FB-26-09, PLAYGROUND ASPHALT AND PLAYGROUND EQUIPMENT REPLACEMENT PROJECT

RANCHO ROSAL ELEMENTARY SCHOOL
3535 VILLAGE AT THE PARK DR
CAMARILLO, CA 93012

GENERAL NOTES

1. AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE REGIONAL NOTIFICATION CENTER (UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA - U.S.A. AT 811) TO OBTAIN AN INQUIRY IDENTIFICATION NUMBER AND TO REQUEST THE UTILITY OWNERS TO MARK OR OTHERWISE INDICATE THE LOCATION OF THEIR SUBSURFACE FACILITIES. THE CONTRACTOR SHALL DETERMINE THE LOCATION AND DEPTH OF ALL UTILITIES, INCLUDING ALL SERVICE CONNECTIONS, WHICH HAVE BEEN MARKED BY THE RESPECTIVE OWNERS WHICH MAY AFFECT OR BE AFFECTED BY ITS OPERATIONS. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PROTECT ALL UTILITIES AND ALL STRUCTURES FOUND AT THE SITE.
2. THROUGHOUT ALL PHASES OF CONSTRUCTION, INCLUDING SUSPENSION OF WORK, UNTIL FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL KEEP THE WORK SITE CLEAN AND FREE FROM RUBBISH AND DEBRIS. THE CONTRACTOR SHALL ALSO ABATE DUST NUISANCE BY CLEANING, SWEEPING AND SPRINKLING WITH WATER AND USING DUST FENCES OR OTHER METHODS AS DIRECTED BY THE DISTRICT REPRESENTATIVE THROUGHOUT THE CONSTRUCTION OPERATION.
3. THE CONTRACTOR SHALL KEEP A STRICT RECORD OF ALL CHANGES AND SUBMIT THIS RECORD TO THE DISTRICT REPRESENTATIVE. "AS-BUILT" PLANS SHALL BE PROVIDED TO THE DISTRICT.
4. ALL DAMAGE CAUSED TO PUBLIC STREETS, INCLUDING HAUL ROUTES, ALLEYS, SIDEWALKS, CURBS OR STREET FURNISHINGS, OR TO PRIVATE PROPERTY SHALL BE REPAIRED AT THE SOLE EXPENSE OF THE CONTRACTOR TO THE DISTRICT REPRESENTATIVE'S SATISFACTION.
5. THE CONTRACTOR SHALL REMOVE AND REPLACE ANY EXISTING BROKEN OR DAMAGED SIDEWALK, CURB, AND GUTTER AS DIRECTED BY THE DISTRICT REPRESENTATIVE.
6. SAWCUTTING OF EXISTING PAVEMENT SHALL BE TO A CLEAN STRAIGHT EDGE AS DIRECTED BY THE DISTRICT REPRESENTATIVE.
7. ALL UNDERGROUND UTILITIES SHALL BE INSTALLED PRIOR TO CONSTRUCTION OF CURBS, GUTTERS, SIDEWALKS AND PAVEMENTS.
8. WHERE JOINING THE EXISTING PAVEMENT, SAWCUT TO SOUND PAVEMENT AND OVERLAY AS REQUIRED TO PROVIDE PROPER GRADE AND 2% CROSS-SLOPE. ANY UNSOUND PAVEMENT SHALL BE REPLACED.
9. ALL MANHOLE RIMS, LIDS, VALVE BOXES AND OTHER APPURTENANCES SHALL BE SET TO FINISH GRADE BY THE CONTRACTOR AS PART OF THIS PROJECT.
10. A PRECONSTRUCTION CONFERENCE OF ALL INTERESTED PARTIES SHALL BE HELD PRIOR TO ANY CONSTRUCTION OR GRADING TO ANSWER ANY QUESTIONS OR TO CLARIFY ANY PORTION OF THESE GRADING PLANS.
11. ALL RECOMMENDATIONS MADE BY THE SOILS ENGINEER CONTAINED IN THE REPORT BY GEOTECHNIQUES (PROJECT NO. 1025.008.02), DATED JANUARY 28, 2026, (INCLUDING ANY ADDENDA) SHALL BE A PART OF THIS GRADING PLAN.
12. ALL DELETERIOUS MATERIAL, SUCH AS LUMBER, LOGS, BRUSH, OR ANY OTHER ORGANIC MATERIALS OR RUBBISH, SHALL BE REMOVED FROM ALL AREAS TO RECEIVE COMPACTED FILL.
13. UNSUITABLE MATERIAL, SUCH AS TOP SOIL, WEATHERED BED ROCK, ETC., SHALL BE REMOVED AS REQUIRED BY THE SOILS ENGINEER FROM ALL AREAS TO RECEIVE COMPACTED FILL OR DRAINAGE STRUCTURES.
14. ALL AREAS TO RECEIVE COMPACTED FILL SHALL BE INSPECTED AND APPROVED BY THE SOILS ENGINEER AFTER REMOVAL OF UNSUITABLE MATERIAL AND EXCAVATION OF KEYWAYS AND BENCHES, AND PRIOR TO PLACEMENT OF SUBSURFACE DRAINAGE SYSTEMS OR ANY FILL.
15. ALL SOIL OR ROCK MATERIALS DEEMED UNSUITABLE FOR PLACEMENT IN COMPACTED FILL SHALL BE REMOVED FROM THE SITE. ANY MATERIAL SUCH AS CONCRETE OR IMPORTED MATERIALS SHALL BE APPROVED BY THE SOILS ENGINEER PRIOR TO USE IN COMPACTED FILL.

SURVEY NOTES

1. MAPPING

TOPOGRAPHIC MAPPING WAS COMPILED AT A SCALE OF 1"=10', WITH A 1 FOOT CONTOUR INTERVAL FROM DATA COLLECTED IN A FIELD SURVEY PERFORMED USING CONVENTIONAL EQUIPMENT AND PROCEDURES IN JULY, 2023, AT THE REQUEST OF PLEASANT VALLEY SCHOOL DISTRICT.

2. RECORD COMPILED BOUNDARY AND EASEMENTS

NO RESEARCH OR COMPILATION OF TITLE INFORMATION, RIGHT OF WAY, CENTERLINE, LOT LINES OR EASEMENTS HAVE BEEN REQUESTED NOR PROVIDED FOR THIS PROJECT.

3. BASIS OF BEARINGS AND COORDINATES

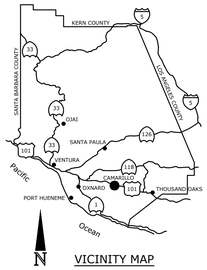
THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM NAD83, ZONE 5, EPOCH 2017.50 AS DETERMINED LOCALLY BY A LINE BETWEEN CONTINUOUS GLOBAL POSITIONING STATIONS (CGPS) AND/OR CONTINUOUS OPERATING REFERENCE STATIONS (CORS) CSCI & TOST BEING NORTH 65-12-26 EAST AS DERIVED FROM GEODETIC VALUES PUBLISHED BY THE CALIFORNIA SPATIAL REFERENCE CENTER (CSRC).

4. ELEVATIONS

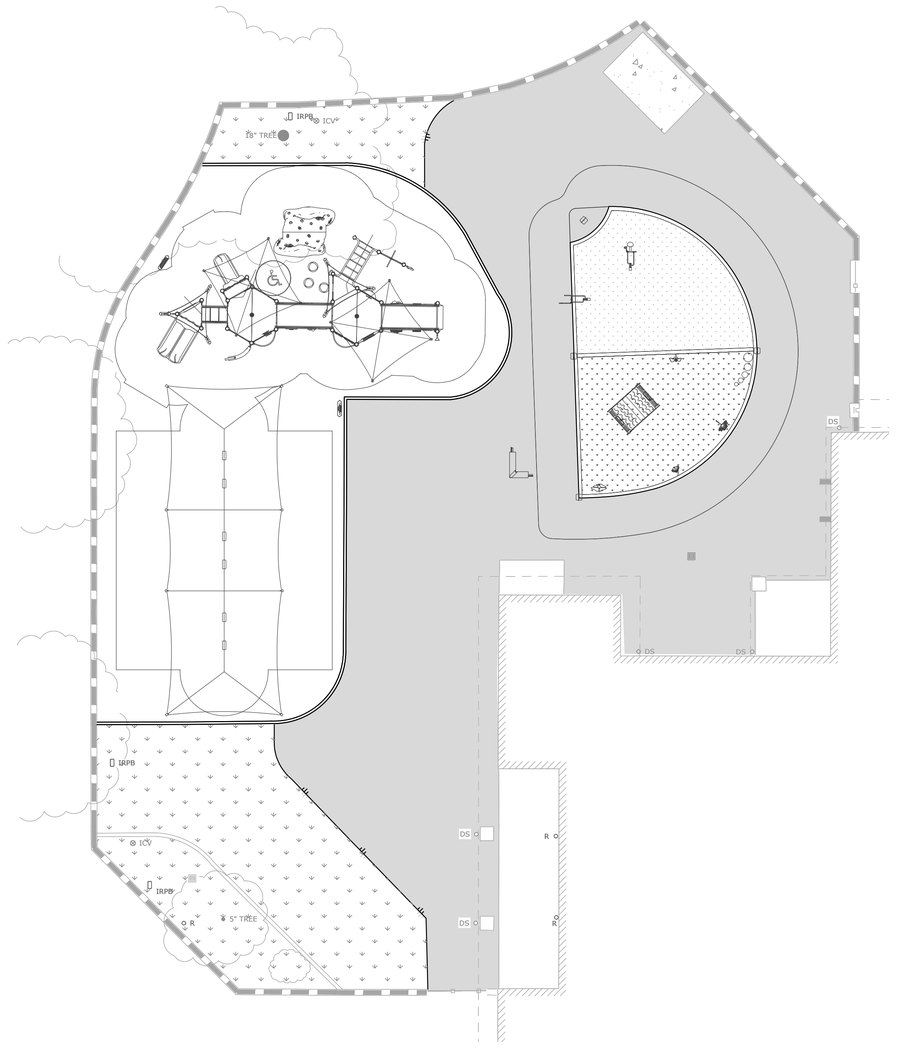
THE VERTICAL DATUM OF THIS SURVEY IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), PER GPS TIES & GEOID MODELING (GEOID12B) TO CGPS STATION TOST. ELLIPSOID HEIGHTS ARE CONSTRAINED PER CSRC. NO COUNTY BENCHMARKS WERE MEASURED IN THIS SURVEY.

5. UTILITIES

SURFACE UTILITY FEATURES SHOWN HEREON WERE LOCATED AS A PART OF THE FIELD SURVEY PERFORMED BY ECG BASED ON VISIBILITY ON THE DATE OF SURVEY. NO RESEARCH OR MAPPING OF SUBSURFACE UTILITIES HAS BEEN PERFORMED.



VICINITY MAP



KEY MAP
SCALE: 1"=10'

SHEET INDEX

SHEET NO.	DESCRIPTION
01	TITLE SHEET
02	DEMOLITION PLAN
03	PAVEMENT REPLACEMENT PLAN
04	DETAILS SHEET
05	PLAYGROUND DETAILS & SPECIFICATIONS
06	PLAYGROUND DETAILS & SPECIFICATIONS
07	PLAYGROUND DETAILS & SPECIFICATIONS
08	PLAYGROUND DETAILS & SPECIFICATIONS

EXISTING UTILITY NOTES

1. THE GENERAL CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT AND NOTIFY APPROPRIATE UTILITY AGENCIES TO VERIFY AND LOCATE ALL EXISTING UNDERGROUND UTILITIES BEFORE COMMENCING ANY EXCAVATION.
2. THE GENERAL CONTRACTOR SHALL POTHOLE TO LOCATE AND VERIFY ALL EXISTING UTILITIES, POINT OF CONNECTIONS, AND CROSSINGS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE DISTRICT REPRESENTATIVE.
3. THE LOCATIONS OF EXISTING AND NEW UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY; ALL UTILITIES MAY NOT BE SHOWN.
4. SOME IRRIGATION PIPING AND ELECTRICAL CONDUIT LOCATIONS AND SIZES ARE UNKNOWN AND NOT IDENTIFIED HEREON.
5. SUBSURFACE UTILITIES SHOWN HEREON HAVE BEEN COMPILED FROM RECORD INFORMATION GATHERED FROM VARIOUS SOURCES. THE SUBSURFACE INFORMATION, INCLUDING LOCATION, SIZES, AND CAPACITIES IS AN ESTIMATION BASED ON AVAILABLE DATA AND MAY NOT REPRESENT ACTUAL FIELD CONDITIONS. ENCOMPASS CONSULTANT GROUP DOES NOT WARRANT THE ACCURACY OF COMPLETENESS OF SAID RECORD INFORMATION.
6. THE CONTRACTOR, BY ACCEPTING THESE PLANS OR PROCEEDING WITH IMPROVEMENTS PURSUANT THERETO, UNDERSTANDS THAT THEY AGREE TO ASSUME LIABILITY, AND AGREE TO HOLD THE UNDERSIGNED HARMLESS FOR ANY LIABILITY FOR DAMAGE RESULTING FROM THE EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, NOT INDICATED ON THE RECORDS PROVIDED, LOCATED AT VARIANCE WITH THAT REPORTED OR SHOWN ON AVAILABLE RECORDS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING TO WORK.
7. THE CONTRACTOR SHALL MAINTAIN EXISTING UTILITY SERVICES TO BUILDINGS OR OTHER STRUCTURES INTENDED TO REMAIN IN OPERATIONAL SERVICE DURING THE COURSE OF CONSTRUCTION.



LOCATION MAP
N.T.S.

ABBREVIATIONS

PER SSPWC SECTION 1-3 AND SPPWC STANDARD PLAN 100-1 UNLESS OTHERWISE NOTED HEREON

A.C.	ASPHALT CONCRETE
ADA	AMERICANS WITH DISABILITIES ACT
ARCH.	ARCHITECT
BC	BEGIN CURVE
BCR	BEGIN CURB RETURN
BDY	BOUNDARY
BEG	BEGIN
BFP	BACKFLOW PREVENTER
BLDG	BUILDING
BOT	BOTTOM OF PIPE
BVC	BEGIN VERTICAL CURVE
BW	BOTTOM OF WALL
B/W	BETWEEN
CB	CATCH BASIN
CF	CURB FACE
CFS	CUBIC FEET PER SECOND
C.L. OR ℄	CENTERLINE
CL	CLASS
CLF	CHAIN LINK FENCE
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
DBL	DOUBLE
DI	DROP INLET
DIA	DIAMETER
DWG	DRAWING
EBAA	EBAA IRON, INC.
EC	END CURVE
ECR	END CURB RETURN
ELEC	ELECTRIC
ELEV	ELEVATION
E'LY	EASTERLY
EP	EDGE OF PAVEMENT
ESM'T	EASEMENT
EVC	END VERTICAL CURVE
FF	FINISH FLOOR
FG	FINISH GRADE
FL	FLOWLINE
FS	FINISH SURFACE
FT/S	FEET PER SECOND
FUT	FUTURE
GB	GRADE BREAK
GM	GAS METER
GV	GAS VALVE
HGL	HYDRAULIC GRADE LINE
HP	HIGH POINT
HW	HEADWALL
ICV	IRRIGATION CONTROL VALVE
INV	INVERT
IRR	IRRIGATION
LAT	LATERAL
LF	LINEAR FEET
LP	LOW POINT
LT	LEFT
MAX	MAXIMUM
MH	MANHOLE
MOC	MIDDLE OF CURVE
N'LY	NORTHERLY
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
O.C.	ON CURB OR ON CURVE
O/C	ON CENTER
OHW	OVERHEAD WIRE
PB	PULL BOX
P.C.C.	PORTLAND CEMENT CONCRETE PCC POINT OF COMPOUND CURVATURE
P.E.	POLYETHYLENE
PL	PROPERTY LINE
PMB	PROCESSED MISC. BASE
PRC	POINT OF REVERSE CURVATURE
PT	POINT
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
RCP	REINFORCED CONCRETE PIPE
RET	RETAINING
R.O.W.	RIGHT OF WAY
RT	RIGHT
RW	RECYCLED WATER
R/W	RIGHT OF WAY
SCE	SOUTHERN CALIFORNIA EDISON
SCO	SEWER CLEAN OUT
SD OR S.D.	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SDR	STANDARD DIMENSION RATIO
SHT	SHEET
S'LY	SOUTHERLY
SMH	SEWER MANHOLE
SPPWC	STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION
SS	SANITARY SEWER
SSPWC	STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION
STD	STANDARD
STRU	STRUCTURE
SW	SIDEWALK
TC	TOP OF CURB
TEL	TELEPHONE
TG	TOP OF GRATE
TI	TRAFFIC INDEX
TMH	TELEPHONE MANHOLE
TOE	TOE OF SLOPE
TOP	TOP OF SLOPE OR PIPE
TRANS	TRANSITION
TW	TOP OF WALL
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VAR	VARIES/VARIABLE
VLV	VALVE
W'LY	WESTERLY
WM	WATER METER
WSEL	WATER SURFACE ELEVATION
WV	WATER VALVE
YR	YEAR

811 Know what's below. Call before you dig.

BID SET DATE: 03-03-2026

REVISIONS

MARK	DATE	DESCRIPTION	BY

REVIEWED BY:
DATE
DATE

REGISTERED PROFESSIONAL ENGINEER — TRISTAN J. SANTOS — NO 71473 — CIVIL — STATE OF CALIFORNIA

ECG Encompass Consultant Group
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TRISTAN J. SANTOS DATE: 02/02/2026
PROJECT ENGINEER
R.C.E. 71473

FB-26-09, PLAYGROUND ASPHALT AND PLAYGROUND EQUIPMENT REPLACEMENT PROJECT
RANCHO ROSAL ELEMENTARY SCHOOL
TITLE SHEET
3535 VILLAGE AT THE PARK DR, CAMARILLO, CA 93012

SCALE: HORIZ. VERT.

WORK ORDER	0879
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SHEET NO. 1 OF 8

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GENERAL NOTES (DEMOLITION PLAN)

1. DEMOLITION SHALL CONSIST OF FURNISHING ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO REMOVE EXISTING STRUCTURES AND ALL OTHER OBJECTIONABLE MATERIAL FROM THE PROJECT SITE.

2. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THE REMOVAL OF MATERIAL FROM THE SITE AND ALL OBJECTIONABLE MATERIALS COVERED BY THESE PLANS. DISPOSAL OF MATERIALS SHALL BE DONE IN A SAFE AND LEGAL MANNER AND SHALL BE IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS. THE CONTRACTOR SHALL CONTINUOUSLY COORDINATE WITH THE DISTRICT'S REPRESENTATIVE TO SALVAGE, RELOCATE, AND/OR PROTECT ANY EXISTING ITEMS OR MATERIALS AS DIRECTED.

3. PRIOR TO COMMENCING DEMOLITION OPERATIONS, THE CONTRACTOR SHALL COORDINATE SEQUENCING OF WORK IN ADVANCE WITH THE DISTRICT'S REPRESENTATIVE.

4. THE CONTRACTOR SHALL CONTINUOUSLY CLEAN AND REMOVE DEMOLISHED MATERIALS FROM THE SITE EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE. DO NOT ALLOW MATERIALS TO ACCUMULATE ON SITE.

5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPLACE ANY ITEMS DAMAGED DURING THE DEMOLITION PROCESS THAT ARE INTENDED TO REMAIN AT NO ADDITIONAL COST TO THE OWNER.

6. THE CONTRACTOR SHALL THOROUGHLY REVIEW THE PLANS IN THEIR ENTIRETY PRIOR TO PROJECT DEMOLITION. PLAN DISCREPANCIES OR DEFICIENCIES SHALL BE REPORTED TO THE DISTRICT'S REPRESENTATIVE PRIOR TO COMMENCING WORK.

7. ALL EXISTING UTILITIES TO BE PROTECTED IN PLACE UNLESS OTHERWISE SHOWN. CONTRACTOR TO COORDINATE WITH ALL NECESSARY UTILITY COMPANIES.

8. REFER TO LANDSCAPE DRAWINGS FOR ANY REQUIRED PLANTING & IRRIGATION DEMOLITION AND TREE REMOVAL. ALL AREAS TO RECEIVE LANDSCAPING TO BE CLEARED, GRUBBED, AND REMOVE EXISTING IRRIGATION AS NECESSARY.

9. ADJUST EXISTING UTILITY LIDS, GRATES, COVERS TO FINISHED GRADE.

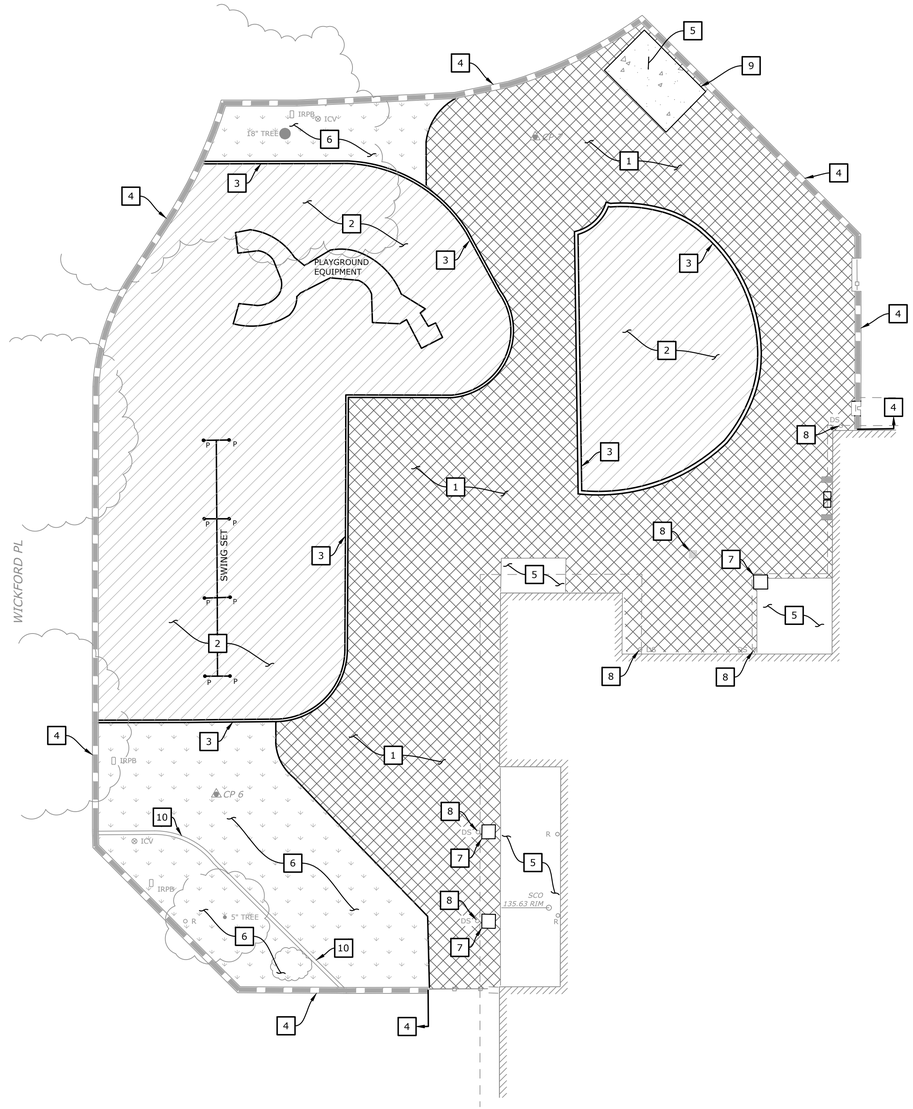
10. DEMOLITION SHALL BE CONDUCTED TO LIMITS SHOWN & AS REQUIRED FOR NEW WORK.

11. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT AND SUPPORT THE UTILITIES OR SUBSTRUCTURES FOUND AT THE SITE WHETHER OR NOT SHOWN ON THE PLANS OR EXPOSED BY CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK (72-HOURS NOTICE REQUIRED). PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT (USA) TOLL FREE AT 8-1-1. CONTRACTOR SHALL PROTECT ALL EXISTING PROPERTIES FROM DAMAGE. CONTRACTOR SHALL RESTORE ALL EXISTING SURFACE AND SUBSURFACE FACILITIES DISTURBED BY CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, TREES, LANDSCAPING, IRRIGATION, TRAILS, ASPHALT CONCRETE ROAD PAVING, CURB AND GUTTER, CROSS GUTTER, SIDEWALK, AND UTILITIES. POTHOLE EXISTING UTILITIES PRIOR TO CONSTRUCTION AND ADVISE DISTRICT'S REPRESENTATIVE OF CONFLICTS. CONTACT PURVEYORS OF UTILITY SYSTEMS SUCH AS ELECTRIC, TELEPHONE, CABLE TV, GAS OR OTHERS TO RELOCATE FACILITIES TO ALLOW FOR THE CONSTRUCTION SHOWN ON THESE PLANS. EXCEPT AS OTHERWISE SHOWN THE DEPTHS OF UTILITIES ARE NOT KNOWN.

12. UNLESS OTHERWISE NOTED ON DRAWINGS, ALL EXISTING WIRING, CONDUITS, JUNCTION BOXES AND OTHER ELECTRICAL DEVICES IN AREAS WHERE NEW WORK OCCURS SHALL BE REMOVED, EXCEPT WHEN SUCH DEVICES ARE REQUIRED TO MAINTAIN SERVICES TO OTHER AREAS, OR OTHERWISE NOTED. IN SUCH CASES, CONTRACTOR SHALL RELOCATE THESE DEVICES PER INSTRUCTIONS BY DISTRICT'S REPRESENTATIVE.

CAUTION: UNDERGROUND STRUCTURES

ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE DISTRICT OR THOSE SHOWN ON RECORDS EXAMINED ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND EXTENT. THE CONTRACTOR, BY ACCEPTING THESE PLANS OR PROCEEDING WITH IMPROVEMENTS PURSUANT THERETO, UNDERSTANDS THAT THEY AGREE TO ASSUME LIABILITY, AND AGREE TO HOLD THE UNDERSIGNED HARMLESS FOR ANY LIABILITY FOR DAMAGE RESULTING FROM THE EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, NOT INDICATED ON THE PUBLIC RECORDS EXAMINED, OR LOCATED AT VARIANCE WITH THAT REPORTED OR SHOWN ON RECORDS EXAMINED. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING TO WORK.



LEGEND

- ASPHALT CONCRETE PAVEMENT REMOVAL
- EXISTING PLAYGROUND DEMOLITION LIMITS
- EXISTING LANDSCAPE AREA
- EXISTING WALL (PROTECT IN PLACE)

DEMOLITION NOTES

1. EXISTING ASPHALT CONCRETE TO BE REMOVED.
2. EXISTING PLAYGROUND STRUCTURES AND APPURTENANCES TO BE REMOVED TO LIMITS SHOWN
3. EXISTING PLAYGROUND CURB TO BE REMOVED AND REPLACED.
4. EXISTING WALL TO BE PROTECTED IN PLACE.
5. EXISTING CONCRETE TO BE PROTECTED IN PLACE.
6. EXISTING LANDSCAPE AREA TO BE PROTECTED IN PLACE.
7. EXISTING COLULMN TO BE PROTECTED IN PLACE.
8. ADJUST EXISTING UTILITY TO PROPOSED FINISH SURFACE.
9. EXISTING SHED TO BE RELOCATED. COORDINATE WITH DISTRICT REPRESENTATIVE FOR LOCATION.
10. EXISTING CURB TO BE PROTECTED IN PLACE.

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SCALE: 1"=10'
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BID SET DATE: 03-03-2026

REVISIONS

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DATE

REGISTERED PROFESSIONAL ENGINEER — TRISTAN J. SANTOS — NO 71473 — CIVIL — STATE OF CALIFORNIA

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TRISTAN J. SANTOS DATE: 02/02/2026
PROJECT ENGINEER
R.C.E. 71473

FB-26-09, PLAYGROUND ASPHALT AND PLAYGROUND EQUIPMENT REPLACEMENT PROJECT
RANCHO ROSAL ELEMENTARY SCHOOL
DEMOLITION PLAN
3535 VILLAGE AT THE PARK DR, CAMARILLO, CA 93012

SCALE: HORIZ. 1" = 10' VERT.

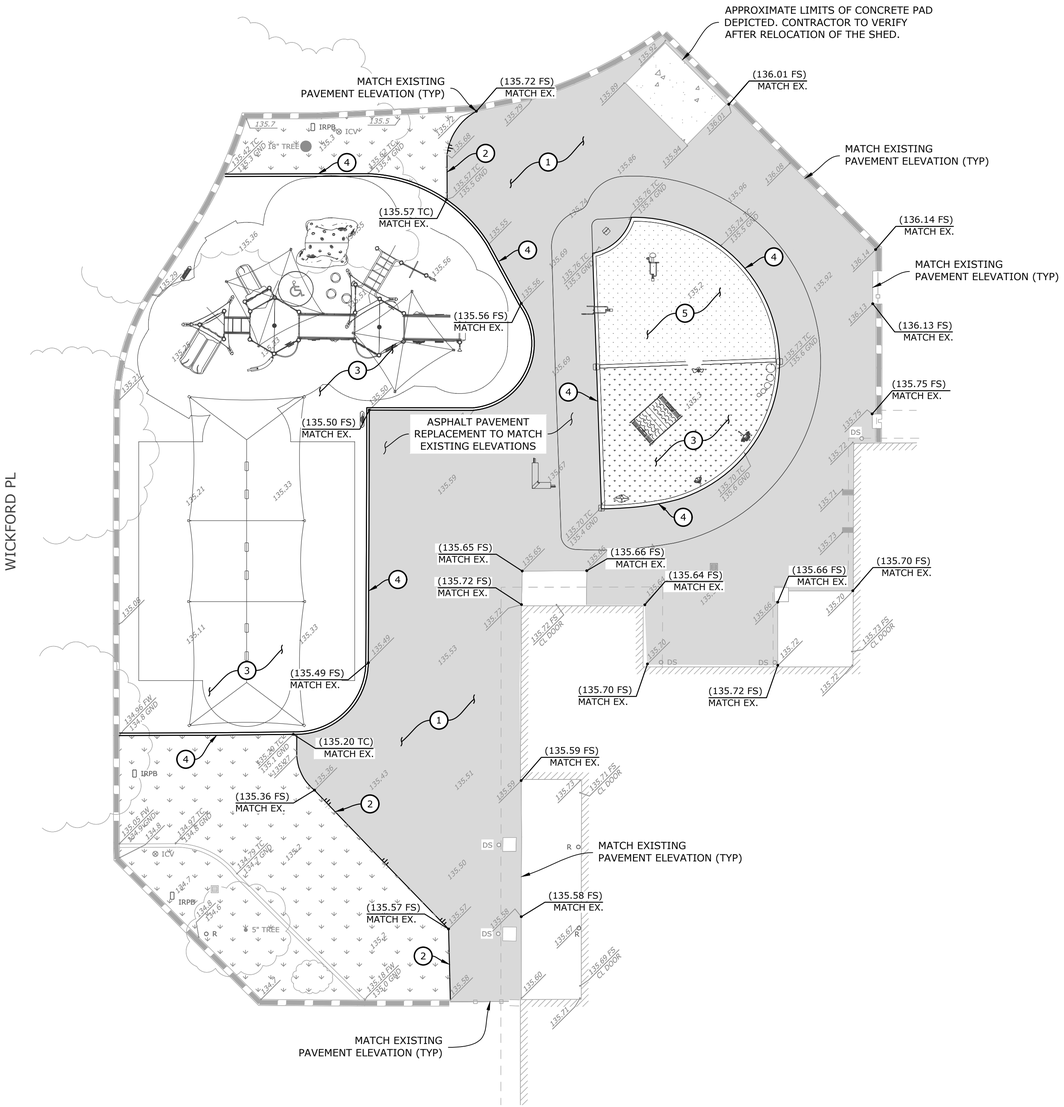
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GENERAL GRADING AND PAVING NOTES

1. REMOVE EXISTING ASPHALT CONCRETE PAVEMENT WITHIN MARKED AREA. IF REQUIRED, SAW CUT WITH CLEAN STRAIGHT EDGES. KEY CUT ASPHALT CONCRETE EDGES TO A DEPTH OF 1½ TO 2 INCHES AND WIDTH OF 18 INCHES INTO ADJACENT ASPHALT CONCRETE PAVEMENT. COMPACT UPPER 8 INCHES BELOW PAVEMENT SECTION SUBGRADE TO A DISTANCE OF 1 FOOT BEYOND PERIMETER WHERE ALLOWABLE TO A MINIMUM OF 95% OF MAXIMUM DRY DENSITY.
2. SUBGRADE AND COMPACTED AGGREGATE BASE COURSE SHALL BE FIRM AND UNYIELDING WHEN PROOF-ROLLED WITH A FULL WATER TRUCK.
3. WITHOUT DRIVING DIRECTLY ON GEOTEXTILE, PLACE AND COMPACT AGGREGATE BASE TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY.
4. PROTECT EXISTING UTILITY STRUCTURES AND CONCRETE IMPROVEMENTS IN PLACE, ADJUST EXISTING UTILITY LIDS, COVERS, AND OTHER APPURTENANCES TO MATCH FINISH GRADE.
5. PROTECT EXISTING PAVEMENT FROM DISTRESS FROM CONSTRUCTION TRAFFIC. REPLACE DAMAGED CONCRETE AND ASPHALT PAVEMENT NOT IDENTIFIED FOR DEMOLITION.
6. CONTRACTOR TO VERIFY PAVEMENT AREAS AND LOCATIONS OF EXISTING UTILITIES.
7. CONTRACTOR TO MEMORIALIZE EXISTING PAVEMENT MARKINGS AT PLAYGROUND AREA.
8. CONTRACTOR TO MATCH FINISHED GRADES TO ADJACENT EXISTING IMPROVEMENTS.
9. APPLY TACK COAT TO ALL CONCRETE FACES/SURFACES JUST PRIOR TO AC LAY-DOWN.
10. CONTRACTOR TO EFFECT POSITIVE DRAINAGE ON ALL NEW PAVEMENT SURFACES. DRAINAGE ON NEW PAVEMENT SURFACES SHALL BE ACHIEVED BY SHEET FLOW AND SHALL NOT BE CONCENTRATED.
11. RESTORE ALL PAVEMENT MARKINGS AND PAINT CURBS IN PAVEMENT RECONSTRUCTION/NEW CONSTRUCTION AREAS WITH TRAFFIC-RATED PAINT.
12. SEALCOAT ASPHALT CONCRETE SEAMS BETWEEN NEW AND EXISTING ASPHALT CONCRETE.



CONSTRUCTION NOTES

1. CONSTRUCT PLAYGROUND ASPHALT CONCRETE PAVEMENT PER DETAIL "A", SHEET 4.
2. CONSTRUCT REDWOOD HEADER ADJACENT TO LANDSCAPING PER DETAIL "B", SHEET 4.
3. CONSTRUCT PLAYGROUND PER DETAIL "D", SHEETS 5-8. SUBGRADE PREPARATION PER GEOTECHNICAL RECOMMENDATIONS.
4. CONSTRUCT PLAY AREA CONTAINMENT CURB PER DETAIL "C", SHEET 4.
5. CONTRACTOR TO FURNISH AND INSTALL WASHED PLAYGROUND SAND.

LEGEND

- PROPOSED ASPHALT CONCRETE PAVEMENT
- PROPOSED WASHED PLAYGROUND SAND
- PROPOSED TURF AREA
- EXISTING WALL (PROTECT IN PLACE)
- W — EXISTING DOMESTIC WATER (PROTECT IN PLACE)
- IRR — EXISTING IRRIGATION WATER (PROTECT IN PLACE)
- SD — EXISTING STORM DRAIN (PROTECT IN PLACE)
- E — EXISTING ELECTRICAL LINE (PROTECT IN PLACE)

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SCALE: 1"=10'
0 10 20 30

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TRISTAN J. SANTOS
PROJECT ENGINEER
R.C.E. 71473
DATE: 02/02/2026

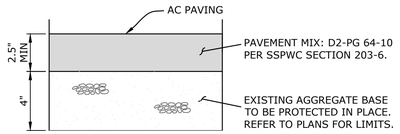
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SHEET NO. 3 OF 8

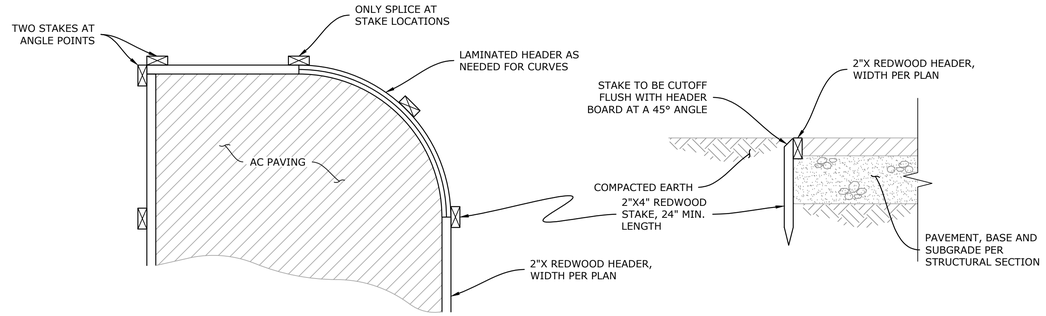
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PLAYGROUND ASPHALT CONCRETE PAVEMENT SECTION

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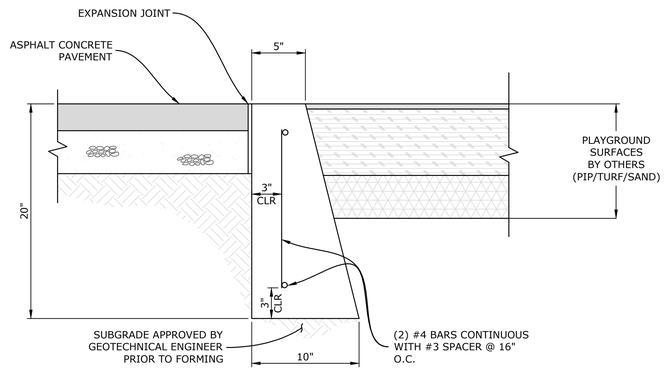


NOTES:

1. HEADER TO BE INSTALLED AFTER BASE.
2. EARTH BACKFILL MUST BE COMPACTED IN PLACE PRIOR TO PAVING.
3. ATTACH STAKES TO HEADER BOARDS WITH TWO 12 PENNY HOT DIPPED GALVANIZED NAILS (MIN).
4. REFER TO SSPWC SECTIONS 204-1 AND 800-1.5 FOR MATERIALS SPECIFICATIONS.

PAVEMENT HEADER DETAIL

B
-



PLAY AREA CONTAINMENT CURB DETAIL

SCALE: N.T.S.

C
-

DRAWING: n:\projects\0879\engineering\acad\improvements\0879_det.dwg

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BID SET DATE: 03-03-2026

REVISIONS

MARK	DATE	DESCRIPTION	BY

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DATE

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TRISTAN J. SANTOS
PROJECT ENGINEER
R.C.E. 71473

DATE: 02/02/2026

FB-26-09, PLAYGROUND ASPHALT AND PLAYGROUND EQUIPMENT REPLACEMENT PROJECT
RANCHO ROSAL ELEMENTARY SCHOOL
DETAILS SHEET
3535 VILLAGE AT THE PARK DR, CAMARILLO, CA 93012

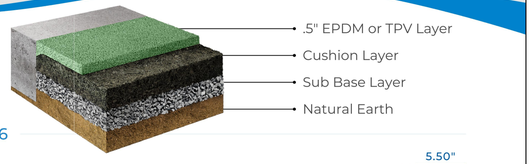
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CHECKED BY:	TJS

SHEET NO. 4 OF 8

SurfaceMax™

ASTM 1292
FALL HEIGHT REQUIREMENTS
TPV/EPDM WEAR COURSE
BUFFINGS CUSHION LAYER



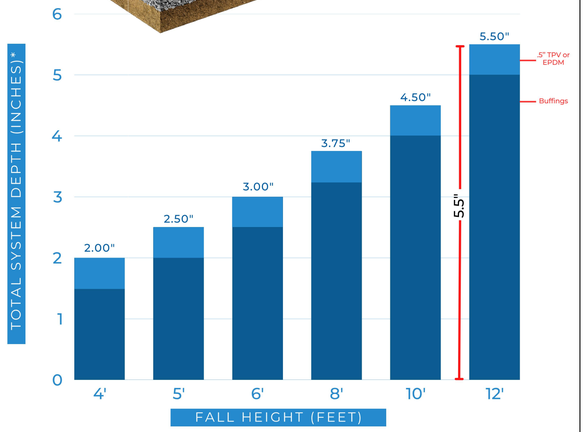


Chart Represents the total (Buffings layer & TPV or EPDM wear course) system depth.
Sub-base 4" Min Compacted Aggregate, Asphalt, or Concrete.

*Depths shown reflect the minimum thickness for each fall height.

R8-2025

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SurfaceMax™
POURED RUBBER

STANDARD POURED IN PLACE

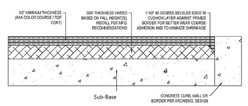
SurfaceMax Poured in Place (PIP) Rubber is the most durable and longest lasting surfacing solution available. PIP also provides a highly accessible surface allowing play for children and adults of all abilities. A wide range of colors and flexibility during installation enables you to include design elements that add play value to your recreational space.

Features:

- Porous for water management
- Highly accessible allowing for recreation for all abilities
- Wear course is a specifically combined 1-4mm EPDM or TPV rubber granules and urethane binder
- Long lasting and durable with routine maintenance
- 5-7 year warranty with proper maintenance
- Ideal for colorful, themed graphics for added play value for your space

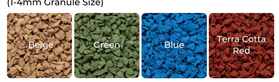
Specifications:

- Two layer system customized to meet critical fall height attenuation standards
- Attenuation layer is recycled rubber material
- Systems must be installed over specified asphalt, concrete, or compacted aggregate
- Available in a variety of colors and combinations to meet your budget and creative expectations
- Temperature should be 40 degrees and rising through installation and cure



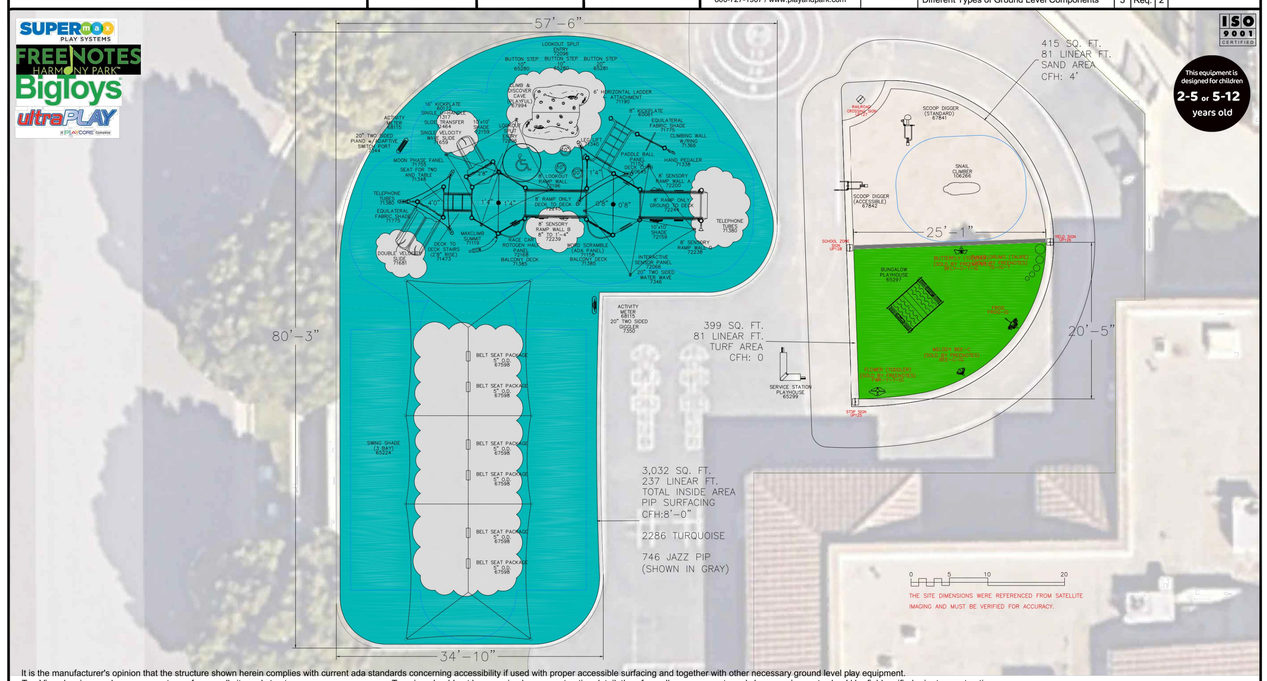


Standard EPDM Colors
(1-4mm Granule Size)



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Rancho Rosal TK-K (Option 2) 600 Temple Ave Camarillo, CA 93010	This play equipment is recommended for children ages: 2-5 or 5-12 Minimum Area Required: Per Site	Scale " = " This drawing can be scaled only when in an 11" x 17" format	Drawn By: Cassie Pruitt Date: 2/11/26 Quote Number: 821-174675F	play&park structures 544 Chestnut Street Chattanooga, TN 37402 800-727-1907 / www.playandpark.com		Total Play Components: 44 Elevated Play Components: 9 Elevated Play Components Accessible by Ramp: 6 Req. 0 Elevated Components Accessible by Transfer: 6 Req. 5 Accessible Ground Level Components Shown: 35 Req. 3 Different Types of Ground Level Components: 5 Req. 2	User Capacity: 150-160 Critical Fall Height: 8'-0"
Play & Park Structures							



It is the manufacturer's opinion that the structure shown herein complies with current ada standards concerning accessibility if used with proper accessible surfacing and together with other necessary ground level play equipment.
Top View drawings and measurements are for overall site and structure appearance purposes. Top view should not be conceived as a construction detail; therefore, all measurements and slope requirements should be field verified prior to construction.
IMPORTANT: Never install play equipment over hard, unresilient surfaces such as asphalt, concrete, or compacted earth. It is the owner's responsibility to ensure the "minimum area required" contains an appropriate amount of resilient material to cushion accidental falls.

RANCHO ROSAL ELEMENTARY SCHOOL PLAYGROUND DETAIL

D
-

SCALE: 1"=10'

NOTES:

1. TOTAL INSIDE AREA PIP SURFACING:
   - 1.1. 3,032 SQ. FT.
   - 1.2. 237 LINEAR FT.
   - 1.3. CFH: 8'- 0"
   - 1.4. 2286 TURQUOISE
   - 1.5. 746 JAZZ PIP (SHOWN IN GRAY)
2. TOTAL TURF AREA:
   - 2.1. 399 SQ. FT.
   - 2.2. 81 LINEAR FT.
   - 2.3. CFH: 0
3. TOTAL PLAYGROUND SAND AREA:
   - 3.1. 415 SQ. FT.
   - 3.2. 81 LINEAR FT.
   - 3.3. CFH: 4'

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FB-26-09, PLAYGROUND ASPHALT AND PLAYGROUND EQUIPMENT REPLACEMENT PROJECT
RANCHO ROSAL ELEMENTARY SCHOOL
PLAYGROUND DETAILS & SPECIFICATIONS
3535 VILLAGE AT THE PARK DR, CAMARILLO, CA 93012

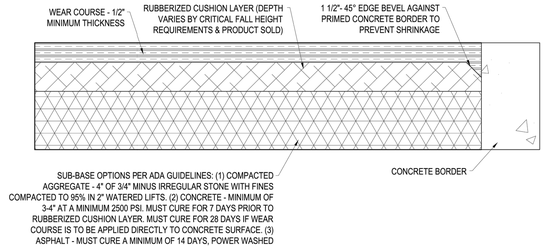
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WORK ORDER	0879
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CHECKED BY:	TJS

SHEET NO. 5 OF 8

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SECTION VIEW

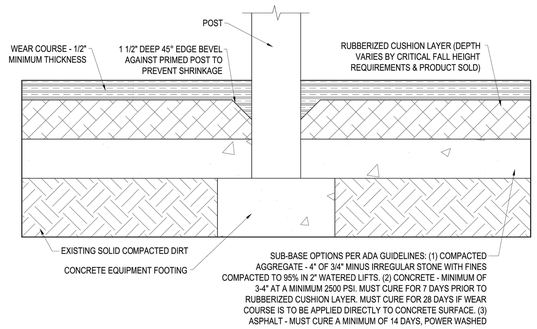
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5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 5251-039.

SURFACEMAX
FLUSH MOUNT TO WALL, CURB, OR SIDEWALK (EXISTING CONSTRUCTION)

5251-039 REVISION DATE 15/11/2023

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SECTION VIEW

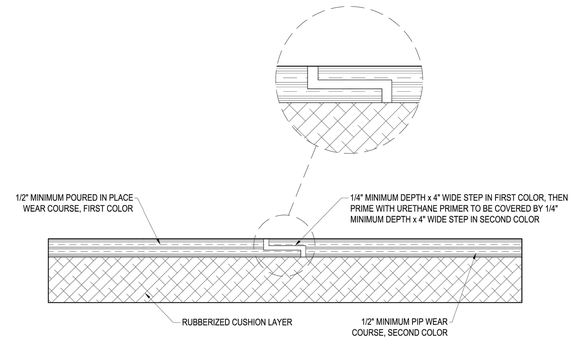
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SURFACEMAX
POST / POLE EDGE POURED-IN-PLACE INSTALLATION

5251-040 REVISION DATE 09/09/2024

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SECTION VIEW

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5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 5251-043.

SURFACEMAX
POURED-IN-PLACE STEP SEAM (COLOR / DESIGN WORK)

5251-043 REVISION DATE 09/09/2024

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SurfaceMax PLAY TURF

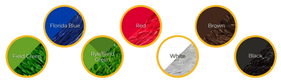
ELITE TURF

SurfaceMax Elite Turf is a durable, high-quality turf system crafted for playgrounds and outdoor fitness areas. Built with strong monofilament fibers and a 20oz backing with drainage holes, it provides a safer, long-lasting, and weather-resistant surface. Offered in six standard colors with customizable options, Elite is Made for Play!

Features

- **Durable Monofilament Fibers** – Engineered for long-lasting durability in high-traffic environments.
- **20oz Backing with Drainage Holes** – Caster oil-based urethane backing enhances flexibility, elongation, and all-weather performance.
- **Vibrant & Customizable** – Offered in six standard colors with options for custom color matching.
- **Soft Yet Resilient** – Provides a cushioned underfoot feel while ensuring long-term durability.
- **Low Maintenance & Eco-Friendly** – No need for mowing, watering, or harsh chemicals—just simple, hassle-free upkeep.
- **Nationwide Installation** – Professionally installed with precision for lasting quality and performance.

Color Options

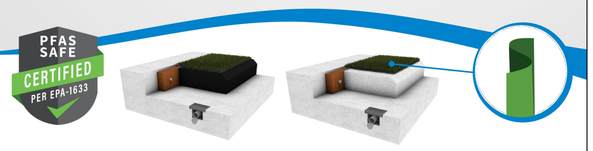




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SurfaceMax PLAY TURF

ELITE TURF SPECIFICATIONS



Fiber:	Monofilament S-Blade
Fiber Supplier:	ITS - Sprinturf
Fiber Denier:	12,000
Fiber Thickness:	270 Microns
Pile Height:	1"
Yarn Color:	Field Green/Olive
Thatch Color:	Field Green/Beige
Face Weight:	65 oz / yd2
Primary Backing:	Non-Woven/Woven/Woven
Primary Backing Weight:	8.5 oz / yd2
Secondary Backing:	Polyurethane
Secondary Backing Weight:	20 oz / yd2
Total Weight (w/o infill):	95 oz / yd2
Tufting Gauge:	3/8"
Tuft Bind:	>8 lbs/force
Permeability:	>60 in PU
Infill Options:	3 lbs Antimicrobial-Coated Silica Sand

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ISO 9001

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TRISTAN J. SANTOS DATE: 02/02/2026
PROJECT ENGINEER
R.C.E. 71473

FB-26-09, PLAYGROUND ASPHALT AND PLAYGROUND EQUIPMENT REPLACEMENT PROJECT
RANCHO ROSAL ELEMENTARY SCHOOL
PLAYGROUND DETAILS & SPECIFICATIONS
3535 VILLAGE AT THE PARK DR, CAMARILLO, CA 93012

SCALE: HORIZ. VERT.
WORK ORDER 0879
DRAWN BY: MCS
CHECKED BY: TJS
SHEET NO. 6 OF 8

DRAWING: n:\projects\0879\engineering\acad\improvements\0879_det.dwg

Synthetic Turf Safety Surface System Specification

PART1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions to the Contract, including General and Supplementary Conditions and Division 1 Specifications apply to this section.

1.2 DESCRIPTION OF WORK

A. Provide all labor, materials, equipment, and tools necessary for the complete installation of synthetic turf safety surface. Surface shall meet the requirements of ASTM F 1292 that states that the surface must yield both a peak deceleration of the no more than 200 g's and a Head Injury Criteria (HIC) value of no more than 1,000 for a headfirst fall from the accessible height of the play equipment. Surface shall also meet the requirements of ASTM F 1951 for playground accessibility. The system shall consist of, but not necessarily be limited to the following:

1. Synthetic Turf consisting of fibers that are a minimum of 1.125" long. Turf fiber construction consisting of polyethylene monofilament and texturized monofilament fibers tufted with pro-flow backing.
2. Pad underlayment system consisting of foam pad base or chunk/SBR rubber base. Thickness and density of panels shall be sufficient so that the system meets the requirements of ASTM F 1292.
3. Synthetic Turf infill, specifically designed for synthetic turf. It shall be rounded uniform quartz sand pigmented and sealed with an acrylic polymer designed to provide the look, feel and performance of optimally maintained natural grass.

B. Work provided in this Section includes grading necessary to shape and drain the area and base preparation and installation of the synthetic turf in areas shown on drawings.

PART 2 – Products

2.1 SYNTHETIC TURF SAFETY SURFACE

A. Aggregate Base- 50% crushed clean stone (size= ¾") / 50% crushed clean stone (size=1/4"). (Refer to Section 3.2-B)

B. Synthetic Turf

a. Yarn Type: Polyethylene

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b. Yarn Cross Section: Polyethylene Monofilament Classic Spine/ Texturized Polypropylene thatch

c. Pile Height: Minimum 1.125"

d. Color: Field Green / Olive Green

e. Construction: Broadloom tufted

g. Tufting Gauge: 3/8"

Finished Roll Width: 180" untrimmed

C. Cushion layer to be foam pad or SBR/Chunk Base

a. Foam Type: Expanded Polypropylene

b. Bulk Density: 5.0-8.0 lb/cu ft

c. Effective Size: 23.59 Sq ft (net coverage)

d. Tensile Strength 55 psi

CI. Synthetic Turf Infill Material

a. Coefficient of Uniformity of ≤ 1.3.

b. 98% of the particles retained on US Standard sieves 12 through 20

c. Coated Particles shall be smooth to resist mounding and compaction and have an angle of repose of 30° or less.

d. The finished product shall be 100% coated, shall repel water, be non-flammable and have <.001% dust content.

e. When placed in synthetic turf, the system shall have an Abrasion Index of 26+2.

f. Color: Green or Tan

g. Product to be Envirofill

CII. Splicing Material: Spun bonded coated polypropylene (12" seaming tape)

CIII. Adhesive: Mapei Synthetic Turf Adhesive

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PART 3 – EXECUTION

3.1 GROUND PREPARATION

A. General: The ground areas to receive synthetic turf safety surface is indicated on drawings

B. Leveling and Site Preparation: All organic material and organic debris to be removed. Soil to be graded level and stabilized (compacted). Compaction shall be done with mechanical compactors, including vibratory compactors, and /or powered tampers and rollers.

3.2 BASE AND SYNTHTTIC TURF CONSTRUCTION

A. General: The area to be smooth and graded to allow proper drainage. Refer to grading plan. The overall grade of the playground is not to exceed 3%.

B. Compacted Aggregate Base: Place 4inches of aggregate base as leveling layer compacted to 90% - 95% of max density per AASHTO T99. Compaction shall be done with mechanical compactors including vibratory compactors and/or powered tampers and rollers. Aggregate should be a combination: 50% crushed clean stone (size=3/4") 50% crushed clean stone (size=1/4").

C. Synthetic Turf: Place turf and cut to fit configuration as shown on Drawings. Splice seams. All seams must be attached with splicing film/ fabric and adhesive as approved by the manufacturer for this type of installation of their product.

D. Infill: Apply layers of synthetic turf infill with a drop spreader and broom the turf fibers with stiff bristled broom to stand up and allow infill to settle into the bottom. Broom in Envirofill® infill at minimum 2 pounds per square foot.

E. Anchor/ Edging: Edges of turf will be ground with mechanical fasteners, stakes or edging.

PART 4- WARRANTY

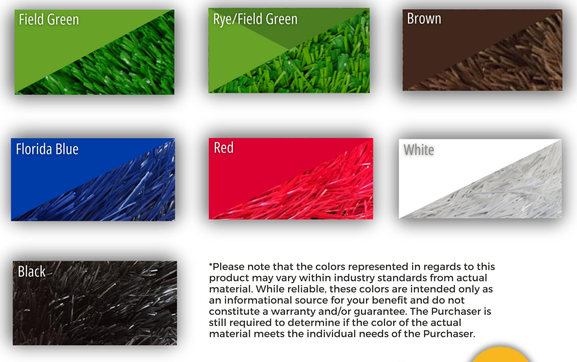
4.1 WARRANTY

A. Warranty: 8 year U. V. degradation

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Elite Playground Turf Color Chart

SurfaceMax PLAY TURF



*Please note that the colors represented in regards to this product may vary within industry standards from actual material. While reliable, these colors are intended only as an informational source for your benefit and do not constitute a warranty and/or guarantee. The Purchaser is still required to determine if the color of the actual material meets the individual needs of the Purchaser.

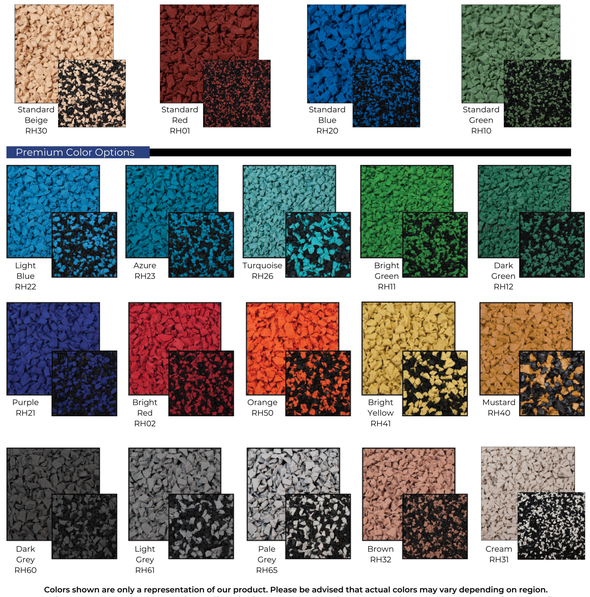
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R10-2024

SurfaceMax™ Poured in Place Rubber

Playground and Recreational Surfacing
800-727-1907 | www.surfacemax.com

TPV Color Chart
.5-1.5mm and 1-4mm



Colors shown are only a representation of our product. Please be advised that actual colors may vary depending on region. Premium colors below line may require an aliphatic binder based on location. Consult with your area representative for details.

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TRISTAN J. SANTOS DATE: 02/02/2026
PROJECT ENGINEER
R.C.E. 71473

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RANCHO ROSAL ELEMENTARY SCHOOL
PLAYGROUND DETAILS & SPECIFICATIONS
3535 VILLAGE AT THE PARK DR, CAMARILLO, CA 93012

SCALE: HORIZ. VERT.

WORK ORDER	0879
DRAWN BY:	MCS
CHECKED BY:	TJS

SHEET NO. 7 OF 8

DRAWING: n:\projects\0879\engineering\acad\improvements\0879_det.dwg

Concrete/ Asphalt Substrate Base Detail Requirements

OUR SUGGESTED SPECIFICATIONS:

SLOPE:
1% nominal slope for drainage

CURING REQUIREMENTS:
All newly poured concrete slabs must cure for a minimum of 14 days prior to the start of the installation of the rubber surfacing system. In some areas, the Pacific Northwest as an example, 30 days or more could be involved.

DRAINAGE:
Drainage at the low end of the site is of the utmost importance. Any brick or concrete walls or curbs at the low end of the area to receive the play surface must have drainage access via weep holes. Weep holes must extend a minimum of 1 inch above the top of the new concrete slab and a minimum of 1/8" below the top of the new concrete slab.
The latter is necessary because the rubber surfacing system is porous and water will permeate (drain downward) to the concrete slab.

CONCRETE:
4" Minimum Thickness.

ASPHALT:
Required minimum thickness (2" to 4") for non-weight bearing loads and a 1% slope is recommended.

DRAINS:
Drains should be installed at the low point of the asphalt/concrete sub surface flush.

FINISH:
Concrete should be finished with a light broom unsealed.

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Compacted Stone Base Requirements

Base Option #1:
A homogeneous mixture of fine and medium stone is applied in multiple layers and compacted using a mechanical compactor and/or roller to provide an even plane. The crushed stone base must be tightly compacted and smooth. A 2% slope is recommended.

- 95% Standard Proctor Compaction is of critical importance.
- Stone for the base must be a homogeneous mix of ¾" stone down to fines and you need to achieve a 95% compaction.
- The minimum depth of the crushed stone base is 4". Typical thickness range is 4" – 6". Crushed stone base layers thicker than 6" are more challenging to achieve the necessary 95% compaction rate throughout the base.
- Finish slope of porous aggregate should be 2% from the centerline of the area to the perimeter, and the grade should not vary more than a quarter inch (1/4") in ten feet (10')
- Crushed stone base must be fully contained when appropriate
- Crushed stone is not an acceptable sub-base for any mounded area. In these areas, the stone would need to be skim-coated with concrete to make it more stable.
- Stone profile is subject to change based on drainage requirements
- **If installing turf over foam pad system, please include 1" layer of finish stone graded within a ¼" tolerance over a 10-foot radius**

Base Option #2: (Applies when French drains or drainage tile is required)
#57 Clean Stone to be installed over all drainage tiles
The minimum depth of #57 Clean Stone base is 4". Typically thickness range is 4" - 6".
Additionally, balance to meet up with crush and run:
A homogeneous mixture of fine and medium stone is applied in multiple layers and compacted using a mechanical compactor and/or roller to provide an even plane. The crushed stone base must be tightly compacted and smooth. A 2% slope is recommended.

- 95% Standard Proctor Compaction is of critical importance.
- Stone for the base must be a homogeneous mix of ¾" stone down to fines and you need to achieve a 95% compaction.
- The minimum depth of the crushed stone base is 4". Typical thickness range is 4" – 6". Crushed stone base layers thicker than 6" are more challenging to achieve the necessary 95% compaction rate throughout the base.

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- Finish slope of porous aggregate should be 2% from the centerline of the area to the perimeter, and the grade should not vary more than a quarter inch (1/4") in ten feet (10'
- Crushed stone base must be fully contained when appropriate
- Crushed stone is not an acceptable sub-base for any mounded area. In these areas, the stone would need to be skim-coated with concrete to make it more stable.
- Stone profile is subject to change based on drainage requirements
- **If installing turf over foam pad system, please include 1" layer of finish stone graded within a ¼" tolerance over a 10-foot radius**

END OF DOCUMENT

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Playground Turf Installation

While this guide provides general best practices for playground turf installation, SurfaceMax strongly recommends that installations be performed by one of our certified installers or trusted installation partners. Professional installation ensures the highest quality, long-term performance, and full compliance with warranty requirements.

Step 1: Excavation

The existing surface should be excavated to a depth of approximately 80–100 mm (4") to meet standard drainage thresholds below the joining surface. For civil or residential areas, it is essential to contact local utility services by calling "811" to have all electrical, cable, and gas lines marked before excavation. Depending on the project and zoning regulations, permits and erosion control measures may be required. A licensed erosion control professional may need to be present during excavation, and silk fencing may be necessary on certain job sites. Evaluate the natural slope and runoff of the area to identify low spots and address drainage concerns accordingly.

Step 2: Subbase and Nailer Board Installation

Apply a 50–70 mm (3/4" minus) crushed rock subbase and smooth it out evenly. Install a perimeter nailer board using 1"x4" composite or recycled plastic boards, such as Trex decking boards, to create a secure boundary. Ensure the nailer boards are firmly anchored to the ground.

Step 3: Top Base Preparation

Add a 20–40 mm (1/4" to 3/8") minus stone top base layer composed of finely crushed or chipped rock. Level the surface, saturate it with water, and compact it using a vibrating plate compactor. For installations involving playground padding, add the appropriate additional depth (1"–3") to accommodate the thickness of the pad. This adjustment is critical for meeting the desired Critical Fall Height (CFH) requirements and ensuring proper alignment with the turf surface layer.

Step 4: Turf Acclimation

Roll out all synthetic turf and allow it to acclimate to the environment for approximately 14 to 24 hours. This step prevents unwanted expansion or contraction during installation and ensures the material settles as intended.

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R2-2025

Playground Turf Installation

Step 5: Turf Layout

Lay all synthetic turf in the same direction, ensuring that the fibers face consistently across the entire surface. Turf fibers are tufted at a slight angle during manufacturing, creating an intentional grain or pile direction that must remain uniform for a seamless appearance.

Step 6: Precision Cutting and Seaming

Make precise cuts, including perimeter cuts, interior object cuts, and seam cuts. Remove the salvage edge as needed. Use seam tape and apply a 1-puck or 2-puck urethane-based indoor/outdoor adhesive to bond turf sections securely. Pay close attention to the stitch gauge—the gap between the tufted rows—which is typically 3/8" for landscape and playground turf. Maintaining this stitch gauge during seaming is essential to prevent visible seams or turf bunching.

- Use a sharp utility knife or a carpet pile cutter for clean and accurate cuts around objects, edges, and seams.

Step 7: Securing the Perimeter

Secure the turf along the perimeter using construction staples or decking screws every 4" to 6", attaching it firmly to the nailer board to prevent shifting over time.

Step 8: Infill Application

Spread an even layer of antimicrobial-coated sand infill (12/20 or 16/30 mesh ratio) using an industrial drop spreader or commercial-grade spreader. Use a power broom or industrial sweeper to distribute the infill evenly and brush against the turf grain. This process helps weigh down the turf, lifts the fibers, and ensures proper ballast for a professional finish.

Step 9: Project Completion

Once installation is complete, inspect the area to ensure all steps have been executed correctly. Enjoy the completed project and the durability, safety, and performance of your SurfaceMax Playground Turf system.

For best results, always adhere to these guidelines and consult a SurfaceMax-certified professional for complex installations or unique site requirements.

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R2-2025

Know what's **below.**
Call before you dig.

BID SET DATE: 03-03-2026

REVISIONS

MARK	DATE	DESCRIPTION	BY

REVIEWED BY:
DATE
DATE

REGISTERED PROFESSIONAL ENGINEER
TRISTAN J. SANTOS
NO 71473
CIVIL
STATE OF CALIFORNIA

ECG Encompass Consultant Group
333 N. LANTANA ST, SUITE 287, CAMARILLO, CA 93010
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TRISTAN J. SANTOS
PROJECT ENGINEER
R.C.E. 71473
DATE: 02/02/2026

FB-26-09, PLAYGROUND ASPHALT AND PLAYGROUND EQUIPMENT REPLACEMENT PROJECT
RANCHO ROSAL ELEMENTARY SCHOOL
PLAYGROUND DETAILS & SPECIFICATIONS
3535 VILLAGE AT THE PARK DR, CAMARILLO, CA 93012

SCALE: HORIZ. VERT.
WORK ORDER 0879
DRAWN BY: MCS
CHECKED BY: TJS
SHEET NO. 8 OF 8

DRAWING: n:\projects\0879\engineering\acad\improvements\0879_det.dwg

GEOTECHNIQUES
1645 Donlon Street, Ste. 107
Ventura, California 93003
(805) 456-9585, (805) 658-8952

January 28, 2026
Project No. 1025.008.02

Pleasant Valley School District
600 Temple Avenue
Camarillo, California 93010

Attention: Ms. Sandra Lovaas, Measure C Bond Manager

Subject: Geotechnical Recommendations for Replacement of Kindergarten Playground at Rancho Rosal School, in the Pleasant Valley School District, 3535 Village at the Park Drive, Camarillo, California

Dear Ms. Lovaas:

This geotechnical letter report provides recommendations for the preparation of subgrade and construction of the replacement Kindergarten playground at Rancho Rosal School, in Camarillo, California.

SITE CONDITIONS

The original playground pavement structural section consisted of about 3 inches of asphalt concrete over about 7 inches of aggregate base. Subgrade soil is anticipated to consist of clayey silt with fine sand (ML) that is several percentage points over optimum moisture content.

SUBGRADE PREPARATION RECOMMENDATIONS

Areas to receive replacement asphalt concrete structural section shall be underlain by a minimum of 12 inches of subgrade compacted to a minimum of 95 percent of the maximum dry density determined according to ASTM D1557.

Preliminary Site Preparation

Contractor should rip and cross-rip subgrade soil upon removal of asphalt concrete structural section to maximize aeration potential of subgrade soils. Excavations and depressions, either existing or from removal of root-balls, below grade structures or improvements, or footings, or from rutting from demolition and construction equipment trafficking shall not be filled in or smoothed over outside the presence of the Geotechnical representative.

Contractor should avoid over-trafficking during demolition and subsequently in terms of applied pressure to subgrade (e.g., equipment type and weight) and repeated passes over ingress/egress and hauling lanes to prevent elevating subgrade moisture conditions and rutting. Contractor shall mitigate or repair at its expense, any rutting and elevated moisture conditions from demolition or earthmoving equipment.

Subgrade Preparation

Subgrade for asphalt concrete or on-grade concrete shall be excavated to a level corresponding to the structural section total thickness. Exposed subgrade soils likely will require ripping and cross-ripping and reducing the upper 1 foot to pea-sized consistency to effect aeration to within 2 percent of optimum moisture content. The excavation shall be deepened, as necessary to remove organics, topsoil, and deleterious material and extend a horizontal distance of an additional 1 foot beyond the asphalt concrete or new concrete in unimproved areas. The exposed surface in the excavation bottom shall be observed by the Geotechnical representative prior to ripping for aeration, scarification or compaction. Excavation bottoms likely shall require extended aeration periods (after scarification effecting pulverization) prior to compacting. Once the targeted moisture condition is achieved, processed materials shall then be compacted to a minimum of 95 percent of the maximum dry density determined by ASTM D1557, latest edition.

Alternatives to Subgrade Aeration and Subgrade Stabilization

An alternative to aeration consists of the treatment of onsite over-moist clayey materials with cement to reduce elevated in-place moisture content and to effect "bridging" over potentially yielding, unstable underlying subgrade materials. For silty and clayey subgrade treatment, 3 to 4 percent cement (by weight), shall be thoroughly mixed into the upper 1 foot of the excavation bottom in accordance with Section 301-3.2.5 of the "Greenbook." The soil-cement mixture shall be moisture-conditioned and compacted to a minimum of 95 percent of the maximum dry density within 90 minutes of adding moisture to cement-treated soil and according to Section 301-3.2.7. The compacted soil-cement mixture shall be cured according to Section 301-3.2.10. At least 2 days of curing time shall be allowed prior to placement of general, select, or treated fill materials. This cement content is appropriate for low-contact pressure, lightweight equipment operation; heavier equipment and rubber tired equipment imposing higher contact pressures shall require higher cement concentrations—approaching 10 percent by weight (for a pavement recycler, for example)—and/or thicker treated zones in order to support heavier equipment loads during construction.

An alternative to cement treatment of subgrade consists of removal and replacement of the upper 1 foot of subgrade with aggregate base over Mirafi 600X, placed in accordance with the manufacturer’s instructions, with the full thickness of aggregate base placed before trafficking with lightweight spreading and compacting equipment so that “bridging” is achieved and maintained over underlying very moist soil.

Cement-treatment and replacement with aggregate base alternatives both require that the Contractor employ appropriate minimal equipment loading (i.e., lightweight equipment and appropriate for materials affected) and trafficking reduction measures to maintain integrity of the compacted subgrade and overlying base courses through completion of concrete placement.

Contractor Awareness and Operations Considerations

The likelihood of encountering very moist subgrade soils should be factored into all aspects of demolition and construction to avoid exacerbating subgrade moisture conditions and inducing ‘pumping’ of subgrade materials.

Equipment loads during demolition and subgrade preparation in pavement and concrete improvement areas shall be minimized, as needed, to avoid increasing moisture content of exposed or underlying subgrade materials and in excavations and subsequently placed fill materials during fill placement and compaction. Examples of such excavating, spreading, processing and compacting equipment include low ground pressure track dozers or, to a greater extent, excavators or backhoes staged outside the excavation. Similar low or no-load means of compacting fill shall be used, as needed, including non-tired sheepsfoot compactors for fine-grained subgrade materials. Care shall be exercised to avoid repeated passes over ingress or egress areas, and to avoid overworking or overloading any area such that pumping conditions and elevated moisture contents and/or rutting are induced by demolition and/or construction operations.

Aeration of subgrade soils should be initiated at earliest well-forecasted and practicable opportunity along with subsequent episodes of turning and/or cross ripping to maximize exposure to drying effects.

Lightweight equipment shall be used for placing and compacting subsequent lifts and courses, as needed, until "bridging" over potentially unstable pumping subgrade soil is accomplished and risk of aggravating moisture conditions with other equipment is low (i.e., the "bridging" effect is not destroyed by subsequent heavy or repeated loadings).

Contractor shall proof-roll both compacted subgrade and aggregate base course with fully-loaded water truck with no deflections in presence of geotechnical representative prior to placing base and asphalt concrete, respectively.

Fill Placement and Compaction

Onsite soils are anticipated to be used as general fill once cleared of organic material, demolition or other debris, and any oversized rock. Earth materials placed as fill or within the upper 12 inches of subgrade in asphalt concrete pavement areas should consist of onsite excavated general fill or imported non-expansive materials with an Expansion Index less than 20. Unless noted otherwise herein, the upper 1 foot of subgrade materials shall be compacted to a minimum of 95 percent of the maximum dry density determined from ASTM D1557.

Subgrade and onsite soils used as fill and imported fill materials shall be placed and compacted at a moisture content of between 0 and 2 percent over optimum moisture content. Each layer shall be spread evenly in loose lifts no thicker than 8 inches and shall be thoroughly blade-mixed during the spreading to reduce soil consistency to pea-size or finer and to provide relative uniformity of material within each layer. Fill and backfill materials may need to be placed in thinner lifts to achieve the recommended compaction with the equipment being used. Soft or yielding materials shall be removed and be replaced with properly compacted fill material, prior to placing the next layer.

Rock, gravel and other oversized material greater than 3 inches in diameter, shall be removed from the subgrade and fill material being placed. Rock less than 3 inches in diameter shall not be nested and voids caused by inclusion of rock in the fill shall be filled with sand or other approved material. All roots larger than ½-inch diameter shall be removed and discarded.

All subgrade and fill materials, including scarified materials, shall be thoroughly processed to pea-sized or finer consistency prior to aeration and applying compactive effort.

Blading or turning very moist to wet soils shall be necessary to effect uniform aeration throughout the targeted layer of soil. When the moisture content of the fill material is below that sufficient to achieve the recommended compaction, water shall be added to the fill during processing. While water is being added, the soil shall be bladed and mixed to provide relatively uniform moisture content throughout the material. .

Surfaces shall be finished to uniform grades and slopes in accordance with contract documents and in such a manner to drain properly, convey runoff to existing and new drainage improvements, and be free from depressions that may cause areas of standing water or concentrates runoff on finished surface.

FILL MATERIALS

Fill shall be free of organics, oversize material (e.g., greater than 3 inches in diameter), trash and debris, and other deleterious material. The expansion index of imported materials or onsite materials used as general fill shall be tested, as necessary, during earthmoving operations to verify that the expansion index of the material is suitable for its use.

Onsite Soils. Onsite soils are generally anticipated to consist predominantly of clayey silt with fine sand that meets the requirements for general fill.

General Fill. General fill materials shall have an expansion index less than or equal to 50. If necessary, general fill may be blended with sand or dry cement just prior to compaction to reduce the expansion index.

There is a potential that silty and clayey onsite general fill materials, where encountered, could be sensitive to changes in moisture content. Control of moisture content, compaction layer thickness, and efficiency and appropriateness of equipment to soil type will likely be necessary to achieve and maintain the recommended compaction.

Imported Fill. Imported fill to be used as general fill shall meet or exceed the requirements of general fill material and shall be non-expansive. Imported fill materials shall be observed, tested as necessary, and accepted by Geotechniques prior to being brought to the site.

Aggregate Base. Aggregate base materials shall consist of imported material conforming to Caltrans Standard Specifications for Class 2 aggregate base, Section 26-1.02B [Caltrans, 2024] or Section 200-2.4 of the “Greenbook” (Public Works Standards, Inc., latest edition) for Crushed Miscellaneous Base (CMB).

A minimum 4-inch compacted thickness of aggregate base course is recommended beneath on-grade concrete, including sidewalks and curbs, and asphalt concrete courses. Aggregate base shall be moisture conditioned to optimum moisture content before placing and spreading and shall be compacted to a minimum of 95 percent of the maximum dry density. Aggregate base materials shall be laterally confined during compaction to achieve the minimum compaction requirements.

Asphalt Concrete. Material for new asphalt concrete playground pavement should consist of plant-mixed 3/8-inch D2 RAP. Asphalt shall be PG-64-10 performance grade binder, per Caltrans Standard Specifications Section 92. Gradation of aggregate and asphalt content of the mix shall be such that a smooth dense finished surface is produced.

Bedding Sand in Utility Trenches. Sand used as bedding and pipe zone sand in utility trenches shall conform to Caltrans Standard Specifications for sand bedding, Section 19-3.02F(2) (2024) and have a minimum Sand Equivalent (SE) of 30. The sand shall have a gradation that allows the material to maintain a compacted surface condition during construction operations until concrete placement or until pipe and/or subsequent lift placement (i.e., as bedding or pipe zone sand in utility trench).

ASPHALT CONCRETE AND ON-GRADE CONCRETE SECTION THICKNESS

Subgrade for asphalt concrete and on-grade concrete to receive rare fire truck traffic should be prepared as recommended previously (see "**SITE SUBGRADE PREPARATION RECOMMENDATIONS**"). Subgrade and aggregate base courses shall be firm and unyielding and proof-rolled with a full water truck or equivalent in the presence of the Geotechnical representative prior to placement of the successive structural section course (i.e., aggregate base or asphalt concrete or concrete).

Surfaces shall be finished to uniform grades and slopes in accordance with contract documents and in such a manner to drain properly, convey runoff to existing and new drainage improvements, and be free from depressions that may cause areas of standing water or concentrates runoff on finished surface.

Asphalt Concrete Playground Pavement. Asphalt concrete pavement for playground pavement replacement and to receive potential fire truck access to or within playground areas shall, at a minimum, consist of the following:

Pavement Area	Asphalt Concrete Thickness (inches)	Aggregate Base Thickness (inches)
Playground/Fire truck access	2½	4

Aggregate base should be compacted to a minimum of 95 percent of the maximum dry density. The base course should be firm and unyielding when proof-rolled with a full water truck in the presence of the Geotechnical representative prior to asphalt concrete laydown. Asphalt concrete should be compacted to a minimum of 95 percent of the maximum density.

UTILITY TRENCHES AND EXCAVATION

Utility trenches shall be braced or sloped in accordance with the requirements of (Cal) OSHA. Utility trench backfill shall be governed by the provisions of this report relating to minimum compaction recommendations.

Prior to excavation, the grass and root mat shall be stripped and wasted (or set aside for reuse at surface upon completion of backfilling trench) along the trench alignment and in excavation stockpile areas.

Excavations and trenches shall be sufficiently wide to accommodate equipment size needed for proper compaction of bedding, pipe zone and backfill materials. Trench and excavation bottoms shall be excavated to a firm uniform bottom free of loose, disturbed material and observed by the Geotechnical representative prior to placement of bedding. Aggregate base materials may be used as bedding, as required, to mitigate soft, yielding excavation bottoms, where encountered.

Trench backfill shall be moisture conditioned between 0 and 2 percent over optimum moisture content prior to placing in trench. Backfill shall be compacted to a minimum of 90 percent relative compaction as determined from ASTM D1557, and 95 percent within the upper 1 foot of subgrade in pavement or on-grade concrete areas, or within a 1h:1v influence zone of footings[1].

Rock larger than 3 inches in maximum dimension shall be excluded from backfill. Jetting of trench backfill materials shall not be permitted.

Trench backfill materials shall consist of bedding and pipe zone sand placed a minimum thickness of 4 inches below the pipe invert and to a height of 12 inches above the top of the pipe. Bedding and pipe zone sand shall consist of fine to medium or coarse sand with a minimum Sand Equivalent (SE) of 30. General fill or pipe zone sand shall be placed as backfill above the pipe zone in 8-inch loose lifts and compacted to the minimum relative compaction summarized above. General backfill materials shall meet the preceding recommendations of this report, “Fill Placement and Compaction” and “Fill Materials.”

CLOSURE

The recommendations in this letter are specific to the scope of the proposed replacement playground asphalt concrete. The presence of hazardous and/or toxic materials is not within the scope of services provided for this study.

We appreciate the opportunity to be of service to Pleasant Valley School District. Please call if you have any questions concerning this letter report.

Sincerely,

Geotechniques

Carole Wockner, P.E.
Principal Engineer
R.C. E. No. 74407, exp 09/30/27

[1] Where this is not feasible because of access constraints or for expediency, a 1½-sack cement and sand slurry may be used.

Pleasant Valley School District

Bid FB-26-09, Playground Asphalt and Playground Equipment Replacement Project, Rancho Rosal Elementary School

Project Spécifications

Division 31 Earthwork

Section 31 10 00 Site Clearing
Section 31 20 00 Earthwork

Division 32 – Exterior Improvements

Section 32 11 23 Aggregate Base Courses
Section 32 12 16 Asphalt Concrete Paving
Section 32 16 00 Curbs, Gutters, Sidewalks

SECTION 31 10 00

SITE CLEARING

PART 1 – GENERAL

1.01 SUMMARY

A. This Section requires the selective removal and subsequent off-site disposal of the following:

1. Demolition of asphalt concrete and pavements as indicated on the drawings to straight, neatly saw cut surface.

2. All other removals which may or may not been shown on plans as required for the project construction.

1.02 SITE CONDITIONS

A. Protections: Contractor shall provide temporary barricades and other forms of protection to protect general public from injury due to demolition work.

B. Traffic: Conduct demolition operations and debris removal to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Access must be coordinated with District's Representative.

C. Utility Services: Maintain all existing utilities to remain in service and protect them against damage during demolition operations.

D. Environmental Controls: Use water sprinkling, temporary enclosures, and other methods to limit dust and dirt migration. Comply with governing regulations and County Air Pollution Control District pertaining to environmental protection. Do not use water when it may create hazardous or objectionable conditions such as flooding and pollution.

1.03 REFERENCES

A. Standard Specifications for Public Works Construction (Green Book), latest edition.

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION

3.01 DEMOLITION

A. General: Perform demolition work in a systematic manner. Use such methods as required to complete work indicated on drawings in accordance with governing regulations.

B. Provide services for effective air and water pollution controls as required by County Air Pollution Control District regulations.

C. Prior to commencing grading operations, soil containing debris, organics, pavement, or other unsuitable materials, shall be stripped from the foundation and pavement areas. Demolition areas shall be cleared of old foundations, slabs, abandoned utilities, tree roots, and soil disturbed during the demolition process. Depressions or disturbed areas left from the removal of such material shall be replaced with compacted fill under observation by the Geotechnical representative.

3.02 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove from Project site debris, rubbish, and other materials resulting from demolition operations. Transport and legally dispose of off site.

B. If hazardous materials are encountered during demolition operations, contact District's Representative.

C. Burning of removed materials is not permitted on project site.

3.03 HAZARDOUS MATERIALS

A. Except as otherwise specified, in the event Contractor encounters on the Project site material reasonably believed to be asbestos, polychlorinated biphenyl (PCB), or other hazardous materials which have not been rendered harmless, Contractor shall immediately stop Work in the area affected and report the condition to the District's Representative in writing. The Work in the affected area shall not thereafter be resumed except by written agreement of the Contractor if in fact the material is asbestos, PCB, or other hazardous materials and has not been rendered harmless. The Work in the affected area shall be resumed in the absence of asbestos, PCB, or other hazardous materials, or when such materials have been rendered harmless.

B. Construction involving asbestos cement (transite) pipe shall be performed by qualified personnel in accordance with the standards and specifications set forth by American Water Works Association (AWWA), the Occupational Safety and Health Act (OSHA) and the Environmental Protection Agency (EPA), as well as location jurisdictional codes.

3.04 CLEANUP AND REPAIR

A. General: Upon completion of demolition work, remove tools, equipment and demolished materials from site.

1. Repair demolition performed in excess of that required. Return elements of construction and surfaces to existing condition prior to start of operations. Repair adjacent construction or surfaces soiled or damaged by demolition work.

END OF SECTION 31 10 00

SECTION 31 20 00
EARTHWORK

PART 1 GENERAL

1.01 SUMMARY

A. Section includes: Excavation, Compaction and Fill.

1.02 REFERENCE

A. Standard Specifications for Public Works Construction (SSPWC), latest edition.

B. Geotechnical Recommendations for Replacement Asphalt Concrete Pavements at Rancho Rosal School, in the Pleasant Valley School District, in Camarillo, California (Dated January 28, 2026, Project No. 1025.008.02), prepared by Geotechniques, and shall be superseded by the most current version.

1.03 QUALITY ASSURANCE

A. Codes and Standards: Perform earthwork in compliance with applicable requirements of governing authorities having jurisdiction.

1. Standard Specifications for Public Works Construction (SSPWC), latest edition.

2. CAL/OSHA Construction Safety Order Requirements.

B. Soil Testing Service

1. The District's Representative will engage a soil testing service to include testing soil materials proposed for use in the Work and for quality control testing during grading operations.

2. Samples of materials shall be furnished to the testing service by the Contractor at least one week before their anticipated use.

3. Work for this Section includes smoothing out areas for density tests and otherwise facilitate testing work, as directed.

4. Shoring Systems: Pre-engineered systems, clearly labeled as such, may be used. Refer to the Geotechnical Recommendations for further requirements.

1.04 PROJECT CONDITIONS

A. The Contractor shall visit the site and familiarize with existing site conditions.

B. Additional test borings and other exploratory operations may be made by the Contractor at no cost or liability to the District.

C. Existing Utilities:

1. Where uncharted or incorrectly charted piping or other utilities are encountered during excavation, consult District's Representative immediately for directions. Cooperate with the District's Representative in keeping respective services and facilities in operation. Repair damaged utilities to the satisfaction of the District's Representative at no cost to the District. Disturbed trench sections shall be replaced in kind.

2. Contractor to coordinate with the District's Representative to obtain all required permits and schedule inspections.

D. Protection of Subgrade: Do not allow equipment to pump, rut, or disturb subgrade, stripped areas, or other areas prepared for Project.

E. Contractor shall implement measures to prevent soil erosion, and where possible, sediment shall be retained onsite.

F. Contractor shall implement all necessary recommendations contained in the Geotechnical Recommendations.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 SITE PREPARATION

A. General:

1. Remove vegetation, improvements, or obstructions interfering with installation of new construction. Transport and legally dispose of off site. Removal includes stumps and roots. Contractor shall utilize the best construction method to minimize the erosive effect from the removal of site vegetation.

2. Excavation bottoms and depressions resulting from demolition or removal of below-grade structures or root balls shall be observed by the Geotechnical representative prior to filling.

3. Carefully and cleanly cut roots and branches of trees indicated to be left standing, where such roots and branches obstruct new construction. Paint cuts over one inch in size with tree pruning compound. Care shall be taken so as not to scar any area of the tree's bark.

4. In order to protect from sediment transfer or contamination from urban run-off during construction, the following grading and erosion control practices shall be followed:

a. If grading occurs during the rainy season (November through April), sediment traps, barriers, covers or other methods shall be used to reduce erosion and sedimentation.

b. Excavated materials shall not be deposited or stored where the material can be washed away by high water or storm run-off.

c. Grading operations on site shall be conducted so as to prevent damaging effects of sediment production and dust on the site and on adjoining properties.

d. When vegetation has to be removed on site, the methods shall be one that minimizes the erosive effects from the removal.

e. Exposure of soil to erosion by removing vegetation shall be limited to the area required for construction operations. The construction area shall be fenced to define the project.

f. Temporary mulching, seeding, or other suitable stabilization shall be used to protect areas during construction or other land disturbance activities on site.

g. Topsoil, removed from the surface in preparation for grading and construction activities on Campus is to be stored on or near the site and protected from erosion while grading operations are underway, provided that such storage may not be located where it would cause suffocation of root systems of trees to be preserved. After completion of such grading, topsoil is to be restored to exposed cut and fill embankments of building pads so as to provide a suitable base of seeding and planting.

h. Sediment basins, sediment traps, or similar control measures shall be installed before extensive clearing and grading operations begin for site development.

i. Water or dust palliatives shall be applied to exposed earth services as necessary to control dust emissions.

j. Revegetation or stabilization of exposed earth surfaces shall take place as soon as possible.

B. Removals

1. Existing fills, soil containing debris, organics, pavement, or other unsuitable materials shall be excavated and removed prior to commencing grading operations. Demolition areas shall be cleared of old foundations, slabs, abandoned utilities, landscaping, and soils disturbed during the demolition process. Depressions or disturbed areas left from the removal of such material shall be replaced with compacted fill after observation by the Geotechnical representative.

2. The limits and depths for removal of existing materials for subgrade preparation shall be consistent with the Geotechnical recommendations. Removals shall be wide enough to accommodate the compaction equipment being used.

3. Revegetation or stabilization of exposed earth surface shall take place as soon as possible.

C. Removal of Improvements

1. Remove above-grade and below-grade improvements necessary to permit construction and other work as indicated.

2. Remove from site and legally dispose of off-site, existing fill materials, soil debris, or other unsuitable materials prior to commencing grading operations.

3.02 EXCAVATION

A. Excavation for Pavements: Cut surface under pavements to comply with cross-sections, elevations and grades as shown.

3.03 COMPACTION

A. General: Control soil compaction during construction providing minimum percentage of density specified for each area, under the provisions of the Geotechnical Recommendations.

B. Percentage of Maximum Density Requirements: Compact soil to not less than the percentages of maximum dry density specified in the Geotechnical Recommendations and in accordance with ASTM D1557-91 method of compaction.

C. Moisture Control:

1. When moisture content of exposed scarified soil and/or full material is below that sufficient to achieve recommended compaction, water shall be added to the soil and/or fill. While water is being added, soil shall be bladed and mixed to provide relatively uniform moisture content throughout the material.

2. When moisture content of exposed scarified soil and/or fill material is excessive, material shall be aerated by blading or other methods. Fill placed in pavement areas shall be compacted at near optimum moisture content. Jetting is not permitted for compaction.

3.04 FILL

A. In all excavations, use satisfactory excavated or borrow material sampled and tested by the District's Testing Laboratory. Fill selection shall be per Geotechnical Recommendations.

B. Fill excavations as promptly as Work permits, but not until completion of the following:

1. Observation of excavation bottom by Geotechnical Representative.

2. Acceptance by District's Representative of construction below finish grade including, where applicable, waterproofing, damp-proofing, and drainage pipe.

3. Examination, testing, approval and recording locations of underground utilities.

4. Removal of concrete formwork.

5. Removal of shoring and bracing and backfilling of voids with satisfactory materials.

6. Removal of trash and debris.

7. Permanent or temporary horizontal bracing is in place on horizontally supported walls.

8. Protect excavations by methods required to prevent cave-in or loose soil from falling into excavation.

9. Protect improvements and structures from lateral and vertical movements adjacent to excavations.

C. Continual dust control, as required by the District, and in accordance with County Air Pollution Control District's Standards shall be required for the project construction.

3.05 GRADING

A. General: To provide support for slabs and walls, all existing fill and unsuitable natural soils shall be excavated and replaced as properly compacted fill.

B. Compaction: After grading, compact subgrade surfaces to the depth and percent relative compaction for each area classification.

C. Fill placement and grading operations shall be performed only under the observation of the District's Testing Laboratory.

D. The exterior grades around building areas shall be sloped to drain away from the buildings to prevent ponding of water adjacent to foundations.

E. Grading operation shall be conducted so as to prevent damaging effects of sediment product and dust on the site and adjoining properties.

3.06 DISPOSAL OF EXCESS AND WASTE MATERIALS

Transport excess excavated material and legally dispose of offsite.

3.07 FIELD QUALITY CONTROL

A. Quality Control Testing During Construction: District 's Testing Laboratory will observe, test and approve subgrades and fill layers before further construction Work can be performed. The District's Representative will determine the frequency of tests. Subgrade: Allow at least one field density test of subgrade to be made for every 2000 sq. ft. of paved area, but in no case less than 3 tests.

B. Field examination and testing will be performed by the District's Testing Laboratory. The Contractor shall cooperate with such testing and shall give the District's Representative advance notice of grading scheduling.

C. Frequency of Tests for Trenching: As specified in Geotechnical Recommendations and as determined by the District's Representative.

D. If in the opinion of the District's Representative, based on soil testing reports and observations, subgrades or fills which have been placed are below specified density, provide corrective work as specified at no additional expense to the District, and pay for retesting of the soil.

3.08 PROTECTION

A. Protect newly graded areas from traffic and erosion. Keep free of trash and debris.

B. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.

C. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape, compact to required density and provide other corrective work as specified, with retesting, prior to further construction.

END OF SECTION 31 20 00

SECTION 32 11 23
AGGREGATE BASE COURSES

PART 1 GENERAL

1.01 SUMMARY

Aggregate base course for pavements, gutters, and all-weather access road.

1.02 RELATED SECTIONS

A. Section 31 20 00 Earthwork.

B. Section 32 12 16 Asphalt Concrete Paving.

C. Section 32 13 13 Concrete Work.

1.03 REFERENCES

A. Standard Specifications for Public Works (SSPWC), latest edition.

B. ASTM Standards.

C. Geotechnical Recommendations for Replacement Asphalt Concrete Pavements at Rancho Rosal School, in the Pleasant Valley School District, in Camarillo, California (Dated January 28, 2026, Project No. 1025.008.02), prepared by Geotechniques, and shall be superseded by the most current version.

D. Caltrans Standard Specifications 2023, and shall be superseded by the most current version.

1.04 SUBMITTALS:

A. Submit material samples and reports in accordance with requirements of the District.

B. Submit samples in sufficient quantities for material testing.

PART 2 PRODUCTS

2.01 MATERIALS

Aggregate Base Material shall be Class 2 Aggregate Base conforming to Caltrans Standard Specifications Section 26-1.02 or Section 200-2.4 of the “Greenbook” (International Conference of Building Officials [ICBO], latest edition) for Crushed Miscellaneous Base (CMB).

PART 3 EXECUTION

3.01 EXAMINATION

Verify substrate has been inspected; gradients and elevations are correct, and dry.

3.02 AGGREGATE BASE PLACEMENT

A. Aggregate base placement shall conform to the provisions of the SSPWC, Section 301-2.

B. Level and contour surfaces to elevations and gradients indicated.

C. Add water to assist compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.

D. Aggregate base course shall be dense and unyielding upon proof-rolling with full water truck.

3.03 TOLERANCES

A. Flatness: Maximum variation of 1/4 inch.

B. Scheduled Compacted Thickness shall conform to the provisions of the SSPWC Section 301-2.2.

3.04 FIELD QUALITY CONTROL

A. Inspection and testing shall be performed by the District's Testing Laboratory. Compaction testing will be performed in accordance with ASTM D1557, latest edition.

B. If tests indicate work does not meet specified requirements, remove work, replace and retest at Contractor's expense.

END OF SECTION 32 11 23

SECTION 32 12 16
ASPHALT CONCRETE PAVING

PART 1 GENERAL

1.01 SUMMARY

Asphaltic concrete paving for parking lots and driveway pavements.

1.02 RELATED SECTIONS

A. Section 31 20 00 Earthwork.

B. Section 32 11 23 Aggregate Base Course.

1.03 REFERENCES

A. Standard Specifications for Public Works Construction (SSPWC), latest edition.

B. ASTM Standards.

C. Geotechnical Recommendations for Replacement Asphalt Concrete Pavements at Rancho Rosal School, in the Pleasant Valley School District, in Camarillo, California (Dated January 28, 2026, Project No. 1025.008.02), prepared by Geotechniques, and shall be superseded by the most current version.

D. Caltrans Standard Specifications 2023, and shall be superseded by the most current version.

1.04 SUBMITTALS

Submit asphalt concrete mix design(s) for approval of the District Representative.

1.05 TESTING AND INSPECTION

A. Testing and inspection of asphalt pavement mix(es) and testing of placed stabilizing base course and asphalt pavement will be performed by the District's Testing Laboratory. Testing and inspection will be performed so as to minimize disruption of work.

B. Allow the District's Testing Laboratory access to the mixing plant for verification of weights or proportions, character of materials used and determination of temperatures used in the preparation of asphaltic concrete mix.

PART 2 PRODUCTS

2.01 GENERAL

Provide the aggregate base, and bituminous surface conforming to the requirements of the Standard Specifications for Public Works Construction (SSPWC).

2.02 PAVING MATERIALS

A. Asphalt Concrete: Asphalt concrete material shall be D2-PG 64-10 per SSPWC Section 203-6 and the geotechnical recommendations. The grading and proportioning of aggregates shall be such that the combined mineral aggregate conforms to the specified requirements.

B. Asphalt Emulsion: SSPWC Section 203-3, Grade SS-1h.

C. Prime Coat: Grade SC-70 per SSPWC Section 203-2.

D. Aggregates for base course shall conform to requirements of Specification Section 32 11 23, Aggregate Base Course.

2.03 ASPHALT PAVEMENT MIX

A. Combine mineral constituents in proportions to produce a mixture conforming to requirements of the SSPWC Section 203-6.

B. Percentage by weight of asphalt cement in mixture shall be in accordance with SSPWC Section 203-6.

C. Maintain thorough and uniform mixture.

D. Bring asphalt and mineral constituents to required temperatures before mixing. Ensure aggregates are sufficiently dry so as not to cause foaming in mixture.

PART 3 EXECUTION

3.01 GENERAL

Execute Work in accordance with SSPWC Section 302 and the Geotechnical Recommendations.

3.02 PREPARATION

A. Ensure grading of subgrade to required elevation. Subgrade preparation shall be per SSPWC Section 301.

B. Before final rolling, shape entire section, add additional sub-soil if necessary, and compact subgrade to provide grades, elevation and cross-section indicated. Points of finished subgrade surface shall be within 0.04 foot of elevations indicated on the Drawings.

3.03 BASE COURSE

Place aggregate base in accordance with requirements of SSPWC Section 301 and to the thickness shown on the Drawings. Grade and compact in 6-inch layers to at least 95 percent of compaction (ASTM D1557).

3.04 MAINTENANCE

Maintain the base course until the asphaltic pavement is in place. Maintenance shall include drainage, rolling, shaping and water as necessary to maintain the course in proper condition. Maintain sufficient moisture at the surface to prevent a dusty condition. Areas of completed base course that are damaged shall be conditioned, reshaped and re-compacted in accordance with the requirements of the Specifications without additional cost to the District.

3.05 TACK COAT

A. Prior to the application of the asphalt concrete, a paint binder (tack coat) shall be applied to all surfaces of walkway, curbs, gutters, manholes and drainage structures which will be in contact with asphalt pavement per SSPWC Section 302-5.4.

B. Coat surfaces of catch basins which are to remain free of asphalt with oil, or provide equivalent protection, to prevent asphalt adhesion.

3.06 PRIME COAT

Prior to the application of the asphalt concrete, a prime coat shall be applied at a rate of 0.20 to 0.40 gallons per square yard.

3.07 SEAL COAT

A. Preparation and application of two coats of sealant shall be in accordance with SSPWC Section 302-8. Seal coat shall be applied after the new asphalt pavement has cured.

B. Striping and pavement markings shall conform to Sections 214 and 314 of the SSPWC. An initial single coat of striping of the playground shall be applied 72 hours after pavement installation and prior to the seal coat. Additionally, the final two coats of striping shall be reapplied 48 hours after the application of the seal coat.

3.08 ASPHALT CONCRETE

A. Requirements: The bituminous concrete shall consist of mineral aggregate, uniformly mixed with bituminous material in a central plant in accordance with SSPWC Section 203-6. The percentage of asphalt binder shall be in accordance with SSPWC Section 203-6. The mixing plant and construction equipment shall conform to the requirements of SSPWC Sections 203-6 and 302-5.

B. Placing: Deliver bituminous mixtures to the work site temperatures specified in SSPWC Section 302-5.5. Spread and place in accordance with SSPC Section 302-5.5. Asphalt surface shall be fog-sealed.

C. Compaction: Initial or breakdown rolling and the final rolling of the uppermost layer of the asphalt concrete shall be in accordance with SSPWC Section 302-5.6. Compaction by vehicular traffic shall not be permitted.

3.09 JOINING PAVEMENT

A. Carefully make joints between old and new pavements or between successive days work in such manner as to insure a continuous bond between old and new sections of the course in accordance with SSPWC Section 302.

B. Expose and clean edges of existing pavement. Cut edge to straight, vertical surfaces. Paint all joints with a uniform coat of tack coat before the fresh mixture is placed. Prepare joints in the new pavement in accordance with SSPWC Section 302-5.7.

3.10 JOINING NON-PAVED AREAS

Where paving will join landscape or other non-hardscape area a redwood header shall be installed.

3.11 TOLERANCES

A. Flatness: Maximum variation of 1/8 inch when measured with a 10-foot straight edge. Asphalt substrate shall not vary from planned cross slope by more than +/- 0.2%. Finished asphalt shall be smooth and planar and shall not vary greater than 1/8", plus or minus, under a 10-foot straight edge in any direction. Contractor shall be responsible for providing a survey of new asphalt surfaces that are acceptable to District or District's representative, and to water flood the surface with a water truck in the presence of District or District's representative. If after 20 minutes, "birdbaths" are evident in a depth more than 1/8", the contractor and the District or District's representative will determine the best method of correction at no cost to District.

B. Variation from True Elevation: Within 1/4 inch.

3.12 FIELD QUALITY CONTROL

A. Inspection and testing shall be performed by the District's Testing Laboratory.

B. Field inspection and testing will be performed by the District 's Testing Laboratory. The Contractor shall cooperate with such testing and shall give the District's Representative advance notice of paving scheduling. Sufficient "Advance Notice" shall be determined by the District's Representative.

C. If tests indicate materials do not meet specified requirement, replace material and retest at no additional cost to the District.

D. Frequency of Test: As determined by the District's Testing Laboratory.

3.13 PROTECTION

After placement, protect pavement from mechanical injury.

END OF SECTION 32 12 16

SECTION 32 16 00
CONCRETE CURBS

PART 1 – GENERAL

1.01 SUMMARY

A. Concrete for curbs.

1.02 RELATED SECTIONS

A. Section 31 20 00 – Earthwork

1.03 REFERENCES

A. Standard Specifications for Public Works Construction (SSPWC), latest edition.

B. Geotechnical Recommendations for Replacement Asphalt Concrete Pavements at Rancho Rosal School, in the Pleasant Valley School District, in Camarillo, California (Dated January 28, 2026, Project No. 1025.008.02), prepared by Geotechniques, and shall be superseded by the most current version.

C. ASTM standards.

1.04 SUBMITTALS

A. Submit the following:

1. Product Data: Provide data on admixtures and curing compounds.

2. Concrete mix design(s).

3. Certificates from the batch plant.

1.05 QUALITY ASSURANCE

A. Perform Work in accordance with the SSPWC, latest edition; and ASTM Standards, latest edition.

B. Obtain cementitious materials from same source throughout.

1.06 ENVIRONMENTAL REQUIREMENTS

A. Do not place concrete when base surface temperature is less than 40 degrees F or surface is wet.

PART 2 – PRODUCTS

2.01 FORM MATERIALS

A. Form Materials: Section 303-5 of the SSPWC.

2.02 CONCRETE MATERIALS

A. Concrete Material:

1. Class 520-C-2500. Portland cement concrete per Standard Specifications for Public Works Construction Section 201-1.1.2.

2. Concrete reinforcements shall be constructed per the Project Plans and Specifications.

2.03 ACCESSORIES

A. Curing Compound shall conform to SSPWC Section 201-4. Pigmented compound shall not demonstrate any residual coloring of the concrete after one week.

2.04 CONCRETE MIX

A. Mix and deliver concrete in accordance with ASTM C94.

B. Use accelerating admixtures in cold weather only when approved by the District's Representative. Use of admixtures will not relax cold weather placement requirements.

C. Use calcium chloride only when approved by the District 's Representative.

D. Use set retarding admixtures during hot weather only when approved by the District 's Representative.

2.05 CONCRETE REINFORCEMENT

A. Concrete reinforcement shall conform to SSPWC Section 201-2.

2.06 SOURCE QUALITY CONTROL

A. Provide certificates of compliance from the batch plant.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Verify compacted subgrade is acceptable and ready to support imposed loads.

B. Verify gradients and elevations of subgrade are correct.

3.02 PREPARATION

A. Moisten subgrade to minimize absorption of water from fresh concrete. Compact subgrade material to a depth of 12" beneath aggregate base below concrete pavements to 95% relative compaction.

B. Coat surfaces of catch basin frames with oil to prevent bond with concrete pavement.

C. Notify District's Representative a minimum of 24 hours prior to commencement of concrete placement operations.

3.03 FORMING

A. Place and secure forms to correct location, dimension, and profile.

B. Assemble formwork to permit easy stripping and dismantling without damaging concrete.

C. Place joint filler vertical in position, in straight lines. Secure to formwork during concrete placement.

3.04 PLACING CONCRETE

A. Place concrete in accordance with SSPWC Section 303-5.

B. Install ½" thick fiberboard expansion joint and snap cap. Seal with Sikaflex self-leveling sealant after removal of snap cap (typical).

C. Construct weakened plane joints conforming to SSPWC Section 303-5.4.3, one inch deep, at intervals not exceeding 10 feet.

D. The top edges of curbs shall have 0.5" radius.

3.05 FINISHING

A. Concrete finishes to conform with SSPWC Section 303-5.

3.06 FIELD QUALITY CONTROL

A. Inspection and testing shall be performed by the District's Testing Laboratory.

B. District 's Testing Laboratory will perform slump and compressive strength tests.

C. Contractor shall maintain records of placed concrete items. Record date, location of pour, quantity, air temperature, and test samples taken.

3.07 PROTECTION

A. Immediately after placement, protect pavement from premature drying, excessive hot or cold temperatures, vandalism and mechanical injury.

B. It is the Contractor's responsibility to replace all concrete work subject to vandalism and graffiti at no extra cost to the District.

END OF SECTION 32 16 00

PLAYGROUND RESILIENT SURFACING
ELITE SYNTHETIC TURF

PART 1 - GENERAL

1.01 WORK

A. Furnishing, delivery, installation and warranty of a complete synthetic turf system including drainage, synthetic turf, and resilient infill material.

1.02 ATTENUATION CUSHION LAYER

See Section 2.03

1.03 REFERENCES

A. ASTM Standard Test Methods

- **F1292** - Standard specification for Impact Attenuation of Surfacing Materials within the Use Zone of Playground Equipment.
- **D1577** - Standard Test Method for Linear Density of Textile Fiber
- **D5848** - Standard Test Method for Mass Per Unit Area of Pile Yam Floor Covering
- D418-Standard Test Method for Testing Pile Yarn Floor Covering Construction
- **D1338-** Standard Test Method for Tuft Bind of Pile Yarn Floor Coverings
- **D1682** - Standard Method of Test for Breaking Load and Elongation of Textile Fabrics
- **D5034** - Standard Test Method of Breaking Strength and Elongation of Textile Fabrics (Grab Test)
- **F1551** - Standard Test Methods for Water Permeability
- **D2859** - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials
- **F355** - Standard Test Method for Shock-Absorbing Properties of Playing Surfaces
- **D1557** - Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.

B. STC Suggested Guidelines for the Essential Elements of Synthetic Turf Systems

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C. IPEMA Certification: Manufacturer must provide proof of certification. In the interest of public playground safety, IPEMA provides an independent laboratory which validates a manufacturer's certification on conformance to ASTM F1292.

1.04 PROJECT CONDITIONS

A. Coordinate all work with the work of other sections to avoid delay and interference with other work.
B. Protect excavations by shoring, bracing sheeting, underpinning, or other methods as
required to prevent cave-ins or loose dirt from entering excavations. Barricade open excavations and post warning lights at work adjacent to public streets and walks.

1.05 SITE INSPECTION

A. The inspection shall include a check for planarity. The finished surface shall not vary from a true plane more than 0.25" in 10' when measured in any direction. The Contractor shall provide all required tools and materials needed for the planarity check, which may include but not be limited to, a laser level, string line, straight edge and/or other assessment materials. The Contractor shall mark in the field any deviations from grade in excess of those specified above, as well as provide a marked-up plan locating the deviations. The Contractor shall correct any deviations to the satisfaction of the Engineer and Synthetic Turf Installer.
B. The compaction of aggregate base shall be 95% to Standard Proctor and surface tolerances shall not exceed 0.25" over 10'.
C. The Contractor shall have a state registered surveyor conduct an elevation survey of the area in a 25' grid to determine and verify that subgrade elevations and slopes are within previously specified tolerances. This elevation survey may require further verification of smaller areas within the 25' grid if determined necessary by the Engineer.
D. When any or all corrective procedures have been completed, the finished sub-base surface must be re-inspected, with the same

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representatives attending as the initial inspection. If required, additional repair and inspections are to be conducted until the sub-base surface is deemed acceptable by the Engineer and Synthetic Turf Installer

E. Once the sub-base surface has been deemed acceptable, the Contractor shall submit a written certificate indicating the acceptance of:
   1. The sub-base construction finished surface as totally suitable for the application of the selected synthetic turf system, and
   2. The sub-base construction as totally suitable for work under this section to proceed with the final installation and fully warrant the turf surface installation for the period and conditions specified herein.

F. Commencement of work under this section shall constitute acceptance of the work completed under other sections by the Contractor, acceptance of dimensions of the sub- base, and hence, no claims for extra work based upon these conditions will be permitted.

1.06 ENVIRONMENTAL CONDITIONS

A. Install synthetic turf surfacing only when ambient air temperature is 50° F and rising or above and the relative humidity is below 35% or as specified by the product manufacturer. Installation will not proceed if rain is imminent.
B. Install product only when prepared base is suitably free of dirt, dust, and petroleum products, is moisture free and sufficiently secured to prevent unwanted pedestrian and vehicular access.
C. Maintain all benchmarks, monuments, and other reference points. If disturbed or destroyed, replace as directed.
D. Adjacent streets, sidewalks, and property shall be kept free of mud, dirt, or similar nuisances resulting from earthwork operations.

1.07 QUALITY CONTROL

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section.

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Manufacturer: ITS - Sprinturf

1. Materials other than those listed must be approved 30 days prior by written addendum. Materials from non-approved manufacturers will not be accepted.
2. Must be experienced in the manufacturing of tall-pile synthetic infill turf systems with the same fiber as specified.
3. Manufacturer must be a member in good standing with the STC.
4. Manufacturer must utilize best practices as certified by ISO-9001.
5. Manufacturer must be owned and operated in the U.S.A.
6. Manufacturer must have no periods of insolvency over the last 25 years.

A. **Installer Qualifications:** Company specializing in performing the work of this section.

1. The Synthetic Turf Installer must provide competent workmen skilled in this type of synthetic turf installation. All technicians must have installed similar synthetic turf.

B. Prior to the beginning of installation, the Synthetic Turf Installer shall inspect the subbase. The installer will accept the sub-base in writing when the general contractor provides test results for compaction, planarity and permeability that are in compliance with the synthetic turf manufacturer's recommendations and as stated herein.

C. Remove defective work, whether the result of poor workmanship, defective products or damage, which has been rejected by the Engineer as unacceptable. Replace defective work in conformance with the contract documents.

1.08 SUBMITTALS

A. **Submit the following with Proposal:**

1. Submit the exact product name/description as well as the name and location of the manufacturers and suppliers of each component. Manufacturers and suppliers must not be changed after the contract is awarded unless approved by the Owner in writing.
2. Submit two samples, l 2"x12" minimum size, illustrating details of finished product as bid, including full cross section of sub-base, turf, and infill material.

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3. Product Literature: Submit two copies of manufacturer's recommended installation and maintenance information, including any technical criteria for evaluation of the installed product. Descriptions of all equipment recommended for the maintenance and repair of turf product, as well as a list of any activities not recommended relative to the warranty.
4. Submit a 1-lb sample of the selected bid infill material(s).
5. A letter and specification sheet certifying that the products of this section meet or exceed specified requirements.
6. Certified copies of independent (third-party) laboratory reports on ASTM tests as follows:
   a. Pile Height, Face Width & Total Fabric Weight, ASTM D418 or D5848
   b. Primary & Secondary Backing Weights, ASTM D418 or D5848
   c. Tuft Bind, ASTM D1335
   d. Grab Tear Strength, ASTM D1682 or D5034
7. ASTM test submittals may vary by no more than 5% of the specified product to bid. Bid winner must show NEW ASTM TESTS with contract submittals.
8. Name and experience of the designated supervisory personnel assigned to this project shall be submitted with the proposal. Changes to this assignment after contract can only be made if approved in writing by the Owner. Include a listing of other on-site personnel and their experience.
9. The Synthetic Turf Installer and Turf Manufacturer shall provide evidence that the turf system does not violate any other manufacturer's patents, patents allowed or patents pending.

1.09 WARRANTY

A. The Contractor shall provide a minimum wear policy provided by the manufacturer, against defects in materials and one year against defects in the workmanship. Defects shall include, but not be limited to ultraviolet ray fading, degradation, or excessive wear of fiber.

B. Warranty shall be for full replacement of any damaged product within the warranty period. This is Subject to repairability. Warranty shall be comprehensive and sufficient to replace all turf if necessary.

C. Warranty shall become effective from the date of substantial completion.

D. Warranty shall contain no usage limits for warranted turf.

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E. Submit Manufacturer Warranty and ensure that forms have been completed in Owner's name and registered with Manufacturer.

PART 2 PRODUCTS

2.01 SUPPLIER QUALIFICATIONS

A. The Owner has conducted an extensive review of synthetic turf products, including visiting installed sites and review of other agencies' review criteria. Based upon their research, they have established the following criteria for acceptance of a synthetic turf product. No variation from these criteria shall be allowed. The Owner's review is considered final.
B. The Synthetic turf installer shall have minimum experience of at least five years, actively selling, installing and maintaining in-fill synthetic turf project of similar size.
C. The Synthetic turf installer must provide a list of references based on previous installations.
D. Installation team shall be established, insured installation firm experienced as a premium turf installer with suitable equipment and supervisory personnel, with a minimum of *5* years' experience with 15-foot-wide tufted materials.

2.02 TURF SYSTEM

A. **Turf Fiber:**

1. The turf fiber must be tufted to the backing with a minimum tuft bind of 8 pounds.
2. The tufted fiber weight shall be a minimum of 65 ounces per square yard.
3. The turf fiber shall be non-abrasive and a minimum of 100 microns thick for slit tape fibers and 350 microns thick for the monofilament fiber.
4. The turf fiber must contain less than 100 ppm of lead chromate in all colors.
5. The turf fiber systems must be from the same dye lots.
6. The turf fiber must retain a minimum of 75% of its original fibril width after 10,000 cycles on the Lisport Studded Roll Test Machine.
7. The pile fiber shall possess the following characteristics:

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Characteristic	Value	Test
Linear Density (Denier)	Monofilament: 12,000	ASTM D 1577
Yarn Thickness	270 microns	ASTM D 3218
Tensile Strength	71 N (PE Mono);16 N (PE)	ASTM D 2256
Pile Weight*	65 oz./yd2	ASTM D 5848
Fiber manufacturer must be from the same source		

The above specifications are nominal. *Values are +/-5%.

8. The pile fabric shall possess the following physical characteristics:

Characteristic	Value	Test
Finished Pile Height*	1" (25.4mm)	ASTM D 5823
Product Weight (total)*	93oz./yd2	ASTM D 3218
Primary Backing Weight*	8.0oz./yd2	ASTM D 2256
Secondary coating Weight**	20oz./yd2	ASTM D 5848
Fabric Width	15' (4.57m)	ASTM D 5793
Tuft Gauge	3/8"	ASTM D 5793
Grab Tear Strength	350-lb-F	ASTM D 5034
Tuft Bind	>8-lb-F	ASTM D 1335
Infill (Sand)	3 lbs. antimicrobial-coated Silica Sand	None

Except where noted as a minimum, the above specifications are nominal
*Values are +/-5%. **All values are +/-3 oz./yd2.

Backing Materials

Primary Backing:

a. Primary backing must be a dual layered woven polypropylene material with polyester fibers used in the weft direction of at least one layer
b. Primary backing system weight must be a minimum of 8.0 ounces/square yard.
c. Primary backing layers must be stitched together to form a composite

Secondary Backing:

a. Secondary backing system weight must be a minimum of 20 ounces/ square yard.
b. Secondary backing shall saturate the primary backing and effectively lock the fiber tufts in place to the primary backing.
c. Secondary backing must be a heat activated polyurethane coating
d. Secondary backing system shall have minimum tuft bind strength of 8

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pounds.

A. **Turf roll seams:** to be sewn or glued on site so that no openings larger than the porous backing mat openings are created. All turf fabric edges to be securely bound as per the perimeter detail design. Adhesives for joining seams of turf together shall be Mapei PU1K Glue. No substitutions.
B. **Fabric surface:** shall be constructed and installed in minimum widths of 15 feet with no longitudinal or transverse seams.
C. The entire system shall be resistant to weather, including ultra-violet light and heat degradation; insects, rot, mildew and fungus growth and be non-allergenic and non-toxic.
D. The turf material shall be non-combustible and pass the DIN standard pill burn test or ASTMD2859.

2.03 ATTENUATION LAYER

A. Cushion layer to be Brock Pad or SBR/Chunk base
B. Brock Pad Underlayment System

1. General Requirements for Underlayment System – An impact energy absorbing sub-base drainage system designed specifically for use with synthetic turf is required. The specified material must have physical, drainage and performance properties that meet the following requirements:
2. Minimum material nominal thickness 50.8 mm (2”) – material thickness must be within ± 2 mm (± 0.08”)
3. Tensile Strength >50 psi (ASTM D3575)
4. Tensile Elongation >10% (ASTM D3575)
5. Compression Strength >20 psi @ 25% strain (ASTM D3575)
6. Water Permeability >1500 in/hr (EN 12616:2013)
7. Water Absorption □ 1% after 24 hrs (ASTM C272)
8. Linear Thermal Expansion < 0.10 mm /m /°C (ASTM D696)
9. Flammability Flame Spread < 100 mm /min. (FMVSS 302)
10. Resistance to Chemicals □ 2 (ASTM F925)
11. Resistance to Acid and Alkaline Liquids 0% tensile strength loss after 100-year model (EN 14030:2010 / ISO 12960:1998)
12. Resistance to Accelerated Aging (Oxidation) <10% tensile strength loss after 100-year model of 56 days at 110oC (ISO 13438:2004)

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13. Resistance to Bacteria - no growth (ASTM G22)
14. Resistance to Fungi - no growth (ASTM G21)

2.04 SYNTHETIC GLUE MATERIAL

A. Adhesive products shall be Mapei PU1K glue.
B. Any adhesive products required for the installation of a proposed turf system shall be purpose-suited to the system. The material and application methods shall be as recommended by the adhesive manufacturer.
C. Disposal of adhesive containers and unused adhesives as well as any fees resulting from such disposal shall be the responsibility of the Contractor.

2.05 INFILL MATERIAL

A. The synthetic infill material shall consist of a blend of Antimicrobial Coated Silica Sand, ceramic coated silica sand.

1. **Antimicrobial Coated Sand:** infill for synthetic/artificial turf this product consists of silicon dioxide coated with an acrylic polymer. HAZARDS DISCLOSURE: This product does not contain known hazardous materials in reportable levels as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200. This product should be classified as NOT being toxic, corrosive, skin/eye irritants, or a strong sensitizer as defined in 16 CFR 1500.3(b)(5), and 1500.3(b)(7)- (9) of the Federal Hazardous Substances Act.
    (a) Color - green,
    (b) Odor - Odorless
    (c) pH-value - Not applicable.
    (d) Change in condition - Melting point/Melting range: 1713 °C (3115 °F); Boiling point/Boiling range: 2230 °C (4046 °F)
    (e) Flash point - None
    (f) Flammability (solid, gaseous) - Product is not flammable.
    (g) Ignition temperature - Decomposition temperature - Not determined.
    (h) Auto igniting - Product is not self-igniting.
    (i) Danger of explosion - Product does not present an explosion hazard.

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(j) Explosion limits - Lower - Not determined; Upper - Not determined.
(k) Vapor pressure@ 1732 °C (3150 °F) - 13.5 hPa (10 mm Hg); Density@20 °C (68 °F) - 2.9-3.1 g/cm³ (24.201-25.87 lbs/gal); Bulk density- 110 (lbs per cu ft); Relative density - Not determined; Vapor density - Not applicable.
(l) Evaporation rate - Not applicable
(m) Solubility in/ Miscibility with: Water – Insoluble
(n) Partition coefficient (n-octanol/water) - Not determined
(o) Viscosity: Dynamic - Not applicable; Kinematic - Not applicable
(p) Solvent content: Organic solvents - 0.0 %; Solids content - 100.0 %
(q) Other information: No further relevant information available.

PART 3 EXECUTION

3.01 GENERAL

A. Installation of the synthetic turf system is to comply with the Manufacturer's recommendations, requirements and the reviewed and approved shop drawings.
B. Perform all work in strict accordance with the contract documents and the manufacturer's specifications and instructions. Only those skilled technicians proposed in the bid phase are to be assigned to this project by the Contractor.
C. The designated Supervisor for the Synthetic Turf Installer must be present during any and all construction activity associated with the field installation, including testing, cleanup and training.
D. All products and equipment are to be from sources approved by the authorized turf manufacturer and conform to the specifications.

3.02 PRODUCT DELIVERY, STORAGE & HANDLING

A. Deliver products to site in original containers and wrappers as agreed between the Engineer and Contractor. Inspect products upon delivery for damage.
B. Store products in a location and in a position, that protects them from crush damage or any other defects.
C. Handle and store (on and off site) all materials safely to ensure

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their physical properties are not adversely affected and that they are not subject to vandalism or damage.

D. Infill shall arrive dry and loose.
E. Adhesives shall arrive in dry, sealed containers.

3.03 SUB-BASE TYPES AND DETAILS

Sub-Base Requirements: The base shall have the specific minimum slope (2%) and shall vary no more than .125" when measured in any direction with a 10' straight edge.

STONE: The density requirement is 90% to 95% compaction with final condition of stone as level and stable so as not to shift when traveled on or during surface installation process. A compaction test is required and must be submitted to SurfaceMax prior to installation of turf surfacing. Failure to provide proof of compaction test will void the five- year warranty of Turf Surfacing should a sub-base failure occur.

DEPTH: 4" minimum thickness

SLOPE: Stone elevation shall maintain .25" per foot towards low end

POROSITY: Base course shall maintain porosity for direct drainage

ENCLOSURE: Stone base course must be surrounded by a retaining curb DRAINAGE: Subsurface drainage is recommended under and around stone
base. Perforated pipe or similar system is acceptable.

TOLERANCES: .25" in any 10' direction and .125" in and 3' direction.

STONE SELECTION: It is critical that different size stones are used so that the base shall be uniformly mixed. The material shall be wetted during mixing operations, if necessary, for proper blending.

STONE GRADUATION:	U.S. SIEVE	PERCENT PASSING
	1"	100%
	¾"	90-100%
	No.4	35-60%
	No. 3010	30%
	No. 200	2-9%

FINISH LAYER: In the event turf is going directly over the aggregate, a finishing layer of 1" - 1.5" compacted Decomposed Granite (DG) over the aggregate is highly recommended.

CONCRETE or ASPHALT: Concrete should be finished with a medium broom finish. All new concrete slabs must cure for a minimum of seven days prior to installation. Asphalt cure time requires fourteen days. Once the new asphalt has cured, it must be

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pressure washed prior to the surfacing being installed. The concrete contractor shall be responsible for flooding the pad to insure proper slope and tolerance. Any areas holding enough water to cover a flat nickel shall be patched prior to arrival of turf installation crews.
DEPTH: 4" minimum thickness
SLOPE: Concrete or Asphalt shall maintain a .25" per foot
TOLERANCE: Concrete must maintain a tolerance of .125" in 10' to avoid low areas that will hold water under the turf.

a. Thermal stability: <2%

3.04 TURF INSTALLATION

A. Install synthetic turf system in accordance with the Manufacturer's written installation instructions.
B. Turf shall be attached to the perimeter edge as shown in the construction plans and as per the manufacturer.
C. All seams shall be brushed thoroughly before infill materials are installed.
D. All terminations shall be as detailed and approved in the shop drawings.

3.05 INFILL INSTALLATION

A. The synthetic turf shall be thoroughly brushed prior to installation of infill materials to remove wrinkles.
B. Turf shall always remain free draining before, during and after the infill materials are installed.

3.06 MATERIALS

A. Playground Synthetic Turf Manufacturer: ITS | (855) 464-8873
B. Location used: Playground Area

3.07 CLEANING AND COMPLETION

A. Protect all installed work from other construction activities as installation progresses.
B. The Contractor shall keep the area clean throughout the construction period and free from the installation process, including track surfaces.
C. Upon completion of the installation, thoroughly clean surfaces and site of all refuse resulting from the installation

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process, including track surfaces.

D. Any damage to existing fixtures or facilities resulting from the installation of the synthetic turf system shall be repaired to original condition at the Contractor's expense prior to substantial completion and commencement of the warranty period.

E. A deficiency list will be produced by the Engineer at the conclusion of the project. All installation project deficiencies not in dispute must be remedied by the Contractor prior to the issuance of a certificate of substantial completion.

F. Contractor to provide a written acceptance that the turf and base system is installed in accordance with their recommendations prior to final completion.

End of Document

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SECTION 32 18 16.13
PLAYGROUND PROTECTIVE SURFACING
STANDARD POURED IN PLACE (PIP) EPDM, TPV

PART 1 – GENERAL

1.01 WORK SCOPE

A. Furnish labor, material, and equipment necessary to install the poured-in-place, resilient surfacing system as shown on the drawings and specified herein.

a. Work shall include, but not be limited to the following: layout; excavation; backfill; furnishing and installing of base material; furnishing and installing of poured-in-place, resilient surfacing and all other incidental work to provide a complete resilient surfacing system.

b. Poured in place playground surfacing shall consist of a polyurethane binder mixed with recycled rubber, which will make up the attenuation cushion layer. The attenuation cushion layer is capped with EPDM, TPV and/or SBR granules, mixed with a polyurethane binder creating the Wear Course.

c. Surfaces shall comply with ADA and CPSC guidelines as well as ASTM Standards. Manufacturer is to be certified by IPEMA, a third-party testing organization for playground surfaces and equipment.

1.02 PERFORMANCE REQUIREMENTS

A. Area Safety: Poured in place within playground use zones shall meet or exceed the performance requirements of the CPSC, ADA and Fall Height Test ASTM F1292. 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 drawings. IPEMA certification is required. (ASTM F1292, section 15 The laboratory test used to determine critical fall height shall have been conducted on surfacing material samples identical in design, materials, components, and thickness and manufactured as the installed playground surface).

B. Accessibility: NOTE: Children's outdoor play areas shall be in compliance with the Uniform Federal Accessibility Standards (UFAS) FED-STD-795 and the Architectural and Engineer Instructions (9AEI) Design Criteria.

C. The requirements of the Americans with Disabilities Act. Accessibility Guidelines (ADAAG) 28 CFR Part 36 that provide equal or greater accessibility than the

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requirements of UFAS must also be met in children's outdoor play areas.

D. Poured in place surfaces intended to serve as accessible paths of travel for persons with disabilities shall be firm, stable and slip resistant, and shall meet the requirements of ASTM F1951and ASTM F1292.

1.03 APPLICABLE STANDARDS

A. ASTM International

B. ASTM D2047- Standard test method for determining the static coefficient of friction of ceramic tile and other like surfaces by the horizontal dynamometer pull meter method. This standard replaces ASTM C1028.

C. ASTM D412 – Standard test methods for vulcanized rubber and thermoplastic rubbers and thermoplastic elastomers-tension.

D. ASTM D624 - Standard test method for tear strength of conventional vulcanized rubber and thermoplastic elastomers.

E. ASTM D2859 – Standard test method for flammability of finished textile floor covering materials.

F. ASTM E303 – Standard test method for measuring surfacing frictional properties using the British Pendulum tester.

G. ASTM F1292 – Standard specification for impact attenuation of surface systems under and around playground equipment.

H. ASTM F1951 – Standard specification for determination of accessibility of surface systems under and around playground equipment.

1.04

Poured in place surfaces shall be manufactured and installed by trained, experienced company employees or certified installers who have successfully completed the "Certified Installers Training Program" required by SurfaceMax.

1.05 SUBMITTALS: THE FOLLOWING SHALL BE SUBMITTED

A. The Contractor shall submit a complete set of the material submittals, as required, including manufacturer's name and address, specific trade names, catalog and model numbers, illustrations and descriptive material, and samples of the proposed material for this project clearly marked as to proposed items for approval by the Owner's representative.

B. Products submitted as equal must include hard copies of manufactures written specifications, warranty, purchase and use of materials.

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C. Manufacturer's descriptive data and installation instructions.

D. Manufacturer's details showing depths of wear course and sub-base materials, anchoring systems and edge details.

E. Upon request, a listing of at least five installations where products similar to these proposed for use have been installed and have been in service for a minimum period of three years. The list shall include owner or purchaser, address of installation, date of installation, contact person, and phone number.

F. A signed statement by an authorized official certifying that the surfacing system meets the requirements of ASTM F1292 section 15 for a head-first fall from the highest accessible portion of the specified playground equipment.

G. 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.

H. A Certificate of Insurance shall be provided by the Manufacturer for poured in place surfacing for use as playground safety surfacing, covering general and product liability, of not less than $1,000,000 for each occurrence, $2,000,000 general aggregate, with an excess/umbrella liability of $25,000,000. The issuing underwrite shall be AA rated.

I. **IPEMA Certification mandatory**

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

1.07 Project Site Conditions: Poured in Place surfacing must be installed on a dry sub- surface, with no prospect of rain within the initial drying period, and within the recommend temperature range of the manufacturer. Installation in weather condition of extreme heat, cold (less than 40°F), and/or high humidity may affect cure time, and the structural integrity of the final product. Immediate surrounding sites must be reasonably free of dust conditions or this could affect the final surface look.

1.08 Sequencing and Scheduling: Poured in Place surfacing shall be installed after all playground equipment, shade structures, signs and any other items that will be within the surfacing area. Coordinate with General Contractor.

1.09 Surface installation coordinated by manufacturer representative.

1.10 Warranty: Poured in Place surface shall maintain required impact attenuation characteristics and be guaranteed against defects in workmanship AND material for a limited five-year period or as specified and agreed upon per alternate contract. Warranty

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will be specific to maintenance requirements and performance standards of completed product. Warranty is void if not installed by Manufacturers Trained and Certified Poured in Place Surfacing Installers.

1.11 Testing: NOTE: Critical Fall Height Four feet through 10 feet have been tested in accordance with Section 15 – Critical Fall Height Test Procedure of ASTM F1292.

PART 2 – PRODUCTS

2.01 Safety surfacing shall consist of both recycled and synthetic materials meeting the requirements of this specification. The type of safety surfacing shall be SurfaceMax, manufactured and installed by SurfaceMax, or it's Certified Installers.
Telephone: 800-727-1907

2.02 PRODUCT SCOPE

A. Poured in Place Surface: The poured in place surface shall consist of recycled rubber mixed with a polyurethane binder, then capped with EPDM, TPV and/or SBR granules granules mixed with an aliphatic binder or aromatic binder.

B. It shall consist of a uniform material manufactured in such a way that the top portion meets the requirements specified herein for wear surface.

C. The type of safety surfacing shall be a poured-in-place system and shall be indicated on the drawings.

2.03 ATTENUATION CUSHION LAYER SECTION

A. Impact attenuation cushion layer consists of these materials; recycled styrene butadiene rubber (SBR) and/or cryogenic crumb rubber and/or pre consumer postindustrial reclaimed scrap rubber adhered with a 100% solids polyurethane binder to form a resilient porous material.

B. Strands of SBR may vary from 0.5 mm – 2.0 mm in thickness by 3.0 mm – 20 mm in length.

C. Chunk Premium Black Rubber Granules are 5/8" granules: This rubber is pre-consumer, post-industrial, reclaimed rubber, granulated through a 5/8" screen and contains less than 2% dust.

D. SBR Crumb Rubber (5-9 Mesh) using sieve analysis ASTM D5644 with a fiber content of .1% or less mixed in.

E. SBR homogeneous rubber pellets derived from rubber powder reclaimed from end of use tires. Genan Pellets 3.8/35.

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F. Depending on base material; binder shall be between 4-12% of the total weight of the material and shall provide 100 % coating of the particles.

G. The attenuation cushion layer shall be compatible with the wear course and must meet requirements herein for impact attenuation.

2.04 WEAR COURSE

A. Wear course shall consist of Ethylene Propylene Diene Monomer (EPDM) or (TPV) Rosehill TPV® proprietary formula, consisting of a vulcanized (fully cross-linked) premium colored rubber granule with polyurethane binder formulated to produce an even, uniform, seamless surface. Installation of surfacing shall be seamless (unless otherwise agreed upon by owner).

B. EPDM shall be sulfur cured with a poly content of ≥20 % content to maintain dynamic testing characteristics, weatherization and UV stability. Size of EPDM granules shall be 1-4mm across. Binder shall be not less than 20% of total weight of rubber used in the wear surface and shall provide 100% coating of the particles.

C. ASTM D2240 (Shore A) hardness ±5% of 60.

D. Rosehill TPV® shall be angular granules with a (Shore A) hardness of 65°A ±5 and particle size between 1-4mm. Binder shall not be less than 20 percent of total weight of rubber used in the wear surface and shall provide 100 percent coating of particles.

E. Thickness of wear course shall be a minimum .5” (12.7 mm).

F. The wear course shall be porous.

2.05 BINDER

A. No Toluene Diphenyl Isocyanate (TDI) shall be used.

B. No filler materials shall be used in urethane such as plasticizers and the catalyzing agent shall contain no heavy metals.

C. 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).

D. Manufacturer is permitted to modify the type of urethane required to match extreme weather conditions. Substitutions must be equal to or exceed original quality.

2.06 ADVANTAGE INSERTS

A. Insert – Rosehill TPV®, a proprietary formula, consisting of a vulcanized (fully cross-linked) premium colored rubber granule with a (Shore A) hardness of 65° A

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± 5 and particle size between .5-1.5 mm shall be used.

B. Thickness of the Advantage Insert shall be .5”

C. Advantage Inserts shall be porous.

D. Aliphatic or Aromatic urethane to be used as a binder.

E. Location –Insert to be installed under swings, swing bays, slide exits (unless otherwise noted in drawings). Customer to approve location of wear mat inserts.

F. Standard Color .5-1.5mm to be used. Colors include four standard colors: Terra Cotta Red, Blue, Green, and Beige.

G. Size: Swing bay use locations shall have TPV Inserts inclusive of all outside bay structure poles. Singular swings and slide exits shall be 4’x4’x.5” in thickness.

2.07 MATERIALS

A. Wear Course - EPDM Granules and/or Rosehill TPV® Granules

As Distributed by: SurfaceMax | 800-727-1907
Location Used: Playground Area

B. Attenuation cushion layer – Shredded and/or Chunk, and or Pellet rubber

As Distributed by: SurfaceMax | 800-727-1907
Location Used: Playground Area

C. Binder – Aromatic Urethane

As Distributed by: SurfaceMax | 800-727-1907
Location Used: Playground Area

D. Binder – Aliphatic Urethane Premium, Non-Ambering

As Distributed by: SurfaceMax | 800-727-1907
Location Used: Playground Area

E. Chunk Premium Black Rubber Granules

As Distributed by: SurfaceMax | 800-727-1907
Location: Playground Area

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PART 3 – EXECUTION

3.01 SITE PREPARATION

A. Finished Grade/Slope: Verify that finished elevations or adjacent areas are as indicated on the architectural or site plans, that the appropriate sub-grade elevation has been established for the safety surface to be installed, and that the subsurface has been installed per architectural, site or equipment plans while meeting accessibility and use zones requirements.

B. Aggregate Sub Base: Tolerance of aggregate sub-base shall be within .5" in depth. Verify that aggregate sub-base has been fully compacted. Per ADA Guidelines: compacted Aggregate sub-base – 4" of .75" minus irregular stone with fines compacted to 95% in 2" watered lifts.

C. Concrete Sub-Base: Tolerance of concrete or bituminous sub-base shall be with .125" (3.0 mm) in 10' (3050 mm). Per ADA Guidelines: Concrete a minimum of 3' – 4' at a minimum 2500 PSI. Concrete must cure for 7 days prior to application of attenuation cushion layer. Concrete must cure 21-28 days if wear course is to be applied directly to concrete surface. If poured in place surfacing is installed, verify that the concrete sub- base has cured (all areas appear white in color usually at 7 days) and that all concrete curing compounds and other deleterious substances that might adversely affect adhesion have been removed. Surface shall be clean and dry.

D. Asphalt Sub-Base: Asphalt cure time requires 21-28 days. Once the new asphalt has cured, it must be pressure washed prior to the surfacing being installed. The contractor shall be responsible for flooding the pad to ensure proper slope and tolerance. Any areas holding enough water to cover a flat nickel shall be patched prior to the arrival of our installation crews.

E. Drainage: Verify that sub-surfacing drainage, if required, has been installed to provide positive drainage.

3.02 INSTALLATION

A. 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 manufactures recommendations. Installation of surfacing shall be seamless up to 2,000 square feet per day. Material shall cover all foundations and fill around all elements penetrating the surface.

B. Attenuation Cushion Layer: Whenever practical, attenuation cushion layer of surfacing material shall be installed in one continuous pour on the same day of up to 2,000 square feet. When a second pour is required, step the seam (see detail) and fully coat the step of the previous work with polyurethane binder to ensure

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100% bond with new work. Apply adhesive in small quantities so that new attenuation cushion layer can be placed before the adhesive dries.

C. Wear Course: Wear course must be quality peroxide cured EPDM or Rosehill TPV® granules. wear surface shall be bonded to attenuation cushion layer. If necessary, additional primer will be used between the attenuation cushion layer and wear course. Apply adhesive to attenuation cushion layer in small quantities allowing the wear course to be applied before adhesive dries. Surface shall be hand troweled to a smooth, even finish. Expect continuous and seamless up to 2,000 square feet per day (contact sales representative for seamless in excess of 2,000 square feet). 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. Pads with multiple seams are encouraged to include a topcoat of urethane before being placed into use. Butt joint seams are not acceptable except for repairs. Under special conditions and with Owners written approval seams may be permitted in same color pad. Consult with Manufacturer for specific applications.

D. Perimeter: For installations over existing concrete, the perimeter shall be saw cut to provide a keyway 1” deep x 1” wide, or formed during the pour, with surfacing rolled down into the void. Primer adhesive must be applied to all sides of the void. When connecting to a concrete curb or border, the inside vertical edge shall be primed with adhesive and the final 2” of the attenuation cushion layer shall be tapered to allow the wear surface material to be 1.5”– 2” thick where it joins the concrete.

E. Asphalt: When installing over new asphalt, a curb or other type of border is recommended around the entire pad to separate the new surface from other ground materials. Primer adhesive must be applied to the inside vertical edge of the border before poured in place surface installation.

F. Asphalt: When installing over existing asphalt, a keyway cut of 1” deep by 1” side for the poured in place to taper into and terminate with required ADA slope.

G. Thickness: Construction methods such as the use of measured screeds or guides shall be employed to ensure that the 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.

H. Clean Up: Manufacturer installers shall work to minimize excessive adhesive on adjacent surfaces or play equipment. Spills of excess adhesive shall be promptly cleaned.

I. Protection: The safety surface shall be allowed to fully cure in accordance with

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Manufacturer's instructions. The surface shall be protected by the owner from all traffic during the curing period of at a minimum of 48 hours or as instructed by the Manufacturer.

J. Manufacturer Services: For poured in place safety surfacing, a Manufacturer's representative who 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.

3.03 SITE AREA CLEAN UP

The site shall be kept clean and free of tools, trash, and debris and installation materials daily. Products may be stored on site during installation with appropriate protective measures and approval by the Owner's representative.

END OF SECTION

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