

HARRIS COUNTY PUBLIC INFRASTRUCTURE DEPARTMENT  
 ARCHITECTURE & ENGINEERING DIVISION  
 INDEX OF SPECIFICATIONS FOR THE YEAR 2008

<b>NO.</b>	<b>SPECIFICATION SECTION</b>	<b>REVISION NO.</b>	<b>REVISION DATE</b>
102	Clearing and Grubbing	5	1 November 2008
104	Removing Old Concrete	1	1 October 1990
110	Roadway Excavation	5	1 November 2008
120	Excavation for Channels, and other Drainage Facilities	4	1 November 2008
130	Borrow	5	1 November 2008
132	Embankment	5	1 November 2008
160	Topsoil	3	1 November 2008
162	Sodding for Erosion Control and Stabilization	6	1 November 2008
164	Seeding and Erosion Control Blanket	4	1 November 2008
165	Hydro-Mulch Seeding (for Erosion Control and Stabilization)	5	1 November 2008
166	Fertilizer	2	1 November 2008
200	Stripping	5	1 November 2008
205	Subgrade	3	1 November 2008
220	Lime Stabilized Subgrade	2	1 October 1999
221	Hydrated Lime and Lime Slurry		
222	Portland Cement Stabilized Subgrade	2	1 October 1999
223	Lime-Flyash or Flyash Stabilized Subgrade	3	1 October 1999
224	Quicklime	1	1 October 1999
230	Crushed Aggregate Base Course	2	1 October 1997

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231	Cement Stabilized Crushed Aggregate Base Course	4	1 October 1999
250	Hot Mix Asphaltic Concrete Base Course (Black Base)	5	1 October 2000
251	Base Repair with Hot Mix Asphaltic Concrete Base Course	3	1 October 1997
252	In-Place Full Depth Cold Flexible Pavement Recycling	2	1 November 2008
309	Milling Existing Pavement		October 2000 1 <sup>st</sup> Issue
310	Prime Coat	3	1 October 2002
320	Single Course Surface Treatment	2	1 October 2002
322	Two Course Surface Treatment	3	1 October 2002
323	Emulsified Asphalt Treatment	1	1 October 1994
324	Seal Coat	1	1 October 1994
340	Hot Mix-Hot Laid Asphaltic Concrete	8	1 October 2002
341	Hot In-Place Asphalt Recycling		1 October 2003 1 <sup>st</sup> Issue
360	Concrete Pavement	11	1 November 2008
361	Full Depth Repair of Concrete Pavement		1 October 2003 1 <sup>st</sup> Issue
400	Structural Excavation and Backfill	2	1 October 1999
402	Bank Sand Backfill	2	1 October 1999
403	Driving Timber Piling		
404	Driving Steel Piling		
405	Driving Concrete Piling	1	1 October 1992

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407	Treated and Untreated Timber Piling		
408	Steel Sheet Piling	1	1 October 1990
409	Steel H Piling		
410	Prestressed Concrete Piling	2	1 October 1990
411	Drilled Shaft Foundations	2	1 October 2001
420	Concrete Structures		
421	Structural Concrete	6	1 October 1999
423	Prestressed Concrete Units	2	1 October 1990
424	Extending Concrete Structures	2	1 October 2001
429	Trench Safety System	1	1 October 1989
430	Construction of Underground Utilities (with drawings)	7	1 November 2008
431	Jacking, Boring or Tunneling Pipe		
432	Tunnel Construction		1 October 1999
433	Cement Stabilized Sand Bedding and Backfill Material	9	1 November 2008
434	Flowable Fill	2	1 November 2008
435	Timber Ordered Left In Trench	2	1 October 1991
436	Well Pointing		
437	Elastomeric Materials		
438	Preformed Joint Seal		

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439	Polyurethane Joint Seal	1	1 October 1990
440	Reinforcing Steel		
441	Steel Structures		
442	Metals for Structures	1	1 October 1990
445	Structural Bolting	2	1 October 1990
446	Structural Welding	1	1 October 1990
447	Painting and Protective Coating		
448	Bridge Plaque	New	1 November 2008
450	Concrete and Steel Railing	3	1 October 1995
451	Removing and Replacing Damaged Railing		
452	Removing Railing		
453	Temporary Railing	1	1 October 1994
454	DELETED	DELETED	1 November 2008
455	Timber for Structures		
456	Timber Structures		
457	Timber Preservatives and Treatment	1	1 October 1991
458	Hardware for Heavy Timber Construction		
459	Timber Bents	New	1 November 2008
460	Reinforced Concrete Pipe	6	1 October 2002

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461	Corrugated Metal Pipe	5	1 October 2002
462	Clay Pipe		
463	Safety End Treatment (with full size drawing)	4	1 October 2001
464	PVC Pipe	1	1 November 2008
465	Remove and Dispose of Existing Concrete or Metal Pipe		
470	DELETED	DELETED	1 November 2008
471	Precast Concrete Manholes (with drawings)	4	1 November 2008
472	Inlets (with drawings)	6	1 November 2008
473	Adjusting Manholes and Inlets	2	1 November 2008
476	Hydrostatic Testing of Pressure Lines		
477	Low Pressure Air Test-Sanitary Sewer Line		
480	Precast Reinforced Concrete Box Sewers (with drawings)	11	1 November 2008
481	Monolithic Reinforced Concrete Box Sewers	4	1 October 1999
491	Reinforced Concrete Slope Paving	1	1 October 1989
493	Riprap	2	1 November 2008
494	Geotextiles	1	1 November 2008
495	Removing Old Structures	2	1 November 2008
500	Remove & Relocate or Dispose of Traffic Signs, Mail Boxes and, Roadway Signs	2	1 November 2008
501	Tree Protection and Trimming	1	1 November 2008

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510	Planing and/or Texturing Pavement	1	1 October 1998
515	Roadway Shell		
516	Installation of Flex Beam Guardrail (with drawings)	7	1 November 2008
520	Weighing and Measuring Equipment		
526	Membrane Curing	4	1 November 2008
530	Concrete Curb, Gutter, Curb and Gutter, Sidewalks and Driveways (with 3 drawings)	2	1 October 1999
531	Colored Concrete for Sidewalks and Wheelchair Ramps		
535	Esplanades, Medians and Directional Islands	3	1 October 1999
536	Coloring Concrete Medians and Sidewalks		
537	Wheel Stops (with drawings)		
540	Removing and Disposing of Existing Asphaltic Surface and Flexible Base Material	1	1 October 2001
550	Existing Fencing and Gates	1	1 November 2008
551	Clearing, Grubbing and Fencing	1	1 October 1990
554	Wood Fencing	1	1 November 2008
555	Chain Link Fencing (with drawings)	3	1 November 2008
556	Four Strand Barbed Wire Fence (with drawings)	2	1 November 2008
560	Cleanup	1	1 October 2002
561	Video Recording Construction	2	1 November 2008

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562	Preparing the Right-of-Way		
624	Aluminum Signs	4	1 October 2000
646	Roadside Traffic Sign Support (with a drawing)	4	1 October 2000
648	Encapsulated Lens Reflective Sheeting for Traffic Control Signs (Hi-Intensity Grade)		
649	Wide Angle Prismatic Retroreflective Sheeting for Traffic Control Signs (Diamond Grade)	2	1 October 2001
658	Delineators and Object Markers		
660	Reflectorized Pavement Markings	2	1 October 2001
661	Traffic Paint (Solvent Based)	2	1 October 2001
662	Glass Reflective Spheres for Traffic Paint	2	1 October 1996
663	Traffic Buttons and Pavement Markers	3	1 October 2000
665	Work Zone Pavement Markings	3	1 October 2001
666	Prefabricated Pavement Markings	3	1 November 2008
669	Pavement Surface Preparation for Markings	1	1 October 2000
670	Barricades (with a drawing)	9	1 October 2001
671	Traffic Control	5	1 November 2008
672	Flagmen	6	1 November 2008
673	Constructing Detours for Maintaining Two-Way Traffic	9	1 October 2003
674	Removing Pavement Striping and Markings	2	1 November 2008
675	Traffic Paint Striping (Water Based)	2	1 November 2008

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676	Traffic Paint (Water Based)		October 1992 1 <sup>st</sup> Issue
677	Electrical Conduits for Traffic Signal Installation	2	1 November 2008
678	Zinc Coated Steel Wire Strand	1	1 November 2008
679	Insulated Jacketed Traffic Signal Cable	1	1 October 1999
680	Steel Mast Arm & Steel Strain Pole Assemblies	1	1 October 2002
681	Treated Timber Poles	1	1 October 2002
682	Traffic Signal Supports: Cantilever, Band-On Arm & Combination Poles		October 1998 1 <sup>st</sup> Issue
683	Traffic Signal Supports – Pedestal Poles	4	1 October 2002
684	DELETED		
685	DELETED		
686	Road Illumination Assemblies (On Traffic Signal Poles)	4	1 November 2008
687	Flasher Assembly Installation	4	1 October 2002
688	Flasher Assemblies	3	1 October 2001
690	Traffic Signal Heads	4	1 November 2008
691	Twelve Inch Signal Head with Programmable Visibility of Signal Faces	1	1 November 2008
692	Symbolic Pedestrian Signal Head (Incandescent Type)	2	1 November 2008
693	Traffic Signal Lamps	1	1 October 1999
694	Down Light for Traffic Signal – Fluorescent Type	4	1 November 2008
696	Low Profile Concrete Barrier	1	1 October 2001

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698 Temporary Polyethylene Water-Filled Barrier		1 October 2000 1 <sup>st</sup> Issue
701 Diversion Dikes		1 October 2001 1 <sup>st</sup> Issue
702 Interceptor Dikes		1 October 2001 1 <sup>st</sup> Issue
703 Diversion Swales		1 October 2001 1 <sup>st</sup> Issue
704 Interceptor Swales		1 October 2001 1 <sup>st</sup> Issue
705 Diversion Dikes with Swales		1 October 2001 1 <sup>st</sup> Issue
706 Pipe Slope Drain		1 October 2001 1 <sup>st</sup> Issue
708 Filter Fabric Fence		1 October 2001 1 <sup>st</sup> Issue
709 Triangular Filter Fabric Fence		1 October 2001 1 <sup>st</sup> Issue
711 Brush Berm		1 October 2001 1 <sup>st</sup> Issue
713 Reinforced Filter Fabric Barrier		1 October 2001 1 <sup>st</sup> Issue
714 Stone Outlet Sediment Trap		1 October 2001 1 <sup>st</sup> Issue
715 Excavated Earth Outlet Sediment Trap		1 October 2001 1 <sup>st</sup> Issue
716 Embankment Earth Outlet Sediment Trap		1 October 2001 1 <sup>st</sup> Issue
717 Sediment Basins (Stone Outlet or Pipe Outlet)		1 October 2001 1 <sup>st</sup> Issue
719 Inlet Protection Barriers		1 October 2001 1 <sup>st</sup> Issue
722 Portable Sediment Tank		1 October 2001 1 <sup>st</sup> Issue
723 Sediment Sump Pit (with drawing)	1	1 November 2008
724 Stabilized Construction Access (Type I – Rock)	1	1 October 2002

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725	General Source Controls	2	1 November 2008
727	Level Spreader		1 October 2001 1 <sup>st</sup> Issue
741	Inlet Protection Barrier (for Stage II Inlets, Gravel Bags) (with drawing)	2	1 November 2008
750	Rock Filter Dams	1	1 October 2002

ITEM 725

GENERAL SOURCE CONTROLS (SWPPP)

725.1 Description. This item describes erosion protection and sediment control related practices which must be utilized during construction operations.

725.2 Materials. Topsoil shall conform to the following requirements:

TABLE NO. 1

<u>Specification</u>	<u>Applicable Test</u>	<u>Applicable Test Method for</u>
pH=5.5 – 8	(1) pH (Litmus)	<u>ASTM D4972,</u> <u>“pH of Soils”</u>
Sand ( <u>2.0-0.05 mm</u> ) content	(2) Sedimentation	<u>ASTM D422,</u> <u>“Particle-Size</u> <u>Analysis of Soils”</u>
Shall be <u>10-70 %</u> of oven dry weight		<u>ASTM D1140,</u> <u>“Amount of Material</u> <u>in Soils Finer Than</u> <u>the No. 200 (75-<math>\mu</math>m)</u> <u>Sieve”</u>
Total Organic Matter <u>2.5-10%</u>	(3) <u>Wet</u> <u>Combustion</u>	<u>ASTM D2974,</u> <u>“Moisture, Ash,</u> <u>and Organic Matter</u> <u>of Peat and Other</u> <u>Organic Soils”</u> <u>AASHTO T194,</u>

All tests shall be oven dry weight.

The Contractor is required to inform the Engineer of the location of the pit or pits from which the material is to be taken. Harris County shall have the right to have an independent testing laboratory test the material to determine if it meets these specifications.

725.3 Construction Methods. No clearing and grubbing or rough cutting, other than as specifically directed by the Engineer to allow for soil

testing and surveying, shall be permitted until sediment control and erosion protection systems are in-place.

The Contractor shall prohibit equipment and vehicles from maneuvering on areas outside of dedicated rights of way and easements for construction. Damages caused by construction traffic to erosion and sedimentation control systems shall be repaired immediately.

#### **Topsoil for Erosion and Sedimentation Control Systems:**

When topsoil is called for as a component of another item, Contractor shall conduct erosion control practices during topsoil operation. When applying topsoil, contractor shall maintain erosion and sediment control systems, such as swales, berms, dikes, and sediment basins. Contractor shall place the topsoil to the lines and grades and to the depths shown on the construction plans.

After the areas to receive topsoil have been brought to grade and immediately prior to dumping and spreading the topsoil, the subgrade shall be loosened by discing or by scarifying to a depth of at least 2 inches, to permit bonding of the topsoil to the subsoil. Contractor shall compact by passing a bulldozer up and down the slope, tracking over the entire surface area of the slope to create horizontal erosion control slots. When grading, filling, and applying topsoil around trees, Contractor shall maintain the existing grade within the drip line of trees, unless otherwise indicated.

Topsoil shall be material free of clay, rock or gravel larger than 2-inches in any dimension, debris, waste, vegetation and other deleterious matter. Drainage fill shall be selected stone or gravel, graded to pass a 3-inch sieve and retained on a 1-inch sieve.

No sod, seed, or other vegetation shall be placed on soil that has been treated with soil sterilants until sufficient time has elapsed to permit dissipation of toxic materials.

#### **Protection of Trees in Construction Area:**

Contractor shall employ protective measures to avoid damage to existing trees to be retained on the project site. Heavy equipment, vehicular traffic, and stockpiles of construction materials, including topsoil, are not permitted within 3 feet of the dripline of any tree to be retained. Specimen trees shown on the construction plans shall be boxed or fenced for protection. Contractor shall water those trees indicated to be

preserved, as required, to maintain their healthy growth during the course of construction operations. Contractor shall protect tree root systems from damage due to noxious materials in solution caused by runoff or spillage during mixing and placement of construction materials or drainage from stored materials.

When called for in the construction plans, tunneling under the root system for the installation of utility lines shall be accomplished by hand digging. Contractor shall not allow exposed roots to dry before permanent backfill is placed. Tree trunks, exposed roots, and limbs of the trees designed to be retained which are damaged during construction operations will be cared for as prescribed by a forester or a licensed tree expert at the expense of the Contractor. The Contractor shall extend the pruning operation to restore the natural shape of the entire tree. Main lateral roots, taproots, or old main branches shall not be cut or pruned. The Contractor shall cut branches and roots with sharp pruning instruments. He shall not break or chop branches and roots. Cuts over 1/2-inch in size shall be painted with tree pruning compound. Tree pruning compound shall be waterproof, antiseptic, elastic, and free of kerosene, coal tar, creosote and other substances harmful to trees.

#### **Dust Control:**

Control dust blowing and moving on construction sites and roads for erosion and sediment control, to prevent exposure of soil surfaces, to reduce on and off site property damage, to prevent health hazards, and to prevent hazardous sight conditions. Control dust blowing by utilizing one or more of the following methods:

1. Mulches bound with natural or chemical binders such as Soiltac®
2. Temporary or permanent vegetative cover.
3. Spray-on adhesive, such as  
or equal, on mineral soils when not used by traffic and as approved by the Engineer.
4. Tillage to roughen surface and bring clods to the surface.
5. Irrigation by water sprinkling.
6. Barriers using solid board fences, snow fences, burlap fences, crate walls, bales of hay, or similar materials.

Dust control methods shall be implemented immediately whenever dust can be observed blowing on the project site.

#### **Equipment Maintenance and Repair:**

Maintenance and repair of construction machinery and equipment shall be confined to areas specifically designated for that purpose. Designated areas shall be located, designed, and maintained so as oils, gasoline, grease, solvents, and other potential pollutants cannot be washed into the storm sewer system or any other receiving stream. Contractor shall not allow oils, gasoline, waste fluids, and other potential pollutants to spill onto the soil or seep into the ground and groundwater. Adequate waste disposal receptacles shall be provided for liquid waste, as well as solid waste. Proper spill response measures and materials will be the responsibility of the Contractor. Designated maintenance areas shall be inspected and properly maintained daily.

On a site where designated equipment maintenance and repair areas are not feasible, care shall be taken during each individual repair or maintenance operation to prevent spills of potential pollutants. All applicable federal, state, and local requirements shall be followed for the proper handling, storage, and waste disposal of oils, gasoline, grease, solvents, and other designated potential pollutants associated with the maintenance and repair of construction machinery and equipment.

#### **Waste Collection and Disposal:**

A plan shall be implemented for the collection and disposal of on site general trash, as well as construction debris. Disposal of waste materials shall be in accordance with applicable federal, state, and local requirements. Trash and debris shall not be allowed to overflow its receptacle or accumulate for excessively long periods of time. Receptacles shall be located where they will least likely be affected by storm water runoff.

Special provisions shall be made for the collection and disposal of liquid, toxic, or hazardous materials.

#### **Sanitary Facilities:**

Adequate sanitary facilities shall be provided for workers. Sanitary collection and disposal shall be in accordance with applicable federal, state, and local requirements.

#### **Vehicle Washing:**

Construction equipment and vehicles, such as concrete trucks, shall be washed in designated areas only, as approved by the Engineer. These

designated wash areas shall be designed and maintained such as to prevent runoff from leaving the site, as well as preventing the runoff from entering a storm sewer system or into a watercourse. The designated areas shall be located where the wash water will evaporate or infiltrate directly into the ground and where runoff can be collected in a temporary holding or seepage basin. Wash areas shall not be located immediately adjacent to a storm sewer system or other watercourse or near a designated jurisdictional wetland. Concrete waste shall be permitted to dry in a controlled pit, sump, or other, and the waste shall be removed from the project site.

#### **Storage of Construction Materials and Chemicals:**

Storage of chemicals, cements, solvents, paints, pesticides, herbicides, fuels, or other potential pollutants shall be stored so that they will not be in contact with storm water runoff or cause potential leachate to the soil or groundwater. These items shall not be stored adjacent to a storm sewer system or other watercourse. Storage and use shall be in accordance with all applicable federal, state, or local requirements, as well as manufacturer's guidelines.

Contractor shall have a spill response program which addresses spills of construction related hazardous and toxic materials.

#### **Demolition Areas:**

Demolition projects usually generate large amounts of dust with significant concentrations of heavy metals and other toxic pollutants. Dust control techniques shall be used to limit the transport of the airborne pollutants. Water or slurries used to control dust shall not be allowed to flow into the storm sewer system or other watercourse.

#### **Street Cleaning:**

Street cleaning, such as sweeping, vacuuming, or shoveling, shall be provided along project area roadways where erosion have deposited or construction traffic have tracked sediments, mud, or debris. Contractor shall inspect the roadways daily, and perform the cleaning on a daily basis, if necessary. Washing or flushing of sediments, mud, or debris into adjacent drainage systems is prohibited.

#### **Dewatering:**

The pumping of ponded storm water, or other waters, from the project site directly into an adjacent watercourse or storm sewer system shall not be permitted unless the water has been pretreated through a sediment basin or other method, and as approved by the Engineer.

**Pesticides, Herbicides, and Fertilizers:**

Contractor shall only use pesticides, herbicides, and fertilizers on the construction site as indicated in the construction specifications and plans or as approved the Engineer. Pesticides, herbicides, and fertilizers shall be stored, used, applied, and disposed of in accordance with manufacturer's guidelines and with local, state, and federal regulations. Contractor shall not dispose of the pesticide, herbicide, and fertilizer wastes, and containers, on site or in the storm sewer system or other watercourse.

- 725.4 Measurement and Payment. No separate payment shall be made for this item. The work performed under this item shall be paid for under the erosion protection and sediment control system(s) for which this work is a component part.

There are no line codes for this item.

END OF ITEM 725

SUMMARY SHEET

ITEM 725 - GENERAL SOURCE CONTROLS (SWPPP)

Other Specifications Required:

None

Reference Standards:

- ASTM D422, "Standard Test Method for Particle-Size Analysis of Soils"
- ASTM D1140, "Standard Test Methods for Amount of Material in Soils Finer Than the No. 200 (75- $\mu$ m) Sieve"
- ASTM D2974, "Standard Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils"
- ASTM D4972, "Standard Test Method for pH of Soils"
- AASHTO T194, "Standard Method of Test for Determination of Organic Matter in soils by Wet Combustion"

Description:

Describes erosion protection and sediment control related practices utilized during construction.

Payment:

No separate payment, incidental to the erosion protection and sediment control system(s).

DO NOT INCLUDE THIS SHEET IN CONTRACT SPECIFICATIONS.