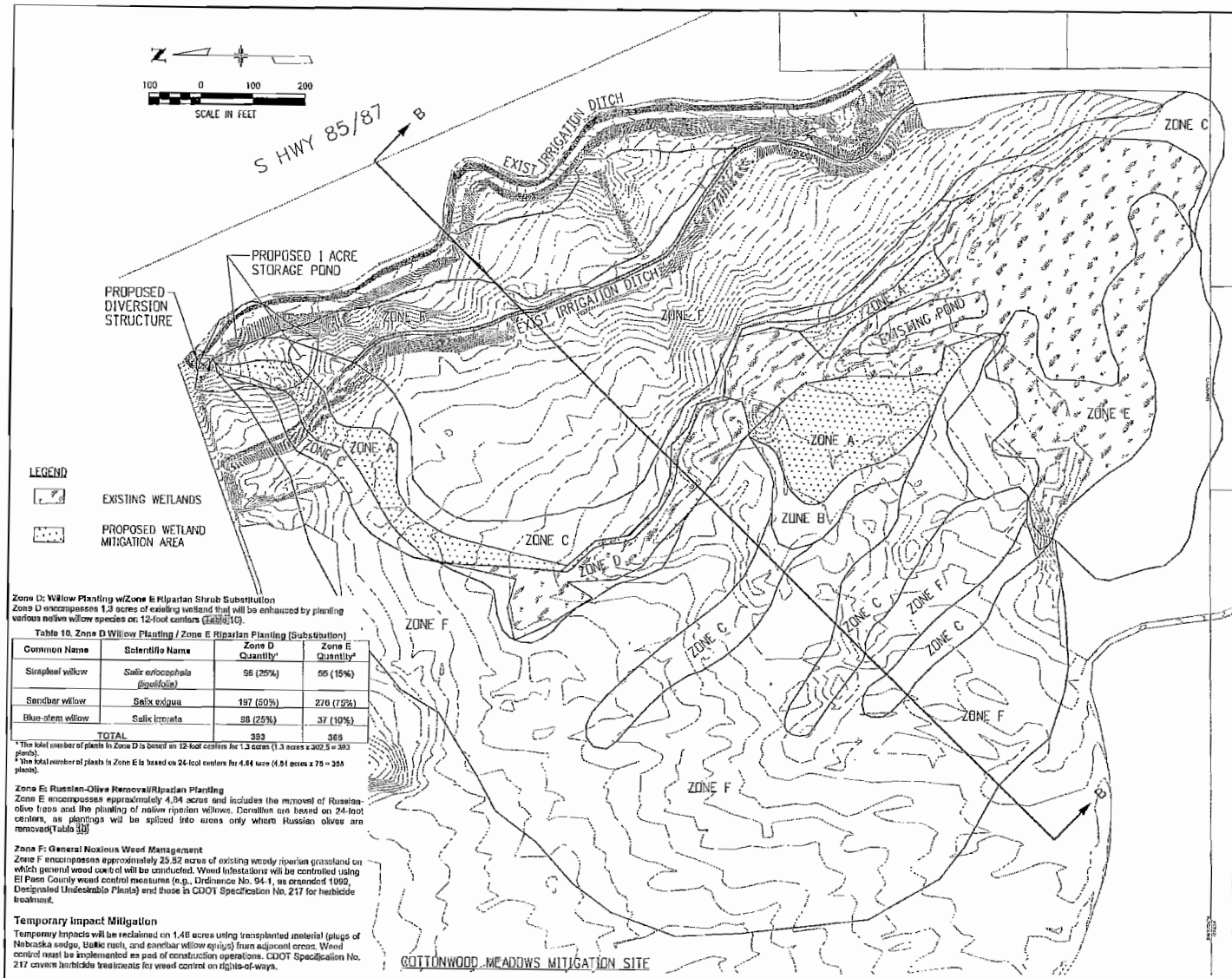

Zone D: Willow Planting w/Zone E Riparian Shrub Substitution
Zone D encompasses 1.3 acres of existing wetland that will be enhanced by planting various native willow species on 12-foot centers (Table 10).

Table 10. Zone D Willow Planting / Zone E Riparian Planting (Substitution)

Common Name	Scientific Name	Zone D Quantity[1]	Zone E Quantity[2]
Strapleaf willow	*Salix eriocephala (ligulifolia)*	96 (25%)	55 (15%)
Sandbar willow	Salix exigua	197 (50%)	276 (75%)
Blue-stem willow	Salix irrorata	98 (25%)	37 (10%)
TOTAL		393	368

[1] The total number of plants in Zone D is based on 12-foot centers for 1.3 acres (1.3 acres x 302.5 = 393 plants).
[2] The total number of plants in Zone E is based on 24-foot centers for 4.84 acre (4.84 acres x 75 = 368 plants).

Zone E: Russian-Olive Removal/Riparian Planting
Zone E encompasses approximately 4.84 acres and includes the removal of Russian-olive trees and the planting of native riparian willows. Densities are based on 24-foot centers, as plantings will be spliced into areas only where Russian olives are removed(Table 10)

Zone F: General Noxious Weed Management
Zone F encompasses approximately 25.82 acres of existing weedy riparian grassland on which general weed control will be conducted. Weed infestations will be controlled using El Paso County weed control measures (e.g., Ordinance No. 94-1, as amended 1999, Designated Undesirable Plants) and those in CDOT Specification No. 217 for herbicide treatment.

Temporary Impact Mitigation
Temporary impacts will be reclaimed on 1.48 acres using transplanted material (plugs of Nebraska sedge, Baltic rush, and sandbar willow sprigs) from adjacent areas. Weed control must be implemented as part of construction operations. CDOT Specification No. 217 covers herbicide treatments for weed control on rights-of-ways.

Cottonwood Meadows
The mitigation objectives of different zones of the sites, and mitigation credit ratios, and acreages are as follows:

Zone A: Emergent wetlands – 3.00 acres @ 1:1 = 3.00 acres
Zone B: Scrub shrub wetlands – 0.48 acres @ 1:1 = 0.48 acres
Zone C: Riparian shrub plantings – 5.57 acres @ 3:1 = 1.86 acres
Zone D: Willow plantings – 1.30 acres @ 1:3 = 0.43
Zone E: Russian olive removal/shrub plantings – 4.84 acres @ 5:1 = 0.97 acres
Zone F: Weed control – 25.82 acres @ 10:1 = 2.58 acres

Total mitigation = 9.32 acres

Soils from excavated areas will not be used for mitigation if the site contains Canada thistle. After excavation, the site will be planted using live material according to prescription zones for wetland establishment and habitat improvement, as follows:

Zone A: Emergent Wetland
Approximately 3.0 acres of emergent wetlands will be created in Zone A (Table 7). This includes Excavation and improving hydrology provided by water from the Chilkote Ditch.

Table 7. Zone A Plants (Plugs)

Common Name	Scientific Name	Quantity[1]
Woolly sedge	*Carex lanuginosa*	6,970 (24%)
Nebraska sedge	*Carex nebrascensis*	11,616 (40%)
Fox sedge	*Carex vulpinoidea*	1,162 (4%)
Creeping spikerush	*Eleocharis palustris*	871 (3%)
Torrey's rush	*Juncus torreyi*	1,162 (4%)
Small-fruit bulrush	*Scirpus microcarpus*	4,356 (15%)
Three-square	*Scirpus pungens*	2,904 (10%)
	TOTAL	29,041

[1] The total number of plants is based on groups of 2 plants (one species per group) on 3x3-foot centers for 3.0 acres (3 acres x 4840 x 2 plants = 29,040). Ratios (%) vary among species

Seeding of redtop, switchgrass, American sloughgrass, and saltgrass in both emergent wetland areas (Table 8). Seeds must be raked into top ¼ to 1/2-inch of soil.

Table 8. Grass seeding species and amounts

Common Name	Scientific Name	% Mix	Seeds/lb (PLS*)	PLS* Lbs/AC Broadcast**	Site amount (3.0 ac) Lbs/AC Broadcast
Redtop	*Agrostis gigantea*	40	4,900,000	1	3.0
Switchgrass	*Panicum virgatum*	20	389,000	6	18.0
American sloughgrass	*Beckmannia syzigachne*	20	1,150,000	2	6.0
Saltgrass	*Distichlis spicata*	20	520,000	5	10.0
		100		14 lbs/AC	37.0 lbs PLS

* PLS = Pure live seed
** Rates to be reduced by ½ if drilled

Zone B: Scrub/Shrub Wetland
Approximately 0.48 acre of scrub/shrub wetland will be created in Zone B, which consists of two separate areas on this site (Figure 3). Zone B will be planted with 74 plains cottonwood and 75 peachleaved willow cuttings (poles) on 12-foot centers (Table 9). Riparian shrubs will be planted Zone B: Scrub/Shrub Wetland using 6-foot centers.

Zone C: Riparian Planting
Zone C encompasses 5.57 acres of existing weedy riparian grassland adjacent to existing wetlands. This area will be enhanced by planting various species of native woody plants on approximately 12-foot centers (Table 9).

Table 9. Zones B and C Riparian Plants

Common Name	Scientific Name	Zone B Quantity[1]	Zone C Quantity[2]
Trees		1/3 of zone	
Plains cottonwood	*Populus deltoides (sargentii)*	24	281
Peachleaf willow	*Salix amygdaloides*	24	281
Shrubs		2/3 of zone	
Wild plum	*Prunus americana*	129	281
Chokecherry	*Padus (Prunus) virginiana*	129	281
Golden currant	*Ribes aureum*	NA	281
Wild rose	*Rosa woodsii*	NA	292
Snowberry	*Symphoricarpos occidentalis*	129	NA
TOTAL		387	1686

[1] The total number of plants in Zone B is based on 12-ft centers for trees on 1/3 of the zone (0.48 acre /3 x 302.5 = 49 trees), and 6-foot centers for shrubs on 2/3 of the zone (0.48 acre / 1.5 x 1210 = 387 shrubs).
[2] The total number of plants in Zone C is based on 12-foot centers for all plants on 5.57 acres (5.57 x 302.5 = 1686).

Woodmen Road improvements in tributaries of Sand Creek and Black Squirrel Creek near Colorado Springs, El Paso County, Colorado
Application by: El Paso County Department of Transportation
Application No. SPA-2007-271
Sheet 20 of 20

May 18, 2007

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As Constructed	WOODMEN RD CAPACITY PROJECT WETLAND MITIGATION PLAN	Project No./Code
No Revisions: –		STU M240-062
Revised: –	Designer: SJM / Structure Numbers	13263
Void: –	Detailer: LPS	Sheet Number
	Sheet Subset: WETLANDS / Subset Sheets: WT04 of 4	

FIGURE 6