New Bedford Regional Airport
Runway Safety Improvements Project – Phase 4
Reconstruct, Mark, and Groove Runway 5-23
MassDEP File No. SE049-0635

ENVIRONMENTAL MONITOR INSPECTION FORM

Environmental Monitor: **Amanda Atwell**
Date/ Time of Inspections: **9/25/14 (morning), 10/2/14 (morning), 10/9/14 and 10/15/14.**

Weather Conditions: **60s overcast 9/25, 50's rainy 10/2/14, 60s sunny 10/9/14, 70s sunny 10/15/14. (weatherunderground.com)**

Observed Construction Activities Underway (attach additional pages if necessary):

On 9/25/14 the contractor is continuing to work on the MALSR, electrical trenching, and wetland replication area. Hydroseeding is ongoing as well as close out and punch list items.

On 10/2/14 the contractor is continuing to work on the MALSR, electrical trenching, and wetland replication area. The contractor planted and seeded the wetland replication area and planted the wetland side slopes (seeding pending). The contractor paved the ILS road and two stub roads off of Taxiway A. Hydroseeding is ongoing as well as close out and punch list items.

On 10/9/14 the contractor is shaping and stabilizing the sideslopes along the ILS paved road and MALSR stems. The contractor is continuing to work on the MALSR, electrical trenching. Hydroseeding outstanding upland and wetland replication area side slopes will occur Friday. The contractor has removed turtle barriers and evaluating the erosion control silt fence for removal. The approved erosion control silt fence removal plan will be included in the WS report. Punchlist items are ongoing.

On 10/15/14 the contractor is grading sideslopes with gravel along the ILS paved road and MALSR stems (approximately 2 feet). The contractor will loam and seed the remaining open earth areas next week. The contractor fixed the six trenched areas discussed below. The contractor is continuing to work on the MALSR, electrical trenching and is almost complete. Nine (9) Replacement shrubs will be planted along the West Ditch area next week. The contractor is starting to remove erosion control silt fence identified in the BMP removal document provided by WS. Epsilon has generally approved the BMP removal document but had some reservations that were discussed with contractor, RE, IO and WS on 10/15. These recommendations generally include discrete areas along the pink highlighted (area stable, silt fence ready for removal) areas. The WS, IO, contractor, and RE agreed with these changes in the field and to hold off removing silt fence in these areas for a few weeks. Punch list items are ongoing.

Status of Existing BMPs and Other Inspection Items

Control Measure	Cleaning or Repair Needed	Comments/Recommendations from the EM
Erosion Control Devices	☒yes ☐no ☐n/a	Erosion controls were generally in good condition throughout the work zone. Erosion controls including check dams, silt fence, compost tubes and hay bales are in good condition. There are (and have been) discrete areas of silt fence that have been laid down or disturbed. These discrete areas are generally addressed quickly after discovery by the WS. Some discrete areas have been repaired multiple times. On 10/9 Epsilon noted that along the ILS road, trenches were compromising the silt fence in approximately six locations. The contractor was notified by the WS and will fix these areas

Control Measure	Cleaning or Repair Needed	Comments/Recommendations from the EM
		as part of their sideslope stabilization work that is currently ongoing. On 10/15 Epsilon viewed each of these areas, the slope within the work zone was regarded and stabilized, the silt fence re-toed in, and the trenches fixed and hay stabilized beyond the silt fence. Catch Basins were reviewed and cleaned by the contractor and the WS. If appropriate grass coverage occurred and once the cleaning took place the erosion controls installed around the catch basins were removed. Only catch basin 10 remains covered and armed as seed was sparse in that area. Epsilon agrees with the BMP removal document submitted on Tuesday by the WS except for a few areas in shown in "pink". The team discussed these areas and agreed to hold off on removal for a few days to a few weeks to further allow areas to stabilize. Areas where previous failures were observed are continuing to be monitored and no additional issues have been observed. The contractor has an emergency supply of silt fence, hay bales and compost tubes present on the site.
Box Turtle Barriers, Gates and Protection Measures	☐**yes** ☐**no** ☒**n/a**	The majority of the turtle barriers were removed this week after discussions with the WS, TE, RE and EM (generally along the 23 end and by the Colonial hangar). Turtle gates along the existing silt fence are still in good condition at time of inspections. The moveable gate installed at the West Ditch arch culvert is still being utilized. Turtle barrier around the staging and trailer area are still intact but will be removed within the week.
Stabilized Construction Entrances, Haul Roads, Dust Control	☐**yes** ☒**no** ☐**n/a**	The stone tracking pad was in good shape with no significant silt or sediment on the roadway. The gravel access road was previously stabilized with pavement millings to minimize erosion in the buffer zone and adjacent wetlands and dust generated by the heavy construction equipment – this BMP has worked well.
Stockpiling Materials	☐**yes** ☒**no** ☐**n/a**	The majority of the contractor staging area is currently sprouting and was hydroseeded a few weeks ago. Coverage is not yet at 70% so silt fence will not be removed along a discrete area. A small section of the existing staging area is still being used and will be reclaimed as soon as possible. Sediment stockpile has been relocated beyond the Airport fence and within Airport property (Aviation Way). Stockpiles are in good condition outside of the 100 foot buffer zone. Epsilon recommends seeding the stockpiles, as necessary, once material from the stockpile is no longer needed for immediate construction.
Dewatering	☐**yes** ☐**no** ☒**n/a**	No dewatering took place during this EM cycle.
Construction Equipment Storage and Refueling	☐**yes** ☒**no** ☐**n/a**	Generally, equipment storage was located within the designated lay down area and outside of 100 foot buffers

Control Measure	Cleaning or Repair Needed	Comments/Recommendations from the EM
		within Area 5 (top of slope adjacent to New Plainville Road) at the time of inspection. No issues to report.
Site Clean-up and Stabilization	☐yes ☒no ☐n/a	Areas noted in previous EM reports appear stable. Epsilon is continuing to monitor wetland resources down gradient from the erosion controls at each headwall, including the west ditch. It does not appear that sediment will need to be removed from these areas. These areas will be monitored, and cleaned and stabilized if necessary. The contractor is working on final site stabilization. Erosion controls and hay bales are being removed once areas are deemed stable.
Timber Swamp Matting in Wetlands for Tree Clearing in Dartmouth	☐yes ☒no ☐n/a	The former timber mat road is in good condition and seedlings are sprouting.
Work Area 1A – Tree Clearing in Dartmouth	☐yes ☒no ☐n/a	The tree clearing area remains stable and in good condition. The leftover slash is minimal.
Work Area V – Wetland Replication Area	☐yes ☒no ☐n/a	Wetland soil was placed along the continuous microtopography and looks stable and uniform. The soil has a high organic content. ~3-4 ft tall shrubs were planted on 10/2-3/14. The wetland was seeded last week with a wet mix, seedlings have yet to germinate. Replication area side slopes were seeded 10/10 and jute matting will be installed next week. Woody debris and amphipod inoculation remain outstanding.
Overall Adherence to Environmental Permits		The project site was in generally good condition during the inspection period. No obvious contradictions or intentional violations with the various permits and approvals were noted.

Other General Comments:

On **9/25/14** – reviewed the Runway 5 end, Runway 23 end, Area 5, ILS road, and stormwater headwalls. The site was generally in good condition and erosion controls were holding up nicely.

On **10/2/14** – reviewed the Runway 5 end, Runway 23 end, Area 5, ILS road, and stormwater headwalls. The site was generally in good condition and erosion controls were holding up nicely.

On **10/9/14** – reviewed the Runway 5 end, Runway 23 end, Area 5, ILS road, and stormwater headwalls. The site was generally in good condition and erosion controls were holding up nicely.

On **10/15/14** – reviewed the Runway 5 end, Runway 23 end, Area 5, ILS road, and stormwater headwalls. The site was generally in good condition and erosion controls were holding up nicely.

Open action items from the June 12, 2014 meeting with MassDEP: (1) formal proposal to stabilize interface between Turtle Area 3 and Site 6 with mulch (continuing with "wait-and-see" approach as the area has vegetated and the sand is not currently migrating; it continues to hold up well following rain events). As shown in the attached photos, Epsilon has not observed additional Area 3 material migrating into Site 6 since early April. The area has re-vegetated nicely. There is no evidence of increased sediment on the up-gradient side of the silt fence or compost tubes. Additionally, Turtle Area 3 is more vegetated and stable upslope after another growing season.

(2) a follow up response to MassDEP's June 4, 2014 email regarding potential long term stabilization measures for runoff

near West Ditch (the need for any additional long term runoff control measures will be determined after work is complete and site is stabilized; likely that no additional measures will be necessary based on current observations following larger storm events). Based on EM and IO recommendations and review of the plant health, it was agreed that nine (9) plants will be planted along the West Ditch and stressed plants will not be removed. These plants are expected to be planted the week of October 20th. Additionally, Epsilon recommends that the silt fence (double silt fence) be removed in this area to prevent blow outs and ponding with winter storms once infiltration lessens (due to freezing) in this area. Epsilon has suggested an alternate approach that uses straw wattles to slow water flowing from the RSA and into the West Ditch. These wattles would be installed at the top of the slope and at the location of the upper silt fence along the length of the West Ditch to the culvert. The feasibility of this BMP is currently being reviewed by the project team and site contractor.

Are additional erosion control measures needed?

☒no ☐yes If yes, describe:

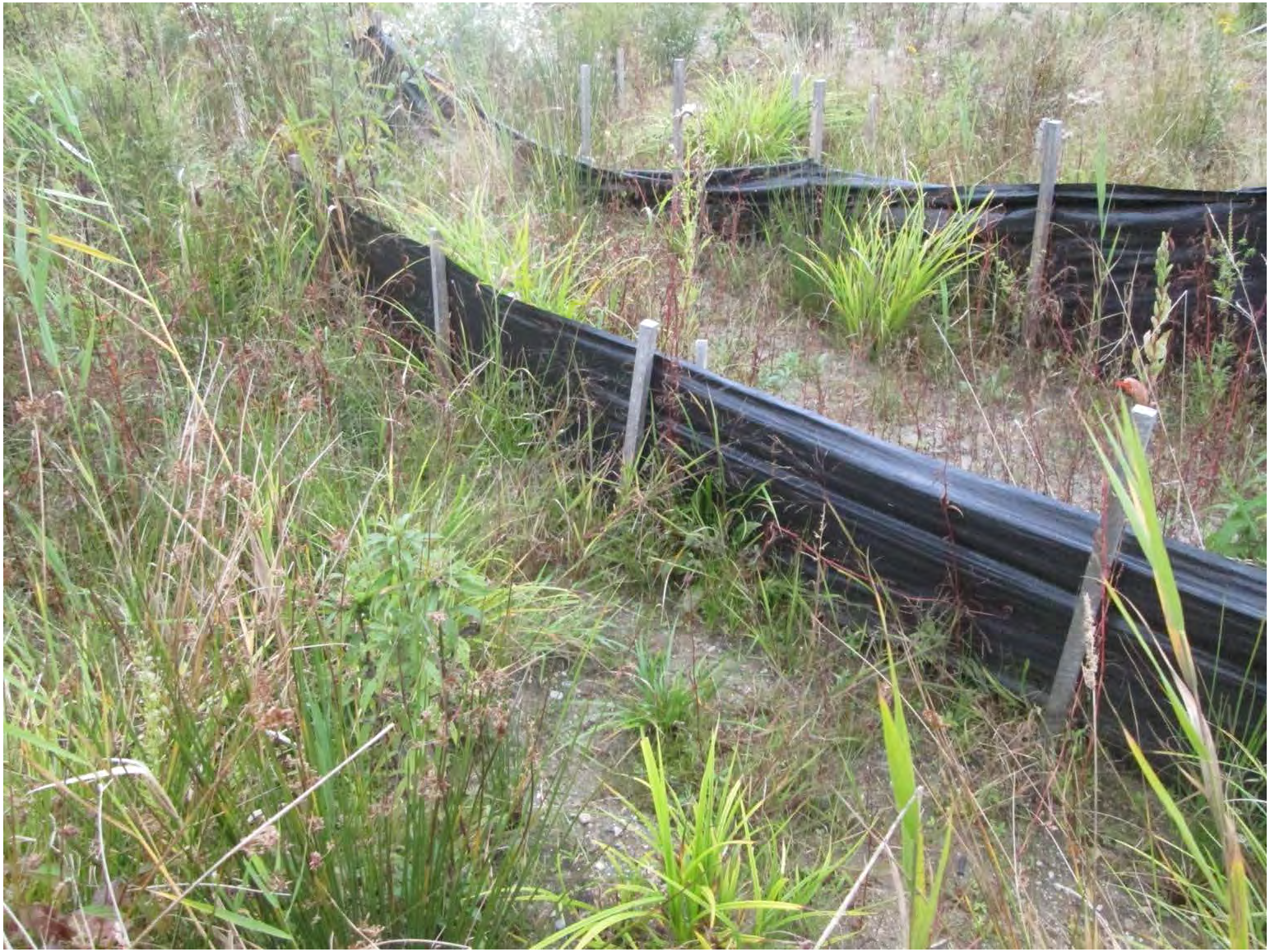
Are sediment/pollution discharges from the site present?

☒no ☐yes If yes, describe: **Previous minimal sediment discharges noted in prior reports were inspected and no new work is currently necessary.**

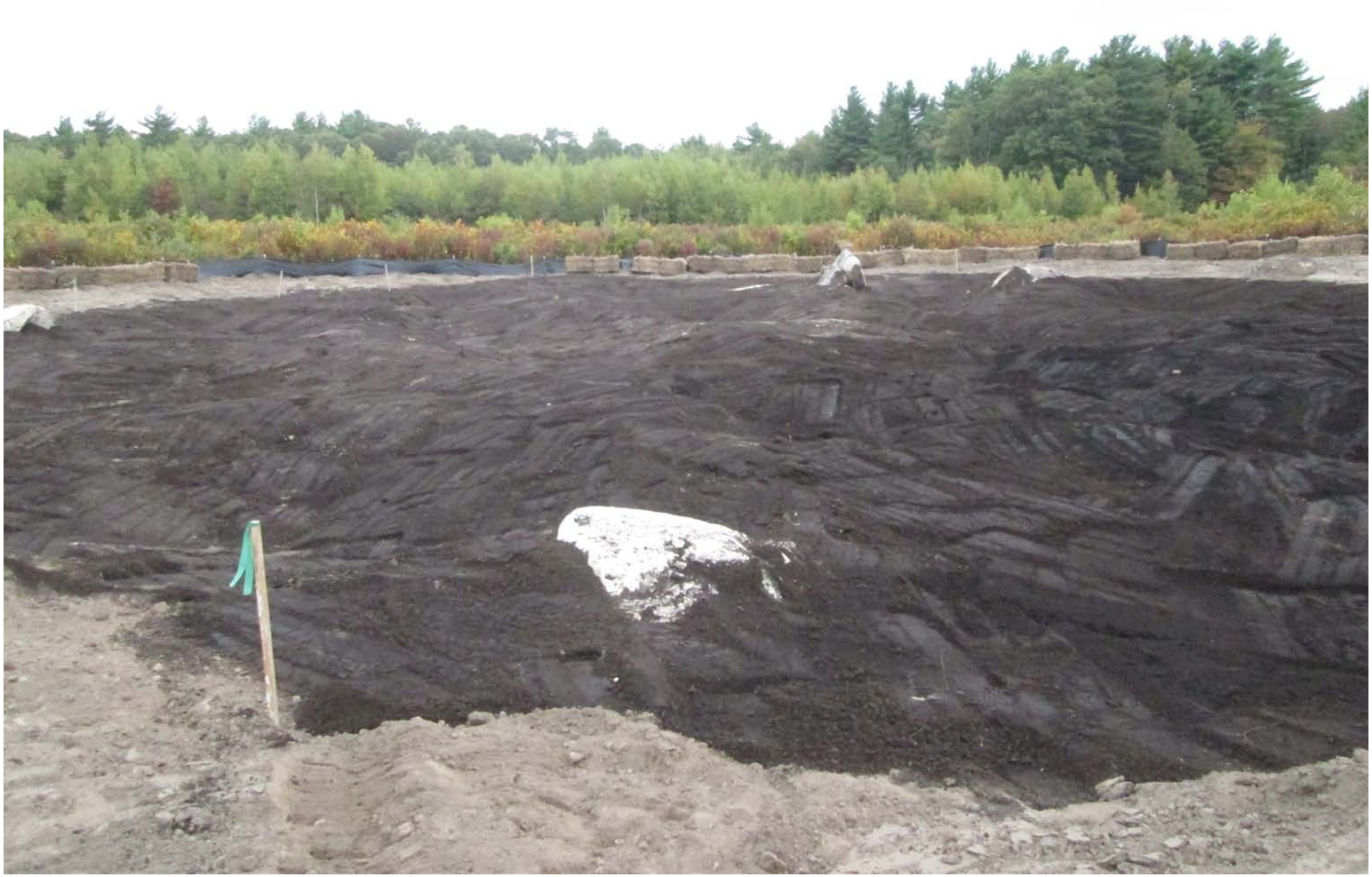
Describe any corrective action required at this time: **Refresh sediment controls along the ILS road in discrete areas as necessary. WS continues to work with ET&L to mitigate any potential erosion issues.**

Attach additional sheets with notes, comments, illustrations and issues as needed. Use site plan to identify locations of work areas or issues noted above: **Photos are attached.**

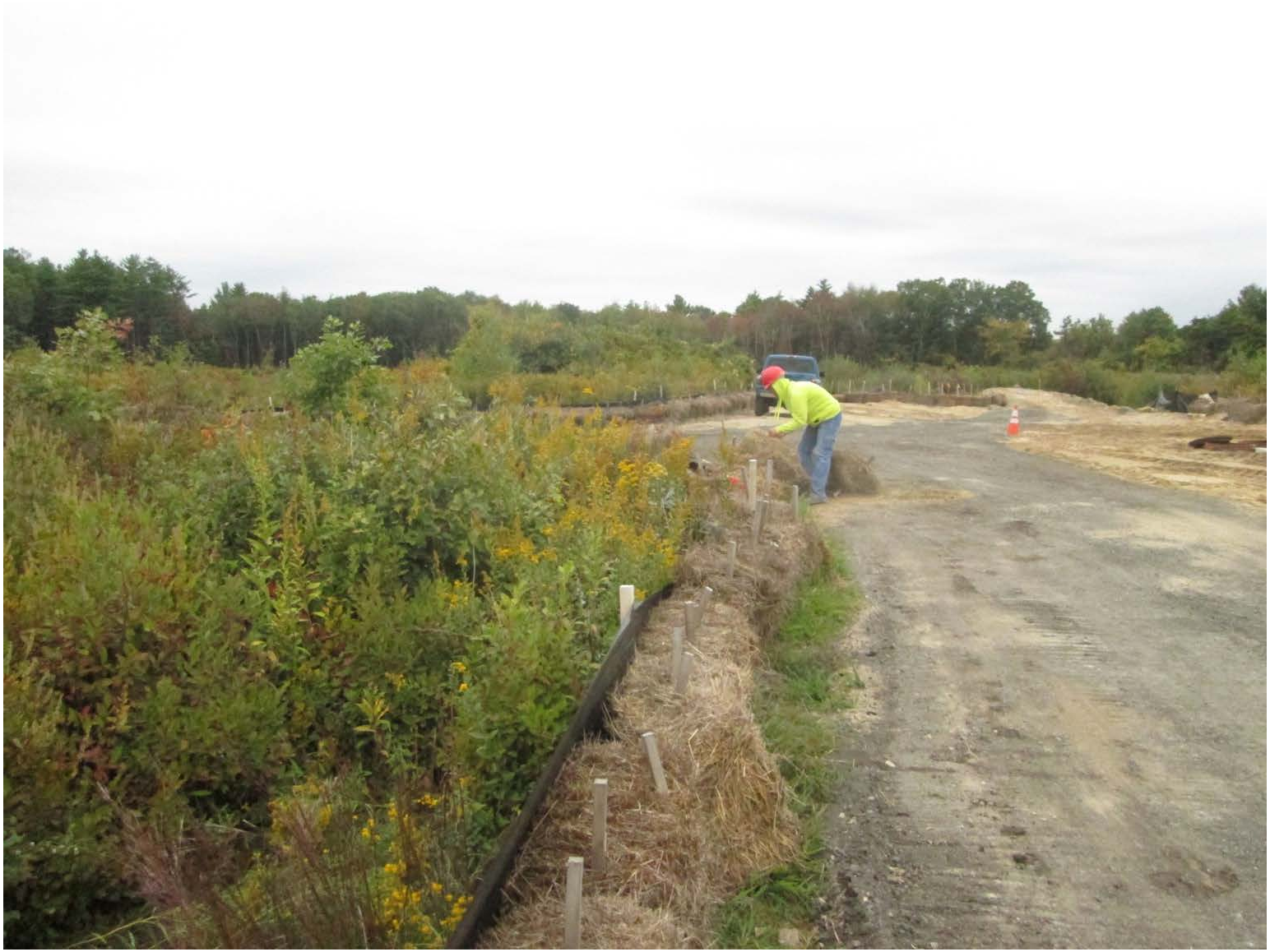
AA/MH



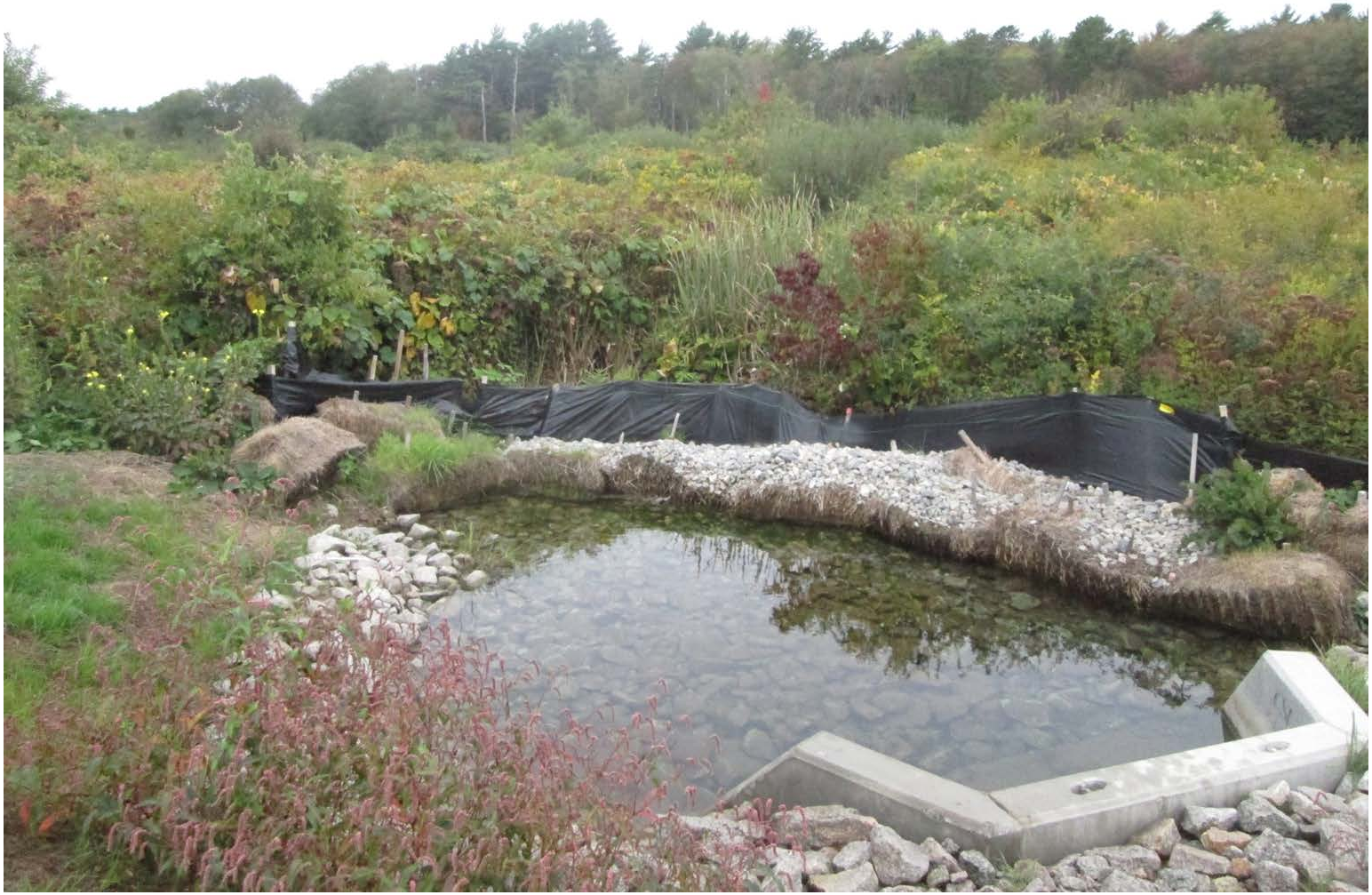
View of Site 6, at intersection of Site 6 and Area 3. This area has grown in nicely over the course of 2014. The pants have stabilized both the wetland creation area and turtle habitat area.



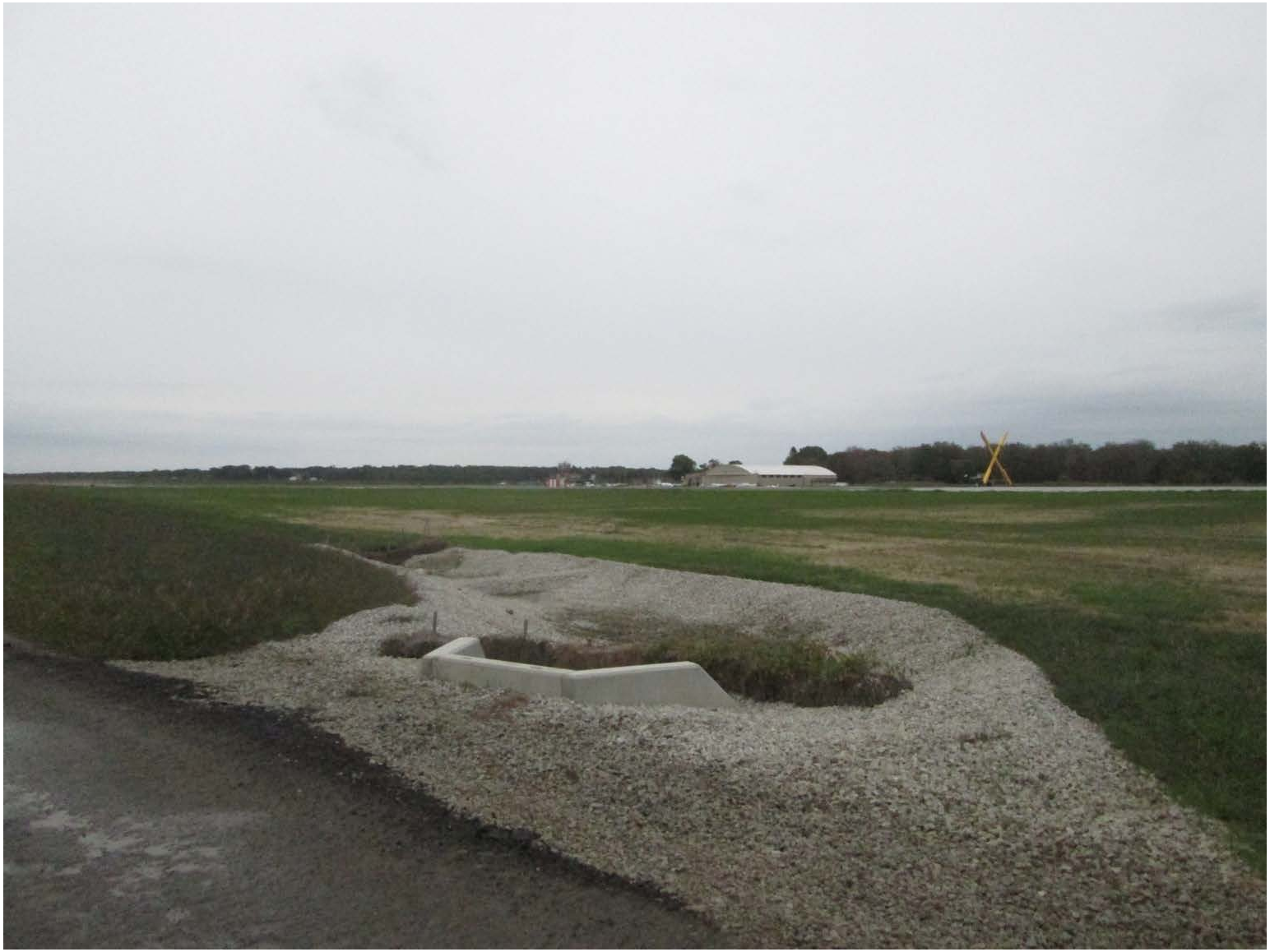
View of graded wetland replication area from 9/25.



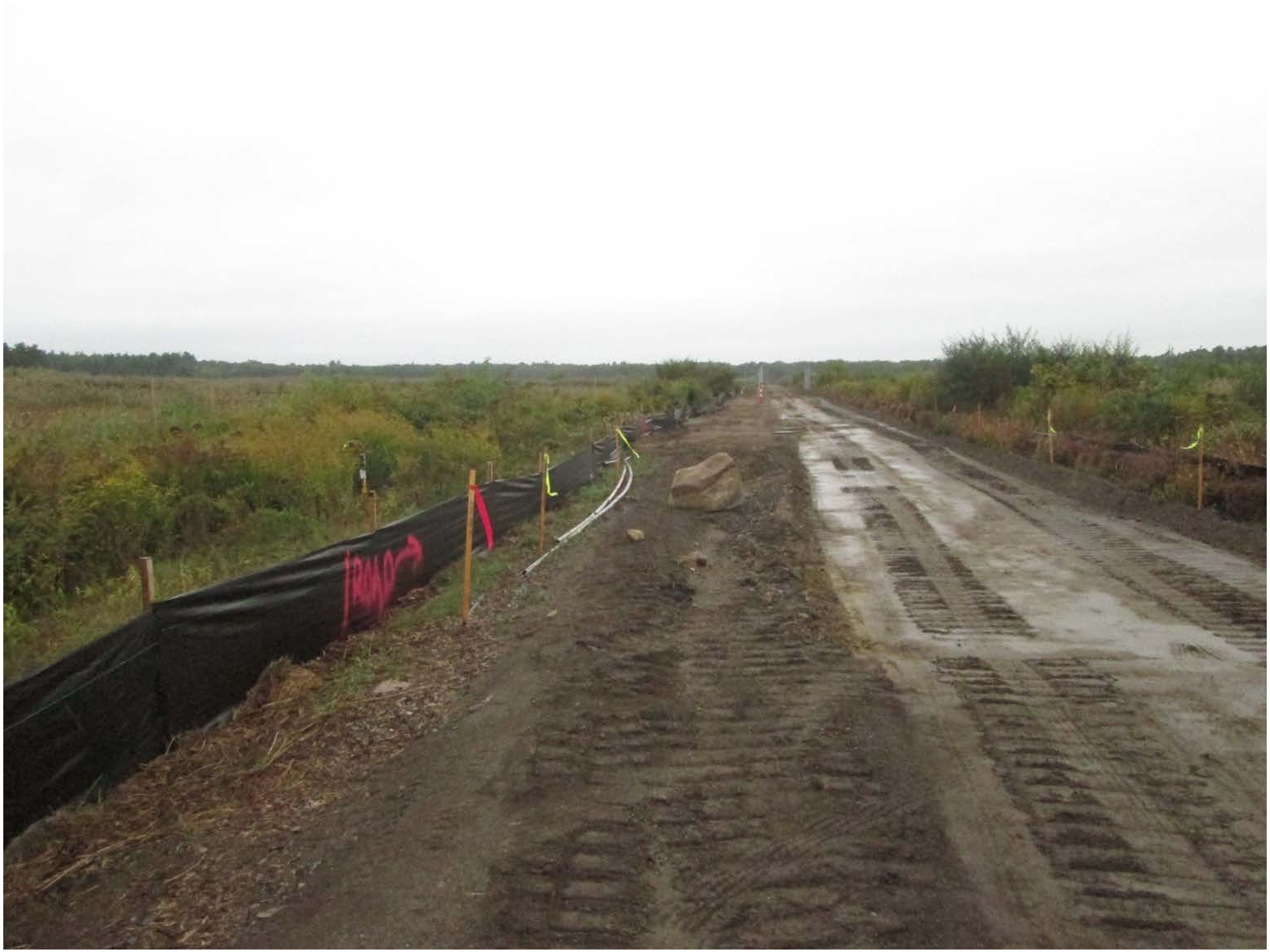
View of contractor repairing silt fence in Area 5, 9/25.



View of catch basin 3 headwall. Area remains stable.



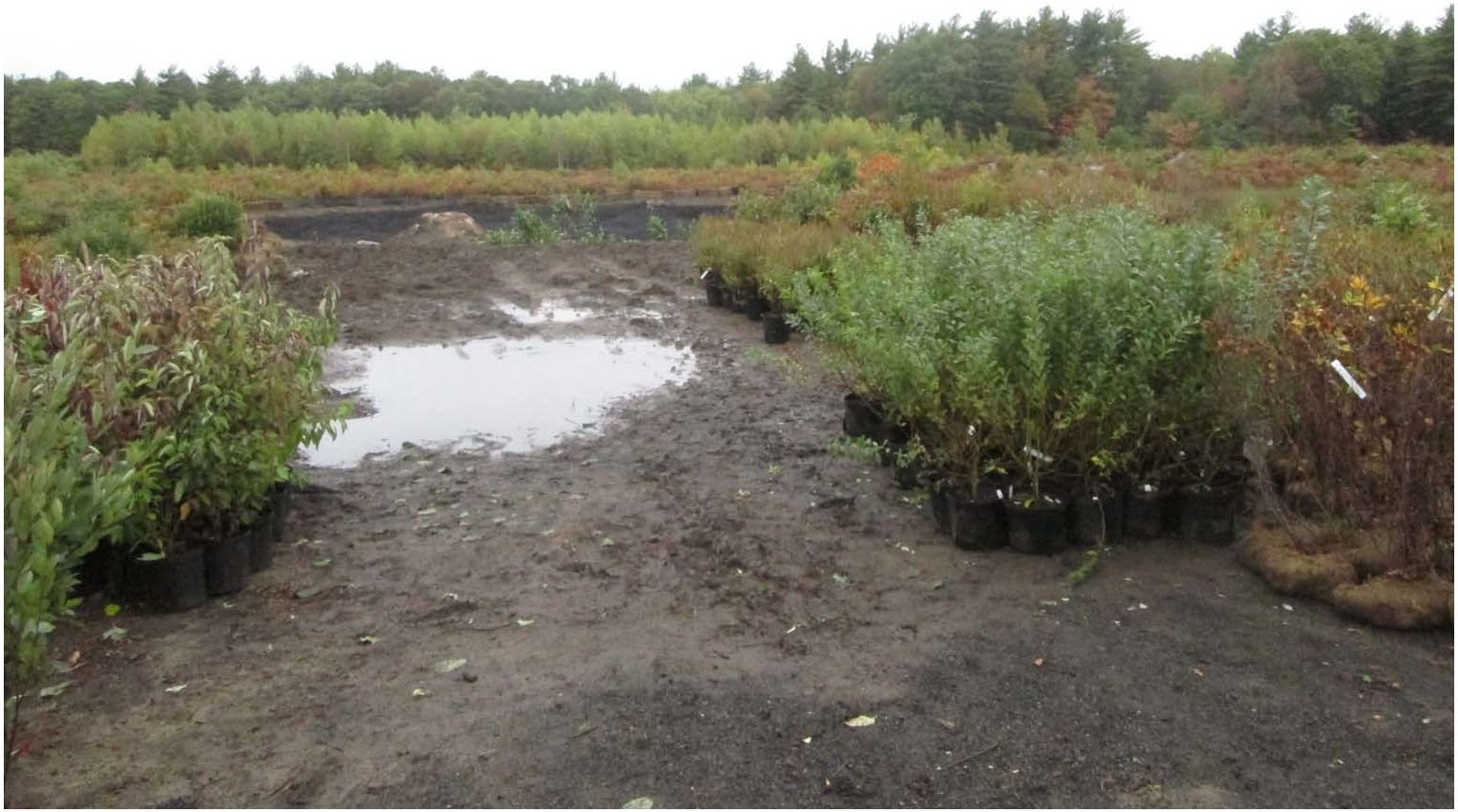
View of drainage swale, from 9/25. Check dams were removed this week.



View of silt fence repairs along ILS road.

View of MALSR silt fence repairs from 9/25.

View of new electrical installation to the FAA shack at 5 end, 9/25.



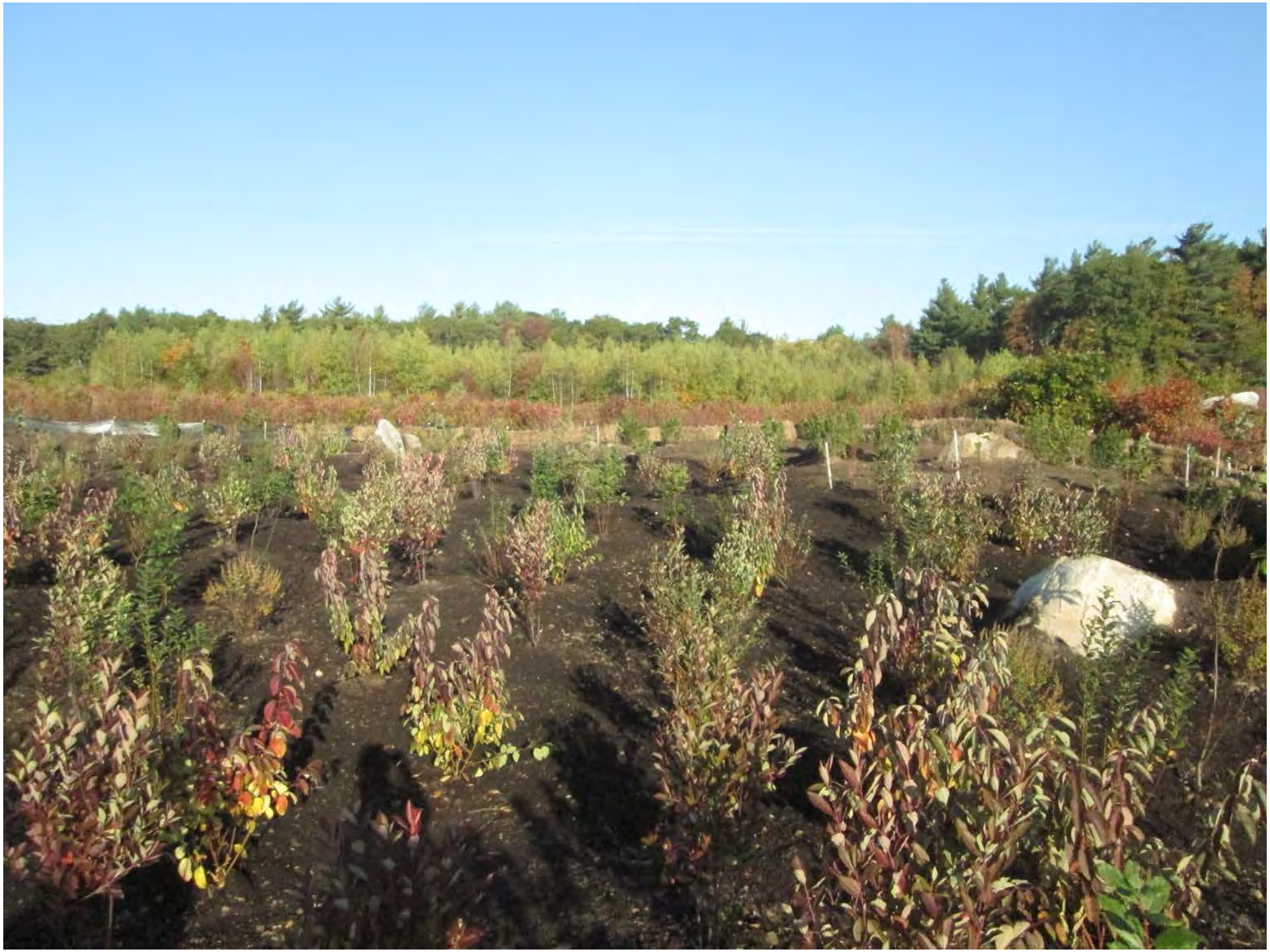
View of wetland plants staging area once delivery occurred on 10/2. Plants were installed on 10/2 and 10/3.

View of hydroseeded staging and laydown area 10/2.

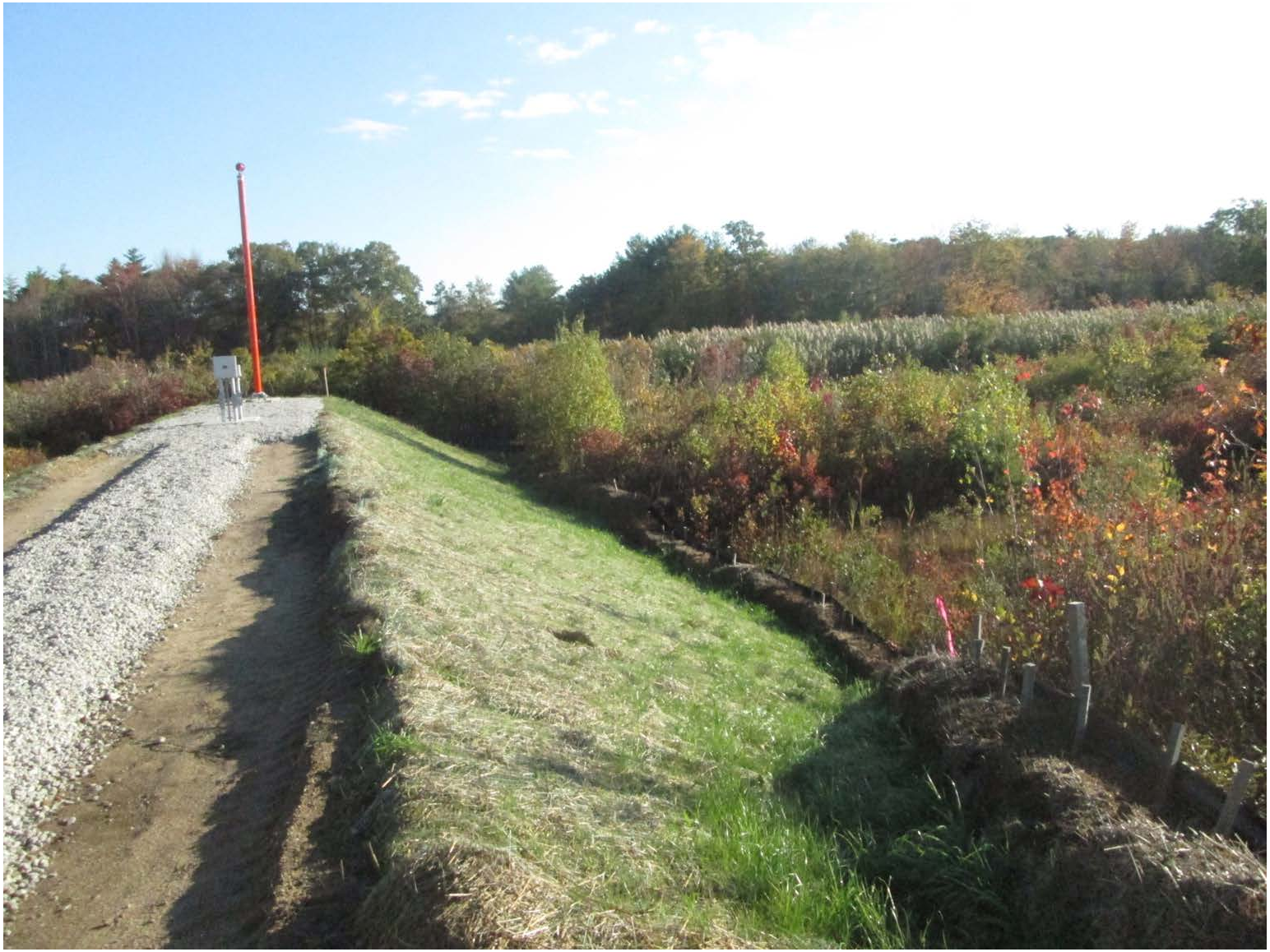
View of water within headwall. Crayfish present. Check dams will be removed, rock re-spread and sediment (from previous months) cleaned out prior to removal of erosion controls.

IMG_4146

View of water within drainage swale



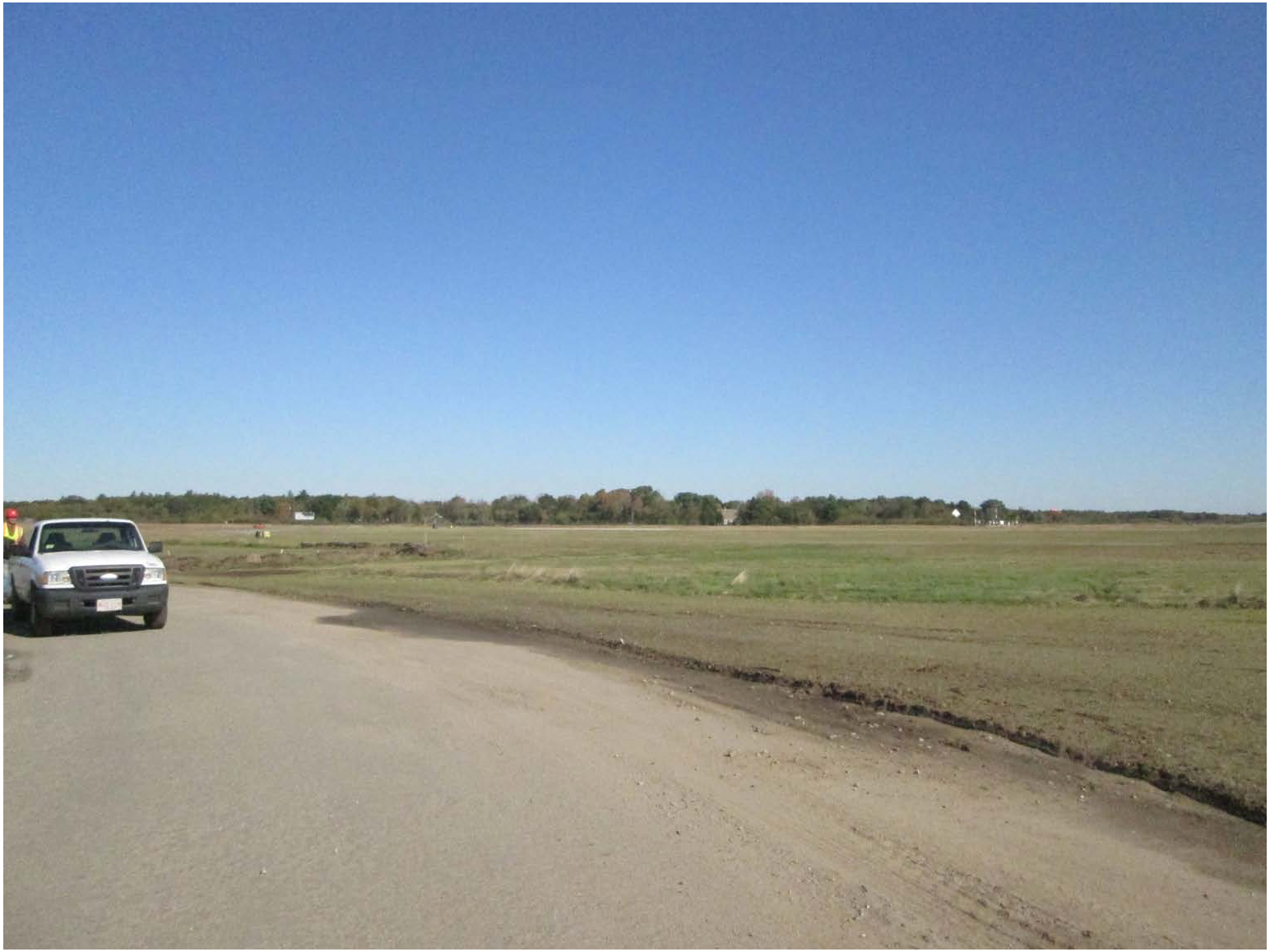
View of planted wetland replication area, 10/9.



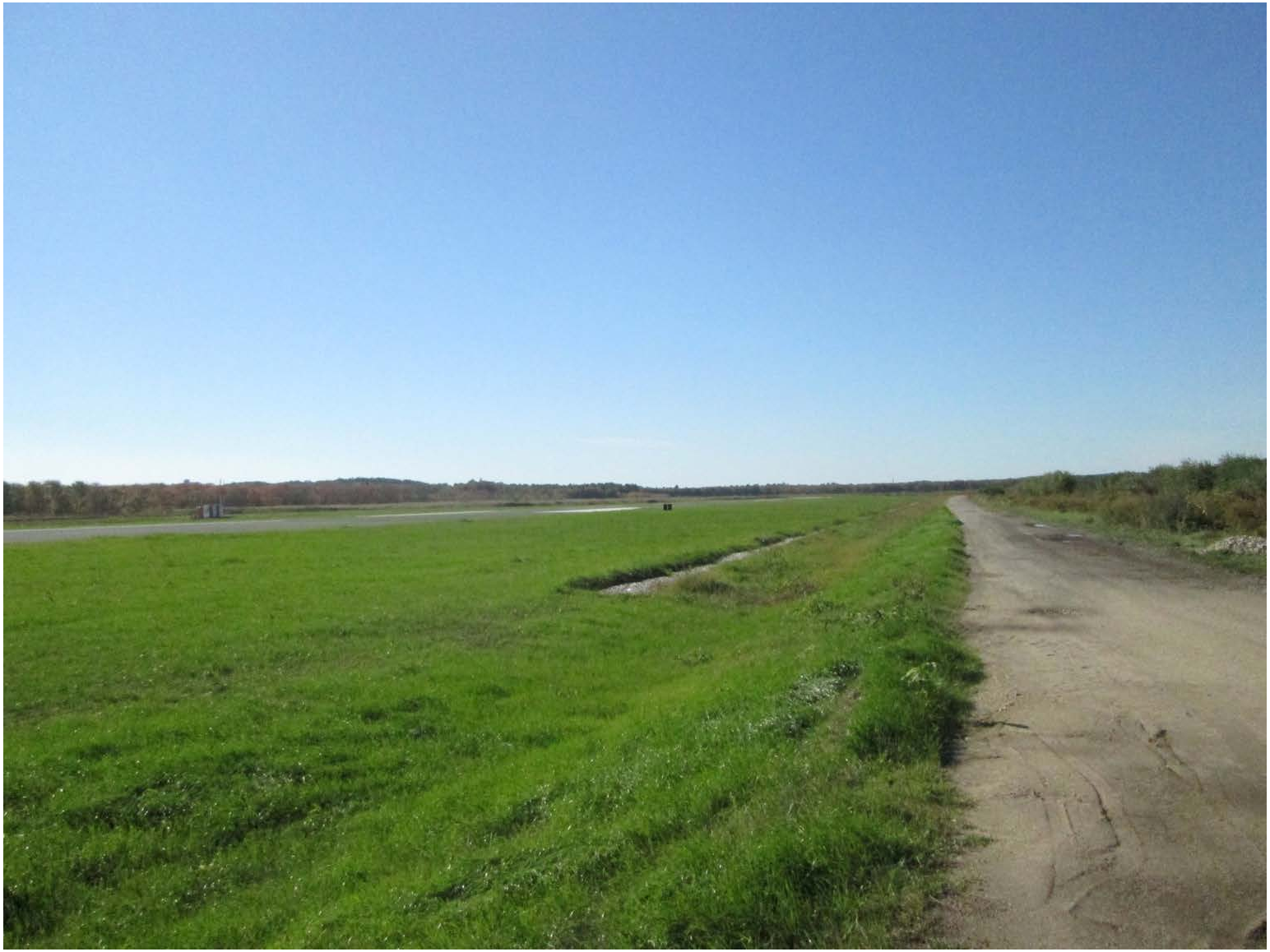
View of MALSR 23 end wetland fill area. Stone was laid. Erosion control matting was repaired (10/9).

View of MALSR along 23 end. Erosion controls are in good condition.

View of MALSR and runway, 10/9.

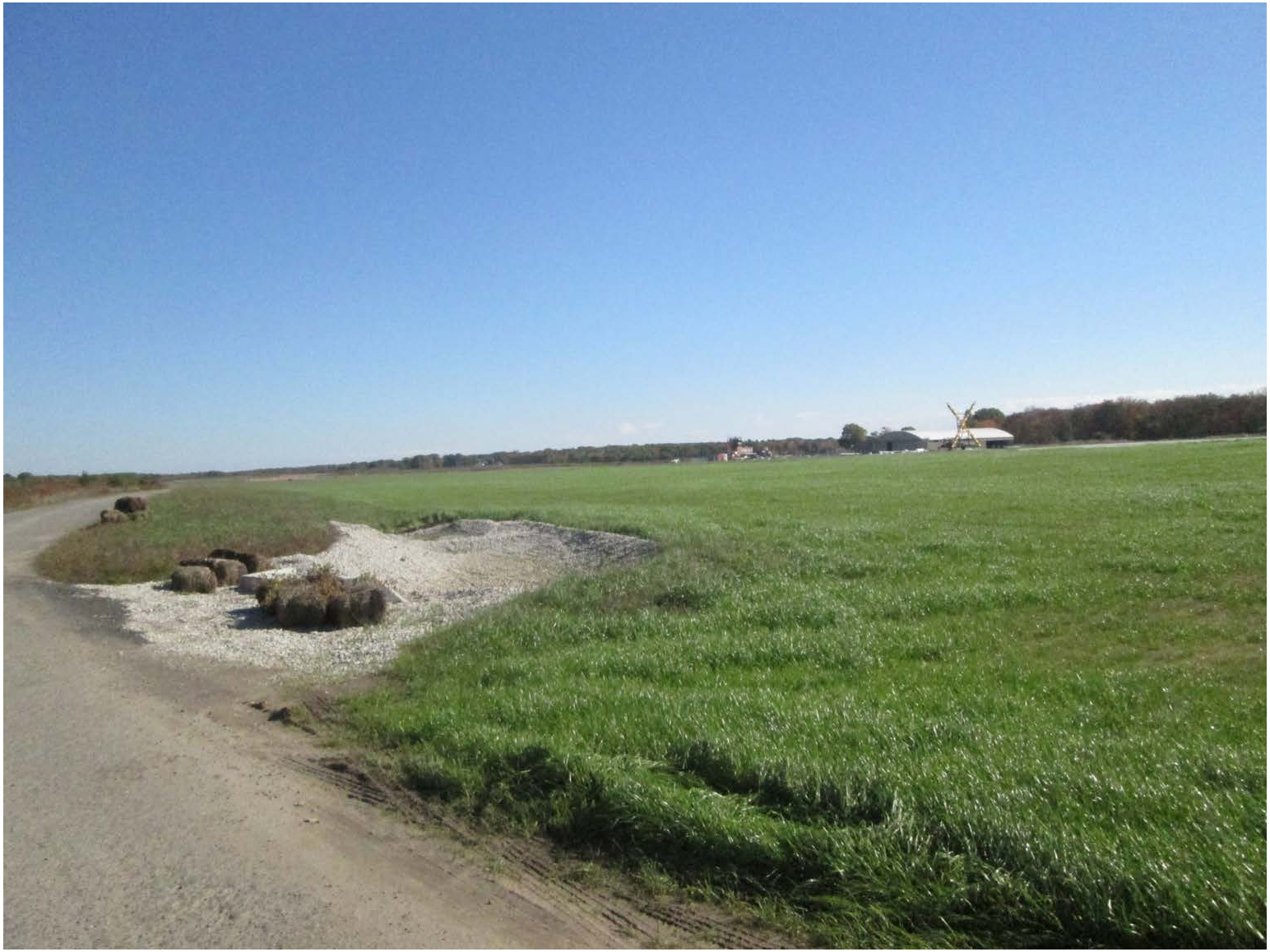


View of seed germination from last weeks hydroseeding (10/9)



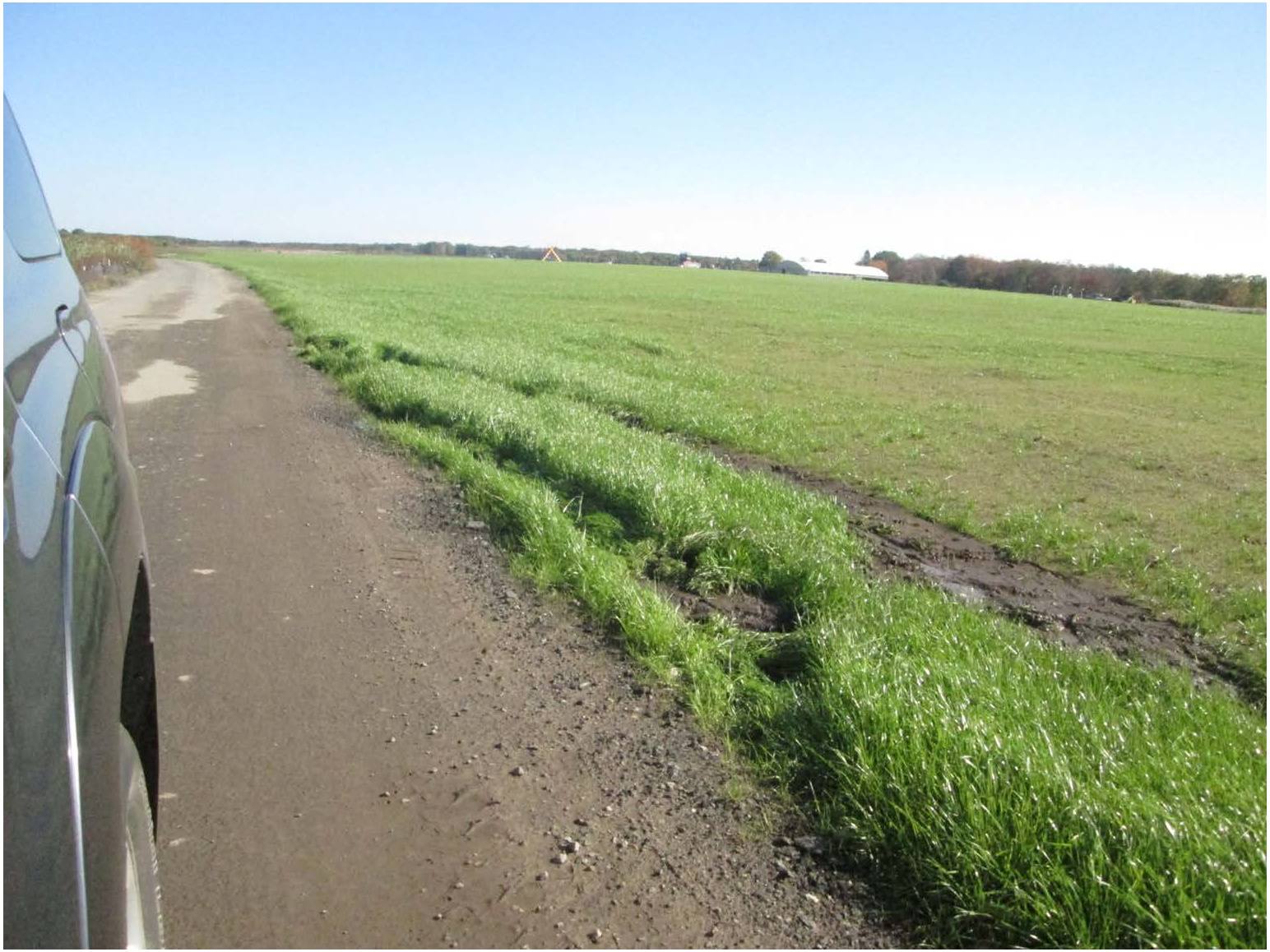
View of infiltration trench and newly established grass (10/9).

View of headwall from catch basin 3. Water is still clear, no sedimentation apparent downslope. Evidence of high flow after rain event (channelization in rock) 10/9.

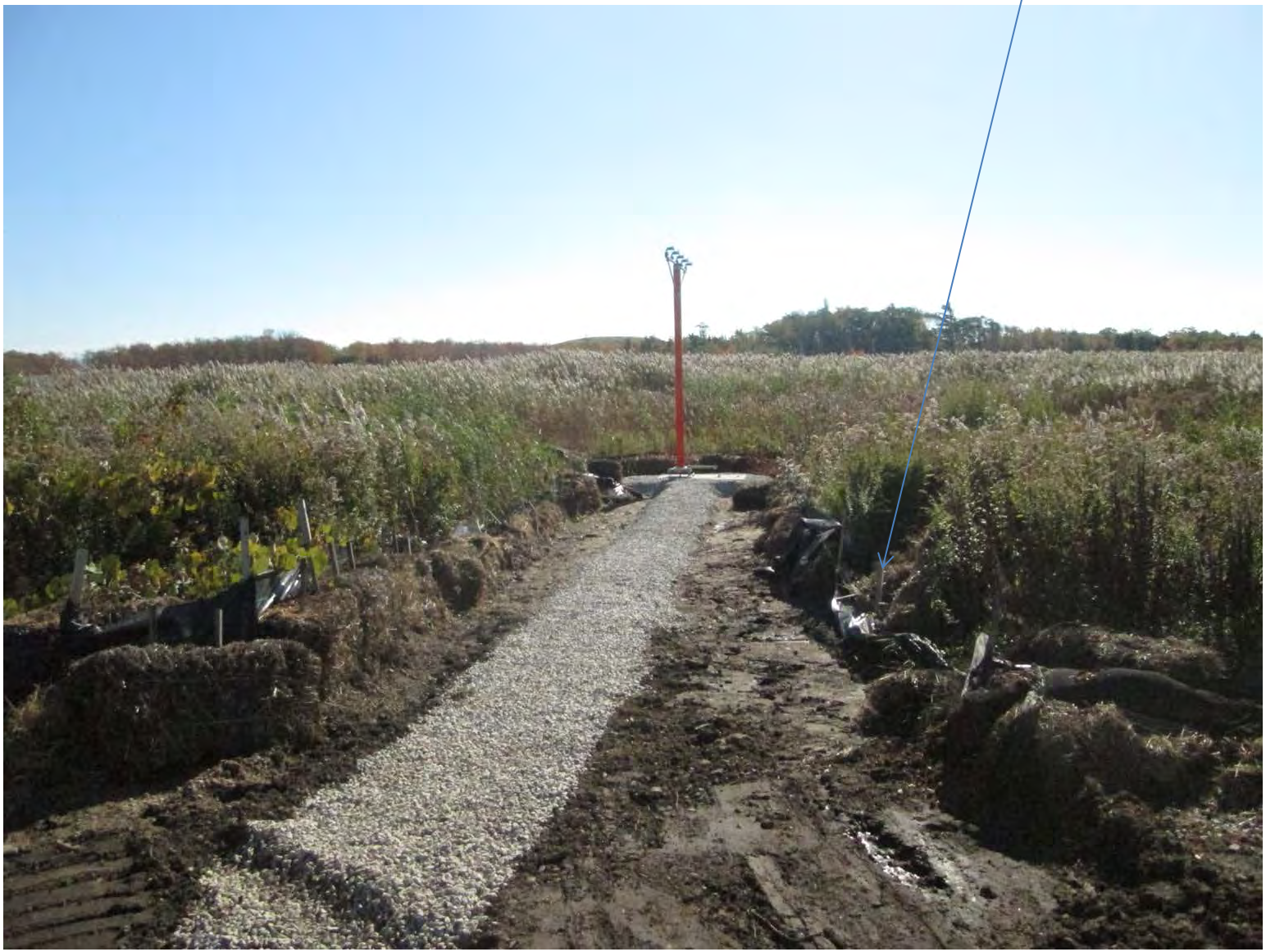


View of removed haybale check dams. This area will be re-graded to smooth grade. 10/9

View of rock movement that will be regraded.

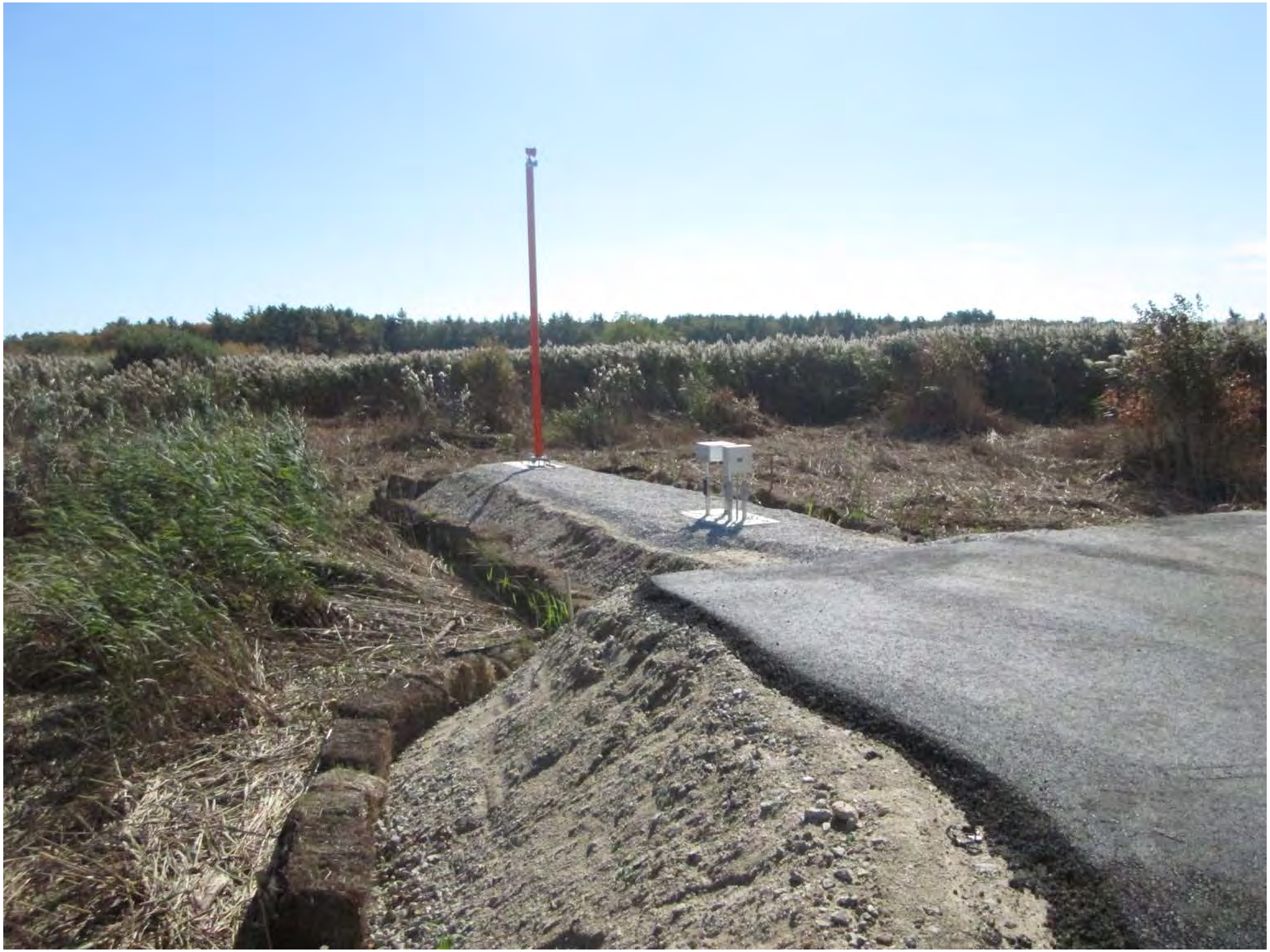


View of minor ruts along RW 5 RSA, within the 100 ft buffer to be repaired. 10/9

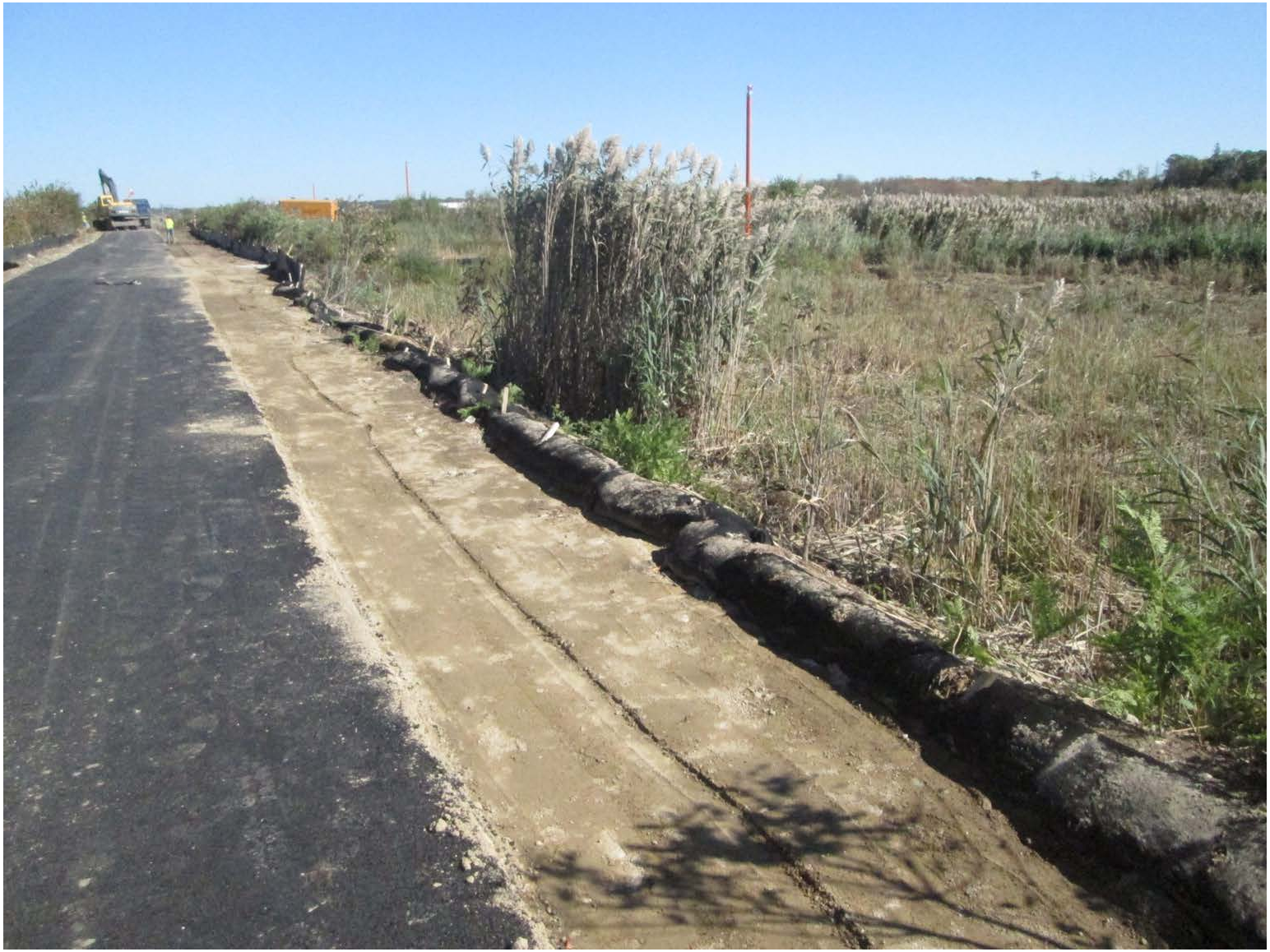


View of MALSR at 5 end. Area where erosion controls will need to be repaired. WS was notified. 10/9

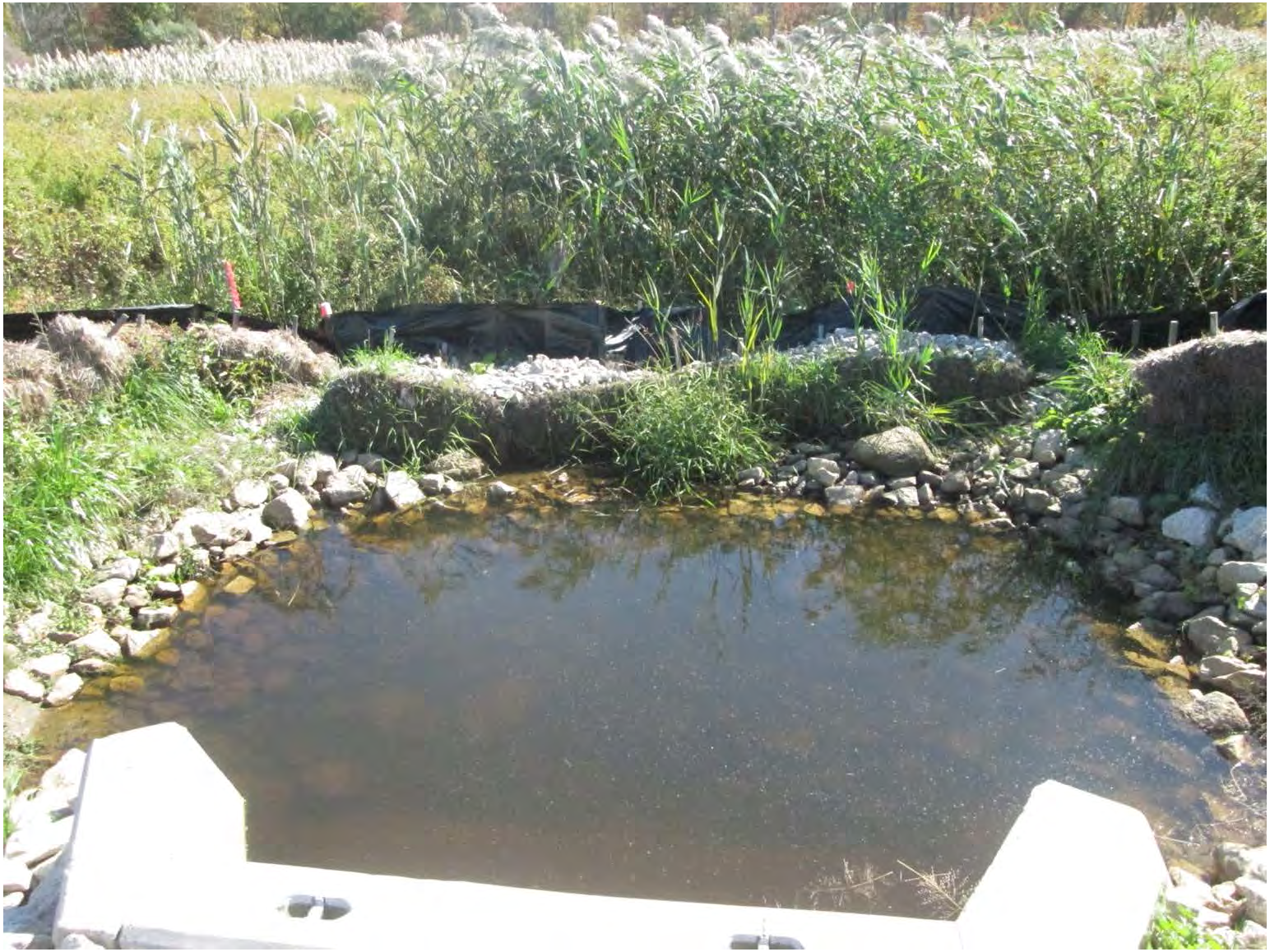
Trench goes under silt fence, silt fence was un-toed in this area. Trench continues to top of slope. No sediment was noted at this time within wetland. 10/9. This area was subsequently repaired as noted in separate WS report.



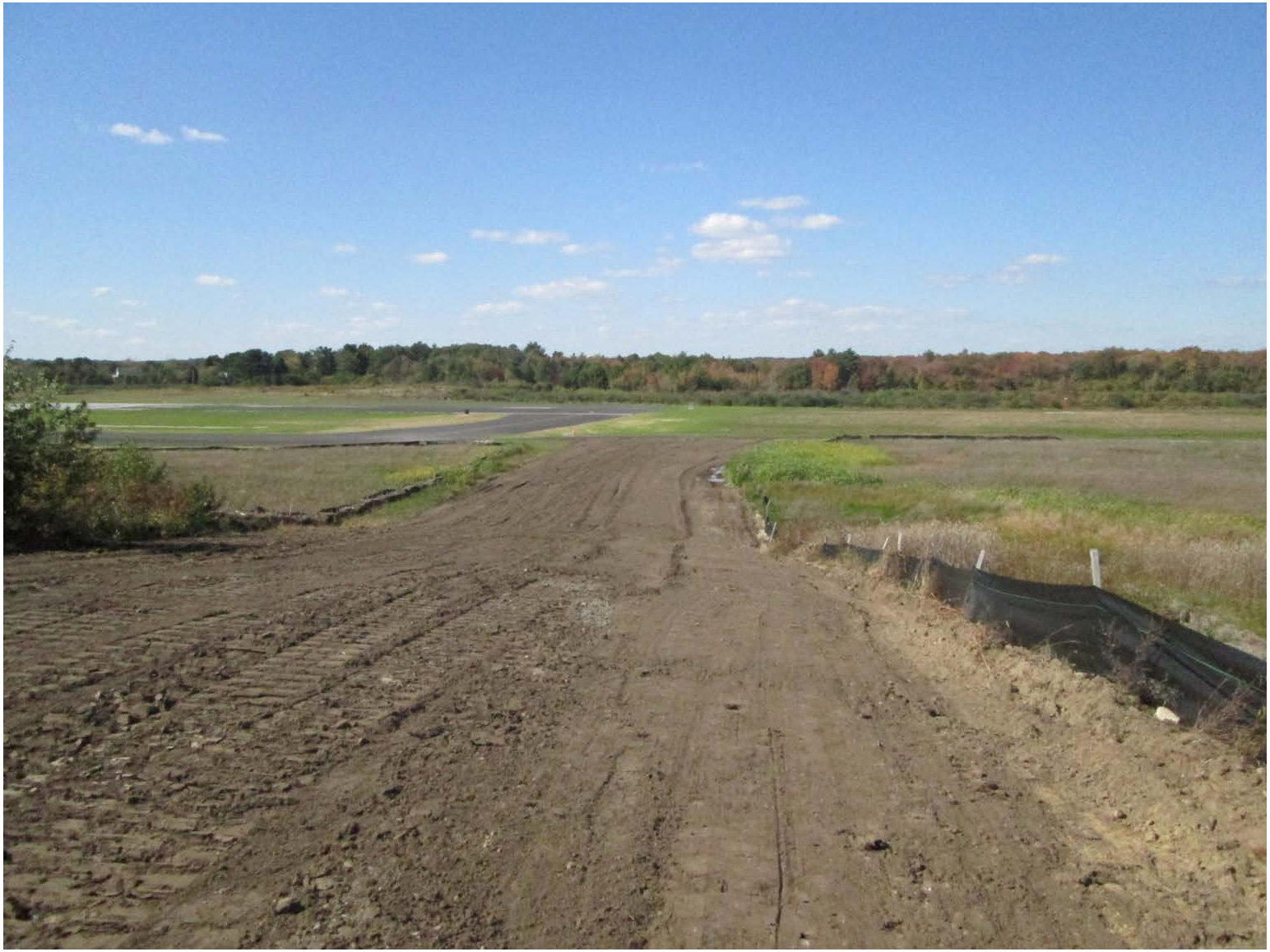
View of last MALSR at 5 end and turnaround. 10/9.



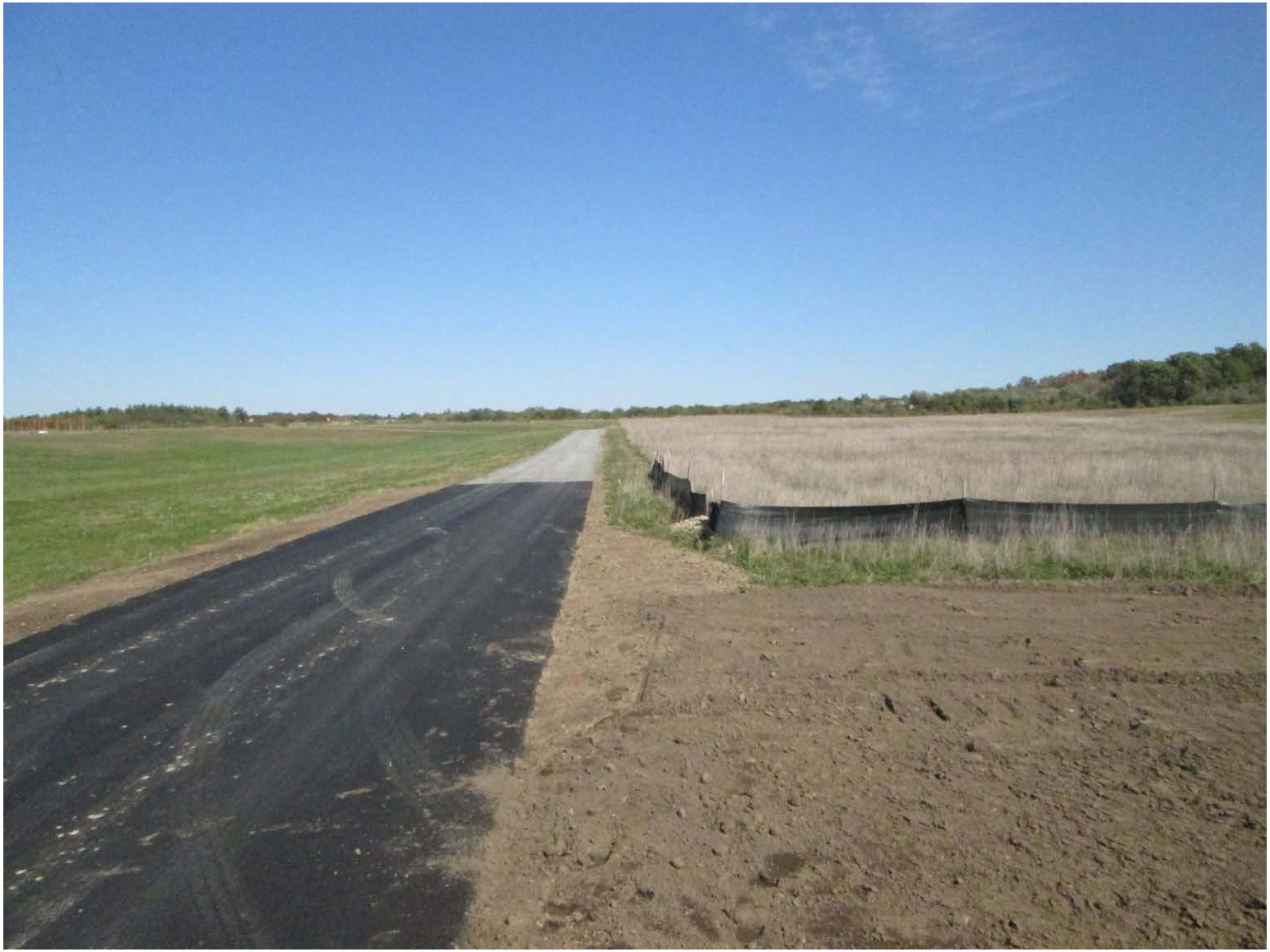
View of dense grade stabilization along ILS road.



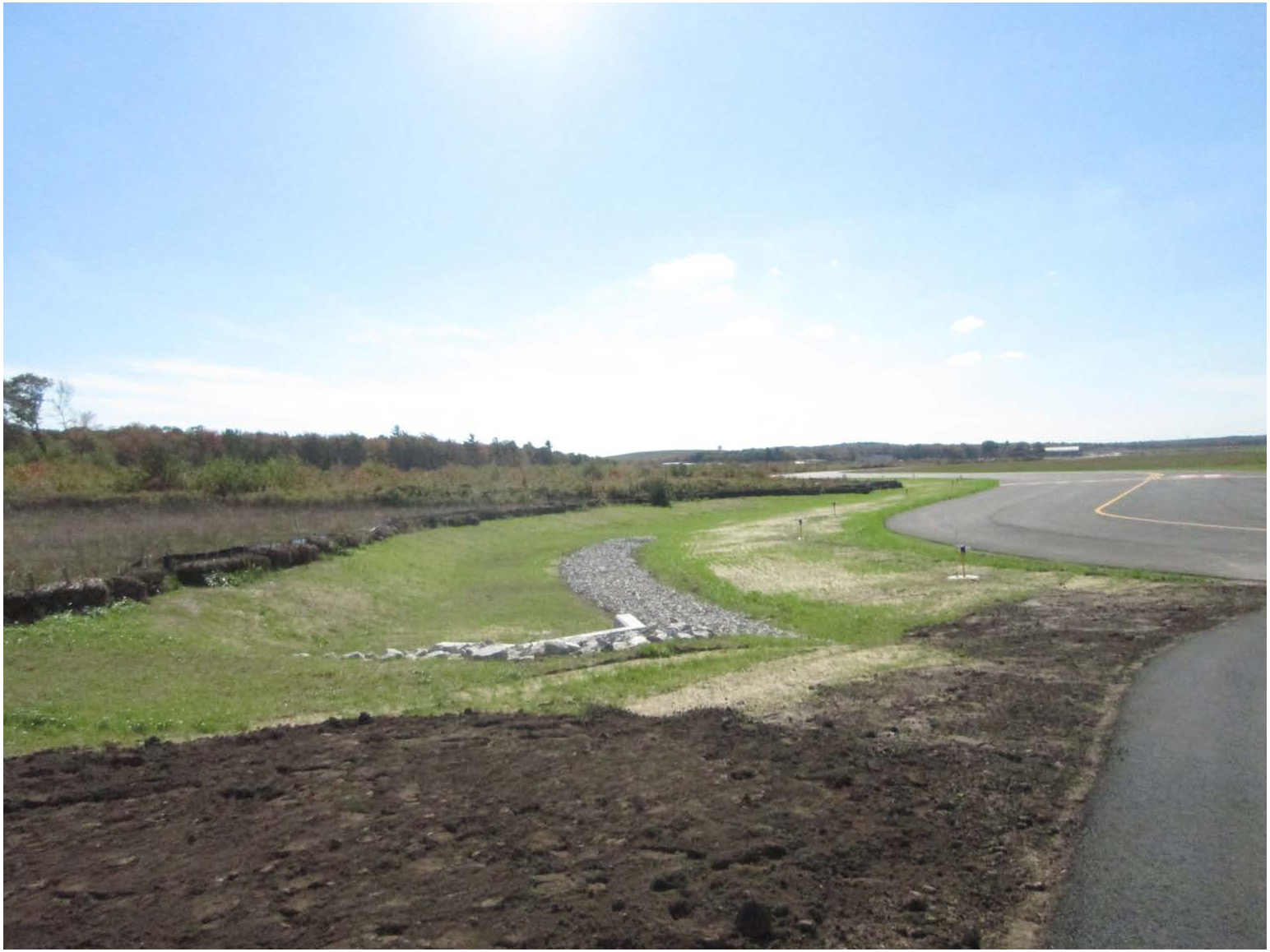
View of catch basin 11 headwall. 10/9.



View of reclaimed temporary road on RW 23 end. Hydroseeding will take place tomorrow. 10/9.

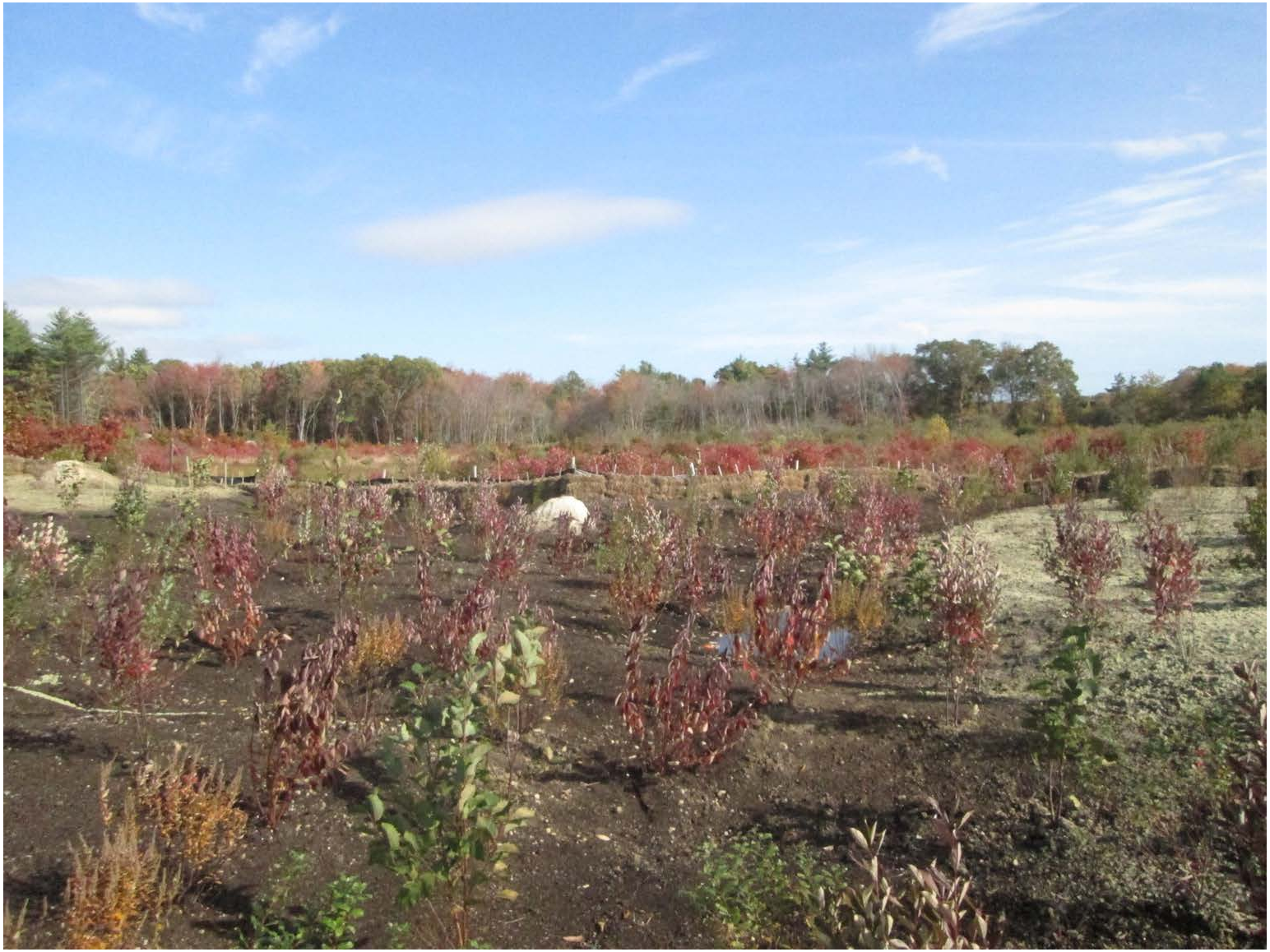


View of paved TX A stem and removed turtle barriers along RW 23 end. 10/9.



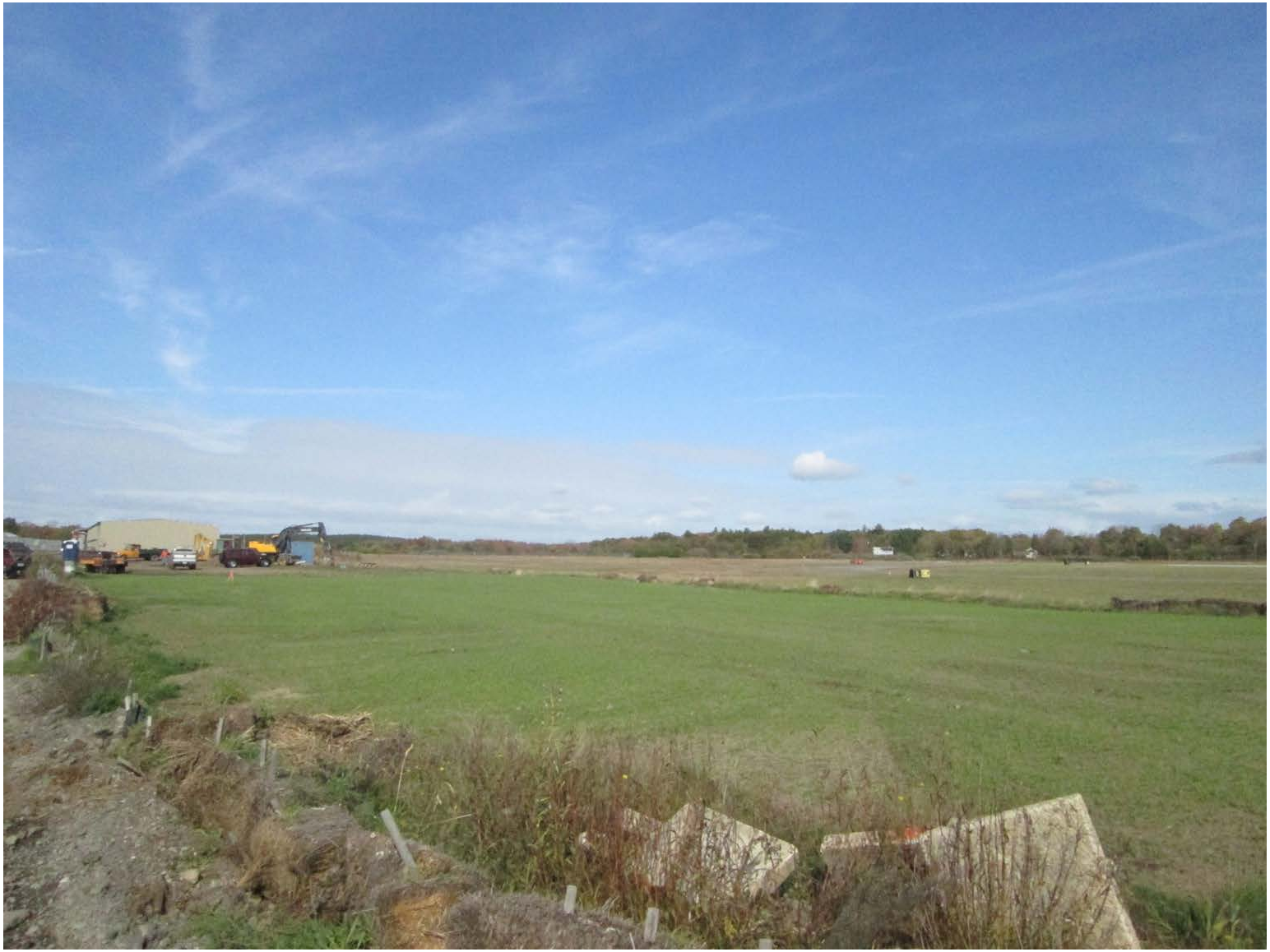
View of infiltration trench next to TX A at RW 23 end. 10/9.

View of hydroseeded side slope adjacent to wetland replication area taken 10/15. This area will receive jute matting early next week.

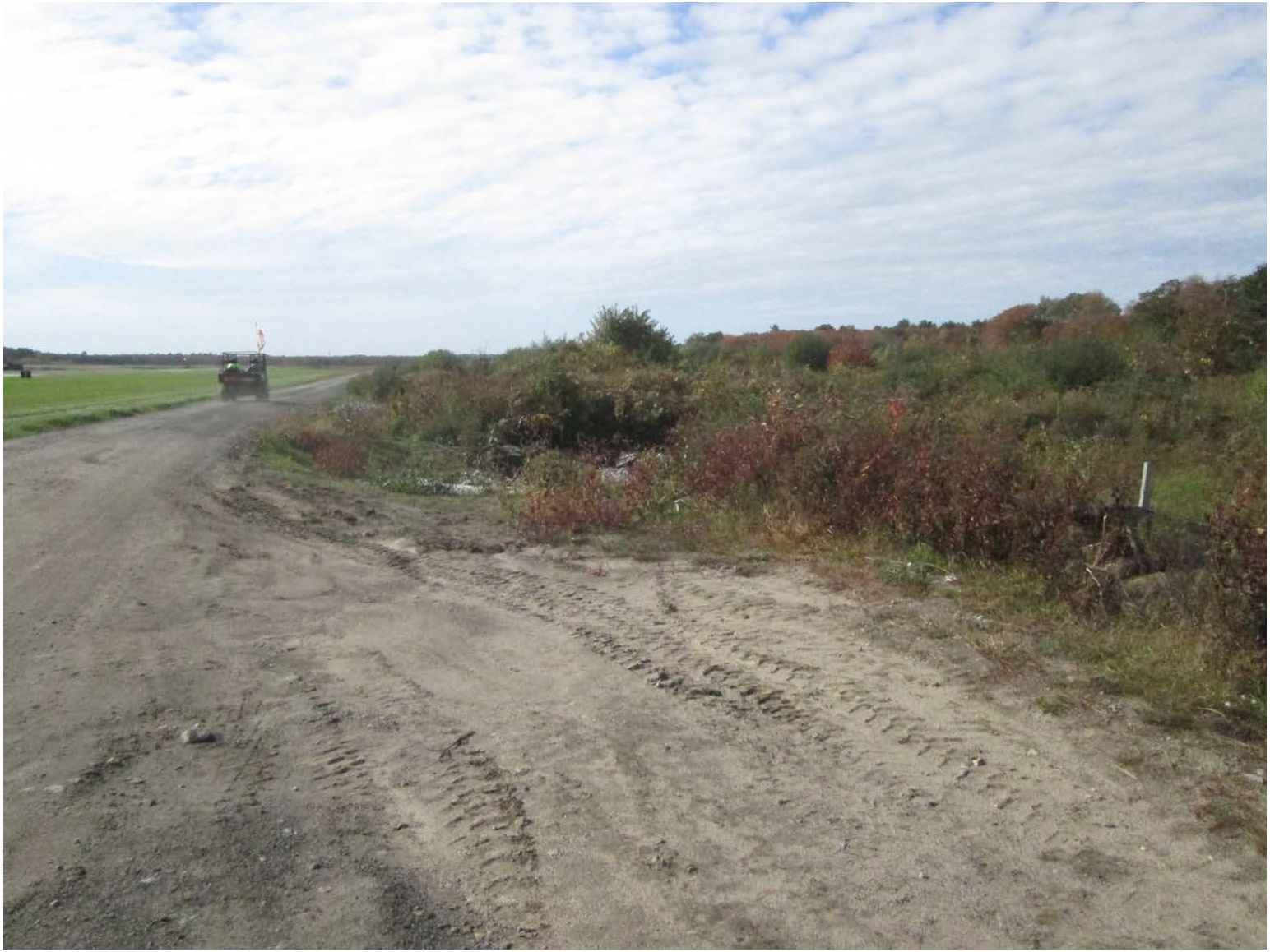


View of replication area. Seed was hand sown with the New England wet mix on 10/3. On 10/15 no evidence of sprouting yet.

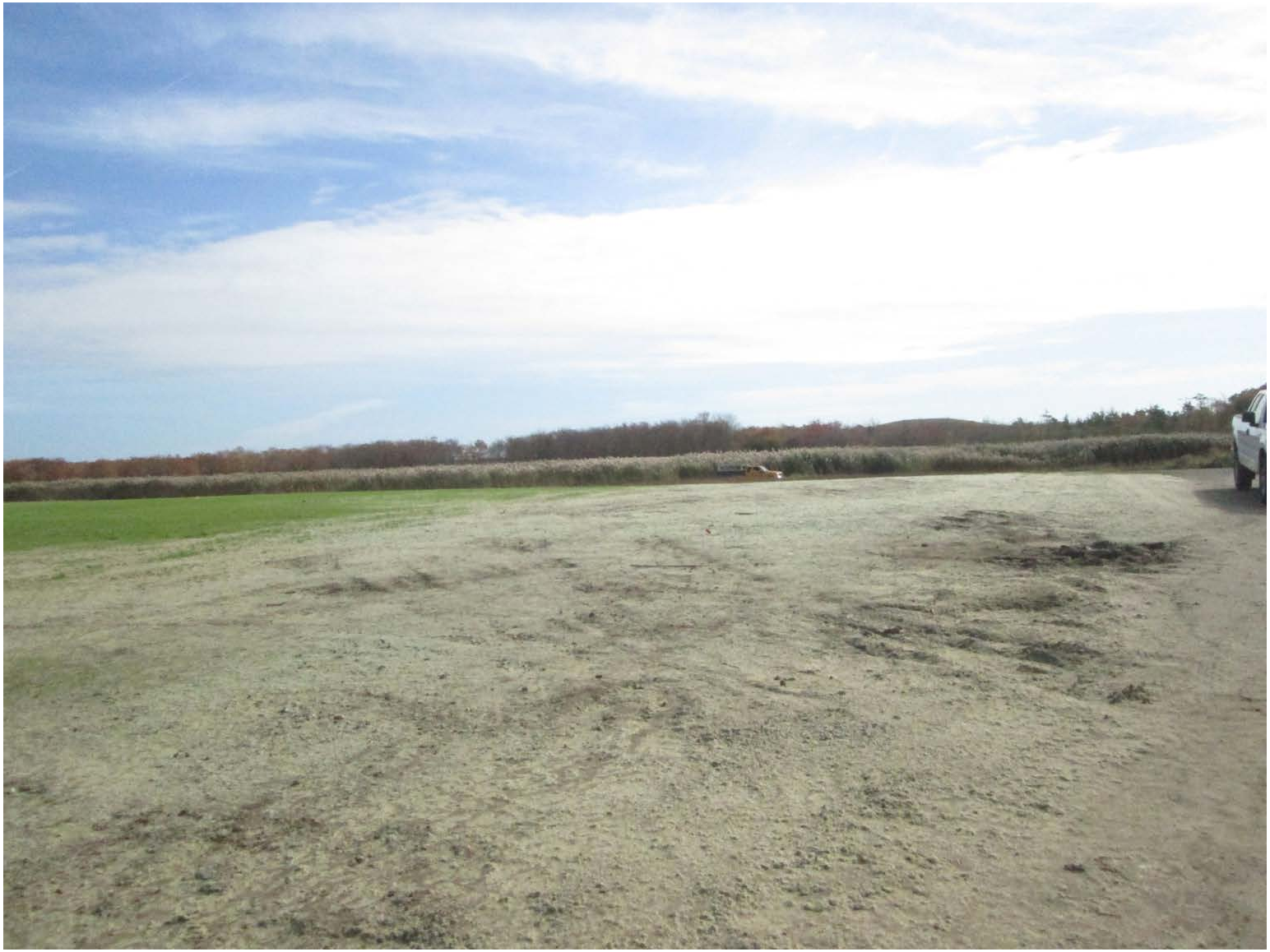
View of “Area 5” MALSR (23 end). Once work is completed we recommended that the contractor remove turtle barriers. Silt fence adjacent to wetland resources should stay in until ground is stabilized. (10/15)



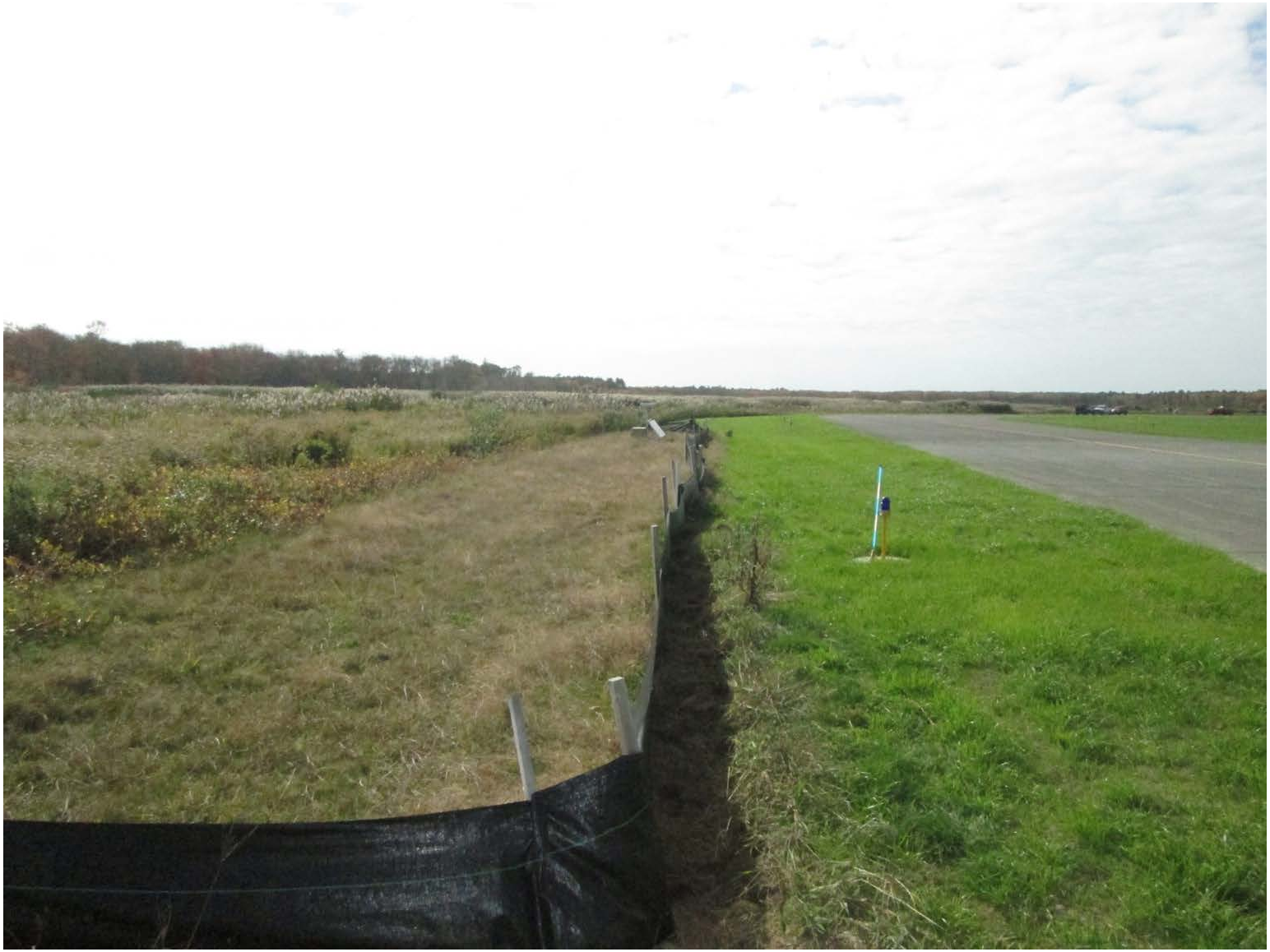
View of staging area hydroseeding. We recommended that silt fence within laydown area be removed while approximately 200 feet along outside silt fence remain in place until ground is stabilized and contractor removes all equipment.



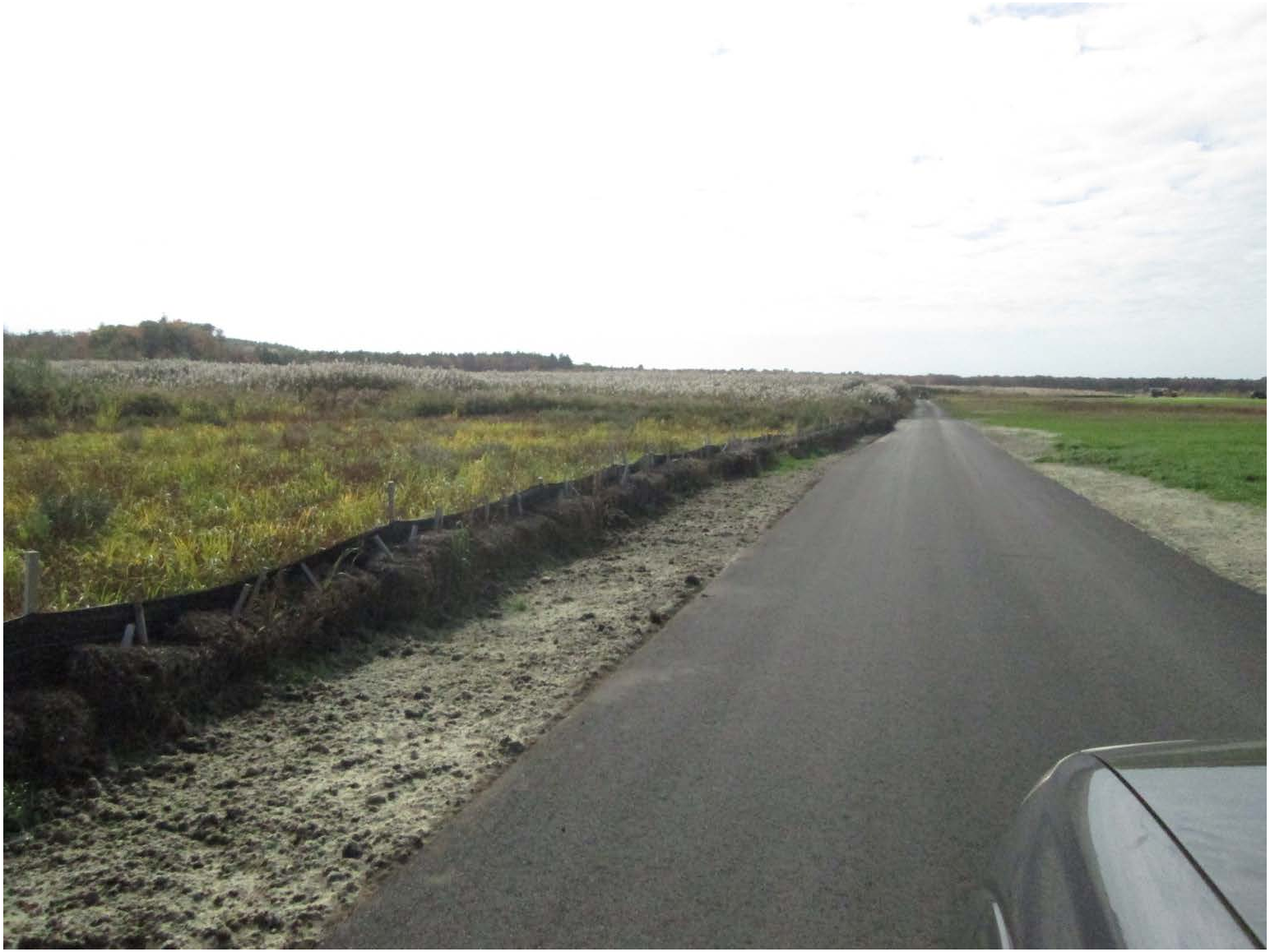
View of discrete area at intersection (up gradient headwall CB 3) that needs stabilization. We recommended silt fence remain in this discrete area until contractor addresses area (10/15)



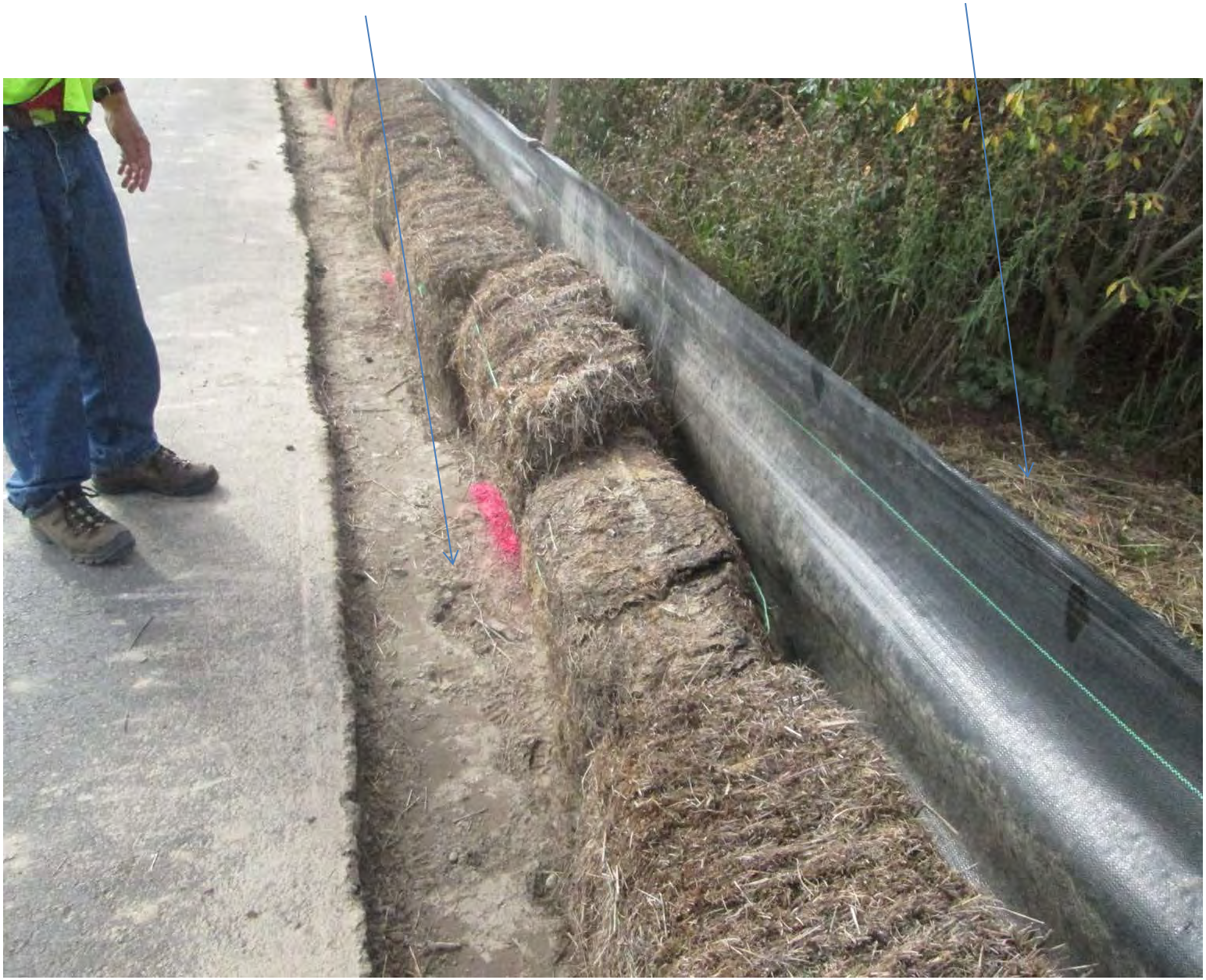
View of hydroseeded area at top of RW 5 RSA. This area was previously used for staging. Erosion controls around the top of the RSA should not be pulled until this area is stable. (10/15)



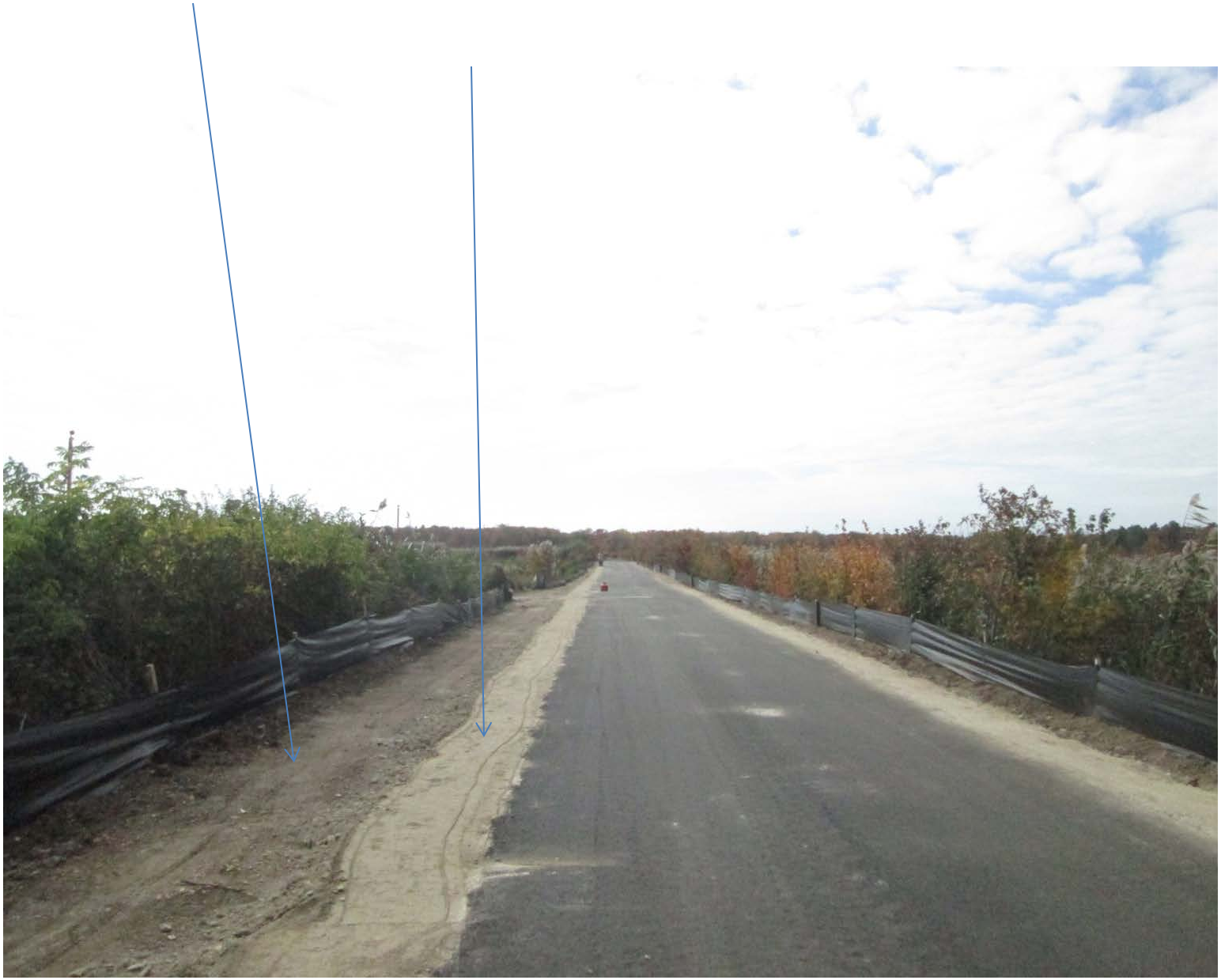
View of erosion controls currently left along Taxiway A, hay bales were removed and silt fence checked (10/15).



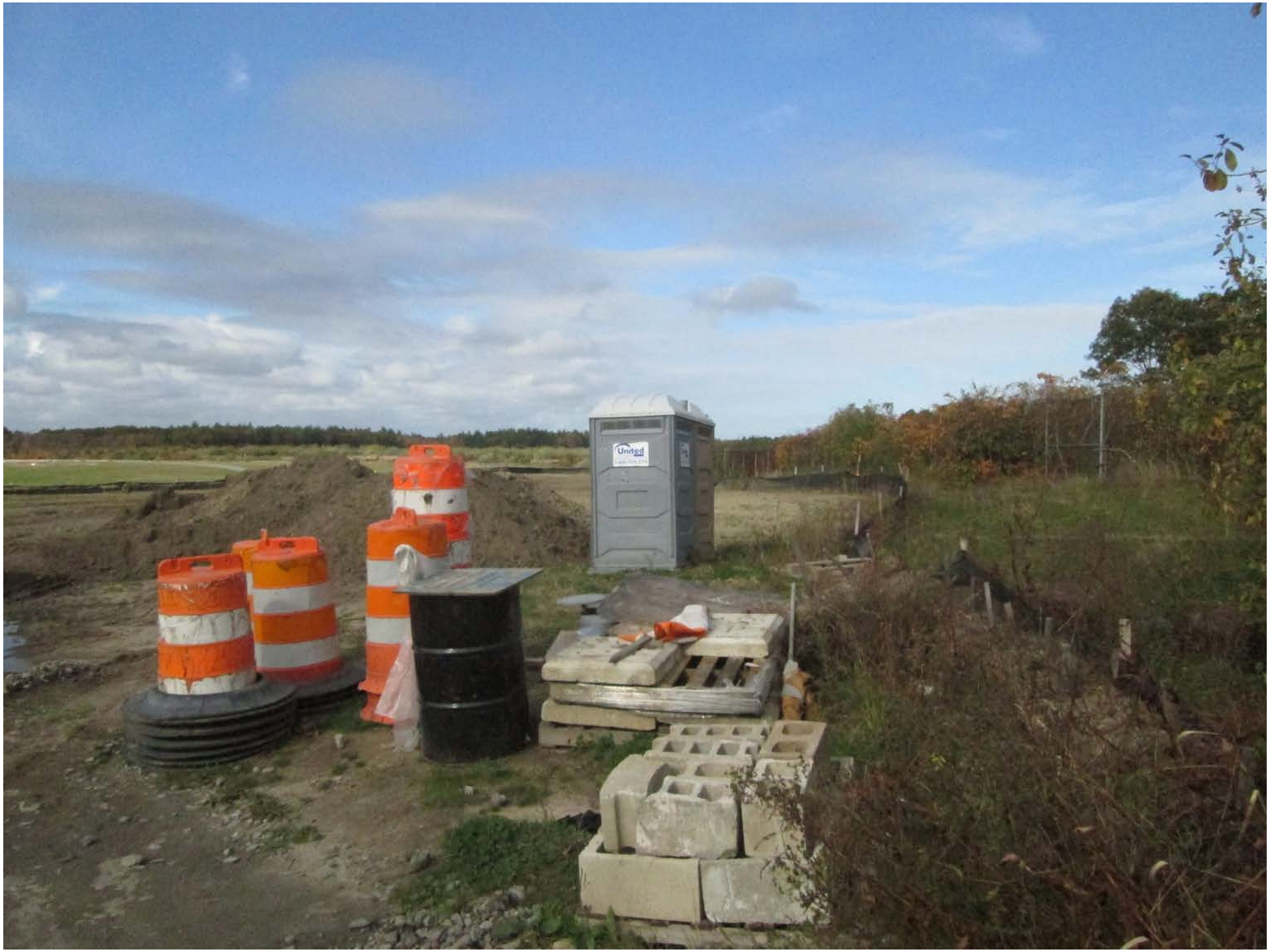
View along lower RW 5 RSA. Erosion controls will remain until stable (10/15).



View of fixed trench (example) along ILS road. The trench was fixed on both sides of the silt fence, stabilized with hay, and the silt fence was retoed (10/15).



View of 2-feet of packed gravel adjacent to paved ILS road. The other area will be stabilized with loam and seed. The gravel boarder will remain in place (10/15).



View of hydroseeded staging area along RW 23 end (10/15). Side slope (where temporary road was installed) was hydroseeded and will receive jute matting to further stabilize the area 10/15.