

**FOR INFORMATIONAL PURPOSES ONLY - DO NOT USE FOR BIDDING**

**Department of Public Works Nassau County, N.Y.**

**Bid Sheet for Contract: S82001-06G**

Item No	Engineers Estimate	Item Description			
1X	1,000.00 SY	Clearing and Grubbing	For:		
2	1,000.00 CY	Unclassified Excavation	For:		
2B	10.00 LF	Removal of Bulkhead & Timber Rails	For:		
2X-1	2,000.00 CY	Unclassified Excavation of Storm Water Basin (0-500 CY)	For:		
2X-2	5,000.00 CY	Unclassified Excavation of Storm Water Basin (501-7000 CY)	For:		
2X-3	5,000.00 CY	Unclassified Excavation of Storm Water Basin (Over 7000 CY))	For:		
3	500.00 CY	Trench, Culvert And Bridge Excavation	For:		
4A	50.00 CY	Cement Concrete Breaking (Pavement)	For:		
4B	25.00 CY	Cement Concrete Breaking (Structures)	For:		
4PX	50.00 LF	Removal of Existing Pipe	For:		
5A	100.00 CY	Embankment in Place	For:		
5B	10.00 CY	Borrow Fill	For:		
5C	400.00 CY	Selected Fill	For:		
5D	10.00 CY	Selected Granular Fill	For:		

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Item No	Engineers Estimate	Item Description			
7	200.00 SY	Preparing Fine Grade	For:		
8X	2,000.00 SY	Trimming Shoulders and Slopes	For:		
9	200.00 CY	Topsoil (Supplied)	For:		
9R	100.00 CY	Topsoil (Rehandled)	For:		
10A	100.00 SF	Temporary Sheetting and Bracing	For:		
10A-1	300.00 SF	Excavation Protection System	For:		
10B	50.00 SF	Temporary Sheetting and Bracing Ordered Left In Place	For:		
10C-1	25.00 SF	Permanent Corrugated Metal Sheetting & Bracing	For:		
10C-2	25.00 SF	Permanent Steel Sheet Piling and Bracing	For:		
10C-3	25.00 SF	Permanent Timber Sheet Piling & Bracing	For:		
10C-3XX	100.00 SF	Treated Timber Sheet Piling 4" Thick	For:		
12A-4-12	10.00 LF	Reinforced Concrete Pipe Class IV, 12 Inch Diameter	For:		
12A-4-15	10.00 LF	Reinforced Concrete Pipe Class IV, 15 Inch Diameter	For:		
12A-4-18	10.00 LF	Reinforced Concrete Pipe Class IV, 18 Inch Diameter	For:		
12A-4-24	10.00 LF	Reinforced Concrete Pipe Class IV, 24 Inch Diameter	For:		

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<b>Item No</b>	<b>Engineers Estimate</b>	<b>Item Description</b>			
12A-4-30	10.00 LF	Reinforced Concrete Pipe Class IV, 30 Inch Diameter	For:		
12A-4-36	10.00 LF	Reinforced Concrete Pipe Class IV, 36 Inch Diameter	For:		
12A-4-42	10.00 LF	Reinforced Concrete Pipe Class IV, 42 Inch Diameter	For:		
12A-4-48	10.00 LF	Reinforced Concrete Pipe Class IV, 48 Inch Diameter	For:		
12A-4-54	10.00 LF	Reinforced Concrete Pipe Class IV, 54 Inch Diameter	For:		
12A-4-60	10.00 LF	Reinforced Concrete Pipe Class IV, 60 Inch Diameter	For:		
12B-12	5.00 EA	Reinforced Concrete Pipe End Sections - 12" Diameter	For:		
12B-15	5.00 EA	Reinforced Concrete Pipe End Sections - 15" Diameter	For:		
12B-18	5.00 EA	Reinforced Concrete Pipe End Sections - 18" Diameter	For:		
12B-24	5.00 EA	Reinforced Concrete Pipe End Sections - 24" Diameter	For:		
12B-30	5.00 EA	Reinforced Concrete Pipe End Sections - 30" Diameter	For:		
12B-36	5.00 EA	Reinforced Concrete Pipe End Sections - 36" Diameter	For:		
12B-42	5.00 EA	Reinforced Concrete Pipe End Sections - 42" Diameter	For:		
12B-48	5.00 EA	Reinforced Concrete Pipe End Sections - 48" Diameter	For:		

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<b>Item No</b>	<b>Engineers Estimate</b>	<b>Item Description</b>			
12B-54	5.00 EA	Reinforced Concrete Pipe End Sections - 54" Diameter	For:		
12B-60	5.00 EA	Reinforced Concrete Pipe End Sections - 60" Diameter	For:		
12C- 14X23	10.00 LF	14" X 23" Reinforced Elliptical Concrete Pipe	For:		
12C- 19X30	10.00 LF	19" X 30" Reinforced Elliptical Concrete Pipe	For:		
12C- 22X34	10.00 LF	22" X 34" Reinforced Elliptical Concrete Pipe	For:		
12C- 24X38	10.00 LF	24" X 38" Reinforced Elliptical Concrete Pipe	For:		
12C- 29X45	10.00 LF	29" X 45" Reinforced Elliptical Concrete Pipe	For:		
12D-12	10.00 LF	Perforated Reinforced Concrete Pipe - 12" Diameter	For:		
12D-15	10.00 LF	Perforated Reinforced Concrete Pipe - 15" Diameter	For:		
12D-18	10.00 LF	Perforated Reinforced Concrete Pipe - 18" Diameter	For:		
12D-24	10.00 LF	Perforated Reinforced Concrete Pipe - 24" Diameter	For:		
12D-30	10.00 LF	Perforated Reinforced Concrete Pipe - 30" Diameter	For:		
12DIP-10	10.00 LF	Ductile Iron Culvert Pipe-10 Inch Diameter	For:		
12DIP-12	10.00 LF	Ductile Iron Culvert Pipe 12 Inch Diameter	For:		
12DIP-14	10.00 LF	Ductile Iron Culvert Pipe 14 Inch Diameter	For:		



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<b>Item No</b>	<b>Engineers Estimate</b>	<b>Item Description</b>			
12DIP-16	10.00 LF	Ductile Iron Culvert Pipe 16 Inch Diameter	For:		
12DIP-18	10.00 LF	Ductile Iron Culvert Pipe 18 Inch Diameter	For:		
12DIP-24	10.00 LF	Ductile Iron Culvert Pipe 24 Inch Diameter	For:		
12DIP-30	10.00 LF	Ductile Iron Culvert Pipe 30 Inch Diameter	For:		
12DIP-6	10.00 LF	Ductile Iron Culvert Pipe-6 Inch Diameter	For:		
12DIP-8	10.00 LF	Ductile Iron Culvert Pipe-8 Inch Diameter	For:		
12F-12	10.00 LF	12" Round Corrugated Metal Pipe (Smooth Flow)	For:		
12F-15	10.00 LF	15" Round Corrugated Metal Pipe (Smooth Flow)	For:		
12F-18	10.00 LF	18" Round Corrugated Metal Pipe (Smooth Flow)	For:		
12F-24	10.00 LF	24" Round Corrugated Metal Pipe (Smooth Flow)	For:		
12F-30	10.00 LF	30" Round Corrugated Metal Pipe (Smooth Flow)	For:		
12F-36	10.00 LF	36" Round Corrugated Metal Pipe (Smooth Flow)	For:		
12F-42	10.00 LF	42" Round Corrugated Metal Pipe (Smooth Flow)	For:		
12F-48	10.00 LF	48" Round Corrugated Metal Pipe (Smooth Flow)	For:		
12G	40.00 LF	Relaying Pipe	For:		

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<b>Item No</b>	<b>Engineers Estimate</b>	<b>Item Description</b>			
12HX	50.00 LF	Clean Existing Drainage System	For:		
12HXC	60.00 CY	Clean Existing Drainage Culverts	For:		
12P-12	10.00 LF	12" Smooth Interior Corrugated Polyethylene Drainage Pipe	For:		
12P-15	10.00 LF	15" Smooth Interior Corrugated Polyethylene Drainage Pipe	For:		
12P-18	10.00 LF	Smooth Interior Corrugated Polyethylene Drainage Pipe 18"	For:		
12P-24	10.00 LF	24" Smooth Interior Corrugated Polyethylene Drainage Pipe	For:		
12P-30	10.00 LF	30" Smooth Interior Corrugated Polyethylene Drainage Pipe	For:		
12P-36	10.00 LF	36" Smooth Interior Corrugated Polyethylene Drainage Pipe	For:		
12P-42	10.00 LF	42" Smooth Interior Corrugated Polyethylene Drainage Pipe	For:		
12P-48	10.00 LF	48" Smooth Interior Corrugated Polyethylene Drainage Pipe	For:		
12P-6	10.00 LF	6" Smooth Interior Corrugated Polyethylene Drainage Pipe	For:		
12P-8	10.00 LF	8" Smooth Interior Corrugated Polyethylene Drainage	For:		

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<b>Item No</b>	<b>Engineers Estimate</b>	<b>Item Description</b>			
		Pipe			
12S40-6	10.00 LF	Schedule 40 PVC Drain Pipe - 6" Diameter	For:		
12S40X-12	10.00 LF	Schedule 40 PVC Drain Pipe - 12" Diameter	For:		
12S40X-18	10.00 LF	Schedule 40 PVC Drain Pipe - 18" Diameter	For:		
12S40X-24	10.00 LF	Schedule 40 PVC Drain Pipe - 24" Diameter	For:		
12S40X-8	10.00 LF	Schedule 40 PVC Drain Pipe - 8" Diameter	For:		
13A	10.00 CY	Catch Basins	For:		
13B	10.00 CY	Manholes	For:		
13BP-4	10.00 LF	Precast Manholes - 4' Diameter	For:		
13BP-5	10.00 LF	Precast Manholes - 5' Diameter	For:		
13BP-6	10.00 LF	Precast Manholes - 6' Diameter	For:		
13BX-10	1.00 EA	Treatment Structure - 10' Diameter	For:		
13BX-12	1.00 EA	Treatment Structure - 12' Diameter	For:		
13BX-4	2.00 EA	Treatment Structure - 4' Diameter	For:		
13BX-6	2.00 EA	Treatment Structure - 6' Diameter	For:		
13BX-8	2.00 EA	Treatment Structure - 8' Diameter	For:		

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Item No	Engineers Estimate	Item Description			
14	10.00 EA	Connections to Existing Drainage Facilities	For:		
15	15.00 EA	Altering Catch Basins	For:		
15X	5.00 EA	Rehabilitation of Catch Basins	For:		
16A	10.00 EA	Altering Brick Manholes (Corbel Top with Frame Head)	For:		
16B	10.00 EA	Altering Brick Manholes (Slab Top with Frame Head)	For:		
16C	10.00 EA	Altering Brick Manholes (Slab Top with Ring Head)	For:		
17A	50.00 CY	Class A Concrete for Structures	For:		
17D	50.00 CY	Class D Concrete for Structures	For:		
17F	100.00 CY	Class F High Early Strength Concrete	For:		
19	100.00 CY	Screened Gravel, Loose Measure	For:		
20	100.00 CY	Broken Stone, Loose Measure	For:		
21	50.00 CY	Limestone Screening	For:		
22C-2	100.00 TON	Base Course Asphalt Concrete, Type Dense Base	For:		
24	60.00 CY	Cement Concrete Pavement	For:		
24V	50.00 CY	Concrete Valley Gutter	For:		

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Item No	Engineers Estimate	Item Description			
26	250.00 LF	Concrete Curb	For:		
26CG	100.00 LF	Monolithic Concrete Curb and Gutter	For:		
26CW	50.00 LF	Concrete Curb Wall	For:		
26F	50.00 LF	Concrete Curb - Type Flush	For:		
26S	100.00 LF	Concrete Curb (Special)	For:		
27	500.00 SF	Cement Concrete Sidewalk	For:		
27DW	100.00 SF	Detectable Warning Surface	For:		
27M	100.00 LF	Concrete mowing Strip 16" Wide	For:		
27SP	50.00 SF	Cement Concrete Pavement (Structures Parks)	For:		
28	100.00 SF	Cement Concrete Driveways and Driveway Aprons	For:		
29	100.00 SF	Driveway Restoration	For:		
30	100.00 SY	Metal Reinforcement for Concrete Pavement	For:		
31	50.00 LF	Transverse Joint Supports	For:		
32A	50.00 EA	Longitudinal Joint Ties (Pavement)	For:		
32B	50.00 EA	Longitudinal Joint Ties (Curb)	For:		
32X	100.00 EA	Joint Ties (Grout Type)	For:		

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Item No	Engineers Estimate	Item Description			
32X-1	100.00 EA	Load Transfer Device For Cement Concrete Pavement Repairs	For:		
33	500.00 LB	Bar Reinforcement for Structures	For:		
33X	100.00 LB	Epoxy Coated Bar Reinforcement for Structures	For:		
34	4,000.00 LB	Miscellaneous Metals	For:		
35	10.00 LF	Resetting Guide Railing	For:		
36C	250.00 TON	Asphalt Concrete T & L Course - Type 1A (Top & Binder)	For:		
36D	250.00 TON	Asphalt Concrete Type 1A (Top & Binder)	For:		
36DRAR	250.00 TON	Rut Avoidance Asphalt Type 1A Top RA Resurfacing	For:		
36E	100.00 TON	Asphalt Concrete Type 1AC	For:		
36T	20.00 TON	Temporary Pavement	For:		
40-4	50.00 SF	New Stone Block Pavement on Aggregate Base - 4" Thick	For:		
40-8	50.00 SF	New Stone Block Pavement on Aggregate Base - 8" Thick	For:		
40R	50.00 SF	Reset Existing Stone Block Pavement	For:		
40RP	30.00 EA	Relocating Traffic Signs	For:		
58A	200.00 LF	Saw Cutting Existing Non-Roadway Asphalt	For:		

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<b>Item No</b>	<b>Engineers Estimate</b>	<b>Item Description</b>			
58RPC	100.00 LF	Saw Cutting Existing Roadway Pavement Concrete	For:		
59	5.00 EA	Relocate Water Boxes Complete	For:		
60	5.00 EA	Alter Water Service Connections	For:		
60A	5.00 EA	Adjust Water Service Box Elevations	For:		
60B	5.00 EA	Relocate Curb Cock and Water Service Boxes	For:		
61	5.00 EA	Relocate Water Meter Pit, Complete	For:		
61S	5.00 LF	Relocate Water Mains, Complete	For:		
62	2.00 EA	Relocate Buried Electric Service Connection	For:		
63	30.00 LF	Alter Sanitary Sewer House Service Connection	For:		
63A	5.00 EA	Adjust Sanitary Sewer Cleanouts	For:		
63SS	20.00 LF	Extension of Sanitary Sewer House Connections	For:		
64	70.00 LF	Reset Existing Fence	For:		
65A	50.00 LF	Transplanting Existing Hedge	For:		
65B	10.00 EA	Transplanting Existing Trees and Shrubs	For:		
73	20.00 LF	Treated Timber Piles	For:		
74	100.00 LF	Precast Concrete Piles	For:		

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Item No	Engineers Estimate	Item Description			
76	100.00 LF	Cast-In-Place Concrete Piles	For:		
91	60.00 SY	Concrete Block Paving	For:		
94B	2.00 KBF	Treated Timber and Lumber	For:		
94C	2.00 KBF	Timber and Lumber	For:		
96	500.00 CY	Dry Rip-Rap	For:		
96S	300.00 CY	Dry Rip-Rap (Small)	For:		
97	50.00 CY	Grouted Rip-Rap	For:		
98X	50.00 SF	Cofferdams	For:		
99-10	10.00 LF	Precast Concrete Leaching Basin 10' Diameter	For:		
99-8	10.00 LF	Precast Concrete Leaching basin - 8' Diameter	For:		
100	4.00 LF	Precast Concrete Diffusion Well 10' Diameter	For:		
102D	50.00 DAY	Flashing Arrow Board	For:		
102PVMS	50.00 DAY	Portable Variable Message Sign	For:		
102X*	50.00 DAY	Work Zone Traffic Control (Day)	For:	\$1,000.00	
102Y*	30.00 NGHT	Work Zone Traffic Control (Night)	For:	\$1,400.00	
104PA-10X	50.00 LF	Polyolefin Coated Chain Link Fencing 10'	For:		

\*Force Bid



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Item No	Engineers Estimate	Item Description			
		High (TOP & BOTTOM TENSION WIRE)			
104PA-12X	50.00 LF	Polyolefin Coated Chain Link Fencing 12' High (TOP & BOTTOM TENSION WIRE)	For:		
104PA-4X	50.00 LF	Polyolefin Coated Chain Link Fencing 4' High (TOP & BOTTOM TENSION WIRE)	For:		
104PA-6X	50.00 LF	Polyolefin Coated Chain Link Fencing 6' High (TOP & BOTTOM TENSION WIRE)	For:		
104PA-8X	50.00 LF	Polyolefin Coated Chain Link Fencing 8' High (TOP & BOTTOM TENSION WIRE)	For:		
104PB-10X	50.00 LF	Polyolefin Coated Chain Link Fencing 10' High (TOP RAIL & BOTTOM TENSION WIRE)	For:		
104PB-12X	50.00 LF	Polyolefin Coated Chain Link Fencing 12' High (TOP RAIL & BOTTOM TENSION WIRE)	For:		
104PB-4X	50.00 LF	Polyolefin Coated Chain Link Fencing 4' High (TOP RAIL & BOTTOM TENSION WIRE)	For:		
104PB-6X	50.00 LF	Polyolefin Coated Chain Link Fencing 6' High (TOP RAIL & BOTTOM TENSION WIRE)	For:		
104PB-8X	50.00 LF	Polyolefin Coated Chain Link Fencing 8' High (TOP RAIL & BOTTOM TENSION WIRE)	For:		
104PC-10X	50.00 LF	Polyolefin Coated Chain Link Fencing 10' High (TOP & BOTTOM RAILS)	For:		

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<b>Item No</b>	<b>Engineers Estimate</b>	<b>Item Description</b>			
104PC-12X	50.00 LF	Polyolefin Coated Chain Link Fencing 12' High (TOP AND BOTTOM RAILS)	For:		
104PC-4-1X	50.00 LF	Polyolefin Coated Chain Link Fencing 4' High 1" Mesh (TOP & BOTTOM RAILS)	For:		
104PC-4X	50.00 LF	Polyolefin Coated Chain Link Fencing 4' High (TOP & BOTTOM RAILS)	For:		
104PC-6X	50.00 LF	Polyolefin Coated Chain Link Fencing 6' High (TOP & BOTTOM RAILS)	For:		
104PC-8X	50.00 LF	Polyolefin Coated Chain Link Fencing 8' High (TOP & BOTTOM RAILS)	For:		
104PD-6X	50.00 LF	Polyolefin Coated Chain Link Fencing 6' High With Concrete Curb	For:		
104R-10	50.00 LF	Renovate 10' Chain Link Fence	For:		
104R-12	50.00 LF	Renovate 12' Chain Link Fence	For:		
104R-4	50.00 LF	Renovate 4' Chain Link Fence	For:		
104R-6	50.00 LF	Renovate 6' Chain Link Fence	For:		
104R-8	50.00 LF	Renovate 8' Chain Link Fence	For:		
104XSF	50.00 SF	Remove Existing Fence	For:		
106P-DG	200.00 SF	Polyolefin Coated Chain Link Double Gate	For:		

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<b>Item No</b>	<b>Engineers Estimate</b>	<b>Item Description</b>			
106P-SG	200.00 SF	Polyolefin Coated Chain Link Single Gate	For:		
110	5.00 CF	Masonry Pipe Plugs	For:		
111	100.00 SY	Removal and Replacement of Pavements	For:		
111P	20.00 SY	Removal and Replacement of Asphalt Covered Pathways	For:		
112	100.00 EA	Adjusting Manholes	For:		
113	50.00 EA	Adjustment of Surface Inlets	For:		
116A	1,000.00 SY	Profiling and Removal of Asphalt Pavement	For:		
117	50.00 LF	Temporary Fence	For:		
118	100.00 CY	Gabion and Revet Mattresses	For:		
121	100.00 CY	Dry Bound Base Course	For:		
122	20.00 EA	Test Holes	For:		
126A	100.00 LF	New Stone Block Curb	For:		
126B	40.00 LF	Reset Existing Stone Block Curb	For:		
127	4.00 EA	Relocating Existing Hydrant	For:		
129	100.00 CY	Cement Concrete For Pavement Repairs	For:		

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<b>Item No</b>	<b>Engineers Estimate</b>	<b>Item Description</b>			
132	50.00 EA	Plowable Raised Reflectorized Pavement Markers	For:		
136S	30.00 DAY	Survey Stakeout (Per Day)	For:		
137	500.00 LF	Remove Existing Traffic Markings	For:		
140	100.00 LF	Temporary Pavement Delineation	For:		
141	200.00 LF	Silt Fence	For:		
141A	30.00 LF	Hay Bales/Straw Bales	For:		
141B	10.00 EA	Silt Protection for Surface Inlet Drainage Structures	For:		
141C	10.00 EA	Silt Protection for Curb Inlet Drainage Structures	For:		
158B	125.00 SY	Soil Stabilization Fabric	For:		
162A-1	3.00 EA	Freshwater Wetland Plantings (2" Peat Pots)	For:		
162A-2	3.00 EA	Freshwater Wetland Plantings (Quart Containers)	For:		
162B-1	3.00 EA	Shoreline Shrubs (12" -18" Height)	For:		
162B-2	3.00 EA	Shoreline Shrubs (18" -24" Height)	For:		
162C-1	3.00 EA	Spartina Alternaflora, Spartina Plantings (2" Peat Pots)	For:		
162C-2	3.00 EA	Spartina Alternaflora, Spartina Plantings (Quart Containers)	For:		

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<b>Item No</b>	<b>Engineers Estimate</b>	<b>Item Description</b>			
178W	1,000.00 LF	Pavement Markings, Painting & Striping (White)	For:		
178Y	1,000.00 LF	Pavement Markings, Painting & Striping (Yellow)	For:		
363-A	50.00 SY	Grass Seeding (Area Less Than 10 Square Yards)	For:		
363-B	100.00 SY	Grass Seeding (Area Greater Than 10 Square Yards)	For:		
364-A	10.00 EA	Tree Pruning -A- (<6" Caliper)	For:		
364-B	10.00 EA	Tree Pruning -B- (6" - <12" Caliper)	For:		
364-C	10.00 EA	Tree Pruning -C- (12" - <24" Caliper)	For:		
364-D	10.00 EA	Tree Pruning -D- (24" - <36" Caliper)	For:		
364-E	10.00 EA	Tree Pruning -E- (36" - <48" Caliper)	For:		
364-F	5.00 EA	TREE PRUNING-F-(>48" Caliper)	For:		
365-1	50.00 SF	Sodding (Area Less Than 50 Square Feet)	For:		
365-2	100.00 SF	Sodding (Area Between 50 and 300 Square Feet)	For:		
365-3	125.00 SF	Sodding (Area Greater Than 300 Square Feet)	For:		
367	2.00 ACRE	Hydro-Seeding	For:		
368A	200.00 SY	Topsoil and Grass Seed (Less Than 0.5 Acres)	For:		

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<b>Item No</b>	<b>Engineers Estimate</b>	<b>Item Description</b>			
368B	2,450.00 SY	Topsoil and Grass Seed (Greater Than 0.5 Acres)	For:		
372A	15.00 EA	Tree Removal (4" - < 6" Caliper)	For:		
372B	15.00 EA	Tree Removal (6" - < 12" Caliper)	For:		
372C	8.00 EA	TREE REMOVAL-C- (12" - <24" Caliper)	For:		
372D	8.00 EA	TREE REMOVAL-D- (24" - <36" Caliper)	For:		
372E	5.00 EA	TREE REMOVAL-E- (36" - <48" Caliper)	For:		
372F	5.00 EA	TREE PRUNING-F-(>48" Caliper)	For:		
373A	10.00 EA	Stump Removal -A- (4" - <6" Caliper)	For:		
373B	10.00 EA	Stump Removal - B- (6" -<12" Caliper)	For:		
373C	10.00 EA	Stump Removal -C- (12" - <24" Caliper)	For:		
373D	10.00 EA	Stump Removal -D- (24" - <36" Caliper)	For:		
373E	10.00 EA	Stump Removal -E- (36" - <48" Caliper)	For:		
373F	10.00 EA	Stump Removal -F- (>48" Caliper)	For:		
374A	10.00 EA	Stump Grinding-A- (4" - <6" Caliper)	For:		
374B	10.00 EA	Stump Grinding-B- (6" - <12" Caliper)	For:		
374C	10.00 EA	Stump Grinding-C- (12" - <24" Caliper)	For:		

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374D	10.00 EA	Stump Grinding-D- (24" - <36" Caliper)	For:		
374E	10.00 EA	Stump Grinding-E- (36" - <48" Caliper)	For:		
374F	10.00 EA	Stump Grinding-F- (>48" Caliper)	For:		
378	5.00 LF	Mechanical Barrier Root Control System - 24" Deep	For:		
379-12	5.00 LF	Root Control System 12" Deep	For:		
379-19.5	5.00 LF	Root Control System 19.5" Deep	For:		
402	500.00 SY	Selective Thinning	For:		
402X	500.00 LF	Selective Thinning Along Fences	For:		
404-A1	100.00 SY	Erosion Control Blankets For Straw/Coconut (Less Than 1000 Square Yards)	For:		
404-A2	1,100.00 SY	Erosion Control Blankets For Straw/Coconut (Greater Than 1000 Square Yards)	For:		
404-B1	100.00 SY	Erosion Control Blankets For Polypropylene (Less Than 1000 Square Yards)	For:		
404-B2	1,100.00 SY	Erosion Control Blankets For Polypropylene (Greater Than 1000 Square Yards)	For:		

**Department of Public Works Nassau County, N.Y.**

**Bid Sheet for Contract: S82001-06G**

Item No	Engineers Estimate	Item Description			
405-1	40.00 SY	Coconut Fiber Rolls (Less Than 50 Square Yards)	For:		
405-2	125.00 SY	Coconut Fiber Rolls (Greater Than 50 Square Yards)	For:		
406	125.00 LF	Goose Control Fence	For:		
430	50.00 CY	Trash and Debris Removal	For:		
503*	1.00 LS	Water Control	For:	\$300,000.00	
504Y	10.00 LF	Removal and Replacement of Barbed Wire Strands	For:		
504Y-A	10.00 LF	Removal of Barbed Wire Strands	For:		
506	10.00 LF	Clean Existing Leaching Basins and Diffusion Wells	For:		
510*	1.00 LS	Force Account Work	For:	\$300,000.00	
511-1-A	2.00 EA	TCLP Volatile Analysis (Method SW 1311)	For:		
511-1-B	2.00 EA	TCLP BNA Analysis (Method SW 1311)	For:		
511-1-C	2.00 EA	TCLP Metals Analysis (Method SW 1311)	For:		
511-1-D	2.00 EA	TCLP Pesticides/Herbicides (Method SW 1311)	For:		
511-2	2.00 EA	Igintability/Flashpoint Analysis (Method SW 1010)	For:		
511-3	2.00 EA	Corrosivity Analysis (Method SW 1110)	For:		

\*Force Bid



**Department of Public Works Nassau County, N.Y.**

**Bid Sheet for Contract: S82001-06G**

Item No	Engineers Estimate	Item Description			
511-4	2.00 EA	Reactivity Analysis (Methods SW 9010 and SW 9030)	For:		
511-5	2.00 EA	Total Petroleum Hydrocarbons (Method EPA 418.1)	For:		
511-6	2.00 EA	Purgeable Aromatics (Method EPA 8020 or 602)	For:		
511-7	2.00 EA	PCB Analysis (Method EPA 8080)	For:		
519	20.00 CY	Sand Bags in Place	For:		
520A	100.00 EA	Type "A" Catch Basin Insert - Sediment Control Type (Combination Inlet)	For:		
520B	100.00 EA	Type "B" Catch Basin Insert - Sediment Control Type (Curb Inlet Only)	For:		
521A	200.00 EA	Type "A" Catch Basin Insert - Filter Type (Combination Inlet)	For:		
521B	200.00 EA	Type "B" Catch Basin Insert - Filter Type (Curb Inlet Only)	For:		
532	1,000.00 CY	Transportation and Disposal of Contaminated Materials	For:		
550-A	3,000.00 CY	Transportation and Disposal of Uncontaminated Soils	For:		
550-B	1,000.00 CY	Transportation and Disposal of Uncontaminated Soils to County Facility	For:		
550-C	1,000.00 CY	Transportation and Disposal of Uncontaminated Soils to County Facility & Spread	For:		

**Department of Public Works Nassau County, N.Y.**

**Bid Sheet for Contract: S82001-06G**

<b>Item No</b>	<b>Engineers Estimate</b>	<b>Item Description</b>			
685.0720 0110	1,000.00 LF	White Epoxy Reflectorized Pavement Stripes - 20 mils (Wet Night Visibility Spheres)	For:		
685.0720 0210	100.00 EA	White Epoxy Reflectorized Pavement Letters - 20 mils	For:		
685.0720 0310	100.00 EA	White Epoxy Reflectorized Pavement Symbols - 20 Mils (Wet Night Visibility Spheres)	For:		
685.0720 0410	500.00 LF	White Epoxy Reflectorized Pavement Stripes (Cross Hatching) - 20 mils (Wet Night Visibility Spheres)	For:		
685.0720 0510	500.00 LF	White Epoxy Reflectorized Pavement Stripes (Special Markings) - 20 mils (Wet Night Visibility Spheres)	For:		
685.0720 0610	1,000.00 LF	Yellow Epoxy Reflectorized Pavement Stripes - 20 mils (Wet Night Visibility Spheres)	For:		
685.0720 0710	500.00 LF	Yellow Epoxy Reflectorized Pavement Stripes (Cross Hatching) - 20 mils (Wet Night Visibility Spheres)	For:		
685.0720 0810	100.00 EA	White Epoxy Reflectorized Pavement Markings Yield Line Symbols- Small- 20 Mils (Wet Night Visibility Spheres)	For:		

Department of Public Works Nassau County, N.Y.

Bid Sheet for Contract: S82001-06G

Item No	Engineers Estimate	Item Description			
685.0720 0910	100.00 EA	White Epoxy Reflectorized Pavement Markings Yield Line Symbols- Large- 20 Mils (Wet Night Visibility Spheres)	For:		
762	250.00 LB	Integral Color Pigment for Cement Concrete	For:		
763	1,000.00 SF	Imprinting on Cement Concrete Pavement or Sidewalk	For:		
767	100.00 LF	Furnish, Install and Maintain Turbidity Curtain	For:		

Total Bid in Numbers \$ \_\_\_\_\_

Total Amount in Words \_\_\_\_\_

**2023 REQUIREMENTS CONTRACT FOR THE  
RECONSTRUCTION & DEWATERING OF  
COUNTY DRAINAGE FACILITIES,  
VARIOUS LOCATIONS,  
NASSAU COUNTY, NEW YORK  
CONTRACT NO. S82001-06G**

**SPECIAL CONDITIONS**

1. Referring to Notice of Award, Agreement section, Page 252, Article XXV, 'Contractor's Maintenance/Guarantee' – the provision shall apply except "one year from the date of final acceptance of the Contract." should be read "one year from the date of final acceptance of each Work Order."
2. Variation from Normal Bidding Procedure
  - a) The contract shall terminate upon reaching either, the contract CAP or the time limit of thirty-six (36) months from the contract execution, whichever comes first, unless an extension is granted at the discretion of the Commissioner. The County may grant an extension of time to permit the Contractor to complete open or incomplete Work Orders. However, no additional Work Orders will be issued unless an extension of contract as stated in Article XXVI, Schedule of Requirements, Section A, No. 1.
  - b) The quantities given are based on average weighted units with the exceptions of those items which are on a lump sum basis. All bid prices are to be based upon these average weighted units. The sum total of all the unit prices will determine the low bid; and the subsequent award of this contract.
  - c) The Bidder is further advised that the County may use only one item of work or may use some quantities of all the contract items in each Work Order. Quantities are provided for bid comparison purposes. Actual quantities may be less, more or none.
  - d) All Force Bids are fixed cost items and therefore the Contractor must bid the price as stated for all force bid items.

**NO TEXT ON THIS PAGE**

**2023 REQUIREMENTS CONTRACT FOR THE  
RECONSTRUCTION & DEWATERING OF COUNTY  
DRAINAGE FACILITIES,  
VARIOUS LOCATIONS,  
NASSAU COUNTY, NEW YORK**

**CONTRACT NO. S82001-06G**

**GENERAL NOTES**

All work included in this contract shall be in accordance with the following Nassau County Standard Specifications and Drawings, if they apply, or modified and amended in the Contract Specifications and Drawings.

- a) County of Nassau, Department of Public Works, 2009 Standard Specifications for Civil Engineering and Site Development Construction, or latest edition.
- b) County of Nassau, Department of Public Works, Traffic Engineering, Traffic Signal Specifications and Standard Drawings, November 1998 and Addenda, or latest edition.
- c) County of Nassau, Department of Public Works, Latest Standard Specifications and Details for the Construction of Sanitary Sewers 2003 or latest edition.
- d) New York State Department of Transportation Standard Specifications 2008 and Addenda or latest edition.

**Note: Compliance with Law**

**Prohibition of Gifts.** In accordance with County Executive Order 2-2018, the Contractor shall not offer, give, or agree to give anything of value to any County employee, agent, consultant, construction manager, or other person or firm representing the County (a "County Representative"), including members of a County Representative's immediate family, in connection with the performance by such County Representative of duties involving transactions with the Contractor on behalf of the County, whether such duties are related to this Agreement or any other County contract to matter. As used herein, "anything of value" shall include, but not be limited to meals, holiday gifts, holiday baskets, gift cards, tickets to golf outings, tickets to sporting events, currency of any kind, or any other gifts, gratuities, favorable opportunities or preferences. For purposes of this subsection, an immediate family member shall include a spouse, child, parent, or sibling. The Contractor shall include the provisions of this subsection in each subcontract entered into under this Agreement.

**Disclosure of Conflicts of Interest.** In accordance with County Executive Order 2-2018, the Contractor has disclosed as part of its response to the County's Business History Form, or other disclosure form(s), any and all instances where the Contractor employs any spouse, child, or parent of a County employee of the agency or department that contracted or procured the goods and/or services described under this Agreement. The Contractor shall have a continuing obligation, as circumstances arise to update this disclosure throughout the term of this Agreement.

## Special Note

When required by the County to provide prices for force account work the contractor shall provide the requested prices including a detailed breakdown of said prices within two (2) weeks of the date of initial receipt of the request.

The intention of this contract is that all emergency repair work shall be done in a responsible and timely manner. Failure to comply with such request will be considered a violation of the contract.

1. The contractor shall provide a work schedule within one (1) week for a scheduled location upon receipt of a work order issued by the Commissioner, unless deemed an emergency by the County at which time the contractor shall be expected to start work as soon as a verbal authorization to proceed is provided by the County. A site location plan or sketch of the work to be done may be provided if deemed necessary by the County. The Contractor shall notify the County 48 hours prior to the start of any work order.
2. The Contractor shall maintain and protect traffic within the limits of and for the duration of the contract (work order) in accordance with the plans and specifications and as directed.
3. Restrictions of Work in Roadway - Perpendicular to the curb line, no more than ten (10) feet of pavement is to be open at any one time. No work will be permitted before 9 AM or after 4PM, Monday through Friday unless written authorization is granted by the County. During these periods and at all times when work is not in progress, all openings in the roadway shall be covered with pinned steel plates or temporary pavement to safely permit traffic to cross over the excavation.
4. The Contractor will be responsible at all times for the safety of the general public, and for the protection of persons who may for any reason enter within the limits of his work.
5. The Contractor shall employ flagmen when deemed necessary by the Engineer and shall erect proper warning signs and necessary barricades to protect the general public and to warn them of changes caused by the progression of his contract. The contractor is responsible for work zone safety as per OSHA requirements.
6. The Contractor shall notify the local police, fire department, school district, utilities and all municipalities within the proximity of the work order limits, prior to the start of work, as to the conditions prevailing on the construction site.
7. The Contractor must provide a safe and uninterrupted two-way traffic over the roads under construction at all times, unless a detour plan is provided and approved by the County.

8. Lighted Barricades, Flashing Warning Lights and Signs
- a) Must be serviced a minimum of twice each week.
  - b) Must be checked and maintained by the Contractor each day, including weekends and holidays.
  - c) Must be secured or weighted in such a manner as to prevent them from blowing over under windy conditions.
  - d) Must be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices.
9. No direct payment shall be made for the above items of work, but the cost shall be included in the price bid for Item 102X, Work Zone Traffic Control Day & Item 102Y, Work Zone Traffic Control Night.
10. Conformance to the following notes with respect to the American with Disabilities Act Curb Ramps is required.
- All curb ramps installed shall be in compliance with the ADA, PROWAG, and NCDPW standards.
  - Contractor shall verify the placement of all new ramp configurations prior to installation. Contractor must give 48 hours (2 business days) notification for NCDPW approval.
  - A NCDPW inspector must be present during the installation of any curb ramp.
  - It is recommended that a smart level tool (or equivalent) is used to check the slopes on all form work prior to the placement of concrete.
  - NCDPW Civil Engineering Design Unit must be notified in writing of all work done to curb ramps to update the transition plan inventory.

**NOTE: The contractor will be required to maintain safe pathways for pedestrians during the entire time the contract is in effect, including all periods of work shutdown. This may involve mowing of grass, removal of snow and ice, and any other interruptions interfering with their safe travel through the construction zone. Failure of the contractor to ensure safe pedestrian passage as determined by County staff, or from pedestrian complaints in the work zone will result in a fine of \$500.00 a day. This fine will be deducted from any funds owed the contractor.**

11. The Contractor must submit to the Engineer a schedule of work order locations at which he will be working and a tentative schedule of dates that he intends to be at said locations. All work will be done during a normal eight (8) hour day, Monday through Friday. If the Contractor chooses to work beyond the normal work hours, the Contractor will be responsible for reimbursing the County for the



additional cost, including benefits costs, of any County employees and/or County representatives working for the County that work these overtime hours.

**Note:** If work is done under a County declared emergency condition, this provision will not apply.

12. The Contractor will not be allowed to commence more than three (3) work orders at any one time. If the County issues a written declaration of an emergency a fourth work order may be started prior to one of the three in progress work orders being 100% complete. However, at no time will more than four Work Orders be in progress.
13. Payment for the work performed under each Work Order, shall be made upon the completion and acceptance by the County. However, final payment will not be made until all punch list work is completed to the satisfaction of the Engineer.
14. Where construction mark-out is performed by County forces, the Contractor shall supply cans of white spray paint, as necessary to permit the mark-out. These cans shall be compatible to the Fox Valley System, "Easy Marker" or equivalent.
15. All weather and temperature requirements specified by the Manufacturers for materials used must be adhered to.
16. Where there are fire hydrants situated along a section of roadway where markers are to be installed, blue double-faced markers shall be installed in addition to the normal white and yellow markers in line with the hydrant (as required).
17. No separate cost for mobilization and demobilization will be paid. Cost shall be included in applicable unit price bids.
18. Pavement Restoration
  - a) Stone Base Pavement
    - (1) Longitudinal Openings
      - (a) The pavement over the trench shall be cut back a minimum of 6" on both sides of the trench to insure an even edge.
      - (b) If the remaining longitudinal strip is less than 3 feet on one side, the *total* width of the cutback, trench and side strip must be replaced.
    - (2) Transverse Openings
      - (a) The Pavement over the trench shall be cut back a minimum of 6 inches on both sides of the trench to insure an even edge.
      - (b) Asphalt plant mix, dense base or concrete, shall be used for the replacement of the stone base pavement removed.
  - b) Concrete Base and Finished Concrete Pavement
    - (1) Longitudinal Openings
      - (a) The entire panel width must be removed and replaced. Ends of panel to be saw cut if not at a transverse joint.
      - (b) In no case shall any portion of the existing panel that is less than 6 feet from a transverse joint be left in place.
      - (c) When concrete base panels with macadam overlays are to be removed, the Black Top shall be cut back a minimum of 6 inches onto the adjacent panels to provide a smooth vertical edge on the Black Top.

- (2) Transverse Openings
  - (a) Transverse openings shall be saw cut 90 degrees to the longitudinal joints.
  - (b) Pavement replacement to be a minimum of 2 feet on both sides of the trench, and a total minimum of 6 feet wide.
  - (c) In no case shall any portion of the existing panel that is less than 6 feet in length from a transverse joint be left in place.
  - (d) Where openings are skewed across the pavement the concrete replacement must be carried straight across each panel and not staggered. No portion of the existing panel that is less than 6 feet from a transverse joint should be left in place.
- 19. The contractor shall ensure that the "Longitudinal Joints" in the top course correspond with the edges of the proposed traffic lanes or are located within one (1) foot of the pavement markings. Longitudinal joints in the travel lanes wheel path shall be avoided. The crown of the roadway will *not be relocated for any reason*. Joint arrangements will require approval by the Engineer. The contractor must submit a detailed mat layout three (3) working days prior to any paving operations.
- 20. Truing and Leveling will only be used when shown on the plans or as directed by the Engineer. The contractor will not be paid for Item 36C unless directed by the Engineer. If this Item is directed to be installed separately other than the top course installation payment will be made under Item 36C, otherwise payment will be made under Item 36D.
- 21. If ROW at any intersection is not shown in the Construction Plans to mill and repave, paving limits will be the flow line or determined by the Engineer in Charge. Also, the Engineer in charge will determine if a topographic survey must be performed to establish a proper flow line.
- 22. All work performed under this contract shall be in compliance with Appendix EE, "Equal Employment Opportunities for Minorities and Women". As part of the "Detailed MBE/WBE Utilization Plan" the contractor shall provide documentation that a good faith effort was made to meet the intended goals. Also, all work performed under this contract shall include SDVOB goal of 6% or Good Faith Effort.
- 23. Procedure to Ensure Worker Safety

Work Zone safety was addressed in the contract documents. In addition, the County and contractor will discuss Work Zone safety issues at the pre-construction meeting. The contractor shall provide a safety plan (including subcontractors). The County Project Manager/Consultant R.E will ensure that the contractor has on site at all times at least one person skilled in safety and health procedures familiar with State and Federal safety and health regulations, whose responsibility it will be to monitor methods and procedures. NCDPW will review and approve prime contractor's Health & Safety plan as per NYSDOT Specification 107-05.

It is the Contractor's responsibility to only have on site for the particular contract those workers who successfully completed the OSHA 10-hour construction safety course, and to have each of the worker's certificates of completion with the project records, available for review by NCDPW. The Health & Safety Plan must be approved by NCDPW prior to the start of contract work.

The Prime contractor will keep NCDPW informed as to their safety meeting schedule. Include with the schedule (whether it is monthly or weekly etc.) any meeting minutes, as well as sign-in sheets as part of the project file/records.

24. Maintenance of Traffic

- a) Please see Special Specifications Item 102X -Work Zone Traffic Control (Day) and Item 102Y- Work Zone Traffic Control (Night).
- b) The Contractor, at his option and at no additional cost may install the pavement marking during night-time hours with prior approval by the Engineer. County pavement marking inspection staff will be provided 3 working days to inspect and approve the pavement marking layout before the permanent installation occurs.

25. Utilities

- a) The Contractor is directed to notify all utilities well in advance of beginning work, to allow them to mark-out their facilities.
- b) The Contractor is directed to notify all privately-owned utilities well in advance of beginning work, to allow them time to adjust their manholes and other castings.
- c) The Contractor will see to it that utility valve boxes and manholes are always readily accessible. The Contractor will not store materials over them, and should it become necessary to cover the valves and manholes with soil, will devise a method for finding them quickly and assist the Utility Company to uncover them. Further, the boxes will be uncovered during non-working hours.
- d) Prior to the award of contract, the Contractor will be required to submit a list, certified by National Grid, of his key personnel who have taken the National Grid Safety Course together with a statement that sufficiently trained personnel will be available on the job site at all times.
- e) Mechanical excavation will not be permitted within two feet (2') on either side of any utility or house service so marked by the utility company. Hand digging will be required to expose the utility pipe. All provisions of 16 NYCRR Part 753 shall apply.
- f) Prior to backfilling, a National Grid representative will inspect all gas facilities and any damaged pipe will be repaired by the utility company.  
The Contractor's attention is called to existing PSE&G overhead lines. The Contractor is warned to keep all equipment and personnel a minimum of ten feet (10') from any conductor. The Contractor shall fully cooperate with PSE&G and comply with its requirements for safe operations.
- g) The Contractor's attention is called to the fact that there are utilities, both publicly and privately owned, that are within the contract area. The owners of privately-owned utilities may be relocating parts of their existing plants to conform to the new lines and grades of this project. The Contractor shall cooperate with the various agencies carrying out the work, which must be coordinated with the work of this contract.

- h) Existing structures, utilities, and facilities, either shown or not shown on the plans, above or below the ground, may not have been located accurately. The Contractor shall determine the locations and elevations of pertinent structures, utilities, and facilities, before new installations are started so that there will be no interference with the progression of the work. Any conflict between existing structures, utilities and facilities and the new items of work shall be ascertained by the Contractor prior to commencing any work under the respective items and called to the attention of the Engineer. It is the responsibility of the contractor to protect and maintain utilities or utility structures while working "in proximity". No additional payment will be made for this purpose except for the test holes, Item 122.
  - i) Grades and locations of new installations may be changed by the Engineer, if necessary, to prevent conflict with existing installations. Therefore, the Contractor shall locate all existing installations accurately, both as to line and grade before new items of work are started.
  - j) If the above procedure is not followed by the Contractor and new work has to be removed and replaced, or there is a delay, all the cost will be borne by the Contractor and the County will only pay for the amount of the items in place at the completion of the work.
  - k) The Contractor shall exercise extreme care in the performance of any operation, in the vicinity of the existing or relocated cable pipelines. No such operations shall take place without proper personnel of PSE&G on hand. All excavation in the immediate vicinity of these lines shall be done by hand, with such application as to ensure that the pipe shall not be punctured, or the coating disrupted. In the event that any length of cable pipeline is exposed, it shall be supported and protected to the satisfaction of PSE&G inspection personnel. No blind sheeting shall be driven in the proximity of the existing electric cable pipes before first exposing these cable pipes by hand.
  - l) The Contractor should inspect the utility companies' plans to ascertain the location of the underground work and locations of crossings of sewer and drainage work. The Contractor shall coordinate his work with the work being done by the utility companies. It is anticipated that job meetings will be held at various times to aid in coordination of the work.
  - m) Payment for locating utilities will be made only under Item 122, Test Holes.
26. Protection of Facilities - The Contractor shall protect all new work done under this contract from possible injury for the duration of the Contract. He shall be responsible for the repair or replacement, to the satisfaction of the Engineer, of any material, structure, or property on or adjacent to the site and damaged by him or his employees through the construction and demolition operations up to the time of acceptance by the County.
27. Drainage Installations - The Contractor shall plan his work and progress so that at all times either the new or the existing drainage facilities will function to carry off liquids so that no damage or inconvenience will result.
28. Clean-Up
- a) Prior to final acceptance of the work under this Contract, the Contractor shall clean the pipe, manholes and catch basins where construction was undertaken, of accumulated dirt, sand or other materials which have washed into them. No direct payment shall be made for the aforementioned work; but shall be included in the prices bid for the various items of the Contract.
  - b) The Contractor will be required to restore to original condition all areas, outside the work limits, that are disturbed by him during the life of this contract.

- c) No separate payment will be made for any of this clean-up and restoration work, but the cost thereof shall be included in the unit prices bid for various items.
29. Test Cylinders - The Contractor will provide a place for concrete test cylinders close enough to the work so that the cylinders share the same curing conditions. The Contractor will protect these cylinders for the three days they will be left on the job site.
30. Construction in State of New York Rights of Way
- a) Permits - A permit shall be obtained by the Contractor from the State of New York for all work within State rights of way. He shall pay for all costs of obtaining this permit including costs of State inspection. A copy of said permit shall be forwarded to the County prior to start of work.
  - b) General - Acceptance of all work within State rights of way shall be subject to the inspection and approval of the Regional Director, Region 10, State of New York Department of Transportation.
  - c) Payment - No separate or additional payment will be made for conforming to the various requirements of the State of New York Department of Transportation, but the cost thereof will be deemed included in the appropriate Contract Items without regard to differences in materials, thicknesses and types of pavements and methods of construction, temporary construction, or maintenance of traffic.
31. Construction in the City of New York Rights of Way
- a) Permits - Shall be obtained by the Contractor from the City of New York for all work within City rights-of-way. He shall pay for all costs of obtaining such permits including costs of City inspection.
  - b) General -Acceptance of all work within City rights of way shall be subject to the inspection and approval of the Transportation Administration Administrator, Office of Construction Coordination, 40 Worth Street, New York, N.Y. 10013.
  - c) Payment - No separate or additional payment will be made for conforming to the various requirements of the City of New York Transportation Administration, but the cost thereof will be deemed included in the appropriate Contract Items without regard to differences in materials, thickness and types of pavements and methods of construction, temporary construction, or maintenance of traffic.
32. The contractor shall supply the following equipment at the start of the project.

#### MINIMUM SPECIFICATION

Boots:	Provide Four Pairs Timberland Pro - Helix Soft Toe Work Boots or approved equal
Mark Out Paint	Provide four (4) cases of Seymour Stripe Inverted Tip Marker White paint or approved equal

At the completion of the Contract, all above referenced equipment shall become the property of Nassau County. The cost of this equipment shall be included in the price bid for the various contract items.

33. Contractor shall provide one (1) cell phone under this item, so that County's,Engineer may maintain contact with inspection forces. It must be a smart phone (type to be approved by the Engineer) with a minimum 256 GB storage capacity along with one(l) mobile charger with an additional regular charger, a hard-protective cover and a screen protector. No work may begin until the phone is provided, and service is activated. The smart phone service shall be maintained for the duration of the contract. The phone shall be replaced at no additional cost to the County if damaged or lost, otherwise cease the operation.
34. The contractor when submitting shop drawings for approval must specify the work order number and location that said shop drawings will be used on.
35. Erosion and Sediment Control: The contractor shall assume responsibility for the temporary control of soil and water pollution that could potentially result from construction activities and shall be in accordance with Federal, State and Local regulations, as well as the Contract specifications and directions of the County representatives. All necessary precautions shall be taken to prevent contamination of waters and surrounding areas by slit, sediments, fuels, solvents, lubricants, epoxy coating, wet concrete, concrete leachate, washings from concrete equipment or any other pollutant associated with drilling and construction procedures. Specific reference is made to the New York State Department of Environmental Conservations' "Guidelines for Urban Erosion and Sediment Control", along with any subsequent updates. Associated costs for erosion and sediment control, inspection and maintenance of the same as mentioned above, including any permits required, shall be included in the unit prices for individual items.
36. When ordered, all concrete supplied for Items 26, 27 and 28 will include an admixture such as will assure compressive strength cores of 2500 PSI in 48 hours. The admixture will be added to the concrete at a rate recommended by the supplier. The cost of the admixture will be included under Items 26, 27 & 28.
37. The contractor shall have a full time Supervisor, fluent in English on the project at all times.
40. No Asphalt top course will be allowed to be placed after December 15<sup>1</sup> (unless approved by the Commissioner and as long as other conditions are met) or if the receiving surface temperature is equal to or below 45 Degrees Fahrenheit, or if the receiving surface is not completely dry for any reason.
41. All layout of traffic pavement markings must be completed immediately after paving and prior to opening the newly paved surface to traffic. The cost of all layouts of traffic pavement markings shall be included in the various items of the Contract.
42. The Contractor must contact the Resident Engineer or the Nassau County Project Manager, within 48 to 72 hours prior to final pavement marking placement. On all roadways resurfaced under this contract, epoxy reflectorized pavement markings shall be placed within 3 business days of final paving. A \$1,000.00 per day penalty will be deducted from the various asphalt items after 3 business days until the epoxy is placed

43. The Contractor must notify the Resident Engineer or Jeff Lindgren of the Nassau County Traffic Management Section prior to any lane closures by calling (516) 571-6998, by email [jlindgren@nassaucountyny.gov](mailto:jlindgren@nassaucountyny.gov), or [TrafficHelp@nassaucountyny.gov](mailto:TrafficHelp@nassaucountyny.gov); two (2) of the three (3) forms of contact must be used to ensure contact has been made.

The contractor must submit any lane closure to Nassau County Traffic Management website:  
<https://apps.nassaucountyny.gov/trafficmanagement/closureform.php>

44. Any existing traffic signal post, pole, mast arm shaft, or strain pole affected by the installation of handicap ramps or change in grade must be height adjusted to bring the base plate to match new grades, including removing the pole/post and adjusting the anchor nuts, and reinstallation of the pole and equipment. Existing rain cap is to be removed and new one installed as per Nassau County traffic signal foundation item specifications. All signal head heights must be checked before any pole height is adjusted so that they continue to meet signal head height requirements.

All traffic signal pushbuttons need to be adjusted in height to be ADA compliant, if affected by the ramp installation which includes changes in grade from existing and meet the Nassau County traffic signal specifications.

All traffic signals shall be placed on recall mode prior to any milling or asphalt paving.

The contractor must notify the Resident Engineer and Michael Kurpis of the Nassau County Traffic Signal Management Section by calling (516) 572-0465, ext. 20958 or by email [mkurpis@nassaucountyny.gov](mailto:mkurpis@nassaucountyny.gov) prior to any work involving alteration of traffic signal equipment or infrastructure including placing traffic signals within the work area on recall if required and return them to the existing operation once all work is completed. A Nassau County Traffic inspector must be present upon the completion of this work.

The contractor must notify the Resident Engineer or Nassau County Project Manager and coordinate with Nassau County Traffic Signal Management Section all required traffic loop installations.

45. The contractor is to notify all privately owned utilities at least 5 business days before starting work to permit the utility time to adjust their facilities.
46. The contractor will also be required to adjust all municipality owned drains, sewers, and/or water - manholes, surface inlets, and/or meter pits, under Item 16X-Adjusting Manholes, and Water Valves under Item 114 - Adjustment of Water Valve Box Elevations.

The contractor must notify all water districts and/or municipality owned water companies of any water valves that cannot be opened so that they can be adjusted, prior to resurfacing the roadways. Any complaints that the County receives for manholes and/or water valves not raised will be referred to the contractor to rectify at no cost to the County of Nassau.

If any water valve and/or gas valve box tops are milled off, complete replacement of the valve box top section will be required at no cost to the County of Nassau.

47. The contractor will also be required to adjust all municipality owned drains, sewers, and/or water - manholes, surface inlets, and/or meter pits, under Item 16X-Adjusting Manholes, and Water Valves under Item 114 - Adjustment of Water Valve Box Elevations.  
The contractor must notify all water districts and/or municipality owned water companies of any water valves that cannot be opened so that they can be adjusted, prior to resurfacing the roadways. Any complaints that the County receives for manholes and/or water valves not raised will be referred to the contractor to rectify at no cost to the County of Nassau.  
If any water valve and/or gas valve box tops are milled off, complete replacement of the valve box top section will be required at no cost to the County of Nassau.
48. Under Item 116A a depth of 1" - 2" is required. Any depth greater than 2" and/or as ordered by the Engineer shall be prorated for payment. On a completely milled roadway, temporary 4" wide traffic lines shall be painted directly after the milling has been completed. The cost shall be included in Item 102X or 102Y.
49. Survey Stakeout - Survey work shall be paid for under Survey Stakeout (Item 136S) only when done with prior written approval of the project manager. When the work is completed in less than an 8 hour shift the payment will be prorated for the actual time required. Survey work done to determine the contractors' payment will not be paid for under this item.
50. All concrete required for this contract shall be air entrained. Except as otherwise specified, all cement used on this project shall be Type 2A (air entraining) or Type 2 with an approved air entraining agent added to the mix to produce air entrained concrete. Air entraining admixtures shall conform to the requirements of Part Two, Section B, material M21, Admixtures of the specifications.
51. DRAINAGE INSTALLATIONS  
The Contractor shall plan his work and progress so that, at all times, either the new or the existing drainage facilities will function to carry off storm water runoff so that no damage or inconvenience will result.
52. COLD PATCH  
Payment for cold patch material used in this contract will be made under Item 102X and/or 102Y.
53. REQUIREMENTS OF OTHER MUNICIPAL DEPARTMENTS  
The Contractor shall give all necessary notices, obtain all permits and pay all fees in connection with the work under this contract. He shall comply with all laws, ordinances, rules and regulations of Nassau County and Municipal Departments having jurisdiction over work of this character. These shall take precedence over any requirements of these Specifications where and if a conflict occurs. This, however, shall not be interpreted as permitting the use of materials and equipment inferior to those specified.
54. PRIVATE FACILITIES IN PUBLIC RIGHTS-OF-WAY
- a. The Contractor shall be aware that sprinkler heads, private lamp and sign posts, signs, electric signs, electric lines, water service, oil inlets, oil lines, horticultural planting, landscaping, etc. were owned privately, but exist in the public Rights-of-Way. The Contractor may be required to remove these appurtenances as ordered by the Engineer.
  - b. Payment for this work will be included in the price bid for the appropriate items of work.



55. SPECIAL O.S.H.A. NOTES

- a. The Safety Provisions in the Specification are primarily to protect County Property and the Public against unsafe acts of the Contractor. The Occupational Safety and Health Act of 1970 requires that "Each Employer (1) shall furnish to each of his employees' employment and a place of employment which are free from recognized hazards that are causing or likely to cause death or serious physical harm to his employees; (2) shall comply with the occupational safety and health standards promulgated under this Act". The regulations in the act may be more stringent than are required by the Plans and/or Specifications. The Contractor however must conform to the O.S.H.A. Regulations and such conformance shall not be reason to demand additional payment or claim extra work.
- b. Sheeting shall conform strictly to the Requirements of the O.S.H.A. Regulations for Construction-Subpart P, Excavation, Trenching and Shoring:

1926.650	General protection requirements;
1926.651	Specific excavation requirements;
1926.652	Specific trenching requirements; and
1926.653	Definitions applicable to this subpart.

56. The Contractor shall obtain the necessary permit from the water district to allow rollers to be filled with water from fire hydrants or any other task which requires the use of water. Intakes shall be fitted with either an "Airgap" or "Double Check Valve Assembly" to prevent water from the roller or other operations from entering the public water system.

57. The Contractor is advised that chemical applicators are required to be certified by New York State Department of Environmental Conservation. Copies of the certificates shall be provided to Nassau County.

58. Tree Size Determination:

The diameter at breast height, commonly referred to as DBH, shall be measured at 4 ½ ft. above surrounding ground levels.

59. Special Note Regarding Asian Long Horned Beetle:

The contractor and any subcontractors shall be under a compliance agreement with the State of New York for conducting operations within any Asian Long Horned Beetle (ALB) quarantine area that may be required under this Contract. Documentation of compliance by the Contractor must be provided to the County.

60. Removal and Disposal of Wood, Branches, Trash/Debris:

All expenses for removal and disposal of wood and branches resulting from tree pruning and/or removal and any trash, debris, grass cuttings, etc. that must be removed from the work locations are included in the respective Items of the Contract. Removal, hauling and disposal of such materials shall be accomplished in accordance with any federal, state and/or local regulations that may be in existence.

61. As-Built Drawings

Subsequent to each repair, modification or installation of any portion of the County's drainage infrastructure or any associated facilities the contractor shall supply an as-built drawing to the County detailing the work performed.

62. **Sanitary Sewer Notes**

- a) The Contractor shall notify the Water/Wastewater Engineering a minimum of two (2) working days prior to work involving any sanitary sewer facilities. Notification is to be made by calling (516) 571-6841
- b) All work shall be in accordance with NCDPW Standard Specifications and Details for the Construction of Sanitary Sewers, latest edition 2003. All work must be performed in the presence of a Nassau County inspector.
- c) All sanitary sewer house connections and laterals shall be located prior to any excavation by Contractor.
- d) The Horizontal/Vertical separation of sewer and drainage pipe or water main/services shall meet or exceed the requirements outlined in the RECOMMENDED STANDARDS FOR SEWAGE WORKS (Ten States Standards), latest edition.
- e) Where sanitary or house connection sewers cross over a drainage trench area, the sewer shall be replaced with Ductile Iron extending a minimum of five (5) feet each side of crossing to undisturbed soil. The same replacement shall apply for sewers under a drainage trench area within twelve (12) inches clearance, bottom of drain to top of sewer.
- f) All pipes, manholes and appurtenances shall have the County approval stamp thereon or written certification acceptable to the County before the material can be installed.
- g) Where it is necessary to raise sanitary sewer manhole castings to grade for repaving, fixed frame castings must be raised either by adjusting the height of the brick masonry or using an approved insert (metal inserts are not permitted). Adjustable frame type manholes may be raised by adding up to a maximum of two, one inch (1") adjustment rings to achieve final grade.
- h) All non-adjustable Nassau County sewer manhole castings will be replaced with new adjustable manhole castings under Item 34 - Miscellaneous Metals and installed under Item 16X - Altering Brick Manholes. The cost of painting the new adjustable manhole castings with two coats of asphaltum paint shall be included in the various items of the contract.

No inserts are to be used. Manholes must be physically raised, except Adjustable Frame type. No payment will be made for manholes that are not set to proper grade. Where sanitary sewer manholes are of the adjustable frame type, a maximum of two (2) one inch adjustment rings will be allowed to bring casting to finished grade.

The contractor must inspect all Village-owned manhole castings at least one week prior to start of work and should any damaged castings be found to exist; the Contractor shall contact the Village and request a replacement casting to be furnished for the Contractor to install. All work shall be included under Item 16X - Altering Brick Manholes.

- i) The Contractor shall comply with all OSHA requirements for entry into a confined space whenever it is necessary for a Contractor's employee to enter a Nassau County sanitary sewer manhole. The minimum requirements the Contractor must comply with are:
  - 1. Contractor issued "ENTRY PERMIT";
  - 11. Confined space entry monitor to test for toxic, explosive and oxygen deficient atmosphere.
  - 111. Confined space rescue and retrieval equipment.

The Contractor will not be permitted to work in a Nassau County sanitary sewer manhole, unless he complies with all applicable OSHA requirements.

- j) The Minimum/ Maximum height limits for brickwork for new manholes are (4) four inches and (16) sixteen inches, respectively. Adjustments to chimney height to meet the limits shall be by altering the precast manhole barrel. Additional requirements are:
  - A. Only concrete brick will be used for brickwork.
  - B. The manhole frame is to be set in Portland cement concrete. Brick mortar will not be permitted.
  - C. The manhole covers must be at Finished Street Grade. Warping or feathering of the pavement to meet improperly set manholes will not be permitted.
  - D. The manholes and covers must be clean and free from all road paving materials and debris prior to painting the castings.

**63. Nassau County Drainage Manholes**

All Nassau County drainage manhole frames and castings raised under Item 16X, shall be replaced with new adjustable two-part manhole frame and castings including new cover. No adjustable rings will be allowed in these castings. They should be raised to the proposed roadway grade. Payment for these new frames, covers, and castings shall be made under Item 34 – Miscellaneous Metals. If any debris is found by the contractor's carelessness in raising the drainage manholes it must be cleaned out immediately.

- 64. The contractor will be required to remove all existing plowable markers prior to the paving operation. Payment for the removal of existing plowable markers will be included in the cost of the various bid items. The voids left from the removal of the plowable markers will immediately be filled with asphalt Cement, type 1A, which will be paid for under 36D.
- 65. The contractor will be required to remove the following traffic markings just prior to the paving operations: *crosswalks, arrows, and stop lines*. Payment for removing these traffic markings will be included in the cost under item 36D. Non paving areas (side streets) traffic pavement markings shall be removed under Item 137.
- 66. The contractor will be required to handout notices to the local homeowners and businesses affected by the milling and paving operations 24 hours prior to work starting.

The contractor must set up portable variable message signs at the limits of the job site three (3) days prior to the start of the milling and/or paving, giving the start dates and work hours. Payment shall be made under Item 102 PVMS – Portable Message Sign.

67. When the final yield factor is not within the tolerances specified of the County worksheets for Item 36D, maximum payment of asphalt in those items shall be shown below:

Percent over Engineer's Estimate: L=Maximum Payment

5 to 10 Percent	95 percent of the total asphalt material delivered to the project
11 to 29 Percent	90 percent of the total asphalt material delivered to the project
21 to 25 Percent and Over	85 percent of the total asphalt material delivered to the project

68. GA-GC Asphalt Quality Control at Asphalt Plants – if ten (10) Nassau County DPW Lab samples fail due to low AC content and/or 15 gradation samples fails, the approved job mix formula, one (1) percent for each infraction of asphalt concrete produced from the plant will be deducted from the total for Item 36DRAR – Rut Avoidance Asphalt Type 1A.
69. The Contractor is required to coordinate his work with Public Agencies and Private Utility companies to avoid conflicts and to arrange for castings and appurtenances which are to be adjusted by others in advance of preforming any final pavement overlay work. The contractor is required to obtain approval for limits of proposed pavement markings from a County representative prior to preforming any proposed work.

**2023 REQUIREMENTS CONTRACT FOR THE  
RECONSTRUCTION & DEWATERING OF COUNTY  
DRAINAGE FACILITIES,  
VARIOUS LOCATIONS,  
NASSAU COUNTY, NEW YORK**

**CONTRACT NO. S82001-06G**

**SPECIAL PROVISIONS**

**1. Past History**

To assist you in the bid process, we have reviewed the County's recent past history of expenditures for the nature of the work being bid herein. Our records have indicated that an average amount in excess of \$12,000,000.00 worth of work has been accomplished under the past few contracts. It is understood and agreed, however, that this allocated amount may be amended if budgetary allowances in said sums are not voted on and approved by the Nassau County Legislature for the County fiscal years in which said payments are to be made. Be advised that this figure is provided for your guidance only and is not to be interpreted as an indication that any specific dollar amount of work is contemplated through the establishment of the contract being bid at this time.

### **Addenda Notes and Modification to the Nassau County Specifications**

NOTE: Where a standard Nassau County item has been modified for use under this agreement for payment purposes all the provisions of the standard item will apply unless indicated otherwise herein.

**2023 REQUIREMENTS CONTRACT FOR THE  
RECONSTRUCTION & DEWATERING OF COUNTY  
DRAINAGE FACILITIES,  
VARIOUS LOCATIONS,  
NASSAU COUNTY, NEW YORK**

**CONTRACT NO. S82001-06G**

**SPECIAL SPECIFICATIONS**

The General Construction Payment Item Specifications as per Nassau County Department of Public Works 2009 Standard Specifications and Detail Sheets for Civil Engineering and Site Development Construction – as amended by the current additions and modifications thereto.

**NO TEXT ON THIS PAGE**



## **ITEM 1X - CLEARING AND GRUBBING**

The requirements for Item 1 of Nassau County *2009* Standard Specifications shall apply with the following modifications:

### **3. Method of Measurement.**

The quantity to be paid for under this item will be the number of square yards of clearing and grubbing provided in accordance with the Plans and Specifications as determined by the engineer.

### **4. Basis of Payment.**

The price bid per square yard for this item shall include the cost of furnishing all labor, material and equipment necessary to complete the work satisfactorily.

## **ITEM 2B - REMOVAL OF BULKHEAD & TIMBER RAILS**

### **A. Description**

Under this Item the Contractor shall remove sections of the existing bulkhead, timber rails, and other timber tie supports to the line and grade shown on the Plans, as described in this Specification or as ordered by the Engineer.

### **B. Materials**

There are no materials which will become part of this work.

### **C. Construction Details**

The Contractor shall cut the bulkhead, and other timber structures that may interfere with the proposed work. After cutting the bulkhead and the other timber materials the Contractor shall remove and dispose of the debris off the site.

Bulkhead shall include fender piles and waler removed to accommodate the new sidewalk and timber decking as detailed on the drawings.

### **D. Method of Measurement**

The quantity to be paid for under this Item shall be the number of horizontal linear feet of bulkhead actually cut and disposed of to the required line and grade as shown on the Plans or as directed by the engineer. In the horizontal linear feet of timber rail shall include the removal of the post.

E. **Basis of Payment**

The linear foot bid price shall include the cutting of the bulkhead and/or timber railing disposing off the site, and all incidental construction necessary to complete the work as shown on the Plan, as stated in this Specification, or as ordered by the Engineer.

Other timber materials found on the path of work like head piles, timber tie support etc. shall be compensated in accordance with Item 2, unclassified excavation.

**ITEM 2X - UNCLASSIFIED EXCAVATION OF STORM WATER BASIN**

The requirements for Item 2 of Nassau County 2009 Standard Specifications shall apply with the following modifications:

1. **Description**

Under this Item, the Contractor shall excavate materials unclassified by nature from within various sections of the storm water basin, form new berms as directed by engineer, and regrade the basin, including side slopes. This Item shall include, but not be limited to, the excavation and removal of material from the basin bottom and side slopes. This Item shall include stockpiling, placement, backfill and compaction of material within the basin. The offsite removal and disposal of soil shall be paid under Item 532 and/or Item 550. Excavation within the storm water basin required for the construction of diffusion wells and construction or modification of inlet structures shall be executed under the requirements of Item 2.

Stockpiled soils may require reworking to dry sufficiently in order to meet requirements for offsite disposal. No additional compensation will be provided for drying material to meet those requirements.

The Contractor is advised that materials excavated may need to be tested for contaminants as part of the requirements for disposal. The tests shall be performed in conformance with Item 510. The Contractor shall advise Nassau County of the tests to be conducted as required by the Landfill to determine if they are in consistent with the requirements of the New York State Department of Environmental Conservation.

Under this Item the Contractor will be paid under the following schedule on each work order:

Item 2X-1	-	0 - 500 CYY	Excavated
Item 2X-2	-	501 - 7000 CYY	Excavated
Item 2X-3	-	Over 7000 CYY	Excavated

### **ITEM 4PX - REMOVAL OF EXISTING PIPE**

#### **A. Description.**

1. Under this Item, the Contractor shall expose, remove and dispose of existing pipe or parts thereof as shown on the Plans and/or directed by the Engineer.

#### **B. Materials and Methods.**

1. After the existing pipe has been removed, the resultant excavation shall be backfilled and compacted in accordance with the requirements of Items 3A and 3B - Trench, Culvert and Bridge Excavation as specified herein.

#### **C. Method of Measurement.**

1. The quantity to be paid for under this Item shall be the actual number of linear feet of pipe removed and disposed of, regardless of size or type, in accordance with the Specifications, Work Orders and/or as directed by the Engineer.

#### **D. Basis of Payment.**

1. The unit price bid per linear foot for this Item shall include the cost of furnishing all labor, materials, tools, equipment, and incidentals including excavation, temporary sheeting and bracing and backfill necessary to satisfactorily complete the work.

### **ITEM 8X – TRIMMING SHOULDERS AND SLOPES**

The requirements for Item 8 of Nassau County 2009 Standard Specifications shall apply with the following modifications:

#### **2. Method of Measurement**

Payment under this item will be made on a Square Yard basis for this Item.

#### **3. Basis of Payment**

The Square yard price shall cover equipment, all labor and incidental work necessary to trim, form and compact shoulders trim and form unpaved sidewalls ditches, drainage basins and slopes to the line and grade shown on the Plans and/or as ordered by the Engineer. Monthly payments will be made in proportion to the amount of work performed under this item as determined by the Engineer.

## **ITEM 10C - 3XX- TREATED TIMBER SHEET PILING 4" THICK**

### **1. Description**

All the requirements of Item 10C-3 Permanent Timber Sheet Piling and Bracing shall apply with the modifications indicated herein:

### **2. Materials**

The timber sheeting shall be tongue and groove of the type and stress grade indicated on the Plans. Any fasteners, washers and plates attached to the sheeting shall be as indicated on the Plans and shall be hot-dipped galvanized in conformance with ASTM A-123.

#### **2.01. Pressure Treatment**

- a. All dimension lumber, timber, and piles shall be treated in accordance with the applicable AWPAs Use Category Standards and Commodity Standards.
- b. Preservation retention shall be in accordance with the following table:

<b>Use</b>	<b>AWPA Use Category</b>	<b>Retention</b>
Marine – Saltwater – Piles	UC5A	2.50 pcf for 0.0" to 0.5" 1.50 pcf for 0.5" to 2.0 Total penetration = 3.5" or 90% of sapwood, whichever is less.
Marine – Saltwater – Other	UC5A	2.50 pcf
Marine – Freshwater	UC4C	0.80 pcf
Foundation Piles	UC4C	0.80 pcf
Timber Retaining Walls	UC4B	0.60 pcf
Fence Posts and Sign Posts	UC4A	0.40 pcf
Timber Curbs	UC4A	0.40 pcf
Above Grade Construction	UC3B	0.25 pcf

## 2.02. Wood Preservative - Waterborne

- a. Waterborne wood preservatives shall be Alkaline Copper Quarternary (ACQ), copper Azol, Ammoniacol Copper Arsenite (ACA) conforming to the requirements of American Wood-Preservers' Association Standard P5.
- b. Waterborne wood preservatives shall be applied in conformance with the American Wood Preservers' Association Standards C1, C2, C3, C4, C5, C14, and C18. Minimum net retention shall be as specified in table above.

## 2.03. Field Treatment

- a. Copper naphthenate having a minimum of 2% metallic solution in accordance with APWA Standard M4.

## 3. **Construction Details**

In addition to requirements indicated on Item 10C-3, the Contractor shall drive the timber sheet piling by jetting to an elevation five feet before the required penetration is reached.

The jets shall then be withdrawn and the piles shall be driven with the hammer to secure the final penetration.

## 4. **Method of Measurement**

As specified on Item 10C-3.

## 5. **Basis of Payment**

As specified on Item 10C-3, cost of fasteners, washers and plates attached to the timber sheet piling shall be included in the price bid per square foot.

### **ITEM 12HX - CLEAN EXSITING DRAINAGE SYSTEM**

The requirements for Item 12H of Nassau County 2009 Standard Specifications shall apply with the following modifications:

This item covers all pipes, box culverts or any other drainage structures with a cross-sectional area less than 19 square feet.

All costs for cleaning existing surface inlets and/or catch basins shall be paid for actual depth regardless of length and width.

### **ITEM 12HXC - CLEANING EXISTING DRAINAGE CULVERTS**

#### **A. Description.**

Under this item the contractor shall clean and maintain drainage culverts, as ordered by the engineer, at various locations within Nassau County. Under this item a culvert is defined as any pipe, box culvert or any other underground structure where the cross-sectional area is greater than 19 square feet.

**B. Method:** All existing drainage culverts shall be cleaned and kept free of obstructions for the duration of the project. Upon completion and final acceptance of the work, the facilities shall be left clean and free flowing to the satisfaction of the engineer.

The contractor shall provide necessary protection against damage to the culvert and any damage caused by his operations in the judgment of the engineer. This damage shall be repaired at the contractor's own expense.

The contractor is advised that the culverts have limited access and as a result most of the work will require hand labor. This item includes all culverts where access is available within 150 feet where the work is requested. Where access is not available, the contractor may be requested to install manholes at locations directed by the Engineer paid under the appropriate contract items. The contractor is further advised the length of the culvert may vary and access to various sections may require entry through manholes along the length of the culvert. The contractor shall be required to observe OSHA requirements for work in confined spaces.

**C. Method of Measurement:** The quantity to be paid for will be the number of cubic yards of material cleaned from the culvert.

All new structures installed during this work and all material deposited as a result of the contractor work shall be excluded from payment under this item. Cleaning and maintenance of these facilities is provided for elsewhere in the proposal.

**D. Basis of Payment:** The price bid per cubic yard shall cover the cost of all labor, material and equipment necessary to clean, protect and maintain the culvert to the satisfaction of the engineer. Payment for removal of trash and debris will be paid for under item no. 430

**DRAINAGE PIPES – ITEMS 12XX**

**12A-4-12 – 12” REINFORCED CONCRETE PIPE, CLASS IV**

**12A-4-15 – 15” REINFORCED CONCRETE PIPE, CLASS IV**

**12A-4-18 – 18” REINFORCED CONCRETE PIPE, CLASS IV**

**12A-4-24 – 24” REINFORCED CONCRETE PIPE, CLASS IV**

**12A-4-30 – 30” REINFORCED CONCRETE PIPE, CLASS IV**

**12A-4-36 – 36” REINFORCED CONCRETE PIPE, CLASS IV**

**12A-4-42 – 42” REINFORCED CONCRETE PIPE, CLASS IV**

**12A-4-48 – 48” REINFORCED CONCRETE PIPE, CLASS IV**

**12A-4-54 – 54” REINFORCED CONCRETE PIPE, CLASS IV**

**12A-4-60 – 60” REINFORCED CONCRETE PIPE, CLASS IV**

**12B-12 – REINFORCED CONCRETE PIPE END SECTION, 12” DIAMETER**

**12B-15 – REINFORCED CONCRETE PIPE END SECTION, 15” DIAMETER**

**12B-18 – REINFORCED CONCRETE PIPE END SECTION, 18” DIAMETER**

**12B-24 – REINFORCED CONCRETE PIPE END SECTION, 24” DIAMETER**

**12B-30 – REINFORCED CONCRETE PIPE END SECTION, 30” DIAMETER**

**12B-36 – REINFORCED CONCRETE PIPE END SECTION, 36” DIAMETER**

**12B-42 – REINFORCED CONCRETE PIPE END SECTION, 42” DIAMETER**

**12B-48 – REINFORCED CONCRETE PIPE END SECTION, 48” DIAMETER**

**12B-54 – REINFORCED CONCRETE PIPE END SECTION, 54” DIAMETER**

**12B-60 – REINFORCED CONCRETE PIPE END SECTION, 60” DIAMETER**

**12C-14X23 - 14"X23" REINFORCED ELLIPTICAL CONCRETE PIPE**

**12C-19X30 - 19"X30" REINFORCED ELLIPTICAL CONCRETE PIPE**

**12C-22X34 - 22"X34" REINFORCED ELLIPTICAL CONCRETE PIPE**

**12C-24X38 - 24"X38" REINFORCED ELLIPTICAL CONCRETE PIPE**

**12C-29X45 - 29"X45" REINFORCED ELLIPTICAL CONCRETE PIPE**

**12D-12 – PERFORATED REINFORCED CONCRETE PIPE – 12” DIAMETER**

**12D-15 – PERFORATED REINFORCED CONCRETE PIPE – 15” DIAMETER**

**12D-18 – PERFORATED REINFORCED CONCRETE PIPE – 18” DIAMETER**

**12D-24 – PERFORATED REINFORCED CONCRETE PIPE – 24” DIAMETER**

**12D-30 – PERFORATED REINFORCED CONCRETE PIPE – 30” DIAMETER**

**12DIP-6 - DUCTILE IRON CULVERT PIPE - 6" DIAMETER**

**12DIP-8 - DUCTILE IRON CULVERT PIPE - 8" DIAMETER**

**12DIP-10 - DUCTILE IRON CULVERT PIPE - 10" DIAMETER**

**12DIP-12 - DUCTILE IRON CULVERT PIPE - 12" DIAMETER**

**12DIP-14 - DUCTILE IRON CULVERT PIPE - 14" DIAMETER**

**12DIP-16 - DUCTILE IRON CULVERT PIPE - 16" DIAMETER**

**12DIP-18 - DUCTILE IRON CULVERT PIPE - 18" DIAMETER**

**12DIP-24 - DUCTILE IRON CULVERT PIPE - 24" DIAMETER**

**12DIP-30 - DUCTILE IRON CULVERT PIPE - 30" DIAMETER**

**12F-12 - 12" ROUND CORRUGATED METAL PIPE (SMOOTH FLOW)**

**12F-15 - 15" ROUND CORRUGATED METAL PIPE (SMOOTH FLOW)**

**12F-18 - 18" ROUND CORRUGATED METAL PIPE (SMOOTH FLOW)**

**12F-24 - 24" ROUND CORRUGATED METAL PIPE (SMOOTH FLOW)**

**12F-30 - 30" ROUND CORRUGATED METAL PIPE (SMOOTH FLOW)**

**12F-36 - 36" ROUND CORRUGATED METAL PIPE (SMOOTH FLOW)**

**12F-42 - 42" ROUND CORRUGATED METAL PIPE (SMOOTH FLOW)**

**12F-48 - 48" ROUND CORRUGATED METAL PIPE (SMOOTH FLOW)**

**12P-6 - SMOOTH INTERIOR CORRUGATED POLYETHYLENE DRAINAGE PIPE - 6" DIAMETER**

**12P-8 - SMOOTH INTERIOR CORRUGATED POLYETHYLENE DRAINAGE PIPE - 8" DIAMETER**

**12P-12 - SMOOTH INTERIOR CORRUGATED POLYETHYLENE DRAINAGE PIPE - 12" DIAMETER**

**12P-15 - SMOOTH INTERIOR CORRUGATED POLYETHYLENE DRAINAGE PIPE - 15" DIAMETER**

**12P-18 - SMOOTH INTERIOR CORRUGATED POLYETHYLENE DRAINAGE PIPE - 18" DIAMETER**

**12P-24 - SMOOTH INTERIOR CORRUGATED POLYETHYLENE DRAINAGE PIPE - 24" DIAMETER**

**12P-36 - SMOOTH INTERIOR CORRUGATED POLYETHYLENE DRAINAGE PIPE - 36" DIAMETER**

**12P-42 - SMOOTH INTERIOR CORRUGATED POLYETHYLENE DRAINAGE PIPE - 42" DIAMETER**



**12P-48 - SMOOTH INTERIOR CORRUGATED POLYETHYLENE DRAINAGE  
PIPE - 48" DIAMETER**

**A. Description.**

All requirements of the above listed items from Nassau County 2009 Standard Specifications shall apply except for change in pipe sizes.

**ITEM 12S40X-8 – SCHEDULE 40 PVC DRAIN PIPE - 8" DIAMETER**

**ITEM 12S40X-12 – SCHEDULE 40 PVC DRAIN PIPE- 12" DIAMETER**

**ITEM 12S40X-18 – SCHEDULE 40 PVC DRAIN PIPE - 18" DIAMETER**

**ITEM 12S40X-24 – SCHEDULE 40 PVC DRAIN PIPE - 24" DIAMETER**

**A. Description.**

All requirements of the above listed items from Nassau County 2009 Standard Specifications shall apply except for change in pipe sizes.

**ITEM 13BX-4 – TREATMENT STRUCTURE, 4' DIAMETER**

**ITEM 13BX-6 – TREATMENT STRUCTURE, 6' DIAMETER**

**ITEM 13BX-8 – TREATMENT STRUCTURE, 8' DIAMETER**

**ITEM 13BX-10 – TREATMENT STRUCTURE, 10' DIAMETER**

**ITEM 13BX-12 – TREATMENT STRUCTURE, 12' DIAMETER**

**The requirements for Item 13B of Nassau County 2009 Standard Specifications shall apply with the following modifications:**

**A. Description.**

1. Under this item the Contractor shall furnish and install storm water treatment structures of the sizes and types at the locations indicated on the construction drawings. The storm water treatment structure and its appurtenances shall be a self-contained system incorporating an induced vortex to separate solids from liquids in the storm water flow. The system shall be self-activating with fluid flow driven by gravity force without the use of mechanical parts or external power requirements.
2. The storm water treatment device must be approved by the New York State Department of Environmental Conservation (NYSDEC). The Contractor shall provide the Engineer with the manufacturer's written certification indicating the structures supplied to the project meet all conditions of and are NYSDEC approved.

**B. Materials.**

1. The storm water treatment system shall be the "Downstream Defender" as designed by Hydo International, 94 Hutchins Drive, Portland, Maine 04102, 207- 756-6200, Fax 207-756-6212, or approved equal.
  - a. The storm water treatment system shall be supplied by a manufacturer regularly engaged in such work who has furnished similar installation in successful and continuous operation for a minimum period five years.
  - b. Performance data and references shall be made available to the Engineer upon request for use in determining conformance to the storm water treatment system design criteria and performance requirements required in this specification.
2. The treatment structure shall consist of a reinforced precast concrete hollow, cylindrical vessel with internal components.
  - a. The internal components to be supplied shall include the center shaft and cone, dip plate, benching skirt, floatables lid and component support frame. These components shall be composed of polypropylene material. The component support frame members and all metal parts shall be Type 304 stainless steel. All components shall be designed to withstand all normal loadings associated with fabrication, shipping, site installation and normal operation of the equipment. The component support frame shall withstand a live load of 500 lbs.

- b. The hollow cylindrical vessel shall be a precast concrete structure manufactured with 4,000 psi (at 28 days cure time) concrete. The structure shall be steel reinforced for H-20 loading. Shiplap joints to be sealed with one inch butyl rubber sealant. Slab tops shall be suitably reinforced and provided with manhole openings and covers as required. The cast iron manhole frames and covers shall be sized as per the manufacturer's drawings. The masonry fixing bolts shall be Type 304 stainless steel.

**C. Submittals.** As a minimum and to the satisfaction of the Engineer, the Contractor shall provide the following:

1. General arrangement and dimensional drawings of the storm water treatment system.
2. Plan and profile drawings of the storm water treatment system as part of the storm water drainage system. The profile drawing shall indicate the top of water level both upstream and downstream of the storm water treatment system at the design flow conditions.
3. Handling, storage and installations instructions.
4. Operation and maintenance instructions.

**D. Equipment Performance, Design Criteria and Installation.**

1. The storm water treatment unit shall adhere to the hydraulic parameters listed below and provide the efficiencies and storage capacities as follows.
2. Performance objectives — the treatment chamber must be capable for treating a maximum flow at least equal to the peak treatment flow listed below:

a. Item 13BX-4 — 4' Diameter Treatment Structure

- |   |                   |
|---|-------------------|
| 1) Peak treatment flow  | 3 cubic feet/sec. |
| 2) Vessel diameter  | 4 feet            |
| 3) Maximum inlet pipe diameter  | 12 inches         |
| 4) Maximum overflow pipe diameter   | 12 inches         |
| 5) Predicted head loss at peak treatment capacity<br>(head loss as defined as the difference between static water level at the inlet to the "Downstream Defender" to the free water surface in the overflow pipe assuming a free discharge) | 8 inches          |
| 6) Sediment storage capacity  | 0.70 cubic yards  |
| 7) Oil storage capacity   | 70 gallons        |

b. Item 13BX-6 — 6' Diameter Treatment Structure

- |                                   |                   |
|-----------------------------------|-------------------|
| 1) Peak treatment flow            | 8 cubic feet/sec. |
| 2) Vessel diameter                | 6 feet            |
| 3) Maximum inlet pipe diameter    | 18 inches         |
| 4) Maximum overflow pipe diameter | 18 inches         |

- 5) Predicted head loss at peak treatment capacity 8 inches  
(head loss as defined as the difference between static water level at the inlet to the "Downstream Defender" to the free water surface in the overflow pipe assuming a free discharge)
- 6) Sediment storage capacity 2.10 cubic yards
- 7) Oil storage capacity 230 gallons

c. Item 13BX-8 — 8' Diameter Treatment Structure

- 1) Peak treatment flow 15 cubic feet/sec.
- 2) Vessel diameter 8 feet
- 3) Maximum inlet pipe diameter 24 inches
- 4) Maximum overflow pipe diameter 24 inches
- 5) Predicted head loss at peak treatment capacity 8 inches  
(head loss as defined as the difference between static water level at the inlet to the "Downstream Defender" to the free water surface in the overflow pipe assuming a free discharge)
- 6) Sediment storage capacity 4.65 cubic yards
- 7) Oil storage capacity 525 gallons

d. Item 13BX-10 — 10' Diameter Treatment Structure

- 1) Peak treatment flow 25 cubic feet/sec.
- 2) Vessel diameter 10 feet
- 3) Maximum inlet pipe diameter 30 inches
- 4) Maximum overflow pipe diameter 30 inches
- 5) Predicted head loss at peak treatment capacity 10 inches  
(head loss as defined as the difference between static water level at the inlet to the "Downstream Defender" to the free water surface in the overflow pipe assuming a free discharge)
- 6) Sediment storage capacity 8.70 cubic yards
- 7) Oil storage capacity 1,050 gallons

e. Item 13BX-12 — 12' Diameter Treatment Structure

- 1) Peak treatment flow 38 cubic feet/sec.
- 2) Vessel diameter 12 feet
- 3) Maximum inlet pipe diameter 36 inches
- 4) Maximum overflow pipe diameter 36 inches
- 5) Predicted head loss at peak treatment capacity 17 inches  
(head loss as defined as the difference between static water level at the inlet to the "Downstream Defender" to the free water surface in the overflow pipe assuming a free discharge)
- 6) Sediment storage capacity 14.70 cubic yards
- 7) Oil storage capacity 1,770 gallons

3. The storm water treatment system shall be a hollow cylindrical vessel with internal components and a tangential inlet to induce a vortex flow pattern that will accumulate and store settle-able solids in a sediment storage facility that is isolated from the treatment flow path. The sediment storage facility shall be beneath the vortex chamber to prevent re-entrainment of captured sediment and reduction in treatment capacity.
4. Each storm water treatment unit shall utilize a submerged inlet to prevent the re- entrainment of trapped floating contaminants without raising the water surface inside the tank.
5. The storm water treatment system shall have a floatables trap that is separate from the treated effluent discharge area to prevent re-entrainment of captured floatables during surcharge conditions.
6. The useable sediment and oil storage capacities shall not be less than the volumes listed above. The useable sediment storage capacity shall not cause a reduction in the volume of the treatment chamber capacity. The useable oil storage capacity shall not encroach upon the useable sediment storage capacity.
7. Access cover shall be provided for the sediment and floatable contaminant storage areas to facilitate maintenance.
8. Installation.
  - a. Each treatment structure shall be factory assembled ready for connection to the proposed inlet and outlet drainage pipes.
  - b. The treatment structure shall be installed in its final position in accordance with the requirements of Item 13B and the manufacturer's recommendations.

**E. Method of Measurement.**

1. The quantity to be paid for under this item will be the number of treatment structures under the respective item numbers designated for the respective structure diameter sizes complete in accordance with the contract documents and orders of the Engineer.

**F. Basis of Payment.**

1. The unit price bid per each shall include all labor, equipment, materials, and incidentals necessary to satisfactorily complete the work.

## **ITEM 26S - CONCRETE CURB (SPECIAL)**

### **A. Description.**

1. Under these Items the Contractor shall cast-in-place concrete curb of various types to match existing and/or conform to those types listed above as shown on the Plans, appropriate Standard Detail Sheets, or as ordered by the Engineer.

### **B. Materials.**

1. The concrete placed under this item for conventionally formed curb shall be Class A, and for machine-formed curb, Class J, and shall conform in all respects to the requirements of PART THREE, SECTION A. The details of concrete materials permitted in this Item are shown in Table 1, "Concrete Mixtures" in Article 2 of Section A. Bar reinforcement shall conform to the requirements of M17.
2. Class F High Early Strength concrete or Class C concrete may be substituted for Class A concrete, if such substitution is approved by the Engineer. Class F concrete shall meet the requirements of Item 17F, and Class C concrete shall meet the requirements of Item 17C. No substitution may be made for Class J concrete.

### **C. Construction Details.**

1. The concrete curb shall be cast in place in sections approximately 20' long and provision made at each joint for expansion of 1/4". Where joint supports are used between curb and reinforced concrete pavement or concrete foundation course, construction joints shall be located at approximately 20' intervals and/or opposite each joint in the pavement. Expansion joints 3/4" in thickness shall be located opposite each pavement expansion joint. Expansion joints 1/2" in thickness shall be installed in the curb at the beginning and end of all curb returns, all sharp curves, at each side of drainage structures or castings, at each side of driveway curb cuts and between curb and sidewalk or other abutting structures.
2. Expansion joint filler shall be pre-molded bituminous material conforming to M32. It shall be cut to fit the cross-section of the curb and shall be accurately installed and firmly secured in position.
3. All forms shall be set true to line and grade and held rigidly in position. They shall be either of metal or of acceptable planed and matched lumber, and shall be of such construction as to allow for inspection for grade and alignment and that will produce a smooth surface on the finished curb.
4. The concrete shall be compacted by means of an approved immersion type, mechanical vibrator of a size and weight sufficient to vibrate the entire concrete mass thoroughly without damaging or misaligning the forms. The vibrator shall be introduced into the concrete at one foot intervals for a period not to exceed two seconds for each immersion. When directed the concrete shall be compacted by working or spading by hand along the faces of the rear and front forms or pavement edge for the full depth. All compacting shall be performed while the concrete is in a plastic state and shall be to such extent as will secure a dense mass with even and uniform surfaces free from aggregate pockets or honeycomb.
5. The back forms shall be left in place at least 24 hours or until the concrete has set sufficiently so that, in the judgment of the Engineer, they can be removed without injury to

the curb. After the concrete has attained its initial set, the face forms shall be removed and the exposed faces of the curb shall be immediately tooled, rubbed down and finished to a smooth, true and uniform surface as directed but no plastering will be permitted. For this work, only skilled finishers shall be employed. All joints shall be retooled for the full depth subsequent to the completion of the facing work.

6. At the Contractor's option, either M34 quilted covers, M34A polyethylene coated burlap blankets, M34B polyethylene curing covers or M34C waterproof paper blankets shall be used in curing concrete curb. Other methods of curing may be used only if so indicated on the Plans, in the Itemized Proposal or permitted in writing by the Engineer.
7. The Contractor shall protect the curb, keep it in true alignment and first class condition until the completion of the contract. Any curb which is damaged at any time previous to the final acceptance of the work or which is unsatisfactory shall be removed and replaced with acceptable curb at the Contractor's own expense.

**D. Method of Measurement.**

1. The quantity to be paid for under this item will be the number of linear feet of curb placed in accordance with the Plans, Specifications and orders of the Engineer.

**E. Basis of Payment.**

1. The price bid per linear foot shall include the cost of furnishing all labor, materials and equipment necessary to complete the work satisfactorily, including bar reinforcement and all grading including removal of existing curb unless otherwise shown on the Plans or in the Proposal.
2. Payment will be made at the unit price bid regardless of any approved substitution for the classes of concrete.

## **ITEM 33X – EPOXY COATED BAR REINFORCEMENT FOR STRUCTURES**

### **1. Description**

The requirements for Item 33 of Nassau County 2009 Standard Specifications shall apply with the following modifications:

### **2. Materials**

#### **1. Reinforcement.**

- a) This shall meet the requirements of ASTM A615 Grade 60.

#### **2. Epoxy Coating Material.**

- a) The epoxy coating material shall be an organic, powdered epoxy resin that is applied by the electrostatic method. The epoxy coating materials shall be approved by the County.

#### **3. Patching Material.**

- a) Patching or repair materials shall be supplied by the epoxy coating manufacturer. The patching material shall be compatible with the epoxy coating, inert in concrete, and shall be suitable for use in making field repairs.

#### **4. Coating Application.**

#### **5. Surface Preparation.**

- a) The surface of bars to be coated shall be blast cleaned in accordance with the Steel Structures Painting Council – Surface Preparation Specifications No. 10 (SSPC-SP10), Near White Blast Cleaning. After blasting, the cleaned surface of the bar shall be defined by SSPC-Vis1, Pictorial Standards ASa 2- 1/2, BSa 2-1/2, or CSa 2-1/2, as applicable.

#### **6. Coating Application.**

- a) The powdered epoxy resin coating shall be electro-statically applied in accordance with the recommendations of the coating manufacturer. The epoxy coating may be applied before or after fabrication of the reinforcing bars.

#### **7. Coating Thickness.**

- a) The epoxy coating shall be applied as a smooth, uniform coat. After curing, the coating thickness shall be 7 plus/minus 2 mils. Coating thickness shall be controlled by taking measurements on a representative number of bars from each production lot. Coating thickness measurements shall be conducted by the method outlined in ASTM G12.

#### **8. Continuity of Coating**

- a) The coating shall be checked visually after cure for continuity. It shall be free from holes, voids, contamination, cracks and damaged areas.
- b) The coating shall not have more than two holes (pinholes not visible to the naked eye) in any linear foot of the coated bar. A hole detector shall be used, in accordance with



manufacturer's instructions, to check the coating for holes.

#### 9. Coating Cure

- a) The coating applicator shall check each production lot to determine that the entire production lot of coated bars is in a fully-cured condition.

#### 10. Flexibility of Coating

- a) The flexibility of the coating shall be evaluated on a representative number of bars selected from each production lot. The coated bar shall be bent 120 degrees (after rebound) around a 6-inch diameter mandrel. The bend shall be done at a uniform rate and may take up to one minute to complete. The test specimens shall be at the thermal equilibrium between 20 and 30 degrees C (68-85 degrees F) at the time of testing.
- b) No cracking of the coating shall be visible to the naked eye on the outside radius of the bent bar.

#### 11. Plant Inspection

- a) The County reserves the right to have its authorized representative to observe the preparation, coating and testing of the reinforcement bars.
- b) The representative shall have free access to the plant and any work done when access has been denied shall be automatically rejected.

### **3. Construction Details**

#### 1. Shop Repair of Coated Bars

- a) Epoxy coated reinforcement bars which do not meet the requirements for Coating Thickness, Continuity of Coating, Coating Cure or Flexibility of Coating shall not be repaired.
- b) Reinforcement bars with these defects shall be replaced or alternately, stripped of epoxy coating, re-cleaned and recoated in accordance with the requirements of this specification.
- c) Coating breaks due to fabrication and handling shall be repaired with patching material if the defective area is greater than the cross-sectional area of the reinforcement bar. Defects which are smaller than the cross-sectional area need not be repaired.
- d) The repair of coating breaks shall be limited to bars on which the total of the defective coating bar does not exceed 5 percent of the surface area of the reinforcement bar. Bars with greater than 5 percent damage shall be replaced or alternately, stripped of epoxy coating, re-cleaned and recoated in accordance with this specification.

## 2. Handling

- a) All systems for coated bars shall have padded contact areas for the bars, wherever possible. All building bands shall be padded and all bundles shall be lifted with a strong back, multiple supports or a platform bridge so as to prevent bar to bar abrasion from sags in the bar bundle. The bars or bundles shall not be dropped or dragged.

## 4. Method of Measurement

The quantity to be paid for under this item is the number of pounds of bar reinforcement exclusive of chairs, fastenings and supports, that is incorporated in the work as shown on the Plans or as ordered by the Engineer. The weight of bar reinforcement will be computed by utilizing the unit weight for each size bar given in the "Table of Standard Weights". If the Engineer allows the substitution of larger bars than have specified, or splices not shown on the Plans or specifically ordered by him, payment will be only for weight of steel which would have been required if the specified size and length of bar had been used.

## 5. Basis of Payment

The unit price bid, per pound, for this item shall include the cost of furnishing all labor, materials and equipment necessary to complete the work. The cost of furnishing and placing chairs, fastenings and supports shall be included in the unit price bid for this item.

## **ITEM 40RP - RELOCATING TRAFFIC SIGNS**

The requirements for Item 27 of Nassau County 2009 Standard Specifications shall apply with the following modifications:

### **1. Description.**

1. This work shall consist of furnishing labor, materials, equipment and appliances necessary to perform and complete all work involved in relocating, in kind, an existing sign in accordance with the plans, specifications and as directed by the Engineer.

### **2. Materials.**

1. The contractor may reuse as many of the original components as possible and as approved by the Engineer. If it becomes necessary to supply new components, they shall be of equal quality to the original components.
2. Concrete for footings, when required, shall be in accordance with the requirements of NCDPW Specifications Section A, "Portland Cement Concrete, General Specifications" and shall be Class "A" Concrete

### **3. Construction Details**

1. The Contractor shall inspect the sign to be relocated to determine the materials, equipment and appliances necessary to effect the relocation. The Contractor shall submit shop drawings for approval, showing all dimensions, details of construction, design criteria and relationship to adjoining work, where same requires cutting and fitting, and other work required for a complete relocation. Use an accredited erection crew experienced in erecting signs.
2. Protect materials during relocation to preclude any damage. The Contractor shall replace, at his own expense, any components damaged during relocation.
3. Electrical connections, when required, shall be under the direction of a licensed electrician and in accordance with the current electrical codes.
4. Existing concrete sign footings shall be cut to a depth of 18 inches below the existing ground and covered with suitable-material, or as directed by the Engineer.
5. Any areas, site elements or services disturbed during the relocation process shall be restored to their original condition.

### **4. Method of Measurement**

1. Payment will be made for EACH sign relocated in accordance with these specifications and the orders of the Engineer.

### **5. Basis of Payment.**

1. The unit price bid each for this Item shall include the cost of all labor, materials, tools and incidentals necessary to satisfactorily complete the required work.

## **ITEM 60A - ADJUST WATER SERVICE BOX ELEVATIONS**

### **1. Description.**

1. Under this Item the Contractor shall raise or lower the grade of the existing water service boxes that are necessitated by a change in grade between the existing grade and the new street grade at the location(s) indicated on the Plans, as required by the Specifications, or as directed by the Engineer.

### **2. Materials and Methods.**

1. The "General Requirements for Modifications to Existing Water Service Facilities", which is included under Item 59, shall apply in addition to the requirements of this Item.
2. Water service boxes and other appurtenances shall conform to the latest standard practice and to the specifications and standards of the local Water District.

### **3. Method of Measurement.**

1. The quantity to be paid for under this Item shall be the actual number of water service boxes reset to the new grade.

### **4. Measurement of Payment.**

1. The unit price bid for under this Item shall include the cost of all labor, materials, equipment and incidentals necessary to satisfactorily complete the work.

## **ITEM 60B - RELOCATE CURB COCK AND WATER SERVICE BOXES**

### **1. Description.**

1. Under this Item the Contractor shall relocate existing curb cocks and water service boxes and furnish and install new pipe and fittings as required between the water main and the service shutoff that are necessitated by change in line and grade at the location(s) indicated on the Plans, as required by the Specifications, or as directed by the Engineer.

### **2. Materials and Methods.**

1. The "General Requirements for Modifications to Existing Water Service Facilities", which is included under Item 59, shall apply in addition to the requirements of this Item.
2. Curb cocks, water service boxes and other appurtenances shall conform to the latest standard practice and to the specifications and standards of the local Water District having jurisdiction.

### **3. Method of Measurement.**

1. The quantity to be paid for under this Item shall be the actual number of curb cock and water service boxes reset to the new grade.

### **4. Measurement of Payment.**

1. The unit price bid for under this Item shall include the cost of all labor, materials, equipment and incidentals necessary to satisfactorily complete the work.

## **ITEM 63A - ADJUST SANITARY SEWER CLEANOUTS**

### **1. Description.**

1. Under this Item the Contractor shall raise or lower the grade of existing sanitary sewer cleanouts that are necessitated by a change in grade between the existing grade and the new street grade at the location(s) indicated on the Plans, as required by the Specifications, or as directed by the Engineer.
2. The Contractor shall obtain all required permits, releases and other authorization required from Nassau County.

### **2. Materials and Methods.**

1. The work under this part of this Item shall conform to the requirements of the Nassau County Department of Public Works, Division of Sewers.
2. The Contractor shall obtain all required permits, releases and other authorization required from Nassau County.

### **3. Method of Measurement.**

1. The quantity to be paid for under this Item shall be the actual number of sanitary sewer cleanouts reset to the new grade.

### **4. Measurement of Payment.**

1. The unit price bid for under this Item shall include the cost of all necessary excavation and backfill and the furnishing and installation of all materials necessary to set the clean-out to the new finished grade, all in accordance with requirements of Nassau County.

### **ITEM 96S – DRY RIP-RAP (SMALL)**

The requirements for Item 96 of Nassau County *2009* Standard Specifications shall apply with the following modifications:

#### **2. Materials.**

Dry Rip-Rap shall consist of durable field or quarry stone or where permitted by the Engineer selected rubble concrete masonry removed under other item of the contract. The stone shall be shaped as nearly as practicable in the form of a right rectangular prism. The concrete sections shall have a surface area of approximately 1 square foot. At least 50% of the stones shall weigh in excess of 100 pounds and the remainder of the stones shall weigh from 30 to 100 pounds each. One dimension of each of the stones furnished shall be the thickness of the rip-rap as shown on the plans, and the stones shall be so laid that this dimension is perpendicular to the prepared bed. Where rubble concrete is used the thickness requirement may be modified but the total thickness of the concrete and stone bed shall conform to the thickness on the plan.

### **ITEM 98X - COFFERDAMS**

The requirements for Item 98 of Nassau County *2009* Standard Specifications shall apply with the following modifications:

**4. Method of Measurement.** The quantity of cofferdams to be paid for under this item will be the number square feet of cofferdams installed.

**5. Basis of Payment:** The unit price bid per square foot of cofferdam for this item shall include the cost of furnishing all labor, materials, tools, equipment and incidentals necessary to satisfactorily complete the required work.

## **ITEM 102X –WORK ZONE TRAFFIC CONTROL (Day)**

All requirements for Item 102 shall apply, with the following modifications:

### **A. Description**

Work Zone Traffic Control (Day) shall be applicable on a per work order basis for construction operations performed during day time and/or for work zone traffic control devices that remain in place during non-work hours. No work shall commence until all appropriate traffic devices have been placed and functioning.

If in the judgment of the Engineer, traffic is not properly and adequately maintained, no payment will be made to the contractor for those days/nights. The price bid shall include the cost of furnishing all labor, materials, tools, and equipment necessary to satisfactorily complete the required work.

### **B. Method of Measurement and Payment**

Measurement and payment under this item shall be made on a per day (24 hour) Basis.

## **ITEM 102Y -WORK ZONE TRAFFIC CONTROL (Night)**

All requirements for Item 102X shall apply, with the following modifications:

### **A. Description**

This item shall be applicable for construction operations performed at night. During night time construction operations, the contractor shall supply portable lights (light towers) and equipment in order to satisfactorily light up the work area per latest edition of Manual on Uniform Traffic Control Devices (MUTCD) standards and/or A.O.B.E.

### **B. Method of Measurement and Payment**

Measurement and payment under this item shall be made on a per night basis when construction operations are performed at night. There shall be no additional payment for furnishing and placing portable lights and/or nighttime labor wage differential and the additional cost shall be deemed included in the bid price for this item.



**ITEM 104PA-4X – POLYOLEFIN COATED CHAIN LINK FENCING 4’ HIGH (TOP & BOTTOM TENSION WIRE)**  
**ITEM 104PA-6X – POLYOLEFIN COATED CHAIN LINK FENCING 6’ HIGH (TOP & BOTTOM TENSION WIRE)**  
**ITEM 104PA-8X – POLYOLEFIN COATED CHAIN LINK FENCING 8’ HIGH (TOP & BOTTOM TENSION WIRE)**  
**ITEM 104PA-10X – POLYOLEFIN COATED CHAIN LINK FENCING 10’ HIGH (TOP & BOTTOM TENSION WIRE)**  
**ITEM 104PA-12X – POLYOLEFIN COATED CHAIN LINK FENCING 12’ HIGH (TOP & BOTTOM TENSION WIRE)**  
**ITEM 104PB-4X – POLYOLEFIN COATED CHAIN LINK FENCING 4’ HIGH (TOP RAIL & BOTTOM TENSION WIRE)**  
**ITEM 104PB-6X – POLYOLEFIN COATED CHAIN LINK FENCING 6’ HIGH (TOP RAIL & BOTTOM TENSION WIRE)**  
**ITEM 104PB-8X – POLYOLEFIN COATED CHAIN LINK FENCING 8’ HIGH (TOP RAIL & BOTTOM TENSION WIRE)**  
**ITEM 104PB-10X – POLYOLEFIN COATED CHAIN LINK FENCING 10’ HIGH (TOP RAIL & BOTTOM TENSION WIRE)**  
**ITEM 104PB-12X – POLYOLEFIN COATED CHAIN LINK FENCING 12’ HIGH (TOP RAIL & BOTTOM TENSION WIRE)**  
**ITEM 104PC-4X – POLYOLEFIN COATED CHAIN LINK FENCING 4’ HIGH (TOP & BOTTOM RAILS)**  
**ITEM 104PC-4-1X – POLYOLEFIN COATED CHAIN LINK FENCING 4’ HIGH 1” MESH (TOP & BOTTOM RAILS)**  
**ITEM 104PC-6X – POLYOLEFIN COATED CHAIN LINK FENCING 6’ HIGH (TOP & BOTTOM RAILS)**  
**ITEM 104PC-8X – POLYOLEFIN COATED CHAIN LINK FENCING 8’ HIGH (TOP & BOTTOM RAILS)**  
**ITEM 104PC-10X – POLYOLEFIN COATED CHAIN LINK FENCING 10’ HIGH (TOP & BOTTOM RAILS)**  
**ITEM 104PC-12X – POLYOLEFIN COATED CHAIN LINK FENCING 12’ HIGH (TOP & BOTTOM RAILS)**  
**ITEM 104PD-6X – POLYOLEFIN COATED CHAIN LINK FENCING 6’ HIGH W/CONC CURB**

#### **A. Description.**

1. All requirements of items 104PA-4 through 104PD-6 shall apply from 2009 Nassau County Standard Specifications except for tie wires spacing. The fabric shall be secured to all corner, gate and terminal posts with stretchers or tension bars fastened to posts and galvanized steel bands at 12 inch intervals with all terminal adjustments completely housed. The fabric shall be fastened to the line posts and braces with tie wires spaced not more than 12 inches on center. It shall be attached to the tension wire by means of 9 gauge polyolefin coated rings spaced at intervals of 2 feet and it shall be attached to the top, mid and bottom rails by means of the tie wires spaced at intervals of 12 inches.

## **ITEM 104XSF - REMOVE EXISTING FENCE**

### **1.. Description.**

1. Under this Item the Contractor shall remove and dispose of the existing fence including the removal and disposal of chain link fence fabric, stockade fence, posts, top-rails, braces, gates, concrete footings, mowing strips, and other appurtenances of the fence.

### **2. Measurement and Payment.**

1. The quantity of removed existing fence to be paid for under this Item shall be the number of square feet of fence which have been removed and disposed of satisfactorily in accordance with the Plans, Specifications and directions of the Engineer.
2. For payment purposes, gates shall be added to the square footage of removed fence.
3. The price bid shall include all labor, materials, equipment and performance of all operations and work necessary to complete the removal of the existing fence and gate.

## **ITEM 136S - SURVEY STAKEOUT (PER DAY)**

### **1. Description.**

- a. Under this Item the Contractor shall do all necessary surveying required to construct all elements of the Project as shown on the Plans and Specifications and as ordered by the Engineer. This shall include, but shall not be limited to, stakeout, layout and elevations for the highway, structures and forms as shown and required, consistent with the current practices of the County and shall be performed by competently qualified personnel acceptable to the Commissioner of Public Works.

### **2. Materials.**

- a. All instruments, equipment, stakes and any other material necessary to perform the work satisfactorily, shall be provided by the Contractor. All stakes used shall be of a type approved by the Engineer. It shall be the Contractor's responsibility to maintain these stakes in their proper position and location at all times.

### **3. Construction Details.**

1. The Contractor shall trim trees, brush and other interfering objects, not inconsistent with the Plans, from survey lines in advance of all survey work to permit accurate and unimpeded work by the Contractor's stakeout survey crews and the County's cross-section survey crews.
2. The exact position of all work shall be established from control points, baseline transit points or other points of similar nature which are shown on the Plans and/or modified by the Engineer. Any error, apparent discrepancy or absence in or of data shown or required for accurately accomplishing the stakeout survey shall be referred to the Engineer for interpretation or furnishing when such is observed or required.
3. The Contractor shall place two offset stakes or references at each centerline or theoretical grade line control point (PC, PT, and/or Angle Point), henceforth called centerline, and at such intermediate locations as the Engineer may direct. From computations and measurements made by the Contractor, these stakes shall be clearly and legibly marked with the correct centerline station and offset distance so as to permit the establishment of the exact centerline location during construction. If markings become faded or blurred for any reason, the markings shall be restored by the Contractor and at the request of the Engineer.
4. The Contractor shall locate and place all cut, fill, slope, fine grade or other stakes and points, as the Engineer may direct for the proper progress of the work. All control points shall be properly guarded and flagged for easy identification.
5. Drainage structures shall be staked out by the Contractor at the locations and elevations shown on the Plans or specified by the Engineer. All required Rights-of-Way and easement limits shall be established, staked and referenced by the Contractor concurrent with the construction stakeout survey. Rights-of-Way and easement limits shall be staked by or under the direction of a Licensed Land Surveyor or exempt Professional Engineer approved by the Commissioner of Public Works. The Contractor shall supply proof to the Engineer that such work is being performed by or supervised by a Licensed Land Surveyor or exempt Professional Engineer.

6. The Contractor shall be responsible for the accuracy of the work of this Item and shall maintain all reference points, stakes, etc. throughout the life of the contract. Damaged or destroyed points, bench marks or stakes, or any reference points made inaccessible by the progress of the construction shall be replaced or transferred by the Contractor. Any of the above points that may be destroyed or damaged shall be transferred by the Contractor before such damage or destruction occurs. All control points shall be referenced by ties to acceptable objects and recorded. Any alterations or revisions in the ties shall be so noted and the information furnished to the Engineer immediately. All stakeout survey work shall be referenced to the centerline shown on the Plans.
7. All computations necessary to establish the exact position of the work from control points, shall be made and preserved by the Contractor. All computations, survey notes and other records necessary to accomplish the work shall be neatly made. Such computations, survey notes and other records shall be made available to the Engineer upon request and shall become the property of the County and delivered to the Engineer not later than the date of acceptance of the contract.
8. The Engineer may check all or any portion of the stakeout survey work or notes made by the Contractor. Any necessary correction to the work shall be made immediately by the Contractor at no cost to the County. Such checking by the Engineer shall not relieve the Contractor of any responsibilities for the accuracy or completeness of his work.
9. The Contractor will not be permitted to take preconstruction and/or final cross-sections to be used for payment purposes.
10. During the progress of the construction work, the Contractor will be required to furnish all of the surveying and stakeout incidental to the proper location by line and grade for each phase of the work. For paving and any other operation requiring extreme accuracy, the Contractor will re-stake with pins or other acceptable hubs located directly adjacent to the work at a spacing directed by the Engineer. Fills required to pave intermediate courses of asphalt shall be painted on the existing pavement, all dimensions referring to finished grade.
11. Any existing stakes, iron pins, survey monuments or other markers defining current or existing property lines that may be disturbed during construction shall be properly tied into fixed reference points before being disturbed and accurately reset in their proper position upon completion of the work.
12. Upon the completion of construction, after all possibility of disturbance is past, the Contractor shall reestablish, layout and retie the centerline control points with a minimum of four ties per control point, as permanently as possible with drill holes and wings in concrete curbs and sidewalks and PK nails in asphalt pavement to the satisfaction of the Engineer. The contractor shall supply a drawing of each of the above noted control points, including, but not limited to: Station, type of point (PK nail, drill hole excreta), coordinates in the same system used by the County on the project plans, and 4 ties, with the distance measured and recorded to 0.01, to the described tie points. Survey notes signed and stamped by a New York State Licensed Land Surveyor showing the station and description of the control points, and the location and description of the ties shall be furnished to the Engineer, in a drawing size to be agreed to before final submittal.

#### **4. Method of Measurement and Basis of Payment.**

1. The price bid for this item will be made on a daily (8hrs/day) basis and shall include the cost of furnishing all labor, equipment, instruments, materials and other incidentals necessary to satisfactorily complete the required project including, but not limited to, surveying, stakeout and retie of the control points. Daily unit price rate shall be prorated for less than 8 hrs of survey work in a day, as determined by the Engineer.

### **ITEM 162-WETLAND PLANTINGS**

#### **1. Scope of Work.**

Under these items the contractor shall furnish, plant, dig, transplant, transport, maintain and replace all plant materials specified in the following plant schedule in accordance with the specifications or as directed by the Landscape Architect. All plant material shall conform to A.A.N. standards. All plants are to be nursery grown and free of insect and disease injury. The contractor shall be liable for any damages caused by planting and/or transplanting operations and all areas and construction disturbed shall be restored to their original condition to the satisfaction of the Landscape Architect.

#### **2. Method of Installation.**

The contractor shall follow the planting instructions as stated herein. The area to be planted shall be prepared by thoroughly raking the section of any debris, trash, weeds, bottles or any other discarded material that may be onsite. This discarded material shall be taken off-site and disposed of by the contractor. Each hole dug for a plant or shrub shall be equal in depth to the associated soil within each plant plug, quart, pot or container. The width of each hole shall be twice the diameter of each plant plug, quart, pot or container. Osmocote slow-release fertilizer (or equivalent), and in pellet form, shall be incorporated into the bottom of each hole. The plants and shrubs shall be placed in each hole, upright and centered, then backfilled to the top of the soil surrounding each plant plug, quart, pot or container. The area then shall be raked again to a finished condition.

#### **3. Goose Netting.**

Upon completion of installation of freshwater wetland plants, shrubs and spartina plantings, Goose netting shall be installed around the perimeter of the planting area to protect from wildlife and waterfowl. Method of installation of Goose netting is described under Item 406.

**4. Temporary Fencing.**

Upon completion of installation of plantings and Goose Netting, temporary Fencing shall be erected on the landward side of the planting area to prevent pedestrian trampling of the material and for pedestrian safety for a period of one growing season. Method of installation of temporary fencing is described under Item 117.

**5. Survival Rate.**

All plants and shrubs must meet and 85% survival rate in one growing season. If the survival rate falls under 85% within one growing season, then the dead plantings must be replaced at no cost to the county.

**6. Plant Location.**

The contractor is responsible for verifying that the wetland plants are installed at the proper elevation to ensure plant survival. The county is not responsible for verifying improper planting locations.

**ITEM 162A-1-FRESHWATER WETLAND PLANTINGS (2" PEA POTS)**

**ITEM 162A-2 - FRESHWATER WETLAND PLANTINGS (QUART CONTAINERS)**

- a. Wetland plantings shall be *Iris Pseudacorus* and *Iris Versicolor* in variety.
- b. Plantings shall be installed along stream and pond shorelines along the mean water line depending on the site condition as evaluated by the engineer. Planting period for the above varieties shall be between mid spring and August 1st. Plants shall be installed 6"-12" on center depending on the site as evaluated by the engineer. Plantings may be installed on the mean water line either on the natural shoreline or within a Biolog depending on the site condition as evaluated by the engineer.

**ITEM 162B-1 - SHORELINE SHRUBS (12"-18" HEIGHT)**

**ITEM 162B-2 - SHORELINE SHRUBS (18"-24" HEIGHT)**

- a. Shrubs shall be *Myrica Pensylvanica* (Bayberry), *Vaccinium Corymbosom* (Highbush Blueberry), and *Cephalanthus Occidentalis* (Buttonbush) in variety. Buttonbush shall be planted along the mean water line of freshwater ponds, lakes and streams. Planting period for the above varieties shall be between mid spring and August 1st. This variety may be planted in full shade, partial shade, or full sun. Spacing shall be 2' on center or wider depending on the site as evaluated by the engineer. This variety shall be planted along the mean water mark within the natural shoreline, within a Biolog or within Erosion Control Matting depending on the site condition as designated by the engineer.

Highbush Blueberry and Bayberry shall be planted above the mean high water mark along ponds, lakes, streams and tidal shorelines. Both varieties shall be planted in partial shade to full sun. Both varieties shall be planted at 2' to 4' on center depending on the site as evaluated by the engineer.

**ITEM 162C-1- SPARTINA ALTERNAFLORA, SPARTINA PLANTINGS (2" PEA POTS)**

**ITEM 162C-2 - SPARTINA ALTERNAFLORA, SPARTINA PLANTINGS (QUART CONTANORS)**

- a. The two varieties include *Spartina Altemiflora* and *Spartina Patens*.
- b. *Spartina Alterniflora* shall be planted between the low tide mark and high tide mark. *Spartina Patens* shall be planted between the high tide mark and spring high tide mark. Both varieties shall be planted from mid spring to August 1st. All plants shall be nursery grown in two inch (2") Peat Pots or Quart Pots. If soil needs to be added prior to planting, it must be a sand or sandy loam soil type. Plant spacing will vary from 6 to 12 inches apart depending on the site condition as evaluated by the engineer.

### **ITEM 363 - GRASS SEEDING**

The requirements for Item 363 of Nassau County *2009* Standard Specifications shall apply with the following modifications:

Under this Item the Contractor will be paid under the following schedule on each work order:

Item 363-A-Areas < 10 SY    Seeded  
Item 363-BB Areas > 10 SY    Seeded

### **ITEM 365 - SODDING**

The requirements for Item 365 of Nassau County *2009* Standard Specifications shall apply with the following modifications:

Under this Item the Contractor will be paid under the following schedule on each work order:

Item 365-1   -   Areas < 50 SFY  
Item 365-2   -   Areas 50 SF - 300 SFF  
Item 365-3   -   Areas > 300 SFF

### **ITEM 368 – TOPSOIL AND GRASS SEED**

The requirements for Item 368 of Nassau County *2009* Standard Specifications shall apply with the following modifications:

Under this Item the Contractor will be paid under the following schedule on each work order:

Item 368AA Areas < .5 Acres  
Item 368B   - Areas >.5 Acres



## **ITEM 402 - SELECTIVE THINNING**

### **ITEM 402X - SELECTIVE THINNING ALONG FENCES**

#### **1. Description:**

The work covered by this item consists of removing trees and shrubs at various recharge basins, retention basins, and drainage easements as directed by the Engineer, protecting trees and shrubs which are to be preserved, and finishing the work as specified.

#### **2. Operations and Materials:**

The following materials shall be removed from areas ordered by the Engineer or his representative:

- a. Trees under 4 inches DBH which are dead, dying, leaning, hazardous, in poor condition, in poor location, or crowding more desirable species of vegetation which are to be preserved.
- b. Stubs and stumps which are more than 3 inches above ground.
- c. Fallen woody debris up to 6 inches in diameter.
- d. Shrubs which are in poor condition shall be cut at base and removed.
- e. Vines growing into trees and fences shall be cut at base and removed.
- f. Vegetation growing within the limits of the grass berms and ramps.
- g. Marsh reeds and phragmites.

All woody debris to be disposed of under this item shall be removed and disposed of off the contract site at the Contractor's expense. Upon written request, the Contractor may be allowed to use a wood chipper, and the chips may be blown into existing wooded areas and used as mulch.

All trees and shrubs to be removed will be designated by the Engineer or his representative either by separate marking, marking in sample areas, or otherwise, to guide the Contractor on the scope and detail of the work.

Care shall be taken in the felling of trees and the operation of equipment to prevent injury to trees and shrubs which are to be preserved. All injuries to limbs, bark and roots of such plants shall be repaired as directed by the Engineer.

The surface of the ground in areas for selective thinning shall be left in a condition which is reasonably consistent with the surroundings.

Trees designated for removal shall be considered under Item 410 A, B & C - Tree Removal.

### **3. Measurement and Payment:**

Selective thinning shall be measured by the number of square yards satisfactorily completed as computed to the nearest tenth thereof.

Selective thinning will be paid for at the unit price bid per square yard, which payment shall constitute full compensation for all labor, materials, equipment and incidentals necessary to complete the work as specified.

Item 402X shall include the removal of vines, shrubs, poison ivy, etc. growing within a fence. Payment shall be by the linear foot of fence thinned.

## **ITEM 404 - EROSION CONTROL BLANKETS**

### **1. DESCRIPTION**

Under this item the contractor shall place erosion control blanket upon restored embankments to stabilize side slopes of streams and/or storm water basins as directed by the Engineer. The blankets shall be installed and anchored to the embankment in conformance with the manufacturer's recommendation.

### **2. MATERIAL**

The erosion control blanket shall be of two separate varieties depending on the application. The products are manufactured by North American Green or approved equal. The first is a straw/coconut mat consisting of a top net of heavyweight UV stabilized polypropylene 3 lbs/1000 sq ft approx. wt. over a straw/coconut matrix 70% straw at 0.35 lb/sq yd. (0.19 kg/sq m) and 30% coconut at 0.15 lb/sf yd (0.08 kg/sq m) with a bottom net of lightweight photodegradable polypropylene 1:64 lb/1000 sq ft approx. wt. with the three layers bound together with a degradable thread: Product No. SC150.

The second is a 50% coconut fiber/50% UVI treated polypropylene fiber consisting of a top net of high strength, UVI treated polypropylene 5 lbs/1000 sq ft approx. Wt. Over a UVI treated polypropylene (50%) at 0.38 lbs/sq. Yd and coconut fiber (50%) at 0.38 lbs/sq. Yd with a bottom net of heavyweight, UVI treated polypropylene 3 lbs/1000 sq. Ft approx. Wt. Over a UVI treated polypropylene (50%) at 0.38 lbs/ sq. Yd and coconut fiber (50%) at 0.38 lbs/sq. Yd with the two layers bound together with degradable thread. Product No. CP2.

### **3. METHOD OF MEASUREMENT**

The quantity to be paid for under this item will be the number of square yards of embankment protected as directed by the Engineer.

### **4. BASIS OF PAYMENT**

The price bid per square yard shall include the cost of furnishing all labor, materials, equipment and incidental work to the limits shown on the plan or directed by Engineer. All costs for re-establishing embankment and/or side slopes prior to the placement of the slope protection will be paid for under other items included in this contract.

Under this Item the Contractor will be paid under the following schedule on each work order:

Item 404-A1	-	Straw/Coconut	Areas < 1000 SY
Item 404-A2	-	Straw/Coconut	Areas > 1000 SY
Item 404-B1	-	Polypropylene	Areas < 1000 SY
Item 404-B2	-	Polypropylene	Areas > 1000 SY

## **ITEM 405 - COCONUT FIBER ROLLS**

### **1. Description:**

Under this Item the contractor shall furnish and install coconut fiber rolls along stream embankments and shorelines to provide erosion protection. The coconut rolls will be staked both front and back with two-inch (2") square oak stakes thirty-six inches (36") long. The stakes shall be placed two to four feet on center depending on the anticipated velocity of the stream. The top of the stake shall not extend beyond the top of the coconut fiber roll. In areas subject to ice or wave action, the stakes shall be notched on the outside on either side of the fiber roll and secured with a 6-gauge wire between opposing stakes. Where required a shallow bedding trench shall be dug at the bottom of the embankment prior to placement. No separate payment will be made for this work. The coconut fiber rolls shall conform to all specifications for Bon Terra's "Bio-log", as not directly stated within this description, or approved equal.

All permit applications required to perform work in wetland areas shall be obtained by Nassau County prior to the commencement of work.

All materials shall be subject to the approval of the engineer. All improperly installed materials shall be removed and replaced by the contractor at his own expense as ordered by the engineer.

### **2. Materials:**

The coconut fiber rolls shall consist of 100% natural coir bristle fiber. It shall be wrapped with machine spun coir twine which is cleaned, evenly spun and uniformly twisted with an inner cotton thread runner. It shall have 37 to 40 curls per foot. The thickness of the twine shall be 4mm to 7.5 mm (+/- 5%). The breaking strength of the twine shall be 60 lbs. of pressure. The roll diameter shall be of three types 12", 16", and 20" and shall be

provided in 10 and 20 lengths. The roll shall be stuffed with 100% natural coir mattress fiber. The twine shall be tied in a standard mesh pattern with a 2" per side diamond pattern knotted at each of four corners.

**3. Construction Details:**

Coconut fiber rolls shall be installed so that they rest against the shore line and the bottom of the waterway. Where required, a shallow bedding trench shall be dug at the bottom of the embankment prior to placement. No separate payment shall be made for this work. Where necessary the rolls shall be placed above and behind the bottom coconut fiber roll to establish an embankment of a maximum slope of 1 on 1 ½ slope. As required the area shall be backfilled with select fill. The cost for this work will be paid under Item 5C Select Fill. The fill shall be compacted in 6" lifts. The recontoured soil behind the rolls shall be covered by an erosion control blanket to prevent erosion, Item #404.

**4. Method of Measurement:**

The quantity to be paid for will be the number of square yards as measured by the average projected plane of the slope times the length installed.

**5. Basis of Payment:**

The bid price per square yard shall include the cost for furnishing all labor, materials and equipment necessary to complete the work except that payment for select fill and erosion control matting.

Under this Item the Contractor will be paid under the following schedule on each work order:

Item 405-1 - Areas < 50SY

Item 405-2 - Areas > 50SY

**ITEM 406 - GOOSE CONTROL FENCE**

**1. Description:**

Under this item the contractor shall furnish and install Goose Control Fence in areas as directed by the Engineer.

**2. Material:**

The fence assembly shall consist of posts, mesh fence and fasteners. Posts shall be a minimum of 48" long, straight and shall be wood material. Softwood posts shall be at least 3" in diameter or 2"-4". Hardwood posts shall be a minimum of 1.5" x 1.5". Posts shall be embedded 18" deep with a spacing of 8' or as directed by the engineer. Mesh fencing shall be black polypropylene with a maximum of 2" x 2" opening or 14 gauge (minimum) welded wire mesh with a maximum 2" x 4" opening.

Either shall be a minimum of 30" wide unless otherwise directed by the engineer. The mesh fencing shall be attached to each post at the top, bottom and two evenly spaced locations. Fasteners for attachment of the mesh fence to the posts shall be staples with a 3/4" crown and a minimum of 16 gauge.

**3. Method of Measurement:**

The quantity to be paid under this item will be the number of Linear Feet measured along the top of the assembly as directed by the engineer.

**4. Basis of Payment:**

The price bid per linear feet shall include the cost of furnishing all labor, materials, equipment and incidental work to the limits shown on the plan or as directed by the engineer.

**ITEM 430 - TRASH AND DEBRIS REMOVAL**

**1. Description:**

Under this item the Contractor shall pick up, load and discard, trash and/or debris from the designated location, which has been deposited by others through no fault of the Contractor.

**2. Operations and Materials:**

Upon notice by the Engineer or his representative, the Contractor shall remove from the site any and all trash and debris, but not limited to dirt, concrete, metals, wood, leaves, garbage, grass clippings, prunings, etc., and as directed by the Engineer.

The Contractor shall be responsible for obtaining all dumping permits, and comply with all laws, ordinances, and regulations in connection with the hauling and dumping of undesirable refuse.

Upon completion by the Contractor of removing the trash and debris, the Engineer or his representative shall measure the body vehicle to determine the volume in cubic yards of undesirable refuse.

**3. Measurement and Payment:**

The quantity to be paid for under this item will be the number of cubic yards of trash and debris, acceptably picked up, loaded and discarded as described. The price bid per cubic yard shall include the cost of all labor, materials, equipment, permits and as directed by the Engineer.

## **ITEM 503 - WATER CONTROL**

### **PART 1 - GENERAL**

#### **1.01 - Description**

##### **A. Scope of Work**

1. The Contractor shall provide all labor, equipment, materials, and incidentals required, and perform all work necessary to lower and control the water levels and piezometric pressure to permit all excavation and construction to be performed under dry and stable conditions.
2. Work under this section includes all costs of system mobilization, permits, furnishing of equipment and materials, installation, testing, supervision, operation, power requirements, maintenance, dewatering, and upon completion dismantling, and removal of the dewatering system from the site.
  - a. Dewatering shall include diversion, collection, and removal of all ice, snow, and surface runoff from the work area.
  - b. The Contractor shall be responsible for compliance with all New York State Department of Conservation regulations relating to this work which shall include but is not limited to obtaining permits, performing tests, and treating discharge water.

#### **1.02 – Quality Assurance**

1. Any proposed dewatering operation requiring well points must be carried out by only licensed well drillers in accordance with Section 15-1525 of the Environmental Conservation Law.
2. The entire dewatering operation and the apparatus connected therewith must at all reasonable hours be open to inspection and test by duly accredited representatives of the Department of Environmental Conservation.
3. All equipment connected with the dewatering system must comply with local noise ordinances.

#### **1.03 – Submittals**

1. If well points are to be used for dewatering, the Contractor shall submit an application to the New York State Department of Environmental Control for an "Operating Permit."

2. This application shall be submitted a minimum of four (4) weeks prior to commencement of dewatering operations and shall give the following details in full:
  - a. The proposed starting date of the dewatering operation
  - b. The name of the licensed Well Driller
  - c. The details of the dewatering system to be installed
  - d. The size, number, and spacing of the Well Points
  - e. The pump capacity, pumping rate, and expected volume of water to be withdrawn
  - f. The amount of water table drawdown
  - g. The final disposition of the water
  - h. The expected duration of the operation
3. Before any dewatering operation is to begin, approval of all the aforementioned items is required. If any unforeseen emergency construction arises, the Contractor must notify the New York State Department of Environmental Conservation as soon as possible, that dewatering under such circumstances has been started. Notification will be made to the following:

New York State Department of Environmental Conservation Regulatory Affairs

C/O Regional Permit Officer

Building No. 40

SUNY at Stony Brook, New York 11794

(516) 751-7900

4. Contractor will submit a copy of the approved permit to the County prior to start of work.

## **PART 2 – MATERIALS (NOT APPLICABLE)**

## **PART 3 – EXECUTION**

### **A. Equipment**

1. Dewatering equipment shall have the capability of extracting and maintaining the ground water level at an elevation of at least twelve (12) inches below the bottom of the excavation and maintain this elevation until construction is complete.

### **B. Effect of Dewatering on Private Wells**

1. The Contractor shall take special precautions where the removal of water may affect the production of private wells.
2. Prior to the start of any dewatering operations, the Contractor shall notify in writing all owners of water supply wells in areas adjacent to the Contract site where his dewatering operations may affect the quality and/or pumping capacity of their wells. In addition, the Contractor shall, prior to and after construction as directed by the Engineer, test the quality and pumping capacity of each well that may be affected by his dewatering operations. The Contractor shall be solely responsible for determining the extent of influence that his operations will have on existing water supply wells and in addition will be solely responsible for contacting, in writing, all affected well owners. If requested, the County may assist the Contractor in notifying affected water supply well owners, but it is to be understood that the Contractor shall assume all responsibility for notification and damages and shall indemnify and hold the County harmless from any claim from either direct or indirect damages resulting from his dewatering operation either directly or indirectly.

## **3.02 – Performance**

1. All water removed from the Storm Basin, trenches, or excavations by pumping, bailing siphoning, well-points or other means shall be disposed of in such a manner so as to avoid interference with business, pedestrians and vehicular traffic and so to prevent damage to persons or property. Unless otherwise permitted, groundwater encountered within the limits of excavation shall be depressed to an elevation not less than twelve (12) inches below the bottom.

The Contractor shall not discharge water from water control operations directly into any live or intermittent stream, channel, wetlands, or surface water. Water from water control operations shall be treated by filtration, settling basins, or other approved method to reduce the amount of sediment contained in the water to allowable levels, as determined by local regulations. The Contractor shall submit for the approval of the Engineer all proposed locations of temporary silt settling basins and the proposed methods of water control.



Upon completion of operations, the Contractor shall remove from the catch basins, sumps, ditches, or water courses, all mud, silt, debris and other accumulations discharged to these various locations. The Contractor is responsible for leaving above in a condition similar to that which existed prior to dewatering operations. Proper control measures shall be employed, so as to minimize siltation and erosion in and adjacent to the area of the work.

The Contractor is hereby advised that during the water control process, in some instances, as directed by the Engineer, the quantity of water to be discharged into existing streams, storm sewers, or other locations, will have to be limited so that flooding will not occur. In such situations, the Contractor shall use approved alternate means of water disposal, i.e., return to the ground through diffusion wells or similar approved means.

The Contractor is advised that the drainage systems discharging to the storm water basin must remain in service at all times. The Contractor shall develop a plan that will allow the work to progress and not cause flooding in tributary areas. This plan shall be submitted to the Engineer prior to the start of work.

Water control shall continue as required during all phases of the proposed construction.

Adjust, repair, replace or clean all work, surfaces and property which may have been damaged as a result of any water control operation.

The Contractor shall submit to the Engineer a detailed plan of water control methods to be employed prior to the start of operations. These plans and any deviations from same must meet with the approval of the Engineer.

2. All catch basins or recharge basins adversely affected by the accumulation of silt resulting from dewatering operations, shall be restored by the Contractor to their original condition. This work shall be done at no additional cost to the County.
3. When dewatering systems utilizing central pumping stations are used, these stations shall be acoustically shielded from neighboring residences. Styrofoam or other sound absorbing material shall be used on the inside of the enclosure surrounding the pump.
4. Noise levels for dewatering pumps measured at a distance of twenty five (25) feet from the pumps shall not exceed sixty (60) db. or be in accordance with local ordinances, whichever is strictest.
5. Where private wells, used for water supply, have become dry or cease to produce potable water, the Contractor shall be required to maintain continuous water service to the homes and buildings affected by the dewatering. In order to maintain continuous service, the Contractor may elect to deepen existing wells or install new

wells where deepening is not practical. In all cases, these wells shall extend to a depth below the drawdown caused by the dewatering operations.

6. Any method of dewatering excavations which does not satisfactorily fulfill and maintain the desired water elevation shall be discontinued and a method of dewatering which will produce the required results shall be substituted. Water shall not be allowed to rise over concrete until it has set, or around pipes or tanks until backfill has been placed and compacted completely.
7. Where required for vehicular or pedestrian access, and where directed by the Engineer, the Contractor shall bury or ramp at the discretion of the Engineer the header and/or discharge pipes.

## **PART 4 – MEASUREMENT AND PAYMENT**

### **4.01 – Dewatering and Disposal of Water**

#### **A. Work Included**

1. The work under this item shall include the pumping and discharging of water and all labor, material, tools, equipment, and incidentals necessary to complete the work.

#### **B. Method of Payment**

1. Payment for this work shall be under the allowance for Item 503, Water Control.
2. Cost for dewatering operations shall be determined on a labor and materials basis as defined under the appropriate section of the Contract Documents.

### **ITEM 504Y – REMOVAL AND REPLACEMENT OF BARBED WIRE STRANDS**

The requirements for Item 104 of Nassau County 2009 Standard Specifications shall apply with the following modifications:

#### **1. Description**

The Contractor shall remove and replace damaged section of barbed wire as required.

#### **2. Construction Details**

The barbed wire shall be cut six (6) inches within of the replacement area and new barbed wire shall extend six (6) inches beyond the brackets. The new barbed wire shall be tied at a point four (4) inches either side of the supporting brackets.

### **3. Method of Measurement**

The quantity to be paid for under this item shall be the total number of linear feet of three (3) strand barbed wire measured in final position, installed complete in accordance with the Plans and Specifications and orders of the Engineer.

### **ITEM 504Y-A - REMOVAL OF BARBED WIRE STRANDS**

The requirements for Item 504Y shall apply with the following modifications:

#### **1. Description**

The Contractor shall remove sections of barbed wire as required.

#### **2. Construction Details**

The barbed wire shall be cut and removed from the existing brackets, the brackets are to be removed from the fence. All materials are to be discarded by the contractor.

#### **3. Method of Measurement**

The quantity to be paid for under this item shall be the total number of linear feet of three (3) strand barbed wire measured in original position, removed and disposed of in accordance with the Plans and Specifications and orders of the Engineer.

### **ITEM 506 - CLEAN EXISTING LEACHING BASINS AND DIFFUSION WELLS**

#### **1. Description**

Under this item the Contractor shall remove all water from the existing basin(s) or well(s) by pumping. Remove and wash gravel, install new filter cloth material and replace washed gravel. Jet under high pressure the inside walls of the ringed sections to loosen and remove silt which has inhibited the flow of water from the wells(s). Special care shall be made to remove the silt once it is loosened from the ring walls. Dewatering the basin and/or well to perform the work defined in this Item shall be covered under the provisions of Item 503.

#### **2. Intent**

It is the intent of this item to improve the leaching capacity of the basin by removing silt which has blocked the diffusion slots.

### **3. Materials and Installation**

The Contractor shall install a filter cloth material Amoco 4538 Geotextile as manufactured by Amoco or approved equal as a silt barrier between the gravel protruding above the bottom of the storm water basin and the broken stone surrounding the leaching basins and/or diffusion wells.

The removal and replacement of the gravel shall be done under Item 2.

### **4. Method of Measurement**

Cleaning shall be made by the number of linear feet of depth needed to be jetted on the rings.

### **5. Basis of Payment**

Payment shall be made for the linear feet of leaching basin and/or diffusion well to be jetted. Payment for removing water from the basin and/or well washing gravel, and installing filter cloth material shall be included within this and other related items. The unit bid price per linear feet for this item shall include the cost of furnishing all labor, equipment, materials and incidentals necessary to satisfactorily complete the required work.

## **ITEM 510 - FORCE ACCOUNT WORK**

### **A. Description.**

1. The amount estimated for the work under this Item is approximate and may be less or greater than the amount of the force account work indicated on the bid sheets. The amount will be based on the Force Account Work actually performed during the term of the contract with prior written approval of the Commissioner.
2. The use of this Item will require prior authorization of the County for each individual Force Account Work to be performed under this contract.

### **B. Materials and Construction Details.**

1. Materials incorporated into the force account work shall be approved by the Engineer prior to installation. When no applicable contract unit prices exist, material costs shall be reimbursed based upon acceptable receipts and/or invoices plus markup, as per the requirement of contract documents, and as approved by the Commissioner of Public Works.

### **C. Method of Measurement**

1. All Force Account work performed under this Item shall be either:
  - a. agreed upon unit price with backup if required by the Engineer
  - b. agreed upon lump sum cost with backup/breakdown
  - c. not to exceed agreed prices with detailed backup (final cost may be lower but will never exceed the agreed price)
  - d. on a Time and Material basis plus applicable overhead and profit as stipulated within the Contract Documents and will be inspected and measured by the Engineer on a daily basis and signed off by the Contractor.

### **D. Basis of Payment**

1. Under this Item, all provisions as incorporated in the Contract concerning payment for extra or additional work are applicable. Total payment for this Item is subject to the requirements and conditions of this contract.
2. The amount to be paid for each type of Force Account Work per work order shall be based (see Method of Measurement, Section C.1.) upon the actual work satisfactorily completed and/or materials/machines furnished and approved in accordance with the requirements of the Contract documents.

**ITEM 511-1-A - TCLP VOLATILE ANALYSIS (Method SW 1311)**

**511-1-B TCLP BNA ANALYSIS (Method SW 1311)**

**511-1-C TCLP METALS ANALYSIS (Method SW 1311)**

**511-1-D TCLP PESTICIDES/HERBICIDES (Method SW 1311)**

**511-2 IGNITABILITY/FLASHPOINT ANALYSIS (Method SW 1010)**

**511-3 CORROSIVITY ANALYSIS (Method SW 1110)**

**511-4 REACTIVITY ANALYSIS (Methods SW 9010 and SW 9030)**

**511-5 TOTAL PETROLEUM HYDROCARBONS (Method EPA 418.1)**

**511-6 PURGEABLE AROMATICS (Method EPA 8020 or 602)**

**511-7 PCB ANALYSIS (Method EPA 8080)**

**1.0 GENERAL**

**1.1 SCOPE OF WORK:** The contractor shall provide all labor, materials, equipment and any shipping necessary to provide lab analysis on soils, sediment, or liquids as directed by the engineer. This will include providing all necessary sample containers, paperwork, and incidentals needed to carry out this task as well as providing the analysis itself. The laboratory used must be certified by New York State to perform that particular analysis.

**2.0 MATERIALS:** Sample bottles, coolers, ice packs, scoops, bailers, and any other related devices necessary to obtain, store and ship a sample.

**4.0 EXECUTION**

4.1 Sample Collection: Contractor personnel will obtain samples utilizing the appropriate equipment and sample containers as directed by the engineer.

4.2 Transportation: All samples will be shipped to the Contractor's specified Laboratory facility via Federal Express if needed, or hand delivered by the contractor.

**5.0 MEASUREMENT AND PAYMENT**

5.1 Measurement: Measurement shall be each sample to be analyzed for a particular parameter.

5.2 Payment: Payment shall be the unit prices bid for

## **ITEM 519 - SAND BAGS IN PLACE**

### **1. Description.**

Under this item the Contractor shall furnish and place bagged sand around structures, in and around stream beds or at any location deemed necessary as shown on the plans or ordered by the Engineer where it is necessary to divert or stem the flow of water.

### **2. Materials.**

Sand shall be of any grade but shall not contain gravel, stone, clay, loam or any deleterious lumpy material. The sand shall be placed in heavy cloth or burlap bags (plastic will not be allowed), each bag having not less than one cubic foot capacity.

### **3. Construction Details.**

Bags of sand shall be placed where shown on the plans and shall provide a thickness not less than that shown or ordered by the Engineer.

### **4. Method of Measurement.**

The quantity of bagged sand to be paid for under this item shall be the amount of bagged sand placed, measured in cubic yard in its final position within payment limit either shown on the plans or as directed by the Engineer.

### **5. Basis of Payment.**

The unit price bid per cubic yard shall include the cost of furnishing all labor, materials and equipment necessary to complete the work.

**ITEM 520A - Type “A” Catch Basin Insert- Sediment Control Type (Combination Inlet)**

**ITEM 520B - Type “B” Catch Basin Insert- Sediment Control Type (Curb Inlet Only)**

**A. Description.**

1. Under each of these items the Contractor shall furnish and install geotextile technology catch basin inserts to collect and retain sediment and debris prior to entering the storm water system.

**B. Submittals.**

1. The manufacturer shall develop and furnish a worksheet to be used by the installer(s) to measure and certify the actual condition of the catch basin which will receive the catch basin insert

**C. Delivery, Storage & Handling.**

1. All materials shall be protected during loading, transporting, and unloading, in accordance with the manufacturer's recommendations.

**D. Materials.**

The catch basin insert to be used in both the Type A and B installations shall comply with the following specifications.

1. Physical Properties.

a. Material:

1) Adjustable Flange and Deflector

- a) Splash Guard: Neoprene Rubber to redirect water from curb opening to the insert
- b) Woven Polypropylene Geotextile bag, replaceable oil boom
- c) Protected by-pass to retain re-suspended material
- d) Lifting Tabs
- e) Mounting kit and support hardware

2) Performance Characteristics:

- a) Debris Capacity: 6.0 Cu-Ft
- b) Filtered Flow Rate: 5.0 cfs
- c) Bypass Flow Rate: 3.4 cfs

3) Oil Absorbing Boom:

- a) Absorbent Material: 100% polypropylene, non-biodegradable
- b) Hydrophobic Media
- c) Absorption Capacity: 3.0 gal (max)
- d) Dimensions: 3" diameter x 100" long



2. Serviceability.
  - a. Catch Basin Insert Maintenance
    - 1) The catch basin inserts shall be serviceable from the street level only; maintenance shall not require “confined space” entry into the catch basin.
    - 2) The consumables (filters) shall be designed to enable replacement from the street level only; maintenance shall not require “confined space” entry into the catch basin.

**E. Method of Measurement.**

1. The quantity to be paid for under these two items shall be the number of catch basin insert assemblies that are furnished and installed.

**F. Basis of Payment.**

1. The unit price bid for each item(s) shall include the cost of furnishing and installing one (1) complete catch basin insert assembly which shall consist of all materials including one set of filters and the metal framework to be installed inside the catch basin.

**G. Warranty.**

1. The equipment, materials, and products furnished under this item shall be guaranteed against defective design, materials, workmanship and operation for a period of one (1) year from the date the equipment is placed into problem free operation. The date of problem free operation will be determined by the Owner’s representative. Upon receipt of notice from the Owner of failure of any part of the equipment, material, or product during the guarantee period, the affected item shall be repaired or replaced (if necessary), at the sole cost and expense of the Contractor, and at no additional cost to the County.

REVISIONS		DATE	APPROVED
REV	DESCRIPTION	DATE	APPROVED
A	FIRST RELEASE	8/27/14	

# NOTES

1. WEIGHT (EMPTY): 50 LB. MAX. NO CARTRIDGES

2. MATERIAL:
- A) ADJUSTABLE FLANGE AND DEFLECTOR: ALUMINUM ALLOY 6063-T6
  - B) BASIN (PLASTIC): POLYPROPYLENE POLYETHYLENE COPOLYMER
  - C) CORNER FILL: ALUMINUM ALLOY 5052-H32
  - D) SUPPORT HARDWARE: CRES 300 SERIES
  - E) SPLASH GUARD: NEOPRENE RUBBER (TRIM IF NECESSARY)

# 3. PERFORMANCE CHARACTERISTICS (TYP)

- A) DEBRIS CAPACITY: 52 GULF
- B) FILTERED FLOW RATE (CLEAN HIGH FLOW CARTRIDGE): 520 GPM (4.16 CFS)
- C) PRIMARY BYPASS FLOW RATE: 1917 GPM (4.3 CFS)
- D) SECONDARY BYPASS FLOW RATE: 164 GPM (0.37 CFS)
- E) TOTAL BYPASS FLOW RATE: 2082 GPM (4.6 CFS)

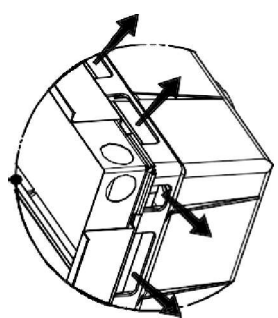
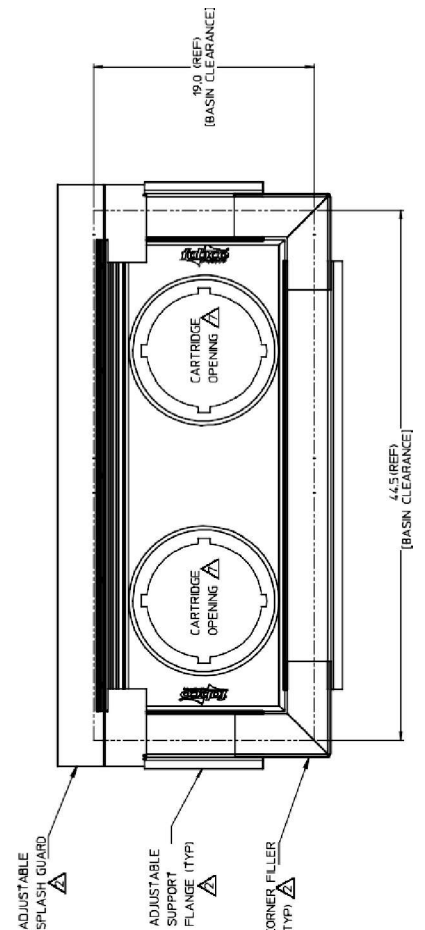
4. CLEAR OPENING RANGE: 0.5 INCH INCREMENTS

- A) MINIMUM SIZE: 19.0 X 45.0
- B) MAXIMUM SIZE: 24.0 X 50.0

5. RECOMMENDED MINIMUM VAULT DEPTH: 2-IN. BELOW CARTRIDGE

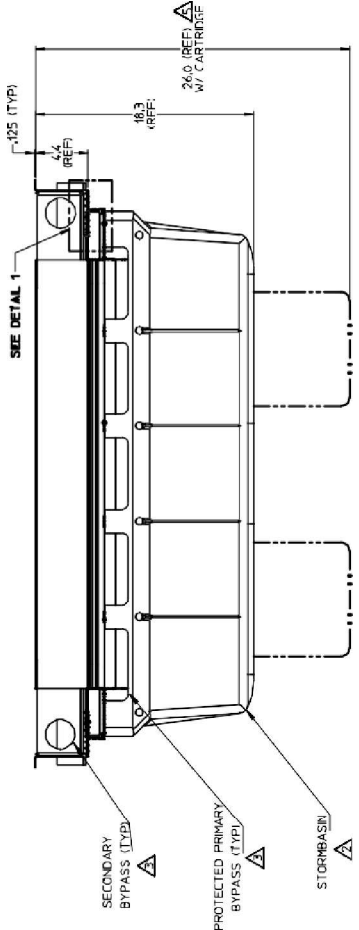
6. TYPICAL INSTALLATION: REMOVE STORM GRATE, MEASURE CATCH BASIN CLEAR OPENING AND ADJUST FLANGES TO REST ON GRATE SUPPORT LEDGE. INSTALL STORMBASIN INSERT WITH RUBBER SPLASH GUARD EXTENDING INTO CURB-BOX AND VERIFY THE ADJUSTABLE FLANGES ARE SECURELY RESTING ON THE GRATE SUPPORT LEDGES. INSTALL THE CORNER FILL PIECES. REINSTALL THE STORM GRATE DIRECTLY ON STORMBASIN SUPPORT FLANGES.

7. USE WITH FABCO REPLACEABLE MEDIA CARTRIDGES ONLY.



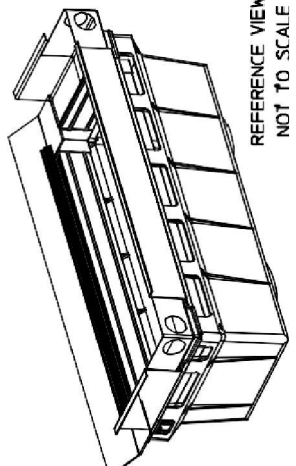
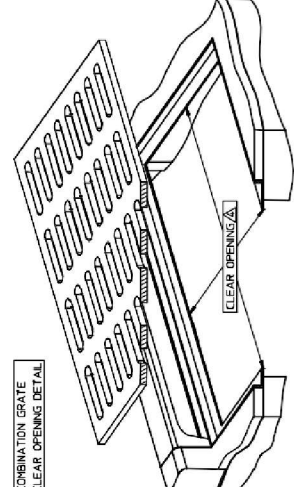
PROTECTED BYPASS, TYPICAL  
(NOT TO SCALE)

DO NOT ADJUST WHEN FEELING  
(TYPICAL - ADJUSTABLE)



SEE DETAIL 1

DETAIL 1  
SCALE 1/1



NO. QTY.		PART NUMBER	DESCRIPTION	BILL OF MATERIALS		REVISIONS
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223</						

Contract No. S82001-06G

**ITEM 521A – Type “A” Catch Basin Insert- Filter Type (Combination Inlet)**

**ITEM 521B – Type “B” Catch Basin Insert- Filter Type (Curb Inlet Only)**

**A. Description.**

1. Under each of these items the Contractor shall furnish and install cartridge type catch basin inserts to collect and retain sediment and debris prior to entering the storm water system.

**B. Submittals.**

1. The manufacturer shall develop and furnish a worksheet to be used by the installer(s) to measure and certify the actual condition of the catch basin which will receive the catch basin insert.

**C. Delivery, Storage & Handling.**

1. All materials shall be protected during loading, transporting, and unloading, in accordance with the manufacturer's recommendations.

**D. Materials.**

1. The catch basin insert to be used in Type A and B catch basins shall comply with the following specifications:
  - a. Physical Properties:
    - 1) Material:
      - a) Adjustable Flange and Deflector
      - b) Splash Guard: Neoprene Rubber (Trim to Fit)
      - c) Plastic or polypropylene basket
      - d) Protected by-pass to retain re-suspended material
      - e) Support Hardware
    - 2) Performance Characteristics & Removal Rates:
      - a) Debris Capacity: 4.0 Cu-Ft
      - b) Filtered Flow Rate: 0.5 cfs
      - c) Bypass Flow Rate: 4.0 cfs
      - d) Sediment Removal: Remove  $\geq$  50% of sub 100 micron
      - e) Hydrocarbons, Oil & Grease: Remove  $\geq$  80%
      - f) Phosphorous: Remove  $\geq$  50%
      - g) Nitrogen Compounds: Remove  $\geq$  40%
      - h) Bacteria: Remove  $\geq$  70%
  - 3) Under this item the catch basin insert manufacturer is required to submit test data to the County (with supporting documentation) specifically indicating that the proposed

devices have been proven to achieve the performance characteristics and removal rates specified herein. No materials may be ordered until the County has accepted said documentation, in writing.

b. Serviceability:

1) Catch Basin Insert Maintenance

- a) The catch basin inserts shall be serviceable from the street level only; maintenance shall not require "confined space" entry into the catch basin.
- b) The consumables (filters) shall be designed to enable replacement from the street level only; maintenance shall not require "confined space" entry into the catch basin.

**E. Method of Measurement.**

- 1. The quantity to be paid for under these two items shall be the number of catch basin insert assemblies that are furnished and installed.

**F. Basis of Payment.**

- 1. The unit price bid for each item(s) shall include the cost of furnishing and installing one (1) complete catch basin insert assembly which shall consist of all materials including one set of filters and the metal framework to be installed inside the catch basin.

**G. Warranty.**

- 1. The equipment, materials, and products furnished under this item shall be guaranteed against defective design, materials, workmanship and operation for a period of one (1) year from the date the equipment is placed into problem free operation. The date of problem free operation will be determined by the Owner's representative. Upon receipt of notice from the Owner of failure of any part of the equipment, material, or product during the guarantee period, the affected item shall be repaired or replaced (if necessary), at the sole cost and expense of the Contractor, and at no additional cost to the County.

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# NOTES:

1. WEIGHT (EMPTY): 40 LB MAX

2. MATERIAL:  
 A) ADJUSTABLE FLANGE AND DEFLECTOR ALUMINUM ALLOY 6063-T6  
 B) SPLASH GUARD, NEOPRENE RUBBER (TRIM TO FIT)  
 C) STORMSACK, GEOTEX TYPE, REINFORCEMENT RIBBON  
 D) MESH LINER HOPE, DIAMOND PATTERN  
 E) LIFTING TABS: ALUMINUM ALLOY, 5052-H32  
 F) CORNER FILLER, ALUMINUM ALLOY, 5052-H32  
 G) SUPPORT HARDWARE: CRES 300 SERIES  
 H) OIL BOOM: POLYPROPYLENE, 3" DIAMETER

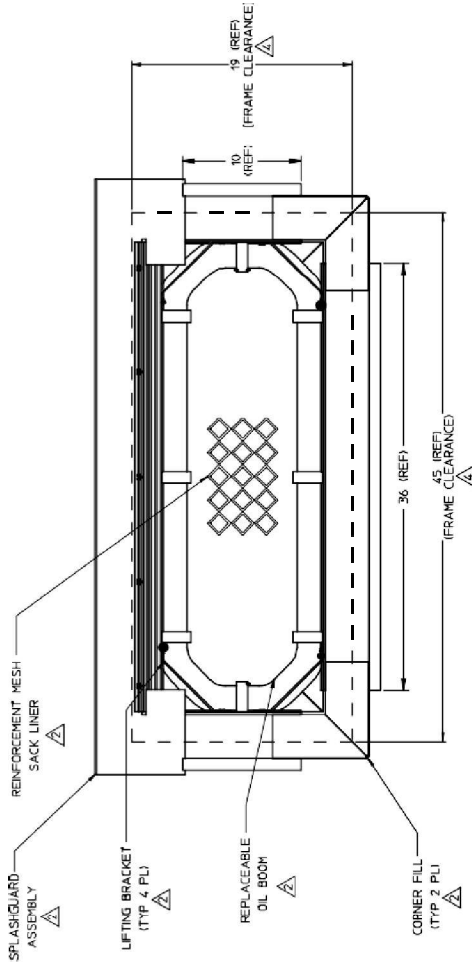
3. PERFORMANCE CHARACTERISTICS (TYP):  
 A) DEBRIS CAPACITY: 8.5 CU-FT  
 B) FILTERED FLOW RATE (INITIAL): 3504 GPM (7.8 CFS)  
 C) PROTECTED PRIMARY BYPASS FLOW RATE: 1086 GPM (4.2 CFS)  
 D) SECONDARY BYPASS FLOW RATE: 164 GPM (0.37 CFS)  
 E) TOTAL BYPASS FLOW RATE: 2048 GPM (4.6 CFS)  
 F) OIL BOOM ABSORPTION CAPACITY: 376 OZ (9 GAL)

4. CLEAR OPENING RANGE 10.5 INCH INCREMENTS:  
 A) MINIMUM SIZE: 19 X 45  
 B) MAXIMUM SIZE: 24 X 50  
 C) MINIMUM RECOMMENDED VAULT DEPTH: 2'-IN BELOW STORMSACK

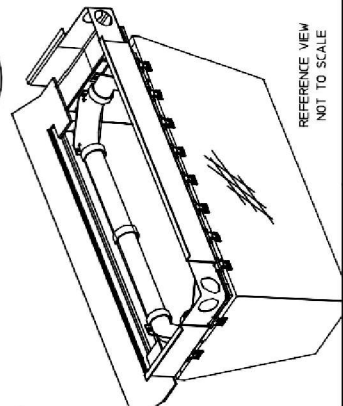
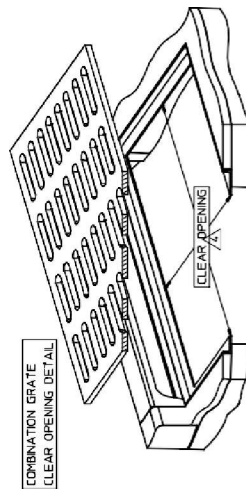
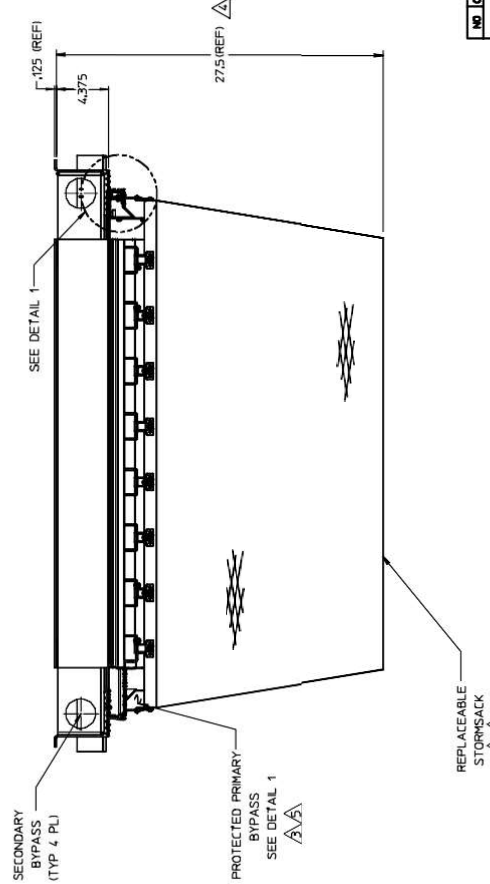
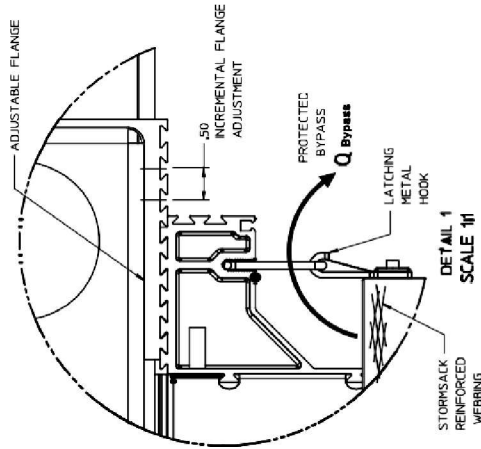
5. PROTECTED BYPASS PREVENT RE-SUSPENSION OF FLOATABLES

6. TYPICAL INSTALLATION REMOVE STORM GRATE, MEASURE CATCH BASIN CLEAR OPENING AND ADJUST FLANGES TO REST ON GRATE SUPPORT LEDGE. TRIM SPLASH GUARD AS NEEDED. INSTALL CORNER FILL PIECES. REINSTALL STORM GRATE DIRECTLY ON STORMSACK SUPPORT FLANGES.

7. USE ONLY FABCO REPLACEABLE STORMSACKS, FABCO PART NO. 9748-1-200



DOVETAIL ADJUSTMENT FEATURE (TYPICAL EACH FLANGED)



NO	QTY	PART NUMBER	DESCRIPTION	REMARKS
1	1	9748-1-200	FABCO STORMSACK, 24" X 50"	
2	1	9748-1-200	FABCO STORMSACK, 24" X 50"	
3	1	9748-1-200	FABCO STORMSACK, 24" X 50"	
4	1	9748-1-200	FABCO STORMSACK, 24" X 50"	
5	1	9748-1-200	FABCO STORMSACK, 24" X 50"	
6	1	9748-1-200	FABCO STORMSACK, 24" X 50"	
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8	1	9748-1-200	FABCO STORMSACK, 24" X 50"	
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97	1	9748-1-200	FABCO STORMSACK, 24" X 50"	
98	1	9748-1-200	FABCO STORMSACK, 24" X 50"	
99	1	9748-1-200	FABCO STORMSACK, 24" X 50"	
100	1	9748-1-200	FABCO STORMSACK, 24" X 50"	

KIT OF PARTS									
FABCO									
TITLE									
NASSAU COUNTY, NY									
TYPE-2A STORMSACK									
SIZE	FACE	CONE	NO	REV					
D	TPAA			1					
SCALE					1" = 1'				
FABCO INDUSTRIES, INC									
FARMINGDALE, NY 11735									
WWW.FABCO-INDUSTRIES.COM									
SEE NOTES									
9748-1E_ASSV4									
MODEL LINK									
NO PARTIAL									
DO NOT SCALE THIS DRAWING									
THIS DRAWING IS UNLESS OTHERWISE SPECIFIED TO BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC. (AISC) SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS AND THE AMERICAN WELDING SOCIETY (AWS) CODE OF SYMBOLS FOR STRUCTURAL STEEL WELDING.									



## **ITEM 532 - TRANSPORTATION AND DISPOSAL OF CONTAMINATED MATERIALS**

### **PART 1 - GENERAL**

#### **1.01. Description:**

During the work under this contract the Contractor may encounter soil and/or material to be contaminated. Under this item the Contractor will containerize and dispose of contaminated soil in compliance with Federal, State, and local regulations.

### **PART 2 – MATERIALS (Not Applicable)**

### **PART 3 - EXECUTION**

#### **3.01. Method**

Soils deemed contaminated by the Engineer will be excavated, contained, and removed as outlined. Contaminated soils to be temporarily stored prior to removal will be placed with a petroleum resistant liner both below and above the contaminated soil. Contaminated soil will be disposed of by a licensed waste hauler. The Contractor will supply and prepare a Uniform Hazardous Waste Manifest to be signed by the Engineer in accordance with the New York State Department of Environmental Conservation regulations contained in 6 NYCRR Part 372. The engineer shall maintain all copies of the manifest that the generator is required to send to the proper regulatory agencies. The Contractor will also supply the Engineer with a copy of the waste hauler's license. All work shall be done in accordance with all Federal, State, and local regulations.

### **PART 4 - MEASUREMENT AND PAYMENT**

#### **4.01. Measurement:**

Measurement for payment purposes will be the volume in cubic yards of contaminated soil measured as stored prior to removal. Excavation to remove soils that are contaminated shall be included in the excavation for storm water basins, or trench excavation. Any contaminated soil located beyond the limits of the above excavations shall be removed under Item 2 - Unclassified Excavation.

Contaminated soil determined to have been contaminated by the Contractor due to accident or non-compliance with contract requirements negligence during the performance of the contract will not be included in measurement for payment.

#### **4.02. Payment:**

Payment shall be the unit prices bid for Item 532 - Containerize and Dispose of Contaminated Soil. Payment for excavation shall be included under items 2X - Unclassified Excavation of Storm Water Basin, or item 2 - Unclassified Excavation or Item 3 - Bridge and Trench Excavation.



## **ITEM 550 – TRANSPORTATION AND DISPOSAL OF UNCONTAMINATED MATERIALS**

### **1. GENERAL**

#### **1.1. Scope of Work:**

The contractor shall provide all labor, equipment, vehicles, and incidentals necessary to transport from the job site or stockpile, and to dispose of the material designated uncontaminated soil and/or debris as specified by the Engineer. The material shall be loaded into trucks suitable for the transportation of excavated soil, and/or debris and shall be transported to a legally authorized disposal site.

#### **1.2. Permits:**

All trucks and drivers used for or involved in the transportation of the material shall have the registration and permits required by the New York State Department of Transportation.

### **2. MATERIALS (Not Used)**

### **3. EXECUTION**

#### **3.1. Removal:**

The contractor shall remove the uncontaminated soil from the site stockpile or directly from the work area. The soil shall be placed into transport vehicles.

#### **3.2. Transportation:**

The soil shall be transported in a truck, which shall be covered as required by NYS Department of Transportation regulations. Vehicle dimensions and weights shall conform to motor vehicle requirements.

#### **3.3. Disposal:**

Under item 550A the contractor shall dispose of material to a site for the contractor's reuse. Under Item 550B - The contractor shall dispose of material to a County facility as directed by the engineer. Under Item 550C - The contractor shall dispose of material to a County facility as directed by the engineer and spread by the contractor, as directed.

### **4. MEASUREMENT AND PAYMENT**

#### **4.1. Measurement:**

The quantity of uncontaminated soil which is to be transported and disposed of under this item, will be determined by the following formula:

The soil will be classified and agreed upon as either wet or dry by both the Contractor and the Engineer. Based upon the classification, the factors listed below will be used to convert the measured tons listed on the delivery tickets of the transport vehicles to cubic yards. The factors are: 1.5 Tons/C.Y. for wet soils and 1.25 Tons/C.Y. dry soils.

#### 4.2. Payment:

The unit price bid for Item 550, Transportation and Disposal of Uncontaminated Soil, shall be payment for each cubic yard of uncontaminated soil as calculated in section 4.1 measurement.

**ITEM 685.0720XX10 - EPOXY REFLECTORIZED PAVEMENT MARKINGS 20 MILS THICK**  
**(WET NIGHT VISIBILITY SPHERES)**

**DESCRIPTION:**

Under this work the contractor shall furnish and apply epoxy reflectORIZED pavement markings in accordance with these specifications, the Contract Documents, the NYSMUTCD, or as ordered by the Engineer. Items for Special Markings include stop bars and crosswalks.

Yield line symbols are isosceles triangles with height equaling 1.5 times the base dimension:

A small yield line symbol shall have a base dimension of one foot.

A large yield line symbol shall have a base dimension of two feet.

Yield line symbols are to be installed with the Apex of the triangle oriented towards oncoming traffic.

The epoxy marking material shall be hot-applied by spray methods onto bituminous and portland cement concrete pavement surfaces at the thickness and width shown on the Contract Documents. Following a simultaneous application of Standard Glass Beads (Type 2) and Wet/Night Visibility Beads (Type 1), the cured epoxy marking shall be an adherent reflectORIZED stripe that will provide wet night retro-reflectivity.

**MATERIALS REQUIREMENTS:**

Epoxy Paint	727-03
Glass Beads for Pavement Markings	727-05

**Reflective Glass Spheres**

Retro-reflective beads shall be a double drop system of glass spheres consisting of Standard Beads (Type 2) and Wet/Night Visibility Beads (Type 1) as defined in §727-05 Glass Beads for Pavement Markings.

**EPOXY APPLICATING EQUIPMENT**

In general, a mobile applicator shall be a truck mounted, self-contained pavement marking machine, specifically designed to apply epoxy resin materials and reflective glass spheres in continuous line patterns. The applying equipment shall be maneuverable to the extent that straight lines can be followed and normal curves can be made in a true arc. In addition, the truck mounted unit shall be provided with accessories to allow for the marking of cross hatching and other special patterns as directed by the Engineer.

At any time throughout the duration of the project, the Contractor shall provide free access to his epoxy applying equipment for inspection by the Engineer or his authorized representative.

The Engineer may approve the use of a portable applicator in lieu of mobile truck mounted accessories for use in applying special markings only, provided such equipment can demonstrate satisfactory application of reflectORIZED epoxy markings in accordance with these specifications.

**ITEM 685.0720XX10 - EPOXY REFLECTORIZED PAVEMENT MARKINGS 20 MILS THICK**  
**(WET NIGHT VISIBILITY SPHERES)**

Mobile applying equipment shall be capable of installing up to 19 miles of epoxy reflectorized pavement markings in an eight hour day and shall include the following features:

1. Individual tanks for the storage of Part A and Part B of the epoxy resin.
2. Individual tanks for the storage of Standard (Type 2) and Wet/Night Visibility (Type 1) glass spheres. Each tank shall have a minimum capacity of 3000 lbs.
3. Heating equipment of sufficient capacity to maintain the individual epoxy resin components at the manufacturer's recommended temperature for spray application.
4. Individual dispensers for the simultaneous application of Standard (Type 2) and Wet/Night Visibility (Type 1) glass spheres. Each dispenser shall be capable of applying spheres at a minimum rate of 10 lbs/gal of epoxy resin composition.
5. Metering devices or pressure gauges on the proportioning pumps, positioned to be readily visible to the Engineer.
6. All necessary spray equipment, mixers, compressors, and other appurtenances for the placement of epoxy reflectorized pavement markings in a simultaneous sequence of operations as described in Construction Details, D. Application of Epoxy ReflectORIZED Pavement Markings.

**CONSTRUCTION DETAILS**

**A. General**

All pavement markings shall be placed as shown on the Contract Documents and in accordance with the New York State, Manual of Uniform Traffic Control Devices (MUTCD).

Before any pavement marking work is begun, a schedule of operations shall be submitted for the approval of the Engineer.

At least five (5) days prior to starting striping, the Contractor shall provide the Engineer with the epoxy manufacturer's written instructions for use. These instructions shall include, but not be limited to, material mixing ratios and application temperatures.

When pavement markings are applied under traffic, the Contractor shall provide all necessary flags, markers, signs, etc. in accordance with the MUTCD to maintain and protect traffic, and to protect marking operations and the markings until thoroughly set.

The application of pavement markings shall be done in the general direction of traffic. Striping against the direction of traffic flow shall not be allowed.

**ITEM 685.0720XX10 - EPOXY REFLECTORIZED PAVEMENT MARKINGS 20 MILS THICK**  
**(WET NIGHT VISIBILITY SPHERES)**

The Contractor shall be responsible for removing, to the satisfaction of the Engineer, all tracking marks, spilled epoxy, and epoxy markings applied in unauthorized areas.

When necessary the Contractor shall establish marking line points at 30 foot intervals throughout the length of the pavement or as directed by the Engineer.

**B. Atmospheric Conditions**

Epoxy pavement markings shall only be applied during conditions of dry weather and on substantially dry pavement surfaces. At the time of installation the pavement surface temperature shall be a minimum of 50°F and the ambient temperature shall be a minimum of 50°F and rising. The Engineer shall be the sole determiner as to when atmospheric conditions and pavement surface conditions are such to produce satisfactory results.

**C. Surface Preparation**

The Contractor shall clean the pavement and existing durable markings to the satisfaction of the Engineer.

Surface cleaning and preparation work shall be performed only in the area of the epoxy markings application.

At the time of application all pavement surfaces and existing durable markings shall be free of oil, dirt, dust, grease and similar foreign materials. The cost of cleaning these contaminants shall be included in the bid price of this item.

In addition, concrete curing compounds on new portland cement concrete surfaces and existing painted pavement markings on both concrete and bituminous pavement surfaces shall be cleaned and paid for in accordance with §635 Cleaning and Preparation of Pavement Surfaces for Pavement Markings.

**D. Application of Epoxy ReflectORIZED Pavement Markings**

Epoxy reflectORIZED pavement markings shall be placed at the width, thickness, and pattern designated in the Contract Documents.

Marking operations shall not begin until applicable surface preparation work is completed and approved by the Engineer, and the atmospheric conditions are acceptable to the Engineer.

Pavement markings shall be applied by the following simultaneous operation:

1. The pavement surface is air-blasted to remove dirt and residues.
2. The epoxy resin, mixed and heated in accordance with the manufacturer's

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recommendations, is uniformly hot-sprayed onto the pavement surface at the minimum specified thickness.

3. Standard (Type 2) and Wet/Night Visibility (Type 1) reflective glass spheres are injected into or dropped onto the liquid epoxy marking. Standard beads (Type 2) shall be applied first immediately followed by the application of Wet/Night Visibility beads (Type 1). Each type shall be applied at a minimum rate of 10 lbs/gal of epoxy resin (minimum total application = 20 lbs/gal).

**E. Defective Epoxy Pavement Markings**

Epoxy reflectORIZED pavement markings, which after application and curing are determined by the Engineer to be defective and not in conformance with this specification, shall be repaired. Repair of defective markings shall be the responsibility of the Contractor and shall be performed to the satisfaction of the Engineer as follows:

1. Insufficient film thickness and line width; insufficient glass bead coverage or inadequate glass bead retention.

Repair Method. Prepare the surface of the defective epoxy marking by grinding or blast cleaning. No other cleaning methods will be allowed. Surface preparation shall be performed to the extent that a substantial amount of the reflective glass spheres are removed and a roughened epoxy marking surface remains.

Immediately after surface preparation remove loose particles and foreign debris by brooming or blasting with compressed air.

Repair shall be made by restriping over the cleaned surface in accordance with the requirements of this specification and at the full thickness indicated on the Contract Documents.

2. Uncured or discolored epoxy\*; insufficient bond (to pavement surface or existing durable marking).

Repair Method. The defective epoxy marking shall be completely removed and cleaned to the underlying pavement surface in accordance with the requirements of Section 635 - Cleaning and Preparation of Pavement Surfaces, at the Contractor's expense.

The extent of removal shall be the defective area plus any adjacent epoxy pavement marking material extending three feet in any direction.

After surface preparation work is complete, repair shall be made by reapplying epoxy over the cleaned pavement surface in accordance with the requirements of this specification.

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\*Uncured epoxy shall be defined as applied material that fails to cure (dry) in accordance with the requirements of §727-03 Epoxy Paint; or applied material that fails to cure (dry) within a reasonable time period under actual field conditions, as defined by the Engineer.

Discoloration shall be defined as localized areas or patches of brown, grayish or black colored epoxy marking material. These areas often occur in a cyclic pattern and often are not visible until several days or weeks after markings are applied.

Other defects not noted above, but determined by the Engineer to need repair, shall be repaired or replaced as directed by and to the satisfaction of the Engineer.

All work in conjunction with the repair or replacement of defective epoxy reflectORIZED pavement markings shall be performed by the Contractor at no additional cost to the State.

**METHOD OF MEASUREMENT**

Pavement striping (regular lines, cross hatching and special markings) will be measured in feet along the centerline of the pavement stripe and will be based on a 4 inch wide stripe. Measurement for striping with a width greater than the basic 4 inches, as shown on the plans or directed by the Engineer, will be made by the following method:

$$\frac{\text{Plan Width of Striping (inches) X Feet}}{4 \text{ inches}}$$

**BASIS OF PAYMENT**

The accepted quantities of markings will be paid for at the contract unit price, which shall include the cost of furnishing all labor, materials and equipment to satisfactorily complete the work. The cost for maintaining and protecting traffic during the marking operations shall be included in the price bid. The cost of removal of concrete curing compounds and existing pavement markings will be paid under separate items and are not included in this item.

No payment will be made for the repair or replacement of defective epoxy reflectORIZED pavement markings.

<b><u>PAY ITEM NO.</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>PAY UNIT</u></b>
685.07150110	White Epoxy ReflectORIZED Pavement Stripes – 15 mils	Foot

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685.07200110	White Epoxy ReflectORIZED Pavement Stripes – 20 mils (Wet Night Visibility Spheres)	Foot
685.07200210	White Epoxy ReflectORIZED Pavement Letters – 20 mils (Wet Night Visibility Spheres)	Each
685.07200310	White Epoxy ReflectORIZED Pavement Symbols – 20 mils (Wet Night Visibility Spheres)	Each
685.07200410	White Epoxy ReflectORIZED Pavement Stripes (Cross Hatching) 20 mils Thick (Wet Night Visibility Spheres)	Foot
685.07200510	White Epoxy ReflectORIZED Pavement Stripes (Special Markings) 20 mils Thick (Wet Night Visibility Spheres)	Foot
685.07200610	Yellow Epoxy ReflectORIZED Pavement Stripes – 20 mils (Wet Night Visibility Spheres)	Foot
685.07200710	Yellow Epoxy ReflectORIZED Pavement Stripes (Cross Hatching) 20 mils Thick (Wet Night Visibility Spheres)	Foot
685.07200810	White Epoxy ReflectORIZED Pavement Yield Line Symbols - Small - 20 mils (Wet Night Visibility Spheres)	Each
685.07200910	White Epoxy ReflectORIZED Pavement Yield Line Symbols - Large - 20 mils (Wet Night Visibility Spheres)	Each



## **ITEM 762 - INTEGRAL COLOR PIGMENT FOR CEMENT CONCRETE**

### **A. Description.**

1. Under this item, the contractor shall furnish and mix color pigment into cement concrete at locations shown on the plans, or as directed by the Engineer.

### **B. Materials.**

1. The pigment shall conform to "Integral Colors" as supplied by "Stampcrete International Ltd.", of Centereach, N.Y., or approved equal. The color to be used shall be as indicated on the plans or as directed by the Engineer.

### **C. Construction Details.**

1. The pigment shall be added to, and thoroughly mixed into, the cement concrete prior to placement, to insure a consistent color throughout the concrete. Pigment shall be added at the rate of 12 pounds per cubic yard of concrete, or in accordance with the manufacturer's instructions, or as directed by the Engineer.

### **D. Method of Measurement.**

1. The quantity to be paid under this item will be the number of pounds of pigment added to the cement concrete mix.

### **E. Basis of Payment.**

1. The unit price bid shall include the cost of all labor, materials, and equipment necessary to complete the work, including cleaning residue of color pigment from the concrete truck. Imprinting and cement concrete will be paid for under their respective items.

## **ITEM 763 - IMPRINTING ON CONCRETE PAVEMENT OR SIDEWALK**

### **1. Description.**

- a. Under this item the contractor shall modify the surface of newly placed cement concrete pavement or sidewalk to create a pattern as specified in the plans and/or as directed by the Engineer.

### **2. Construction Details.**

- a. Cement concrete pavement or sidewalk shall be placed at locations and dimensions shown on the plans and/or as directed by the Engineer, in accordance with Items No. 24, 27, 30, 32A, 32X and 7 as described in the Standard Specifications. At the appropriate time in the concrete curing process (as detailed in the specific treatment directions) the concrete surface shall be imprinted, stamped, or rolled such that the specified pattern is obtained. The contractor shall submit the recommended method of operation, containing dimensions of forms and/or rollers, timing of installation, and any other pertinent information to the Engineer for approval. Immediately after the surface finishing has been completed, the Impervious Membrane Method of curing shall be implemented, as detailed in the latest edition of the New York State Department of Transportation Standard Specifications.
- b. Suppliers and/or Installers - Possible technology to complete this work is available from, but not limited to:
  - i. Bomanite Corporation, P.O. Box 599, Madera, California 93639
  - ii. Quick Imprint Systems, P.O. Box 7, Goodman, Mo., 64850
  - iii. Stampcrete International Ltd., Centereach, N.Y., 11720
  - iv. Or equal

### **3. Method of Measurement.**

- a. The quantity to be paid under this item will be the number of square feet of imprinting on cement concrete pavement or sidewalk, in accordance with the plans and specifications, or as directed by the Engineer.

### **4. Basis of Payment.**

- a. The unit price bid per square foot for this item shall include the cost of furnishing all labor, materials, equipment and incidentals necessary to complete the imprint work to the satisfaction of the Engineer. Cement concrete pavement or sidewalk will be for paid under their respective items.

## **ITEM 767 - FURNISH & INSTALL & MAINTAIN TURBIDITY CURTAIN**

### **A. Description.**

1. This work shall consist of furnishing, installing, repairing, maintaining, and removing turbidity curtains in accordance with the contract documents and as directed by the Engineer.

### **B. References.**

1. New York State Department of Transportation, (NYSDOT) Standard Specifications dated September 2, 2010 and updated supplements.

### **C. Materials.**

1. The turbidity curtain shall be a commercially available, preassembled system, including a geotextile, flotation system, bottom weight, and anchoring and securing mechanism. If assembled in panels, it shall include a secure mechanism for joining panels together. Geotextiles shall conform to the requirements specified in §737- 01F. Turbidity Curtain. Hemmed pockets shall be sewn or heat bonded to contain flotation material, bottom weights, and for anchor lines. The flotation material shall maintain buoyancy if punctured or cut. The bottom weight shall be sufficient to hold the curtain in a vertical position. For sites not subject to tidal or heavy wave action, the curtain shall be capable of molding to conform to bottom contours so that suspended sediment is prevented from escaping underneath the curtain. Anchorage lines shall be provided of sufficient strength and number to support the curtain and maintain it in position under normally expected conditions. End anchors shall be provided, with intermediate anchor points (for stakes or anchors) such that unanchored spans do not exceed 100 feet, sufficient to maintain the turbidity curtain in place. Where the turbidity curtain is constructed in panels, anchor-line and shackle connections securing the panels together shall be sufficient for normally expected current, wind, or wave conditions.

### **D. Construction Details.**

#### **1. Systems Requirements.**

- a. Perform all work in accordance with Section 209 except as modified herein.
- b. For sites not subject to tidal or heavy wave action the curtain height shall provide sufficient slack to allow the top of the curtain to rise to the maximum expected highwater level (including waves) while the bottom maintains continuous contact with the bottom of the water body. The bottom edge of the curtain shall have a weight system capable of holding the bottom of the curtain down and conforming to the bottom of the water body, so as to prohibit escape of turbid water under the curtain.
- c. For sites subject to tidal or heavy wave action, the curtain height shall provide sufficient slack to allow the top of the curtain to rise to the maximum expected highwater level (including waves) while the bottom remains 12 inches above the bottom. The weight system shall hold the lower edge of the curtain in place so as to allow 12 inches of clearance above the bottom at mean low water, so that the curtain does not stir up sediment by repeatedly striking the bottom.

- d. If constructed in panels, panels shall be connected in such a manner as to prevent suspended particles passing through joints. Load lines shall be connected so as to develop the full strength of the line across the joint.
- e. Flotation material shall be arranged so as to be flexible and to provide continuous support.
- f. The flotation and curtain top shall be such as to provide a minimum of 4 inches of freeboard along the entire length of the curtain, to prohibit escape of turbid water over the top.

## **2. Installation.**

- a. The turbidity curtain shall be installed as shown in the contract documents in accordance with the manufacturer's instructions. It shall be placed as close to the site of disturbance as possible without interfering with construction activity.
- b. Turbidity curtain shall be installed and maintained in a manner that precludes entry of equipment, other than hand-held equipment or boats, to the water body outside the protected area.
- c. The fully assembled turbidity curtain shall be prepared for installation by being furled and tied at intervals of 5 foot for the length of the curtain. It shall be placed and secured in the furled condition, then released to allow the bottom edge to sink.
- d. At sites subject to tidal or heavy wave action, adjustment lines may be used to achieve the required height of the curtain.
- e. At sites not subject to tidal or heavy wave action, excess curtain material shall lay on the bottom, away from construction activity.
- f. Turbidity curtain shall be placed as nearly as possible parallel to current flow. It shall not be deployed across a flowing water course.
- g. The ends of the installation shall be anchored securely well up the bank. Intermediate anchors of a type and number sufficient to hold the curtain in place under expected conditions shall be placed, and firmly fastened to the top of the curtain assembly. Maximum spacing between anchorage points shall not exceed 100 feet.
- h. In situations with flow velocities that exceed 5 feet/sec use a redirection barrier. The redirection barrier shall be installed prior to installation of the turbidity curtain wherever possible, and care should be exercised in order to minimize disturbance of the bottom of the water body during installation of the redirection barrier.

## **3. Maintenance.**

- a. The turbidity curtain shall be inspected daily, with additional monitoring of performance during storms or significant flow events.
- b. Any visible plume of cloudy water passing beyond the curtain from the enclosed construction area shall constitute inadequate performance of the turbidity curtain. The Contractor shall immediately modify, adjust, or repair any portion of the turbidity curtain to correct inadequate performance.
- c. The turbidity curtain shall remain in place until the protected construction activities have

ceased and the turbidity of the water enclosed is reduced to acceptable levels. The curtain shall be removed within 72 hours of this condition being met.

**4. Removal.**

- a. The turbidity curtain shall be removed in such a way as to minimize release of sediment.
- b. Sediment behind the curtain shall be removed before removal of the curtain, if directed by the Engineer. If so, any resulting turbidity shall be allowed to settle before removal proceeds.

**E. Method of Measurement.**

1. Payment for this work will be made per linear foot for work satisfactorily completed. Progress payments will be made in proportion to the amount of work done as determined by the Engineer.

**F. Basis of Payment.**

1. The unit price bid per linear foot shall include the cost of furnishing all labor, materials, and equipment necessary to satisfactorily complete the work, including redirection barrier and the cost of removal associated with the removal of accumulated sediment. Payment will not be made for work which is attributed to the Contractor's negligence, carelessness or failure to install temporary or permanent controls in accordance with the contract documents.