

FOR INFORMATIONAL USE ONLY-DO NOT USE TO PREPARE A BID

Department of Public Works Nassau County, N.Y.

Bid Sheets for Contract: H41009-01G

Item No	Engineers Estimate	Unit	Item Description			
1	1	LS	CLEARING & GRUBBING	For:		
1M	1	LS	MOBILIZATION	For:		
1S	2	EA	JOB INFORMATION SIGN	For:		
2	4980	CY	UNCLASSIFIED EXCAVATION	For:		
2S	1	LS	REMOVAL OF MISCELLANEOUS MATERIALS	For:		
3	595	CY	TRENCH, CULVERT AND BRIDGE EXCAVATION	For:		
4A	110	SY	CEMENT CONCRETE BREAKING (PAVEMENT)	For:		
4B	5	CY	CEMENT CONCRETE BREAKING (STRUCTURES)	For:		
5C	550	CY	SELECTED FILL	For:		
7	7650	SY	PREPARING FINE GRADE	For:		
9R	1800	CY	TOPSOIL (REHANDLED)	For:		
9	100	CY	TOPSOIL	For:	CONTINGENT	
12H	50	LF	CLEANING EXISTING DRAINAGE PIPES	For:		
12P-12	240	LF	12" DIAMETER SMOOTH INTERIOR CORRUGATED POLYETHYLENE DRAINAGE PIPE	For:		
12P-15	35	LF	15" DIAMETER SMOOTH INTERIOR CORRUGATED POLYETHYLENE DRAINAGE PIPE	For:		
12UP-12	730	LF	12" DIAMETER CORRUGATED POLYETHYLENE UNDERDRAIN PIPE	For:		

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Item No	Engineers Estimate	Unit	Item Description			
13BP-4	5	VF	PRECAST MANHOLE - 4' DIAMETER	For:		
14	1	EA	CONNECTIONS TO EXISTING DRAINAGE FACILITIES	For:		
19	340	CY	SCREENED GRAVEL, LOOSE MEASURE	For:		
20	170	CY	BROKEN STONE, LOOSE MEASURE	For:		
21	170	CY	LIMESTONE SCREENINGS	For:		
26	800	LF	CONCRETE CURB	For:		
26F	680	LF	CONCRETE CURB - TYPE FLUSH	For:		
27	12200	SF	CONCRETE SIDEWALK	For:		
27DW	70	SF	DETECTABLE WARNING SURFACE	For:		
28	330	SF	CEMENT CONCRETE DRIVEWAYS AND APRONS	For:		
30	40	SY	METAL REINFORCEMENT FOR CONCRETE PAVEMENT	For:		
34	6000	LBS	MISCELLANEOUS METALS	For:		
36D	430	TON	ASPHALT CONCRETE TYPE 1A TOP & BINDER COURSES	For:		
58RPC	230	LF	SAWCUTTING EXISTING ROADWAY PAVEMENT AND CONCRETE	For:		
94BX	1370	LF	PLASTIC WOOD NAILER	For:		
99-10	120	VF	PRECAST CONCRETE LEACHING BASIN - 10' DIAMETER	For:		

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Item No	Engineers Estimate	Unit	Item Description			
102	1	LS	WORK ZONE TRAFFIC CONTROL	For:		
103S	8	EA	BASEBALL PLAYERS BENCH SYSTEM	For:		
104PC-4	880	LF	POLYOLEFIN COATED CHAINLINK FENCE 4' HEIGHT	For:		
104PC-6	750	LF	POLYOLEFIN COATED CHAIN LINK FENCE 6' HEIGHT	For:		
104PC-10	660	LF	POLYOLEFIN COATED CHAIN LINK FENCE 10' HEIGHT	For:		
104PC-16	450	LF	POLYOLEFIN COATED CHAIN LINK FENCE 16' HEIGHT	For:		
104XF	1940	LF	REMOVE EXISTING FENCE	For:		
104XB	2	EA	REMOVE EXISTING BACKSTOP	For:		
104XR	660	LF	MIDDLE RAIL, BRACE RAIL, TOP RAIL & BOTTOM RAIL	For:		
106P-B	2	EA	POLYOLEFIN COATED BACKSTOP	For:		
106P-DG	90	SF	POLYOLEFIN COATED CHAIN LINK DOUBLE GATE	For:		
106P-SG	170	SF	POLYOLEFIN COATED CHAIN LINK SINGLE GATE	For:		
106VBG	80	LF	VEHICLE BARRIER GATE	For:		
110	5	CF	MASONRY PIPE PLUGS	For:		
116A	1270	SY	PROFILING AND REMOVAL OF ASPHALT PAVEMENT	For:		
117	175	LF	TEMPORARY FENCE	For:		

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Item No	Engineers Estimate	Unit	Item Description			
121	230	CY	DRYBOUND BASE COURSE - 1" NOMINAL	For:		
121X	1440	CY	DRYBOUND BASE COURSE - VIRGIN 3/4" NOMINAL	For:		
122	4	EA	TEST HOLES	For:	CONTINGENT	
136	1	LS	SURVEY AND LAYOUT	For:		
137	920	LF	REMOVE EXISTING TRAFFIC MARKINGS	For:		
141	1860	LF	SILT FENCE	For:		
141B	1	EA	SILT PROTECTION FOR DRAINAGE STRUCTURE SURFACE INLET	For:		
158B	9120	SY	SOIL STABILIZATION FABRIC	For:		
199*	1	LS	INTERIM PAYMENTS	For: EIGHTY THOUSAND DOLLARS AND ZERO CENTS	\$80,000.00	\$80,000.00
199A*	1	LS	ASPHALT PRICE ADJUSTMENT	For: ONE THOUSAND EIGHT HUNDRED DOLLARS AND ZERO CENTS	\$1,800.00	\$1,800.00
361E	45	EA	PLANTING TREES AND SHRUBS - E	For:		
362	110	CY	TRIPLE SHREDDDED MULCH	For:		
367	2.5	AC	HYDROSEED	For:		
450	4	EA	FURNISH AND INSTALL POST MOUNTED SIGN	For:		
451	8	EA	FURNISH AND INSTALL POST MOUNTED HANDICAP SIGN	For:		
500	53250	SF	SYNTHETIC TURF FIELD WITH UNDERDRAIN	For:		

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Item No	Engineers Estimate	Unit	Item Description			
501	4	EA	FOUL POLE AND FOOTING	For:		
502-S-8	2950	SF	SAFETY SURFACE - 8' FALL HEIGHT	For:		
503	2	EA	BASE PAD SET	For:		
504	2	EA	HOME PLATE	For:		
506	2	EA	PITCHER'S RUBBER	For:		
507	4	EA	DUGOUT ROOF	For:		
508	610	LF	CHAIN LINK FENCE SAFETY CAP	For:		
509	4	EA	5-ROW ALUMINUM BLEACHERS	For:		
510	4	EA	PLAYGROUND SIGNS WITH POST	For:		
511	2	EA	REMOVE AND RESET STORAGE CONTAINER	For:		
512	80	LF	REMOVAL OF EXISTING GUIDE RAIL	For:		
513	75	LF	WEAK POST CORRUGATED BEAM GUIDE RAIL	For:		
514	2	EA	PORTABLE PITCHER'S MOUND	For:		
515-A	1	EA	FURNISH & INSTALL PLAYGROUND EQUIPMENT A - LHOTSE WITH ROOF SKY	For:		
515-B	1	EA	FURNISH & INSTALL PLAYGROUND EQUIPMENT B - TROUPER WITH ROOF SKY	For:		
515-C	1	EA	FURNISH & INSTALL PLAYGROUND EQUIPMENT C - OCEAN SEESAW	For:		

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Item No	Engineers Estimate	Unit	Item Description			
515-D	2	EA	FURNISH & INSTALL PLAYGROUND EQUIPMENT A - LHOTSE WITH ROOF SKY	For:		
516	4	EA	FURNISH AND INSTALL PARK BENCHES	For:		
685.07200110	1900	LF	EPOXY REFLECTORIZED PAVEMENT MARKINGS WHITE & BLUE	For:		
685.07200310	8	LF	EPOXY REFLECTORIZED PAVEMENT MARKINGS BLUE SYMBOLS	For:		
685.07200410	950	LF	EPOXY REFLECTORIZED PAVEMENT MARKINGS CROSS HATCHING - WHITE & BLUE	For:		

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NASSAU COUNTY
REHABILITATION OF POLARIS PARK
CONTRACT NO. H41009-01G

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, May 1, 2020 or latest edition.
- e) FHWA 2009 Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), or latest edition.

1. Scope of Work:

The scope of work involves the rehabilitation of sports playing fields including turf Little League and Tee-Ball fields and natural turf soccer fields, parking fields, drainage installation, pavement and sidewalk installation, fence and playing field appurtenances and playground equipment required to bring Polaris Park into a state of good repair and compliance within applicable codes and standards.

All work shall be implemented and executed according to the plans and specifications.

2. 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 or 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.

3. Work Hours

Special Condition: Unless otherwise specified in other sections of this Contract, the Contractor may not close an active travel lane during peak travel times. Any requests to close the lanes between 6:30 AM and 9:00 AM and/or between 4:00 PM and 6:30 PM must have written approval 72 working hours in advance. If approval is obtained and excessive congestion results, the approval will be withdrawn by verbal notice from a County Representative and no claim for additional compensation will be considered valid.

If the contractor does not adhere to the specified time limit on each roadway, a \$5,000.00 per day penalty for each infraction shall be deducted from Item 102 - Work Zone Traffic Control. Nassau County DPW shall utilize the information contained on/in the Inspector Daily Work Reports to determine when an infraction has occurred.

Work is not permitted on all Nassau County holidays unless prior County Approval is obtained. This includes, but is not limited to Memorial Day, Independence Day, Labor Day, Columbus Day, Election Day, Veterans Day, from 12:00 on the Wednesday before Thanksgiving Day through the following Sunday, Christmas Eve, Christmas Day, New Year's Eve, New Year's Day, and various Jewish Holidays including, but not limited to Rosh Hashanah, Sukkot, Shemini Atzeret, Simchat Torah, Yom Kippur, Chanukah.

No Night Work will be allowed under this Contract.

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. Prior to the start of work, the Contractor shall notify the local police, fire department, school district, utilities and all municipalities within the proximity of the work order limits or if they may be impacted by the work in anyway, as to the conditions prevailing on the construction site.

7. The Contractor must, at all times, provide a safe and uninterrupted two-way traffic over the roads under construction, unless a detour plan is provided and approved by the County.
8. Lighted Barricades, Flashing Warning Lights and Signs:
 - Must be serviced a minimum of twice each week.
 - Must be checked and maintained by the Contractor each day, including weekends and holidays.
 - Must be secured or weighted in such a manner as to prevent them from blowing over under windy conditions.Must be in accordance with the latest Manual of 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 102.
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, NCDPW and NYSDOT 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 insure 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. All weather and temperature requirements specified by the Manufacturers for materials used must be adhered to.
13. 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 an SDVOB goal of 6% or Good Faith Effort.

14. 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.

15. Maintenance of Traffic

- Maintenance and protection of traffic will be paid as described under Item 102. 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 Item 102, Maintenance and protection of traffic. The price bid shall include the cost of furnishing all labor, materials, tools and equipment necessary to satisfactorily complete the requirements to safely maintain traffic.

16. Utilities

- The Contractor is directed to notify all utilities well in advance of beginning work, to allow them to mark-out their facilities.
- 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.
- The Contractor will see to it that utility valves and manholes are readily accessible at all times. 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, all utilities will be uncovered during non-working hours.

- 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 along with a statement that sufficiently trained personnel will be available on the job site at all times.
- 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.
- 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.
- The Contractor's attention is called to the fact that there may be 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.
- 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.
- Grades and locations of new installations may be changed by the Engineer, if possible, 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.
- 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 complete at the completion of the work.
- 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.
- 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.

17. **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.

18. **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.

19. Clean-Up

- 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.
- 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.
- 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.
- 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 the various items.

20. Subletting

The attention of all bidders is directed to the provisions of Article 20, Sublet or Assign, relative to the percentage of work that may be assigned or sublet, which provisions will be enforced by the County in the manner it deems advisable.

21. Job Site Safety

Precaution shall be exercised by the Contractor at all times for the protection of all personnel. The safety provisions of applicable laws shall be observed, but job site safety is the sole responsibility of the Contractor and his subcontractors and cannot be assumed by the County or its agents.

22. Rubbish and Debris

The Contractor shall legally dispose of all unsuitable material, rubbish and debris at some separate location, not in the vicinity of the site.

23. Concrete Breaking

The Contractor is cautioned that the use of a ball operated from a crane or other equipment will not be permitted under any circumstances for the breaking up of any concrete or other demolition work. Any machine or method used must meet the approval of the Engineer.

24. Sales Tax Exemptions

Nassau County is exempt from the payment of New York State Sales Tax and Compensating Use Taxes under Section 1116 of Article 28 of the Tax Law of the State of New York and is exempt from the payment of Nassau County Sales and Uses taxes under Section 7, Ordinance 404-C- 1968, enacted pursuant to Section 1210 of Article 29 of the Tax Law of the State of New York.

However, it is not to be construed by bidders as relieving them from any obligation to pay sales tax on applicable items pursuant to the terms of the present sales tax laws.

25. Cold Patch

Payment for cold patch material used in this contract is included in the cost of the Item 102, no additional payment shall be paid for this material.

26. 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.

27. The Contractor shall notify the Nassau County Dept. of Public Works at (516) 571-9600 prior to the removal and relocation of bus shelters and/or benches. Shelters shall be taken out of service for the shortest amount of time possible. The Contractor is directed to relocate bus shelters and/or benches in kind, the cost of this removal and reinstallation shall be included in the cost of Item 1. The seven-inch (7") thick concrete slab for shelters, is to be paid for under Items 28 and 30. The planning Commission reserves the right to have its vendor relocate their advertising bus shelters and/or benches.

28. Private Facilities in Public Rights-of-Way (ROW)

- 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 ROW. The Contractor may be required to remove these appurtenances as ordered by the Engineer.
- Payment for this work will be included in the price bid for various items in the Contract.

29. Special OSHA Notes

- Safety Provisions in the Specifications are primarily to protect County Property and the public against unsafe acts of the Contractor. The Occupational Safety and Health Act of 1970 (OSHA) requires that “Each Employer” (1) shall furnish to each of his employee’s 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 OSHA Regulations and such conformance shall not be reason to demand additional payment or claim extra work.

- Sheeting shall conform strictly to the Requirements of the OSHA Regulations for Construction Subpart P, Excavation, Trenching and Shoring:

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

30. The Contractor shall notify the Nassau County Police Department, local Fire Department and Metropolitan Suburban Bus Authority in writing as to the conditions prevailing on the construction site and detours in use. Duplicate copies of such notices shall be filed with the Engineer.
31. The Contractor shall obtain the necessary permit from the water district to allow rollers to be filled with water from fire hydrants. Intakes shall be fitted with either an “Airgap” or “Double Check Valve Assembly” to prevent water from the roller from entering the public water system.
32. The Contractor shall be required to hand out notices to the local homeowners and businesses affected by any work in this Contract, twenty-four (24) hours prior to starting work. A sample letter is attached at the end of these General notes.

The Contractor must set up portable variable message sign boards three days prior to the start of asphalt milling and asphalt paving operations giving the dates when work is going to start and work hours, at the limits of the job site. Payment will be made under Item Number 102PVMS, “Portable Variable Message Sign.”

The Contractor shall notify the local police department, fire department/district, school district, utilities and all municipalities within the proximity of the work limits or if they may be impacted by the work in any way, prior to the start of the work, as to the conditions prevailing on the construction site.

33. **Schedule:** The Contractor shall provide a detailed written schedule of operations for when work will be started and completed for work within the Contract one week after the Notice to Proceed is issued. Typical information to be provided includes, but is not limited to:
 - Removals;
 - Grading & Drainage work;
 - Curb, apron & sidewalk ramp work;
 - Sidewalk / Utility strip work;

- Milling Asphalt Pavement;
- Asphalt pavement;
- Concrete pavement;
- Turf Little League & Tee-Ball Fields;
- Natural Turf Soccer Fields;
- Bleachers, Dugouts & Benches;
- Children's Playground;
- Fencing;
- Signage & Pavement Markings;
- Topsoil, Seeding & Plantings;
- Punch list

No claims will be processed until the County has this updated information on a bi-weekly basis until the project has been completed.

34. 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.
35. The contractor when submitting shop drawings for approval must specify the work order number and location that said shop drawings will be used.
36. 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. In essence 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 constructions 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.
37. 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.
38. The contractor shall have a full time Supervisor, fluent in English on the project at all times.
39. No permanent asphalt top course will be allowed to be placed after December 1st (unless approved by the Commissioner and as long as other conditions are met per specification).
40. 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.
41. 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.

42. Under Item 116A a depth of 1.5" is required. Any depth greater than 1.5" 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 102.
43. 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.
44. At all times during the life of this contract, the Contractor shall maintain safe vehicular traffic and access to adjacent private properties located throughout the entire length of the contract.
45. 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 entranced concrete. Air entraining admixtures shall conform to the requirements of Volume One, Part Two, Section B, material M21, Admixtures of the 2009 Nassau County Standard Specifications.
46. The Contractor will provide a place for concrete test cylinders in proximity to the work so that the cylinders share the same curing conditions as the newly placed concrete. The Contractor will protect these cylinders for the three days they will be left on the job site.
47. 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 casting including new cover. No adjustment rings will be allowed in these castings. They must be raised to the proposed roadway grade. Payment for these new frames, covers, and castings shall be made under Item 34 - Miscellaneous Metals. No payment will be made for manholes that are not set to proper grade. If any debris is found by the contractor's carelessness in raising the drainage manholes it must be cleaned out immediately.
48. 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: Maximum Payment

5 to 10 Percent	95 percent of the total asphalt material delivered to the project
Greater than 10 to 20 Percent	90 percent of the total asphalt material delivered to the project
Greater than 20 Percent	85 percent of the total asphalt material delivered to the project

49. 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 fail, the approved job mix formula, one (1) percent for each infraction of asphalt concrete produced from that plant will be deducted from the total for Item 36DRAR - Rut Avoidance Asphalt Type 1A.
50. 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 performing any final pavement overlay work. The contractor is required to obtain approval for limits of proposed pavement milling and overlay work, sidewalk ramp type and layout of proposed pavement markings from a County representative prior to performing any proposed work.

51. Supplies

As per Item 1M - Mobilization: All the provisions of the Item 1M shall apply with the following modifications: 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 a mobile charger and a hard-protective cover. 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.

At the completion of the Contract, all above referenced equipment, with exception to the cell phone, shall become the property of Nassau County. The cost of this equipment shall be included in the cost of Item 1M-Mobilization.

NO TEXT ON THIS PAGE

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.

**NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS
REHABILITATION OF POLARIS PARK**

SPECIAL SPECIFICATIONS

Item 2S	Removal of Miscellaneous Materials
Item 94BX	Plastic Wood Nailer
Item 103S	Ballfield Players Bench System
Item 121X	Drybound Base Course - Virgin
Item 136S	Survey Stakeout (Per Day)
Item 500	Synthetic Turf Field with Underdrain
Item 501	Foul Pole and Footing
Item 502-S-8	Safety Surface – 8’ Fall Height
Item 503	Base Pad Set
Item 504	Home Plate
Item 506	Pitcher’s Rubber
Item 507	Dugout Roof
Item 508	Chain Link Fence Safety Cap
Item 509	5 Row Aluminum Bleachers
Item 510	Playground Signs with Post
Item 511	Removal and Reset Storage Container
Item 512	Removal of Existing Guide Rail
Item 513	Weak Post Corrugated Beam Guide Rail
Item 514	Portable Pitcher’s Mound
Item 515-A	Furnish and Install Playground Equipment – A – Lhotse with Roof Sky
Item 515-B	Furnish and Install Playground Equipment – B – Trouper with Roof Sky
Item 515-C	Furnish and Install Playground Equipment – C – Ocean Seesaw
Item 515-D	Furnish and Install Playground Equipment – D – Spinner Bowl
Item 516	Furnish and Install Park Benches
Item 685-W	Epoxy Reflectorized Pavement Markings (White)
Item 685-B	Epoxy Reflectorized Pavement Markings (Blue)
Item 685-B-S	Epoxy Reflectorized Pavement Markings (Symbols)

ITEM 2S – REMOVAL OF MISCELLANEOUS MATERIALS

All provisions of Item 2, 'Unclassified Excavation' shall apply with the following modifications and/or additions.

1. DESCRIPTION

Under this Item the Contractor shall remove existing bleachers, player benches and other miscellaneous items as directed by the Engineer and shall be legally disposed of off-site by the Contractor, where shown on the Plans, specifications and/or as directed by the Engineer.

2. CONSTRUCTION DETAILS

The Contractor shall disassemble and remove bleachers, player benches and other miscellaneous materials as directed by the Engineer. Player benches shall be removed before the concrete pad has been broken and removed. Any items that need to be excavated before removal shall be excavated and backfilled to grade under various items in this Contract. All items removed shall be legally disposed of off-site.

3. METHOD OF MEASUREMENT

The quantity to be paid for under this Item shall be paid for on a lump sum basis.

4. BASIS OF PAYMENT

The unit price bid for this item shall include the cost of furnishing all labor, material, equipment and incidentals necessary to complete the work.

All excavation, backfilling and breaking concrete pavement shall be paid for under various items in this Contract including Item 2 'Unclassified Excavation' and Item 4A, 'Cement Concrete Breaking (Pavement.)'

ITEM 94BX – PLASTIC WOOD NAILER

1. DESCRIPTION

Under this Item the Contractor shall furnish and place dimensional plastic where and as shown on the Plans and in accordance with the specifications and/or as ordered by the Engineer. The provisions of Item 94-A will apply with the following exceptions:

2. MATERIALS

- a. Premium Recycled Plastic Lumber is manufactured from purified blends of post-consumer, pre-consumer and/or virgin HDPE (high-density polyethylene) base resins.
- b. Material properties shall be as follows:

Property	ASTM Method	Units	Value
Specific Gravity	D611-13	Lbs/in3	0.0216 – 0.0275*
Water Absorption	D570-98	%	<1
Stress @ 3% Strain** Flexural Property	D6109-05	Psi	1,414
Secant Modulus @1% Strain** Flexural Property	D6109-055	Psi	77,067
Coefficient of Thermal Expansion	D6341-98	In/in/°F	0.000064
Screw Withdrawal	D61147-05	Lbf	583

*Lower density may occur in larger cross sections

**Testing performed on samples of 2" x 3" nominal size

4. METHOD OF MEASUREMENT

The provisions of Item 94A will apply.

5. BASIS OF PAYMENT

The provisions of Item 94A will apply.

ITEM 103S – BALLFIELD PLAYERS BENCHS**A. DESCRIPTION**

Under this Item the Contractor shall furnish and install players' benches as shown on the plans, as herein specified and as directed by the Engineer. The type of bench shall be 10' long surface mounted aluminum players bench without back, Model No. ATBTNBSP10 as manufactured by Sports Field Specialties, Inc., PO Box 231, 41155 State Highway 10, Delhi, NY 13573; phone: (888) 975-3343, and/or approved equal.

B. MATERIALS

1. Frame and Bench Supports: The bench supports shall be fabricated from 2" x 2" x 1/8" square weather-resistant aluminum tubing, unsusceptible to rust. The frame and bench supports shall be powder coated black,
2. Planking: All horizontal slats shall be fabricated from a 10" wide aluminum extrusion. The planking shall be powder coated black.
3. The upright supports shall be anchor bolted into concrete as per the manufacturer's specifications.
4. Concrete walk shall be paid for under Item 27 'Concrete Sidewalk'.
5. Shal have a 5-year Manufacturer's limited product warranty.

C. CONSTRUCTION DETAILS

The bench legs shall be anchored to the concrete walk with specified wedge anchors with supports vertical and true to line and position as shown on the plans and/or as directed by the Engineer.

D. METHOD OF MEASUREMENT

The quantity to be paid for under this Item will be the number of ballfield player benches, installed in accordance with the plans, specifications, and directions of the Engineer.

E. BASIS OF PAYMENT

The unit price bid for each ballfield players bench shall include the cost of all labor, materials and incidentals to complete the work including but not limited to placement of benches, standards, hardware, and all expenses necessary to complete the work.

Concrete walk shall be paid for under Item 27 'Concrete Sidewalk.'

ITEM 121X – DRY BOUND BASE COURSE – VIRGIN ¾” NOMINAL

The requirements of Item 121 – Dry Bound Base Course shall apply with the following modifications:

2. MATERIAL

- a. The base course blend shall consist of a nominal three-quarter (3/4”) crushed stone blend with crushed stone screenings. Recycled concrete blend will not be allowed.

% PASSING

Sieves	Pasing
3” or 75mm	-
2” or 55mm	-
1 ½” or 38mm	-
1” or 25mm	100
¾” or 19mm	90-100
½” or 12.5mm	80-100
3/8” or 9.5mm	70-100
¼” or 6.3mm	60-90
US #4 or 4.75 mm	50-85
US #8 or 2.36 mm	30-65
US #16 or 1.18mm	10-50
US #30 or 600mm	0-35
US #60 or 250mm	0-15
US #100 or 150mm	0-8
US #200 or 75mm	0-2

3. CONSTRUCTION DETAILS

The dry bound base course shall be placed on compacted subgrade for turf field where shown on the Plans and as directed by the Engineer.

ITEM 500 – SYNTHETIC TURF FIELD WITH UNDER DRAIN**A. DESCRIPTION**

1. Under this item, the Contractor shall furnish all labor, materials, tools and equipment necessary to install synthetic turf field with a new engineered synthetic turf system including infill materials, and underdrain system. as indicated and as specified herein. All excavation, regrading, fine grading, stone base, sub-base as required to in-fill low spots, and geotextile shall be paid separately under their respective items.
2. The installation of all new materials shall be performed in strict accordance with the plans and specifications of this contract as well as manufacturer's recommendations, and in accordance with all approved shop drawings.

B. SUBMITTALS

1. **Product Data:**
 - a. Contractor shall submit information/cut sheets for each type of product indicated.
 - b. Manufacturer's standard color chart. All colors shall be determined by the County.
2. **Shop Drawings**
 - a. Show field layout, roll/seaming layout as well as fabrication and installation details for synthetic turf and in-fill.
 - b. Include plans, elevations, sections, details and attachments to other work.
 - c. Show field striping plan for (2) baseball fields.
3. **Samples for Verification:** For the following products, in manufacturer's standard sizes.
 - a. A 12-inch x 12-inch, minimum sample of the exact synthetic turf and infill system that is specified for this project, if different than specified.
 - b. A 12-inch-long sample of the exact means by which the synthetic turf seams will be bound.
4. **Manufacturer's Certificates:** Provide, prior to bid award, a certified list of fifteen (15) installations of 65,000 square feet or more of this specific type of infill system, all being located in the United States in locations similar- in climate to the northeast USA. The fields shall not have been constructed over an e-layer (elastic layer) of a formed under pad.
5. **Sample Warranty:** Provide a sample pre-paid third party insured warranty prior to bid award.

6. Warranties:

The Contractor shall provide a warranty to the County that covers defects in materials and workmanship of the turf for a period of ten (10) years from the date of final acceptance by County. The turf manufacturer must verify that their representative has inspected the installation and that the work conforms to the manufacturer's requirements. The manufacturer's warranty shall include general wear and damage caused from UV degradation. The warranty shall specifically exclude vandalism, and acts of God beyond the control of the County or the manufacturer. The warranty shall be fully third-party insured; pre-paid for the entire 8-year term and be non-prorated. The Contractor shall provide a warranty to the County that covers defects in the installation workmanship, and further warrant that the installation was done in accordance with the plans and specifications, the manufacturer's recommendations, and any written directives of the manufacturer's and/or the County's representative(s). Prior to final payment for the synthetic turf, the Contractor shall submit to owner an insurance policy, guaranteeing the warranty to the County. The insurance must reflect the following values:

- a. No maximum per claim coverage amount.
 - b. Minimum of seven-million-dollar annual aggregate.
 - c. Must cover full 100% replacement value of total square footage installed, minimum of \$5.00 per sq ft., and;
 - d. Pre-paid 10-year third party policy must be issued by a carrier with an AM. Best rated "A" or better rating.
7. **Special Warranty:** Turf must maintain an ASTM F355, G-Max no less than 135 and no greater than a level of 190 for the life of the warranty. Contractor shall provide third-party testing results twice during the maintenance period, as directed by The County.
8. Synthetic turf system shall be approved as ADA Handicap accessible as determined by Test Method - ASTM 1951-99 Standard Specification for determination of accessibility of surface under and around playground equipment. Proof of passing test report must be submitted prior to the bid award.
9. The source, material description, gradation, and sample of all items in the materials section shall be provided for County approval.
10. All potential bidders that are substituting materials different than specified shall submit appropriate product data along with their bid submission.

C. QUALITY CONTROL

1. **Installer Qualifications:** The turf fabric shall be installed by factory-authorized distributors directly employing the installation crew. Manufacturing "jobbers" or installation "subcontractors" shall not be permitted.

2. Installers must be skilled trades people enrolled in a State-approved apprenticeship program, or certified by a program equal to the International Standards and Training Alliance, consisting of:
 - a. 4-year apprenticeship program, 160 hours per year
 - b. Career-long training
 - c. Manufacturer-endorsed training
 - d. Fundamental journeyman skills certification
 - e. Has installed at least (5) synthetic turf fields on Long Island
 - f. Must provide a reference contact list
 - g. Contractor must demonstrate a minimum of 5 installations of the approved synthetic turf system.
3. **Source Limitations:** Obtain synthetic turf through one source from a single manufacturer.
4. **Pre-installation Conference:** Conduct conference at Project site prior to installation of synthetic turf.
5. All components and their installation method shall be designed and manufactured for use on outdoor athletic fields. The materials as hereinafter specified, should be able to withstand full climatic exposure in the Northeast USA, be resistant to insect infestation, rot, fungus and mildew; to ultra-violet light and heat degradation, and shall have the basic characteristic of flow through-drainage allowing free movement of surface run-off through the turf and directly into the prepared granular base and drainage system as shown on the plans.
6. The synthetic turf and components shall be of national reputation with previous use at all levels of competition, including professional and collegiate levels and shall be in use for a period of not less than (5) years. The turf fabric shall be produced by the manufacturer.
7. Prior to the bid award, the Contractor and manufacturer shall specify in writing that their turf system does not violate any other manufacturers' patents, patents allowed, or patents pending.
8. Prior to the beginning of installation, the manufacturer of the synthetic turf shall inspect the sub-base and supply a Certificate of Sub-base Acceptance for the purpose of obtaining manufacturer's warranty for the finished synthetic playing surface.

D. SITE CONDITIONS

1. **Weather Limitations:** Proceed with installation only when existing and forecasted weather conditions permit synthetic turf installation to be performed according to manufacturers' written instructions and warranty requirements.
2. **Field Measurements:** The Contractor must field measure existing conditions and verify proposed field dimensions prior to start of work. Inventory of existing sports field striping shall be taken to ensure new turf field matches, unless otherwise directed by the County. Any discrepancies found shall be immediately reported to the County's representative for resolution.

E. MANUFACTURERS

1. Synthetic turf system as manufactured by FieldTurfTarkett Inc., 5211 Mitchell Bridge Road, Dalton, GA 30721, USA, Tel: (800) 724-296. Model: Prestige Monofilament XM-57, or approved equal.
2. Approved equal. Note: As part of the bid submission, Contractor must provide information to demonstrate the equivalency of the proposed synthetic turf system.
3. **Synthetic Turf with 2-Layer Infill-UV-Resistant Polyethylene XM-57**
 - a. The component materials of the artificial grass field turf System consist of:
 - i.* A Carpet made of UV-Resistant polyethylene slit-film fibers tufted into a fibrous, porous backing.
 - ii.* The fiber height shall conform to the manufacturer's specification for the turf field's intended use.
 - iii.* A resilient layered infill system consisting of specifically formulated rounded silica sand and ambient processed rubber. The infill installation consists of a base layer of sand followed by the processed rubber. The total infill amount shall be no less than 6.0 lbs. per square foot (5.0 lbs. silica sand, 2.0 lbs. rubber).
 - iv.* Glue, paint, seaming fabric and other materials used to install and mark the artificial grass monofilament field turf.
 - b. The Carpet shall consist of UV-Resistant polyethylene slit-film fibers tufted into a primary backing with a secondary backing.
 - i.* The Carpet shall be furnished in min. 15' wide rolls. Rolls shall be long enough to go from sideline to sideline without splicing. If football is to be played, the perimeter white line shall be tufted into the individual sideline rolls. Head seams, other than at sidelines, will not be acceptable.
 - ii.* The Carpet's primary backing shall be a double-layered polypropylene fabric treated with UV inhibitors. The secondary backing shall consist of an application of porous, heat-activated urethane to permanently lock the fiber tufts in place.
 - iii.* The fiber shall be equal to or greater than 10,000 denier, low friction and UV - resistant fiber height measuring 2" inches long, or to the manufacturer's recommendations for intended field use unless shown otherwise on the plans. The same fiber from the above listed projects must be used on this project.
 - iv.* Synthetic turf carpet total weight shall be minimum 54 ounces per square yard.
 - c. The Infill material shall be approved by the Manufacturer.

- d. The exposed pile height of finished synthetic turf field shall be approximately $\frac{3}{4}$ ".
- e. All seams shall be sewn as recommended by the synthetic turf Manufacturer. Glued seams will not be permitted.
- f. Glue and seaming fabric for inlaying lines and markings shall be as recommended by the synthetic turf Manufacturer.

4. Perimeter Nailer:

- a. A perimeter concrete curb or pressure treated infield-outfield transition nailer (item 94BY) shall be installed around the entire perimeter of the turf field as shown on the plans (paid for under separate bid items). Contractor shall install a perimeter edge nailer (Item 94BX) which will be attached to the concrete curb as per manufacturer's recommendations. Remove and replace existing nailer or as directed by the Engineer.

5. Drainage Piping:

- a. **Flat Drains** – 12-inch wide geotextile wrapped Multi-Flow, as manufactured by Varicore Technologies, 412 19th Avenue SW, Wilmar, MN 56201, (1800-978-80070 or Advanedge as manufactured by Advanced Drainage Systems, 4640 Truman Boulevard, Hilliard, OH 43026 (1800-821-6710) or approved equal.
- b. **Perimeter Drain** – Properly sized diameter HDPE to match existing, ADS N-12 or approved equal.

F. EXECUTION

1. Preparation

a. Examination

- i.* Examine substrates and conditions, with Installer present, for compliance with requirements for maximum moisture content, installation tolerances, and other conditions affecting performance of work.
- ii.* Proceed with installation only after unsatisfactory conditions have been corrected.
- iii.* The surface to receive the synthetic turf shall be inspected and certified by the manufacturer as ready for the installation of the synthetic turf system and must be perfectly clean as installation commences and shall be maintained in that condition throughout the process. The final sub-base surface shall be surveyed by the Contractor by means of a laser level on a 25 ft. grid shot. The Contractor shall provide grade stakes for visual monitoring of the grading operations at intervals as directed by the Engineer.
- iv.* The installation shall be performed in full compliance with approved shop drawings. Only factory-trained technicians skilled in the installation of athletic caliber synthetic

turf systems, working under the direct supervision of the manufacturer's supervisors, shall undertake the placement of the system. The designated Supervisory personnel on the project must be certified, in writing by the turf manufacturer, as competent in the installation of this material, including seaming operations and proper installation of the infill. The manufacturer shall certify the installation and warranty compliance. The surface to receive the synthetic turf shall be inspected and certified by the manufacturer as ready for the installation of the synthetic turf system and must be perfectly clean as installation commences and shall be maintained in that condition throughout the process.

G. INSTALLATION

1. Synthetic Turf with In-Fill:

- a.** The finished stone base must be accepted by the turf Contractor for planarity. It shall not vary more than 1/8" in any ten-foot (10') direction.
- b.** The carpet rolls are to be installed directly over the properly prepared base stone. Extreme care should be taken to avoid disturbing the base stone, regarding both compaction and planarity.
- c.** The full width rolls shall be laid out across the field. Utilizing the manufacture's standard, each roll shall be attached to the next. Each seam shall be securely fastened so as to prevent and separation. When all of the rolls of the playing surface have been installed, the sideline areas shall be installed at right angles to the playing field turf.
- d.** All seams shall be transverse to the field direction; i.e., run perpendicularly across the field. Seams shall be flat, tight, and permanent with no separation or fraying.
- e.** Synthetic turf shall be installed across the field and attached to the perimeter edge nailer as per manufacture's approved detail. Turf shall be of sufficient length to permit full cross-field installation. No head or cross seams will be allowed.
- f.** The infill shall be evenly spread with large drop spreaders, minimum 5' wide, in multiple layers. Between each layer, the fiber shall be brushed with a rotary nylon broom to insure that fibers are not trapped by the infill.
- g.** The markings on the field may be inlaid or factory tufted. All field markings shall be approved by the County prior to installation.
- h.** The average G-max of the finished system shall be greater than 135 and less than or equal to 190 G's for the life of the warranty.
- i.** In order to maintain the G-max, the Owner shall be required to maintain the synthetic grass by following the recommended maintenance and grooming procedures contained in the Synthetic Turf Maintenance Manual, provided to the Owner.
- j.** On completion of the surface the fiber shall be approximately 3/4" above the finished infill

- k. All field markings shown on the plans shall be installed in accordance with manufacturer's specifications (and paid for under this Item).

2. Perimeter Edge Nailer:

- a. A perimeter edge nailer shall be installed onto a perimeter concrete curb where indicated on the drawings or to a timber edge nailer where indicated on the drawings along the entire perimeter boundary of the synthetic turf field as shown on contract drawings and installed as per the manufacturer's specifications.
- b. The perimeter edge nailer shall be paid separately under its respective item.

3. Porous Stone Base:

- a. Laser guided grading of stone base layers is mandatory.
- c. The surface planarity must not vary more than $\frac{1}{8}$ " in any 10' direction. All stone layers must be rolled in both directions to obtain maximum compaction and settlement.

H. FIELD QUALITY CONTROL

1. **Testing Agency:** The Contractor shall provide a qualified independent testing and inspecting agency, approved by County, to perform field tests and inspections and prepare test reports.
2. **Testing Services:** Testing and inspecting of completed applications of synthetic turf system shall take place in successive stages, in areas of extent and using methods as follows. Do not proceed with application of the next stage until test results for previously completed applications show compliance with requirements.
3. Remove and replace applications where test results indicate that it does not comply with specified requirements.

I. FINAL ACCEPTANCE

1. Prior to Final Acceptance, the Contractor shall submit to the County three (3) copies of Maintenance Manuals, which will include all necessary instructions for the proper care and preventative maintenance of the synthetic turf system, including painting and striping.
2. The Contractor shall provide evidence that the turf can be plowed with conventional rubber bladed snow removal equipment.
3. The finished playing surface shall appear as mowed grass with no irregularities and shall afford excellent traction for conventional athletic shoes of all types. The finished surface shall resist abrasion and cutting from normal use.

4. Contractor shall perform a GMAX test at the completion of installation and prior to final acceptance to demonstrate compliance with an ASTM F355 GMAX of at least 135 and less than or equal to 190.

J. CLEANING

1. Contractor shall provide the labor, supplies and equipment as necessary for final cleaning of surfaces and installed items. All usable remnants of new material shall become the property of the County. The Contractor shall keep the area clean throughout the project and clear of debris. Surfaces, recesses, enclosures, etc., shall be cleaned, as necessary, to leave the work area in a clean, immaculate condition ready for immediate occupancy and use by the County.

K. METHOD OF MEASUREMENT

The square foot unit quantities to be paid for under these items shall be for the installation of new synthetic turf field surface, and under drainage system as required completed in place and accepted by the Engineer in accordance with the provisions of these specifications.

L. BASIS OF PAYMENT

The square foot unit price base bid shall include, but not limited to, under drain and all associated fittings, any fine grading, of the stone base, synthetic grass system, resilient infill, markings and other incidentals necessary and as specified, and all labor, materials, tools, supplies, equipment and incidentals necessary to complete the work in accordance with these specifications, drawings and the directions of the Engineer.

ITEM 501 – FOUL POLE AND FOOTING**A. DESCRIPTION**

1. Furnishing and installation of foul poles as indicated and specified herein. Installation shall be performed in strict accordance with the manufacturers' written instructions and in accordance with all approved shop drawings.

B. SUBMITTALS

1. Shop Drawings: Include plans, elevations, sections, details and attachments for the foul poles.

C. MATERIAL

1. Concrete reinforcement and installation of foul pole foundation shall conform to Item 27.
2. For special requirements for concrete, see Addenda Notes and Modifications.
3. The foul pole shall be twenty-feet (20') in height model BBFLPOLE as manufactured by BSN Sports or approved equal.

D. INSTALLATION

1. Foul pole shall be set true and plumb in the concrete footing along the foul line at the location shown on the drawings.
2. The concrete footings shall be as shown on the drawings, unless a larger footing is recommended by the manufacturer of the foul pole. The Contractor shall install the larger of the two footing designs.
3. As a minimum the installation shall be in accordance with the manufacturers' recommendations.

E. MEASUREMENT AND PAYMENT

1. The quantity to be paid for under this Item shall be for each foul pole furnished and installed and accepted in accordance with the specifications and drawings.
2. The unit price for this Item shall include all labor, materials, equipment and other incidentals required to do the work in accordance with these specifications. The work includes, but not limited to, reinforced concrete foundation, excavation, fill, compaction, foundation, and the furnishing, placing and finishing the foul pole.

ITEM 502-S-8 – SAFETY SURFACE – 8’ FALL HEIGHT**A. DESCRIPTION**

Under this Item the Contractor shall furnish and install Safety Surface of various types in accordance with the plans, specifications and directions of the Engineer.

Note: The safety surface shall be installed as soon as possible after the play equipment installation is complete. The Contractor shall be responsible for temporarily barricading the Play Equipment prior to completion of the safety surfacing installation.

Intent: In general, mats shall be utilized according to ASTM F1292-09 (or latest issue) drop height criteria as follows: tot unit play areas shall be surfaced with mats which meet or exceed 5 foot drop height criteria; ten foot high play swing areas shall be surfaced with mats which meet or exceed 10 foot drop height criteria; all other areas shall be surfaced with mats which meet or exceed 8 foot drop height criteria.

B. MATERIALS

1. **Drybound Base Course:** Shall contain no hazardous or contaminated materials. Shall prepare a compacted level sub-grade using a “stone blend” material. Stone base shall be uniformly mixed on a mixing table or by other mechanical means (such as quarry blending operations), conforming to and paid under Item 121X Drybound Base Course.
2. #1A Chip/Stone Dust/Granite/Marble/Limestone Screening: Known as Dense Graded Aggregate shall contain no hazardous or contaminated materials.
3. **Geo-Textile Fabric/Mesh for Separation:** Conform to Item 158B.
4. **Self-Interlocking Play-Tile – 22”× 44”** resilient, self-interlocking (with “Button-Lock™ Technology) unitary, rubberized safety surfacing, flooring and paver products in the tile/mat/block/paver form with bolt-down capabilities, known as the:

Pigmented 2” thick “Pave-Land” offering shock resistance/impact attenuation for up to a five foot (5’) fall rating

Pigmented, 3” thick-“Soft-Land” series offering shock resistance/impact attenuation for up to an eight foot (8’) fall rating.
5. All necessary material components and application information required to install the molded Three inch (3”) thick “Soft Land 3.0” series with the new “Button-Lock™” technology, composed of clean rubber granules, using the “Step & Repeat” method of installation, gluing the interlocks and underside of each unit to a solid subbase material, bolting them down, shall be by Unity Creations Ltd/Unity Surfacing Systems or approved equal.
6. **Color:** To be determined by County from Manufacturer’s list of Standard Pigmented Colors: Black, Terra Cotta Red, Grass Green, Chocolate Brown, Sky Blue, Slate Grey, Sandy Tan, Mystic White

7. Acceptable Manufacturer:Sales & Marketing Dept.

Unity Surfacing Systems

56 Bloomingdale Rd.

Hicksville, NY 11801

T (516) 724-1357

F (845) 246-1700

Email: productinfo@surfacingystems.comwww.surfacingystems.comManufacturing Plant:

Unity Creations, Ltd.

3997 Rte 9W (PO Box 9)

Saugerties, NY 12477

T (845) 246-2700

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Contact Representative: Robert Pettinelli, Pettinelli Recreation, Inc., 423 Kenwood Avenue, Delmar, NY 12054 (518) 461-5917 / Robert@PettinelliRecreation.com

Premoulded synthetic polyurethane safety surfacing consisting of rubber crumbs bound together with a polyurethane binder and/or poured in place safety surfacing are not acceptable under this specification.

8. Adhesives – Any variations from pre-approved adhesives must be submitted as per “Submittals.” The following adhesives have been pre-approved for specific applications:

“Epoxygrout” 2 part Epoxy as manufactured by US Epoxy, Patchogue, NY, or approved equal, for plastic or rubber anchor to asphalt applications.

Lord® Cyanoacrylate Adhesive as manufactured by Lord Chemical Products Corp., Cary, NYC or approved equal, for rubber to rubber applications. Cyanoacrylate adhesive is commonly known as “Superglue” or “Crazy Glue.”

9. Standards – All safety surface material shall meet the latest suggested guidelines published in the “Handbook for Public Playground Safety” by the US Consumer Product Safety Commission (CPSC) and the American Society for Testing and Materials (ASTM) as outlined below.

10. Tests – Safety surfacing must meet the following test requirements and criteria:

- a. Shock Absorbency – When tested in accordance with ASTM F1929-09 (or latest issue) Test Method F355, Procedure C (Metal Headform), the surface shall not impart to the headform upon impact, a peak deceleration exceeding 200 times the acceleration due to gravity (200G’s) and shall not exceed 1000 Head Injury Criteria (HIC). Test submittals must clearly state that test was performed over the seam and anchoring system, and on the body of the tile. The drop height(s) used in this test shall be the height(s) as noted on the contract drawings or as directed by Nassau County DPR.
- b. Weathering (Aging) – After being subject to fifty (50) freeze-thaw cycles in accordance with ASTM C67, “Freezing and Thawing” and after being subject to 200°F for 7 days in accordance with ASTM D573 “Rubber Deterioration in an Air Oven” the same sample shall be re-tested in compliance with ASTM F1292-09 at 72°F only. A peak deceleration reading not exceeding 200G’s shall be maintained. HIC testing is not required for re-testing.

- c. Slip Resistance – When using the “British Portable Skid Resistance Tester” in accordance with ASTM E303, the wet-dynamic reading shall not be less than 40.
- d. Flammability – When tested in accordance with ASTM E648, “Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source” the material shall have a minimum critical radiant flux of 0.22 Watts/cm².

C. INSTALLATION

Installation of all types shall be in accordance with CPSC guidelines and manufacturer’s installation instructions approved by the Engineer. The safety surfacing should not create new hazards; hence, all installations shall be done as carefully as possible in a neat and skillful manner.

All safety surfacing shall either be recessed with the top flush with surrounding finish grade or have a beveled perimeter transition piece along its entire open perimeter to allow for a smooth, easy transition between the surrounding finish grade and the level of the safety surfacing. Safety surfacing in swing areas shall be installed with full thickness to the fence or curb except in the entryway, which shall have a beveled edge.

Molded rubber mat installation must be by mechanical means of each individual tile. Adhesives to hold small, cut pieces of mat to pavement surface are unacceptable. Adhesives are only to be used with anchoring devices, transition piece, or caps as described in “Adhesives.” Shop drawing shall clearly show that every piece is connected by mechanical means. The installation shall be vandal resistant and be firmly secured so that it cannot be pulled up from the playground surface.

Mats shall have either: a) all center tiles secured individually to the playground surface with vandal-resistant anchors, or b) mechanically locked together to prevent separation or removal of blocks from play area. The perimeter transition pieces shall be secured to the pavement with vandal-resistant anchors or approved adhesives.

Any anchoring system used shall not create “hard” spots within the surfacing which fails to meet test requirement No. 1 and ASTM 1292. All plugs shall be installed flush with or slightly recessed (1/8” maximum) below the rest of the surfacing; plugs shall not protrude above the surrounding surfacing. All mats shall be installed so that they will be hand tight in hot weather. Necessary adjustments shall be made for installation in cool weather.

1. Installation Sequence:

- a. Earth Surface Subgrade – Shall be compacted with a flat plate vibratory compactor to 95% proctor, per ASTM D-1557.
- b. Stone Base for Safety Surfacing – Shall contain no hazardous or contaminated materials. Shall prepare a compacted level subgrade using a “stone blend” material. Stone base shall be uniformly mixed on a mixing table or by other mechanical means (such as quarry blending operations) prior to placement on the compacted earth surface subgrade. Stone base shall be bladed and evenly compacted and shall be a minimum of six inches (6”) deep at all locations. Stone base shall be wetted during mixing operations if necessary for proper

blending. Moisten and compact with a flat plate vibratory compactor to 95% proctor/density, in accordance with ASTM D-1557. Tolerance: ¼" in any 10 foot direction. Moisten and compact again if necessary. Paid under Item 21 and 121X.

- c. #1A Chip/Stone Dust/Granite/Marble/Limestone Screening: Known as dense grade aggregate, shall contain no hazardous or contaminated materials. Shall be installed and compacted to a depth of one-half inch (1/2") over the compacted and leveled Stone Base. Paid for under Item 21.
 - d. Geotextile Fabric/Mesh for Separation – Shall be installed between the #1A Chip/Stone Dust/Granite/Marble/Limestone Screening and Unity's products overlapping the seams 6" – 9".
 - e. Rubberized Safety Surfacing Tile – Shall be installed as per manufacturer's recommendations.
2. **Special Conditions** – Where surfacing may cover a drain opening, the surfacing shall be drilled or slotted in a pattern matching the basin openings to allow for drainage. Where surfacing covers a basin or manhole, the Contractor shall drill six (6) one-quarter inch (1/4") holes at an angle of 45° providing a vent for the basin or manhole. Surfacing shall be formed around tree pits and not cover granite block, provided that such elements are outside the fall zone.
 3. **Additional Testing** – The County reserves the right to do any additional tests it feels necessary, and the Contractor shall furnish material when needed for testing.
 4. **Extra Materials** – The Contractor shall furnish (furnish only, not install) extra materials and deliver to Nassau County Parks Department as follows:

Additional fifty (50) rubber anchors or plugs

The above materials shall be delivered to the APRM of the Division or the Supervisor of Mechanics (ONLY) and a signed receipt (from M&O) shall be submitted to the Engineer to acknowledge M&O receipt of the aforementioned materials.

5. **Submittals** – All submittals shall be submitted prior to manufacture and in accordance with the requirements of the General Conditions, Section C, Special Provisions, Article 11.
 - a. Material – For approval and prior to installation, the Contractor shall submit two samples of each drop height specified on the safety surface materials no larger than one foot by one foot (1' × 1') in size representing color, composition and thickness proposed to be used, the drop height used, and the supporting certified test data showing that the material meets or exceeds the test requirements of this specification. In addition, all anchoring/attachment components and product literature for necessary adhesives which vary from preapproved adhesives shall be submitted for approval. The Project Manager may waive this requirement, where samples and test results are on file.
 - b. Shop Drawings – A shop drawing of the proposed safety surfacing layout shall be drawn in ¼" = 1'-0" scale (unless otherwise specified by the Project Manager) and shall clearly show

the following details: actual size of mats or modular tiles; size of transition pieces; size of cut pieces, if any; location of all mechanical anchors, rods or clips; type of adhesive to be used; and exact location of all play equipment, posts, springs or other support systems. As-built deviations from the proposed safety surfacing layout made during installation shall be approved in the field by the Engineer in writing on the shop drawing.

- c. Installer Certification – Installer must be trained and certified by the manufacturer. Installer’s certification on manufacturer’s letterhead shall be submitted to the Engineer.
- d. Insurance Certificate – The Contractor shall furnish a Manufacturer’s Certificate of Product Liability Insurance for a minimum of one (1) million dollars naming “Nassau County Parks Department” as additional insured. Insurance shall be for one year, starting at the Contract Final inspection date.
- e. Warranty against Shrinkage – The Contractor shall furnish a standard one-year manufacturer’s warranty enhanced as follows: For three full years, starting from date of Contract Final Inspection, the Manufacturer agrees to reinstall or replace material which shrinks, creating a gap between mats of more than one-half inch (1/2”). Measurement shall be performed in an ambient temperature of 72°F ± 5°F.
- f. Manufacturer’s Recommended Installation Instructions and Maintenance and Repair Instructions – Installation, maintenance and repair of all types of safety surfacing, including adhesives, graffiti removal, etc. shall be per manufacturer’s instructions. Instructions shall be submitted to approval by the Engineer.

D. METHOD OF MEASUREMENT

The quantity of Safety Surface of various types to be paid for under this Item shall be the number of square feet, furnished and installed in accordance with the plans, specifications and directions of the Engineer. No deduction shall be made for cut surfacing removed for cross section of posts.

E. BASIS OF PAYMENT

The price bid shall be the unit price per square foot of each type and shall include the cost of all labor, materials and incidentals necessary to complete the work, in accordance with the plans and specifications to the satisfaction of the Engineer.

Drybound base course and stone dust shall be paid for under Items 21 and 121X.

In addition, the Contractor shall deliver extra materials as outlined above to the County. Unless otherwise specified, one set of extra materials is required per contract, regardless of the number of items. No additional payment shall be made for extra materials. Contractor shall include cost in the bid price.

ITEM 503 – BASE PAD SET**ITEM 504 – HOME PLATE****ITEM 506 – PITCHER’S RUBBER****A. DESCRIPTION**

1. Under this Item, the Contractor shall furnish all labor, tools, materials and equipment necessary to supply and install a pitcher’s rubber, base systems and a home plate system as shown on plans or directed by the County’s representative.
2. Pitcher’s rubbers integral with portable pitcher’s mound are not paid under this Item.

B. SUBMITTALS

1. Submit two copies of manufacturer’s shop drawings, installation instructions and maintenance procedures if applicable.

C. MATERIALS**1. Bases System**

- a. Each base shall be 15” × 15” × 3” and constructed using a heavy gauge rubber cover over high density foam interior with a rust proof bolted stanchion pan and turf field cut-out.
- b. Anchoring of the bases shall be accomplished in accordance with the manufacturer’s recommendations and synthetic turf field manufacturer. Bases shall be “safety release bases” and are not to be permanently anchored.
- c. Base system shall consist of three bases and anchoring.

2. Home Plate

- a. Home Plate shall be the “bury-all” style and constructed from durable all-rubber with no corners or edges to catch spikes permanently mounted per turf field manufacturer’s recommendation.

3. Secondary Base Anchoring System

- a. Contractor shall furnish secondary base anchoring system with turf cut-out and plug/cap to match base system provided for secondary base location (60’ base path and 75’ base path) when shown on plans.

4. Pitcher’s Rubber

- a. The Pitcher’s Rubber shall be 6” × 24” and constructed of durable heavy duty rubber.
- b. Permanently anchoring the Pitcher’s Rubber shall be accomplished in accordance with the manufacturer’s recommendations.

D. CONSTRUCTION DETAILS

1. The Contractor shall meet all of the manufacturers' requirements for the installation of the bases, pitcher's mound and home plate.
2. The Contractor shall make provisions during the installation of the field's manifold underdrain system, base stone bed and finishing stone to accommodate the installation of the above baseball field accessories in accordance with the turf field manufacturer's recommendations.

E. MEASUREMENT AND PAYMENT

1. The total quantity to be paid under Item 503 shall be for the furnishing and installation of each base system (3 bases) and accepted in accordance with the plans and specifications.
2. The total quantity to be paid under Item 504 shall be for the furnishing and installation of each home plate and accepted in accordance with the plans and specifications.
3. The total quantity to be paid under Item 505 shall be for the furnishing and installation of each system of three secondary base anchoring systems with synthetic turf cut-outs and anchoring system caps and accepted in accordance with the plans and specifications.
4. The total quantity to be paid for under Item 506 shall be for the furnishing and installation of each pitcher's rubber and accepted in accordance with the plans and specifications.
5. The unit price bid for each to include but not be limited to all necessary labor, materials, tools, supplies, equipment and incidentals necessary to complete the work.

ITEM 507 –DUGOUT ROOF**A. DESCRIPTION**

1. Under this Item the Contractor shall furnish and install a roof over the dugouts in accordance with the plans, specifications and/or as directed by the Engineer.

B. MATERIAL

1. The Contractor shall furnish and install galvanized “Q” Roof Decking over the players’ dugout areas, galvanizing shall conform to Coating Designation G165.
2. The top support rail shall be 1-5/8” O.D. polyolefin coated standard weight, schedule 40 galvanized steel pipe, minimum yield strength of 30,000 psi, color-black.
3. Except as otherwise herein specified or as shown on the plans, fittings shall be of best quality, malleable iron castings, wrought iron forgings or pressed steel and shall be galvanized in accordance with ASTM Specifications A123. Malleable iron fittings shall be galvanized in accordance with ASTM A 338. All fittings shall be polyolefin coated coat black.
4. The U-Shaped fasteners shall be galvanized including bolts.

C. METHOD

1. The 1 5/8” O.D. transverse polyolefin steel toprail shall be spaced at five feet (5’) on center and fastened to top rail of the eight-foot (8’) high fence and ten-foot (10’) high intermediate rail of the twenty-foot (20’) high fence. The galvanized “1” decking shall be placed on top of the new frame and the sheets shall be overlapped to prevent leaks and secured to rails by galvanized U-Shaped fasteners and or galvanized sheet metal screws, and/or as directed by the Engineer.

D. METHOD OF MEASUREMENT

1. The quantity to be paid for under this Item shall be the number of each “Q” decking dugout roofs installed at the players’ dugout areas satisfactorily in accordance with the plans, specifications and/or as directed by the Engineer.

E. BASIS OF PAYMENT

1. The price bid per each roof over dugout installed shall include the cost of furnishing all labor, materials, equipment, fittings, tools and incidentals necessary to complete the work satisfactorily.

ITEM 508 – CHAIN LINK FENCE SAFETY CAP**A. DESCRIPTION**

Under this Item the Contractor shall furnish and install split sleeve tubing safety cap on top of outfield chain link fence where shown on the plans or as directed by the Engineer.

B. MATERIALS

The safety cap shall be 4 ½" diameter HDPW plastic tube with UV stabilizer. Color shall be bright yellow. The tubing shall be pre-slit. Sip ties shall be 100% virgin resin, no filler with UV stabilizer. As manufactured by Kodiak sports (877) 401-2298 and/or approved equal.

C. CONSTRUCTION DETAILS

The safety cap shall be installed on top of the outfield chain link fence. The cap shall be permanently attached to the chain link fence using zip ties spaced every four feet (4') and/or in accordance to the manufacturer's recommendations. Field joints shall overlap by twelve inches (12") and secured with zip tie.

D. METHOD OF MEASUREMENT

The quantity to be paid for under this Item shall be the number of linear feet, measured along axis of the cap in accordance with the Plans, specifications and as directed by the Engineer.

E. BASIS OF PAYMENT

The unit price bid per linear foot for this item shall include the cost of furnishing all labor, materials, equipment and incidentals necessary to complete the work.

ITEM 509 – FIVE ROW ALUMINUM BLEACHERS**A. DESCRIPTION**

Under this Item the Contractor shall furnish and install five (5) row bleacher with aisles as manufactured by National Recreation Systems, 1300-D Airport North Office Par, Fort Wayne, IN 46825 (888.568.9064) / sales@bleachers.net model No. NA-0515PRF-CL or approved equal all aluminum, non-elevated, welded angel frame bleachers as shown on the plans, and/or as directed by the Engineer.

B. MATERIALS

All aluminum non-elevated welded angle frame bleachers, 5 rows high × 2'-0", 15 foot length

1. First seat 17" above grade, 8" rise / 24" tread
2. 2 × 10 anodized seats
3. Double 2 × 10 mill finish footboards on all rows
4. 1 × 6 mill finish riser on all rows with a 2 × 10 mill finish riser last row only
5. 42" guiderail system consists of 2/ line rail with chain link fence on the back and 3/line rail with CLF on the sides to row 1
6. One 3'-0" wide and aisle with handrail

C. METHODS

In accordance with the manufacturer's specifications and as directed by the Engineer the bleachers shall be installed true and plumb.

D. METHOD OF MEASUREMENT

The quantity to be paid for under this Item will be the number of bleachers furnished and installed in accordance with the plans, specifications and directions of the Engineer.

E. BASIS OF PAYMENT

The price bid shall include the cost of furnishing all labor, materials, tools and equipment necessary to complete the work including but not limited to the bleachers and all hardware, all assembly accessories and disposal of excess material.

ITEM 510 – PLAYGROUND SIGNS WITH POST**A. DESCRIPTION**

Under this Item the Contractor shall furnish and install park signs and posts as shown on the plans and/or as directed by the Engineer.

B. MATERIALS

Signs shall be UV Screen-Printed on 0.80" (2mm) thick heavy-duty baked aluminum.

The 18" × 24" sign shall be white background with blue lettering wording to be provided.

Signs shall have rounded corners with pre-punched holes to insure hassle free installation.

Post shall be "U" type channel galvanized post, eight feet (8') in length, 3 ½" wide and 2 ½" lbs/ft.

All hexhead bolts, nuts and lock washers are to be galvanized and bolts and nuts vandal proof.

C. CONSTRUCTION DETAILS

The Contractor shall drive signpost 36" into the ground so that 60" remains above the ground. The post shall be driven plumb and a driving cap or another method will be used to prevent damage to the top of channel post.

The signpost shall not be placed directly over any existing underground utility lines.

D. METHOD OF MEASUREMENT

The quantity to be paid for under this item shall be the number of signs with posts furnished and installed in accordance with the plans and/or as directed by the Engineer.

E. BASIS OF PAYMENT

The unit price bid for this item shall include the cost of furnishing all labor, materials, equipment and incidentals necessary to complete the work.

ITEM 511 – REMOVAL AND RESETTING STORAGE CONTAINER**A. DESCRIPTION**

Under this Item the Contractor shall remove, store and reset existing storage containers where shown on the Plans and/or as directed by the Engineer.

B. MATERIALS

None

C. CONSTRUCTION DETAILS

The Contractor shall remove the existing storage containers and relocate them where shown on the Plans and/or as directed by the Engineer. The setting pad shall be level and compacted. The storage containers shall be set on jumbo concrete solid block placed at the corners and mid-section of the container and or 6" x 6" treated lumber as long as the width of the container.

D. METHOD OF MEASUREMENT

The quantity to be paid for under this Item shall be the number of each storage container removed and relocated in accordance with the Plans, specifications and /or as directed by the Engineer.

E. BASIS OF PAYMENT

The unit price bid for this Item shall include the cost of furnishing all labor, materials, equipment and incidentals necessary to complete the work, including storage, excavation, compaction of concrete jumbo solid blocks and/or treated lumber.

ITEM 512 – REMOVAL OF EXISTING GUIDE RAIL

A. DESCRIPTION

Under this Item the Contractor shall remove existing guide rail where and as shown on the plans and/or as ordered by the County's representative.

B. CONSTRUCTION DETAILS

The Contractor shall remove the existing guide rail, posts, bolts, nuts, washers and concrete bootings, etc. and deliver to a designated County maintenance garage or dispose of as ordered by the County's representative.

D. METHOD OF MEASUREMENT

The quantity to be paid for under this Item shall be the number of lineal feet measured prior to the removal of the existing guide rail.

E. BASIS OF PAYMENT

The price bid per lineal foot of removal shall include the cost of all labor, equipment, tools, storage delivery and/or disposal of the guide railing including the filling in of any voids.

ITEM 513 – WEAK POST CORRUGATED BEAM GUIDE RAIL**A. DESCRIPTION**

Under this Item the Contractor shall furnish and install weak steel post, galvanized steel beam guide railing or median barrier as shown on the Plans in accordance with the Specifications and/or as ordered by the County's representative.

B. MATERIALS**1. Beams, Posts, Sections and Accessory Hardware**

- a. Beams and terminal sections shall be fabricated as shown on the plans. When beams and terminal sections are galvanized by the hot-dip method in accordance with ASTM A124, they shall be blanked to the proper shape, fabricated and ready for assembly before galvanizing. No punching, drilling, cutting or welding will be permitted after galvanizing. Bolt holes in the beam at the post bolt and elsewhere as necessary shall be enlarged or slotted to permit expansion and contraction and to facilitate erection. The beams shall be straight unless otherwise required by the plans or specifications and of uniform section. The edges shall be rolled to eliminate sharp edges.
- b. Beams and terminal sections shall be made from 12 gauge or heavier sheet. Beams, terminal sections, SL and SH posts shall be rolled from new billet open hearth, electric furnace or basic oxygen steel. All connections or splices shall be made with flat, round-headed galvanized bolts and galvanized nuts conforming to ASTM Designation A307 and as shown on the plans.
- c. Strength – the minimum yield point and elongation of steel used in the manufacture of beam and terminal sections shall be 50,000 psi and 12% in 2" gage length respectively.
- d. Galvanizing
 - i. Beams and terminal sections shall be galvanized in accordance with ASTM A 123. Bolts, nuts and washers shall be galvanized in accordance with ASTM A 153.
 - As an alternative to ASTM 123 galvanizing beam guide rail and terminal sections may be galvanized by a process or system of continuous galvanizing substantially in conformance with ASTM A525 except the minimum check limits for the weight of coating as determined by the triple post and single spot tests shall be 4.0 and 3.0 ounces per square foot respectively (total amount both sides of sheet).
 - All the requirements for beam and terminal sections as stated herein shall apply to this continuous galvanizing method except sampling, shop inspection and test procedures shall be as directed by the Laboratory.

2. The posts shall be as detailed on the Standard Structure Sheet for guide railing.

- a. SL Posts shall conform to ASTM A 245, Grade C.
 - b. SH Posts shall conform to ASTM A36.
 - c. WF and I Beam Posts shall conform to ASTM A36.
 - d. The above posts shall be galvanized in accordance with ASTM A 123.
 - e. No posts shall be installed without the prior approval of the Engineer.
3. **Hardware** – All post connection bolts shall be in conformance with ASTM A 307 and details shown on the plans and shall be galvanized in accordance with ASTM A 153.
 4. **Certification** – When shop inspection is not provided, each shipment of guide rail to a project site shall be accompanied by a certificate of chemical analysis and physical tests for the heat of base metal used in fabricating beams, SL and SH posts and terminal sections as well as a certificate of compliance with the galvanizing requirements of this specification.

C. CONSTRUCTION DETAILS

1. **General** – Posts and railings shall be erected in the position and manner indicated on the Plans and NYSDOT Standard Sheets and in a manner approved by the County's representative.
2. Posts shall be driven unless otherwise specified by the County's representative. The driving shall be accomplished with approved equipment and methods that will leave the posts in their final position, free of any distortion, burring or other damage.
3. When posts are driven through asphalt concrete or a bituminous treated material, the Contractor shall take care to prevent damage to the paved or treated areas. Large holes and voids caused by driving the posts shall be filled and compacted with a bituminous treated material or asphalt concrete similar to that damaged. The small area adjacent to the post disturbed during installation or where gaps exist at the post after pavement repairs shall be sealed with bituminous material approved by the County's representative, at no cost to the County.

D. METHOD OF MEASUREMENT

1. The quantity of weak steel posts, galvanized steel beam guide railing to be paid for under this Item shall be the number of linear feet center to center of end posts furnished and installed in accordance with these specifications, the plans and the orders of the County's representative.
2. An allowance of 4 linear feet will be paid for each end terminal section.
3. Where curved beam type guide railing is specifically called for on the plans or ordered in writing by the County's representative and no special item for such curved beam type guide railing is included in the contract proposal, the quantity of guide railing to be paid for will be as described above plus an additional allowance of 33 -1/3% of the curved lengths measured along the horizontal center line of the "valley" of the beam. Curved Beam Type Guide Railing is defined

as that which will require shop working to attain the required curvature. Railing curved by springing in the field is not to be considered as Curved Beat Type Guide Railing.

E. BASIS OF PAYMENT

1. The unit price bid per linear foot shall include the cost of all labor, equipment and material necessary to complete the work, including all costs to attain the required curvature. Payment for guide rail shall include the unit price bid and the measured quantity multiplied by the payment factor for various typical post spacing and lengths listed below:

Payment Factors for Post Spacing		
Post Spacing	Post Length	Payment Factor
6'-3"	5'-6"	1.0
6'-3"	7'-0"	1.3
3'-1 1/2"	5'-6"	1.8
3'-1 1/2"	7'-0"	2.3
1'-6"	7'-0"	3.3

The unit price bid per linear foot shall include the cost of all labor, equipment and material necessary to properly complete the work including the inspection and testing information specified as well as excavating and backfilling, as necessary to satisfactorily complete the work.

ITEM 514 – PORTABLE PITCHER’S MOUND**A. DESCRIPTION**

1. Under this Item the Contractor shall furnish portable pitcher’s mounds of the type and number shown on the plans and as specified herein or as directed by the County.

B. SUBMITTALS

1. Submit 2 copies of the manufacturer’s shop drawings, instructions and maintenance procedures if applicable.

C. MATERIALS

1. The portable pitcher’s mound shall be Model No. BBPORTMD as manufactured by BSN Sports (1800-527-7510) with attached pitcher’s rubber, or approved equal.
2. Pitcher’s mound shall be approved for Little League sanctioned play.

D. INSTALLATION

1. Contractor shall deliver the portable pitcher’s mound, assembled, to a location designated by the County.

E. MEASUREMENT AND PAYMENT

1. The total quantity to be paid for under this Item shall be for furnishing assembled each portable pitcher’s mound and accepted in accordance with the plans and specifications.
2. The unit price bid for each to include, but not be limited to all labor, material, tools, supplies, equipment and incidentals to complete the work specified.

- ITEM 515-A – FURNISH AND INSTALL PLAYGROUND EQUIPMENT – LHOTSE WITH ROOF SKY**
ITEM 515-B – FURNISH AND INSTALL PLAYGROUND EQUIPMENT – TROUPER WITH ROOF SKY
ITEM 515-C – FURNISH AND INSTALL PLAYGROUND EQUIPMENT – OCEAN SEESAW
ITEM 515-D – FURNISH AND INSTALL PLAYGROUND EQUIPMENT – SPINNER BOWL

A. DESCRIPTION

Under this Item the Contractor shall furnish and install the following playground equipment in accordance with the plans, specifications and directions of the Engineer:

Lhotse with Roof Sky – Model No. PCE211932-0901
 Trouper with Roof Sky - Model No. PCE105932-0901
 Ocean Seesaw - Model No. M18701-01P
 Spinner Bowl - Model No. ELE400024-3717BL

As supplied by Kompan Inc, 605 W. Howard Lane, Suite 101, Austin, TX 78753 (1-800-426-9788) / contact@kompan.com / www.kompan.us. Sales Representative August Lehmuller (GusLeh@kompsan.com) and or approved equal.

The manufacturer and equipment specified herein is provided to establish the types of equipment, features and level of quality acceptable to the County and are not intended to be proprietary. The County is receptive to equipment determined to be an approved equal.

B. GENERAL REQUIREMENTS

All play equipment must meet the following requirements, guidelines and specifications.

- 1. American Society for Testing and Materials (ASTM F 1487-01) Standard Consumer Safety Performance Specifications for Playground Equipment for Public Use** – Verification that all equipment meets the ASTM F 1487-01 requirement is required for Owners/Architects review prior to approval of any play equipment. Verification submittals to be:
 - a. The International Play Equipment Manufacturers Association (PEMA)** – Third party certification program that validates manufacturer’s certification to ASTM F 1487. All individual play components that make up a composite structure must be certified by IPEMA. IPEMA certificate is required for Owners/Architects review prior to approval of any play equipment. Submission of detailed drawings with IPEMA Certification Seal and the following are stated below the seal: The play components identified on this plan are IPEMA certified. The use and layout of these components conform to the requirements of ASTM F 1487. Manufacturer’s membership in IPEMA does not constitute equipment certification and approval for use. Proposed equipment must meet the above criteria for review and approval.

OR

- b.** Submission of Engineering calculations and structural integrity tests as specified in ASTM F 1487-01, Section 12. Structural integrity 12.1 through 12.16.1. Alternatives to Testing for Structural Integrity: Instead of the tests in 12.3.1 through 12.5.2 it is acceptable that a

licensed Architect or a licensed Professional Engineer certify the integrity of the equipment if it were to be subjected to the aforementioned test loads. Certification by any Architect or Engineer employed by the submitting equipment manufacturer is prohibited. All submittals and certifications are to be by Independent or Third Party Architectural/Engineering firms licensed in the State of New York.

2. US Consumer Product Safety Commission – handbook for Playground Safety Publication No. 325.
3. Manufacturers of play equipment must be certified by the following:
 - a. ISO 9001 – Quality Standards for certifying manufacturers processes;
 - b. ISO 14001 - Standards for Environmental Protection and Natural Resource Preservation
 - c. Certifications of all ISO Standards are required and must be submitted for review by owner’s representative or Architect.
 - d. All playground equipment provided must be manufactured by companies who are currently ISO certified per the above standards. Both ISO 9001 and 14001 are required.
4. **The Americans with Disabilities Act (ADA)** – Current Americans with Disabilities Act Architectural Guidelines (ADAAG) as set forth in the Federal Register. All playground equipment both independent and composite structures shall meet the current standards as developed by the Federal Access Board. All manufacturers must provide certification that proposed equipment meet or exceed the ADAAG guidelines.

Manufacturers of play equipment must provide drawings that include the following:

- a. Manufacturers statement that proposed equipment conforms to the ADA Accessibility Guidelines (ADAAG);
- b. Breakdown of playground components certifying compliance to the ADAAG guidelines as follows:
 - i.* Total elevated play components
 - ii.* Total elevated components accessible by ramp as proposed
Total elevated components required
 - iii.* Total elevated components accessible by transfer as proposed
Total elevated components required
 - iv.* Total accessible ground level components as proposed
Total accessible ground level components required
5. **Recycled and Reclaimed Materials Requirements** – Play equipment materials and all components must meet or exceed the following recycled/reclaimed materials contents percentages. Manufacturers must provide written certification as to compliance to these requirements.

Material Used	Common Products Used	% Used	Recyclable	% Pre-Consumer	% Post-Consumer	Total Recycled
Aluminum	Playstructure Posts, Scoop Buckets, Steering Wheel, Sping Riders, Trackrides	100%	Yes	90-100%	0%	90-100%
Aluminum Die Castings	Post Caps, Clamps	100%	Yes	0%	90%	90%
Steel Tubing	PVC Coated Tubing, Vertical Ladders, Rollerslide Rollers	100%	Yes	20-30%	0-30%	20-30%
Steel Sheet & Plate	Decks, Ramps, Brackets, Flanges	100%	Yes	20-30%	0-30%	20-30%
Steel Wire	Wire Barriers, Wire Tunnels	100%	Yes	0%	100%	100%
Recycled Plastic	Plastic Benches, Peak Roof, PV Strip, Plastic Decks and Walls	90%	Yes	0%	100%	90%
Injection Molded Plastic	Bottom Post, Caps, Dowel Pins	100%	Yes	0%	100%	100%
Rotationally Molded Plastic	Slides, Roofs and Hoods	100%	Yes	0%	0%	0%
Compression Molded Plastic	Activity Panels, Handholds	100%	Yes	0%	0%	0%
Blow Molded Plastic	Timbers	100%	Yes	0%	0%	0%
Rubber	Rubber Tiles	83-94%	Yes	0%	100%	83-94%
Cardboard Boxes		99%	Yes	0-25%	0-25%	0-25%
Packaging Peanuts		100%	Biodegradable			

6. Maintenance Package – Manufacturers of play equipment must provide a Maintenance Package to the owner or owner’s representative as directed.

Maintenance package must include the following:

- a. Special tools required for maintenance of equipment
- b. Graffiti cleaner
- c. PVC repair kit
- d. Touch up paint

- e. Three ring binder to include detailed instructions for cleaning, preventative maintenance and repairs.
 - f. Inspection reports for specific play system.
 - g. Duplicate of original installation instructions and parts list.
7. **Substitutions** – All equipment manufacturers requesting approval of equivalent equipment for use on this project must submit all information and certifications as required and specified above FIVE DAYS prior to bid or due date for approval by Owner or Owner’s Representative. Submittal packages that do not include all the required information will be returned and will not be considered for use.

C. MATERIALS

1. All play equipment design and construction shall meet or exceed the Latest Rev. Requirements as published in the Handbook for Public Playground Safety for the US Consumer Product Safety Commission and ASTM Designation F1487 – latest rev., Standard Consumer Safety Performance Specification for Playground Equipment for Public Use. Play equipment design and construction shall also comply with the Guide to ADA Accessibility Guidelines for Play Areas, Final Ruling (ADA). Each Playground Equipment Manufacturer must be a member of the IPEMA, a third-party certification inspection organization that continually validates a manufacturer's compliance with CPSC guidelines and ASTM 1487, latest rev., or demonstrate that the standards and experience required for membership are possessed.

2. All concrete used for footing shall be Class A – 4,000 psi.

All steel posts, railing, support posts, slats shall be hot dip galvanized inside and outside with lead-free zinc. All post caps shall be UV-stabilized nylon (PA6).

All galvanized steel items shall be powder coated top finish.

All bolts, nuts and washers shall be hot dip galvanized and/or stainless steel devices.

Roofs shall be made of recyclable PE made from 33% post-consumer recycled materials with minimum wall thickness of 5 mm.

Sails shall be made of commercial 95 high-density PE knitted specially for sunshade structures. The sails are to be treated with UV stabilizers.

Slides shall be made of recyclable PE made from 33 post-consumer recycled materials.

Seesaw seats – platform and seats shall be made of HPL with a thickness of 17.8mm with non-skid surface texture.

All molded decks shall be made of 75% post-consumer waste PP material with non-skid pattern and textured surface.

All panels shall be 19mm Ecocore from 100% recycled material.

Colors to be selected by the County from manufacturer's standard colors.

D. INSTALLATION

1. All play equipment shall be installed by a Contractor, certified by the manufacturer, to install their play equipment. An inspector certified by the manufacturer shall provide written certification to the Owner that the equipment has been installed in accordance with the manufacturer's specifications. The Contractor shall provide documentation of the installer's certification and inspector's certificate prior to the installation of the play equipment.
2. The work under this Item shall be performed by a Contractor with experience erecting steel play equipment in accordance with ASTM 1487, latest rev. and CPSC guidelines.

If the general contractor lacks the experience, a subcontractor certified by the manufacturer shall be hired to perform the work. Final installation of the steel play equipment (concrete footings) shall not proceed until the Contractor has demonstrated to the satisfaction of the Engineer that the use zones and the no-encroachment zones comply with ASTM 1487 latest rev. and CPSC guidelines.

3. All tubular aluminum posts shall be set square and plumb in concrete footings as shown on the approved shop drawings to grade required assuring level installation of platform angle frames and rails. Footings shall have the top surface finished so as to provide sheet drainage away from uprights, level and free of surface fluctuations that could contribute to an uneven surface in overlying safety surfacing.
4. Equipment shall be assembled to configuration as shown on the approved shop drawings. All fastenings shall be made as shown on the drawings and shall be securely tightened with an impact and/or torque wrench (as per manufacturer's specifications). A manufacturer's applied high-strength Loctite #204 Dri-Lock patch adhesive or approved equal shall be applied prior to final tightening of nuts and bolts. The Contractor shall take precautions while trimming bolt projections to prevent metallic contamination (rust bloom) of the corrosion resistant bolts to the satisfaction of the Engineer. These precautions include the use of previously unused grinding wheels, and applying zinc rich paint on trimmed galvanized bolts. All work shall be done so that no hazardous projections or rust bloom shall be left in the finished work. All wood shall be smooth and without splinters in the final assembled equipment.
5. All work shall be done by skilled mechanics in a workmanlike manner.

E. METHOD OF MEASUREMENT

The quantity to be paid for under this Item shall be the number of each playground equipment furnished and installed in accordance with the plans, specifications and as directed by the Engineer.

Item 515-A	Lhotse with Roof Sky
Item 515-B	Trouper with Roof Sky
Item 515-C	Ocean Seesaw

Item 515-D Spinner Bowl

F. BASIS OF PAYMENT

The unit price bid for this Item shall include the cost of furnishing all labor, materials, equipment and incidentals necessary to complete the work including excavation, backfill, disposal of excess materials and concrete necessary to complete the work.

ITEM 516 – FURNISH AND INSTALL PARK BENCHES**A. DESCRIPTION**

Under this Item the Contractor shall furnish and install new park bench where shown on the plans and/or as directed by the Engineer.

B. MATERIALS

The six-foot (6') bench shall be Model Number 57-60 PL and/or approved equal as manufactured by DuMor Inc. 138 Industrial Circle, Mifflintown, PA 17059 / Phone: 800-598-4018 / Fax: (717) 436-9839 / email: sales@dumor.com / website: www.dumor.com

1. Materials:

- a. Supports shall be ASTM A48 Class 30 Cast Iron
- b. Seat Assembly – Recycled Plastic “PL”
 - i. Seat surface shall be manufactured from 2” × 3” nominal HDPE recycled plastic slats.
 - ii. Support straps shall be manufactured from ¼” × 1-1/2” ASTM A 36 Carbon steel flat bar and ¼” × 3” ASTM A36 carbon steel flat bar.
 - iii. Pipe brace shall be manufactured from 3/4” (11/16” O.D.) ASTM A500 Schedule 40 steel tubing.
 - iv. Seat brace shall be manufactured from 3/16” thick ASTM A36 steel plate.
- c. Intermediate Arm Rests (Optional) shall be manufactured from ASTM A 48 Class 30 Cast Iron.
- d. Stainless Steel Expansion Anchors (1/2” × 3 ¾”) to be provided
- e. Dimensions: 6’ bench recycled plastic, 74 ¼” long × 27 9/16” deep × 31 11/16” high
- f. Finish – Powder Coating
 - i. All parts are processed through an 8-stage iron phosphorous wash system.
 - ii. Parts are coated with a zinc-rich epoxy primer to an average of 4-5 mils.
 - iii. Parts are then finished with a top coat of TGIC Polyester powder to an average of 4-5 mils
 - iv. Powder is cured at the powder manufacturer’s specifications using a combination of infrared and convection heat for approximately 20 minutes.
 - v. Finished parts shall comply with the following ASTM for coating and coating method: ASTM-D-523, ASTM-D-3363, ASTM-D-1737, ASTM-D-3359, ASTM-D-2794, ASTM-B-117 AND ASTM-D-3451.
- g. Shop drawings will be required.
- h. Concrete pad shall be Class A Concrete and paid for under Item 27, Concrete Sidewalk.

C. CONSTRUCTION DETAILS

The new benches shall be installed where shown on the Plans and/or as directed by the County's Representative. The benches shall be anchored to new concrete pads as per manufacturer's recommendations

D. METHOD OF MEASUREMENT

The quantity to be paid for under this Item shall be the number of benches furnished and installed in accordance with the plans, specifications and/or as directed by the Town's Representative.

E. BASIS OF PAYMENT

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

New concrete pads shall be paid for under Item 27, Concrete Sidewalk.

ITEM 685 - W – EPOXY REFLECTORIZED PAVEMENT MARKINGS (WHITE)**ITEM 685 - B – EPOXY REFLECTORIZED PAVEMENT MARKINGS (BLUE)****ITEM 685 - B-S – EPOXY REFLECTORIZED PAVEMENT MARKINGS (SYMBOLS)****A. DESCRIPTION**

Furnish and apply epoxy reflectorized pavement markings at the thickness and patterns specified and at locations indicated on the Contract Documents or as ordered by the Engineer, and in conformance with the Manual of Uniform Traffic Control Devices (MUTCD). For the purposes of this specification, the pavement surface may also refer to a bridge deck surface.

B. MATERIALS

From the NYSDOT Standard Specifications, latest edition:

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

C. CONSTRUCTION DETAILS

1. **General** – Apply all pavement markings and patterns as shown on the Contract Documents and in accordance with the MUTCD. Do not apply long line markings over longitudinal pavement joints.
 - a. The Contractor shall supply the following equipment to the Engineer for use in inspecting the work:
 - i.* Surface thermometer capable of measuring pavement surface temperatures $\pm 1.0^{\circ}\text{F}$
 - ii.* Thermometer to measure ambient air temperature $\pm 1.0^{\circ}\text{F}$.
 - iii.* Humidity gauge.
 - b. Submit to the Engineer or their authorized representative the following before starting any pavement marking work:
 - i.* Schedule of operations.
 - ii.* At least seven (7) calendar days, prior to use, the epoxy paint manufacturer's written instructions for use including material mixing ratios and application temperatures.
 - c. The Contractor shall:
 - i.* Provide all necessary traffic control devices when required, in accordance with the MUTCD to maintain and protect traffic and to protect marking operations and the markings until thoroughly set.
 - ii.* When necessary, establish marking line points at 30 ft. intervals throughout the length of the pavement or as directed by the Engineer.
 - iii.* Apply pavement markings in the general direction of traffic. Striping against the direction of traffic flow if not allowed.

- iv.* After application, clean off and/or remove all tracking marks, spilled epoxy markings applied in unauthorized areas, to the satisfaction of the Engineer, at no additional cost to the County.

2. Epoxy Applying Equipment – At any time throughout the duration of the project, the Contractor shall provide free access to their epoxy applying equipment for inspection by the Engineer or their authorized representative.

a. Truck Mounted Mobile Applicator – Self-contained pavement marking machine, specifically designed to apply epoxy resin materials and reflective glass beads and/or optics in continuous and skip-line patterns and meeting the following requirements:

- i.* Be capable of installing a minimum of 100,000 linear feet of epoxy reflectorized pavement markings in an 8-hour day.
- ii.* Be capable of following a straight line and normal curves in true arc.
- iii.* Equipped with accessories to allow for the marking of legends, symbols, crosswalks and other special patterns.
- iv.* The applying equipment shall include the following features:
 - Individual tanks for the storage of Part A and Part B of the epoxy resin;
 - Individual tanks for the storage of various types of glass beads and/or retro-reflective optics (when required);
 - Heating equipment of sufficient capacity to maintain the individual epoxy resin components at the manufacturer’s recommended temperature for spray application.
 - Glass bead dispensing equipment with the capacity of applying beads at a minimum rate of 20 lbs/gal of epoxy resin composition. Additional bead dispenser for the simultaneous application of a second type of bead or retroreflective optic (when required).
 - Metering devices or pressure gauges on the proportioning pumps, positioned to be readily visible to the Engineer.
 - 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 C.5 “Application of Epoxy Reflectorized Pavement Markings.

b. Portable Applicator/Hand Application – The Engineer may approve the use of a portable applicator or hand application, in lieu of mobile truck mounted accessories for applying special markings only, provided such equipment can demonstrate satisfactory application of reflectorized epoxy markings in accordance with these specifications.

3. Atmospheric Conditions – Apply epoxy markings only during dry weather conditions and on dry pavement surfaces as well as the temperatures noted in Table below:

Minimum Temperature Requirements	
Pavement Surface Temperature	45°F
Ambient Temperature	45°F

- 4. Surface Preparation and Cleaning** – Prepare and clean the pavement and existing durable markings as specified below and to the satisfaction of the Engineer, without damaging the surface or any joints.

The area of surface cleaning for stripes shall be the width of the pavement marking +1-inch on each side. The area of surface preparation for special markings shall be sufficiently large to accommodate the new special marking, or to remove the existing, and shall be a minimum of 1-inch greater in limits than the new special marking.

Prepare areas to receive new pavement markings in accordance with §635 'Cleaning and Preparation of Pavement Surfaces for Pavement Markings' From the NYSDOT Standard Specifications, latest edition ,before final surface cleaning in the following situations:

- a. New PCC with curing compound** – Remove curing compounds from areas where new epoxy markings will be applied. After cleaning, there shall be no visible evidence of curing compound or sealer on the concrete.
- b. Existing pavement marking removal** – Total removal of existing pavement markings is required when specified, when there are 3 or more layers of pavement markings in place or as ordered by the Engineer. The surface shall be cleaned and prepared prior to pavement marking application in accordance with §635 'Cleaning and Preparation of Pavement Surfaces for Pavement Markings' From the NYSDOT Standard Specifications, latest edition.
- c. Other** - The Engineer determines the area is not sufficiently free of contamination, dirt and/or debris or temporary pavement markings (ex. Temporary tape) after standard surface preparation in this section.

Required cleaning and preparation of pavement surfaces according to §635 of the NYSDOT Standard Specifications, latest edition will be paid separately under §635 items from the NYSDOT Standard Specifications, latest edition.

The Contractor shall not leave the finished pavement surface in a pattern that will mislead or misdirect motorists.

The Contractor shall remove residue and debris and dispose of it in accordance with §107-10 Managing Surplus Material and Waste of the NYSDOT Standard Specifications, latest edition.

At the time of marking application, clean all surfaces and existing durable markings to be painted, so that the areas are free of oil, dirt, dust, grease, loose markings, beads and other foreign materials. Mechanically sweep, then vacuum or blow off the surface with compressed air to remove residue and debris. The compressed air blast shall be from a nozzle a maximum of 6-inches from the pavement surface at a minimum pressure of 75 psi. Include the cost of this operation in the bid price of the respective epoxy reflectorized pavement marking item.

- 5. Application of Epoxy Reflectorized Pavement Markings** – Apply epoxy reflectorized pavement markings at the width, thickness and pattern designated by the Contract Documents. Follow the additional application requirements for specific surfaces:

- a. **New PCC Surfaces** – Do not apply permanent epoxy pavement markings on new PCC surfaces until at least 30 days after placement, or such time as determined by the Engineer, to allow adequate cure of the PCC.
- b. **New Asphalt Surfaces** – Do not apply permanent epoxy pavement markings on new asphalt pavement surfaces until at least 14 days after placement.

Begin marking operations only after applicable surface preparation work is completed and the atmospheric conditions and pavement surface temperature are acceptable to the Engineer.

- c. Apply pavement markings using the following simultaneous operation:
 - i. The pavement surface is air-blasted to remove dirt and residue.
 - ii. The epoxy resin, mixed and heated in accordance with the manufacturer's recommendations, is uniformly hot sprayed onto the pavement surface to meet the minimum specified thickness.
 - iii. Glass beads are injected into, or dropped into, the liquid epoxy marking at a minimum rate of 20lbs/gal of epoxy resin.

6. **Defective Epoxy Pavement Markings** – The Engineer or their representative will carry out a daytime and nighttime inspection to determine areas of deficient application or damage.

The Contractor shall repair all epoxy reflectorized pavement markings determined by the Engineer to be defective and not in conformance with this specification.

Perform repairs to the satisfaction of the Engineer as follows:

- a. Insufficient film thickness and the line width; insufficient glass bead and/or optics coverage or inadequate glass bead and/or optics retention.
 - i. Prepare the surface of the defective epoxy marking by grinding or blast cleaning. No other cleaning methods will be allowed.
 - ii. Prepare the surface by removing a substantial amount of the reflective glass beads and leave a roughened epoxy marking surface. Immediately after surface preparation remove loose particles and foreign debris by brooming or blasting with compressed air.
 - iii. Restripe over the cleaned surface in accordance with the requirements of this specification and at the full thickness indicated on the Contract Documents.
- b. **Uncured or discolored epoxy:** insufficient bond (to pavement surface or existing durable marking)
 - i. **Uncured epoxy** – Applied material that fails to cure (dry) in accordance with requirements of §727-03 Epoxy Pavement Marking Paint of the NYSDOT Standard Specifications, latest edition; or applied material that fails to cure (dry) within a reasonable time period under actual field conditions; as defined by the Engineer.

- ii. **Discolored Epoxy** – Localized areas or patches of brown, grayish or black colored epoxy marking material. These areas often occur in a cyclic pattern and may not be readily visible until several days or weeks after markings have been applied.
- iii. **Repair Method** – Completely remove the defective epoxy markings and clean to the underlying pavement surface in accordance with the requirements of §635 Cleaning and Preparation of Pavement Surfaces for Pavement Markings, From the NYSDOT Standard Specifications, latest edition. Remove the defective area plus any adjacent epoxy pavement marking material extending three feet in any direction. After surface preparation work is complete, reapply the epoxy markings over the cleaned pavement surface in accordance with this specification.

Repair or replace any other defects not noted above but determined by the Engineer to need repair or replacement, as directed by and to the satisfaction of the Engineer.

D. METHOD OF MEASUREMENT

Pavement striping will be measured in linear feet along the centerline of the pavement stripe and will be based on a 4-inch wide stripe. Measurement for striping with a plan with greater or less than the basic 4-inch s shown on the plans or directed by the Engineer, will be made by the following method:

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

This includes stripes 6 inches and wider, such as hatch lines, crosswalk bars and stop bars.

Letters and symbols will be measured by each unit applied. A unit will consists of one letter or one symbol. Fore Example "SCHOOL" would be paid as six units. Double and triple headed arrows will be measured by a single unit, but the "X" in railroad grade crossing markings (MUTCD Figure 6B-7) will be measured by linear feet of 4-inch stripe.

E. 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, surface preparation and cleaning 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 635 pay items and are not included in this Item.

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

No additional payment will be made for the number of linear feet of gaps between dashed lines.

(On Construction firms letterhead)

Date Issued: _____

Dear Resident:

We are sorry to inconvenience you, but in order to proceed with construction for _____ we must close and/or limit your access to your driveway. As work progresses, you will be notified on a daily basis when and how your particular residence will be affected. We assure you that every effort will be made to minimize the impact to you relative to this construction.

Our current schedule calls for the project related work to be performed in your area during the week of _____. A copy of this letter with specific dates and time for this work will be delivered at least twenty-four (24) hours in advance in order that you will have sufficient opportunity to plan for accessibility to your vehicles.

If additional information is necessary, you may contact any of the representatives listed below.

Thank you for your patience.

Contractor	_____	Phone:	_____
Inspector	_____	Phone:	_____
Project Manager	_____	Phone:	_____

(On Construction firms letterhead)

Date Issued: _____

CONSTRUCTION NOTIFICATION
24 HOUR NOTICE

Date & Type of Construction: _____
How will residence be affected: _____
Approximate time of
Construction: _____

Driveway access (will) (will not) be permitted.