CITY OF FOSTER CITY

ADDENDUM NO. TWO (2) TO THE PROJECT DOCUMENTS

SYNTHETIC TURF RESURFACING PROJECT SEA CLOUD PARK S4 (CIP301-709)

BID SUBMITTAL DUE DATE: WEDNESDAY, April 26, 2023 (2:00 PM)

Notice is hereby given that the following revisions, additions, and/or deletions are hereby made a part of and incorporated into the project documents for the Synthetic Turf Resurfacing Project Sea Cloud Park (CIP 301-709).

Bidders shall acknowledge the receipt of this Addendum on the Bid Form (004115). Failure to do so may render Bidder's Bid non-responsive.

The following changes, additions or deletions shall be made to the following documents as indicated and shall be made a part thereof as if originally specified and/or shown. All other terms, conditions, drawings and specifications remain unchanged.

Construction Services Project Manual:

1 Specification Section 32 18 13 shall be **REPLACED** in its entirety due to the addition of some tables and clarity on the salvaging and cleaning of the existing infill materials. See Attached. New text is in red.

2 Specification Section 02 41 00 is **REPLACED** in its entirety due to the addition of some clarity on the salvaging of the existing infill materials and hauling of materials. See Attached. New / clarified text is in red.

Approved By: _____ 4/19/2023

Derek Schweigart — Date

Director of Parks and Recreation

ADDENDUM #2 ITEM

SECTION 32 18 13

SYNTHETIC TURF PLAYING FIELD

PART 1 GENERAL

1.01 SCOPE OF WORK

A. It shall be the responsibility of the successful turf contractor to provide all labor, materials, equipment, and tools necessary for the complete installation of a synthetic grass material. The system shall consist of, but not necessarily be limited to, the following:
   1. A complete synthetic grass system consisting of 2-inch tall dual fibers (consisting of a slit film and monofilament polyethylene fiber).
   2. A resilient infill system, consisting of salvaged and reused sand and SBR infill as specified in this section. The infill shall be supplemented as needed with new sand and rubber per the specifications so that there is a void of no greater than ¾" to the top of the fiber.
   3. A full warranty and maintenance service contract as outlined in the specification section.

B. Related sections can include, but may not be limited to:
   1. Section 02 41 00 - Site Clearing & Demolition

1.02 JOB CONDITIONS

A. Contractor shall be responsible for reviewing the base and ensuring it conforms to the project requirements prior to placement of the synthetic turf.

B. Playing field subgrade preparation shall be completed and accepted by the Owner Representative prior to commencement of Work under this Section.

1.03 REFERENCES

A. ASTM Standard Test Methods:
   1. D1335 - Standard Test Method for Tuft Bind of Pile Yarn Floor Coverings
   2. D1577 - Standard Test Method for Linear Density of Textile Fiber
   3. D2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering
   4. D4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity
   5. D5034 - Standard Test Method of Breaking Strength and Elongation of Textile Fabrics (Grab Test)
   6. D5848 - Standard Test Method for Mass per Unit Area of Pile Yarn Floor Covering
   7. F355 - Standard Test Method for Shock-Absorbing Properties of Playing Surfaces.
   8. F1015 - Standard Test Method for Relative Abrasiveness of Synthetic Turf Playing Surfaces.
   9. F1936 - Standard Test Method for Shock-Absorbing Properties of North American Football Field Playing Systems as Measured in the Field

1.04 TURF QUALIFICATIONS

A. The contractor shall be required to submit information from the synthetic turf installer and/or manufacturer as required in Section 01 33 00 that complies with the following:

1. The Turf Company / Contractor and/or the turf manufacturer must be experienced in **both** the manufacturing and installation of the specified type of synthetic infilled turf system for at least five (5) years and have at least two hundred (200) outdoor installations in California of the specified material of 50,000 sq. ft. or greater. One of these fields must be in play for at least eight years in California and has surpassed manufacturer's warranty period.
2. For the purpose of meeting these qualifications, the type of infill materials are not determining factors in meeting these installation qualifications.
3. The Turf Company must be an actual manufacturer of synthetic turf, not a reseller. Turf Company must own its manufacturing plant in the U.S. and be able to control its production 100%, including fiber extrusion, coating, lead time and quality control.
4. The foreman installing the synthetic turf must have installed at least twenty (20) fields in the last three (3) years of the specified material.
5. The Turf Company must provide competent workmen, skilled in this specific type of in-filled synthetic grass installation. 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 sewing seams and proper installation of the infill mixture. The manufacturer shall have a representative on site to certify the installation and warranty compliance.
6. The Turf Company must have certified crews and may not use outside, independent contractors for the installation.
7. The Turf Company must possess an active California D-12 Synthetic Products license in good standing, and have never had a license revoked.
8. The Turf Company must not have had a Surety or Bonding Company finish work on any contract within the last five (5) years.
9. The Turf Company must not have been disqualified or barred from performing work for any public entity or other contracting entity in the U.S.
10. Turf Company shall have a minimum $30,000,000 bonding capacity.
11. Turf Company must have a professional, full time maintenance service company with a minimum of 50 current maintenance contracts in place in the US.

1.05 SUBMITTALS

A. Submit two complete samples, a minimum of 12" x 12" in size, illustrating details of finished product. In addition, submit two loose samples (one foot squares) of the turf backing and tufted fibers and two sets of one quart samples of the following:
   1. Specified Sand Infill
   2. Specified non-SBR Infill

B. Submit manufacturer's installation instructions.

C. The turf manufacturer shall submit a project specific letter on the company letterhead certifying that the products of this section meet or exceed all specified requirements, and

state that the installer has complied with the qualifications above and is certified by the manufacturer to install this type of synthetic turf.

D. Submit Drawings for:
   1. Seaming plan.
   2. Installation details; edge detail, utility box detail, etc.
   3. Field Layout and Striping Plan (including field colors), including field line layouts (including colors), etc.
   4. The Turf Manufacturer shall submit color samples for approval for all color and/or line work, including final electronic versions of all field markings.

E. Certified copies of independent (third-party) laboratory reports on ASTM tests as follows:
   1. Pile Height, Face Width & Total Fabric Weight, ASTM D5848
   2. Primary & Secondary Backing Weights, ASTM D5848
   3. Tuft Bind, ASTM D1335
   4. Grab Tear Strength, ASTM D5034
   5. Water Permeability, ASTM D1551
   6. Flame Resistance, ASTM F1551
   7. Tuft Yarn Tensile Strength and Elongation, ASTM D2256

F. Submit a copy of the 8-year (minimum), prepaid, non-prorated, third-party insured warranty and insurance policy information.

G. Submit a list providing project name, date the field installation was approved, contact names and telephone numbers for each project that meets the experience requirements identified in 1.04-A.1 above.

1.06 WARRANTY

A. The Turf Company shall submit its Manufacturer's Warranty which guarantees the usability and playability of the synthetic turf system for its intended uses for a minimum eight (8) year period commencing with the date of Substantial Completion. The warranty coverage shall not be prorated nor limited to the amount of the usage.

B. The warranty submitted must have the following characteristics:
   1. A non-prorated, non-cancellable up-front pre-paid, third-party insured warranty. Warranty shall be covered by a third-party insurance policy, non-cancelable and pre-paid, and is in effect covering this installation, and underwritten by a Best “A” Rated (or better) Insurance Carrier listed in the A.M. Best Key Rating Guide.
   2. Insurance carrier must confirm that the policy is in force and premiums prepaid for entire warranty duration in full.
   3. The policy must include a minimum annual aggregate of $10,000,000 per year and be based on claims arising from fields installed and completed only during the policy year.
   4. The policy must provide full coverage for eight (8) years (minimum) from the date of Notice of Completion.
   5. The policy shall cover all costs associated with full field replacement with new equal or better turf material, including labor, materials, and any other costs to repair or replace the field.
   6. Owner shall not be responsible for any deductible.

7. Warranty shall have no restrictions on amount of use (provided type of use is per approved warranty language).
8. Must warrant materials and workmanship, and that the materials installed meet or exceed the product specifications, including general wear and damage caused from UV degradation.
9. Must have a provision to either make a cash refund or repair or replace such portions of the installed materials that are no longer serviceable to maintain a serviceable and playable surface.
10. Must be a warranty from a single source covering workmanship and all self-manufactured or procured materials.
11. Guarantee the availability of replacement material for the synthetic turf system installed for the full warranty period.
12. Turf must maintain an ASTM F355 G-Max of less than 160 for the life of the warranty.

1.07 MAINTENANCE SERVICE CONTRACT REQUIREMENTS

A. Turf Company shall provide two maintenance service visits per year of the 8 year minimum warranty (for a total of 16 visits). Each maintenance service visit shall include the following:
   1. One (1) SMG Sportchamp (or equivalent) grooming session including:
      (a) A general sweeping to remove foreign objects such as dirt, leaves, bird droppings, gum and other debris that may collect on the field surface.
      (b) A deep groom, sweep and rejuvenation to de-compact infill and in an effort to maintain appropriate G-Max levels.
      (c) The above two steps are intended to clean the infill from deleterious matter contaminating the infill material. All accumulated debris and contaminating material shall be off-hauled and disposed of in a legal manner by the Turf Company.
   2. Overall analysis and inspection of the field and its applicable systems, including fiber wear analysis, ultraviolet degradation, infill depth and consistency, infill migration, field edging attachments, sewn and glued seams, line verification and field inserts (inlays).
   3. As part of item #2 above, Turf Company shall address deficiencies identified, including adding of specified infill material to bring field to specified levels and minor repairs (sewing/adhesive failures, inlay separation, and general workmanship) as needed for issues found relating to the synthetic surface.
   4. Turf Company shall be responsible for the testing of the G-max levels of the installed synthetic turf at the completion of years one, two, four, six, and three months prior to the completion of year eight. If any of these tests do not fall within the G-max range as specified in this specification section, the Manufacturer will be required to modify the field composition to the sole satisfaction of the Owner so that it falls within the target G-max range. All costs associated with such work shall be borne solely by the Manufacturer and/or installer. Any failed test shall be retested to verify that the field meets the specifications. All testing shall be paid by the Manufacturer and/or installer. All testing shall be completed by an independent testing laboratory accredited for such tests, and shall be pre-approved by the Owner. All testing and analysis of findings shall be

completed by qualified persons utilizing the required techniques outlined in the ASTM F355 test standard.

PART 2 MATERIALS

2.01 INFILL SYNTHETIC TURF

A. The synthetic turf system shall meet the following **minimum testing requirements and parameters**. The City and its design professional shall be the final authority if any submitted product meets these product requirements, and it is the Contractor and Turf Company's sole responsibility to show and prove that the proposed turf product meets the following product requirements:

Standard	Property	Specification
N/A	Pile Yard type	UV-Resistant Polyethylene
N/A	Yarn Structure	Dual Fiber (Ridged Monofilament and Fibrillated Slit-Film)
ASTM D1577 (slit)	Fiber Denier	min.14,000 (mono) / 5,000
ASTM D3218	Tape Thickness (in microns)	> 225 (mono) / > 100 (slit)
ASTM D2256	Yarn Breaking Strength	min. 20 lbs
ASTM D5823	Pile Height	2.0"
ASTM D5793	Stitch Gauge	3/8" – ¾"
ASTM D5848	Pile Weight	min. 38 oz/square yard
ASTM D5848	Total Backing Weight	min. 21 oz/square yard
ASTM D5848	Total Weight (without infill)	min. 59 oz/square yard
ASTM D1335	Tuft Bind (Without Infill)	min. 9 lbs
ASTM D5034	Grab Tear (Width)	min. 200 lbs/force
ASTM D5034	Grab Tear (Length)	min. 200 lbs/force
ASTM D4491	Carpet Permeability	>40 inches/hour
ASTM F355A	Impact Attenuation (Gmax)	<160
	Infill Material Depth	1.25 inches (min.)

Note: All pitcher runways and batters boxes / catcher areas in the baseball / softball fields (as well as the add alternate bullpens) shall be high pile weight (minimum 60 ounce/SY) products (and shall have a low pile PE thatch zone), and shall be constructed of an industry standard velcro system. In addition, Turf Company shall provide a total of eight (8) batter's box replacement panels, four (4) catcher's box replacement panels, and six (6) pitcher's runway replacement panels, as part of the project turnover / project closeout.

B. All bidders must meet all of the qualifications, product specifications and warranty requirements. The turf product shall be one of the following (provided they meet the specification requirements) or approved equal:
   1. AstroTurf Rhino Blend. Contact is Dominic Berarducci, Ph: 559-612-9065.
   2. FieldTurf Vertex Prime. Contact is Andrew Rowley, Ph: 707-586-2066.
   3. Shaw Legion 2.0. Contact is Matt Cohen, Ph: 916-216-9883.

C. The turf product shall consist of two fibers, a monofilament fiber and a slit-film fiber. All fibers shall be low friction, UV stabilized fibers (in accordance with established

product standards as identified by the Synthetic Turf Council), and shall be specifically designed to virtually eliminate abrasion.

D. The fiber tufts shall be fanned or unfolded prior to installation, rolling or spiraling is not acceptable.

E. 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 heat-activated urethane to permanently lock the fiber tufts in place.

F. The carpet shall be delivered in 15-foot wide rolls. The perimeter white and yellow lines can be tufted into the individual sideline rolls. The rolls shall be of sufficient length to extend from sideline to sideline. Head seams, between the sidelines, will not be acceptable.

G. All field of play lines shall be inlaid or tufted as noted on the drawings.

H. Thread for sewing seams of turf shall be as recommended by the Synthetic Turf Manufacturer.

I. Glue for inlaying lines and markings shall be as recommended by the synthetic turf manufacturer. Seams between turf panels must be sewn. Inlaid markings may not be installed by means of cutting through the fabric and adhering the colored turf to a separate reinforcing tape or cloth. Rather, inlaid markings (that cannot be tufted into the fabric), shall be installed by means of shearing out the existing fiber and laying in a new piece of colored fabric into a bed of suitable "hot melt" adhesive placed directly on the original turf backing material. Systems that cut through the turf fabric for inlaid lines are not acceptable due to the fact that such a procedure shall weaken the structural integrity of the turf fabric backing.

J. Rubber shall be provided per product specifications and shall either be cryogenically processed or ambient SBR rubber. All rubber shall be a homogeneous color, to be determined, and uniform size, and shall be clean of any impurities or material other than approved rubber.

K. Sand shall be rounded silica sand and dust free. Coarse jagged sand will not be accepted. Sand shall consist of 65-80% of the total infill material as defined by weight. The sand shall have the following gradation:

Sieves (US Mesh Size)	**% Retained**
16	0
25	10-30
30	30-50
35	15-35
40	5-15
50	<5
70	<1

L. The Turf Company is responsible for determining the final actual quantities required to achieve the uniform infill depth of not less than 1.25-inches depth in total uniform thickness. Turf infill levels shall not vary more than 0.1-inches at any point within the field. The salvaged and re-used sand and SBR rubber shall be supplemented with a new base layer of clean specified sand and a new top layer of clean specified SBR rubber. Anticipated sand and SBR rubber weights per square foot are 3.5 and 2.5 pounds, respectively.

2.02 MANUFACTURED DRAINAGE / SHOCK PAD MATERIAL (for REPLACEMENT STOCK AS NEEDED)

A. Shall be Brock Gen1 PowerBase (PB2000b3). Contact is Dave Brown, Northern Calif. Brock Sales Manager, phone no. (530) 575-8976. Contractor is recommended to procure 7500 s.f. for replacement panels.

2.03 HEAVY METALS AND MATERIAL CONTENT

A. The Turf Company will conduct and submit product analysis with the project proposal. Analysis will be presented in the form of current, certified laboratory results using specified standards and processes. Turf Company shall also fill in attached Tables C & D with applicable lab results. For threshold limits, reference Tables A & B below.

Analytical Methodologies: Representative samples of the turf fibers, turf backing, and infill material shall be analyzed for total metals content and semi-volatile organic compounds (SVOCs), as well as select analyses for leachable metals concentrations.

1. Total Metals Analysis: *All samples* (fibers, infill, backing) shall be analyzed for the California Assessment Manual 17/Title 26 list of metals (CAM 17 metals). The submitted samples shall be prepared by the laboratory for analysis of total recoverable metals by USEPA method 3050B. The samples shall then be analyzed for total metals concentrations by USEPA method 6010B/7400.
2. Leachable Metals Analysis: *Infill samples only* shall be analyzed for leachability of selected metals using the California Waste Extraction Test (WET). All samples shall be analyzed by the WET for lead, zinc, and total chromium. For other constituents, if the detected concentrations from the total metals analysis above are greater than or equal to ten times the Soluble Threshold Limit Concentration (STLC) value, as shown on attached Table A in Specification Section 02450, the WET shall be conducted for those individual metals as well.
3. Analysis for SVOCs: *All samples* (fibers, infill, backing.) shall be analyzed for the SW-846 list of SVOCs. The submitted samples shall be prepared by the laboratory for analysis by USEPA method 3540 or 3550. The samples shall then be analyzed for SVOC concentrations by USEPA method 8270B or 8270C. Results shall at a minimum include data for aniline (CAS #62-53-3), phenol (108-95-2) and benzothiazole (95-16-9). Concentrations of SVOCs are to be provided for reference purposes only and are not being evaluated against any particular criteria.

Evaluation Criteria: The detected concentrations of lead, chromium, and zinc in the samples of the turf infill material shall not exceed the threshold values listed in Tables A & B, outlined below for total metals and leachable metals analyses. In no case, shall the total metal concentration of any metal equal or exceed the TTLC values. In addition, concentrations of metals detected in any leachate tests shall not exceed the STLC value (for threshold values, see California Code of Regulations, Title 22, Chapter 11, Article 3.)

TABLE A. Maximum levels of metals permitted for synthetic turf products – recycled styrene butadiene rubber (SBR) infill materials

Metal	Total metals analysis (mg/kg)	Leachable metals analysis (ug/L)
Chromium	750 i	50
Lead	50	2.5
Zinc	23,000 ii	250,000 iii

i. No total chromium value promulgated in ESLs; chromium III value indicated instead.
ii. California Human Health Screening Levels (CHHSLs) for soil for residential land use.
iii. Selected soluble threshold limit concentration (STLC).

TABLE C (to be completed by Turf Company)

Metal	Total metals analysis (mg/kg)	Leachable metals analysis (ug/L)
Chromium		
Lead		
Zinc		

TABLE B. Maximum levels of total metals permitted for synthetic turf products – fibers, underlayment, and backing

Metal	Total metals analysis (mg/kg)
Chromium	25
Lead	50

TABLE D (to be completed by Turf Company)

Metal	Total metals analysis (mg/kg)
Chromium	
Lead	

2.04 BROMINATED FLAME RETARDANTS

A. The Turf Company shall provide verification that brominated flame retardants have not been intentionally added in the manufacture of the turf fiber, backing, underlayment or infill materials. Verification can take the form of a signed letter from the manufacturer, or appropriate laboratory analyses of the product proving that levels of elemental bromine are lower than 1% by weight.

PART 3 EXECUTION

3.01 TURF INFILL SALVAGING AND CLEANING OPERATIONS

A. Contractor / Turf Company must remove all infill from the carpet and send the sand and rubber infill to an infill regeneration or similar facility to be cleaned.

B. Infill cleaning facility must separate all particle sizes (sand and rubber particles must be 99% separated) and use a minimum of a two-filter cleaning process.

C. Filtering process must include the following: Fluidized bed dryer, Gravity table, destoner unit, heated and filtered through a system with a minimum of 8000 CFM.

D. All infill that is being reused must be able to be weighed individually to insure proper quantities and weight for re-installation.

3.02 FIELD BASE PREPARATION AND ADJUSTMENTS

E. Contractor shall ensure that the existing perimeter field subdrain trenches beneath the existing drainage / shock pad product are free draining (minimum 50 inches per hour as tested by an acceptable hydraulic ASTM infiltration / permeability test).

F. Contractor is to fine grade and provide planarity of the existing rock base. Contractor is to exercise extreme care not to contaminate the existing subdrain trench drain rock trenches. Intent is just to smooth out any identified inconsistencies in the grade due to operations related to the removal of the old synthetic turf and prior to the re-installation of the drainage /shock pad and turf products. Once fine graded, the rock base shall be checked by the Contractor (under the observation of the Owner representative) by use of a string line method. A mason's line held taught between two workmen separated by a distance of approximately 100-125 feet, shall be placed directly on the finished surface, parallel to the direction of greatest slope. A third workman shall check for separations between the mason's line and the finished surface of the crushed rock. Areas of separation shall be outlined with marking paint and the depth of separation indicated. Entire finished surface shall be "walked" with mason's line in increments of approximately 3-6 feet. No deviation over the string line greater than ½" will be allowed, or 1/8" deviation over a ten foot long straightedge.

G. Once the planarity of the permeable rock base has been reviewed and accepted by the Owner, the Contractor shall re-install the drainage / shock pad product in strict compliance with the manufacturer installation instructions. Contractor to exercise extreme care in order to avoid disturbing the field rock base. Any new panels that are needed to replace compromised or damaged panels or pieces of the drainage / shock pad are to be provided at the Contractor's sole expense.

H. Contractor to take measures to ensure that the pad product is not exposed to the outdoor elements longer than the manufacturer's recommendations. Any product that exceeds this time duration shall be removed from the project site immediately and not used on the project.

I. All sections of the pad material shall be interlocked and/or connected to adjacent pieces of the pad material in strict conformance with the manufacturer's written recommendations.

3.03 INSTALLING THE SYNTHETIC TURF

A. The installation shall be performed in full compliance with the reviewed and accepted product submittal.

B. Only trained technicians, skilled in the installation of athletic caliber synthetic turf systems working under the direct supervision of the approved installer/manufacturer supervisors, shall undertake any cutting, sewing, gluing, shearing, topdressing or brushing operations.

C. The turf contractor shall strictly adhere to the installation procedures outlined in this section. Any variance from these requirements must be submitted to and accepted in writing, by the manufacturer's onsite representative, and submitted to the Owner, verifying that the changes do not, in any way, affect the warranty.

D. The Turf Company's installation foreman shall inspect and accept the field's base, including the permeable crushed rock and drain / shock pad installation. Turf Company shall provide documentation to that effect, prior to the installation of the synthetic grass system. The surface shall be clean as installation commences and shall be maintained in that condition throughout the process.

E. The carpet rolls are to be installed directly over the shock pad material. No equipment with loads greater than 35 pounds per square inch (35 psi) shall be allowed on the field. As required, Contractor is responsible for altering operations in order to adhere to this requirement. Contractor and synthetic turf installer shall strictly adhere to the written instructions provided by the shock pad manufacturer for installing turf on top of their product. Contractor shall always make sure that those vehicles that go on top of the shock pad are equipped with pneumatic (air-filled) tires, preferably turf tires. These tires are designed to spread loads and minimize damage to surface. Foam Filled or solid tires as well as tires with aggressive lug patterns should not be used on the Brock base, without synthetic turf installed. *If possible, use of an A-frame for unrolling of the synthetic turf is strongly recommended.*

F. Any cutouts in the synthetic turf shall be per plans. Coordinate all cutouts in turf with Owner's Representative before cutting turf for utility boxes or other structures.

G. The carpet rolls are to be installed directly over the properly prepared base. Extreme care should be taken to avoid disturbing the base, both in regard to compaction and planarity. It is suggested that a 2 - 5-ton static roller is on site and available to repair and properly compact any disturbed areas of the prepared base.

H. The full width rolls shall be laid out across the width of the field. Utilizing standard state of the art sewing procedures each roll shall be attached to the next. 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. GLUING OF ROLLS SHALL NOT BE ACCEPTABLE.

I. The synthetic turf field shall utilize sewn seams. Minimum gluing will only be permitted to repair problem areas, corner completions, and to cut in any inlaid lines as required by the specifications. Seams between turf panels must be sewn. Inlaid markings may not be installed by means of cutting through the fabric and adhering the colored turf to a separate reinforcing tape or cloth. Rather, inlaid markings (that cannot be tufted into the fabric), shall be installed by means of shearing out the existing green fiber and laying in a new

piece of colored fabric into a bed of suitable “hot melt” adhesive placed directly on the original turf backing material. Systems that cut through the turf fabric for inlaid lines are not acceptable due to the fact that such a procedure shall weaken the structural integrity of the turf fabric backing. All seams shall be sewn using double bagger stitches and polyester thread or adhered using seaming tape and high grade adhesive (per the manufacturer’s standard procedures). Seams shall be flat, tight, and permanent with no separation or fraying.

J. Contractor to install industrial strength industry-specific velcro systems for the high face-weight insert panels at the baseball and softball high wear areas as called out in item 2.01. These systems shall be durable and stable enough to not move under foot traffic, but be able to be pulled apart and have the bottom receiving Velcro connection remain intact and in place, so that one of the replacement turf panels can replace the worn turf panel.

K. Connections of the existing perimeter synthetic turf edges shall be completed by one of the following two methods:
   a. For existing perimeter concrete edges (with recessed edge), use the manufacturer-approved adhesive.
   b. For existing header boards, use industrial staples (min. depth embedment is one inch (1”) at maximum 4 inch (4”) on center staple spacing.

L. The new and re-used infill materials shall be applied in thin lifts. The turf shall be brushed as the mixture is applied. The infill material shall be installed to a depth as specified in this section. The mix shall be uniform and even in thickness to assure proper playing characteristics.

M. The infill materials shall be installed to fill the voids between the fibers and allow the fibers to remain vertical and non-directional. The infill shall be placed so that there is not more than a ¾” void to the top of the fibers.

N. At near Substantial Completion of the synthetic turf fields, the turf contractor shall test for shock absorbency. The turf contractor and/or manufacturer shall pay for an independent testing laboratory accredited for such tests (who shall be pre-approved by the Owner). All testing and analysis of findings shall be completed by qualified persons utilizing correct techniques. The laboratory shall provide the necessary testing data to the Owner that verifies the finished field meets or exceeds the required shock attenuation. The G-max range shall be between 80 and 160 for the life of the warranty, as determined by the ASTM F355A and F1936 test procedures. Any test results that do not meet the requirements of this specification or if any one test value is greater than ten percent (10%) greater in variance as specified in 3.03-G, then the Contractor’s field installer shall address the failed test area, be required to retest the entire field as stated above, and conform to these requirements prior to the issuance of the Certificate of Substantial Completion.

3.04 MAINTENANCE & WARRANTY

A. The turf installer and/or the turf manufacturer must provide the following prior to Final Acceptance and the Owner filing the Project Notice of Completion:

   1. The turf manufacturer shall provide the written warranty for the project per the minimum requirements identified in this specification section. Submit Manufacturer Warranty and ensure that forms have been completed in Owner's name and registered with Manufacturer and Insurance Carrier. Submit information confirming

that the third-party insurance policy, non-cancelable and pre-paid, is in effect covering this installation, and underwritten by a Best “A” Rated Insurance Carrier. Insurance carrier must confirm that the policy is in force and premiums paid.

2. The date of all warranties commence on the date the Owner’s governing body has formally accepted the project.
3. Three (3) copies of Maintenance Manuals, which will include all necessary instructions for the proper care and preventive maintenance of the turf system, including painting and markings.
4. Project Record Documents: Record actual locations of seams and other pertinent information.
5. Upon completion of the field installation, the turf installation contractor shall have some supervisory personnel provide a minimum three (3) hour field training seminar with the Owner on how to care for the field. At a minimum, seminar shall include a demonstration of how to care for the field, review the entire provided maintenance manual (including the proper procedure for removal of gum and other debris) and answer any questions.
6. Turf Company shall provide all high face weight velcro’d replacement panels as called out in item 2.01,

B. Turf Manufacturer shall be responsible for the testing of the G-max levels of the installed synthetic turf at the completion of years two, four, six, and three months prior to the completion of year eight.

1. If any of these tests do not fall within the G-max range as specified in this specification section, the Manufacturer will be required to modify the field composition to the sole satisfaction of the Owner so that it falls within the target G-max range.
2. All costs associated with such work shall be borne solely by the Manufacturer and/or installer.
3. Any failed test shall be retested to verify that the field meets the specifications.
4. All testing shall be paid by the Manufacturer and/or installer.
5. All testing shall be completed by an independent testing laboratory accredited for such tests, and shall be pre-approved by the Owner.
6. All testing and analysis of findings shall be completed by qualified persons utilizing the required techniques outlined in the ASTM F355 test standard.

C. Included in its bid, the Turf Company shall provide a comprehensive maintenance service contract for the duration of the manufacturer’s warranty, but not less than 8-years. The Turf company shall provide two maintenance visits per year for the entirety of the 8 year warranty as part of this proposal (for an entirely of 16 visits). Each maintenance service visit shall be scheduled at least 30 days in advance at the City’s request to allow for City program coordination and shall include the following:

5. One (1) SMG Sportchamp grooming session including:
   (d) A general sweeping to remove foreign objects such as dirt, leaves, bird droppings, gum and other debris that may collect on the field surface.
   (e) A deep groom, sweep and rejuvenation to de-compact infill and in an effort to maintain appropriate G-Max levels, as well as clean the infill from deleterious matter contaminating the infill material. All accumulated debris and contaminating material shall be off-hauled and disposed of in a legal manner by the Turf Company.

(f) Minor repairs (sewing/adhesive failures, inlay separation, and general workmanship) as needed shall be completed by the Turf Company for items found relating to the synthetic surface.

6. Overall analysis and inspection of the field and its applicable systems, including fiber wear analysis, ultraviolet degradation, infill depth and consistency, infill migration, field edging attachments, sewn and glued seams, line verification and field inserts (inlays).
7. Minor repairs (sewing/adhesive failures, inlay separation, and general workmanship) as needed, of items found relating to the synthetic surface.

END OF SECTION

ADDENDUM #2 ITEM

SECTION 02 41 00

SITE CLEARING AND DEMOLITION

PART 1 GENERAL

1.01 SUMMARY

A. Furnish all labor, materials, equipment, facilities, transportation, and services to complete all site clearing and demolition work plus all related activities as shown on the Drawings and/or specified herein.

B. Scope of work: The general extent of the site clearing and demolition work is shown on the Drawings and can include, but is not necessarily limited to the following:
   1. Demolition, removal, and disposal of existing synthetic turf.
   2. Salvaging, Stockpiling, and Cleaning of existing sand and SBR rubber infill material.

1.02 REFERENCES AND REGULATORY REQUIREMENTS

A. State of California Department of Transportation Standard Specifications, Current Edition

1.03 SUBMITTALS

A. Conform to requirements of Section 01 33 00 Submittals and/or applicable Division One and Division Two specifications, General Conditions, and Special Provisions.

B. Indicate the proposed time line for site clearing and demolition work on the project schedule.

1.04 QUALITY ASSURANCE

A. The Owner shall obtain and pay for all permits required in connection with this work.

B. Fees for the dumping of debris shall be paid for by the Contractor.

1.05 PROJECT CONDITIONS

A. Dust Control:
   1. The contractor shall, at all times, prevent the formation of airborne dust on and around the project site with the use of sprinkled water or other means acceptable to the Owner's representative. Non-compliance with proper dust control measures shall be grounds for issuance of "stop work" orders by the Owner's representative until such time as satisfactory measures are implemented.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION

3.01 EXAMINATION

A. Conform to Section 01 45 00 - Quality Control (as applicable).

B. Carefully identify limits of demolition.

C. Mark project areas as directed by the Owner's representative and as necessary to clearly identify the interface of items to be removed and items to be left in place intact.

3.02 PREPARATION

A. Protection:
   1. Make provisions and take necessary precautions to protect all existing items not designated for removal. Any existing item or area damaged during construction operations shall be replaced or repaired to an "as-was" or better condition at no additional cost to the project and subject to the acceptance of the Owner's representative.
   2. Erect barriers, fences, guard rails, enclosures, chutes, and shoring as necessary to protect personnel, structures, and utilities remaining intact.
   3. Provide warning signs and lighting as necessary for vehicular and personnel protection. Maintain warning signs during construction as required by applicable safety ordinances and as reasonably prudent.
   4. Coordinate arrangements for items to be salvaged and turned over to the Owner.
   5. Notify Underground Service Alert (USA), (800) 642-2444, and local utility companies to verify locations of existing utilities a minimum of 48 hours prior to beginning work.
   6. Provide tree protection fencing prior to any demolition work if applicable.

B. Traffic Access:
   1. Ensure minimum interference with roads, streets, driveways, sidewalk and adjacent facilities.
   2. Do not close or obstruct streets, sidewalk, alleys or passageways without acceptance from the Owner's representative.
   3. Provide approved alternate routes around closed or obstructed traffic ways as required by the Owner's representative.
   4. Maintain access to adjacent existing buildings to ensure uninterrupted operations during demolition work.

3.03 DEMOLITION

A. General:
   1. Refer to drawings for extent of demolition work.

3.04 SALVAGE

A. Demolition:

1. Materials or equipment to be demolished shall become the property of the Contractor except for items specified to be salvaged for the Owner.

B. Replacement:

1. In the event items not scheduled to be demolished are damaged, promptly replace or repair such items to an as-was or better condition per the discretion of the Owner's representative at no additional cost.

C. Existing Synthetic Turf Infill:

1. Contractor to carefully salvage the existing synthetic turf infill material (consisting of silica sand and SBR rubber.
2. Salvaged granular infill material is to be cleaned so that it is free of impurities, and Contractor is responsible for stockpiling or storing infill in a manner that will eliminate any contamination of the infill material, either by on -site debris, atmospheric conditions, or construction activities. Extreme care is to be taken so that no infill material migrates or enters on or off-site storm drainage infrastructure. Refer to Specification Section 32 18 13 for additional infill cleaning requirements.

3.05 CLEANING

A. Debris and Rubbish:

1. Remove and transport debris and rubbish as it accumulates and dispose in a legal manner via recognized haul routes in a manner that will prevent spillage on streets or adjacent areas.
2. Remove all tools, equipment and appliances used for demolition from the site upon completion of the work.
3. Clean entire project area, adjacent streets, and pavements to a broom-clean, "stain-free" condition per the discretion of the Owner's representative.

END OF SECTION