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Construction Notes & Specifications

Drawn By: EWM
Checked: WWS
Approved: GDP

AES Project No.: 09-0198 (02-527)
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Date: 11-30-2009

Crystal Creek Realignment Algonquin, Illinois Village of Algonquin 125 Wilbrandt Street Algonquin, Illinois 60102

No.	By	Date	Description
1		02-26-10	Final AES review for ACOE submittal
2		05-28-10	ACOE & MCSWCD Comments
3		05-16-11	ACOE permit submittal
4			
5			
6			
7			

Sheet Number
10 of 10

NOTES:
SEE STANDARD SPECIFICATIONS, SPECIAL PROVISIONS, AND STANDARD DETAILS FOR ADDITIONAL INFORMATION.

PART 2 - PRODUCTS

2.1 MATERIALS

A. HERBACEOUS SPECIES TO BE REMOVED IN AREAS WITH STANDING WATER OR SATURATED SOILS SHALL BE TREATED WITH A 5% SOLUTION OF GLYPHOSATE-N-(PHOSPHONOMETHYL) GLYCLINE IN A FORM APPROVED FOR AQUATIC APPLICATIONS SUCH AS ROBOG OR EQUIVALENT, WITH ADDED NON-IONIC SURFACTANT, AS APPROVED IN WRITING BY OWNER.

B. HERBACEOUS SPECIES TO BE REMOVED IN AREAS WITHOUT STANDING WATER OR SATURATED SOILS SHALL BE TREATED WITH A 3% SOLUTION OF GLYPHOSATE-N-(PHOSPHONOMETHYL) GLYCLINE, TRADE NAME ROUNDUP OR EQUIVALENT AS APPROVED IN WRITING BY OWNER. CONTRACTOR MAY ALSO USE A GRASS-SPECIFIC HERBICIDE WITH THE APPROVAL OF THE OWNER.

C. HERBICIDE TO BE USED FOR BARK-TO-WOOD VEGETATION SHALL BE A 25% SOLUTION OF TRICLOPIR-3,5,6-TRICHLORO-2-PYRIDINYLOXYACETIC ACID, BUTOXYETHYL ESTER, TRADE NAME GARLON 3 OR EQUIVALENT, WITH ADDED IONIC SURFACTANT, AS APPROVED IN WRITING BY THE OWNER.

D. HERBICIDE TO BE USED FOR FOLIAR APPLICATIONS TO WOODY VEGETATION SHALL BE A 5% SOLUTION OF TRICLOPIR-3,5,6-TRICHLORO-2-PYRIDINYLOXYACETIC ACID, BUTOXYETHYL ESTER, TRADE NAME GARLON 3 OR EQUIVALENT, WITH ADDED IONIC SURFACTANT, AS APPROVED IN WRITING BY OWNER.

E. HERBICIDE TO BE USED ON HONEYSUCKLE SPECIES SHALL BE A 50% SOLUTION OF GLYPHOSATE AND WATER. NO GARLON PRODUCTS SHALL BE USED ON HONEYSUCKLE.

F. OTHER PRODUCTS SUCH AS GRASS-SPECIFIC HERBICIDES MAY BE PROPOSED BY THE CONTRACTOR FOR APPROVAL BY THE OWNER.

G. THE CONTRACTOR SHALL SUBMIT TO THE OWNER FOR APPROVAL PROPOSED RATES OF HERBICIDE APPLICATION PRIOR TO COMMENCING THE WORK DESCRIBED IN THIS SECTION.

PART 3 - EXECUTION

3.1 METHOD - HERBICIDE APPLICATION

A. CONTRACTOR SHALL TREAT WEEDY HERBACEOUS AND UNDESIRABLE WOODY VEGETATION WITHIN EACH VEGETATION COMMUNITY AS NEEDED DURING THE FIRST FIVE GROWING SEASONS FOLLOWING INITIAL SEEDING OF EACH VEGETATION COMMUNITY USING THE APPROPRIATE HERBICIDE. HERBICIDE APPLICATION INSTRUCTIONS GIVEN ON THE LABEL SHALL BE FOLLOWED AT ALL TIMES. UNDESIRABLE SPECIES INCLUDE ALL VASCULAR SPECIES NOT NATIVE TO THIS LOCATION IN MCHENRY COUNTY, ILLINOIS.

B. HERBICIDE SHALL BE MIXED AND PLACED IN CONTAINERS AWAY FROM ANY NATURAL AREA - TREES, SHRUBS, HERBACEOUS OR WOODY GROWTH, OR BODY OF WATER. HERBICIDES SHALL NOT BE TRANSPORTED TO THE WORK AREA IN ANY CONTAINER OTHER THAN THAT USED FOR APPLICATION. WORK OR SPOT APPLICATION WITH ROADS, TRAILS, REED CANARY GRASS, TEASLES, SWIFTS CLOVER, AND PURPLE LOOSESTRIFE.

C. PRESENT IN THE PROJECT VICINITY SHOULD BE TREATED DIRECTLY WITH A 2% SOLUTION OF ROBOG - BEST APPLICATION PERIOD IS JUST BEFORE OR DURING THE VERY EARLIEST STAGES OF FLOWERING, WHERE LARGE PATCHES OF TARGET WEEDS ARE PRESENT IT MAY BE NECESSARY TO USE A LARGER WORK UNIT WHICH CAN BE ATTACHED TO AN ALL-TERRAIN VEHICLE OR TRACTOR. SEVERAL BACK-TO-BACK TREATMENTS MAY BE USEFUL IN GREATLY REDUCING THESE PLANTS.

D. A SUPPLY OF CHEMICAL ABSORBENT SHALL BE MAINTAINED AT THE PROJECT SITE. ANY CHEMICAL SPILLS SHALL BE PROPERLY CLEANED UP AND REPORTED TO THE OWNER WITHIN 24 HOURS.

E. THE CONTRACTOR SHALL MAINTAIN COPIES AT THE PROJECT SITE OF ALL CURRENT PESTICIDE APPLICATION LICENSES, HERBICIDE LABELS, AND MSDS MATERIAL SAFETY DATA SHEETS FOR ALL CHEMICALS UTILIZED DURING COMPLETION OF THE WORK.

F. TARGET SPECIES SHALL BE TREATED AS OFTEN AS REQUIRED TO MEET THE SEED AND PLANT GUARANTEES IN THESE SPECIFICATIONS.

G. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT NATIVE SPECIES AND AREAS OUTSIDE OF THE PROJECT AREA DURING EXECUTION OF THE WORK DESCRIBED IN THIS SECTION. THE CONTRACTOR SHALL RESTORE ALL AREAS AFFECTED OR DISTURBED BY THE WORK ACCORDING TO THE APPROVED PLANS AND SPECIFICATIONS AT NO ADDITIONAL COST TO THE OWNER.

3.2 METHOD - MOWING

A. THE CONTRACTOR SHALL MOW SEEDING AREAS TO A HEIGHT OF 4-10" AFTER VEGETATION IN SAID AREAS REACHES A HEIGHT OF APPROXIMATELY 24" AND BEFORE NON-NATIVE SPECIES GO TO SEED DURING THE FIRST GROWING SEASON AFTER PLANTING. MOWING DURING THE FIRST GROWING SEASON SHALL OCCUR THREE TIMES (APPROXIMATELY EARLY JUNE, MID JULY, AND LATE AUGUST). THE CONTRACTOR SHALL ALSO MOW SEEDING AREAS TO A HEIGHT OF 12" TWO TIMES DURING THE SECOND GROWING SEASON (APPROXIMATELY EARLY JUNE AND EARLY AUGUST) UNLESS THE PROJECT ECOLOGIST DETERMINES THAT MOWING IS NOT NEEDED.

B. MOWING SHOULD BE DONE WITH A ROTARY BUSH-HOE STYLE MOWER TO ENSURE CLIPPINGS ARE DISPERSED RATHER THAN DEPOSITED IN DENSE MATS, WHICH SMOOTHER VEGETATION, OR THE CLIPPINGS BRANCHES SHOULD BE REMOVED FROM THE MOWED AREA.

3.3 METHOD - PRESCRIBED BURNING

A. PRESCRIBED BURNING SHALL BE THE PRIMARY METHOD OF LONG-TERM ECOLOGICAL MANAGEMENT AND WEED CONTROL OF PLANTING AREAS AT THE PROJECT SITE. BURNING SHALL BE CONDUCTED IN THE SPRING OF THE THIRD GROWING SEASON FOLLOWING INITIAL SEEDING. THEREAFTER, THE OWNER SHOULD CONTRACT A PARTY TO CONTINUE BURNING ONCE EVERY 2-3 YEARS. BURNING SHALL BE CONDUCTED BY A CONTRACTOR EXPERIENCED IN BURN PLANNING AND PERMIT APPLICATION AS WELL AS PRESCRIBED BURN MANAGEMENT.

B. PRIOR TO THE COMMENCEMENT OF PRESCRIBED BURNING, THE CONTRACTOR SHALL COMPLETE A BURN PLAN THAT OUTLINES A PLAN OF ACTION, IDENTIFIES CONTINGENCIES, AND LISTS THE NAMES AND PHONE NUMBERS OF EMERGENCY AGENCIES (FIRE DEPARTMENT, POLICE DEPARTMENT, ETC.). PROPER NOTICE OF INTENT TO BURN SHALL BE GIVEN.

C. THE CONTRACTOR SHALL APPLY FOR AND RECEIVE ALL REQUIRED PERMITS PRIOR TO THE COMMENCEMENT OF PRESCRIBED BURNING.

3.4 CLEAN-UP, REMOVAL AND REPAIR

A. CLEAN-UP: THE WORK AREA SHALL BE KEPT FREE OF DEBRIS BY THE CONTRACTOR. AT NO TIME SHALL EMPTY HERBICIDE CONTAINERS, TRASH, OR OTHER MATERIAL BE ALLOWED TO ACCUMULATE AT THE PROJECT SITE. ALL CLEANING OF HERBICIDE CONTAINERS SHALL BE DONE AWAY FROM THE OWNER'S PROPERTY OR ANY SURROUNDING AREA. ALL TOOLS SHALL BE KEPT IN APPROPRIATE CARRYING CASES, TOOLBOXES, ETC. PARKING AREAS, ROADS, SIDEWALKS, PATHS AND PAVED AREAS SHALL BE KEPT FREE OF MUD AND DIRT.

B. REMOVAL: AFTER WORK HAS BEEN COMPLETED REMOVE TOOLS, EMPTY CONTAINERS, AND ALL OTHER DEBRIS GENERATED BY THE CONTRACTOR.

C. REPAIR: REPAIR ANY DAMAGES CAUSED BY THE CONTRACTOR DURING COMPLETION OF THE WORK DESCRIBED IN THIS SECTION. GAD DAMAGES MAY INCLUDE, BUT ARE NOT LIMITED TO, TIRE RUTS IN THE GROUND, DAMAGE TO PLANTED AREAS, DAMAGE TO TRAILS, SMOKE AND/OR FIRE DAMAGE TO TREES, ETC. THE CONTRACTOR SHALL BE LIABLE FOR REMEDIATING DAMAGES TO PLANT MATERIALS AND PROPERTY AT NO COST TO THE OWNER CAUSED BY CONTRACTOR NEGLIGENCE DURING COMPLETION OF THE WORK.

D. REPLANTING: AREAS OF PLANTING FAILURE WILL NEED TO BE REPLANTED. CONTRACTOR SHALL IDENTIFY THE AREAS OF FAILURE WITH THE OWNER AND DETERMINE THE REASON FOR FAILURE. REPLANTING IF NOT DUE TO VANDALISM OR REASONS NOT IDENTIFIED IN THE SITE WORK PLANTING SPECIFICATIONS SHALL BE DONE BY THE CONTRACTOR AS PART OF THE SITE WORK TASKS. OTHER PLANTING FAILURE AREAS WILL BE REPLANTED BY CONTRACTOR AS EXTRA WORK AUTHORIZED IN WRITING BY THE OWNER PRIOR TO COMMENCEMENT OF THE CONSTRUCTION.

3.5 INSPECTION

A. AT THE REQUEST OF THE OWNER, THE CONTRACTOR SHALL SCHEDULE AN INSPECTION WITH THE OWNER TO REVIEW THE WORK COMPLETED BY THE CONTRACTOR PURSUANT TO THIS SECTION.

3.6 ACCEPTANCE AND GUARANTEE

A. FINAL ACCEPTANCE: MANAGEMENT SHALL BE CONSIDERED 100% COMPLETE AFTER THE CONTRACTOR HAS COMPLIED WITH ALL PARTS OF THIS SECTION AND MEETS ALL PERFORMANCE STANDARDS FOR SEEDING AREAS (SECTION SEEDING 3.4), PLANTINGS (SECTION HERBACEOUS PERENNIAL 3.4).

AQUA-BARRIER PRODUCT SPECIFICATION

1.1 SPECIFICATION

A. WATER-INFLATED TEMPORARY DAM SHALL CONSIST OF THE FOLLOWING:

1. THE WATER-INFLATED DAM WILL CONSIST OF A SELF-CONTAINED, SINGLE-TUBE WITH AN INNER RESTRAINT BAFFLE (S/DIAPHRAGM(S)) STABILIZATION SYSTEM. THE WATER-INFLATED DAM MUST HAVE THE ABILITY TO STAND BALANCE WITHOUT ANY ADDITIONAL EXTERNAL MECHANICAL OR GRAVITATIONAL STABILIZATION DEVICES, AS A POSITIVE WATER BARRIER AND WATER MANAGEMENT SYSTEM.
2. THE WATER-INFLATED DAM SHALL BE PRODUCED FROM HEAVY-GAUGE POLYVINYL CHLORIDE (PVC) REINFORCED WITH POLYESTER. THE PVC FABRIC USED TO CREATE THE INFLATABLE DAM WILL BE INFILTED REPAIRABLE UTILIZING A VINYL ADHESIVE AND PATCH MATERIAL.
3. THE WATER-INFLATED DAM MUST MAINTAIN MECHANICAL STABILITY IN ADDITION TO PROVIDING ANTI-ROLLING WHEN EXPOSED TO UNEVEN HYDROSTATIC PRESSURE FROM EITHER SIDE.
4. THE SELF-CONTAINED WATER-INFLATED DAM SHALL HAVE THREADED FILL PORTS AND DRAIN PORTS FOR RAPID INFLATION AND DRAINING. THE DAM WILL BE EQUIPPED WITH END-LIFTING LOOPS USED TO CONTROL THE DAM WITH EQUIPMENT DURING THE INSTALLATION AND REMOVAL PROCESSES.
5. METHOD FOR CONNECTING THE INDIVIDUAL UNITS TOGETHER WILL CONSIST OF OVERLAPPING THE END OF THE UNITS A SPECIFIC LENGTH WHICH WILL CREATE A WATER-TIGHT CONNECTION. NO OTHER DEVICES OR METHODS FOR CONNECTING THE BARRIERS ARE REQUIRED.

1.2 AQUA-BARRIER™ PRODUCT DESCRIPTION

AQUA-BARRIERS™ ARE WATER-INFLATED DAMS USED TO CONTROL INVASIVE WATER IN FLOODWATER SITUATIONS. A MEANS OF WATER MANAGEMENT TO PROVIDE ACCESS TO UNDERWATER AREAS FOR CONSTRUCTION AND MAINTENANCE OPERATIONS; HAZARDOUS LIQUID CONTAINMENT; SEDIMENT RETENTION IN ENVIRONMENTALLY SENSITIVE AREAS IN ADDITION TO A CONTINUALLY EXPANDING LIST OF WATER CONTROL RELATED APPLICATIONS.

AQUA-BARRIERS™ ARE A SINGLE-TUBE DEVICE WITH A PATENTED INNER RESTRAINT BAFFLE (S/DIAPHRAGM(S)) STABILIZATION SYSTEM REQUIRED FOR STABILITY.

1.3 DAM SIZE REQUIREMENTS

THE WATER-INFLATED TEMPORARY DAM HEIGHT SHALL BE DETERMINED AS FOLLOWS:

1. STATIC WATER HEIGHT CONDITIONS SHALL NOT EXCEED 75% OF THE PROPERLY FILLED HEIGHT OF THE BARRIER.
2. DYNAMIC WATER HEIGHT CONDITIONS SHALL NOT EXCEED STATED VALUE DURING HYDRODYNAMIC INSTALLATION PROCEDURES (SEE DYNAMIC INSTALLATION INSTRUCTIONS FOR COMPLETE LIST OF REQUIREMENTS).
3. INSTALLATION SITE CRITERIA ARE REQUIRED FOR ASSESSMENT OF ALL RELEVANT FACTORS.

EXCESS SLOPE, HIGH WATER VELOCITIES, DYNAMIC LOADS RESULTING FROM WAVE ACTIONS, MOUNTING SURFACE IRREGULARITIES, AND CHANGES IN INTERRELATED HYDROLOGICAL CONDITIONS CAN INCREASE THE REQUIRED WATER-INFLATED DAM HEIGHT VERSUS RETENTION HEIGHT REQUIREMENTS.

NORTH AMERICAN GREEN® MATERIAL AND PERFORMANCE SPECIFICATIONS SC150 EROSION CONTROL BLANKET

The extended-term double net erosion control blanket shall be a machine-produced mat of 70% agricultural straw and 30% coconut fiber with a functional longevity of up to 24 months. (NOTE: functional longevity may vary depending upon climatic conditions, soil, geographical location, and seedlings). The blanket shall be of consistent thickness with the straw and coconut evenly distributed over the entire area of the mat. The blanket shall be covered on the top side with a heavyweight photodegradable polypropylene netting having ultraviolet additives to delay breakdown. The blanket shall be 66" wide by 150' long with a weight of approximately 0.53 x 0.63 (1.53 x 1.59 cm) mesh, and on the bottom side with a lightweight photodegradable polypropylene netting having ultraviolet additives to delay breakdown. The blanket shall be 1.50 inch (3.81 cm) centers with degradable threads.

The SC150 must meet requirements established by the Erosion Control Technology Council (ECTC) Specification and the US Department of Transportation Highway Administration's (FHWA) Standard Specifications for Construction of Roads and Bridges, Section 713.17 as a type 3.B Extended-Term Erosion Control Blanket.

The SC150 is also compatible with the DOT System™ which consists of installation stipe patterns clearly marked on the erosion control blanket with environmentally safe ink. The blanket shall be manufactured with a colored thread stitched along both outer edges (approximately 2.5 inches [5-12.5 cm] from the edge) as an overlap guide for adjacent mats.

Material Content		
Matrix	100% Straw Fiber	0.35 lbs/yd ² (0.35 kg/100 m ²)
Nettings	Top side only: Leno Woven 100% biodegradable polypropylene fiber	9.3 lbs/yd ² (9.3 kg/100 m ²)
Thread	Biodegradable	approx.

SC150 is available in the following standard rolls:

Width	6.67 ft (2.03 m)	16 ft (4.88 m)
Length	108 ft (32.92 m)	108 ft (32.92 m)
Weight ± 10%	44 lbs (19.9 kg)	105 lbs (47.6 kg)
Area	80.0 yd ² (69.9 m ²)	192 yd ² (195.5 m ²)

Index Value Properties:

Property	Test Method	Typical
Thickness	ASTM D5525	0.24 in
Resiliency	ECTC Guidelines	91%
Water Absorbency	ASTM D1117	39.7 g/g
Mass/Unit Area	ASTM G475	9.3 g/yd ² (339.7 g/m ²)
Smell	ECTC Guidelines	Yes
Smolder Resistance	ECTC Guidelines	Yes
Softness	ASTM D1388	6.92 oz/in
Light Penetration	ECTC Guidelines	9.1%
Tensile Strength - MD	ASTM D2256	187.2 lbs/ft (2.78 kN/m)
Elongation - MD	ASTM D2256	6.7%
Tensile Strength - TD	ASTM D2256	193.2 lbs/ft (2.86 kN/m)
Elongation - TD	ASTM D2256	8.5%

Performance Design Values:

Maximum Permissible Shear Stress		Slope Design Data: C Factors	
Unvegetated Shear Stress	2.00 lbs/ft ² (98 Pa)	Slope Length (ft)	≤ 3.1
Unvegetated Velocity	8.00 fts (2.44 m/s)	Slope Gradient (S)	3:1 - 2:1
			≥ 2:1
		Slope Length (m)	≤ 0.95 (0.15 m)
			0.95 - 2.0 ft
			2.0 - 50 ft (0.60 m)
			≥ 50 ft (15.2 m)
			0.079
			0.110
			0.190

Bench Scale Testing (MCP):

Test Method	Results	Roughness Coefficient: Unveg.
ECTC Method 2	SLR** = 5.47	≤ 0.65 (0.15 m)
Rainfall	SLR** = 5.67	0.50 - 2.0 ft
ECTC Method 3	SLR** = 5.86	≥ 2.0 ft (0.60 m)
ECTC Method 4	SLR** = 5.86	0.018
Shear at 0.50 inch soil loss	2.72 lbs/ft ²	

Bench Scale Testing (MCP):

Test Method	Results	Roughness Coefficient: Unveg.
ECTC Method 2	SLR** = 6.63	≤ 0.65 (0.15 m)
Rainfall	SLR** = 7.25	0.50 - 2.0 ft
ECTC Method 3	SLR** = 7.52	≥ 2.0 ft (0.60 m)
ECTC Method 4	SLR** = 7.52	0.021
Shear at 0.50 inch soil loss	2.07 lbs/ft ²	

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Test Method	Results	Roughness Coefficient: Unveg.
ECTC Method 2	SLR** = 6.63	≤ 0.65 (0.15 m)
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USER NAME	DESIGNED	REVISION
akw	- AES	-
	DRAWN - AES	REVISED -
	CHECKED - AES	REVISED -
	DATE - 5/3/2012	REVISED -

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

TOWNE PARK PLANS

SCALE: AS NOTED SHEET NO. 12 OF 12 SHEETS STA. TO STA.

O.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0003	18A-2	MCHENRY	825	409
				CONTRACT NO. 60F72
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				