Illinois Department of Natural Resources

Office of Resource Conservation

DRAFT CONSERVATION PLAN FOR THE INCIDENTAL TAKING OF THE STATE ENDANGERED KIRTLAND'S SNAKE (*Clonophis kirtlandii*) AND THE SMOOTH GREEN SNAKE (*Opheodrys vernalis*)

Forest Preserve District of Will County
Plum Creek Greenway Trail
Plum Valley Forest Preserve
Unincorporated, Will County, Illinois

Applicant: FOREST PRESERVE DISTRICT OF WILL COUNTY

REVISED OCTOBER 2024

Introduction

The project undertaking described within this document is for the proposed improvements and extension of Plum Creek Greenway Trail located east of Illinois Route 394 (Calumet Expressway) within the Plum Valley Forest Preserve, a residential neighborhood southwest of Plum Valley Forest Preserve, and Goodenow Grove Nature Preserve located south of Crete within unincorporated Will County, Illinois. Drainage improvements are proposed to the southern portion of the existing Plum Creek Greenway Trail at Plum Valley Forest Preserve. In addition, the Forest Preserve District of Will County (FPDWC) is proposing to extend the trail on new alignment beginning at the southern terminus of the existing Plum Creek Greenway Trail and extending south through Plum Valley Forest Preserve where it will cross Plum Creek. From Plum Creek the trail will extend southwest through an agricultural field and a residential neighborhood, at which point the trail will connect to an existing multi-use trail within Goodenow Grove Nature Preserve. The project is proposed by the FPDWC.

Coordination with the Illinois Department of Transportation (IDOT) was completed for the proposed project in order to obtain the appropriate biological clearances as well as appropriate documentation regarding the Illinois Natural Areas Preservation Act (525 ILCS 30). As part of coordination, an Ecological Compliance Assessment Tool (EcoCAT) was submitted for the project on February 22, 2023 (EcoCAT Review Number 2310589). The Illinois Department of Natural Resources (IDNR) response to the EcoCAT review request dated March 22, 2023, states that, due to the location and scope of the proposed project, the IDNR recommends the applicant seek an incidental Take Authorization (ITA) for Kirtland's snake (*Clonophis kirtlandii*), **see Appendix A**. In addition, based on email correspondence with IDOT, due to the known presence of the smooth greensnake (*Opheodrys vernalis*) within Goodenow Grove Nature Preserve, which is a candidate species for listing under the state ESA in Illinois, this conservation plan includes this species.

Due to the density of snakes in the area, the IDNR recommends that information about the presence of snakes be implemented at the trailhead's kiosk. The IDNR states that the information should not mention the presence of Kirtland's snakes (or other listed species), but should caution visitors about the possibility of snakes on the trail. The Forest Preserve will design and install a minimum of 4 trailhead kiosks as part of the plan. Mitigation will also include the allocation of a minimum of $200,000 by the Forest Preserve District of Will County for the restoration and enhancement of 94 acres of habitat in the immediate vicinity of the location where the Kirtland's Snakes were found under the FPDWC Plum Valley Preserve Snake Habitat Management Plan. The plan is currently an initial four-year timeline that involves invasive species treatments, prescribed burning, and native seed installation. Highest priority will be given to habitat management activities in the wet swale, which is known habitat for Kirtland's snakes. Secondary priority will be given to habitat management in the rest of the old field, particularly areas with wet or wet-mesic soils. Buffering upland areas will be included in the prescribed burn unit and will receive invasive species treatments and habitat restoration as resources allow. In addition, conservation efforts will include changing the trail surface from asphalt to limestone screenings north of Plum Creek, modifying the existing alignment to include an elevated boardwalk, and utilizing top down construction, across two areas of potential habitat to decrease the footprint of disturbance and further avoid potential impacts.

It is estimated that there will be a take of three (3) individual Kirtland's snakes due the presence of this species at Plum Valley Forest Preserve based on the INHS surveys completed for the proposed project in 2022. Because the smooth greensnake was not captured during surveys completed by the INHS for the proposed project, the taking of this species and any other listed species as a result of the proposed project is not anticipated. Given the above conservation recommendations are adopted, the long-term viability of Kirtland's and other native snake populations present within the project vicinity are unlikely to be in jeopardy. The IDNR has determined impacts to other protected resources in the vicinity of the project location are also unlikely.

1. Description of Project Impact Assessment for Illinois State Threatened and Endangered Species

According to the database review completed by the INHS for the proposed project, there are records for three state-listed herptiles (eastern massasauga rattlesnake, *Sistrurus catenatus;* four-toed salamander, *Hemidactylium scutatum;* and Kirtland's snake) within a few miles of the project. In addition, according to the EcoCAT completed for the proposed project, there are also records of the Blanding's turtle (*Emydoidea blandingii*) within the project vicinity. Based on coordination with IDOT, the smooth greensnake is also known to be present at Goodenow Grove Nature Preserve.

The Illinois State endangered reptile species, the Kirtland's snake is known to be present within Goodenow Grove Nature Preserve and was captured by the INHS during surveys completed for the proposed project at Plum Creek Forest Preserve near the proposed trail alignment. **See Figure 1**, Site Location Map and **Figure 2**, Project Location Map.

Recent species surveys (within the last five years) were completed within the area of proposed construction, and anticipated take numbers for the above listed species have been estimated. Anticipated take numbers for each Illinois State listed species assessed for potential impacts as a result of the Plum Creek Greenway Trail Improvement Project are presented in **Table 1**.

This Incidental Take Authorization (ITA) Habitat Conservation Plan has been developed for the Kirtland's snake and the smooth greensnake, in case this species becomes officially listed by the State of Illinois before the completion of the project. The FPDWC is seeking approval to this plan to pursue the proposed trail project.

Figure 1: Site Location Map

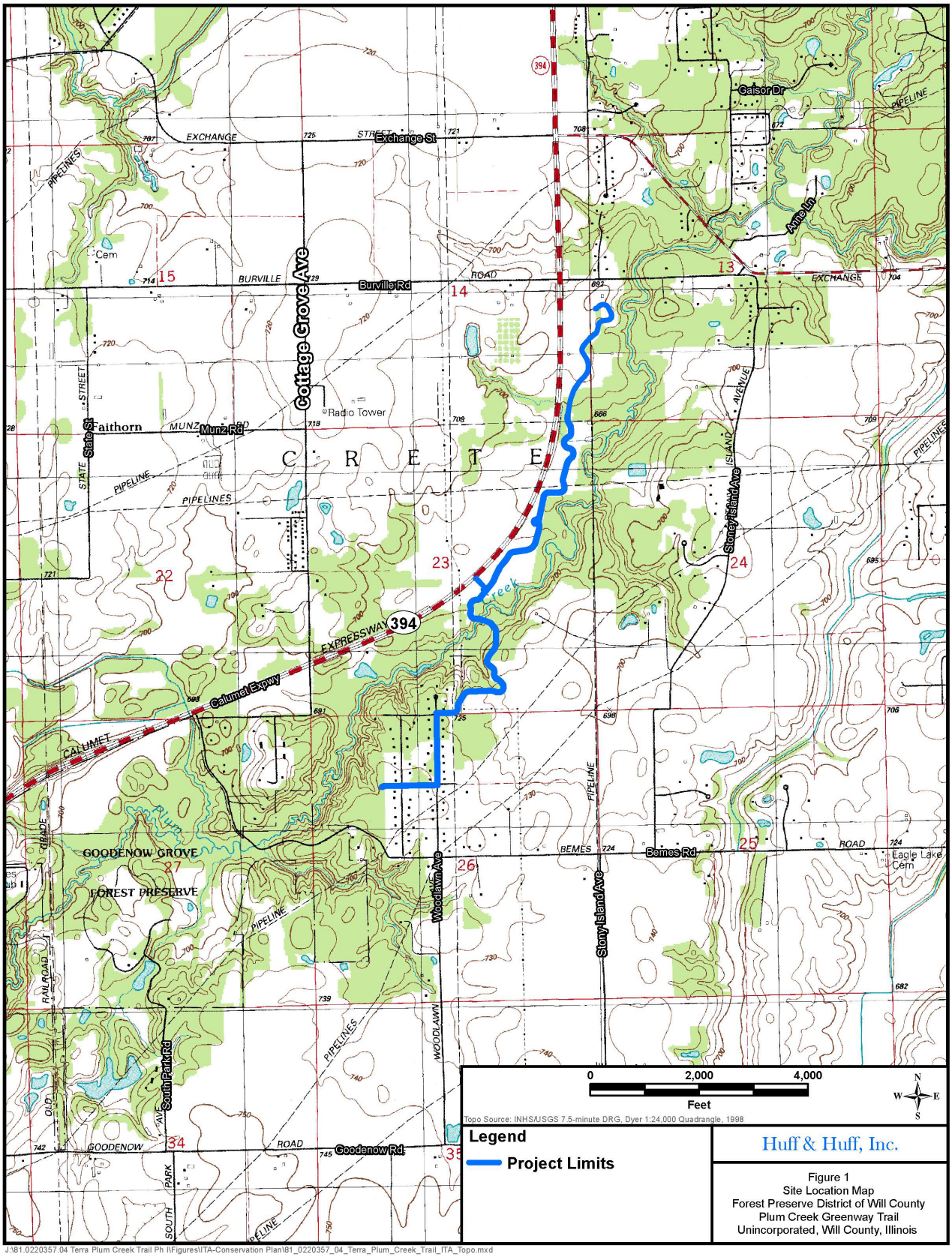

Figure 2: Site Location Map (Page 1 of 4)

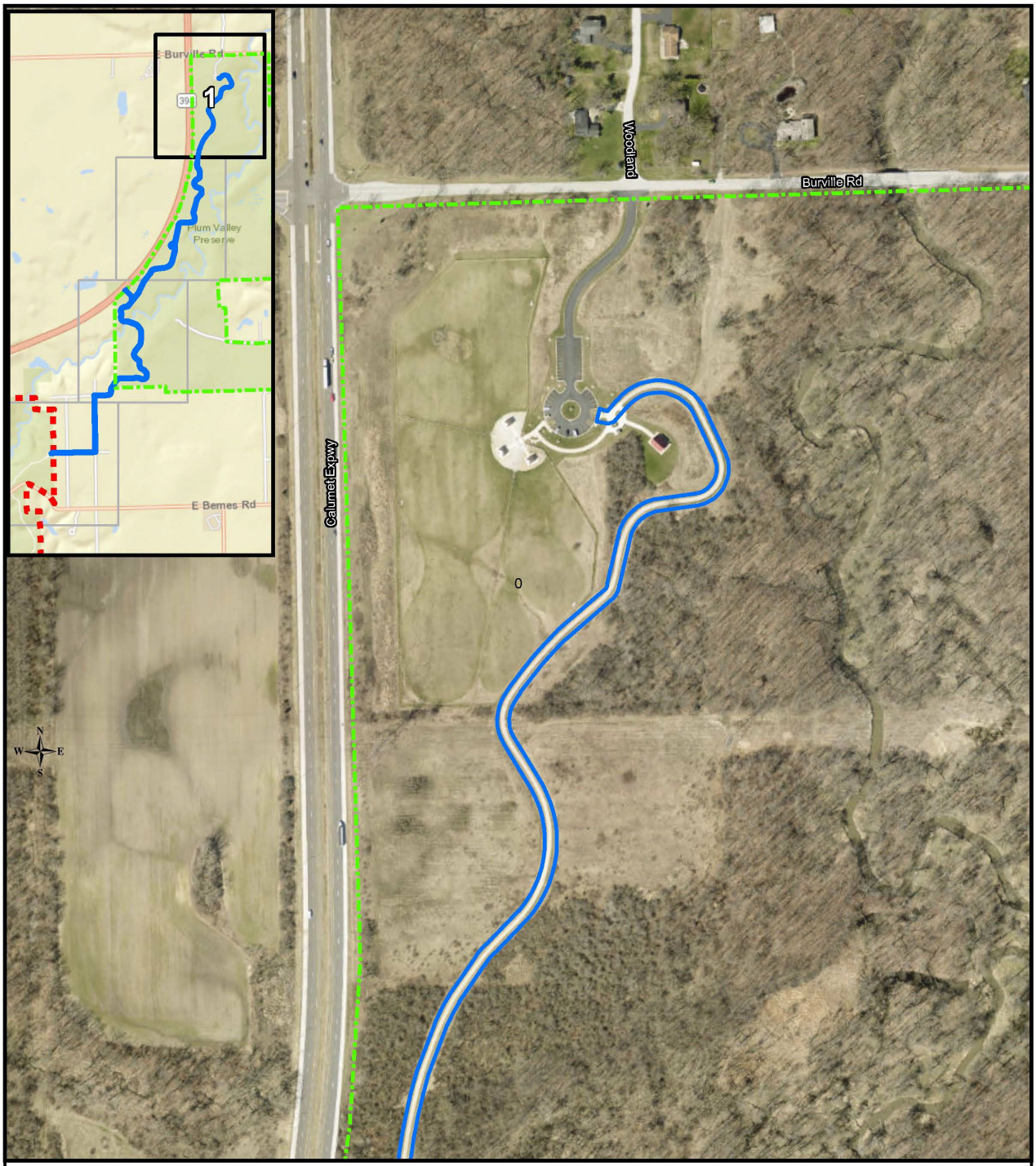

Figure 2: Site Location Map (Page 2 of 4)

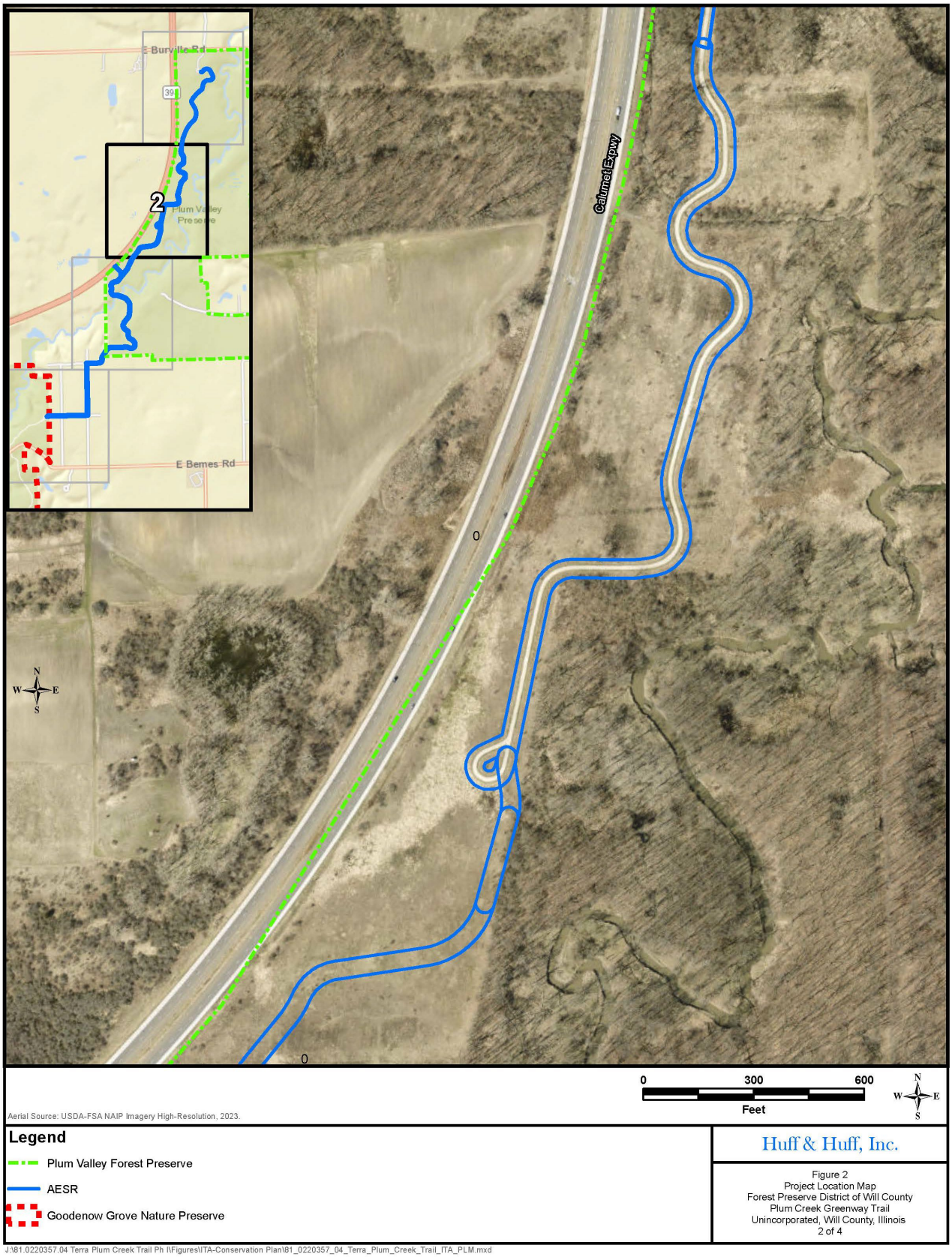

Figure 2: Site Location Map (Page 3 of 4)

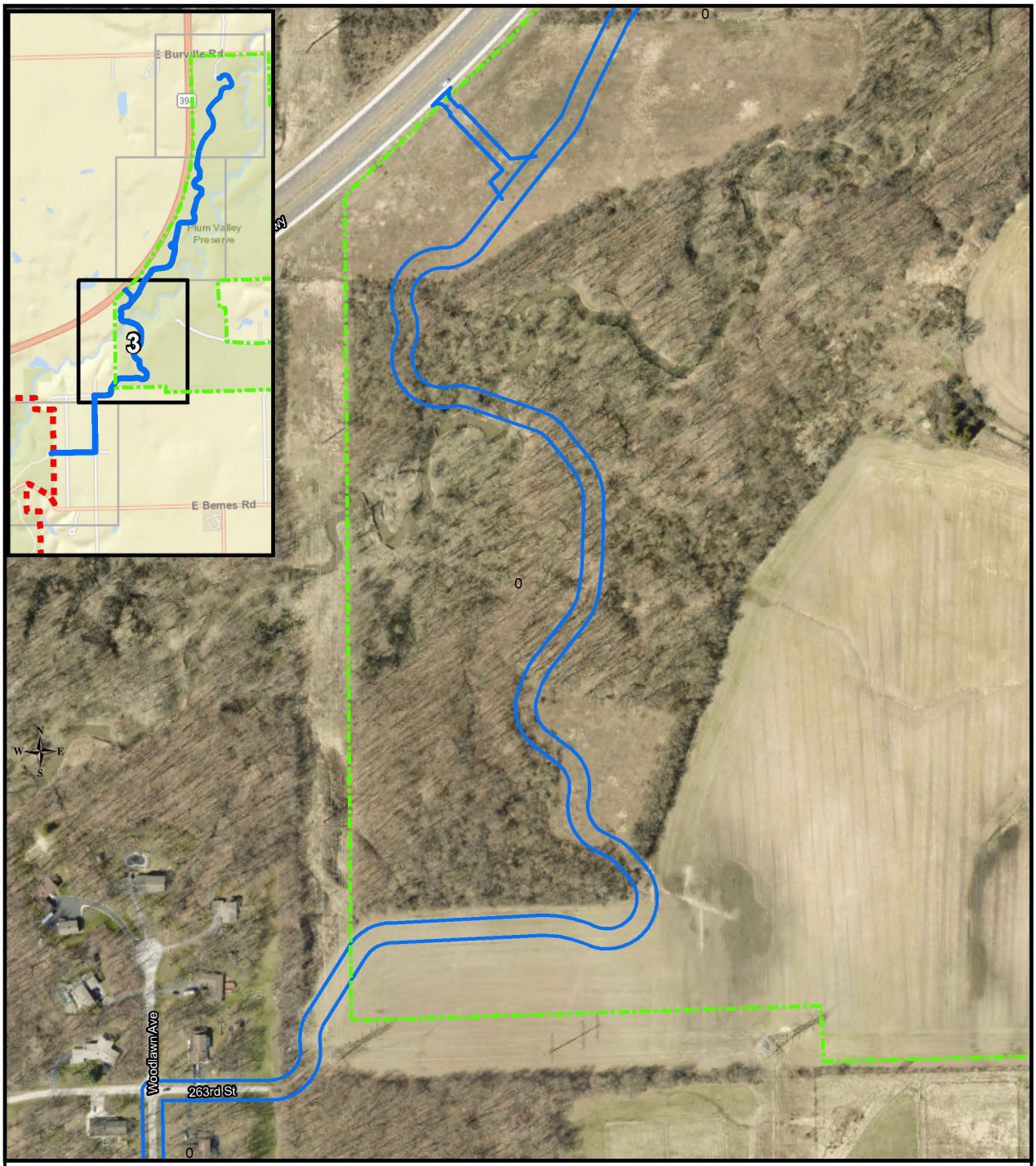

Figure 2: Site Location Map (Page 4 of 4)

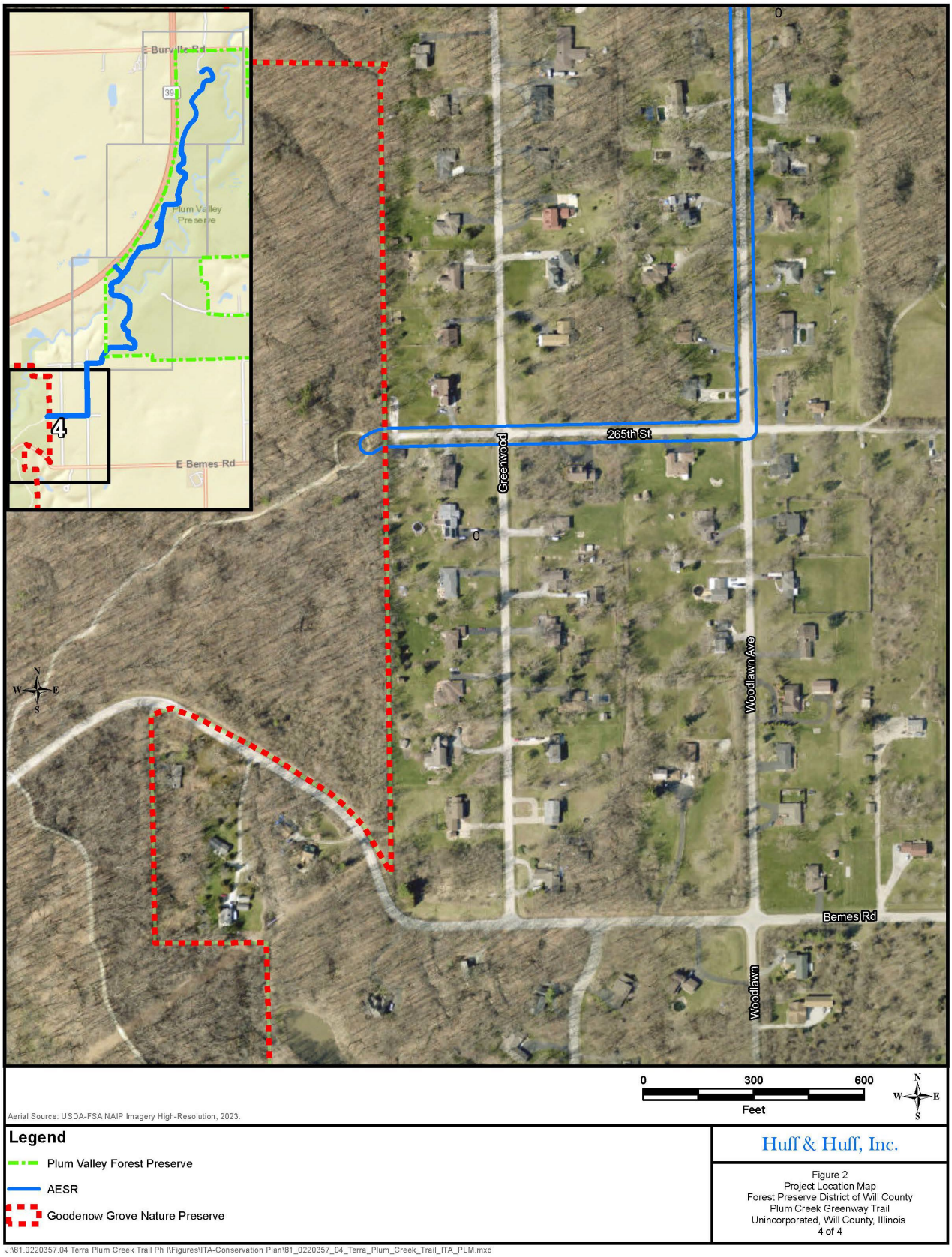

Table 1[1]

Anticipated Take Numbers for the Proposed Project

Common Name	Scientific Name	Anticipated Take Number (Individuals)
Kirtland's snake	*Clonophis kirtlandii*	3

[1]Table 1 presents the estimated take numbers for the project.

Field surveys were conducted for the Kirtland's snake by the Illinois Natural History Survey (INHS) in April of 2021 as well as April, May and June of 2022, as documented in the following reports (**see Appendix B**); Survey for Kirtland's Snake, *Clonophis kirtlandii,* for the Plum Creek Greenway Trail in Will County, Illinois (INHS, October 2022) and Survey for Kirtland's Snake, *Clonophis kirtlandii,* for the Plum Creek Greenway Trail in Will County, Illinois (INHS, August 2021). The INHS captured six different species of grassland snakes during the field surveys, including three (3) Kirtland's snakes within Plum Valley Forest Preserve and within the project vicinity. No other listed species were encountered during the field surveys completed by the INHS for the proposed project.

There are historic records of the Kirtland's snake along Plum Creek, both up and downstream of the proposed project (INHS, 2022). Goodenow Grove Forest Preserve, which is located one mile west-southwest of the Plum Valley Forest Preserve, has a known Kirtland's snake population, including captures of this species in 2021 (INHS, 2022). There are also records of this species from 1994 occurring approximately four miles upstream (northeast), near Steger Road in Bloom Township. According to the INHS, suitable habitat for the Kirtland's Snake is apparent adjacent to the trail throughout the project limits (INHS, 2022). In addition, three (3) Kirtland's snakes were captured within the location of the proposed trail alignment within Plum Valley Forest Preserve during field surveys completed by the INHS in 2022. Therefore, an ITA is being requested for the Kirtland's snake.

This conservation plan includes discussion of presence of the listed herptile species to examine the likelihood of their occurrence within the project area during construction.

According to the INHS, the eastern massasauga rattlesnake is likely extirpated in northeastern Illinois, as this species has not been observed in the project vicinity for over 20 years, although the INHS notes that their sampling method also allowed for the detection of the eastern massasauga, and none were captured or observed during field surveys. The INHS did not conduct field surveys for the listed four-toed salamander as there is no suitable habitat for this species within or adjacent to the ESR limits.

This Conservation Plan includes details for all listed species that could be present in the project vicinity.

A) Description of the area to be affected:

Habitats present within and surrounding the proposed work consist of residential neighborhoods, actively farmed agricultural land, a Commonwealth Edison (ComEd) utility easement, the existing Greenway (limestone) Trail within Plum Valley Forest Preserve, existing roadways and roadway rights-of-way (ROW)s, wet meadow wetlands, Plum Creek, mesic and upland forests, and old field habitat that has been converted to prairies. It should be noted that the FPDWC and ComEd have an easement agreement that has been approved and executed by both agencies.

The northern section of the current Greenway Trail begins at the Plum Valley Preserve Parking lot, located immediately south of Burville Road, and extends south for approximately one (1) mile. Drainage improvements are proposed to the southern portion of the existing Plum Creek Greenway Trail at Plum Valley Forest Preserve. In addition, the existing aggregate trail located at the northern end of the project limits within Plum Valley Forest Preserve will remain as limestone screenings and no excavation will occur

within this section. Habitats present adjacent to the one-mile section of existing trail include degraded prairies, wet meadow wetlands, and mesic and upland forests.

The new 1.5-mile Plum Creek Greenway Trail addition will be a paved trail with an aggregate base south of the creek to deter equestrian use and a limestone screenings trail north of the creek with and elevated boardwalk through areas identified as possible habitat. The new trail will consist of an approximate 0.8 mile section (approximately 9.7 acres) that extends through Plum Valley Forest Preserve, 0.2 miles (approximately 2.4 acres) of which is active agricultural land, an additional 0.5 mile section (approximately 6.1 acres) that extends through a residential neighborhood, and a 0.01 mile section (approximately 0.12 acre) extends into Goodenow Grove Nature Preserve, as shown on **Figure 2**. The area of construction will be approximately 100-feet in width. There will also be an approximate 0.2-acre area utilized for temporary construction access located southeast of the Calumet Expressway, north of a ComEd easement, north of Plum Creek, and west of the proposed trail as shown on **Figure 2**.

The new trail alignment will extend south/southwest from the southern terminus of the existing trail through a degraded wet meadow and prairie, and then will enter a mesic forest, cross Plum Creek, and extend south though a mesic forest and upland forest into a degraded meadow. At this point, the trail will extend east through an actively farmed agricultural field (soy and corn) located adjacent to a ComEd utility easement. The trail will then extend east and south within a residential neighborhood on existing roadway. At its southern terminus, the trail will extend west along 265th Street and connect to an existing trail within Goodenow Grove Nature Preserve. This 0.01-mile section of proposed trail within Goodenow Grove consists of degraded mesic forests and degraded wet and upland meadows.

As stated above, the trail is proposed to cross over Plum Creek, a perennial waterway, and the alignment will be approximately 100 feet in width. The FPDWC modified the existing alignment to include an elevated boardwalk, utilizing top down construction, across two areas of potential habitat to decrease the footprint of permanent land disturbance and further avoid potential impacts to listed species. The final alignment for the new trail construction has been developed and is presented in **Appendix C, Engineering Plans**.

In order to construct the new trail segments, access to the areas of identified habitat will be limited and all construction access will come from 394 to the west and the residential neighborhood to the south. In areas of suitable habitat, elevated boardwalks will be constructed using what is called a top down construction technique. In all other areas, the top 12 inches of topsoil within the width of the construction limits of the trail will first be excavated, then suitable fill will be brought in to bring the proposed elevation up to the trail subgrade. As noted previously, the new trail will be asphalt located south of Plum Creek and will be limestone screenings and boardwalks located north of Plum Creek as paved surfaces can cause snake mortality. Additionally, the 3-foot wide shoulders adjacent to the trail will utilize a path rush *(Juncus spp*.)-based seed mix to allow a less frequent mowing schedule that will be implemented as part of the site's ongoing maintenance. The mowing schedule will include blackout periods when snakes are most likely to be at risk in the mowed shoulders. Dump trucks will utilize the trail corridor for earthwork and paving. Concrete trucks will need to also utilize the trail corridor to pour concrete for the bridge abutments. In addition, one or two cranes will be needed to bring in and place the new bridge over Plum Creek. In-stream work is not proposed.

The project is currently scheduled for an April 2025 letting, and final plans were submitted to IDOT on April 22, 2024. Although the project has an August Letting, because there is a tree clearing restriction for the project, construction is not anticipated to begin until November 1, 2025. The FPDWC anticipates that

the concrete work for the bridge abutments and the placement of the bridge over Plum Creek may take place late winter or early spring (February and March of 2026).

Coordination with IDOT was completed in order to obtain biological clearances for the proposed project. As part of coordination, an EcoCAT was submitted for the project on February 22, 2023 (EcoCAT Review Number 2310589; **see Appendix A**). The IDNR response to the EcoCAT review request dated March 22, 2023, states that, due to the location and scope of the proposed project, the IDNR recommends the applicant seek an ITA for Kirtland's snake.

The IDNR is requesting that the FPDWC obtain an ITA prior to the commencement of construction activities. Other state protected herptiles known to occur within the project vicinity are included in the ITA.

B) Biological Data for Protected Herptiles Potentially Present in the Project Vicinity

1. **Kirtland's Snake (*Clonophis kirtlandii*), Illinois State Endangered Species.**

Kirtland's snake primarily inhabits the southern till plain in Illinois and extends north into the Chicago Region. It is absent from the sandy soil habitats in these areas. Suitable habitat for this species historically includes wet prairies, wet meadows, prairie fens, and associated wetlands, especially those that were seasonally flooded and adjacent to upland areas (Ernst and Ernst 2003). Suitable habitats for this species have been destroyed through agricultural practices and other development. Present day habitats for this snake consists of open, low, grassy areas, often at the margins of streams, ponds, or ditches (Minton, 1972; Ernst and Barbour 1989; Bavetz 1994). Crayfish burrows are used as shelter for this species, although Kirtland's snakes have been collected in vacant lots in urban areas where crayfish burrows are not present. When crayfish burrows are not present they hide under boards, trash, and other surface debris (Ernst and Ernst 2003).

Kirtland's snake is a small to medium-sized snake with numerous black or dark-brown blotches. The dorsal (upperside) ground color is reddish brown to grayish brown with two rows of round dark spots extending along the back, and a row of round dark spots running along each side. Taken together, these four rows of alternating dark spots create a somewhat checkerboard pattern if viewed from above. The head is black or brown with a cream to yellow chin and throat. A key identifying characteristic is the belly, which is pink to red, with dark stippling along each side. The dorsal scales are keeled, and the anal plate is divided (the anal plate is the last belly scale of a snake, which covers the anal opening). Like the other natricine snake species, the Kirtland's Snake has keeled scales and a divided anal plate. It is a small species that is distinguished by other snakes in Illinois, by its red or orange venter with contrasting black spots on each ventral scale.

The Illinois Natural History Survey (INHS) database contains 287 records of Kirtland's snake occurrences in Illinois, dating back to 1886. Recent reports (2000 onwards), of Kirtland's snake within Will County are all from Goodenow Grove Nature Preserve or areas immediately adjacent to this preserve. Three (3) Kirtland's snake individuals were found at the current terminus of the existing limestone Greenway Trail, within the direct path of the proposed trail alignment during field surveys completed by the INHS in 2022. The location of the captured Kirtland's snake is shown as Site A within the (**see Appendix B**); Survey for Kirtland's Snake, *Clonophis kirtlandii,* for the Plum Creek Greenway Trail in Will County, Illinois (INHS, October 2022).

In addition, according to the INHS, the existing Greenway Trail traverses potential Kirtland's snake habitat and one redbellied snake (*Storeria occipitomaculata*), a non-listed common snake species, was found

deceased on the trail during a site visit conducted on June 3, 2022 (INHS, 2022). Areas of concern for the Kirtland's snake within the project vicinity include low lying areas with culverts that pass under the existing trail. These areas have crayfish burrows and riprap, which may be used as refugia for Kirtland's snakes (INHS, 2022). The INHS states that if the proposed construction can be limited to the trail surface, it should reduce the chance of take. However, drainage improvements are proposed to the existing trail. In addition, the section of the trail within Goodenow Grove Nature Preserve has reserved rights and was planned to be connected to Plum Creek Greenway Trail. The INHS states that suitable habitat for the Kirtland's snake is present throughout the project limits.

Other populations of Kirtland's snake are also known to occur within northeastern Illinois counties of Cook and DuPage. However, the Cook and DuPage County populations are over 25 miles away from the proposed project. A review of INHS historic records of Kirtland's snake in Will County was completed in preparation of this plan. According to the INHS database accessed in January of 2024, there are 35 records of this species in Will County since the year 2000.

It is estimated that there will be a take of three (3) individual Kirtland's snakes due the presence of this species at Plum Valley Forest Preserve based on the INHS surveys completed for the proposed project in 2022. Given the conservation recommendations outlined within this plan are adopted, the long-term viability of Kirtland's snake populations present within the project vicinity are unlikely to be in jeopardy.

2. **Smooth Greensnake (*Opheodrys vernalis*), Illinois State Candidate Species.**

The smooth greensnake is a grassland snake that occurs in the northern half of Illinois and is identified as a Species in Greatest Need of Conservation in the Illinois Wildlife Action Plan. This species is likely to be officially listed at a future date by the Illinois Endangered Species Board. The decline of this species is due to habitat loss from anthropogenic uses (INHS, 2024).

A review of INHS historic records of the smooth greensnake was completed in preparation of this plan. The INHS database contains 108 records for the smooth greensnake in Illinois. There are 18 records of the smooth greensnake in Will County, Illinois, all of which are from 2002 or older, but of these, 13 are from Goodenow Grove Nature Preserve or other locations close to the project vicinity.

It is estimated that there will not be a take for the candidate species, the smooth greensnake as a result of the proposed project.

3. **Eastern Massasauga Snake (*Sisturus catenatus*), Federal and Illinois State Threatened Species.**

According to the INHS, the eastern massasauga rattlesnake is likely extirpated as none have been observed in Will County for over 20 years (INHS, October 2022).

It is estimated that there will not be a take for the listed eastern massasauga rattlesnake as a result of the proposed project.

4. **Blanding's Turtle (*Emydoidea blandingii*), Illinois State Endangered Species.**

The INHS database contains 316 records for the Blanding's turtle in 32 counties within Illinois, as of January 2024. Of these, 54 occurrences are from Will County, none are from Goodenow Grove Nature Preserve or Plum Creek Forest Preserve.

It is estimated that there will not be a take for the Blanding's turtle as a result of the proposed project.

5. **Four-Toed Salamander (*Hemidactylium scutatum*), Illinois State Threatened Species.**

The INHS database contains 62 records for the four-toed salamander in Illinois. There are six records of this species in Will County, Illinois, four of which are from after the year 2000 located a few miles north of the project. According to the INHS, suitable habitat for the four-toed salamander is not present within or near the project limits (INHS, October 2022).

It is estimated that there will not be a take for the listed four-toed salamander as a result of the proposed project.

C) Description of the activities that could result in the taking of a threatened or endangered species:

Direct impact by the placement of the new trail and by drainage improvements to the existing Greenway Trail are not likely to impact listed species. However, based on prior coordination for the proposed project as well as surveys completed by the INHS where three (3) Kirtland's snake were captured, it is estimated that there will be a take of three (3) individual Kirtland's snakes. Because the smooth greensnake was not captured during surveys completed by the INHS for the proposed project, the taking of this species and any other listed species as a result of the proposed project is not anticipated. It is anticipated that herptiles will likely avoid construction areas as snakes, turtles, and salamanders generally abandon areas of construction. Indirect impacts to herptiles may include habitat disturbance and/or alteration as well as potential temporary disruptions of predator/prey interactions. Artificial lighting will not be utilized during construction or during the future operation of the trail infrastructure to minimize predator/prey disruptions.

Drainage improvements are proposed to the southern portion of the existing Plum Creek Greenway Trail at Plum Valley Forest Preserve. The existing aggregate trail located at the northern end of the project limits within Plum Valley Forest Preserve will remain a limestone trail and no excavation will occur within this section. In order to construct the new trail segments, the top 12 inches of topsoil within the width of the construction limits of the trail will first be excavated, then suitable fill will be brought in to bring the proposed elevation up to the trail subgrade. The new trail will be asphalt located south of Plum Creek and will be limestone located north of Plum Creek. Dump trucks will utilize the trail corridor for earthwork and paving. Concrete trucks will need to also utilize the trail corridor to pour concrete for the bridge abutments. In addition, one or two cranes will be needed to bring in and place the new bridge over Plum Creek. In-stream work is not proposed. The construction will begin on November 1, 2025, and will end in September of 2026.

D) Explanation of the anticipated adverse effects on the listed species:

Protected species will likely be visible during construction activities and avoidance of snakes, salamanders, and turtles will occur during construction. It is anticipated that a taking of three (3) individual Kirtland's snakes may occur as a result of construction activities; however, if Kirtland's snakes or other listed species are encountered during construction, all activities will cease immediately and the appropriate staff at the IDNR and IDOT will be contacted immediately.

Silt fencing will be placed for the project, and will be trenched into the earth as typically installed, which will also serve as an exclusion fencing to assist with keeping animals outside of the construction area during all phases of construction. Contractors will inspect the construction area within the silt fence limits each morning before construction occurs to ensure animals are not injured as a result of construction activities. It is anticipated that herptiles will likely avoid construction areas as snakes, turtles, and salamanders generally abandon areas of construction. Indirect impacts to herptiles may include habitat disturbance and/or alteration as well as potential temporary disruptions of predator/prey interactions. Artificial lighting will not be utilized during construction or during the future operation of the trail infrastructure to minimize predator/prey disruptions.

To reiterate, if listed species are encountered during construction, all activities will cease immediately and the appropriate staff at the IDNR and IDOT will be contacted immediately. Construction will not continue until the appropriate steps are taken as outlined by the appropriate authority. Adverse effects to the listed species are anticipated by the function and use of the proposed trail, as trails already exist within the vicinity of the proposed project and the general usage of land within the project vicinity will not change as a result of the project; however, one red-bellied snake (*Storeria occipitomaculata*) was encountered on the trail by the INHS during their surveys.

Appropriate best management practices (BMP)s will be utilized during construction to ensure that impacts do not occur to offsite habitats. Noise and vibration from construction activities (construction of trail and bridge) is not anticipated to have an effect on the life history stages of listed herptile species. Noise related impacts would only occur during construction activities.

2. Measures to minimize and mitigate impacts and funding available to undertake these measures.

A) Plans to minimize affected area, and estimated number of protected species that will be taken and amount of habitat affected.

Minimization of the area affected through the use of silt fencing, which will be trenched in at least six (6) inches to prevent burrowing, has been considered and the proposed temporary construction area is the smallest needed for safe construction practices.

Additionally, in order to avoid impacts from usage of the new trail and due to the density of snakes in the area, the IDNR recommends that information about the presence of snakes be implemented at the trailhead's kiosk. The IDNR states that the information should not mention the presence of Kirtland's snakes (and other listed species), but should caution visitors about the possibility of snakes on the trail. Signs will be provided by the FPDWC at multiple locations along the trail.

Silt fencing will be placed for the project, which will also serve as an exclusion fencing to assist with keeping animals outside of the construction area during all phases of construction. Contractors will inspect the construction area within the silt fence limits each morning before construction occurs to ensure animals are not injured as a result of construction activities. If listed species are encountered during construction, all activities will cease immediately and the appropriate staff at the IDNR and IDOT will be contacted immediately. Construction will not continue until the appropriate steps are taken as outlined by the appropriate authority.

During construction, land areas will be protected with the appropriate erosion and sediment control measures. Erosion and sediment control policy and specifications (Storm Water Pollution Prevention Plan (SWPP) contained in the bid specifications) will be followed and will be in compliance with U.S. Army Corps of Engineers (USACE) Section 404 and Illinois EPA water quality certification standards, as well as the requirements within the NPDES construction permit.

Mitigation would include the FPDWC committing to a budget of $200,000 towards the continued enhancement and restoration of 94 acres of habitat in the immediate vicinity of the location where the Kirtland's Snakes were found under the FPDWC Plum Valley Preserve Snake Habitat Management Plan. In addition, conservation efforts would include changing the trail surface from asphalt to limestone screenings north of Plum Creek, modifying the existing alignment to include an elevated boardwalk, and utilizing top down construction, across two areas of potential habitat to decrease the footprint of disturbance and further avoid potential impacts.

Final mitigation measures and associated costs will be coordinated with the IDNR as part of the final ITA.

B) Plans for management of the affected area that will enable continued use by the listed species:

1. FPDWC will be responsible for management of the areas immediately adjacent to the newly constructed trail that are located on FPDWC properties and will continue to be native ecosystems that support native herptiles. The turf directly adjacent to the trail will be mowed at a continuous width of 3 feet from the edge of pavement without herbicide applications. Outside of the 3-foot turf shoulder, typical management activities including prescribed fire and localized/specific/spot herbicide applications for targeted invasive species will continue to occur. Hydrology of the existing project area will not be altered as a result of the trail construction. There are no berms proposed. The proposed trail profile closely matches the existing groundline in order to minimize earthwork. The subgrade will be graded including the shaping of the upslope ditches followed by the installation of the aggregate base followed by the hot-mix asphalt (HMA) paving and limestone screenings where appropriate.

2. Siltation during all phases of construction will be minimized through use of erosion control devices such as silt fences to prevent runoff from entering adjacent upland habitats, as well as wetlands and waterways. A designated crew will inspect and maintain silt fences/erosion structures.

3. It is anticipated that any listed species would not be trapped within the silt fenced construction area. However, if any listed are present, all activities will cease immediately and the appropriate staff at the IDNR and IDOT will be contacted immediately. Construction will not continue until the appropriate steps are taken as outlined by the appropriate authority.

4. After construction is completed, silt fencing will be removed and all areas that are not part of the new multi-use trail will be restored to approximate original condition and flow patterns, allowing for re-colonization of biota.

C) Description of all measures to be implemented to minimize or mitigate the effects of the proposed action on listed species:

1. Implementation and maintenance of the soil, erosion, and sedimentation control plan will prevent runoff from entering adjacent habitats; including uplands, wetlands, and Plum Creek.

2. Non-intrusion fencing shall be used to keep animals from entering the construction zone. In addition, no area outside of the designated construction limits shall be used for equipment storage, soil stockpiles, parking, laydown yards, etc.

3. Inspections for native and listed fauna species within the construction limits each day prior to commencing construction to ensure listed species are not present within or immediately adjacent to construction activities. If listed species are encountered, construction will be halted, and the IDNR and IDOT will be contacted immediately to determine the next appropriate steps. The FPDWC plans to contract the inspection work out to the Phase I Engineer or others, as needed.

4. In order to reduce impacts from usage of the new trail and due to the density of snakes in the project area, the IDNR recommends that information about the presence of snakes be implemented at the trailhead's kiosk. The IDNR states that the information should not mention the presence of Kirtland's snakes, but should caution visitors about the possibility of snakes on the trail.

5. Mitigation will include the FPDWC committing to a budget of $200,000 towards the continued enhancement and restoration of 94 acres of habitat in the immediate vicinity of the location where the Kirtland's Snakes were found under the FPDWC Plum Valley Preserve Snake Habitat Management Plan.

6. Conservation efforts will also include changing the trail surface from asphalt to limestone screenings north of Plum Creek, modifying the existing alignment to include an elevated boardwalk, and utilizing top down construction, across two areas of potential habitat to decrease the footprint of disturbance and further avoid potential impacts.

D) Plans for monitoring the effects of measures implemented to minimize or mitigate the effects of the proposed action on endangered or threatened species.

1. Inspections for native and listed wildlife species within the construction limits will be completed each day prior to commencing construction to ensure listed species are not present within or immediately adjacent to construction activities. If listed species are encountered, construction will be halted, and the IDNR and IDOT will be contacted immediately to determine the next appropriate steps. Monitoring efforts will prevent Kirland's snakes and smooth green snakes from entering the construction site.

2. Post-construction surveys for the Kirtland's snake and the smooth green snake will be completed by the INHS and qualified FPDWC staff upon completion of the project. Two surveys will be completed, one will take place one to two years after construction and the second survey will take place five years after construction. The methodologies used for the post-construction surveys will be similar to those used by the INHS for the pre-construction surveys and will include documentation of suitable habitats for the two snake species as well as placement of cover objects during the appropriate time of year to collect data on the presence of the two species in the project vicinity. Detailed survey methodologies utilized for this effort can be vetted through the IDNR prior to field work, if appropriate.

3. In order to reduce impacts from usage of the new trail and due to the density of snakes in the project area, the IDNR recommends that information about the presence of snakes be implemented at the trailhead's kiosk. The IDNR states that the information should not mention the presence of Kirtland's snakes, but should caution visitors about the possibility of snakes on the trail.

E) Adaptive management practices that will be used to deal with changed or unforeseen circumstances affecting the effectiveness of measures instituted:

1. Sediment/erosion control measures may be modified and supplemented to ensure maximum protection of offsite habitats as different phases of construction shift erosion points and channels. Erosion control measures/sediment structures will be evaluated and modified weekly or more often if weather events or shifts in construction area dictate modifications. Perimeter controls will protect trees and buffer areas located in the vicinity of the construction activities.

2. Permits from the USACE, IEPA, and IDNR-OWR are not required for the proposed project. A letter was received from the Chicago District USACE on April 6, 2023, that a no permit required determination was made for the proposed project. Work will not take place within any flowing water or floodwaters. A short, 50-foot long section of trail immediately west of the bridge is between the 10 and 100 year floodplain but no equipment storage is allowed in that area. A stormwater pollution prevention plan (SWPPP) has been developed for the proposed project. Perimeter erosion barrier and high visibility wetland fencing will be utilized and placed at the edge of the construction limits to prevent incursions beyond the work zone. The bridge over Plum Creek will span the entire valley with the bridge abutments being located at the top of each bank. Upstream and adjacent to Plum Creek, the Erosion and Sediment Control Plan includes perimeter erosion barrier, temporary ditch checks, erosion

control blanket, and temporary seeding to protect the receiving waters. The staging areas on both sides of the creek are not located within a floodplain. If listed species are encountered, construction will be halted, and the IDNR and IDOT will be contacted immediately to determine the next appropriate steps.

F) Verification of adequate funding to support and implement all activities described in the conservation plan:

The monitoring costs during construction, the snake signage, and any mitigation costs related to obtaining the requested ITA will be borne by the FPDWC.

The project is funded by local, state, and federal funding for construction through Transportation Alternatives Program (TAP) money. The construction costs include adequate funding to support and implement all activities and commitments described in the conservation plan. It will be the responsibility of the selected contractor to comply with the environmental commitments of the plan – an allowance is included in the contract cost specifically for environmental project aspects and tasks. Also, as part of the FPDWC construction inspection and project oversite, the FPDWC construction management consultant will provide intermittent environmental inspections, reviews, and reporting.

3. Description of alternative actions the applicant considered that would not result in take and the reasons that each of those alternatives was not selected. A "no-action" alternative shall be included in this description of alternatives.

Various alternatives were analyzed to avoid or minimize impacts to wetlands. To avoid impacts the "No Action" alternative was considered. This alternative does not meet the project purpose and need and was disregarded. Because of the need to connect the existing Plum Creek Trail to the existing trail within Goodenow Grove Nature Preserve, no alternative avoids Goodenow Grove Nature Preserve, and the use of this preserve is unavoidable.

Various trail alignments were considered for the proposed project, all alternatives utilized the same termini in order to connect to an existing trail located within Plum Valley Forest Preserve at the northern end of the project, and to connect to an existing trail located within Goodenow Grove Nature Preserve, at the southern end of the project. A field meeting with the FPDWC, Terra Engineering, and Huff and Huff, Inc. (H&H) was held on June 23, 2020, to review the project area and to discuss proposed alignments. Areas reviewed during the field meeting include the area located south of the existing trail within Plum Valley Forest Preserve, the forested area east of the ComEd utility easement, Plum Creek, the area located south of Plum Creek, including the actively farmed agricultural field, and Goodenow Grove Nature Preserve at 265th Street. During the field review, the preferred alignment was selected to avoid high quality flora assemblages, wetlands, the forested area to the east of the alignment, as well as to minimize impacts to Plum Creek. The width of the creek and associated wetlands was a deciding factor for the determination of the bridged component of the trail. In addition, the avoidance of high-quality trees was a consideration for the alignment. The design reduces impacts to listed species and their habitats by reducing the construction limits. Avoidance and minimization measures include using the minimum trail width required to meet safety requirements.

Measures to avoid and/or minimize impacts to aquatic resources downstream of Plum Creek include the installation of ditch checks, silt fencing, and working during dry or no-flow conditions. Workspace associated with the proposed project was minimized to the extent practical.

BMPs will be incorporated into the final design to further minimize impacts. BMPs include permanent erosion and sedimentation control measures including post construction native seeding.

4. Data and information to indicate that the proposed taking will not reduce the likelihood of the survival of the endangered or threatened species in the wild within the State of Illinois, the biotic community of which the species is a part or the habitat essential to the species existence in Illinois.

It is anticipated that the proposed project, will not significantly reduce the population of protected snakes, turtles, or salamanders that occur near the project area. The objective of this Conservation Plan is to monitor the project during the life of the construction to ensure that listed species do not enter the construction zone and if listed species occur within the construction zone at any time, to halt construction and notify the IDNR and IDOT to determine the appropriate next steps before continuing construction.

In addition, in order to reduce impacts from usage of the new trail and due to the density of snakes in the project area, the FPDWC will post information about the presence of snakes at the trailhead's kiosk. The IDNR states that the information should not mention the presence of Kirtland's snakes, but should caution visitors about the possibility of snakes on the trail. Given the conservation recommendations outlined within this plan are adopted, the long-term viability of Kirtland's and other native snake populations present within the project vicinity are unlikely to be in jeopardy.

The information presented for each species presented in *Section B, Biological Data for Various Protected Herptiles,* illustrates that the species identified in this Conservation Plan are present in other ecosystems throughout the state. As a result, this project will not reduce the likelihood of survival of the species listed within the State of Illinois.

5. Implementing Agreement

A) The names and signatures of all participants in the execution of the conservation plan

Names and Signatures are provided at the end of this document.

The obligations and responsibilities of each of the identified participants with schedules and deadlines for completion of activities included in the conservation plan and a schedule for preparation of progress reports to be provided to the Department.

Applicant. Forest Preserve District of Will County
17540 West Laraway Road
Joliet, Illinois 60433

Conservation Plan Developers.
Huff & Huff Inc. (Lailah Reich / Jim Novak)

Conservation Plan Implementers.
Forest Preserve District of Will County (Matt Novander / Chief Landscape Architect)

Conservation Plan Monitors. Sedimentation/Erosion control monitors are yet to be determined by the FPDWC. Monitor will include INHS and qualified staff yet to be designated by the FPDWC.

Conservation Plan Funder/Enabler, include designees and sub-contractors. The FPDWC is the funder/enabler of the Conservation Plan. Mr. Matt Novander will be the representative for the FPDWC during this process.

B) Certification

The FPDWC certifies that their agency has the authority to complete the project and to address the issues proposed in the Incidental Take Application/Conservation Plan in the event state listed threatened or endangered species are encountered. The FPDWC is in charge of construction through its designated subcontractors. The FPDWC will assure that all applicable state laws will be adhered to during the completion of the project.

Anticipated Project Milestones Schedule

Project Milestone	Anticipated Completion
Project Letting	April 2025
Construction Begins	November 1, 2025
Bridge Construction	February and March 2026
Construction Ends	September 2026
Project Completion	February 2027

C) Assurance of compliance with all other federal, state, and local regulations pertinent to the proposed action and to execution of the conservation plan

The FPDWC is compliant with all other federal, state, and local regulations pertinent to the proposed action and execution of the Conservation Plan.

D) Copies of any final federal authorizations for a taking already issued to the applicant.

No federal authorization needed for the proposed project.

Signatories

Name: Ralph Schultz **Date:** 10/17/24

Ralph Schultz
Executive Director
Forest Preserve District of Will County

WORKS CONSULTED

Anton, T.G.., D. Mauger, C.A. Phillips, M.J. Dreslik, J.E. Petzing, A.R. Kuhns and J.M. Mui, 2003. Clonophis kirtlandii; Aggregating Behavior and site fidelity. Herpetological Review 34(3):248-249.

Bavetz, M. 1994. Geographic variation, status, and distribution of Kirtland's Snake (*Clonophis kirtlandii* Kennicott) in Illinois. Transactions of the Illinois State Academy of Science 87(3-4): 151-163.

Ernst, C.H., and R.W. Barbour. 1989. Snakes of Eastern North America. George Mason University Press, Fairfax, Virginia. 282 pp.

Ernst, C.H., and E.M. Ernst. 2003. Snakes of the United States and Canada. Smithsonian Books. Washington and London.

Illinois Department of Natural Resources (Illinois DNR). 2023. Illinois Endangered Species Protection Board. Illinois Threatened and Endangered Species by County. https://dnr.illinois.gov/content/dam/soi/en/web/dnr/espb/documents/et-county-list-dec2023.pdf

Illinois Natural History Survey Collection, Herptiles. Published Date January 18, 2024. Accessed January 24, 2024. https://biocoll.inhs.illinois.edu/portalx/collections/datasets/datapublisher.php

Illinois Natural History Survey Collection, Herptiles. Published Date January 18, 2024. Accessed March 28, 2024. https://biocoll.inhs.illinois.edu/portalx/collections/datasets/datapublisher.php

Illinois Natural History Survey. 2021. The grassland snake community of the Plum Valley Preserve, Will County, Illinois.

Illinois Natural History Survey. 2022. Survey for Kirtland's Snake, *Clonophis kirtlandii,* for the Plum Creek Greenway Trail in Will County, Illinois. IDOT Sequence No. 23641A, Section No. 20-F3000-06-BT.

Illinois Natural History Survey. 2021. Survey for Kirtland's Snake, *Clonophis kirtlandii,* for the Plum Creek Greenway Trail in Will County, Illinois. IDOT Sequence No. 23641, Section No. 20-F3000-06-BT.

Minton, S.A. 1972. Amphibians and Reptiles of Indiana. Indiana Academy of Science Monograph No. 3: i-v + 346 pp.

Phillips, C.A., R.A. Brandon, and E.O. Moll. 1999. Field Guide to Amphibians and Reptiles of Illinois. Illinois Natural History Survey Manual 8: 1-282.

Stewart, T.M., et. el. 2023. Estimating the effort required to detect Kirtland's snakes (*Chlonophis kirtlandii*). Wildlife Society Bulletin. 2023;47:e1498.

U.S. Fish and Wildlife Service (USFWS). 2024. Endangered species website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. https://www.fws.gov/species/eastern-massasauga-sistrurus-catenatus. Accessed 2/3/2024.

U.S. Fish and Wildlife Service (USFWS). 2024. Endangered species website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. https://www.fws.gov/species/blandings-turtle-emydoidea-blandingii. Accessed 2/3/2024.

U.S. Geological Survey (USGS). 7.5-minute topographic map. Dyer Quadrangle.

APPENDIX A

Coordination Documentation

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chicago Ecological Service Field Office
U.s. Fish And Wildlife Service Chicago Ecological Services Office
230 South Dearborn St., Suite 2938
Chicago, IL 60604-1507
Phone: (312) 485-9337

In Reply Refer To: February 21, 2023
Project Code: 2023-0047798
Project Name: IDOT - 23621 and 23621A - Plum Creek Greenway Extension

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

Additionally, please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat (NLEB) as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing

determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of NLEB after the new listing goes into effect this will first need to addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and

recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Chicago Ecological Service Field Office
U.s. Fish And Wildlife Service Chicago Ecological Services Office
230 South Dearborn St., Suite 2938
Chicago, IL 60604-1507
(312) 485-9337

PROJECT SUMMARY

Project Code: 2023-0047798
Project Name: IDOT - 23621 and 23621A - Plum Creek Greenway Extension
Project Type: Recreation - New Construction
Project Description: The proposed project involves the construction of pedestrian / bike trail from existing trail west of Greenwood Ave; along 265th St, Woodlawn Avenue & 263rd Street., then northeasterly thru Plum Valley Forest Preserve, to connect with an exiting trail, south of Burville Road within the Forest Preserve. The addendum covers the existing Plum Creek Greenway Trail, which will be paved as part of the full Plum Creek Greenway Trail extension project.

The project will require 0.06-acre of right-of-way (ROW) acquisition or easements. There will be instream work within a tributary to Plum Creek. There will be two acres of trees to be removed. The land cover in the vicinity of the project is Forest Preserve throughout the corridor. Construction is unknown.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.4221812,-87.57847681326862,14z

Counties: Will County, Illinois

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

REPTILES

NAME	STATUS
Eastern Massasauga (=rattlesnake) *Sistrurus catenatus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2202	Threatened

INSECTS

NAME	STATUS
Hine's Emerald Dragonfly *Somatochlora hineana* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7877	Endangered
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

FLOWERING PLANTS

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea*	Threatened
No critical habitat has been designated for this species.	
This species only needs to be considered under the following conditions:	
▪ Follow the guidance provided at https://www.fws.gov/midwest/endangered/section7/s7process/plants/epfos7guide.html	
Species profile: https://ecos.fws.gov/ecp/species/601	
Lakeside Daisy *Hymenoxys herbacea*	Threatened
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/3615	
Leafy Prairie-clover *Dalea foliosa*	Endangered
Population:	
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/5498	

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPAC USER CONTACT INFORMATION

Agency: Illinois Department of Transportation
Name: Joe Bartletti
Address: 2300 S. Dirksen Parkway
City: Springfield
State: IL
Zip: 62764
Email joe.bartletti@illinois.gov
Phone: 2174157157

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Highway Administration

EcoCAT
Ecological Compliance Assessment Tool

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Applicant: Illinois Department of Transportation
Contact: Joe Bartletti
Address: Bureau of Design and Environment
2300 South Dirksen Parkway
Springfield, IL 62764

IDNR Project Number: 2310589
Date: 02/22/2023

Project: IDOT - 23621 /23621 A - Plum Creek Greenway Extension
Address: Burville Road, Crete

Description: The proposed project involves the construction of pedestrian / bike trail from existing trail west of Greenwood Ave; along 265th St, Woodlawn Avenue & 263rd Street., then northeasterly thru Plum Valley Forest Preserve, to connect with an existing trail, south of Burville Road within the Forest Preserve. The addendum covers the existing Plum Creek Greenway Trail, which will be paved as part of the full Plum Creek Greenway Trail extension project.

The project will require 0.06-acre of right-of-way (ROW) acquisition or easements. There will be instream work within a tributary to Plum Creek. There will be two acres of trees to be removed. The land cover in the vicinity of the project is Forest Preserve throughout the corridor.

Natural Resource Review Results

Consultation for Endangered Species Protection and Natural Areas Preservation (Part 1075)

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

Goodenow Grove INAI Site
Moeller Woods INAI Site
Goodenow Grove Nature Preserve
Blanding's Turtle *(Emydoidea blandingii)*
Eastern Massasauga *(Sistrurus catenatus catenatus)*
Kirtland's Snake *(Clonophis kirtlandi)*

An IDNR staff member will evaluate this information and contact you to request additional information or to terminate consultation if adverse effects are unlikely.

Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: Will

Township, Range, Section:
34N, 14E, 13
34N, 14E, 14
34N, 14E, 23
34N, 14E, 26

EXHIBIT A-12.2

IL Department of Natural Resources Contact
Bradley Hayes
217-785-5500
Division of Ecosystems & Environment

Government Jurisdiction
IL Department of Transportation
Joe Bartletti
2300 South Dirksen Pkwy
Springfield, Illinois 62764

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

Terms of Use

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.

2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.

3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

Security

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

Privacy

EcoCAT generates a public record subject to disclosure under the Freedom of Information Act. Otherwise, IDNR uses the information submitted to EcoCAT solely for internal tracking purposes.

EXHIBIT A-12.2

Illinois Department of Natural Resources
JB Pritzker, Governor • Natalie Phelps Finnie, Director
One Natural Resources Way • Springfield, Illinois 62702-1271
www.dnr.illinois.gov

March 22, 2023

Mr. Joe Bartletti
2300 South Dirksen Parkway
Springfield, IL 62764

RE: IDOT - 23621 /23621 A - Plum Creek Greenway Extension
Consultation Program
EcoCAT Review #2310589
Will County

Dear Mr. Bartletti:

The Department has received your submission for this project for the purposes of consultation pursuant to the *Illinois Endangered Species Protection Act* [520 ILCS 10/11], the *Illinois Natural Areas Preservation Act* [525 ILCS 30/17], Title 17 *Illinois Administrative Code* Part 1075, and Title 17 *Illinois Administrative Code* Part 1090.

The proposed action consists of construction of pedestrian / bike trail from existing trail west of Greenwood Ave; along 265th St, Woodlawn Avenue & 263rd Street., then northeasterly thru Plum Valley Forest Preserve, to connect with an existing trail, south of Burville Road within the Forest Preserve. The addendum covers the existing Plum Creek Greenway Trail, which will be paved as part of the full Plum Creek Greenway Trail extension project.

The project will require 0.06-acre of right-of-way (ROW) acquisition or easements. There will be instream work within a tributary to Plum Creek. There will be two acres of trees to be removed. The land cover in the vicinity of the project is Forest Preserve throughout the corridor.

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

Illinois Natural Areas Inventory
Goodenow Grove
Moeller Woods

Illinois Nature Preserves Commission Lands
Goodenow Grove Nature Preserve

State Threatened or Endangered Species
Blanding's Turtle (*Emydoidea blandingii*)
Eastern Massasauga (*Sistrurus catenatus*)
Kirtland's Snake (*Clonophis kirtlandii*)

Due to the project scope and proximity to protected resources the Department offers the following comments and recommends the following actions be taken to avoid adversely impacting listed species and protected natural areas in the vicinity of the project:

Goodenow Grove INAI & Goodenow Grove Nature Preserve
The applicant should be aware that they may be liable for any adverse impact to an Illinois Nature Preserve or Illinois Land and Water Reserve pursuant to the *Illinois Natural Areas Preservation Act [525 ILCS 30/21-23]*. Violations under this Act can carry significant penalties. Coordination with the Illinois Nature Preserves Commission should continue through project completion.
Due to the location of the proposed project, the Department recommends avoiding or minimizing impacts to Goodenow Grove INAI and Goodenow Grove Nature Preserve where feasible. The Department also recommends:

- All equipment should be power washed offsite prior to entering the work site to remove exotic/invasive seed or propagules.
- No equipment should be stored in Goodenow Grove Nature Preserve.
- Soil erosion and sediment control BMPs should be implemented and properly maintained.
- Disturbed areas should be reseeded with an appropriate native seed mix that contains forbs as well as grasses (such as IDOT Class 5, 5A, or 5B seed mix), where feasible.
- Work should be completed during dry conditions, preferably between August and September.
- If work must be completed during wet conditions, matting or low ground pressure (<7 psi) equipment should be used to avoid rutting.
- The Department requests that temporary and permanent lighting be avoided. If lighting is required, the Department recommends:
    - All lighting should be fully shielded fixtures that emit no upward light.
    - Only "warm-white" or filtered LEDs (CCT < 3,000 K; S/P ratio < 1.2) should be used to minimized blue emission.
    - Based on the higher luminous efficiency of LEDs, do not over-light area.
    - Only light the exact space with the amount (lumens) needed to meet highway or industry safety requirement.
- Good housekeeping practices should be implemented and maintained during and after construction to prevent trash and other debris from inadvertently blowing or washing into nearby natural areas.

If disturbance to Goodenow Grove Nature Preserve is anticipated, further coordination with the Illinois Nature Preserves Commission is required.

Blanding's Turtle & Eastern Massasauga
Due to the location of the proposed project, the Department has determined that impacts to these listed species are unlikely.

Kirtland's Snake

Due to the location and scope of the proposed project, the Department recommends the applicant seek an incidental Take Authorization (ITA) from the Department. Be advised, an ITA can take at least four months to complete. All questions pertaining to ITA should be directed to the ITA coordinator, Heather Osborn (Heather.Osborn@Illinois.gov). Visit the link below for information on the ITA process:
Incidental Take Authorizations - Species Conservation (illinois.gov)

Additionally, due to the density of snakes in the area, the Department recommends that information about the presence of snakes be implemented at the trailhead's kiosk. Information should not mention the presence of Kirtland's snakes but should caution visitors about the possibility of snakes on the trail.

Given the above recommendations are adopted, the Department has determined that impacts to these protected resources are unlikely. The Department has determined impacts to other protected resources in the vicinity of the project location are also unlikely.

In accordance with 17 Ill. Adm. Code 1075.40(h), please notify the Department of your decision regarding these recommendations.

Interagency Wetland Policy Act

The Department has reviewed for wetland impacts and proposed mitigation and has no objections. The Department concurs with your assessment that the amount of mitigation required under IWPA is 0.398 acres; and has no concerns with mitigation occurring out of basin a Squaw Creek wetland mitigation bank in the Fox River IWPA drainage basin.

This project was reviewed for compliance with Title 17 *Illinois Administrative Code* Part 1090 of the *Interagency Wetland Policy Act* and was determined to be in compliance. Consultation for Part 1090 is valid for three years.

Consultation on the part of the Department is closed unless the applicant desires additional information or advice related to this proposal. Consultation for Part 1075 is valid for two years unless new information becomes available which was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the action has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary.

The natural resource review reflects the information existing in the Illinois Natural Heritage Database at the time of the project submittal and should not be regarded as a final statement on the project being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are unexpectedly encountered during the project's implementation, the applicant must comply with the applicable statutes and regulations.

This letter does not serve as permission to take any listed or endangered species. As a reminder, no take of an endangered species is permitted without an Incidental Take Authorization or the required permits. Anyone who takes a listed or endangered species without an Incidental Take Authorization or required permit may be subject to criminal and/or civil penalties pursuant to the *Illinois Endangered Species Act*, the *Fish and Aquatic Life Act*, the *Wildlife Code* and other applicable authority.

The Department also offers the following conservation measures be considered to help protect native wildlife and enhance natural areas in the project area:

If erosion control blanket is to be used, the Department also recommends that wildlife-friendly plastic-free blanket be used around wetlands and adjacent to natural areas, if not feasible to implement project wide, to prevent the entanglement of native wildlife.

Please contact me with any questions about this review.
Sincerely,

Bradley Hayes
Manager, Impact Assessment Section
Division of Real Estate Services and Consultation
Office of Realty & Capital Planning
Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702
Bradley.Hayes@Illinois.gov
Phone: (217) 782-0031

Cc Heather Osborn – Incidental Take Authorization Coordinator

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chicago Ecological Service Field Office
U.s. Fish And Wildlife Service Chicago Ecological Services Office
230 South Dearborn St., Suite 2938
Chicago, IL 60604-1507
Phone: (312) 485-9337

In Reply Refer To: March 27, 2023
Project code: 2023-0047798
Project Name: IDOT - 23621 and 23621A - Plum Creek Greenway Extension

Federal Nexus: yes
Federal Action Agency (if applicable): Federal Highway Administration

Subject: Federal agency coordination under the Endangered Species Act, Section 7 for 'IDOT - 23621 and 23621A - Plum Creek Greenway Extension'

Dear Joe Bartletti:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on March 27, 2023, for 'IDOT - 23621 and 23621A - Plum Creek Greenway Extension' (here forward, Project). This project has been assigned Project Code 2023-0047798 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements may not be complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into the IPaC must accurately represent the full scope and details of the Project. Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (DKey), invalidates this letter.

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis completed by the Service, your project has reached the determination of “May Affect, Not Likely to Adversely Affect” the northern long-eared bat. Unless the Service advises you within 15 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that consultation on the Action is complete and no further action is necessary unless either of the following occurs:

- new information reveals effects of the action that may affect the northern long-eared bat in a manner or to an extent not previously considered; or,
- the identified action is subsequently modified in a manner that causes an effect to the northern long-eared bat that was not considered when completing the determination key.

15-Day Review Period

As indicated above, the Service will notify you within 15 calendar days if we determine that this proposed Action does not meet the criteria for a “may affect, not likely to adversely affect” (NLAA) determination for the northern long-eared bat. If we do not notify you within that timeframe, you may proceed with the Action under the terms of the NLAA concurrence provided here. This verification period allows the identified Ecological Services Field Office to apply local knowledge to evaluation of the Action, as we may identify a small subset of actions having impacts that we did not anticipate when developing the key. In such cases, the identified Ecological Services Field Office may request additional information to verify the effects determination reached through the Northern Long-eared Bat DKey.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Eastern Massasauga (=rattlesnake) *Sistrurus catenatus* Threatened
- Eastern Prairie Fringed Orchid *Platanthera leucophaea* Threatened
- Hine's Emerald Dragonfly *Somatochlora hineana* Endangered
- Lakeside Daisy *Hymenoxys herbacea* Threatened
- Leafy Prairie-clover *Dalea foliosa* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate
- Whooping Crane *Grus americana* Experimental Population, Non-Essential

You may coordinate with our Office to determine whether the Action may affect the species and/or critical habitat listed above. Note that reinitiation of consultation would be necessary if a new species is listed or critical habitat designated that may be affected by the identified action before it is complete.

If you have any questions regarding this letter or need further assistance, please contact the Chicago Ecological Service Field Office and reference Project Code 2023-0047798 associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

IDOT - 23621 and 23621A - Plum Creek Greenway Extension

2. Description

The following description was provided for the project 'IDOT - 23621 and 23621A - Plum Creek Greenway Extension':

> The proposed project involves the construction of pedestrian / bike trail from existing trail west of Greenwood Ave; along 265th St, Woodlawn Avenue & 263rd Street., then northeasterly thru Plum Valley Forest Preserve, to connect with an existing trail, south of Burville Road within the Forest Preserve. The addendum covers the existing Plum Creek Greenway Trail, which will be paved as part of the full Plum Creek Greenway Trail extension project.
>
> The project will require 0.06-acre of right-of-way (ROW) acquisition or easements. There will be instream work within a tributary to Plum Creek. There will be two acres of trees to be removed. The land cover in the vicinity of the project is Forest Preserve throughout the corridor. Construction is unknown.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.4221812,-87.57847681326862,14z

DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of “may affect, but not likely to adversely affect” for the Endangered northern long-eared bat (*Myotis septentrionalis*).

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. Do you have data that indicates that northern long-eared bats may be present in the action area?

   No

3. Does any component of the action involve construction or operation of wind turbines?

   Note: For federal actions, answer ‘yes’ if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

   No

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   Yes

5. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

   Yes

6. FHWA, FRA, and FTA have completed a range-wide programmatic consultation for transportation- related actions within the range of the Indiana bat and northern long-eared bat.

   Does your proposed action fall within the scope of this programmatic consultation?

   Note:If you have **previously consulted** on your proposed action with the Service under the NLEB 4dRule, answer 'no' to this question and proceed with using this key. If you have **not yet consulted** with the Service on your proposed action and are unsure whether your proposed action falls within the scope of the FHWA, FRA, FTA range-wide programmatic consultation, please select "Yes" and use the FHWA, FRA, FTA Assisted Determination Key in IPaC to determine if the programmatic consultation is applicable to your action. Return to this key and answer ‘no’ to this question if it is not.

   No

7. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

   Note: This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

   Yes

8. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

   No

9. Have you determined that your proposed action will have no effect on the northern long-eared bat? Remember to consider the effects of any activities that would not occur but for the proposed action.

   If you think that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, answer “No” below and continue through the key. If you have determined that the northern long-eared bat does not occur in your project’s action area and/or that your project will have no effects whatsoever on the species despite the potential for it to occur in the action area, you may make a “no effect” determination for the northern long-eared bat.

   Note: Federal agencies (or their designated non-federal representatives) must consult with USFWS on federal agency actions that may affect listed species [50 CFR 402.14(a)]. Consultation is not required for actions that will not affect listed species or critical habitat. Therefore, this determination key will not provide a consistency or verification letter for actions that will not affect listed species. If you believe that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, please answer “No” and continue through the key. Remember that this key addresses only effects to the northern long-eared bat. Consultation with USFWS would be required if your action may affect another listed species or critical habitat. The definition of Effects of the Action can be found here: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

   No

10. Does the action area contain any caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating northern long-eared bats?

    No

11. Does the action area contain or occur within 0.5 miles of (1) talus or (2) anthropogenic or naturally formed rock crevices in rocky outcrops, rock faces or cliffs?

    No

12. Is suitable summer habitat for the northern long-eared bat present within 1000 feet of project activities?
    (If unsure, answer "Yes.")

    Note: If there are trees within the action area that are of a sufficient size to be potential roosts for bats (i.e., live trees and/or snags ≥3 inches (12.7 centimeter) dbh), answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat can be found at: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

    Yes

13. Will the action cause effects to a bridge?

    No

14. Will the action result in effects to a culvert or tunnel?

    No

15. Does the action include the intentional exclusion of northern long-eared bats from a building or structure?

    Note: Exclusion is conducted to deny bats' entry or reentry into a building. To be effective and to avoid harming bats, it should be done according to established standards. If your action includes bat exclusion and you are unsure whether northern long-eared bats are present, answer "Yes." Answer "No" if there are no signs of bat use in the building/structure. If unsure, contact your local U.S. Fish and Wildlife Services Ecological Services Field Office to help assess whether northern long-eared bats may be present. Contact a Nuisance Wildlife Control Operator (NWCO) for help in how to exclude bats from a structure safely without causing harm to the bats (to find a NWCO certified in bat standards, search the Internet using the search term "National Wildlife Control Operators Association bats"). Also see the White-Nose Syndrome Response Team's guide for bat control in structures

    No

16. Does the action involve removal, modification, or maintenance of a human-made structure (barn, house, or other building) **known or suspected to contain roosting bats?**

    No

17. Will the action cause construction of one or more new roads open to the public?

    For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    No

18. Will the action include or cause any construction or other activity that is reasonably certain to increase average daily traffic on one or more existing roads?

    Note: For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.). .

    No

19. Will the action include or cause any construction or other activity that is reasonably certain to increase the number of travel lanes on an existing thoroughfare?

    For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    No

20. Will the proposed action involve the creation of a new water-borne contaminant source (e.g., leachate pond pits containing chemicals that are not NSF/ANSI 60 compliant)?

    No

21. Will the proposed action involve the creation of a new point source discharge from a facility other than a water treatment plant or storm water system?

    No

22. Will the action include drilling or blasting?

    No

23. Will the action involve military training (e.g., smoke operations, obscurant operations, exploding munitions, artillery fire, range use, helicopter or fixed wing aircraft use)?

    No

24. Will the proposed action involve the use of herbicides or pesticides other than herbicides (e.g., fungicides, insecticides, or rodenticides)?

    No

25. Will the action include or cause activities that are reasonably certain to cause chronic nighttime noise in suitable summer habitat for the northern long-eared bat? Chronic noise is noise that is continuous or occurs repeatedly again and again for a long time.

    Note: Additional information defining suitable summer habitat for the northern long-eared bat can be found at: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

    No

26. Does the action include, or is it reasonably certain to cause, the use of artificial lighting within 1000 feet of suitable northern long-eared bat roosting habitat?

    Note: Additional information defining suitable roosting habitat for the northern long-eared bat can be found at: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

    No

27. Will the action include tree cutting or other means of knocking down or bringing down trees, tree topping, or tree trimming?

    Yes

28. Has a presence/probable absence summer bat survey targeting the northern long-eared bat following the Service's Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines been conducted within the project area? If unsure, answer "No."

    No

29. Does the action include emergency cutting or trimming of hazard trees in order to remove an imminent threat to human safety or property? See hazard tree note at the bottom of the key for text that will be added to response letters

    Note: A "hazard tree" is a tree that is an immediate threat to lives, public health and safety, or improved property and has a diameter breast height of six inches or greater.

    No

30. Are any of the trees proposed for cutting or other means of knocking down, bringing down, topping, or trimming suitable for northern long-eared bat roosting (i.e., live trees and/or snags ≥3 inches dbh that have exfoliating bark, cracks, crevices, and/or cavities)?

    Yes

31. [Semantic] Does your project intersect a known sensitive area for the northern long-eared bat?

    Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your state agency or USFWS field office

    Automatically answered
    No

32. Will all tree cutting/trimming or other knocking or bringing down of trees be restricted to the inactive season for the northern long-eared bat?

    Note: Inactive Season dates for summer habitat outside of staging and swarming areas can be found here: https://www.fws.gov/media/inactive-season-dates-swarming-and-staging-areas.

    Yes

33. Will the action cause trees to be cut, knocked down, or otherwise brought down across an area greater than 10 acres?

    No

34. Will the action cause trees to be cut, knocked down, or otherwise brought down in a way that would fragment a forested connection (e.g., tree line) between two or more forest patches of at least 5 acres?

    The forest patches may consist of entirely contiguous forest or multiple forested areas that are separated by less than 1000’ of non-forested area. A project will fragment a forested connection if it creates an unforested gap of greater than 1000’.

    No

35. Will the action result in the use of prescribed fire?

    No

36. Will the action cause noises that are louder than ambient baseline noises within the action area?

    No

PROJECT QUESTIONNAIRE

Enter the extent of the action area (in acres) from which trees will be removed - round up to the nearest tenth of an acre. For this question, include the entire area where tree removal will take place, even if some live or dead trees will be left standing.

57

In what extent of the area (in acres) will trees be cut, knocked down, or trimmed during the inactive (hibernation) season for northern long-eared bat? **Note:** Inactive Season dates for spring staging/fall swarming areas can be found here: https://www.fws.gov/media/inactive-season-dates-swarming-and-staging-areas

2

In what extent of the area (in acres) will trees be cut, knocked down, or trimmed during the active (non-hibernation) season for northern long-eared bat? **Note:** Inactive Season dates for spring staging/fall swarming areas can be found here: https://www.fws.gov/media/inactive-season-dates-swarming-and-staging-areas

0

Will all potential northern long-eared bat (NLEB) roost trees (trees ≥3 inches diameter at breast height, dbh) be cut, knocked, or brought down from any portion of the action area greater than or equal to 0.1 acre? If all NLEB roost trees will be removed from multiple areas, select 'Yes' if the cumulative extent of those areas meets or exceeds 0.1 acre.

Yes

Enter the extent of the action area (in acres) from which all potential NLEB roost trees will be removed. If all NLEB roost trees will be removed from multiple areas, entire the total extent of those areas. Round up to the nearest tenth of an acre.

2

For the area from which all potential northern long-eared bat (NLEB) roost trees will be removed, on how many acres (round to the nearest tenth of an acre) will trees be allowed to regrow? Enter '0' if the entire area from which all potential NLEB roost trees are removed will be developed or otherwise converted to non-forest for the foreseeable future.

2

Will any snags (standing dead trees) ≥3 inches dbh be left standing in the area(s) in which all northern long-eared bat roost trees will be cut, knocked down, or otherwise brought down?

No

Will all project activities by completed by April 1, 2024?

No

IPAC USER CONTACT INFORMATION

Agency: Illinois Department of Transportation
Name: Joe Bartletti
Address: 2300 S. Dirksen Parkway
City: Springfield
State: IL
Zip: 62764
Email joe.bartletti@illinois.gov
Phone: 2174157157

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Highway Administration

Wetlands

Submittal Date: 11/11/2020 **Sequence No:** 23621
District: 1 **Requesting Agency:** Local Will Co FPD **Project No:**
Contract #: **Job No.:**
Counties: Will
Route: Plum Creek Greenway Trail **Marked:**
Street: On & Off-road **Section:** 20-F3000-06-BT
Municipality(ies): 2 1/2 miles SE Crete **Project Length:** 2.4140 **km** 1.5 **miles**
FromTo (At): South of Burville Road to 265th Street
Quadrangle: Dyer **Township-Range-Section:** T34N R14E S 23 and 26
Anticipated Design Approval: 09/01/2021 **Cleared for Design Approval:** 03/27/2023
Cleared for Letting: **Mitigation:** Yes **Mitigation Completed:**

Wetland Impacts Evaluation

Submittal Date: 06/30/2021 **Submitted By:**

Does the project have wetland impacts? Yes **Type:** Permanent

Briefly describe the measures considered to avoid and minimize adverse impacts to the wetlands: The trail was routed to avoid or minimize impacts as much as possible. A bridge will be utilized to span several wetlands along with Plum Creek.

Summarize briefly why there are no practicable alternatives to the use of the wetland(s): The impacts as shown cannot be avoided due to the linear nature of the existing wetlands and the need to meet geometric design criteria of the proposed trail.

Wetland mitigation is being proposed: wetland bank site ☐ **Reviewed**

Memo Date: 03/27/2023 **Memo By:** Joe Bartletti - BDE

Memo: The proposed improvement was surveyed for wetlands. We reviewed the wetland survey report and the Wetlands Impact Evaluation (WIE) form and approve both. None of the delineated wetlands had an FQI or mean c-value greater than or equal to 20.0 or 4.0 respectively, thus none of the features are considered high quality. The WIE indicates, there will be permanent impacts to six wetland sites for the new alignment portion of the project, totaling 0.185-acre. Because a portion of this project occurs on new alignment, it is considered a Standard Review Action in accordance with the Interagency Wetland Policy Act (IWPA) and requires concurrence from IDNR before this project can be cleared for letting regarding wetlands. Mitigation for permanent impacts is proposed at Squaw Creek wetland mitigation bank in the out of basin Fox River IWPA drainage basin. The project is in the Des Plaines River and Lake Michigan Tributaries IWPA drainage basin. Therefore, the out-of-basin mitigation replacement ratio of 2:1 shall apply to permanent impacts to Wetland Sites 6-9 and 13. Wetland Site 15 occurs within the boundaries Goodenow Grove Natural Areas Inventory (INAI) / Nature Preserve thus it requires a replacement ratio of 5.5:1.0 for permanent impacts. There are 0.008 ac of permanent impact to this site requiring 0.044-acre of mitigation. Total wetland mitigation credits required for the entire project total 0.398- acre.

This project was submitted to IDNR on 02-22-2023 for their review. The Department has reviewed for wetland impacts and proposed mitigation and has no objections. The Department concurs with your assessment that the amount of mitigation required under IWPA is 0.398 acres; and has no concerns with mitigation occurring out of basin a Squaw Creek wetland mitigation bank in the Fox River IWPA drainage basin.
This project is cleared with respect to wetlands

Memo Date: 06/30/2021 **Memo By:** Huff & Huff, Inc.

Memo: Because Goodenow Grove Nature Preserve falls within a portion of the proposed project, threatened and endangered species may be present. However, it is unknown at this time whether or not threatened and endangered species are present within the immediate project vicinity.

Wetland Impacts and Mitigation Required

Site No.	Type	T&E	Nature Preserve	Natural Area	Essential Habitat	Size (acres)	Acres of Impact	Ratio	Acres of Compensation
W3	Open Water	No	No	No	No	.001	.000		

Basin 07120003 **Quadrangle** Dyer **FQI** NA
Describe the work:

EXHIBIT A-12.2

W2	Open Water	No	No	No	No	.06	.000		
Basin	07120003	**Quadrangle**	Dyer			**FQI**	NA		
Describe the work:									
W1	Open Water	No	No	No	No	.004	.000		
Basin	07120003	**Quadrangle**	Dyer			**FQI**	NA		
Describe the work:									
1	Wet Mead	No	No	No	No	0.09	.000		
Basin	07120003	**Quadrangle**	Dyer			**FQI**	20.1		
Describe the work:									
3	Wet Mead	No	No	No	No	.02	.000		
Basin	07120003	**Quadrangle**	Dyer			**FQI**	13.3		
Describe the work:									
4	Wet Mead	No	No	No	No	.03	.000		
Basin	07120003	**Quadrangle**	Dyer			**FQI**	13.1		
Describe the work:									
5	Wet Mead	No	No	No	No	.09	.000		
Basin	07120003	**Quadrangle**	Dyer			**FQI**	17.8		
Describe the work:									
6	Wet Mead	No	No	No	No	.10	.028	2.0	.056
Basin	07120003	**Quadrangle**	Dyer			**FQI**	14.8		
Describe the work:		Fill							
7	Wet Shrub	No	No	No	No	.02	.013	2.0	.026
Basin	07120003	**Quadrangle**	Dyer			**FQI**	14.3		
Describe the work:		Fill							
8	Forested	No	No	No	No	.13	.064	2.0	.128
Basin	07120003	**Quadrangle**	Dyer			**FQI**	16.4		
Describe the work:		Fill							
9	Forested	No	No	No	No	.10	.057	2.0	.114
Basin	07120003	**Quadrangle**	Dyer			**FQI**	14.8		
Describe the work:		Fill							
10	Forested	No	No	No	No	.01	.000		
Basin	07120003	**Quadrangle**	Dyer			**FQI**	14		
Describe the work:									
11	Forested	No	No	No	No	.05	.000		
Basin	07120003	**Quadrangle**	Dyer			**FQI**	18.7		
Describe the work:									
13	Wet Mead	No	No	No	No	.03	.015	2.0	.030
Basin	07120003	**Quadrangle**	Dyer			**FQI**	13.1		
Describe the work:		Fill							
15	Wet Shrub	No	Yes	Yes	No	.02	.008	5.5	.044
Basin	07120003	**Quadrangle**	Dyer			**FQI**			
Describe the work:		Fill							
						Total	.185		.398

APPENDIX B

INHS Survey Reports

ILLINOIS NATURAL HISTORY SURVEY
PRAIRIE RESEARCH INSTITUTE

AQUATIC SURVEY REPORT

Survey for Kirtland's Snake, *Clonophis kirtlandii*, for the Plum Creek Greenway Trail in Will County, Illinois

IDOT Sequence No. 23641, Section No. 20-F3000-06-BT

Prepared by:
Andrew R. Kuhns

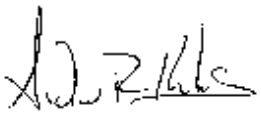
INHS/IDOT Statewide Biological Survey & Assessment Program

2021: 34

August 2021

PROJECT SUMMARY

This report details results of a habitat assessment and a herpetological survey for the Kirtland's Snake, *Clonophis kirtlandii*, in preparation for the continuation of the Plum Creek Greenway Trail from south of Burville Road to 265th Street in Will County, Illinois (IDOT sequence No. 23621, Section No. 20-F3000-06-BT). Information on the natural history and ecology of the Kirtland's Snake, the only herptile listed as threatened or endangered in Illinois that is known to occur near the project area, can be found in **Appendix A**. Coverboard arrays were set in two low lying areas along the proposed path on 01 April 2021. Surveys were conducted by INHS personnel A.R. Kuhns and T. Stewart under Illinois Department of Natural Resources (IDNR) State Threatened and Endangered Species Permit 10812 as required under the Illinois Endangered Species Protection Act (520 ILCS 10/4), Illinois Herptile Scientific and Research Collecting Permit (HCSP) 19-04, and Will County Forest Preserve District Special Use Permit 21-10. Coverboard arrays are mapped in **Appendix C** and images are included in **Appendix D**. The spatial data shown in **Figure C.1** of **Appendix C** were digitally uploaded to the Further Studies Illinois Site Assessment Tracking System (https://isats.dot.illinois.gov/), and are herein referenced as **Appendix E.** We made 155 captures of four different species of grassland snakes, but no Kirtland's Snake were encountered.



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Cover Photo: Kirtland's Snake found 17 July 2018 in Coles County, Illinois. Photo by A. R. Kuhns, INHS.

INTRODUCTION

In a transmittal dated 05 January 2021, Susan Hargrove of the Illinois Department of Transportation (IDOT) Bureau of Design and Environment tasked the Illinois Natural History Survey (INHS) to conduct a habitat assessment and a herpetological survey for the presence of the state threatened Kirtland's Snake in Plum Valley Preserve along the proposed path of the continuation of the Plum Creek Greenway Trail from South of Burville Road to 265th Street in Will County, Illinois (IDOT sequence No. 23621, Section No. 20-F3000-06-BT). The natural history and ecology of the Kirtland's Snake, listed as a state threatened species in Illinois (IESPB 2020) can be found in **Appendix A**.

PROJECT AREA

The site occurs on the Dyer, Illinois, U.S. Geological Survey 7.5' topographic quadrangle map in Township 34 North, Range 14 East, Sections 23 and 26, in Will County, Illinois. The 1.5-mile Plum Creek Greenway Trail addition will extend from the existing trail west of Greenwood Avenue, along 256th Street, Woodlawn Avenue, and 263rd Street then northeasterly through Plum Valley Preserve to connect with the existing trail south of Burville Road (**Appendix C: Figure C.1**). The habitat surrounding the proposed work consists of residential neighborhoods, wooded riparian areas, and native grassland prairies.

METHODS

Database Review

The Illinois Natural Heritage Database maintained by the Illinois Department of Natural Resources (IDNR) was queried for Element Occurrence Records (EOR) of threatened and endangered amphibians and reptiles within a mile of the project boundary. Each EOR may be subdivided into multiple Element of Occurrence Identification numbers (EOID) to record separate identification events or sub-locations. Additionally, a search of both vouchered and un-vouchered (photo only) specimens in the Illinois Natural History Survey (INHS), University of Illinois Museum of Natural History (UIMNH), and non-INHS Illinois Amphibian and Reptile databases maintained by the Illinois Natural History Survey was conducted. Together these databases are merged and accessed through the All_IL_Herps database at INHS and are updated semi-annually. The locations of any results were plotted onto aerial photographs of the Environmental Survey Request (ESR) corridor and examined to search for suitable habitat for the species.

Field Methods

On 01 April 2021 INHS Herpetologist A.R. Kuhns and INHS Graduate Research Assistant Tyler Stewart conducted a visual encounter survey at the project area (**Appendix C: Figure C.1; Appendix D: Plates 1-2)** for 0.5 person-hours. Specifically, we looked for low-lying areas in native prairie habitats with an abundance of crayfish burrows in or near the proposed trail (crayfish burrows are used as refugia by Kirtland's Snake). We documented two low-lying areas along the proposed trail that had suitable habitat for the Kirtland's Snake and deployed cover objects. Cover objects were 19.7 x 19.7" vinyl-backed carpet tiles (**Appendix D: Plate 1**). Tiles were set with the vinyl size up (ie. upside down) at approximately 5-meter intervals. Grid A

occurs near the current terminus of the Plum Creek Greenway trail south of Burville Road and consists of 40 carpet tiles (20" X 20") set in a 4 x 10 pattern. Grid B is approximately 750' southwest of grid A and is set in a 6 x 10 grid pattern. Survey methods are detailed in **Appendix B** and were approved under Protocol 19057 of the University of Illinois Institutional Animal Care and Use Committee, as required by the Federal Animal Welfare Act (CFR Title 9 Parts 1, 2, and 3).

RESULTS

Database Review

There are records for three state-listed herptiles (Eastern Massasauga Rattlesnake, *Sistrurus catenatus;* Four-Toed Salamander, *Hemidactylium scutatum;* and Kirtland's Snake, *Clonophis kirtlandii*) within a few miles of the project (**Appendix C: Figure C.1**, IESPB 2020). The Eastern Massasauga Rattlesnake is likely extirpated as none have been observed in the region for over 20 years, although our sampling method would also allow for their detection. We did not sample for the Four-Toed Salamander as there is no suitable habitat for them in or near the ESR area.

Kirtland's Snake occurs along Plum Creek both up and downstream from the proposed addition to the Plum Creek Greenway Trail (**Appendix C: Figure C.1**). Goodenow Grove Forest Preserve, 1 mile west-southwest of the in Plum Valley Preserve, has a known population of the species including captures in 2021. There are also records from 1994 approximately 4 miles upstream (northeast) near Sterger Road in Bloom Township.

Field Surveys

Coverboards were set on 01 April and checked nine times from 09 April through 30 June. Late April and early May checks produced the greatest numbers of Snakes (**Table 1**). Kirtland's Snake was not detected in the Plum Creek Greenway Trail ESR area. However, we made 155 captures of grassland snakes from the two coverboard arrays. Species Richness was 4 and included by order of abundance Common Gartersnake (52), Red-bellied Snake (44), Dekays' Brownsnake (40), and Plains Gartersnake (19) (**Table 1)**.

Table 1. Snake captures by species and date for coverboard arrays set in Plum Valley Preserve in Will County, Illinois from 09 April through 30 June 2021.

	Dekay's Brownsnake		**Red-bellied Snake**		**Plains Gartersnake**		**Common Gartersnake**		
Date	***Storeria dekayi***		***Storeria occipitomaculata***		***Thamnophis radix***		***Thamnophis sirtalis***		**Sum**
Grid	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**	
9-Apr	0	0	5	0	0	0	1	0	**6**
16-Apr	2	0	6	0	1	0	1	0	**10**
23-Apr	1	0	3	0	1	0	0	0	**5**
30-Apr	7	3	7	2	2	1	6	1	**29**
7-May	4	2	10	3	0	4	12	0	**35**
14-May	5	0	1	0	1	3	8	0	**18**
26-May	5	0	2	2	0	1	6	2	**18**
3-Jun	1	0	1	0	0	4	7	1	**14**
30-Jun	7	3	2	0	0	1	7	0	**20**
Grand Total	**32**	**8**	**37**	**7**	**5**	**14**	**48**	**4**	**155**

Detection frequencies ranged from 0.01 for Plains Gartersnakes in Grid A, to 0.1 for Red-bellied Snake also in Grid A (**Table 2**). Shannon Diversity Index values (H) were 1.211 for Array A, 1.292 for Array B, and 1.331 combined indicating that the species and their abundances are evenly distributed throughout the sampled areas.

Table 2. Frequencies of detection of grassland snake species under coverboard arrays in Plum Valley Preserve in Will County, Illinois from 09 April through 30 June 2021.

	Array A			Array B			Overall		
Species	N	Occasions	Frequency	N	Occasions	Frequency	N	Occasions	Frequency
Storeria dekayi	32	360	0.09	8	540	0.01	40	900	0.04
S. occipitomaculata	37	360	0.10	7	540	0.01	44	900	0.05
Thamnophis radix	5	360	0.01	14	540	0.03	19	900	0.02
T. sirtalis	48	360	0.13	4	540	0.01	52	900	0.06

DISCUSSION

The Kirtland's Snake is a shy and secretive species and thus one of the most difficult snakes in Illinois to observe or capture during surveys (**Appendix A**). Their primarily subterranean existence results in few direct observations of the species. Deploying coverboards in potentially suitable habitat has proven to be one of the most effective means of documenting this species presence. However, it is not typically feasible to do so for most projects. Because this work was in a public preserve, it allowed a more thorough examination of the snake community using coverboards. Though no state listed herptiles were detected in this study of the area associated with the proposed addition (IDOT sequence No. 23621, Section No. 20-F3000-06-BT) to the Plum Creek Greenway Trail in Will County, Illinois, the community of other grassland snakes observed to be present during our surveys in April and June 2021 had a Shannon Diversity Index value of 1.331 indicating an abundant and evenly distributed snake community.

LITERATURE CITED

Illinois Endangered Species Protection Board (IESPB). 2020. Checklist of Endangered and Threatened Animals and Plants of Illinois. Illinois Endangered Species Protection Board, Springfield, Illinois. 10 pp. Published online at: https://www2.illinois.gov/dnr/ESPB/Documents/ET%20List%20Review%20and%20Revision/Illinois%20Endangered%20and%20Threatened%20Species.pdf

Appendix A.

Natural History of the Kirtland's Snake, *Clonophis kirtlandii*, Listed as Threatened in the State of Illinois.

SYNOPSIS

This appendix presents information on the Kirtland's Snake, *Clonophis kirtlandii*, listed as a threatened species in the State of Illinois, because there is some possibility of its occurrence within the project area. The species account includes diagnostic characters, range in Illinois, habitat requirements, spatial ecology and activity, reproduction, and the suitable sampling season in Illinois. Standard and scientific names follow Crother (2012).

Species range maps were created by Ethan J. Kessler. Maps were based upon data in the Illinois Natural History Survey's All_IL_Herps Database which contains records of vouchered and un-vouchered specimens in the Illinois Natural History Survey (INHS), University of Illinois Museum of Natural History (UIMNH), and amphibian and reptile specimens from ~30 other science museums. The database is maintained by INHS/UIMNH Amphibian and Reptile Curator, Christopher A. Phillips, with records from other institutions updated annually.

LITERATURE CITED

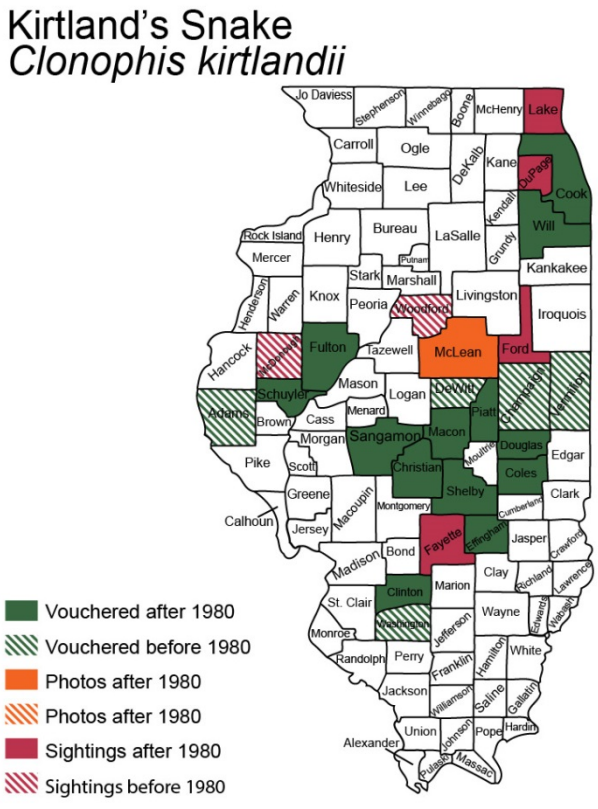
Crother, B.I. 2012. Scientific and standard English names of amphibians and reptiles of North America north of Mexico, with comments regarding confidence in our understanding. 7th Edition. SSAR Herpetological Circular. 39: 1–101.

KIRTLAND'S SNAKE, *CLONOPHIS KIRTLANDII*

General Description for Identification: Like the other natricine snake species, the Kirtland's Snake has keeled scales and a divided anal plate. It is a small species that is distinguished by other snakes in Illinois, by its red or orange venter with contrasting black spots on each ventral scale.

Range: Within Illinois, Kirtland's snake primarily inhabits the southern till plain and extends north in the Chicago Region. It is absent from the sandy soil habitats in these areas.

Suitable Habitat: Historically, wet prairies, wet meadows, prairie fens, and associated wetlands, especially those that were seasonally flooded and adjacent to upland areas, were the preferred habitats for Kirtland's Snakes (Ernst and Ernst 2003). Most of these habitats have long since been destroyed through agricultural practices and other development. Present habitat consists of open, low, grassy areas, often at the margins of streams, ponds, or ditches (Minton, 1972; Ernst and Barbour 1989; Bavetz 1994). Crayfish burrows are used as shelter although Kirtland's snakes have been collected in vacant lots in urban areas where crayfish burrows are not present. When crayfish burrows are not present they hide under boards, trash, and other surface debris (Ernst and Ernst 2003).



Reproduction: Little is known about the life history of the Kirtland's Snake due to its secretive nature. Courtship behavior has been observed in September in Illinois (Anton et al. 2003).

Activity: Kirtland's Snakes are reported to be most active in April and May (spring) and October (autumn) and enter hibernation in late October to early November (Ernst and Ernst 2003). Snakes may den communally (Anton et al 2003).

Suitable Sampling Seasons: This species is shy and secretive, spending most of its time below ground and under large cover objects. Anecdotal evidence suggests that they are most often surface-active when temperatures are below 70 F on overcast days in the spring and fall.

Illinois Status: Kirtland's Snake is listed as threatened in Illinois (Illinois Endangered Species Protection Board 2020). The primary threat to the species in Illinois is the destruction of habitat (Phillips et al. 1999).

Literature Cited

Anton, T.G., D. Mauger, C.A. Phillips, M.J. Dreslik, J.A. Petzing, A.R. Kuhns, and J.M. Mui. 2003. *Clonophis kirtlandii* (Kirtland's Snake) aggregating behavior and site fidelity. Herpetological Review 34:248-249.

Bavetz, M. 1994. Geographic variation, status, and distribution of Kirtland's Snake (*Clonophis kirtlandii* Kennicott) in Illinois. Transactions of the Illinois State Academy of Science 87(3-4): 151-163.

Ernst, C.H., and R.W. Barbour. 1989. Snakes of Eastern North America. George Mason University Press, Fairfax, Virginia. 282 pp.

Ernst, C.H., and E.M. Ernst. 2003. Snakes of the United States and Canada. Smithsonian Books. Washington and London.

Illinois Endangered Species Protection Board (IESPB). 2020. Checklist of Endangered and Threatened Animals and Plants of Illinois. Illinois Endangered Species Protection Board, Springfield, Illinois. 10 pp. Published online at: https://www2.illinois.gov/dnr/ESPB/Documents/ET%20List%20Review%20and%20Revision/Illinois%20Endangered%20and%20Threatened%20Species.pdf

Minton, S.A. 1972. Amphibians and Reptiles of Indiana. Indiana Academy of Science Monograph No. 3: i-v + 346 pp.

Phillips, C.A., R.A. Brandon, and E.O. Moll. 1999. Field Guide to Amphibians and Reptiles of Illinois. Illinois Natural History Survey Manual 8: 1-282.

APPENDIX B

Sampling methods appropriate for the detection of amphibians and reptiles listed as endangered or threatened in the state of Illinois.

Table B.1. Species of amphibians and reptiles listed as threatened or endangered in Illinois and potential sampling methods for their detection.

State Listed Herptiles			Threatened	Endangered	Dip-Net	Minnow Trap	Call Survey	Visual Encounter	Hoop Trap	Fyke Net	Seine	Drift Fence	Coverboard
AMPHIBIANS	SALIENTIA	*Ambystoma jeffersonianum*	X		■	■		■				■	
		Ambystoma platineum		X	■	■		■				■	
		Cryptobranchus alleganiensis		X				■					
		Desmognathus conanti		X	■			■					
		Hemidactylium scutatum	X					■				■	
		Necturus maculosus	X		■	■		■			■		
	ANURA	*Hyla avivoca*		X	■	■	■	■					
		Pseudacris streckerii		X	■	■	■	■				■	
		Gastrophryne carolinensis	X		■	■	■	■				■	
REPTILES	TESTUDINES	*Apalone mutica*		X				■	■	■			
		Clemmys guttata		X				■	■				
		Emydoidea blandingii		X				■	■				
		Kinosternon flavescens		X				■	■				
		Macrochelys temminckii		X					■				
		Pseudemys concinna		X				■		■			
		Terrapene ornata	X					■				■	
	SERPENTES	*Clonophis kirtlandii*	X					■				■	■
		Crotalus horridus	X					■				■	
		Pantherophis emoryi		X				■				■	■
		Heterodon nasicus	X					■				■	■
		Masticophis flagellum		X				■				■	■
		Nerodia fasciata		X				■				■	■
		Nerodia cyclopion	X					■				■	■
		Sistrurus catenatus		X				■				■	
		Tantilla gracilis	X					■				■	■
		Thamnophis sauritus	X					■				■	■
		Tropidoclonion lineatum	X					■				■	■

Sampling Methods for the Detection of State Listed Amphibians and Reptiles

ACTIVE SAMPLING METHODS

Call Survey**.** This method is only effective for anurans during the breeding season. The researcher either visits wetlands in the evening hours to listen to the frog chorus, or places an audio recording device at the wetland during the day and returns the following morning to retrieve the recording. In either case, the researcher must be familiar with the calls of frogs and toads in the area in order to identify the species based only upon the calls in the chorus. To be effective, the researcher must also be familiar with the ecology of the target species and sample during its breeding season in habitats where it is likely to reside.

Dip Netting. A dip net is useful for sampling aquatic animals and can be used to capture individuals observed or as a means of blindly sampling for aquatic organisms in vegetation choked or turbid water. Typically, a researcher will pull the net along the substrate and through the water column for approximately 3 feet, and then finish the net sweep by pulling the net up and out of the water with the net opening facing upward. The researcher can then remove any substrate or detritus from the net and search for captured animals.

Seine. A seine is a fishing net that hangs vertically in the water column suspended by floats with the bottom edge held down by weights. The net is dragged along the bottom of aquatic habitats and captures aquatic amphibians and reptiles when it is drawn onto shore or scooped out of the water. In many ways, it functions much like a large dip net when used for amphibian and reptile sampling.

Visual Encounter Survey (VES). Visual encounter surveys involve searching appropriate habitat (mainly turning cover items such as logs, rocks and miscellaneous debris and also visually scanning open habitats) and recording all species encountered. Surveys can be regimented such as by walking pre-defined grid patterns and time limits, or in a more haphazard wandering pattern. This method is most effective if the researcher is familiar with the target species ecology and can focus on habitat areas where the species is most likely to be encountered, as well as time of day and seasons when the species is most active. A thorough explanation of this technique can be found in Heyer et al. (1994).

PASSIVE SAMPLING METHODS

Drift Fence**.** A drift fence is any object that is placed perpendicular to the ground surface as a way to intercept animals that may be passing through. It is often constructed of hardware cloth or silt fencing buries a few inches into the ground to prevent burrowing; but natural cover items such as large logs or rock formations may also function as a drift fence. Animals are captured by travelling parallel to the fence until they fall into a receptacle, such as a bucket or coffee can,

which has been buried flush with the substrate. Similarly, funnel traps can be placed along the drift fence to capture animals that are walking along the fence. This technique is covered in Heyer et al. (1994) and McDairmid et al. (2012).

Coverboards**.** Coverboards are essentially any item sitting flush with the substrate under which an amphibian or reptile may seek refuge. Artificial coverboards are often made of plywood or corrugated tin and are placed in areas likely to harbor the species of interest. Coverboards often attract small mammals and invertebrates as well which may enhance their ability to attract amphibians and reptiles. Well-seasoned artificial cover objects with little vegetation underneath them seem to work better in attracting herptiles, therefore their use most effective for long term projects when they can be set out many months in advance of surveys.

Minnow Trap**.** Traps may be constructed of rope, monofilament, or steel and may have funnels or throats, at one or both ends which allow the animal to enter into the trap body but prevent them from easily exiting the trap. Minnow traps may be cylindrical or rectangular and can be baited or not depending on the target species. If baited, the bait is refreshed every 2 to 4 days. Traps are usually placed so that a portion of the trap placed in water is emergent so that captured animals have access to air and will not drown. However, in riverine environments, where there is little to no probability of capturing non-gilled species, the traps may be fully submerged. Effort is recorded in trap hours (i.e., number of traps multiplied by the number of hours the traps were deployed). Results are reported as the numbers of each species captured.

Hoop Trap**.** These traps work on the same principal as minnow traps but are larger in diameter and have larger throats to allow for the capture of larger animals such as turtles (Legler 1960). All hoop traps are placed such that at least 5cm of the trap is above the surface of the water to ensure captured turtles have access to air. Traps are tied via string or rope to surrounding vegetation to ensure that captured turtles do not roll traps into deeper water and drown. Traps are placed parallel to either the shoreline or potential basking sites. Traps are baited (usually with sardines canned in spring water or oil). Traps are checked daily and bait is changed every 2 to 4 days. Effort is recorded in trap hours (i.e., number of traps multiplied by the number of hours the traps were deployed). Results are reported as the numbers of each species captured.

Fyke Net**.** This trapping method is essentially a combination of a Drift Fence and a Hoop Trap. It consists of a hoop trap body with a single throat, and long wings and a lead that extend out from the throat in a double V formation (**Figure B.1**). Wings and leads have a lead-line that makes them hang vertically in the water column. This essentially extends the reach of the throat and works well for turtle species that are not attracted to readily available baits. It can be used to intercept turtles entering a cove or attempting to access a popular basking site, by funneling them into the trap body where the throat prevents them from escaping. A description of Fyke Nets can be found in Vogt (1980).

LITERATURE CITED

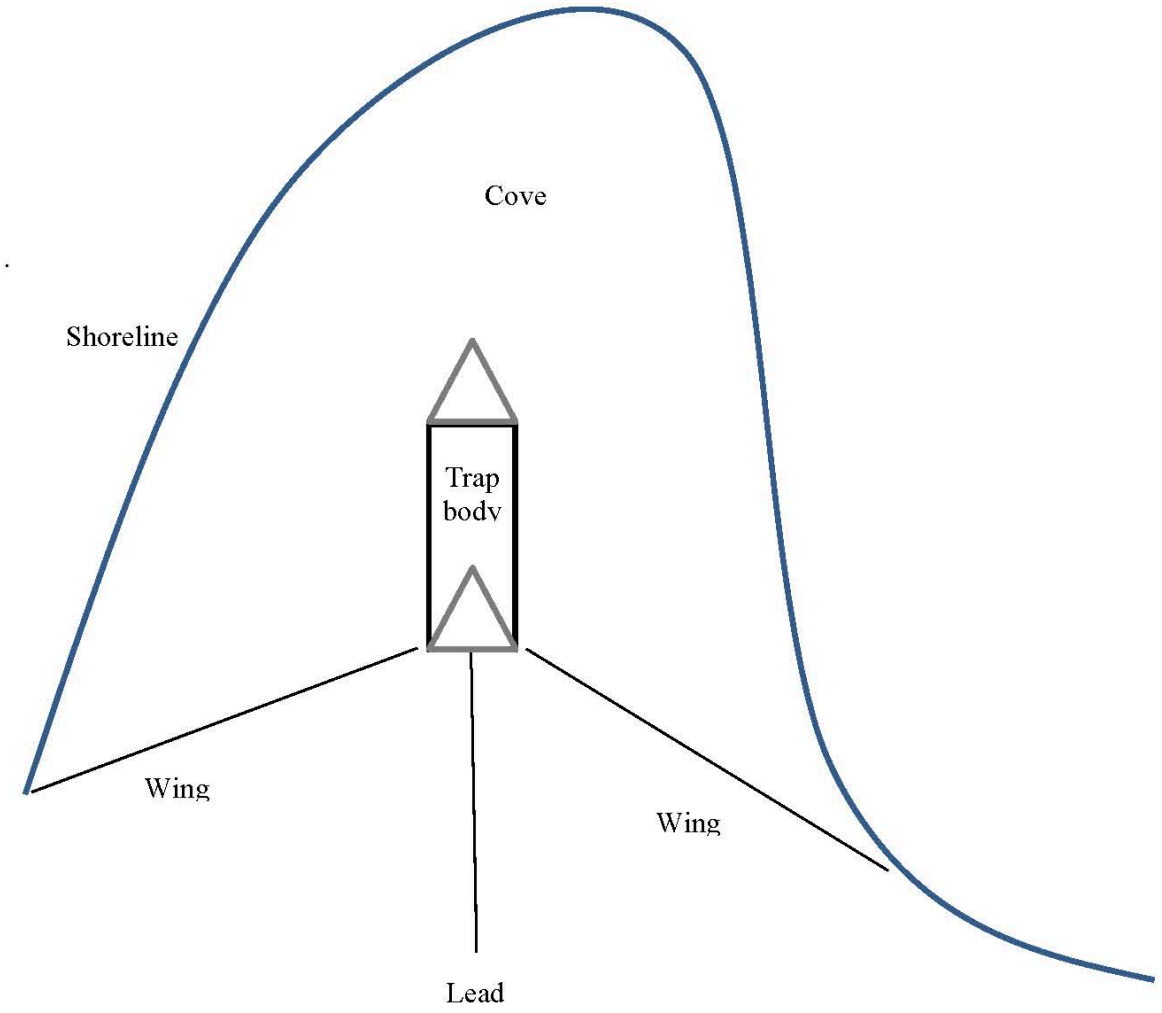
Heyer, W.R., M.A. Donnelly, R.W. McDiarmid, L.C. Hayek and M.S. Foster, eds. 1994. Measuring and Monitoring Biodiversity: Standard methods for amphibians. Smithsonian Institution Press, Washington D.C. 364 pp.

Legler, J.M. 1960. A simple and inexpensive device for trapping aquatic turtles. Proceedings of the Utah Academy of Sciences, Arts and Letters 37**:** 63-66.

McDairmid, R.W., M.S. Foster, C. Guyer, J.W. Gibbons, and N. Chernoff. Eds. 2012. Reptile Biodiversity: Standard Methods for Inventory and Monitoring. University of California Press. Berkeley. 412 pp.

Vogt, R.C. 1980. New methods for trapping aquatic turtles. Copeia 1980:368-371.

Figure B.1. Fyke Net set to capture turtles attempting to enter a cove (as viewed from above).



APPENDIX C

Figures relevant to the Plum Creek Greenway Trail project from South of Burville Road to 265th Street in Will County, Illinois (IDOT sequence No. 23621, Section No. 20-F3000-06-BT)

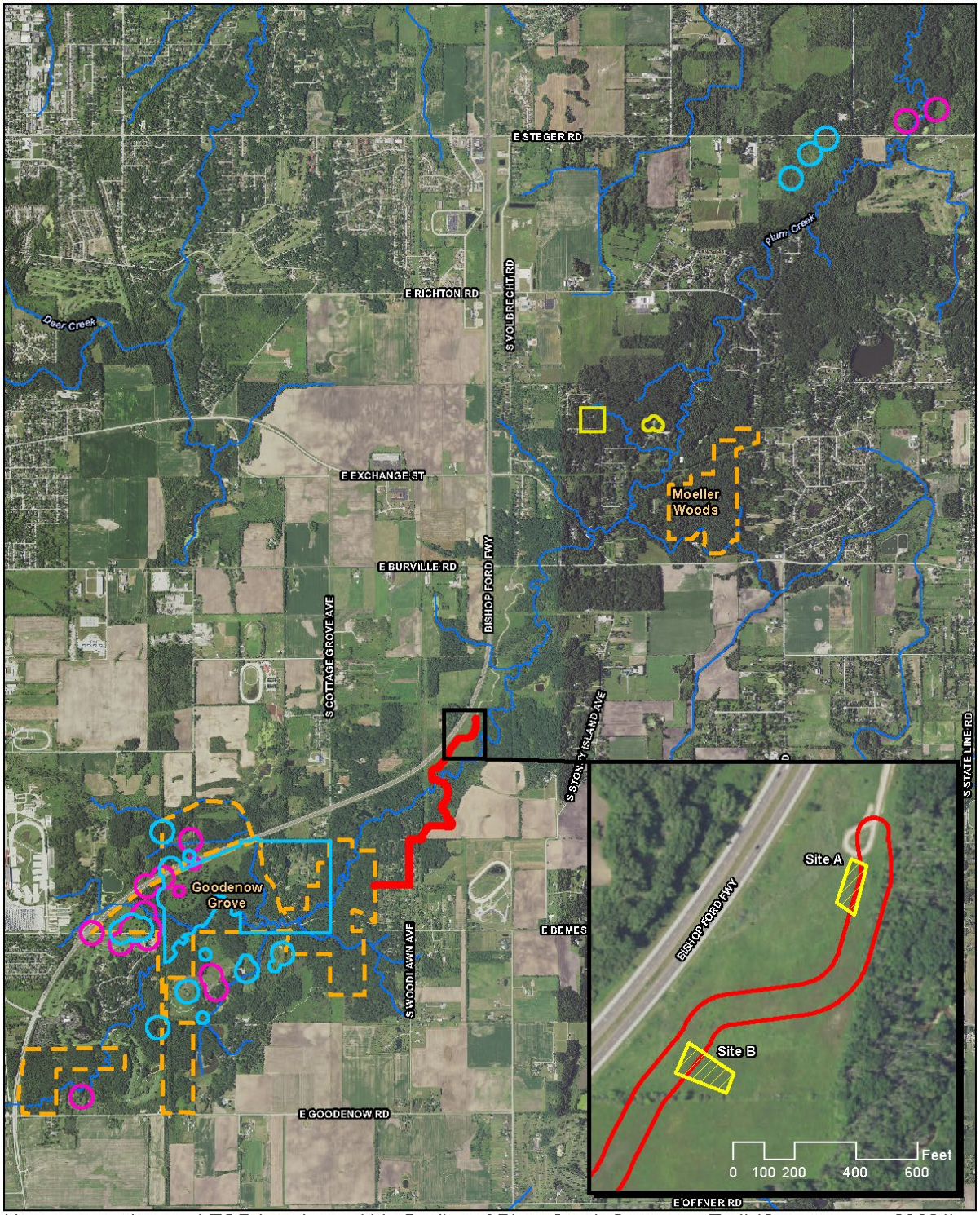


Figure C.1. Herpetile Element Occurrence Records relative to Plum Creek Greenway Trail project from south of Burville Road to 265th Street in Will County, Illinois (IDOT sequence No. 23621, Section No. 20-F3000-06-BT).

APPENDIX D

Photograph relative to the Plum Creek Greenway Trail project from South of Burville Road to 265th Street in Will County, Illinois (IDOT sequence No. 23621, Section No. 20-F3000-06-BT)

Plate 1. Cover object placed *in situ*. Photograph by Andrew R. Kuhns.

APPENDIX E

Arc-GIS Shapefiles

An ArcGIS folder < 23621_Herp_Survey_GIS.zip> containing an Arc-GIS shapefile of the sampled area constitutes this appendix. The ArcGIS shapefile and this report will be submitted to IDOT via the IDOT Site Assessment Tracking System extranet website.

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The grassland snake community of the Plum Valley Preserve, Will County, Illinois

Prepared by: Andrew R. Kuhns and Tyler Stewart

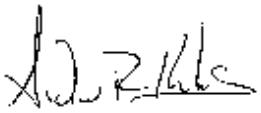
INHS Technical Report 2021 (20)

Prepared for:
Special Use Permit SUP 21-10
Forest Preserve District of Will County
17540 W. Laraway Road
Joliet, IL 60433

Issue Date: 18 November 2021
Restricted (no online release): Contains locality data of listed species

PROJECT SUMMARY

This report details results of a herpetological survey of the grassland snake community inhabiting the Plum Valley Preserve, Will County, Illinois. The primary impetus for the surveys was to search for endangered and threatened snake species that may occur in the preserve. We set coverboard arrays in two low-lying grassy areas in the preserve on 01 April 2021. Surveys were conducted by INHS personnel A.R. Kuhns and T. Stewart under Illinois Department of Natural Resources (IDNR) State Threatened and Endangered Species Permit 10812 as required under the Illinois Endangered Species Protection Act (520 ILCS 10/4), Illinois Herptile Scientific and Research Collecting Permit (HCSP) 19-04, and Will County Forest Preserve District Special Use Permit 21-10. Coverboard arrays are mapped in **Figure 1**. Arrays were checked 19 times between 09 April and 27 October 2021. We made 209 captures of five snake species, and report encounter frequency by species, two diversity metrics, and examine community similarity between the two arrays. No threatened or endangered snake species were encountered.



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Tyler Stewart, Graduate Research Assistant

Map by: Janet L. Jarvis, GIS and Remote Sensing Specialist

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Cover Photo: Kirtland's Snake found 17 July 2018 in Coles County, Illinois. Photo by A. R. Kuhns, INHS.

INTRODUCTION

The Illinois Natural History Survey (INHS) conducted a herpetological survey of the grassland snake community inhabiting the Plum Valley Preserve in Will County, Illinois. The impetus of the study was to survey for the presence of threatened or endangered species that may occur in the preserve, specifically the Kirtland's Snake, *Clonophis kirtlandii*.

In Illinois, the Kirtland's Snake primarily inhabits the southern till plain but extends its range north into the Chicago Region (Phillips et al. 1999). Historically, wet prairies, wet meadows, prairie fens, and associated wetlands, especially those that were seasonally flooded and adjacent to upland areas, were the preferred habitats for Kirtland's Snakes (Ernst and Ernst 2003). Most of these habitats have long since been destroyed through agricultural practices and other development. Present habitat consists of open, low, grassy areas, often at the margins of streams, ponds, or ditches (Minton, 1972; Ernst and Barbour 1989; Bavetz 1994). This species is shy and secretive, spending most of its time below ground. Crayfish burrows are used as shelter, although Kirtland's snakes have been collected in vacant lots in urban areas where crayfish burrows are not present. When crayfish burrows are not present, they hide under boards, trash, and other surface debris (Ernst and Ernst 2003).

Kirtland's Snakes are reported to be most active in April and May (spring) and October (autumn) and enter hibernation in late October to early November (Ernst and Ernst 2003). Snakes may den communally (Anton et al. 2003). Anecdotal evidence suggests that they are most often surface-active when temperatures are below 70 F on overcast days in the spring and fall.

PROJECT AREA

The site occurs on the Dyer, Illinois, U.S. Geological Survey 7.5' topographic quadrangle map in Township 34 North, Range 14 East, Sections 23 and 26, in Will County, Illinois. The 455-acre Plum Valley Preserve has been managed by the Forest Preserve District of Will County since 2000. It consists of wooded riparian corridor along Plum Creek and grassland habitat along its western edge between the riparian zone and Illinois Route 394/Calumet Expressway, which serves as the western edge for most of the preserve. The habitat surrounding the preserve consists of residential neighborhoods, wooded riparian areas, and grassland/pasture. Our surveys were focused on the grasslands that form the western edge of the preserve, south of the current terminus of the Plum Valley Greenway Trail (**Figure 1**).

METHODS

<u>Database Review</u>

The Illinois Natural Heritage Database maintained by the Illinois Department of Natural Resources (IDNR) was queried for Element Occurrence Records (EOR) of threatened and endangered amphibians and reptiles within a mile of the project boundary. Each EOR may be subdivided into multiple Element of Occurrence Identification numbers (EOID) to record separate identification events or sub-locations. Additionally, a search of both vouchered and

un-vouchered (photo only) specimens in the Illinois Natural History Survey (INHS), University of Illinois Museum of Natural History (UIMNH), and non-INHS Illinois Amphibian and Reptile databases maintained by the Illinois Natural History Survey was conducted. Together these databases are merged and accessed through the All_IL_Herps database at INHS and are updated semi-annually. The locations of any results were plotted onto aerial photographs of the Environmental Survey Request (ESR) corridor and examined to search for suitable habitat for the species.

Field Methods

On 01 April 2021 INHS Herpetologist A.R. Kuhns and INHS Graduate Research Assistant Tyler Stewart conducted a visual encounter survey at the project area (**Figure 1)** for 0.5 person-hours. Specifically, we looked for low-lying areas in native prairie habitats with an abundance of crayfish burrows in or near the proposed trail (crayfish burrows are used as refugia by Kirtland's Snake). We documented two low-lying areas along the proposed trail that had suitable habitat for the Kirtland's Snake and deployed cover objects. Cover objects were 19.7 x 19.7" vinyl-backed carpet tiles (**Figure 2**). Tiles were set with the vinyl size up (i.e., upside down) at approximately 5-meter intervals. Grid A occurs near the current terminus of the Plum Creek Greenway trail south of Burville Road and consists of 40 carpet tiles set in a 4 x 10 pattern. Grid B is approximately 750' southwest of grid A and is set in a 6 x 10 grid pattern. Survey methods consisted of lifting each coverboard and capturing snakes sheltered underneath. Snakes were identified to species and immediately released at their capture location. We recorded date, species, coverboard array, and coverboard number for all captures. Survey methods were approved under Protocol 19057 of the University of Illinois Institutional Animal Care and Use Committee, as required by the Federal Animal Welfare Act (CFR Title 9 Parts 1, 2, and 3).

Analytical Methods

We generated detection frequencies per coverboard check for each species for each grid array and for both arrays combined. We also generated Shannon Diversity Indices (H) and the Simpson Diversity Index (D) for grid array A, grid array B, and combined. Finally, we calculated Sorensen's coefficient of similarity (CC) to look for differences between the two arrays. CC values range from 0 (no overlap) to 1 (complete overlap).

RESULTS

Database Review

There are records for two state-listed snakes (IESPB 2020) within a few miles of the project area: the Eastern Massasauga, *Sistrurus catenatus;* and the Kirtland's Snake, *Clonophis kirtlandii* (**Figure 1**). The Eastern Massasauga Rattlesnake is likely extirpated as none have been observed in the region for over 20 years, although our sampling method would also allow for their detection.

Kirtland's Snake occurs along Plum Creek both up and downstream from our study area (**Figure 1**). Goodenow Grove Forest Preserve, 1 mile west-southwest of the in Plum Valley Preserve, has a known population of the species including captures in 2021 (Stewart, *unpublished data*). There are also records from 1994 approximately 4 miles upstream (northeast) near Sterger Road in Bloom Township.

Field Surveys

Coverboards were set on 01 April and checked 19 times from 09 April through 27 October 2021. Late April and early May checks produced the greatest numbers of snakes and no snakes were detected after 01 September 2021 (**Table 1**). Kirtland's Snake was not detected in the Plum Valley Preserve. However, we made 209 captures of grassland snakes from the two coverboard arrays. Snake species richness was 5 and included 71 Common Gartersnake, *Thamnophis sirtalis;* 53 Red-bellied Snake, *Storeria occipitomaculata*; 53 Dekays' Brownsnake, *S. dekayi;* 31 Plains Gartersnake, *T. radix;* and one Common Watersnake, *Nerodia sipedon* (**Table 1**). We also captured one Blue-spotted Salamander, *Ambystoma laterale,* on 15 October 2021, which was excluded from all analyses.

Analytical Results

We excluded the October samples from our analysis as they were the second and third consecutive check with no snake detections, suggesting that snakes at the site were inactive and no longer available for detection. Detection frequencies ranged from a low of 0.001 for the Northern Watersnake in Grid A, to 0.087 for Common Gartersnake also in Grid A (**Table 2**). Shannon Diversity Index values (H) were 1.28 for Array A, 1.35 for Array B, and 1.37 combined indicating that the species and their abundances are evenly distributed throughout the sampled areas. Simpson Diversity Indices (D) were 0.71 for Array A, 0.74 for Array B, and 0.74 combined, indicating high species diversity at each site and overall. The Sorensen's coefficient of community similarity indicated nearly equal overlap of species (CC = 0.89)

DISCUSSION

The Kirtland's Snake is a shy and secretive species and thus one of the most difficult snakes in Illinois to observe or capture during surveys. Their primarily subterranean existence results in few direct observations of the species. Deploying coverboards in potentially suitable habitat has proven to be one of the most effective means of documenting this species' presence. For this report, we sampled for grassland snake species in Plum Valley Preserve, Will County, Illinois using two coverboard arrays placed in low lying areas of the preserve. No state-listed herptiles were detected in this study of the area. The community of other grassland snakes observed during our surveys had a Shannon Diversity Index value of 1.37; indicating an abundant and evenly distributed snake community. Similarly, the Simpson Diversity Index of 0.74 also indicates a diverse snake community. The snake communities sampled from the two grid arrays were very similar with a Sorensen Coefficient of Similarity of 0.89, which is not surprising considering the sites were within 300 m and likely represent the same population. Therefore, while no threatened or endangered herptiles were present, a diverse snake community is present in the Plum Valley Preserve.

LITERATURE CITED

Anton, T.G., D. Mauger, C.A. Phillips, M.J. Dreslik, J.A. Petzing, A.R. Kuhns, and J.M. Mui. 2003. *Clonophis kirtlandii* (Kirtland's Snake) aggregating behavior and site fidelity. Herpetological Review 34:248-249.

Bavetz, M. 1994. Geographic variation, status, and distribution of Kirtland's Snake (*Clonophis kirtlandii* Kennicott) in Illinois. Transactions of the Illinois State Academy of Science 87(3-4): 151-163.

Ernst, C.H., and R.W. Barbour. 1989. Snakes of Eastern North America. George Mason University Press, Fairfax, Virginia. 282 pp.

Ernst, C.H., and E.M. Ernst. 2003. Snakes of the United States and Canada. Smithsonian Books. Washington and London.

Illinois Endangered Species Protection Board (IESPB). 2020. Checklist of Endangered and Threatened Animals and Plants of Illinois. Illinois Endangered Species Protection Board, Springfield, Illinois. 10 pp. Published online at: https://www2.illinois.gov/dnr/ESPB/Documents/ET%20List%20Review%20and%20Revision/Illinois%20Endangered%20and%20Threatened%20Species.pdf

Minton, S.A. 1972. Amphibians and Reptiles of Indiana. Indiana Academy of Science Monograph No. 3: i-v + 346 pp.

Phillips, C.A., R.A. Brandon, and E.O. Moll. 1999. Field Guide to Amphibians and Reptiles of Illinois. Illinois Natural History Survey Manual 8: 1-282.

Table 1. Snake captures by species and date for coverboard arrays (A and B) set in Plum Valley Preserve in Will County, Illinois from 09 April through 15 October 2021.

	Common Watersnake		***Dekay's Brownsnake***		***Red-bellied Snake***		***Plains Gartersnake***		***Common Gartersnake***		
	Nerodia sipedon		***Storeria dekayi***		***S. occipitomaculata***		***Thamnophis radix***		***T. sirtalis***		
Date	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**	**Daily Totals**
9-Apr	0	0	0	0	5	0	0	0	1	0	6
16-Apr	0	0	2	0	6	0	1	0	1	0	10
23-Apr	0	0	1	0	3	0	1	0	0	0	5
30-Apr	0	0	7	3	7	2	2	1	6	1	29
7-May	0	0	4	2	10	3	0	4	12	0	35
14-May	0	0	5	0	1	0	1	3	8	0	18
26-May	0	0	5	0	2	2	0	1	6	2	18
3-Jun	0	0	1	0	1	0	0	4	7	1	14
30-Jun	0	0	7	3	2	0	0	1	7	0	20
8-Jul	1	0	8	0	4	0	2	1	5	3	24
12-Jul	0	0	1	3	3	1	1	3	2	2	16
20-Jul	0	0	1	0	0	0	2	0	0	0	3
29-Jul	0	0	0	0	0	0	2	0	1	2	5
5-Aug	0	0	0	0	0	0	0	0	3	0	3
18-Aug	0	0	0	0	0	0	1	0	0	0	1
1-Sep	0	0	0	0	0	1	0	0	0	1	2
23-Sep	0	0	0	0	0	0	0	0	0	0	0
15-Oct	0	0	0	0	0	0	0	0	0	0	0
27-Oct	0	0	0	0	0	0	0	0	0	0	0
Species/Array Totals	**1**	**0**	**42**	**11**	**44**	**9**	**13**	**18**	**59**	**12**	**209**
Species Totals	**1**		**53**		**53**		**31**		**71**		**209**

Table 2. Frequencies of detection of grassland snake species under coverboard arrays in Plum Valley Preserve in Will County, Illinois from 09 April through 23 September 2021.

	Array A			*Array B*			*Overall*		
Species	**N**	**Occasions**	**Frequency**	**N**	**Occasions**	**Frequency**	**N**	**Occasions**	**Frequency**
Common Watersnake	1	680	0.001				1	1700	0.001
Dekay's Brownsnake	42	680	0.062	11	1020	0.011	53	1700	0.031
Red-bellied Snake	44	680	0.065	9	1020	0.009	53	1700	0.031
Plains Gartersnake	13	680	0.019	13	1020	0.013	31	1700	0.018
Common Gartersnake	59	680	0.087	12	1020	0.012	71	1700	0.042

Figure C.1. Herpetile Element Occurrence Records near the Plum Valley Preserve in Will County, Illinois. Inset depicts coverboard arrays labeled as Site A and Site B and a potential route for the extension of a multi-use trail.

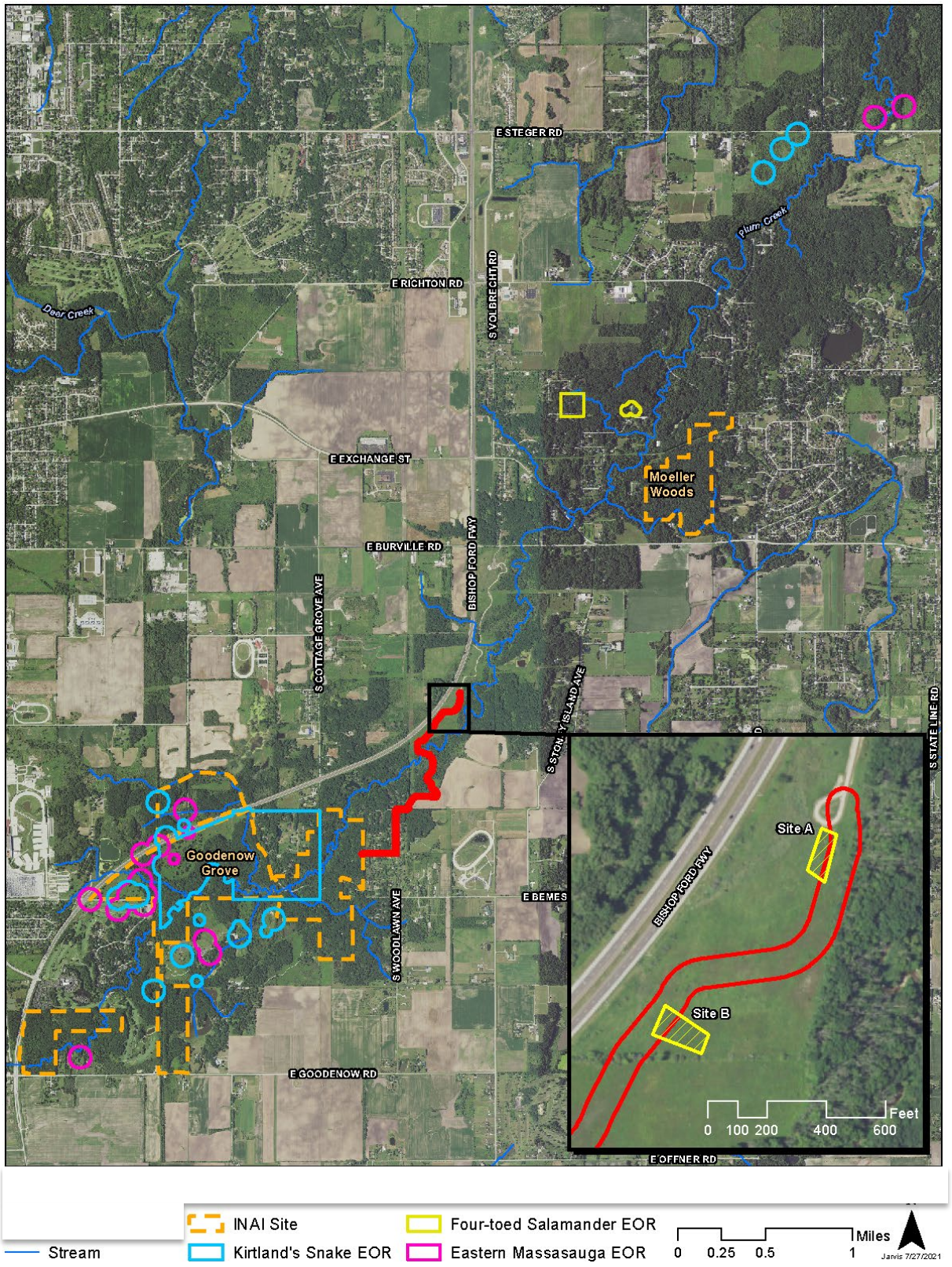


Figure 2. Cover object placed *in situ*. Photograph by Andrew R. Kuhns.

ILLINOIS NATURAL HISTORY SURVEY
PRAIRIE RESEARCH INSTITUTE

AQUATIC SURVEY REPORT

Survey for Kirtland's Snake, *Clonophis kirtlandii*, for the Plum Creek Greenway Trail in Will County, Illinois

IDOT Sequence No. 23621A

Prepared by:
Andrew R. Kuhns

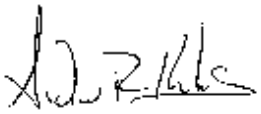
INHS/IDOT Statewide Biological Survey & Assessment Program

2022: 61

October 2022

PROJECT SUMMARY

This report details results of a habitat assessment and a herpetological survey for the Kirtland's Snake, *Clonophis kirtlandii*, in preparation for the continuation of the Plum Creek Greenway Trail from south of Burville Road to 265th Street in Will County, Illinois (IDOT sequence No. 23621A, Section No. 20-F3000-06-BT). Information on the natural history and ecology of the Kirtland's Snake, the only herptile listed as threatened or endangered in Illinois that is known to occur near the project area, can be found in **Appendix A**. Coverboard arrays were set in two low lying areas along the proposed path on 01 April 2021. Surveys were conducted by INHS personnel A.R. Kuhns and T. Stewart under Illinois Department of Natural Resources (IDNR) State Threatened and Endangered Species Permits 10812 (2021) and 14983 (2022) as required under the Illinois Endangered Species Protection Act (520 ILCS 10/4), Illinois Herptile Scientific and Research Collecting Permits (HCSP) 19-04 and 22-34, and Will County Forest Preserve District Special Use Permit 21-10. Coverboard sites are mapped in **Appendix C** and images are included in **Appendix D**. The spatial data shown in **Figure C.1** of **Appendix C** were digitally uploaded to the Further Studies Illinois Site Assessment Tracking System (https://isats.dot.illinois.gov/), and are herein referenced as **Appendix E.** We made 312 captures of six species of snakes, including three Kirtland's Snakes from Site A at the current terminus of the Plum Creek Greenway Trail.



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Cover Photo: Gravid female Kirtland's Snake found 03 June 2022 in Site A of the Plum Creek Greenway Trail from South of Burville Road to 265th Street in Will County, Illinois (IDOT sequence No. 23621A, Section No. 20-F3000-06-BT). Photo by A. R. Kuhns, INHS.

INTRODUCTION

In a transmittal dated 10 May 2022, Joe Bartletti of the Illinois Department of Transportation (IDOT) Bureau of Design and Environment tasked the Illinois Natural History Survey (INHS) to conduct a habitat assessment and a herpetological survey for the presence of the state threatened Kirtland's Snake in Plum Valley Preserve along the current Plum Creek Greenway Trail in Plum Valley Preserve, Will County, Illinois (IDOT sequence No. 23621A). The existing crushed limestone trail, slated to be paved with asphalt, currently extends from the Plum Valley Preserve parking lot south of Burville Road, south for approximately 1 mile. Prior surveys conducted during 2021 (Kuhns 2021) in response to the original tasking for this project area examined a proposed path for an extension of this trail from the current trail terminus to 265th Street in Will County, Illinois (IDOT Seq. No. 23641, IDOT section no. 20-F3000-06-BT).
This report includes data collected for both the original tasking (summarized in Kuhns 2021) and for this present addendum tasking. The natural history and ecology of the Kirtland's Snake, listed as a state threatened species in Illinois (Illinois Endangered Species Protection Board [IESPB] 2020) can be found in **Appendix A**.

PROJECT AREA

The site occurs on the Dyer, Illinois, U.S. Geological Survey 7.5' topographic quadrangle map in Township 34 North, Range 14 East, Sections 23 and 26, in Will County, Illinois. The current Greenway Trail runs from the Plum Valley Preserve Parking lot off Burville Road, south for approximately 1 mile. The 1.5-mile Plum Creek Greenway Trail addition will extend from the existing trail west of Greenwood Avenue, along-256th Street, Woodlawn Avenue, and 263rd Street, then northeasterly through Plum Valley Preserve – to connect with the existing trail south of Burville Road (**Appendix C: Figure C.1**). The habitat surrounding the proposed work consists of residential neighborhoods, wooded riparian areas, and old field habitat that has been reverted to prairie.

METHODS

Database Review

The Illinois Natural Heritage Database maintained by the Illinois Department of Natural Resources (IDNR) was queried for Element Occurrence Records (EOR) of threatened and endangered amphibians and reptiles within a mile of the project boundary. Each EOR may be subdivided into multiple Element of Occurrence Identification numbers (EOID) to record separate identification events or sub-locations. Additionally, a search of both vouchered and un-vouchered (photo only) specimens in the Illinois Natural History Survey (INHS), University of Illinois Museum of Natural History (UIMNH), and non-INHS Illinois Amphibian and Reptile databases maintained by the Illinois Natural History Survey was conducted. Together these databases are merged and accessed through the All_IL_Herps database at INHS and are updated semi-annually. The locations of any results were plotted onto aerial photographs of the Environmental Survey Request (ESR) corridor and examined to search for suitable habitat for the species.

Field Methods

On 01 April 2021 INHS Herpetologist A.R. Kuhns and INHS Graduate Research Assistant Tyler Stewart conducted a visual encounter survey at the project area (**Appendix C: Figure C.1; Appendix D: Plates 1-2)** for 0.5 person-hours. Specifically, we looked for low-lying areas in native prairie habitats with an abundance of crayfish burrows in or near the proposed trail (crayfish burrows are used as refugia by Kirtland's Snake). We documented two low-lying areas along the proposed trail that had suitable habitat for the Kirtland's Snake and deployed cover objects (**Appendix C: Figure C.1**). Cover objects were 19.7 x 19.7" vinyl-backed carpet tiles (**Appendix D: Plate 1**). Tiles were set with the vinyl size up (i.e., upside down) at approximately 5-meter intervals. Site A occurs near the current terminus of the Plum Creek Greenway trail south of Burville Road and consists of 40 carpet tiles (20" X 20") set in a 4 x 10 pattern **(Appendix C: Figure C.1)**. Site B is approximately 750' southwest of Site A and is set in a 6 x 10 grid pattern **(Appendix C: Figure C.1)**. On 03 June 2022, the existing Plum Creek Greenway Trail was walked by A.R. Kuhns to conduct a habitat assessment and Visual Encounter Survey for herpetofauna. Survey methods are detailed in **Appendix B** and were approved under Protocol 19057 of the University of Illinois Institutional Animal Care and Use Committee, as required by the Federal Animal Welfare Act (CFR Title 9 Parts 1, 2, and 3).

RESULTS

Database Review

There are records for three state-listed herptiles (Eastern Massasauga Rattlesnake, *Sistrurus catenatus;* Four-Toed Salamander, *Hemidactylium scutatum;* and Kirtland's Snake, *Clonophis kirtlandii*) within a few miles of the project (**Appendix C: Figure C.1**; IESPB 2020). The Eastern Massasauga Rattlesnake is likely extirpated as none have been observed in the region for over 20 years, although our sampling method would also allow for their detection. We did not sample for the Four-Toed Salamander as there is no suitable habitat for them in or near the ESR area.

Kirtland's Snake occurs along Plum Creek both up and downstream from the proposed addition to the Plum Creek Greenway Trail (**Appendix C: Figure C.1**). Goodenow Grove Forest Preserve, 1 mile west-southwest of the in Plum Valley Preserve, has a known population of the species including captures in 2021 and 2022. There are also records from 1994 approximately 4 miles upstream (northeast) near Sterger Road in Bloom Township.

Field Surveys

One Red-bellied Snake, *Storeria occipitomaculata* was found dead on the extant trail during the site visit on 03 June 2022 (**Appendix D: Plate 2**). Potentially suitable habitat for the Kirtland's Snake was apparent adjacent to the trail throughout.

Coverboards were set on 01 April and checked nine times from 09 April through 30 June 2021 and seven times from 29 April through 13 June 2022. We captured 331 snakes over 2600 coverboard checks of the two sites (**Table 1**). May coverboard checks produced the greatest numbers of snakes (**Table 1**). Species Richness was 6 for Site A and 4 for Site B. Total captures over both sites were by order of abundance Common Gartersnake, *Thamnophis sirtalis* (140), Dekay's Brownsnake, *Storeria dekayi* (65), Red-bellied Snake, *S. occipitomaculata* (63), Plains

Gartersnake *T. radix* (59), Kirtland's Snake, *Clonophis kirtlandii* (3), and Common Watersnake, *Nerodia sipedon* (1); (**Table 2**). Kirtland's Snake and Common Watersnake were not detected in Site B (**Tables 1** & **2**).

Detection frequencies ranged from >0.001 for Northern Watersnake to 0.05 for Common Gartersnake (**Table 2**). Shannon Diversity Index values (H) were 1.33 for Site A, 1.292 for Site B, and 1.49 combined– indicating that the species and their abundances are evenly distributed throughout the sampled areas.

Table 1. Snake captures by species and date for coverboard arrays set in Plum Valley Preserve in Will County, Illinois from 09 April through 13 June 2022.

	Species												
	Kirtland's Snake		**Common Watersnake**		**Dekay's Brownsnake**		**Red-bellied Snake**		**Plain's Gartersnake**		**Common Gartersnake**		
	C. kirtlandii		***N. sipedon***		***S. dekayi***		***S. occipitomaculata***		***T. radix***		***T. sirtalis***		**Sum**
	A	B	A	B	A	B	A	B	A	B	A	B	
2021													
April	0	0	0	0	10	3	21	2	4	1	8	1	50
May	0	0	0	0	14	2	13	5	1	8	26	2	71
June	0	0	0	0	8	3	3	0	0	5	14	1	34
July	0	0	1	0	10	3	7	1	7	4	8	7	48
August	0	0	0	0	0	0	0	0	1	0	3	0	4
September	0	0	0	0	0	0	0	1	0	0	0	1	2
2022													
April	0	0	0	0	2	1	1	0	0	7	3	1	15
May	2	0	0	0	6	2	3	5	2	13	26	23	82
June	1	0	0	0	1	0	0	1	2	4	5	11	25
Grand Total	**3**	**0**	**1**	**0**	**51**	**14**	**48**	**15**	**17**	**42**	**93**	**47**	**331**

Table 2. Frequencies of detection of grassland snake species under coverboard arrays in Plum Valley Preserve in Will County, Illinois from 09 April through 13 June 2022.

	Site A			**Site B**			**Overall**		
Species	N	Occasions	Frequency	N	Occasions	Frequency	N	Occasions	Frequency
Kirtland's Snake *Clonophis kirtlandii*	3	1040	0.0029	0	1560	0.0000	3	2600	0.0012
Common Watersnake *Nerodia sipedon*	1	1040	0.0010	0	1560	0.0000	1	2600	0.0004
Dekay's Brownsnake *Storeria dekayi*	51	1040	0.0490	14	1560	0.0090	65	2600	0.0250
Red-bellied Snake *S. occipitomaculata*	48	1040	0.0462	15	1560	0.0096	63	2600	0.0242
Plain's Gartersnake *Thamnophis radix*	17	1040	0.0164	42	1560	0.0269	59	2600	0.0227
Common Gartersnake *T. sirtalis*	93	1040	0.0894	47	1560	0.0301	140	2600	0.0538

DISCUSSION

The Kirtland's Snake is a shy and secretive species and thus one of the most difficult snakes in Illinois to observe or capture during surveys (**Appendix A**). Their primarily subterranean existence results in few direct observations of the species. Deploying coverboards in potentially suitable habitat has proven to be one of the most effective means of documenting this species presence. However, it is not typically feasible to do so for most projects. Because this work was in a public preserve, it allowed a more thorough examination of the snake community using coverboards. The community of grassland snakes observed to be present during our surveys in 2021 and 2022 had a Shannon Diversity Index value of 1.49 indicating an abundant and evenly distributed snake community. The current greenway trail does pass through potential Kirtland Snake habitat and one Redbellied Snake was found deceased on the trail during the site visit on 03 June 2022. Areas of concern are low lying areas with culverts that pass under the trail. These sites have crayfish burrows and rip rap present that may be used as refugia for Kirtland's Snakes. If work for the present trail can be limited to the trail surface, it should reduce the chance of take. Three state threatened Kirtland's Snake were found in Site A (**Appendix C: Figure C.1**) at the current terminus of the trail and in the direct path of the proposed addition (IDOT sequence No. 23621A, Section No. 20-F3000-06-BT) to the Plum Creek Greenway Trail in Will County, Illinois.

LITERATURE CITED

Illinois Endangered Species Protection Board (IESPB). 2020. Checklist of Endangered and Threatened Animals and Plants of Illinois. Illinois Endangered Species Protection Board, Springfield, Illinois. Effective May 28. 10 pp. A PDF of this checklist available here: https://www2.illinois.gov/dnr/education/CDIndex/ETListMay2020.pdf Accessed 02 August 2022.

Kuhns, A.R. 2021. Survey for Kirtland's Snake, *Clonophis kirtlandii*, for the Plum Creek Greenway Trail in Will County, Illinois. INHS/IDOT Statewide Biological Survey & Assessment Program 2022(34): 1–19.

Appendix A.

Natural History of the Kirtland's Snake, *Clonophis kirtlandii*, Listed as Threatened in the State of Illinois.

SYNOPSIS

This appendix presents information on the Kirtland's Snake, *Clonophis kirtlandii*, listed as a threatened species in the State of Illinois, because there is some possibility of its occurrence within the project area. The species account includes diagnostic characters, range in Illinois, habitat requirements, spatial ecology and activity, reproduction, and the suitable sampling season in Illinois. Standard and scientific names follow Crother (2012).

Species range maps were created by Ethan J. Kessler. Maps were based upon data in the Illinois Natural History Survey's All_IL_Herps Database which contains records of vouchered and un-vouchered specimens in the Illinois Natural History Survey (INHS), University of Illinois Museum of Natural History (UIMNH), and amphibian and reptile specimens from ~30 other science museums. The database is maintained by INHS/UIMNH Amphibian and Reptile Curator, Christopher A. Phillips, with records from other institutions updated annually.

LITERATURE CITED

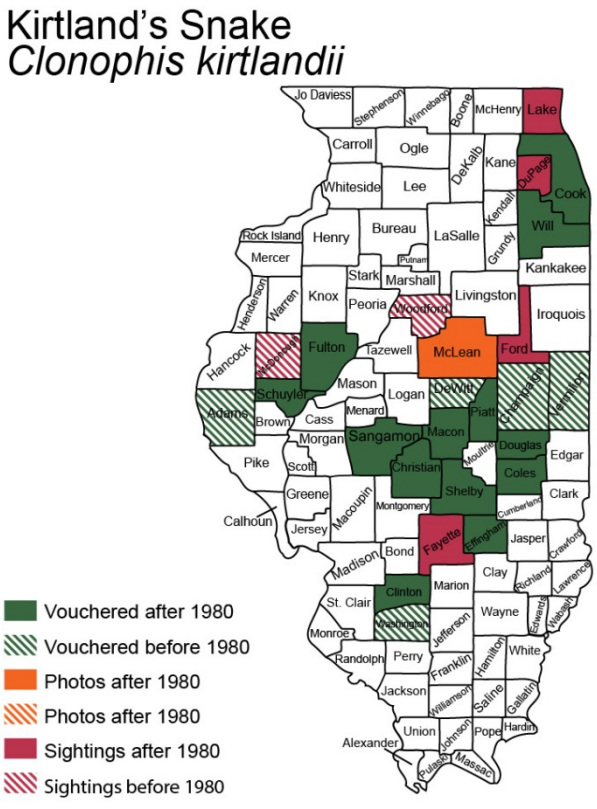
Crother, B.I. 2012. Scientific and standard English names of amphibians and reptiles of North America north of Mexico, with comments regarding confidence in our understanding. 7th Edition. SSAR Herpetological Circular. 39: 1–101.

KIRTLAND'S SNAKE, *CLONOPHIS KIRTLANDII*

General Description for Identification: Like the other natricine snake species, the Kirtland's Snake has keeled scales and a divided anal plate. It is a small species that is distinguished by other snakes in Illinois, by its red or orange venter with contrasting black spots on each ventral scale.

Range: Within Illinois, Kirtland's snake primarily inhabits the southern till plain and extends north in the Chicago Region. It is absent from the sandy soil habitats in these areas.

Suitable Habitat: Historically, wet prairies, wet meadows, prairie fens, and associated wetlands, especially those that were seasonally flooded and adjacent to upland areas, were the preferred habitats for Kirtland's Snakes (Ernst and Ernst 2003). Most of these habitats have long since been destroyed through agricultural practices and other development. Present habitat consists of open, low, grassy areas, often at the margins of streams, ponds, or ditches (Minton, 1972; Ernst and Barbour 1989; Bavetz 1994). Crayfish burrows are used as shelter although Kirtland's snakes have been collected in vacant lots in urban areas where crayfish burrows are not present. When crayfish burrows are not present they hide under boards, trash, and other surface debris (Ernst and Ernst 2003).



Reproduction: Little is known about the life history of the Kirtland's Snake due to its secretive nature. Courtship behavior has been observed in September in Illinois (Anton et al. 2003).

Activity: Kirtland's Snakes are reported to be most active in April and May (spring) and October (autumn) and enter hibernation in late October to early November (Ernst and Ernst 2003). Snakes may den communally (Anton et al. 2003).

Suitable Sampling Seasons: This species is shy and secretive, spending most of its time below ground and under large cover objects. Anecdotal evidence suggests that they are most often surface-active when temperatures are below 70 F on overcast days in the spring and fall.

Illinois Status: Kirtland's Snake is listed as threatened in Illinois (Illinois Endangered Species Protection Board 2020). The primary threat to the species in Illinois is the destruction of habitat (Phillips et al. 2022).

Literature Cited

Anton, T.G., D. Mauger, C.A. Phillips, M.J. Dreslik, J.A. Petzing, A.R. Kuhns, and J.M. Mui. 2003. *Clonophis kirtlandii* (Kirtland's Snake) aggregating behavior and site fidelity. Herpetological Review 34:248–249.

Bavetz, M. 1994. Geographic variation, status, and distribution of Kirtland's Snake (*Clonophis kirtlandii* Kennicott) in Illinois. Transactions of the Illinois State Academy of Science 87(3–4): 151-163.

Ernst, C.H., and R.W. Barbour. 1989. Snakes of Eastern North America. George Mason University Press, Fairfax, Virginia. 282 pp.

Ernst, C.H., and E.M. Ernst. 2003. Snakes of the United States and Canada. Smithsonian Books. Washington and London.

Illinois Endangered Species Protection Board (IESPB). 2020. Checklist of Endangered and Threatened Animals and Plants of Illinois. Illinois Endangered Species Protection Board, Springfield, Illinois. Effective May 28. 10 pp. A PDF of this checklist available here: https://www2.illinois.gov/dnr/education/CDIndex/ETListMay2020.pdf Accessed 02 August 2022.

Minton, S.A. 1972. Amphibians and Reptiles of Indiana. Indiana Academy of Science Monograph No. 3: i-v + 346 pp.

Phillips, C.A., J.A. Crawford, and A.R. Kuhns. 2022. Field Guide to Amphibians and Reptiles of Illinois. Second Edition. University of Illinois Press, Urbana, Chicago, Springfield. 277 pp.

APPENDIX B

Sampling methods appropriate for the detection of amphibians and reptiles listed as endangered or threatened in the state of Illinois.

Table B.1. Species of amphibians and reptiles listed as threatened or endangered in Illinois and potential sampling methods for their detection.

		State Listed Herptiles	Threatened	Endangered	Dip-Net	Minnow Trap	Call Survey	Visual Encounter	Hoop Trap	Fyke Net	Seine	Drift Fence	Coverboard
AMPHIBIANS	SALIENTIA	*Ambystoma jeffersonianum*	X		■	■		■				■	
		Ambystoma platineum		X	■	■		■				■	
		Cryptobranchus alleganiensis		X				■					
		Desmognathus conanti		X	■			■					
		Hemidactylium scutatum	X					■				■	
		Necturus maculosus	X		■	■		■			■		
	ANURA	*Hyla avivoca*		X	■	■	■	■					
		Pseudacris streckerii		X	■	■	■	■				■	
		Gastrophryne carolinensis	X		■	■	■	■				■	
REPTILES	TESTUDINES	*Apalone mutica*		X				■	■	■			
		Clemmys guttata		X				■	■				
		Emydoidea blandingii		X				■	■				
		Kinosternon flavescens		X				■	■				
		Macrochelys temminckii		X					■				
		Pseudemys concinna		X				■		■			
		Terrapene ornata	X					■				■	
	SERPENTES	*Clonophis kirtlandii*	X					■				■	■
		Crotalus horridus	X					■				■	
		Pantherophis emoryi		X				■				■	■
		Heterodon nasicus	X					■				■	■
		Masticophis flagellum		X				■				■	■
		Nerodia fasciata		X				■				■	■
		Nerodia cyclopion	X					■				■	■
		Sistrurus catenatus		X				■				■	
		Tantilla gracilis	X					■				■	■
		Thamnophis sauritus	X					■				■	■
		Tropidoclonion lineatum	X					■				■	■

Sampling Methods for the Detection of State Listed Amphibians and Reptiles

ACTIVE SAMPLING METHODS

Call Survey**.** This method is only effective for anurans during the breeding season. The researcher either visits wetlands in the evening hours to listen to the frog chorus, or places an audio recording device at the wetland during the day and returns the following morning to retrieve the recording. In either case, the researcher must be familiar with the calls of frogs and toads in the area in order to identify the species based only upon the calls in the chorus. To be effective, the researcher must also be familiar with the ecology of the target species and sample during its breeding season in habitats where it is likely to reside.

Dip Netting. A dip net is useful for sampling aquatic animals and can be used to capture individuals observed or as a means of blindly sampling for aquatic organisms in vegetation choked or turbid water. Typically, a researcher will pull the net along the substrate and through the water column for approximately 3 feet, and then finish the net sweep by pulling the net up and out of the water with the net opening facing upward. The researcher can then remove any substrate or detritus from the net and search for captured animals.

Seine. A seine is a fishing net that hangs vertically in the water column suspended by floats with the bottom edge held down by weights. The net is dragged along the bottom of aquatic habitats and captures aquatic amphibians and reptiles when it is drawn onto shore or scooped out of the water. In many ways, it functions much like a large dip net when used for amphibian and reptile sampling.

Visual Encounter Survey (VES). Visual encounter surveys involve searching appropriate habitat (mainly turning cover items such as logs, rocks and miscellaneous debris and also visually scanning open habitats) and recording all species encountered. Surveys can be regimented such as by walking pre-defined grid patterns and time limits, or in a more haphazard wandering pattern. This method is most effective if the researcher is familiar with the target species ecology and can focus on habitat areas where the species is most likely to be encountered, as well as time of day and seasons when the species is most active. A thorough explanation of this technique can be found in Heyer et al. (1994).

PASSIVE SAMPLING METHODS

Drift Fence**.** A drift fence is any object that is placed perpendicular to the ground surface as a way to intercept animals that may be passing through. It is often constructed of hardware cloth or silt fencing buries a few inches into the ground to prevent burrowing; but natural cover items such as large logs or rock formations may also function as a drift fence. Animals are captured by travelling parallel to the fence until they fall into a receptacle, such as a bucket or coffee can,

which has been buried flush with the substrate. Similarly, funnel traps can be placed along the drift fence to capture animals that are walking along the fence. This technique is covered in Heyer et al. (1994) and McDiarmid et al. (2012).

Coverboards**.** Coverboards are essentially any item sitting flush with the substrate under which an amphibian or reptile may seek refuge. Artificial coverboards are often made of plywood or corrugated tin and are placed in areas likely to harbor the species of interest. Coverboards often attract small mammals and invertebrates as well which may enhance their ability to attract amphibians and reptiles. Well-seasoned artificial cover objects with little vegetation underneath them seem to work better in attracting herptiles, therefore their use most effective for long term projects when they can be set out many months in advance of surveys.

Minnow Trap**.** Traps may be constructed of rope, monofilament, or steel and may have funnels or throats, at one or both ends which allow the animal to enter into the trap body but prevent them from easily exiting the trap. Minnow traps may be cylindrical or rectangular and can be baited or not depending on the target species. If baited, the bait is refreshed every 2 to 4 days. Traps are usually placed so that a portion of the trap placed in water is emergent so that captured animals have access to air and will not drown. However, in riverine environments, where there is little to no probability of capturing non-gilled species, the traps may be fully submerged. Effort is recorded in trap hours (i.e., number of traps multiplied by the number of hours the traps were deployed). Results are reported as the numbers of each species captured.

Hoop Trap**.** These traps work on the same principal as minnow traps but are larger in diameter and have larger throats to allow for the capture of larger animals such as turtles (Legler 1960). All hoop traps are placed such that at least 5cm of the trap is above the surface of the water to ensure captured turtles have access to air. Traps are tied via string or rope to surrounding vegetation to ensure that captured turtles do not roll traps into deeper water and drown. Traps are placed parallel to either the shoreline or potential basking sites. Traps are baited (usually with sardines canned in spring water or oil). Traps are checked daily and bait is changed every 2 to 4 days. Effort is recorded in trap hours (i.e., number of traps multiplied by the number of hours the traps were deployed). Results are reported as the numbers of each species captured.

Fyke Net**.** This trapping method is essentially a combination of a Drift Fence and a Hoop Trap. It consists of a hoop trap body with a single throat, and long wings and a lead that extend out from the throat in a double V formation (**Figure B.1**). Wings and leads have a lead-line that makes them hang vertically in the water column. This essentially extends the reach of the throat and works well for turtle species that are not attracted to readily available baits. It can be used to intercept turtles entering a cove or attempting to access a popular basking site, by funneling them into the trap body where the throat prevents them from escaping. A description of Fyke Nets can be found in Vogt (1980).

LITERATURE CITED

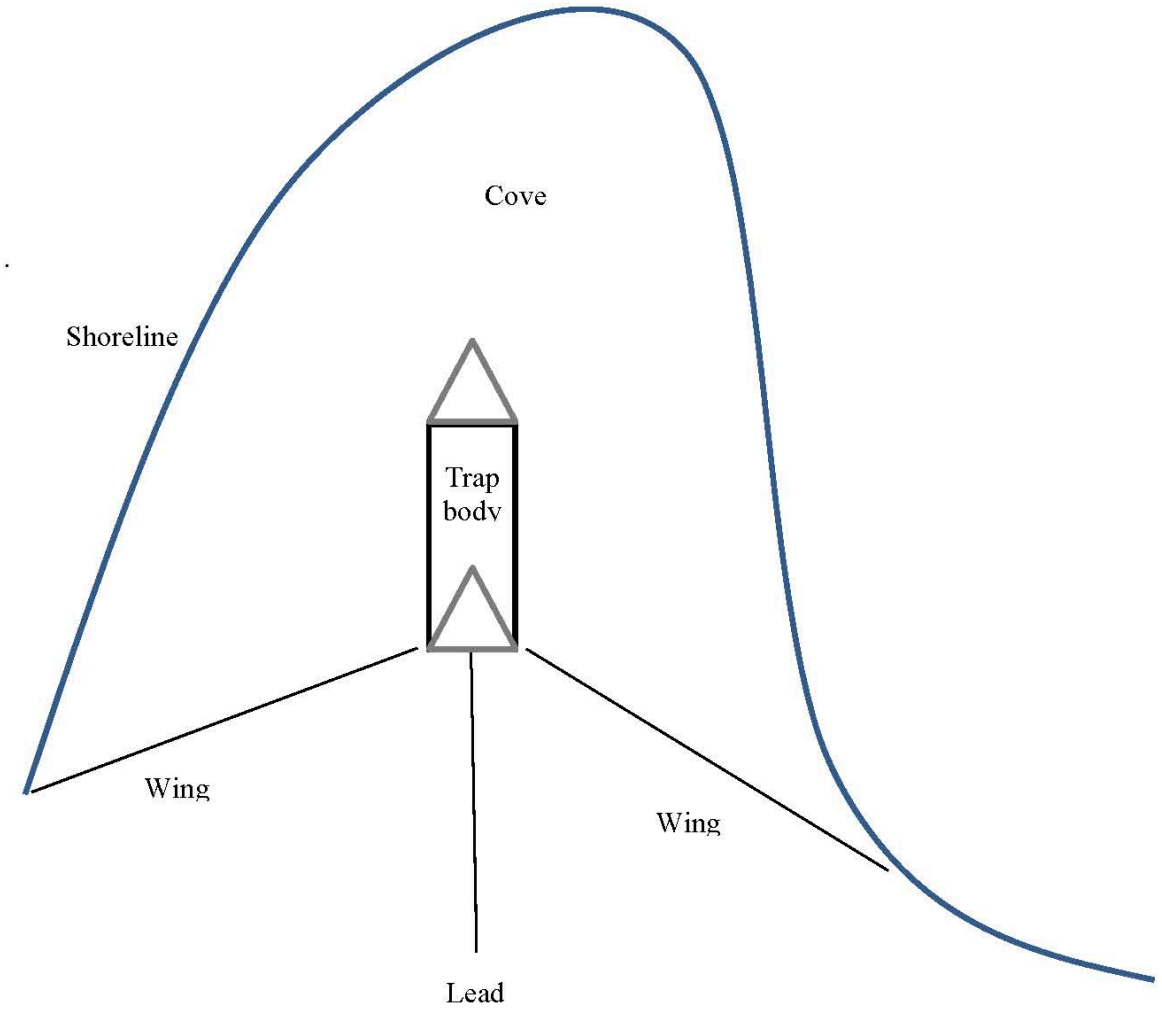
Heyer, W.R., M.A. Donnelly, R.W. McDiarmid, L.C. Hayek and M.S. Foster, eds. 1994. Measuring and Monitoring Biodiversity: Standard methods for amphibians. Smithsonian Institution Press, Washington D.C. 364 pp.

Legler, J.M. 1960. A simple and inexpensive device for trapping aquatic turtles. Proceedings of the Utah Academy of Sciences, Arts and Letters 37**:** 63–66.

McDiarmid, R.W., M.S. Foster, C. Guyer, J.W. Gibbons, and N. Chernoff. Eds. 2012. Reptile Biodiversity: Standard Methods for Inventory and Monitoring. University of California Press. Berkeley. 412 pp.

Vogt, R.C. 1980. New methods for trapping aquatic turtles. Copeia 1980:368–371.

Figure B.1. Fyke Net set to capture turtles attempting to enter a cove (as viewed from above).



APPENDIX C

Figures relevant to the Plum Creek Greenway Trail project from South of Burville Road to 265th Street in Will County, Illinois (IDOT sequence No. 23621A, Section No. 20-F3000-06-BT)

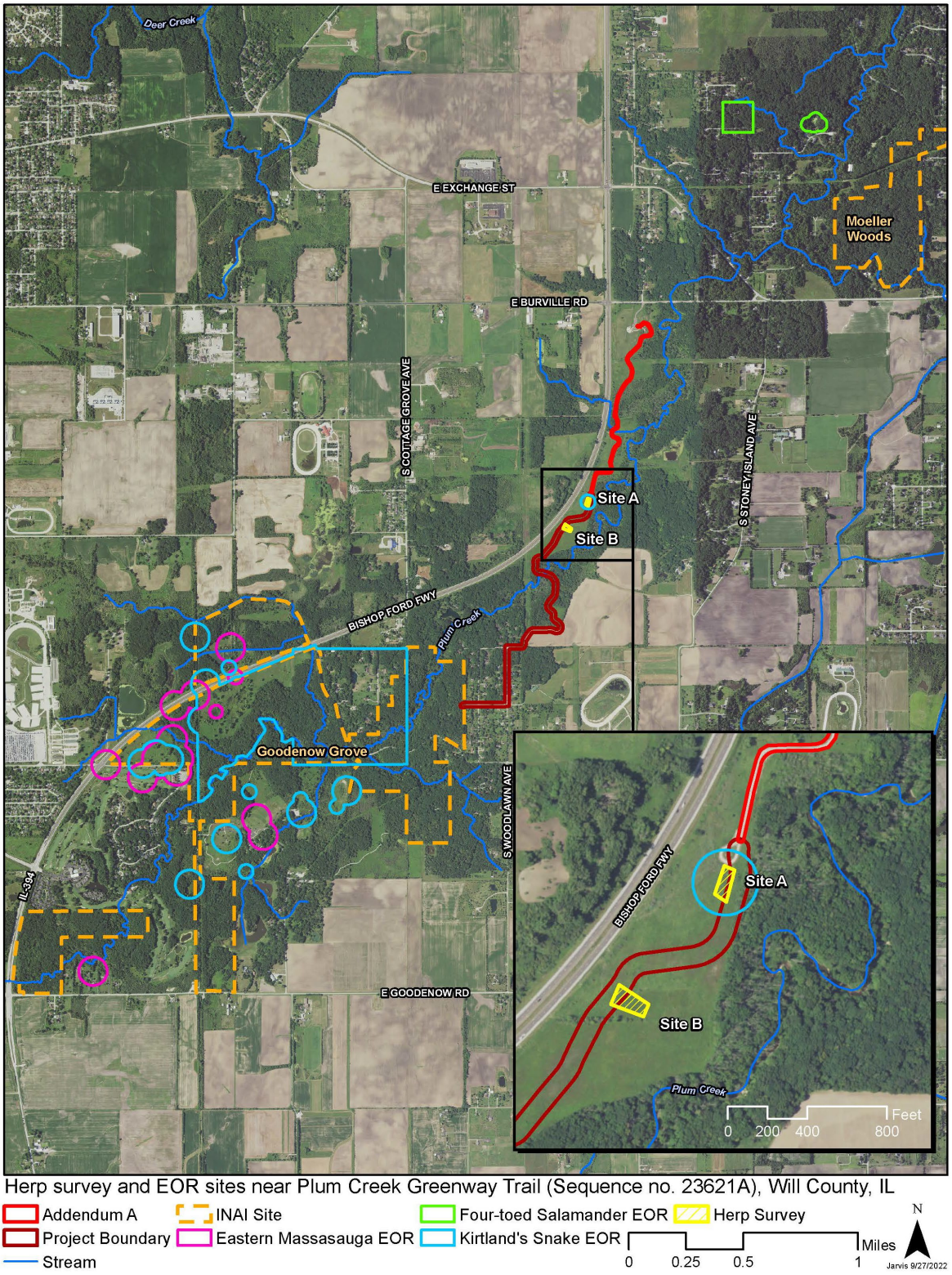


Figure C.1. Herptile Element Occurrence Records relative to Plum Creek Greenway Trail project from south of Burville Road to 265th Street in Will County, Illinois (IDOT sequence No. 23621A, Section No. 20-F3000-06-BT).

APPENDIX D

Photograph relative to the Plum Creek Greenway Trail project from South of Burville Road to 265th Street in Will County, Illinois (IDOT sequence No. 23621A, Section No. 20-F3000-06-BT)

Plate 1. Cover object placed *in situ*. Photograph by Andrew R. Kuhns.

Plate 2. Deceased Red-bellied Snake, *Storeria occipitomaculata,* found on Plum Creek Greenway Trail on 03 June 2022. While the exact cause of mortality is unknown the injuries appear consistent with being run over by a bicycle tire. Photograph by A.R. Kuhns.

APPENDIX E

Arc-GIS Shapefiles

An ArcGIS folder <23621A_Herp_Survey_GIS.zip> containing an Arc-GIS shapefile of the sampled area constitutes this appendix. The ArcGIS shapefile and this report will be submitted to IDOT via the IDOT Site Assessment Tracking System extranet website.

APPENDIX C

Engineering Plans

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	1
	ILLINOIS	CONTRACT NO. 61K44		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED FEDERAL AID HIGHWAY

PLUM CREEK GREENWAY TRAIL SEGMENT 3
SECTION 20–F3000–06–BT
PROJECT L7MD(600)
FOREST PRESERVE DISTRICT OF WILL COUNTY
WILL COUNTY

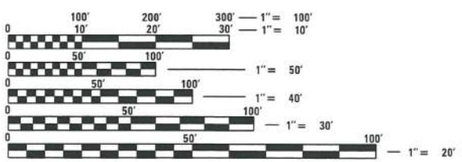
C–91–176–24

FOR INDEX OF SHEETS, SEE SHEET NO. 2

PROJECT LOCATED IN WILL COUNTY

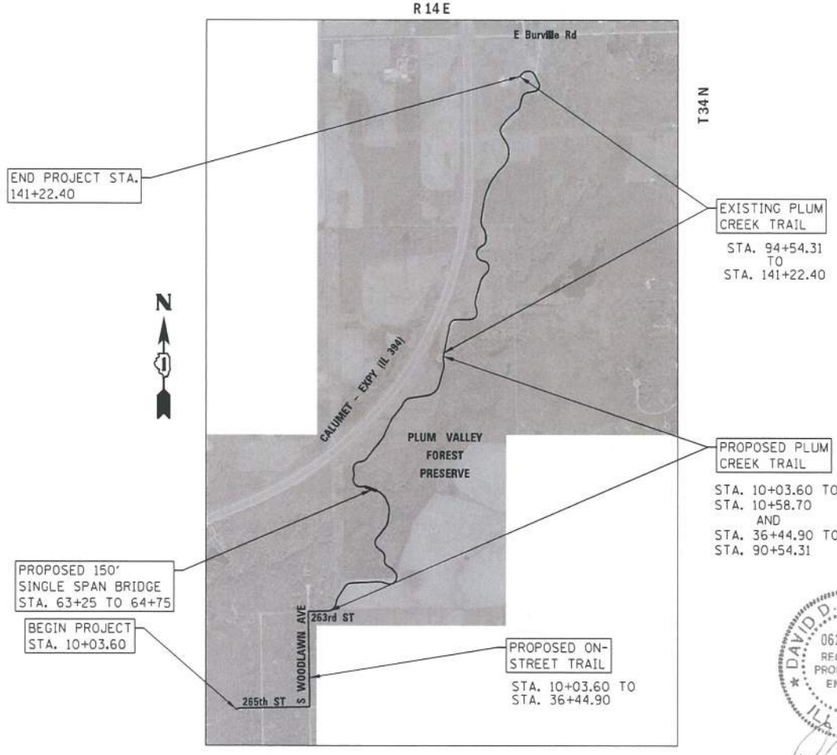
DESIGN DESIGNATION
BIKE TRAIL

DESIGN SPEED LIMIT
20 M.P.H.



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

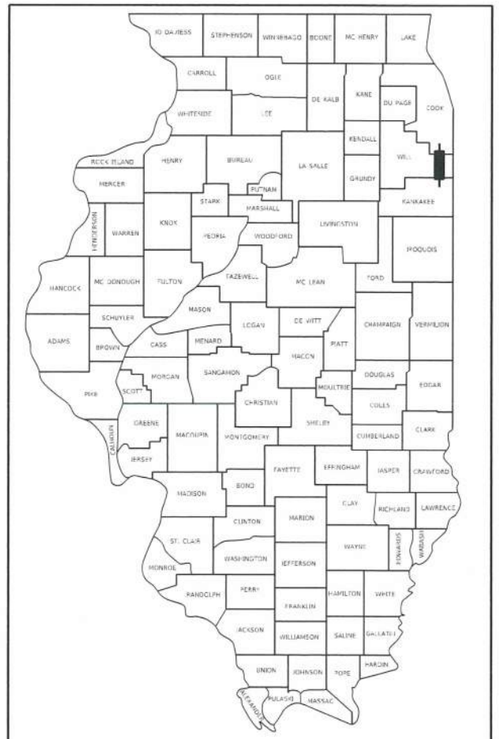
J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS
1–800–892–0123
OR 811



LOCATION MAP
NOT TO SCALE

GROSS LENGTH = 13,148.3 FT. = 2.49 MILE

61K44



LOCATION OF SECTION INDICATED THUS: –

AGENCY RESPONSIBLE FOR LETTING

APPROVED May 30 20 24
FOREST PRESERVE DISTRICT OF WILL COUNTY

PASSED _____
DISTRICT 1 ENGINEER OF LOCAL ROADS AND STREETS

RELEASED FOR BID BASED ON LIMITED REVIEW _____ 20 _____
REGIONAL ENGINEER

DAVID D. LANDEWEER
062-042363
REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

DATE: 05–31–24

DAVID LANDEWEER, P.E.
LICENSED PROFESSIONAL ENGINEER
ILLINOIS NO. 062.042363 EXPIRES 11–30–25

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

FEDERAL AID DESIGN PROGRAM ENGINEER: CARMEN E. RAMOS, P.E. SCHAUMBURG, IL

CONTRACT NO. 61K44

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	INDEX OF SHEETS, GENERAL NOTES AND STANDARDS
3-9	SUMMARY OF QUANTITIES
10-11	TYPICAL SECTIONS
12	SCHEDULE OF QUANTITIES
13-15	ALIGNMENT AND TIES
16-20	REMOVAL PLAN
21-30	PLAN AND PROFILE
31	TRAFFIC CONTROL / CONTRACTOR ACCESS
32-36	EROSION AND SEDIMENT CONTROL PLAN AND DETAILS
37-41	LANDSCAPING / SIGNING PLAN
42-49	BRIDGE PLANS AND DETAILS
50-55	DETAIL SHEETS
56-57	DISTRICT 1 DETAILS
58-80	CROSS SECTIONS

DISTRICT 1 DETAILS

BD-32	BUTT JOINTS AND HMA TAPERS
BM-20	PRUNING FOR SAFETY AND EQUIPMENT CLEARANCE

HIGHWAY STANDARDS

000001-08	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
424026-03	ENTRANCE / ALLEY PEDESTRIAN CROSSINGS
515001-04	NAME PLATE FOR BRIDGES
542301-03	PRECAST REINFORCED CONCRETE FLARED END SECTION
701001-02	OFF-RD OPERATIONS, 2L, 2W, MORE THAN 15' AWAY
701006-05	OFF-RD OPERATIONS, 2L, 2W, 15' TO 24'' FROM PAVEMENT EDGE
701101-05	OFF-RD OPERATIONS, MULTILANE, 15' TO 24'' FROM PAVEMENT EDGE
701301-04	LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
701311-03	LANE CLOSURE, 2L, 2W, MOVING OPERATIONS - DAY ONLY
701501-06	URBAN LANE CLOSURE, 2L, 2W, UNDIVIDED
701801-06	SIDEWALK, CORNER OR CROSSWALK CLOSURE
701901-09	TRAFFIC CONTROL DEVICES
720001-01	SIGN PANEL MOUNTING DETAILS
720006-04	SIGN PANEL ERECTION DETAILS
720011-01	METAL POSTS FOR SIGNS, MARKERS & DELINEATORS
729001-01	APPLICATION OF TYPES A AND B METAL POSTS (FOR SIGNS & MARKERS)

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", ADOPTED JANUARY 1, 2022; THE LATEST EDITION OF THE "ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" (IMUTCD), THE "DETAILS" IN THE PLANS, AND THE "SPECIAL PROVISIONS" INCLUDED IN THE CONTRACT DOCUMENTS.

2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN EXISTING FIELD CONDITIONS PRIOR TO BIDDING ON THIS PROJECT.

3. THE CONTRACTOR SHALL LIMIT HIS/HER CONSTRUCTION ACTIVITIES TO THE WORK AREAS DESIGNATED ON THE PLANS. ANY DAMAGE TO AREAS OUTSIDE OF THESE LIMITS SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

4. THE CONTRACTOR SHALL NOTIFY THE FOREST PRESERVE DISTRICT OF WILL COUNTY REPRESENTATIVE AT LEAST 48 HOURS IN ADVANCE OF BEGINNING WORK AND COORDINATE ALL CONSTRUCTION OPERATIONS WITH THE ENGINEER.

5. THE CONTRACTOR WILL BE REQUIRED TO RELOCATE OR REMOVE AND REPLACE SIGNS WHICH INTERFERE WITH CONSTRUCTION OPERATIONS, AND TO TEMPORARILY RESET ALL SUCH SIGNS DURING CONSTRUCTION OPERATIONS. IF EXISTING SIGNS ARE DAMAGED DURING THE REMOVAL AND REPLACEMENT PROCESS, THE SIGN SHALL BE REPLACED.

6. THE CONTRACTOR SHALL GIVE NOTICES AND COMPLY WITH APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ALL PUBLIC AUTHORITIES BEARING ON SAFETY OF PERSONS OR PROPERTY OR THEIR PROTECTION FROM DAMAGE, INJURY OR LOSS.

7. GEOTECHNICAL FABRIC FOR GROUND STABILIZATION AND/OR AGGREGATE SUBGRADE IMPROVEMENT (CU YD) HAVE BEEN PROVIDED FOR USE FOR SOILS THAT TEND TO BE UNSTABLE AND/OR UNSUITABLE. THE ACTUAL NEED FOR REMOVAL AND REPLACEMENT WITH ABOVE ITEM WILL BE DETERMINED IN THE FIELD AT THE TIME OF CONSTRUCTION BY THE GEOTECHNICAL ENGINEER. ALL POTENTIALLY UNSTABLE SOILS SHOULD BE TESTED WITH A STATIC OR DYNAMIC CONE PENETROMETER AND TREATED IN ACCORDANCE WITH ARTICLE 301.04 OF THE SSRBC AND IDOT SUBGRADE STABILITY MANUAL. IF UNSTABLE AND/OR UNSUITABLE SOILS ARE NOT ENCOUNTERED, THEN THE QUANTITY SHALL BE DEDUCTED AND NO ADDITIONAL COMPENSATION WILL BE DUE TO THE CONTRACTOR.

8. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH OTHER ROADWAY PROJECTS WITHIN THE AREA THAT ARE UNDER CONSTRUCTION AT THE SAME TIME.

9. THE CONTRACTOR SHALL CONTACT KALPANA KANNAN-HOSADURGA, THE DISTRICT ONE TRAFFIC CONTROL SUPERVISOR, AT KALPANA.KANNAN-HOSADURGA@ILLINOIS.GOV A MINIMUM 72 HOURS IN ADVANCE OF BEGINNING WORK.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER PROTECTION OF ALL EXISTING PUBLIC OR PRIVATE ROADWAYS, STRUCTURES, AND UTILITIES PRIOR TO THE START OF CONSTRUCTION AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO SAID ROADWAYS, STRUCTURES, AND UTILITIES. ANY ROADWAY, STRUCTURE, OR UTILITY THAT IS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR.

11. THE SUBGRADE STABILITY SHALL BE VERIFIED BY PROOF ROLLING WITH A FULLY LOADED TANDEM-AXLE TRUCK.

12. STATION, OFFSETS, AND ELEVATIONS FOR PRECAST FLARED END SECTIONS ARE GIVEN FOR THE PIPE END OF THE FLARED END SECTION.

UTILITIES

1. ALL UNDERGROUND UTILITY LOCATIONS, INCLUDING BUT NOT LIMITED TO SANITARY AND STORM SEWERS, WATER MAINS AND THEIR RESPECTIVE SERVICE LINES, SHOWN ON THE PLANS ARE APPROXIMATE ONLY. UNDERGROUND FACILITIES REPRESENTS ONLY THE OPINION OF THE ENGINEER, AS TO THE LOCATION OF SUCH UTILITIES AND IS ONLY INCLUDED FOR THE CONVENIENCE OF THE BIDDER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE THE RESPECTIVE UTILITY COMPANIES FIELD LOCATE ALL UTILITIES AS NECESSARY, PRIOR TO STARTING CONSTRUCTION. THE CONTRACTOR SHLL NOTIFY J.U.L.I.E. AT (800) 892-0123, AND ALL PUBLIC AND PRIVATE UTILITIES BEFORE STARTING CONSTRUCTION.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UNDERGROUND OR SURFACE UTILITIES EVEN THOUGH THEY MAY NOT BE SHOWN ON THE PLANS. ANY UTILITY THAT IS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER.

SOIL EROSION AND SEDIMENT CONTROLS

1. SOIL EROSION AND SEDIMENT CONTROL (SESC) FEATURES MUST BE CONSTRUCTED PRIOR TO THE COMMENCEMENT OF UPLAND DISTURBANCE. SOIL DISTURBANCE MUST BE PHASED OR ENACTED IN SUCH A MANNER AS TO MINIMIZE EROSION. SOIL STABILIZATION MEASURES MUST CONSIDER THE TIME OF YEAR, SITE CONDITIONS AND THE USE OF TEMPORARY AND/OR PERMANENT MEASURES.

2. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSTALLED AT A MINIMUM ACCORDING TO THE STANDARDS AND SPECIFICATIONS IN THE ILLINOIS URBAN MANUAL, REVISED TO LATEST VERSION AS AMENDED. A COPY OF THE APPROVED SOIL EROSION AND SEDIMENT CONTROL (SESC) PLAN AND THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) MUST BE MAINTAINED ON THE SITE AT ALL TIMES.

3. THE EROSION AND SEDIMENT CONTROLS SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED AS DIRECTED BY THE ENGINEER. ALL ADDITIONAL MEASURES MUST BE IN PLACE WITHIN 3 DAYS OF DISTURBANCE AND ANY EMERGENCY SESC MEASURES MUST BE INSTALLED IMMEDIATELY.

4. THE CONTRACTOR MUST CLEAN UP, GRADE THE WORK AREAS AS THE PROJECT PROGRESSES, AND INSTALL TEMPORARY OR PERMANET EROSION PROTECTION TO CONTROL SOIL EROSION, OR INSTALL APPROPRIATE SEDIMENT CONTROL DEVICES TO TRAP SEDIMENT. PAVEMENT MUST BE CLEANED DAILY OR AS NECESSARY TO REMOVE TRACK-OUT MATERIAL.

5. ACCESS TO THE WORK AREA WILL ONLY BE ALLOWED FROM STABILIZED CONSTRUCTION ENTRANCES WHERE SHOWN ON THE PLAN. ANY SOIL REACHING PUBLIC OR PRIVATE ROADWAYS MUST BE REMOVED IMMEDIATELY.

6. DURING DE-WATERING/PUMPING OPERATIONS, ONLY UNCONTAMINATED WATER SHOULD BE ALLOWED TO DISCHARGE TO PROTECTED NATURAL AREAS, WATERS OF THE STATE, OR TO A STORM SEWER SYSTEM (IN ACCORDANCE WITH LOCAL PERMITS). INLET HOSES SHOULD BE FLOATED AT THE SURFACE OF THE WATER IN ORDER TO LIMIT THE AMOUNT OF SEDIMENT INTAKE. PUMPING OPERATIONS MAY BE DISCHARGED TO A STABILIZED AREA THAT CONSISTS OF AN ENERGY DISSIPATING DEVICE (E.G. STONE), SEDIMENT FILTER BAG, OR BOTH. ADEQUATE EROSION AND SEDIMENT CONTROLS SHOULD BE USED DURING DE-WATERING OPERATIONS AS NECESSARY. DE-WATERING SEDIMENT LADEN WATER DIRECTLY INTO FIELD TILES, STORM WATER STRUCTURES, OR "WATERS OF THE US" IS PROHIBITED.

7. CONSTRUCTION ACTIVITIES MUST BE SCHEDULED TO MINIMIZE THE TIME SOIL IS EXPOSED AND UNPROTECTED. IN NO CASE WILL THE EXISTING VEGETATION BE DESTROYED, REMOVED, OR DISTURBED MORE THAN FOURTEEN (14) DAYS PRIOR TO THE INITATION OF IMPROVEMENTS.

8. ALL DISTURBED SOILS ARE TO BE STABILIZED, TEMPORARILY OR PERMANENTLY, WITHIN SEVEN (7) DAYS OF CONSTRUCTION ACTIVITY HAVING CEASED IF THE SOIL IS TO REMAIN UNDISTURBED FOR MORE THAN FOURTEEN (14) DAYS.

9. THE CONTRACTOR SHALL COORDINATE WITH AND OBTAIN ANY NECESSARY PERMITS FROM THE WILL/SOUTH COOK SOIL AND WATER CONSERVATION DISTRICT.

MODEL: $MODELNAME$
FILE NAME: $FILEL$

TERRA ENGINEERING LTD.

USER NAME = $USER$	DESIGNED - MIA	REVISED -	
	DRAWN - JS	REVISED -	
PLOT SCALE = $SCALE$	CHECKED - DDL	REVISED -	
PLOT DATE = $DATE$	DATE - 4-26-24	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
INDEX OF SHEETS, GENERAL NOTES AND STANDARDS

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	2
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			

* SPECIALTY ITEM

SI	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	ROADWAY 0028	BRIDGE 0008
	20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	746	746	
	20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	542	542	
	20101000	TEMPORARY FENCE	FOOT	190	190	
*	20101300	TREE PRUNING (1 TO 10 INCH DIAMETER)	EACH	35	35	
*	20101350	TREE PRUNING (OVER 10 INCH DIAMETER)	EACH	35	35	
	20200100	EARTH EXCAVATION	CU YD	1010	1010	
	20201200	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL	CU YD	1450	1450	
	20400800	FURNISHED EXCAVATION	CU YD	3390	3390	
	21001000	GEOTECHNICAL FABRIC FOR GROUND STABILIZATION	SQ YD	5062	5062	
	21101505	TOPSOIL EXCAVATION AND PLACEMENT	CU YD	5225	5225	
	21101600	TOPSOIL FURNISH AND PLACE, VARIABLE DEPTH	SQ YD	1270	1270	
	21101625	TOPSOIL FURNISH AND PLACE, 6"	SQ YD	6240	6240	
*	25000115	SEEDING, CLASS 1B	ACRE	1.25	1.25	
*	25000310	SEEDING, CLASS 4	ACRE	2.50	2.50	

MODEL: $MODELNAME$
FILE NAME: $FILE$

TERRA ENGINEERING LTD.

USER NAME = $USER$	DESIGNED - MIA	REVISED -
	DRAWN - JS	REVISED -
PLOT SCALE = $SCALE$	CHECKED - DDL	REVISED -
PLOT DATE = $DATE$	DATE - 4-26-24	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
SUMMARY OF QUANTITIES

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	3
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			

* SPECIALTY ITEM

SI	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	ROADWAY 0028	BRIDGE 0008
*	25000324	SEEDING, CLASS 5B	ACRE	0.25	0.25	
*	25000750	MOWING	ACRE	1.75	1.75	
*	25200200	SUPPLEMENTAL WATERING	UNIT	36	36	
	28000305	TEMPORARY DITCH CHECKS	FOOT	152	152	
	28000400	PERIMETER EROSION BARRIER	FOOT	8933	8933	
	28100107	STONE RIPRAP, CLASS A4	SQ YD	298		298
	28100705	STONE DUMPED RIPRAP, CLASS A3	SQ YD	54	54	
	28200200	FILTER FABRIC	SQ YD	352	54	298
	30300001	AGGREGATE SUBGRADE IMPROVEMENT	CU YD	1450	1450	
	35101600	AGGREGATE BASE COURSE, TYPE B 4"	SQ YD	24	24	
	35102000	AGGREGATE BASE COURSE, TYPE B 8"	SQ YD	6508	6508	
	40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	178	178	
	40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	28293	28293	
	40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	5779	5779	

MODEL: $MODELNAME$
FILE NAME: $FILEL$

TERRA ENGINEERING LTD.

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PLOT DATE = $DATE$	DATE - 4-26-24	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
SUMMARY OF QUANTITIES

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	4
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			

* SPECIALTY ITEM

SI	CODE NO.	ITEM ITEM	UNIT	TOTAL QUANTITY	ROADWAY 0028	BRIDGE 0008
	40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	168	168	
	40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	1621	1621	
	40604060	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "D", N50	TON	1108	1108	
	42400300	PORTLAND CEMENT CONCRETE SIDEWALK 6 INCH	SQ FT	200	200	
	42400800	DETECTABLE WARNINGS	SQ FT	40	40	
	44000155	HOT-MIX ASPHALT SURFACE REMOVAL, 1 1/2"	SQ YD	267	267	
	44201690	CLASS D PATCHES, TYPE I, 4 INCH	SQ YD	126	126	
	44201692	CLASS D PATCHES, TYPE II, 4 INCH	SQ YD	126	126	
	44201694	CLASS D PATCHES, TYPE III, 4 INCH	SQ YD	126	126	
	44201696	CLASS D PATCHES, TYPE IV, 4 INCH	SQ YD	126	126	
	50200100	STRUCTURE EXCAVATION	CU YD	453		453
	50300225	CONCRETE STRUCTURES	CU YD	21.8		21.8
	50300255	CONCRETE SUPERSTRUCTURE	CU YD	8.4		8.4
	50300300	PROTECTIVE COAT	SQ YD	229		229

MODEL: $MODELNAME$
FILE NAME: $FILE$

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PLOT DATE = $DATE$	DATE - 4-26-24	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
SUMMARY OF QUANTITIES

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	5
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			

* SPECIALTY ITEM

SI	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	ROADWAY 0028	BRIDGE 0008
	50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	4620		4620
	51200961	FURNISHING METAL SHELL PILES 16'' X 0.312''	FOOT	184		184
	51202305	DRIVING PILES	FOOT	184		184
	51203200	TEST PILE METAL SHELLS	EACH	2		2
	51500100	NAME PLATES	EACH	1		1
	52000110	PREFORMED JOINT STRIP SEAL	FOOT	26		26
	54213657	PRECAST REINFORCED CONCRETE FLARED END SECTIONS 12''	EACH	2	2	
	54213660	PRECAST REINFORCED CONCRETE FLARED END SECTIONS 15''	EACH	14	14	
	54213669	PRECAST REINFORCED CONCRETE FLARED END SECTIONS 24''	EACH	2	2	
	5421D012	PIPE CULVERTS, CLASS D, TYPE 1 12'' (TEMPORARY)	FOOT	84	84	
	542A0217	PIPE CULVERTS, CLASS A, TYPE 1 12''	FOOT	14	14	
	542A0220	PIPE CULVERTS, CLASS A, TYPE 1 15''	FOOT	117	117	
	542A0229	PIPE CULVERTS, CLASS A, TYPE 1 24''	FOOT	18	18	
	58600101	GRANULAR BACKFILL FOR STRUCTURES	CU YD	38		38

MODEL: $MODELNAME$
FILE NAME: $FILEL$

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
SUMMARY OF QUANTITIES

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	6
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			

* SPECIALTY ITEM

SI	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	ROADWAY 0028	BRIDGE 0008
	58700300	CONCRETE SEALER	SQ FT	169		169
	59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	34		34
	60146304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	70		70
	60600605	CONCRETE CURB, TYPE B	FOOT	31	31	
	67100100	MOBILIZATION	L SUM	1	1	
*	72000100	SIGN PANEL - TYPE 1	SQ FT	55.25	55.25	
	72400100	REMOVE SIGN PANEL ASSEMBLY - TYPE A	EACH	2	2	
	72400500	RELOCATE SIGN PANEL ASSEMBLY - TYPE A	EACH	1	1	
*	72900100	METAL POST - TYPE A	FOOT	188	188	
*	73000100	WOOD SIGN SUPPORT	FOOT	58	58	
*	78000100	THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS	SQ FT	64	64	
*	78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	10585	10585	
*	A2006512	TREE, QUERCUS BICOLOR (SWAMP WHITE OAK), 1-1/2" CALIPER, BALLED AND BURLAPPED	EACH	10	10	
*	A2007112	TREE, QUERCUS RUBRA (RED OAK), 1-1/2" CALIPER, BALLED AND BURLAPPED	EACH	10	10	

MODEL: $MODELNAME$
FILE NAME: $FILE1$

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
SUMMARY OF QUANTITIES

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	7
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			

* SPECIALTY ITEM

SI	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	ROADWAY 0028	BRIDGE 0008
*	K1005418	TEMPORARY SEEDING	ACRE	3.75	3.75	
	X0322508	PEDESTRIAN TRUSS SUPERSTRUCTURE	SQ FT	1800		1800
	X0326806	WASHOUT BASIN	L SUM	1	1	
*	X0327997	TRASH RECEPTACLES	EACH	2	2	
	X2011001	HIGH VISIBILITY TEMPORARY FENCING	FOOT	3205	3205	
*	X2511630	EROSION CONTROL BLANKET (SPECIAL)	SQ YD	16636	16636	
	X6640104	FENCE REMOVAL	FOOT	31	31	
	X6640624	RUSTIC RAIL FENCE	FOOT	128	128	
	X6700407	ENGINEER'S FIELD OFFICE, TYPE A (D1)	CAL MO	12	12	
	X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1	1	
	XX008864	INSTALL SIGN	EACH	2	2	
*	XX009531	TREE ROOT PRUNING (SPECIAL)	FOOT	500	500	
	Z0013797	STABILIZED CONSTRUCTION ENTRANCE	SQ YD	50	50	
	Z0013798	CONSTRUCTION LAYOUT	L SUM	1	1	

MODEL: $MODELNAME$
FILE NAME: $FILE$

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
SUMMARY OF QUANTITIES

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	8
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			

* SPECIALTY ITEM

SI	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	ROADWAY 0028	BRIDGE 0008
	Z0076600	TRAINEES	HOUR	500**	500**	
	Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	HOUR	500**	500**	

** CONSTRUCTION CODE 0042

MODEL: $MODELNAME$
FILE NAME: $FILEL$

TERRA ENGINEERING LTD.

USER NAME = $USER$
PLOT SCALE = $SCALE$
PLOT DATE = $DATE$

DESIGNED - MIA
DRAWN - JS
CHECKED - DDL
DATE - 4-26-24

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REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

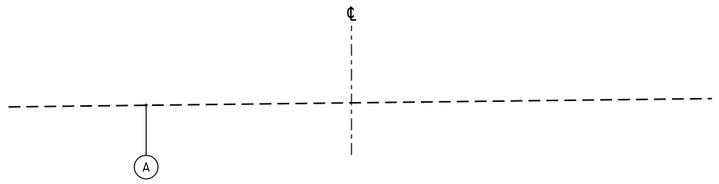
PLUM CREEK GREENWAY TRAIL SEGMENT 3
SUMMARY OF QUANTITIES

SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	9

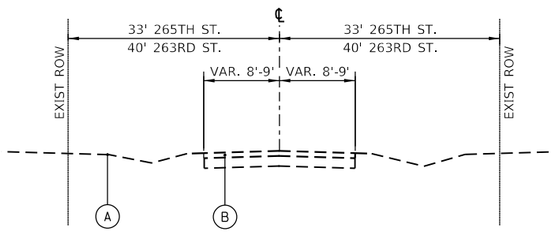
CONTRACT NO.61K44

ILLINOIS FED. AID PROJECT



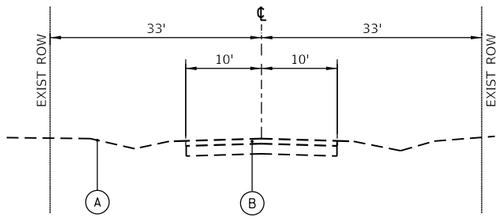
EXISTING TYPICAL SECTION

STATION 10+03.60 TO 10+58.70
STATION 72+00 TO 90+54.3



EXISTING TYPICAL SECTION
265th ST. AND 263rd ST.

STATION 10+58.70 TO 13+51.00
STATION 33+61.00 TO 36+44.90



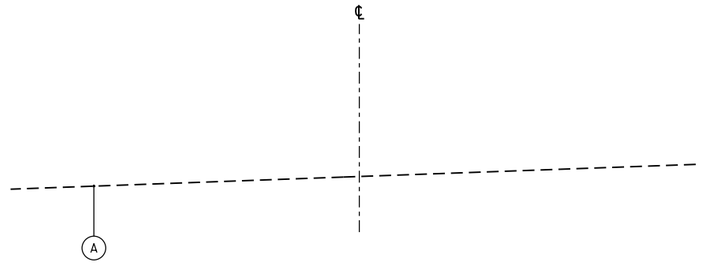
EXISTING TYPICAL SECTION
265TH ST. AND S. WOODLAND AVE

STATION 13+51.00 TO 33+61.00

LEGEND

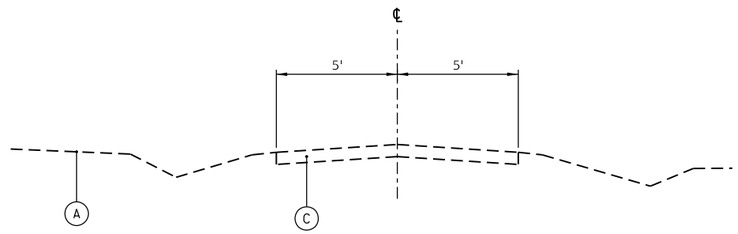
- (A) EXISTING GROUND
- (B) EXISTING ASPHALT PAVEMENT
- (C) EXISTING AGGREGATE PATH

- (1) GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (21001000)
- (2) TOPSOIL FURNISH AND PLACE, 6" (21101625)
- (3) TOPSOIL FURNISH AND PLACE, VARIABLE DEPTH (21101600)
- (4) SEEDING, CLASS 1B (25000115)
- (5) SEEDING, CLASS 4 (25000310)
- (6) HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "D", N50, 1.5" (40604060)
- (7) HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "D", N50, 2" (40604060)
- (8) HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2.5" (40602978)
- (10) AGGREGATE BASE COURSE, TYPE B 8" (35102000)
- (11) PROPOSED ON - STREET TRAIL SIGN
- (12) LIMESTONE SCREENING SURFACE, 2" (XX007606)



EXISTING TYPICAL SECTION

STATION 36+44.90 TO 72+00.00



EXISTING TYPICAL SECTION

STATION 90+54.30 TO 91+61.81

MODEL: $MODELNAME$
FILE NAME: $FILE$

TERRA ENGINEERING LTD.

USER NAME = $USER$	DESIGNED - MIA	REVISED -
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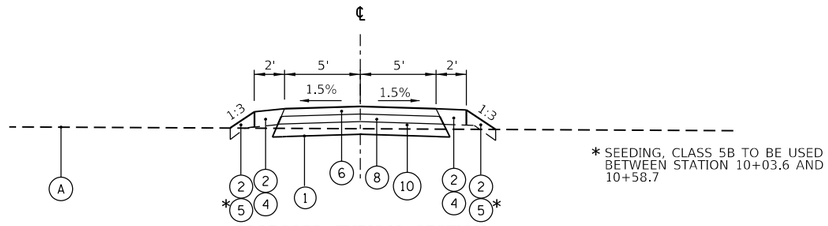
PLOT SCALE = $SCALE$	CHECKED - DDL	REVISED -
PLOT DATE = $DATE$	DATE - 4-26-24	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

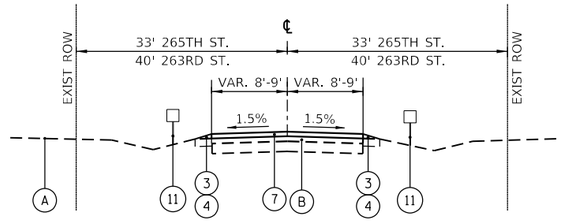
PLUM CREEK GREENWAY TRAIL SEGMENT 3
TYPICAL SECTIONS

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	10
		CONTRACT NO. 61K44		
	ILLINOIS	FED. AID PROJECT		

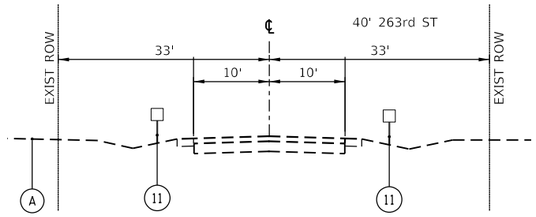


PROPOSED TYPICAL SECTION
STATION 10+03.60 TO 10+58.70



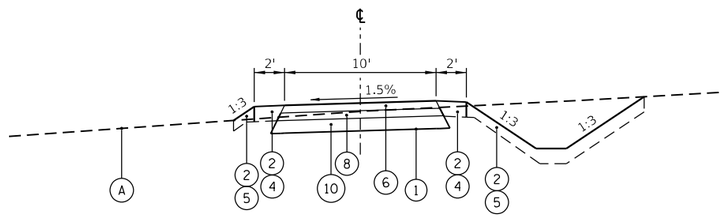
PROPOSED TYPICAL SECTION
265th ST, AND 263rd ST.

STATION 10+58.70 TO 13+51.00
STATION 33+61.00 TO 36+44.90



PROPOSED TYPICAL SECTION
265TH AND S. WOODLAND AVE

STATION 13+51.00 TO 33+61.00



PROPOSED TYPICAL SECTION
STATION 36+44.90 TO 64+90

LEGEND

- (A) EXISTING GROUND
- (B) EXISTING ASPHALT PAVEMENT
- (C) EXISTING AGGREGATE PATH

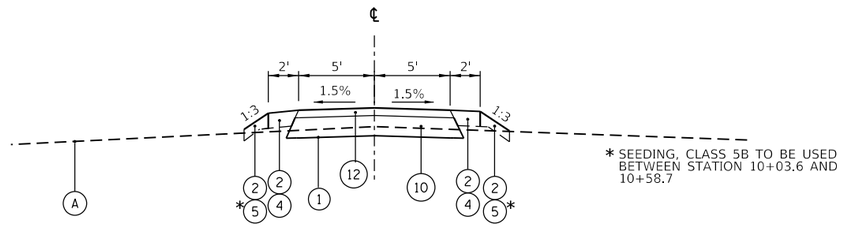
- (1) GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (21001000)
- (2) TOPSOIL FURNISH AND PLACE, 6" (21101625)
- (3) TOPSOIL FURNISH AND PLACE, VARIABLE DEPTH (21101600)
- (4) SEEDING, CLASS 1B (25000115)
- (5) SEEDING, CLASS 4 (25000310)
- (6) HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "D", N50, 1.5" (40604060)
- (7) HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "D", N50, 2" (40604060)
- (8) HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2.5" (40602978)
- (10) AGGREGATE BASE COURSE, TYPE B 8" (35102000)
- (11) PROPOSED ON - STREET TRAIL SIGN
- (12) LIMESTONE SCREENING SURFACE, 2" (XX007606)

HOT-MIX ASPHALT MIXTURE REQUIREMENTS TABLE

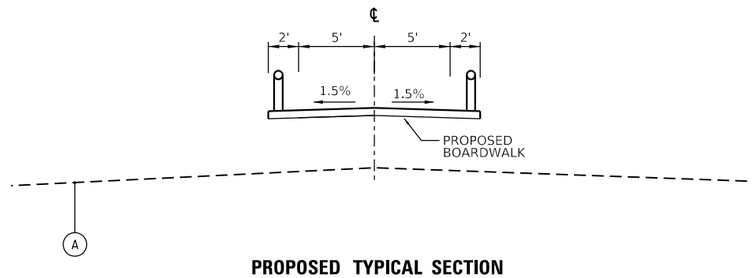
	MIXTURE	AIR VOIDS @ NDES	QMP
HMA PATH	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "D", N50, 1.5" HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2.5"	4% @ 50 GYR 4% @ 50 GYR	LR1030-2 LR1030-2
ROADWAY RESURFACING	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "D", N50, 2"	4% @ 50 GYR	LR1030-2
QMP DESIGNATION	QUALITY CONTROL / QUALITY ASSURANCE (QC/QA) PER LR 1030-2		

HMA NOTES:

1. THE UNIT WEIGHT USED TO CALCULATE ALL HMA MIXTURE QUANTITIES IS 112 LBS/SQYD/IN.
2. THE AC TYPE FOR POLYMERIZED HMA MIXES SHALL BE "SBS/SBR PG 76-22" AND FOR NON-POLYMERIZED HMA THE "AC TYPE" SHALL BE "PG 64-22" UNLESS MODIFIED BY RECLAIMED MATERIALS SPECIFICATION



PROPOSED TYPICAL SECTION
STATION 64+90 TO 76+70
STATION 78+70 TO 84+54.31
STATION 90+54.31 TO 91+61.81



PROPOSED TYPICAL SECTION
STATION 76+70 TO 78+70
STATION 84+54.31 TO 90+54.31

MODEL: $MODELNAME$
FILE NAME: $FILE$

TERRA ENGINEERING LTD.

USER NAME = $USER$	DESIGNED - MIA	REVISED -			
	DRAWN - JS	REVISED -			
PLOT SCALE = $SCALE$	CHECKED - DDL	REVISED -			
PLOT DATE = $DATE$	DATE - 4-26-24	REVISED -			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
TYPICAL SECTIONS

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	11
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			

TREE REMOVAL					
			20100110	20100210	
			TREE REMOVAL (6 TO 15 UNITS DIAMETER)	TREE REMOVAL (OVER 15 UNITS DIAMETER)	NOTE
STATION	OFFSET	RT/LT	UNIT	UNIT	
36+88.13	4.6'	LT	7		
36+89.31	9.2'	LT	8		
36+91.73	7.8	LT		18	
36+94.66	8.7	LT	6		
55+57.70	12.1	LT		22	
55+83.16	10.3'	LT		23	
56+74.28	5.2'	LT		18	
56+77.97	7.9'	LT		20	
57+39.21	8.7'	LT		18	
57+46.12	7.8'	LT		21	
58+29.08	2.5'	LT		28	
58+70.23	3.0'	LT		15	
59+67.67	4.5'	LT		24	
61+11.73	7.5'	LT	12		DEAD
61+39.78	12.9'	LT	6		DEAD
61+90.08	0.5'	LT	6		
62+23.85	5.3'	LT	7		
62+30.82	0.1'	LT	9		
62+44.70	7.9'	LT	6		DEAD
62+61.08	1.4'	LT	7		
62+70.91	9.1'	LT	6		
64+65.41	17.0'	LT		20	
64+75.60	22.5'	LT	13		
64+77.32	24.5'	LT	7		
64+93.17	8.9'	LT	9		
64+93.62	7.6'	LT	12		
65+06.56	1.8'	LT	6		DEAD
65+19.51	14.0'	LT	6		DEAD
65+37.05	5.9'	LT		16	
65+67.98	10.0'	LT	13		
65+88.52	0.0'	LT	15		DEAD
66+07.97	11.7'	LT	10		
66+11.29	0.2'	LT	6		
66+22.11	19.1'	LT	15		
66+31.37	5.6'	LT	15		
66+33.81	25.7'	LT	10		
66+43.99	3.2'	LT	12		DEAD
66+48.57	13.3'	LT	11		
66+51.87	10.6'	LT	11		
66+71.19	7.0'	LT	6		
66+87.07	7.3'	LT	6		
66+96.21	16.7'	LT	9		
67+06.47	22.2'	LT	7		
67+30.33	12.8'	LT	6		
67+59.13	9.1'	LT	7		
67+99.13	16.3'	LT	6		
68+00.05	15.1'	LT	8		
68+56.89	19.9'	LT	6		
68+57.87	11.8'	LT	6		
68+78.38	2.2'	LT	13		
68+78.54	16.8'	LT	9		
77+61.23	3.3'	LT	11		
36+78.11	2.8'	RT	10		
36+99.33	5.8'	RT	8		
55+61.95	6.2'	RT		18	
55+66.45	7.6'	RT		18	
55+80.00	7.8'	RT		18	
55+83.67	12.4'	RT	12		DEAD
56+61.46	8.6'	RT		28	
56+74.17	14.1'	RT		18	
56+78.32	16.5'	RT	14		DEAD
57+06.81	20.8'	RT	8		
57+15.82	0.2'	RT	6		
57+37.91	5.2'	RT		21	
57+44.80	12.0'	RT		18	
57+63.44	19.7'	RT	15		
57+70.20	7.3'	RT		23	
57+78.84	17.6'	RT	6		DEAD

TREE REMOVAL					
			20100110	20100210	
			TREE REMOVAL (6 TO 15 UNITS DIAMETER)	TREE REMOVAL (OVER 15 UNITS DIAMETER)	NOTE
STATION	OFFSET	RT/LT	UNIT	UNIT	
58+69.60	0.2'	RT	6		
58+94.69	8.4'	RT	7		
59+29.16	19.2'	RT	6		DEAD
59+28.90	16.3'	RT	7		DEAD
59+39.21	12.1'	RT	6		
59+93.05	22.0'	RT	6		DEAD
59+96.47	19.0'	RT	6		DEAD
60+25.33	3.0'	RT		24	
60+45.10	1.2'	RT		24	
60+50.06	10.4'	RT		24	
60+98.93	6.8'	RT	6		
61+29.23	12.8'	RT	6		
61+95.23	8.1'	RT	8		
62+56.04	2.3'	RT		20	
63+16.76	0.9'	RT		24	
63+27.94	29.4'	RT		21	
64+83.71	4.0'	RT	11		
64+93.40	4.0'	RT	7		DEAD
65+11.80	14.3'	RT	10		DEAD
65+35.23	11.0'	RT	15		
65+64.54	12.2'	RT	6		
65+89.13	21.7'	RT	13		
66+03.11	4.1'	RT	6		DEAD
66+11.10	35.4'	RT	13		
66+39.48	39.3'	RT	13		DEAD
66+41.67	38.9'	RT	6		DEAD
66+37.23	6.9'	RT	10		
66+51.60	4.1'	RT	10		
66+57.74	6.9'	RT	14		
66+71.40	23.4'	RT	6		DEAD
66+74.99	9.6'	RT	12		
66+79.95	40.9'	RT	7		
67+02.31	29.6'	RT	6		DEAD
67+05.43	25.1'	RT	6		
67+14.51	17.8'	RT	6		
67+17.18	18.8'	RT	9		
67+24.88	21.7'	RT	6		
67+30.68	17.9'	RT	6		
67+66.45	1.1'	RT	8		
68+59.01	8.7'	RT	8		
68+80.79	4.0'	RT	12		
68+81.68	12.6'	RT	12		
68+82.34	14.4'	RT	6		DEAD
77+86.68	1.9'	RT	8		
SUBTOTAL			746	542	

TEMPORARY FENCE AND PERIMETER EROSION BARRIER				
		20101000	28000400	X2011001
START STATION - END STATION	SIDE	TEMPORARY FENCE	PERIMETER EROSION BARRIER	HIGH VISIBILITY TEMPORARY FENCING
		FOOT	FOOT	FOOT
10+04 - 10+59	LT	15	75	40
10+04 - 10+59	RT	15	55	
36+45 - 53+50	LT	30	1702	50
36+45 - 53+50	RT	30		120
53+50 - PLUM CREEK	LT		1028	86
53+50 - PLUM CREEK	RT		291	64
PLUM CREEK - 72+00	LT		550	436
PLUM CREEK - 72+00	RT		723	354
72+00 - 87+00	LT		1496	
72+00 - 87+00	RT		1267	
87+00 - 104+00	LT		544	740
87+00 - 104+00	RT		157	405
104+00 - 120+00	LT			665
104+00 - 120+00	RT			80
120+00 - 134+00	LT			60
120+00 - 134+00	RT			105
134+00 - 141+23	LT	25		
134+00 - 141+23	RT	75		
TEMP ACCESS ROAD	LT & RT		1045	
	TOTAL	190	8933	3205

TEMPORARY DITCH CHECKS		
		28000305
STATION	SIDE	TEMPORARY DITCH CHECKS
		FOOT
39+00	RT	8
42+65	RT	8
42+95	RT	8
45+00	RT	8
47+00	RT	8
48+45	RT	8
49+05	RT	8
51+50	RT	8
53+10	RT	8
53+50	RT	8
55+30	RT	8
55+70	RT	8
59+00	RT	8
61+00	RT	8
66+00	LT	8
68+50	LT	8
87+00	RT	8
89+00	RT	8
89+40	RT	8
	TOTAL	152

STONE DUMPED RIP RAP, CLASS A3		
		28100705
STATION	SIDE	STONE DUMPED RIP RAP, CLASS A3
		SQ YD
10+39	LT	3
10+52	RT	3
41+80	LT	3
41+80	RT	3
48+83	LT	3
48+79	RT	3
53+30	RT	3
53+30	LT	3
55+50	LT	3
55+50	RT	3
69+00	LT	3
69+00	RT	3
70+50	LT	3
70+50	RT	3
79+20	LT	3
79+20	RT	3
89+20	LT	3
89+20	RT	3
	TOTAL	54

	EARTH EXCAVATION 20200100	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE (15%)	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-) FURNISHED EX 20400800	TOPSOIL EXCAVATION (TOPSOIL EXCAVATION AND PLACEMENT) 21101505	TOPSOIL MATERIAL ADJUSTED FOR SHRINKAGE (15%)	TOPSOIL PLACEMENT, 6"	TOPSOIL PLACEMENT, VARIABLE DEPTH	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-) (TOPSOIL)
STATION TO STATION	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
10+03.6 10+58.7	0	0	0	0	41	35	13	0	22
36+44.9 PLUM CREEK	370	315	2320	-2005	2810	2389	1144	0	1245
PLUM CREEK 90+54.3	630	536	1930	-1394	2370	2015	924	0	1091
90+54.3 141+22.4	10	9	0	9	0	0	0	98	-98
TEMPORARY ACCESS ROAD	0	0	0	0	4	3	0	3	0
265TH STREET	0	0	0	0	0	0	0	4	-4
263RD STREET	0	0	0	0	0	0	0	4	-4
	1,010	**860**	**4,250**	**-3,390**	**5,225**	**4,442**	**2,081**	**109**	**2,252**

QUANTITY OF TOPSOIL PLACEMENT PROVIDED FOR CONTRACTOR INFORMATION ONLY.

TOPSOIL THAT IS STRIPPED SHALL BE STOCKPILED, SORTED, AND REUSED FOR THE PROPOSED LANDSCAPING IMPROVEMENTS. THE ACTUAL REMOVAL DEPTH AND QUANTITY OF TOPSOIL REMOVAL SHALL BE VERIFIED IN THE FIELD. QUANTITY OF FURNISH AND PLACE TOPSOIL, 6" AND FURNISH AND PLACE TOPSOIL, VARIABLE DEPTH PROVIDED FOR BIDDING PURPOSES. QUANTITY TO BE USED, IF NEEDED, TO BE VERIFIED IN FIELD.

MODEL: $MODELNAME$
FILE NAME: $FILE$

TERRA ENGINEERING LTD.

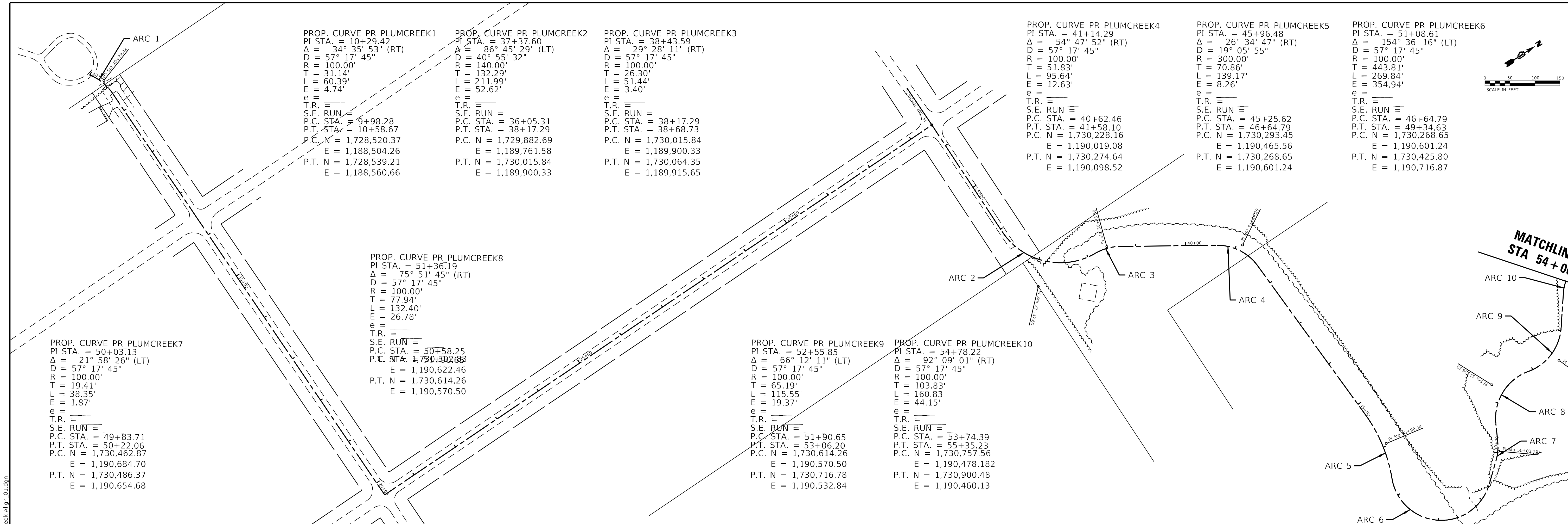
USER NAME = $USER$	DESIGNED - MIA	REVISED -
	DRAWN - JS	REVISED -
PLOT SCALE = $SCALE$	CHECKED - DDL	REVISED -
PLOT DATE = $DATE$	DATE - 4-26-24	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
SCHEDULE OF QUANTITIES

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	12
		CONTRACT NO. 61K44		
	ILLINOIS	FED. AID PROJECT		



PROP. CURVE PR_PLUMCREEK1
PI STA. = 10+29.42
Δ = 34° 35' 53" (RT)
D = 57° 17' 45"
R = 100.00'
T = 31.14'
L = 60.39'
E = 4.74'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 9+98.28
P.T. STA. = 10+58.67
P.C. N = 1,728,520.37
E = 1,188,504.26
P.T. N = 1,728,539.21
E = 1,188,560.66

PROP. CURVE PR_PLUMCREEK2
PI STA. = 37+37.60
Δ = 86° 45' 29" (LT)
D = 40° 55' 32"
R = 140.00'
T = 132.29'
L = 211.99'
E = 52.62'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 36+05.31
P.T. STA. = 38+17.29
P.C. N = 1,729,882.69
E = 1,189,761.58
P.T. N = 1,730,015.84
E = 1,189,900.33

PROP. CURVE PR_PLUMCREEK3
PI STA. = 38+43.59
Δ = 29° 28' 11" (RT)
D = 57° 17' 45"
R = 100.00'
T = 26.30'
L = 51.44'
E = 3.40'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 38+17.29
P.T. STA. = 38+68.73
P.C. N = 1,730,015.84
E = 1,189,900.33
P.T. N = 1,730,064.35
E = 1,189,915.65

PROP. CURVE PR_PLUMCREEK4
PI STA. = 41+14.29
Δ = 54° 47' 52" (RT)
D = 57° 17' 45"
R = 100.00'
T = 51.83'
L = 95.64'
E = 12.63'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 40+62.46
P.T. STA. = 41+58.10
P.C. N = 1,730,228.16
E = 1,190,019.08
P.T. N = 1,730,274.64
E = 1,190,098.52

PROP. CURVE PR_PLUMCREEK5
PI STA. = 45+96.48
Δ = 26° 34' 47" (RT)
D = 19° 05' 55"
R = 300.00'
T = 70.86'
L = 139.17'
E = 8.26'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 45+25.62
P.T. STA. = 46+64.79
P.C. N = 1,730,293.45
E = 1,190,465.56
P.T. N = 1,730,268.65
E = 1,190,601.24

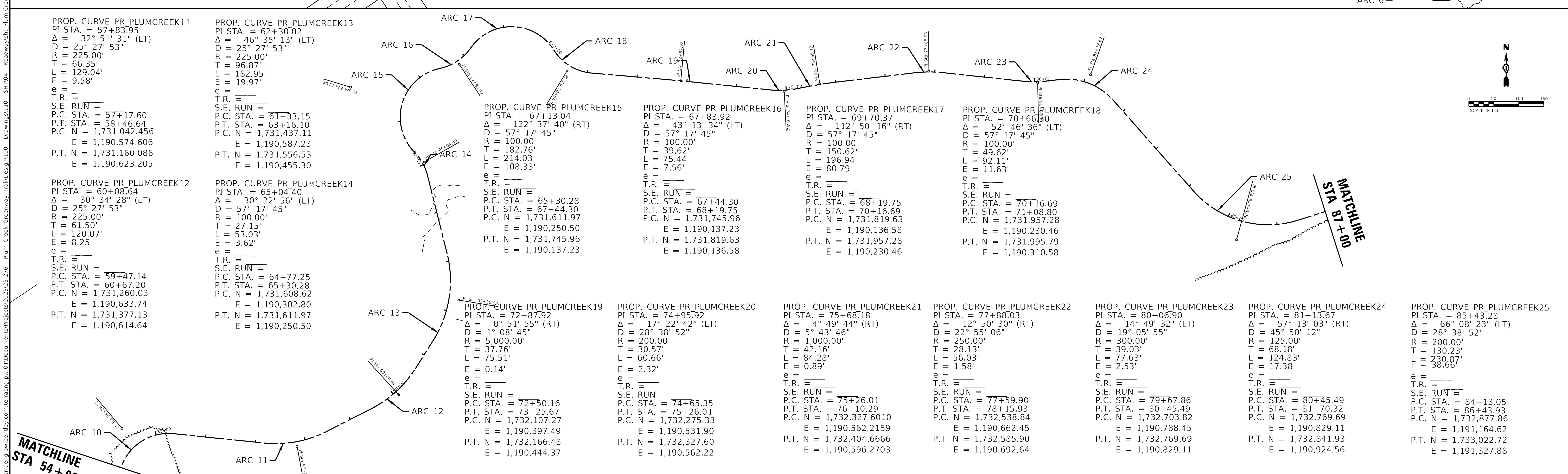
PROP. CURVE PR_PLUMCREEK6
PI STA. = 51+08.61
Δ = 154° 36' 16" (LT)
D = 57° 17' 45"
R = 100.00'
T = 443.81'
L = 269.84'
E = 354.94'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 46+64.79
P.T. STA. = 49+34.63
P.C. N = 1,730,268.65
E = 1,190,601.24
P.T. N = 1,730,425.80
E = 1,190,716.87

PROP. CURVE PR_PLUMCREEK7
PI STA. = 50+03.13
Δ = 21° 58' 26" (LT)
D = 57° 17' 45"
R = 100.00'
T = 19.41'
L = 38.35'
E = 1.87'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 49+83.71
P.T. STA. = 50+22.06
P.C. N = 1,730,462.87
E = 1,190,684.70
P.T. N = 1,730,486.37
E = 1,190,654.68

PROP. CURVE PR_PLUMCREEK8
PI STA. = 51+36.19
Δ = 75° 51' 45" (RT)
D = 57° 17' 45"
R = 100.00'
T = 77.94'
L = 132.40'
E = 26.78'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 50+58.25
P.T. STA. = 51+90.65
P.C. N = 1,730,592.63
E = 1,190,622.46
P.T. N = 1,730,614.26
E = 1,190,570.50

PROP. CURVE PR_PLUMCREEK9
PI STA. = 52+55.85
Δ = 66° 12' 11" (LT)
D = 57° 17' 45"
R = 100.00'
T = 65.19'
L = 115.55'
E = 19.37'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 51+90.65
P.T. STA. = 53+06.20
P.C. N = 1,730,614.26
E = 1,190,570.50
P.T. N = 1,730,716.78
E = 1,190,532.84

PROP. CURVE PR_PLUMCREEK10
PI STA. = 54+78.22
Δ = 92° 09' 01" (RT)
D = 57° 17' 45"
R = 100.00'
T = 103.83'
L = 160.83'
E = 44.15'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 53+74.39
P.T. STA. = 55+35.23
P.C. N = 1,730,757.56
E = 1,190,478.182
P.T. N = 1,730,900.48
E = 1,190,460.13



PROP. CURVE PR_PLUMCREEK11
PI STA. = 57+83.95
Δ = 32° 51' 31" (LT)
D = 25° 27' 53"
R = 225.00'
T = 66.35'
L = 129.04'
E = 9.58'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 57+17.60
P.T. STA. = 58+46.64
P.C. N = 1,731,042.456
E = 1,190,574.606
P.T. N = 1,731,160.086
E = 1,190,623.205

PROP. CURVE PR_PLUMCREEK12
PI STA. = 60+08.64
Δ = 30° 34' 28" (LT)
D = 25° 27' 53"
R = 225.00'
T = 61.50'
L = 120.07'
E = 8.25'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 59+47.14
P.T. STA. = 60+67.20
P.C. N = 1,731,260.03
E = 1,190,633.74
P.T. N = 1,731,377.13
E = 1,190,614.64

PROP. CURVE PR_PLUMCREEK13
PI STA. = 62+30.02
Δ = 46° 35' 13" (LT)
D = 25° 27' 53"
R = 225.00'
T = 96.87'
L = 182.95'
E = 19.97'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 61+33.15
P.T. STA. = 63+16.10
P.C. N = 1,731,437.11
E = 1,190,587.23
P.T. N = 1,731,556.53
E = 1,190,455.30

PROP. CURVE PR_PLUMCREEK14
PI STA. = 65+04.40
Δ = 30° 22' 56" (LT)
D = 57° 17' 45"
R = 100.00'
T = 27.15'
L = 53.03'
E = 3.62'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 64+77.25
P.T. STA. = 65+30.28
P.C. N = 1,731,608.62
E = 1,190,302.80
P.T. N = 1,731,611.97
E = 1,190,250.50

PROP. CURVE PR_PLUMCREEK15
PI STA. = 67+13.04
Δ = 122° 37' 40" (RT)
D = 57° 17' 45"
R = 100.00'
T = 182.76'
L = 214.03'
E = 108.33'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 65+30.28
P.T. STA. = 67+44.30
P.C. N = 1,731,611.97
E = 1,190,250.50
P.T. N = 1,731,745.96
E = 1,190,137.23

PROP. CURVE PR_PLUMCREEK16
PI STA. = 67+83.92
Δ = 43° 13' 34" (LT)
D = 57° 17' 45"
R = 100.00'
T = 39.62'
L = 75.44'
E = 7.56'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 67+44.30
P.T. STA. = 68+19.75
P.C. N = 1,731,745.96
E = 1,190,137.23
P.T. N = 1,731,819.63
E = 1,190,136.58

PROP. CURVE PR_PLUMCREEK17
PI STA. = 69+70.37
Δ = 112° 50' 16" (RT)
D = 57° 17' 45"
R = 100.00'
T = 150.62'
L = 196.94'
E = 80.79'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 68+19.75
P.T. STA. = 70+16.69
P.C. N = 1,731,819.63
E = 1,190,136.58
P.T. N = 1,731,957.28
E = 1,190,230.46

PROP. CURVE PR_PLUMCREEK18
PI STA. = 70+66.30
Δ = 52° 46' 36" (LT)
D = 57° 17' 45"
R = 100.00'
T = 49.62'
L = 92.11'
E = 11.63'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 70+16.69
P.T. STA. = 71+08.80
P.C. N = 1,731,957.28
E = 1,190,230.46
P.T. N = 1,731,995.79
E = 1,190,310.58

PROP. CURVE PR_PLUMCREEK19
PI STA. = 72+87.92
Δ = 0° 51' 55" (RT)
D = 1° 08' 45"
R = 5,000.00'
T = 37.76'
L = 75.51'
E = 0.14'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 72+50.16
P.T. STA. = 73+25.67
P.C. N = 1,732,107.27
E = 1,190,397.49
P.T. N = 1,732,166.48
E = 1,190,444.37

PROP. CURVE PR_PLUMCREEK20
PI STA. = 74+95.92
Δ = 17° 22' 42" (LT)
D = 28° 38' 52"
R = 200.00'
T = 30.57'
L = 60.66'
E = 2.32'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 74+65.35
P.T. STA. = 75+26.01
P.C. N = 1,732,275.33
E = 1,190,531.90
P.T. N = 1,732,327.60
E = 1,190,562.22

PROP. CURVE PR_PLUMCREEK21
PI STA. = 75+68.18
Δ = 4° 49' 44" (RT)
D = 5° 43' 46"
R = 1,000.00'
T = 42.16'
L = 84.28'
E = 0.89'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 75+26.01
P.T. STA. = 76+10.29
P.C. N = 1,732,327.6010
E = 1,190,562.2159
P.T. N = 1,732,404.6666
E = 1,190,596.2703

PROP. CURVE PR_PLUMCREEK22
PI STA. = 77+88.03
Δ = 12° 50' 30" (RT)
D = 22° 55' 06"
R = 250.00'
T = 28.13'
L = 56.03'
E = 1.58'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 77+59.90
P.T. STA. = 78+15.93
P.C. N = 1,732,538.84
E = 1,190,662.45
P.T. N = 1,732,585.90
E = 1,190,692.64

PROP. CURVE PR_PLUMCREEK23
PI STA. = 80+06.90
Δ = 14° 49' 32" (LT)
D = 19° 05' 55"
R = 300.00'
T = 39.03'
L = 77.63'
E = 2.53'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 79+67.86
P.T. STA. = 80+45.49
P.C. N = 1,732,703.82
E = 1,190,788.45
P.T. N = 1,732,769.69
E = 1,190,829.11

PROP. CURVE PR_PLUMCREEK24
PI STA. = 81+13.67
Δ = 57° 13' 03" (RT)
D = 45° 50' 12"
R = 125.00'
T = 68.18'
L = 124.83'
E = 17.38'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 80+45.49
P.T. STA. = 81+70.32
P.C. N = 1,732,769.69
E = 1,190,829.11
P.T. N = 1,732,841.93
E = 1,190,924.56

PROP. CURVE PR_PLUMCREEK25
PI STA. = 85+43.28
Δ = 66° 08' 23" (LT)
D = 28° 38' 52"
R = 200.00'
T = 130.23'
L = 230.87'
E = 38.66'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 84+13.05
P.T. STA. = 86+43.93
P.C. N = 1,732,877.86
E = 1,191,164.62
P.T. N = 1,733,022.72
E = 1,191,327.88

TERRA ENGINEERING LTD.	USER NAME = JuanS	DESIGNED - MIA	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN - JS	REVISED -	
	PLOT SCALE = 200.0000 ' / in.	CHECKED - DDL	REVISED -	
	PLOT DATE = 7/2/2024	DATE - 4-26-24	REVISED -	

PLUM CREEK GREENWAY TRAIL SEGMENT 3
ALIGNMENT AND TIES

SCALE: | SHEET | OF | SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	13
		CONTRACT NO. 61K44		
		ILLINOIS FED. AID PROJECT		

MODEL: Default
FILE NAME: pw:\\terraeng-pw.bentley.com:terraeng-pw-01\Documents\Projects\2023\23-276 - Plum Creek Greenway Trail\Design\100 - Drawings\110 - SHT\04 - Roadway\sht_Plum-Creek-Align_01.dgn

PROP. CURVE PR_PLUMCREEK26
PI STA. = 89+20.85
Δ = 23° 43' 26" (LT)
D = 38° 11' 50"
R = 150.00'
T = 31.51'
L = 62.11'
E = 3.27'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 88+89.34
P.T. STA. = 89+51.45
P.C. N = 1,733,259.38
E = 1,191,392.84
P.T. N = 1,733,320.93
E = 1,191,396.59

PROP. CURVE PR_PLUMCREEK27
PI STA. = 90+36.92
Δ = 20° 07' 56" (RT)
D = 57° 17' 45"
R = 100.00'
T = 17.75'
L = 35.14'
E = 1.56'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 90+19.17
P.T. STA. = 90+54.31
P.C. N = 1,733,387.93
E = 1,191,386.73
P.T. N = 1,733,422.87
E = 1,191,387.76

PROP. CURVE PR_PLUMCREEK28
PI STA. = 95+75.78
Δ = 78° 58' 17" (RT)
D = 63° 39' 43"
R = 90.00'
T = 74.15'
L = 124.05'
E = 26.61'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 95+01.63
P.T. STA. = 96+25.68
P.C. N = 1,733,860.81
E = 1,191,478.90
P.T. N = 1,733,932.47
E = 1,191,568.16

PROP. CURVE PR_PLUMCREEK29
PI STA. = 98+05.34
Δ = 11° 49' 40" (LT)
D = 14° 19' 26"
R = 400.00'
T = 41.43'
L = 82.57'
E = 2.14'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 97+63.91
P.T. STA. = 98+46.48
P.C. N = 1,733,930.71
E = 1,191,706.38
P.T. N = 1,733,938.16
E = 1,191,788.47

PROP. CURVE PR_PLUMCREEK30
PI STA. = 99+23.47
Δ = 81° 05' 06" (LT)
D = 63° 39' 43"
R = 90.00'
T = 76.98'
L = 127.37'
E = 28.43'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 98+46.48
P.T. STA. = 99+73.85
P.C. N = 1,733,938.16
E = 1,191,788.47
P.T. N = 1,734,029.91
E = 1,191,861.08

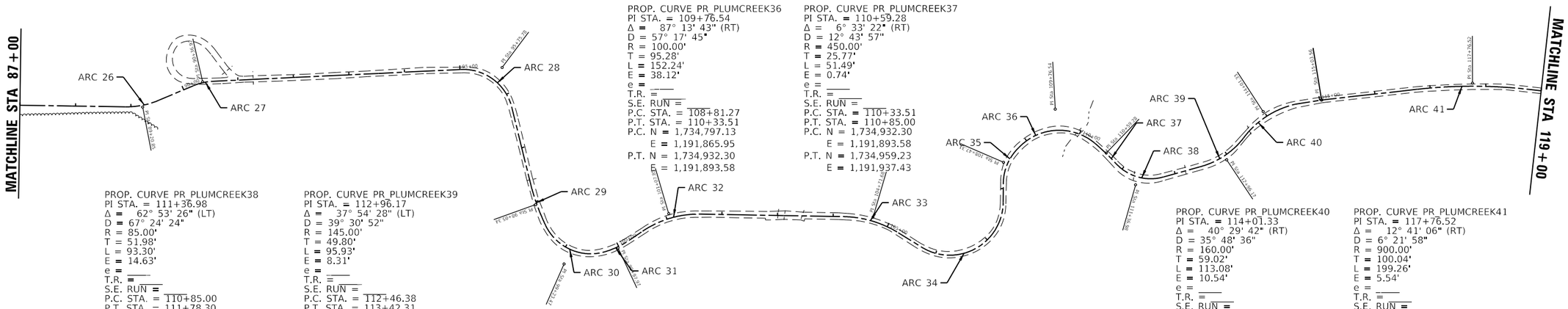
PROP. CURVE PR_PLUMCREEK31
PI STA. = 99+97.97
Δ = 17° 21' 17" (LT)
D = 36° 15' 47"
R = 158.00'
T = 24.11'
L = 47.86'
E = 1.83'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 99+73.85
P.T. STA. = 100+21.71
P.C. N = 1,734,029.91
E = 1,191,861.08
P.T. N = 1,734,076.73
E = 1,191,852.10

PROP. CURVE PR_PLUMCREEK32
PI STA. = 101+07.85
Δ = 35° 01' 07" (RT)
D = 31° 49' 52"
R = 180.00'
T = 56.79'
L = 110.01'
E = 8.74'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 100+51.06
P.T. STA. = 101+61.08
P.C. N = 1,734,104.39
E = 1,191,842.28
P.T. N = 1,734,212.63
E = 1,191,838.44

PROP. CURVE PR_PLUMCREEK33
PI STA. = 104+71.68
Δ = 30° 43' 03" (RT)
D = 29° 22' 57"
R = 195.00'
T = 53.56'
L = 104.54'
E = 7.22'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 104+18.12
P.T. STA. = 105+22.66
P.C. N = 1,734,460.35
E = 1,191,907.04
P.T. N = 1,734,549.04
E = 1,191,960.00

PROP. CURVE PR_PLUMCREEK34
PI STA. = 107+42.77
Δ = 121° 15' 33" (LT)
D = 59° 40' 59"
R = 96.00'
T = 170.58'
L = 203.17'
E = 99.74'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 105+72.19
P.T. STA. = 107+75.36
P.C. N = 1,734,583.32
E = 1,191,995.74
P.T. N = 1,734,745.36
E = 1,191,954.04

PROP. CURVE PR_PLUMCREEK35
PI STA. = 108+47.31
Δ = 45° 51' 05" (RT)
D = 63° 39' 43"
R = 90.00'
T = 38.06'
L = 72.02'
E = 7.72'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 108+09.24
P.T. STA. = 108+81.27
P.C. N = 1,734,754.10
E = 1,191,921.30
P.T. N = 1,734,797.13
E = 1,191,865.95



PROP. CURVE PR_PLUMCREEK36
PI STA. = 109+76.54
Δ = 87° 13' 43" (RT)
D = 57° 17' 45"
R = 100.00'
T = 95.28'
L = 152.24'
E = 38.12'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 108+81.27
P.T. STA. = 110+33.51
P.C. N = 1,734,797.13
E = 1,191,865.95
P.T. N = 1,734,932.30
E = 1,191,893.58

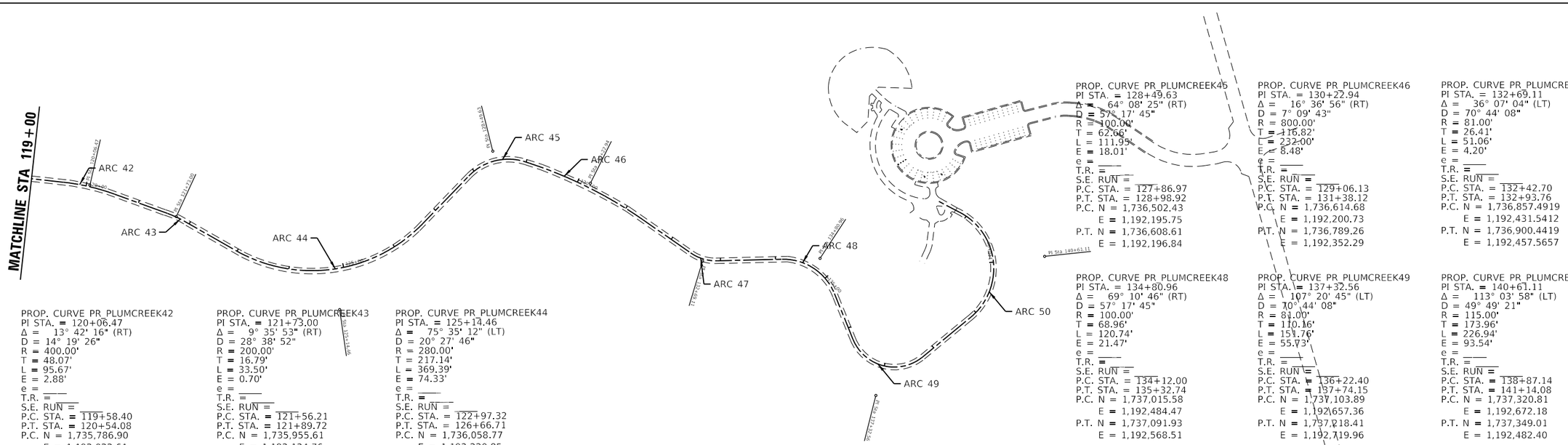
PROP. CURVE PR_PLUMCREEK37
PI STA. = 110+59.28
Δ = 6° 33' 22" (RT)
D = 12° 43' 57"
R = 450.00'
T = 25.77'
L = 51.49'
E = 0.74'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 110+33.51
P.T. STA. = 110+85.00
P.C. N = 1,734,932.30
E = 1,191,893.58
P.T. N = 1,734,959.23
E = 1,191,937.43

PROP. CURVE PR_PLUMCREEK38
PI STA. = 111+36.98
Δ = 62° 53' 26" (LT)
D = 67° 24' 24"
R = 85.00'
T = 51.98'
L = 93.30'
E = 14.63'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 110+85.00
P.T. STA. = 111+78.30
P.C. N = 1,734,959.23
E = 1,191,937.43
P.T. N = 1,735,035.81
E = 1,191,982.15

PROP. CURVE PR_PLUMCREEK39
PI STA. = 112+96.17
Δ = 37° 54' 28" (LT)
D = 39° 30' 52"
R = 145.00'
T = 49.80'
L = 95.93'
E = 8.31'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 112+46.38
P.T. STA. = 113+42.31
P.C. N = 1,735,103.88
E = 1,191,980.77
P.T. N = 1,735,192.95
E = 1,191,950.14

PROP. CURVE PR_PLUMCREEK40
PI STA. = 114+01.33
Δ = 40° 29' 42" (RT)
D = 35° 48' 36"
R = 160.00'
T = 59.02'
L = 113.08'
E = 10.54'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 113+42.31
P.T. STA. = 114+55.39
P.C. N = 1,735,192.95
E = 1,191,950.14
P.T. N = 1,735,297.91
E = 1,191,914.80

PROP. CURVE PR_PLUMCREEK41
PI STA. = 117+76.52
Δ = 12° 41' 06" (RT)
D = 6° 21' 58"
R = 900.00'
T = 100.04'
L = 199.26'
E = 5.54'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 116+76.48
P.T. STA. = 118+75.74
P.C. N = 1,735,517.06
E = 1,191,943.60
P.T. N = 1,735,709.62
E = 1,191,993.25



PROP. CURVE PR_PLUMCREEK42
PI STA. = 120+06.47
Δ = 13° 42' 16" (RT)
D = 14° 19' 26"
R = 400.00'
T = 48.07'
L = 95.67'
E = 2.88'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 119+58.40
P.T. STA. = 120+54.08
P.C. N = 1,735,786.90
E = 1,192,022.61
P.T. N = 1,735,871.44
E = 1,192,066.90

PROP. CURVE PR_PLUMCREEK43
PI STA. = 121+73.00
Δ = 9° 35' 52" (RT)
D = 28° 38' 52"
R = 200.00'
T = 16.79'
L = 33.50'
E = 0.70'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 121+56.21
P.T. STA. = 121+89.72
P.C. N = 1,735,955.61
E = 1,192,124.76
P.T. N = 1,735,981.50
E = 1,192,145.96

PROP. CURVE PR_PLUMCREEK44
PI STA. = 125+14.46
Δ = 75° 35' 12" (LT)
D = 20° 27' 46"
R = 280.00'
T = 217.14'
L = 369.39'
E = 74.33'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 122+97.32
P.T. STA. = 126+66.71
P.C. N = 1,736,058.77
E = 1,192,220.85
P.T. N = 1,736,399.87
E = 1,192,258.56

PROP. CURVE PR_PLUMCREEK45
PI STA. = 128+49.63
Δ = 64° 08' 25" (RT)
D = 57° 17' 45"
R = 100.00'
T = 62.66'
L = 111.95'
E = 18.01'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 127+86.97
P.T. STA. = 128+98.92
P.C. N = 1,736,502.43
E = 1,192,195.75
P.T. N = 1,736,608.61
E = 1,192,196.84

PROP. CURVE PR_PLUMCREEK46
PI STA. = 130+22.94
Δ = 16° 36' 56" (RT)
D = 7° 09' 43"
R = 800.00'
T = 116.82'
L = 232.00'
E = 8.48'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 129+06.13
P.T. STA. = 131+38.12
P.C. N = 1,736,614.68
E = 1,192,200.73
P.T. N = 1,736,789.26
E = 1,192,352.29

PROP. CURVE PR_PLUMCREEK47
PI STA. = 132+69.11
Δ = 36° 07' 04" (LT)
D = 70° 44' 08"
R = 81.00'
T = 26.41'
L = 51.06'
E = 4.20'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 132+42.70
P.T. STA. = 132+93.76
P.C. N = 1,736,857.4919
E = 1,192,431.5412
P.T. N = 1,736,900.4419
E = 1,192,457.5657

PROP. CURVE PR_PLUMCREEK48
PI STA. = 134+80.96
Δ = 69° 10' 46" (RT)
D = 57° 17' 45"
R = 100.00'
T = 68.96'
L = 120.74'
E = 21.47'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 134+12.00
P.T. STA. = 135+32.74
P.C. N = 1,737,015.58
E = 1,192,484.47
P.T. N = 1,737,091.93
E = 1,192,568.51

PROP. CURVE PR_PLUMCREEK49
PI STA. = 137+32.56
Δ = 107° 20' 45" (LT)
D = 70° 44' 08"
R = 81.00'
T = 110.16'
L = 151.76'
E = 55.73'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 136+22.40
P.T. STA. = 137+74.15
P.C. N = 1,737,103.89
E = 1,192,657.36
P.T. N = 1,737,218.41
E = 1,192,719.96

PROP. CURVE PR_PLUMCREEK50
PI STA. = 140+61.11
Δ = 113° 03' 58" (LT)
D = 49° 49' 21"
R = 115.00'
T = 173.96'
L = 226.94'
E = 93.54'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 138+87.14
P.T. STA. = 141+14.08
P.C. N = 1,737,320.81
E = 1,192,672.18
P.T. N = 1,737,349.01
E = 1,192,482.40

MODEL: Default
FILE NAME: pw:\terraeng-pw.bentley.com:terraeng-pw-01\Documents\Projects\2023\23-276 - Plum Creek Greenway Trail\Design\100 - Drawings\110 - SHT\04 - Roadway\SHT Plum-Creek-Alignment-02.dgn

TERRA ENGINEERING LTD.

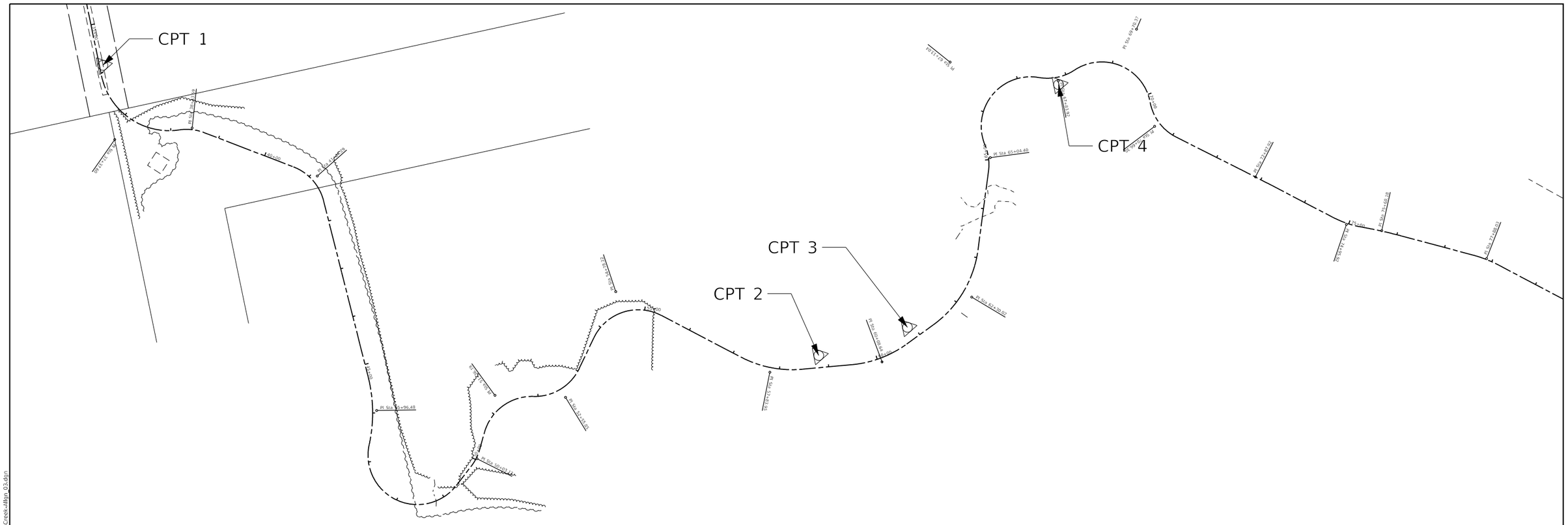
USER NAME = JuanS	DESIGNED - MIA	REVISED -
	DRAWN - JS	REVISED -
PLOT SCALE = 200.0000 ' / in.	CHECKED - DDL	REVISED -
PLOT DATE = 7/2/2024	DATE - 4-26-24	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
ALIGNMENT AND TIES

SCALE: | SHEET OF SHEETS | STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	14
		CONTRACT NO. 61K44		
	ILLINOIS	FED. AID PROJECT		



CONTROL POINT #1

SURVEY POINT

STA. 35+85.36, 6.96' LT
N 1,729,889.49
E 1,189,741.58
ELEV. 727.36

CONTROL POINT #2

SURVEY POINT

STA. 58+82.00, 15.14' RT
N 1,731,782.18
E 1,190,159.07
ELEV. 684.30

CONTROL POINT #3

SURVEY POINT

STA. 60+88.43, 26.50' LT
N 1,731,385.44
E 1,190,581.71
ELEV. 684.44

CONTROL POINT #4

SURVEY POINT

STA. 58+81.99, 24.66' LT
N 1,731,197.84
E 1,190,602.41
ELEV. 694.89

MODEL: Default
FILE NAME: pw:\\terraeng-pw.bentley.com:terraeng-pw-01\Documents\Projects\2023\23-276 - Plum Creek Greenway Trail\Design\100 - Drawings\110 - SHT\04 - Roadway\sht_Plum-Creek-Align_03.dgn

TERRA ENGINEERING LTD.

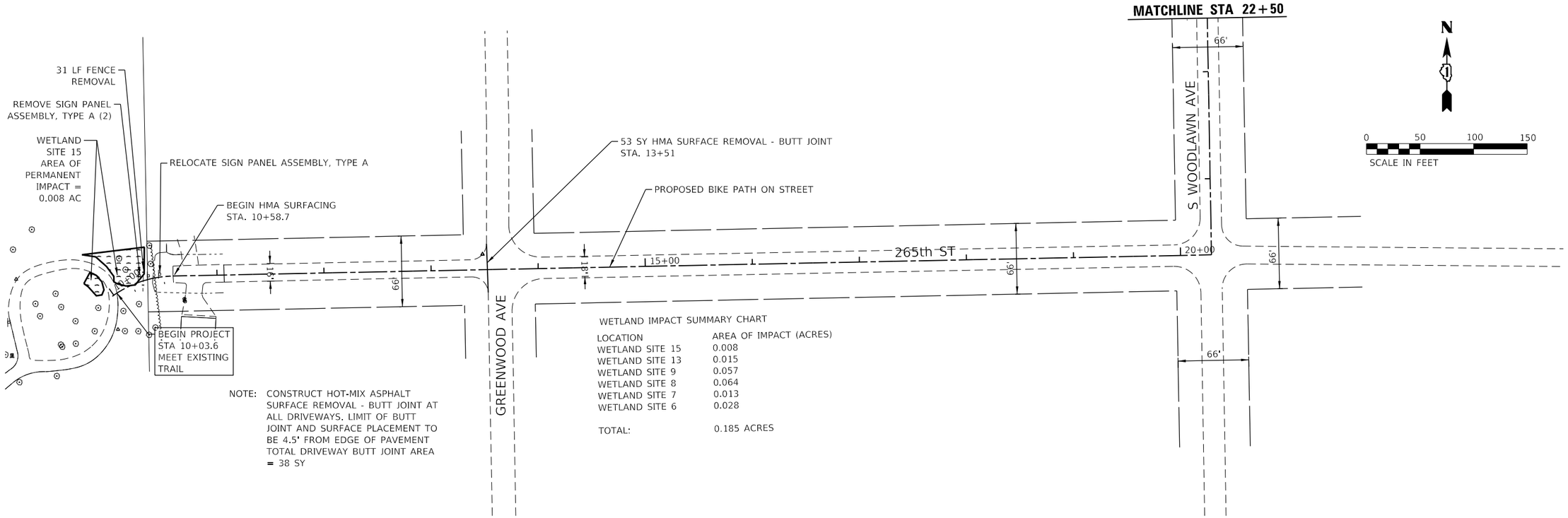
USER NAME = JuanS	DESIGNED - MIA	REVISED -	
	DRAWN - JS	REVISED -	
PLOT SCALE = 200.0000 ' / in.	CHECKED - DDL	REVISED -	
PLOT DATE = 7/2/2024	DATE - 4-26-24	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
ALIGNMENT AND TIES

SCALE: SHEET OF SHEETS STA. TO STA.

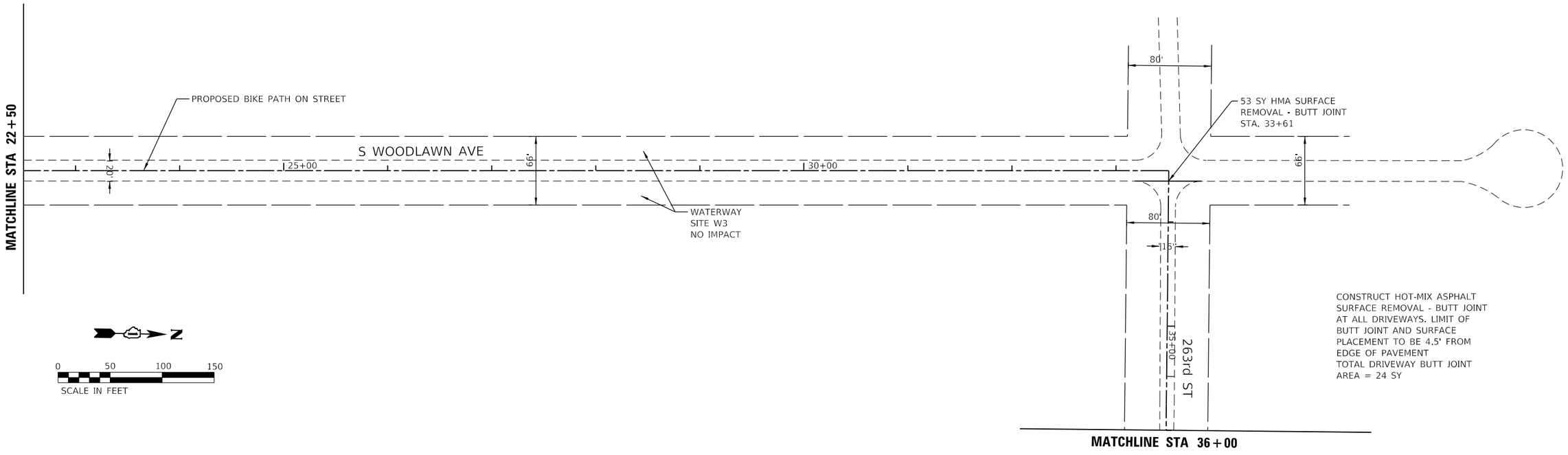
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	15
		CONTRACT NO. 61K44		
	ILLINOIS	FED. AID PROJECT		



NOTE: CONSTRUCT HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT AT ALL DRIVEWAYS. LIMIT OF BUTT JOINT AND SURFACE PLACEMENT TO BE 4.5' FROM EDGE OF PAVEMENT TOTAL DRIVEWAY BUTT JOINT AREA = 38 SY

WETLAND IMPACT SUMMARY CHART

LOCATION	AREA OF IMPACT (ACRES)
WETLAND SITE 15	0.008
WETLAND SITE 13	0.015
WETLAND SITE 9	0.057
WETLAND SITE 8	0.064
WETLAND SITE 7	0.013
WETLAND SITE 6	0.028
TOTAL:	0.185 ACRES



CONSTRUCT HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT AT ALL DRIVEWAYS. LIMIT OF BUTT JOINT AND SURFACE PLACEMENT TO BE 4.5' FROM EDGE OF PAVEMENT TOTAL DRIVEWAY BUTT JOINT AREA = 24 SY

MODEL: Default
FILE NAME: pw:\\terraeng-pw.bentley.com:terraeng-pw-01\Documents\Projects\2023\23-276 - Plum Creek Greenway Trail\Design\100 - Drawings\110 - SHT\04 - Roadway\ISM Plum-Creek-Rem 01.dgn

TERRA ENGINEERING LTD.

USER NAME = JuanS	DESIGNED - MIA	REVISED -	
	DRAWN - JS	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - DDL	REVISED -	
PLOT DATE = 7/2/2024	DATE - 4-26-24	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
REMOVAL PLAN

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	16
		CONTRACT NO. 61K44		
	ILLINOIS	FED. AID PROJECT		

MATCHLINE STA 36+00

MATCHLINE STA 53+50

40+00

45+00

50+00

PROP. ℄

COM ED

END ON-STREET ROUTE
BEGIN HMA PATH STA.
36+44.9

END HMA SURFACING
STA. 36+44.9

WETLAND
SITE 13
AREA OF PERMANENT IMPACT = 0.015 AC

N

0 50 100 150
SCALE IN FEET

MATCHLINE STA 53+50

55+00

60+00

PROP. ℄

WETLAND
SITE 9
AREA OF PERMANENT IMPACT =
0.057 AC

WETLAND
SITE 7
AREA OF PERMANENT
IMPACT = 0.013 AC

WETLAND
SITE 8
AREA OF PERMANENT
IMPACT =
0.064 AC

PLUM CREEK

WETLAND
SITE 10
NO IMPACT

WATERWAY
SITE W2 AREA OF
NO IMPACT

WETLAND
SITE 11
NO IMPACT

PLUM CREEK

170+00

MATCHLINE STA 72+00

N

0 50 100 150
SCALE IN FEET

MODEL: Default
FILE NAME: pw:\\terraeng-pw.bentley.com:terraeng-pw-01\Documents\Projects\2023\23-276 - Plum Creek Greenway Trail\Design\100 - Drawings\110 - SHT\04 - Roadway\sht Plum-Creek-Rem 02.dgn

TERRA ENGINEERING LTD.

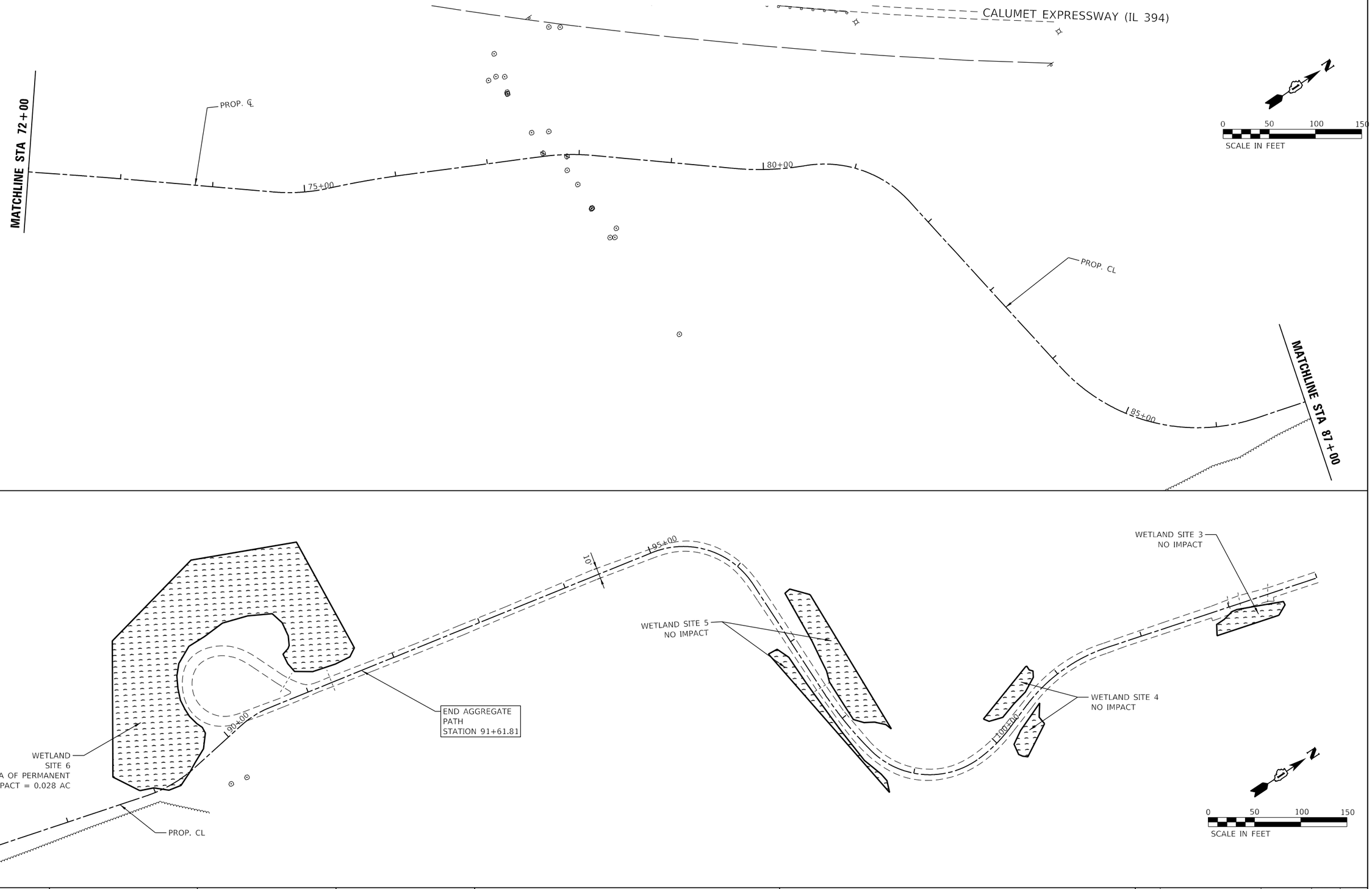
USER NAME = JuanS	DESIGNED - MIA	REVISED -
	DRAWN - JS	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED - DDL	REVISED -
PLOT DATE = 7/2/2024	DATE - 4-26-24	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
REMOVAL PLAN

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	17
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			



MODEL: $MODELNAME$
FILE NAME: $FILE$

TERRA ENGINEERING LTD.

USER NAME = $USER$	DESIGNED - MIA	REVISED -	
	DRAWN - JS	REVISED -	
PLOT SCALE = $SCALE$	CHECKED - DDL	REVISED -	
PLOT DATE = $DATE$	DATE - 4-26-24	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
REMOVAL PLAN

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	18
		CONTRACT NO. 61K44		
	ILLINOIS	FED. AID PROJECT		

MATCHLINE STA 22+50

HMA PATH:
HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "D", N50, 1.5"
HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2.5"
AGGREGATE BASE COURSE, TYPE B, 8"

265th STREET
HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "D", N50, 2"
CLASS D PATCH, 4" (AS DIRECTED BY THE ENGINEER)

WETLAND SITE 15 AREA OF PERMANENT IMPACT = 0.008 AC

END HMA PATH
BEGIN ON-STREET
ROUTE STA. 10+58.7

PROPOSED BIKE PATH ON STREET

Sta 10+58.67

Sta 9+98.28

EX. 36"

CURVE 1

BEGIN PROJECT
STA 10+03.60
MEET EXISTING
TRAIL

SEE SHEET 49
FOR DETAIL

10' RADIUS
(TYP.)

PROP. CURVE PR_PLUMCREEK1
PI STA. = 10+29.42
Δ = 34° 35' 53" (RT)
D = 57° 17' 45"
R = 100.00'
T = 31.14'
L = 60.39'
E = 4.74'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 9+98.28
P.T. STA. = 10+58.67

GREENWOOD AVE

265th ST

15+00

20+00

S WOODLAWN AVE
PI Sta 20+28.88

66'

16'

18'

(A) STA. 10+52.4, 16.8' LT 15" PRECAST FES INV. =737.00

(B) STA. 10+39.3, 8.8' RT 15" PRECAST FES INV. =737.10

(C) STA. 10+44.6, 29 LF CLASS A, TYPE 1, 15"

N

0 50 100 150
SCALE IN FEET

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
PROFILE CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

738.20
739.20
+1.81%
739.04

PROPOSED PROFILE

EXISTING PROFILE

745 740 735 730 725 720 715 710 705

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00

MODEL: Default
FILE NAME: pw:\\terraeng-pw.jbentley.com:terraeng-pw-01\Documents\Projects\2023\23-276 - Plum Creek Greenway Trail\Design\100 - Drawings\110 - SHT\04 - Roadway\sht_PlumCreek-PP01.dgn

TERRA ENGINEERING LTD.

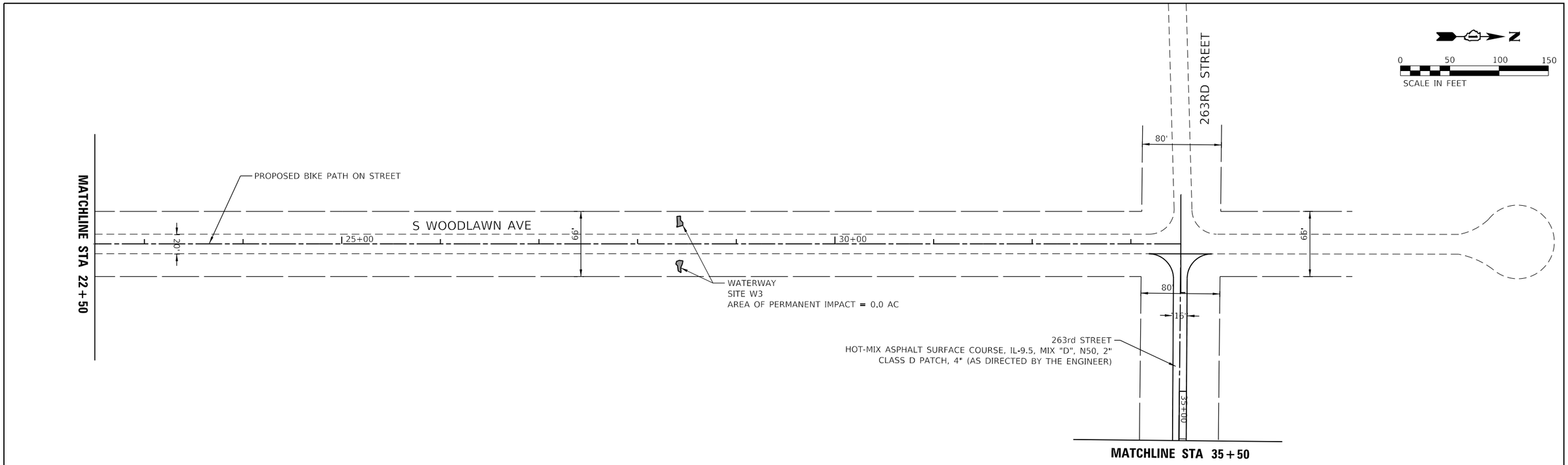
USER NAME = JuanS	DESIGNED - MIA	REVISED -
	DRAWN - JS	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED - DDL	REVISED -
PLOT DATE = 7/2/2024	DATE - 4/26/24	REVISED -

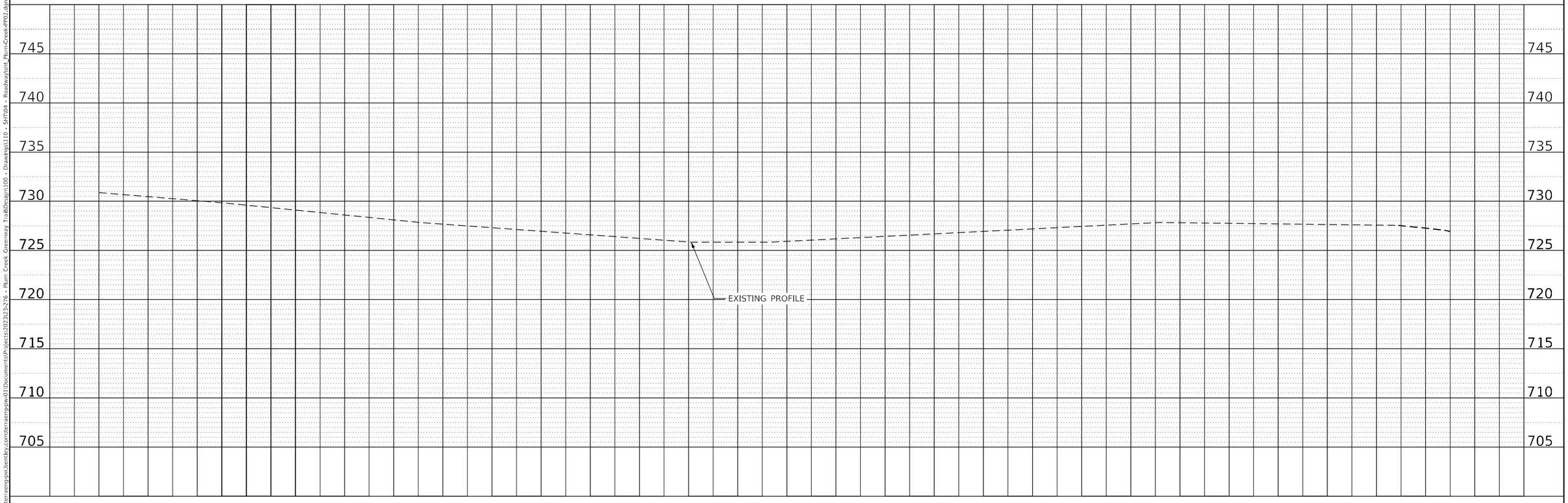
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
PLAN AND PROFILE

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	21
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			





PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
PROFILES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

MODEL: Default
FILE NAME: pw:\\terraeng-pw.jbentley.comsterraengpw-01\Documents\Projects\2023\23-276 - Plum Creek Greenway Trail\Design\100 - Drawings\110 - SHT\04 - Roadway\sht_PlumCreek-PP02.dgn

TERRA ENGINEERING LTD.	USER NAME = JuanS	DESIGNED - MIA	REVISED -	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**
		DRAWN - JS	REVISED -	
	PLOT SCALE = 100.0000 ' / in.	CHECKED - DDL	REVISED -	
	PLOT DATE = 7/2/2024	DATE - 4/26/24	REVISED -	

PLUM CREEK GREENWAY TRAIL SEGMENT 3
PLAN AND PROFILE

SCALE: | SHEET OF SHEETS | STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	22
		CONTRACT NO. 61K44		
	ILLINOIS	FED. AID PROJECT		

PROP. CURVE PR_PLUMCREEK4
PI STA. = 41+14.29
Δ = 54° 47' 52" (RT)
D = 57° 17' 45"
R = 100.00'
T = 51.83'
L = 95.64'
E = 12.63'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 40+62.46
P.T. STA. = 41+58.10

PROP. CURVE PR_PLUMCREEK2
PI STA. = 37+37.60
Δ = 86° 45' 29" (LT)
D = 40° 55' 32"
R = 140.00'
T = 132.29'
L = 211.99'
E = 52.62'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 36+05.31
P.T. STA. = 38+17.29

PROP. CURVE PR_PLUMCREEK3
PI STA. = 38+43.59
Δ = 29° 28' 11" (RT)
D = 57° 17' 45"
R = 100.00'
T = 26.30'
L = 51.43'
E = 3.40'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 38+17.29
P.T. STA. = 38+68.73

PROP. CURVE PR_PLUMCREEK5
PI STA. = 45+96.48
Δ = 26° 34' 47" (RT)
D = 19° 05' 55"
R = 300.00'
T = 70.86'
L = 139.17'
E = 8.26'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 45+25.62
P.T. STA. = 46+64.79

PROP. CURVE PR_PLUMCREEK6
PI STA. = 51+08.61
Δ = 154° 36' 16" (LT)
D = 57° 17' 45"
R = 100.00'
T = 443.81'
L = 269.84'
E = 354.94'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 46+64.79
P.T. STA. = 49+34.63

PROP. CURVE PR_PLUMCREEK7
PI STA. = 50+03.13
Δ = 21° 58' 26" (LT)
D = 57° 17' 45"
R = 100.00'
T = 19.41'
L = 38.35'
E = 1.87'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 49+83.71
P.T. STA. = 50+22.06

STA. 41+80, 8.0' LT
15" PRECAST FES
INV = 716.65

STA. 41+80
16 LF, CULVERT PIPE
CLASS A, TYPE 1, 15"

STA. 41+80, 8.0' RT
15" PRECAST FES
INV = 716.76

HMA PATH:
HOT-MIX ASPHALT SURFACE COURSE,
IL-9.5, MIX "D", N50, 1.5"
HOT-MIX ASPHALT BINDER COURSE,
IL-19.0, N50, 2.5"
AGGREGATE BASE COURSE, TYPE B, 8"

END ON-STREET
ROUTE BEGIN HMA
PATH STA. 36+44.9

263rd STREET
HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "D", N50, 2"
CLASS D PATCH, 4" (AS DIRECTED BY THE ENGINEER)

STA. 48+81
18 LF, CULVERT PIPE
CLASS A, TYPE 1, 24"

STA. 48+83, 9.0' LT
24" PRECAST FES
INV = 704.23

STA. 48+79, 9.0' RT
24" PRECAST FES
INV = 704.32

PLAN	SURVEYED	PLOTTED	ALIGNMENT CHECKED	R.O.W. CHECKED	CADD FILE NAME	NOTE BOOK	NO.

PROFILE	SURVEYED	PLOTTED	GRADES CHECKED	B.M. NOTED	STRUCTURE NOTATIONS CHKD	NOTE BOOK	NO.

MODEL: Default
FILE NAME: pw:\\terraeng-pw.bentley.com:terraeng-pw-01\Documents\Projects\2023\23-276 - Plum Creek Greenway Trail\Design\100 - Drawings\110 - SHT\104 - Roadway\sht_Plum-Creek-PP03.dgn

TERRA ENGINEERING LTD.

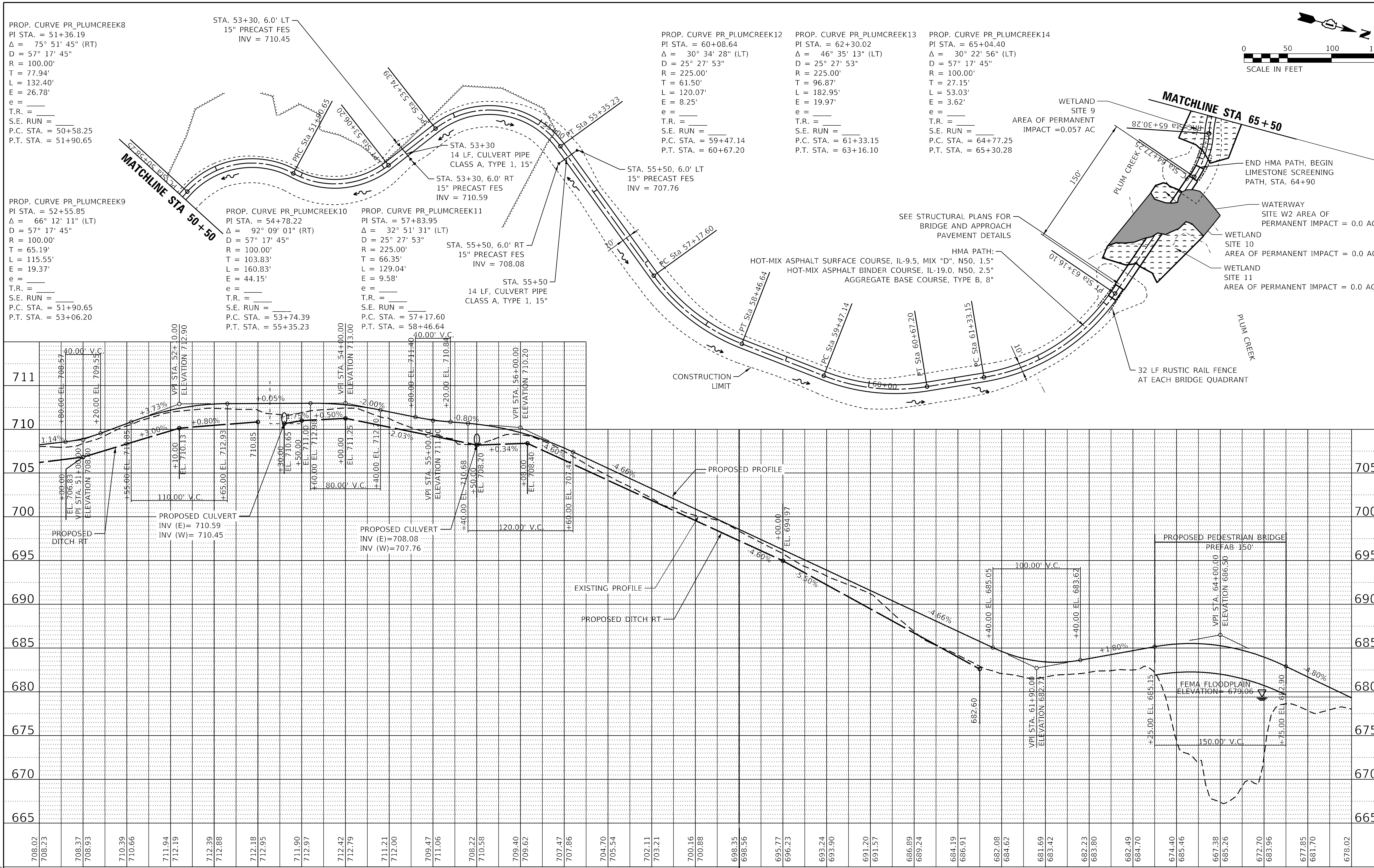
USER NAME = JuanS	DESIGNED - MIA	REVISED -	
	DRAWN - JS	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - DDL	REVISED -	
PLOT DATE = 7/2/2024	DATE - 4/26/24	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
PLAN AND PROFILE

SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	23
		CONTRACT NO. 61K44		
		ILLINOIS FED. AID PROJECT		



PROP. CURVE PR_PLUMCREEK8
PI STA. = 51+36.19
Δ = 75° 51' 45" (RT)
D = 57° 17' 45"
R = 100.00'
T = 77.94'
L = 132.40'
E = 26.78'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 50+58.25
P.T. STA. = 51+90.65
PROP. CURVE PR_PLUMCREEK9
PI STA. = 52+55.85
Δ = 66° 12' 11" (RT)
D = 57° 17' 45"
R = 100.00'
T = 65.19'
L = 115.55'
E = 19.37'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 51+90.65
P.T. STA. = 53+06.20
STA. 53+30, 6.0' LT
15" PRECAST FES
INV = 710.45
PROP. CURVE PR_PLUMCREEK10
PI STA. = 54+78.22
Δ = 92° 09' 01" (RT)
D = 57° 17' 45"
R = 100.00'
T = 103.83'
L = 160.83'
E = 44.15'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 53+74.39
P.T. STA. = 55+35.23
PROP. CURVE PR_PLUMCREEK11
PI STA. = 57+83.95
Δ = 32° 51' 31" (LT)
D = 25° 27' 53"
R = 225.00'
T = 66.35'
L = 129.04'
E = 9.58'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 57+17.60
P.T. STA. = 58+46.64
PROP. CURVE PR_PLUMCREEK12
PI STA. = 60+08.64
Δ = 30° 34' 28" (LT)
D = 25° 27' 53"
R = 225.00'
T = 61.50'
L = 120.07'
E = 8.25'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 59+47.14
P.T. STA. = 60+67.20
PROP. CURVE PR_PLUMCREEK13
PI STA. = 62+30.02
Δ = 46° 35' 13" (LT)
D = 25° 27' 53"
R = 225.00'
T = 96.87'
L = 182.95'
E = 19.97'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 61+33.15
P.T. STA. = 63+16.10
PROP. CURVE PR_PLUMCREEK14
PI STA. = 65+04.40
Δ = 30° 22' 56" (LT)
D = 57° 17' 45"
R = 100.00'
T = 27.15'
L = 53.03'
E = 3.62'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 64+77.25
P.T. STA. = 65+30.28
0 50 100 150
SCALE IN FEET
N
MATCHLINE STA 50+50
MATCHLINE STA 65+50
STA. 53+30
14 LF, CULVERT PIPE
CLASS A, TYPE 1, 15"
STA. 53+30, 6.0' RT
15" PRECAST FES
INV = 710.59
STA. 55+50, 6.0' LT
15" PRECAST FES
INV = 707.76
STA. 55+50, 6.0' RT
15" PRECAST FES
INV = 708.08
STA. 55+50
14 LF, CULVERT PIPE
CLASS A, TYPE 1, 15"
WETLAND
SITE 9
AREA OF PERMANENT
IMPACT =0.057 AC
END HMA PATH, BEGIN
LIMESTONE SCREENING
PATH, STA. 64+90
WATERWAY
SITE W2 AREA OF
PERMANENT IMPACT = 0.0 AC
WETLAND
SITE 10
AREA OF PERMANENT IMPACT = 0.0 AC
WETLAND
SITE 11
AREA OF PERMANENT IMPACT = 0.0 AC
SEE STRUCTURAL PLANS FOR
BRIDGE AND APPROACH
PAVEMENT DETAILS
HMA PATH:
HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "D", N50, 1.5"
HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2.5"
AGGREGATE BASE COURSE, TYPE B, 8"
PLUM CREEK
CONSTRUCTION
LIMIT
32 LF RUSTIC RAIL FENCE
AT EACH BRIDGE QUADRANT
PRC Sta 51+90.65
PC Sta 53+74.39
PT Sta 55+35.23
PC Sta 57+17.60
PT Sta 58+46.64
PC Sta 59+47.14
PT Sta 60+67.20
PC Sta 61+33.15
PT Sta 63+16.10
PC Sta 64+77.25
PT Sta 65+30.28
150'
10'
PROPOSED PROFILE
EXISTING PROFILE
PROPOSED DITCH RT
PROPOSED CULVERT
INV (E)= 710.59
INV (W)= 710.45
PROPOSED CULVERT
INV (E)=708.08
INV (W)=707.76
PROPOSED
DITCH RT
40.00' V.C.
110.00' V.C.
80.00' V.C.
40.00' V.C.
120.00' V.C.
100.00' V.C.
150.00' V.C.
VPI STA. 51+00.00
ELEVATION 708.00
VPI STA. 52+40.00
ELEVATION 712.90
VPI STA. 54+00.00
ELEVATION 713.00
VPI STA. 55+00.00
ELEVATION 711.00
VPI STA. 56+00.00
ELEVATION 710.20
VPI STA. 61+92.00
ELEVATION 682.71
VPI STA. 64+00.00
ELEVATION 686.50
PROPOSED PEDESTRIAN BRIDGE
PREFAB 150'
FEMA FLOODPLAIN
ELEVATION= 679.06
+1.14%
+3.73%
+3.00%
+0.80%
+0.05%
+0.50%
-2.00%
-2.03%
-0.80%
+0.34%
-4.60%
-4.66%
-5.50%
-4.66%
+1.80%
-4.80%
711
710
705
700
695
690
685
680
675
670
665
51+00
52+00
53+00
54+00
55+00
56+00
57+00
58+00
59+00
60+00
61+00
62+00
63+00
64+00
65+00

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION							
TERRA ENGINEERING LTD.	USER NAME = $USER$	DESIGNED - MIA	REVISED -	PLUM CREEK GREENWAY TRAIL SEGMENT 3	F.A. RTE.	SECTION	COUNTY
		DRAWN - JS	REVISED -	PLAN AND PROFILE		20-F3000-06-BT	WILL
	PLOT SCALE = $SCALE$	CHECKED - DDL	REVISED -			TOTAL SHEETS 80	SHEET NO. 24
	PLOT DATE = $DATE$	DATE - 4/26/24	REVISED -	SCALE: SHEET OF SHEETS STA. TO STA.		CONTRACT NO. 61K44	ILLINOIS FED. AID PROJECT

MODEL: $MODELNAME$
FILE NAME: $FILE$

PROP. CURVE PR_PLUMCREEK15
PI STA. = 67+13.04
Δ = 122° 37' 40" (RT)
D = 57° 17' 45"
R = 100.00'
T = 182.76'
L = 214.03'
E = 108.33'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 65+30.28
P.T. STA. = 67+44.30

PROP. CURVE PR_PLUMCREEK16
PI STA. = 67+83.92
Δ = 43° 13' 34" (LT)
D = 57° 17' 45"
R = 100.00'
T = 39.62'
L = 75.44'
E = 7.56'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 67+44.30
P.T. STA. = 68+19.75

PROP. CURVE PR_PLUMCREEK17
PI STA. = 69+70.37
Δ = 112° 50' 16" (RT)
D = 57° 17' 45"
R = 100.00'
T = 150.62'
L = 196.94'
E = 80.79'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 68+19.75
P.T. STA. = 70+16.69

PROP. CURVE PR_PLUMCREEK18
PI STA. = 70+66.30
Δ = 52° 46' 36" (LT)
D = 57° 17' 45"
R = 100.00'
T = 49.62'
L = 92.11'
E = 11.63'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 70+16.69
P.T. STA. = 71+08.80

PROP. CURVE PR_PLUMCREEKXX
PI STA. = 65+04.40
Δ = 30° 22' 56" (LT)
D = 57° 17' 45"
R = 100.00'
T = 27.15'
L = 53.03'
E = 3.62'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 64+77.25
P.T. STA. = 65+30.28

PROP. CURVE PR_PLUMCREEK19
PI STA. = 72+87.92
Δ = 0° 51' 55" (RT)
D = 1° 08' 45"
R = 5,000.00'
T = 37.76'
L = 75.51'
E = 0.14'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 72+50.16
P.T. STA. = 73+25.67

PROP. CURVE PR_PLUMCREEK20
PI STA. = 74+95.92
Δ = 17° 22' 42" (LT)
D = 28° 38' 52"
R = 200.00'
T = 30.57'
L = 60.66'
E = 2.32'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 74+65.35
P.T. STA. = 75+26.01

PROP. CURVE PR_PLUMCREEK21
PI STA. = 75+68.18
Δ = 4° 49' 44" (RT)
D = 5° 43' 46"
R = 1,000.00'
T = 42.16'
L = 84.28'
E = 0.89'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 75+26.01
P.T. STA. = 76+10.29

PROP. CURVE PR_PLUMCREEK22
PI STA. = 77+88.03
Δ = 12° 50' 30" (RT)
D = 22° 55' 06"
R = 250.00'
T = 28.13'
L = 56.03'
E = 1.58'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 77+59.90
P.T. STA. = 78+15.93

PROP. CURVE PR_PLUMCREEK23
PI STA. = 80+06.90
Δ = 14° 49' 32" (LT)
D = 19° 05' 55"
R = 300.00'
T = 39.03'
L = 77.63'
E = 2.53'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 79+67.86
P.T. STA. = 80+45.49

PROP. CURVE PR_PLUMCREEK24
PI STA. = 81+13.67
Δ = 57° 13' 03" (RT)
D = 45° 50' 12"
R = 125.00'
T = 68.18'
L = 124.83'
E = 17.38'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 80+45.49
P.T. STA. = 81+70.32

PLAN
NOTE BOOK
NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
R.T. OF WAY CHECKED
CADD FILE NAME
BY
DATE

PROFILE
NOTE BOOK
NO.
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATIONS CHECKED
BY
DATE

MODEL: $MODELNAME$
FILE NAME: $FILE$

TERRA ENGINEERING LTD.

USER NAME = $USERS	DESIGNED - MIA	REVISED -	
	DRAWN - JS	REVISED -	
PLOT SCALE = $SCALES	CHECKED - DDL	REVISED -	
PLOT DATE = $DATES	DATE - 4/26/24	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
PLAN AND PROFILE

SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	25

CONTRACT NO. 61K44
ILLINOIS FED. AID PROJECT

PROP. CURVE PR_PLUMCREEK24
PI STA. = 81+13.67
Δ = 57° 13' 03" (RT)
D = 45° 50' 12"
R = 125.00'
T = 68.18'
L = 124.83'
E = 17.38'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 80+45.49
P.T. STA. = 81+70.32

PROP. CURVE PR_PLUMCREEK25
PI STA. = 85+43.28
Δ = 66° 08' 23" (LT)
D = 28° 38' 52"
R = 200.00'
T = 130.23'
L = 230.87'
E = 38.66'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 84+13.05
P.T. STA. = 86+43.93

PROP. CURVE PR_PLUMCREEK26
PI STA. = 89+20.85
Δ = 23° 43' 26" (LT)
D = 38° 11' 50"
R = 150.00'
T = 31.51'
L = 62.11'
E = 3.27'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 88+89.34
P.T. STA. = 89+51.45

MATCHLINE STA 80+50

PT Sta 81+70.32

PROP. CL

10'

PC Sta 84+13.05

PT Sta 86+43.93

CONSTRUCTION LIMIT

HMA PATH:
HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "D", N50, 1.5"
HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2.5"
AGGREGATE BASE COURSE, TYPE B, 8"

85+00

PROPOSED
BOARDWALK
STA 84+54.31
TO 90+54.31

WETLAND
SITE 6
AREA OF PERMANENT IMPACT = 0.028 AC

PT Sta 90+54.31

PC Sta 90+19.19

PT Sta 89+59.45

PC Sta 88+89.34

STATION 91+61.81
END AGGREGATE
PATH

PROP. CURVE PR_PLUMCREEK27
PI STA. = 90+36.92
Δ = 20° 07' 56" (RT)
D = 57° 17' 45"
R = 100.00'
T = 17.75'
L = 35.14'
E = 1.56'
e = ____
T.R. = ____
S.E. RUN = ____
P.C. STA. = 90+19.17
P.T. STA. = 90+54.31

0 50 100 150
SCALE IN FEET

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
R.O. WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
CHANGES CHECKED
R.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

690
685
680
675
670
665
660
655
650

679.77 | 680.74 681.18 | 681.30 681.69 | 680.81 681.30 | 680.42 680.73 | 680.09 681.24 | 679.86 682.48 | 679.97 683.28 | 680.50 683.22 | 679.56 682.73 | 679.06 682.24 | 679.00 681.75 | 678.17 681.06 | 676.54 680.18 | 675.10 679.31 | 673.22 678.43 | 671.52 677.55 | 670.72 676.67 | 670.47 675.79 | 671.11 674.92 | 671.40 674.04 | 671.63 672.92 | 671.67 671.72 | 671.54 | 672.00 | 672.72 | 673.93 | 675.36 | 676.68

81+00 82+00 83+00 84+00 85+00 86+00 87+00 88+00 89+00 90+00 91+00 92+00 93+00 94+00

+70.00' EL. 680.40
110.00' V.C.
+80.00' EL. 681.52
VPI STA. 81+25.00
ELEVATION 682.15
-1.14%
+3.17%
+50.00' EL. 680.73
40.00' V.C.
+90.00 EL. 680.99
VPI STA. 82+70.00
ELEVATION 680.50
+2.47%
+50.00' EL. 682.48
VPI STA. 84+00.00
ELEVATION 683.71
+50.00' EL. 683.22
100.00' V.C.
-0.98%
VPI STA. 86+25.00
ELEVATION 681.50
PROPOSED PROFILE
PROPOSED
BOARDWALK
-1.75%
+54.31 EL. 673.96
50.00' V.C.
VPI STA. 90+79.31
ELEVATION 673.53
+04.31 EL. 672.79
+21.81 EL. 672.28
40.00' V.C.
VPI STA. 91+41.81
ELEVATION 671.65
+61.81 EL. 671.65
END AGGREGATE PATH
STA 91+61.81
1.4%
2.9%
EXISTING PROFILE

MODEL: $MODELNAME$
FILE NAME= $FILEIL$

TERRA ENGINEERING LTD.

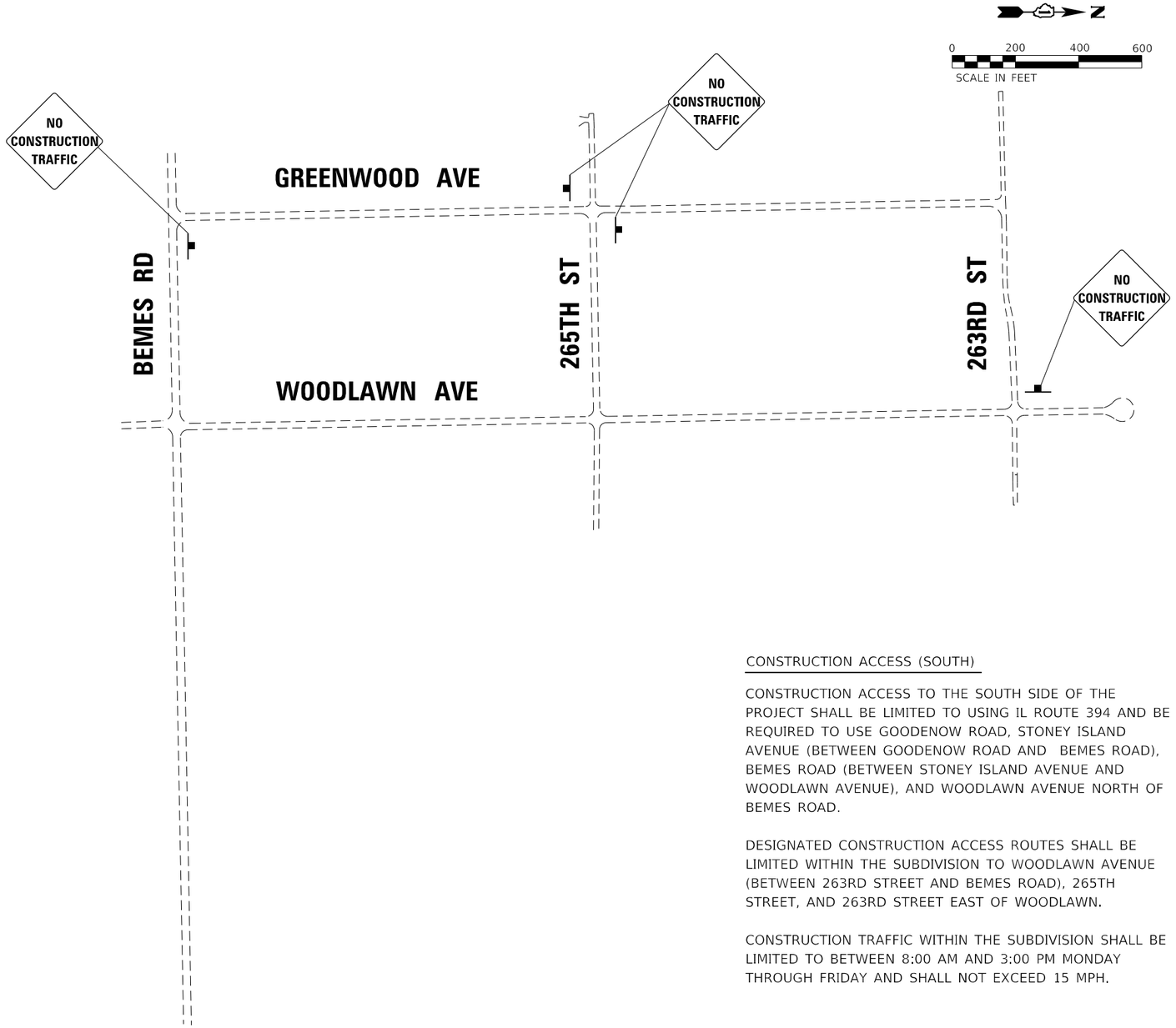
USER NAME = $USER$	DESIGNED - MIA	REVISED -
	DRAWN - JS	REVISED -
PLOT SCALE = $SCALE$	CHECKED - DDL	REVISED -
PLOT DATE = $DATE$	DATE - 4/26/24	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
PLAN AND PROFILE

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	26
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			

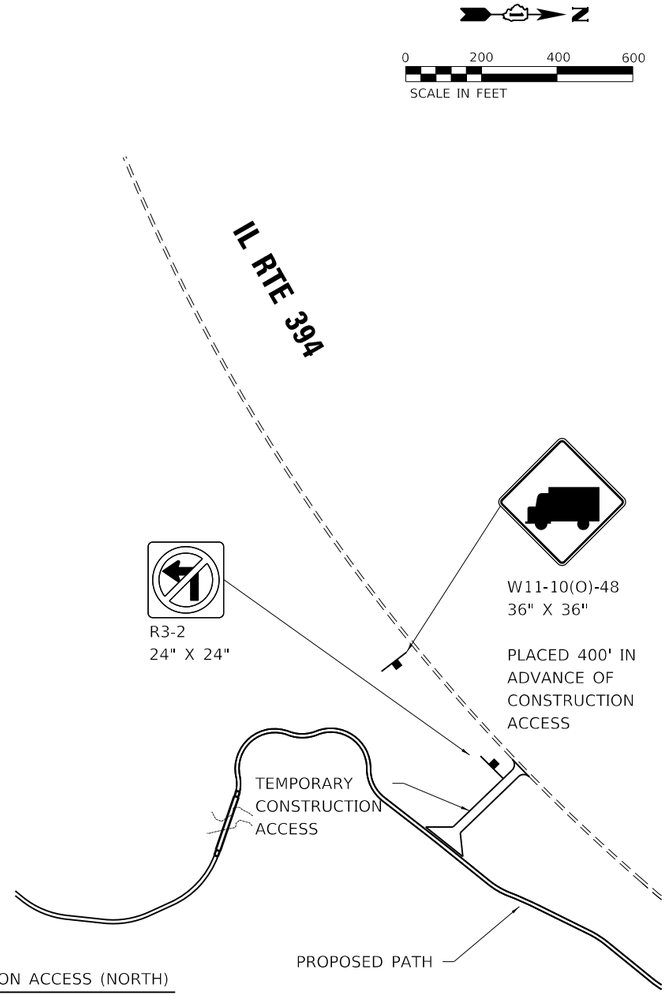


CONSTRUCTION ACCESS (SOUTH)

CONSTRUCTION ACCESS TO THE SOUTH SIDE OF THE PROJECT SHALL BE LIMITED TO USING IL ROUTE 394 AND BE REQUIRED TO USE GOODENOW ROAD, STONEY ISLAND AVENUE (BETWEEN GOODENOW ROAD AND BEMES ROAD), BEMES ROAD (BETWEEN STONEY ISLAND AVENUE AND WOODLAWN AVENUE), AND WOODLAWN AVENUE NORTH OF BEMES ROAD.

DESIGNATED CONSTRUCTION ACCESS ROUTES SHALL BE LIMITED WITHIN THE SUBDIVISION TO WOODLAWN AVENUE (BETWEEN 263RD STREET AND BEMES ROAD), 265TH STREET, AND 263RD STREET EAST OF WOODLAWN.

CONSTRUCTION TRAFFIC WITHIN THE SUBDIVISION SHALL BE LIMITED TO BETWEEN 8:00 AM AND 3:00 PM MONDAY THROUGH FRIDAY AND SHALL NOT EXCEED 15 MPH.



CONSTRUCTION ACCESS (NORTH)

CONSTRUCTION ACCESS TO THE NORTH SIDE OF THE PROJECT SHALL BE REQUIRED TO USE A TEMPORARY ACCESS ROAD FROM IL ROUTE 394. NO CONSTRUCTION TRAFFIC WILL BE ALLOWED FROM BURVILLE ROAD EXCEPT AS ALLOWED BY THE ENGINEER.

STANDARD 701101 SHALL BE USED WHEN THE TEMPORARY ACCESS ROAD IS CONSTRUCTED AND REMOVED.

MODEL: $MODEL$NAME$
FILE NAME: $FILE$

TERRA ENGINEERING LTD.

USER NAME = $USER$	DESIGNED - MIA	REVISED -
	DRAWN - JS	REVISED -
PLOT SCALE = $SCALE$	CHECKED - DDL	REVISED -
PLOT DATE = $DATE$	DATE - 4-26-24	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
TRAFFIC CONTROL /CONTRACTOR ACCESS

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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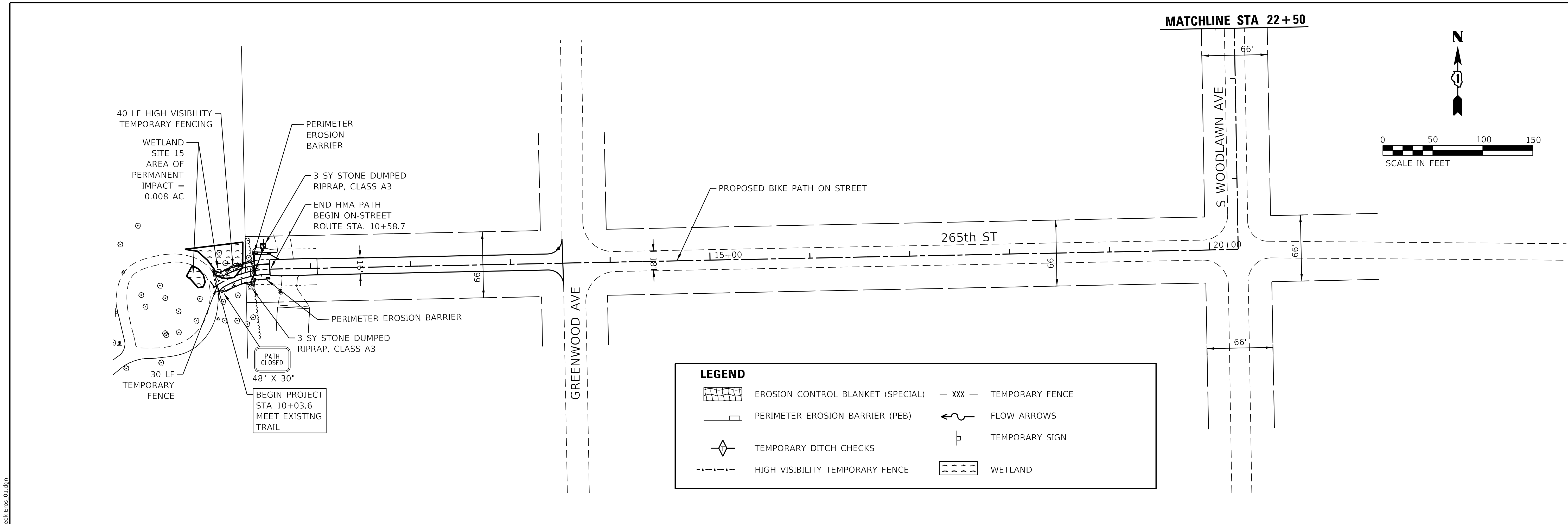
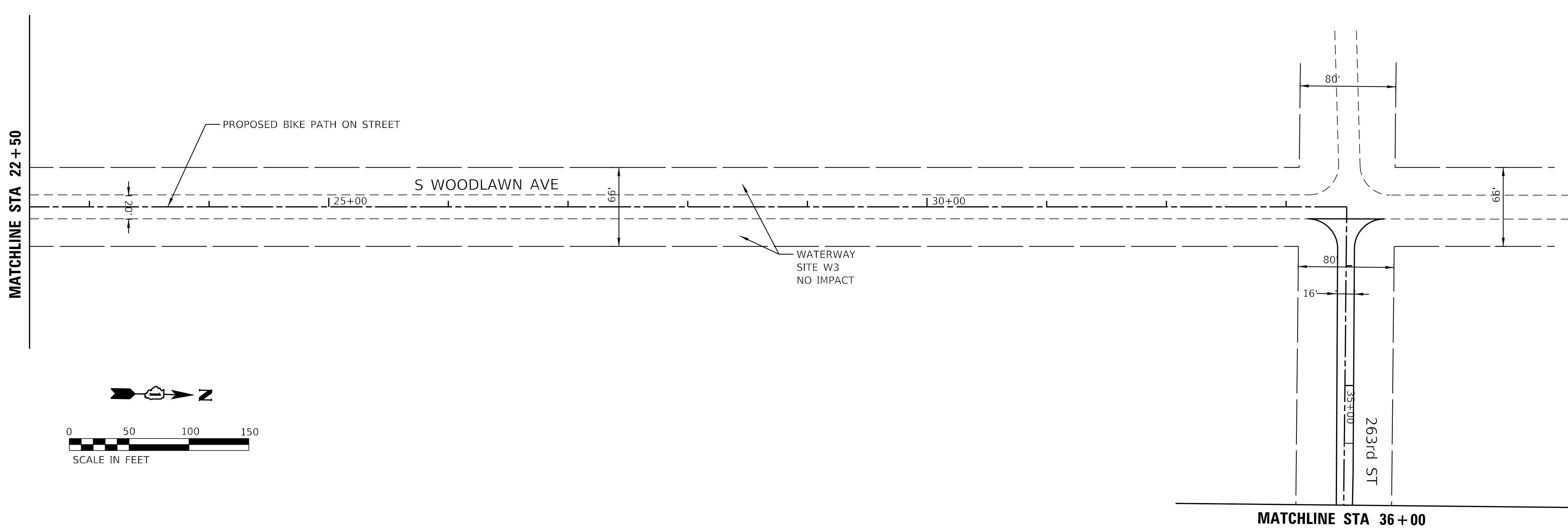
		CONTRACT NO. 61K44		
	ILLINOIS	FED. AID PROJECT		





NOTES:

1. NO STORAGE OF MATERIAL, EQUIPMENT OR STAGING SHALL BE ALLOWED ON ANY STREETS OR AT THE WORK AREA AT THE WEST END OF 265th STREET.
2. NO VEHICLES OF ANY KIND SHALL BE PARKED OR STOPPED ON ANY STREET EXCEPT WHEN WORK IS TO BE PERFORMED ON THE STREETS.
3. MATERIAL AND EQUIPMENT STORAGE SHALL ONLY OCCUR AT LOCATIONS DESIGNATED ON THE PLAN.
4. THE COST OF ALL TRAIL CLOSURE SIGNING SHALL BE INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION (SPECIAL). THE TRAIL CLOSURE SIGNING IS THE MINIMUM REQUIRED. THE CONTRACTOR SHALL PROVIDE ADDITIONAL TRAIL CLOSING MEASURES AS DIRECTED BY THE FOREST PRESERVE OR ENGIENER.
5. TEMPORARY FENCE SHALL BE PLACED ACROSS THE EXISTING TRAIL AND AT THE CONSTRUCTION ACCESS LOCATIONS. THE CONTRACTOR SHALL ENSURE THAT THE FENCE IS PLACED ACROSS THE CONSTRUCTION ACCESS LOCATIONS AT ALL TIMES WHEN THE CONTRACTOR IS NOT ON SITE.

MATCHLINE STA 36+00

PATH CLOSED
48" X 30"

50 SY STABILIZED CONSTRUCTION ENTRANCE

3 SY STONE DUMPED RIPRAP, CLASS A3

WASHOUT BASIN

END ON-STREET ROUTE
BEGIN HMA PATH
STA. 36+44.9

60 LF TEMPORARY FENCE

COM ED

3 SY STONE DUMPED RIPRAP, CLASS A3

PROP. ℄

CONTRACTOR STAGING AND MATERIAL STORAGE AREA

MATCHLINE STA 53+50

3 SY STONE DUMPED RIPRAP, CLASS A3

3 SY STONE DUMPED RIPRAP, CLASS A3

PROPOSED ASPHALT PATH HMA SURFACE COURSE, AGGREGATE BASE COURSE

PERIMETER EROSION BARRIER

50 LF HIGH VISIBILITY TEMPORARY FENCING

3 SY STONE DUMPED RIPRAP, CLASS A3

120 LF HIGH VISIBILITY TEMPORARY FENCING

3 SY STONE DUMPED RIPRAP, CLASS A3

WETLAND SITE 13
AREA OF PERMANENT IMPACT = 0.015 AC

N

0 50 100 150
SCALE IN FEET

LEGEND

- EROSION CONTROL BLANKET (SPECIAL)
- PERIMETER EROSION BARRIER (PEB)
- TEMPORARY DITCH CHECKS
- HIGH VISIBILITY TEMPORARY FENCE
- XXX — TEMPORARY FENCE
- FLOW ARROWS
- TEMPORARY SIGN
- WETLAND

MATCHLINE STA 53+50

3 SY STONE DUMPED RIPRAP, CLASS A3

3 SY STONE DUMPED RIPRAP, CLASS A3

PERIMETER EROSION BARRIER

150 LF HIGH VISIBILITY TEMPORARY FENCING

710 LF HIGH VISIBILITY TEMPORARY FENCING

WETLAND SITE 9
AREA OF PERMANENT IMPACT = 0.057 AC

PLUM CREEK

WETLAND SITE 9
AREA OF PERMANENT IMPACT = 0.057 AC

WATERWAY SITE W2 AREA OF NO IMPACT

WETLAND SITE 10
NO IMPACT

WETLAND SITE 11
NO IMPACT

PLUM CREEK

PERIMETER EROSION BARRIER

WETLAND SITE 8
AREA OF PERMANENT IMPACT = 0.064 AC

WETLAND SITE 7
AREA OF PERMANENT IMPACT = 0.013 AC

40 LF HIGH VISIBILITY TEMPORARY FENCING

3 SY STONE DUMPED RIPRAP, CLASS A3

40 LF HIGH VISIBILITY TEMPORARY FENCING

3 SY STONE DUMPED RIPRAP, CLASS A3

3 SY STONE DUMPED RIPRAP, CLASS A3

3 SY STONE DUMPED RIPRAP, CLASS A3

PERIMETER EROSION BARRIER

PERIMETER EROSION BARRIER

MATCHLINE STA 72+00

N

0 50 100 150
SCALE IN FEET

MODEL: Default
FILE NAME: pw:\\terraeng-pw.bentley.com:terraeng-pw-01\Documents\Projects\2023\23-276 - Plum Creek Greenway Trail\Docs\in\100 - Drawings\110 - SHT\04 - Roadway\sht Plum-Creek-Eros_02.dgn

TERRA ENGINEERING LTD.	USER NAME = JuanS	DESIGNED - MIA	REVISED -	
		DRAWN - JS	REVISED -	
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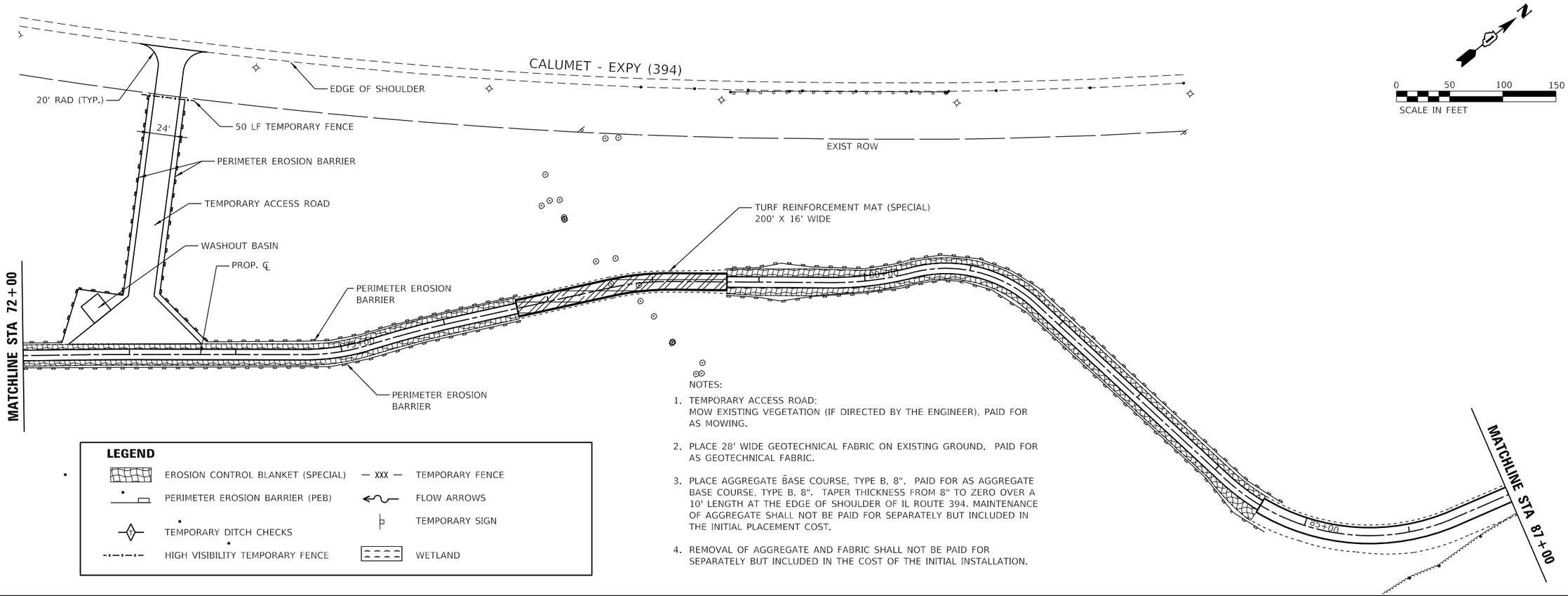
	PLOT DATE = 7/2/2024	DATE - 4-26-24	REVISED -	

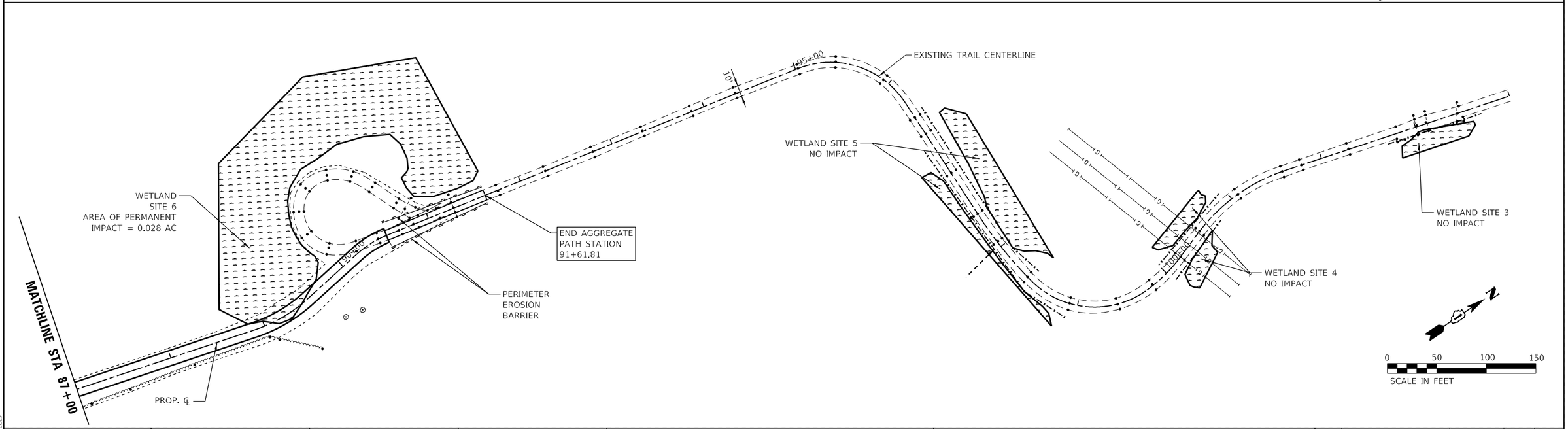
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
EROSION, SEDIMENT CONTROL, AND STAGING DETAILS

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	33
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			





MODEL: $MODELNAME$
FILE NAME: $FILE$

TERRA ENGINEERING LTD.

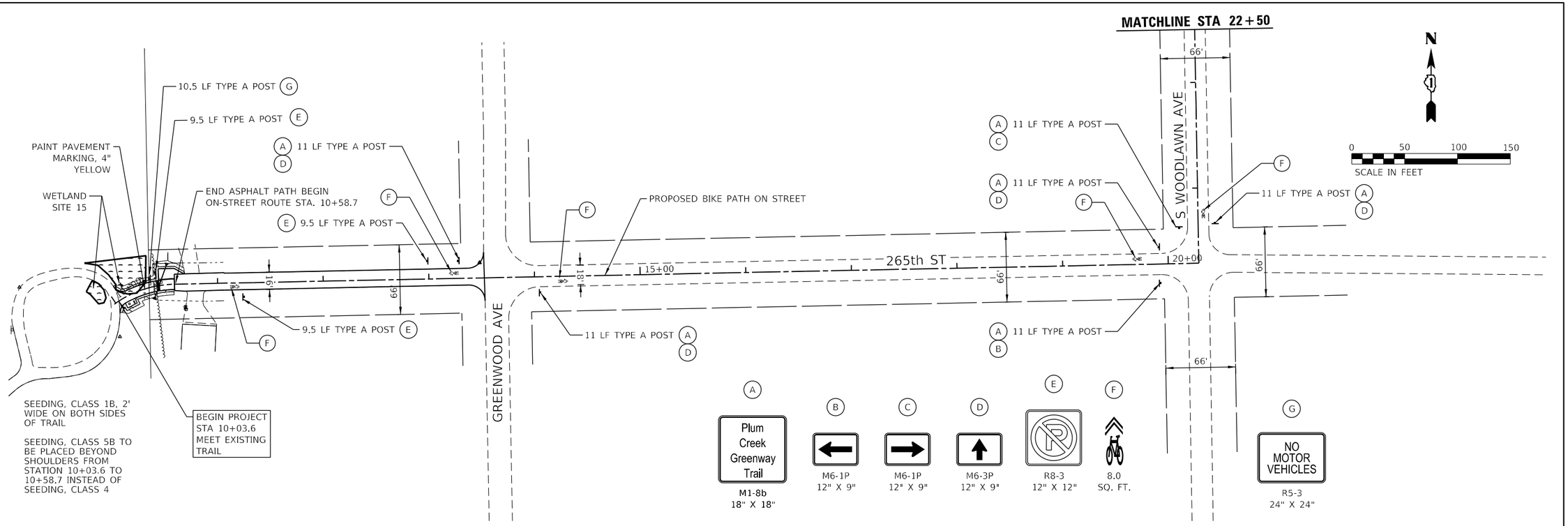
USER NAME = $USER$	DESIGNED - MIA	REVISED -	
	DRAWN - JS	REVISED -	
PLOT SCALE = $SCALE$	CHECKED - DDL	REVISED -	
PLOT DATE = $DATE$	DATE - 4-26-24	REVISED -	

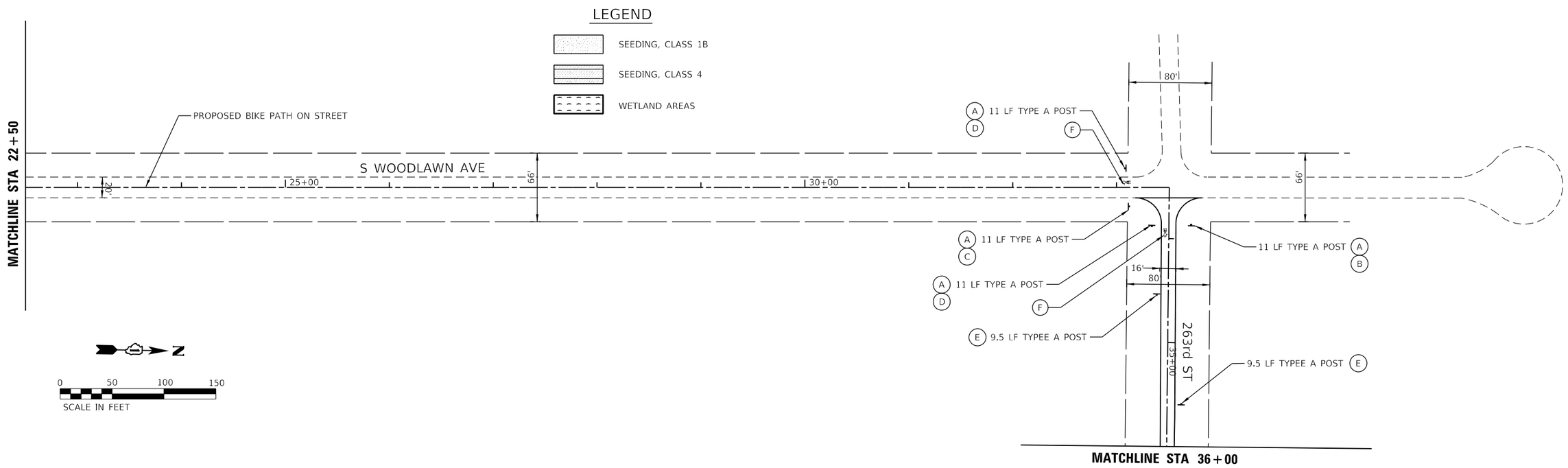
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
EROSION, SEDIMENT CONTROL, AND STAGING DETAILS

SCALE: | SHEET OF SHEETS | STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	34
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			





MODEL: $MODELNAME$
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		DRAWN - JS	REVISED -
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	PLOT DATE = $DATE$	DATE - 4-26-24	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
LANDSCAPING /SIGNING PLAN

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	37
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			

MATCHLINE STA 36+00

10.5 LF TYPE A POST (G)

9.5 LF TYPE A POST (E)

END ON-STREET ROUTE
BEGIN ASPHALT PATH
STA. 36+44.9

PAINT PAVEMENT MARKING, 4" YELLOW

PROP. ℄

SEEDING, CLASS 1B,
2' WIDE ON BOTH
SIDES OF TRAIL

MATCHLINE STA 53+50

WETLAND SITE 13

N

0 50 100 150
SCALE IN FEET

(E) R8-3 12" X 12"

(F) 8.0 SQ. FT.

(G) NO MOTOR VEHICLES R5-3 24" X 24"

LEGEND

- SEEDING, CLASS 1B
- SEEDING, CLASS 4
- WETLAND AREAS

MATCHLINE STA 53+50

PAINT PAVEMENT MARKING, 4" YELLOW

PROP. ℄

SEEDING, CLASS 1B, 2'
WIDE ON BOTH SIDES
OF TRAIL

PLUM CREEK

WETLAND SITE 8

WETLAND SITE 7

WETLAND SITE 9

WATERWAY SITE W2

WETLAND SITE 10

WETLAND SITE 11

PLUM CREEK

MATCHLINE STA 72+00

N

0 50 100 150
SCALE IN FEET

MODEL: Default
FILE NAME: pw:\terraeng-pw.bentley.com:terraeng-pw-01\Documents\Projects\2023\23-276 - Plum Creek Greenway Trail\Docs\lgn\100 - Drawings\110 - SHT\04 - Roadwaysht Plum-Creek-Landscape_Signing_02.dgn

TERRA ENGINEERING LTD.

USER NAME = JuanS	DESIGNED - MIA	REVISED -	
	DRAWN - JS	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - DDL	REVISED -	
PLOT DATE = 7/2/2024	DATE - 4-26-24	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
LANDSCAPING /SIGNING PLAN

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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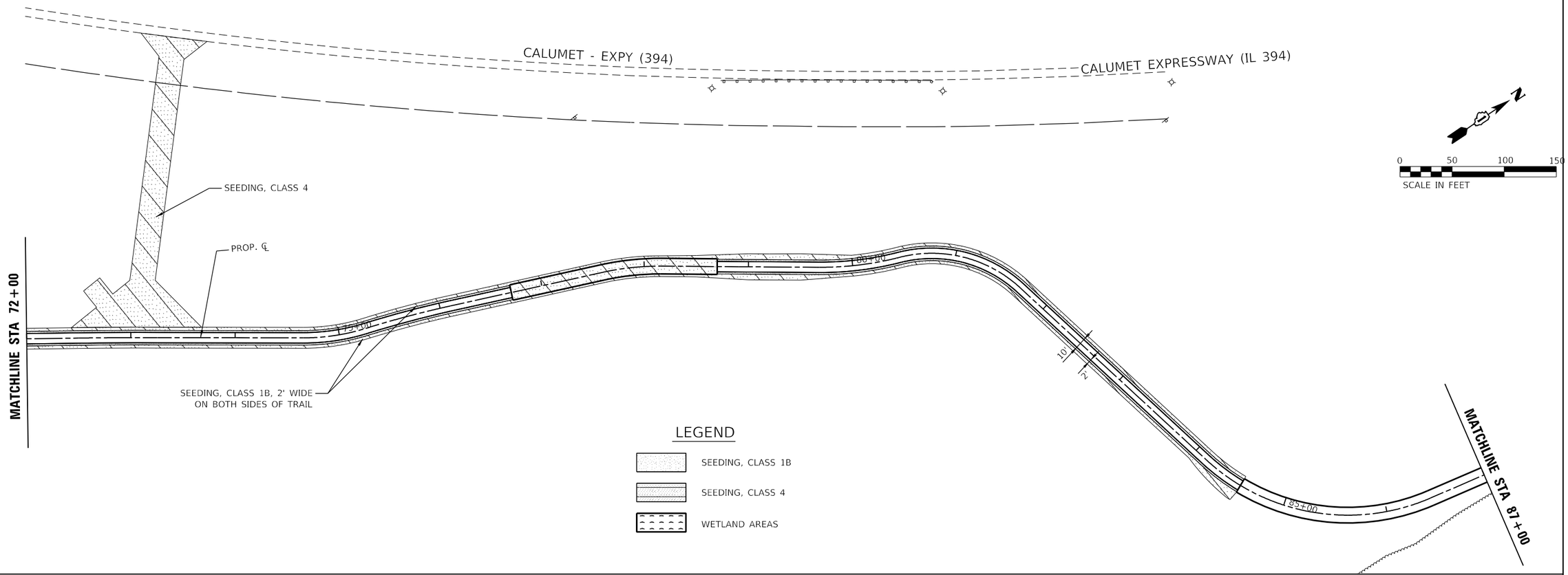
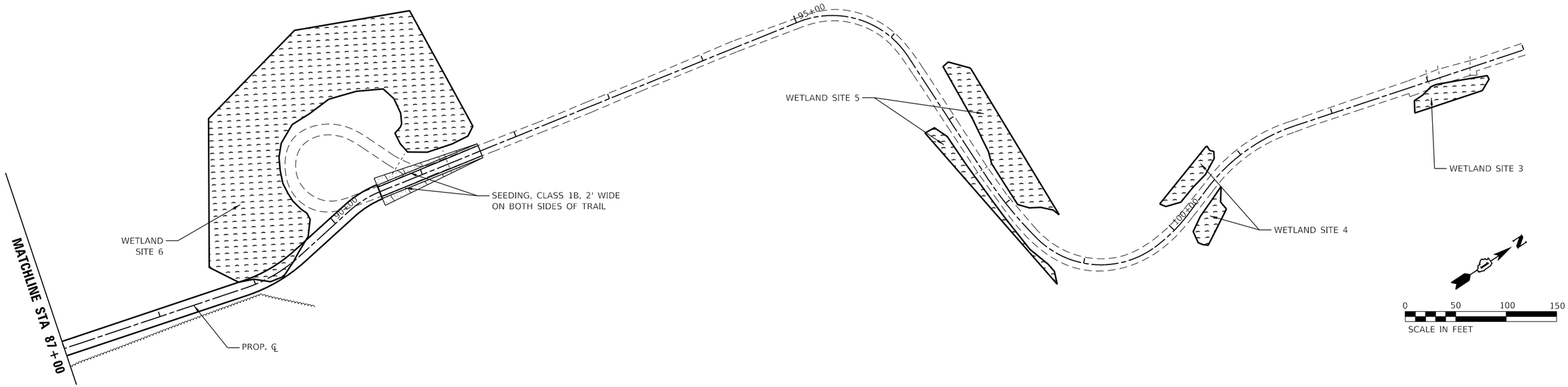
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			





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FILE NAME: $FILE$

TERRA ENGINEERING LTD.

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	DRAWN - JS	REVISED -
PLOT SCALE = $SCALE$	CHECKED - DDL	REVISED -
PLOT DATE = $DATE$	DATE - 4-26-24	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
LANDSCAPING /SIGNING PLAN

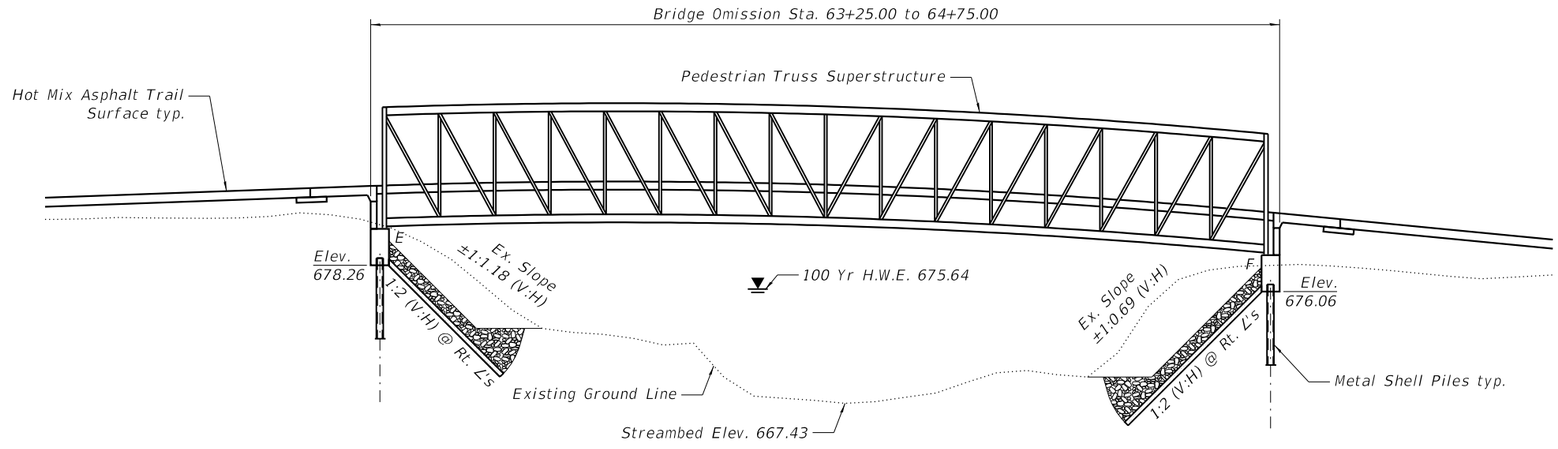
SCALE: | SHEET OF SHEETS | STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	39
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			

Benchmark: MAG Nail at the south end on the trail pnt #2700 el 727.36

Existing Structure: N/A

New Structure: New Pedestrian Bridge is a single span prefabricated truss with concrete deck superstructure on reinforced concrete abutments with driven pile foundation.

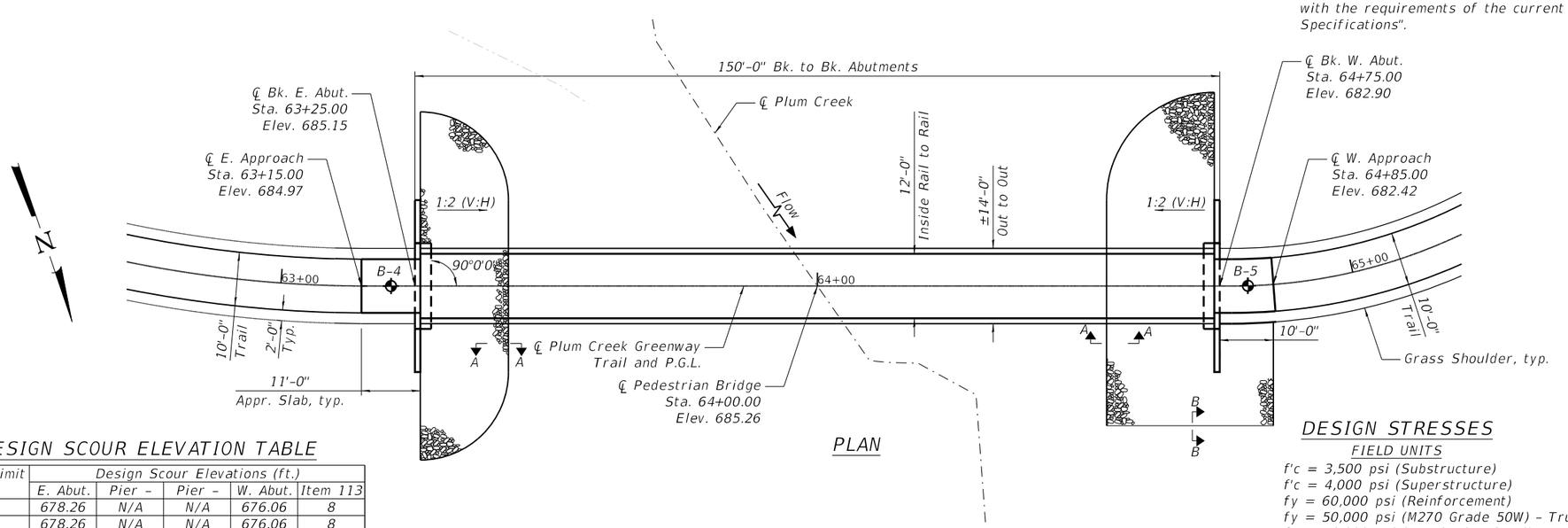


ELEVATION

WATERWAY INFORMATION

Drainage Area = 16.5 sq mi Low Grade Elev. – @ Sta. –

Flood	Freq. Yr.	Q C.F.S.	Opening Ft² Exist.	Opening Ft² Prop.	Nat. H.W.E.	Head – Ft. Exist.	Head – Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	580		485.31	674.92	N/A	0.03		674.95
Design	15	609		491.71	675.00	N/A	0.02		675.02
Base	100	910		548.13	675.68	N/A	0.00		675.64
Overtopping									
Max. Calc.	500	1200		592.22	676.16	N/A	0.00		676.12



PLAN

DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.) E. Abut.	Pier –	Pier –	W. Abut.	Item 113
Q100	678.26	N/A	N/A	676.06	8
Q200	678.26	N/A	N/A	676.06	8
Design	678.26	N/A	N/A	676.06	8
Check	678.26	N/A	N/A	676.06	8

INDEX OF SHEETS

S–1	General Plan and Elevation
S–2	General Data
S–3	Bridge Approach Slab Details
S–4	West Abutment Details
S–5	East Abutment Details
S–6	Pile Details
S–7–8	Boring Logs

DESIGN LOADING

Live Load: Pedestrian Live Load 90 Lb./Sq. Ft.
Maintenance Vehicle: AASHTO H10 Truck
Applied Separately From The Uniform Live Load

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition.

2009 AASTHO LRFD Guide Specifications for the Design of Pedestrian Bridges.

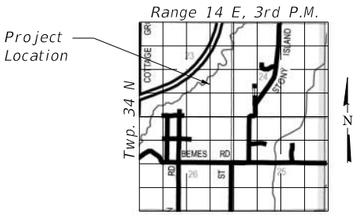
SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.07
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.11
Soil Site Class = D

I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with the requirements of the current "AASHTO LRFD Specifications".

LICENSED STRUCTURAL ENGINEER
KRISTEN FIELDS
081–005714
STATE OF ILLINOIS

DATE SIGNED : 6/5/2024
LIC. EXP. DATE : 11/30/2024



LOCATION SKETCH

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi (Substructure)
f'c = 4,000 psi (Superstructure)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50W) – Truss
fy = 46,000 psi (Weathering Steel) – Truss Tubing
fy = 50,000 psi (ASTM A252, Grade 3) – Piles

GENERAL PLAN AND ELEVATION
PLUM CREEK GREENWAY TRAIL BRIDGE
OVER PLUM CREEK
WILL COUNTY
STATION 64+00.00

TERRA ENGINEERING LTD.

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PLOT DATE =		CHECKED –	REVISED –

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
PLUM CREEK PEDESTRIAN BRIDGE
SHEET S-1 OF S-8 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	42
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
FILE NAME: pw:\\terraeng-pw.bentley.com:terraeng-pw-01\Documents\Projects\2023\23-276 - Plum Creek Greenway Trail\Design\100 - Drawings\110 - SHT\09 - Structures\D123276-XXXXX-SHT-1-GPE-001.dgn

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GENERAL NOTES

No field welding is permitted except as specified in the contract documents.

Reinforcement bars designated (E) shall be epoxy coated.

The Contractor shall make allowance for the deflection of forms, shrinkage and settlement of falsework, in addition to allowance for dead load deflection.

The concrete for bridge decks finished according to Article 503.16(a) of the Standard Specifications.

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

No construction joints except those shown on the plans will be allowed unless approved by the Engineer.

The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments and bridge approach slabs.

Concrete Sealer shall be applied to the surfaces of all abutment seats, including backwalls located below path expansion joints.

PREFABRICATED TRUSS

The substructure is designed per AASHTO LRFD and based on the assumed truss loads given in the Truss Reaction Table.

Truss Manufacturer shall camber the truss as necessary to provide allowance for dead load deflection.

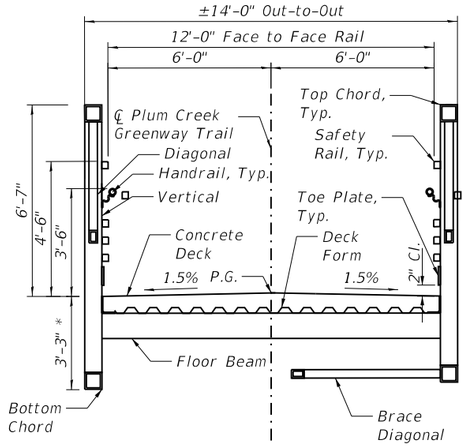
Bridge bearing seat elevations and ℄ bearing locations are subject to revision based on the approved pedestrian truss superstructure shop drawings. Contractor shall verify all dimensions and elevations with final approved shop drawings.

Truss Manufacturer shall provde the reinforced concrete deck design. Concrete deck to utilize stay-in-place galvanized forms. Reinforcement shall be epoxy coated. Contractor shall place the concrete deck after truss to set. Safety rail shall be M270 Grade 50W and handrail shall be galvanized steel. Cost of concrete deck, reinforcing amd handrail is included with "Pedestrian Truss Superstructure". Protective coat shall be paid for under pay item "Protective Coat".

All structural steel shall be AASHTO M270, Grade 50W, except where otherwise noted. All weathering steel tubing shall be cold formed structural steel ASTM A500, Grade B, Fy=46,000 PSI.

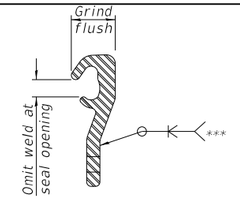
The Truss Fabricator shall design and furnish all truss bearing anchor bolts. Cost included with "Pedestrian Truss Superstructure".

Truss erection procedures shall be according to the Manufacturer's instructions.



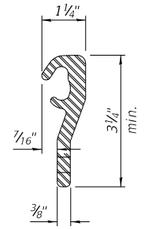
CROSS SECTION

* Subject to refinement per Truss Manufacturer



***Omit weld at seal opening

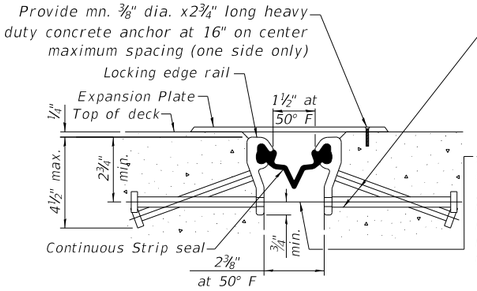
LOCKING EDGE RAIL SPLICE



LOCKING EDGE RAIL

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
STONE RIPRAP, CLASS A4	SQ YD		298	298
FILTER FABRIC	SQ YD		298	298
PROTECTIVE COAT	SQ YD	197	32	229
STRUCTURE EXCAVATION	CU YD		453	453
CONCRETE STRUCTURES	CU YD		21.8	21.8
CONCRETE SUPERSTRUCTURE (APPROACH SLAB)	CU YD	8.4		8.4
REINFORCEMENT BARS, EPOXY COATED	POUND	2,060	2,560	4,620
FURNISHING METAL SHELL PILES 16" x 0.312"	FOOT		184	184
DRIVING PILES	FOOT		184	184
TEST PILE METAL SHELLS	EACH		2	2
GRANULAR BACKFILL FOR STRUCTURES	CU YD		38	38
CONCRETE SEALER	SQ FT		169	169
GEOCOMPOSITE WALL DRAIN	SQ YD		34	34
PIPE UNDERDRAIN FOR STRUCTURES 4"	FOOT		70	70
PEDESTRIAN TRUSS SUPERSTRUCTURE	SQ FT	1,800		1,800
NAME PLATES	EACH	1		1
PREFORMED JOINT STRIP SEAL	FOOT	26		26



Strip Seal Notes:

The strip seal shall be made continuous and shall have a minimum thickness of ¼". The configuration of the strip seal shall match the configuration of the Locking Edge Rail.

The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from Manufacturer to Manufacturer. Flanged edge rails will not be allowed.

The inside of the Locking Edge Rail groove shall be free of weld residue.

Locking Edge Rails may be spliced at slope discontinuities. The Manufacturer's recommended installation methods shall be followed.

Minimum ½" expansion plate thickness.

SECTION THRU STRIP SEAL JOINT

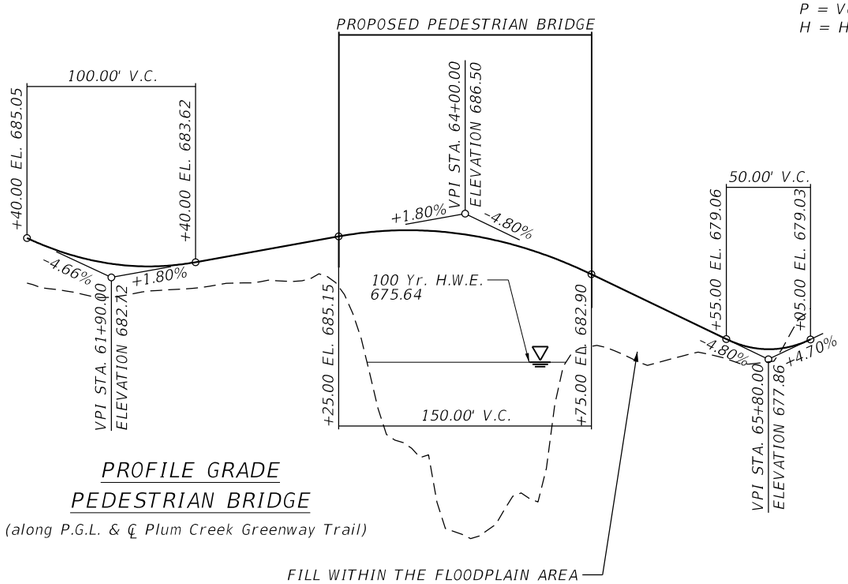
Place at deck joint at each end of truss superstructure.

TRUSS REACTION TABLE

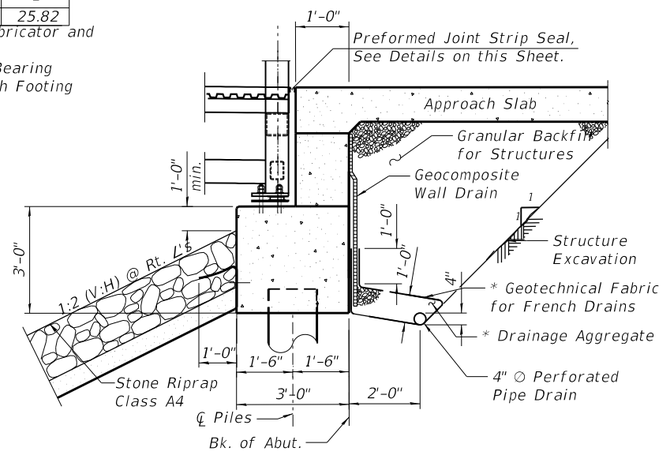
(UNFACTORED)

Loading Type	P (Kips)	H (Kips)
Dead Load	47.9	–
Uniform Live Load	40.5	–
Vehicle Load	10.0	–
Wind Load	± 9.9	25.82

Loads are provided by a Fabricator and are for reference only
P = Vertical Load at Each Bearing
H = Horizontal Load at Each Footing



PROFILE GRADE
PEDESTRIAN BRIDGE
(along P.G.L. & ℄ Plum Creek Greenway Trail)



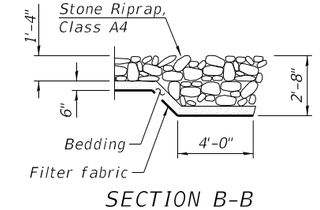
* Included in the Cost of Pipe Underdrains for Structures. (See Special Provision)

SECTION THROUGH ABUTMENT

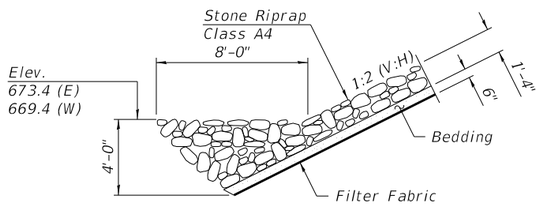
All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 60105 of the Standard Specifications and Highway Standards 65110D). Cost of Concrete Headwalls for Structures included with Pipe Underdraings for Structures 4".

STATION
BUILT BY
STATE OF ILLINOIS
LOADING H10
STRUCTURE NO.

NAME PLATE
See Std. 515001



SECTION B-B



SECTION A-A

GENERAL DATA
PLUM CREEK GREENWAY TRAIL BRIDGE
OVER PLUM CREEK
WILL COUNTY
STATION 64+00.00

MODEL: Default
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PLOT DATE =	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL DATA
PLUM CREEK PEDESTRIAN BRIDGE
SHEET S-2 OF S-8 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	43
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			

TWO APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	20	#4	9'-8"	
a1(E)	28	#5	9'-8"	
b(E)	18	#4	10'-6"	
b1(E)	40	#7	12'-2"	
t(E)	44	#4	4'-2"	
w(E)	40	#5	9'-8"	
Concrete Structures		Cu. Yd.	2.8	
Concrete Superstructure (Approach Slab)		Cu. Yd.	8.4	
Protective Coat		Sq. Yd.	24.4	
Reinforcement Bars, Epoxy Coated		Pound	2,060	

Notes:

Approach slab concrete shall be paid for as Concrete Superstructure.

Approach footing concrete shall be paid for as Concrete Structures.

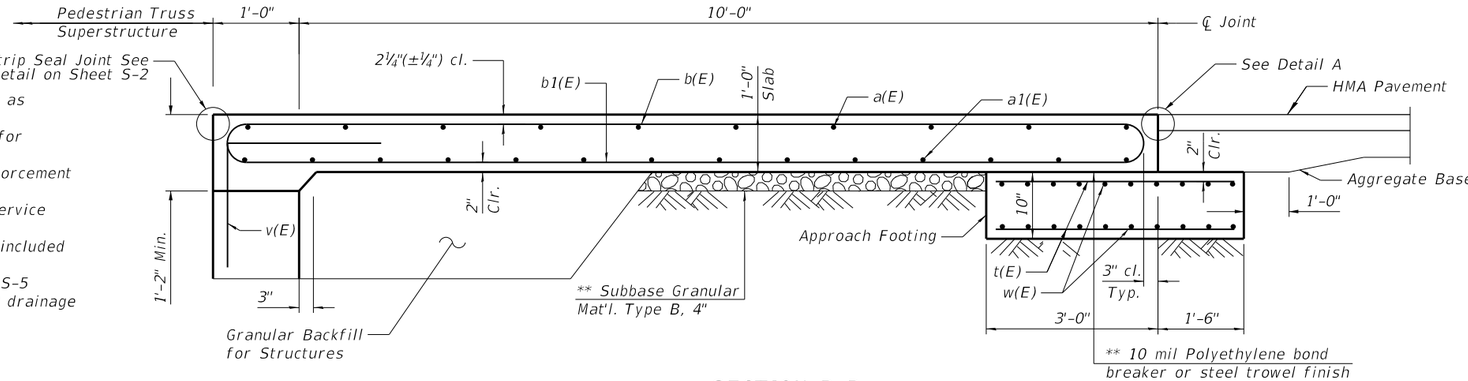
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.

The approach footing maximum applied service bearing pressure (max) = 2.0 ksf

Cost of excavation for approach footing included with Concrete Structures.

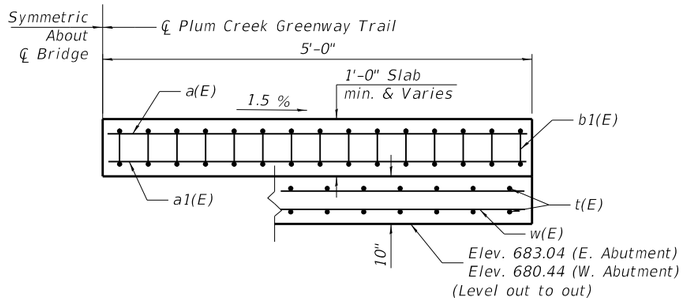
For v(E) bar details see sheets S-4 and S-5

For Granular Backfill for Structures and drainage treatment details see sheet S-2.

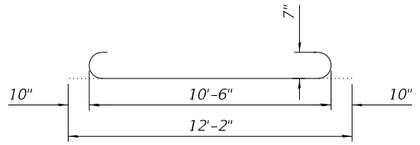


SECTION B-B

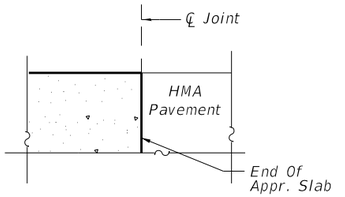
** Cost included with Concrete Superstructure



NEAR ABUTMENT AT APPROACH FOOTING



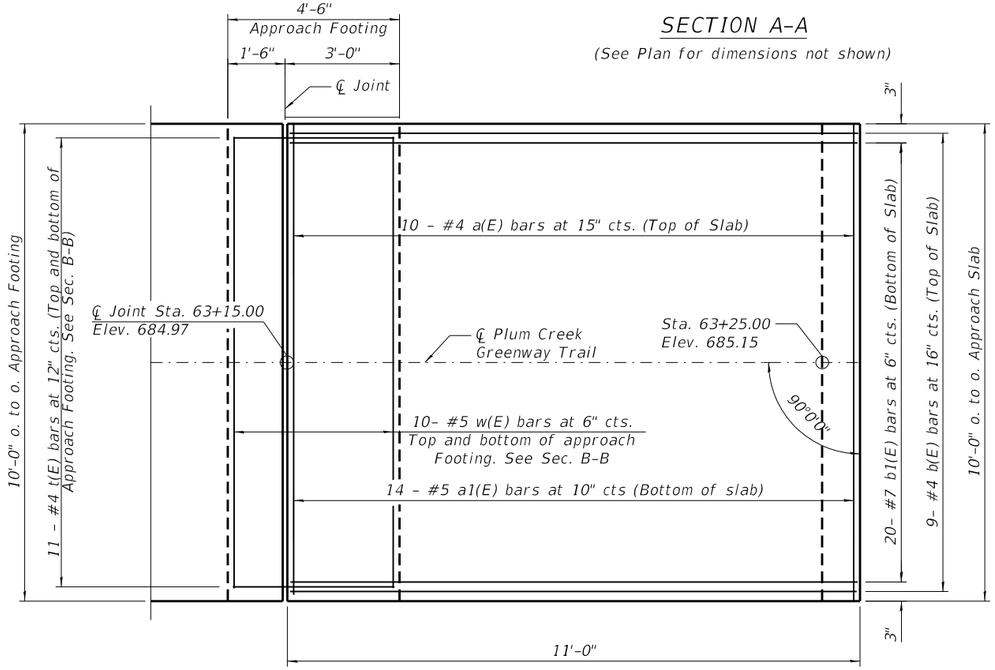
BAR b1(E)



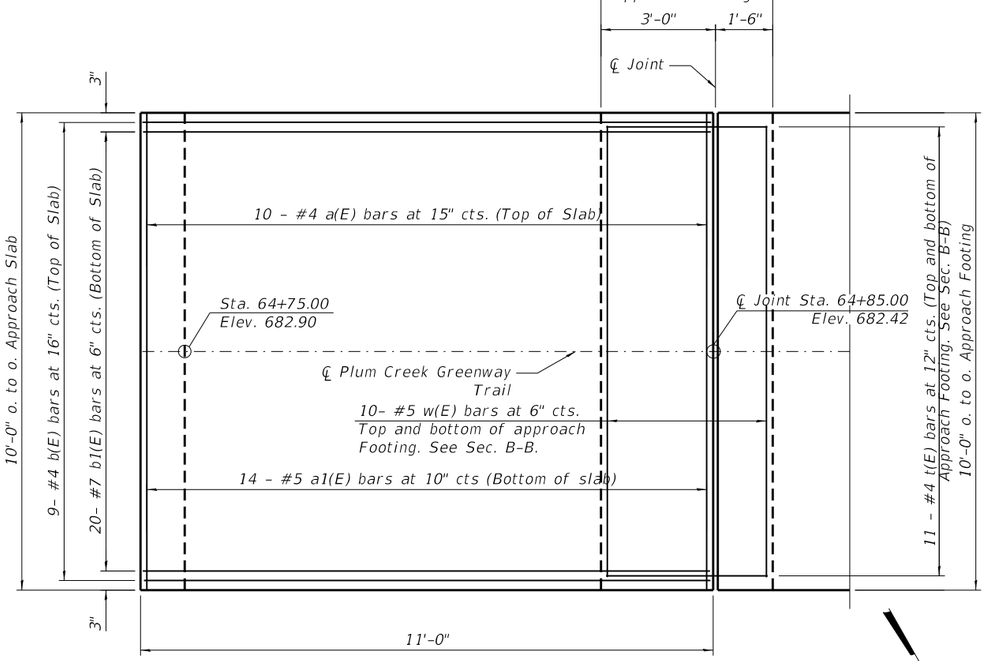
DETAIL A

SECTION A-A

(See Plan for dimensions not shown)



EAST APPROACH - PLAN



WEST APPROACH - PLAN

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DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
PLUM CREEK PEDESTRIAN BRIDGE

SHEET S-3 OF S-8 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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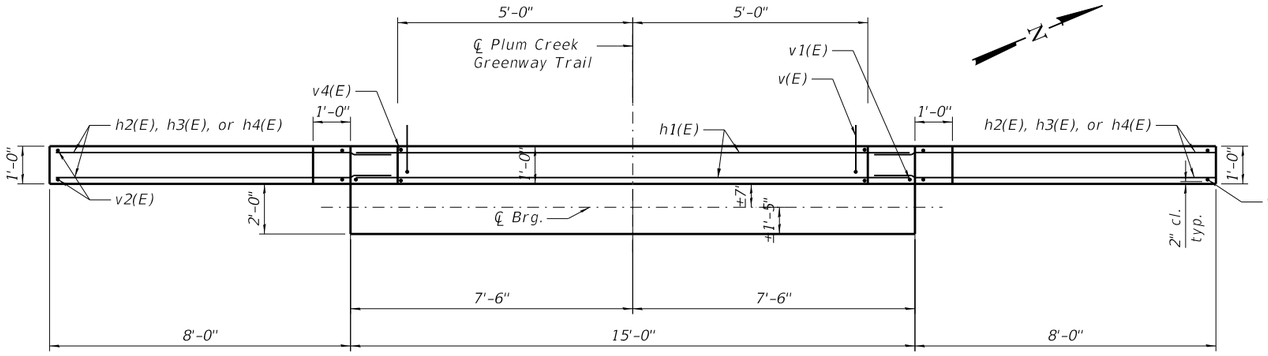
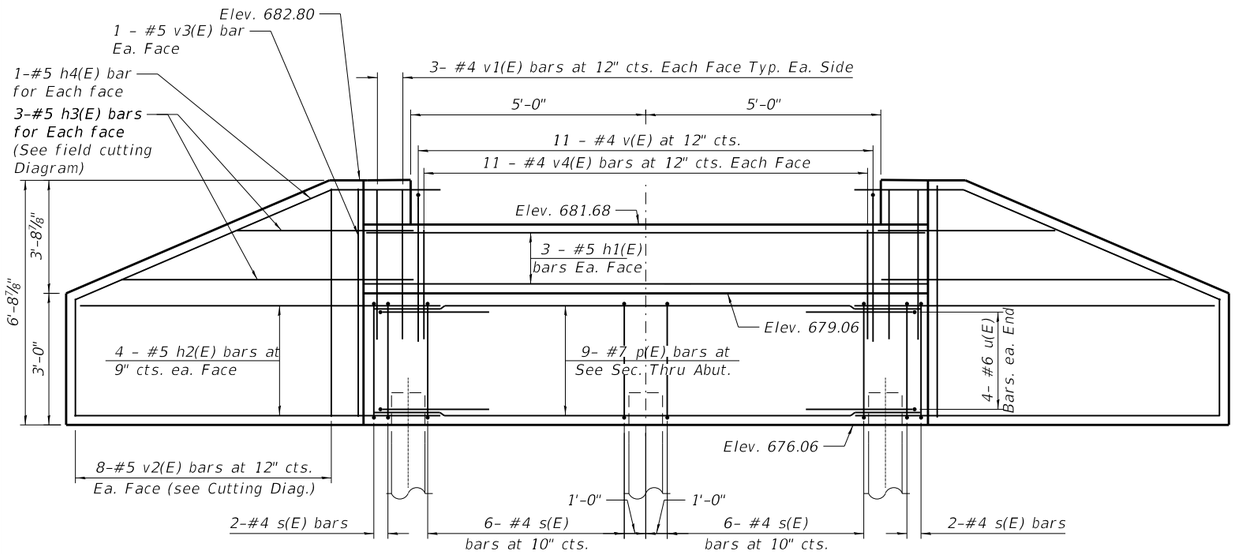
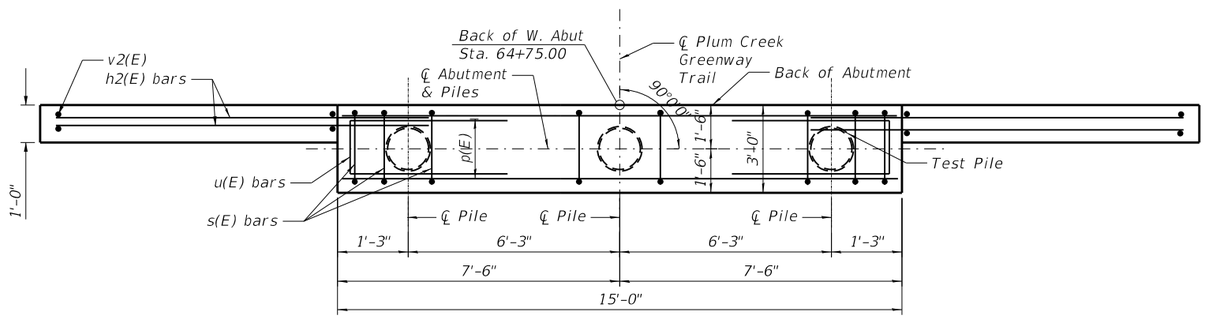
		CONTRACT NO. 61K44		
	ILLINOIS	FED. AID PROJECT		



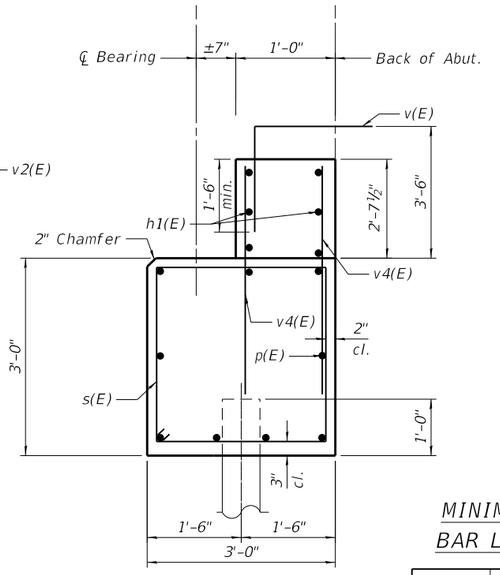
TOP VIEW



ELEVATION



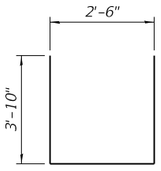
PLAN-PILE CAP



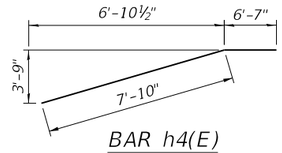
SEC. THRU ABUT.

MINIMUM BAR LAPS

Bar	Lap
#5	3'-7"
#6	4'-4"



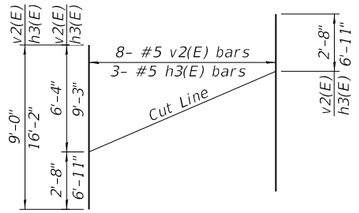
BAR u(E)



BAR h4(E)

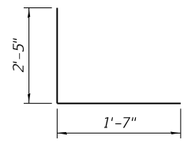
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1(E)	6	#5	14'-8"	
h2(E)	16	#5	11'-7"	
h3(E)	6	#5	16'-2"	
h4(E)	4	#5	14'-5"	
p(E)	9	#7	14'-8"	
s(E)	16	#4	11'-5"	
u(E)	8	#6	10'-2"	
v(E)	11	#4	4'-0"	
v1(E)	12	#4	5'-4"	
v2(E)	16	#5	9'-0"	
v3(E)	4	#5	6'-5"	
v4(E)	22	#4	4'-3"	
Concrete Structures		Cu. Yd.	9.5	
Protective Coat		Sq. Yd.	3.7	
Reinforcement Bars, Epoxy Coated		Pound	1,280	
Furnishing Metal Shell Piles 16"x0.312"		Foot	110	
Driving Piles		Foot	110	
Test Pile Metal Shells		Each	1	
Concrete Sealer		Sq. Ft.	84	

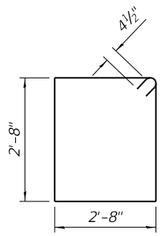


FIELD CUTTING DIAGRAM

Order h3(E) and v2(E) full length. Cut as shown and use remainder of bars in opposite face.



BAR v(E)



BAR s(E)

PILE DATA

Type: Metal Shell 16"x0.312"
Nominal Required Bearing: 340 kips
Factored Resistance Available: 187 kips
Est. Length: 55 ft
No. Production of Piles: 2
No. Test Piles: 1

Notes:
Concrete clear cover shall be 2" minimum unless noted otherwise.

Anchor Bolt design and locations shall be per Truss Manufacturer. The Contractor shall place top cap reinforcement to miss anchor bolt locations. Cost of Anchor Bolts is included in the cost of Pedestrian Truss Superstructure.

All edges shall have standard ¾" chamfers except as noted.

For details of piles, see sheet S-6.

Concrete sealer shall be applied to the beam seat and front face of backwall and cap.

Truss fabricator shall provide a 1" nominal shim pack for each bearing consisting of a ½", ¼" and 2-⅛" shim plates matching the dimensions of the masonry plate provided, including holes for anchor bolts. Cost included in the cost of Pedestrian Truss Superstructure.

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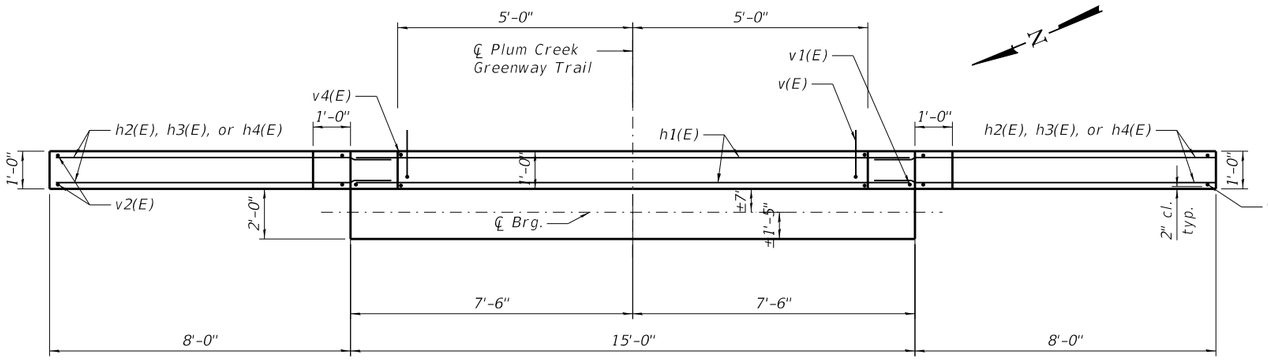
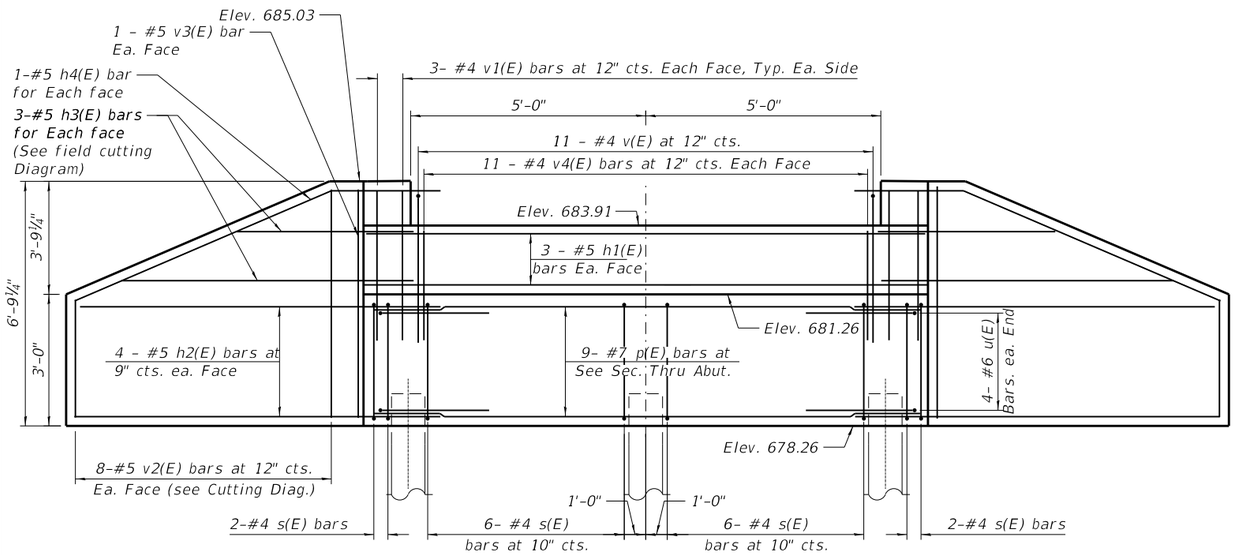
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT DETAILS
PLUM CREEK PEDESTRIAN BRIDGE
SHEET S-4 OF S-8 SHEETS

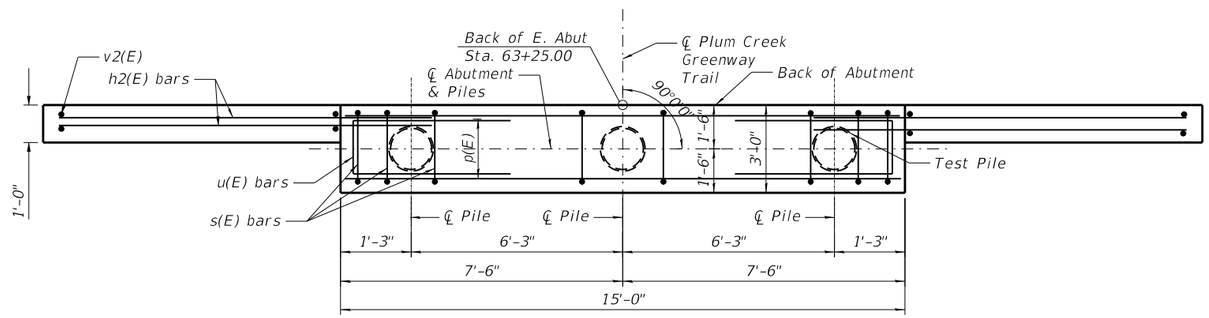
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	45
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			



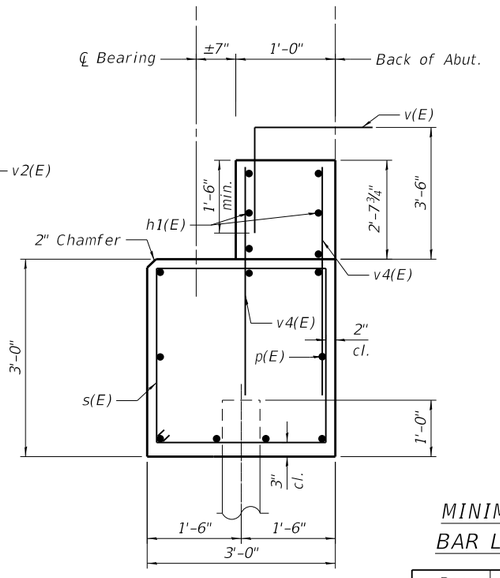
TOP VIEW



ELEVATION



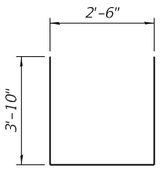
PLAN-PILE CAP



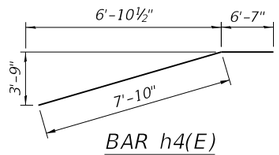
SEC. THRU ABUT.

MINIMUM BAR LAPS

Bar	Lap
#5	3'-7"
#6	4'-4"



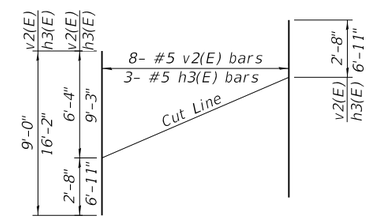
BAR u(E)



BAR h4(E)

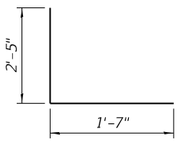
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1(E)	6	#5	14'-8"	
h2(E)	16	#5	11'-7"	
h3(E)	6	#5	16'-2"	
h4(E)	4	#5	14'-5"	
p(E)	9	#7	14'-8"	
s(E)	16	#4	11'-5"	
u(E)	8	#6	10'-2"	
v(E)	11	#4	4'-0"	
v1(E)	12	#4	5'-4"	
v2(E)	16	#5	9'-0"	
v3(E)	4	#5	6'-5"	
v4(E)	22	#4	4'-3"	
Concrete Structures		Cu. Yd.	9.5	
Protective Coat		Sq. Yd.	3.7	
Reinforcement Bars, Epoxy Coated		Pound	1,280	
Furnishing Metal Shell Piles 16"x0.312"		Foot	74	
Driving Piles		Foot	74	
Test Pile Metal Shells		Each	1	
Concrete Sealer		Sq. Ft.	85	

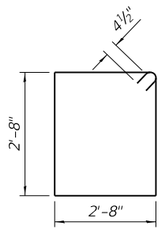


FIELD CUTTING DIAGRAM

Order h3(E) and v2(E) full length. Cut as shown and use remainder of bars in opposite face.



BAR v(E)



BAR s(E)

PILE DATA

Type: Metal Shell 16"x0.312"
Nominal Required Bearing: 340 kips
Factored Resistance Available: 187 kips
Est. Length: 37 ft
No. Production of Piles: 2
No. Test Piles: 1

Notes:
Concrete clear cover shall be 2" minimum unless noted otherwise.

Anchor Bolt design and locations shall be per Truss Manufacturer. The Contractor shall place top cap reinforcement to miss anchor bolt locations. Cost of Anchor Bolts is included in the cost of Pedestrian Truss Superstructure.

All edges shall have standard ¾" chamfers except as noted.

For details of piles, see sheet S-6.

Concrete sealer shall be applied to the beam seat and front face of backwall and cap.

Truss fabricator shall provide a 1" nominal shim pack for each bearing consisting of a ½", ¼" and 2-⅛" shim plates matching the dimensions of the masonry plate provided, including holes for anchor bolts. Cost included in the cost of Pedestrian Truss Superstructure.

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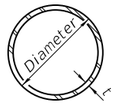
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

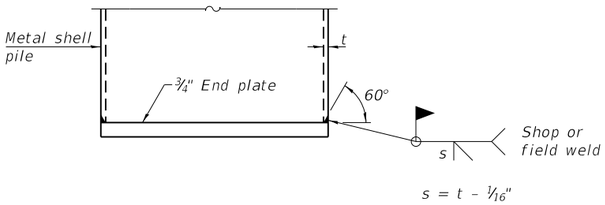
EAST ABUTMENT DETAILS
PLUM CREEK PEDESTRIAN BRIDGE
SHEET S-5 OF S-8 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	46
		CONTRACT NO. 61K44		
	ILLINOIS	FED. AID PROJECT		



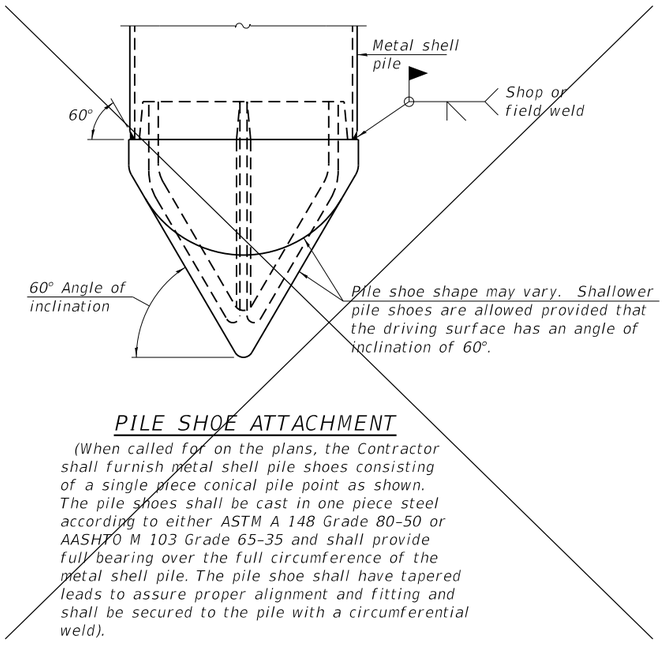
METAL SHELL PILE TABLE

Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume ($yd.^3/ft.$)
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361
PP16	0.312"	52.32	0.0478
PP16	0.375"	62.64	0.0470



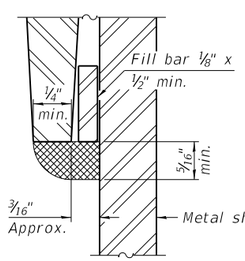
$s = t - 1/16"$

END PLATE ATTACHMENT

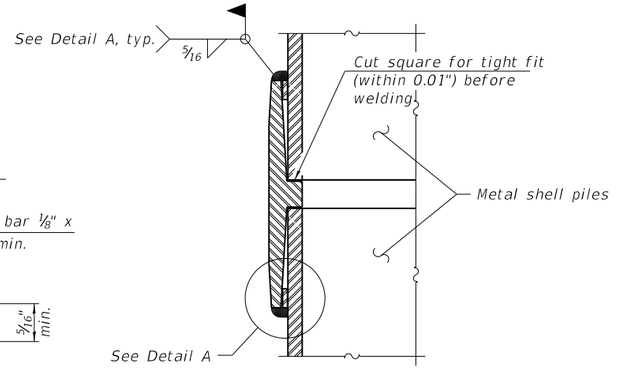


PILE SHOE ATTACHMENT

(When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 80-50 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld).

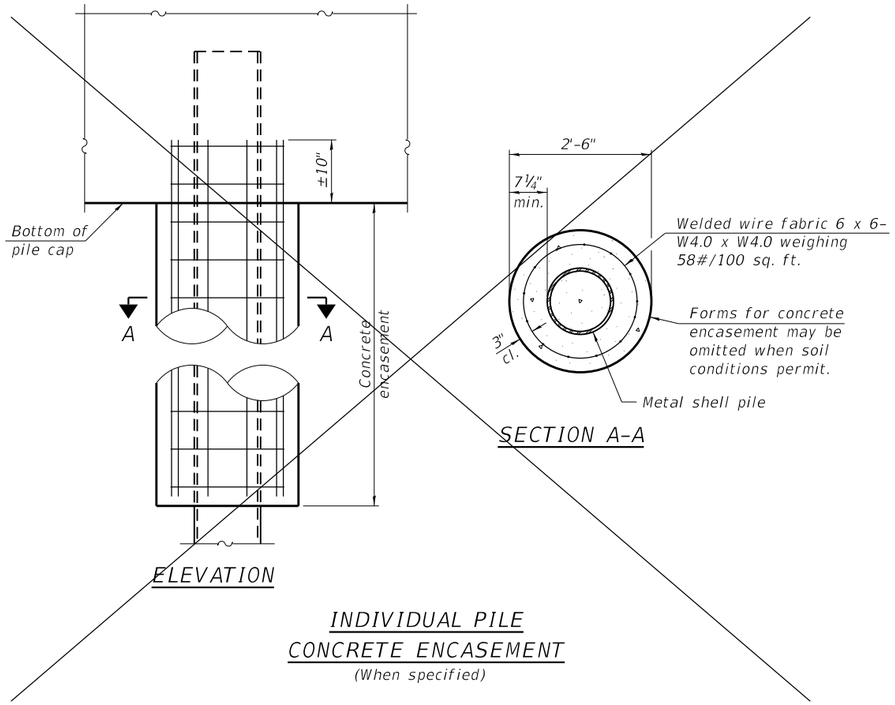


DETAIL A



WELDED COMMERCIAL SPLICE

Notes:
The ⅛" x ½" min. fill bar may be constructed of 2 bars with a ⅛" max. gap between them.
Pile segments shall be driven to solid contact with splicer before welding.

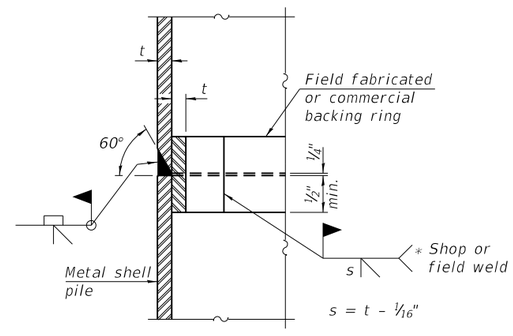


ELEVATION

SECTION A-A

INDIVIDUAL PILE CONCRETE ENCASEMENT

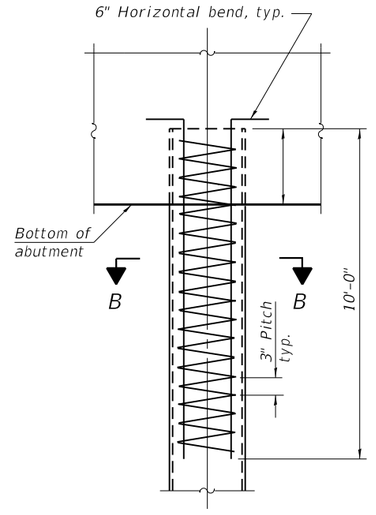
(When specified)



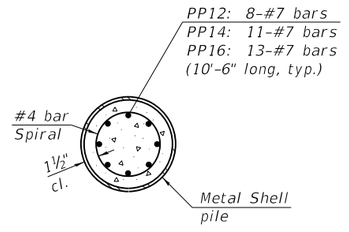
$s = t - 1/16"$

COMPLETE PENETRATION WELD SPLICE

* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



ELEVATION



SECTION B-B

REINFORCEMENT AT ABUTMENTS

(Omit when concrete encasement is specified)

Note:
The metal shell piles shall be according to Article 1006.05 of the Standard Specifications.

F-MS 1-1-2020

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DEPARTMENT OF TRANSPORTATION

METAL SHELL PILE DETAILS
PLUM CREEK PEDESTRIAN BRIDGE
SHEET S-6 OF S-8 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	47
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			

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GEOCON PROFESSIONAL SERVICES

BORING NO. B-4

PAGE 1 OF 2

CLIENT Terra Engineering **PROJECT NAME** Plum Creek Trail Improvements

PROJECT NUMBER 21-G0323 **PROJECT LOCATION** Crete, Illinois

DATE COMPLETED 3/17/21 **LOGGED BY** Ken/Tom **DRILLING METHOD** 3.25 in. HSA

DEPTH (ft)	ELEVATION (ft.)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (Qp) (tsf)	UNC. STRENGTH (Qu) (tsf)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	ORGANIC CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
0	680.5		dark brown CLAY very stiff, moist	SS 1	100	3-4-6 (10)	3.75	3.2	20.3					
			brown and gray LEAN CLAY very stiff to hard, moist	SS 2	89	4-6-9 (15)	4.5+	5.2	20.6					
	674.0			SS 3	100	3-8-8 (16)	4.5+		13.5					
10			brown and gray SANDY CLAY stiff to very stiff, moist	SS 4	100	2-4-6 (10)	2.75		16.9					
	669.0			ST 1	92		1.75	1.05	20.9	108.4				
			brown and gray LEAN CLAY very stiff, moist	SS 5	100	2-3-3 (6)	2.0	2.2	29.2					
	664.0													
20			gray LEAN CLAY stiff to very stiff, moist	SS 6	100	2-4-6 (10)	4.0	4.0	18.3					
				SS 7	100	3-8-9 (17)	3.25	3.0	18.3					
30				SS 8	89	3-4-5 (9)	1.75	1.8	20.1					
				ST 2	100		2.5	1.85	19.7	111.5				
40				SS 9	89	2-4-6 (10)	2.0	2.1	16.0					
	638.0		gray SILTY SAND medium dense, wet	SS 10	100	5-7-13 (20)			21.3					
50	632.5		gray LEAN CLAY very stiff, moist	SS 11	100	8-8-9 (17)	2.75		13.4 13.8					

COMPLETION DEPTH 83 ft **GROUND ELEVATION** 682 ft

CAVE DEPTH ft **BACKFILL** Soil Cuttings

GROUND WATER LEVELS:

AT TIME OF DRILLING 44.00 ft / Elev 638.00 ft

AT END OF DRILLING 44.00 ft / Elev 638.00 ft

AFTER DRILLING ---

NOTES

Lines of Demarcation represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes.

GPS STANDARD GEOTECH LOG - OZ STD DATA TEMPLATE.GDT - 4/5/21 14:26 - C:\USERS\NHAGGE\DESKTOP\GINT FOLDER\21-G0323.GPJ

GEOCON PROFESSIONAL SERVICES

BORING NO. B-4

PAGE 2 OF 2

CLIENT Terra Engineering **PROJECT NAME** Plum Creek Trail Improvements

PROJECT NUMBER 21-G0323 **PROJECT LOCATION** Crete, Illinois

DATE COMPLETED 3/17/21 **LOGGED BY** Ken/Tom **DRILLING METHOD** 3.25 in. HSA

DEPTH (ft)	ELEVATION (ft.)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (Qp) (tsf)	UNC. STRENGTH (Qu) (tsf)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	ORGANIC CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
	629.0		gray SILTY SAND medium dense, wet	SS 12	100	7-7-10 (17)			17.3					
60				SS 13	100	8-12-17 (29)			22.8					
	619.0		gray LEAN CLAY stiff, moist	SS 14	100	2-3-5 (8)	1.25	1.3	31.5					
	615.0		gray SILTY SAND/SANDY SILT medium dense, wet											
70				SS 15	83	13-12-13 (25)			19.9					
				SS 16	78	11-12-12 (24)			21.6					
	604.0		SAND and GRAVEL medium dense, wet											
80				SS 17	44	14-12-15 (27)			12.0					
	599.0		Refusal at 83.0 feet. Bottom of borehole at 83.0 feet.											

Lines of Demarcation represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes.

GPS STANDARD GEOTECH LOG - OZ STD DATA TEMPLATE.GDT - 4/5/21 14:26 - C:\USERS\NHAGGE\DESKTOP\GINT FOLDER\21-G0323.GPJ

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS
PLUM CREEK PEDESTRIAN BRIDGE

SHEET S-7 OF S-8 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	48
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			

GEOCON PROFESSIONAL SERVICES

BORING NO. B-5
PAGE 1 OF 2

CLIENT Terra Engineering **PROJECT NAME** Plum Creek Trail Improvements
PROJECT NUMBER 21-G0323 **PROJECT LOCATION** Crete, Illinois
DATE COMPLETED 3/23/21 **LOGGED BY** Robert/Ken **DRILLING METHOD** 3.25 in. HSA

DEPTH (ft)	ELEVATION (ft.)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (Qp) (tsf)	UNC. STRENGTH (Qu) (tsf)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	ORGANIC CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
0														
	675.4		dark brown CLAY with wood fragments stiff, moist	SS 1	33	3-4-5 (9)	2.5		32.1					
			brown SANDY CLAY soft to stiff, moist	SS 2	72	2-3-4 (7)	1.5	1.2	31.6					
				SS 3	67	2-3-4 (7)	2.0		20.3					
10				SS 4	44	1-2-2 (4)	<0.25	0.2	18.5					
	667.4		▼	SS 5	100	1-1-2 (3)			27.7					
			gray SILTY SAND very loose, wet	SS 5	44	1-2-3 (5)			30.1					
	661.4													
20			gray LEAN CLAY stiff, moist Sand seam noted at about 34'	SS 6	100	4-4-4 (8)	2.0	1.1	21.4					
				SS 7	100	3-3-5 (8)	1.0	1.0	18.3					
30				SS 8	100	2-3-4 (7)	1.25	1.1	22.0					
				SS 9	56	5-3-5 (8)	2.0	1.5	14.9					
	640.4													
40			gray SILTY SAND loose, wet	SS 10	56	4-4-5 (9)			21.1					
	636.4													
			gray SILT loose, wet	SS 11	78	3-4-6 (10)			23.4					
	631.4													
50			gray SILTY SAND loose, wet	SS 12	89	3-4-5 (9)			27.1					

COMPLETION DEPTH 78.8 ft **GROUND ELEVATION** 679.4 ft
CAVE DEPTH ft **BACKFILL** Soil Cuttings
GROUND WATER LEVELS:
AT TIME OF DRILLING 12.00 ft / Elev 667.40 ft
AT END OF DRILLING 12.00 ft / Elev 667.40 ft
AFTER DRILLING ---

NOTES

Lines of Demarcation represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes.

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GEOCON PROFESSIONAL SERVICES

BORING NO. B-5
PAGE 2 OF 2

CLIENT Terra Engineering **PROJECT NAME** Plum Creek Trail Improvements
PROJECT NUMBER 21-G0323 **PROJECT LOCATION** Crete, Illinois
DATE COMPLETED 3/23/21 **LOGGED BY** Robert/Ken **DRILLING METHOD** 3.25 in. HSA

DEPTH (ft)	ELEVATION (ft.)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (Qp) (tsf)	UNC. STRENGTH (Qu) (tsf)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	ORGANIC CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
	626.4													
			gray SILTY SAND/SANDY SILT trace gravel medium dense, wet	SS 13	83	8-8-12 (20)			25.5					
60				SS 14	89	7-10-13 (23)			13.3					
	616.4													
			SAND and GRAVEL medium dense to very dense, wet	SS 15	89	17-22-18 (40)			7.1					
70				SS 16	56	13-15-10 (25)			8.0					
				SS 17	67	13-20-19 (39)			8.9					
	600.6													
			Refusal at 78.8 feet. Bottom of borehole at 78.8 feet.	SS 18	100	50/3"			11.3					

Lines of Demarcation represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes.

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DEPARTMENT OF TRANSPORTATION

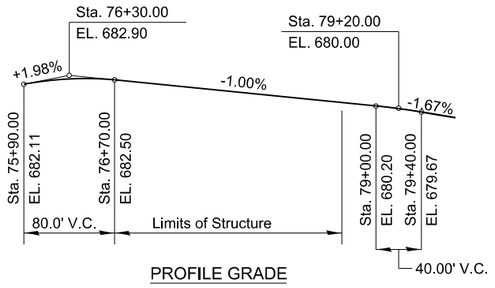
SOIL BORING LOGS
PLUM CREEK PEDESTRIAN BRIDGE
SHEET S-8 OF S-8 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	49
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			

Benchmark: MAG Nail at the south end on the trail pnt #2700 el 727.36

Existing Structure: N/A

New Structure: New Boardwalk is prefabricated concrete plank with prefabricated concrete beams on drilled shaft pier foundations.



PROFILE GRADE

DESIGN LOADING

Live Load: Pedestrian Live Load 90 Lb./Sq. Ft.
Maintenance Vehicle: AASHTO H10 Truck
Applied Separately From The Uniform Live Load

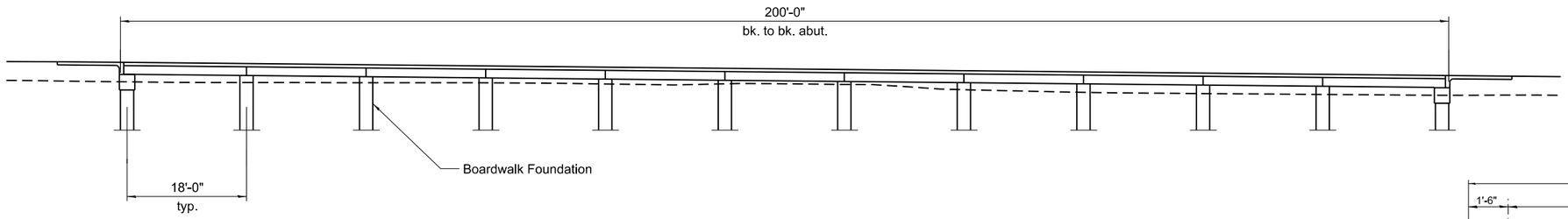
DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition.

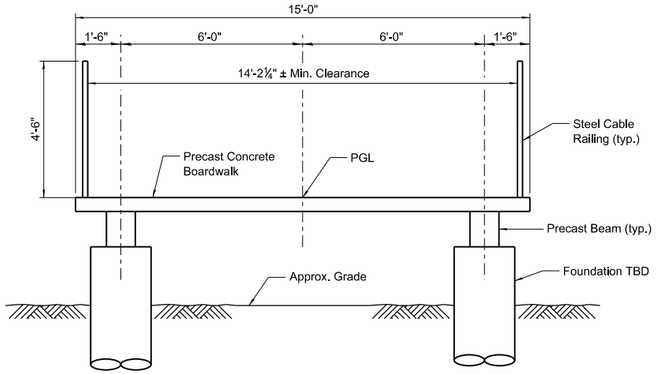
2009 AASHTO LRFD Guide Specifications for the Design of Pedestrian Bridges.

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.07
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.11
Soil Site Class = D



ELEVATION



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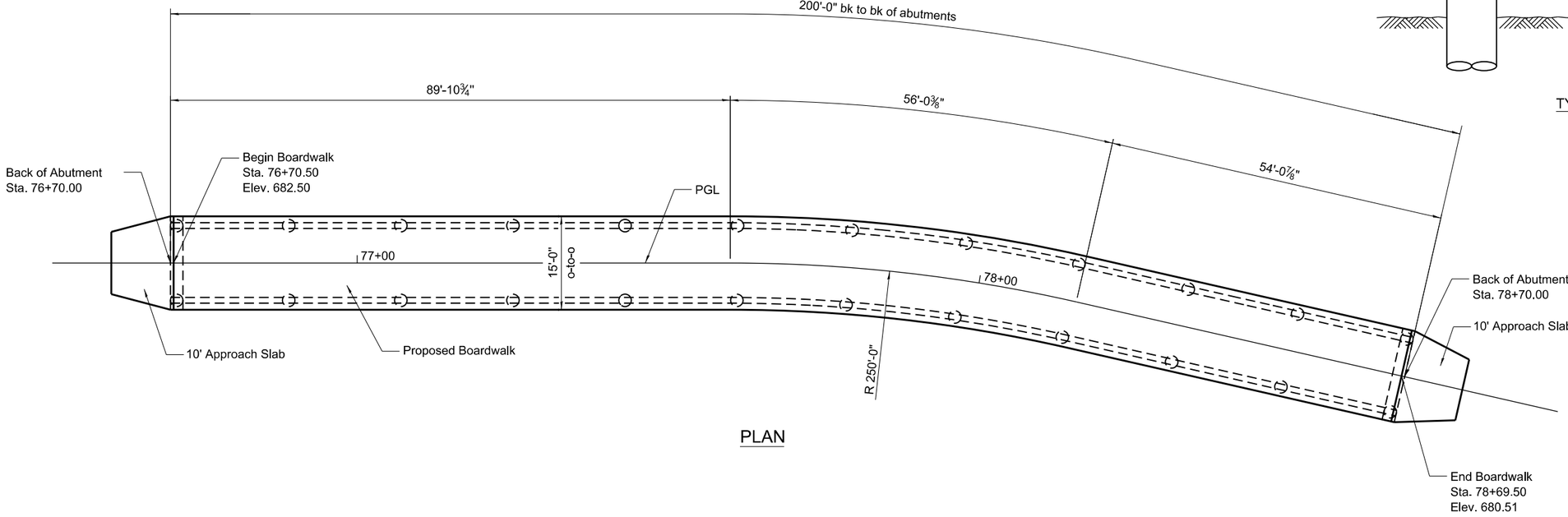
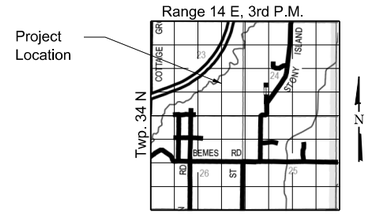


PLAN



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
PLUM CREEK GREENWAY
PROPOSED BOARDWALKS
WILL COUNTY
STA 76+70.00 TO STA. 78+70.00

MODEL: Default
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PLOT DATE =	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET OF 3 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	3	
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			

Benchmark: MAG Nail at the south end on the trail pnt #2700 el 727.36

Existing Structure: N/A

New Structure: New Boardwalk is prefabricated concrete plank with prefabricated concrete beams on drilled shaft pier foundations.

DESIGN LOADING

Live Load: Pedestrian Live Load 90 Lb./Sq. Ft.
Maintenance Vehicle: AASHTO H10 Truck
Applied Separately From The Uniform Live Load

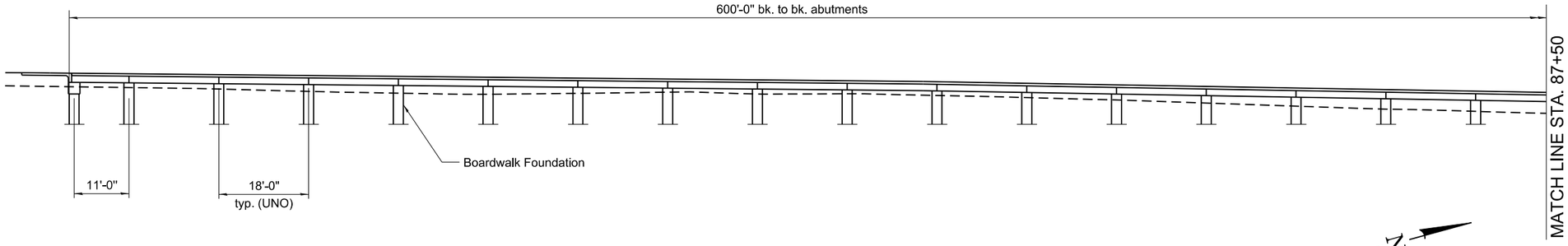
DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition.

2009 AASTHO LRFD Guide Specifications for the Design of Pedestrian Bridges.

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.07
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.11
Soil Site Class = D



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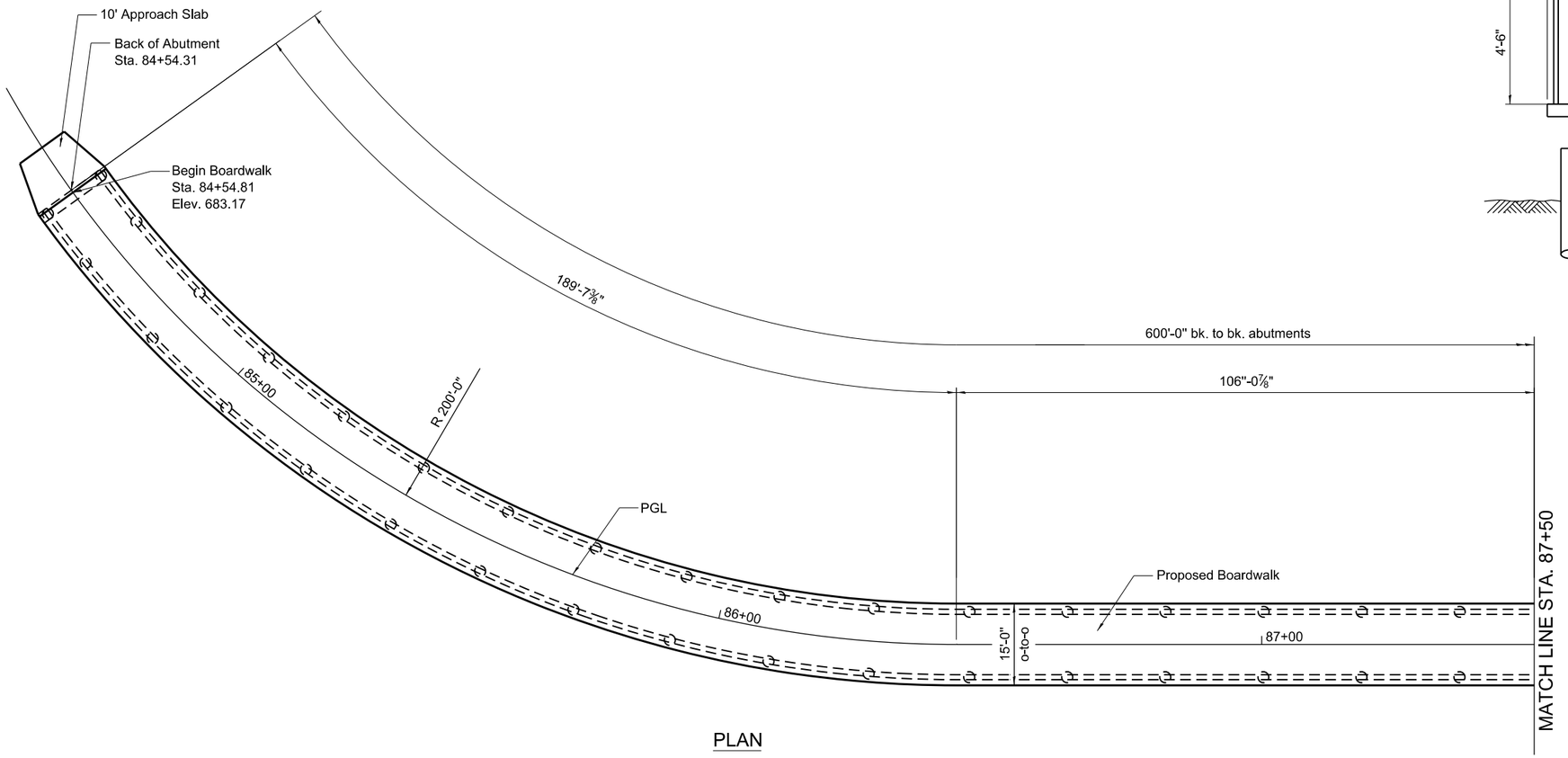

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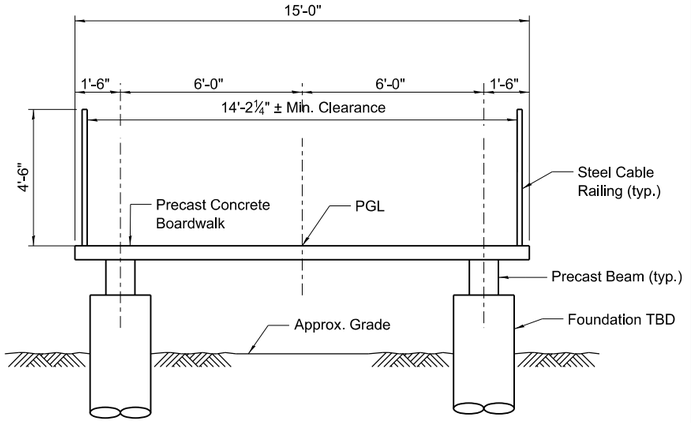

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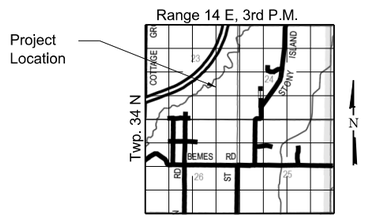

LOCATION SKETCH

GENERAL PLAN AND ELEVATION
PLUM CREEK GREENWAY
PROPOSED BOARDWALKS
WILL COUNTY
STA 84+54.31 TO STA. 90+54.31

MODEL: Default
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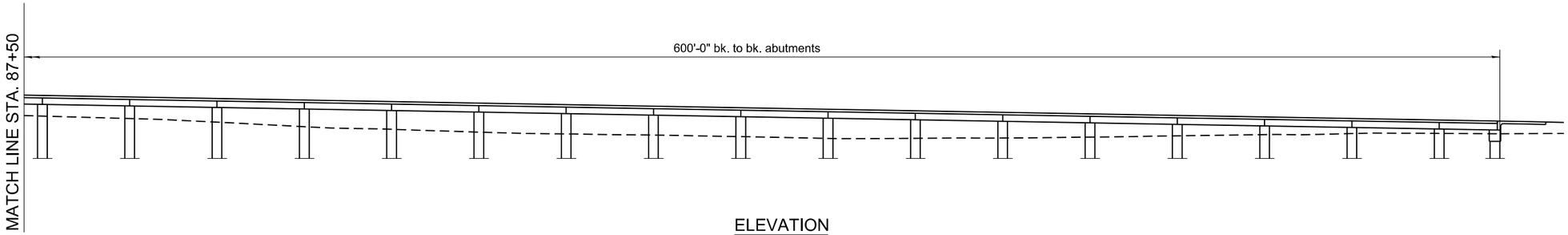
TERRA ENGINEERING LTD.

USER NAME =	DESIGNED -	REVISED -	
	CHECKED -	REVISED -	
PLOT SCALE =	DRAWN -	REVISED -	
PLOT DATE =	CHECKED -	REVISED -	

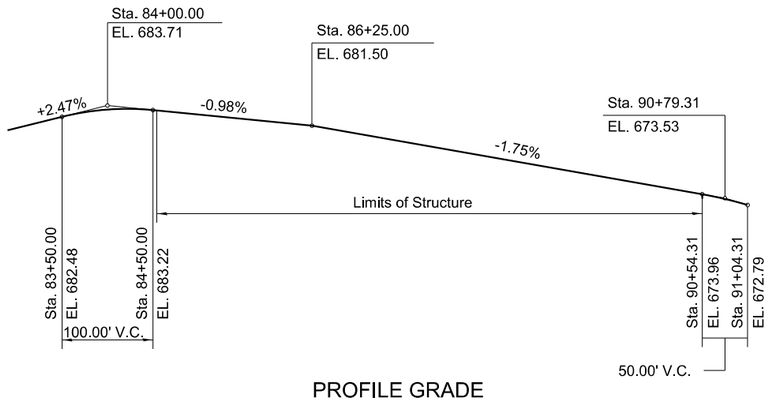
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET OF 3 SHEETS

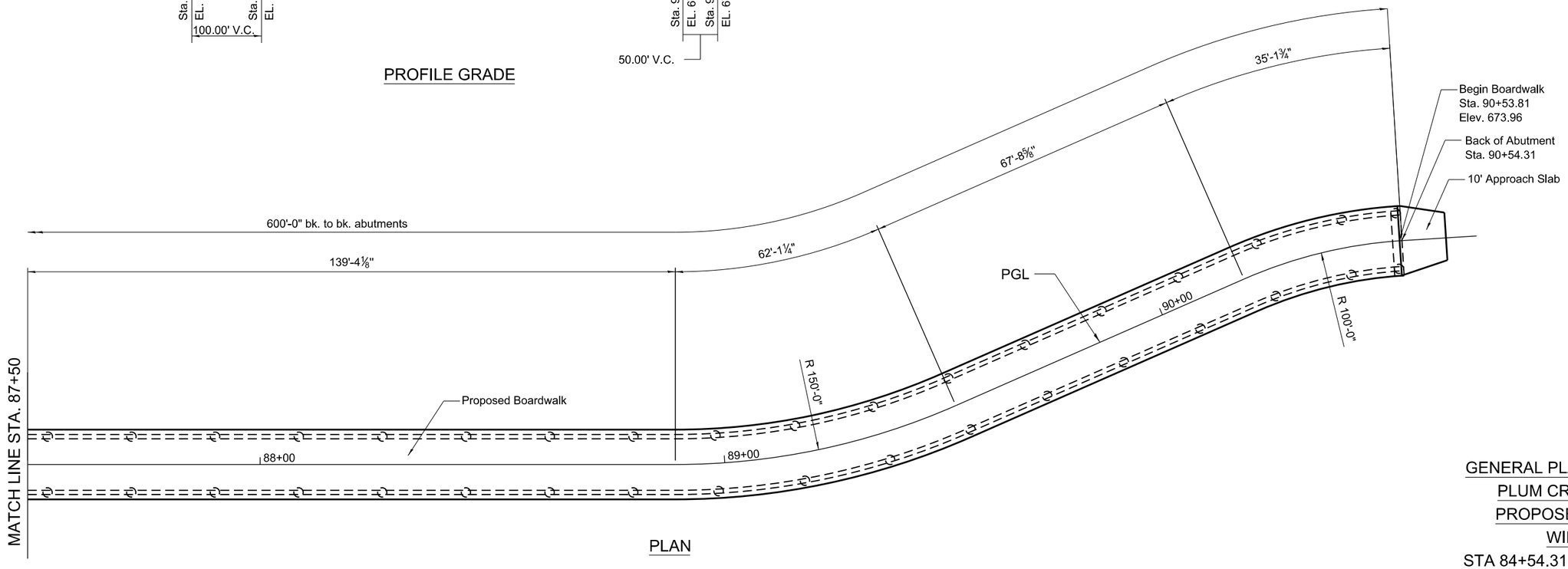
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	3	
		CONTRACT NO. 61K44		
		ILLINOIS	FED. AID PROJECT	



ELEVATION



PROFILE GRADE



PLAN

GENERAL PLAN AND ELEVATION
PLUM CREEK GREENWAY
PROPOSED BOARDWALKS
WILL COUNTY
STA 84+54.31 TO STA. 90+54.31

MODEL: Default
FILE NAME: pw:\\terraeng-pw.bentley.com:terraeng-pw-01\Documents\Projects\2023\23-276 - Plum Creek Greenway Trail\Design\100 - Drawings\110 - SHT\09 - Structures\Boardwalks\D123276-XXXXX-SHT-1-TSL-003.dgn

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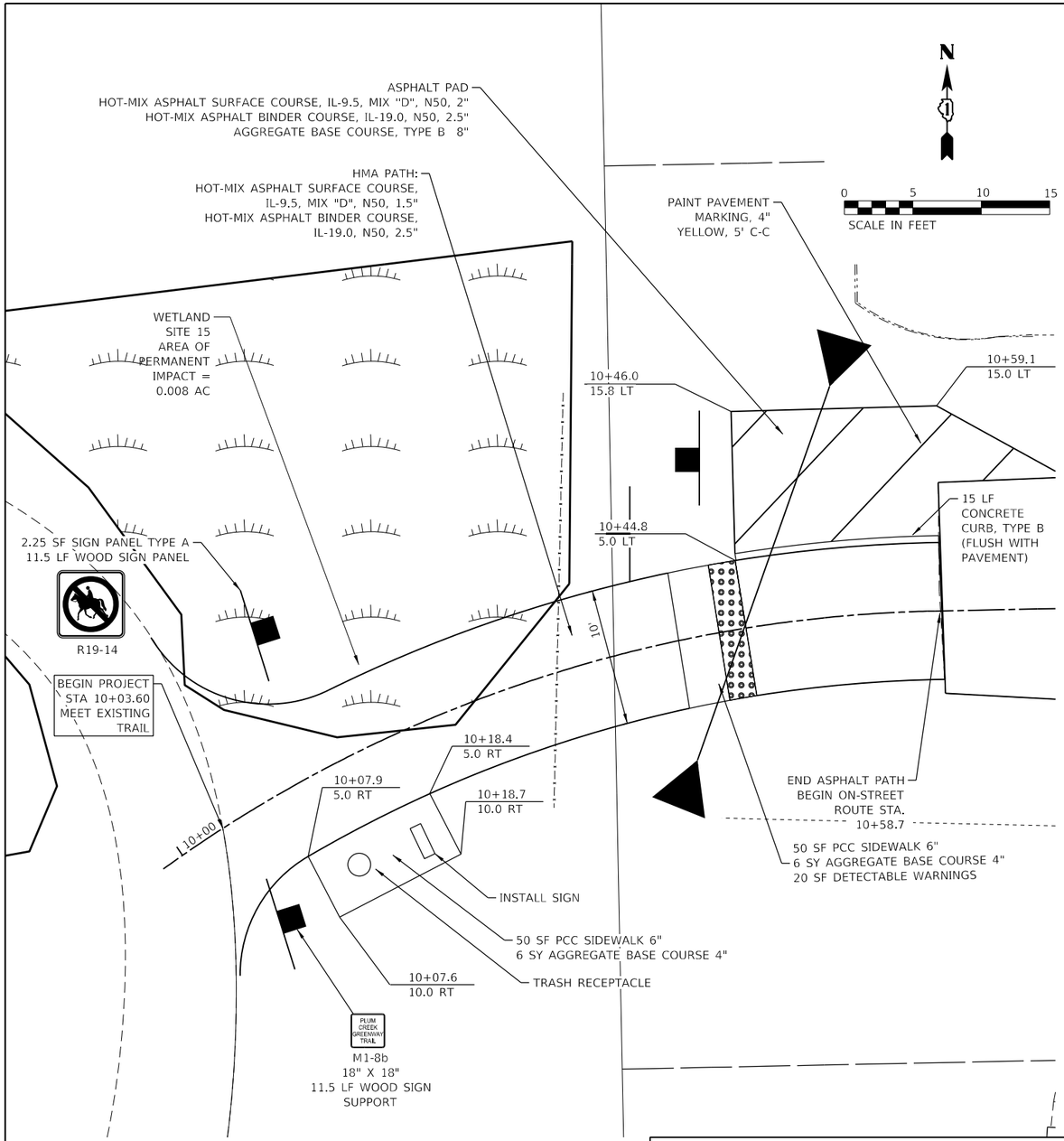
TERRA ENGINEERING LTD.

USER NAME =	DESIGNED -	REVISED -	
	CHECKED -	REVISED -	
PLOT SCALE =	DRAWN -	REVISED -	
PLOT DATE =	CHECKED -	REVISED -	

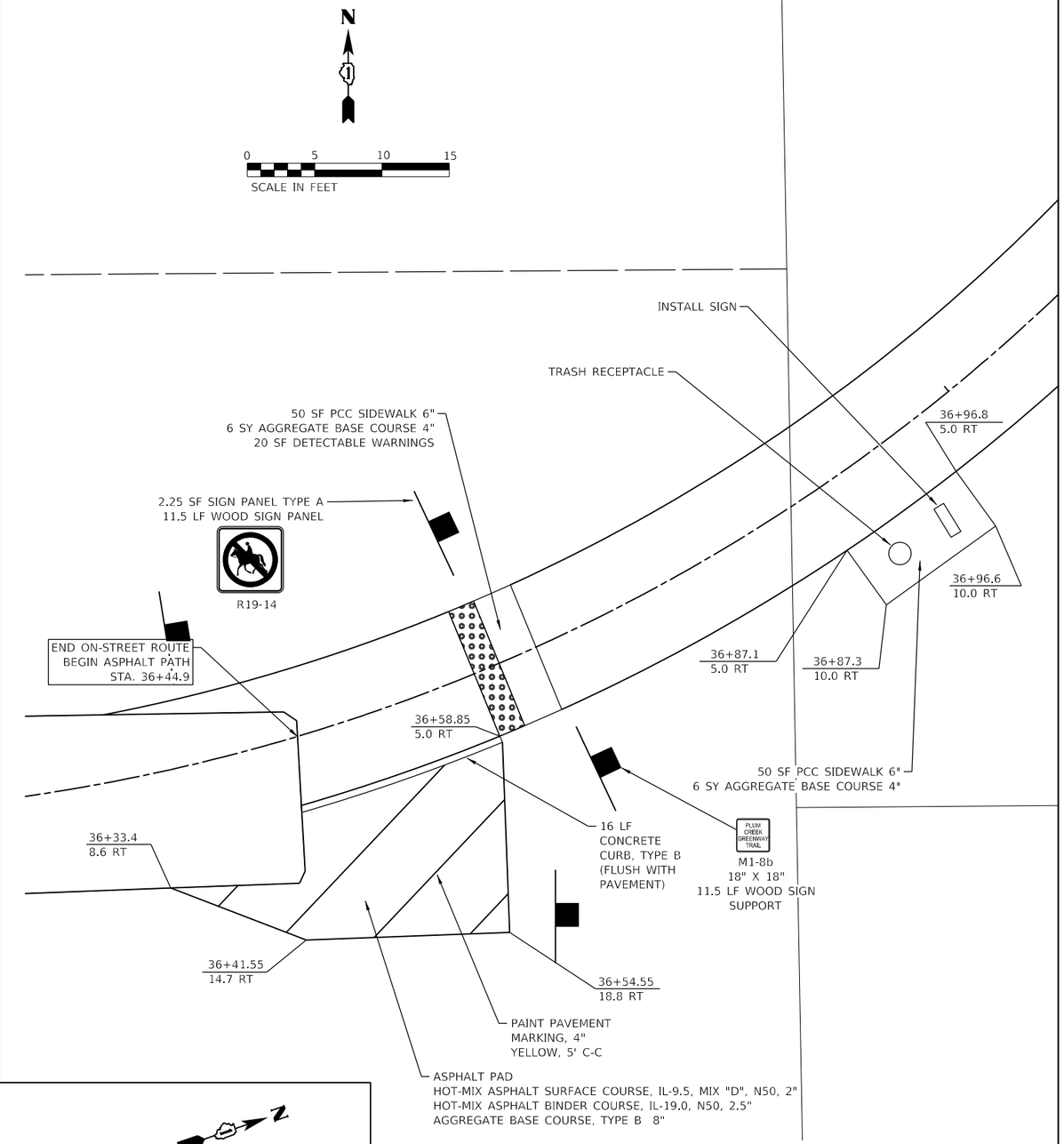
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET OF 3 SHEETS

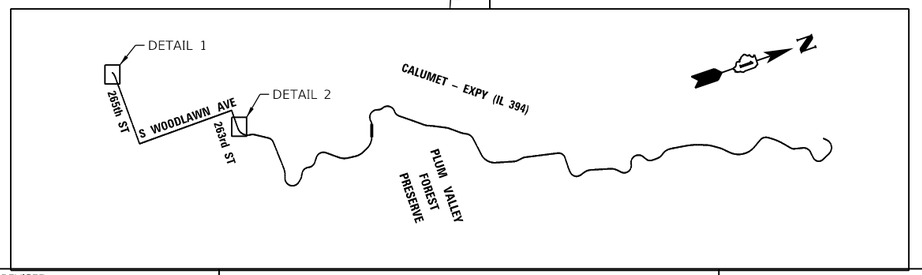
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	3	
		CONTRACT NO. 61K44		
	ILLINOIS	FED. AID PROJECT		



DETAIL 1



DETAIL 2



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TERRA ENGINEERING LTD.

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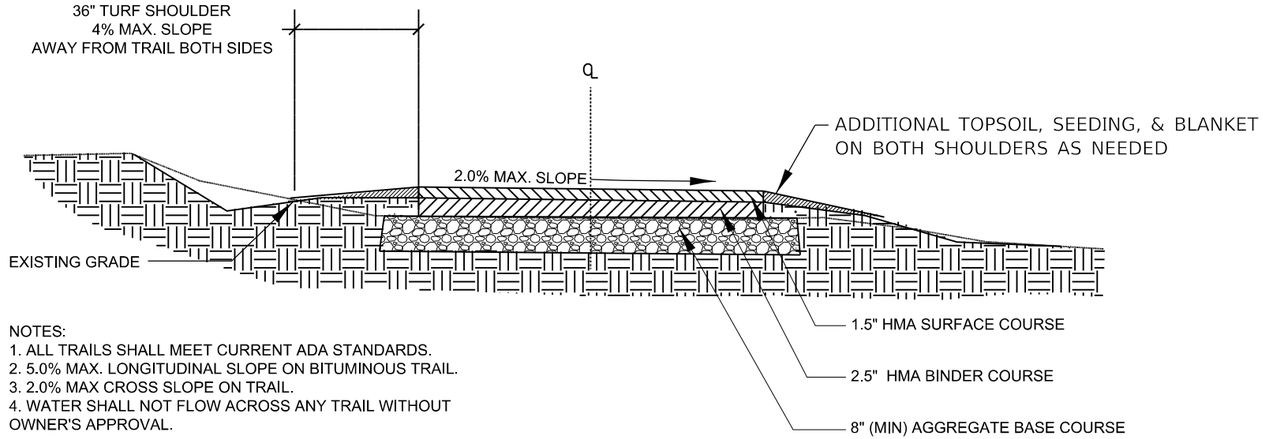
	DRAWN - JS	REVISED -
PLOT SCALE = $SCALE$	CHECKED - DDL	REVISED -
PLOT DATE = $DATE$	DATE - 4-26-24	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
MISC. DETAILS

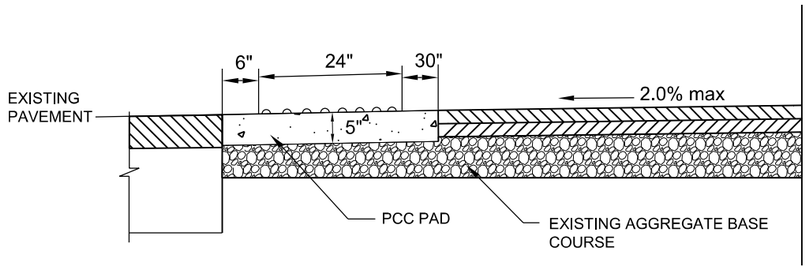
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	50
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			

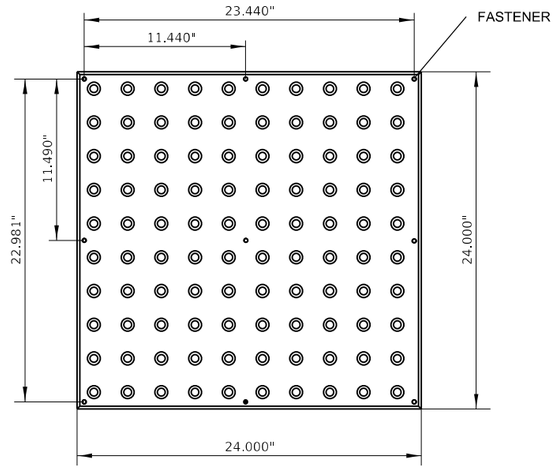


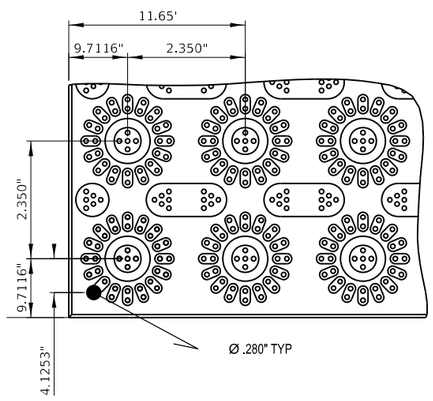
NOTES:
1. ALL TRAILS SHALL MEET CURRENT ADA STANDARDS.
2. 5.0% MAX. LONGITUDINAL SLOPE ON BITUMINOUS TRAIL.
3. 2.0% MAX CROSS SLOPE ON TRAIL.
4. WATER SHALL NOT FLOW ACROSS ANY TRAIL WITHOUT OWNER'S APPROVAL.

1 BITUMINOUS TRAIL CROSS-SECTION (TYPICAL)
(Scale as Noted)



2 DETECTABLE WARNINGS CONCRETE DETAIL
(Scale as Noted)





3 2'X2' DETECTABLE WARNING DETAIL
(Scale as Noted)

MODEL: $MODELNAME$
FILE NAME: $FILE1$

TERRA ENGINEERING LTD.

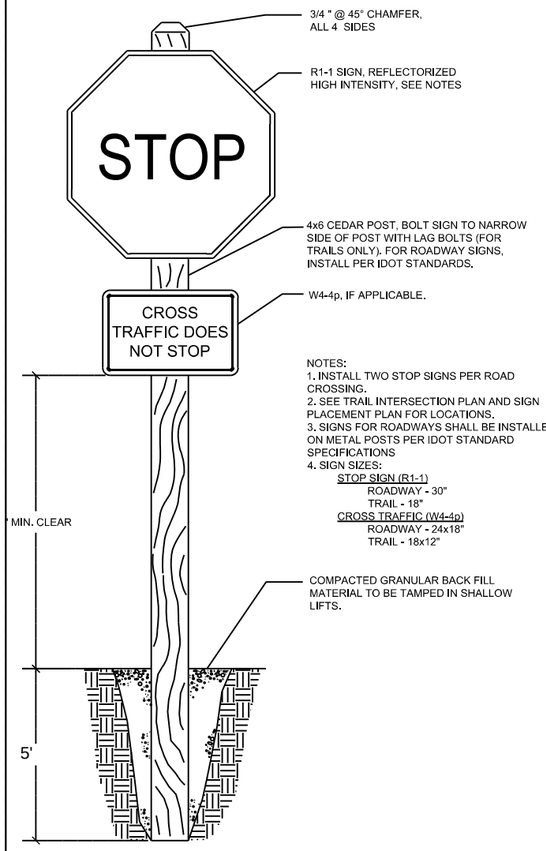
USER NAME = $USER$	DESIGNED - MIA	REVISED -
	DRAWN - JS	REVISED -
PLOT SCALE = $SCALE$	CHECKED - DDL	REVISED -
PLOT DATE = $DATE$	DATE - 4-26-24	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
MISC. DETAILS

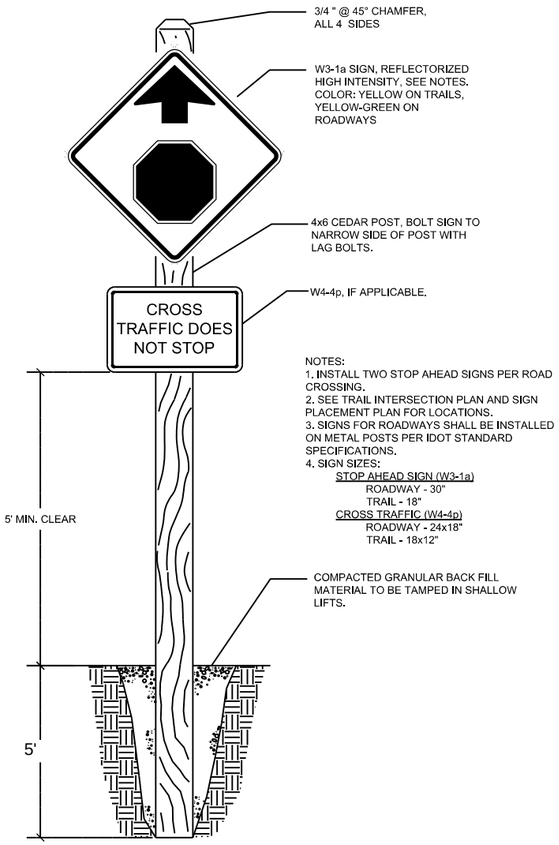
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	51
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			



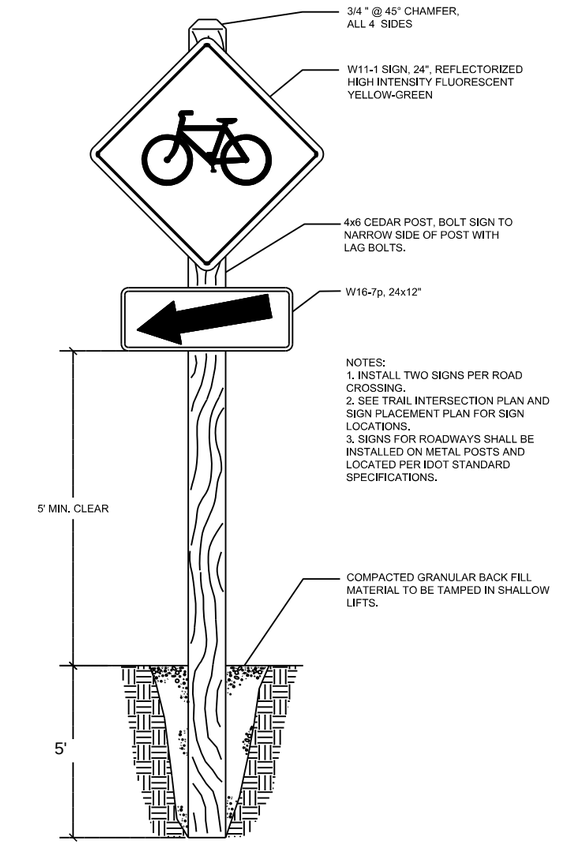
'STOP' SIGN

NOT TO SCALE



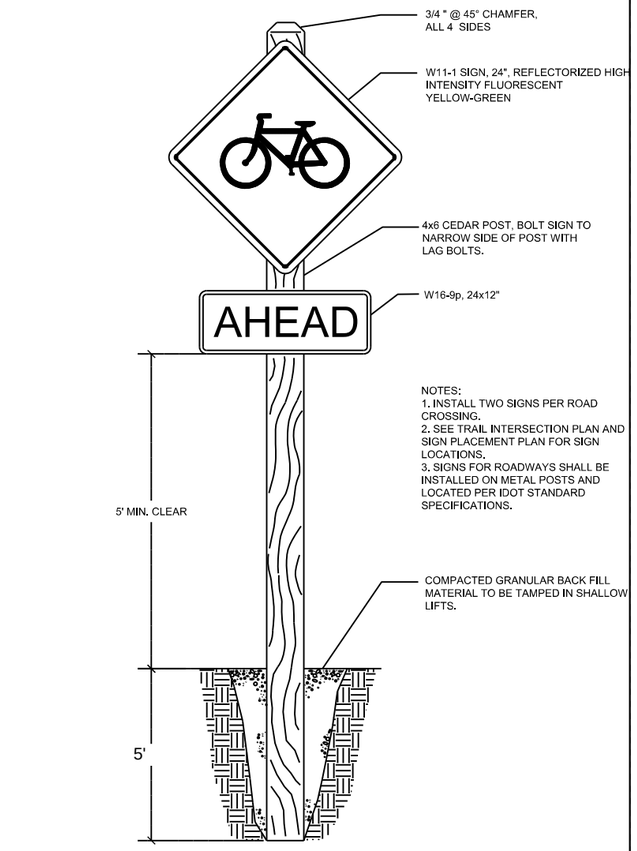
'STOP AHEAD' SIGN

NOT TO SCALE



'BICYCLE CROSSING' STREET SIGN

NOT TO SCALE



'BICYCLE CROSSING AHEAD' STREET SIGN

NOT TO SCALE

TYPICAL APPLICATION FOR SIGNS WITH WOOD SIGN SUPPORTS

MODEL: $MODELNAME$
FILE NAME: $FILEL$

TERRA ENGINEERING LTD.

USER NAME = $USER$	DESIGNED - MIA	REVISED -	
	DRAWN - JS	REVISED -	
PLOT SCALE = $SCALE$	CHECKED - DDL	REVISED -	
PLOT DATE = $DATE$	DATE - 4-26-24	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
MISC. DETAILS

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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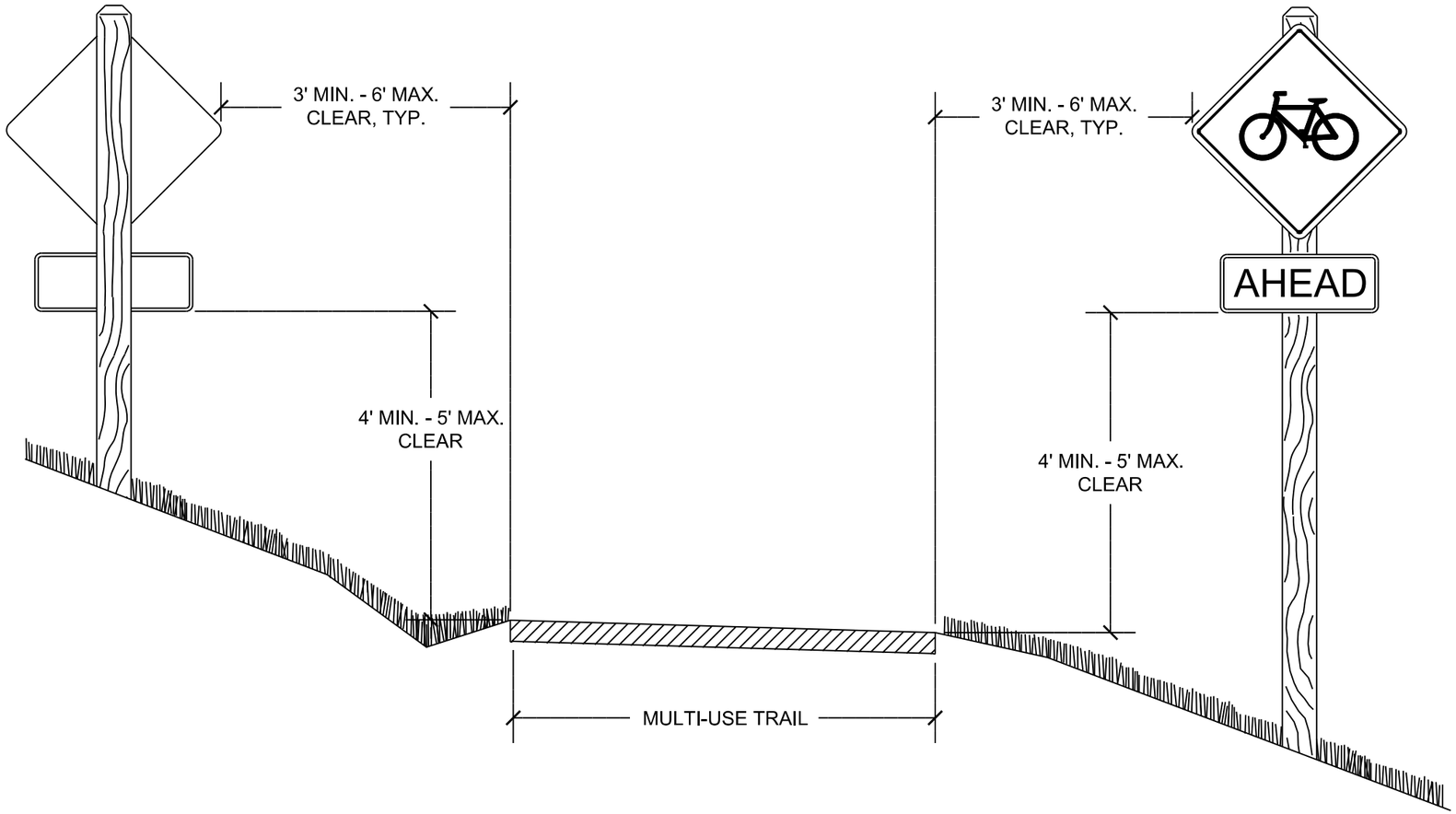
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			



SIGN PLACEMENT

NOT TO SCALE

MODEL: SOO 2
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TERRA ENGINEERING LTD.	USER NAME = JuanS	DESIGNED - MIA	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PLUM CREEK GREENWAY TRAIL SEGMENT 3 MISC. DETAILS
		DRAWN - JS	REVISED -		
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	PLOT DATE = 7/2/2024	DATE - 4-26-24	REVISED -		

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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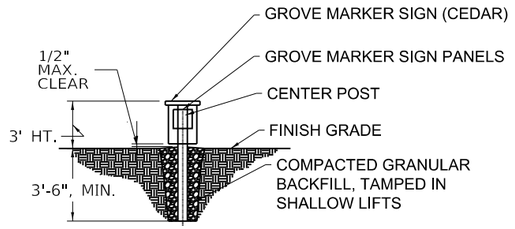
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			



NOTE:
GROVE MARKER SIGN PANELS TO BE SUPPLIED BY THE FOREST PRESERVE DISTRICT.

GROVE MARKER SIGN

TERRA ENGINEERING LTD.

USER NAME = JuanS	DESIGNED - MIA	REVISED -
	DRAWN - JS	REVISED -
PLOT SCALE = 2.0000 ' / in.	CHECKED - DDL	REVISED -
PLOT DATE = 7/2/2024	DATE - 4-26-24	REVISED -

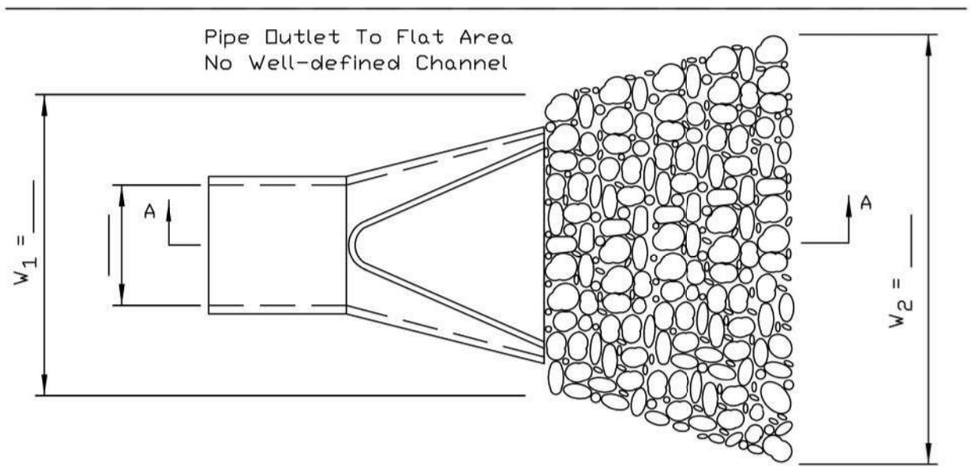
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK GREENWAY TRAIL SEGMENT 3
MISC. DETAILS

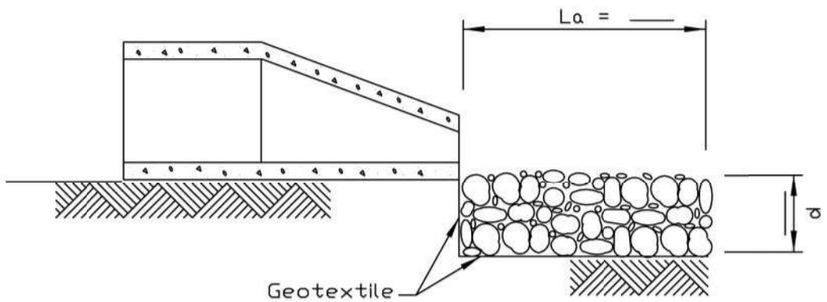
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	54
		CONTRACT NO. 61K44		
	ILLINOIS	FED. AID PROJECT		

PIPE OUTLET TO FLAT AREA

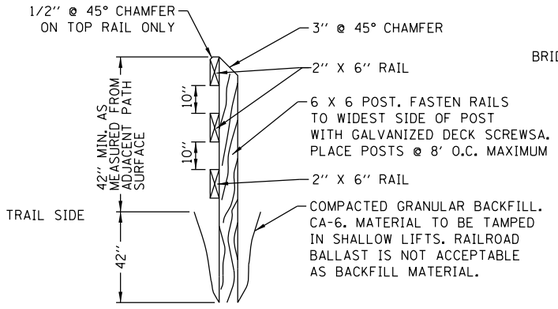


PLAN



SECTION A-A

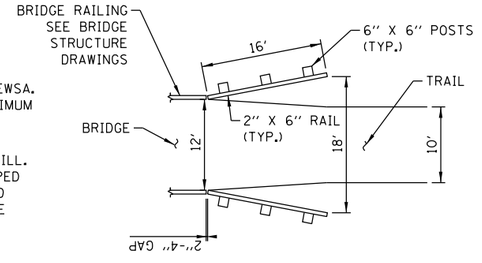
NOTES:
1. The filter fabric shall meet the requirements in material specifications 592 GEOTEXTILE Table 1 or 2, class I, II or III.
2. The rock riprap shall shall meet the IDOT requirements for the following gradation: RR _____, Quality _____.
3. The riprap shall be placed according to construction specification 61 LOOSE ROCK RIPRAP. The rock may be equipment placed.



NOTES:
1. ALTERNATE JOINTS IN RAILS BY USING 8' AND 16' LUMBER.
2. PLACE BARK SIDE AWAY FROM POST.
3. CHAMFER RAILS 45° AT TERMINAL POSTS.
4. ALL FENCE WOOD TO BE ACO TREATED PINE GRADE #1 OR BETTER.

WOOD BICYCLE RAILING SECTION (TYP.)

NOT TO SCALE



PLAN – RAILING DETAIL AT BRIDGE ENDS

NOT TO SCALE

TERRA ENGINEERING LTD.	USER NAME = JuanS	DESIGNED - MIA	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PLUM CREEK GREENWAY TRAIL SEGMENT 3 MISC. DETAILS
		DRAWN - JS	REVISED -		
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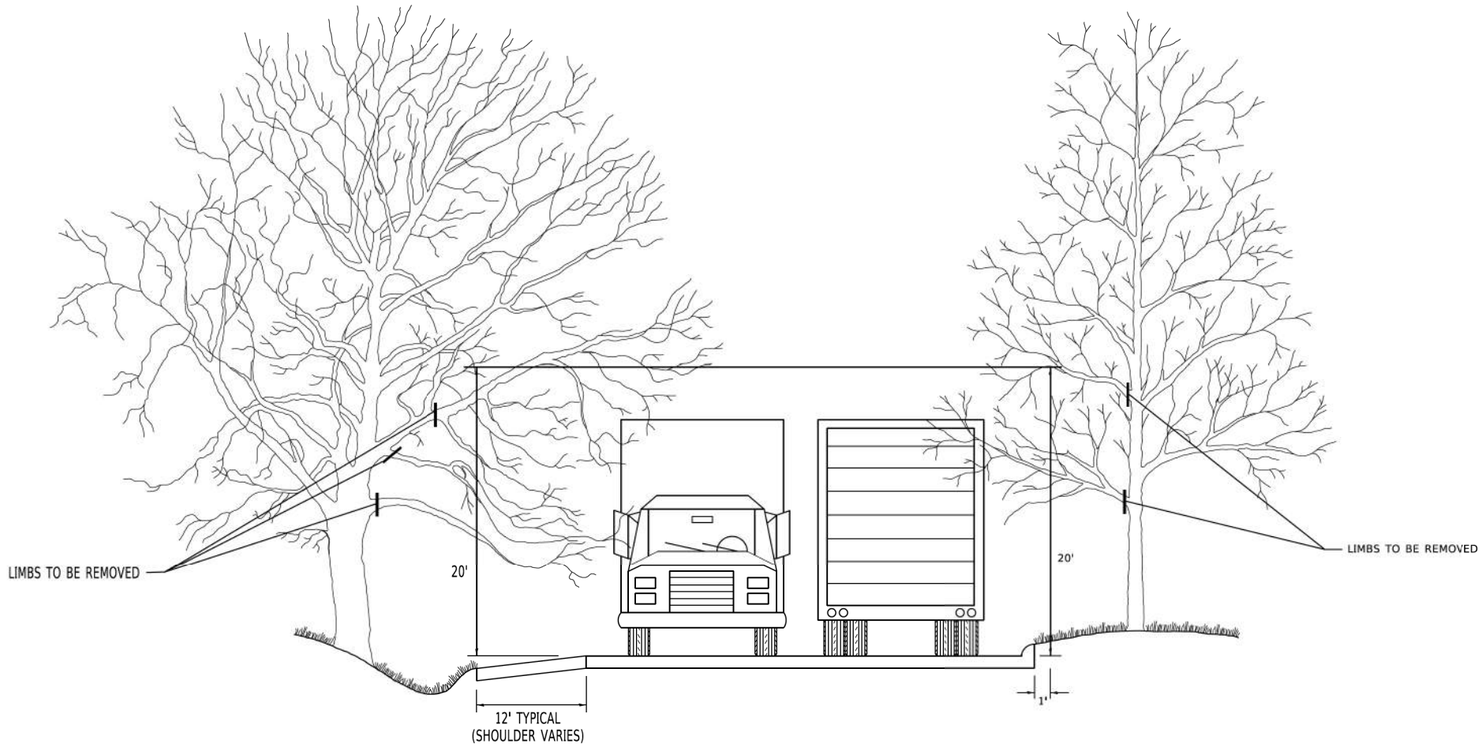
	PLOT DATE = 7/2/2024	DATE - 4-26-24	REVISED -		

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	55
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			



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	DRAWN -	REVISED -	
PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 3/11/2019	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRUNING FOR SAFETY AND EQUIPMENT CLEARANCE

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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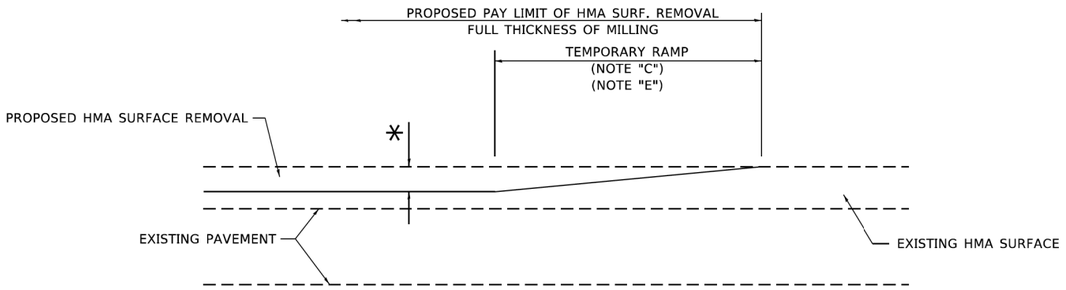
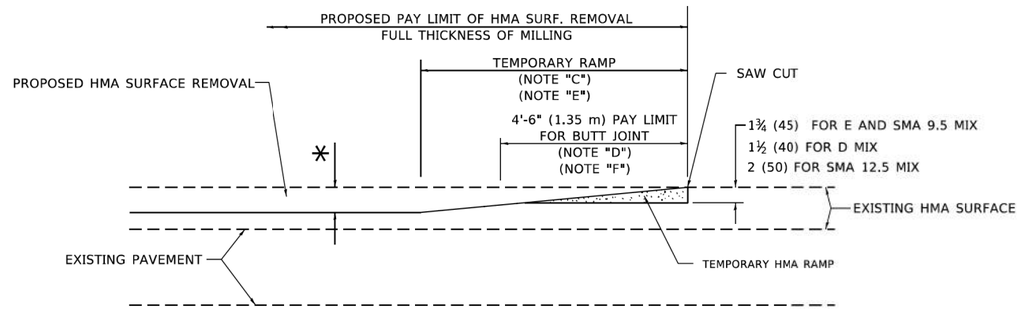
	BM–20		CONTRACT NO.	
	ILLINOIS	FED. AID PROJECT		



MILLED TEMPORARY RAMP

(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

OPTION 1

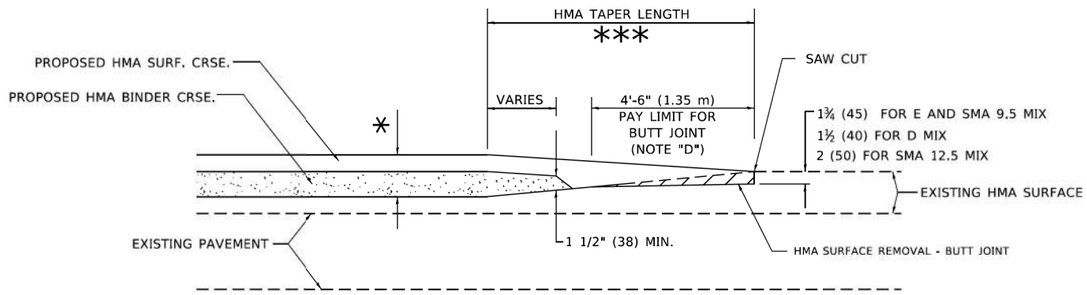


HMA CONSTRUCTED TEMPORARY RAMP

(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

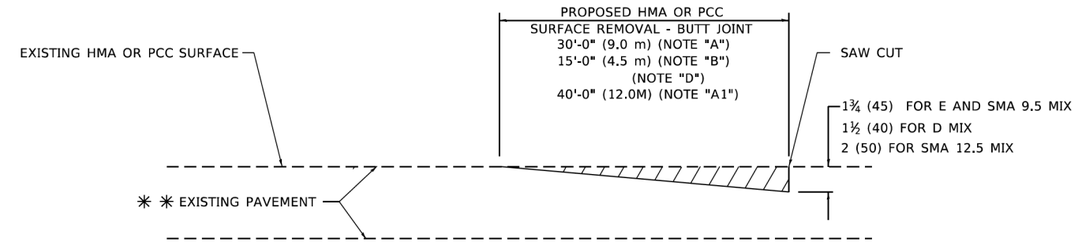
OPTION 2

TYPICAL TEMPORARY RAMP

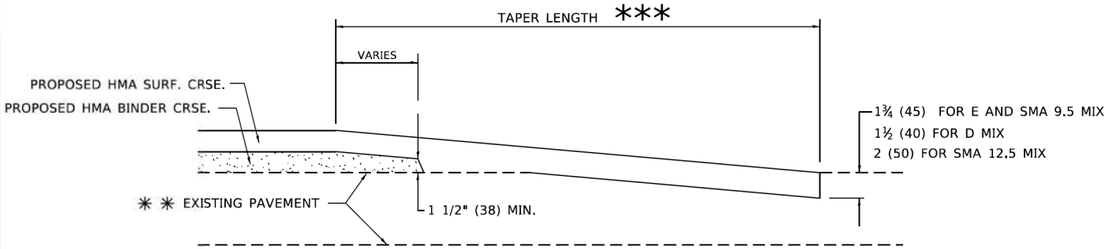


BUTT JOINT AND HMA TAPER

TYPICAL BUTT JOINT AND HMA TAPER FOR MILLING AND RESURFACING



BUTT JOINT DETAIL



HMA TAPER DETAIL

TYPICAL BUTT JOINT AND HMA TAPER FOR RESURFACING ONLY

** PC CONCRETE, HMA OR HMA RESURFACED PAVEMENT.

GENERAL NOTES

A. MAINLINE ARTERIAL ROADWAYS AND MAJOR SIDE ROADS.

A1. INTERSTATES

B. MINOR SIDE ROADS.

C. THE TEMP. RAMP SHALL BE CONSTRUCTED IMMEDIATELY UPON REMOVAL OF THE EXISTING HMA SURFACE.

D. THE BUTT JOINT SHALL BE CONSTRUCTED IMMEDIATELY PRIOR TO PLACING THE PROPOSED HMA COURSES.

E. TAPER THE TEMP. RAMP AT A RATE OF 3' - 4" (1.02m) PER 1 INCH (25 mm) OF MILLING THICKNESS.

* SEE TYPICAL SECTIONS FOR MILLING THICKNESS.

F. SEE ARTICLE 406.08 AND 406.14 OF THE STANDARD SPECIFICATIONS FOR "HMA AND/OR PCC SURFACE REMOVAL, BUTT JOINT".

*** 20'-0" (6.1 m) PER 1 (25) RESURFACING (NOTE "A")
10'-0" (3.0 m) PER 1 (25) RESURFACING (NOTE "B")

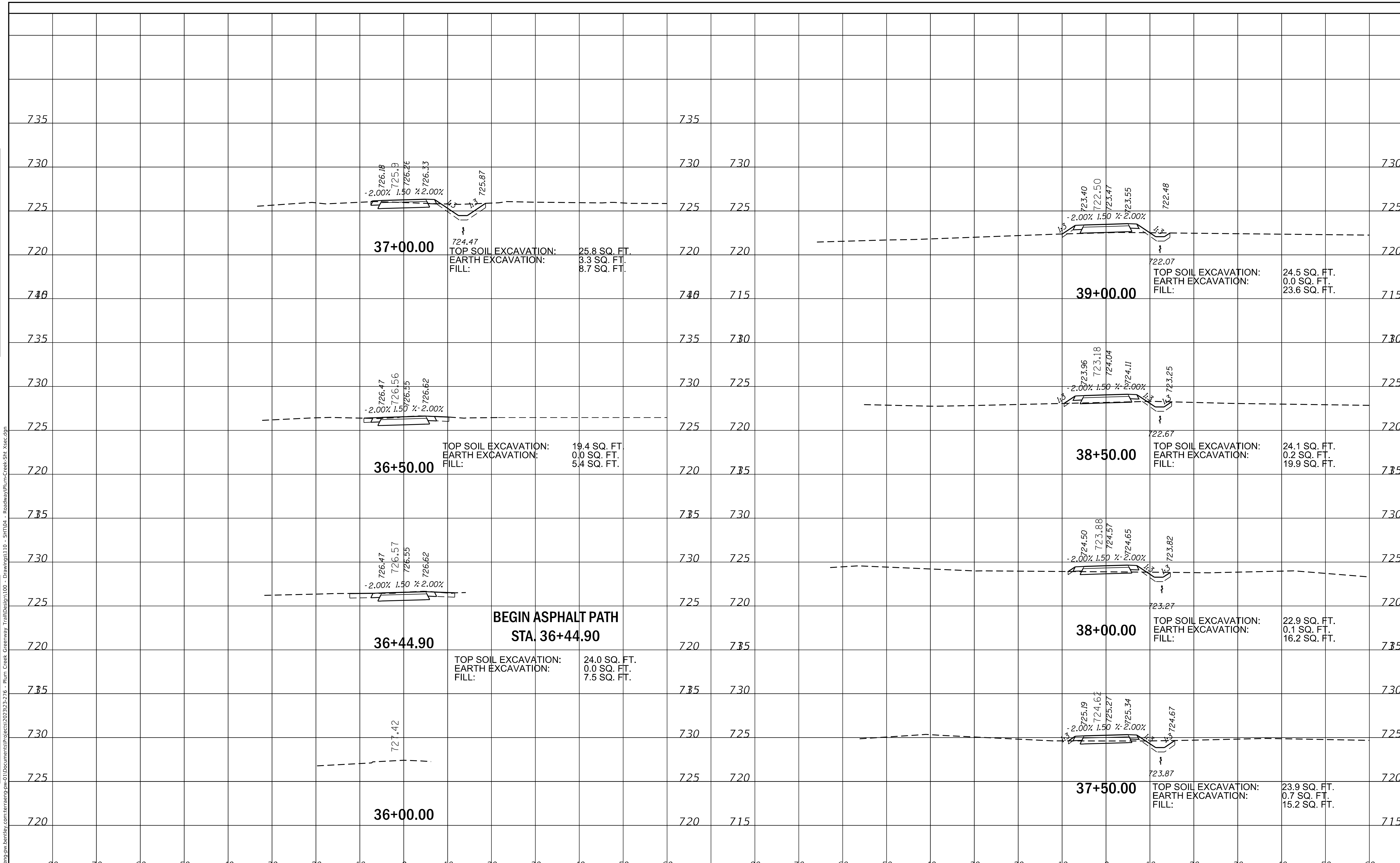
BASIS OF PAYMENT

1. THE BUTT JOINT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD (SQUARE METER) FOR "HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT" OR FOR "PORTLAND CEMENT CONCRETE SURFACE REMOVAL- BUTT JOINT".

2. THE TEMPORARY RAMP AND SAW CUT SHALL BE INCLUDED IN THE UNIT COST FOR HMA OR PCC SURFACE REMOVAL-BUTT JOINT.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

USER NAME = Lawrence.DeManche	DESIGNED - M. DE YONG	REVISED - A. ABBAS 03-21-97	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BUTT JOINT AND HMA TAPER DETAILS	F.A. RTE. / SECTION / COUNTY / TOTAL SHEETS / SHEET NO.
	DRAWN -	REVISED - M. GOMEZ 04-06-01			80 / 57
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED - R. BORO 01-01-07			BD400-05 BD-32 / CONTRACT NO.
PLOT DATE = 11/18/2022	DATE - 06-13-90	REVISED - K. SMITH 11-18-22		SCALE: NONE / SHEET 1 OF 1 SHEETS / STA. / TO STA.	ILLINOIS / FED. AID PROJECT



FINAL SURVEY — NOTE BOOK NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

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TERRA ENGINEERING LTD.

USER NAME = JuanS	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 7/2/2024	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

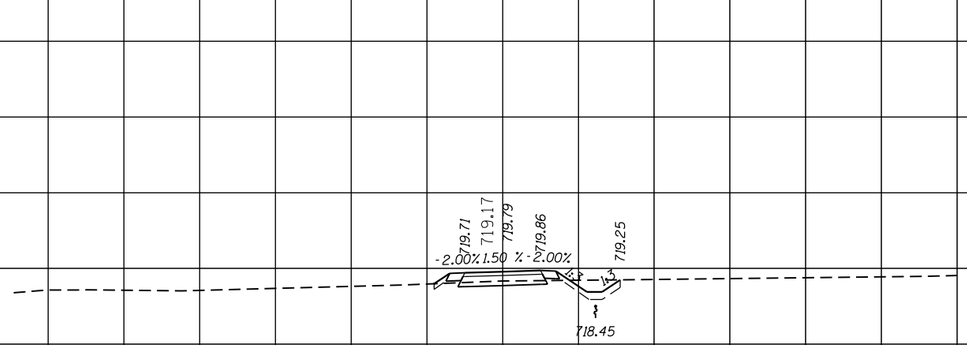
PLUM CREEK TRAIL
X-SECTIONS

SCALE: | SHEET OF SHEETS | STA. 36+00.00 TO STA. 39+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	58

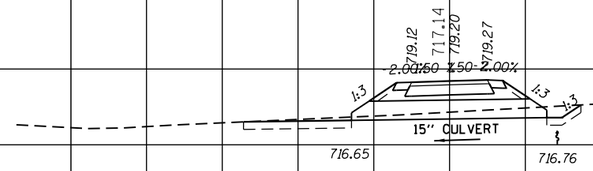
CONTRACT NO. 61K44

ILLINOIS FED. AID PROJECT



40+50.00

TOP SOIL EXCAVATION:	24.3 SQ. FT.
EARTH EXCAVATION:	0.7 SQ. FT.
FILL:	15.5 SQ. FT.



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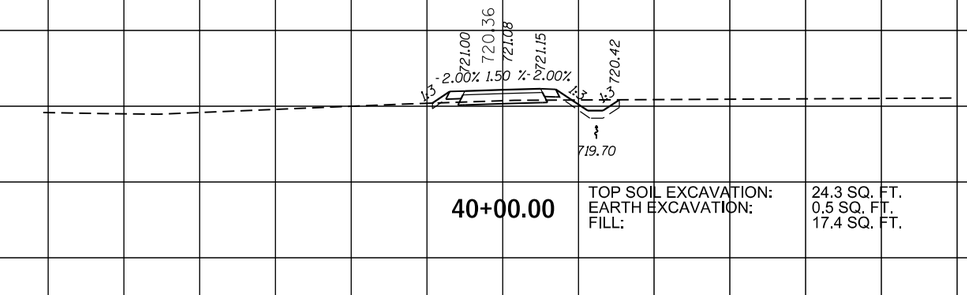
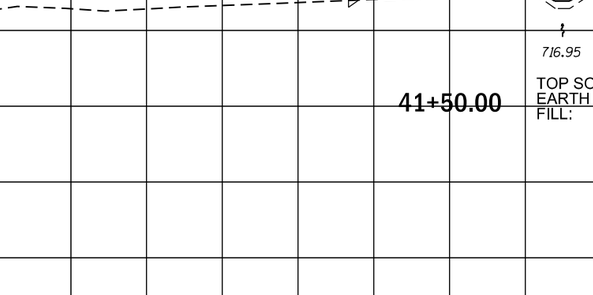


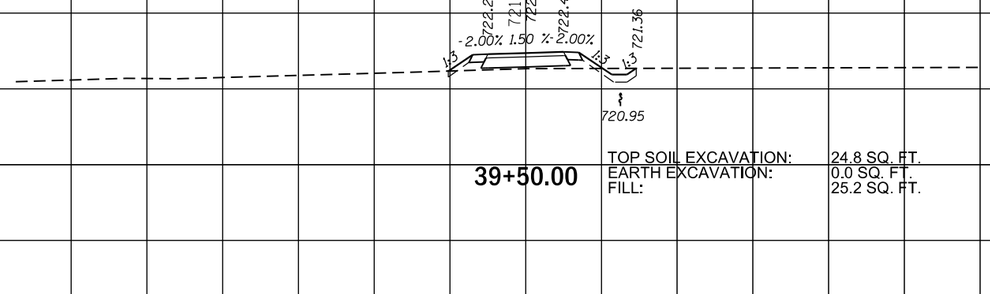
40+00.00

TOP SOIL EXCAVATION:	24.3 SQ. FT.
EARTH EXCAVATION:	0.5 SQ. FT.
FILL:	17.4 SQ. FT.



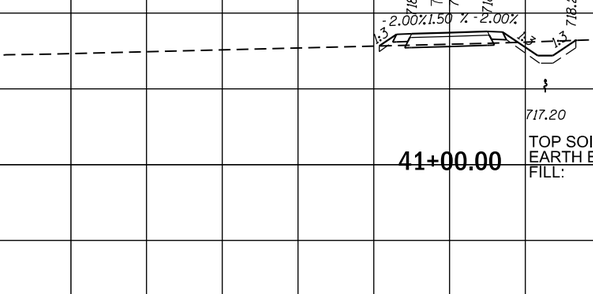
41+50.00

TOP SOIL EXCAVATION:	31.3 SQ. FT.
EARTH EXCAVATION:	0.6 SQ. FT.
FILL:	46.5 SQ. FT.



39+50.00

TOP SOIL EXCAVATION:	24.8 SQ. FT.
EARTH EXCAVATION:	0.0 SQ. FT.
FILL:	25.2 SQ. FT.



41+00.00

TOP SOIL EXCAVATION:	25.6 SQ. FT.
EARTH EXCAVATION:	1.4 SQ. FT.
FILL:	17.7 SQ. FT.

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

FINAL SURVEY	BY	DATE
NOTE BOOK	SURVEYED	
NO.	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

ORIGINAL SURVEY	BY	DATE
NOTE BOOK	SURVEYED	
NO.	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

MODEL: Default
FILE NAME: pw:\\terraeng-pw.bentley.com:terraeng-pw-01\Documents\Projects\2023\23-276 - Plum Creek Greenway Trail\Design\100 - Drawings\110 - SHT\04 - Roadway\Plum-Creek-Sht Xsec.dgn

TERRA ENGINEERING LTD.

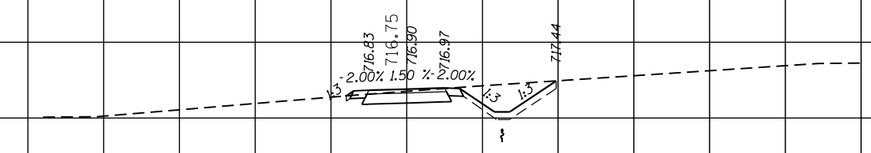
USER NAME = JuanS	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 7/2/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK TRAIL
X-SECTIONS

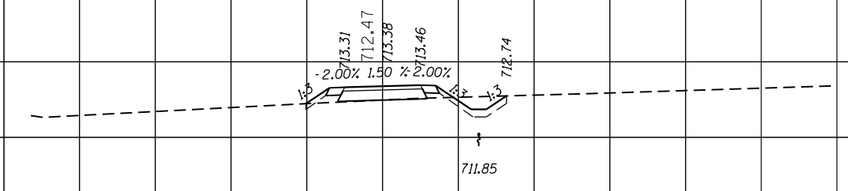
SCALE: | SHEET OF SHEETS | STA. 39+50.00 | TO STA. 41+80.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	59
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			



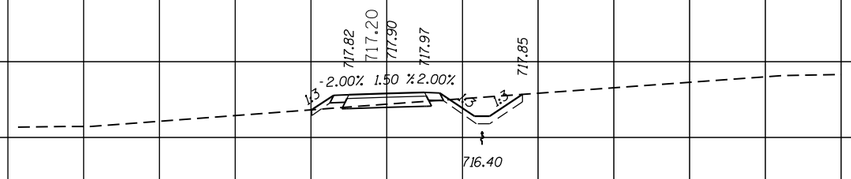
43+00.00

TOP SOIL EXCAVATION:	27.4 SQ. FT.
EARTH EXCAVATION:	7.4 SQ. FT.
FILL:	5.4 SQ. FT.



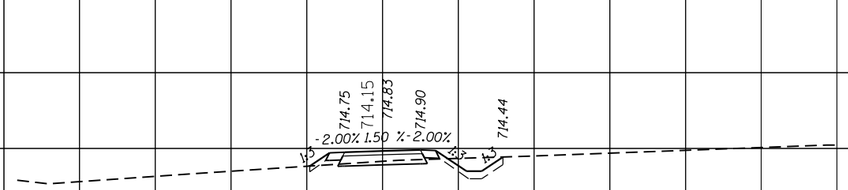
44+50.00

TOP SOIL EXCAVATION:	26.1 SQ. FT.
EARTH EXCAVATION:	1.0 SQ. FT.
FILL:	21.4 SQ. FT.



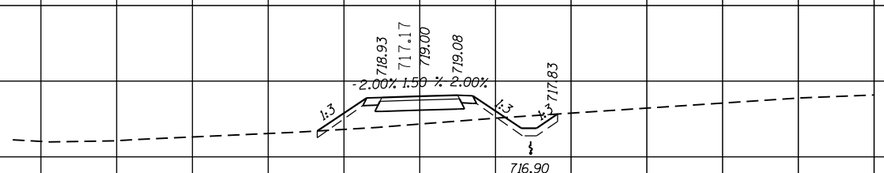
42+50.00

TOP SOIL EXCAVATION:	27.5 SQ. FT.
EARTH EXCAVATION:	3.0 SQ. FT.
FILL:	16.8 SQ. FT.



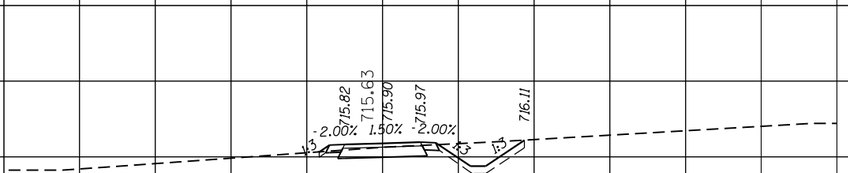
44+00.00

TOP SOIL EXCAVATION:	25.1 SQ. FT.
EARTH EXCAVATION:	1.1 SQ. FT.
FILL:	16.5 SQ. FT.



42+00.00

TOP SOIL EXCAVATION:	31.4 SQ. FT.
EARTH EXCAVATION:	0.9 SQ. FT.
FILL:	44.8 SQ. FT.



43+50.00

TOP SOIL EXCAVATION:	26.7 SQ. FT.
EARTH EXCAVATION:	5.1 SQ. FT.
FILL:	8.2 SQ. FT.

FINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

MODEL: Default
FILE NAME: pw:\\terraeng-pw.bentley.com:terraeng-pw-01\Documents\Projects\2023\23-276 - Plum Creek Greenway Trail\Design\100 - Drawings\110 - SHT\04 - Roadway\Plum-Creek-Sht Xsec.dgn

TERRA ENGINEERING LTD.

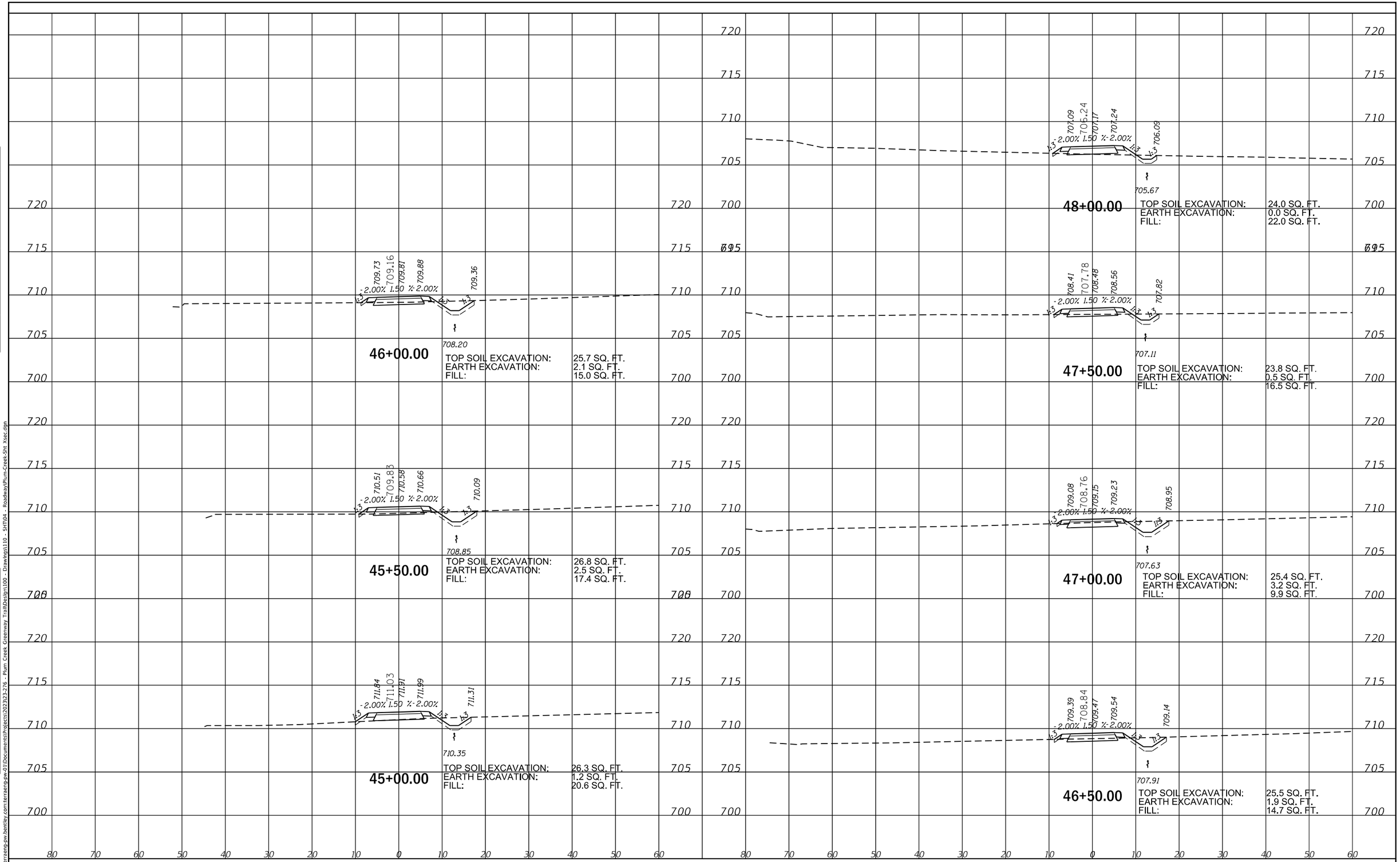
USER NAME = JuanS	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 7/2/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK TRAIL
X-SECTIONS

SCALE: | SHEET OF SHEETS | STA. 42+00.00 | TO STA. 44+50.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	60
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			



46+00.00
TOP SOIL EXCAVATION: 25.7 SQ. FT.
EARTH EXCAVATION: 2.1 SQ. FT.
FILL: 15.0 SQ. FT.

45+50.00
TOP SOIL EXCAVATION: 26.8 SQ. FT.
EARTH EXCAVATION: 2.5 SQ. FT.
FILL: 17.4 SQ. FT.

45+00.00
TOP SOIL EXCAVATION: 26.3 SQ. FT.
EARTH EXCAVATION: 1.2 SQ. FT.
FILL: 20.6 SQ. FT.

48+00.00
TOP SOIL EXCAVATION: 24.0 SQ. FT.
EARTH EXCAVATION: 0.0 SQ. FT.
FILL: 22.0 SQ. FT.

47+50.00
TOP SOIL EXCAVATION: 23.8 SQ. FT.
EARTH EXCAVATION: 0.5 SQ. FT.
FILL: 16.5 SQ. FT.

47+00.00
TOP SOIL EXCAVATION: 25.4 SQ. FT.
EARTH EXCAVATION: 3.2 SQ. FT.
FILL: 9.9 SQ. FT.

46+50.00
TOP SOIL EXCAVATION: 25.5 SQ. FT.
EARTH EXCAVATION: 1.9 SQ. FT.
FILL: 14.7 SQ. FT.

FINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

MODEL: Default
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TERRA ENGINEERING LTD.

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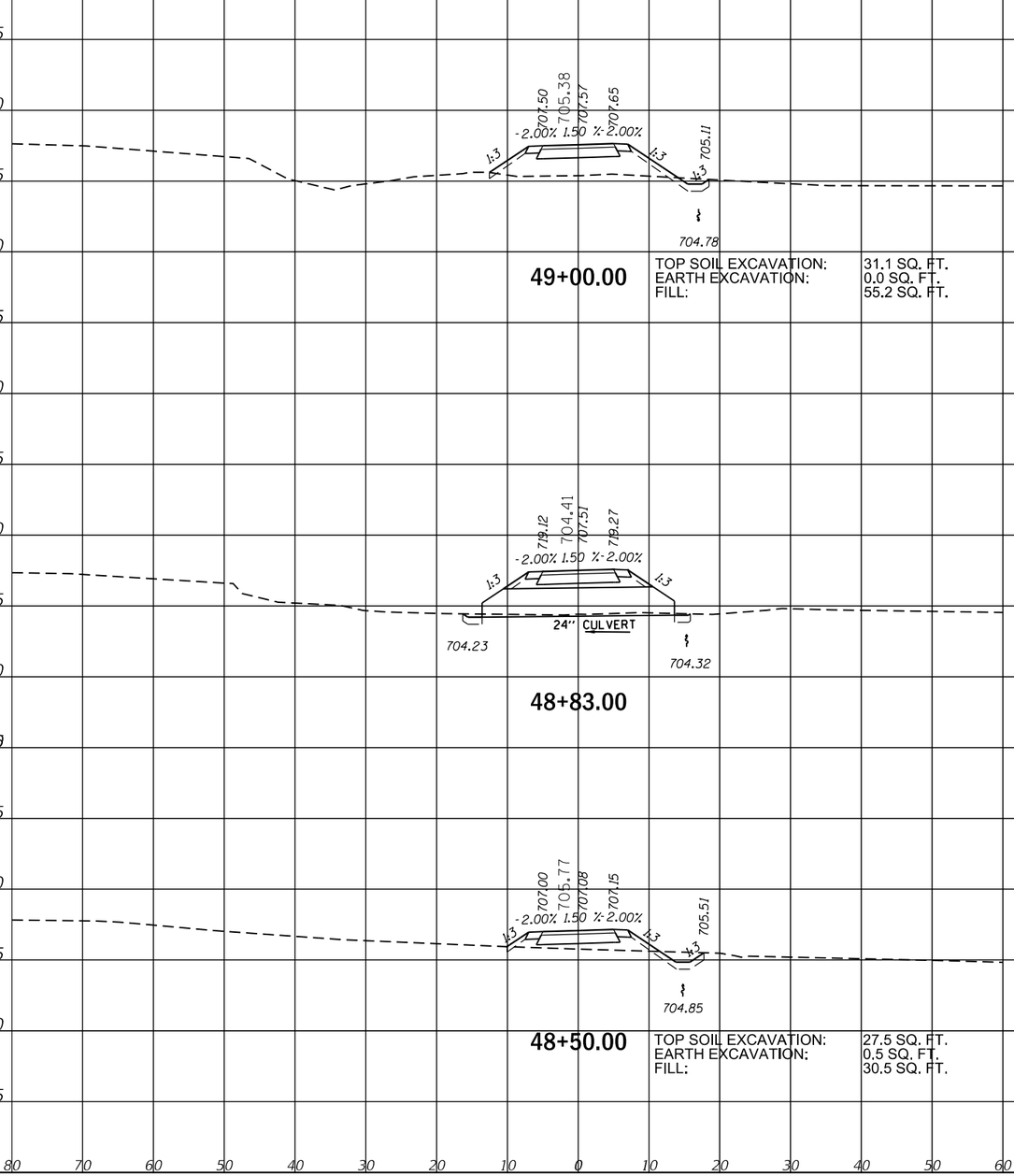
	DRAWN -	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 7/2/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK TRAIL
X-SECTIONS

SCALE: | SHEET OF SHEETS | STA. 45+00.00 | TO STA. 48+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	61
		CONTRACT NO. 61K44		
		ILLINOIS FED. AID PROJECT		



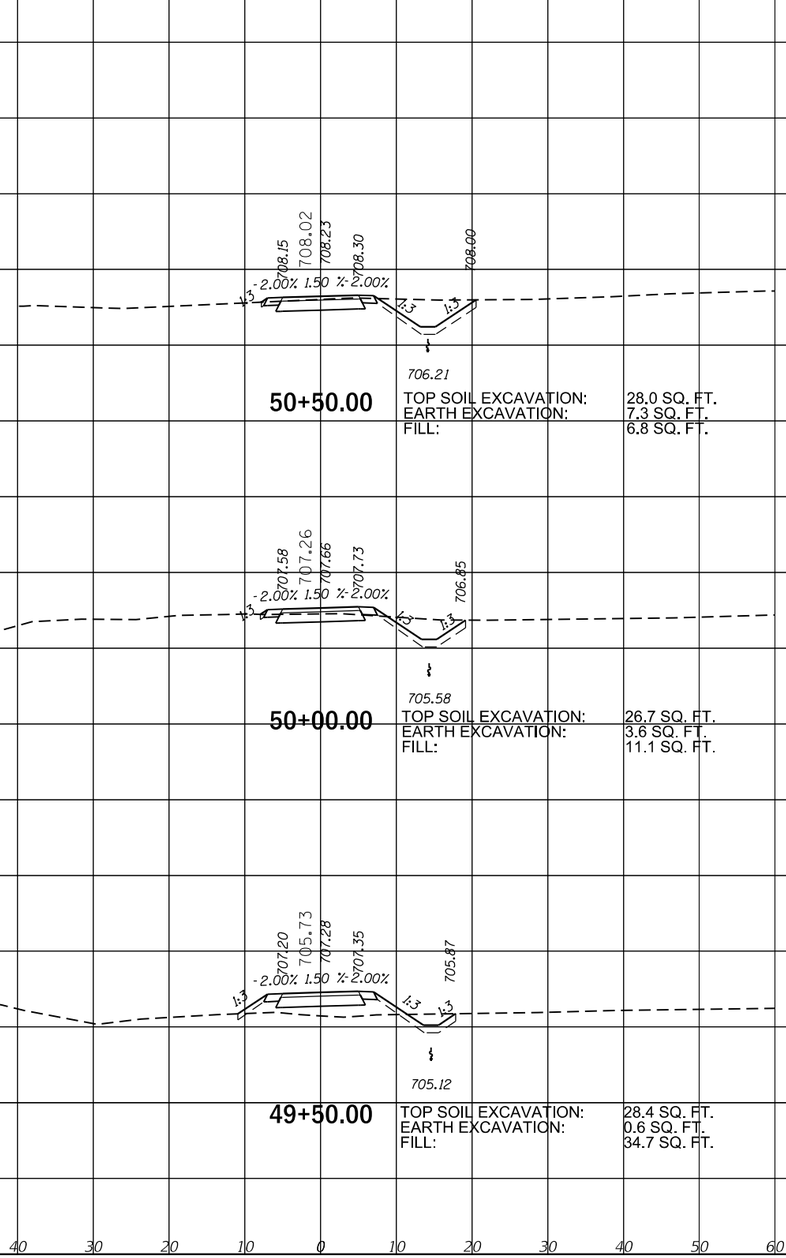
49+00.00

TOP SOIL EXCAVATION:		31.1 SQ. FT.
EARTH EXCAVATION:		0.0 SQ. FT.
FILL:		55.2 SQ. FT.

48+83.00

TOP SOIL EXCAVATION:		27.5 SQ. FT.
EARTH EXCAVATION:		0.5 SQ. FT.
FILL:		30.5 SQ. FT.

48+50.00



50+50.00

TOP SOIL EXCAVATION:		28.0 SQ. FT.
EARTH EXCAVATION:		7.3 SQ. FT.
FILL:		6.8 SQ. FT.

50+00.00

TOP SOIL EXCAVATION:		26.7 SQ. FT.
EARTH EXCAVATION:		3.6 SQ. FT.
FILL:		11.1 SQ. FT.

49+50.00

TOP SOIL EXCAVATION:		28.4 SQ. FT.
EARTH EXCAVATION:		0.6 SQ. FT.
FILL:		34.7 SQ. FT.

FINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

MODEL: Default
FILE NAME: pw:\\terraeng-pw.bentley.com:terraeng-pw-01\Documents\Projects\2023\23-276 - Plum Creek Greenway Trail\Design\100 - Drawings\110 - SHT\04 - Roadway\Plum-Creek-Sht Xsec.dgn

TERRA ENGINEERING LTD.

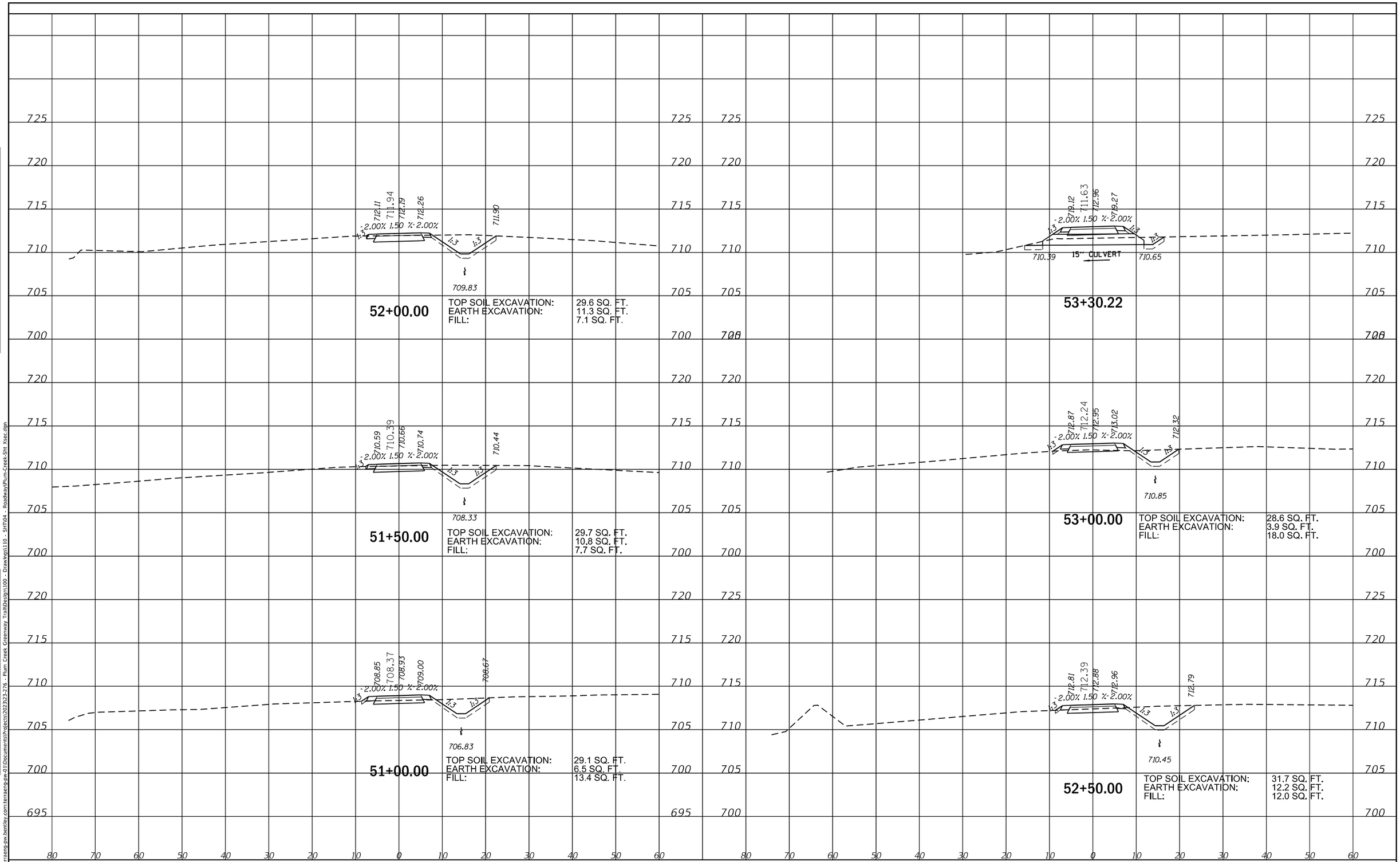
USER NAME = JuanS	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 7/2/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK TRAIL
X-SECTIONS

SCALE: | SHEET OF SHEETS | STA. 48+50.00 | TO STA. 50+50.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	62
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			



52+00.00

TOP SOIL EXCAVATION:	29.6 SQ. FT.
EARTH EXCAVATION:	11.3 SQ. FT.
FILL:	7.1 SQ. FT.

53+30.22

51+50.00

TOP SOIL EXCAVATION:	29.7 SQ. FT.
EARTH EXCAVATION:	10.8 SQ. FT.
FILL:	7.7 SQ. FT.

53+00.00

TOP SOIL EXCAVATION:	28.6 SQ. FT.
EARTH EXCAVATION:	3.9 SQ. FT.
FILL:	18.0 SQ. FT.

51+00.00

TOP SOIL EXCAVATION:	29.1 SQ. FT.
EARTH EXCAVATION:	6.5 SQ. FT.
FILL:	13.4 SQ. FT.

52+50.00

TOP SOIL EXCAVATION:	31.7 SQ. FT.
EARTH EXCAVATION:	12.2 SQ. FT.
FILL:	12.0 SQ. FT.

FINAL SURVEY — NOTE BOOK — NO. — BY — DATE
SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED

ORIGINAL SURVEY — NOTE BOOK — NO. — BY — DATE
SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED

MODEL: Default
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TERRA ENGINEERING LTD.

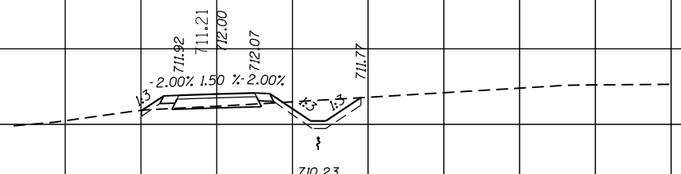
USER NAME = JuanS	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 7/2/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK TRAIL
X-SECTIONS

SCALE: | SHEET OF SHEETS | STA. 51+00.00 | TO STA. 53+30.22

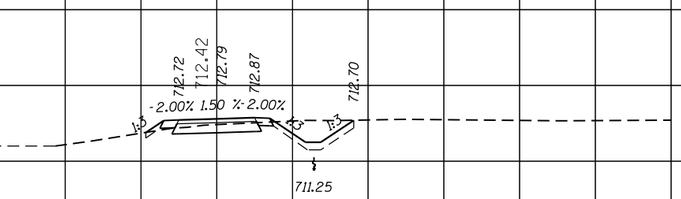
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	63
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			



710.23

54+50.00

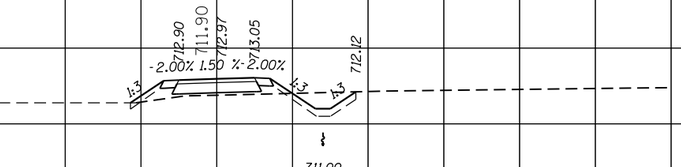
TOP SOIL EXCAVATION:	28.5 SQ. FT.
EARTH EXCAVATION:	3.8 SQ. FT.
FILL:	18.5 SQ. FT.



711.25

54+00.00

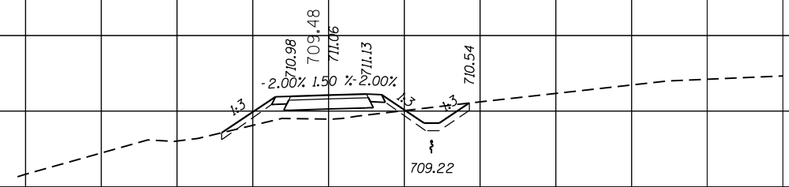
TOP SOIL EXCAVATION:	27.1 SQ. FT.
EARTH EXCAVATION:	4.1 SQ. FT.
FILL:	11.3 SQ. FT.



711.00

53+50.00

TOP SOIL EXCAVATION:	29.5 SQ. FT.
EARTH EXCAVATION:	2.0 SQ. FT.
FILL:	26.9 SQ. FT.



709.22

55+00.00

TOP SOIL EXCAVATION:	32.6 SQ. FT.
EARTH EXCAVATION:	1.9 SQ. FT.
FILL:	37.4 SQ. FT.

FINAL SURVEY	BY	DATE
NOTE BOOK	SURVEYED	
NO.	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

ORIGINAL SURVEY	BY	DATE
NOTE BOOK	SURVEYED	
NO.	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

MODEL: Default
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TERRA ENGINEERING LTD.	USER NAME = JuanS	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
	PLOT DATE = 7/2/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK TRAIL
X-SECTIONS

SCALE: | SHEET OF SHEETS | STA. 53+50.00 | TO STA. 55+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	64
		CONTRACT NO. 61K44		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY

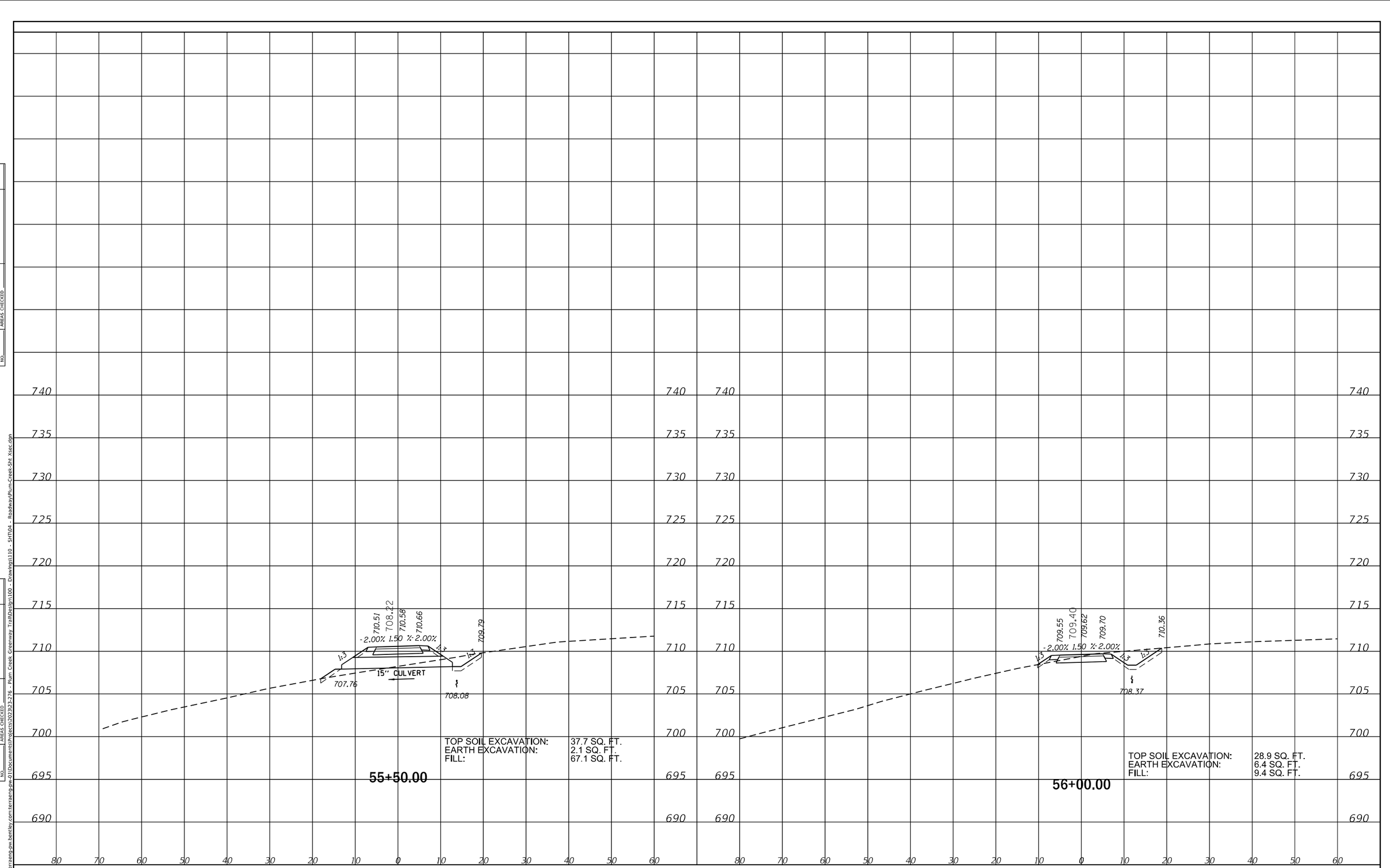
	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

NOTE BOOK
NO.

ORIGINAL SURVEY

	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

NOTE BOOK
NO.



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TERRA ENGINEERING LTD.

USER NAME = JuanS	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 7/2/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK TRAIL
X-SECTIONS

SCALE: | SHEET OF SHEETS | STA. 55+50.00 | TO STA. 56+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	65
		CONTRACT NO. 61K44		
		ILLINOIS	FED. AID PROJECT	

FINAL SURVEY

	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

NOTE BOOK
NO.

ORIGINAL SURVEY

	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

NOTE BOOK
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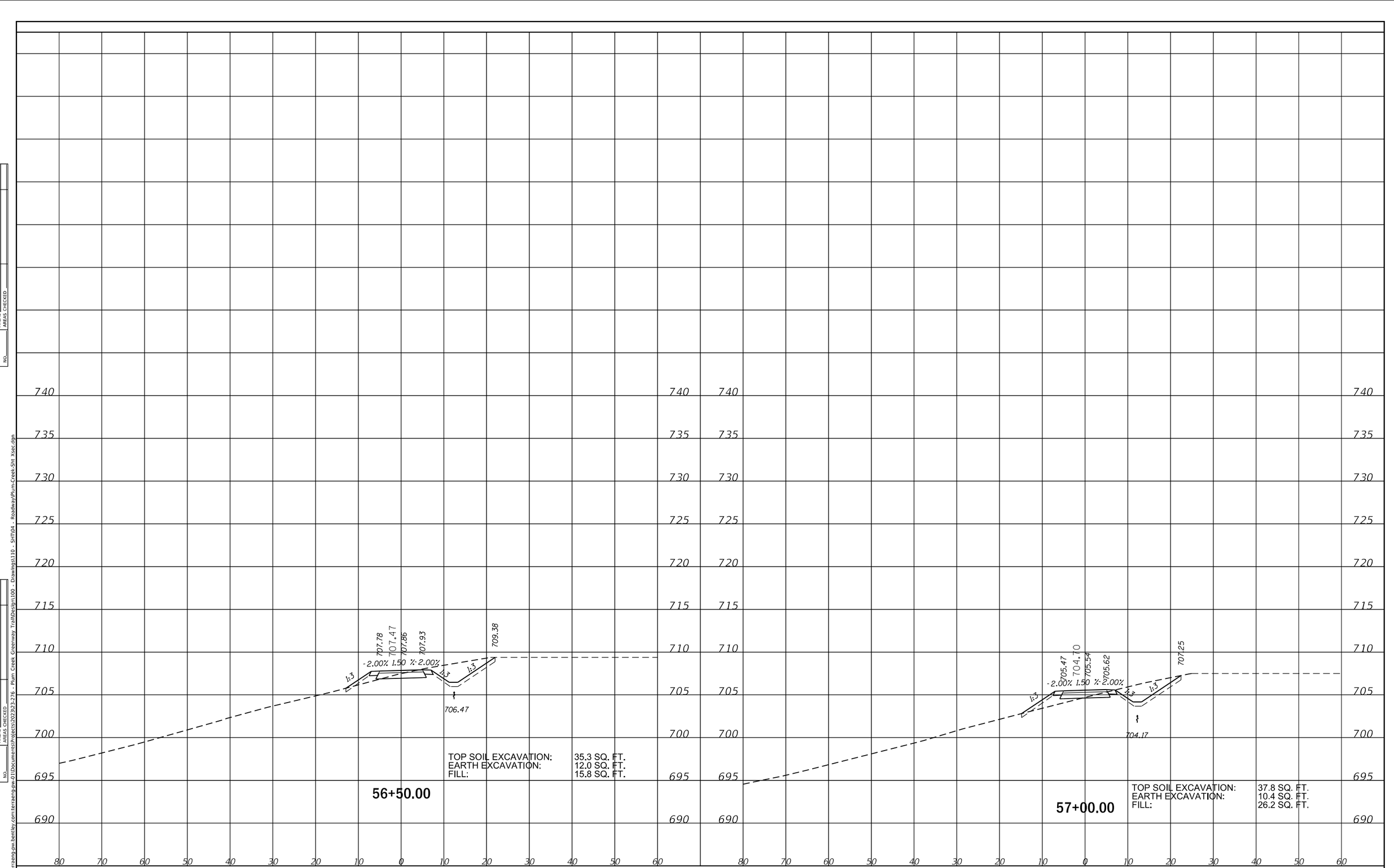

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TERRA ENGINEERING LTD.

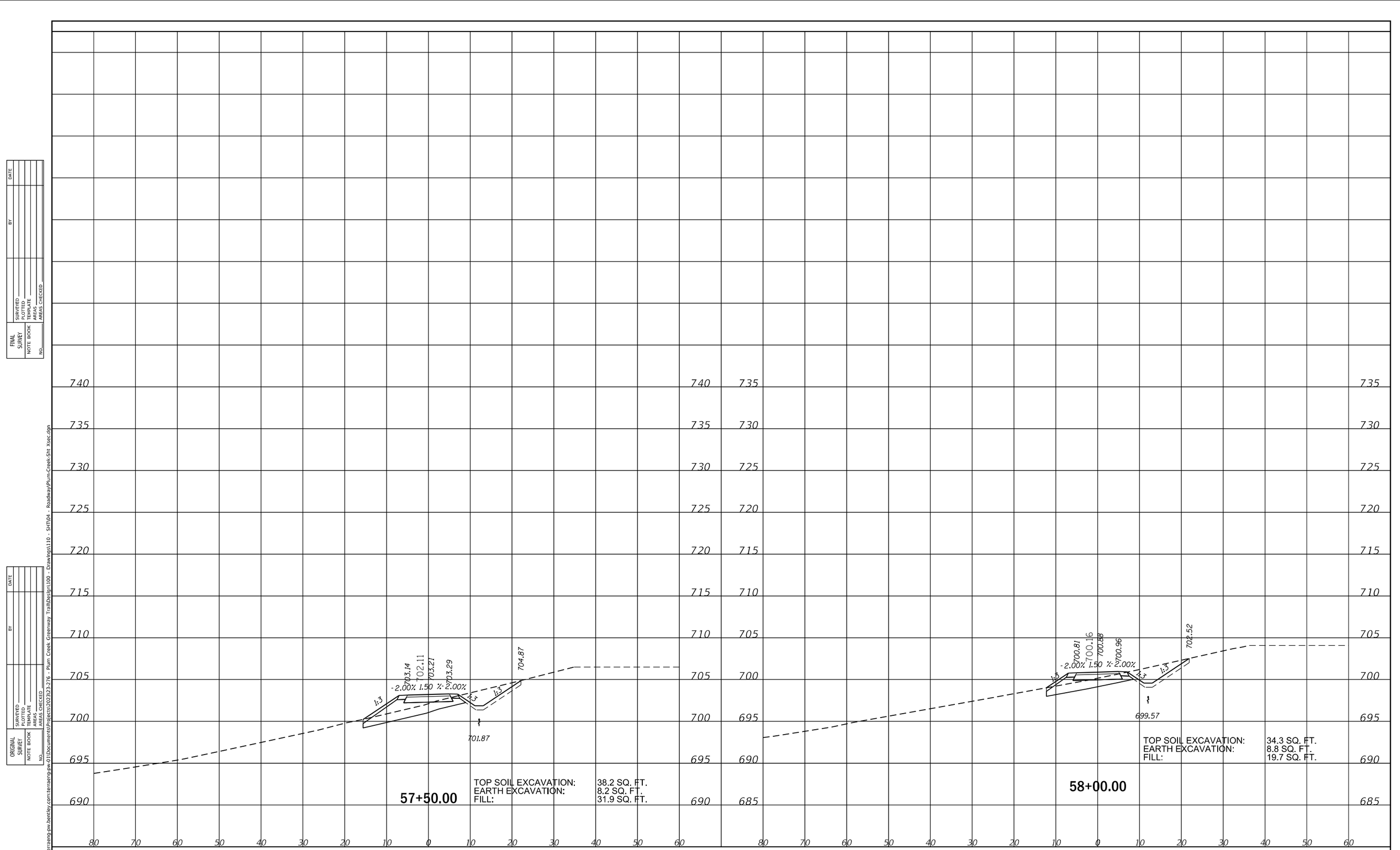
USER NAME = JuanS	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 7/2/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK TRAIL
X-SECTIONS

SCALE: | SHEET OF SHEETS | STA. 56+50.00 | TO STA. 57+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	66
		CONTRACT NO. 61K44		
		ILLINOIS	FED. AID PROJECT	



FINAL SURVEY

NOTE BOOK	BY	DATE
NO.		
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

ORIGINAL SURVEY

NOTE BOOK	BY	DATE
NO.		
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

MODEL: Default
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TERRA ENGINEERING LTD.

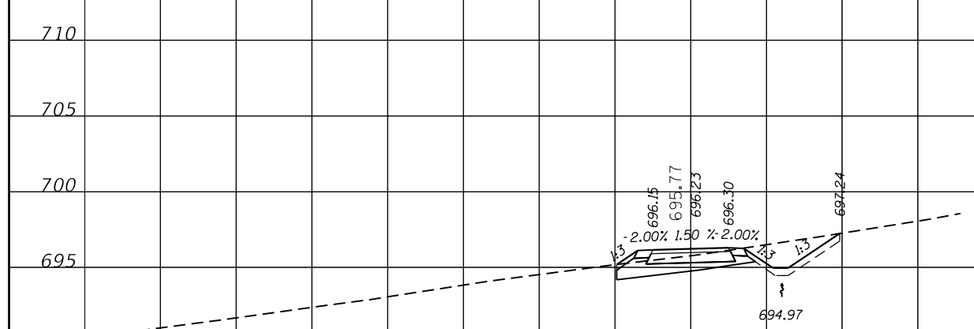
USER NAME = JuanS	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 7/2/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK TRAIL
X-SECTIONS

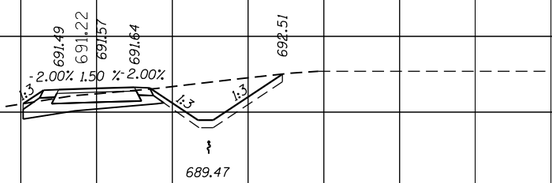
SCALE: | SHEET OF SHEETS | STA. 57+50.00 | TO STA. 58+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	67
		CONTRACT NO. 61K44		
		ILLINOIS	FED. AID PROJECT	



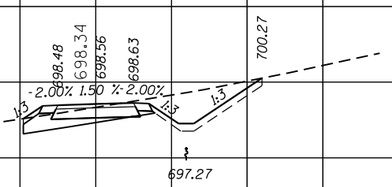
TOP SOIL EXCAVATION: 29.2 SQ. FT.
EARTH EXCAVATION: 6.4 SQ. FT.
FILL: 11.7 SQ. FT.

59+00.00



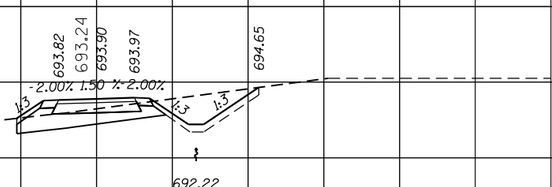
TOP SOIL EXCAVATION: 34.0 SQ. FT.
EARTH EXCAVATION: 15.6 SQ. FT.
FILL: 10.8 SQ. FT.

60+00.00



TOP SOIL EXCAVATION: 34.3 SQ. FT.
EARTH EXCAVATION: 10.6 SQ. FT.
FILL: 7.9 SQ. FT.

58+50.00



TOP SOIL EXCAVATION: 31.7 SQ. FT.
EARTH EXCAVATION: 8.5 SQ. FT.
FILL: 16.3 SQ. FT.

59+50.00

USER NAME = JuanS	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 7/2/2024	DATE -	REVISED -	

TERRA ENGINEERING LTD.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK TRAIL
X-SECTIONS

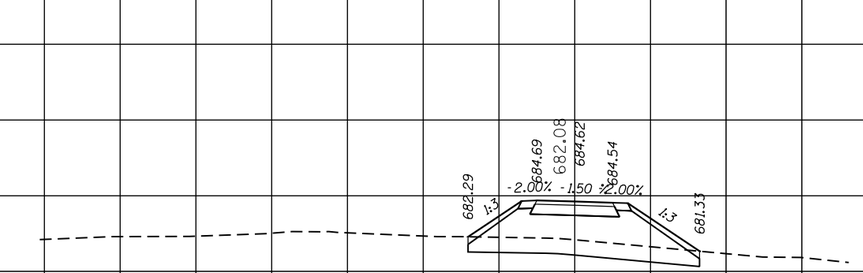
SCALE: | SHEET OF SHEETS | STA. 58+50.00 | TO STA. 60+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	68
		CONTRACT NO. 61K44		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

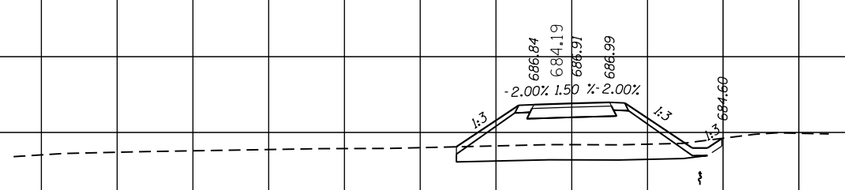
ORIGINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

MODEL: Default
FILE NAME: pw:\\terraeng-pw.bentley.com:terraeng-pw-01\Documents\Projects\2023\23-276 - Plum Creek Greenway Trail\Design\100 - Drawings\110 - SHT\04 - Roadway\Plum-Creek-Sht Xsec.dgn



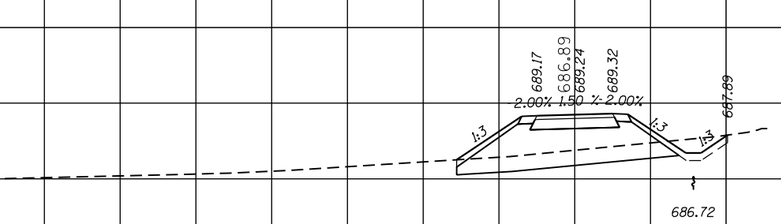
61+50.00

TOP SOIL EXCAVATION:	30.7 SQ. FT.
EARTH EXCAVATION:	0.0 SQ. FT.
FILL:	69.3 SQ. FT.



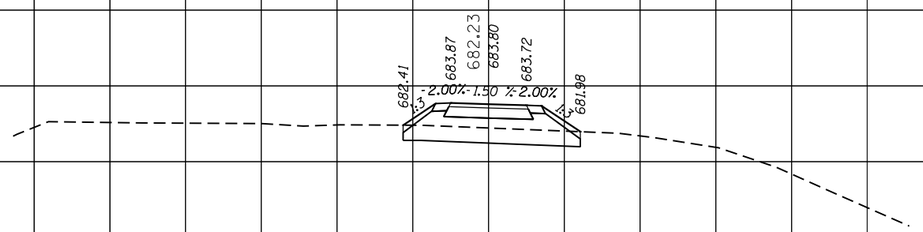
61+00.00

TOP SOIL EXCAVATION:	34.6 SQ. FT.
EARTH EXCAVATION:	0.0 SQ. FT.
FILL:	72.3 SQ. FT.



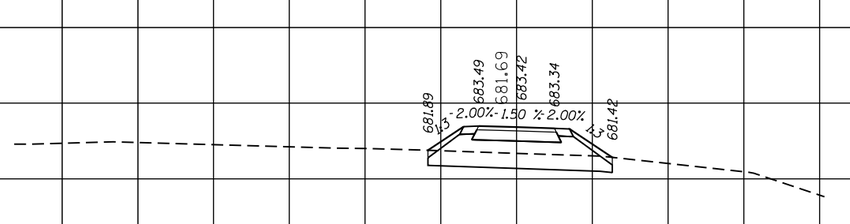
60+50.00

TOP SOIL EXCAVATION:	35.4 SQ. FT.
EARTH EXCAVATION:	1.4 SQ. FT.
FILL:	60.9 SQ. FT.



62+50.00

TOP SOIL EXCAVATION:	23.4 SQ. FT.
EARTH EXCAVATION:	0.0 SQ. FT.
FILL:	36.9 SQ. FT.



62+00.00

TOP SOIL EXCAVATION:	24.3 SQ. FT.
EARTH EXCAVATION:	0.0 SQ. FT.
FILL:	41.0 SQ. FT.

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

FINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

MODEL: Default
FILE NAME: pw:\\terraeng-pw.bentley.com:terraeng-pw-01\Documents\Projects\2023\23-276 - Plum Creek Greenway Trail\Design\100 - Drawings\110 - SHT\04 - Roadway\Plum-Creek-Sht Xsec.dgn

TERRA ENGINEERING LTD.

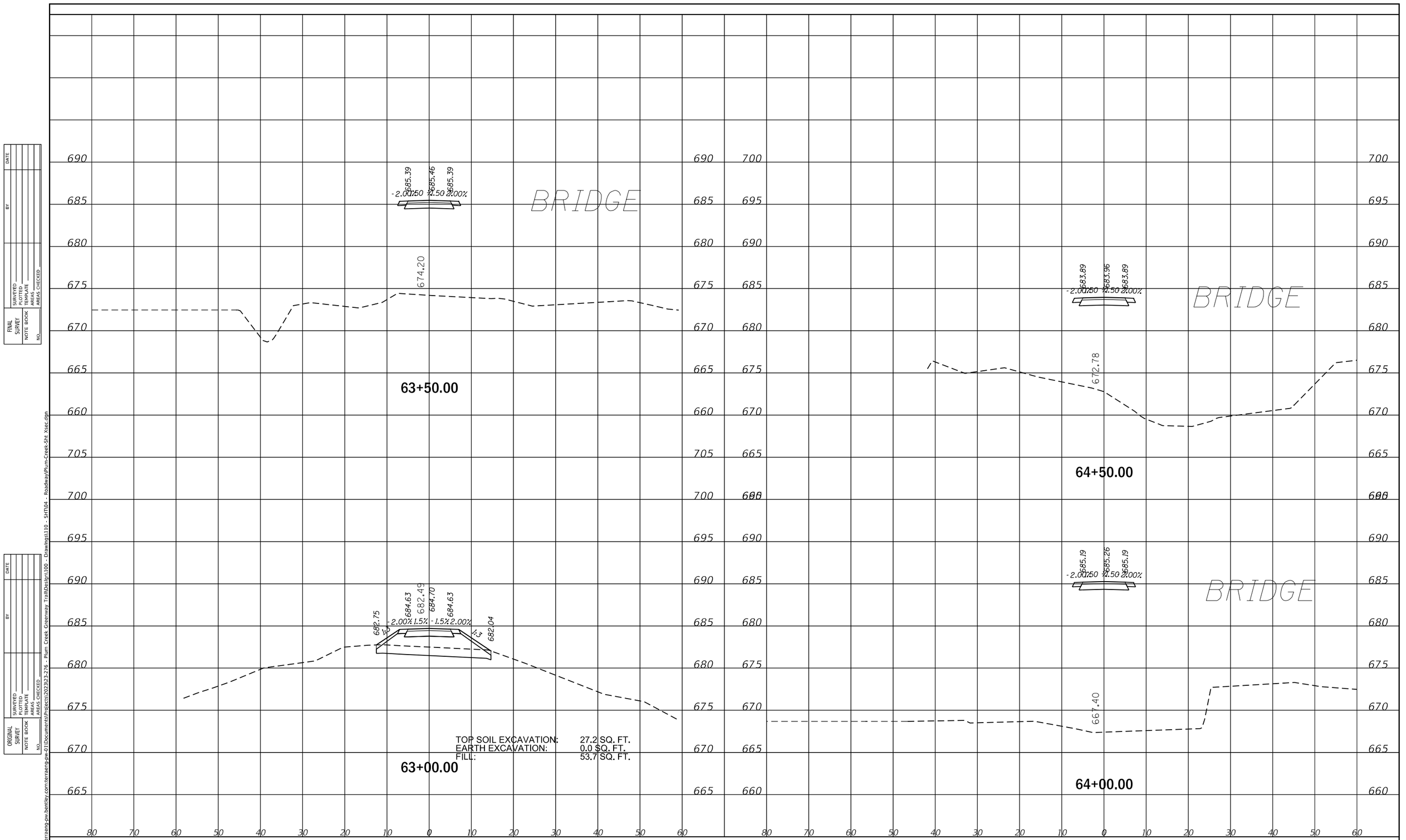
USER NAME = JuanS	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 7/2/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK TRAIL
X-SECTIONS

SCALE: | SHEET OF SHEETS | STA. 60+50.00 | TO STA. 62+50.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	69
		CONTRACT NO. 61K44		
		ILLINOIS	FED. AID PROJECT	



ORIGINAL SURVEY	DATE
NOTE BOOK	BY
NO.	SURVEYED
	PLOTTED
	TEMPLATE
	AREAS
	AREAS CHECKED

FINAL SURVEY	DATE
NOTE BOOK	BY
NO.	SURVEYED
	PLOTTED
	TEMPLATE
	AREAS
	AREAS CHECKED

MODEL: Default
FILE NAME: pw:\terraeng-pw.bentley.com:terraeng-pw-01\Documents\Projects\2023\23-276 - Plum Creek Greenway Trail\Design\100 - Drawings\110 - SHT04 - Roadway\Plum-Creek-Sht Xsec.dgn

TERRA ENGINEERING LTD.

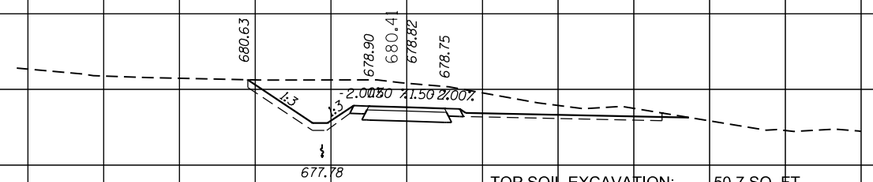
USER NAME = JuanS	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 7/2/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK TRAIL
X-SECTIONS

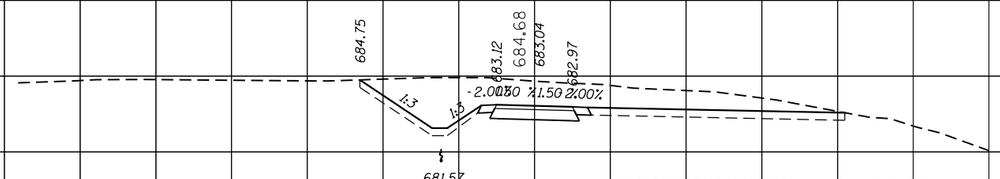
SCALE: | SHEET OF SHEETS | STA. 63+00.00 | TO STA. 64+50.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	70
		CONTRACT NO. 61K44		
		ILLINOIS	FED. AID PROJECT	



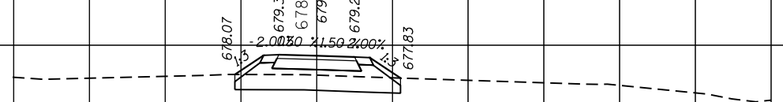
66+00.00

TOP SOIL EXCAVATION:	50.7 SQ. FT.
EARTH EXCAVATION:	42.5 SQ. FT.
FILL:	13.7 SQ. FT.



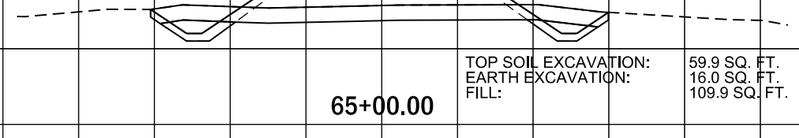
67+00.00

TOP SOIL EXCAVATION:	62.4 SQ. FT.
EARTH EXCAVATION:	65.3 SQ. FT.
FILL:	0.0 SQ. FT.



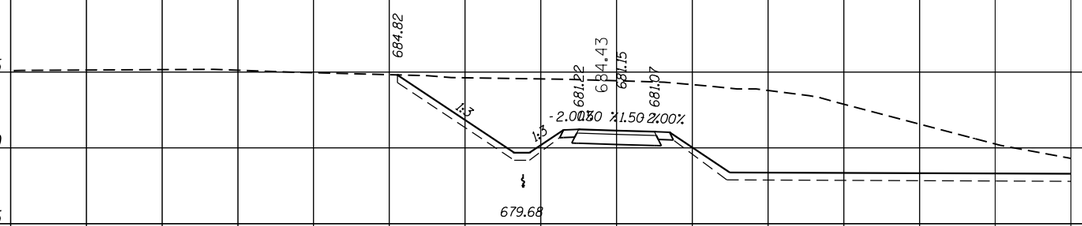
65+50.00

TOP SOIL EXCAVATION:	21.9 SQ. FT.
EARTH EXCAVATION:	0.0 SQ. FT.
FILL:	30.0 SQ. FT.



65+00.00

TOP SOIL EXCAVATION:	59.9 SQ. FT.
EARTH EXCAVATION:	16.0 SQ. FT.
FILL:	109.9 SQ. FT.



66+50.00

TOP SOIL EXCAVATION:	75.4 SQ. FT.
EARTH EXCAVATION:	162.3 SQ. FT.
FILL:	0.0 SQ. FT.

TERRA ENGINEERING LTD.	USER NAME = JuanS	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
	PLOT DATE = 7/2/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK TRAIL
X-SECTIONS

SCALE: | SHEET OF SHEETS | STA. 65+00.00 | TO STA. 67+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	71
		CONTRACT NO. 61K44		
		ILLINOIS FED. AID PROJECT		

ORIGINAL SURVEY | NOTE BOOK | NO. | SURVEYED | PLOTTED | TEMPLATE | AREAS | AREAS CHECKED | BY | DATE

FINAL SURVEY | NOTE BOOK | NO. | SURVEYED | PLOTTED | TEMPLATE | AREAS | AREAS CHECKED | BY | DATE

MODEL: Default
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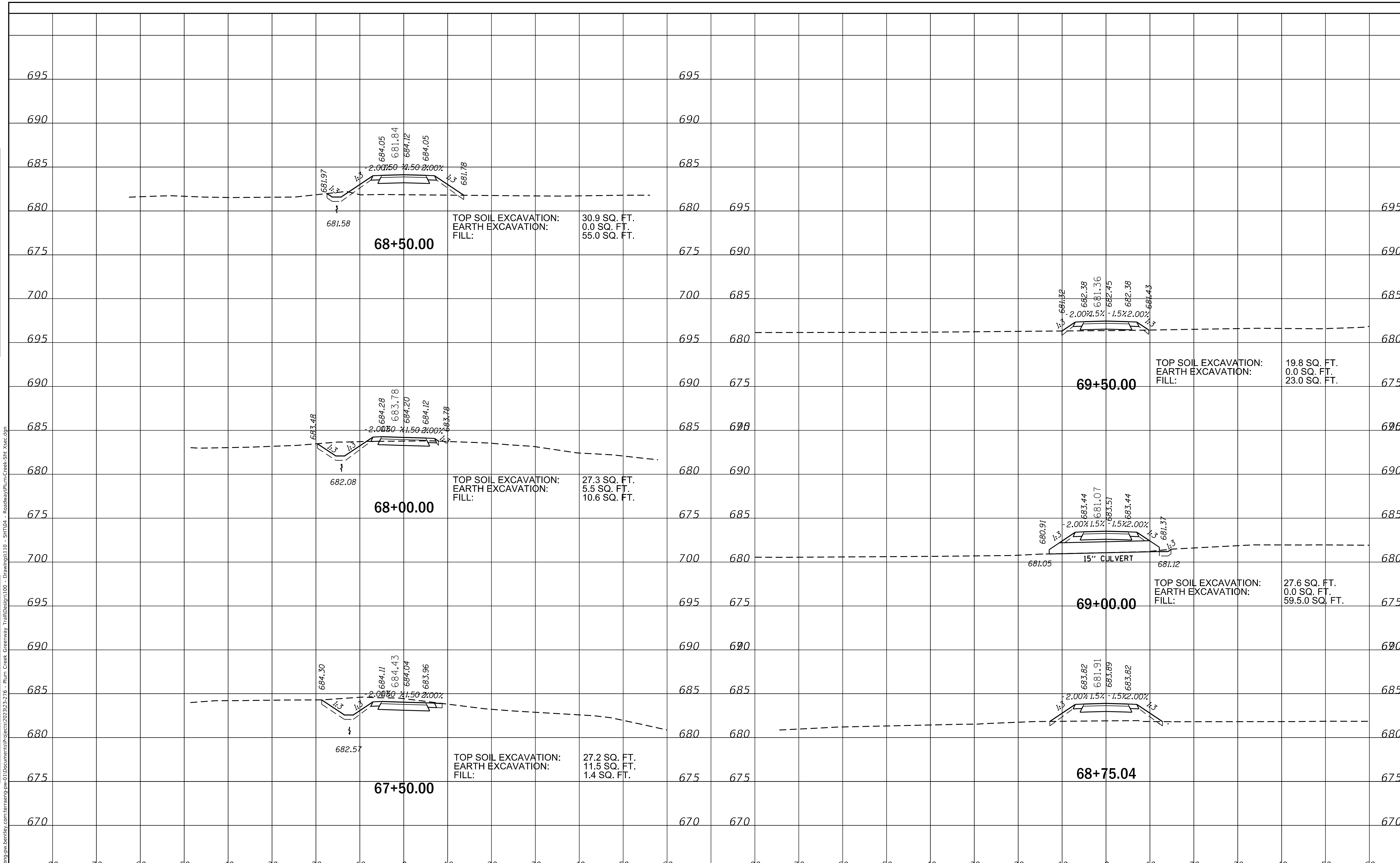

68+50.00
TOP SOIL EXCAVATION: 30.9 SQ. FT.
EARTH EXCAVATION: 0.0 SQ. FT.
FILL: 55.0 SQ. FT.
68+00.00
TOP SOIL EXCAVATION: 27.3 SQ. FT.
EARTH EXCAVATION: 5.5 SQ. FT.
FILL: 10.6 SQ. FT.
67+50.00
TOP SOIL EXCAVATION: 27.2 SQ. FT.
EARTH EXCAVATION: 11.5 SQ. FT.
FILL: 1.4 SQ. FT.
69+50.00
TOP SOIL EXCAVATION: 19.8 SQ. FT.
EARTH EXCAVATION: 0.0 SQ. FT.
FILL: 23.0 SQ. FT.
69+00.00
15" CULVERT
TOP SOIL EXCAVATION: 27.6 SQ. FT.
EARTH EXCAVATION: 0.0 SQ. FT.
FILL: 59.5.0 SQ. FT.
68+75.04

TERRA ENGINEERING LTD.

USER NAME = JuanS	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 7/2/2024	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

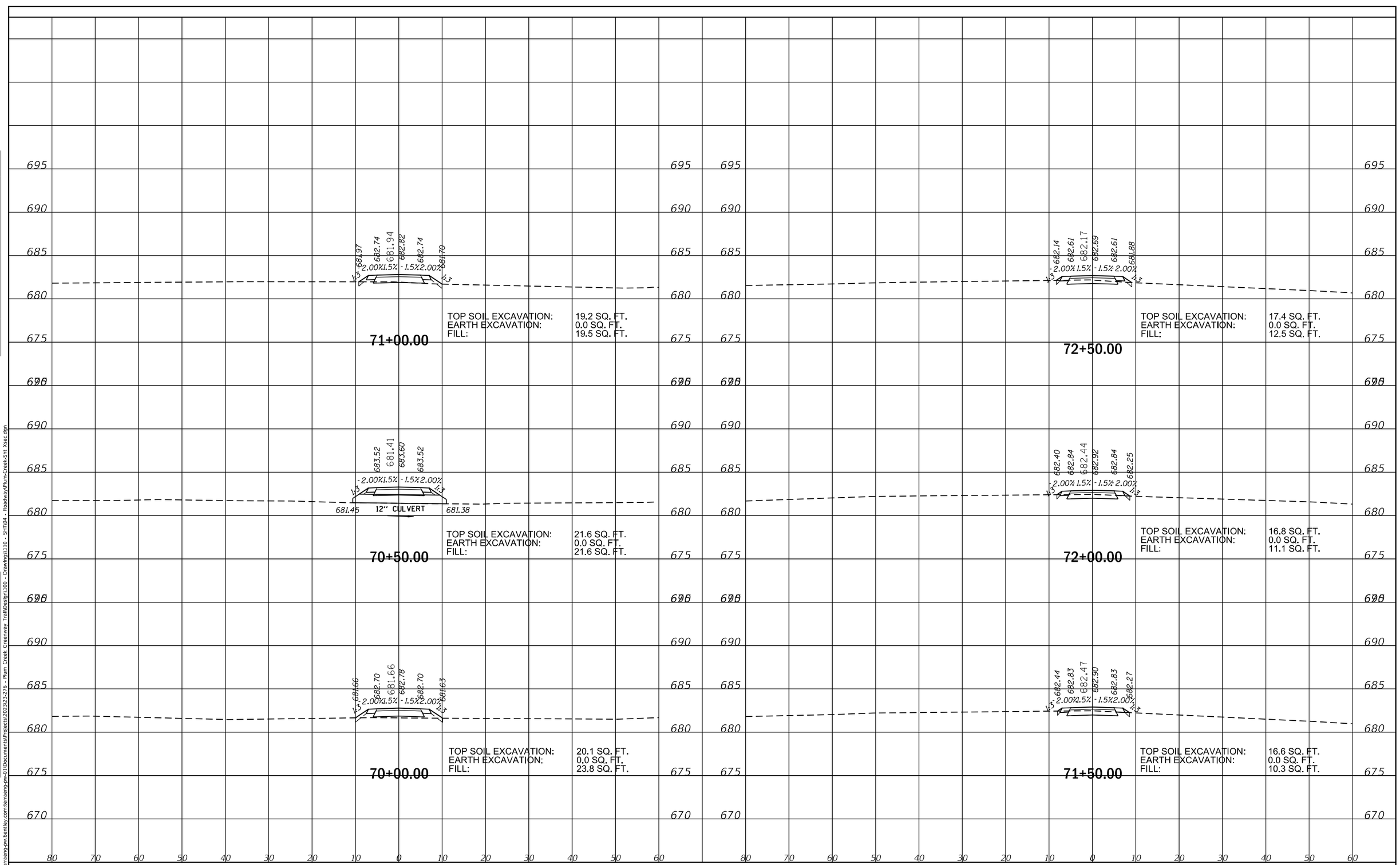
PLUM CREEK TRAIL
X-SECTIONS

SCALE: SHEET OF SHEETS STA. 67+50.00 TO STA. 69+50.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	72

CONTRACT NO. 61K44

ILLINOIS FED. AID PROJECT



FINAL SURVEY / ORIGINAL SURVEY

NOTE BOOK
NO.

SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED

BY

DATE

MODEL: Default
FILE NAME: pw:\terraeng-pw.bentley.com:terraeng-pw-01\Documents\Projects\2023\23-276 - Plum Creek Greenway Trail\Design\100 - Drawings\110 - SHT04 - Roadway\Plum-Creek-Sht Xsec.dgn

TERRA ENGINEERING LTD.

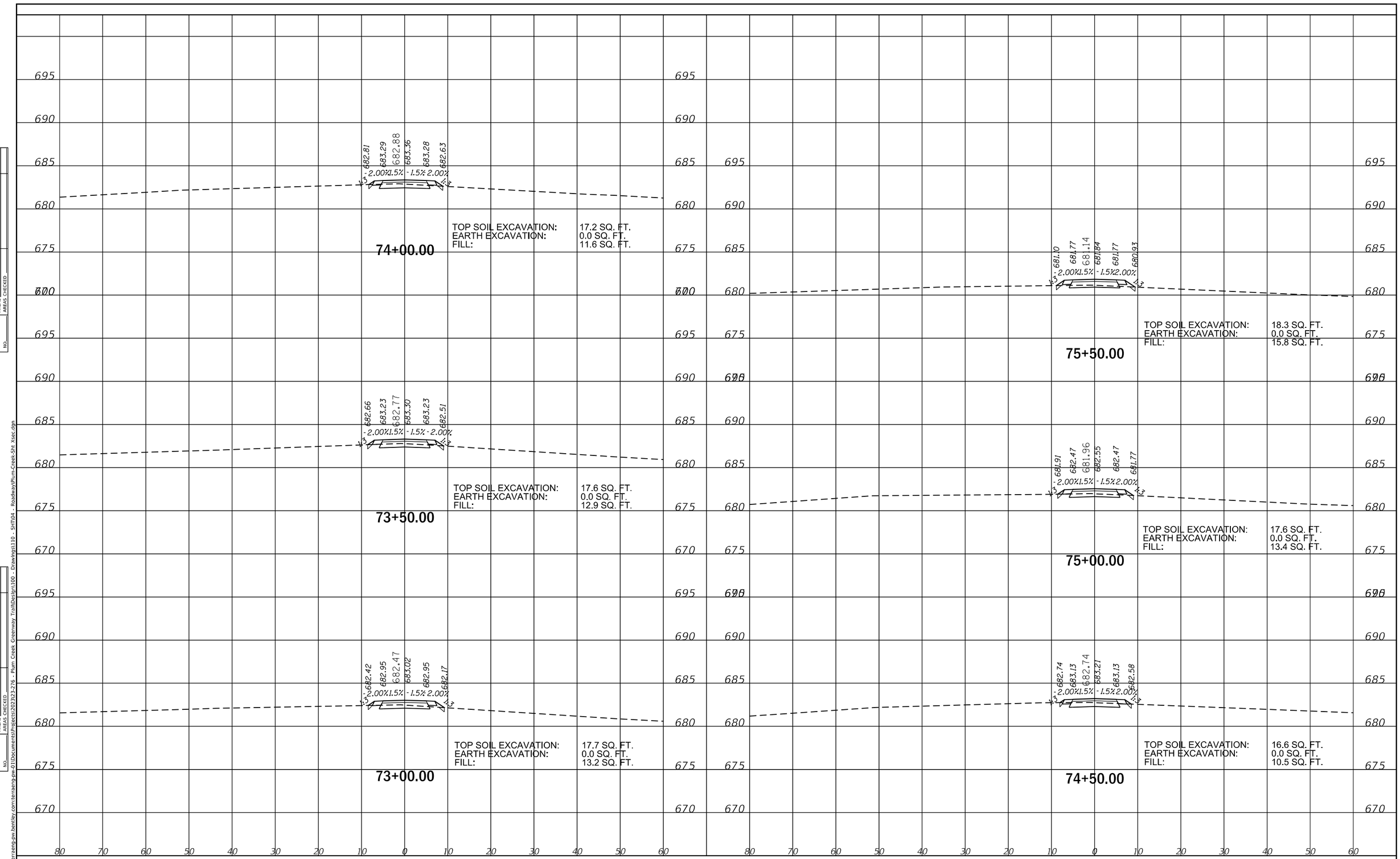
USER NAME = JuanS	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 7/2/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK TRAIL
X-SECTIONS

SCALE: | SHEET OF SHEETS | STA. 70+00.00 | TO STA. 72+50.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	73
		CONTRACT NO. 61K44		
		ILLINOIS	FED. AID PROJECT	



FINAL SURVEY | NOTE BOOK | NO. | BY | DATE
SURVEYED | PLOTTED | TEMPLATE | AREAS | AREAS CHECKED

ORIGINAL SURVEY | NOTE BOOK | NO. | BY | DATE
SURVEYED | PLOTTED | TEMPLATE | AREAS | AREAS CHECKED

MODEL: Default
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TERRA ENGINEERING LTD.

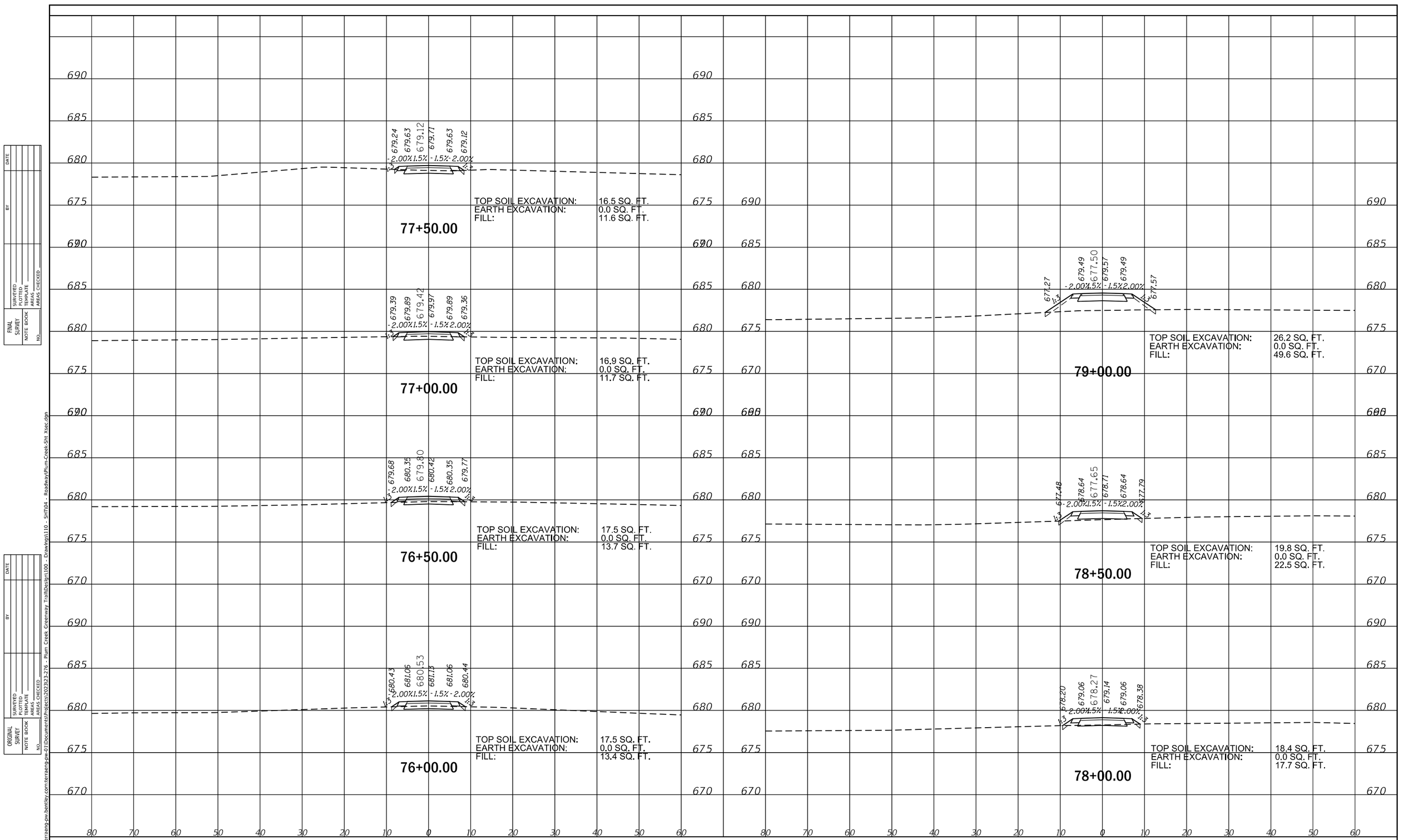
USER NAME = JuanS	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 7/2/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK TRAIL
X-SECTIONS

SCALE: | SHEET OF SHEETS | STA. 73+00.00 | TO STA. 75+50.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	74
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			



FINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

MODEL: Default
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TERRA ENGINEERING LTD.

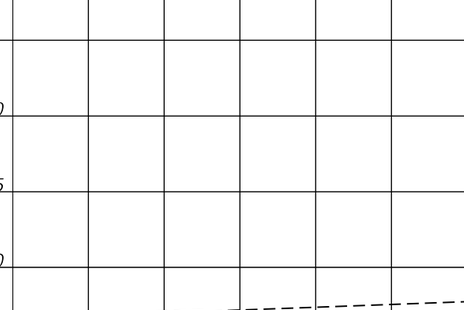
USER NAME = JuanS	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 7/2/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK TRAIL
X–SECTIONS

SCALE: | SHEET OF SHEETS | STA. 76+00.00 | TO STA. 79+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	75
		CONTRACT NO. 61K44		
		ILLINOIS FED. AID PROJECT		

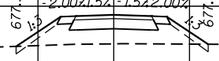


80+00.00

TOP SOIL EXCAVATION: 19.6 SQ. FT.
EARTH EXCAVATION: 0.0 SQ. FT.
FILL: 20.7 SQ. FT.

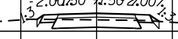
81+50.00

TOP SOIL EXCAVATION: 16.5 SQ. FT.
EARTH EXCAVATION: 0.0 SQ. FT.
FILL: 9.4 SQ. FT.



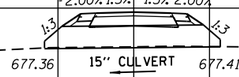
79+50.00

TOP SOIL EXCAVATION: 25.4 SQ. FT.
EARTH EXCAVATION: 0.0 SQ. FT.
FILL: 45.5 SQ. FT.

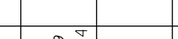


81+00.00

TOP SOIL EXCAVATION: 16.1 SQ. FT.
EARTH EXCAVATION: 0.0 SQ. FT.
FILL: 9.2 SQ. FT.



79+20.00



80+50.00

TOP SOIL EXCAVATION: 16.9 SQ. FT.
EARTH EXCAVATION: 0.0 SQ. FT.
FILL: 10.3 SQ. FT.

USER NAME = JuanS	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 7/2/2024	DATE -	REVISED -	

TERRA ENGINEERING LTD.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK TRAIL
X-SECTIONS

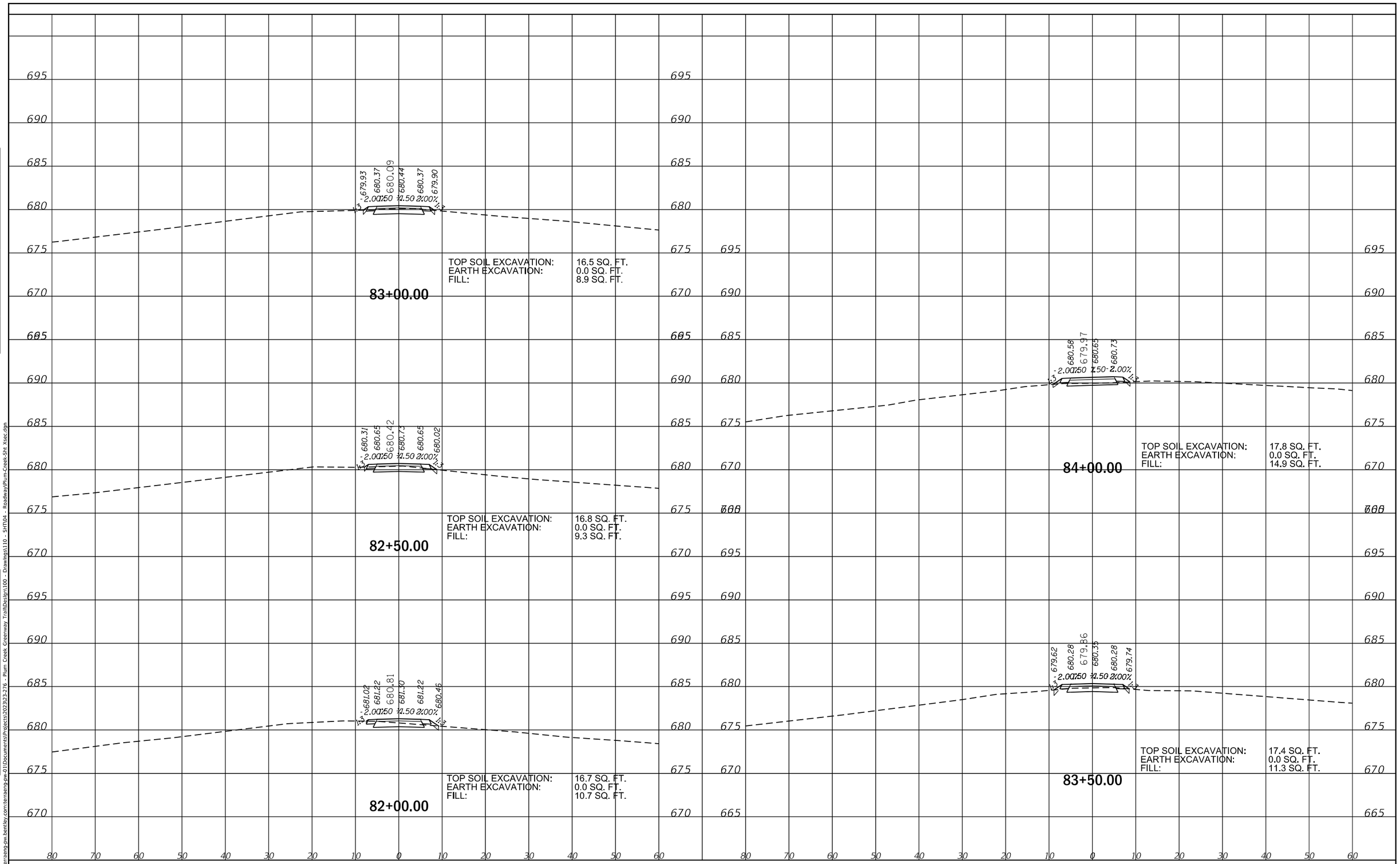
SCALE: | SHEET OF SHEETS | STA. 79+20.00 | TO STA. 81+50.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	76
		CONTRACT NO. 61K44		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

ORIGINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

MODEL: Default
FILE NAME: pw:\terraeng-pw.bentley.com:terraeng-pw-01\Documents\Projects\2023\23-276 - Plum Creek Greenway Trail\Design\100 - Drawings\110 - SHT\04 - Roadway\Plum-Creek-Sht Xsec.dgn



FINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

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TERRA ENGINEERING LTD.

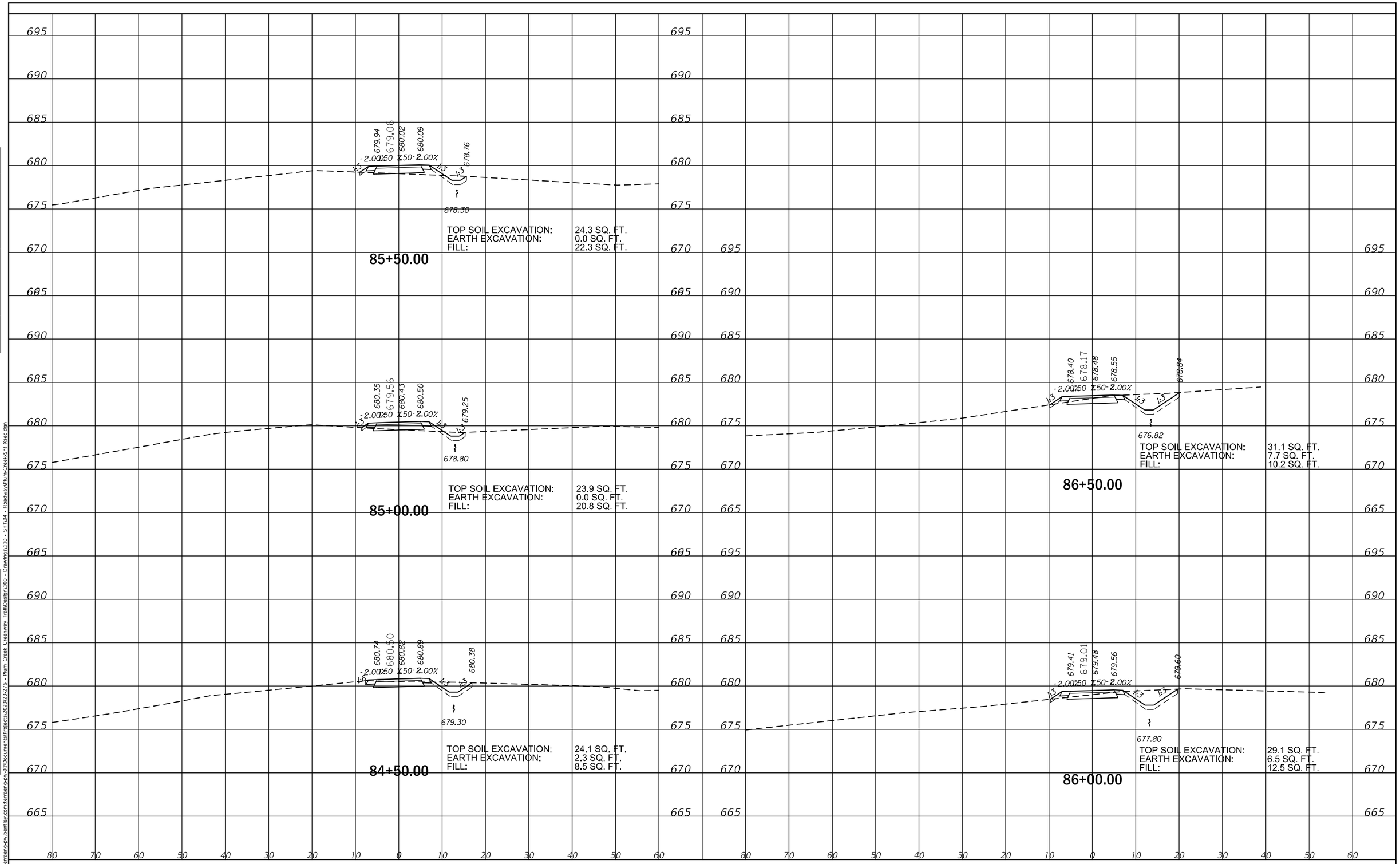
USER NAME = JuanS	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 7/2/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK TRAIL
X-SECTIONS

SCALE: | SHEET OF SHEETS | STA. 82+00.00 | TO STA. 84+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	77
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			



FINAL SURVEY	DATE	BY
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
AREAS CHECKED		
NO.		

ORIGINAL SURVEY	DATE	BY
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
AREAS CHECKED		
NO.		

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TERRA ENGINEERING LTD.

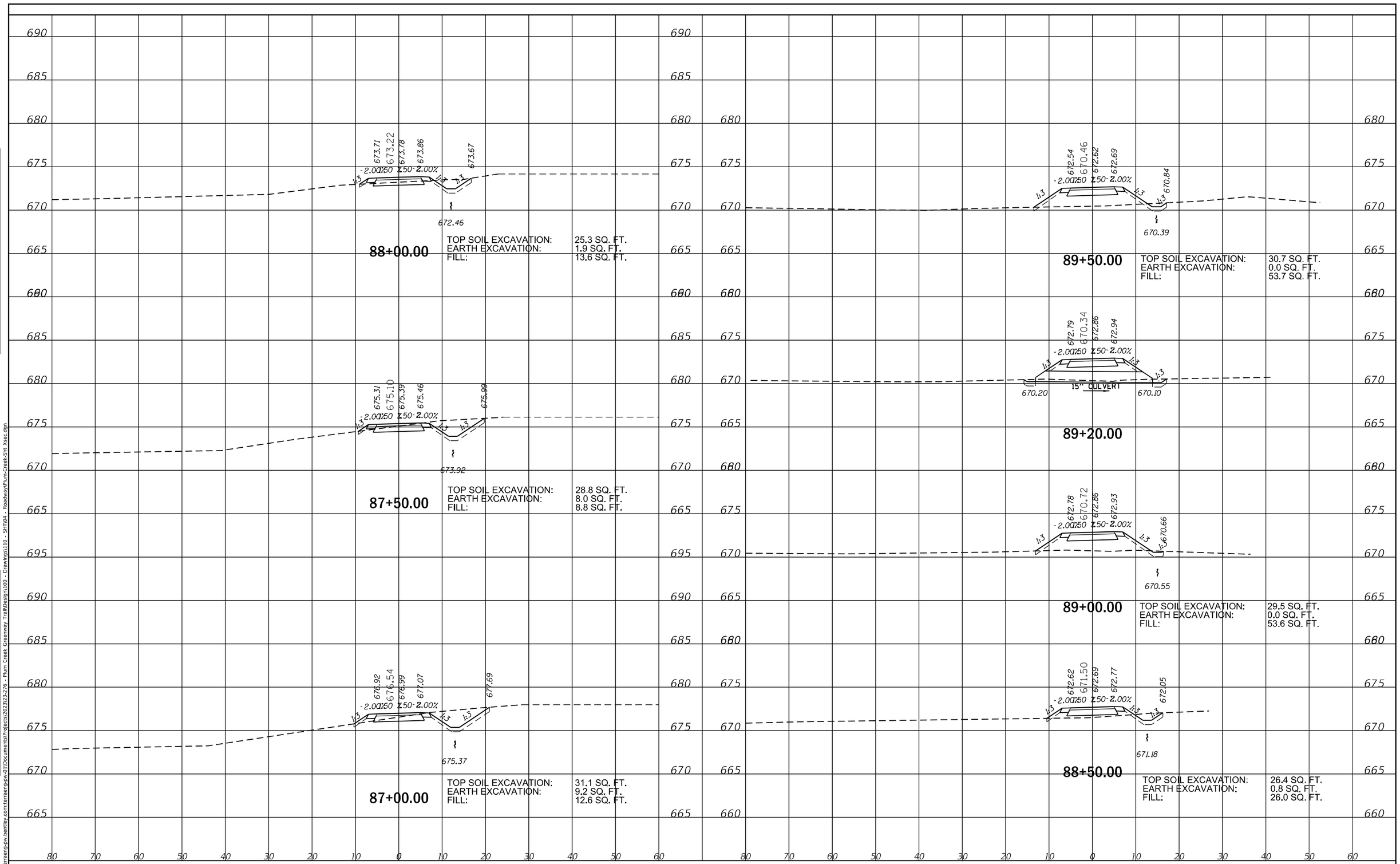
USER NAME = JuanS	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 7/2/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK TRAIL
X-SECTIONS

SCALE: | SHEET OF SHEETS | STA. 84+50.00 | TO STA. 86+50.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	78
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			



FINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE

MODEL: Default
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TERRA ENGINEERING LTD.

USER NAME = JuanS	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 7/2/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK TRAIL
X-SECTIONS

SCALE: | SHEET OF SHEETS | STA. 87+00.00 | TO STA. 89+50.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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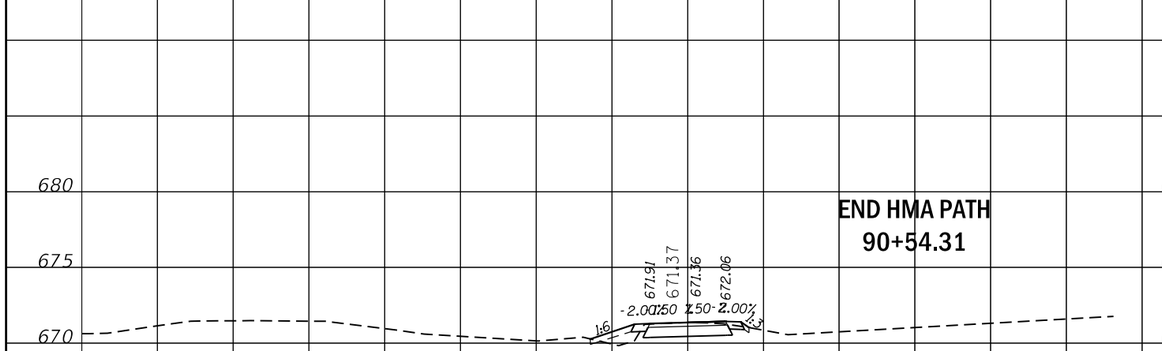
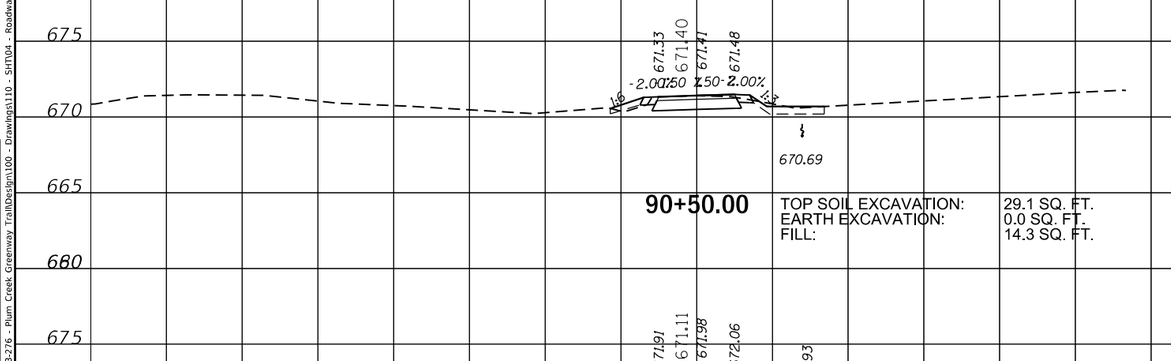
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			



END HMA PATH
90+54.31

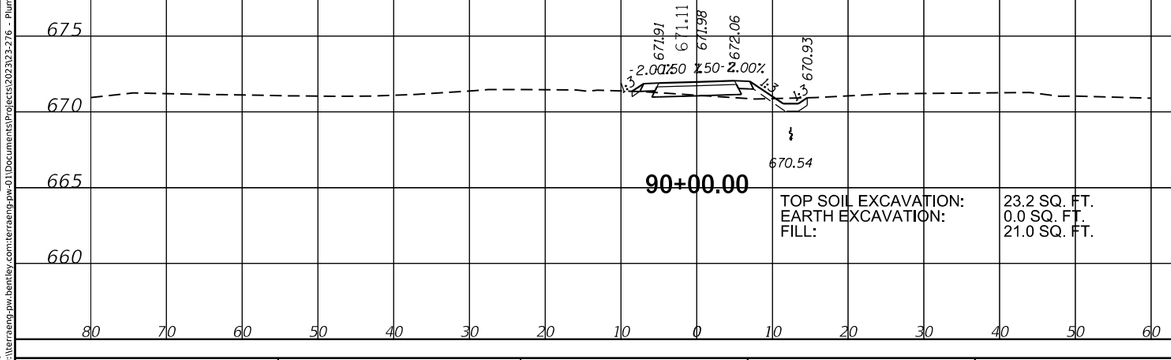
90+54.31

TOP SOIL EXCAVATION:	22.4 SQ. FT.
EARTH EXCAVATION:	0.0 SQ. FT.
FILL:	14.0 SQ. FT.



90+50.00

TOP SOIL EXCAVATION:	29.1 SQ. FT.
EARTH EXCAVATION:	0.0 SQ. FT.
FILL:	14.3 SQ. FT.



90+00.00

TOP SOIL EXCAVATION:	23.2 SQ. FT.
EARTH EXCAVATION:	0.0 SQ. FT.
FILL:	21.0 SQ. FT.

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

FINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

MODEL: Default
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TERRA ENGINEERING LTD.

USER NAME = JuanS	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 7/2/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLUM CREEK TRAIL
X-SECTIONS

SCALE: | SHEET OF SHEETS | STA. 90+00.00 | TO STA. 90+54.31

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	20-F3000-06-BT	WILL	80	80
		CONTRACT NO. 61K44		
	ILLINOIS FED. AID PROJECT			