

**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: **4/14/14 (9am to 11am), 4/24/14 (10am-4pm), and 5/1/14 (9:30am-4pm)**

Weather Conditions: **4/14/14 sunny high 40s, 4/24/14 sunny high 50s, 5/1/14 rainy to overcast, high 50s: Prior to site visit approximately 1.4 inches of rain fell at EWB within 24 hrs (weatherunderground.com).**

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

On 4/14/14 ETL mobilized. Scott Smyers of Oxbow was present to conduct eastern box turtle training sessions for the workers, inspect turtle barriers and conduct sweeps. Silt fence trenching and installation commenced.

On 4/24/14 ETL continued to place silt fence and turtle barriers in advance of construction. MassDEP Permit Numbers were posted on each construction entrance.

On 4/28/14 ETL received notice to proceed from Airport.

On 5/1/14 ETL continued to place silt fence and turtle barriers around Runway 5 and 23 ends. ETL constructed a temporary access road and culverts in uplands at Runway 23 end. Stripped and stockpiled soil within the Runway5 end RSA, started milling asphalt within Work Area 1 section of the Runway (from Taxiway B to 5 end), and placed asphalt millings along designated airport access road and trucked off-site.

**Status of Existing BMPs and Other Inspection Items**

Control Measure	Cleaning or Repair Needed	Comments/Recommendations from the EM
Erosion Control Devices	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> n/a	Erosion controls were being installed along the Runway 5 and 23 ends over the past three weeks. As of the afternoon of 5/1/14, erosion controls along the 5 end are complete. Erosion controls along the 23 ends are still being installed. Erosion control issues within the 5 end RSA are described in detail below. WS should continue to supervise work including conducting “look-ahead” inspections with ET&L for the subsequent days’ work to make sure controls are being installed as per permit conditions. WS should implement erosion controls recommendations outlined in their WS Rprt 1.
Box Turtle Barriers, Gates and Protection Measures	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> n/a	Turtle barriers along the Work Area 1 (Runway from Taxiway B to 5 end) are complete enclosed from construction entrance to the fence at the Colonial Hangar. Gaps along the remote access fence were sealed and approved by Oxbow. A manufactured plastic turtle barrier was installed along the bottom of the electric slide gate as approved by the NHESP. Turtle sweeps are ongoing and many turtles with transmitters were observed and confirmed. Oxbow has coordinated directly with the NHESP on this aspect of the project.
Stabilized Construction Entrances, Haul Roads, Dust Control	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> n/a	The stone tracking pad was in good shape with no significant silt or sediment on the roadway. An individual ET&L is stationed at the entrance for site access control and sediment

Control Measure	Cleaning or Repair Needed	Comments/Recommendations from the EM
		control.
Stockpiling Materials	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> n/a	Two sediment stockpiles were created from stripping the Runway 5 end. One of the smaller sediment stockpiles appeared to be near the outer edge of the BVW 100-ft buffer zone. The WS was alerted and promised to inquire about location and moving the stockpile out of the buffer zone if necessary. Epsilon will follow up during its next inspection.
Construction Equipment Storage and Refueling	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> n/a	Equipment storage is located within the designated lay down area. Refueling occurred outside of resource areas and buffer zones.
Site Clean-up and Stabilization	<input type="checkbox"/> yes <input type="checkbox"/> no <input checked="" type="checkbox"/> n/a	
Timber Swamp Matting	<input type="checkbox"/> yes <input type="checkbox"/> no <input checked="" type="checkbox"/> n/a	
Work Area 1A – Tree clearing and grubbing in Dartmouth	<input type="checkbox"/> yes <input type="checkbox"/> no <input checked="" type="checkbox"/> n/a	
Work Area V – Wetland Replication Area	<input type="checkbox"/> yes <input type="checkbox"/> no <input checked="" type="checkbox"/> n/a	
Overall Adherence to Environmental Permits		The site contractor in consultation with the WS shall continue to implement the West Ditch restoration & monitoring work and properly install erosion controls to avoid future sedimentation and erosion problems. Epsilon will provide an update on the progress of these items in its next EM Report.

**Other General Comments:**

On 4/24/14 Epsilon visited the Runway 5 end RSA area. Prior monthly (off season) EM reports have documented that silt fence from the Phase 2 project was still present north of the gravel access road, at the top of the slope of the relocated West Ditch. Epsilon previously reported that the silt fence was in fair condition with repairs being made by the Airport as necessary during the off season. During an inspection for this phase of construction Epsilon observed that ET&L was installing its silt fence ~2 to 4 feet downslope of the existing Phase 2 silt fence installed by Manafort from the end of Runway 5 (pavement) and in the vicinity of the relocated West Ditch. Installing controls in this manner placed controls at the toe of slope and immediately adjacent to the wetlands between the Runway 5 pavement end and the west ditch tie in point along approximately 600 feet. Installing the controls in this manner also resulted in the disturbance of 50 of the planted shrubs and the previously stabilized grassed slope over a distance of ~450 feet; the second row (higher row) of shrubs were predominantly disturbed. Epsilon immediately notified the RE (ASG), the Airport, the Contractor (ETL) and the WS on site at the time work was occurring (Joe Rogers), reviewed the plans, and explained that the controls should not be installed in this manner. The EM, Contractor and WS then developed a corrective plan of action and began implementing temporary restoration efforts for the disturbed area. The Contractor immediately supplied an excavator to relocate the soil, and shovel and rake soil back in place. Uprooted shrubs were reinstalled and a thick coating of hay was spread to temporarily stabilize the soil surface. The team agreed that the newly installed silt fence should remain in place until the ground surface is revegetated and stable. Epsilon requested that a written restoration and monitoring plan be provided by the Contractor's WS. Epsilon and ASG received the draft plan shortly thereafter and provided verbal direction and written comments on 5/1/14 and 5/2/14. Epsilon understands that the Contractor's WS is working on a revised plan that addresses Epsilon's comments (mostly minor, pertaining to contingency plantings if the reinstalled shrubs do not survive the growing season, revised seed mix specification for the bank, review of slope stabilization measures/jute mat repair, and agreed upon compliance deadlines). The WS indicated on a conference call with Epsilon and ASG that moving forward they will conduct "look ahead" inspections with the Contractor to confirm that the erosion controls are being installed in locations that are consistent with permit conditions and that the controls are being properly trenched and staked. If there is any confusion between field conditions and the permit drawings the Contractor and WS were instructed to contact the RE who in turn will reach out to the EM if additional guidance is needed relative to staying in compliance with permit conditions. Epsilon recommended that silt fence be installed in the same location (at the top of the slope therefore protecting the constructed bank, the West Ditch, and the wetland resource) as previous Phase 2 construction as per plans and specs. Epsilon cautioned that the previous erosion control was in fair condition.

On 5/1/14 Epsilon visited the Runway 5 end RSA after approximately 1.4 inches of rain fell within a 24 hr. period. Much of the site was inundated from the heavy precipitation and two areas were observed where the abandoned Phase 2 silt fence failed and a breach occurred. Epsilon observed the Contractor installing silt fence immediately adjacent to Phase 2 abandoned silt fence. The WS was onsite and was actively trying to contain the site, including adding additional silt fence south of the gravel access road to break up the water flow. Turbid water (very fine sediment) was observed flowing into the West Ditch and the wetland located between the Runway 5 end and the West Ditch. During a follow up site visit after rains dissipated turbid water conditions were no longer present in the West Ditch (the water clarified relatively quickly as the rain event died down and water levels dropped). Sarah Porter of the New Bedford Conservation Commission conducted a site inspection with Epsilon and the WS in the afternoon. One other area, located at the northern bend of the West Ditch was observed and the WS was notified. Once water was controlled the contractor raked eroded areas and spread hay to protect the ground surface. Epsilon recommends that at the appropriate time the silt fence placed along the toe of slope (between Runway 5 end pavement and the west ditch) be relocated or installed at the top of slope to prevent sedimentation into the wetland in the future. We will coordinate this recommendation with the RE and WS.

Are additional erosion control measures needed?

no yes If yes, describe: Hay bales need to be installed per the specifications adjacent to the silt fence. New silt fence adjacent to the abandoned Phase 2 silt fence needs to be properly tailed. Relocate silt fence from toe of slope of wetland at Runway 5 end. The WS was informed of these requirements at the time of inspection by Epsilon. The WS should also implement the recommended erosion control measures in its most recent WS report.

Are sediment/pollution discharges from the site present?

no yes If yes, describe: Discrete minor areas of sedimentation were observed along the Runway 5 end RSA, as noted above.

Describe any corrective action required at this time: The Contractor's WS should provide Epsilon with a revised restoration and monitoring plan as noted above.

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.



April 14, 2014 mobilization. Scott Smyers of Oxbow giving the Contractor training on eastern box turtle. Note turtle in hand.



MassDEP permits are posted at each construction entrance. View of stone tracking pad.



Typical view of fully installed silt fence/hay bale erosion controls and turtle barriers.



View of west ditch bank that was inadvertently disturbed down gradient of preexisting Phase 2 controls in order to install Phase 4 silt fence. See subsequent photos and proposed restoration plan prepared by the ET&L's Wetlands Specialist.



View of west ditch bank that was inadvertently disturbed by ET&L in order to install new silt fence. See subsequent photos and proposed restoration plan prepared by the ET&L's Wetlands Specialist.



View of Contractor replacing shrubs and temporarily restoring disturbed area along West Ditch.



View of Contractor replacing shrubs and temporarily restoring disturbed area. Starting to place straw to protect soil.



View of Contractor replacing shrubs and temporarily restoring disturbed area. Starting to place straw to protect soil.



View of RSA 5 end post rain event. Contractors are actively installing silt fence immediately adjacent to existing silt fence.



View of west ditch in morning (approximately 9:45am) in location of silt fence breach. See WS report for more photos of this area.



View of actively installing silt fence along ILS road, beyond the Runway 5 end RSA.



View of RSA 5 end from western point (curve of access road). The Contractor installed half moon erosion control on the RSA side of gravel road.



View of west ditch breach at corner of RSA (western edge). The Contractor placed hay to protect soil surface and will include this area in restoration plan.



View of protected bank along a portion of the disturbed west ditch area at approximately 2pm.



View of protected bank along a portion of the disturbed west ditch area at approximately 2pm.



View of breach number three along west ditch.



View of first breach during very intense rainfall event, once water dissipated. The previous erosion control had a hole in it.



View of silt fence installed at toe of slope near Runway 5 end.



View of sediment stockpile. The WS and contractor have been instructed to ensure that this area is beyond the BVW 100-ft buffer zone.



View of silt fence installed at toe of slope near Runway 5 end.



View of temporary culvert in upland area where ponding occurred under the temporary access road at Runway 23 end.



View of culvert under gravel access road in uplands at Runway 23 end.

7/19/2013 10:57:26 AM P:\VSS Data\Projects\MA - New Bedford\028 Reconstruct Runway 5-23\CADD\Construction Set\103-028 C6 DRAINAGE AND EROSION CONTROL PLANS.dwg (MKO)



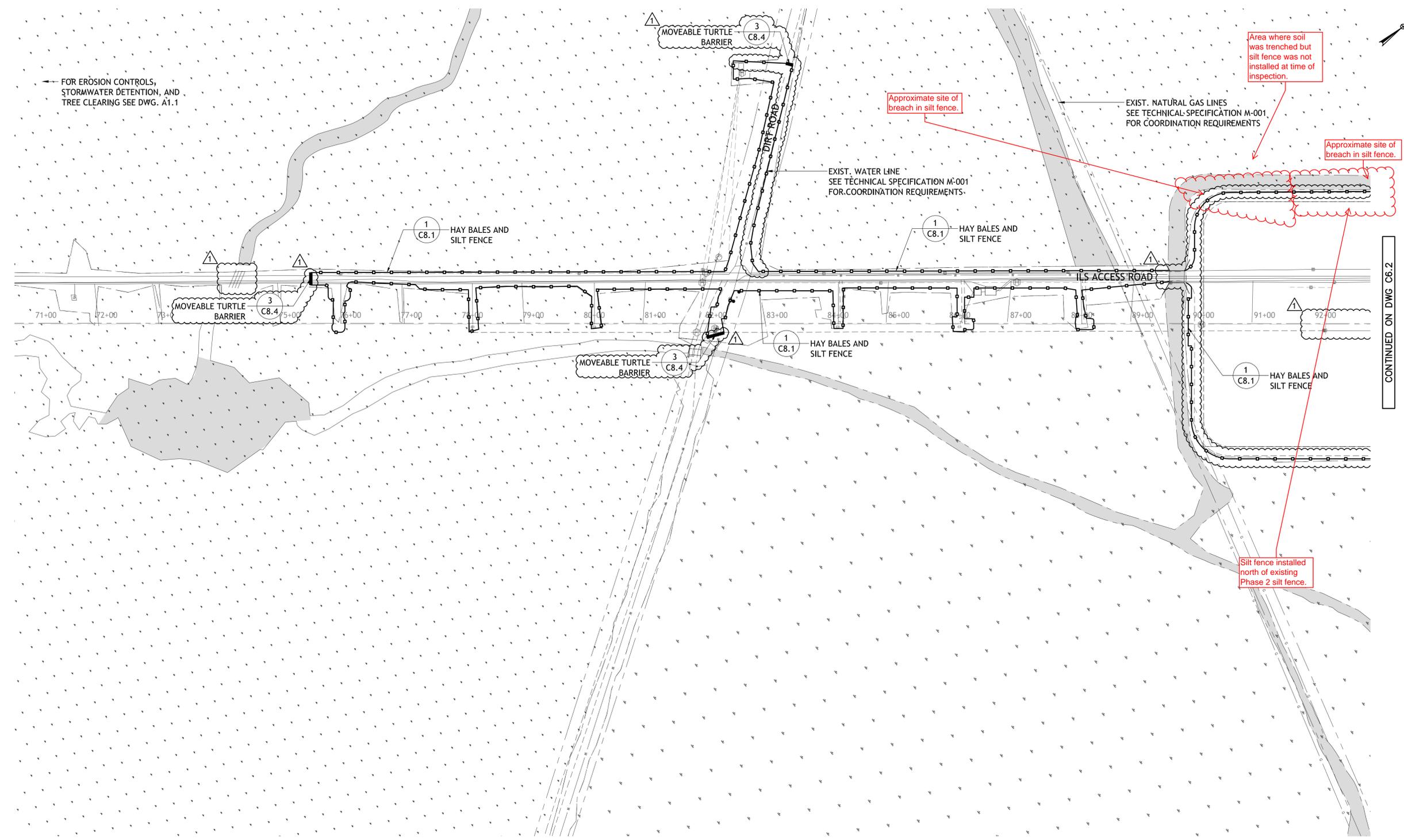
**AIRPORT SOLUTIONS GROUP**  
 INNOVATIVE AIRPORT DEVELOPMENT SPECIALISTS  
 1000 STATE STREET, SUITE 200  
 NEW BEDFORD, MA 01905  
 PHONE (508) 461-1000 FAX (508) 461-1001  
 WWW.AIRPORTSOLUTIONSGROUP.COM

NO.	DATE	DESCRIPTION	BY
1	4/13	APPENDUM NO. 2	MKO

<b>PROJECT</b>	RECONSTRUCT, MARK AND GROOVE RUNWAY 5-23 AIP NO. 03-25-0034-48-2013 CITY OF NEW BEDFORD BID NO. 13482304
<b>OWNER</b>	NEW BEDFORD AIRPORT COMMISSION NEW BEDFORD REGIONAL AIRPORT NEW BEDFORD, MASSACHUSETTS

<b>PROJECT NO.</b>	103-026
<b>CADD FILE</b>	C6 DRAINAGE & ESC
<b>DESIGNED BY</b>	MKO
<b>DRAWN BY</b>	MKO
<b>CHECKED BY</b>	DWR
<b>DATE</b>	MARCH 2013
<b>DRAWING SCALE</b>	1" = 80'

<b>SHEET TITLE</b>	DRAINAGE AND EROSION CONTROL PLAN-1
<b>DRAWING NO.</b>	C6.1
	49 OF 117



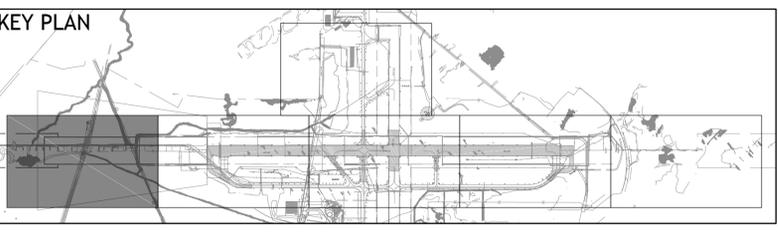
CONTINUED ON DWG C6.2

**NOTES:**

- FOR WORK IN THIS AREA SEE DRAWINGS C9.1 AND FAA PLANS - VOLUME 2. COORDINATE EROSION CONTROLS WITH LIMITS OF WORK.
- FOR DEMOLITION AND REMOVAL OF EXISTING DRAINAGE STRUCTURES AND PIPES SEE DRAWINGS D1.1 TO D1.6
- FOR EROSION CONTROL AND DRAINAGE DETAILS SEE DRAWINGS C8.1 TO C8.4.
- FOR DRAINAGE PROFILES SEE DRAWINGS C7.1 TO C7.4.
- RETAIN, AND MAINTAIN FUNCTION, OF ALL EXISTING DRAINAGE PIPES AND STRUCTURES UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL PROVIDE ADEQUATE BRACING AND SHORING OF ALL EXCAVATIONS IN ACCORDANCE WITH THE REQUIREMENTS OF ALL GOVERNING CODES AND REGULATIONS.
- CONTRACTOR SHALL PROVIDE EROSION CONTROLS AS NOTED ON THIS PLAN AND AS DIRECTED BY THE ENGINEER. HAYBALE INLET PROTECTION SHALL BE INSTALLED AT ALL EXISTING AND PROPOSED CATCH BASINS WITHIN THE LIMITS OF WORK.
- THE CONTRACTOR SHALL COMPLY WITH "DIG SAFE" REQUIREMENTS.
- CONTRACTOR SHALL VERIFY LOCATION, ELEVATION, ETC. OF ALL FACILITIES AND UTILITIES THAT THE PROPOSED WORK WILL IMPACT OR INTERFACE WITH. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES OR CONFLICTS TO THE ENGINEER.
- CONTRACTOR SHALL VERIFY INVERTS OF PIPES AT EXISTING CATCH BASINS THAT ARE BEING MODIFIED AND TIED INTO PROPOSED DRAINAGE SYSTEM. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES OR CONFLICTS TO THE ENGINEER.
- ALL EXISTING PIPING AND STRUCTURES EXPOSED DURING EXCAVATION SHALL BE ADEQUATELY SUPPORTED, BRACED OR OTHERWISE PROTECTED DURING CONSTRUCTION ACTIVITIES.
- ADDITIONAL UNDERGROUND UTILITIES MAY BE PRESENT AND NOT SHOWN ON THIS PLAN.
- CONTOURS NOT SHOWN FOR CLARITY. FOR GRADING PLAN SEE DRAWINGS C4.1 TO C4.6.
- ALL UNDERDRAINS SHALL BE INSTALLED TO ACHIEVE POSITIVE DRAINAGE WITH A MINIMUM SLOPE OF 0.0010 FT/FT.

**LEGEND**

	CONSTRUCTION BASELINE		PROPOSED CONCRETE HEADWALL
	EDGE OF PROPOSED PAVEMENT		PROPOSED END CLEANOUT
	PROPOSED CATCH BASINS/DRAIN LINE		PROPOSED LINE CLEANOUT
	PROPOSED UNDERDRAIN		EXISTING WETLAND
	PROPOSED DRAIN MANHOLE		OPEN WATER
	EXISTING CATCH BASINS/DRAIN LINE		PROPOSED PAVEMENT
	REMOVE EXISTING CATCH BASINS/DRAIN LINE		PROPOSED SILT FENCE
	PROPOSED HAY BALES AND SILT FENCE		PROPOSED MOVEABLE TURTLE BARRIER
	PROPOSED INFILTRATION TRENCH		





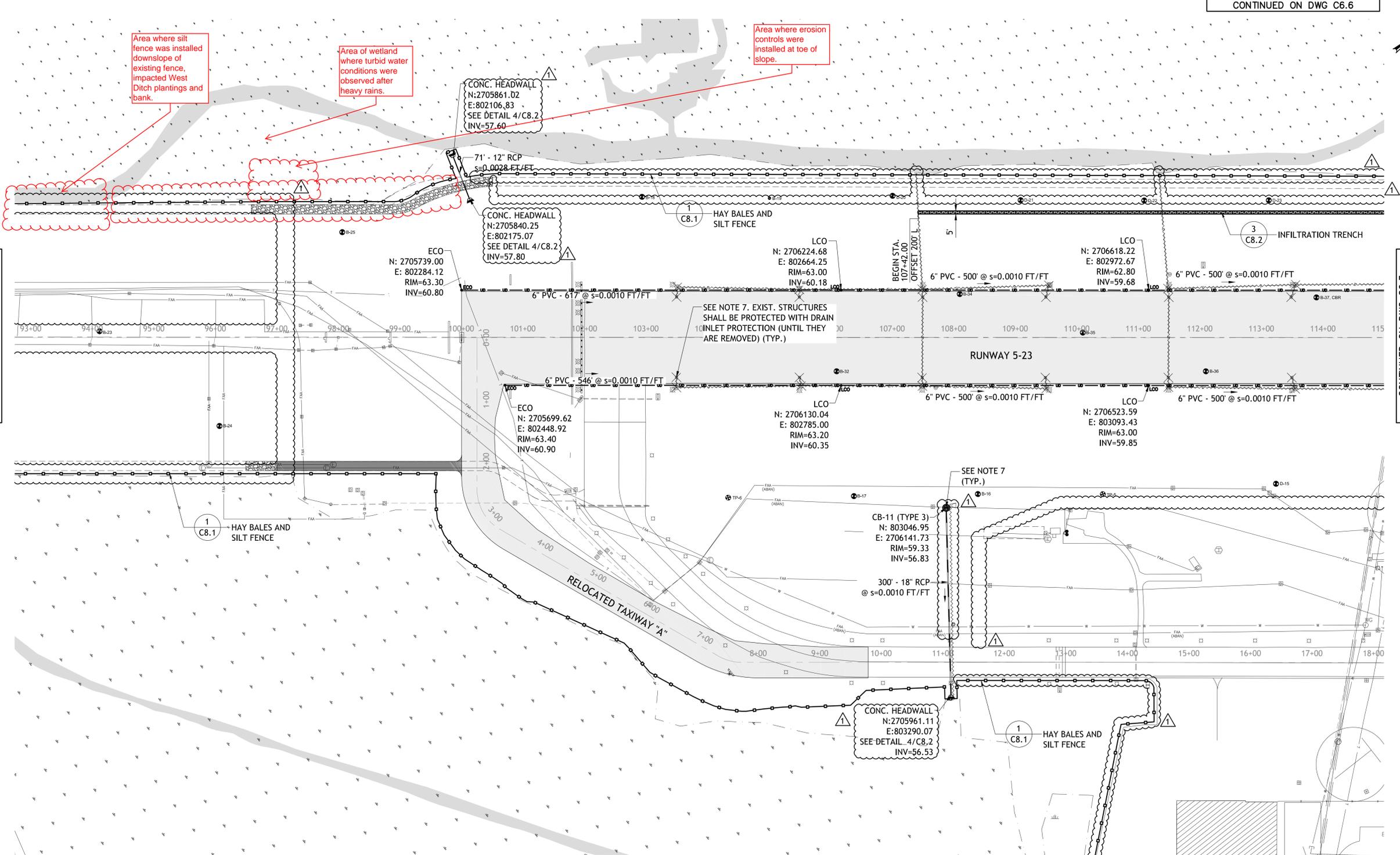
**AIRPORT SOLUTIONS GROUP**  
INNOVATIVE AIRPORT DEVELOPMENT SPECIALISTS  
100 BEDFORD AVENUE, SUITE 200  
NEW BEDFORD, MASSACHUSETTS 01903  
PHONE: (508) 461-0083 FAX: (508) 461-0084  
WWW.AIRPORTSOLUTIONSGROUP.COM

NO.	DATE	DESCRIPTION	BY
1	4/13	APPENDUM NO. 2	MKO

PROJECT	OWNER
RECONSTRUCT, MARK AND GROOVE RUNWAY 5-23 AIP NO. 03-25-0034-48-2013 CITY OF NEW BEDFORD BID NO. 13482304	NEW BEDFORD AIRPORT COMMISSION NEW BEDFORD REGIONAL AIRPORT NEW BEDFORD, MASSACHUSETTS

PROJECT NO.	103-026
CADD FILE	C6 DRAINAGE & ESC
DESIGNED BY	MKO
DRAWN BY	MKO
CHECKED BY	DWR
DATE	MARCH 2013
DRAWING SCALE	1" = 80'

SHEET TITLE	DRAWING NO.
DRAINAGE AND EROSION CONTROL PLAN-2	C6.2
50 OF 117	



CONTINUED ON DWG C6.1

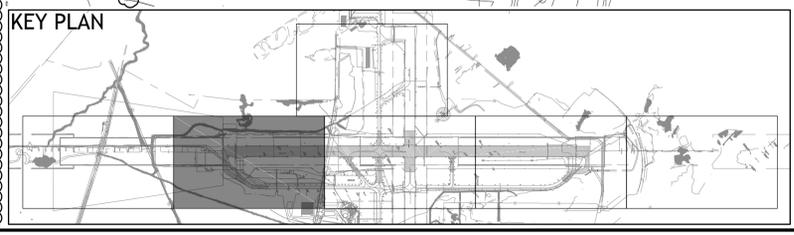
CONTINUED ON DWG C6.3

**NOTES:**

- FOR ADDITIONAL WORK IN THIS AREA SEE FAA PLANS - VOLUME 2.
- FOR DEMOLITION AND REMOVAL OF EXISTING DRAINAGE STRUCTURES AND PIPES SEE DRAWINGS D1.1 TO D1.6
- FOR EROSION CONTROL AND DRAINAGE DETAILS SEE DRAWINGS C8.1 TO C8.4.
- FOR DRAINAGE PROFILES SEE DRAWINGS C7.1 TO C7.4.
- RETAIN, AND MAINTAIN FUNCTION, OF ALL EXISTING DRAINAGE PIPES AND STRUCTURES UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL PROVIDE ADEQUATE BRACING AND SHORING OF ALL EXCAVATIONS IN ACCORDANCE WITH THE REQUIREMENTS OF ALL GOVERNING CODES AND REGULATIONS.
- CONTRACTOR SHALL PROVIDE EROSION CONTROLS AS NOTED ON THIS PLAN AND AS DIRECTED BY THE ENGINEER. HAYBALE INLET PROTECTION SHALL BE INSTALLED AT ALL EXISTING AND PROPOSED CATCH BASINS WITHIN THE LIMITS OF WORK.
- THE CONTRACTOR SHALL COMPLY WITH "DIG SAFE" REQUIREMENTS.
- CONTRACTOR SHALL VERIFY LOCATION, ELEVATION, ETC. OF ALL FACILITIES AND UTILITIES THAT THE PROPOSED WORK WILL IMPACT OR INTERFACE WITH. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES OR CONFLICTS TO THE ENGINEER.
- CONTRACTOR SHALL VERIFY INVERTS OF PIPES AT EXISTING CATCH BASINS THAT ARE BEING MODIFIED AND TIED INTO PROPOSED DRAINAGE SYSTEM. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES OR CONFLICTS TO THE ENGINEER.
- ALL EXISTING PIPING AND STRUCTURES EXPOSED DURING EXCAVATION SHALL BE ADEQUATELY SUPPORTED, BRACED OR OTHERWISE PROTECTED DURING CONSTRUCTION ACTIVITIES.
- ADDITIONAL UNDERGROUND UTILITIES MAY BE PRESENT AND NOT SHOWN ON THIS PLAN.
- CONTOURS NOT SHOWN FOR CLARITY. FOR GRADING PLAN SEE DRAWINGS C4.1 TO C4.6.
- ALL UNDERDRAINS SHALL BE INSTALLED TO ACHIEVE POSITIVE DRAINAGE WITH A MINIMUM SLOPE OF 0.0010 FT/FT.

**LEGEND**

	CONSTRUCTION BASELINE		PROPOSED CONCRETE HEADWALL
	EDGE OF PROPOSED PAVEMENT		PROPOSED END CLEANOUT
	PROPOSED CATCH BASINS/DRAIN LINE		PROPOSED LINE CLEANOUT
	PROPOSED UNDERDRAIN		EXISTING WETLAND
	PROPOSED DRAIN MANHOLE		OPEN WATER
	EXISTING CATCH BASINS/DRAIN LINE		PROPOSED PAVEMENT
	REMOVE EXISTING CATCH BASINS/DRAIN LINE		PROPOSED SILT FENCE
	PROPOSED HAY BALES AND SILT FENCE		PROPOSED MOVEABLE TURTLE BARRIER
	PROPOSED SILT FENCE		PROPOSED GRAVEL ROAD
	PROPOSED INFILTRATION TRENCH		



4/19/2013 10:57:26 AM P:\VSS Data\Projects\MA - New Bedford\026 - Reconstruct Runway 5-23\CADD\Construction Set\103-026\_C6\_DRAINAGE AND EROSION CONTROL PLANS.dwg (MKO)