ADDENDUM NO. TWO

PROJECT:	**Sunman-Dearborn Community Schools Renovations**
PROJECT NUMBER:	**23138**
DATE OF ADDENDUM:	**2024-10-16**

THIS ADDENDUM FORMS A PART OF THE CONTRACT DOCUMENTS AND IS ISSUED IN ACCORDANCE WITH THE INSTRUCTIONS TO BIDDERS. ACKNOWLEDGE RECEIPT OF THIS ADDENDUM BY SIGNING THE ADDENDUM ACKNOWLEDGMENT SECTION OF THE BID FORM.

QUESTIONS & ANSWERS:

Q: There are no cut thrus on the drawings, but existing conditions have all sill conditions being wrapped with the same painted brake metal trim. This trim will likely be damaged during demo, are we to replace with the same painted trim to match the current trim?
A: Yes, patch or replace interior and exterior surfaces damaged during demolition

Q: At BES on Sheet A610 there are specific designations on each storefront opening SF1 – SF14, but there are no notes on the Floor Plan or any building elevations showing where these locations are. Please provide an update on Elevations.
A: See elevation Markers on unit floor plans (A101A-A101C)

Q: I have the total seat count with the removable chairs at 1,486 seats. This is just a count of the chairs and number designation at the end of the aisles.
The “S” designation is for the removable chairs. The drawing shows a quantity of 6 of 3-chair removable assemblies and 4 of 1 chair removable assemblies. This is a total of 22 chairs. There are no loose chair designations on the drawing. The current space has a lot of open areas for wheelchairs, however, the drawing has no open areas when the removable chair and assemblies are present. I just wanted to make sure this is correct. Please provide clarification where loose chairs are to be placed.
A: No loose chairs, just removable chairs

Q: Auditorium Seating; attic stock, please clarify quantity needed, spec says a percentage and also gives totals, not sure which is correct.
A: Provide the numbers indicated

Q: Will you provide a roller shade schedule? There are no elevation drawings shown to determine size of windows that receive shades. Please include the Natatorium windows at High School.
A: High School: typical height 11’-4” typical widths: 14’-0” and 4’-8” VIF.
Middle School:
First Floor Typical Classrooms South (4 total): height 6’-4”, width 9’-4” VIF
First Floor Typical Classrooms West and North (10 total): height 4’-0”, width 9’-4” VIF
First Floor Double Window North-West corner classrooms (2 total): height 4’-0” width 20’-0” VIF
First Floor Band/Choir Room (7 total): height 3’-4”, width 6’-0” VIF
Second Floor Typical Classrooms (12 total): height 5’-6”, width 6’-0” VIF

Q: Sliding Security gates; Please clarify quantity of gates in Auditorium
A: Provide 4 gates total

Q: 4" Site Concrete, Do we need to include fiber or mesh reinforcement? Nothing shown on drawings or listed in specs.
A: For pedestrian flatwork reflected on L-Series Plans, Sheet L600 of EC High School plans & Spec Section 32 13 13 - 'Concrete Paving' indicate 5" thick concrete flatwork and specify reinforcement. No instances of 4" thick conditions were part of the final L-Series issued plans. Context is agreeable to either WWM or Fiber Reinforcement methods. Any flatwork exposed to potential maintenance traffic shall include WWM as shown in Detail 1 / L600. Flatwork exposed to only foot traffic shall include Fiber Reinforcement as shown in Detail 4 / L600.

Q: Can Thermaduct be used for ductwork on the roof at ECHS in lieu of material as shown?

A: No, Thermaduct is not an acceptable substitution.

Clarification: Where new mini-split HVAC systems are shown for TR Rooms, contractor shall remove existing packaged terminal air-conditioner unit complete including associated controls and mounting devices.

SPECIFICATIONS:

1. **Specification Section 04 21 00 – Unit Masonry**
   Add Brick Manufacturer:
   Belden Brown Velour A. 8"x8" Contact: Chris Martin

   Architectural Sales

   Lee Building Products

   Office: 317-842-6602
   Fax: 317-842-4044
   Cell: 317-246-8936
   Email: cmartin@leebp.com

2. **Specification Section 08 71 00 – Door Hardware**
   See Attached updated Door Hardware Door Index
   See Attached changes to Door Hardware Specification for door hardware numbers 09, 10, 18, 24, 24A, 24B, 25, 28, 28A, 30, 32 the other parts of the specification to stay the same

3. **Specification Section 08 80 00 – Glazing**

   Change 2.6 GLASS FILM to say:
   A. Provide 3M Fasara Chamonix applied as recommended by the Manufacturer.

4. **Specification Section 10 21 13 – Plastic Toilet Prtitions**
   Add spec section in its entirety

5. **Specification Section 230900 "Instrumentation and Control for HVAC"**
   a. Part 1.3 D: revise rough-in of thermostat to be by TCC. Refer to attached revised specification section.
   b. Part 1.3 G: mechanical contractor shall be responsible for interlock wiring. Refer to attached revised specification section.
   c. Part 1.5 A: workstation desktop and laptop computers shall be furnished by Owner. Refer to attached revised specification section.
   d. Part 2.2 A: Add Johnson Controls Facility Explorer with Niagara v4 Front End, installed by factory authorized branch as an approved manufacturer. Refer to attached revised specification section.

6. **Specification Section 230903 "Sequence of Operations for HVAC Controls"**
    a. Add Part 3.4 D. Fan Coil Unit Control. Refer to attached revised specification section.
    b. Revise Part 3.5 A.1.b. and Part 3.5 B.1.b. outside air damper and relief fan control sequences for RTU. Refer to attached revised specification section.
    c. Add Part 3.5 A.2.c Unoccupied heating and cooling. Refer to attached revised specification section.
    d. Add Part 3.5 B.2.b. and c. Unoccupied heating, cooling, and dehumidification. Refer to attached revised specification section.
    e. Add Part 3.5 C Safety Controls. Refer to attached revised specification section.
    f. Revise Part 3.7 Single Duct Shut-off VAV Terminal with Hot Water Reheat Sequence. Refer to attached revised specification section.

7. **Specification Section 238126 "Split-System Air-Conditioners"**
    a. Add Trane as an approved manufacturer.

8. **Specification Section 32 18 18 – Playground Synthetic Turf**
   Add spec section in its entirety

9. **32 91 16' – Synthetic Turf – Golf'**
   Hitting/Driving Cages and Driving Mats added, warranty language clarified, list of approved manufacturers updated

10. **32 91 15' – Synthetic Turf – Soccer'**
    Omit references to Voluntary Alternates. Warrant language clarified.

DRAWINGS:

Sunman Dearborn Elementary School

1. Drawing Sheet Number: A601
   Drawing Sheet Title: Door Schedule

   Added Door Hardware Designations

North Dearborn Elementary School

1. Drawing Sheet Number: G000
   Drawing Sheet Title: COVER

   Add Sheet A011 OVERALL PLANS to the drawing index

2. Drawing Sheet Number: A601
   Drawing Sheet Title: Door Schedule

   Added Door Hardware Designations, changed exterior doors to existing with new electric strikes

Bright Elementary School

1. Drawing Sheet Number: A601
   Drawing Sheet Title: Door Schedule

   Added Door Hardware Designations

East Central Middle School

1. Drawing Sheet Number: G000
   Drawing Sheet Title: COVER

   Add sheet A121B REFLECTED CEILING PLAN - ENLARGED CEILING PLAN – AGRICULTURE and sheet E301A

2. Drawing Sheet Number: A101C
   Drawing Sheet Title: FLOOR PLAN – FIRST FLOOR – UNIT C

   Add keynote 12 to two windows on the west side of the choir room

3. Drawing Sheet Number: A110 and A111
   Drawings Sheet Titles: ENLARGED PLAN – FACS AND AGRICULTURE

   Change Keynote 13 to “NEW 4’X4’ TACKBOARD”
   Change Keynote 17 to “NEW DOOR, EX FRAME”
   Add Keynote 26 “NEW 8’X4’ TACKBOARD”

   Change keynote 12 on the north wall of the FACS room to keynote 13

East Central High School

1. Drawing Sheet Sheet EC 201
   Added existing rim elevations for three structures in courtyard area.

2. Drawing Sheet Sheet EC 202
   Added note to remove and relocate light pole at new northern drive.
   Added note to replace existing inlet grate in parking lot with a curb inlet grate.
   Added note that contractor is to plug existing drive culvert under existing drive that is being removed.
   Added demolition areas for the new curb islands.

3. Drawing Sheet Sheet EC 204
   Added note to remove the existing drive culvert in the bus lot.

4. Drawing Sheet Sheet EC 301
   Added note to adjust casting to grade for storm manhole in new sidewalk.
   Changed the curb island curb type to be a low sloping roll curb.

5. Drawing Sheet Sheet EC 500
   Added several spot grades as requested in various locations for clarity.

6. Drawing Sheet Number S101J
   A. New to existing slab detail reference added to foundation plan at new opening.
   B. New lintel added to framing plan at new opening

7. Drawing Sheet Number: A601
   Drawing Sheet Title: Door Schedule

   Added Door Hardware numbers, added materials to a few doors, added door elevations, changed a few notes. See attached

8. Drawing Sheet Number: A762
   Drawing Sheet Title: CASEWORK SECTIONS

   Added Bookshelf Section

9. DRAWING SHEET M001
   a. Controls Responsibility Chart: rough-in of thermostats shall be by TCC. Refer to attached drawing revision.

10. DRAWING SHEET MD101E
    a. Add demolition of existing air-conditioning unit. Refer to attached drawing revision.

11. DRAWING SHEET MD101G
    a. Add demolition of existing air-conditioning unit. Refer to attached drawing revision.

12. DRAWING SHEET MD101I
    - **a.** Add demolition of existing air-conditioning unit. Refer to attached drawing revision.

13. DRAWING SHEET M101H
    - **a.** Delete “THC” reference at space sensor. Refer to attached drawing revision.

14. DRAWING SHEET M101J
    - **a.** Delete “THC” reference at space sensor. Refer to attached drawing revision.

15. DRAWING SHEET M101K
    - **a.** Delete “THC” reference at space sensor. Refer to attached drawing revision.

16. DRAWING SHEET M101N
    - **a.** Delete “THC” reference at space sensor. Refer to attached drawing revision.

17. DRAWING SHEET M501
    - **a.** Rooftop Unit Schedule: revise Remarks #10 and #11. Provide and install with BACnet controller similar to Carrier System Vu. Refer to attached drawing revision.

18. DRAWING SHEET M601
    - **a.** Control Point List Schedule: delete setpoint adjustment, add over-ride button, and revise space sensors to be combination temperature, relative humidity, and carbon dioxide. Refer to attached drawing revision.
    - **b.** Control Point List Schedule: delete VAV space occupancy. Refer to attached drawing revision.
    - **c.** Control Point List Schedule: delete RTU return air carbon dioxide sensor and add freezestat. Freezestat shall be adjustable, hardwired, electric with automatic reset. Refer to attached drawing revision.
    - d. Control Point List Schedule: add position feedback sensor to all outside air, exhaust air, and relief air control dampers. Refer to attached drawing revision

19. DRAWING SHEET E204
    - **a.** Added service receptacles to Roof top units. Refer to supplemental information drawing E204 for additional information.

20. DRAWING SHEET ES101.
    a. Relocation of existing light pole and fixture at North Drive. Refer to supplemental information drawing ES101 for additional information.

21. DRAWING SHEET ES201.
    a. Relocation of existing light pole and fixture at North Drive. Refer to supplemental information drawing ES201 for additional information.

22. DRAWING SHEET ES202.
    a. Rerouting optical fiber to cameras to IDF-J in high school. Refer to supplemental information drawing ES202 for additional information.
    b. Scale of plan should be 1”-40’-0” in lieu of 1”-30’-0”. Refer to supplemental information drawing ES202 for additional information.

Attachments:

Specifications: Partial 08 71 00 (updated index and hardware groups), 10 21 13, 32 18 18, 32 91 15, 32 91 16

Bright Elementary:
(Drawings): A601

Sunman Elementary:
(Drawings): A601

North Dearborn Elementary:
(Drawings): A601

East Central Middle School:
(Drawings) A110, A601

East Central High School:
(Drawings) A601, A762, M001, M101H, E204, ES101, ES201, ES202

END OF ADDENDUM NO. TWO

08 71 00 Door Hardware Schedule Updates

BUILDING	DOOR#	HWSET#
23138-BRIGHT ELEM-CENTRAL-V23_GLIU6D8ZA	A101A	22
23138-BRIGHT ELEM-CENTRAL-V23_GLIU6D8ZA	A101B	23
23138-BRIGHT ELEM-CENTRAL-V23_GLIU6D8ZA	A101C	23
23138-BRIGHT ELEM-CENTRAL-V23_GLIU6D8ZA	A102A	25
23138-BRIGHT ELEM-CENTRAL-V23_GLIU6D8ZA	A102B	26
23138-BRIGHT ELEM-CENTRAL-V23_GLIU6D8ZA	A153	02
23138-BRIGHT ELEM-CENTRAL-V23_GLIU6D8ZA	B100A	25
23138-BRIGHT ELEM-CENTRAL-V23_GLIU6D8ZA	B125A	25
23138-BRIGHT ELEM-CENTRAL-V23_GLIU6D8ZA	C100A	22
23138-BRIGHT ELEM-CENTRAL-V23_GLIU6D8ZA	C100B	23
23138-BRIGHT ELEM-CENTRAL-V23_GLIU6D8ZA	C100C	23
23138-BRIGHT ELEM-CENTRAL-V23_GLIU6D8ZA	C137A	25
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	203A.1	07
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	C266	03
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	C268	03
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	D113A	34
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	D113E	34
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	D113F	34
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	D114	10
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	D115	12
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	**E122**	**30**

BUILDING	**DOOR#**	**HWSET#**
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	E123	15
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	E124A	35
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	E124B	35
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	E124C	35
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	E124D	35
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	E126A	10
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	**E128**	**10**
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	E129A	11
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	E129B	11
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	E130	16
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	E131A	34
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G107.1	14
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G107B.1	14
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G107B.2	13
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G107B.3	34
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G107M	20
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G107N	**10** ~~**(19)**~~

BUILDING	DOOR#	HWSET#
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G107O	05
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G107P	05
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G107Q	20
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G107R	10
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G107S	10
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G107T	09
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G107U	17
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G107V	05
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G107W	05
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G108A	28
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G108B	24
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G108C	24
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G108D	28
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G109A	33
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G109B	33
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G110	06
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G111	10

BUILDING	**DOOR#**	**HWSET#**
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G207A	10
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	G1100.1	31
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	H103	11
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	J102	03
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	J103	03
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	**J104** ~~**(D117)**~~	18
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	J105	10
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	J106.1	21
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	J202	**24A** ~~**(09)**~~
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	J204A	**28A** ~~**(28)**~~
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	J204B	**24B** ~~**(24)**~~
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	J204C	**28A** ~~**(28)**~~
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	J204D	**24B** ~~**(24)**~~
23138-EAST CENTRAL HIGH SCHOOL-CENTRAL-V23_GLIU6D8ZA	M102	05
23138-EAST CENTRAL MIDDLE SCHOOL-CENTRAL-V23_GLIU6D8ZA	C152C	34
23138-EAST CENTRAL MIDDLE SCHOOL-CENTRAL-V23_GLIU6D8ZA	C158	32
23138-EAST CENTRAL MIDDLE SCHOOL-CENTRAL-V23_GLIU6D8ZA	C159	32

BUILDING	**DOOR#**	**HWSET#**
23138-NORTH DEARBORN-CENTRAL-V23_GLIU6D8ZA	224A	01
23138-NORTH DEARBORN-CENTRAL-V23_GLIU6D8ZA	224B	08
23138-NORTH DEARBORN-CENTRAL-V23_GLIU6D8ZA	A102A	25
23138-NORTH DEARBORN-CENTRAL-V23_GLIU6D8ZA	D101A	25
23138-NORTH DEARBORN-CENTRAL-V23_GLIU6D8ZA	E101A	25
23138-SUNMAN ELEM-CENTRAL-V23_GLIU6D8ZA	B014A	25
23138-SUNMAN ELEM-CENTRAL-V23_GLIU6D8ZA	B131B	29
23138-SUNMAN ELEM-CENTRAL-V23_GLIU6D8ZA	D010A	04
23138-SUNMAN ELEM-CENTRAL-V23_GLIU6D8ZA	D010B	27
23138-SUNMAN ELEM-CENTRAL-V23_GLIU6D8ZA	D013A	25 ~~(30)~~

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V2 9/5/2024 vs. V3 10/2/2024

Hardware Group No. 09

For use on Door #(s):
G107T ~~J202~~

Provide each OPENING with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)	652	IVE
1	EA	OFFICE/ENTRY LOCK	L9050BDC 06A L583-363	626	SCH
1	EA	PERMANENT CORE	1C7*2	626	BES
1	EA	OH STOP	410S	652	GLY
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 10

For use on Door #(s):

D114	E126A	E128	G107N	G107R	G107S
G111	G207A	J105			

Provide each OPENING with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)	652	IVE
1	EA	OFFICE/ENTRY LOCK	L9050BDC 06A L583-363	626	SCH
1	EA	PERMANENT CORE	1C7*2	626	BES
1	EA	WALL STOP	WS406/407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 18

For use on Door #(s):
~~D117~~ J104

Provide each OPENING with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)	652	IVE
1	EA	OFFICE/ENTRY LOCK	L9050BDC 06A L583-363	626	SCH
1	EA	PERMANENT CORE	1C7*2	626	BES
1	EA	SURFACE CLOSER (W/ DEAD STOP)	4040XP CUSH	689	LCN
1	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

For use on Door #(s):
~~G107N~~

Provide each OPENING with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 SIZE, QTY, NRP AS REQ'D (SEE SPECS)	652	IVE
1	EA	OFFICE/ENTRY LOCK	L9050BDC 06A L583-363	626	SCH
1	EA	PERMANENT CORE	1C7*2	626	BES
1	EA	SURFACE CLOSER	4040XP REG	689	LCN
1	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS	630	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 24

For use on Door #(s):
G108B G108C ~~J204B~~ ~~J204D~~

Provide each OPENING with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224XY	628	IVE
1	EA	PANIC HARDWARE	CD-99-NL	626	VON
2	EA	PERMANENT CORE	1C7*2	626	BES
1	EA	MORTISE CYL HOUSING (SFIC)	80-110 XQ11-948 (W/ DISP CONST CORE)	626	SCH
1	EA	RIM CYL HOUSING (SFIC)	80-116 (W/ DISP CONST CORE)	626	SCH
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS	630	IVE
1	EA	WALL STOP/HOLDER	WS45/WS45X	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No.24A

For use on Door #(s):
J202

Provide each OPENING with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	PANIC HARDWARE	CDSI-99-L-NL-06	626	VON
2	EA	PERMANENT CORE	1C7*2	626	BES
1	EA	MORTISE CYL HOUSING (SFIC)	80-110 XQ11-948 (W/ DISP CONST CORE)	626	SCH
1	EA	RIM CYL HOUSING (SFIC)	80-116 (W/ DISP CONST CORE)	626	SCH
1	EA	SURFACE CLOSER (W/ DEAD STOP & HO)	4040XP HCUSH	689	LCN
1	EA	MOUNTING PLATE	4040XP-18PA	689	LCN
1	EA	CUSH SHOE SUPPORT	4040XP-30	689	LCN
1	EA	BLADE STOP SPACER	4040XP-61	689	LCN

Hardware Group No.24B

For use on Door #(s):

J204B J204D

Provide each OPENING with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	PANIC HARDWARE	CD-99-NL	626	VON
2	EA	PERMANENT CORE	1C7*2	626	BES
1	EA	MORTISE CYL HOUSING (SFIC)	80-110 XQ11-948 (W/ DISP CONST CORE)	626	SCH
1	EA	RIM CYL HOUSING (SFIC)	80-116 (W/ DISP CONST CORE)	626	SCH
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	MOUNTING PLATE	4040XP-18PA	689	LCN
1	EA	BLADE STOP SPACER	4040XP-61	689	LCN
1	EA	WALL STOP/HOLDER	WS45/WS45X	626	IVE

Hardware Group No. 25

For use on Door #(s):

A102A	A102A	B014A	B100A	B125A	C137A
D013A	D101A	E101A			

Provide each OPENING with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	112XY EPT	628	IVE
2	EA	POWER TRANSFER	EPT10	689	VON
1	EA	REMOVABLE MULLION	KR4954 STAB	689	VON
1	EA	ELEC PANIC HARDWARE	RX-QEL-99-DT 24 VDC	626	VON
1	EA	ELEC PANIC HARDWARE	RX-QEL-99-NL 24 VDC	626	VON
2	EA	PERMANENT CORE	1C7*2	626	BES
1	EA	MORTISE CYL HOUSING (SFIC)	80-110 (W/ DISP CONST CORE)	626	SCH
1	EA	RIM CYL HOUSING (SFIC)	80-159 (W/ KEYED CONST CORE)	626	SCH
2	EA	SURFACE CLOSER (W/ SPRING STOP)	4040XP SCUSH	689	LCN
2	EA	MOUNTING PLATE	4040XP-18PA	689	LCN
2	EA	CUSH SHOE SUPPORT	4040XP-30	689	LCN
2	EA	BLADE STOP SPACER	4040XP-61	689	LCN
1	EA	MULLION SEAL	8780NBK PSA	BK	ZER
1	EA	WEATHERSTRIPPING	BY DOOR/FRAME MANUFACTURER		B/O
2	EA	DOOR SWEEP, BRUSH W/ DRIP	8198AA	AA	ZER
1	EA	THRESHOLD, 1/2"	655A	A	ZER
1	EA	CREDENTIAL READER	BY DIV 28		B/O
2	EA	DOOR CONTACT	679 SERIES	BLK	SCE
1	EA	POWER SUPPLY	PS902 900-2RS 120/240 VAC		VON

DOOR(S) NORMALLY CLOSED AND LOCKED. PRESENTING VALID CREDENTIAL TO READER RETRACTS EXIT DEVICE LATCH, ALLOWING ACCESS. EXIT DEVICE LATCH ALSO CAPABLE OF BEING ELECTRONICALLY DOGGED DOWN (I.E. PUSH/PULL MODE) AS DESIGNATED BY ACCESS CONTROL SYSTEM SCHEDULE. EXIT DEVICE LATCHES AND LOCKS WITH LOSS OF POWER. FREE EGRESS AT ALL TIMES.

Hardware Group No. 28

For use on Door #(s):

G108A G108D ~~J204A~~ ~~J204C~~

Provide each OPENING with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	224XY	628	IVE
1	EA	REMOVABLE MULLION	KR4954 STAB	689	VON
2	EA	PANIC HARDWARE	CD-99-DT	626	VON
1	EA	PERMANENT CORE	1C7*2	626	BES
1	EA	MORTISE CYL HOUSING (SFIC)	80-110 (W/ DISP CONST CORE)	626	SCH
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	SURFACE CLOSER (W/ DEAD STOP & HO)	4040XP HCUSH	689	LCN
2	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS	630	IVE
1	EA	WALL STOP/HOLDER	WS45/WS45X	626	IVE
1	EA	MULLION SEAL	8780NBK PSA	BK	ZER
2	EA	SILENCER	SR64	GRY	IVE

Hardware Group No.**28A**

For use on Door #(s):

J204A **J204C**

Provide each OPENING with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	**EA**	**CONT. HINGE**	**112XY**	**628**	**IVE**
2	**EA**	**PANIC HARDWARE**	**CD-9949-DT-LBL**	**626**	**VON**
2	**EA**	**PERMANENT CORE**	**1C7*2**	**626**	**BES**
2	**EA**	**MORTISE CYL HOUSING (SFIC)**	**80-110 XQ11-948 (W/ DISP CONST CORE)**	**626**	**SCH**
1	**EA**	**SURFACE CLOSER**	**4040XP EDA**	**689**	**LCN**
1	**EA**	**SURFACE CLOSER (W/ DEAD STOP & HO)**	**4040XP HCUSH**	**689**	**LCN**
2	**EA**	**MOUNTING PLATE**	**4040XP-18PA**	**689**	**LCN**
1	**EA**	**CUSH SHOE SUPPORT**	**4040XP-30**	**689**	**LCN**
2	**EA**	**BLADE STOP SPACER**	**4040XP-61**	**689**	**LCN**
1	**EA**	**WALL STOP/HOLDER**	**WS45/WS45X**	**626**	**IVE**

Hardware Group No.30

For use on Door #(s):
E122

Provide each OPENING with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	112XY	628	IVE
1	EA	PANIC HARDWARE	CD-9949-DT-LBL	626	VON
1	EA	PANIC HARDWARE	CD-9949-NL-LBL	626	VON
3	EA	PERMANENT CORE	1C7*2	626	BES
2	EA	MORTISE CYL HOUSING (SFIC)	80-110 XQ11-948 (W/ DISP CONST CORE)	626	SCH
1	EA	RIM CYL HOUSING (SFIC)	80-116 (W/ DISP CONST CORE)	626	SCH
2	EA	SURFACE CLOSER (W/ DEAD STOP & HO)	4040XP HCUSH	689	LCN
2	EA	MOUNTING PLATE	4040XP-18PA	689	LCN
2	EA	CUSH SHOE SUPPORT	4040XP-30	689	LCN
2	EA	BLADE STOP SPACER	4040XP-61	689	LCN

Hardware Group No.~~30- Not Used~~

For use on Door #(s):
~~D013A~~

Provide each OPENING with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
~~2~~	~~EA~~	~~CONT. HINGE~~	~~112XY~~	~~628~~	~~IVE~~
~~1~~	~~EA~~	~~REMOVABLE MULLION~~	~~KR4954 STAB~~	~~689~~	~~VON~~
~~1~~	~~EA~~	~~PANIC HARDWARE~~	~~CD-99-DT~~	~~626~~	~~VON~~
~~1~~	~~EA~~	~~PANIC HARDWARE~~	~~CD-99-NL~~	~~626~~	~~VON~~
~~4~~	~~EA~~	~~PERMANENT CORE~~	~~1C7*2~~	~~626~~	~~BES~~
~~1~~	~~EA~~	~~MORTISE CYL HOUSING (SFIC)~~	~~80-110 (W/ DISP CONST CORE)~~	~~626~~	~~SCH~~
~~2~~	~~EA~~	~~MORTISE CYL HOUSING (SFIC)~~	~~80-110 XQ11-948 (W/ DISP CONST CORE)~~	~~626~~	~~SCH~~
~~1~~	~~EA~~	~~RIM CYL HOUSING (SFIC)~~	~~80-159 (W/ KEYED CONST CORE)~~	~~626~~	~~SCH~~
~~2~~	~~EA~~	~~SURFACE CLOSER (W/ SPRING STOP)~~	~~4040XP SCUSH~~	~~689~~	~~LCN~~
~~2~~	~~EA~~	~~MOUNTING PLATE~~	~~4040XP-18PA~~	~~689~~	~~LCN~~
~~2~~	~~EA~~	~~CUSH SHOE SUPPORT~~	~~4040XP-30~~	~~689~~	~~LCN~~
~~2~~	~~EA~~	~~BLADE STOP SPACER~~	~~4040XP-61~~	~~689~~	~~LCN~~
~~1~~	~~EA~~	~~MULLION SEAL~~	~~8780NBK PSA~~	~~BK~~	~~ZER~~
~~1~~	~~EA~~	~~WEATHERSTRIPPING~~	~~BY DOOR/FRAME MANUFACTURER~~		~~B/O~~
~~2~~	~~EA~~	~~DOOR SWEEP, BRUSH W/ DRIP~~	~~8198AA~~	~~AA~~	~~ZER~~
~~1~~	~~EA~~	~~THRESHOLD, 1/2"~~	~~655A~~	~~A~~	~~ZER~~
~~2~~	~~EA~~	~~DOOR CONTACT~~	~~679 SERIES~~	~~BLK~~	~~SCE~~

Hardware Group No. 32

For use on Door #(s):
C158 C159

Provide each OPENING with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	224XY	628	IVE
1	EA	PANIC HARDWARE	CDSI-9950WDC-L-DT-03-LBL-SNB	626	VON
1	EA	PANIC HARDWARE	CDSI-9950WDC-L-NL-03-LBL-SNB	626	VON
3 ~~(2)~~	EA	PERMANENT CORE	1C7*2	626	BES
2 ~~(1)~~	EA	MORTISE CYL HOUSING (SFIC)	80-110 XQ11-948 (W/ DISP CONST CORE)	626	SCH
1	EA	RIM CYL HOUSING (SFIC)	80-116 (W/ DISP CONST CORE)	626	SCH
2	EA	SURFACE CLOSER (W/ DEAD STOP & HO)	4040XP HCUSH	689	LCN
2	EA	KICK PLATE	8400 10"H X WIDTH AS REQ'D B-CS	630	IVE
2	EA	SILENCER	SR64	GRY	IVE

VERIFY/COORDINATE PREPS ON EXISTING FRAMES. PROVIDE FIELD MODIFICATIONS AND/OR FILLERS TO EXISTING FRAMES AS NECESSARY TO ACCEPT NEW SPECIFIED HARDWARE.

10 21 13 Plastic Toilet Compartments

SECTION 10 2113 - PLASTIC TOILET COMPARTMENTS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes solid plastic toilet compartments and screens.

1.2 REFERENCES

A. ASTM International:

1. ASTM A666 - Standard Specification for Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.

B. NFPA

1. Pass NFPA 286.

C. Americans With Disabilities Act.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Shop Drawings: Indicate partition plan, elevation views, dimensions, details of wall and floor supports, door swings.

C. Product Data: Submit data on panel construction, hardware, and accessories.

D. Samples: Submit two 4 x 4 inch in size illustrating panel finish, color, and sheen.

E. Manufacturer's Installation Instructions: Submit special procedures and perimeter conditions requiring special attention.

1.4 COORDINATION

A. Coordinate Work with placement of support framing and anchors.

PART 2 PRODUCTS

2.1 SOLID PLASTIC TOILET COMPARTMENTS

A. Manufacturers:

1. Bradley
2. Accurate Partitions Corp.
3. Scraton Products.
4. Columbia.
5. Metpar Corp.

6. AJW Architectural Products

2.2 COMPONENTS

A. Toilet Compartments: Solid molded plastic panels, doors, and pilasters, floor-mounted headrail-braced meeting NFPA 286.

1. Colors: As selected by the Architect.

B. Door and Panel Dimensions:

1. Thickness: 1 inch
2. Door Width: 24 inch
3. Accessible Door Width: 36 inch, out-swinging.
4. Height: 58 inch
5. Thickness of Pilasters: 1-1/4 inch.

C. Screens: Wall mounted with two panel brackets, and floor-to-ceiling vertical upright consisting of pilaster anchored to floor and ceiling.

2.3 ACCESSORIES

A. Pilaster Shoe: Formed polymer or ASTM A666 Type 304 stainless steel with No. 4 finish, 3 inch high, concealing floor fastenings. Provide adjustment for floor variations with screw jack through steel saddles integral with pilaster.

B. Head Rails: Standard polymer or hollow anodized aluminum tube, 1 x 1-5/8 inch size, with anti-grip profiles and cast socket wall brackets.

C. Brackets: Standard polymer or satin stainless steel or anodized aluminum.

D. Attachments, Screws, and Bolts: Stainless steel , tamper proof type.

1. For attaching panels and pilasters to brackets: Through-bolts and nuts; tamper proof.

E. Hardware:

1. Pivot hinges, gravity type, adjustable for door close positioning; two for each door.
2. Nylon bearings.
3. Thumb turn door latch with exterior emergency access feature.
4. Door strike and keeper with rubber bumper; mounted on pilaster in alignment with door latch.
5. Coat hook with rubber bumper; one for each compartment, mounted on door.
6. Furnish door pull for outswinging doors.
7. Furnish metal heat sink at bottom of doors and partitions.

F. Heat Sink Strip: Manufacturer's standard continuous extruded aluminum strip fastened to exposed bottom edges of solid polymer components to prevent burning.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify field measurements are as indicated on shop drawings and instructed by manufacturer.

B. Verify correct spacing of and between plumbing fixtures.

C. Verify correct location of built-in framing, anchorage, and bracing.

3.2 INSTALLATION

A. Maintain 3/8 to 1/2 inch space between wall and panels and between wall and end pilasters.

B. Attach panel brackets securely to walls using anchor devices.

C. Attach panels and pilasters to brackets. Locate head rail joints at pilaster center lines.

3.3 ERECTION TOLERANCES

A. Section 01400 - Quality Requirements: Tolerances.

B. Maximum Variation From Indicated Position: 1/4 inch.

C. Maximum Variation From Plumb: 1/8 inch.

3.4 ADJUSTING

A. Section 01 7000 - Execution Requirements: Testing, adjusting, and balancing.

B. Adjust and align hardware to uniform clearance at vertical edge of doors, not exceeding 3/16 inch (5 mm).

C. Adjust hinges to position doors in partial opening position when unlatched. Return out-swinging doors to closed position.

D. Adjust adjacent components for consistency of line or plane.

END OF SECTION 10 2113

32 18 18 Playground Synthetic Turf

SECTION 32 18 18 – PLAYGROUND SYNTHETIC TURF

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes playground synthetic turf surfacing system.

B. Related Sections include the following:

1. Division 31 Section "Earth Moving" for excavation and grading work.
2. Division 11 Section "Playground Equipment" for installation of play equipment.
3. Division 3 Section "Site Cast-in-Place Concrete" for concrete footings.

1.3 DEFINITIONS

A. Critical Height: Standard measure of shock attenuation. According to CPSC No. 325, this means "the fall height below which a life-threatening head injury would not be expected to occur."

B. Fall Height: According to ASTM F 1487, this means "the vertical distance between a designated play surface and the protective surfacing beneath it." The fall height of playground equipment should not exceed the Critical Height of the protective surfacing beneath it.

C. Protective Surfacing: According to ASTM F 1487, this means impact-attenuating "materials to be used within the use zone of any playground equipment" for playground surface systems.

D. Use Zone: According to ASTM F 1487, this is "the area beneath and immediately adjacent to a play structure that is designated for unrestricted circulation around the equipment and on whose surface it is predicted that a user would land when falling from or exiting the equipment."

1.4 SUBMITTALS

A. Product Data: For each type of product indicated. Include installation details, material descriptions, profiles, colors and finishes.

B. Samples for Initial Selection: Manufacturer's color charts and 6-inch (150-mm) square samples of actual surface materials.

C. Product Test Reports:
1. ASTM F 1292-17: Impact Attenuation Test Certification for the play surface system to be installed in compliance with the Critical Fall Height as determined by the Playground Equipment to be installed in conjunction with the play surfacing system.

2. ASTM D 2859: Flammability.
3. ASTM D 2047-82: Coefficient of Friction.
4. ASTM D 412-87: Tensile Strength.
5. ASTM D 624-86: Tear Resistance.
6. Permeability Coefficient: Five (5) feet per minute.

D. Statement of Warranty for a minimum five-year period with detailed Warranty Claim requirements of the owner and specific procedures to be followed by the manufacturer in terms of response and repair of warranty claims.

E. Generate and provide field test inspection reports and samples for materials, including but not limited to Impact Attenuation, Permeability, and Flammability Field test inspection reports and samples.

F. Product Substitution Submittals: Contractor shall provide the following material for playground grass material substitution.
   a. At least one project in excess of 5,000 square feet and completed in the two (2) years.
   b. Two 1'x1' product samples.
   c. Product warrantee and guarantee from manufacture warranting against all defects for an 8 year period.
   d. A written guarantee from manufacturer for workmanship.
   e. Impact attenuation (per fall height requirements), permeability and flammability test results from independent approved and certified testing laboratories.
   f. The artificial grass INSTALLER/CONTRACTOR will provide a maintenance procedure for the installed surface.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: The installation of the play surface product shall be completed by Manufacturer Certified Contractors or by direct employees of the Manufacturer's Installation Division.

B. Manufacturer Qualifications: Manufacturer shall have installed playground turf systems for no fewer than five (5) Indiana school corporations within the past five (5) years on comparable projects. Comparable projects must be equitable in scale, complexity, level of difficulty, e.g. number of poles and cutouts, transitions and other special requirements. The Landscape Architect and Construction Manager will determine applicability of examples. Relevant projects must have been contracted and installed by the Company bidding the current project.

C. Standards and Guidelines: Provide playground equipment and resilient surfacing complying with or exceeding requirements in the following:

   1. CPSC No. 325, "Handbook for Public Playground Safety."

1.6 COORDINATION

A. Coordinate construction of equipment use zones and fall heights during installation of playground equipment with installation of resilient surfacing specified herein. Sequence work so resilient surfacing can be installed immediately after equipment installation is complete.

B. Synthetic Turf Playground Surfacing is identified as an Alternate Bid system that would replace Engineered Wood Fiber and Poured-in-Place systems identified at elementary schools. ALL COST IMPACTS in coordinating and adjusting to achieve the synthetic turf system shall be contemplated within this Alternate Bid Response, including any necessary modifications to subgrade elevation, padding, drainage, aggregate base, etc that may be needed for a turn-key turf system.

C. Concrete footings have been identified in the Division 11- “Playground Equipment” specification as held 12” below finished grade within all protective play surfacing conditions. Account for any related impacts on overall footing depth and quantity of surfacing material to achieve CPSC guidelines.

PART 2 - PRODUCTS

2.1 PRODUCTS

A. Products: Subject to compliance with requirements, provide CPSC-compliant surfacing systems as indicated in the Drawings.

B. Manufacturer: Subject to compliance with requirements, provide ADA-compliant playground surfacing products by the following manufacturers, or approved equal prior to bidding. Comply with manufacturers instructions for installation.

1. ForeverLawn - Playground Grass Ultra, North Canton, OH.
2. PerfectTurf - PlayGround Turf 55™, Rolling Meadows, IL.
3. T°Cool® Cincinnati, OH.

C. Colors: As selected by Landscape Architect from manufacturer's full range for resilient applications.

2.2 PLAYGROUND SYNTHETIC TURF

A. Description: As recognized and approved by CPSC Guidelines and ADA Standards, free of chemicals or stains that might be toxic to users or able to transfer onto clothing or shoes.

1. General Description: All necessary material components and application shall be required to install a synthetic turf system. The turf system shall be composed of synthetic carpet wearing course filled with approriate ballast and an impact attenuation pad underneath.
2. Quality Assurance: The turf manufacturer shall have manufactured and marketed this system in the United States for a period of five (5) years. Install should be by a “certified” installer or by a competent installer using the instructions provided by the manufacturer. The turf system shall be designed to meet current ADA, CPSC and ASTM requirements. Acceptable substrates must comply with manufacturer standards and achieve long-term, durable performance to the Owner.
3. Submittals: Samples shall be submitted in all the colors available.
4. Delivery, Storage and Handling: All materials shall be delivered in good condition in its original unopened package, bound and shrink wrapped with labels intact. All materials shall be protected from weather and the adhesive shall be stored on temperature of 40 degrees F or greater.

5. Job Conditions: At the time of application ambient air temperature shall be 40 degrees F or greater. All materials shall be un-stacked and laid out prior to installation. All materials shall be protected from weather and other damage prior to application, during application and while glue is curing.
6. Alternatives: The owner/architect shall approve any system or series prior to the bid date. Alternate information and samples shall be provided in writing. Substitution requests shall be measured against the basis of design of “Playground Grass Ultra” by ForeverLawn, Inc.
7. Products: All components of the turf system shall be obtained from the turf manufacturer or its authorized distributors and shall be manufactured in the United States of America, and meet the standard specifications set herein.
8. Materials:
    a. Pile Weight: 48 oz. per square foot or substantially similar and approved prior to bidding.
    b. Yarn Types/Sizes:
        1) Primary Fiber: Polyethylene Slit film or Monofilament;
        2) Secondary Fiber: Monofilament thatch layer, polyethylene or nylon.
        3) Provide data with micron ratings and validation of yarn types for consideration of the Landscape Architect prior to bidding.
    c. Pile Height: Consistent 1 5/8” height throughout all areas of the play surface.
    d. Construction Method: Broadloom Tufted, 3/8” tufting gauge or as approved in submitted samples.
    e. Primary/Secondary Backing: 13 Pic Polybac / US80NW or equal Non-woven /18 Pic Polybac or as approved in submitted samples.
    f. Total Product Weight: 113 oz. / sq. yard or substantially similar and approved prior to bidding.
    g. Seams: Seams shall be glued. Mechanically bonded or stitched seams shall be approved in submitted samples.
    h. Fill Requirement: Unless otherwise listed below, encapsulated sand, T°Cool® or crumb rubber per manufacturer’s recommended weight.
    i. Impact Attention Pad: Pad shall be obtained from the turf manufacturer or its authorized distributor. Pad materials shall be either foam or rubber. Thickness for under play equipment shall be sized to meet or exceed critical fall height of play equipment throughout the use zone compliant to ASTM 1292. Thickness of pad for areas outside of play equipment use zone shall be sized to meet or exceed critical fall height of 6’-0” compliant to ASTM 1292.
9. Testing: All turf shall meet the current guidelines from ASTM, CPSC, USGBC-LEED and ADA for fall height, weathering (aging), Spread of Flames, Skid Resistance, ADA, Lead Content, R-Value, Reflectance/SRI & Emittance, Water Penetration and USGBC.
10. Warranty: The manufacturer shall provide a five (5) year, non-prorated warranty.

PART 3 - EXECUTION

3.1 PREPARATION

A. The sub-base of the entire area to be surfaced shall be cleared of any foreign materials and treated with sterilizing spray products to completely eliminate growth of grass, weeds, etc.

B. Protect all adjacent trees, equipment, pavement and wall surfaces from damage during surfacing installation.

3.2 INSTALLATION

A. General: Comply with manufacturer's written installation instructions, unless more stringent requirements are indicated.

1. Maximum Equipment Height: Coordinate installed heights of equipment and components with installation of resilient surfacing.

B. Excavate area to dimensions and depth as indicated in the Drawings. Confirm use zone for each play structure with manufacturer’s coordination drawings.

C. The native sub-base shall be graded to allow for proper drainage that will prevent sub-base erosion.

D. The native sub-base shall be compacted to a 95% rating.

E. Carefully coordinate the finished grade of the subbase as it relates to the required fall height above. The Contractor will be accountable for achieving all required safety criteria.

F. Perimeter curbing shall be as shown in Plans. Should playground turf require modifications or adjustments, the cost of those modification must be contemplated within the Alternate Bid response.

G. Crushed Stone Base: Installation of a minimum four (4) inch layer of #8 crushed stone shall be completed and compacted to a 95% rating and a ± ¼” level when measured with a ten foot straight edge in any direction.

H. Separation Fabric: A non-woven geotextile fabric shall be applied over the compacted and graded stone sub-base. The application of the poured in-place system shall be applied over the geotextile membrane.

I. The system installer shall inspect the above work prior to installation of resilient surfacing materials.

J. Resilient Surface System: Install in strict accordance with manufacturer’s instructions, approved shop drawings and submittals, complying with critical fall height requirements. Carefully coordinate depths with the Construction Manager to ensure the proper quantity of material is understood.

K. Ensure the finished surface is fully accessible and compliant with ADA guidelines. Take care to properly compact all transitions from protective to paved surfacing.

3.3 FIELD QUALITY CONTROL

A. Arrange for manufacturer's technical personnel to inspect playground surfacing during installation and at final completion and to certify compliance with the following applicable standards.
1. CPSC No. 325, "Handbook for Public Playground Safety."
2. ASTM F 1487.

B. Notify Landscape Architect and Owner 48 hours in advance of date and time of final inspection.

3.4 CLEANING

A. After completing surface installation, inspect the entire area. Remove debris and repair or replace effective materials.

END OF SECTION

32 91 15 Synthetic - Soccer Turf

SECTION 32 91 15 – SYNTHETIC TURF CONSTRUCTION – SOCCER

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract.

1.2 SUMMARY

A. Work Includes:

1. New synthetic turf conversion for Varsity Soccer use.
    a. Concrete Curb and Perimeter Nailer. The Builder shall install a 6” wide x 18" deep perimeter concrete curb and nailer as described within this Specification for areas where synthetic turf abuts any paved condition.
    b. Complete underdrain system. The Builder will be responsible for providing and installing all layers of the complete synthetic system, including synthetic base preparation and drainage. Collect and tie flat-panel underdrain system, on a 25’ o.c. spacing, to the nearest header drain trench and/or and storm structures shown in the C-Series Plans. The Builder shall utilize C-Series Plans for anticipated invert elevations yet calculate his own slopes to verify positive drainage.
    c. Geo-textile fabric installation; Tencate-Mirafi® 140N or equivalent.
    d. Field subgrade confirmation. The Builder shall be present for a proof roll of subgrade as part of reviewing and accepting subgrade conditions prior to beginning work.
    e. Base installation. Builder shall achieve final surface grade on fields as shown in the Civil Drawings. Ensure the Civil Engineer and Landscape Architect are fully aware and approve of any anticipated deviations.
    f. Synthetic turf, ballast, turf installation, and select maintenance.
    g. Game lines shall be coordinated during the submittal process. Markings shall comply with industry standards. Coordinate all marking details during submittals at no additional charge to the Owner. Minor deviations during submittal coordination may occur as the Landscape Architect and Manufacturer finalize details.
    h. Field finishing, including infill installation and grooming, as specified within. No additional cost will be borne by the Owner for coordination or adjustments after bidding.
    i. Providing and training the Owner with a Field Groomer for their ongoing maintenance operations. The Builder shall conduct field grooming with his or her own equipment and forces until Substantial Completion is achieved.

B. Bidding Approach

Include all necessary surveying, staking, drainage infrastructure, geotextiles, curbing, football goals, stone aggregate layers, installation of all base-related systems, shop drawings and coordination, synthetic carpet, infill/ballast, nailers, grooming, grooming equipment, inspection/maintenance requirements, deep cleaning, GMAX testing, and associated installation of all turf-related systems listed here. Warranties shall be included within the Base Bid.

C. Submittals

1. Bid Submittals

a. List of similar projects completed by the Builder within the last two (2) years utilizing substantially similar turf product. Provide full Client contact information and details of the turf manufacturer and turf type.
b. Identify any pending litigation involving either the synthetic turf manufacturer or Builder or both. Such documentation shall be provided confidentially to the Owner rather than the Design Team. Similarly, the Owner reserves the right to request insurance documentation and company financial reports from any Bidder or subcontractor performing work on-site as a means to evaluate capacity to perform the work.
c. Identify the Foreman, Supervisor and Crew experience for the team executing this project installation. Include a list of completed projects in the last three (3) years by this specific team.
d. Builder to provide independent laboratory testing data, such as Lisport testing or similar, to substantiate the comparative durability of the proposed synthetic system the other competing systems that may be offered for the Owner's consideration.
e. Provide documentation of sources of infill materials. Local and regional sources are encouraged whenever possible.
f. Samples: One sample box for each turf type used in overall project must be presented with each Respondent's bid.

2. Post-Bid Analysis

A. Credentials: Qualifications and credentials are a critical component of determining the most responsive Bid for all athletic field construction. Provide a listing of previous field installations, including full Client contact information, within the sealed Bid submitted for this project. The successful Bidder shall demonstrate his or her experience, industry knowledge, specialized construction methods/techniques, and overall project approach.

B. Bidding: Builders are advised that evaluating the most responsive Bid will include a combination of price, product type, credentials, and project approach. The Owner will review all materials, approach, credentials, and pricing within a Bidder's submission to determine which Bid is most responsive to the project goals and offers best value.

3. Pre-Construction Submittals

a. Cut sheets and product samples for all products listed in Bid Submittals for Owner review and approval.
b. Complete and detailed shop drawings from the Turf Manufacturer including layout of all components, parts and materials required for a complete synthetic system.
c. Verification in writing provided to the Owner indicating no patent infringements have occurred in the Manufacturer's proposed synthetic system. The Owner and all his design, construction, and administrative agents shall be held harmless by the Manufacturer with regard to any legal action relating to patent infringements.
d. Staking of shall be under the full control of the Builder. The Builder shall utilize a registered surveyor to provide all necessary stakes, batter boards, lines, etc., to establish grades required and corresponding benchmarks. The cost of staking shall be included in the Base Bid. A digital record of the actual field as-built measurements shall be made for the Owner's archives in both AutoCAD and PDF format.

4. Post-Construction Submittals

a. Provide Record Drawings of the completed installation. Submit Record Drawings for review by the Owner ten (10) days prior to Substantial Completion. Include the following:

1) Underdrain locations and inverts.
2) Location of primary seam locations on the synthetic turf installation.
3) Operation & Maintenance Manuals.
4) All warranty documents related to third-party coverage of base construction and synthetic turf, plus applicable coverage for field grooming equipment.

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C. Quality Control

1. Turf Inspection: The Owner, the Owner's agents, and the Builder shall inspect all turf at the site prior to the start of any installation. Any damaged or defective items shall be rejected and subsequently replaced by the Builder.

2. Installed Turf: Installed turf shall be inspected for, but not limited to the following:
   a. Acceptable seams
   b. Uniformity of product and color
   c. Surface bubbles
   d. Field markings
   e. Field edge installation
   f. Pile height of each roll supplied shall be measured
   g. Pile height in its finished position
   h. Surface tension

   Any products or materials that fail to meet the minimum requirements shall be rejected.

3. Manufacturer shall provide up to three (3) random samplings of the turf product obtained during the specific manufacturing process of this project's order. Verify that all carpet meets or exceeds the specifications prior to shipment to ensure installation delays are avoided.

4. Weather Conditions: Only install turf according to weather requirements provided by the Manufacturer. Review all installation requirements and product limitations with Owner and Landscape Architect prior to commencing work.

5. Workmanship: All seams and inlaid markings shall be flat, tight, and permanent with no separation or fraying.

6. Sourcing: No fibers or backing from Chinese sources will be accepted. Vendor shall provide verifiable Country of Origin certification for such materials.

7. Cushioning: The dynamic cushioning of the combined turf and infill material supplied shall not exceed the following criteria:
   a. ASTM Test F355e- Average maximum value of GMAX 110 upon initial installation. A GMAX 160 may not be exceeded over the full warranty period.
   b. ASTM Test F3146- Average maximum value of HIC 1000 at 1.3 meters upon initial installation.
   c. ASTM Test F3189-
      1. Shock Absorption- Average value between 55-70% upon initial installation.
      2. Energy Restitution- Average value between 20-50% upon initial installation.
      3. Vertical Deformation- Average value between 5.5-11mm upon initial installation.
   d. The Builder shall engage a third-party testing agency acceptable to the Owner to perform both GMAX and HIC testing on an annual basis throughout the warranty period as part of the Base Bid. No fewer than six (6) tests shall be performed by each testing device during each testing visit to compile a diverse, random assessment of the field. Any failures or deficiencies shall be remedied by the Builder as warranty work at no cost to the Owner.

D. Warranties

1. Turf Warranty:

BASIC WARRANTY: Within his or her Base Pricing Response, the Builder shall provide a written and enforceable Warranty for no less than (8) years from the date of Substantial Completion of the project. Base integrity, drainage function, UV degradation, fiber strength, stability of the backing, tufted yarn and seam integrity, and all other related components of the synthetic turf system.

- **a. All warranties shall be in writing and remain valid should the Manufacturer be acquired by another company prior to the conclusion of said warranty.**
- **b. Confirming warranty language shall be provided with each Respondent's bid. No pro-rated warranties shall be accepted.**
- **c. Basic warranty will be accepted by-Manufacturer subject to a satisfactory letter of credit or financial statements that demonstrate the provider's ability to meet or exceed $2,000,000 in protection to the Owner should a claim occur.**

ENHANCED WARRANTY (Soccer Only): Within his or her Alternate 1D Pricing Response, the Builder shall provide a third-party, fully insured, pre-paid, and enforceable Warranty for no less than (8) years from the date of Substantial Completion of the project. Base integrity, drainage function, UV degradation, fiber strength, stability of the backing, tufted yarn and seam integrity, and all other related components of the synthetic turf system.

- **a. An additional two (2) years of extended warranty protection shall be added to the conclusion of the insured 8-year warranty as part of the Base Bid. The Owner shall allow this portion of the warranty to be by-Manufacturer rather than third-party insured.**
- **b. Warranty coverage shall be a single-source, third-party insured warranty from an A-Rated domestic insurance carrier. Letters of credit, financial statements, and related-party companies are not permissible. Per claim coverage shall meet or exceed $5,000,000 in protection to the Owner.**
- **c. All warranties shall be in writing and remain valid should the Manufacturer be acquired by another company prior to the conclusion of said warranty.**
- **d. Confirming warranty language shall be provided with each Respondent's bid. No pro-rated warranties shall be accepted.**

2. **Related Definitions:**
   - **a. "Base integrity" shall be considered the absence of rutting, heaving, settlement, ponding, or related planarity issues that affect proper and intended use of the facility.**
   - **b. "Drainage function" shall be considered 16" per hour of percolation upon installation (Spec Subparagraph 2.7). So long as drainage performance remains 12" or greater over the life of the warranty, we would consider that satisfactory.**

3. Quality Assurance: The Builder shall make inspections of the fields on no less than a quarterly basis during the two (2) year period following Substantial Completion to monitor performance and condition of the system. Bidder shall commit to utilizing a Certified Field Builder (CFB) as credentialed by the American Sports Builders Association, to conduct the initial build and also perform future inspections. Each inspection shall be conducted with the Owner present. Document and submit notes, pictures and a formal inspection report each inspection to the Owner. Any proactive measures required of the Builder to keep the field in proper working order shall be remedied within ten (10) days of such inspections by the

Builder and Owner.

3. Training: Train the Owner for proper maintenance and upkeep of the synthetic system to ensure the warranty remains in force. Include one (1) deep clean of the infill material of the synthetic field at the conclusion of the first year of service for the turf within the Base Bid. Schedule to suit the Owner's convenience.

4. Attic Stock: Provide the Owner with a palette of "attic stock" ballast material (1,000 lbs in either 50 lb individually-wrapped bags or a single oversized bag) at the conclusion of the project for their future use. Ensure the material is an exact match to the approved and installed ballast on the field.

5. Repair Response Time: The Builder shall provide response time commitments for the execution of warranty repairs for inside & outside play-critical zones.

PART 2 – PRODUCTS

2.1 Synthetic Turf Systems.

A. Soccer Field:

1. Dual-fiber System
   A. Pile Weight: 52 oz. Dual fiber system without thatch is anticipated with combination of slit-film and monofilaments. Provide and demonstrate long-lasting, durable performance for a high school facility anticipating heavy usage. Provide data, micron ratings, and validation of yarn types for consideration by the Landscape Architect as part of the bid response.

Numerous turf vendors are capable of tailoring their product line(s) to match the published specification. In some instances, vendors have chosen to proactively submit confirming product literature. As such, Context is acknowledging the following pre-approved soccer products for Addendum #2:
A.) Motz CrossFlex; B.) Sprinturf DFE Extreme; B.) Sprinturf Predator

2. Pile Height: Consistent 2.25" height throughout all areas of the playing field and safety zones.
3. Construction Method: Broadloom Tufted.
4. Tufting Gauge: 3/8" or as approved in submitted samples; stitch rate of 12 stitches per 3 inches. The Landscape Architect may choose to list systems on the Bid Form that vary in gauge.
5. Primary/Secondary Backing: 13 Pic Polybac / US80NW or equal Non-woven /18 Pic Polybac or as approved in submitted samples.
6. Secondary Coating: Minimum 26 oz. Urethane or as approved in submitted samples.
7. Total Product Weight: Aggregate of the face weight, coating and primary backing is intended to be in the 84oz to 86oz range.
8. Finished Roll Width: 180" Untrimmed.
9. Line Markings: In addition to the tufted lines and inlaid lines, the pile surface shall be suitable for both temporary and permanent line markings using paint specifically developed for this use and recommended by the turf manufacturer.
10. Seams: Seams shall be stitched. Any seaming shall include fabric recommended by synthetic turf manufacturer.
11. Overall Color Intent: Colors inside the soccer playing area are anticipated to be a consistent color blend of 50% Field Green / 50% Lime Green. Colors outside the soccer playing area are anticipated to be a consistent color of 100% Field Green. The Builder shall validate color fields and finalize color blends during submittal process at no additional cost to the Owner.

12. Fill Requirement: 50/50 blend of rubber/silica sand. The Contractor shall accommodate minor changes at no additional expense to the Owner. **Voluntary alternates are stricken at the Owner's direction.**
    b. ~~Voluntary Alternate – Should bidders wish to present an alternative infill, doing so shall be on a voluntary basis only. The Owner is not highly motivated to add cost to the project for cooling properties. However, should a vendor choose to offer an option, the following ballast options are agreeable, or approved equal prior to bidding. All products must provide a written 10-year infill warranty to be considered for use.~~
        ~~1. 'Brockfill'~~
        ~~2. 'NaturalCool'~~
        ~~3. 'SmoothPlay'~~
        ~~4. 'CoolPlay'~~
13. Fill Height: Owner shall require 1/2" to 3/4" exposed fiber throughout the duration of the warranty. The Landscape Architect may choose to list systems on the Bid Form that vary in fill weight.
14. ~~Alternative Products. Should a Builder offer a voluntary alternate for the Owner's consideration, said system or product shall comply with all manufacturer recommendations for a high performance, durable use that meets or exceeds the requirements of this Specification.~~

2.2 Synthetic Turf Underdrainage System
A. Furnish geo-textile covered perforated flat panel drains with all end caps, adapters, transitions and fittings required for a complete system.
B. Approved Manufacturers:
1. Hydraway, 800-223-7015, 12" Hydraway 2000
2. Advanced Drainage Systems, 800-821-6710; Model AdvanEdge 12"
3. Varicore Technologies, Inc., 800-978-8007; Multi-Flow 12"

2.3 Collector Drains: Utilize C-Series Plans. Include all associated fittings, transitions, end caps, adapters, couplers, outlets, and connectors. Lateral flat-panel drains may terminate directly into detention trenches without fitted connections.

2.4 Concrete Curb and Perimeter Nailer:
A. Curb: 3,500 PSI, minimum; Top Edges - 1/4" Radius Tooled.
B. Nailer: 2x4 Composite Wood or Treated Wood nailers appropriate for this application, fastened with tapcon or ramset every 24" on center.

2.5 Aggregate: A1 Stone Drainage Layer

Sieve Size	Percent Passing
1 1/2"	100%
1"	95-100%
3/4"	80-100%
1/2"	60-80%
3/8"	30-50%
#4	20-40%
#8	10-30%
#16	7-25%
#40	5-17%
#200	0-4%

Submit laboratory test providing a complete breakdown of the material and permeability prior to starting work.

2.7 Aggregate: A2 Washed Stone Choker Layer

Sieve Size	Percent Passing
1/2”	100%
3/8”	95-100%
#4	70-85%
#8	45-60%
#16	25-40%
#40	2-12%
#200	0-3%

Minor adjustments to aggregate blends may be approved by the Owner with prudent testing data to support the deviation. Permeability must be greater than 16” per hour for the finished synthetic system. Submit laboratory test providing a complete breakdown of the material and permeability prior to starting work.

2.8 Equipment

A. Field Groomer: Provide the Owner with one (1) synthetic field groomer as part of the Base Bid. TurfCare Model TCA1400 (1-253-350-8803) or approved equal. Model must include tray to capture and easily dispose of loose fiber and debris picked up during normal maintenance.

2.9 Soccer Goals

A. Provide and install a pair of Soccer Goals. White powdercoat finish.
1. Basis-of-design: 8Hx24W Fusion Soccer Goal, including Fusion Wheels for portability and associated anchor bag hold-downs. As coordinated, designed, and fabricated by Kwik Goal, 1-800-531-4252, or approved equal.

2. The following manufacturers offer comparable products and are encouraged to offer an equal product as part of the bidding process. Manufacturers not listed are also welcome to compete. Provide full product literature and ensure all quality standards demonstrated by the basis-of-design product are met or exceeded.

a. Beacon Athletics; b. Sportsedge; c. Sportsfield Specialties; d. Kwik Goal

PART 3 – EXAMINATION

A. The Builder shall validate pre-existing subgrade conditions prior to commencing work. Ensure proof roll requirements are met for a fully functioning, durable system.
B. Verify that all sub-base leveling is complete prior to installation.
C. The completed grade of the base and perimeter nailer shall be verified by means of a laser and plotted on a 10-foot grid. The Bidder shall supply a third-party professional survey documenting the conditions to ensure full compliance with the specifications. Based upon the Builder’s inspection of the topographical survey, the Builder shall fine grade the base suitably, including properly rolling and compacting the base to achieve a surface planarity within ¼ “ in 10-feet (+0, -1/4 “). OWNER, ENGINEER, OR BUILDER SHALL NOT APPROVE THE BASE FOR TOLERANCE TO GRADE WITHOUT OBTAINING THE TOPGRAPHICAL SURVEY.
D. The compaction of the aggregate base shall be 95% or greater, according to the Modified Proctor procedure (ASTM D1557), and the surface tolerance shall not exceed 0-1/4 inch over 10 feet and 0-½" from design grade.
E. The Builder shall field-test the permeability of the base prior to the installation of the turf. Initial testing may be self-performed by the Builder over no less than five (5) broad areas of the playing surface to ensure that no less than 16” per hour of permeability can be achieved for the finished synthetic system. Verify the means for the test with the Landscape Architect prior to beginning testing. Should such tests validate performance indicative of the third-party drainage testing, no additional reports or documentation will be required to commence with

turf replacement. If questions remain regarding performance, the Owner reserves the right to request third-party validation.

PART 4 – INSTALLATION

A. Install in accordance with Manufacturer's instructions. The Builder shall strictly adhere to the installation procedures outlined under this section. Any variance from these requirements must be accepted in writing, by the Manufacturer’s onsite representative, and submitted to the Landscape Architect and Owner for approval. The Builder shall verify that any changes or deviations do not adversely affect performance or the warranty. Infill materials shall be approved by the Manufacturer and installed in accordance with the Manufacturer’s standard procedures.
B. The carpet rolls are to be installed directly over the properly prepared aggregate base. Extreme care should be taken to avoid disturbing the aggregate base, both in regard to compaction and planarity. It is suggested that a 2-5 ton static roller is on site and available to repair and properly compact any disturbed areas of the aggregate base.
C. The full width rolls shall be laid out across the field. Turf shall be of sufficient length to permit full cross-field installation from edge to edge of play limits whenever practical.
Utilizing state of the art seaming procedures, as approved through the shop drawing and submittal process, each roll shall be attached to the next.
D. Infill materials shall be applied in numerous thin lifts. The turf shall be brushed as the mixture is applied. The infill material shall be installed to a depth determined by the Manufacturer and approved in samples submitted during the bidding process.
E. Infill materials shall be installed to fill the voids between the fibers and allow the fibers to remain vertical and non-directional. Ensure all blended infill materials are fully homogenous.
F. The Bidder shall cooperate with the Owner to sequence work on and around the field.

END OF SECTION

32 91 16 Synthetic - Golf Turf

SECTION 32 91 16 – SYNTHETIC TURF CONSTRUCTION – GOLF

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract.

1.2 SUMMARY

A. Work Includes:

1. New synthetic turf system for golf use.
    a. Concrete Curb and Perimeter Nailer. The Builder shall install a 6” wide x 18" deep perimeter concrete curb and nailer as described within this Specification for areas where synthetic turf abuts any paved condition.
    b. Complete underdrain system. The Builder will be responsible for providing and installing all layers of the complete synthetic system, including synthetic base preparation and drainage. Collect and tie flat-panel underdrain system, on a 20’ o.c. spacing, to the nearest header drain trench and/or storm structures shown in the C-Series Plans. The Builder shall utilize C-Series Plans for anticipated invert elevations yet calculate his own slopes to verify positive drainage.
    c. Geo-textile fabric installation. Tencate-Mirafi® 140N or equivalent.
    d. Field subgrade confirmation. The Builder shall be present for a proof roll of subgrade as part of reviewing and accepting subgrade conditions prior to beginning work.
    e. Base installation and Contouring. Builder shall coordinate final surface contouring and sculptural grade for putting, chipping, and bunker areas during the Shop Drawing process. Also coordinate with Earth Moving trades in advance of mass excavation to ensure base development is compatible with surface intent.
    f. System. Full complement of base construction, drainage, preparation, synthetic turf, ballast (as applicable per turf type application), turf installation, and associated maintenance.
    g. Equipment. Provide and install all components of the turn-key facility described in Plans, including but not limited to the features referenced for Golf Hole Cups, Flags, Tee Box tees, Golf Cages, and related amenities.
    h. Basic Maintenance. Providing and training the Owner with a Field Groomer for their ongoing maintenance operations. The Builder shall conduct field grooming with his or her own equipment and forces until Substantial Completion is achieved

B. Bidding Approach

Include all necessary surveying, staking, drainage infrastructure, geotextiles, curbing, stone aggregate layers, installation of all base-related systems, shop drawings and coordination, synthetic carpet, infill/ballast, nailers, grooming, grooming equipment, inspection/maintenance requirements, and associated installation of all turf-related systems listed here. Warranties shall be included within the Base Bid.

C. Submittals

1. Bid Submittals

a. List of similar projects completed by the Builder within the last two (2) years utilizing substantially similar turf product. Provide full Client contact information and details of the turf manufacturer and turf type.
b. Identify any pending litigation involving either the synthetic turf manufacturer or Builder or both. Such documentation shall be provided confidentially to the Owner rather than the Design Team. Similarly, the Owner reserves the right to request insurance documentation and company financial reports from any Bidder or subcontractor performing work on-site as a means to evaluate capacity to perform the work.
c. Identify the Foreman, Supervisor and Crew experience for the team executing this project installation. Include a list of completed projects in the last three (3) years by this specific team.
d. Builder to provide independent laboratory testing data, such as Lisport testing or similar, to substantiate the comparative durability of the proposed synthetic system the other competing systems that may be offered for the Owner's consideration.
e. Provide documentation of sources of infill materials (when applicable). Local and regional sources are encouraged whenever possible.
f. Samples: One sample box for each turf type used in overall project must be presented with each Respondent's bid.

2. Post-Bid Analysis

A. Credentials: Qualifications and credentials are a critical component of determining the most responsive Bid for all athletic field construction. Provide a listing of previous field installations, including full Client contact information, within the sealed Bid submitted for this project. The successful Bidder shall demonstrate his or her experience, industry knowledge, specialized construction methods/techniques, and overall project approach.

B. Bidding: Builders are advised that evaluating the most responsive Bid will include a combination of price, product type, credentials, and project approach. The Owner will review all materials, approach, credentials, and pricing within a Bidder's submission to determine which Bid is most responsive to the project goals and offers best value.

3. Pre-Construction Submittals

a. Cut sheets and product samples for all products listed in Bid Submittals for Owner review and approval.
b. Complete and detailed shop drawings from the Turf Manufacturer including layout of all components, contours, equipment, parts and materials required for a complete synthetic system.
c. Verification in writing provided to the Owner indicating no patent infringements have occurred in the Manufacturer's proposed synthetic system. The Owner and all his design, construction, and administrative agents shall be held harmless by the Manufacturer with regard to any legal action relating to patent infringements.
d. Staking of shall be under the full control of the Builder. The Builder shall utilize a registered surveyor to provide all necessary stakes, batter boards, lines, etc., to establish grades required and corresponding benchmarks. The cost of staking shall be included in the Base Bid. A digital record of the actual field as-built measurements shall be made for the Owner's archives in both AutoCAD and PDF format.

4. Post-Construction Submittals

a. Provide Record Drawings of the completed installation. Submit Record Drawings for review by the Owner ten (10) days prior to Substantial Completion. Include the following:

1) Underdrain locations and inverts.
2) Location of primary seam locations on the synthetic turf installation.
3) Operation & Maintenance Manuals.
4) All warranty documents related to base construction and synthetic turf, plus applicable coverage for field grooming equipment.

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D. Quality Control

1. Turf Inspection: The Owner, the Owner's agents, and the Builder shall inspect all turf at the site prior to the start of any installation. Any damaged or defective items shall be rejected and subsequently replaced by the Builder.

2. Installed Turf: Installed turf shall be inspected for, but not limited to the following:
   a. Acceptable seams
   b. Uniformity of product and color
   c. Surface bubbles
   d. Field markings
   e. Field edge installation
   f. Pile height of each roll supplied shall be measured
   g. Pile height in its finished position
   h. Surface tension

   Any products or materials that fail to meet the minimum requirements shall be rejected.

3. Manufacturer shall provide up to three (3) random samplings of the turf product obtained during the specific manufacturing process of this project's order. Verify that all carpet meets or exceeds the specifications prior to shipment to ensure installation delays are avoided.

4. Weather Conditions: Only install turf according to weather requirements provided by the Manufacturer. Review all installation requirements and product limitations with Owner and Landscape Architect prior to commencing work.

5. Workmanship: All seams shall be flat, tight, and permanent with no separation or fraying.

E. Warranties

1. **BASIC TURF WARRANTY: Within his or her <u>Base Pricing</u> Response, the Builder shall provide a written and enforceable Warranty for no less than (8) years from the date of Substantial Completion of the project. Base integrity, drainage function, UV degradation, fiber strength, stability of the backing, tufted yarn and seam integrity, and all other related components of the synthetic turf system.**

   a. All warranties shall be in writing and remain valid should the Manufacturer be acquired by another company prior to the conclusion of said warranty.
   b. Confirming warranty language shall be provided with each Respondent's bid. No pro-rated warranties shall be accepted.
   c. Basic warranty will be accepted by-Manufacturer subject to a satisfactory letter of credit or financial statements that demonstrate the provider's ability to meet or exceed $2,000,000 in protection to the Owner should a claim occur.

2. Quality Assurance: The Builder shall make inspections of the fields on no less than a quarterly basis during the two (2) year period following Substantial Completion to monitor performance and condition of the system. Bidder shall commit to utilizing a Certified Field Builder (CFB) as credentialed by the American Sports Builders Association, to perform the initial build and monitor ongoing inspections. Each inspection shall be conducted with the Owner present. Document and submit notes, pictures and a formal inspection report each

inspection to the Owner. Any proactive measures required of the Builder to keep the field in proper working order shall be remedied within ten (10) days of such inspections by the Builder and Owner.

3. Training: Train the Owner for proper maintenance and upkeep of the synthetic system to ensure the warranty remains in force.

4. Attic Stock: When applicable, provide the Owner with a palette of “attic stock” ballast material (500 lbs in either 50 lb individually-wrapped bags or a single oversized bag) at the conclusion of the project for their future use. Ensure the material is an exact match to the approved and installed ballast on the facility.

5. Repair Response Time: The Builder shall provide response time commitments for the execution of warranty repairs.

PART 2 – PRODUCTS

2.1 Synthetic Turf System.

A. Golf Turf for Chipping, Putting, Bunkers, and Tee Box Areas:

1. Applications:
   Turf Type A – Tee Box Area, **Tee Box Driving Mats, and Hitting Cage Driving Mats**; Tarkett ‘Tee Turf’ from EasyTurf Collection, or approved equal.
   Turf Type B – Fringes/Rough/Bunker; Tarkett ‘First Cut’ from TarkettTurf Collection, or approved equal.
   Turf Type C – Putting Green Areas; Tarkett ‘Tru-Roll’ Putting Green from UltimateGrass Collection, or approved equal.
   Approved golf product substitutions for Addendum #2:
   A.) Challenger Golf Turf; B.) Forever Lawn Golf Turf; C.) Sprinturf Golf Turf
2. Pile Height: Consistent 0.625” height in putting areas; Consistent 1.125” height throughout all Tee Box areas and Fringes; Consistent 1.75” height in Bunkers.
3. Tufting Gauge: 3/16” or as approved in submitted samples.
4. Secondary Coating: Minimum 20 oz. Urethane or substantially similar and approved prior to quoting.
5. Finished Roll Widths: 180“ Untrimmed.
6. Seams: Seams shall be glued. Any seaming shall include fabric recommended by synthetic turf manufacturer.
7. Color: Field Green/Grass Green blend for "Grass" Areas and Terra Cotta color for “Skinned” conditions. Lines and field markings shall be White.
8. Warranty: 8 Year minimum warranty for entirety of base construction, drainage, and overall turf system. See Warranty Section.
9. Provide attic stock of two (2) replacement Tee Box **driving mat** area carpets for the Owner’s future use.
10. Provide and install all corresponding golf equipment listed in Plans and itemized earlier within this Specification.
11. Alternative manufacturers may submit for consideration as an approved equal.

2.2 Synthetic Turf Underdrainage System

A. Furnish geo-textile covered perforated flat panel drains with all end caps, adapters, transitions and fittings required for a complete system.
B. Approved Manufacturers:
   1. Hydraway, 800-223-7015, 12” Hydraway 2000
   2. Advanced Drainage Systems, 800-821-6710; Model AdvanEdge 12”
   3. Varicore Technologies, Inc., 800-978-8007; Multi-Flow 12”

2.3 Collector Drains: Utilize C-Series Plans. Include all associated fittings, transitions, end caps, adapters, couplers, outlets, and connectors. Lateral flat-panel drains may terminate directly into detention trenches without fitted connections.

2.4 Concrete Curb and Perimeter Nailer:

A. Curb: 3,500 PSI, minimum; Top Edges - 1/4" Radius Tooled.

B. Nailer: 2x4 Composite Wood or Treated Wood nailers appropriate for this application, fastened with tapcon or ramset every 24” on center.

2.5 Aggregate: A1 Stone Drainage Layer

Sieve Size	Percent Passing
1 1/2”	100%
1”	95-100%
3/4”	80-100%
1/2”	60-80%
3/8”	30-50%
#4	20-40%
#8	10-30%
#16	7-25%
#40	5-17%
#200	0-4%

Submit laboratory test providing a complete breakdown of the material and permeability prior to starting work.

2.7 Aggregate: A2 Washed Stone Choker Layer

Sieve Size	Percent Passing
1/2”	100%
3/8”	95-100%
#4	70-85%
#8	45-60%
#16	25-40%
#40	2-12%
#200	0-3%

Minor adjustments to aggregate blends may be approved by the Owner with prudent testing data to support the deviation. Permeability must be greater than 16” per hour for the finished synthetic system. Submit laboratory test providing a complete breakdown of the material and permeability prior to starting the work.

2.8 Equipment

A. Field Groomer: Provide the Owner with one (1) synthetic field groomer as part of the Base Bid. TurfCare Model TCA1400 (1-253-350-8803) or approved equal. Model must include tray to capture and easily dispose of loose fiber and debris picked up during normal maintenance.

2.10 Miscellaneous

A. Golf Hitting/Driving Cages: Provide, assemble, and erect ‘Freestanding Golf Cage – 42mm Professional Range Model,’ as designed and distributed by Net World Sports, or approved equal. Provide eight (8) total bays generally as reflected in plan. Coordinate with General Trades Package to ensure concrete flatwork is provided under the cage systems.

PART 3 – EXAMINATION

A. The Builder shall validate pre-existing subgrade conditions prior to commencing work. Ensure proof roll requirements are met for a fully functioning, durable system.
B. Verify that all sub-base leveling is complete prior to installation.
C. The completed grade of the base and perimeter nailer shall be verified by means of a laser and plotted on a 10-foot grid. The Bidder shall supply a third-party professional survey documenting the conditions to ensure full compliance with the specifications. Based upon the Builder's inspection of the topographical survey, the Builder shall fine grade the base suitably, including properly rolling and compacting the base to achieve a surface planarity within ¼ " in 10-feet (+0, -1/4 "). OWNER, ENGINEER, OR BUILDER SHALL NOT APPROVE THE BASE FOR TOLERANCE TO GRADE WITHOUT OBTAINING THE TOPGRAPHICAL SURVEY.
D. The compaction of the aggregate base shall be 95% or greater, according to the Modified Proctor procedure (ASTM D1557), and the surface tolerance shall not exceed 0-1/4 inch over 10 feet and 0-½" from design grade.
E. The Builder shall field-test the permeability of the base prior to the installation of the turf. Initial testing may be self-performed by the Builder over no less than five (5) broad areas of the playing surface to ensure that no less than 16" per hour of permeability can be achieved for the finished synthetic system. Verify the means for the test with the Landscape Architect prior to beginning testing. Should such tests validate performance indicative of the third-party drainage testing, no additional reports or documentation will be required to commence with turf replacement. If questions remain regarding performance, the Owner reserves the right to request third-party validation.

PART 4 – INSTALLATION

A. Install in accordance with Manufacturer's instructions. The Builder shall strictly adhere to the installation procedures outlined under this section. Any variance from these requirements must be accepted in writing, by the Manufacturer's onsite representative, and submitted to the Landscape Architect and Owner for approval. The Builder shall verify that any changes or deviations do not adversely affect performance or the warranty. Infill materials shall be approved by the Manufacturer and installed in accordance with the Manufacturer's standard procedures.
B. The carpet rolls are to be installed directly over the properly prepared aggregate base. Extreme care should be taken to avoid disturbing the aggregate base, both in regard to compaction and planarity. It is suggested that a 2-5 ton static roller is on site and available to repair and properly compact any disturbed areas of the aggregate base.
C. The full width rolls shall be laid out across the field. Turf shall be of sufficient length to permit full cross-field installation from edge to edge of play limits whenever practical.
Utilizing state of the art seaming procedures, as approved through the shop drawing and submittal process, each roll shall be attached to the next.
D. Infill materials shall be applied in numerous thin lifts. The turf shall be brushed as the mixture is applied. The infill material shall be installed to a depth determined by the Manufacturer and approved in samples submitted during the bidding process.
E. Infill materials shall be installed to fill the voids between the fibers and allow the fibers to remain vertical and non-directional. Ensure all blended infill materials are fully homogenous.
F. The Bidder shall cooperate with the Owner to sequence work on and around the field.

END OF SECTION