

PRACTICE CODE	PRACTICE NAME	SCENARIO NAME	SCENARIO DESCRIPTION	ADDITIONAL PRACTICES REQUIRED to ACHIEVE COMPLETE PRACTICE	ASSOCIATED PRACTICES	COST COMPONENTS (All costs include the necessary mobilization and demobilization).	COST CALCULATION GUIDANCE
309	Agrichemical Handling Facility	Open building, locked chemical storage room, concrete slab floor	This practice scenario is an open, roofed agrichemical handling facility. The facility contains a locked storage room and area for mixing, loading and storage of chemicals on a concrete floor. This practice addresses water quality degradation and due to mis-handling, storing, and mixing of agrichemicals where nutrients and/or chemicals are running off into surface waters or leaching into ground water.		Associated practices: Heavy Use Area Protection (561), Diversion (362), Access Road (560), Pumping Plant for Water Control (533), Nutrient Management (590), Pest Management (595), Roof Runoff Management (558). <u>Includes roof.</u>	Includes cost of all materials, equipment use and labor required to install excavation, earthfill, grading, compaction, catch basin (concrete), impermeable coating, emergency shower and eye wash station, post frame building, roof, wall (concrete), steel door.	Total Storage + Containment Area = Total Square Feet
309	Agrichemical Handling Facility	Enclosed building, locked chemical storage room, concrete slab floor	This practice scenario is a roofed and enclosed agrichemical handling facility. The facility contains a locked storage room and area for mixing, loading and storage of chemicals on a concrete floor. This practice addresses water quality degradation and due to mis-handling, storing, and mixing of agrichemicals where nutrients and/or chemicals are running off into surface waters or leaching into ground water. A flexible membrane liner is installed beneath the concrete slab.		Associated practices: Heavy Use Area Protection (561), Diversion (362), Access Road (560), Pumping Plant for Water Control (533), Nutrient Management (590), Pest Management (595), Roof Runoff Management (558). <u>Includes roof.</u>	Includes cost of all materials, equipment use and labor required to install excavation, earthfill, grading, compaction, concrete, catch basin (concrete), impermeable coating, synthetic membrane, emergency shower and eye wash station, poly tank reservoir (chemical storage), post frame building, roof, wall (concrete), steel door.	Total Storage + Containment Area = Total Square Feet
313	Waste Storage Facility	Earthen storage facility	An earthen waste impoundment constructed to store wastes such as manure, wastewater, and contaminated runoff as part of an agricultural waste management system. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation. Earthen storage liners are addressed with another standard. Vehicular and equipment access is addressed in Heavy Use Area Protection (561) to adequately protect liner at agitation and access points.	Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B)	Fence (382), Critical Area Planting (342), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), Roofs and Covers (367), and Solid/Liquid Waste Separation Facility (632), Waste Treatment (629)	Includes costs of all materials, equipment use and labor required to install excavation, earthfill, compaction, stripping and stockpiling topsoil, structural steel tubing (drawdown marker).	Design Storage Volume
313	Waste Storage Facility	Earthen storage facility high water table	An earthen waste impoundment constructed to store wastes such as manure, wastewater, and contaminated runoff as part of an agricultural waste management system. Due to high watertable conditions, the earthen embankment is constructed on the soil surface. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation. Earthen storage liners are addressed with another standard. Vehicular and equipment access is addressed in Heavy Use Area Protection (561) to adequately protect liner at agitation and access points.		Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Waste Treatment (629), Subsurface Drain (606), and Underground Outlet (620)	Includes costs of all materials, equipment use and labor required to install excavation, earthfill, compaction, stripping and stockpiling topsoil, structural steel tubing (drawdown marker).	Design Storage Volume
313	Waste Storage Facility	Above ground steel/concrete	An above ground circular glass lined steel or concrete structure constructed to store wastes such as manure, wastewater, and contaminated runoff as part of an agricultural waste management system.		Fence (382), Critical Area Planting (342), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), Solid/Liquid Waste Separation Facility (632), Waste Treatment (629), and Pumping Plant (533)	Includes costs of all materials, equipment use and labor required to install excavation, earthfill, grading, compaction, concrete, above ground tank.	Design Storage Volume
313	Waste Storage Facility	Dry stack, concrete floor, no wall	This scenario consists of a dry stack facility with reinforced concrete floor without side walls. This scenario is applicable when geological, soil, climate conditions or state and local regulations prohibit the use of an earthen surface, and requires a hard working surface such as concrete. The purpose of this practice is to properly store manure and other agricultural by-products until they can be hauled away from the site for proper disposal or utilization on land at agronomical rates.	Roofs and Covers (367)	Critical Area Planting (342), Diversion (362), Heavy Use Area Protection (561), Roof Runoff Structure (558), Composting Facility (317), Waste Transfer (634), Waste Recycling (633), Vegetated Treatment Area (635)	Includes costs of all materials, equipment use and labor required to install earthfill, grading, concrete, excavation.	Square Foot Floor Area
313	Waste Storage Facility	Dry stack, concrete floor, wood wall	This scenario consists of a dry stack facility with reinforced concrete floor with pressure treated wood walls. This scenario is applicable when geological, soil, climate conditions or state and local regulations prohibit the use of an earthen surface, and requires a hard working surface such as concrete. The purpose of this practice is to temporarily, properly store manure and other agricultural by-products until they can be hauled away from the site for proper disposal or utilization on land at agronomical rates.	Roofs and Covers (367)	Critical Area Planting (342), Diversion (362), Heavy Use Area Protection (561), Roof Runoff Structure (558), Composting Facility (317), Waste Transfer (634), Waste Recycling (633), Vegetated Treatment Area (635)	Includes costs of all materials, equipment use and labor required to install earthfill, grading, concrete, wood planks and posts.	Square Foot Floor Area
313	Waste Storage Facility	Dry stack, concrete floor, concrete wall	This scenario consists of a dry stack facility with reinforced concrete floor with concrete walls. This scenario is applicable when geological, soil, climate conditions or state and local regulations prohibit the use of an earthen surface, and requires a hard working surface such as concrete. The purpose of this practice is to temporarily, properly store manure and other agricultural by-products until they can be hauled away from the site for proper disposal or utilization on land at agronomical rates.	Roofs and Covers (367)	Critical Area Planting (342), Diversion (362), Heavy Use Area Protection (561), Roof Runoff Structure (558), Composting Facility (317), Waste Transfer (634), Waste Recycling (633), Vegetated Treatment Area (635)	Includes costs of all materials, equipment use and labor required to install excavation, earthfill, grading, concrete.	Square Foot Floor Area

313 Waste Storage Facility	Concrete tank, buried	This scenario consists of installing a concrete tank that is totally or partially buried and has an open top. The tank can also be under an animal facility with the top cover of either slats or solid concrete lid/floor. Design volume does not include freeboard.	Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B). Vehicular and equipment access is addressed in Heavy Use Area Protection (561) to adequately protect liner at agitation and access points.	Potential Associated Practices: Fence (382), Critical Area Planting (342), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), and Underground Outlet (620), Waste Utilization (633), Pumping Plant (533).	Includes costs of all materials, equipment use and labor required to install excavation, earthfill, grading, compaction, stripping and stockpiling topsoil, concrete.	Design Storage Volume (Volume does not include 6" of freeboard.)
313 Waste Storage Facility	Concrete lined waste storage pond	A concrete lined impoundment constructed to store wastes such as manure, wastewater, and contaminated runoff as part of an agricultural waste management system. Soils are typically (1) very sandy with no structure thus having not stable side slopes when covering standard liners or (2) the soils are very rocky with little to no bedding making concrete the more suitable lining material. Also, concrete is typically used in Karst area where sinkholes may develop. Design volume does not include freeboard. Earthen storage liners are addressed with another standard. Vehicular and equipment access is addressed in Heavy Use Area Protection (561) to adequately protect liner at agitation and access points.		Potential Associated Practices: Fence (382), Critical Area Planting (342), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), and Underground Outlet (620), Waste Utilization (633), Pumping Plant (533).	Includes costs of all materials, equipment use and labor required to install excavation, earthfill, compaction, stripping and stockpiling topsoil, concrete, structural steel tubing (drawdown marker).	Design Storage Volume
314 Brush Management	Mechanical, Hand tools	Using hand tools, such as axes, shovels, hoes, nippers, brush pullers, and including chainsaws to remove or cut off woody plants at or below the root collar. Typical area is moderate rolling to gentle sloping, moderately deep to deep soils that have stands of woody and non herbaceous species that are in the early phases of invasions.		Firebreak, (Code 394), Prescribed Burning, (Code 338), Prescribed Grazing, (Code 528), Upland Wildlife Habitat Management, (Code 645), Wetland Wildlife Habitat Management, (Code 644)	Includes the cost of materials, equipment use and labor for mechanical treatments such as axes, shovels, hoes, nippers, brush pullers, and chainsaws.	
314 Brush Management	Mechanical Bush Hog	Removal of small woody vegetation of light infestations on gentle sloping to moderately deep to deep soils. The practice entails the removal of brush in order to reduce fuel loading and improve ecological site condition. Brush density has exceeded desired levels based on ecological site potential. It has been determined that the brush is at a light infestation.		Firebreak, (Code 394), Prescribed Burning, (Code 338), Prescribed Grazing, (Code 528), Upland Wildlife Habitat Management, (Code 645), Wetland Wildlife Habitat Management, (Code 644)	Includes the cost of materials, equipment use and labor for mechanical treatments such as mower (e.g. cutter), bush hog or other light equipment.	
314 Brush Management	Mechanical Roller Chopper	Removal of small woody vegetation of heavy infestations on gentle sloping to moderately deep to deep soils. The practice entails the removal of brush in order to reduce fuel loading and improve ecological site condition. Brush density has exceeded desired levels based on ecological site potential. It has been determined that the brush is at the heavy infestation.		Firebreak, (Code 394), Prescribed Burning, (Code 338), Prescribed Grazing, (Code 528), Upland Wildlife Habitat Management, (Code 645), Wetland Wildlife Habitat Management, (Code 644)	Includes the cost of materials, equipment use and labor for mechanical treatments such as a flail shredder, hydro axe, mechanical cutter or roller chopper.	
314 Brush Management	Mechanical & Chemical, Small Shrubs, Light Infestation	Removal of small woody vegetation of light infestations on gentle sloping to moderately deep to deep soils. The practice entails the removal of brush in order to reduce fuel loading and improve ecological site condition. Brush density has exceeded desired levels based on ecological site potential. It has been determined that the brush is at the light infestation rate.		Pest Management, (Code 595), Firebreak, (Code 394), Prescribed Burning, (Code 338), Prescribed Grazing, (Code 528), Upland Wildlife Habitat Management, (Code 645), Wetland Wildlife Habitat Management, (Code 644)	Includes the cost of materials, equipment use and labor for mechanical treatments followed by an application of low cost chemicals in low volumes.	
314 Brush Management	Mechanical & Chemical, Small Shrubs, Medium Infestation	Removal of small woody vegetation of medium infestations on gentle sloping to moderately deep to deep soils. The practice entails the removal of brush in order to reduce fuel loading and improve ecological site condition. Brush density has exceeded desired levels based on ecological site potential. It has been determined that the brush is at the medium infestation rate.		Pest Management, (Code 595), Firebreak, (Code 394), Prescribed Burning, (Code 338), Prescribed Grazing, (Code 528), Upland Wildlife Habitat Management, (Code 645), Wetland Wildlife Habitat Management, (Code 644)	Includes the cost of materials, equipment use and labor for mechanical treatments followed by an application of low cost chemicals in low volumes.	
314 Brush Management	Mechanical & Chemical, Small Shrubs, Heavy Infestation	Removal of small woody vegetation of heavy infestations on gentle sloping to moderately deep to deep soils. The practice entails the removal of brush in order to reduce fuel loading and improve ecological site condition. Brush density has exceeded desired levels based on ecological site potential. It has been determined that the brush is at the heavy infestation.		Pest Management, (Code 595), Firebreak (Code 394), Prescribed Burning, (Code 338), Prescribed Grazing, (Code 528), Upland Wildlife Habitat Management, (Code 645), Wetland Wildlife Habitat Management, (Code 644)	Includes the cost of materials, equipment use and labor for mechanical treatments followed by an application of low cost chemicals in low volumes. Because of the heavy infestation, additional labor hours are required.	
314 Brush Management	Mechanical, Large Shrubs, Medium Infestation	Removal of large woody vegetation of medium infestations on gentle sloping to moderately deep to deep soils. The practice entails the removal of brush in order to reduce fuel loading and improve ecological site condition. Brush density has exceeded desired levels based on ecological site potential. It has been determined that the brush is at the medium infestation.		Pest Management, (Code 595), Firebreak (Code 394), Prescribed Burning, (Code 338), Prescribed Grazing, (Code 528), Upland Wildlife Habitat Management, (Code 645), Wetland Wildlife Habitat Management, (Code 644)	Includes the cost of materials, equipment use and labor for mechanical treatments for removal of brush by pushing, grubbing, masticating, chaining and then raking or piling.	
314 Brush Management	Chemical Hand	Implementation of brush management on range, pasture or native pasture using Individual Plant Treatment (IPT). The typical method of control is application of herbicides (basal or foliar location) on selected individual plants.		Pest Management, (Code 595), Firebreak (Code 394), Prescribed Burning, (Code 338), Prescribed Grazing, (Code 528), Upland Wildlife Habitat Management, (Code 645), Wetland Wildlife Habitat Management, (Code 644)	Includes the cost of materials, equipment use and labor required for application of low cost chemicals in low volumes through the use of spot treatment.	

314 Brush Management	Chemical - Ground Applied	Apply brush management or remove undesirable deciduous species (brush) in uplands and other areas not in or directly adjacent to streams, ponds, or wetlands.	Pest Management, (Code 595), Prescribed Burning, (Code 338), Firebreak, (Code 394), Prescribed Grazing, (Code 528), Upland Wildlife Habitat Management, (Code 645), Wetland Wildlife Habitat Management, (Code 644)	Includes the cost of materials, equipment use and labor for application of low cost chemicals in low volumes using ground equipment.
314 Brush Management	Chemical, Aerial Applied	Apply brush management to reduce or remove undesirable deciduous species (brush) in uplands and other areas not in or directly adjacent to streams, ponds, or wetlands.	Pest Management, (Code 595), Prescribed Burning, (Code 338), Firebreak, (Code 394), Prescribed Grazing, (Code 528), Upland Wildlife Habitat Management, (Code 645), Wetland Wildlife Habitat Management, (Code 644)	Includes the cost of materials, equipment use and labor for application of low cost chemicals in low volumes using equipment thru the use of aerial application.
314 Brush Management	Invasive	Control the spread of undesirable, noxious, and/or invasive woody plant species in order to promote the regeneration of natural plant communities or the health and vigor of desirable forage species. (Please refer to the Florida Exotic Pest Plant Council, Category I List of Invasive Species and the Florida Department of Agriculture and Consumer Services, Noxious Weed List.).	Pest Management, (Code 595), Prescribed Burning (338), Firebreak, (Code 394), Prescribed Grazing (528), Upland Wildlife Habitat Management, (Code 645), Wetland Wildlife Habitat Management, (Code 644)	Includes the cost of materials, equipment use and labor required for application of low cost chemicals in low volumes through the use of spot treatment.
314 Brush Management	Invasive Heavy	Control the spread of undesirable, noxious, and/or invasive woody plant species in order to promote the regeneration of natural plant communities or the health and vigor of desirable forage species. To specifically address Brazilian pepper by cut and stump application.	Pest Management, (Code 595), Prescribed Burning, (Code 338), Firebreak, (Code 394), Prescribed Grazing, (Code 528), Upland Wildlife Habitat Management, (Code 645), Wetland Wildlife Habitat Management, (Code 644)	Includes the cost of materials, equipment use and labor required for chemical and mechanical treatments using mechanical and hand crew techniques.
315 Herbaceous Weed Control	Mechanical	Removal of herbaceous weeds of light infestations on gentle sloping to moderately deep soils. The practice entails the removal of herbaceous weeds in order to reduce fuel loading and improve ecological site condition. Weed has exceeded desired levels based on ecological site potential.	Prescribed Burning, (Code 338), Firebreak, (Code 394), Prescribed Grazing, (Code 528), Upland Wildlife Habitat Management, (Code 645), Wetland Wildlife Habitat Management, (Code 644)	Includes the cost of materials, equipment use and labor for mechanical treatments such as mower, bush hog or other light equipment.
315 Herbaceous Weed Control	Chemical, Spot	Land unit on which weed control would be beneficial in order to set back the plant community succession, improve the ecological condition, and improve forage conditions for domestic livestock or wildlife. The practice entails the treatment of vegetation by use of weed treatment by applying chemicals, in order to eliminate noxious weeds, promote forage productivity, and improve ecological condition.	Pest Management, (Code 595), Prescribed Burning, (Code 338), Firebreak, (Code 394), Prescribed Grazing, (Code 528), Upland Wildlife Habitat Management, (Code 645), Wetland Wildlife Habitat Management, (Code 644)	Includes the cost of materials, equipment use and labor for application of low cost chemicals in low volumes using equipment such as a back pack or hand sprayer.
315 Herbaceous Weed Control	Chemical, Ground	Land unit on which weed control would be beneficial in order to set back the plant community succession, improve the ecological condition, and improve forage conditions for domestic livestock or wildlife. The practice entails the treatment of vegetation by use of weed treatment by applying chemicals, in order to treat noxious weeds, promote forage productivity, and improve ecological condition.	Pest Management, (Code 595), Prescribed Burning, (Code 338), Firebreak, (Code 394), Prescribed Grazing, (Code 528), Upland Wildlife Habitat Management, (Code 645), Wetland Wildlife Habitat Management, (Code 644)	Includes the cost of materials, equipment use and labor for application of low cost chemicals in low volumes using equipment thru the use of broadcast application with ground equipment.
315 Herbaceous Weed Control	Chemical Invasive	Land unit on which weed control would be beneficial in order to set back the plant community succession, improve the ecological condition, and improve forage conditions for domestic livestock or wildlife. The practice entails the treatment of vegetation by use of weed treatment using ground equipment to apply chemicals, in order to treat noxious weeds, promote forage productivity, and improve ecological condition. (Please refer to the Florida Exotic Pest Plant Council, Category I List of Invasive Species and the Florida Department of Agriculture and Consumer Services, Noxious Weed List. This includes Tropical Soda Apple and all other non-native, invasive (noxious) plants.)	Pest Management, (Code 595), Prescribed Burning, (Code 338), Firebreak, (Code 394), Prescribed Grazing, (Code 528), Upland Wildlife Habitat Management, (Code 645), Wetland Wildlife Habitat Management, (Code 644)	Includes the cost of materials, equipment use and labor for application of low cost chemicals in low volumes with ground equipment for the treatment of invasive species.
315 Herbaceous Weed Control	Invasive Chemical and Mechanical	Land unit on which weed control would be beneficial in order to set back the plant community succession, improve the ecological condition, and improve forage conditions for domestic livestock or wildlife. The practice entails the eradication of vegetation by use of weed treatment using ground equipment to apply chemicals, in order to eliminate noxious weeds, promote forage productivity, and improve ecological condition. Includes costs of treatment for Climbing fern (<i>Lygodium</i>) and Jasminum (Gold Coast - <i>J. dichotomum</i> or Brazilian - <i>J. fluminense</i>), Burma reed (<i>Neyraudia reynaudiana</i>), Napier grass (<i>Pennisetum purpureum</i>).	Pest Management, (Code 595), Prescribed Burning, (Code 338), Firebreak, (Code 394), Prescribed Grazing, (Code 528), Upland Wildlife Habitat Management, (Code 645), Wetland Wildlife Habitat Management, (Code 644)	Includes the cost of materials, equipment use and labor for mechanical treatments such as a flail shredder, hydro axe, mechanical cutter or roller chopper with an application of low cost chemicals in low volumes for the treatment of invasive species.
315 Herbaceous Weed Control	Chemical Broad Band	Land unit on which weed control would be beneficial in order to set back the plant community succession, improve ecological condition, improving health and vigor of pine species by spraying a 4 - 6 foot wide chemical band application over the top of pine seedlings usually in early spring after planting. The practice entails the eradication of vegetation by use of weed treatment using ground equipment to apply chemicals, in order to eliminate noxious weeds, promote wildlife, and improve ecological condition.	Pest Management, (Code 595), Prescribed Burning, (Code 338), Firebreak, (Code 394), Prescribed Grazing, (Code 528), Upland Wildlife Habitat Management, (Code 645), Wetland Wildlife Habitat Management, (Code 644)	Includes the cost of materials, equipment use and labor for application of low cost chemicals in low volumes using equipment thru the use of broadcast application with ground equipment.

316 Animal Mortality Facility	Static pile, Wood Bin(s)	This scenario consists of installing a group of small bins along two sides of a concrete pad to compost poultry or small swine mortality in static pile(s) that have sufficient bulking material to allow natural aeration. Piles are turned to go through a second heat cycle prior to final land application. The roofed portion of the facility is addressed with Roofs and Covers (367).	Roofs and Covers (367)	Heavy Use Area Protection (561), Critical Area Planting (342), Mulching (484), Nutrient Management (590), Access Road (560), Structure for Water Control (587), Roof Runoff Structure (558), Diversion (362), Subsurface Drain (606), and Underground Outlet (620).	Includes cost of all materials, equipment use and labor required to install excavation, earthfill, grading, compaction, concrete (floor and ramps), concrete and treated lumber (planks and posts).	Total Bin Area (Sq Ft)
317 Composting Facility	Composter, whole concrete floor, wood or concrete bins	The composting facility, with complete concrete floor, equipment lane and under bins, is installed to address water quality concerns and disease vectors resulting from improper waste disposal by providing a dedicated facility for storage and treatment, and by creating a compost product that can be used in multiple ways including land application for enrichment of crop ground. This scenario is applicable when geological, soil or climate conditions prohibit the use of only partial concrete surfaces (bins only).	Roofs and Covers (367)	Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Mulching (484), Nutrient Management (590), Access Road (560), Structure for water control (587), Diversion (362), Pipeline (516), Subsurface Drain (606), Heavy Use Area Protection (561), Roofs and Covers (367), Roof Runoff Structure (558), Waste Storage Facility (313), Waste Recycling (633), Waste Transfer (634), Underground Outlet (620) and Vegetative Treatment Area (635).	Includes cost of all materials, equipment use and labor required to install excavation, earthfill, grading, compaction, concrete, wood planks and posts.	Square Foot Floor Area
317 Composting Facility	Concrete floor, outer wood wall no bins	The composting facility, with complete concrete floor and equipment lane and outer wood walls (complete on the long side and partial on the short side) is installed to address water quality concerns and disease vectors resulting from improper waste disposal by providing a dedicated facility for storage and treatment. This scenario is applicable when geological, soil or climate conditions prohibit the use of only partial concrete surfaces (bins only).	Roofs and Covers (367)	Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Mulching (484), Nutrient Management (590), Access Road (560), Structure for water control (587), Diversion (362), Pipeline (516), Subsurface Drain (606), Heavy Use Area Protection (561), Roofs and Covers (367), Roof Runoff Structure (558), Waste Storage Facility (313), Waste Recycling (633), Waste Transfer (634), Underground Outlet (620) and Vegetative Treatment Area (635).	Includes cost of all materials, equipment use and labor required to install excavation, earthfill, grading, compaction, concrete and wood planks and posts.	Square Foot Floor Area
317 Composting Facility	Composter, whole concrete floor, no bins, organic	The composting facility, with complete concrete floor is installed to address water quality concerns and disease vectors resulting from improper waste disposal by providing a dedicated facility for storage and treatment, and by creating a compost product that can be used in multiple ways including land application for enrichment of crop ground. This scenario is applicable when geological, soil or climate conditions prohibit the use of only partial concrete surfaces (bins only).	Roofs and Covers (367)	Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Mulching (484), Nutrient Management (590), Access Road (560), Structure for water control (587), Diversion (362), Pipeline (516), Subsurface Drain (606), Heavy Use Area Protection (561), Roofs and Covers (367), Roof Runoff Structure (558), Waste Storage Facility (313), Waste Recycling (633), Waste Transfer (634), Underground Outlet (620) and Vegetative Treatment Area (635).	Includes cost of all materials, equipment use and labor required to install excavation, earthfill, grading, compaction, concrete.	Square Foot Floor Area
320 Irrigation Canal or Lateral	Irrigation Canal	An earthen canal that has adequate capacity to convey sufficient irrigation water to meet the demands of the system and make irrigation practical for the crops being grown.		Irrigation Field Ditch (388), Irrigation System, Surface or Subsurface (443); Pumping Plant (533), Irrigation Pipeline (430), Structure for Water Control (587), Irrigation Water Management (449)	Includes cost of all materials, equipment use and labor required for excavation and spoil spreading.	Volume of earth excavated.
327 Conservation Cover	Native Grass	This practice applies on land to be retired from agricultural production and on other lands needing permanent protective cover. This practice typically involves conversion from a clean-tilled (conventional tilled) intensive cropping system to permanent native vegetation (scenario includes native grass). This practice scenario is typically used to reduce soil erosion, reduce soil quality degradation, improve water quality and develop wildlife habitat.		Cover Crop (Code 340); Pest Management (Code 595); Nutrient Management (Code 590); Residue Management (Code 345, 329); Stripcropping (Code 585); Upland Wildlife Habitat Management (Code 645)	Includes the cost of materials, equipment use and labor required to install adequate seedbed, herbicide for site preparation, mowing (weed control), broadcast or no till/grass drill, native grass.	
327 Conservation Cover	Native Grass - Local Seed Source	This practice applies on land to be retired from agricultural production and on other lands needing permanent protective cover. This practice typically involves conversion from a clean-tilled (conventional tilled) intensive cropping system to permanent native vegetation (scenario includes native grass). This practice scenario is typically used to reduce soil erosion, reduce soil quality degradation, improve water quality and develop wildlife habitat. The seed source in this scenario will be from a locally grown seed source that is in close proximity to the area where the practice is being installed.		Cover Crop (Code 340); Pest Management (Code 595); Nutrient Management (Code 590); Residue Management (Code 345, 329); Stripcropping (Code 585); Upland Wildlife Habitat Management (Code 645)	Includes the cost of materials, equipment use and labor required to install adequate seedbed, herbicide for site preparation, mowing (weed control), broadcast or no till/grass drill, native grass.	

327 Conservation Cover	Pollinator Habitat	Permanent vegetation, including mix of native grasses, legume, forbs (mix may also include non-native species), established on any land needing permanent vegetative cover that provides habitat for pollinators. In addition to providing pollinator habitat, this practice scenario may also reduce sheet and rill erosion, improve soil quality and improve water quality. The practice may also provide wildlife habitat. Practice applicable on cropland, odd areas, corners, etc.	Cover Crop (Code 340); Pest Management (Code 595); Nutrient Management (Code 590); Residue Management (Code 345, 329); Stripcropping (Code 585); Upland Wildlife Habitat Management (Code 645)	Includes the cost of materials, equipment use and labor required to install adequate seedbed, herbicide for site preparation, mowing (weed control), broadcast or no till/grass drill, native grass and native forbs/legumes for pollinators.
327 Conservation Cover	Legume	This practice applies on cropland or orchards and vineyards needing permanent protective cover in the alleyways between tree and vine rows. This practice typically involves conversion from a clean-tilled (conventional tilled) intensive cropping system to permanent vegetation (scenario includes non-native grass and legume mix). This practice scenario is typically used to reduce soil erosion, reduce soil quality degradation, improve water quality, enhance wildlife and/or pollinator habitat and manage plant pests.	Cover Crop (Code 340); Pest Management (Code 595); Nutrient Management (Code 590); Residue Management (Code 345, 329); Stripcropping (Code 585); Upland Wildlife Habitat Management (Code 645)	Includes the cost of materials, equipment use and labor required to install adequate seedbed, herbicide for site preparation, mowing (weed control), broadcast or no till/grass drill, introduced grasses, legumes and fertilizer.
327 Conservation Cover	Special Restoration/Pollinator Habitat	Permanent vegetation, including mix of native grasses, legume, forbs (mix may also include non-native species), established on any land needing permanent vegetative cover that provides a specialized purpose such as ecosystem restoration. In addition to providing pollinator habitat, this practice scenario may also reduce sheet and rill erosion, improve soil quality, improve water quality, and improve air quality. The practice may also provide wildlife habitat.	Cover Crop (Code 340); Pest Management (Code 595); Nutrient Management (Code 590); Residue Management (Code 345, 329); Stripcropping (Code 585); Upland Wildlife Habitat Management (Code 645)	Includes the cost of materials, equipment use and labor required to install adequate seedbed, herbicide for site preparation, mowing (weed control), broadcast or no till/grass drill, mix of native grasses, legume, forbs (mix may also include non-native species).
327 Conservation Cover	Monarch Habitat/Milkweed	Permanent vegetation, including mix of native species and other native grasses and forbs, established on any land needing permanent vegetative cover that provides habitat for monarch butterflies throughout their life cycle (host for larvae, structure/cover for pupae, nectar for adults). In addition to providing monarch butterfly habitat, this practice scenario may also reduce sheet and rill erosion, improve soil quality, improve water quality, and improve air quality. The practice may also provide wildlife habitat. Practice applicable on cropland, odd areas, corners, etc. Specific to monarchs due to a drastic population decline range-wide.	Cover Crop (Code 340); Pest Management (Code 595); Nutrient Management (Code 590); Residue Management (Code 345, 329); Stripcropping (Code 585); Upland Wildlife Habitat Management (Code 645)	Includes the cost of materials, equipment use and labor required to install adequate seedbed, herbicide for site preparation, mowing (weed control), broadcast or no till/grass drill, mix of native grasses and forbs for restoration of Monarch butterfly foraging and larva development habitat.
328 Conservation Crop Rotation	Standard	In this region this practice may be part of a conservation management system to: 1) Reduce sheet and rill erosion 2) Reduce soil erosion from wind 3) Maintain or improve soil organic matter 4) Manage the balance of plant nutrient 5) Improve water use efficiency 6) Manage plant pests (weeds, insects, and diseases). 7) Provide food for domestic livestock and 8) Provide food and cover for wildlife.	Cover Crop (Code 340); Irrigation Water Management (Code 449); Pest Management (Code 595); Nutrient Management (Code 590); Residue Management (Code 345, 329); Stripcropping (Code 585); Upland Wildlife Habitat Management (Code 645)	This practice payment is provided to acquire the technical knowledge and skills necessary to effectively implement a conservation crop rotation on conventional cropland.
328 Conservation Crop Rotation	Specialty Crops	In this region a rotation of specialty crops (fruits and vegetable) are produced as part of a conservation management system to: 1) Reduce sheet and rill erosion 2) Reduce soil erosion from wind 3) Maintain or improve soil organic matter 4) Manage the balance of plant nutrients 5) Improve water use efficiency, and 6) Manage plant pests (weeds, insects, and diseases).	Cover Crop (Code 340); Irrigation Water Management (Code 449); Pest Management (Code 595); Nutrient Management (Code 590); Residue Management (Code 345, 329); Stripcropping (Code 585); Upland Wildlife Habitat Management (Code 645)	This practice payment is provided to acquire the technical knowledge and skills necessary to effectively implement a conservation crop rotation on specialty cropland, such as fruits and vegetables.
329 Residue and Tillage Management - No-Till/Strip-Till No Till/Strip Till/Direct Seed		This practice typically involves conversion from a clean-tilled (conventional tilled) system to no-till or strip-till (conservation tilled) system on cropland. This involves managing the amount, orientation and distribution of crop and other plant residue on the soil surface year round while limiting soil-disturbing activities used to grow and harvest crops in systems. The practice is used to reduce sheet and rill erosion, reduce wind erosion, improve soil quality, reduce CO ² losses from the soil, reduce energy use, increase plant available moisture and provide food and escape cover for wildlife. The no-till/strip-till system includes chemical weed control (rather than cultivation) and may also include a period of chemical fallow. System is applicable in both irrigated and non-irrigated fields.	Conservation Crop Rotation (328), Contour Farming (330), Cover Crop (340), Field Border (386), Nutrient Management (590), Pest Management (595)	Includes cost of using no-till/strip till planter to seed and establish for no till, strip till, or direct seed, power unit (e.g. tractor) and labor.
332 Contour Buffer Strips	Introduced	Narrow strips of permanent, introduced herbaceous vegetative cover established around the hill slope and alternated down the slope with wider cropped strips in between that are farmed on the contour. This practice applies to all cropland.	Nutrient Management (590), Critical Area Planting (342), Mulching (484), Forage and Biomass Planting (512), Upland Wildlife Habitat Management (645), Stripcropping (585)	Includes the cost of materials, equipment use and labor required to install adequate seedbed, herbicide for site preparation, broadcast or no till/grass drill, introduced perennial grass and fertilizer for establishment.
332 Contour Buffer Strips	Native	Narrow strips of permanent, native herbaceous vegetative cover established around the hill slope and alternated down the slope with wider cropped strips in between that are farmed on the contour. This practice applies to all cropland.	Nutrient Management (590), Critical Area Planting (342), Mulching (484), Forage and Biomass Planting (512), Upland Wildlife Habitat Management (645), Stripcropping (585)	Includes the cost of materials, equipment use and labor required to install adequate seedbed, herbicide for site preparation, broadcast or no till/grass drill, native grass.
332 Contour Buffer Strips	Organic Seed	Narrow strips of permanent, organic herbaceous vegetative cover established around the hill slope and alternated down the slope with wider cropped strips in between that are farmed on the contour. This practice applies to all cropland.	Nutrient Management (590), Critical Area Planting (342), Mulching (484), Forage and Biomass Planting (512), Upland Wildlife Habitat Management (645), Stripcropping (585)	Includes the cost of materials, equipment use and labor required to install adequate seedbed, herbicide for site preparation, broadcast or no till/grass drill, organic perennial grass and organic legumes, organic fertilizer for establishment.

338 Prescribed Burning	Prescribed Burning	Applying a prescribed burn according to designed burn plan and NRCS Prescribed Burning (338) standard and specifications. A burn can consume debris or leaf litter under controlled conditions that otherwise could burn uncontrollably and devastatingly. Burn should be cool enough not to cause mortality to residual stand but also must reduce litter and debris.	Firebreak, (Code 394); Upland Wildlife Habitat Management, (Code 645); Wetland Wildlife Habitat Management, (Code 644); Prescribed Grazing, (Code 338); Wetland Restoration, (Code 657); Pest Management (Code 595); Forest Stand Improvement, (Code 666); Herbaceous Weed Control and Management (Code 797), Brush Management, (Code 314)	Includes the cost of materials, equipment use and labor required for to install burn fuel, operate fire suppression equipment and monitoring.
338 Prescribed Burning - High Risk	Prescribed Burning - High Risk	Applying a prescribed burn according to designed burn plan and NRCS Prescribed Burning (338) standard and specifications. A burn can consume debris or leaf litter under controlled conditions that otherwise could burn uncontrollably and devastatingly. Burn should be cool enough not to cause mortality to residual stand but also must reduce litter and debris. <u>Burn to take place is a smoke sensitive area.</u>	Firebreak, (Code 394); Upland Wildlife Habitat Management, (Code 645); Wetland Wildlife Habitat Management, (Code 644); Prescribed Grazing, (Code 338); Wetland Restoration, (Code 657); Pest Management (Code 595); Forest Stand Improvement, (Code 666); Herbaceous Weed Control and Management (Code 797), Brush Management, (Code 314)	Includes the cost of materials, equipment use and labor required for to install burn fuel, operate fire suppression equipment and monitoring.
340 Cover Crop	Chemical Kill	Typically a small grain (single species) cover crop will be planted as a cover crop after harvest of a row crop, and will be followed by a row crop that will utilize the residue as a mulch. This scenario assumes that seed will be planted with a no-till drill. The cover crop should be allowed to generate as much biomass as possible, without delaying planting of the following crop. The cover crop will be terminated using an approved herbicide a minimum of 3 weeks prior to planting the subsequent crop.	Conservation Crop Rotation (328), Nutrient Management (590), Pest Management (595), Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue Management, Mulch Till (345)	Includes the cost of materials, equipment use and labor required to no-till/grass drill summer or winter cover crops (annual grass or legume) and application of herbicide to terminate vegetation.
340 Cover Crop	Legume-N Fixation	A legume (single species) will be planted as a cover crop immediately after harvest of a row crop, and will be followed by a row crop that will utilize fixed nitrogen and cover crop biomass as a mulch. This scenario assumes that seed will be drilled. Legume seeds must be inoculated with the proper inoculant prior to planting. The cover crop should be allowed to reach early to mid-bloom before it is terminated, using an approved herbicide, in order to maximize nitrogen fixation. The legume will promote biological nitrogen fixation and reduce energy use by reducing the need for commercial nitrogen fertilizer in following crops.	Conservation Crop Rotation (328), Nutrient Management (590), Pest Management (595), Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue Management, Mulch Till (345)	Includes the cost of materials, equipment use and labor required to no-till/grass drill summer or winter cover crops (legumes) and application of herbicide to terminate vegetation.
340 Cover Crop	Mix	Typically a grain-legume mix (4 to 5 species - may also use forage sorghum, radishes, turnips, buckwheat, etc) will be planted as a cover crop after harvest of a row crop, and will be followed by a row crop that will utilize the residue as a mulch. This scenario assumes that seed will be planted with a no-till drill. The cover crop should be allowed to generate as much biomass as possible, without delaying planting of the following crop. The cover crop will be terminated using an approved herbicide a minimum of 3 weeks prior to planting the subsequent crop.	Conservation Crop Rotation (328), Nutrient Management (590), Pest Management (595), Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue Management, Mulch Till (345)	Includes the cost of materials, equipment use and labor required to no-till/grass drill summer or winter cover crops (annual grass and legume mix) and application of herbicide to terminate vegetation.
340 Cover Crop	Organic Cover Crop	Typically a small grain (single species) will be planted as a cover crop after harvest of an organically grown crop, and will be followed by an organically grown crop that will utilize the residue as a mulch. This scenario assumes that seed will be drilled. The cover crop should be allowed to generate as much biomass as possible, without delaying planting of the following crop. The cover crop will be terminated using a mechanical kill method (mowing, rolling, undercutting, etc.), a minimum of 3 weeks prior to planting the subsequent crop. <u>This scenario requires use of Certified Organic Seed.</u>	Conservation Crop Rotation (328), Nutrient Management (590), Pest Management (595), Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue Management, Mulch Till (345)	Includes the cost of materials, equipment use and labor required to no-till/grass drill summer or winter cover crops (organic annual grass) and mechanical application with a roller-crimper, mower, shredder, etc. in order to terminate vegetation.
340 Cover Crop	Organic Legume	Typically a small grain or small grain-legume mix will be planted as a cover crop immediately after harvest of an organically grown crop, and will be followed by an organically grown crop that will utilize the residue as a mulch. This scenario assumes that seed will be drilled. The cover crop should be allowed to generate as much biomass as possible, without delaying planting of the following crop. The cover crop will be terminated using a mechanical kill method (mowing, rolling, undercutting, etc.), a minimum of 3 weeks prior to planting the subsequent crop. <u>This scenario requires use of Certified Organic Seed.</u>	Conservation Crop Rotation (328), Nutrient Management (590), Pest Management (595), Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue Management, Mulch Till (345)	Includes the cost of materials, equipment use and labor required to no-till/grass drill summer or winter cover crops (organic legumes) and mechanical application with a mower, shredder, etc. in order to terminate vegetation.
340 Cover Crop	Organic Mix	Typically a grain-legume mix (4 to 5 species - may also use forage sorghum, radishes, turnips, buckwheat, etc) will be planted as a cover crop after harvest of a row crop, and will be followed by a row crop that will utilize the residue as a mulch. This scenario assumes that seed will be planted with a no-till drill. The cover crop should be allowed to generate as much biomass as possible, without delaying planting of the following crop. The cover crop will be terminated using a mechanical kill method (mowing, rolling, undercutting, etc.), a minimum of 3 weeks prior to planting the subsequent crop. <u>This scenario requires use of Certified Organic Seed.</u>	Conservation Crop Rotation (328), Nutrient Management (590), Pest Management (595), Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue Management, Mulch Till (345)	Includes the cost of materials, equipment use and labor required to no-till/grass drill summer or winter cover crops (organic annual grass, legume, forb mix) and application of herbicide to terminate vegetation.

342 Critical Area Planting	Introduced Grass - Light Tillage	Establishment of permanent vegetation on a site that is void or nearly void of vegetation due to a natural occurrence or a newly constructed conservation practice.	If erosion control blankets or mulching for seedbed establishment/protection are needed, use conservation practice Mulching (484).	Diversion (362), Field Border (386), Land Smoothing (466), Obstruction Removal (500), Surface and Subsurface Drains (607), Underground Outlet (620), Forage and Biomass Planting (512), Tree and Shrub Establishment (612)	Includes the cost of materials, equipment use and labor required to install adequate seedbed, cultipacking, planting, perennial grass (seed or sprigs), fertilizer and lime for establishment.
342 Critical Area Planting	Native seeding - Light Tillage	Establishment of permanent vegetation on a site that is void or nearly void of vegetation due to a natural occurrence or a newly constructed conservation practice.	If erosion control blankets or mulching for seedbed establishment/protection are needed, use conservation practice Mulching (484).	Diversion (362), Field Border (386), Land Smoothing (466), Obstruction Removal (500), Surface and Subsurface Drains (607), Underground Outlet (620), Forage and Biomass Planting (512), Tree and Shrub Establishment (612)	Includes the cost of materials, equipment use and labor required to install adequate seedbed, cultipacking, planting, native grass (seed or sprigs), fertilizer and lime for establishment.
345 Residue and Tillage Management - Mulch Till	Mulch till-Basic Mulch Till	Mulch-till is managing the amount, orientation and distribution of crop and other plant residue on the soil surface year round while limiting the soil-disturbing activities used to grow crops in systems where the entire field surface is tilled prior to planting. This practice includes tillage methods commonly referred to as mulch tillage or chiseling and disking. It applies to stubble mulching on summer-fallowed land, to tillage for annually planted crops and to tillage for planted crops and to tillage for planting perennial crops. All residue shall be uniformly surface throughout critical wind erosion period. All residue shall be uniformly distributed over the entire field and not burned or removed. These periods of intensive tillage have led to excessive soil loss, often above the Soil Loss Tolerance (T), due to the loss of critical crop or weed residue. The RUSLE 2 model will be used to review the farming operation and determine if enough residue is being retained, throughout the rotation, to keep soil loss below T. The producer will then remove operations, or select alternate operations, to reduce erosion below T.		Conservation Crop Rotation (328), Contour Farming (330), Cover Crop (340), Field Border (386), Nutrient Management (590), Pest Management (595)	Includes cost of managing crop residues on the soil surface while planting and growing crops where the entire field has been tilled just prior to planting.
350 Sediment Basin	Embankment Earthen Basin with No Pipe	An low hazard class embankment earthen sediment basin in an existing drainage way on a farm for purpose of trapping sediment and preserving the capacity of reservoirs, ditches, canals, diversions, waterways and streams and to prevent undesirable deposition on bottom lands and other developed lands. An earthen embankment will be constructed with an earthen auxiliary spillway, as designed. Resource concerns addressed include excessive suspended sediment and turbidity in surface water, damage from sediment deposition, and reduced capacity of conveyances by sediment deposition. Surface water causes the sediment (and potentially pesticides and nutrients) to be transported into the riparian areas and water bodies downstream.		Critical Area Planting (342), Mulching (484), Structure for Water Control (587), Pond Sealing or Lining (521A, 521B, 521C, 521D).	Includes cost of all materials, equipment use and labor required to install excavation. Embankment Volume
351 Well Decommissioning	Drilled Well	A licensed well driller will seal and permanently close an inactive, abandoned, or unusable water well to prevent excess nutrients in surface and groundwater and to eliminate pesticides transported to surface and ground water. <u>Assumes a 8" diameter casing.</u> Well will be cleared of all equipment and materials. Residual water column must be treated with chlorine according to local, State, Tribal, or Federal regulations. Procedures and sealing materials shall conform to ASTM D5299 and be compatible with all local, State, Tribal, and Federal requirements. Backfill shall be placed and compacted in a manner that minimizes segregation and bulking to prevent surface subsidence.		Critical Area Planting (342)	Includes cost of all materials, equipment use and labor required to install tremie pipe, cement and/or bentonite grout, chlorine, sealant, backfill.
351 Well Decommissioning	Shallow Well	A licensed well driller will seal and permanently close an inactive, abandoned, or unusable water well to prevent excess nutrients in surface and groundwater and to eliminate pesticides transported to surface and ground water. Well will be cleared of all equipment and materials. Residual water column must be treated with chlorine concentration of >50 ppm or according to local, State, Tribal, or Federal regulations. Procedures and sealing materials shall conform to ASTM D5299 and be compatible with all local, State, Tribal, and Federal requirements. Backfill shall be placed and compacted in a manner that minimizes segregation and bulking to prevent surface subsidence.		Critical Area Planting (342)	Includes cost of all materials, equipment use and labor required to install tremie pipe, cement and/or bentonite grout, chlorine, sealant, backfill.

351 Well Decommissioning	Small Drilled Well	A licensed well driller will seal and permanently close an inactive, abandoned, or unusable water well to prevent excess nutrients in surface and groundwater and to eliminate pesticides transported to surface and ground water. Assumes a 4" diameter casing. Well will be cleared of all equipment and materials. Residual water column must be treated with chlorine according to local, State, Tribal, or Federal regulations. Procedures and sealing materials shall conform to ASTM D5299 and be compatible with all local, State, Tribal, and Federal requirements. Backfill shall be placed and compacted in a manner that minimizes segregation and bulking to prevent surface subsidence.	Critical Area Planting (342)	Includes cost of all materials, equipment use and labor required to install tremie pipe, cement and/or bentonite grout, chlorine, sealant, backfill.
355 Groundwater Testing	Basic Water Test	Typical scenario includes the professional testing for nitrates, nitrites, and coliform to confirm well water meets basic water quality standards for consumption by livestock or use in irrigation. Water samples are sent to an EPA or state certified laboratory for testing. There are no known contaminants of the well, however, neighboring wells have known issues with nitrates, or coliform, and confirmation of acceptable water quality is desired.		Includes cost of all materials, equipment use and labor required to install standard water test which include pH, alkalinity, carbonates/bicarbonates, EC, dissolved solids, B, Cl, Ca, Mg, Na, SAR, and hardness.
355 Groundwater Testing	Full Spectrum Test	Typical scenario includes the professional comprehensive testing for all less common substances, to include: pesticides, heavy metals, VOC's or other less common substances, in addition to the basic water test items. Tests are intended to confirm well water meets water quality standards for consumption by livestock or use in irrigation. Water samples are sent to an EPA or state certified laboratory for testing. This scenario is recommended when water quality is known to be degraded due to a specialized substance but thorough analysis is warranted.		Includes cost of all materials, equipment use and labor required to install <u>comprehensive</u> testing for a broad spectrum of pesticides, inorganic chemicals or volatile organics not included in a basic well suitability test as well as those tested in the standard water test which include pH, alkalinity, carbonates/bicarbonates, EC, dissolved solids, B, Cl, Ca, Mg, Na, SAR, and hardness.
356 Dike	Material haul < 1 mile; On-Site	Construction of a barrier, constructed of an earthen embankment, to control water level. Embankment structure to provide adequate freeboard, allowance for settlement, and foundation and embankment stability.	Conservation Cover (327), Constructed Wetland (656), Critical Area Planting (342), Mulching (484), Pond (378), Fence (382), Irrigation Land Levelling (464), Obstruction Removal (500), Prescribed Grazing (528), Structure for Water Control (587), Underground Outlet (620), Upland Wildlife Management (645), Wetland Creation (658), Wetland Enhancement (659), Wetland Restoration (657), Wetland Wildlife Habitat Management (644).	Includes cost of all materials, equipment use and labor required to install excavation and compaction.
356 Dike	Material haul > 1 mile; Off-Site	Construction of a barrier, constructed of an earthen embankment, to control water level. Embankment structure to provide adequate freeboard, allowance for settlement, and foundation and embankment stability.	Conservation Cover (327), Constructed Wetland (656), Critical Area Planting (342), Mulching (484), Pond (378), Fence (382), Irrigation Land Levelling (464), Obstruction Removal (500), Prescribed Grazing (528), Structure for Water Control (587), Underground Outlet (620), Upland Wildlife Management (645), Wetland Creation (658), Wetland Enhancement (659), Wetland Restoration (657), Wetland Wildlife Habitat Management (644).	Includes cost of all materials, equipment use and labor required to install excavation and compaction.
359 Waste Treatment Lagoon	Waste Treatment Lagoon	A waste treatment lagoon is a component of a waste management system that provides biological treatment of manure and other byproducts of animal agricultural operations by reducing the pollution potential. Resource concern addressed is water quality by reducing the pollution potential to surface and groundwater by treating and storing liquid waste. Earthen lagoon liners are addressed with another standard.	Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Mulching (484), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), and Solid/Liquid Waste Separation Facility (632).	Includes costs of all materials, equipment use and labor required to install excavation, earthfill, compaction, stripping and stockpiling topsoil, structural steel tubing (drawdown marker).

360 Waste Facility Closure	Freshwater Conversion	This practice scenario includes the conversion of an earthen liquid waste impoundment (embankment or excavated type) to fresh water storage where the estimated volume of waste to be removed is approximately 75% liquid/slurry waste and 25% sludge/solid waste of the structural storage capacity of the structure. The purpose of the practice is to address resource concerns related to water quality degradation due to excess nutrient and pathogens in ground and/or surface waters and air quality impacts from greenhouse gases, particulate matter and associated precursors, and objectionable odors. This practice scenario includes the decommissioning of an earthen liquid waste impoundment (embankment or excavated type) where the waste material is a liquid/slurry/sludge and will be handled/removed from the entire structure through pumping, hauling, and land applying. There may be thicker sludge type material within the structure, the material should be agitated and mixed with the liquid for pumping. Residual sludge may remain after pumping which will require handling as solids or may remain if the amount is allowable per 360 Waste Facility Closure.	Nutrient Management (590), Critical Area Planting (342), Mulching (484)	Includes cost of all materials, equipment use and labor required to install agitation, pumping, loading, hauling, spreading of wastewater and sludge from either earthen or lined waste storage or treatment lagoon and demolition of embankment for filling lagoon/pond. Cubic Feet of Structural Storage
360 Waste Facility Closure	Liquid Waste Impoundment Closure with Fill	This practice scenario includes the decommissioning of an earthen liquid waste impoundment (embankment or excavated type) where the waste material is a liquid/slurry/sludge and will be handled/removed from the entire structure through pumping, hauling, and land applying. There may be thicker sludge type material within the structure, the material should be agitated and mixed with the liquid for pumping. Residual sludge may remain after pumping which will require handling as solids or may remain if the amount is allowable per 360 Waste Facility Closure. The purpose of the practice is to address resource concerns related to water quality degradation due to excess nutrient and pathogens in ground and/or surface waters and air quality impacts from greenhouse gases, particulate matter and associated precursors, and objectionable odors.	Nutrient Management (590), Critical Area Planting (342), Mulching (484)	Includes cost of all materials, equipment use and labor required to install agitation, pumping, loading, hauling, spreading of wastewater and sludge from either earthen or lined waste storage or treatment lagoon and demolition of embankment for filling lagoon/pond. Cubic Feet of Structural Storage
360 Waste Facility Closure	Liquid Waste Impoundment Closure with No Liquid/Slurry	This practice scenario includes the decommissioning of an earthen liquid waste impoundment (embankment/excavated type) where there is no waste material (liquid/slurry/sludge) to be removed. The purpose of the practice is to address resource concerns related to water quality degradation due to excess nutrient and pathogens in ground and/or surface waters. The embankment material will be used to fill in the excavated area of the waste storage pond. The area will be overfilled to compensate for settling. The area will be properly graded so there is no standing surface water. Structural removal, as necessary, may include the sealing or removal and disposal of waste transfer components and other appurtenances associated with closure of the facility. All inflow devices and associated appurtenances will be removed and properly disposed of.	Nutrient Management (590), Critical Area Planting (342), Mulching (484)	Includes cost of all materials, equipment use and labor required for demolition of embankment for filling lagoon/pond. Cubic Yards of Earthfill
360 Waste Facility Closure	Poultry House Soil Remediation	This practice scenario includes the remediation of the soil in an abandoned poultry structures previously used to store poultry waste (litter) on an earthen floor. The purpose of the practice is to address resource concerns related to water quality degradation due to excess nutrient and pathogens in ground and/or surface waters and air quality impacts from greenhouse gases, particulate matter and associated precursors, and objectionable odors.	Nutrient Management (590), Critical Area Planting (342), Mulching (484)	Includes costs of all materials, equipment use and labor required to install carbon material amendment and mixing, loading, hauling, spreading of remediated soil, soil testing and replacement of topsoil. Cubic Feet of Soil Remediated
362 Diversion	Diversion	An earthen channel constructed across long slopes with supporting ridge on lower side, to divert runoff away from farmsteads, agricultural waste systems, gullies, critical erosion areas, construction areas or other sensitive areas. Outlet may be waterway, underground outlet, or other suitable outlet. Channel may be level or gradient and ridge may be vegetated or farmed. The quantity of excavation and fill is balanced.	Critical Area Planting (342), Mulching (484), Grassed Waterway (412), Underground Outlet (620) and Subsurface Drainage (606)	Includes cost of all materials, equipment use and labor required to install excavation.
367 Roofs and Covers	Post Frame Building	A timber framed building with a timber or steel "sheet" roof and supporting foundation. Manure is stored as a liquid in basins, tanks, and as a solid on concrete and earthen surfaces. Excess precipitation can cause premature filling of storages or cause nutrients to leach from solid manure piles leading to uncontrolled runoff.	Waste Storage Facility (313), Animal Mortality Facility (316), Composting Facility (317), Agrichemical Handling Facility (309), Roof Runoff Structure (558), Waste Treatment (629).	Includes cost of all materials, equipment use and labor required to install post frame, roof (timber or steel sheet) and concrete for posts.

367	Roofs and Covers	Steel Frame Building	A steel framed building with steel "sheet" roof and supporting foundation. Manure is stored as a liquid in basins, tanks, and as a solid on concrete and earthen surfaces. Excess precipitation can cause premature filling of storages or cause nutrients to leach from solid manure piles leading to uncontrolled runoff.	Waste Storage Facility (313), Animal Mortality Facility (316), Composting Facility (317), Roof Runoff Structure (558), Waste Treatment (629).	Includes cost of all materials, equipment use and labor required to install steel frame, roof (timber or steel sheet) and concrete for piers.
372	Combustion System Improvement	IC Engine Repower, Up to 99 bhp	Older diesel engine replaced with new diesel engine repower. The existing diesel engine may be operating an irrigation pump or an auxiliary engine providing mechanical function for agricultural equipment.	Farmstead Energy Improvement (374), Pumping Plant (533), Irrigation Pipeline (430), Irrigation System, Microirrigation (441), Sprinkler System (442), Irrigation Reservoir (436), Irrigation Water Management (449), Pipeline (516), Waste Storage Facility (313), Waste Transfer, (634), Watering Facility, (614), Water Well, (642), CAP 126 Comprehensive Air Quality Management Plan, CAP 122 Agricultural Energy Management Plan - Headquarters, and CAP 124 Agricultural Energy Management Plan - Landscape.	Includes cost of all materials, equipment use and labor required to install most current tier level diesel or cleaner 50 - 99 HP IC engine.
372	Combustion System Improvement	IC Engine Repower, 100 to 150 bhp	Older diesel engine replaced with new diesel engine repower. The existing diesel engine may be operating an irrigation pump or an auxiliary engine providing mechanical function for agricultural equipment.	Farmstead Energy Improvement (374), Pumping Plant (533), Irrigation Pipeline (430), Irrigation System, Microirrigation (441), Sprinkler System (442), Irrigation Reservoir (436), Irrigation Water Management (449), Pipeline (516), Waste Storage Facility (313), Waste Transfer, (634), Watering Facility, (614), Water Well, (642), CAP 126 Comprehensive Air Quality Management Plan, CAP 122 Agricultural Energy Management Plan - Headquarters, and CAP 124 Agricultural Energy Management Plan - Landscape.	Includes cost of all materials, equipment use and labor required to install most current tier level diesel or cleaner 100 - 199 HP IC engine.
372	Combustion System Improvement	Electric Motor in-lieu of IC Engine, less than 100 hp	Replace an existing IC engine operating an irrigation well with a new electric motor. This replacement provides the greatest emission reductions by eliminating NOx, VOC, and PM emissions from the source.	Farmstead Energy Improvement (374), Pumping Plant (533), Irrigation Pipeline (430), Irrigation System, Microirrigation (441), Sprinkler System (442), Irrigation Reservoir (436), Irrigation Water Management (449), Pipeline (516), Waste Storage Facility (313), Waste Transfer, (634), Watering Facility, (614), Water Well, (642), CAP 126 Comprehensive Air Quality Management Plan, CAP 122 Agricultural Energy Management Plan - Headquarters, and CAP 124 Agricultural Energy Management Plan - Landscape.	Includes cost of all materials, equipment use and labor required to install a premium National Electrical Manufacturers Association (NEMA) < 100 hp electric motor.
372	Combustion System Improvement	Electric Motor in-lieu of IC Engine, greater than or equal to 100 hp	Replace an existing IC engine operating an irrigation well with a new electric motor. An existing IC engine is stationary (does not propel a vehicle and is not an auxiliary IC engine on a vehicle).	Farmstead Energy Improvement (374), Pumping Plant (533), Irrigation Pipeline (430), Irrigation System, Microirrigation (441), Sprinkler System (442), Irrigation Reservoir (436), Irrigation Water Management (449), Pipeline (516), Waste Storage Facility (313), Waste Transfer, (634), Watering Facility, (614), Water Well, (642), CAP 126 Comprehensive Air Quality Management Plan, CAP 122 Agricultural Energy Management Plan - Headquarters, and CAP 124 Agricultural Energy Management Plan - Landscape.	Includes cost of all materials, equipment use and labor required to install a premium National Electrical Manufacturers Association (NEMA) ≥ 100 hp electric motor.
372	Combustion System Improvement	Electric Motor/Centrifugal Pump Combination Unit in-lieu of IC Engine, < 100 hp	Replace an existing IC engine operating an irrigation well with a new electric motor/centrifugal pump combination unit. This replacement provides the greatest emission reductions by eliminating NOx, VOC, and PM emissions from the source.	Farmstead Energy Improvement (374), Pumping Plant (533), Irrigation Pipeline (430), Irrigation System, Microirrigation (441), Sprinkler System (442), Irrigation Reservoir (436), Irrigation Water Management (449), Pipeline (516), Waste Storage Facility (313), Waste Transfer, (634), Watering Facility, (614), Water Well, (642), CAP 126 Comprehensive Air Quality Management Plan, CAP 122 Agricultural Energy Management Plan - Headquarters, and CAP 124 Agricultural Energy Management Plan - Landscape.	Includes cost of all materials, equipment use and labor required to install a premium National Electrical Manufacturers Association (NEMA) < 100 hp electric motor and centrifugal pump.
374	Farmstead Energy Improvement	Ventilation - Exhaust	Replacement of a conventional exhaust fan with high volume, low speed, efficient exhaust fan. Fans being installed should be models previously tested by BESS Lab or the Air Movement and Control Association and be in top 20 percentile of fans tested.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install high efficiency fan.

374 Farmstead Energy Improvement	Ventilation - HAF	A system of fans are installed to create a horizontal air circulation pattern; the new system promotes efficient heat and moisture distribution. Fan performance meets Energy Audit efficiency criteria as tested by AMCA or BESS Labs.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install Horizontal Air Flow (HAF) fan with VER rating of 13 CFM/Watt.
374 Farmstead Energy Improvement	Ventilation - Paddle Stir Fan	A system of fans are installed to create a vertical air circulation pattern; the new system promotes efficient heat and moisture distribution. Fan performance meets Energy Audit efficiency criteria as tested by AMCA or BESS Labs.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install a high efficiency Horizontal Air Flow (HAF) fan with 1/10 to 1/15 hp.
374 Farmstead Energy Improvement	Plate Cooler ≤ 499 gal/hr	High-efficiency milk cooling system which reduces energy use. The new milk cooling equipment will pre-cool the milk and reduce overall power requirements (kW) compared to the existing milk cooling system (where most of the cooling was accomplished in the bulk tank) as evidenced in an energy audit.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install ≤ 499 gal/hr dual pass milk plate cooler.
374 Farmstead Energy Improvement	Plate Cooler 500 - 749 gal/hr	High-efficiency milk cooling system which reduces energy use. The new milk cooling equipment will pre-cool the milk and reduce overall power requirements (kW) compared to the existing milk cooling system (where most of the cooling was accomplished in the bulk tank) as evidenced in an energy audit.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install 500 - 749 gal/hr dual pass milk plate cooler.
374 Farmstead Energy Improvement	Plate Cooler 750 - 999 gal/hr	High-efficiency milk cooling system which reduces energy use. The new milk cooling equipment will pre-cool the milk and reduce overall power requirements (kW) compared to the existing milk cooling system (where most of the cooling was accomplished in the bulk tank) as evidenced in an energy audit.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install 750 - 999 gal/hr dual pass milk plate cooler.
374 Farmstead Energy Improvement	Plate Cooler 1,000 - 4,999 gal/hr	High-efficiency milk cooling system which reduces energy use. The new milk cooling equipment will pre-cool the milk and reduce overall power requirements (kW) compared to the existing milk cooling system (where most of the cooling was accomplished in the bulk tank) as evidenced in an energy audit.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install 1000 - 4999 gal/hr dual pass milk plate cooler.
374 Farmstead Energy Improvement	Scroll Compressor	A more efficient scroll compressor, which will reduce energy use, is evidenced by the energy audit. A comparably sized scroll compressor provides refrigeration capacity at a higher efficiency than a reciprocating compressor. Newer scroll compressor systems typically reduce electricity use by 15 to 25 percent compared to reciprocating compressors.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install scroll compressor.
374 Farmstead Energy Improvement	Variable Speed Drive ≤ 50 HP	The typical scenario consists of a variable speed drive (VSD) and appurtenances, such as hook-ups, control panels, wiring, control blocks, filters, switches, pads, etc. attached to an electric motor used to drive a ventilation fan, irrigation pumps, vacuum pump, or similar equipment involved with agricultural production. The motor size, on which the VSD is added, is less than or equal to 50 HP.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install less than or equal to 50 HP variable speed drive (VSD).
374 Farmstead Energy Improvement	Variable Speed Drive > 50 HP	The typical scenario consists of a variable speed drive (VSD) and appurtenances, such as hook-ups, control panels, wiring, control blocks, filters, switches, pads, etc. attached to an electric motor used to drive a ventilation fan, irrigation pumps, vacuum pump, or similar equipment involved with agricultural production. The motor size, on which the VSD is added, is greater than 50 HP.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install greater than 50 HP variable speed drive (VSD).
374 Farmstead Energy Improvement	Automatic Controller System	The typical scenario consists of an automatic control system installed on an existing manually controlled agricultural system.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required wiring, sensors, data logger, logic controller, communication link, software, switches, relay.
374 Farmstead Energy Improvement	Motor Upgrade ≤ 2 HP	The typical scenario consists of replacing an existing electric motor used to drive a ventilation fan, irrigation pumps, vacuum pump, or similar equipment involved with agricultural production with a new, high efficiency motor. The motor size is less than or equal to 2 HP.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install a premium National Electrical Manufacturers Association (NEMA) less than or equal to 2 HP electric motor.
374 Farmstead Energy Improvement	Motor Upgrade > 2 and < 40 HP	The typical scenario consists of replacing an existing electric motor used to drive a ventilation fan, irrigation pumps, vacuum pump, or similar equipment involved with agricultural production with a new, high efficiency motor. The motor size is larger than 2 HP or less than 40 HP.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install a premium National Electrical Manufacturers Association (NEMA) greater than 2 HP and less than 40 HP electric motor.
374 Farmstead Energy Improvement	Motor Upgrade 40 and < 100 HP	The typical scenario consists of replacing an existing electric motor used to drive a ventilation fan, irrigation pumps, vacuum pump, or similar equipment involved with agricultural production with a new, high efficiency motor. The motor size is equal to 40 HP or than 100 HP.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install a premium National Electrical Manufacturers Association (NEMA) equal to 40 HP and less than 100 HP electric motor.
374 Farmstead Energy Improvement	Motor Upgrade = or > 100 HP	The typical scenario consists of replacing an existing electric motor used to drive a ventilation fan, irrigation pumps, vacuum pump, or similar equipment involved with agricultural production with a new, high efficiency motor. The motor size is greater than 100 HP.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install a premium National Electrical Manufacturers Association (NEMA) greater than 100 HP electric motor.
374 Farmstead Energy Improvement	Vacuum Pump - Compatible w/Variable Speed	The typical scenario consists of replacing an existing vacuum pump not compatible with an add-on variable frequency drive to a vacuum pump compatible with an add-on variable frequency drive; typically used in a milking system for a dairy. The motor size and the Variable Speed Drive (VSD) on which the vacuum pump is added, generally ranges from 7.5 to 15 HP.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install a vacuum pump, stand, silencer and drive kit.

374 Farmstead Energy Improvement	Evaporative Cooling	An evaporative cooling system used for the purpose of modifying climate (cooling) within livestock confinement houses or greenhouses. Reduces the amount of run time for fans which reduces the overall energy consumption. Water is recycled reducing the amount of water pulled from the aquifer.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install a complete system with cooling pads, aluminum distribution and end panels, submersible sump pump and plumbing kit.	Square Foot of Cooling Pad
374 Farmstead Energy Improvement	Heating - Radiant Systems	Replace "pancake" brood heaters in a poultry house with Radiant Tube Heaters. Alternate acceptable radiant heating systems can include radiant brooders and quad radiant systems as evidenced by the energy audit.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install radiant tube heaters.	
374 Farmstead Energy Improvement	Heating (Building)	Replace existing low efficiency heaters with new high efficiency heaters. High-efficiency heating systems include any heating unit with efficiency rating of 80%+ for fuel oil and 90%+ for natural gas and propane. Applications may be air heating/building environment and hydronic (boiler) heating for agricultural operations, including under bench, or root zone heating.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install natural gas, propane, or oil unit high efficiency heater.	
374 Farmstead Energy Improvement	Heating - Attic Heat Recovery vents	Install actuated inlets or automatic latching gravity inlets that draw warmer, drier air from the attic to assist with moisture and heat control when ventilation fans are being operated in poultry houses and swine barns. Other systems to transfer heat, as detailed in ASABE S612-compliant energy audit may also be used.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install poultry house attic air inlets.	
374 Farmstead Energy Improvement	Compressor Heat Recovery Unit	Install a new heat recovery unit (a desuperheater), associated controls, wiring, and materials to an existing refrigeration system. The heat extracted from the warm milk is used to pre-heat water before it enters a conventional water heater. Energy savings comes from the reduced heating required in a water heater.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install compressor heat recovery (CHR) [insulated storage tank heat exchangers] added to a refrigeration system.	
374 Farmstead Energy Improvement	Tunnel Doors	Install tunnel doors to replace tunnel curtain openings in a poultry house.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install tunnel doors.	
374 Farmstead Energy Improvement	Grain Dryer	A replacement continuous dryer rated for an appropriate rated bushel/per hour capacity for the operation that includes a microcomputer-based control system that adjusts the amount of time the crop remains in the dryer in order to achieve a consistent and accurate moisture content in the dried product. Alternate types of replacement dryers which reduce energy use are acceptable as evidenced by the energy audit.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install grain dryer (axial or centrifugal).	
378 Pond	Excavated Pit	A low-hazard water impoundment structure on agricultural lands to improve water quality and to provide water for livestock. Pond is created solely by excavation and impounds less than 3 feet against the embankment or spoil. Excavated material is spoiled, not placed in a designed embankment. Earthen spillway is constructed as needed.	Vegetation will be completed under Critical Area Planting (342), Mulching (484). Other associated practices include Fence (382), Pipeline (516), Pond Sealing and Lining, Flexible Membrane (521A), Pumping Plant (533), Watering Facility (614), Structure for Water Control (587).	Includes cost of all materials, equipment use and labor required to install permanent micro-irrigation system includes an automated filter station, flow meter, backflow prevention device, automated control box or timer, emitters, both a supply and a flushing manifold and numerous types of water control valves. Pipe downstream of the filter (i.e. mainline, sub main, manifold, flush manifold) is included. This is an all-inclusive system starting with the filter station including all required system components out to the flush valves.	Excavated Volume
378 Pond	Embankment Pond with Pipe	A low-hazard water impoundment structure on agricultural land to improve water quality and to provide water for livestock, fish and wildlife, recreation, fire control, developing renewable energy systems, and other related uses to maintain or improve water quality. An earthen embankment will be constructed with a principle spillway conduit and earthen auxiliary spillway, as designed.	Vegetation will be completed under Critical Area Planting (342), Mulching (484). Other associated practices include Fence (382), Pipeline (516), Pond Sealing and Lining, Flexible Membrane (521A), Pumping Plant (533), Watering Facility (614), Structure for Water Control (587).	Includes the cost of materials, equipment use and labor required for install excavation, earthfill, grading, concrete, trash guard, corrugated metal pipe.	Embankment Volume
378 Pond	Embankment Pond with Siphon Pipe	A low-hazard water impoundment structure on agricultural land to improve water quality and to provide water for livestock, fish and wildlife, recreation, fire control, developing renewable energy systems, and other related uses to maintain or improve water quality. An earthen embankment will be constructed with a principle spillway conduit and earthen auxiliary spillway, as designed.	Vegetation will be completed under Critical Area Planting (342), Mulching (484). Other associated practices include Fence (382), Pipeline (516), Pond Sealing and Lining, Flexible Membrane (521A), Pumping Plant (533), Watering Facility (614), Structure for Water Control (587).	Includes the cost of materials, equipment use and labor required for install excavation, earthfill, grading, trash guard, SCH 40 PVC pipe.	Embankment Volume
380 Windbreak/Shelterbelt Establishment	1 Row Windbreak, Shrubs, Hand Planted	Single row of tree seedlings for wind protection, wildlife habitat. This practice is typically applied to crop, pasture or range lands. Wind velocity suitably reduced to reduce soil erosion. Additional wildlife food and cover.	Tree Shrub Site Preparation (490), Tree Shrub Establishment (612), Mulching (484)	Includes cost of all materials, equipment use and labor required to install a 1 row configuration hand planting of shrubs.	
380 Windbreak/Shelterbelt Establishment	2-Row Windbreak, Trees, Machine Planted	Two rows of hardwood trees for wind protection, energy conservation, wildlife habitat or to provide a visual screen. This practice is typically applied to crop, pasture or range lands. Wind velocity suitably reduced to reduce soil erosion. Additional wildlife food and cover.	Tree Shrub Site Preparation (490), Tree Shrub Establishment (612), Microirrigation (441), Mulching (484)	Includes cost of all materials, equipment use and labor required to install a 2 row configuration machine planting of trees.	

381 Silvopasture	Tree Establishment	Establishment of trees into an existing pasture that contains adequate native or introduced forage. The site will be prepared using Tree/Shrub Site Preparation (490), if needed, and then pine trees per acre will be planted, providing shade and wind protection to livestock and wildlife, and, in time, producing a viable wood products crop. Per the conservation practice standard, livestock grazing will be deferred until the trees reach adequate height to resist damage, or use exclusion measures are established.	Tree Shrub Site Preparation (490), Tree Shrub Establishment (612), Forage and Biomass Planting (512)	Includes cost of all materials, equipment use and labor required to install bareroot, tubing conifers machine or hand planted.
381 Silvopasture	Commercial Thinning and Establishment of Native Grasses	Commercial thinning of an existing stand of trees followed by establishment of native grasses. The stand is thinned commercially allowing adequate sunlight to the forest floor for grass production, yet still provide shade and some protection from the elements for livestock and wildlife. Since thinning is done commercially, no harvesting costs are incurred. The soil is prepared for planting using chemical and mechanical means, then a mix of native warm-season grasses will be established, providing forage to livestock and wildlife.	Forage and Biomass Planting (512), Forest Stand Improvement (666)	Includes cost of all materials, equipment use and labor required to install thinning of existing stand and preparing adequate seedbed, herbicide for site preparation, no till/grass drill, native grasses.
381 Silvopasture	Commercial Thinning and Establishment of Introduced Grasses	Commercial thinning of an existing stand of trees followed by establishment of introduced grasses. The stand is thinned commercially allowing adequate sunlight to the forest floor for grass production, yet still provide shade and some protection from the elements for livestock and wildlife. Since thinning is done commercially, no harvesting costs are incurred. The soil is prepared for planting using chemical and mechanical means, then a mix of cool-season grasses and legumes will be established, providing forage to livestock and wildlife.	Forage and Biomass Planting (512), Forest Stand Improvement (666)	Includes cost of all materials, equipment use and labor required to install thinning of existing stand and adequate seedbed, herbicide for site preparation, no till/grass drill, introduced grass, legume, fertilizer and lime for establishment.
382 Fence	Temporary Electric-Polywire	Installation of fence will allow for implementation of a grazing management that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds.	Prescribed Grazing (528)	Includes cost of all materials, equipment use and labor required to install polywire, energizer, lightening diverter, line posts, corner posts, gate posts, single H braces, double H braces, staples, and gates.
382 Fence	Permanent Electric	Installation of fence will allow for implementation of a grazing management that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds.	Prescribed Grazing (528)	Includes cost of all materials, equipment use and labor required to install high tensile wire, energizer, lightening diverter, line posts, corner posts, gate posts, single H braces, double H braces, staples, and gates.
382 Fence	Barbed/Smooth Wire	Installation of fence will allow for implementation of grazing management that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds.	Prescribed Grazing (528)	Includes cost of all materials, equipment use and labor required to install barbed wire, line posts, corner posts, gate posts, single H braces, double H braces, staples, stays and gates.
382 Fence	Woven Wire	Installation of fence will allow for implementation of a grazing management that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. Woven wire is typically used in applications with sheep, goats, hogs.	Prescribed Grazing (528)	Includes cost of all materials, equipment use and labor required to install woven wire, line posts, corner posts, gate posts, single H braces, double H braces, staples, stays and gates.
383 Fuelbreak	Fuelbreak	Fuelbreak installation requires creating an opening around a stand of timber that will protect the stand from being damaged or destroyed by wildfire. Practice is installed with a bull dozer and a crew that is limbing or cutting smaller trees to facilitate installation. Fuelbreak is installed at the property line or a key locations to reduce crown fire spread.		Includes cost of all materials, equipment use and labor required to install hand crew and machine cutting of strategic areas.
386 Field Border	Introduced	A strip of permanent vegetation established at the edge or around the perimeter of a field. This practice may also apply to recreation land or other land uses where agronomic crops including forages are grown.		Includes cost of all materials, equipment use and labor required to install adequate seedbed, no-till/grass till, introduced perennial grasses.
386 Field Border	Native Grasses	A strip of permanent vegetation established at the edge or around the perimeter of a field. This practice may also apply to recreation land or other land uses where agronomic crops including forages are grown.	Contour Farming (330), Critical Area Planting (342), Mulching (484), Nutrient Management (590), Forage and Biomass Planting (595), Pest Management (595), Tree Shrub Establishment (612), Upland Wildlife Habitat Management (645)	Includes cost of all materials, equipment use and labor required to install adequate seedbed, no-till/grass till and native perennial grasses.
386 Field Border	Pollinator Habitat	A strip of permanent vegetation established at the edge or around the perimeter of a field. This practice may also apply to recreation land or other land uses where agronomic crops including forages are grown.	Contour Farming (330), Critical Area Planting (342), Mulching (484), Nutrient Management (590), Forage and Biomass Planting (595), Pest Management (595), Tree Shrub Establishment (612), Upland Wildlife Habitat Management (645)	Includes cost of all materials, equipment use and labor required to install adequate seedbed, no-till/grass till, native perennial grasses, and legumes and forbs (pollinator mix).
388 Irrigation Field Ditch	Irrigation Field Ditch	An earthen canal that has adequate capacity to convey sufficient irrigation water to meet the demands of the system and make irrigation practical for the crops being grown.	Irrigation Canal or Lateral (320), Irrigation System, Surface or Subsurface (443), Pumping Plant, (533) Irrigation Pipeline (430)	Includes cost of all materials, equipment use and labor required for excavation.

391 Riparian Forest Buffer	Bare-root, Hand Planted	Establish a buffer of trees and/or shrubs into a suitably prepared site to restore riparian plant communities and associated benefits. The buffer will be located adjacent to and up-gradient from a watercourse or water body extending a minimum of 35 feet wide. The planting will consist of hand planted bare-root hardwood trees. One third of the area will be planted to each woody plant type.	Streambank and Shoreline Protection, (580), Fence (382), Riparian Forest Buffer (390), Range Planting, (550), Filter Strip (393), Access Control (472), Prescribed Grazing (528), Brush Management (314), Upland Wildlife Habitat Management (644), Wetland Wildlife Habitat Management (645)	Includes the cost of all materials, equipment use and labor required to install site preparation, hand planting, bareroot trees.
391 Riparian Forest Buffer	Bare-root, Machine Planted	Establish a buffer of trees and/or shrubs into a suitably prepared site to restore riparian plant communities and associated benefits. The buffer will be located adjacent to and up-gradient from a watercourse or water body extending a minimum of 35 feet wide. The planting will consist of machine planted bare-root hardwood trees. One third of the area will be planted to each woody plant type.	Streambank and Shoreline Protection, (580), Fence (382), Riparian Forest Buffer (390), Range Planting, (550), Filter Strip (393), Access Control (472), Prescribed Grazing (528), Brush Management (314), Upland Wildlife Habitat Management (644), Wetland Wildlife Habitat Management (645)	Includes the cost of all materials, equipment use and labor required to install site preparation, machine planting, bareroot trees.
393 Filter Strip	Introduced Grasses	A strip or area of Introduced herbaceous vegetation situated between cropland, grazing land or disturbed land and sensitive areas. The vegetation will consist of native species. The filter strip will have adequate width to filter the planned pollutants. Species selected shall be able to withstand partial burial by sediment and tolerant of herbicides used on contribution area while protecting environmentally-sensitive areas.	Nutrient Management (590), Forage and Biomass Planting (512), Prescribed Burning (338), Prescribed Grazing (338), Riparian Forest Buffer (391).	Includes cost of all materials, equipment use and labor required to install adequate seedbed, herbicide for site preparation, no-till/grass drill planting and fertilizer for establishment.
393 Filter Strip	Native Grasses	A strip or area of native herbaceous vegetation situated between cropland, grazing land or disturbed land and sensitive areas. The planned filter strip will be established and maintained per the practice plan that will meet the criteria for the planned purpose(s). The vegetation will consist of native species. The filter strip will have adequate width to filter the planned pollutants. Species selected shall be able to withstand partial burial by sediment and tolerant of herbicides used on contribution area while protecting environmentally-sensitive areas.	Nutrient Management (590), Forage and Biomass Planting (512), Prescribed Burning (338), Prescribed Grazing (338), Riparian Forest Buffer (391).	Includes cost of all materials, equipment use and labor required to install adequate seedbed, herbicide for site preparation, no till/grass drill, native perennial grasses.
393 Filter Strip	Organic	A strip or area of Introduced herbaceous vegetation situated between cropland, grazing land or disturbed land and sensitive areas. The planned filter strip will be established and maintained per the practice plan that will meet the criteria for the planned purpose(s). The vegetation will consist of introduced species. The filter strip will have adequate width to filter the planned pollutants. Species selected shall be able to withstand partial burial by sediment and tolerant of herbicides used on contribution area while protecting environmentally-sensitive areas.	Nutrient Management (590), Forage and Biomass Planting (512), Prescribed Burning (338), Prescribed Grazing (338), Riparian Forest Buffer (391).	Includes cost of all materials, equipment use and labor required to install adequate seedbed, no-till/grass drill planting, organic legumes and perennial grass, organic fertilizer for establishment.
394 Firebreak	Light Equipment	Installation of a bare-ground firebreak. Generally water control devices such as water bars are not needed due either to the lack of steep terrain or the temporary nature of the firebreak.	Prescribed Burning (338)	Includes cost of all materials, equipment use and labor to construct a firebreak prepared by normal farm type machinery (offset harrow or chisel plow) or similar type equipment.
394 Firebreak	Constructed Dozer	Installation of a bare-ground firebreak. Generally water control devices such as water bars are not needed due either to the lack of steep terrain or the temporary nature of the firebreak.	Prescribed Burning (338)	Includes cost of all materials, equipment use and labor to construct a firebreak prepared by dozer and/or heavy fireplow or similar type equipment.
410 Grade Stabilization Structure	Check Dams	Typical setting has a slope of 5 to 10 percent where ephemeral gullies have formed.	Disturbed areas are protected with permanent vegetative cover. Any needed re-vegetation of disturbed areas use Critical Area Planting (342), Mulching (484). Other associated practices such as; Pond (378), Dam (402), Fence (382), Pumping Plant (533), Watering Facility (614), and Livestock Pipeline (516).	Includes cost of all materials, equipment use and labor required Tons of Rock Installed to install excavation and rock rip rap.
410 Grade Stabilization Structure	Embankment, Pipe < 12"	An earthen embankment dam with a principle spillway pipe less than 12 inches, anti-seep collars or sand diaphragm, and excavated plunge pool basin. Installed to stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion.	Disturbed areas are protected with permanent vegetative cover. Any needed re-vegetation of disturbed areas use Critical Area Planting (342), Mulching (484). Other associated practices such as; Pond (378), Dam (402), Fence (382), Pumping Plant (533), Watering Facility (614), and Livestock Pipeline (516).	Includes cost of all materials, equipment use and labor required Cubic Yards of Earthfill to install excavation, earthfill, compaction, filter diaphragm sand, PVC pipe (drain pipe).
410 Grade Stabilization Structure	Embankment, Pipe > 12" & < 36"	An earthen embankment dam with a principle spillway pipe greater than 12 inches, anti-seep collars or sand diaphragm, and excavated plunge pool basin. Installed to stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion.	Disturbed areas are protected with permanent vegetative cover. Any needed re-vegetation of disturbed areas use Critical Area Planting (342), Mulching (484). Other associated practices such as; Pond (378), Dam (402), Fence (382), Pumping Plant (533), Watering Facility (614), and Livestock Pipeline (516).	Includes cost of all materials, equipment use and labor required Cubic Yards of Earthfill to install excavation, earthfill, compaction, filter diaphragm sand, PVC pipe (drain pipe).

410	Grade Stabilization Structure	Embankment, Pipe ≥ 36"	An earthen embankment dam with a principle spillway pipe greater than or equal to 36 inches. Installed to stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion.		Disturbed areas are protected with permanent vegetative cover. Any needed re-vegetation of disturbed areas use Critical Area Planting (342), Mulching (484). Other associated practices include Pond (378), Dam (402), Fence (382), Pumping Plant (533), Watering Facility (614), Livestock Pipeline (516).	Includes cost of all materials, equipment use and labor required to install excavation, earthfill, compaction, concrete, steel pipe, lumber (pipe support), anti-seep collars, rock rip rap, geotextile fabric.	Cubic Yards of Earthfill
410	Grade Stabilization Structure	Pipe Drop	A full flow pipe drop grade stabilization structure designed and constructed using plastic pipe without anti-seep collars. Installed to stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion.		Disturbed areas are protected with permanent vegetative cover. Any needed re-vegetation of disturbed areas use Critical Area Planting (342), Mulching (484). Other associated practices include Pond (378), Dam (402), Fence (382), Channel Bed Stabilization (584), Dike (356), Grassed Waterway (412), Structure for Water Control (587), and Irrigation Canal or Lateral (320).	Includes cost of all materials, equipment use and labor required to install excavation, earthfill, compaction, concrete, PVC pipe (drain pipe).	Linear Foot of Pipe (Barrel Length)
410	Grade Stabilization Structure	Rock Drop Structures	A straight drop structure constructed of rock riprap held in place by galvanized wire, such as, gabion baskets, fence panels, or "sausage" baskets. These structures are used to stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion.		Disturbed areas are protected with permanent vegetative cover. Any needed re-vegetation of disturbed areas use Critical Area Planting (342), Mulching (484). Other associated practices include Pond (378), Dam (402), Fence (382), Channel Bed Stabilization (584), Dike (356), Grassed Waterway (412), Structure for Water Control (587), Subsurface Drain (606), and Underground Outlet (620).	Includes cost of all materials, equipment use and labor required to install excavation, earthfill, compaction, gabion basket or mat, geotextile.	The unit of payment measurement is defined as weir length times drop in "feet". The drop (feet) is defined as the structure inlet crest elevation minus the control outlet elevation (ie: outlet apron elevation).
410	Grade Stabilization Structure	Weir Drop Structures	A straight, semicircular, or box drop structure composed of metal or reinforced concrete used to stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion.		Disturbed areas are protected with permanent vegetative cover. Any needed re-vegetation of disturbed areas use Critical Area Planting (342), Mulching (484). Other associated practices include Pond (378), Dam (402), Fence (382), Channel Bed Stabilization (584), Dike (356), Grassed Waterway (412), Structure for Water Control (587), Subsurface Drain (606), and Underground Outlet (620).	Includes cost of all materials, equipment use and labor required to install excavation, earthfill, CMP pipe, rock rip rap, concrete, geotextile, PVC pipe (drain pipe).	The unit of payment measurement is defined as weir length times drop in "feet". The drop (feet) is defined as the structure inlet crest elevation minus the control outlet elevation (ie: outlet apron elevation).
412	Grassed Waterway	Base Waterway	A grass waterway that is a shaped or graded channel and is established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet.	Use Critical Area Planting (342) for establishment of waterway vegetation. If erosion control blankets or mulching for seedbed establishment/protection are needed, use conservation practice Mulching (484).	Drainage tile, if needed, will be installed according to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). If inlet structures are needed with the drainage tile, then those will be installed using Underground Outlet (620).	Includes cost of all materials, equipment use and labor required to install excavation and associated work to construct the overall shape and grade of the waterway.	Acre of Waterway
412	Grassed Waterway	With Checks	A grass waterway that is a shaped or graded channel and is established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet. Fabric or stone checks are installed every 100 feet along the length of the waterway perpendicular to waterflow and are 2/3 the waterway top width to reduce maintenance and provide temporary protection until vegetation is established. Fabric Checks are installed 18" deep with 12" laid over on the surface. (Alternatively, rock checks could be installed).	Use Critical Area Planting (342) for establishment of waterway vegetation. If erosion control blankets or mulching for seedbed establishment/protection are needed, use conservation practice Mulching (484).	Drainage tile, if needed, will be installed according to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). If inlet structures are needed with the drainage tile, then those will be installed using Underground Outlet (620).	Includes cost of all materials, equipment use and labor required to install excavation, compaction and geotextile and associated work to construct the overall shape and grade of the waterway.	Acre of Waterway
422	Hedgerow Planting	Pollinator Habitat	Where pollinator habitat is an additional wildlife habitat concern this scenario addresses the resource concern of inadequate fish and wildlife habitat. It provides both physical habitat by providing areas that are not disturbed by annual tillage and provides pollen and nectar throughout the growing season by establishing a diverse mixture of flowering plants. Typically a mixture of 5 or more species is planted to improve diversity so that pollen and nectar are available as long as possible. Typical installation is in or at the edge of cropland or pasture.		Tree Shrub Establishment (612), Contour Farming (330), Stripcropping (585), Forage and Biomass Planting (512)	Includes the cost of all materials, equipment use and labor required to install adequate seedbed, native perennial grass, forbs and shrubs.	
422	Hedgerow Planting	Wildlife, Machine Plant	This scenario is for machine planting of woody species. Typically installed in or at the edge of cropland or pasture. Specifically, the establishment of dense vegetation in a linear design can be used to provide for several habitat elements depending on the needs identified in the habitat assessment. This scenario can provide: habitat connectivity, food, and cover for wildlife depending on design and plant species selection.		Tree Shrub Establishment (612), Contour Farming (330), Stripcropping (585), Forage and Biomass Planting (512)	Includes the cost of all materials, equipment use and labor required to install adequate seedbed, native perennial grass, shrubs and trees.	

430 Irrigation Pipeline	Steel (Iron Pipe Size) ≤ 8"	Below ground installation of Steel (Iron Pipe Size) pipeline. Steel (IPS) is manufactured in sizes (nominal diameter) from ½-inch to 36-inch; typical practice sizes range from 2-inch to 18-inch; and typical scenario size is 6-inch. The unit is weight of pipe in pounds.	Irrigation Reservoir (436), Irrigation System, Microirrigation (441), Sprinkler System (442), Irrigation System, Surface & Subsurface (443), Irrigation Reservoir (436), Pumping Plant (533), Waste Transfer (634)	Includes cost of all materials, equipment use and labor required to install trenching and backfill and pipe material.	
430 Irrigation Pipeline	PVC (Iron Pipe Size)	Below ground installation of PVC (Iron Pipe Size) pipeline. PVC (IPS) is manufactured in sizes (nominal diameter) from ½-inch to 36-inch; typical practice sizes range from 2-inch to 24-inch; and typical scenario size is 6-inch. The unit is weight of pipe material in pounds.	Irrigation Reservoir (436), Irrigation System, Microirrigation (441), Sprinkler System (442), Irrigation System, Surface & Subsurface (443), Irrigation Reservoir (436), Pumping Plant (533), Waste Transfer (634)	Includes cost of all materials, equipment use and labor required to install trenching and backfill and pipe material.	
430 Irrigation Pipeline	PVC (Plastic Irrigation Pipe) ≤ 8"	Below ground installation of PVC (Plastic Irrigation Pipe) pipeline. PVC (PIP) is manufactured in sizes (nominal diameter) from 4-inch to 27-inch; typical practice sizes range from 4-inch to 24-inch; and typical scenario size is 6-inch. The unit is weight of pipe in pounds.	Irrigation Reservoir (436), Irrigation System, Microirrigation (441), Sprinkler System (442), Irrigation System, Surface & Subsurface (443), Irrigation Reservoir (436), Pumping Plant (533), Waste Transfer (634)	Includes cost of all materials, equipment use and labor required to install trenching and backfill and pipe material.	
430 Irrigation Pipeline	Surface Steel (Iron Pipe Size)	On-ground surface installation of Steel (Iron Pipe Size) pipeline. Steel (IPS) is manufactured in sizes (nominal diameter) from ½-inch to 36-inch; typical practice sizes range from 2-inch to 18-inch; and typical scenario size is 2-inch. The unit is weight of pipe in pounds.	Irrigation Reservoir (436), Irrigation System, Microirrigation (441), Sprinkler System (442), Irrigation System, Surface & Subsurface (443), Irrigation Reservoir (436), Pumping Plant (533), Waste Transfer (634)	Includes cost of all materials, equipment use and labor required to install galvanized steel pipe and appurtenances on the ground surface.	
436 Irrigation Reservoir	Excavated Pit	A low-hazard water impoundment structure on agricultural lands to improve water quality and to provide water for livestock, fish and wildlife, recreation, fire control, developing renewable energy systems, and other related uses to maintain or improve water quality. Pond is created solely by excavation and impounds less than 3 feet against the embankment or spoil. Excavated material is spoiled, not placed in a designed embankment. Earthen spillway is constructed as needed.	Irrigation Pipeline, (430), Irrigation System, Microirrigation, (441), Sprinkler System (442), Pumping Plant, (533), Irrigation Reservoir (436)	Includes the cost of materials, equipment use and labor required for install excavation.	Excavated Volume
436 Irrigation Reservoir	Embankment Dam with On-Site Borrow	The reservoir, created by an embankment built across a natural depression, with a principal spillway outlet through the embankment, controlled by a canal-style gate. Outlet can also serve as overflow protection with a diameter standpipe and tee to a pipe. Any watershed runoff will be diverted around reservoir.	521 - Pond Sealing or Lining (521A, 521B, 521C, 521D), 320 - Irrigation Canal or Lateral, (320), Irrigation Pipeline (430), Irrigation Ditch Lining, (428), Pumping Plant (533), Irrigation Systems, Microirrigation 441 , Irrigation Systems, Sprinkler (442), Irrigation System, Surface and Subsurface (443), Irrigation Reservoir (436), Pond (378), Mulching (484), Critical Area Planting (342)	Includes cost of all materials, equipment use and labor required to install excavation, compaction, HDPE pipe, HDPE coupling, screw gate.	Volume of Compacted Earthfill
436 Irrigation Reservoir	Embankment Reservoir ≤ 30 Acre-Feet	This is a small rectangular embankment reservoir with a principal spillway through the embankment controlled by a canal-type gate. It is designed to accumulate, store, and deliver water by gravity to an open ditch or non-pressurized pipeline, in excess of 5 cfs.	521 - Pond Sealing or Lining (521A, 521B, 521C, 521D), 320 - Irrigation Canal or Lateral, (320), Irrigation Pipeline (430), Irrigation Ditch Lining, (428), Pumping Plant (533), Irrigation Systems, Microirrigation 441 , Irrigation Systems, Sprinkler (442), Irrigation System, Surface and Subsurface (443), Irrigation Reservoir (436), Pond (378), Mulching (484), Critical Area Planting (342)	Includes cost of all materials, equipment use and labor required to install excavation, compaction, HDPE pipe, metal catwalk, screw gate.	Volume of Compacted Earthfill
436 Irrigation Reservoir	Fiberglass Tank	A 10,000 Gallon above ground, enclosed, fiberglass tank, is installed on 6" of well compacted drain rock support pad. The tank is used to store water from a reliable source for irrigation of areas less than 3 acres. The scenario assumes a 19 feet diameter gravel base pad to extend a minimum of 2 feet past the base of tank for adequate foundation support.	Irrigation Pipeline, (430), Irrigation System, Microirrigation, (441), Sprinkler System (442), Pumping Plant, (533), Irrigation Reservoir (436)	Includes cost of all materials, equipment use and labor required to install aggregate, compaction, fiberglass storage tank. This cost estimate scenario is for cost of the tank and pad only and does not include estimate for pumps, pipe, fittings for the pipeline, or catchment area.	Volume of Tank Storage
436 Irrigation Reservoir	Steel Tank	A 20,000 Gallon, above ground, enclosed fabricated Steel or bottomless Corrugated Metal (with plastic liner and cover) tank with fittings, is installed on 6" of well compacted drain rock support pad with sand padding (CM tank), to store water from a reliable source for irrigation of an area less than 5 acres. The scenario also assumes a base pad to extend a minimum of 2 feet past the base of tank for adequate foundation support.	Irrigation Pipeline, (430), Irrigation System, Microirrigation, (441), Sprinkler System (442), Pumping Plant, (533), Irrigation Reservoir (436)	Includes cost of all materials, equipment use and labor required to install earthfill, compaction, corrugated metal storage tank. This cost estimate scenario is for cost of the tank and pad only and does not include the cost for pumps, pipe, or fittings for the pipeline.	Volume of Tank Storage

436	Irrigation Reservoir	Plastic Tank	A 3,000 Gallon, above-ground, High Density Polyethylene plastic enclosed tank, is installed on 6" of well-compacted drain rock or a 4" thick reinforced concrete support pad, to store water from a reliable source for irrigation of an area less than one acre. The scenario assumes a 126" diameter gravel base or concrete pad to extend a minimum of 12" past the base of tank for adequate foundation support.		Irrigation Pipeline, (430), Irrigation System, Microirrigation, (441), Sprinkler System (442), Pumping Plant, (533), Irrigation Reservoir (436)	Includes cost of all materials, equipment use and labor required to install aggregate, compaction, poly-enclosed storage tank. This cost estimate scenario is for cost of the tank and pad only and does not include estimate for pumps, pipe, or connecting fittings.	Volume of Tank Storage
441	Irrigation System, Microirrigation	Surface Micro with Screen Filter	A micro-irrigation system using drip tape or similar type micro irrigation material on the surface for vegetables with water source being well. Spacing of drip tape, drip line, bubblers or similar type micro irrigation material is based on soil type or row alignment but will typically vary from 18" to 36".		Pumping Plant (533), Irrigation Water Management (449), Irrigation Pipeline (430), Conservation Crop Rotation (328), Nutrient Management (590)	Includes cost of all materials, equipment use and labor required to install drip tubing (includes plumbing connection to supply and flushing laterals with emitters built in) and screen filter.	
441	Irrigation System, Microirrigation	Surface Micro with Sand Media Filter	A micro-irrigation system using drip tape or similar type micro irrigation placed on the soil surface for vegetables with water sources being surface waters. Spacing of drip tape similar type micro irrigation material is based on soil type or row alignment but will typically vary from 18" to 36".		Pumping Plant (533), Irrigation Water Management (449), Irrigation Pipeline (430), Conservation Crop Rotation (328), Nutrient Management (590)	Includes cost of all materials, equipment use and labor required to install drip tubing (includes plumbing connection to supply and flushing laterals with emitters built in) and sand or media filter (including manual control valves).	
441	Irrigation System, Microirrigation	SDI (Subsurface Drip Irrigation) less than 50 acres Using a Well Water Source	A subsurface drip irrigation system (SDI) with a lateral spacing between 30-59 inches. This buried drip irrigation system utilizes a thinwall dripperline or tape with inline emitters at a uniform spacing for the system laterals. The dripperline or tape is normally installed by being plowed in approx 10-14 inches deep with a chisel shank type plow equipped with tape reels. This type of drip irrigation system utilizes a buried supply manifold with automated zone control valves and a buried flush manifold with manual flush valves.	Pipe upstream of the filter should use payment schedule for irrigation pipeline (Code 430)	Pumping Plant (533), Irrigation Water Management (449), Irrigation Pipeline (430), Conservation Crop Rotation (328), Nutrient Management (590)	Includes cost of all materials, equipment use and labor required to install permanent micro-irrigation system includes an automated filter station, flow meter, backflow prevention device, automated control box or timer, thinwall dipperline or tape for laterals, both a supply and a flushing manifold and numerous types of water control valves. This is an all-inclusive system starting with the filter station including all required system components out to the flush valves.	
441	Irrigation System, Microirrigation	SDI (Subsurface Drip Irrigation)	A subsurface drip irrigation system (SDI) with a lateral spacing between 37-59 inches. This buried drip irrigation system utilizes a thinwall dripperline or tape with inline emitters at a uniform spacing for the system laterals. The dripperline or tape is normally installed by being plowed in approx 10-14 inches deep with a chisel shank type plow equipped with tape reels. This type of drip irrigation system utilizes a buried supply manifold with automated zone control valves and a buried flush manifold with manual flush valves.	Pipe upstream of the filter should use payment schedule for irrigation pipeline (Code 430)	Pumping Plant (533), Irrigation Water Management (449), Irrigation Pipeline (430), Conservation Crop Rotation (328), Nutrient Management (590)	Includes cost of all materials, equipment use and labor required to install a permanent micro-irrigation system including an automated filter station, flow meter, backflow prevention device, automated control box or timer, thinwall dipperline or tape for laterals, both a supply and a flushing manifold and numerous types of water control valves. This is an all-inclusive system starting with the filter station including all required system components out to the flush valves.	
441	Irrigation System, Microirrigation	Polytube and Emitter Replacement for Old Microjet Systems	Replacement of orchard, vineyard, groves micro-irrigation system components that have <u>exceeded 15 years of service (design lifespan)</u> OR that do not meet current 441 practice standard criteria. Replace above ground durable tubing, emitters or sprayers with new durable tubing, emitters or sprayers.		Pumping Plant (533), Irrigation Water Management (449), Irrigation Pipeline (430), Conservation Crop Rotation (328), Nutrient Management (590)	Includes cost of all materials, equipment use and labor required to install drip tubing (includes plumbing connection to supply and flushing laterals).	
441	Irrigation System, Microirrigation	Microjet	A micro-irrigation system, utilizing micro-jets to provide irrigation for an orchard or other specialty crops grown in a grid pattern.	Pipe upstream of the filter should use payment schedule for irrigation pipeline (Code 430)	Pumping Plant (533), Irrigation Water Management (449), Irrigation Pipeline (430), Conservation Crop Rotation (328), Nutrient Management (590)	Includes cost of all materials, equipment use and labor required to install permanent micro-irrigation system includes an automated filter station, flow meter, backflow prevention device, automated control box or timer, emitters, both a supply and a flushing manifold and numerous types of water control valves. Pipe downstream of the filter (i.e. mainline, sub main, manifold, flush manifold) is included. This is an all-inclusive system starting with the filter station including all required system components out to the flush valves.	
441	Irrigation System, Microirrigation	Surface PE with Emitters	A micro-irrigation system, utilizing surface PE tubing (can be placed on trellis or above ground) with emitters to provide irrigation for an orchard, vineyard, or other specialty crop grown in a grid pattern. The typical system is a permanent system installed on a vineyard on the ground surface or trellis. This system utilizes emitters at each tree or plant as the water application device.	Pipe upstream of the filter should use payment schedule for irrigation pipeline (Code 430)	Pumping Plant (533), Irrigation Water Management (449), Irrigation Pipeline (430), Nutrient Management (590)	Includes cost of all materials, equipment use and labor required to install permanent micro-irrigation system includes an automated filter station, backflow prevention device, automated control box or timer, emitters, both a supply and a flushing manifold and numerous types of water control valves. Pipe downstream of the filter (i.e. mainline, sub main, manifold, flush manifold) is included. This is an all-inclusive system starting with the filter station including all required system components out to the flush valves.	

441 Irrigation System, Microirrigation	Nursery	A micro-irrigation system, utilizing drippers or spray stakes to provide irrigation for a nursery or other specialty crops grown in a grid pattern.	Pipe upstream of the filter should use payment schedule for irrigation pipeline (Code 430)	Pumping Plant (533), Irrigation Water Management (449), Irrigation Pipeline (430), Conservation Crop Rotation (328), Nutrient Management (590)	Includes cost of all materials, equipment use and labor required to install permanent micro-irrigation system includes an automated filter station, flow meter, backflow prevention device, automated control box or timer, emitters, both a supply and a flushing manifold and numerous types of water control valves. Pipe downstream of the filter (i.e. mainline, sub main, manifold, flush manifold) is included. This is an all-inclusive system starting with the filter station including all required system components out to the flush valves.
441 Irrigation System, Microirrigation	Microirrigation High Tunnel	A micro-irrigation system, utilizing surface PE tubing (can be placed on trellis or above ground) with emitters to provide irrigation for crops grown under a seasonal high tunnel. The typical system is a permanent system, installed on the ground surface under a 30' x 72' seasonal high tunnel. This system utilizes drip tape on each plant row as the water application device.		Pumping Plant (533), Irrigation Water Management (449), Irrigation Pipeline (430), Conservation Crop Rotation (328), Nutrient Management (590)	Includes cost of all materials, equipment use and labor required to install filter system, drip tape, PVC manifolds, and submains, valves, fittings, etc.
442 Sprinkler System	Center Pivot	Installation of a low pressure center pivot system.		Pumping Plant (533), Irrigation Water Management (449), Irrigation Pipeline (430)	Includes cost of all materials, equipment use and labor required to install a center pivot including concrete pad or anchoring device, pivot structure, spans, nozzles, control pad and end of field stops.
442 Sprinkler System	Linear Move	Installation of a linear or lateral move sprinkler system with sprinklers on drops with or without drag hoses to improve irrigation efficiency and reduce soil erosion.		Pumping Plant (533), Irrigation Water Management (449), Irrigation Pipeline (430)	Includes cost of all materials, equipment use and labor required to install a linear move system including central and lateral towers, pipes, sprinklers and controllers.
442 Sprinkler System	Solid Set	The typical installation will be on cropland with some existing inefficient irrigation. The farm is typically producing specialty crops, such as fresh vegetables.		Pumping Plant (533), Irrigation Water Management (449), Irrigation Pipeline (430)	Includes cost of all materials, equipment use and labor required to install pipe, sprinklers, and connectors.
442 Sprinkler System	Traveling Gun	A portable big gun system used to apply waste water from animal feeding operations. The scenario describes an irrigation system that is typical to confined animal feeding operations.		Irrigation Pipeline (430), Pumping Plant (533), Irrigation Water Management (449), Conservation Crop Rotation (328), Cover Crop (340), Nutrient Management (590), Waste Utilization (633), Manure Transfer (634)	Includes cost of all materials, equipment use and labor required to install impact sprinkler gun, gun cart, hose, hose caddy, drive system, control, fittings and adaptors.
442 Sprinkler System	Retrofit of Existing Sprinkler System	The scenario involves changing nozzles on center pivot or lateral move irrigation systems to low-pressure systems to improve efficiency of water use and reduce energy use. This scenario is intended for cropland areas where the objective is water conservation.		Irrigation Pipeline (430), Pumping Plant (533), Irrigation Water Management (449)	Includes cost of all materials, equipment use and labor required to install sprinkler package, including pressure regulators, drop lines, weights and hoses.
442 Sprinkler System	VRI System Renovation	Upgrading existing irrigation system with a more uniform and efficient (vendor provided and installed modular system) center pivot system for the purpose of protecting water quality and utilizing water effectively. Integrating variable application technology onto a center pivot system for precision zone placement of water along the length of the system for water savings. A variable application over the field based on EM mapping and a grid system. This scenario is to renovate a previously retrofitted irrigation system with proper modular components and pressure regulating devices, along with other needed components to install a VRI system for more effective utilization of water.		Irrigation Pipeline (430), Pumping Plant (533), Irrigation Water Management (449)	Includes cost of all materials, equipment use and labor required to install flow meter, expansion nodes, programmable controller, variable rate valve and tubing, pressure regulating valve, Global Positioning System (GPS).
442 Sprinkler System	VRI New System	Upgrading existing irrigation system with a more uniform and efficient (vendor provided and installed modular system) center pivot system for the purpose of protecting water quality and utilizing water effectively. Integrating variable application technology onto a center pivot system for precision zone placement of water along the length of the system for water savings. A variable application over the field based on EM mapping and a grid system. This scenario is a new system to replace an old system which has exceeded its practice life or is leaking resulting in water wastage, with the proper components, nozzles, and pressure regulating devices, along with other needed components for installation of a VRI system for more effective utilization of water.		Irrigation Pipeline (430), Pumping Plant (533), Irrigation Water Management (449)	Includes cost of all materials, equipment use and labor required to install a center pivot including concrete pad or anchoring device, pivot structure, spans, nozzles, control pad and end of field stops, flow meter, expansion nodes, programmable controller, variable rate valve and tubing, pressure regulating valve, Global Positioning System (GPS).

442 Sprinkler System	VRI System Retrofit	Upgrading existing irrigation system with a more uniform and efficient (vendor provided and installed modular system) center pivot system for the purpose of protecting water quality and utilizing water effectively. Integrating variable application technology onto a center pivot system for precision zone placement of water along the length of the system for water savings. A variable application over the field based on EM mapping and a grid system. This scenario is to retrofit an existing high pressure system with low pressure drop nozzles and to add the proper components to install a VRI system for more effective utilization of water.		Irrigation Pipeline (430), Pumping Plant (533), Irrigation Water Management (449)	Includes cost of all materials, equipment use and labor required to install sprinkler package, including pressure regulators, drop lines, weights and hoses including end gun shut off, flow meter, expansion nodes, programmable controller, variable rate valve and tubing, pressure regulating valve, Global Positioning System (GPS).
443 Irrigation System, Surface and Subsurface	Ebb and Flow Benches	Water tight benches, that are housed within the interior of a greenhouse, are installed that re-circulates (ebb and flow) water for irrigation purposes as a permanent subsurface irrigation system. The bench is flooded then slowly drained to allow water to upflux of water into potted plants located on the bench.		Irrigation Pipeline (430), Irrigation Reservoir (436), Pumping Plant (533), Underground Outlet (620)	Includes cost of all materials, equipment use and labor required to install sliding benches or troughs, filters and automated zone control valves.
443 Irrigation System, Surface and Subsurface	Wide Lateral Spacing	A subsurface irrigation system that utilizes subsurface drip irrigation tubing as laterals spaced 20-26 feet apart. This subsurface irrigation system utilizes a thinwall dripperline or tape with inline emitters at a uniform spacing for the system laterals. The dripperline or tape is normally installed by being plowed in approx 10-14 inches deep with a chisel shank type plow equipped with tape reels. This type of irrigation system utilizes a buried supply manifold with automated zone control valves and a buried flush manifold with manual flush valves.	The water supply line from the water source to the filter station is an irrigation pipeline (430) and is not included as part of this system.		Includes cost of all materials, equipment use and labor required to install This permanent subsurface irrigation system includes an automated filter station, flow meter, backflow prevention device, automated control box or timer, the thinwall dripperline or tape for laterals, both a supply and a flushing manifold and numerous types of water control valves.
443 Irrigation System, Surface and Subsurface	Subsurface Irrigation System	An underground conduit irrigation system with laterals spaced at 40 feet. The buried laterals consist of 4" subsurface tubing installed at a depth of 2-3 feet. This system begins at the supply control valve out to the discharge point into an existing outlet.		Pumping Plant (533), Irrigation Water Management (449), Irrigation Pipeline (430)	Includes cost of all materials, equipment use and labor required to install water level control structure (stoplog/inline type), HDPE pipe, control (ball) valve, supply manifolds with manual control valves and drainage manifolds which regulate the water table with operable structures.
449 Irrigation Water Management	Basic IWM	A low Intensity irrigation water management system for producers using a checkbook method (crop grown, soil moisture conditions prior to irrigation, dates of irrigation start and stop, depths of irrigation applied, duration of irrigations, and amount of rainfall). For a typical scenario, soil moisture is determined by the feel method, volumes of irrigation water are based on energy or water district bills, records are kept on paper copies, and calculations are made by hand.		Irrigation System Microirrigation (441), Sprinkler System (442), Irrigation System Surface and Subsurface, (443)	Includes the cost of practicing proper irrigation scheduling with appropriate record records of soil moisture, crop water use, rainfall amounts and irrigation timing and amounts. Irrigations are scheduled based on measured crop water requirements. At the end of the irrigation season all the data has been reviewed and evaluated. Improvements planned for the next season have been determined.
449 Irrigation Water Management	Intermediate IWM	A medium intensity irrigation water management system for producers using a checkbook method (crop grown, soil moisture conditions prior to irrigation, dates of irrigation start and stop, depths of irrigation applied, duration of irrigations, and amount of rainfall). For a typical scenario, soil moisture is determined by in field moisture sensors with manual downloads. Irrigation amounts are recorded from a flow meter near the pump. Records are input manually into an irrigation scheduling computer program.		Irrigation System Microirrigation (441), Sprinkler System (442), Irrigation System Surface and Subsurface, (443)	Includes the cost of practicing proper irrigation scheduling with appropriate record records of soil moisture, crop water use, rainfall amounts and irrigation timing and amounts. Irrigations are scheduled based on measured crop water requirements. At the end of the irrigation season all the data has been reviewed and evaluated. Improvements planned for the next season have been determined.
449 Irrigation Water Management	Advanced IWM	A high intensity irrigation water management system for producers using a checkbook method with advanced methods of determining irrigation water applied, and estimating crop evapotranspiration, monitoring field soil moisture, or monitoring crop temperature stress. Typical methods include flow measurement, daily record keeping, and use of real-time evapotranspiration estimates (such as those provided dedicated weather stations) and/or soil moisture sensors with automated data logging to monitor field soil moisture content and/or crop temperature. For this scenario, soil moisture is determined by automated soil moisture monitoring stations equipped with telemetry data. Irrigation amounts are recorded from a flow meter near the pump. Telemetry data is automatically sent to a computer with irrigation software. Some data such as total water applied may be entered into computer software manually.		Irrigation System Microirrigation (441), Irrigation System Sprinkler (442), Irrigation System Surface and Subsurface (443)	Includes the cost of practicing proper irrigation scheduling with appropriate record records of soil moisture, crop water use, rainfall amounts and irrigation timing and amounts. Irrigations are scheduled based on measured crop water requirements and soil moisture measurements. At the end of the irrigation season all the data has been reviewed and evaluated. Improvements planned for the next season have been determined.

449 Irrigation Water Management	Variable Rate IWM	A high intensity irrigation water management system for producers employing a Variable Rate Irrigation system. IWM is carried out using a checkbook method with advanced methods of determining irrigation water applied, and estimating crop evapotranspiration, monitoring field soil moisture, or monitoring crop temperature stress, and variable rate application of irrigation water. Typical methods include flow measurement, daily record keeping, and use of real-time evapotranspiration estimates (such as those provided dedicated weather stations) and/or soil moisture sensors with automated data logging to monitor field soil moisture content and/or crop temperature. Soil moisture is determined by automated soil moisture monitoring stations equipped with telemetry data. Irrigation amounts are recorded from a flow meter near the pump. Telemetry data is automatically sent to a computer with irrigation software. Irrigator also receives real time data via mobile phone applications. Some data such as total water applied may be entered into computer software manually.	Irrigation System Microirrigation (441), Irrigation System Sprinkler (442), Irrigation System Surface and Subsurface (443)	Includes the cost of practicing proper irrigation scheduling with appropriate record records of soil moisture, crop water use, rainfall amounts and irrigation timing and amounts. Irrigations are scheduled based on measured crop water requirements, soil moisture measurements, and variable rate application of irrigation water. At the end of the irrigation season all the data has been reviewed and evaluated. Improvements planned for the next season have been determined.	
449 Irrigation Water Management	Soil Moisture Sensors	Includes soil moisture sensors such as tensiometers, gyp blocks, capacitance sensors etc, that are read to determine point in time soil moisture by depth. Typical Scenario involves installation of 4 resistance sensor blocks per site and 2 sites per typical 60 acre field of irrigated cropland. One soil moisture meter can be used on multiple sites.	Irrigation Water Management, (Code 449), Structure for water Control, (Code 587), Conservation Crop Rotation (Code 528), Nutrient Management, (Code 590).	Includes cost of all materials, equipment use and labor required to install soil moisture meters and sensors and utilize sensors and readings in assisting making IWM decisions during first year.	
449 Irrigation Water Management	Soil Moisture Sensors with Data Recorder	Includes soil moisture sensors such as tensiometers, gyp blocks, capacitance sensors etc, that are read to determine point in time soil moisture by depth. Typical Scenario involves installation of 4 resistance sensor blocks per site and 2 sites per typical 60 acre field of irrigated cropland. Typical Scenario involves installation of 4 resistance sensors per site, with 2 sites serving a typical 60 acre sprinkler irrigated cropland field. The data logger cost component used for this scenario requires one logger per monitoring site.	Irrigation Water Management, (Code 449), Structure for water Control, (Code 587), Conservation Crop Rotation (Code 528), Nutrient Management, (Code 590).	Includes cost of all materials, equipment use and labor required to install soil moisture sensors and data logger to log continuous soil moisture data that can be downloaded to a personal computer and associated graphing software in assisting making IWM decision during first year.	
460 Land Clearing	Heavy Equipment	Site preparation of a field with dozer or equivalent heavy equipment to acheive a conservation objective. Typical scenario is approximately 1 acre or less of trees and shrubs to be cleared.	Critical Area Planting, (Code 342)	Includes the cost of all materials, equipment use and labor required for clearing trees any diameter, grubbing and removing stumps.	
462 Precision Land Forming	Minor Shaping	The land surface is shaped or leveled to a specific elevation and grade for various land uses. Cuts and fills are small.	Critical Area Planting, (Code 342), Diversion, (Code 362), Grassed Waterway, (Code 412), Terrace, (Code 600)	Includes cost of all materials, equipment use and labor required to precision land form a field to the designed grade.	
464 Irrigation Land Leveling	Irrigation Land Leveling	This is scenario will level an irrigated crop land surface to enhance uniform flow of surface water to improve irrigation efficiency.	Irrigation System, Surface and Subsurface (443), Surface Drain, Field Ditch (407), Irrigation Field Ditch (388), Irrigation Water Management (449), Structure for Water Control (587)	Includes cost of all materials, equipment use and labor required to land level a field to the designed grade using dirtpans/carry-all/pan-scraper for a surface irrigation system.	
466 Land Smoothing	Minor Shaping	Removing irregularities on the land surface of cropland by use of regular, on-farm equipment.	Critical Area Planting (342), Diversion (362), Grassed Waterway, (412), Terrace (600)	Includes cost of all materials, equipment use and labor required to smooth a field to the designed grade using disc or land level.	
466 Land Smoothing	Heavy Shaping	Removing irregularities on the land surface of cropland by use of heavy equipment.	Critical Area Planting (342), Diversion (362), Grassed Waterway, (412), Terrace (600)	Includes cost of all materials, equipment use and labor required to smooth a field to the designed grade using backhoe or dozer.	
468 Lined Waterway or Outlet	Turf Reinforced Matting	Install a deep trapezoidal or parabolic shaped waterway lined with Turf Reinforced Matting (TRM). Half the channel is excavated. Excess excavation is spoiled in the immediate area. TRM is installed over the wetted area of the waterway to prevent scour and aid in waterway establishment.	Subsurface Drain (606), Underground Outlet (620), Structure for Water Control (587), and Critical Area Planting (342)	Includes the cost of all materials, equipment use and labor required to install excavation, spoil spreading and Turf Reinforcement Mat (TRM).	Lined waterway width is measured from top of bank to top of bank. Square Foot of Waterway
468 Lined Waterway or Outlet	Rock Lined - 12"or less	Install deep trapezoidal or parabolic shaped waterway lined with riprap (D100 = 9", Velocity ~ 8 ft/sec). Excess excavation is spoiled in the immediate area. Riprap is installed over 100% of the width of the waterway to prevent scour.	Subsurface Drain (606), Underground Outlet (620), Structure for Water Control (587), and Critical Area Planting (342)	Includes the cost of all materials, equipment use and labor required to install excavation, spoil spreading, geotextile fabric, rock rip rap.	Lined waterway width is measured from top of bank to top of bank. Square Foot of Waterway
468 Lined Waterway or Outlet	Concrete	Install deep trapezoidal or parabolic shaped waterway lined with concrete. Excess excavation is spoiled in the immediate area. Concrete is installed over 100% of the width of the waterway to prevent scour.	Subsurface Drain (606), Underground Outlet (620), Structure for Water Control (587), and Critical Area Planting (342)	Includes the cost of all materials, equipment use and labor required to install excavation, spoil spreading, earthfill, reinforced concrete.	Lined waterway width is measured from top of bank to top of bank. Square Foot of Waterway
468 Lined Waterway or Outlet	Articulated Block	Install wide trapezoidal or parabolic shaped lined articulated block or similar waterway according to the manufacturer's recommendations. Excess excavation is spoiled in the immediate area. The articulated block or similar manufactured product is installed over the wetted area of the lined waterway to prevent scour and aid in waterway establishment.	Subsurface Drain (606), Underground Outlet (620), Critical Area Planting (342)	Includes the cost of all materials, equipment use and labor required to install excavation, spoil spreading and articulated block.	The lined waterway width is a measurement of the surface area covered by the product. Square Foot of Waterway

484 Mulching	Erosion Control Blanket	Installation of erosion control blanket on critical areas with steep slopes, grassed waterways or diversions. Blanket is typically made of coconut coir, wood fiber, straw and is typically covered on both sides with polypropylene netting. Used to help control erosion and establish vegetative cover.	Irrigation Water Management (449), Pest Management (595), Nutrient Management (590)	Includes the cost of all materials, equipment use and labor required to place and spread erosion control blanket (composite of natural fibers with reinforced polymer netting).
484 Mulching	Natural Material - Full Coverage	Application of straw mulch or other other state approved natural material to reduce erosion and facilitate the establishment of vegetative cover. Mulch provides full coverage and is typically used with critical area planting. Typical scenario ranges from a 0.1 to 1.0 acre disturbed site around a newly constructed structural practice. The potential for soil erosion is high and mulch is needed to stabilize the soil and facilitate the establishment of vegetative cover.	Irrigation Water Management (449), Pest Management (595), Nutrient Management (590)	Includes the cost of all materials, equipment use and labor required to place and spread straw mulch (non-organic and organic) or other state approved natural mulch.
490 Tree and Shrub Site Preparation	Chemical - Ground Application	This practice involves the use of various herbicides applied using ground-based machinery (and some hack-n-squirt treatment of select trees) in order to remove undesirable vegetation and improve site conditions for establishing trees and/or shrubs.	Tree and Shrub Establishment (612), Brush Management (314), Field Border (386), Hedgerow Planting (422), Pest Management (595), Range Planting (550), Riparian Forest Buffer (391), Upland Wildlife Habitat Management (645), Wetland Wildlife Habitat Management (644), Wetland Restoration (647), Wetland Enhancement (659), Wetland Creation (658), Bedding (311)	Includes the cost of materials, equipment use and labor for the application of low cost chemicals in low volumes.
490 Tree and Shrub Site Preparation	Chemical - Hand Application	This practice involves the use of various herbicides applied using backpack sprayer or similar equipment, and hack-n-squirt for tree control, in order to remove undesirable vegetation and improve site conditions for establishing trees and/or shrubs.	Tree and Shrub Establishment (612), Brush Management (314), Field Border (386), Hedgerow Planting (422), Pest Management (595), Range Planting (550), Riparian Forest Buffer (391), Upland Wildlife Habitat Management (645), Wetland Wildlife Habitat Management (644), Wetland Restoration (647), Wetland Enhancement (659), Wetland Creation (658), Bedding (311)	Includes the cost of materials, equipment use and labor for the application of low cost chemicals in low volumes.
490 Tree and Shrub Site Preparation	Chemical - Aerial Application	This practice involves the use of herbicides applied by aerial application in order to remove undesirable vegetation and improve site conditions for establishing trees and/or shrubs.	Tree and Shrub Establishment (612), Brush Management (314), Field Border (386), Hedgerow Planting (422), Pest Management (595), Range Planting (550), Riparian Forest Buffer (391), Upland Wildlife Habitat Management (645), Wetland Wildlife Habitat Management (644), Wetland Restoration (647), Wetland Enhancement (659), Wetland Creation (658), Bedding (311)	Includes the cost of materials, equipment use and labor for the application of low cost chemicals in low volumes.
490 Tree and Shrub Site Preparation	Mechanical - Very Light	This practice involves the use of light/moderate machinery to clear above ground vegetation and to also rip/cut/lift underground root systems in order to improve site conditions for establishing trees and/or shrubs.	Tree and Shrub Establishment (612), Brush Management (314), Field Border (386), Hedgerow Planting (422), Pest Management (595), Range Planting (550), Riparian Forest Buffer (391), Upland Wildlife Habitat Management (645), Wetland Wildlife Habitat Management (644), Wetland Restoration (647), Wetland Enhancement (659), Wetland Creation (658), Bedding (311)	Includes cost of all materials, equipment use and labor required for mechanical site preparation down to the soil to prepare an adequate seedbed prior to planting trees. This includes applications such as a mowing or light disk for lightly covered brush.
490 Tree and Shrub Site Preparation	Mechanical - Light	This practice involves the use of light/moderate machinery to clear above ground vegetation and to also rip/cut/lift underground root systems in order to improve site conditions for establishing trees and/or shrubs.	Tree and Shrub Establishment (612), Brush Management (314), Field Border (386), Hedgerow Planting (422), Pest Management (595), Range Planting (550), Riparian Forest Buffer (391), Upland Wildlife Habitat Management (645), Wetland Wildlife Habitat Management (644), Wetland Restoration (647), Wetland Enhancement (659), Wetland Creation (658), Bedding (311)	Includes cost of all materials, equipment use and labor required for mechanical site preparation down to the soil to prepare an adequate seedbed prior to planting trees. This includes applications such as a bush hog, scalping, or subsoiling for brush 1" - 2" DBH.
490 Tree and Shrub Site Preparation	Mechanical - Medium	This practice involves the use of machinery to treat an area in order to improve site conditions for establishing trees and/or shrubs. Typical sites include trees and brush cover that is not appropriate to the site or providing the desired condition for the landowner.	Tree and Shrub Establishment (612), Brush Management (314), Field Border (386), Hedgerow Planting (422), Pest Management (595), Range Planting (550), Riparian Forest Buffer (391), Upland Wildlife Habitat Management (645), Wetland Wildlife Habitat Management (644), Wetland Restoration (647), Wetland Enhancement (659), Wetland Creation (658), Bedding (311)	Includes cost of all materials, equipment use and labor required for mechanical site preparation down to the soil to prepare an adequate seedbed prior to planting trees. This includes applications such as a single-drum chopping or harrowing for brush greater than 2"- 5" DBH.
490 Tree and Shrub Site Preparation	Mechanical - Heavy	This practice involves the use of heavy machinery to treat an area in order to improve site conditions for establishing trees and/or shrubs. Typical sites include trees and brush cover that is not appropriate to the site or providing the desired condition for the landowner.	Tree and Shrub Establishment (612), Brush Management (314), Field Border (386), Hedgerow Planting (422), Pest Management (595), Range Planting (550), Riparian Forest Buffer (391), Upland Wildlife Habitat Management (645), Wetland Wildlife Habitat Management (644), Wetland Restoration (647), Wetland Enhancement (659), Wetland Creation (658), Bedding (311)	Includes cost of all materials, equipment use and labor required for mechanical site preparation down to the soil to prepare an adequate seedbed prior to planting trees. This includes applications such as a raking, V-blading, shearing, KG-blading for greater than 5" DBH.

490 Tree and Shrub Site Preparation	Heavy Mechanical plus Chemical	This practice involves the use of heavy machinery in combination with a chemical to treat an area in order to improve the site conditions for establishing tree and/or shrubs. This practice involves the use of heavy machinery to treat an area in order to improve site conditions for establishing trees and/or shrubs. Typical sites include trees and brush cover that is not appropriate to the site or providing the desired condition for the landowner.	Tree and Shrub Establishment (612), Brush Management (314), Field Border (386), Hedgerow Planting (422), Pest Management (595), Range Planting (550), Riparian Forest Buffer (391), Upland Wildlife Habitat Management (645), Wetland Wildlife Habitat Management (644), Wetland Restoration (647), Wetland Enhancement (659), Wetland Creation (658), Bedding (311)	Includes cost of all materials, equipment use and labor required for low cost chemicals in low volumes including heavy mechanical operations requiring a water filled roller chopper or dozers.
490 Tree and Shrub Site Preparation	Windbreak Site Preparation	This practice involves the use of various mechanical methods to allow for the planting of a windbreak. Site preparation includes mechanical site preparation that includes appropriate methods to allow for planting of the site. This practice may be applied on all lands needing treatment to facilitate establishment of trees and/or shrubs to facilitate establishment of a windbreak. Typical sites include open land such as citrus groves.	Tree and Shrub Establishment (612), Brush Management (314), Field Border (386), Hedgerow Planting (422), Pest Management (595), Range Planting (550), Riparian Forest Buffer (391), Upland Wildlife Habitat Management (645), Wetland Wildlife Habitat Management (644), Wetland Restoration (647), Wetland Enhancement (659), Wetland Creation (658)	Includes the cost of materials, equipment use and labor for the removal of brush and hardwoods (specifically citrus trees) for the construction of windbreaks.
512 Forage and Biomass Planting	Remediation - Seed & Seeding- Introduced Perennial Grasses	Establish or reseed adapted introduced grasses to improve or maintain livestock/wildlife nutrition and health, extend the length of the grazing season, and provide soil cover to reduce erosion. Used for either conventional or no-till seeding of perennial introduced warm season grasses for pasture, hayland, and wildlife openings.	Pest Management (595); Prescribed Grazing (528); Prescribed Burning (338), Brush Management (314)	Includes the cost of all materials, equipment use and labor required to install an adequate seedbed herbicide for site preparation, no-till/grass drill, introduced perennial grass and fertilizer and lime for establishment.
512 Forage and Biomass Planting	Seedbed Prep. Seed & Seeding- Introduced Perennial Grasses Organic	Establish adapted introduced grasses to improve or maintain livestock/wildlife nutrition and health, extend the length of the grazing season, and provide soil cover to reduce erosion. Used for either conventional or no-till seeding of perennial introduced warm season grasses for pasture.	Pest Management (595); Prescribed Grazing (528); Prescribed Burning (338), Brush Management (314)	Includes the cost of all materials, equipment use and labor required to install an adequate seedbed, no-till/grass drill, introduced organic perennial grass and organic fertilizer for establishment.
512 Forage and Biomass Planting	Overseeding Legumes	Establishment of legumes for the purpose of increasing plant diversity, soil quality and fertility, and plant health and enhancing the quality of forage.	Pest Management (595); Prescribed Grazing (528); Prescribed Burning (338), Brush Management (314)	Includes the cost of all materials, equipment use and labor required to install an adequate seedbed, legumes, no-till/grass drill, and fertilizer and lime for establishment.
512 Forage and Biomass Planting	Seedbed Prep. Seed & Seeding- Introduced Perennial Grasses	Establish adapted introduced grasses to improve or maintain livestock/wildlife nutrition and health, extend the length of the grazing season, and provide soil cover to reduce erosion. Used for either conventional or no-till seeding of perennial introduced warm season grasses for pasture.	Pest Management (595); Prescribed Grazing (528); Prescribed Burning (338), Brush Management (314)	Includes the cost of all materials, equipment use and labor required to install an adequate seedbed herbicide for site preparation, no-till/grass drill, introduced perennial grass and fertilizer and lime for establishment.
512 Forage and Biomass Planting	Grass Establishment-Sprigging	Sprigging new grasses with sprigging application for the purpose of providing forage, increasing plant diversity, soil quality and fertility, and plant health.	Pest Management (595); Prescribed Grazing (528); Prescribed Burning (338), Brush Management (314)	Includes the cost of all materials, equipment use and labor required to install an adequate seedbed, herbicide for site preparation, introduced sprigged perennial grass, fertilizer and lime for establishment.
512 Forage and Biomass Planting	Seedbed Prep. Seed & Seeding- Native Perennial Warm Season Grasses	Establish adapted perennial native warm season grasses to improve or maintain livestock/wildlife nutrition and health, extend the length of the grazing season, and provide soil cover to reduce erosion. Used for either conventional or no-till seeding of perennial native warm season grasses for pasture.	Pest Management (595); Prescribed Grazing (528); Prescribed Burning (338), Brush Management (314)	Includes the cost of all materials, equipment use and labor required to install an adequate seedbed, herbicide for site preparation, no-till/grass drill, and native perennial grass.
512 Forage and Biomass Planting	Overseeding Legumes - Organic	Establishment of legumes for the purpose of increasing plant diversity, soil quality and fertility, and plant health and enhancing the quality of forage.	Pest Management (595); Prescribed Grazing (528); Prescribed Burning (338), Brush Management (314)	Includes the cost of all materials, equipment use and labor required to install an adequate seedbed, certified organic legumes, no-till/grass drill, and organic fertilizer for establishment.
516 Pipeline	PVC (Iron Pipe Size)	Below ground installation of PVC (Iron Pipe Size) pipeline. The unit is weight of pipe in pounds. PVC (IPS) is manufactured in sizes (nominal diameter) from ½-inch to 36-inch; typical practice sizes range from 1-inch to 4-inch; and typical scenario size is 1½-inch.	Critical Area Planting (342), Pumping Plant (533), Watering Facility (614), Water Harvesting Catchment (636)	Includes cost of all materials, equipment use and labor required to install trenching and backfill and pipe material.
521A Pond Sealing or Lining - Flexible Membrane	Flexible Membrane - Uncovered without liner drainage or venting	Installation of a flexible geosynthetic membrane liner, uncovered, to reduce seepage from ponds or waste storage impoundment structures.	Pond (378), Waste Storage Facility (313)	Includes the cost of all materials, equipment use and labor required to install synthetic liner and geotextile or soil cushion to protect the liner from subgrade damage.

521A Pond Sealing or Lining - Flexible Membrane	Flexible Membrane - Uncovered with liner drainage or venting	Installation of a flexible geosynthetic membrane liner, uncovered, to reduce seepage from ponds or waste storage impoundment structures.	Pond (378), Waste Storage Facility (313)	Includes the cost of all materials, equipment use and labor required to install synthetic liner, geonet and geotextile or soil cushion to protect the liner from subgrade damage.	
521A Pond Sealing or Lining - Flexible Membrane	Flexible Membrane - Covered without liner drainage or venting	Installation of a flexible geosynthetic membrane liner to reduce seepage from ponds or waste storage impoundment structures.	Pond (378), Waste Storage Facility (313)	Includes the cost of all materials, equipment use and labor required to install earthfill, compaction, synthetic liner and geotextile or soil cushion to protect the liner from subgrade damage.	
521A Pond Sealing or Lining - Flexible Membrane	Flexible Membrane - Covered with liner drainage or venting	Installation of a flexible geosynthetic membrane liner to reduce seepage from ponds or waste storage impoundment structures.	Pond (378), Waste Storage Facility (313)	Includes the cost of all materials, equipment use and labor required to install earthfill, compaction, synthetic liner, geonet and geotextile or soil cushion to protect the liner from subgrade damage.	
521B Pond Sealing or Lining - Soil Dispersant	Soil Dispersant - Covered	Construction of a compacted soil liner, treated with a soil dispersant, to reduce seepage from ponds or waste storage impoundment structures.	Pond (378), Waste Storage Facility (313)	Includes the cost of all materials, equipment use and labor required to install the dispersant with the soil liner under proper moisture conditions, compaction to the designed liner thickness, and placement of soil cover over the treated liner.	
521B Pond Sealing or Lining - Soil Dispersant	Soil Dispersant - Uncovered	Construction of a compacted soil liner, treated with a soil dispersant, to reduce seepage from ponds or waste storage impoundment structures.	Pond (378), Waste Storage Facility (313)	Includes the cost of all materials, equipment use and labor required to install the dispersant with the soil liner under proper moisture conditions and compaction to the designed liner thickness.	
521C Pond Sealing or Lining - Bentonite	Bentonite Treatment - Uncovered	Construction of a compacted soil liner, treated with bentonite, to reduce seepage from ponds or waste storage impoundment structures.	Pond (378), Waste Storage Facility (313)	Includes the cost of all materials, equipment use and labor required to install the bentonite with the soil under proper moisture conditions, compaction to the designed liner thickness.	
521C Pond Sealing or Lining - Bentonite	Bentonite Treatment - Covered	Construction of a compacted soil liner, treated with bentonite, to reduce seepage from ponds or waste storage impoundment structures.	Pond (378), Waste Storage Facility (313)	Includes the cost of all materials, equipment use and labor required to install the bentonite with the soil under proper moisture conditions, compaction to the designed liner thickness, and placement of soil cover over the treated liner.	
521D Pond Sealing or Lining - Compacted Clay Treatment	Material Onsite	Construction of a compacted soil liner, treated with compacted clay, to reduce seepage from ponds or waste storage impoundment structures.	Pond (378), Waste Storage Facility (313)	Includes the cost of all materials, equipment use and labor required to install of the soil liner with compaction under proper moisture conditions to the designed liner thickness, and soil cover to protect the finished liner.	
521D Pond Sealing or Lining - Compacted Clay Treatment	Material Hauled	Construction of a compacted soil liner, treated with compacted clay, to reduce seepage from ponds or waste storage impoundment structures.	Pond (378), Waste Storage Facility (313)	Includes the cost of all materials, equipment use and labor required to install the soil liner with compaction under proper moisture conditions to the designed liner thickness, and protection of the finished liner. Material hauled.	
528 Prescribed Grazing	Standard	Design and implementation of a grazing system that will enhance pasture/range condition and ecosystem function as well as optimize efficiency and economic return through monitoring and record keeping. Rotated on a cycle of 5 days or more.	Brush Management (314), Fence (382), Forage and Biomass Planting (512), Pipeline (516), Pond (378), Prescribed Burning (338), Range Planting (550), Upland Wildlife Habitat Management (645), Watering Facility (614), Water Well (642), Wetland Wildlife Habitat Management (644)	Includes the cost of rotationing herd(s), and monitoring (ex:photo points, stubble height after grazing, etc) and record keeping responses to grasses/forages to ensure adequate forage.	
528 Prescribed Grazing	Intensive	Design and implementation of a grazing system that will enhance pasture/range condition and ecosystem function as well as optimize efficiency and economic return through monitoring and record keeping. Rotated on a 3 - 4 day cycle.	Brush Management (314), Fence (382), Forage and Biomass Planting (512), Pipeline (516), Pond (378), Prescribed Burning (338), Range Planting (550), Upland Wildlife Habitat Management (645), Watering Facility (614), Water Well (642), Wetland Wildlife Habitat Management (644)	Includes the cost of rotationing herd(s), and monitoring (ex: trend, composition, production, etc.), and record keeping responses to grasses/forages to ensure adequate forage.	
533 Pumping Plant	Electric-Powered Pump ≤ 5 Hp	A submersible electric-powered pump is installed in a well or structure; or a close-coupled electric-powered centrifugal pump is mounted on a platform. It is used for watering livestock as part of a prescribed grazing system or tailwater recovery, or for transferring liquid waste in a waste transfer system.	Farmstead Energy Improvement (374), Livestock Pipeline (516), Waste Storage Facility (313), Waste Transfer (634), Watering Facility (614)	Includes the cost of all materials, equipment use and labor required to install an electric centrifugal or submersible pump.	Brake Horsepower
533 Pumping Plant	Electric-Powered Pump ≤ 5 HP with Pressure Tank	A submersible electric-powered pump is installed in a well or structure; or a close-coupled electric-powered centrifugal pump is mounted on a platform. It is used for watering livestock as part of a prescribed grazing system.	Farmstead Energy Improvement (374), Livestock Pipeline (516), Waste Storage Facility (313), Waste Transfer (634), Watering Facility (614)	Includes the cost of all materials, equipment use and labor required to install an electric centrifugal or submersible pump and pressure tank and foundation.	Brake Horsepower

533 Pumping Plant	Electric-Powered Pump >5 HP<=30 hp	This is a close-coupled, 3-phase, electric-powered centrifugal pump mounted on a platform for pressurizing a medium-sized (500 gpm and 50 psi) sprinkler or large microirrigation (1,000 gpm and 30 psi) system or a large-sized surface irrigation system (1,500 gpm) or a medium-sized (1,000 gpm and 25 psi) waste transfer system.	Farmstead Energy Improvement (374), Waste Storage Facility (313), Waste Transfer (634), Irrigation Water Management (449), Sprinkler System (442)	Includes the cost of all materials, equipment use and labor required to install electrical pump and appurtenances.	Brake Horsepower
533 Pumping Plant	Electric-Powered Pump <30 hp <=75	This is a close-coupled, 3-phase, electric-powered centrifugal pump mounted on a platform for pressurizing a large-sized 1,000 gpm and 50 psi) sprinkler or very large microirrigation (2,000 gpm and 30 psi) system or a very large-sized surface irrigation system (3,000 gpm) or a large-sized (2,000 gpm and 25 psi) waste transfer system.	Farmstead Energy Improvement (374), Waste Storage Facility (313), Waste Transfer (634), Irrigation Water Management (449), Sprinkler System (442)	Includes the cost of all materials, equipment use and labor required to install electrical pump and appurtenances.	Brake Horsepower
533 Pumping Plant	Electric-Powered Pump >75	This is a close-coupled, 3-phase, electric-powered centrifugal pump mounted on a platform for pressurizing a very large (2500 gpm and 50 psi) sprinkler or a large-sized surface irrigation system (3,000 gpm).	Farmstead Energy Improvement (374), Waste Storage Facility (313), Waste Transfer (634), Irrigation Water Management (449), Sprinkler System (442)	Includes the cost of all materials, equipment use and labor required to install electrical pump and appurtenances.	Brake Horsepower
533 Pumping Plant	Internal Combustion-Powered Pump ≤ 50HP	The typical scenario supports installation of a pump in an existing irrigation system or installation of a new pump on cropland. Size of pump is determined by required GPM and pressure derived from a design for specific irrigation system on cropland. The combination of higher solids content and volume require a larger horse power pump. This liquid manure pump is used to transfer semi-solid manure from a small reception pit located either below a barnyard or at the end of a free-stall barn or scrape alley.	Farmstead Energy Improvement (374), Waste Storage Facility (313), Waste Transfer (634), Irrigation Water Management (449), Sprinkler System (442), Irrigation Reservoir (436), Irrigation Reservoir (436)	Includes the cost of all materials, equipment use and labor to install a ≤ 50HP IC engine.	Brake Horsepower
533 Pumping Plant	Internal Combustion-Powered Pump > 50 to 70 HP	The typical scenario supports installation of a pump in an existing irrigation system or installation of a new pump on cropland. Size of pump is determined by required GPM and pressure derived from a design for specific irrigation system on cropland. The combination of higher solids content and volume require a larger horse power pump. This liquid manure pump is used to transfer semi-solid manure from a small reception pit located either below a barnyard or at the end of a free-stall barn or scrape alley.	Farmstead Energy Improvement (374), Waste Storage Facility (313), Waste Transfer (634), Irrigation Water Management (449), Sprinkler System (442), Irrigation Reservoir (436), Irrigation Reservoir (436)	Includes the cost of all materials, equipment use and labor to install a > 50 to 70HP IC engine.	Brake Horsepower
533 Pumping Plant	Internal Combustion-Powered Pump > 70 HP	The typical scenario supports replacement of a pump in an existing irrigation system or installation of a new pump on cropland. Size of pump is determined by required GPM and pressure derived from a design for specific irrigation system on cropland. Scenario could also be used for a pump for silage leachate, barnyard runoff, and milk house waste (as part of a waste transfer system).	Farmstead Energy Improvement (374), Waste Storage Facility (313), Waste Transfer (634), Irrigation Water Management (449), Sprinkler System (442), Irrigation Reservoir (436), Irrigation Reservoir (436)	Includes the cost of all materials, equipment use and labor to install a > 70HP IC engine.	Brake Horsepower
533 Pumping Plant	Variable Frequency Drive	This is an installation of electrical and electronic components designed to vary the frequency of the voltage to an electric motor and thus the ability to vary the speed of the motor. This directly affects pressure and flowrate.	Farmstead Energy Improvement (374), Waste Storage Facility (313), Waste Transfer (634), Irrigation Water Management (449), Sprinkler System (442)	Includes the cost of all materials, equipment use and labor to install a variable frequency drive.	Brake Horsepower
533 Pumping Plant	Photovoltaic-Powered Pump	The typical scenario assumes installation of a submersible solar-powered pump in a well. Note: It is generally not advisable to use a storage battery for a number of reasons. A storage tank is generally the most efficient method to store energy.	Farmstead Energy Improvement (374), Fence (383), Livestock Pipeline (516), Heavy Use Area Protection (516) Watering Facility (614)	Includes the cost of all materials, equipment use and labor to install pump, solar modules (panels), platform, control box, pole top mount brackets, wiring kit, pump connector kit, drop pipe, safety rope, pump cable, hardware kit.	Brake Horsepower
533 Pumping Plant	Windmill-Powered Pump	A windmill is installed in order to supply a reliable water source for livestock and/or wildlife.	Farmstead Energy Improvement (374), Livestock Pipeline (516), Watering Facility (614)	Includes the cost of all materials, equipment use and labor to install tower, concrete footings, wheel blade unit, sucker rod, down pipe, gear box, pump, plumbing, and well head protection concrete pad.	Diameter of Mill Wheel
550 Range Planting	Native -Standard prep	Establishment of a mixture of adapted native, range perennial species on a rangeland unit to improve forage condition, improve wildlife habitat and/or reduce erosion.	Brush Management (314), Fence (382), Forage and Biomass Planting (512), Pipeline (516), Pond (378), Prescribed Burning (338), Upland Wildlife Habitat Management (645), Watering Facility (614), Water Well (642), Wetland Wildlife Habitat Management (644)	Includes the cost of all materials, equipment use and labor to install adequate seedbed, no-till/grass drill, range drill, or broadcasting, native perennial grass.	
554 Drainage Water Management	Drainage Water Management	This scenario is the process of managing water discharges from surface and/or subsurface agricultural drainage systems by reducing nutrient loading into surface waters. Typical systems consist of a field with existing drainage tile lines and installed water control structures. The operator goes to the field in order to adjust water control structures (riser boards). While on site the date and adjustment information is recorded/logged.	Subsurface Drain (606), Surface Drain, Field Ditch (607), Surface Drain, Main or Lateral (680), Structure for Water Control (587), Nutrient Management (590)	Includes the cost of recording, monitoring and controlling water surface elevations and discharge from surface and subsurface drainage systems adjust water control structures (riser boards), and making necessary adjustments.	

558 Roof Runoff Structure	Roof Gutter, Small, 6 inches Wide and Smaller	A small roof runoff structure, consisting of gutter(s) equal to or less than 6" wide, downspout(s) 5 inches wide or less, and appropriate outlet facilities. Used to keep roof clean water runoff uncontaminated and provide a stable outlet to ground surface. Facilitates waste management and protects environment by minimizing clean water additions to waste systems and addresses water quality concerns.	Waste Storage Facility (313), Composting Facility (317), Heavy Use Area Protection (561), Watering Facility (614), Underground Outlet (620), Diversion (362) and any relevant irrigation practices.	Includes cost of all materials, equipment use and labor required to install gutters and downspouts.
558 Roof Runoff Structure	Roof Gutter, Medium, 7 to 9 inches Wide	A small roof runoff structure, consisting of gutter(s) equal to or less than 7-9" wide, downspout(s) 6-8 inches or more, and appropriate outlet facilities. Used to keep roof clean water runoff uncontaminated and provide a stable outlet to ground surface. Facilitates waste management and protects environment by minimizing clean water additions to waste systems and addresses water quality concerns.	Waste Storage Facility (313), Composting Facility (317), Heavy Use Area Protection (561), Watering Facility (614), Underground Outlet (620), Diversion (362) and any relevant irrigation practices.	Includes cost of all materials, equipment use and labor required to install gutters and downspouts.
558 Roof Runoff Structure	Roof Gutter, 6 inches Wide with Runoff Storage Tank	A roof runoff structure, consisting of gutter(s), downspout(s), and a storage tank. Used to keep roof clean water runoff uncontaminated, provide storage for on-farm use of roof water and a stable outlet for any excess to ground surface in a way that avoids erosion. Facilitates waste management and protects environment by minimizing clean water additions to waste systems and addresses water quality concerns.	Waste Storage Facility (313), Composting Facility (317), Heavy Use Area Protection (561), Watering Facility (614), Underground Outlet (620), Diversion (362) and any relevant irrigation practices.	Includes cost of all materials, equipment use and labor required to install earthfill, grading, gutters, downspouts and storage tank.
558 Roof Runoff Structure	Roof Gutter with Fascia	Existing roof does not have adequate fascia material to support the required roof gutter for a roof runoff structure. Practice installation requires a fascia board, gutter(s), downspout(s), and appropriate outlet facilities. Used to keep roof clean water runoff uncontaminated and provide a stable outlet to ground surface. Facilitates waste management and protects environment by minimizing clean water additions to waste systems and addresses water quality concerns.	Waste Storage Facility (313), Composting Facility (317), Heavy Use Area Protection (561), Watering Facility (614), Underground Outlet (620), Diversion (362) and any relevant irrigation practices.	Includes cost of all materials, equipment use and labor required to install gutters, downspouts and lumber.
558 Roof Runoff Structure	Concrete Curb	A roof runoff structure, consisting of a concrete curb or parabolic channel installed on existing impervious surface or the ground with appropriate outlet facilities. Environmental/design considerations or a building without proper structural support needed for gutters dictate the use of an on-ground concrete curb. Used to keep roof clean water runoff uncontaminated and provide a stable outlet to ground surface.	Waste Storage Facility (313), Composting Facility (317), Heavy Use Area Protection (561), Underground Outlet (620), Diversion (362)	Includes cost of all materials, equipment use and labor required to install excavation, earthfill, grading, concrete, geotextile.
558 Roof Runoff Structure	Trench Drain	A roof runoff structure, consisting of a trench filled with rock, with a polyethylene, corrugated, perforated drain tile installed in trench bottom. Used to keep roof clean water runoff uncontaminated and provide a stable outlet to ground surface. Environmental/design considerations or a building without proper structural support needed for gutters dictate the use of a trench drain.	Waste Storage Facility (313), Composting Facility (317), Heavy Use Area Protection (561), Underground Outlet (620), Diversion (362)	Includes cost of all materials, equipment use and labor required to install excavation, earthfill, grading, HDPE pipe, geotextile.
560 Access Road	New Earth Road in Dry, Level Terrain	Newly constructed compacted earth road. A properly constructed, well defined access road will address resource concerns related with compaction and excessive sediment in surface water.	Structure for Water Control (587), Diversion (362), Critical Area Planting (342).	Includes the cost of all materials, equipment use and labor to install earthfill, grading, compaction.
561 Heavy Use Area Protection	Aggregate Shell/Rock	The stabilization of areas around watering facilities that are frequently and intensively used by surfacing with aggregate shell/rock foundation to provide a stable, non-eroding surface.	All needed roads must use Access Road (560). Any needed treatment of stream crossings must use Stream Crossing (578). Any needed vegetation of disturbed areas must use Critical Area Planting (342). Provisions to collect, store, utilize, and or treat contaminated runoff must use Sediment Basin (350), Waste Storage Facility (313), or Waste Treatment (629) as appropriate.	Includes the cost of all materials, equipment use and labor to install excavation, grading, shell.
561 Heavy Use Area Protection	Rock/Gravel on Geotextile	The stabilization of areas around facilities that are frequently and intensively used by people, animals or vehicles by surfacing with rock and or gravel on a geotextile fabric foundation to provide a stable, non-eroding surface.	All needed roads must use Access Road (560). Any needed treatment of stream crossings must use Stream Crossing (578). Any needed vegetation of disturbed areas must use Critical Area Planting (342). Provisions to collect, store, utilize, and or treat contaminated runoff must use Sediment Basin (350), Waste Storage Facility (313), or Waste Treatment (629) as appropriate.	Includes the cost of all materials, equipment use and labor to install excavation, earthfill, grading, geotextile, rock/gravel.
561 Heavy Use Area Protection	Rock/Gravel Geocell- Geotextile	The stabilization of areas around facilities that are frequently and intensively used by people, animals or vehicles by surfacing with rock and or gravel in a cellular containment grid on a geotextile fabric foundation to provide a stable, non-eroding surface.	All needed roads must use Access Road (560). Any needed treatment of stream crossings must use Stream Crossing (578). Any needed vegetation of disturbed areas must use Critical Area Planting (342). Provisions to collect, store, utilize, and or treat contaminated runoff must use Sediment Basin (350), Waste Storage Facility (313), or Waste Treatment (629) as appropriate.	Includes the cost of all materials, equipment use and labor to install excavation, earthfill, grading, geocell, geotextile, rock/gravel.

561 Heavy Use Area Protection	Concrete with sand or gravel foundation	The stabilization of areas around facilities that are frequently and intensively used by surfacing with reinforced concrete on a sand or gravel foundation to provide a stable, non-eroding surface.	All needed roads must use Access Road (560). Any needed treatment of stream crossings must use Stream Crossing (578). Any needed vegetation of disturbed areas must use Critical Area Planting (342). Provisions to collect, store, utilize, and or treat contaminated runoff must use Sediment Basin (350), Waste Storage Facility (313), or Waste Treatment (629) as appropriate.	Includes the cost of all materials, equipment use and labor to install excavation, earthfill, grading, compaction and concrete.	
561 Heavy Use Area Protection	Steel Reinforced Concrete with sand or gravel foundation	The stabilization of areas around facilities that are frequently and intensively used by surfacing with fiber reinforced concrete on a sand or gravel foundation to provide a stable, non-eroding surface.	All needed roads must use Access Road (560). Any needed treatment of stream crossings must use Stream Crossing (578). Any needed vegetation of disturbed areas must use Critical Area Planting (342). Provisions to collect, store, utilize, and or treat contaminated runoff must use Sediment Basin (350), Waste Storage Facility (313), or Waste Treatment (629) as appropriate.	Includes the cost of all materials, equipment use and labor to install excavation, earthfill, grading, compaction and steel reinforced concrete.	
570 Stormwater Runoff Control	Storm Water Retention	This scenario involves installation of a stormwater retention area as part of a conservation engineering system. The combined system shall include the construction of dikes to enclosed an embankment to collect and treat runoff water from farmland before reaching downstream public waterways and retain water on site as needed.	The protection and/or construction of inlets and structures depending on the combination shall be cover under the applicable facilitating practices. Dike (356) is the main facilitating practice and shall not be cost share for the same sytem as it is included in the component cost for this practice. Associated and facilitating practices like Structure for Water Control, (587), Pumping plant, (533), Critical Area Planting (342), Land Clearing (460) and other related practices will be planned or cost shared under other practice codes as applicable.	Includes the cost of all materials, equipment use and labor to install earthfill, grading.	Embankment Volume
576 Livestock Shelter Structure	Portable Shade Structure	A flexible membrane or fabric-like roof placed on a steel or wood portable frame used to promote animal health where prescribed grazing practices have limited livestock access to shade.	Fence (382), Prescribed Grazing (528), Watering Facility (614)	Includes the cost of all materials, equipment use and labor to install welded steel pipe, shade fabric, grommets and fasteners.	Area of Roof Frame
576 Livestock Shelter Structure	Prefabricated Portable Shade Structure	A flexible membrane or fabric-like roof placed on a steel or wood portable frame used to promote animal health where prescribed grazing practices have limited livestock access to shade.	Fence (382), Prescribed Grazing (528), Watering Facility (614)	Includes the cost of all materials, equipment use and labor to install prefabricated shade structure.	Area of Roof Frame
576 Livestock Shelter Structure	Permanent Shelter Structure for Small Ruminants	A wood post and frame structure with roof and partial walls used to promote animal health where prescribed grazing practices have limited livestock access to shade.	Fence (382), Prescribed Grazing (528), Watering Facility (614) and Heavy Use Area Protection (561)	Includes the cost of all materials, equipment use and labor to install lumber (frame and posts), steel roof.	Area of Roof Support Frame
578 Stream Crossing	Culvert installation	Install culvert so that crossing and waterflow are able to cross each other in a stable manner. Stream flow is not impeded and a stable base exists for equipment, people and/or animals to cross.	Use Structure for Water Control (587) instead, for ditch cross culverts and other intermittent flows. Access road and waterflow are able to cross each other in a stable manner. Stream flow is not impeded and a stable base exists for equipment, people and/or animals to cross. Associated practices could be (342) Critical Area Planting, (560) Access Road, (575) Animal Trails and Walkways, (566) Recreational Trails and Walkways, (500) Obstruction Removal, or (584) Channel Stabilization, (382) Fence.	Includes the cost of all materials, equipment use and labor to install excavation, earthfill, dewatering, geotextile, rock riprap, HDPE pipe.	Inch-Foot
578 Stream Crossing	Rock armored low water crossing	Stabilize the bottom and slope of a stream channel using rock riprap or cast in place concrete. Stream flow is not impeded and a stable base exists for equipment, people and/or animals to cross.	Stream flow is not impeded and a stable base exists for equipment, people and/or animals to cross. Associated practices could be Critical Area Planting (342), Access Road, (560), Animal Trails and Walkways, (575), Recreational Trails and Walkways, (566), Obstruction Removal, (500), Channel Stabilization (584), Fence (382).	Includes the cost of all materials, equipment use and labor to install excavation, earthfill, dewatering, geotextile, rock riprap. Final travel surface shall be the rocks or concrete.	Crossing Demissions
578 Stream Crossing	Low Water Crossing using Prefabricated Products	To install a stable crossing medium on channel bottom and approaches.	Associated practices could be Critical Area Planting (342), Access Road, (560), Animal Trails and Walkways, (575), Recreational Trails and Walkways, (566), Obstruction Removal, (500), Channel Stabilization (584), Fence (382). Use (396) Aquatic Organism Passage instead, when the primary intent is biological concerns, not hydrologic.	Includes the cost of all materials, equipment use and labor to install excavation, earthfill, dewatering, geotextile, geocell, rock riprap.	Crossing Demissions
578 Stream Crossing	Concrete low water crossing	Stabilize the bottom and slope of a stream channel using cast in place concrete. Final travel surface shall be concrete. Stream flow is not impeded and a stable base exists for equipment, people and/or animals to cross.	Stream flow is not impeded and a stable base exists for equipment, people and/or animals to cross. Associated practices could be (342) Critical Area Planting, (560) Access Road, (575) Animal Trails and Walkways, (566) Recreational Trails and Walkways, (500) Obstruction Removal, or (584) Channel Stabilization, (382) Fence.	Includes the cost of all materials, equipment use and labor to install excavation, earthfill, dewatering, geotextile, concrete, rock riprap.	Crossing Demissions

578 Stream Crossing	Bridge	Install a bridge to allow stream flows to cross under access road or animal trail. Bridge opening determined by sizing for storm event dictated in standard. If a different travel surface is needed, refer to another appropriate standard for the surfacing. Load is H-20.	Associated practices could be Critical Area Planting (342), Access Road, (560), Animal Trails and Walkways, (575), Recreational Trails and Walkways, (566), Obstruction Removal, (500), Channel Stabilization (584), Fence (382). Use (396) Aquatic Organism Passage instead, when the primary intent is biological concerns, not hydrologic.	Scenario includes site preparation, dewatering, backfill, abutments, girders, geotextile, riprap, decking. Riprap and geotextile are used to stabilize and protect abutments as needed. Scenario based on cast in place concrete abutments, steel girders, and timber deck. Travel surface shall be wooden deck surface.	Square Footage of Bridge Deck
580 Streambank and Shoreline Protection	Shaping	Protection of streambanks consisting of shaping to stabilize and protect against scour and erosion. Improve, or restore physical, chemical, and biological functions of a stream to provide diverse aquatic communities to improve habitat for desired aquatic species.	Access Road (560), Critical Area Planting (342), Fence (382), Riparian Forest Buffer, (391), Riparian Herbaceous Cover, (390), Stream Habitat Improvement and Management (393), Watering Facility (614)	Includes the cost of all materials, equipment use and labor to install excavation and shaping.	
580 Streambank and Shoreline Protection	Bioengineered	Protection of streambanks consisting of a bioengineered technique comprised of non-structural measures such as earth revetments and benches with vegetative measures to stabilize and protect the streambank against scour and erosion. Soil bioengineering is a system of living plant materials used as structural components. In addition, soil bioengineering systems create resistance to sliding or shear displacement in a streambank as they develop roots or fibrous inclusions. Environmental benefits derived from woody vegetation include diverse and productive riparian habitats, shade, organic additions to the stream, cover for fish, and improvements in aesthetic value and water quality. Under certain conditions, soil bioengineering installations work well in conjunction with structures to provide more permanent protection and healthy function, enhance aesthetics, and create a more environmentally acceptable product. Soil bioengineering systems normally use unrooted plant parts in the form of cut branches and rooted plants.	Access Road (560), Critical Area Planting (342), Fence (382), Riparian Forest Buffer, (391), Riparian Herbaceous Cover, (390), Stream Habitat Improvement and Management (393), Watering Facility (614)	Includes the cost of all materials, equipment use and labor to install excavation, earthfill, shaping, compaction, shaping adapted types of woody vegetation (shrubs and trees). For streambanks, living systems include brushmattresses, live stakes, joint plantings, vegetated geogrids, branchpacking, and live fascines.	
580 Streambank and Shoreline Protection	Toe Protection	Protection of streambanks using structural measures such as riprap, concrete block, gabions, etc. to stabilize and protect banks of streams or excavated channels against scour and erosion.	Access Road (560), Critical Area Planting (342), Fence (382), Riparian Forest Buffer, (391), Riparian Herbaceous Cover, (390), Stream Habitat Improvement and Management (393), Watering Facility (614)	Includes the cost of all materials, equipment use and labor to install excavation, earthfill, shaping, compaction, erosion control blanket, rock rip rap.	
580 Streambank and Shoreline Protection	Structural	Protection of streambanks using structural measures such as riprap, concrete block, gabions, etc. to stabilize and protect banks of streams or excavated channels against scour and erosion.	Access Road (560), Critical Area Planting (342), Fence (382), Riparian Forest Buffer, (391), Riparian Herbaceous Cover, (390), Stream Habitat Improvement and Management (393), Watering Facility (614)	Includes the cost of all materials, equipment use and labor to install excavation, erosion control blanket, rock rip rap.	
587 Structure for Water Control	Culvert	Install a new HDPE culvert under 30 inches in diameter to convey water under roads or other barriers.	Use Stream Crossing (578) for culverts ≥ 30 inches or perennial flow. Associated practices include Access Road (560), Animal Trails and Walkways (575), Critical Area Planting (342), Drainage Water Management (554), Irrigation Canal or Lateral (320), Irrigation Pipeline (430), Irrigation Reservoir (436), Irrigation System, Surface and Subsurface (443), Irrigation Reservoir (436), Irrigation Water Management (449), Lined Waterway or Outlet (468), Obstruction Removal (500), Pond (378), Stormwater Runoff Control (570), Surface Drain, Field Ditch (607), Surface Drain, Main or Lateral (608), and Trails and Walkways (568).	Includes cost of all materials, equipment use and labor required to install excavation, earthfill, compaction, HDPE pipe, rock riprap.	
587 Structure for Water Control	Flashboard Riser, Metal	A flashboard riser fabricated of metal and used in a water management system that maintains a desired water surface elevation, controls the direction or rate of flow, or conveys water. The water surface elevation is controlled by addition or removal of slats or "stoplogs". This scenario is applicable to variable crest weir structures where the elevation is controlled at the inlet (Half-Rounds). They are often fabricated from half pipes (i.e. half-rounds) or sheet steel in a box shape.	Any disturbed areas use Critical Area Planting (342). Other associated practices include Irrigation Water Management (449), Irrigation Land Leveling (464), Irrigation Canal or Lateral (320), Irrigation Reservoir (436), Dike (356), and Grade Stabilization Structure (410).	Includes cost of all materials, equipment use and labor required to install excavation, earthfill, compaction, concrete, pipe, flashboard riser.	Unit of payment is based upon the flashboard weir length in inches multiplied by the outlet length in feet (inch-foot). Flashboard Weir Length (in) x Barrel Length (ft)
587 Structure for Water Control	Pipe Drop Structure	Install a new PVC pipe culvert under 12 inches in diameter to convey water under roads or other barriers.	Access Road (560), Animal Trails and Walkways (575), Critical Area Planting (342), Drainage Water Management (554), Irrigation Canal or Lateral (320), Irrigation Pipeline (430), Irrigation Reservoir (436), Irrigation System, Surface and Subsurface (443), Irrigation Reservoir (436), Irrigation Water Management (449), Lined Waterway or Outlet (468), Obstruction Removal (500), Pond (378), Stormwater Runoff Control (570), Surface Drain, Field Ditch (607), Surface Drain, Main or Lateral (608), and Trails and Walkways (568).	Includes cost of all materials, equipment use and labor required to install excavation, earthfill, compaction, PVC pipe.	

587 Structure for Water Control	Commercial Inline Flashboard Riser	An inline Water Control Structure (WCS) composed of plastic that maintains a desired water surface elevation, controls the direction or rate of flow, or conveys water to address the resource concern "Inadequate habitat for Fish and Wildlife." The water surface elevation is controlled by addition or removal of slats or "stoplogs". This scenario is applicable to variable crest weir structures where the elevation is controlled at point along a pipe extending through an embankment, providing ease of access to the structure and provide better protection against beaver activity. There are commercially available models composed of plastic that are commonly used when the width of the is 24" or less.	Any disturbed areas use Critical Area Planting (342). Other associated practices include Irrigation Water Management (449), Irrigation Land Leveling (464), Irrigation Canal or Lateral (320), Irrigation Reservoir (436), Dike (356), and Grade Stabilization Structure (410).	Includes cost of all materials, equipment use and labor required to install excavation, earthfill, compaction, concrete, PVC pipe.	Unit of payment is based upon the flashboard weir length in inches multiplied by the outlet length in feet (inch-foot). Flashboard Weir Length (in) x Barrel Length (ft)
587 Structure for Water Control	Flap Gate	This scenario is the installation of a permanent flap (tide) gate structure to control the direction of flow resulting from tides or high water or back-flow from flooding. The gate may be installed on an open channel or pipeline. It is made of steel and operates automatically.	Constructed Wetland (656), Drainage Water Management (554), Irrigation Canal or Lateral (320), Irrigation Field Ditch (388), Irrigation System, Surface and Subsurface (443), Irrigation Water Management (449), Salinity and Sodic Soil Management (610), Subsurface Drain (606), Surface Drain, Field Ditch (607), Surface Drain, Main or Lateral (608), Wetland Creation (658), Wetland Enhancement (659), Wetland Restoration (657), and Wetland Wildlife Habitat Management (644)	Includes cost of all materials, equipment use and labor required to install excavation, cast iron flap gate.	Feet Diameter (of Gate)
587 Structure for Water Control	Flap Gate w/ Concrete Wall	Install a concrete cut off wall with tide gate at the outlet of a channel. Tide or flood inundation is controlled.	Constructed Wetland (656), Drainage Water Management (554), Irrigation Canal or Lateral (320), Irrigation Field Ditch (388), Irrigation System, Surface and Subsurface (443), Irrigation Water Management (449), Salinity and Sodic Soil Management (610), Subsurface Drain (606), Surface Drain, Field Ditch (607), Surface Drain, Main or Lateral (608), Wetland Creation (658), Wetland Enhancement (659), Wetland Restoration (657), and Wetland Wildlife Habitat Management (644)	Includes cost of all materials, equipment use and labor required to install excavation, earthfill, compaction, concrete, cast iron flap gate.	Cubic Yards of Concrete
587 Structure for Water Control	Slide Gate	This scenario is the installation of a permanent slide gate structure to control the conveyance of water. The slide gate may be installed on an open channel or pipeline. The slide gate is made of steel and has a hand operated mechanical lifting system, i.e. screw.	Constructed Wetland (656), Drainage Water Management (554), Irrigation Canal or Lateral (320), Irrigation Field Ditch (388), Irrigation System, Surface and Subsurface (443), Irrigation Water Management (449), Salinity and Sodic Soil Management (610), Subsurface Drain (606), Surface Drain, Field Ditch (607), Surface Drain, Main or Lateral (608), Wetland Creation (658), Wetland Enhancement (659), Wetland Restoration (657), and Wetland Wildlife Habitat Management (644)	Includes cost of all materials, equipment use and labor required to install excavation, cast iron screw gate.	Feet Diameter (of Gate)
590 Nutrient Management	Basic NM System	This scenario describes the implementation of a basic nutrient management system on cropland or where there is no manure application. The planned NM system will meet the current 590 standard. Implementation will result in the proper rate, source, method of placement, and timing of nutrients. Records demonstrating implementation of the 4 R's of the NM criteria will be required. Nutrient applications are completed in a manner that minimizes nutrient runoff and leaching or build up of excess nutrient concentrations.	Conservation Cover (327), Conservation Crop Rotation (327), Contour Buffer Strips (332), Cover Crop (340), Field Border (386), Filter Strip (393), Grassed Waterway (412), Herbaceous Wind Barriers (603), Mulching (484), Irrigation Water Management (449), Residue Management, No Till/Strip Till (329), Residue Management, Mulch Till (329), Riparian Forest Buffer (391), Riparian Herbaceous Cover (390), Windbreak/Shelterbelt Establishment (380).	Includes the cost of all materials, equipment use and labor to install soil testing, analysis, services that provide nutrient recommendations based on UF/IFAS recommendations or crop removal rates and an associated nutrient budget, recordkeeping and proper implementation.	
590 Nutrient Management	Basic NM system with manure	This scenario describes the implementation of a basic nutrient management system on planning units of cropland where there is manure or compost application in addition to commercial fertilizer applications. The planned NM system will meet the current 590 standard. Implementation will result in the proper rate, source, method of placement, and timing of nutrients while minimizing off-site degradation or the excessive built up of N and P. Risk assessments including PI (phosphorus index) and NI (nitrogen index) will be completed with applications of manure completed based on risk results. Records demonstrating implementation of the 4 R's of the NM plan will be required along with copies of risk assessments.	Conservation Cover (327), Conservation Crop Rotation (327), Contour Buffer Strips (332), Cover Crop (340), Field Border (386), Filter Strip (393), Grassed Waterway (412), Herbaceous Wind Barriers (603), Mulching (484), Irrigation Water Management (449), Residue Management, No Till/Strip Till (329), Residue Management, Mulch Till (329), Riparian Forest Buffer (391), Riparian Herbaceous Cover (390), Windbreak/Shelterbelt Establishment (380).	Includes the cost of all materials, equipment use and labor to install soil testing, manure testing, analysis, proper implementation, services that provide nutrient recommendations based on UF/IFAS recommendations or crop removal rates and an associated nutrient budget, recordkeeping and proper implementation.	

590 Nutrient Management	Precision NM System	<p>This scenario describes the implementation of a basic precision nutrient management system on cropland. The planned NM system will meet the current 590 standard. Records demonstrating implementation of the 4 R's of at the NM plan will be required. This scenario goes beyond the basic NM system by using technologies that improve efficiency and effectiveness of nutrient management by utilizing precision techniques and tools. Precision nutrient mgmt techniques ensure that the right rate, proper timing, and proper placement of nutrients minimize non-point source pollution and provide proper amounts of nutrients to the crop where it is needed and not applying where it is not needed. Soil testing is completed in a fashion that provides a representative assessment of nutrient concentrations in each field or management zone. Soil sampling consists of methods that allow for various zones to be established. Zone maps are created and a nutrient budget developed for each zone. An application rate (prescription) is developed for each zone based on representative soil analysis and zone nutrient budget. Nutrient applications are based on UF/IFAS recommendations. Soil testing is completed at least once every three years for N-P-K. A nutrient budget is developed for each field annually. Application of nutrients is completed so that non-point source pollution is minimized. Nutrients are applied based on realistic yield expectations. Records are maintained for all nutrient applications and soil testing. Record keeping will include all soil tests, analysis, zone maps, nutrient prescriptions and budgets, and as-applied applications.</p>	<p>Conservation Cover (327), Conservation Crop Rotation (327), Contour Buffer Strips (332), Cover Crop (340), Field Border (386), Filter Strip (393), Grassed Waterway (412), Herbaceous Wind Barriers (603), Mulching (484), Irrigation Water Management (449), Residue Management, No Till/Strip Till (329), Residue Management, Mulch Till (329), Riparian Forest Buffer (391), Riparian Herbaceous Cover (390), Windbreak/Shelterbelt Establishment (380).</p>	<p>Includes the cost of all materials, equipment use and labor to install soil testing based on grid or zone sampling, analysis, services that provide nutrient recommendations based on UF/IFAS recommendations or crop removal rates and an associated nutrient budget, recordkeeping, and monitoring on a precision level.</p>
590 Nutrient Management	Advanced NM Precision System	<p>This scenario describes the implementation of an advanced precision nutrient management system on cropland. The planned NM system will meet the current 590 standard. Records demonstrating implementation of the 4 R's of the NM plan will be required. This scenario goes beyond the basic precision system by using technologies that improve efficiency and effectiveness of nutrient management by utilizing specialized precision techniques and tools (variable rate applicators, NDVI, aerial photography, yield monitoring). Precision nutrient mgmt techniques ensure that the right rate, proper timing, and proper placement of nutrients minimize non-point source pollution and provide proper amounts of nutrients to the crop where it is needed and not applying where it is not needed. Soil testing is completed in a fashion that provides a representative assessment of nutrient concentrations in each field or planning unit including zone directed sampling, real time NDVI (normalized differenced vegetative index) sensing, EC Index type sampling, or via high definition aerial photography that allows for the identification of numerous variations (zones) in a planning unit. Zone maps are created and a nutrient budget developed for each zone. An application rate (prescription) is developed for each zone based on representative soil analysis and a zone nutrient budget. Soil testing is completed at least once every three years for N-P-K. A nutrient budget is developed for each field annually. Application of nutrients is completed so that non-point source pollution is minimized. Nutrients are applied based on realistic yield expectations. Applications of nutrients are completed using a GPS guided variable rate fertilizer applicator. Applications of nutrients will be completed in split applications where a majority of the N needs are applied based on the needs of the crop based on growing season requirements. Acquisition of technical knowledge may be needed to effectively implement the practice. Producer may want to attend training courses and use specialized labor where needed in the annual maintenance of the NM plan. Record keeping will include all soil tests, analysis, zone maps, nutrient prescriptions and budgets, and as-applied applications. Yield monitoring maps will be collected and utilized (where technology allows) to develop the following year nutrient applications.</p>	<p>Conservation Cover (327), Conservation Crop Rotation (327), Contour Buffer Strips (332), Cover Crop (340), Field Border (386), Filter Strip (393), Grassed Waterway (412), Herbaceous Wind Barriers (603), Mulching (484), Irrigation Water Management (449), Residue Management, No Till/Strip Till (329), Residue Management, Mulch Till (329), Riparian Forest Buffer (391), Riparian Herbaceous Cover (390), Windbreak/Shelterbelt Establishment (380).</p>	<p>Includes the cost of all materials, equipment use and labor to install soil testing based on grid or zone sampling, analysis, services that provide nutrient recommendations, specialized nutrient application that provide nutrient proper recommendations based on UF/IFAS recommendations or crop removal rates and an associated nutrient budget, recordkeeping, and monitoring on a precision level that includes split applications, NDVI sensing, satellite/infrared/aerial imagery.</p>
590 Nutrient Management	Basic Organic NM System	<p>The planned NM system for organic production will meet the current 590 standard. Implementation will result in the proper rate, source, method of placement, and timing of nutrients. Records demonstrating implementation of the 4 R's of NM standard will be required. This Scenario is designed to encourage organic producers to effectively utilize organic fertilizers, manure, and/or compost appropriately improving soil quality and minimizing runoff of nutrients from fields to surface waters. The basis for nutrient applications will be recommendations based on soil and manure analyses.</p>	<p>Conservation Cover (327), Conservation Crop Rotation (327), Contour Buffer Strips (332), Cover Crop (340), Field Border (386), Filter Strip (393), Grassed Waterway (412), Herbaceous Wind Barriers (603), Mulching (484), Irrigation Water Management (449), Residue Management, No Till/Strip Till (329), Residue Management, Mulch Till (329), Riparian Forest Buffer (391), Riparian Herbaceous Cover (390), Windbreak/Shelterbelt Establishment (380).</p>	<p>Includes the cost of all materials, equipment use and labor to install soil testing, manure and/or compost analysis and services that provide nutrient recommendations based on NOP recommendations, recordkeeping and proper implementation.</p>
591 Amendment to Treatment of Agricultural Waste	Liquid Animal Waste Amendment	<p>This practice scenario includes the treatment of liquid animal waste for odor control.</p>	<p>Nutrient Management (590), Waste Storage Facility (313)</p>	<p>Includes cost of all materials, equipment use and labor required to install digestive enzymes.</p>
591 Amendment to Treatment of Agricultural Waste	Litter Amendments applied on a %w/w basis for Water Quality Impacts	<p>This practice scenario includes the application of a litter treatment amendment that is approved by NRCS to the entire poultry house to reduce water-soluble phosphorous in the poultry litter by a specified percentage. The amendment used is proven to reduce the concentration of water-soluble phosphorous in the litter and reduces ammonia levels in the house.</p>	<p>Nutrient Management (590)</p>	<p>Includes cost of all materials, equipment use and labor required to install aluminum sulfate, alum or poultry litter amendment.</p>
595 Integrated Pest Management	Basic IPM Field 1 Resource Concern	<p>A basic IPM plan with UF/IFAS-approved pest monitoring techniques and pest thresholds (where available) is applied in large scale field crops to address one identified resource concern (e.g. Water Quality - Impacts to Human Drinking Water) with either risk prevention (e.g. planned pesticides have no risk to the identified resource concern) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings).</p>	<p>Agrichemical Handling Facility (309), Brush Management (314), Conservation Crop Rotation (328), Field Border (386), Filter Strip (393), Forage Harvest Management, (511), Herbaceous Wind Barriers (603), Tree Shrub Site Preparation (612), Forest Stand Improvement (666), Mulching (484), Prescribed Burning (338), Prescribed Grazing (528), Residue Management, Mulch Till (345), Upland Wildlife Habitat Management (645), Wetland Wildlife Habitat Management (644)</p>	<p>Includes the cost of scouting and recordkeeping of scouting and type and amount of chemicals applied reflecting decisions based upon scouting/monitoring results.</p>

595 Integrated Pest Management	Basic IPM Field >1 Resource Concern	A basic IPM plan with UF/IFAS-approved pest monitoring techniques and pest thresholds (where available) is applied in large scale field/forage crops to address multiple identified resource concerns (e.g. Water Quality – Impacts to Human Drinking Water and Pollinator Impacts) with either risk prevention (e.g. planned pesticides have no risks to the identified resource concerns) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from Agronomy Technical Note 5 for “Intermediate”, “High” or “Extra High” WIN-PST Final Hazard Ratings).	Agrichemical Handling Facility (309), Brush Management (314), Conservation Crop Rotation (328), Field Border (386), Filter Strip (393), Forage Harvest Management, (511), Herbaceous Wind Barriers (603), Tree Shrub Site Preparation (612), Forest Stand Improvement (666), Mulching (484), Prescribed Burning (338), Prescribed Grazing (528), Residue Management, Mulch Till (345), Upland Wildlife Habitat Management (645), Wetland Wildlife Habitat Management (644)	Includes the cost of scouting and recordkeeping of scouting and type and amount of chemicals applied reflecting decisions based upon scouting/monitoring results.
595 Integrated Pest Management	Advanced Field - All Resource Concerns	A comprehensive IPM plan with UF/IFAS-approved pest prevention, avoidance and monitoring techniques and pest thresholds (where available) is applied in Large Scale Field/Forage Crops to address all identified resource concerns with either risk prevention (e.g. planned pesticides have no risk to the identified resource concerns) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from Agronomy Technical Note 5 for “Intermediate”, “High” or “Extra High” WIN-PST Final Hazard Ratings).	Agrichemical Handling Facility (309), Brush Management (314), Conservation Crop Rotation (328), Field Border (386), Filter Strip (393), Forage Harvest Management, (511), Herbaceous Wind Barriers (603), Tree Shrub Site Preparation (612), Forest Stand Improvement (666), Mulching (484), Prescribed Burning (338), Prescribed Grazing (528), Residue Management, Mulch Till (345), Upland Wildlife Habitat Management (645), Wetland Wildlife Habitat Management (644)	Includes the cost of scouting and recordkeeping of scouting and type and amount of chemicals applied reflecting decisions based upon scouting/monitoring results.
600 Terrace	Broadbased	An earthen embankment with channel constructed across the field slope as part of a system to shorten slope lengths and reduce sheet, rill, and gully erosion in a cropped field. The typical installation is a broadbased terrace having 5:1 upstream and 5:1 downstream slopes with slopes from 2% to 8% constructed in loam soils or similar in regards to workability.	Associated practices are Critical Area Planting (342), Grassed Waterway (412), and Underground Outlet (620). A stable outlet is provided in the form of a Grassed Waterway or Underground Outlet.	Includes cost of all materials, equipment use and labor required Length of Terrace to install excavation, shaping and compaction.
600 Terrace	Flat Channel	An earthen embankment with channel constructed across the field slope as part of a system to shorten slope lengths, and reduce sheet, rill, and gully erosion in a cropped field. The typical installation is a flat channel (level) terrace storing runoff and side slopes of 8:1 or greater in a field with slopes from 2% to 8% constructed in loam soils or similar in regards to workability.	Associated practices are Critical Area Planting (342), Grassed Waterway (412), and Underground Outlet (620).	Includes cost of all materials, equipment use and labor required Length of Terrace to install excavation, shaping and compaction.
600 Terrace	Narrow Base, less than 8% Slope	An earthen embankment with channel constructed across the field slope as part of a system to shorten slope lengths and reduce sheet, rill, and gully erosion in a cropped field. The typical installation is a system of narrow base terraces with 2:1 slopes in a field with slopes from 3% to 8% constructed in loam soils or similar in regards to workability.	Associated practices are Critical Area Planting (342), Grassed Waterway (412), and Underground Outlet (620). A stable outlet is provided in the form of a Grassed Waterway or Underground Outlet.	Includes cost of all materials, equipment use and labor required Length of Terrace to install excavation, shaping and compaction.
603 Herbaceous Wind Barriers	Annual Species	This scenario describes the implementation of herbaceous barriers to reduce wind velocities and wind-borne particulate matter. Plant materials shall be selected for local adaptation and climatic conditions and are resistant to lodging and are non-spreading in their habit. Barriers will be designed as close to perpendicular to prevailing winds as practical. Barrier direction, spacing, and composition needed to achieve the desired purpose shall be designed using the currently approved wind erosion technology.	Forage and Biomass Planting (512), Nutrient Management (590), Pest Management (595), Upland Wildlife Habitat Management (645)	Includes cost of all materials, equipment use and labor required to install adequate seedbed, annual grass or legumes, no till/grass drill.
606 Subsurface Drain	Corrugated Plastic Pipe (CPP), Single-Wall, ≤ 6"	Below ground installation of perforated HDPE (Corrugated Plastic Pipe) pipeline, using a drainage plow. HDPE (CPP) Single-Wall is manufactured in sizes (nominal diameter) from 3-inch to 24-inch; typical practice sizes range from 3-inch to 12-inch; and typical scenario size is 5-inch.	Surface Drainage, Main or Lateral (608), Structure for Water Control (587), Pumping Plant (533), Drainage Water Management (554)	Includes cost of all materials, equipment use and labor required to install trenching and backfill, HDPE pipe, drainage lateral connections.
606 Subsurface Drain	Enveloped Corrugated Plastic Pipe (CPP), Single-Wall, ≤ 6"	Below ground installation of perforated HDPE (Corrugated Plastic Pipe) pipeline with Sand-Gravel envelope, using a drainage trencher. HDPE (CPP) Single-Wall is manufactured in sizes (nominal diameter) from 3-inch to 24-inch; typical practice sizes range from 3-inch to 12-inch; and typical scenario size is 5-inch.	Surface Drain, Main or Lateral (608), Structure for Water Control (587), Pumping Plant (533), Drainage Water Management (554)	Includes cost of all materials, equipment use and labor required to install trenching and backfill, earthfill, HDPE pipe, drainage lateral connections.
606 Subsurface Drain	Corrugated Plastic Pipe (CPP), Single-Wall, ≥ 8"	Below ground installation of HDPE (Corrugated Plastic Pipe) pipeline, using a drainage plow. HDPE (CPP) Single-Wall is manufactured in sizes (nominal diameter) from 3-inch to 24-inch; typical practice sizes range from 3-inch to 12-inch; and typical scenario size is 10-inch.	Surface Drain, Main or Lateral (608), Structure for Water Control (587), Pumping Plant (533), Drainage Water Management (554)	Includes cost of all materials, equipment use and labor required to install trenching and backfill, HDPE pipe, drainage lateral connections.
607 Surface Drainage, Field Ditch	Field Drainage Ditch	This scenario is the construction of a surface drain, field ditch. Typical construction dimensions are 4' bottom x 2.5' deep with a side slope of 3:1.	Surface Drain, Main or Lateral (608), Structure for Water Control (587), Pumping Plant (533), Drainage Water Management (554)	Includes cost of all materials, equipment use and labor required to install excavation.
608 Surface Drainage, Main or Lateral	Main or Lateral Drainage Ditch	This scenario is the construction of a surface drain, main or lateral. Typical construction dimensions are 4' wide bottom x 4' deep with a side slope of 2.5:1.	Surface Drain, Main or Lateral (608), Structure for Water Control (587), Pumping Plant (533), Drainage Water Management (554)	Includes cost of all materials, equipment use and labor required to install excavation.

612 Tree and Shrub Establishment	Low Density-Hand Plant Conifer Containerized	This practice involves planting of tree seedlings after the site has been prepared for seedling growth and establishment. The productivity of the site is good and will handle a low density planting rate. Terrain is moderatey to steeply sloping, too steep to be planted with a mechanical tree planter so the area is hand planted.	Tree Shrub Site Preparation (490), Prescribed Grazing (528), Prescribed Burning (338), Bedding, (310) Forest Stand Improvement (666)	Includes the cost of pines (containerized) and all materials, equipment use and labor required to machine plant pines at a rate of less than 400 stems per acre.
612 Tree and Shrub Establishment	Medium Density-Mech Plant Conifer	This practice involves planting of tree seedlings after the site has been prepared for seedling growth and establishment. The productivity of the site is good and will handle a medium density planting rate. Terrain is moderately sloping and will be planted with a mechanical tree planter.	Tree Shrub Site Preparation (490), Prescribed Grazing (528), Prescribed Burning (338), Bedding, (310) Forest Stand Improvement (666)	Includes the cost of pines (bareroot) and all materials, equipment use and labor required to machine plant pines at a rate of less than 500 stems per acre.
612 Tree and Shrub Establishment	Medium Density-Hand Plant Conifer, Bareroot	This practice involves planting of tree seedlings after the site has been prepared for seedling growth and establishment. The productivity of the site is good and will handle a medium density planting rate. Terrain is moderately to steeply sloping, too steep to be planted with a mechanical tree planter so the area is hand planted.	Tree Shrub Site Preparation (490), Prescribed Grazing (528), Prescribed Burning (338), Bedding, (310) Forest Stand Improvement (666)	Includes the cost of pines (bareroot) and all materials, equipment use and labor required to hand plant pines at a rate of less than 500 stems per acre.
612 Tree and Shrub Establishment	Medium Density-Hand Plant Conifer Containerized	This practice involves planting of tree seedlings after the site has been prepared for seedling growth and establishment. The productivity of the site is good and will handle a medium density planting rate. Terrain is moderatey to steeply sloping, too steep to be planted with a mechanical tree planter so the area is hand planted.	Tree Shrub Site Preparation (490), Prescribed Grazing (528), Prescribed Burning (338), Bedding, (310) Forest Stand Improvement (666)	Includes the cost of pines (containerized) and all materials, equipment use and labor required to machine plant pines at a rate of less than 500 stems per acre.
612 Tree and Shrub Establishment	High Density-Mech Plant	This practice applies to forestlands that are being actively managed. Tree seedlings are planted after the site has been prepared for seedling establishment and growth. Forest site productivity is high or very high and dense planting is planned.	Tree Shrub Site Preparation (490), Prescribed Grazing (528), Prescribed Burning (338), Bedding, (310) Forest Stand Improvement (666)	Includes the cost of pines (bareroot) and all materials, equipment use and labor required to hand plant pines more than 500 stems per acre.
612 Tree and Shrub Establishment	High Density-Hand Plant Conifer Bareroot	This practice involves planting of tree seedlings after the site has been prepared for seedling growth and establishment. The productivity of the site is good and will handle a high density planting rate. Terrain is moderatey to steeply sloping, too steep to be planted with a mechanical tree planter so the area is hand planted.	Tree Shrub Site Preparation (490), Prescribed Grazing (528), Prescribed Burning (338), Bedding, (310) Forest Stand Improvement (666)	Includes the cost of pines (bareroot) and all materials, equipment use and labor required to hand plant pines more than 500 stems per acre.
612 Tree and Shrub Establishment	High Density-Hand Plant Conifer Containerized	This practice involves planting of tree seedlings after the site has been prepared for seedling growth and establishment. The productivity of the site is good and will handle a medium density planting rate. Terrain is moderately to steeply sloping, too steep to be planted with a mechanical tree planter so the area is hand planted.	Tree Shrub Site Preparation (490), Prescribed Grazing (528), Prescribed Burning (338), Bedding, (310) Forest Stand Improvement (666)	Includes the cost of pines (containerized) and all materials, equipment use and labor required to hand plant pines more than 500 stems per acre.
612 Tree and Shrub Establishment	Shrub Planting	Shrubs are planted to provide a more diverse habitat. Plantings are in either uplands or bottomlands. The site lacks ground level habitat structure and diversity for wildlife.	Tree Shrub Site Preparation (490), Prescribed Grazing (528), Prescribed Burning (338), Bedding, (310) Forest Stand Improvement (666)	Includes the cost of shrubs and all materials, equipment use and labor required to plant.
612 Tree and Shrub Establishment	Hardwood-Hand Plant, Bareroot	Improving the hardwood forest setting by hand planting hardwood tree seedlings. The number of trees to plant is lower than establishing a new forest.	Tree Shrub Site Preparation (490), Prescribed Grazing (528), Prescribed Burning (338), Bedding, (310) Forest Stand Improvement (666)	Includes the cost of hardwoods and all materials, equipment use and labor required to plant.
612 Tree and Shrub Establishment	Tree Plantings for Small Openings	Improving forest condition setting by hand planting hardwoods fruit bearing plants in forest openings. Tree establishment planting does not have to be evenly spaced. Hardwood fruit bearing tree planting will attract deer/turkeys/and other wildlife. Hardwood trees are protected from deer browsing with tree tubes. The number of trees plant is lower than establishing a new forest. Tree establishment will be planted in forest openings.	Tree Shrub Site Preparation (490), Prescribed Grazing (528), Prescribed Burning (338), Bedding, (310) Forest Stand Improvement (666)	Includes the cost of containerized hardwoods and tree shelters and all materials, equipment use and labor required to plant and install.
614 Watering Facility	Less than 100 gal	A permanent watering facility for livestock and or wildlife constructed of approved materials with less than 100 gallons of capacity that stores adequate quantity and quality of water for storage and or direct drinking access. All watering facilities will be constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation.	All needed pipelines are installed using Livestock Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). Any needed water source installation will use Water Well (642), Pumping Plant (533), or Livestock Pipeline (516) as appropriate. Areas around watering facilities where animal concentrations or overflow from the watering facility will cause resource concerns will be protected by using Heavy Use Area Protection (561) as appropriate.	Includes cost of all materials, equipment use and labor required to install galvanized metal tank, float control valve, and guard post.

614 Watering Facility	Less than 100-200 gal	A permanent watering facility for livestock and or wildlife constructed of approved materials for 100- 200 gallons of capacity that stores adequate quantity and quality of water for storage and or direct drinking access. All watering facilities will be constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation.	All needed pipelines are installed using Livestock Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). Any needed water source installation will use Water Well (642), Pumping Plant (533), or Livestock Pipeline (516) as appropriate. Areas around watering facilities where animal concentrations or overflow from the watering facility will cause resource concerns will be protected by using Heavy Use Area Protection (561) as appropriate.	Includes cost of all materials, equipment use and labor required to install galvanized metal tank, float control valve, and guard post.
614 Watering Facility	Less than 201-400 gal	A permanent watering facility for livestock and or wildlife constructed of approved materials for 201-400 gallons of capacity that stores adequate quantity and quality of water for storage and or direct drinking access. All watering facilities will be constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation.	All needed pipelines are installed using Livestock Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). All collectors or catchments for collecting precipitation will be addressed by using Water Harvesting Catchment (636). Any needed water source installation will use Water Well (642), Pumping Plant (533), or Livestock Pipeline (516) as appropriate. Areas around watering facilities where animal concentrations or overflow from the watering facility will cause resource concerns will be protected by using Heavy Use Area Protection (561) as appropriate.	Includes cost of all materials, equipment use and labor required to install galvanized metal tank, float control valve, and guard post.
614 Watering Facility	Less than 401-600 gal	A permanent watering facility for livestock and or wildlife constructed of approved materials for 401-600 gallons of capacity that stores adequate quantity and quality of water for storage and or direct drinking access. All watering facilities will be constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation.	All needed pipelines are installed using Livestock Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). All collectors or catchments for collecting precipitation will be addressed by using Water Harvesting Catchment (636). Any needed water source installation will use Water Well (642), Pumping Plant (533), or Livestock Pipeline (516) as appropriate. Areas around watering facilities where animal concentrations or overflow from the watering facility will cause resource concerns will be protected by using Heavy Use Area Protection (561) as appropriate.	Includes cost of all materials, equipment use and labor required to install galvanized metal tank, float control valve, and guard post.
614 Watering Facility	Greater Than 600 gal	A permanent watering facility for livestock and or wildlife constructed of approved materials for greater than 600 gallons of capacity that stores adequate quantity and quality of water for storage and or direct drinking access. All watering facilities will be constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation.	All needed pipelines are installed using Livestock Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). All collectors or catchments for collecting precipitation will be addressed by using Water Harvesting Catchment (636). Any needed water source installation will use Water Well (642), Pumping Plant (533), or Livestock Pipeline (516) as appropriate. Areas around watering facilities where animal concentrations or overflow from the watering facility will cause resource concerns will be protected by using Heavy Use Area Protection (561) as appropriate.	Includes cost of all materials, equipment use and labor required to install galvanized metal tank, float control valve, and guard post.
614 Watering Facility	Concrete Less than 500 gal	A permanent watering facility for livestock and or wildlife constructed of approved materials for a less than 500 gallons of capacity concrete tank that stores adequate quantity and quality of water for storage and or direct drinking access. All watering facilities will be constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation.	All needed pipelines are installed using Livestock Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). All collectors or catchments for collecting precipitation will be addressed by using Water Harvesting Catchment (636). Any needed water source installation will use Water Well (642), Pumping Plant (533), or Livestock Pipeline (516) as appropriate. Areas around watering facilities where animal concentrations or overflow from the watering facility will cause resource concerns will be protected by using Heavy Use Area Protection (561) as appropriate.	Includes cost of all materials, equipment use and labor required to install concrete tank.

614 Watering Facility	Concrete 500 plus gal	A permanent watering facility for livestock and or wildlife constructed of approved materials for greater than 500 gallons of capacity concrete tank that stores adequate quantity and quality of water for storage and or direct drinking access. All watering facilities will be constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation.	All needed pipelines are installed using Livestock Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). All collectors or catchments for collecting precipitation will be addressed by using Water Harvesting Catchment (636). Any needed water source installation will use Water Well (642), Pumping Plant (533), or Livestock Pipeline (516) as appropriate. Areas around watering facilities where animal concentrations or overflow from the watering facility will cause resource concerns will be protected by using Heavy Use Area Protection (561) as appropriate.	Includes cost of all materials, equipment use and labor required to install concrete tank.
614 Watering Facility	Permanent Drinking/Storage 500 - 1,000 gallon	A permanent watering facility for livestock and or wildlife constructed of approved materials with 500 to 1,000 gallons of capacity that stores adequate quantity and quality of water for storage and or direct drinking access. All watering facilities will be constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation.	All needed pipelines are installed using Livestock Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). All collectors or catchments for collecting precipitation will be addressed by using Water Harvesting Catchment (636). Any needed water source installation will use Water Well (642), Pumping Plant (533), or Livestock Pipeline (516) as appropriate. Areas around watering facilities where animal concentrations or overflow from the watering facility will cause resource concerns will be protected by using Heavy Use Area Protection (561) as appropriate.	Includes cost of all materials, equipment use and labor required to install excavation, earthfill, grading, storage tank.
614 Watering Facility	Storage Tank for Solar Systems	A storage tank for a permanent watering facility with a capacity of 10,000 gallons is installed with all tank materials, tank plumbing and float valve, to provide adequate water storage capacity to ensure an adequate supply and quality of water for livestock or wildlife and provides improved plant productivity and health, water quality, and habitat. The storage tank will provide a 5 day supply of water for 100 beef cattle during times when the solar pump is nonfunctional based on weather conditions. All storage tanks are constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation and placed on a properly prepared foundation with required plumbing.	All needed pipelines are installed using Livestock Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). Any needed water source installation will use Water Well (642), Pumping Plant (533), Spring Development (574), or Livestock Pipeline (516) as appropriate.	Includes cost of all materials, equipment use and labor required to install grading, concrete, storage tank.
620 Underground Outlet	Less than or equal to 6"	Install approved plastic pipe to convey stormwater from one location to a suitable and stable outlet. Field system meets "T" or "clean" storm water runoff is diverted to minimize the volume of runoff to be stored or treated.	Critical Area Planting (342), Grassed Waterway (412), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606), Roof Runoff (558)	Includes cost of all materials, equipment use and labor required to install excavation, compaction, HDPE pipe, perforated PVC riser inlet, rock riprap, geotextile.
620 Underground Outlet	Greater than 6" to 12"	Install approved double walled plastic pipe to convey stormwater from one location to a suitable and stable outlet. Field system meets "T" or "clean" storm water runoff is diverted to minimize the volume of runoff to be stored or treated.	Critical Area Planting (342), Grassed Waterway (412), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606), Roof Runoff (558)	Includes cost of all materials, equipment use and labor required to install excavation, compaction, HDPE pipe, perforated PVC riser inlet, rock riprap, geotextile.
620 Underground Outlet	Greater than 12" to 18"	Install approved double walled plastic pipe to convey stormwater from one location to a suitable and stable outlet. Field system meets "T" or "clean" storm water runoff is diverted to minimize the volume of runoff to be stored or treated.	Critical Area Planting (342), Grassed Waterway (412), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606), Roof Runoff (558)	Includes cost of all materials, equipment use and labor required to install excavation, compaction, HDPE pipe, rock riprap, geotextile, concrete catch basin.
620 Underground Outlet	Greater than 18" to 30"	Install approved double walled plastic pipe to convey stormwater from one location to a suitable and stable outlet. Field system meets "T" or "clean" storm water runoff is diverted to minimize the volume of runoff to be stored or treated.	Critical Area Planting (342), Grassed Waterway (412), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606), Roof Runoff (558)	Includes cost of all materials, equipment use and labor required to install excavation, compaction, HDPE pipe, rock riprap, geotextile, concrete catch basin.
620 Underground Outlet	Greater than 30"	Install greater than 30" approved plastic pipe to convey stormwater from one location to a suitable and stable outlet. Field system meets "T" or "clean" storm water runoff is diverted to minimize the volume of runoff to be stored or treated.	Critical Area Planting (342), Grassed Waterway (412), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606), Roof Runoff (558)	Includes cost of all materials, equipment use and labor required to install excavation, compaction, HDPE pipe, rock riprap, geotextile, concrete catch basin.
620 Underground Outlet	6" to 12" single wall	Install approved single walled plastic pipe to convey stormwater from one location to a suitable and stable outlet. Field system meets "T" or "clean" storm water runoff is diverted to minimize the volume of runoff to be stored or treated.	Critical Area Planting (342), Grassed Waterway (412), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606), Roof Runoff (558)	Includes cost of all materials, equipment use and labor required to install excavation, compaction, HDPE pipe, riser inlet, rock rip rap, geotextile.
629 Waste Treatment	Aerator Less than or Equal to 5 hp	This practice scenario includes installation of an aerator into a liquid storage pond or tank that has a surface area less than 1 acre. This scenario assumes that the producer would like to increase oxygen content in the storage pond and mix the waste for even nutrient distribution. Under aerobic conditions microorganisms can convert nutrients and odors will be reduced.	Nutrient Management (590) and Waste Storage Facility (313)	Includes cost of all materials, equipment use and labor required to install aerator. Horsepower

629 Waste Treatment	Aerator Greater than 5 hp	This practice scenario includes installation of an aerator into a liquid storage pond or tank that has a surface area less than 1 acre. This scenario assumes that the producer would like to increase oxygen content in the storage pond and mix the waste for even nutrient distribution. Under aerobic conditions microorganisms can convert nutrients and odors will be reduced.	Nutrient Management (590) and Waste Storage Facility (313)	Includes cost of all materials, equipment use and labor required. Each to install aerator.
632 Solid/Liquid Waste Separator	Concrete Sand Settling Lane	A concrete structure, a concrete lane with curbs, used to capture and separate a portion of the solids, mainly sand, from a liquid stream from a confinement facility. Removes as portion of the solids to facilitate waste handling and to address water quality concerns.	Nutrient Management (590), Composting Facility (317), Anaerobic Digester (366), Waste Storage Facility (313), Waste Recycling (633), Waste Transfer (634), Pumping Plant (533), Vegetated Treatment Area (635), Pond Lining or Sealing (521A-D), and Waste Treatment (629).	Includes cost of all materials, equipment use and labor required to install excavation, earthfill, compaction, concrete, geotextile.
632 Waste Separation Facility	Concrete Separator	A concrete structure, such as a basin with concrete walls and floor, used to capture and separate a portion of the solids from a liquid stream from a feedlot or confinement facility. Removes as portion of the solids to facilitate waste handling.	Nutrient Management (590), Composting Facility (317), Anaerobic Digester (366), Waste Storage Facility (313), Waste Recycling (633), Waste Transfer (634), Pumping Plant (533), Vegetated Treatment Area (635), Pond Lining or Sealing (521A-D), and Waste Treatment (629).	Includes cost of all materials, equipment use and labor required to install excavation, earthfill, compaction, weeping wall or picket screen structure, concrete, geotextile.
632 Waste Separation Facility	Mechanical Separation Facility	A small mechanical separation facility to partition solids, liquids, and/or associated nutrients from animal waste streams. Mechanical separators may include, but are not limited to: static inclined screens, vibratory screens, rotating screens, centrifuges, screw or roller presses, or other systems.	Nutrient Management (590), Composting Facility (317), Anaerobic Digester (366), Waste Storage Facility (313), Waste Recycling (633), Waste Transfer (634), Amendments for the Treatment of Agricultural Waste (591), Pumping Plant (533), Vegetated Treatment Area (635), Pond Lining or Sealing (521A-D), and Waste Treatment (629).	Includes cost of all materials, equipment use and labor required to install excavation, concrete, vibratory or rotating screen.
634 Waste Transfer	Wastewater reception pit	Installation for a wastewater collection system that includes materials and structures to collect liquids such as silage leachate, lot runoff and other contaminated liquid effluent. The wastewater will typically be transferred from the collection basin to a waste storage facility through a gravity or low pressure flow conduit that would be contract in a separate scenario (wastewater transfer pipe).	Waste Storage Facility (313), Pumping Plant (533), Irrigation Pipeline (430), Solid/Liquid Waste Separation Facility (632), Lined Waterway or Outlet (468), Nutrient Management (590), Waste Recycling (633). Transfer pump if needed must be contracted under Pumping Plant, (533).	Includes costs of all materials, equipment use and labor required to install earthfill, concrete, safety chain (tractor barrier) or solid/grated cover.
634 Waste Transfer	Medium sized wastewater reception pit with conduit transfer pipe to waste storage pond	Installation for a wastewater collection system that includes materials and structures to collect liquids such as silage leachate, lot runoff and other contaminated liquid effluent which is then transferred through a 6" low pressure conduit to the waste storage structure. This scenario includes a reinforced concrete manure reception pit and a 6" PVC SDR 41 conduit to transfer the manure and wastewater to a waste storage pond. Reception Pit includes safety fence w/gate or solid/grated cover.	Waste Storage Facility (313), Pumping Plant (533), Irrigation Pipeline (430), Solid/Liquid Waste Separation Facility (632), Lined Waterway or Outlet (468), Nutrient Management (590), Waste Recycling (633). Transfer pump if needed must be contracted under Pumping Plant, (533).	Includes costs of all materials, equipment use and labor required to install earthfill, concrete, pipe, safety chain (tractor barrier) or solid/grated cover.
634 Waste Transfer	Large reception pit, pipe to storage, plus pipe to treatment.	Installation for a wastewater collection system that includes materials and structures to collect liquids such as lot runoff, manure slurry and other contaminated liquid effluent. The wastewater collected in this pit is intended to be transferred to final storage within a 48 hour period. The waste is transferred through a conduit to a waste treatment location. After treatment the remaining liquids are transferred to the waste storage pond in a pipeline. After treatment the remaining liquids are transferred to the waste storage pond in a pipeline. This typical scenario includes a reinforced concrete manure reception pit an 8" conduit to transfer the manure and wastewater to a treatment location and a secondary 6" transfer pipeline. Reception Pit includes safety fence w/gate or solid/grated cover.	Waste Storage Facility (313), Pumping Plant (533), Irrigation Pipeline (430), Solid/Liquid Waste Separation Facility (632), Lined Waterway or Outlet (468), Nutrient Management (590), Waste Recycling (633). Transfer pump if needed must be contracted under Pumping Plant, (533).	Includes costs of all materials, equipment use and labor required to install earthfill, concrete, pipe, safety chain (tractor barrier) or solid/grated cover.
634 Waste Transfer	Agitator, small, mixing contents of a reception pit that is no more than 10 ft. deep	This scenario is for a manure and wastewater agitator associated with an agricultural production operation to transfer agricultural waste product from the production source to a storage facility for proper utilization. This agitator is typically no more than 15 HP and is used for smaller waste storage facilities that are less than 10 feet deep.	Waste Storage Facility (313), Pumping Plant (533), Irrigation Pipeline (430), Solid/Liquid Waste Separation Facility (632), Lined Waterway or Outlet (468), Nutrient Management (590), Waste Recycling (633)	Includes costs of all materials, equipment use and labor required to install manure agitator.

634 Waste Transfer	Agitator, medium, mixing contents of a reception pit that is 10 ft to 15 ft. deep	This scenario is for a manure and wastewater agitator associated with an agricultural production operation to transfer agricultural waste product from the storage facility to a site for proper utilization. This agitator is typically 30 HP and is used where the waste storage facility tank or pond is between 10 and 15 feet deep.	Waste Storage Facility (313), Pumping Plant (533), Irrigation Pipeline (430), Solid/Liquid Waste Separation Facility (632), Lined Waterway or Outlet (468), Nutrient Management (590), Waste Recycling (633)	Includes costs of all materials, equipment use and labor required to install manure agitator.	
634 Waste Transfer	Agitator, large, mixing contents of a reception pit that is over 15 ft. deep	This scenario is for a large manure and wastewater agitator associated with an agricultural production operation to transfer agricultural waste product from the storage facility to a site for proper utilization. This agitator is typically 100 HP and is used where the waste storage facility tank or pond is greater than 15 feet deep.	Waste Storage Facility (313), Pumping Plant (533), Irrigation Pipeline (430), Solid/Liquid Waste Separation Facility (632), Lined Waterway or Outlet (468), Nutrient Management (590), Waste Recycling (633)	Includes costs of all materials, equipment use and labor required to install manure agitator.	
634 Waste Transfer	Concrete Channel	Installation of a concrete channel that consists of a slab with curb and footing on each side of the slab for the entire length of the channel to enable the facility manager to direct liquid waste to an existing collection basin and/or waste storage facility.	Waste Storage Facility (313), Pumping Plant (533), Irrigation Pipeline (430), Solid/Liquid Waste Separation Facility (632), Lined Waterway or Outlet (468), Nutrient Management (590), Waste Recycling (633)	Includes costs of all materials, equipment use and labor required to install earthfill, concrete, safety chain, manure channel or chute, span manure transfer channel or chute.	Bottom surface area of concrete channel
634 Waste Transfer	Concrete Channel with push-off wall at pond and safety gate	Installation of a concrete channel that consists of a slab with curb and footing on each side of the slab for the entire length of the channel to enable the facility manager to direct liquid waste to a collection basin and/or waste storage facility at the end of a push-off ramp. A safety gate is installed at the end of the push-off ramp.	Waste Storage Facility (313), Pumping Plant (533), Irrigation Pipeline (430), Solid/Liquid Waste Separation Facility (632), Lined Waterway or Outlet (468), Nutrient Management (590), Waste Recycling (633)	Includes costs of all materials, equipment use and labor required to install earthfill, concrete, safety chain, manure channel or chute, span manure transfer channel or chute.	
634 Waste Transfer	Concrete channel, to wastewater reception pit	Installation of a concrete channel that consists of a slab with curb and footing on each side of the slab for the entire length of the channel to enable the facility manager to direct liquid waste to a 4300 gallon wastewater collection basin and/or waste storage facility.	Waste Storage Facility (313), Pumping Plant (533), Irrigation Pipeline (430), Solid/Liquid Waste Separation Facility (632), Lined Waterway or Outlet (468), Nutrient Management (590), Waste Recycling (633)	Includes costs of all materials, equipment use and labor required to install earthfill, concrete, pipe, safety chain (tractor barrier), pipe.	
634 Waste Transfer	Concrete channel, to medium reception pit, small pipe to storage	Installation of a concrete channel that consists of a slab with curb and footing on each side of the slab for the entire length of the channel to enable the facility manager to direct liquid waste to a 4300 gallon collection basin and/or waste storage facility. The wastewater is then transferred from the basin to the waste storage pond through a 6" diameter low pressure pipeline.	Waste Storage Facility (313), Pumping Plant (533), Irrigation Pipeline (430), Solid/Liquid Waste Separation Facility (632), Lined Waterway or Outlet (468), Nutrient Management (590), Waste Recycling (633)	Includes costs of all materials, equipment use and labor required to install earthfill, compaction, concrete, pipe, safety chain (tractor barrier), pipe.	
634 Waste Transfer	Medium, Low pressure flow PVC pipeline, from waste storage pond to land application site	Low pressure flow pipeline used to transfer manure wastewater by a low pressure pump from the waste storage pond to the field where it is applied according to the CNMP. The pipeline moves the water from the pond through a buried mainline with low pressure outlets that spread the water on a vegetated treatment area or to a site where the water is applied through an existing field application system. Low pressure flow PVC transfer pipelines can be between 3" and 30" diameter and are designed for a pumping pressure of 100 psi or less.	Waste Storage Facility (313), Pumping Plant (533), Irrigation Pipeline (430), Solid/Liquid Waste Separation Facility (632), Lined Waterway or Outlet (468), Nutrient Management (590), Waste Recycling (633)	Includes costs of all materials, equipment use and labor required to install excavation, earthfill, compaction, concrete, PVC pipe.	
634 Waste Transfer	Large diameter, Low pressure flow, PVC conduit	Low pressure flow conduit is typically a PVC pipeline used to transfer wastewater or manure slurry by pumping from one production location to a storage or treatment location. Low pressure flow PVC transfer pipelines can be between 3" and 30" diameter and are designed for a pumping pressure of no more than 100 psi. The low pressure transfer system typically consists of an inlet structure or hopper connected to a smooth interior PVC pipe sized to deliver the design flow.	Waste Storage Facility (313), Pumping Plant (533), Irrigation Pipeline (430), Solid/Liquid Waste Separation Facility (632), Lined Waterway or Outlet (468), Nutrient Management (590), Waste Recycling (633)	Includes costs of all materials, equipment use and labor required to install excavation, earthfill, compaction, concrete, PVC pipe.	
634 Waste Transfer	HDPE conduit, gravity flow, from an existing inlet structure to site of treatment or storage.	Gravity flow conduit is typically a large diameter water tight HDPE sanitary sewer pipe used to transfer manure by gravity from one location to another. The gravity transfer system typically consists of an existing inlet structure or hopper with attachment to a smooth interior large diameter pipe. The pipe conveys the slurry waste liquid between the waste collection point and a manure storage or waste treatment structure.	Waste Storage Facility (313), Pumping Plant (533), Irrigation Pipeline (430), Solid/Liquid Waste Separation Facility (632), Lined Waterway or Outlet (468), Nutrient Management (590), Waste Recycling (633). Transfer pump if needed must be contracted under Pumping Plant, (533).	Includes costs of all materials, equipment use and labor required to install excavation, earthfill, compaction, concrete, HDPE pipe.	

634 Waste Transfer	Wastewater Transfer Pipeline	Pipeline used to transfer manure wastewater throughout the operation including from the waste storage pond to the field where it is to be applied according to the CNMP, to a recycle system, or within the manure capture system. Transfer pipelines can be between 3" and 12" diameter but 6" diameter is a commonly used pipe size. The pipeline moves the water by pumping from the intake riser location, through a buried mainline with outlet risers spaced at 300 ft intervals for a traveler applicator. This practice includes the pipe plus an inlet riser structure, clean-out risers and outlet risers plus all other valves and fittings, trench excavation and backfill, labor and a equipment for installation.	Waste Storage Facility (313), Pumping Plant (533), Irrigation Pipeline (430), Solid/Liquid Waste Separation Facility (632), Lined Waterway or Outlet (468), Nutrient Management (590), Waste Recycling (633). Transfer pump if needed must be contracted under Pumping Plant, (533).	Includes costs of all materials, equipment use and labor required to install pipe plus an inlet riser structure, clean-out risers and outlet risers plus all other valves and fittings, trench excavation and backfill, earthfill, compaction, concrete, PVC pipe.	Weight of Pipe Installed
634 Waste Transfer	Wastewater Flush Transfer System - Pipes only	Installation of the pipe for a manure and wastewater flush system that provides the structures to utilize recycled wastewater to flush waste from a concrete surface into a waste storage pond. This may include pipe and valves, concrete flush lane, concrete curbs or gutter. The animal waste will be transferred by recycled flush water through the pipe system to rinse the concrete production surface and carry the waste to a waste storage pond.	Waste Storage Facility (313), Pumping Plant (533), Irrigation Pipeline (430), Solid/Liquid Waste Separation Facility (632), Lined Waterway or Outlet (468), Nutrient Management (590), Waste Recycling (633). Transfer pump if needed must be contracted under Pumping Plant, (533).	Includes costs of all materials, equipment use and labor required to install earthfill, compaction, concrete, PVC pipe.	
638 Water and Sediment Control	WASCOB base	Typical scenario is for the construction of an earthen embankment. Outlet is typically an underground outlet. An earthen embankment or combination ridge and channel generally constructed across the slope and minor watercourses to form a sediment trap and water detention basin.	If riser and underground outlet are needed, then include Underground Outlet (620). Include Critical Area Planting (342) where necessary to prevent erosion following construction activities.	Includes costs of all materials, equipment use and labor required to install excavation, shaping, grading.	
638 Water and Sediment Control	WASCOB topsoil	Typical scenarios for the construction of an earthen embankment. Prior to building the embankment, topsoil is removed and stockpiled. Outlet is typically an underground outlet. An earthen embankment or combination ridge and channel generally constructed across the slope and minor watercourses to form a sediment trap and water detention basin. Topsoil is replaced following construction of the embankment.	If riser and underground outlet are needed, then include Underground Outlet (620). Include Critical Area Planting (342) where necessary to prevent erosion following construction activities.	Includes costs of all materials, equipment use and labor required to install excavation, shaping, grading, topsoil stripped and stockpiled.	
642 Water Well	Shallow Well	Typical construction is for the installation of a well, in areas where sufficient water is known to occur within 100 feet of the ground surface. The well shall be drilled, dug, driven, bored, jetted or otherwise constructed to an aquifer for water supply.	Utilize Pumping Plant (533) and Pipeline (516) as associated practices. Use Critical Area Seeding (342) where necessary to prevent erosion following construction activities.	Includes the cost of all materials, equipment use and labor required to install drilling, casing, screen, sealant for shallow well.	
642 Water Well	Typical Well	Typical construction is for the installation of a well, in areas where sufficient water is known to occur 100 - 600 feet of the ground surface. The well shall be drilled, dug, driven, bored, jetted or otherwise constructed to an aquifer for water supply.	Utilize Pumping Plant (533) and Pipeline (516) as associated practices. Use Critical Area Seeding (342) where necessary to prevent erosion following construction activities.	Includes the cost of all materials, equipment use and labor required to install drilling, casing, screen, sealant for typical well.	
642 Water Well	Deep Well	Typical construction is for the installation of a well, in areas where sufficient water is known to occur > 600 feet of the ground surface. The well shall be drilled, dug, driven, bored, jetted or otherwise constructed to an aquifer for water supply.	Utilize Pumping Plant (533) and Pipeline (516) as associated practices. Use Critical Area Seeding (342) where necessary to prevent erosion following construction activities.	Includes the cost of all materials, equipment use and labor required to install drilling, casing, screen, sealant for deep well.	
643 Restoration and Management of Rare and Declining Habitats	Development of Shallow Micro-Topographic Features with Normal Farming Equipment	This typical scenario is installed on open non-wetlands. The purpose is to increase plant species richness and diversity, create micro-habitats for invertebrates, increase water infiltration and reduce run-off. The area is plowed to loosen the soil. Then the soil is excavated with normal farming equipment (e.g. tractor and box-blade) to a depth of 2-6 inches and immediately deposited. This lowering and raising of a box-blade restores the original micro-topographic features (6' X 6' depressions and mounds) common to most landscapes and landforms prior to clearing, tilling, and annual mowing. Restoration of shallow but frequent micro-topographic features has been lost by the smoothing action of tillage, mowing and the original land-clearing. This scenario is typically implemented for ecosystem restoration projects such as prairie restoration and range-land restoration, and particularly on moderately well-drained soils.		Includes the cost of all materials, equipment use and labor required to install micro-topographic changes with the use of low horsepower equipment, such as, rubber tired tractor and farm implements (i.e. – disc, box blade, scraper blade, grader blade).	

643 Restoration and Management of Rare and Declining Habitats	Development of Deep Micro-Topographic Features with Heavy Equipment	his typical scenario is installed on non-forested wetlands (or open land prior to tree planting), where micro-topographic features have been removed by past farming and/or ranching cultural practices. The purpose is to increase plant species richness and diversity, create micro-habitats for invertebrates, increase water infiltration and reduce run-off. The area is plowed 2 weeks prior to excavation to kill existing vegetation and allow for proper dirt work. Then the soil is excavated with track equipment (dozer) to a depth of 6-12 inches and immediately deposited. This lowering and raising of a dozer -blade restores the original deep micro-topographic features (10' X10' depressions and mounds) common to many landscapes and landforms prior to the lands conversion to agricultural lands. This scenario it typically implemented for ecosystem restoration projects such as wetland restoration (herbaceous or prior to planting of woody species), prairie restoration and range-land restoration. It is most commonly applied to well-drained soils as the purpose is for the micro-depression to pond water for short duration (less than 7 days).		Includes the cost of all materials, equipment use and labor required to install macro-topographic changes with the use of moderate horsepower equipment, such as a dozer.
644 Wetland Wildlife Management	Development of Shallow Micro-Topographic Features with Normal Farming Equipment	This typical scenario is installed on open non-wetlands. The purpose is to increase plant species richness and diversity, create micro-habitats for invertebrates, increase water infiltration and reduce run-off. The area is plowed to loosen the soil. Then the soil is excavated with normal farming equipment (e.g. tractor and box-blade) to a depth of 2-6 inches and immediately deposited. This lowering and raising of a box-blade restores the original micro-topographic features (6' X 6' depressions and mounds) common to most landscapes and landforms prior to clearing, tilling, and annual mowing. Restoration of shallow but frequent micro-topographic features has been lost by the smoothing action of tillage, mowing and the original land-clearing. This scenario it typically implemented for ecosystem restoration projects such as prairie restoration and range-land restoration, and particularly on moderately well-drained soils.	Riparian Forest Buffer (391), Early Successional Habitat Development and Management (647), Forest Stand Improvement (666)	Includes the cost of all materials, equipment use and labor required to install micro-topographic changes with the use of low horsepower equipment, such as, rubber tired tractor and farm implements (i.e. – disc, box blade, scraper blade, grader blade).
644 Wetland Wildlife Management	Development of Deep Micro-Topographic Features with Heavy Equipment	his typical scenario is installed on non-forested wetlands (or open land prior to tree planting), where micro-topographic features have been removed by past farming and/or ranching cultural practices. The purpose is to increase plant species richness and diversity, create micro-habitats for invertebrates, increase water infiltration and reduce run-off. The area is plowed 2 weeks prior to excavation to kill existing vegetation and allow for proper dirt work. Then the soil is excavated with track equipment (dozer) to a depth of 6-12 inches and immediately deposited. This lowering and raising of a dozer -blade restores the original deep micro-topographic features (10' X10' depressions and mounds) common to many landscapes and landforms prior to the lands conversion to agricultural lands. This scenario it typically implemented for ecosystem restoration projects such as wetland restoration (herbaceous or prior to planting of woody species), prairie restoration and range-land restoration. It is most commonly applied to well-drained soils as the purpose is for the micro-depression to pond water for short duration (less than 7 days).	Riparian Forest Buffer (391), Early Successional Habitat Development and Management (647), Forest Stand Improvement (666)	Includes the cost of all materials, equipment use and labor required to install macro-topographic changes with the use of moderate horsepower equipment, such as a dozer.
645 Upland Wildlife Habitat Management	Development of Shallow Micro-Topographic Features with Normal Farming Equipment	This typical scenario is installed on open non-wetlands. The purpose is to increase plant species richness and diversity, create micro-habitats for invertebrates, increase water infiltration and reduce run-off. The area is plowed to loosen the soil. Then the soil is excavated with normal farming equipment (e.g. tractor and box-blade) to a depth of 2-6 inches and immediately deposited. This lowering and raising of a box-blade restores the original micro-topographic features (6' X 6' depressions and mounds) common to most landscapes and landforms prior to clearing, tilling, and annual mowing. Restoration of shallow but frequent micro-topographic features has been lost by the smoothing action of tillage, mowing and the original land-clearing. This scenario it typically implemented for ecosystem restoration projects such as prairie restoration and range-land restoration, and particularly on moderately well-drained soils.	Riparian Forest Buffer (391), Early Successional Habitat Development and Management (647), Forest Stand Improvement (666)	Includes the cost of all materials, equipment use and labor required to install micro-topographic changes with the use of low horsepower equipment, such as, rubber tired tractor and farm implements (i.e. – disc, box blade, scraper blade, grader blade).

645 Upland Wildlife Habitat Management	Development of Deep Micro-Topographic Features with Heavy Equipment	his typical scenario is installed on non-forested wetlands (or open land prior to tree planting), where micro-topographic features have been removed by past farming and/or ranching cultural practices. The purpose is to increase plant species richness and diversity, create micro-habitats for invertebrates, increase water infiltration and reduce run-off. The area is plowed 2 weeks prior to excavation to kill existing vegetation and allow for proper dirt work. Then the soil is excavated with track equipment (dozer) to a depth of 6-12 inches and immediately deposited. This lowering and raising of a dozer -blade restores the original deep micro-topographic features (10' X10' depressions and mounds) common to many landscapes and landforms prior to the lands conversion to agricultural lands. This scenario it typically implemented for ecosystem restoration projects such as wetland restoration (herbaceous or prior to planting of woody species), prairie restoration and range-land restoration. It is most commonly applied to well-drained soils as the purpose is for the micro-depression to pond water for short duration (less than 7 days).	Riparian Forest Buffer (391), Early Successional Habitat Development and Management (647), Tree Shrub Pruning (660), Forest Stand Improvement (666)	Includes the cost of all materials, equipment use and labor required to install macro-topographic changes with the use of moderate horsepower equipment, such as a dozer.
647 Early Successional Habitat Development and Management	Disking	This scenario address inadequate habitat for fish and wildlife where setting back succession by mowing incoming woody species will improve habitat for the target species. Mowing can be used to increase structural diversity by creating areas of shorter vegetation preferred by some species or certain life stages of species. The typical setting for this scenario is at the edge of crop fields, in the edge of pastures, at the edge of woodlands or brushy areas, and in odd areas such as pivot corners.	Where the management of woody plants is require to create or maintain early successional habitat conservation practice Brush Management (314) Forest Stand Improvement (666) should be used. Where chemical control of weeds, including invasives, is required to reduce competition for the desired plant community conservation practice Herbaceous Weed Control (315) should be used. Where the seedbank is inadequate for natural regeneration and seeding is required use conservation practice Range Seeding (550) or Conservation Cover (327). Where the need is to create early successional habitat within or at the edge of woodland or forest use conservation practice Forest Stand Improvement (666) to remove trees.	Includes costs of all materials, equipment use and labor required to install disking.
647 Early Successional Habitat Development and Management	Mowing	This scenario address inadequate habitat for fish and wildlife where setting back succession by mowing incoming woody species will improve habitat for the target species. Mowing can be used to increase structural diversity by creating areas of shorter vegetation preferred by some species or certain life stages of species. The typical setting for this scenario is at the edge of crop fields, in the edge of pastures, at the edge of woodlands or brushy areas, and in odd areas such as pivot corners.	Where the management of woody plants is require to create or maintain early successional habitat conservation practice Brush Management (314) Forest Stand Improvement (666) should be used. Where chemical control of weeds, including invasives, is required to reduce competition for the desired plant community conservation practice Herbaceous Weed Control (315) should be used. Where the seedbank is inadequate for natural regeneration and seeding is required use conservation practice Range Seeding (550) or Conservation Cover (327). Where the need is to create early successional habitat within or at the edge of woodland or forest use conservation practice Forest Stand Improvement (666) to remove trees.	Includes costs of all materials, equipment use and labor required to install mowing, bush hog.
649 Structures for Wildlife	Nesting Box, Small No Pole	A structure is provided to support the nesting and rearing of smaller targeted species, such as birds, bats and pollinators, and is directly mounted to a tree, building or other structure		Includes costs of all materials, equipment use and labor required to install nest box.
649 Structures for Wildlife	Nesting Box, Small, with Wood Pole	Constructing a nest box and mounting on a pole. A structure is provided to support the nesting and rearing of targeted species, such as blue birds and waterfowl. Trees, buildings or other structures are not available.		Includes costs of all materials, equipment use and labor required to install nest box.
649 Structures for Wildlife	Nesting Box, Large, No Pole	A structure is provided to support the nesting and rearing of larger targeted species such as waterfowl, bats and barn owls, and is directly mounted to a tree, building or other structure.		Includes costs of all materials, equipment use and labor required to install nest box.
649 Structures for Wildlife	Nesting Box or Rapture Perch, Large, with Pole	Constructing a nest box or rapture perch on a steel pole with a predator guard where needed. A structure is provided to support the nesting and rearing of larger targeted species such as woodducks, bats, barn owls or to provide needed perches or nesting structures for raptures.		Includes costs of all materials, equipment use and labor required to install nest box or rapture perch.
649 Structures for Wildlife	Fence Markers, Vinyl Undersill	Existing fences are retrofitted with vinyl markers that increase wire visibility and reduce mortality due to collision for wildlife species of concern. Markers are installed approximately every 3 feet along top wire.		Includes costs of all materials, equipment use and labor required to install fence markers.
649 Structures for Wildlife	Escape Ramp	Retrofit an existing watering trough/tank with an appropriately designed and installed wildlife escape ramp to reduce wildlife mortality and maintain water quality within the watering facility.		Includes costs of all materials, equipment use and labor required to install escape ramp.

655 Forest Trails and Landings	Trail Erosion Control w/o Vegetation	Rehabilitation of existing forest access trail segments by addressing legacy resource issues for long-term use. Typically the trail is a single lane (including cut and fill), seasonal prism requiring sustained erosion control measures installed by using heavy equipment such as dozers, graders, backhoes, and/or excavators. The purpose is to hydrologically disconnect the existing trail/landing system from streams and natural drainages.	Other practices such as Stream Crossing (578), and Critical Area Planting (342), Access Road (560) and Structure for Water Control (587) can be adjacent/appurtenant but not part of this practice scenario.	Includes costs of all materials, equipment use and labor required to install trail water deflectors, constructed of the length of a conveyor belt, or belting bolted between pressure treated planks.
655 Forest Trails and Landings	Water Bars	Rehabilitation of existing forest access trails and landings by addressing legacy resource issues such as sedimentation, for long-term use. Typically the trail is a existing single lane, including cut and fill seasonal road prism on a moderately steep slope on forestland requiring sustained erosion control measures. The purpose is to hydrologically disconnect existing trail/landing system from the streams and natural drainages. This includes the design and installation of cross drains, rock drains, relief drains, out sloping (or changing road surface drainage), rolling dips and water bars and ditch outs as needed This scenario applies to only those segments of the trail system that have resource concerns requiring rehabilitation.	Other practices such as Stream Crossing (578), and Critical Area Planting (342), Access Road (560) and Structure for Water Control (587) can be adjacent/appurtenant but not part of this practice scenario.	Includes costs of all materials, equipment use and labor required to install graded trail water controlling structures (e.g. water bars, broad based dips), for erosion control.
657 Wetland Restoration	Ditch Plug	A depressional HGM class wetland is to be restored. The site is a recharge depression, fed only from surface runoff.	Range Planting (550), Tree Shrub Establishment (612), Wetland Wildlife Habitat Management (644), Conservation Cover (327)	Includes cost of all materials, equipment use and labor required to install earthfill, shaping and compaction.
666 Forest Stand Improvement	Band Spray	Using ground applied chemicals to release young desirable trees from competing and/or overtopping vegetation.	Early Successional Habitat Development and Management (647), Upland Wildlife Habitat Management (645), Prescribed Burning (338)	Includes cost of all materials, equipment use and labor required to install application of low cost chemicals in low volumes through band spraying.
666 Forest Stand Improvement	Timber Stand Improvement - Chemical, Ground	Using ground applied chemicals to release young desirable trees from competing and/or overtopping vegetation.	Early Successional Habitat Development and Management (647), Upland Wildlife Habitat Management (645), Prescribed Burning (338)	Includes cost of all materials, equipment use and labor required to install application of low cost chemicals in low volumes through ground application.
666 Forest Stand Improvement	Timber Stand Improvement - Chemical, Aerial	Using aerially applied chemicals to release desirable trees from competing and/or overtopping vegetation.	Early Successional Habitat Development and Management (647), Upland Wildlife Habitat Management (645), Prescribed Burning (338)	Includes cost of all materials, equipment use and labor required to install application of low cost chemicals in low volumes through aerial application.
666 Forest Stand Improvement	Timber Stand Improvement - Single Stem Treatment	Altering the composition and stocking of a stand of trees by means of individual stem treatment.	Early Successional Habitat Development and Management (647), Upland Wildlife Habitat Management (645), Prescribed Burning (338)	Includes cost of all materials, equipment use and labor required to install application of low cost chemicals in low volumes through spot treatment using backpack sprayer.
666 Forest Stand Improvement	Competition Control - Mechanical, Light Equipment	Using light equipment such as a tractor with bush hog to control vegetation that is competing with desirable trees and species or to reduce the stocking level of a stand of desirable trees.	Early Successional Habitat Development and Management (647), Upland Wildlife Habitat Management (645), Prescribed Burning (338)	Includes cost of all materials, equipment use and labor required to install application of bush hog.
666 Forest Stand Improvement	Competition Control - Mechanical, Heavy Equipment	Using equipment such as a masticator or mulcher to control vegetation that is competing with desirable trees and species or to reduce the stocking level of a stand of desirable trees.	Early Successional Habitat Development and Management (647), Upland Wildlife Habitat Management (645), Prescribed Burning (338)	Includes cost of all materials, equipment use and labor required to install application of masticator, mulcher.
666 Forest Stand Improvement	Creating Patch Clearcuts	Creating 2 acre patches in over-mature and/or degraded stands using hand tools such as chainsaws.	Early Successional Habitat Development and Management (647), Upland Wildlife Habitat Management (645), Prescribed Burning (338)	Includes cost of all materials, equipment use and labor required to install clearings through use of chainsaw.
666 Forest Stand Improvement	Thinning for Wildlife and Forest Health at 50BA	Used to open the canopy of a stand to improve the wildlife habitat and tree health.	Early Successional Habitat Development and Management (647), Upland Wildlife Habitat Management (645), Prescribed Burning (338)	Includes cost of all materials, equipment use and labor required to install tree marking paint. Costs involved in any commercial harvesting including marking, access, and transportation are not included in this scenario.
666 Forest Stand Improvement	Thinning for Wildlife and Forest Health at 60BA	Used to open the canopy of a stand to improve the wildlife habitat and tree health.	Early Successional Habitat Development and Management (647), Upland Wildlife Habitat Management (645), Prescribed Burning (338)	Includes cost of all materials, equipment use and labor required to install tree marking paint. Costs involved in any commercial harvesting including marking, access, and transportation are not included in this scenario.
666 Forest Stand Improvement	Thinning for Wildlife and Forest Health at 70BA	Used to open the canopy of a stand to improve the wildlife habitat and tree health.	Early Successional Habitat Development and Management (647), Upland Wildlife Habitat Management (645), Prescribed Burning (338)	Includes cost of all materials, equipment use and labor required to install tree marking paint. Costs involved in any commercial harvesting including marking, access, and transportation are not included in this scenario.
666 Forest Stand Improvement	Thinning for Wildlife and Forest Health at 80BA	Used to open the canopy of a stand to improve the wildlife habitat and tree health.	Early Successional Habitat Development and Management (647), Upland Wildlife Habitat Management (645), Prescribed Burning (338)	Includes cost of all materials, equipment use and labor required to install clearings through use of chainsaw. Costs involved in any commercial harvesting including marking, access, and transportation are not included in this scenario.

666 Forest Stand Improvement	Pre-commercial Thinning - Mechanical	Adjusting the stocking of a young, non-merchantable stand of trees.	Early Successional Habitat Development and Management (647), Upland Wildlife Habitat Management (645), Prescribed Burning (338)	Includes cost of all materials, equipment use and labor (typically a forest consultant) required to conduct a commercial thinning using mechanical equipment such as drum chopper, tractor and disk or mechanical brush cutter.
666 Forest Stand Improvement	Pre-commercial Thinning - Hand tools	Adjusting the stocking of a young, non-merchantable stand of trees.	Early Successional Habitat Development and Management (647), Upland Wildlife Habitat Management (645), Prescribed Burning (338)	Includes cost of all materials, equipment use and labor (typically a forest consultant) required to conduct a commercial thinning using hand tools such as chainsaws.
670 Lighting System Improvement	Lighting - CFL	To install dimmable CFLs to replace incandescent lamps on a one-for-one basis. Light fixtures do not have to be replaced. More efficient lighting is provided by Compact Fluorescent Lamps (CFLs) in order to reduce energy use as evidenced by the energy audit. CFL requirements: minimum 8 Watt, 4100 Kelvin, dimmable, grow-out bulb; industrial grade; suitably protected from dirt accumulation. In high humidity environments or areas subject to wash down, gasketed or weatherproof housings are required to prevent corrosion and premature failure.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install CFL bulbs.
670 Lighting System Improvement	Lighting - LED	To install dimmable LEDs to replace incandescent lamps on a one-for-one basis. Light fixtures do not have to be replaced. LED requirements: minimum 6 Watt, 3700 Kelvin, dimmable, grow-out bulb; industrial grade; suitably protected from dirt accumulation. In high humidity environments or areas subject to wash down, gasketed or weatherproof housings are required to prevent corrosion and premature failure.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install LED lamps.
670 Lighting System Improvement	Lighting - Linear Fluorescent	The lighting system consists of a four-foot, three-lamp fixture with a single electronic ballast. The high-efficiency lighting system uses high-efficiency T8 or T5 fluorescent lamps. Associated materials for installation of replacement fixtures are included. Appropriate disposal of existing lamps, ballasts and other materials is required.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install linear fluorescent lamps, fixtures.
670 Lighting System Improvement	Lighting - Pulse-Start Metal Halide	The lighting system consists of a Pulse-Start Metal Halide (PSMH) lamp with a matched ballast or light-emitting diode (LED) equivalent fixtures (as detailed in ASABE S612-compliant energy audit). Associated materials for installation of replacement fixtures are included. Appropriate disposal of existing lamps, ballasts and other materials is required.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install PSMH.
670 Lighting System Improvement	Automatic Controller System	The typical scenario consists of an automatic control system installed on an existing manually controlled agricultural system. Typical components may include any of the following: wiring, sensors, data logger, logic controller, communication link, software, switches, and relay.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install programmable logic controller.
672 Building Envelope Improvement	Attic Insulation	Install a minimum R-7 insulation in addition to existing attic or ceiling to reduce heat transfer. Increased insulation reduces seasonal heat loss and heat gain which reduces the respective need for heating and cooling equipment to operate.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install R-7, cellulose or fiberglass, insulation. Area of Attic Insulated
672 Building Envelope Improvement	Spray Foam Wall Insulation	Enclose both sidewalls and endwalls from ceiling to floor with closed-cell polyurethane foam application (minimum 1" thickness (R-7) of 2.0 to 3.0 lbs/cu.ft., thermal barrier, and a form of physical protective barrier on lower 2' (treated lumber or similar product)	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install closed-cell polyurethane foam insulation (minimum 1" thickness (R-7) with a protective sheathing barrier on lower 2 feet of wall height. (Spray foam insulation, one inch increments per SF. Insulation R values 1 inch R6.5 - 1 SF, 2 inch R13, 2-SF and 3 inch R19.5, 3-SF). Square Foot of Wall Insulated
672 Building Envelope Improvement	Batt Wall Insulation	Enclose both sidewalls and endwalls from ceiling to floor with metal exterior, 3.5" fiberglass batts (R-11), vapor barrier, & interior plywood or OSB sheathing.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install Insulated wall panel typically 3.5" fiberglass batts (R-11), vapor barrier and OSB sheathing with corrugated or ribbed, galvanized, 28 gauge, includes fasteners. Square Footage of Side and End Wa
672 Building Envelope Improvement	Sealant	Sealing the gaps between walls, gables, ceiling, etc. in a poultry house or greenhouse. Sealing is performed by a professional contractor, not merely use of spray foam from a can.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install sealant.

672 Building Envelope Improvement	Greenhouse Screens	A mechanically controlled energy screen is installed truss-to-truss or gutter-to-gutter, with side screens as necessary, reducing heat loss. The screen provides a means to better control solar heat gain and heat transfer during night or cold weather conditions to reduce energy use. Screens and similar devices may also be used to divide internal areas and allow for differentiated heating, ventilation, or cooling system operation to reduce energy use.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install screens.
672 Building Envelope Improvement	Greenhouse - Insulate Unglazed Walls	The greenhouse is fitted with insulation installed truss-to-truss or gutter-to-gutter and/or non glazed endwalls and/or sidewalls, reducing heat loss and gain in the greenhouse. The insulation can be either of the cellulose or bubble type (or equivalent). The increased insulation reduces seasonal heat loss and heat gain which reduces the respective need for heating and cooling equipment to operate.	128-AgEMP - HQ, and other activities within Farmstead Energy Improvement (374). Any improvements are based on an energy audit meeting the requirements of ASABE S612.	Includes cost of all materials, equipment use and labor required to install unglazed walls.
755 Well Plugging	Artesian Well Capping	The sealing of a water well in a specified manner to cap a free flowing well.	Water Well (642), Irrigation Pipeline (430), Watering Facility (614)	Includes cost of all materials, equipment use and labor required to valve, concrete, water test.
755 Well Plugging	Well Plug	The sealing of a water well in a specified manner to a specific depth in order to prevent contamination from ground water contaminants.	Water Well (642), Irrigation Pipeline (430), Watering Facility (614)	Includes cost of all materials, equipment use and labor required to install cement and/or bentonite grout, water test.
798 Seasonal High Tunnel for Crops	Seasonal High Tunnel for Crops	A manufactured frame of tubular steel covered with 4-year 6mil plastic.	Conservation Crop Rotation (328), Nutrient Management (590), Pest Management (595),	Includes cost of all materials, equipment use and labor required to install a hoop house, quonset style.