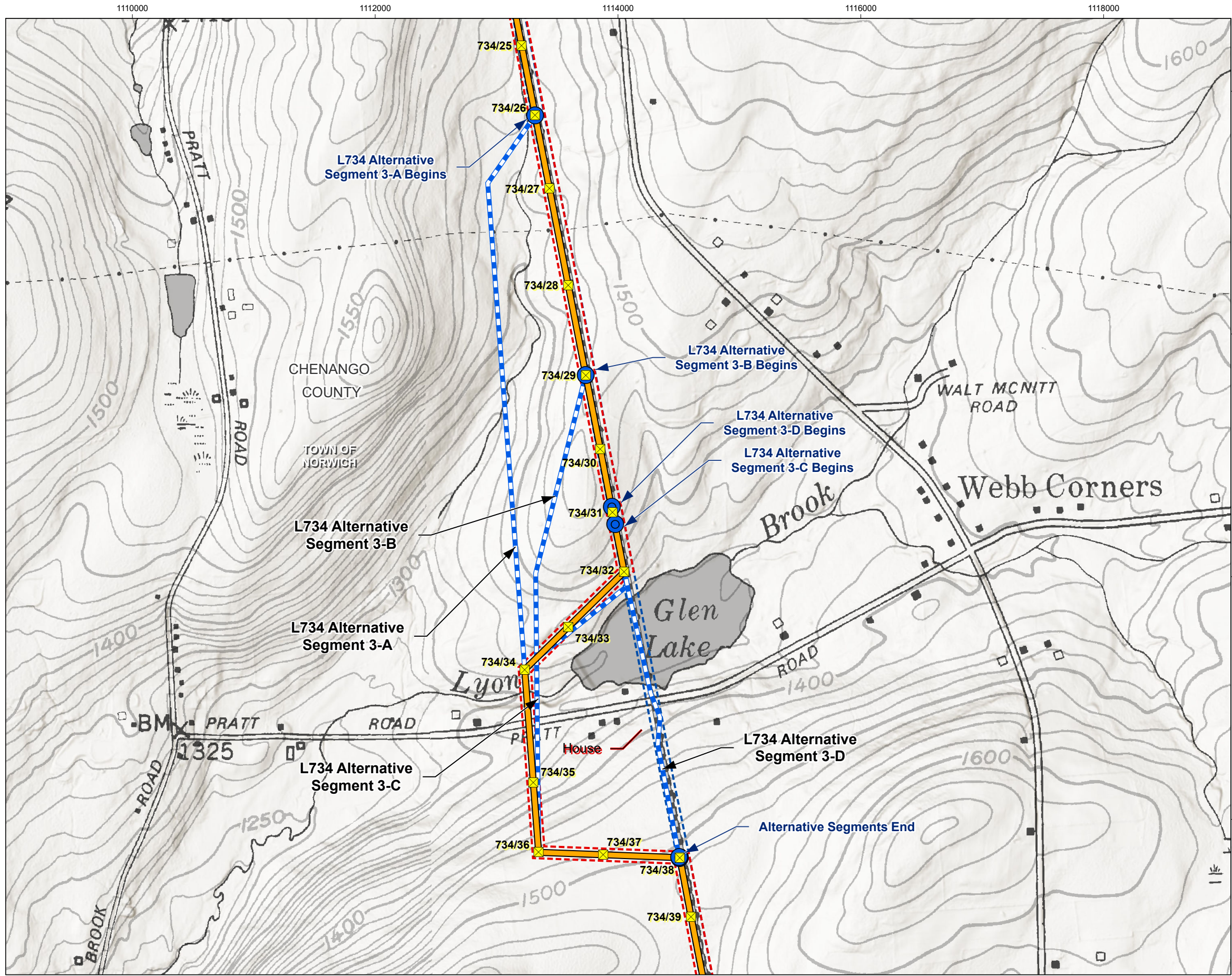
Project Location: Chenango, Delaware, & Otsego Counties, NY
 Prepared by DG on 2024-06-24
 TR by AB on 2024-10-14
 IR by BS on 2024-10-25

Client/Project: Jennison Transmission Solution Project
 NYSEG CLCPA Program
 213415070 REVA

Figure No. **3-3**
 Title

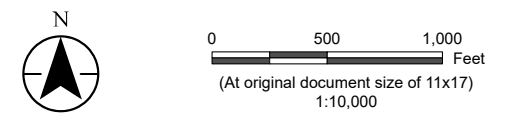
**Line 734 Alternatives and Proposed Route
 Mapsheet 3 - Alternative Segment 3 (Aerial)**

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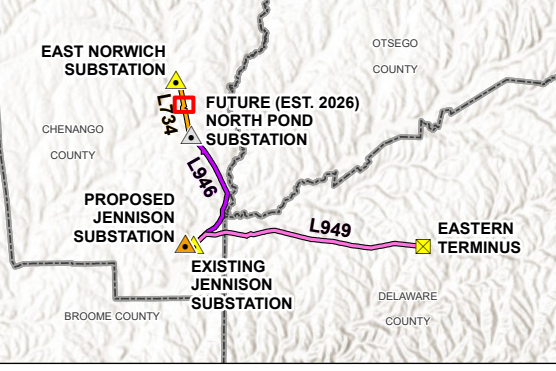


Jennison Transmission Solution Project

- Structure, Proposed
- Alternative Segment Endpoint
- Existing Line 946
- Proposed Line 734
- Line 734 Alternative
- Existing Right-of-Way
- Proposed Right-of-Way



Notes
 1. Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet
 2. Data Sources: NYSEG Data, 2024; Esri North American Detailed Streets, 2012; USGS Elevation Contours, The National Map, 2024; NYS OITS GIS Program Office (GPO) Civil Boundaries, 2018
 3. Background: NYSDOT 1:24,000-scale Raster Quadrangles
 Esri World Hillshade: https://services.arcgis.com/arcgis/rest/services/Elevation/World_Hillshade/MapServer



Project Location
 Chenango, Delaware, & Otsego Counties, NY

Prepared by DG on 2024-06-24
 TR by AB on 2024-10-14
 IR by BS on 2024-10-25

Client/Project
 Jennison Transmission Solution Project
 NYSEG CLCPA Program

213415070 REVA

Figure No.
3-3

Title
Line 734 Alternatives and Proposed Route
Mapsheet 3 - Alternative Segment 3 (NYSDOT)

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New York State Electric & Gas Corporation

Jennison Transmission Solution Project

Exhibit 3

Alternatives

Figure 3-4

Line 946 Alternatives and Proposed Route

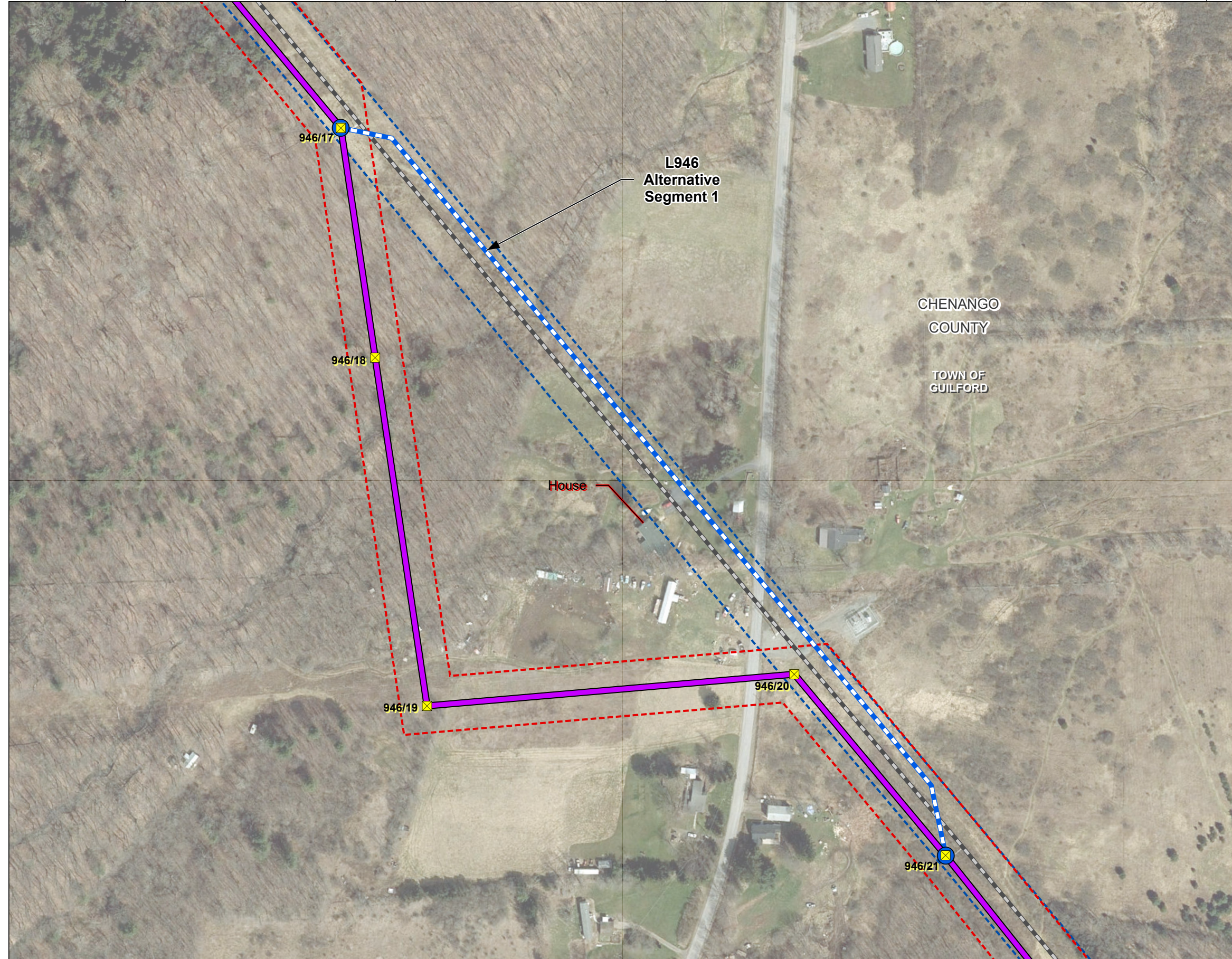
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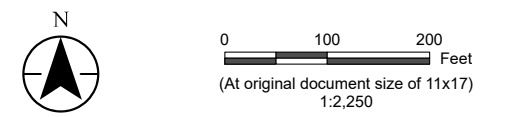


Jennison Transmission Solution Project

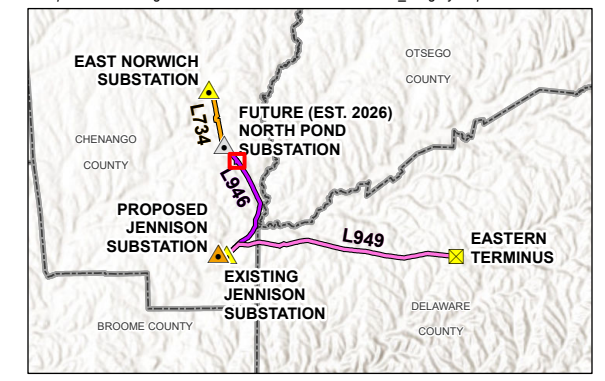
- Structure, Proposed
- Alternative Segment Endpoint
- Existing Line 946
- Proposed Line 946
- Line 946 Alternative
- Existing Right-of-Way
- Proposed Right-of-Way



882500
882000
881500
881000



- Notes**
1. Coordinate System: NAD 1983 StatePlane New York Central FIPS 3102 Feet
 2. Data Sources: NYSEG Data, 2024; Esri North American Detailed Streets, 2012; USGS Elevation Contours, The National Map, 2024; NYS OITS GIS Program Office (GPO) Civil Boundaries, 2018
 3. Background: Esri World Imagery
https://services.arcgis.com/ArcGIS/rest/services/World_Imagery/MapServer



Project Location
Chenango, Delaware, & Otsego Counties, NY

Prepared by DG on 2024-06-24
TR by AB on 2024-10-14
IR by BS on 2024-10-25

Client/Project
Jennison Transmission Solution Project
NYSEG CLCPA Program

213415070 REVA

Figure No.
3-4

Title
**Line 946 Alternatives and Proposed Route
Mapsheet 1 - Alternative Segment 1 (Aerial)**

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