



- Soil & Wetland Studies
- Ecology • Application Reviews
- Listed Species Surveys • GPS
- Environmental Planning & Management
- Ecological Restoration & Habitat Mitigation
- Expert Testimony • Permitting

October 14, 2021

VIA E-MAIL

Town of South Windsor
Inlands Wetlands Agency/Conservation Commission
Town Hall
1540 Sullivan Avenue
South Windsor, CT 060742

RE: 3RD PARTY VERIFICATION OF WETLANDS/WATERCOURSES

5 & 25 Talbot Road, 475 & 551 Governor's Highway, South Windsor, CT

Dear Chairperson Kelly and Commissioners:

At the request of Town staff, REMA ECOLOGICAL SERVICES, LLC (REMA), has conducted soil investigations at the above-referenced property, which encompasses +/- 30.37 acres, for the purpose of: (1) Verifying the accuracy of wetland delineations by James M. McManus (JMM Wetland Consulting Services, LLC), and (2) identifying potentially missed regulated wetlands within the subject site.

Prior to our site investigations, we were provided 50 scale and 60 scale existing conditions plans of the site, with topography, but without any delineated wetlands and watercourses. We were also provided an August 25th, 2021 report by Steven Danzer, Ph.D., which included a figure showing three "areas of concern" with confirmed or possible wetland areas.

Soil investigations took place, by the undersigned, on September 21st and 25th, 2021. Additionally, a joint site investigation took place on October 4th, with Mr. Jeff Folger, Town Environmental Planner, Mr. James M. McManus, the applicant's soil scientist, and representatives of the Intervenor, including Mr. James Sipperly, soil scientist, who participated via video conference. During the second portion of this site visit we were joined by a member of the neighborhood group that has been raising concerns about the subject site.



Attached to this report are several figures (i.e., Figures A, B, C, D, E1 and E2) that show pertinent site features, and the GPS-tracked routes taken during the three separate site investigations. Moreover, several representative annotated photographs taken during the site visits are attached (i.e., Photos 1 through 16).

The following summarize our findings:

1. Four additional wetland boundary markers (i.e., RES-100 to RES-103) were placed in the field, and were associated with the westerly forested wetland by Talbot Road. During our October 4th, 2021 joint site visit, we (REMA), after further investigations with Mr. McManus, agreed that RES-100 and RES-103, would remain, while the others would be taken down.
2. The northern forested wetland by Governor's Highway was found to be substantially correct. In fact, we found that the delineation was conservative and contained inclusions of moderately well drained upland soils.
3. All of the "areas of concern" shown on the figure included in the letter by Dr. Danzer, did not contain poorly drained wetland soil profiles.
4. A small, excavated wet depression was observed in the northern portion of the site, but was determined to be too small to be delineated.
5. Several dozen old wetland boundary markers (not flags by John Ianni) were observed, especially in the areas to the south of the southerly ditched watercourse/wetland. These appear to be at least 8-10 years old. Thorough investigations took place below these flags. In all cases no poorly drained wetland soil profiles were observed.
6. We investigated an area at specific coordinates (i.e., latitude and longitude) provided to us by Town staff. No poorly drained wetland soil profiles were observed at this location or within 30 feet.
7. The predominately undisturbed (except for the plow layer) soils at the site are derived from sandy glaciofluvial deposits. In many locations we encountered rusty colored spodic horizons at depths often between 20 and 24 inches from the top of the mineral horizon. Spodic horizons are areas of accumulation of humus and aluminum and ferric oxides, which can form an "iron pan," although none were observed at the site.



We believe that the “podzolization” (i.e., forming of spodic horizons) that occurs at the site’s soils, including both the presence of mostly disturbed, through plowing, E horizons¹, and the presence of thick Oi (i.e., organic) horizons, may have led previous delineators to mistaken the thick and very dark A-horizon (i.e., topsoil) overlying a disturbed and “gray” E-horizon, as evidence of a poorly drained soil profile. It is often the case, that while soil scientists are trained to use a 20-inch deep “diagnostic horizon” to assess drainage class, that if the Oi horizon is not factored in, which extends the depth of soil investigation from the soil surface, or if the A-horizon and the E-horizon together are more than 20 inches, that soil probing may not go deep enough for a proper assessment of soil drainage class.

In conclusion, we find that the wetland/watercourses delineated at the subject site are substantially correct, and that no other wetlands or watercourse occur therein.

Please feel free to contact us if you have any questions.

Respectfully submitted,

REMA ECOLOGICAL SERVICES, LLC

George T. Logan, MS, PWS, CSE
Certified Professional Wetland Scientist
Registered Soil Scientist, Certified Senior Ecologist

Attachments: Figures A, B, C, D, E1 and E2
Photos 1 through 16

¹ An E horizon is a mineral horizon that has formed through the eluvial loss of silicate clay, iron, aluminum, silicon, or some combination of these. An E horizon is typically light-colored and is underlain by an illuvial horizon (i.e., spodic horizon) where these minerals have accumulated.

FIGURE A: GPS track during 9/21/21 Survey of Site
5 & 25 Talbot Road, 475 & 551 Governor's Highway
South Windsor, CT

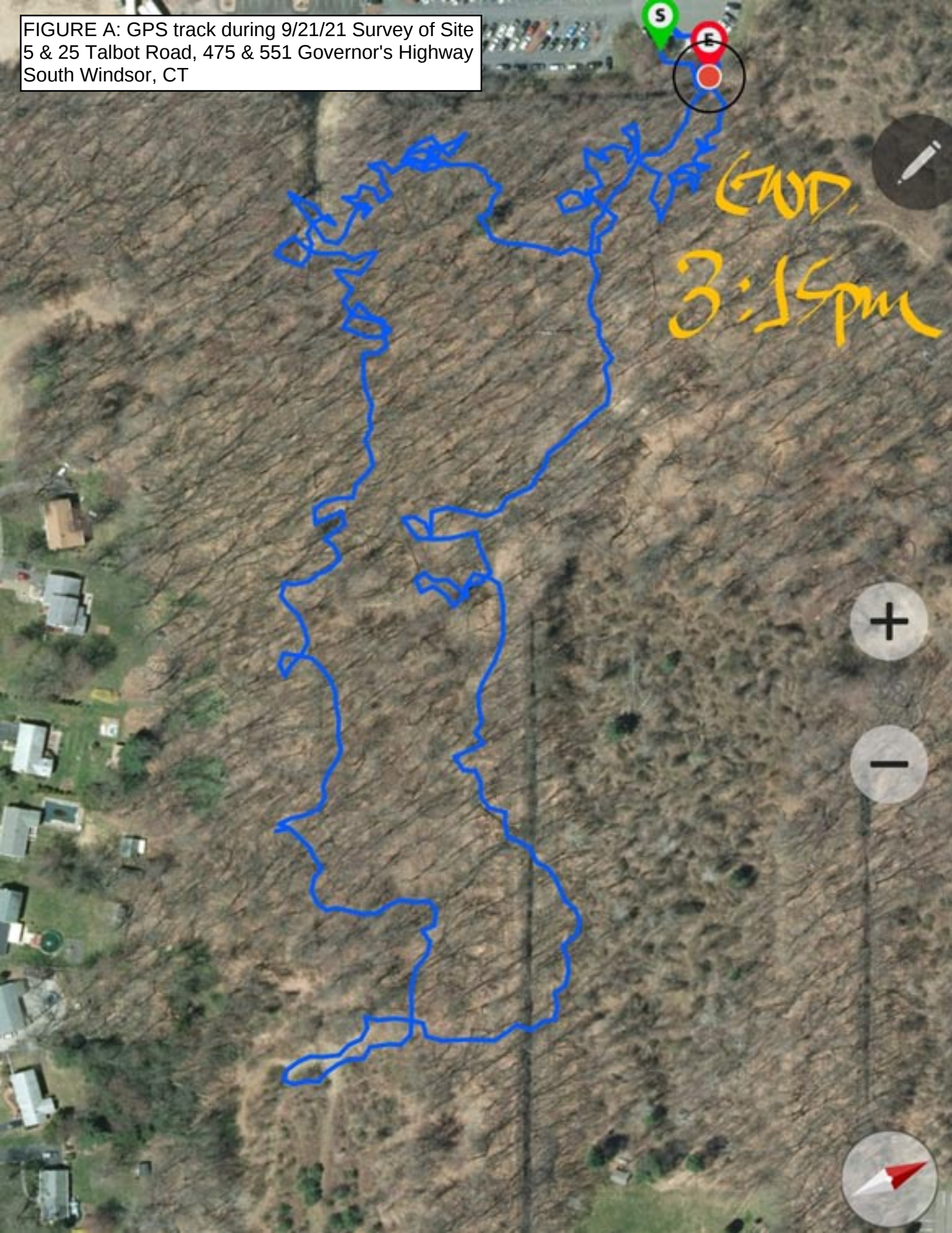


FIGURE B: GPS track during 9/25/21 Survey of Site
5 & 25 Talbot Road, 475 & 551 Governor's Highway
South Windsor, CT

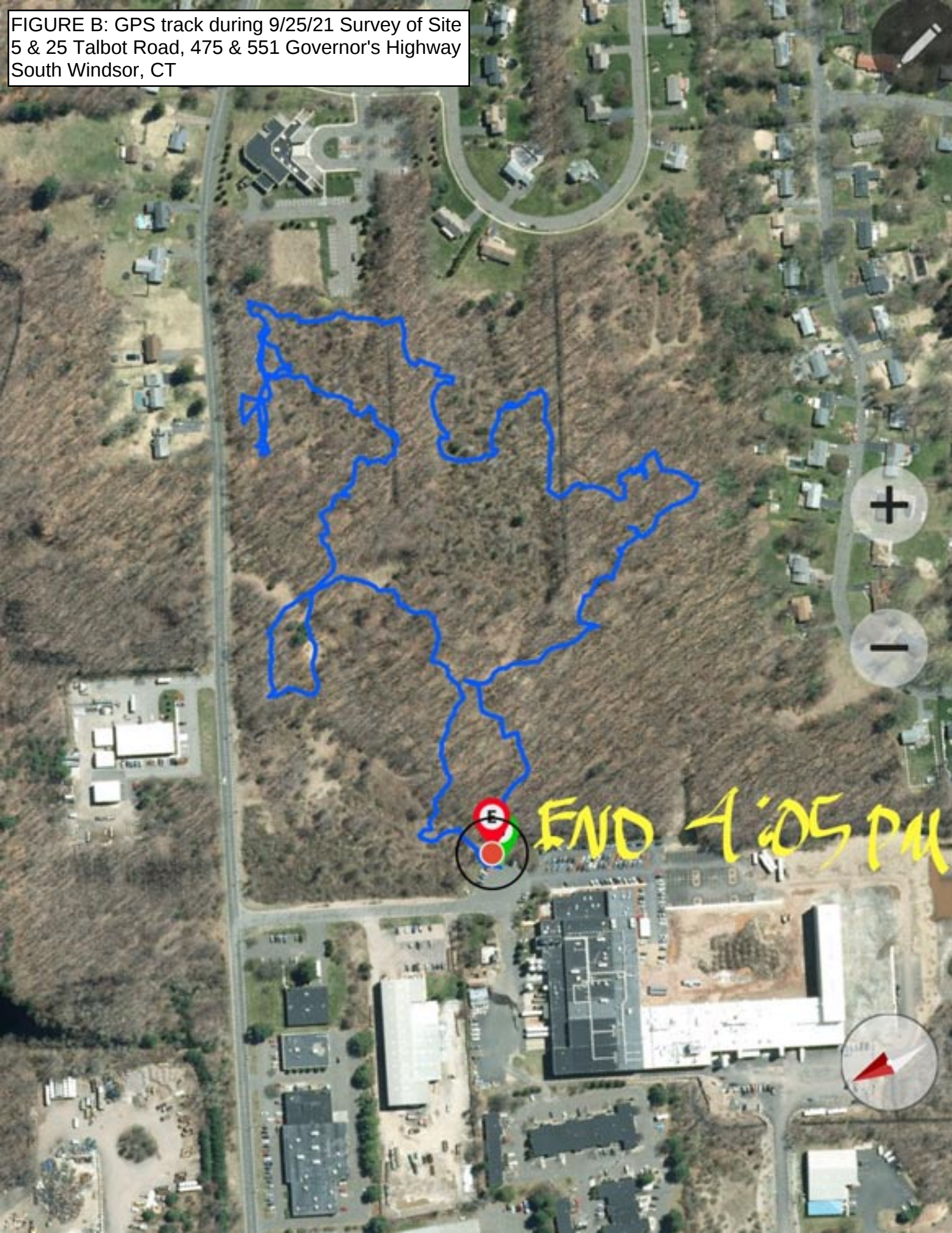


FIGURE D: GPS track during 9/25/21 Survey of Site to small wet spot near Governor's Highway 5 & 25 Talbot Road, 475 & 551 Governor's Highway South Windsor, CT



FIGURE C: GPS track during 9/25/21 Survey of Site to specific coordinates given to REMA by Town staff 5 & 25 Talbot Road, 475 & 551 Governor's Highway South Windsor, CT



FIGURE E1: GPS track during 10/4/21 Survey of Site with Town staff, applicant's soil scientist & intervenor's representatives
5 & 25 Talbot Road, 475 & 551 Governor's Highway
South Windsor, CT

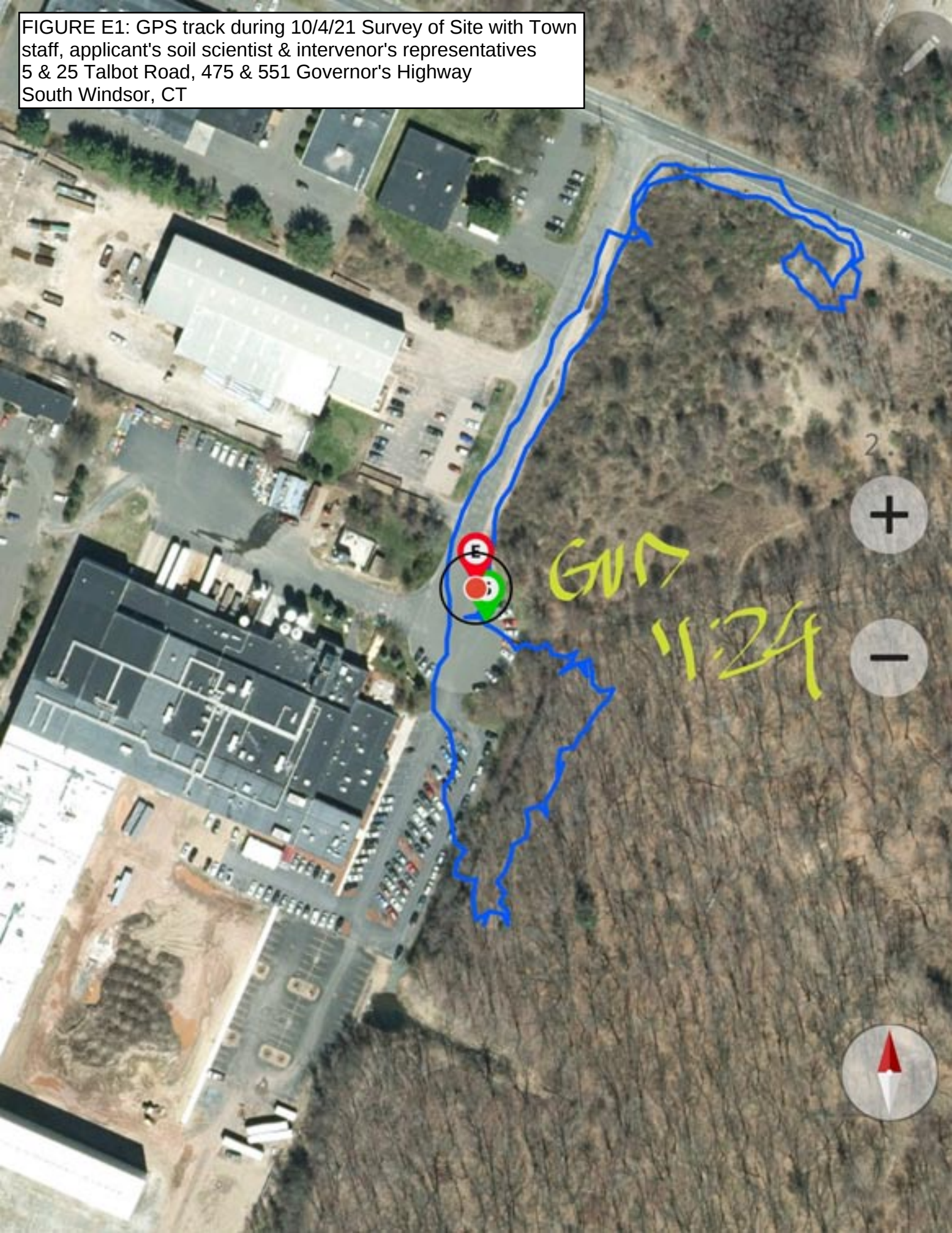


FIGURE E2: GPS track during 10/4/21 Survey of Site with Town staff, applicant's soil scientist & intervenor's representatives
5 & 25 Talbot Road, 475 & 551 Governor's Highway, South Windsor, CT

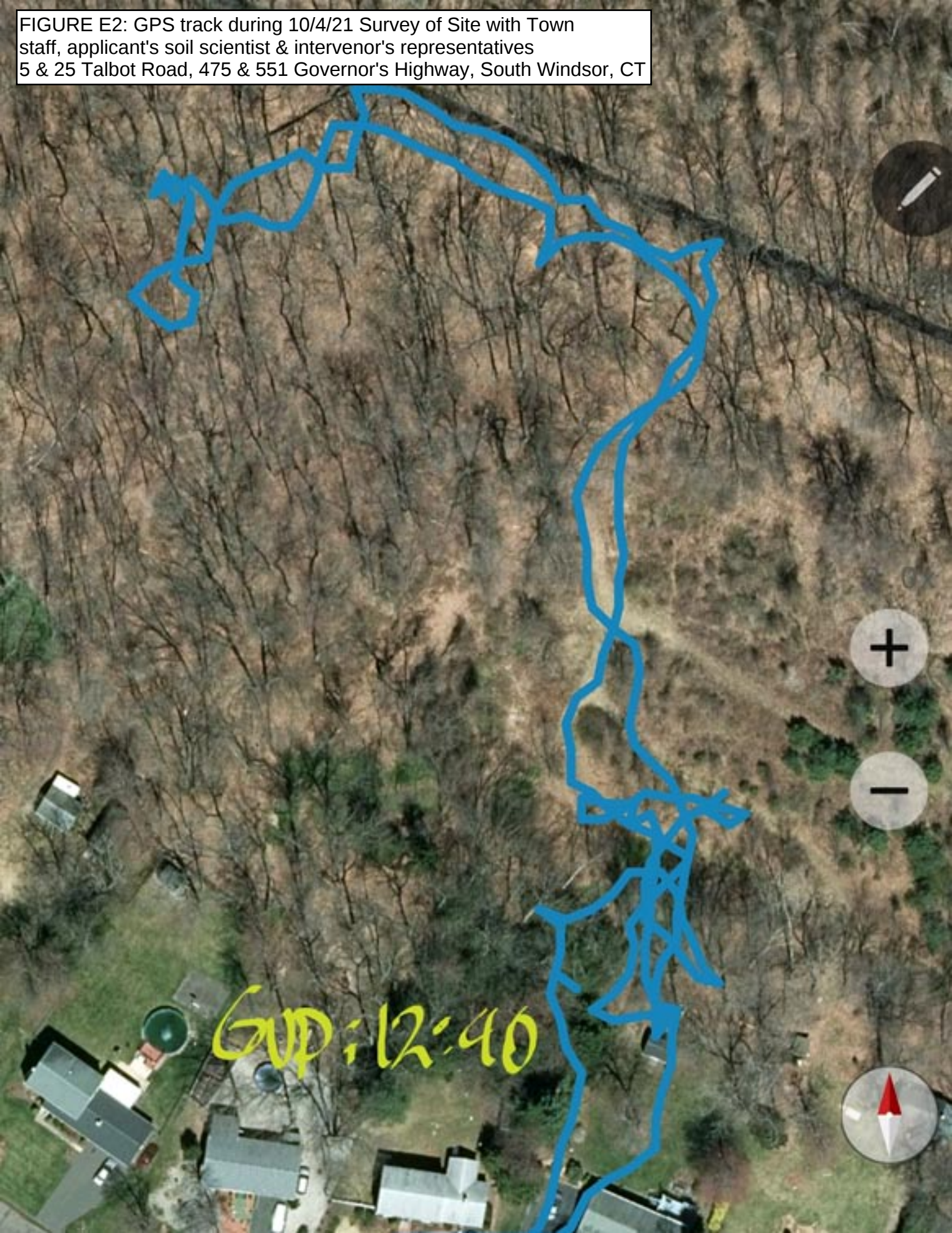




Photo 1: Typical wetland boundary flag by JMM Wetland Consulting Services, LLC; western portion of site near Talbot Road, facing southerly



Photo 2: One of several “new” wetland boundary markers by REMA associated with westerly forested wetland near Talbot Road; facing southwesterly



Photo 3: Many older wetland boundary flags were located, and soils investigations were conducted immediately downgradient of them

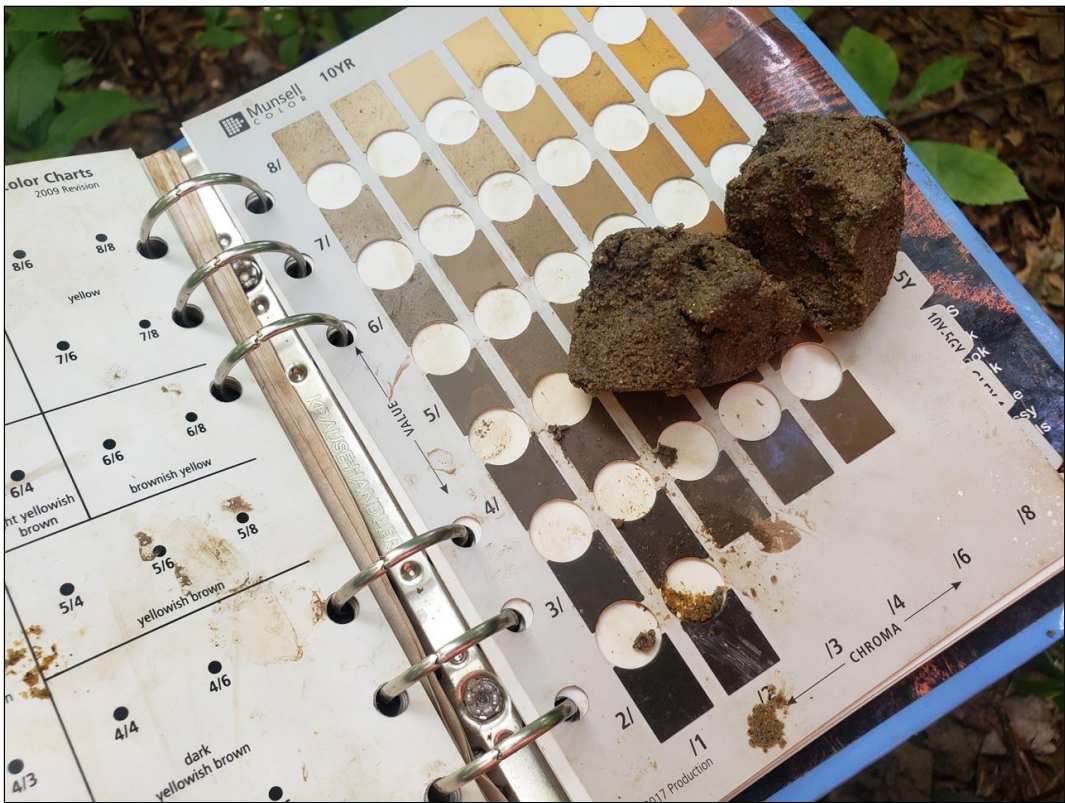


Photo 4: A Munsell Soil Color Chart was extensively used throughout the survey of the subject site.



Photo 5: The presence of “moist habit” dense vegetation, such black gum (tree) and sweet pepperbush (shrub) necessitated thorough exploration of soils.



Photo 6: Areas investigated included post-agricultural areas, such as this meadow and scrub shrub area at the southeastern section of the site.



Photo 7: A soil auger was used to depths of at least 20 inches from the top of the mineral horizon (i.e., topsoil)



Photo 8: Often high chroma mottles was observed within 20" of the mineral horizon, but the matrix chroma was too light for a poorly drained designation (i.e. wetland)



Photo 9: The presence of spodic horizons (areas of humus, aluminum and ferric oxides) can challenge interpretation of the drainage class of the site's soils.



Photo 10: One of two dug ditches (southern on here) have wetland/watercourse characteristics; facing easterly



Photo 11: Area in northern portion of site where a wetland was delineated. REMA found the delineation very conservative, containing areas of moderately well drained soils.



Photo 12: Wet dugout depression, too small to delineated, near Governor's Highway; facing northeasterly



Photo 13: The presence of “disturbed” E-horizon below a thick Oi (organic, duff) horizon may have led to misinterpretation of soils as poorly drained



Photo 14: Below a “confusing” E-horizon at depths greater than 20 inches due to a thick Oi horizon, soil matrix colors indicate moderately well drained upland soils



Photo 15: The presence of a thick Oi (organic, duff) horizon may have led to misinterpretation of soils as poorly drained, by not exploring soils to proper depths.



Photo 16: Northern delineated watercourse/wetland dugout ditch; facing easterly