



# Department of Administrative Services

## Purchasing and Contracts

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Sabra Smith Newby, Chief Administrative Officer  
Adleen B. Stidhum, Purchasing Manager



### CLARK COUNTY, NEVADA BID NO. 604220-16 PLAYGROUND SAFETY SURFACING REPLACEMENT AT CESAR CHAVEZ PARK, JOE SHOONG PARK, LAURELWOOD PARK, AND PAUL MEYER PARK

October 6, 2016

#### ADDENDUM NO. 2

#### INVITATION TO BID

1. The bid opening date of October 6, 2016 at 2:15:00 p.m. **has been changed to October 13, 2016 at 2:15:00 p.m.**

#### SPECIFICATIONS

2. **Delete** Section 32 18 16.13 issued in Addendum No. 1, Playground Safety Surfacing System dated March 2016 and **Replace with** the attached **revised** Section 32 18 16 13 Playground Safety Surfacing System dated October 6, 2016.

#### DRAWINGS

3. **Delete** originally issued Sheet AS1.01 Site Demolition Plan for Cesar Chaves Park dated 3/7/2016, and **Replace** with the attached **revised** Sheet AS1.01 Site Demolition Plan for Cesar Chavez dated 10/3/16.

#### QUESTIONS AND ANSWERS

1. QUESTION –As per our conversation in regards to locations requiring Slurry and Sub base installed would be Paul Meyer Park? As it is our understanding that the slurry and sub base at the other locations meet the standard?

**ANSWER** – Refer to sheet GP-1 Excavation, Grading and ADA Safety Surfacing Notes #1 & #2 for all four (4) parks:

For Cesar Chavez Park: Refer to sheet AS1.01, specific demolition notes #8 and #16.

For Joe Shoong Park: Refer to sheet AS1.02, specific demolition note #16.

For Laurelwood Park: Refer to sheet AS1.03, specific demolition note #18.

For Paul Meyer Park: Refer to sheet AS1.04, specific demolition note #14.

2. QUESTION –We are requesting clarification on the following Items. What will the warranty period be 5 years as stated in A or 10 years as it is stated in C? The other question we have is how long must the certificate of Insurance that is mentioned in B must be in affect for? If it must also cover the warranty period what length of time will that be as well as will this be the limits per park or for the contract?

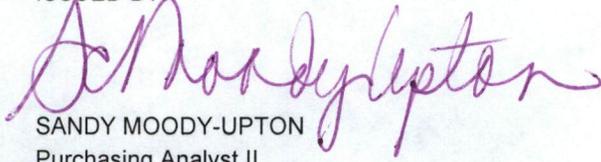
**ANSWER** – The warranty is for a period of 10 years. Revise specification Section 32 18 16.13, Article 1.8 Warranty under A to read" Poured in place surface shall maintain required impact attenuation characteristics and guaranteed against defects in workmanship and material for a limited ten (10) year period. Warranty will be specific to maintenance requirements and performance standards of completed product". The Certificate of insurance provided must be in effect for the duration of warranty for all four (4) parks.

#### BOARD OF COUNTY COMMISSIONERS

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DONALD G. BURNETTE, County Manager

Except as modified herein all other bid specifications, term and conditions and special conditions shall remain the same.

ISSUED BY:



SANDY MOODY-UPTON  
Purchasing Analyst II

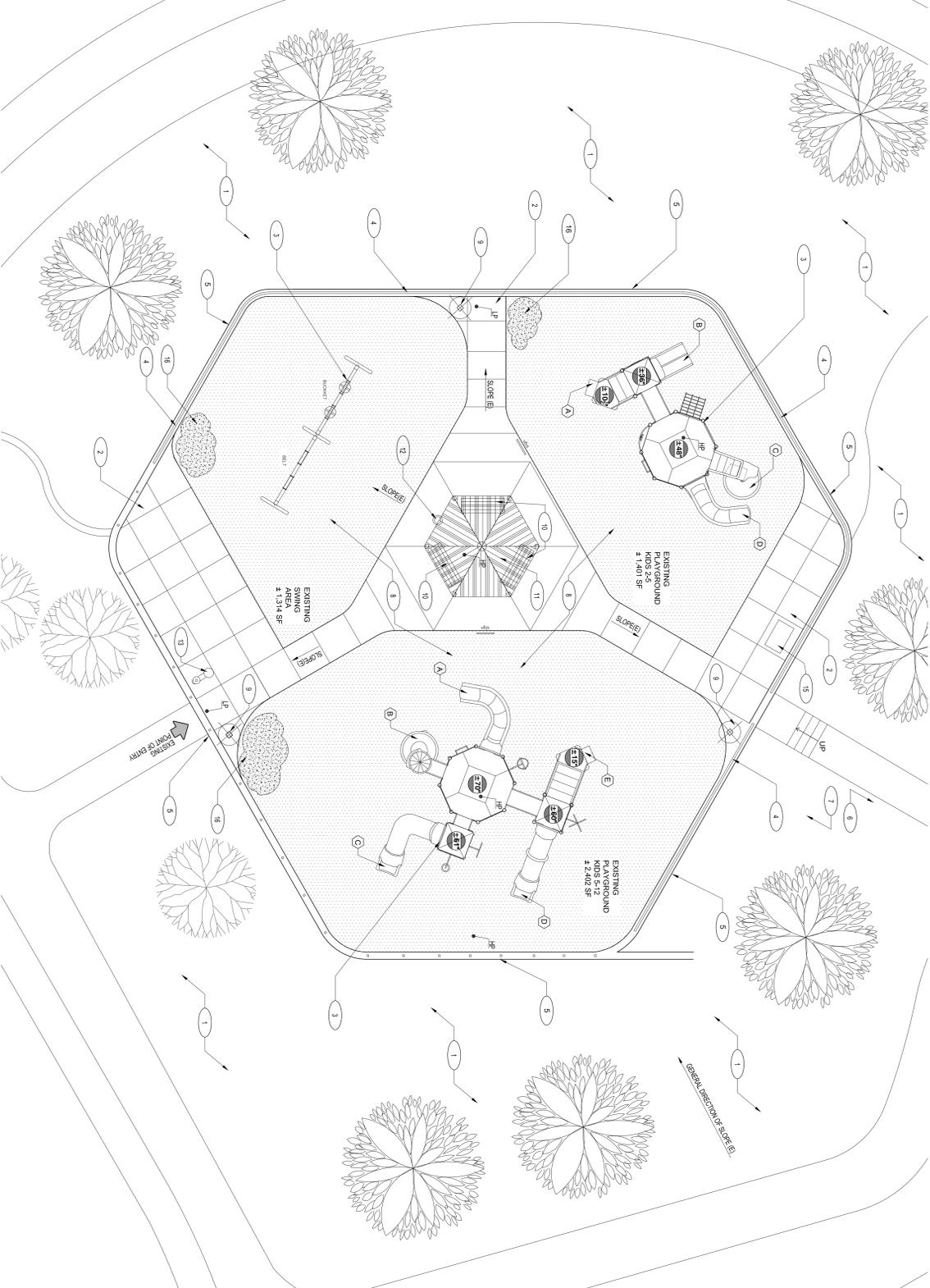
Attachment(s)    Revised Sheet AS1.01 dated 10/3/16  
                         Revised Section 32 18 16 13 Playground Safety Surfacing System dated 10/6/16

Cc:            Chuck James, Real Property Management  
                 Brian Connolly, Real Property Management  
                 John Advent, Real Property Management  
                 William Loeslein, Real Property Management  
                 Al Taghdir, [ali@taghdir.com](mailto:ali@taghdir.com)

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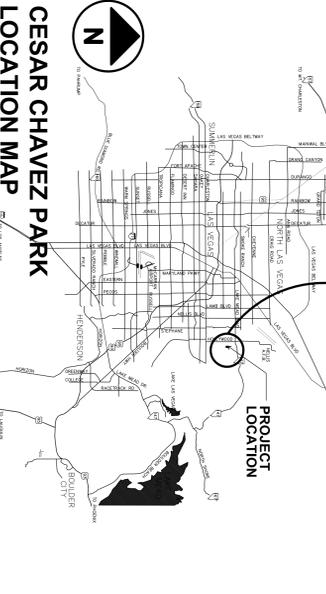
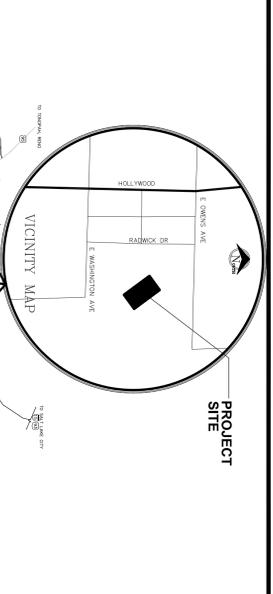
### GENERAL NOTES

- PLANS ARE BASED ON ARCHIVED DRAWINGS AND FIELD SURVEYS/OBSERVATIONS AND ARE TO BE USED FOR GENERAL REFERENCE ONLY.
- CONTRACTOR SHALL VISIT EACH SITE TO VERIFY SITE CONDITIONS, SUBMISSIONS INCLUDING ALL CONDITIONS THAT IMPACT THE WORK. NO EXTENSIVE SHALL BE ALLOWED FOR SITE CONDITIONS.
- COORDINATE WITH UTILITIES COMPANIES AND OWNER, COUNTY, PARKS AND RECREATION DEPARTMENT, AND NEIGHBORING COMMUNITIES REGARDING UTILITIES, LINES (POT HOLES) PRIOR TO ANY TRENCHING / GRADING & EXCAVATION.
- ALL UTILITIES SERVING ADJACENT FACILITIES THAT WOULD BE AFFECTED BY THIS PROJECT SHALL BE IDENTIFIED AND MAINTAINED TO MAINTAIN THE CONTINUOUS OPERATION OF THESE ADJACENT FACILITIES.
- COMPLY WITH APPLICABLE REGULATIONS, LAWS AND ORDINANCES CONCERNING REMOVAL, HANDLING, AND PROTECTION AGAINST HAZARDOUS MATERIALS AND SOLID WASTE DISPOSAL.
- CONTRACTOR SHALL REQUIRE THE WORK PERFORMED ON THE PROJECT SITE TO BE IN ACCORDANCE WITH THE STATE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION GUIDELINES.
- PROVIDE TEMPORARY BARRIERS TO PROTECT USERS, AND THE PUBLIC FROM DUST OR DEBRIS FOR PEDESTRIAN SAFETY.
- CONTRACTOR SHALL ENSURE ALL TRASH AND MATERIALS CREATED AS A RESULT OF DEMOLITION WORK SHALL BE DISPOSED OF LEGALLY OFF-SITE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ALL FINISHED GRADES INCLUDING ESTABLISHING SUBGRADE ELEVATIONS PRIOR TO INSTALLATION OF SUBGRADE BASE COURSE AND OF THE ADA SAFETY SURFACING. CONTRACTOR SHALL PROVIDE ALL NECESSARY ADA SAFETY STANDARDS, REFER TO SHEET GP-1 FOR EXCAVATION, GRADING AND ADA SAFETY SURFACING NOTES.
- CONTRACTOR SHALL BE RESPONSIBLE TO ESTABLISH AND COORDINATE CONSTRUCTION SITE ACCESS POINTS AND STAGING AREAS WITH CLARK COUNTY PARKS MAINTENANCE PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF TEMPORARY FENCING AND SIGNAGE DURING THE COURSE OF THE WORK.
- CONTRACTOR TO PROTECT EXPOSED EXCAVATIONS AND GRADING OPERATIONS FROM ACCUMULATION OF WATER. PROVIDE DRAINAGE CONTINUING WITH THE WORK.



**CESAR CHAVEZ PARK - SITE DEMOLITION PLAN**  
SCALE: 1/8" = 1'-0"

EXISTING SURFACING REMOVAL AREA: 745,117 SF  
**PROJECT NORTH**



### LEGEND

- EXISTING LANDSCAPE AREA TO REMAIN.
- EXISTING CONCRETE WALKWAY TO REMAIN.
- EXISTING PLAYGROUND EQUIPMENT (WIRACLE) TO REMAIN. PROTECT IN PLACE.
- EXISTING WROUGHT IRON FENCE TO REMAIN. PROTECT IN PLACE.
- EXISTING CONCRETE CURBING TO REMAIN. PROTECT IN PLACE.
- LOCATION OF TEMPORARY CHAIN LINK CONSTRUCTION FENCE TO BE ESTABLISHED BY CONTRACTOR ON OWNER'S APPROVAL.
- MONUMENT CONSTRUCTION SIGN INSIDE THE CHAIN LINK FENCE TO BE ESTABLISHED BY CONTRACTOR IN COORDINATION WITH THE OWNER.
- REMOVE SLABBASE AND GRASS AND SURFACING. COORDINATE DEPTH OF REMOVAL WITH NEW SURFACING AND SLABBASE REQUIREMENTS.
- EXISTING LIGHT POLE TO REMAIN. TYP. PROTECT IN PLACE.
- EXISTING METAL BENCH TO REMAIN. TYP. PROTECT IN PLACE.
- EXISTING METAL SCAMPY TO REMAIN. TYP. PROTECT IN PLACE.
- EXISTING TRASH CAN TO REMAIN. TYP. PROTECT IN PLACE.
- EXISTING DRINKING FOUNTAIN TO REMAIN. NOT USED.
- EXISTING CONC BENCH TO REMAIN.
- EXISTING CONC. SLURRY TO REMAIN. RUBBERIZED SURFACING TYP.

(E) FIELD CONDITIONS & ASSUMPTIONS			
LOCATION	AREA	FINISHED SURFACING THICKNESS	FALL ZONE
SWING SET	1,134 SF *	* 2 LAYERS OF 1.375"	6'-0"
2-6 YEARS OLD	1,140 SF *	* 2 LAYERS OF 1.25"	5'-0"
5-12 YEARS OLD	2,242 SF *	* 2 LAYERS OF 1.25"	6'-3"

\* NOTE: CONTRACTOR TO FIELD VERIFY AND COORDINATE WITH OWNER PRIOR TO BIDDING

<b>CLARK COUNTY</b> DEPARTMENT OF REAL PROPERTY MANAGEMENT ACQUISITION, DESIGN, & CONSTRUCTION DIVISION 500 S. GRAND CENTRAL PARKWAY Las Vegas, Nevada (702) 455-6731	<b>ATA ARCHITECTURE, LLC</b> 1615 SADDLE ROCK CIRCLE - LAS VEGAS, NEVADA 89117 TEL (702) 360-9764 FAX (702) 360-6426 WWW.TAGHDIR.COM E-MAIL: ai@taghdir.com ATA JOB NUMBER: 0607-2011	REVISIONS BY DATE BID SET 03/07/2016 ADDENDUM #1 10/03/16
		<b>COUNTYWIDE ADA PLAYGROUND SAFETY SURFACING</b> <b>CESAR CHAVEZ PARK</b> 1490 RADWICK DR LAS VEGAS, NV 89110 <b>SITE DEMOLITION PLAN</b>

**AS1.01**  
SHEET 3 OF 11

## SECTION 32 18 16.13

### PLAYGROUND SAFETY SURFACING SYSTEM

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Section includes: Safety surface for playground equipment including, but not limited to:
1. Poured-In-Place trowelable rubber surface over Portland cement concrete slurry base and Type II sub-base. Concrete base shall be sloped to drain holes, dictated by site conditions, as detailed on the drawings.
  2. Surfacing shall consist of a polyurethane resin-based post consumer recycled rubber shred material derived from recycled tires which will make up the cushion Layer. The Cushion layer is capped with EDM rubber granules mixed with a polyurethane binder creating the Wear Course.
  3. Provide a non-flammable, non-shrinking, one part moisture cured polyurethane adhesive as recommended by the manufacturer and capable of bonding to concrete or asphalt.
  4. Accessories required for a complete installation.
  5. The contractor shall provide full depth safety surface for the range of shapes, from conformal to full rectangle, as shown on the drawings.
- B. Related Sections:
1. Section 01 11 00 – Summary of Work
  2. Section 03 30 53 - Miscellaneous Cast-In-Place Concrete
  3. Section 31 20 11 – Earth Moving.

##### 1.2 SYSTEM PERFORMANCE REQUIREMENT

- A. Area Safety: Poured in place within playground equipment use zones shall meet or exceed the performance requirements of the CPSC, ADA and Fall Height test ASTM F 1292-04. The surface must yield both a peak deceleration of no more than 200-G-max and a Head Injury Criteria (HIC) value of no more than 1,000 for a head-first fall from the highest accessible portion of play equipment being installed as shown on the drawings, or 8'-0", whichever is greater.
- B. Accessibility: NOTE: Children's outdoor play area equipment is existing. Owner is responsible for the equipment to be in compliance with the Uniform Federal Accessibility Standards (UFAS) FED-STD-795 and the Architectural and Engineer Instructions ( 9AEI) Design Criteria and the requirements of the Americans with Disabilities Act Accessibility Guidelines (ADAAG) 28 CFR Part 36 that provide equal or greater accessibility than the requirements of UFAS must also be met in children's outdoor areas:
1. Safety surfaces intended to serve as accessible paths of travel, clear ground surfaces, for persons with disabilities shall be firm, stable and slip resistant, and shall meet the requirements of FED-STD-795, 39 CFR Part 36, ASTM F 1487, ASTM F 1951-08, and ASTM F 1292.04.

Contractor is responsible to install the Playground Protective Surfacing to comply with all equipment to finish grade height restrictions and accessibility routes and clear floor and ground space as required for Area Safety and Accessibility noted above.

- C. Poured in place surfaces shall be manufactured and installed by trained, experienced company employees and certified installers who have successfully completed the "Certified

Installers Training Program” of the specified manufacturer’s.

- D. Coefficient of Friction: ASTM Procedure E303.
- E. Permeability: Minimum 8 inches per hour of water flow through surface material.
- F. Impact Attenuation: ASTM F 1292 – 96( or most current edition) and ASTM F 355, Procedure 3
  - 1. Peak Deceleration: Maximum 200 G’s.
  - 2. Head Injury criteria (HIC): Maximum 1,000.
  - 3. Critical Fall Height: Minimum: **8 feet**.
  - 4. Critical Fall Height for Deck Heights at 8 feet and above’: **12 feet**.

### 1.3 QUALITY ASSURANCE

- A. Regulatory Requirements:
  - 1. Comply with applicable requirements for the American Disabilities Act Accessibility Guidelines (ADAAG) for Buildings and Facilities, 28 CFR Part 36.
  - 2. Comply with Consumer Product Safety Commission (CPSC), Public Playground Safety Handbook.
  - 3. Comply with Uniform Federal Accessibility Standards (UFAS) FED-STD-795 as applicable for installation of Playground Surfacing.
  - 4. Surface Burning Characteristics: Self extinguishing against fire; class A flame spread rating complying with ASTM E108.
  - 5. Comply with restrictions and requirements of NV Senate Bill 367, relating to diisocyanates.
- B. Manufacturer. Installer shall obtain surface materials from a single manufacturer.
- C. Manufacturer Qualification. Firm having minimum five years documented experience producing safety surfacing.
- D. Installer Qualification. Material shall be installed by a manufacturer’s trained and certified installation team that has the necessary insurance, bonding, and Nevada contractor’s license. Firm having minimum five years documented experience installing one of more of the pre-approved surfaces, over 5,000 square feet.
- E. Certification: safety surfaces shall be certified at the tie of bid by the International Playground Manufacturer’s Association (IPEMA), in the interest public playground Safety.

### 1.4 SUBMITTALS

- A. Product Data. Technical data, specifications, installation instructions, material safety data sheet (MSDS) and maintenance instruction of each grade level of surfacing. Two additional copies of MSDS’s will be submitted; one copy will be submitted to Clark County Parks Maintenance 30 days prior to start of work. The other will be submitted to Architect.
- B. Shop Drawings. Indicate location and size of each surface, detail of surface layout including depths of Wear Course and sub-base materials, seams, details and edge configuration, substrate, base conditions, and materials for each park. Indicate thickness of safety surfacing materials and location, type, footprint, and existing height of playground equipment installed in each installation.

- C. Samples. Two samples, 6" square indicating texture and color selected.
- D. Certification: Provide certification signed by Installer and Contractor stating safety surfacing complies with requirements of ASTM F 1292-04 for a head-first fall for the highest accessible portion of the existing playground equipment.
- E. A signed statement from the manufacturer of the poured in place surfacing attesting that all materials under this section shall be installed only by the Manufacturer's Trained Installers.(Verification of training using 5-1.5mm TPV product for a minimum of 1 yr required).
- F. Proof of Installer's qualifications and a list of references from installations in Nevada, California or Arizona in the last three (3) years including address and telephone number of point of contact. Previous installations shall total 40,000 square feet.
- G. Test Reports. Report from independent testing laboratory certifying compliance with ASTM F 1292-96(or most current edition) and ASTM F 355 Procedure 3 for critical heights described in paragraph 1.2 C3. All tests must have been performed within two years of the date of submission.

#### **1.5 DELIVERY**

- A. Delivery, Storage and Handling: Materials and equipment shall be delivered and stored in accordance with the manufacturer's recommendations.

#### **1.6 PROJECT CONDITIONS**

- A. Grade control. Establish and maintain required lines and elevations.
- B. Poured in Place surfacing must be installed on a d dry sub-surface, with no prospect of rain within the initial drying period, and within the recommended temperature range of the manufacturer. Installation in weather condition of extreme heat, cold (less than 55 degrees F) and/or high humidity may affect cure time, and the structural integrity of the final product.
- C. Immediate surrounding sites must be reasonably free of dust conditions or this could affect the final surface look. Contractor to provide temporary surface protection as required to maintain surrounding area from excess dirt and debris during installation to achieve final surface look.
- D. The manufacturer's installation manager shall reserve the right to control installation based on such factors without penalty to supplier.

#### **1.7 SEQUENCING AND SCHEDULING**

- A. Poured in place surfacing shall be installed after all existing surfaces and sub-base soils have been removed from the site and structure/footing for existing playground equipment and structures are exposed to view within the surfacing areas.

#### **1.8 WARRANTY**

- A. Poured in place surface shall maintain required impact attenuation characteristics and guaranteed against defects in workmanship and material for a limited ten (10) year period. Warranty will be specific to maintenance requirements and performance standards o completed product.
- B. A certificate of Insurance shall be provided for poured in place surfacing for use as

playground safety surfacing, covering both general and product liability of not less than \$1,000,000.00 for each occurrence, \$2,000,000.00 general aggregate. The issuing underwrite shall be A-VII or higher rated.

- C. Submit written agreement in manufacturer's standard form signed by Manufacturer, Installer, and General Contractor, agreeing to repair or replace surfacing defective due to workmanship or materials for 10 years from date of installation:
  - 1. No deterioration permitted from ultraviolet rays.
  - 2. No brittleness or loss of resiliency for minimum 2 years due to local conditions.
- D. Contractor's Responsibilities. Replace or repair surfacing using methods approved by the Owner.
  - 1. Provide source and cost information for materials to Owner's Maintenance Department.
  - 2. Provide instruction and training to Owner's Maintenance Department.
  - 3. Provide instruction and source of material for graffiti removal/covering to Owner's Maintenance Department.

## **PART 2 – PRODUCTS**

### **2.1 PRODUCT SCOPE**

- A. Safety Surfacing shall consist of an impact attenuating substrate and wear surface bonded to produce unified system.
- B. Safety Surfacing shall consist of uniform material manufactured in such a way that the top portion meets the requirements specified herein for war surface.
- C. The type of safety surfacing shall be poured-in place system and shall be located as indicated on the drawing. Contractor shall field verify with Architect prior to forming and placement.

### **2.2. MANUFACTURERS**

- A. Manufacturer. Safety surfacing shall consist of synthetic materials meeting the requirements of this specification. Provide products complying with requirements by one of the following or a pre-approved equal:
  - 1. "TotTurf", manufactured by Robertson Industries, Inc., 2146 West Sherman Street, Phoenix, Arizona, 85009-5911.
  - 2. "Pebble Flex", manufactured by Pebble Flex, Inc., 1<sup>st</sup> Field Street, 1399 Stimmel Road, Columbus, Ohio, 43223.
  - 3. "Playsafe", manufactured by Miracle Recreation Equipment Company, P.O. Box 420, Monett, Missouri, 65708.

### **2.3 PRODUCT REQUIREMENTS**

- A. Polyurethane Primer and Binder. Binder for safety surfacing shall be specifically designed for use with rubber granule material for outdoor installations.
  - A. Single component polyurethane pre-polymer formulated as a polymeric foam of Diphenylmethane 4, 4' Diisocyanate (MDI), Amber Viscosity cps, NCO content -9.0, Density – 20dc-68, PCF Flash Point -> 390dF, elongation-550%, Tensile – 3900

- lb./sq.in.
2. No Toluene Diphenyl Isocyanate (TDI) shall be used.
  3. No filler materials shall be used in urethane such as plasticizers and the catalyzing agent shall contain no heavy metals.
  4. Weight of polyurethane shall be no less than 8.5 lbs/gal (1.02 Kg/1) and no more than 9.5 lbs/gal (1.14 Kg/1).
  5. Manufacture is permitted to modify the type of urethane required to match extreme weather conditions. Substitutions must be equal to or exceed material specified in this document.

**B. Cushion (Impact) Layer:**

1. Impact Attenuating Cushion Layer: Substrate shall consist of shredded styrene butadiene rubber (SBR) adhered with a 100 percent solids polyurethane binder to form a resilient porous material.
2. Strands of SBR may vary from 0.5mm-2.0mm in thickness, by 3.0mm-20mm in length.
3. Foam or standard rubber granules are not to be permitted in cushion Layer.
4. Binder shall be not less than 14%, nor more than 16 percent, of the total weight of the rubber material, and shall provide a 100 percent coating of the particles.
5. The Cushion Layer shall be compatible with the Wear course and must meet requirements herein for impact attenuation.
6. The rubber shall be free of contamination by other material.
7. Thickness (material depth) shall meet or exceed manufacturer's requirements or specified critical fall heights.

**C. Wear Course / Cap Surface [Top Coat].**

1. Color: Cap surface color shall be: 50% black and 50% tan mix.
2. Wear course shall consist of Ethylene Propylene Diene Polymer (EPDM) particles adhered with polyurethane binder formulated to produce an even, uniform surface.
3. EPDM particles shall meet requirements of ASTM D 412 and CSA Z614-98 for tensile strength and elongation.
4. ASTM D2240 (Shore A) hardness of 55-65, not less than 26 percent rubber Hydrocarbons.
5. EDM shall be peroxide cured with an EPDM content of 26 percent and shall include a processing aid to prevent hardness with 26% poly content to maintain dynamic testing characteristics, weatherization and UV stability.
6. Sized of rubber particles shall not be less than 2 mm, not greater than 3.0 mm across. Binder shall not be less the 20 percent of total weight of rubber used in the wear surface, and shall provide 100 percent coating of the particles.
7. Thickness of Wear Course shall be a minimum ½ inch (12.7 mm) to 5/8 inch.
8. The Wear course shall be porous.

## **EXECUTION - PART 3**

### **3.1 SITE PREPARATION**

- A. Finishes Grade/Slope: Contractor is responsible for establishing and preparing all finished grades and slopes of the area. Prior to installation of surfacing, verify that finished elevations of base and sub-base surfaces are the appropriate sub-grade elevation for the particular safety surface to be installed and that the subsurface has been installed per drawings, while meeting accessibility and use zone requirements.
- B. Base Course [Concrete Slurry]: Tolerance of concrete base shall be within 1/8inch in 10 feet.

- C. Sub Base Course [Type II Drainage Course]: Tolerance of sub-base course shall be within 3/8 inch in 10 feet.
- D. Verify that aggregate sub-base has been fully compacted in 2" watered lifts to 95 percent of greater.
- E. Curing of Concrete Base Course: Verify that concrete base course has cured and that all concrete curing compounds and other deleterious substances that might adversely affect adhesion have been removed. Surface shall be clean and dry.
- F. Drainage: Verify that sub-surfacing drainage has been installed to provide positive drainage.
- G. Verify types of playground equipment installed with safety surfacing and thickness of surfacing complies with requirements for intended equipment.

### 3.2 ENVIRONMENTAL SAFETY

- A. The safety surface installer is required to have written emergency procedures and a spill containment/clean-up plan. A copy of these documents will be provided to Clark County Parks Maintenance 14 days prior to the start of construction and the contractor will have a set on the construction site.
- B. The Clark County Parks Maintenance shall be provided MSDSs and shall be notified not less than five (5) days prior to the application of safety surface.
- C. The construction site work area and placement area shall be fenced to minimize accidental exposure to chemicals.

### 3.3 INSTALLATION

- A. Install recessed Portland cement concrete pad in accordance with Section 03 30 53. Thickness as indicated on the drawings, and shall be a minimum of 4 inches unless noted otherwise. Minimum cure time: As recommended by safety surface manufacturer. Wherever practical, base course [concrete slurry] shall be installed in one continuous pour on the same day. When a second pour is required, fully coat the edge of the previous work with polyurethane binder to ensure 100 percent bond with new work. Apply adhesive in small quantities to that the new substrate can be placed before the adhesive dries.
- B. Poured in Place Surfacing: Components of the poured in place surfacing shall be mixed on site in a rotating tumbler to ensure components are thoroughly mixed and are in accordance with manufacturers recommendations. Installation of the surfacing shall be by a manufacturer's trained and Certified Crew only. It will be seamless up to 5,000 square feet per day and completely bonded to concrete of sub base. Material shall cover all foundations and fill around all elements penetrating the surface.
- C. Safety Surface. Comply with manufacturer's installation instructions. Thickness of entire area of full depth surfacing to comply with ASTM F 1292-92 or current for required critical height of playground equipment installation and these specifications:
  - 1. Cushion Layer / Impact Course.
    - a. Prior to placing the impact course, apply a 9" – 12" wide coat of urethane resin on the concrete around the perimeter of the pad.

- b. Whenever practical, pour recycled rubber mixture in one continuous pour on the same day up to 5,000 square feet. Place, screed and hand trowel for seamless application. When a second pour is required, step the seam, as indicated on the drawing details, and fully coat the step of the previous work with polyurethane binder to ensure 100 percent bond with new work. Apply adhesive in small quantities so that new cushion layer can be placed before the adhesive dries. Binder with a shelf life over one month shall not be used.
  - c. A primer coat shall be placed between the impact course and the cap surface.
2. Wear Course / Poured Cap:
- a.. Wearing surface must be of high quality peroxide cured EPDM rubber.
  - b. Wear surface shall be bonded to Cushion Layer.
  - c. Apply primer coat between impact course and the cap surface.
  - d. Apply adhesive to Cushion Layer in small quantities allow the Wear Course to be applied before adhesive dries.
  - f. Surface shall be hand toweled to a smooth, even finish.
  - g. Where Wear Course is composed of differing color patterns, pour shall be continuous and seamless up to 5000 square feet per day.
  - h. Where seams are required due to color change, size or adverse weather, a step configuration will be constructed to maintain Wear course integrity. The edge of initial pour shall be coated with adhesive and wearing surface mixture shall be immediately applied. Butt joint seams are not acceptable.
  - i. Where seams are required due to pad being greater than 5000 square feet, location of the Seam shall be installed as directed by the Owner.
  - j. Joint seams are not acceptable.
  - k. Minimum compacted thickness is 5/8 inch .
  - l. The cap for any single playground shall be started and completed in a single work day from a single batch of material. There will be no visible seam lines in the poured cap, unless approved by the Owner.
  - m. Safety surface shall not be applied if the ambient temperature is less than 45°F and/or if the surface is wet. If it starts to rain and/or the temperature drops below 45° operations will cease.
3. Perimeter / Surface Edge:
- a. For installation at existing perimeter edges, Refer to Drawings for detail. Primer adhesive shall be applied to all sides of edge detail and the inside vertical edge of the concrete curb or boarder.
  - b. The final 2" of the cushion layer shall be tapered to all the wear surface material to be 1.5"-2" thick where it joins the concrete edge.
  - c. Form edges flush with edge of adjacent area. Slope surface to drain as indicated on drawings.
  - d. Coordinate edge detail with sheet metal fabrication installation.
4. Thickness: Construction methods, such as the use of measured screeds or guides shall be employed to ensure that full depth of specified surfacing material is installed. Surfacing system thickness throughout the playground equipment use zone shall be as required to meet the impact attenuation requirements specified herein and comply with all applicable codes and regulations.
5. The contractor shall provide full depth safety surface under and around all playground equipment to a minimum distance of 6' in all directions and 2 times the height of swing pivots in both directions of the swing. The only exceptions to this will be shown and noted on the project drawings. Full depth slide exit distance must comply with current CPSC guidelines or 8', whichever is greater.
6. Protection. Surface installer shall be responsible for the protection of safety surface during the installation process. Contractor shall be responsible for the protection of the surface from all traffic during curing period following completion of the installation. The safety surface shall be allowed to fully cure in accordance with

- Manufacturer's instructions.
7. Safety surface at slide outlet to withstand repeated impacts.
  8. Contractor shall field verify exact dimensions and heights of play structure before installing safety surface to insure adequate coverage and to meet ASTM clearance for height. Coordinate work with safety surface manufacturer and installer. Contact Clark County Parks Maintenance if existing equipment is installed unlevel or un-plumb to the finish grades.
  9. The footprint for equipment as shown on the drawings may vary in size and general arrangement. Field verification is required.
  10. The horizontal area (outer edge) of full depth safety surface is governed by the equipment footprint.
  11. The full thickness of safety surface is determined by the manufacturer's testing criteria.
  12. Clean Up: Manufacturer's installers shall work to minimize excessive adhesive on adjacent surfaces or play equipment. Spills of excess adhesive shall be promptly cleaned.
  13. Manufacturer's Services: For poured in place safety surfacing, a manufacturer's representative which is experienced in the installation of playground safety surfacing shall be provided. The representative shall supervise the installation to ensure that the system meets the impact attenuation requirements as specified herein.

### **3.4 TOLERANCES**

- A. Flatness: Maximum variation of ¼ inch (6mm) measured with 10 foot (3m) straight edge.
- B. Scheduled Compacted Thickness: Within 1/8 inch (3mm).
- C. Variation from True Elevation: Within 1/8 inch (3mm).

### **3.5 THIRD PARTY INDEPENDENT HIC TESTING**

#### **PROJECT SAFETY SURFACING DESIGN CRITERIA AND COMPLIANCE STANDARDS REQUIRED**

- A. Installation shall comply with IPEMA H.I.C. and ADA standards at minimum, and further, shall be installed to a thickness as required to meet Clark County Requirements of an H.I.C. Fall Height of 8'-0" minimum (or as noted on plans for taller play equipment components).
- B. Contractor / Installer shall all required IPEMA and Industry Certification for all H.I.C. Fall Height compliances per specifications prior to start of work for approval.
- C. Upon completion of the work, the CONTRACTOR / INSTALLER shall provide final testing by an independent IPEMA "Certified" and State of Nevada licensed Safety Surfacing Testing Agency certifying that the installation meets or exceeds the H.I.C. criteria.
- D. All testing must be performed in the presence of the Owner's Representative. Failure to comply will result in having to retest at no additional cost to the Owner.

**END OF SECTION 32 18 16.13**