

LET'S DEBATE!

Natural VS Artificial Turf
2022 WASBO Facilities Management Conference



PRESENTATION OVERVIEW

Presenters

Introductory: Natural VS Artificial Turf

Debate Questions Panel

Construction Process

Construction Cost

Maintenance Process

Maintenance Cost

Uses & Playability

Questions/Comments

Open Dialogue!

PRESENTERS

PRESENTERS

LET'S DEBATE! Natural VS Artificial Turf

SCOTT GROHOLSKI



**POINT OF BEGINNING,
INC.**

Owner & President
Civil Engineering
30 Years of Experience

RICH RIGGS



**RIGGS SITE
CONSULTING, LLC.**

Owner
Natural Turf Site Maintenance
45 Years of Experience

JODY FACTOR



**MIDWEST SPORT & TURF
SYSTEMS, LLC.**

Owner
Synthetic Turf
20 Years of Experience

INTRODUCTORY

INTRODUCTORY

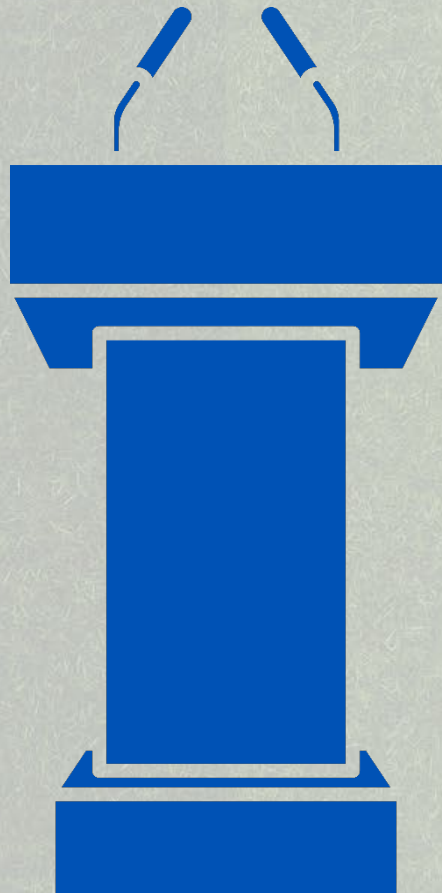
LET'S DEBATE! Natural VS Artificial Turf

NATURAL VS ARTIFICIAL TURF

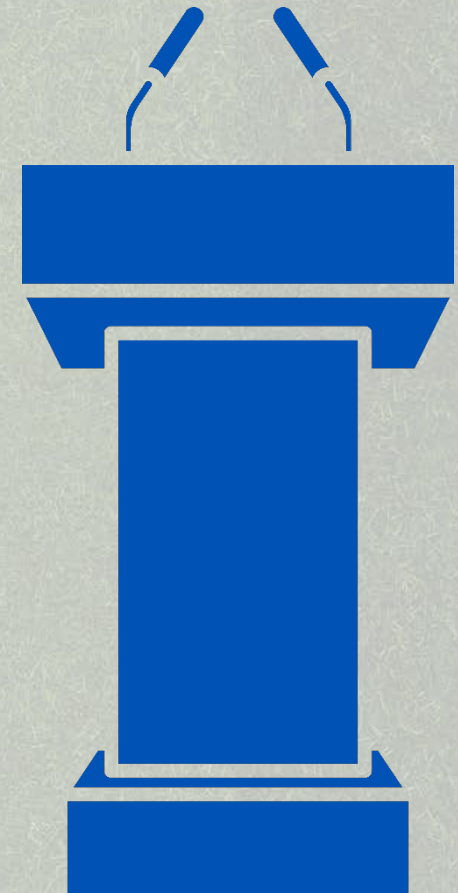
DEBATE PANEL QUESTIONS

DEBATE QUESTIONS PANEL

LET'S DEBATE! Natural VS Artificial Turf



- 1. Construction Process**
- 2. Construction Cost**
- 3. Maintenance Process**
- 4. Maintenance Cost**
- 5. Uses & Playability**



DEBATE PANEL QUESTIONS

Construction Processes

CONSTRUCTION PROCESS

LET'S DEBATE! Natural VS Artificial Turf

NATURAL

6 Months

***Limited Use for 1st Year*

- 1. Site Preparation**
- 2. Excavation & Subbase**
- 3. Drainage System**
- 4. Amended Top Soil**
- 5. Seed / Sod / Grow Time**

ARTIFICIAL

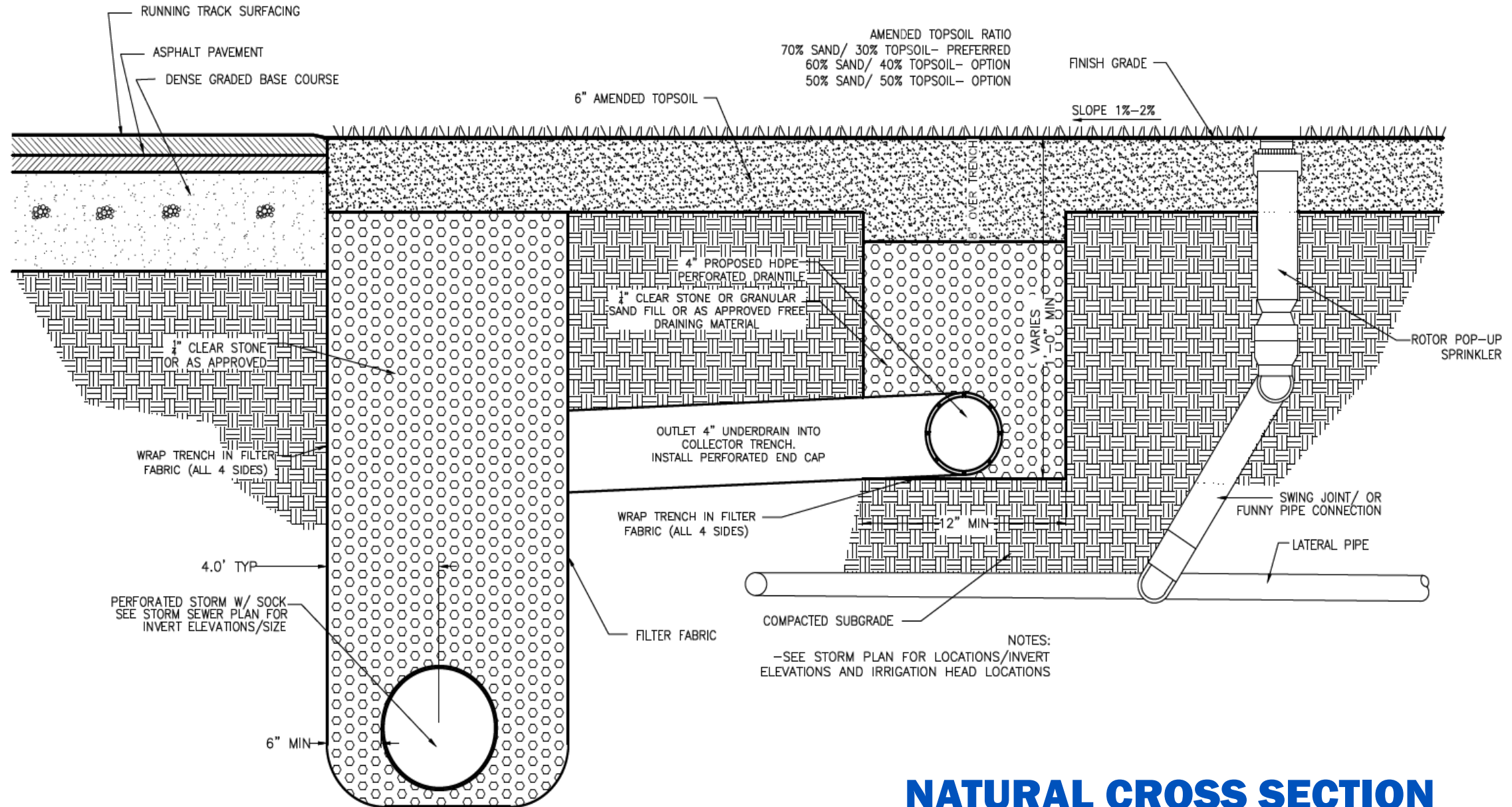
3 Months

***Unlimited Use Immediately*

- 1. Site Preparation**
- 2. Excavation & Subbase**
- 3. Drainage System**
- 4. Drainage Stone**
- 5. Turf / Infill**

CONSTRUCTION PROCESS Natural

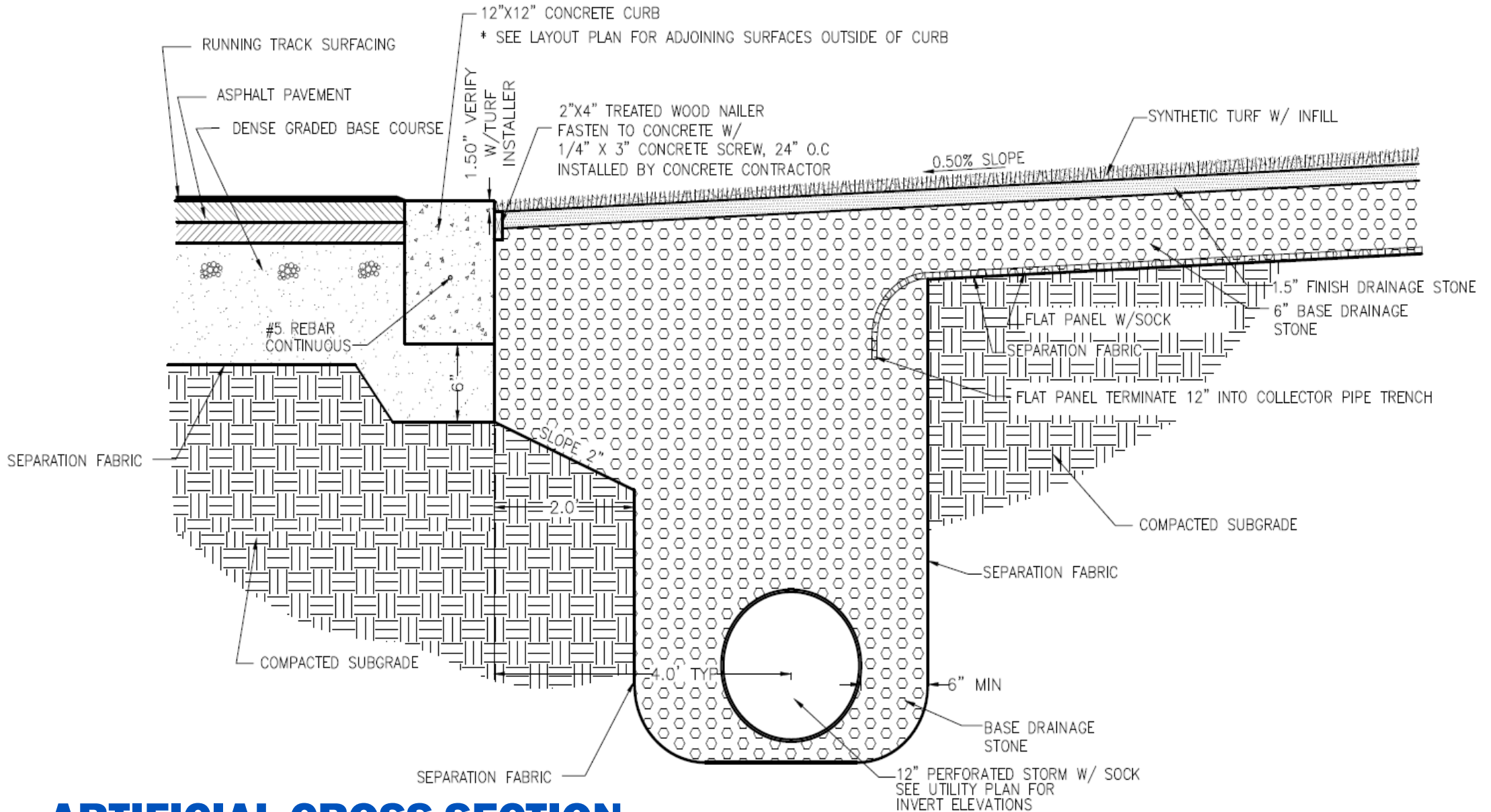
LET'S DEBATE! Natural VS Artificial Turf



NATURAL CROSS SECTION

CONSTRUCTION PROCESS Artificial

LET'S DEBATE! Natural VS Artificial Turf



ARTIFICIAL CROSS SECTION

NOTE: SAWCUT CURB EVERY 10' O.C TYP

DEBATE PANEL QUESTIONS

Construction Costs

CONSTRUCTION COSTS

LET'S DEBATE! Natural VS Artificial Turf

COSTS BASED ON 95,000 SF

NATURAL

1. Excavation (Grading/Stripping/Exporting)
2. Storm Sewer w/Basins
3. Flat Panel Underdrain
4. Amended Top Soil
5. Irrigation
6. Sod/Seeding/Fertilizing/Mulch

\$375,790

ARTIFICIAL

1. Excavation (Grading/Stripping/Exporting)
2. Storm Sewer
3. Flat Panel Underdrain
4. Drainage Stone & Separation Fabric
5. Concrete Curb w/ Nailer
6. Synthetic Turf w/ Pad

\$1,276,794

CONSTRUCTION COSTS Natural

LET'S DEBATE! Natural VS Artificial Turf

Description	Square Feet	Depth Feet	Cubic Feet	Quantity		Unit Price		Total	Base Total
SITE DEMOLITION									
Mobilization	-	-	-	1	L.S.	\$10,000.00	L.S.	\$10,000.00	
									\$10,000.00
SITE UTILITIES									
Waterman Service	-	-	-	200	L.F.	\$35.00	L.F.	\$7,000.00	
Storm water Management Area	-	-	-	1	L.S.	\$25,000.00	L.S.	\$25,000.00	
									\$32,000.00
TRACK/FOOTBALL STADIUM									
Site Grading	95000	0.5	47500	1,759	C.Y.	\$6.00	C.Y.	\$10,555.56	
Strip Topsoil	95000	0.5	47500	1,759	C.Y.	\$4.00	C.Y.	\$7,037.04	
Export Soil	0	0.5	0	0	C.Y.	\$10.00	C.Y.	\$0.00	
Erosion Control	-	-	-	1	L.S.	\$5,000.00	L.S.	\$5,000.00	
Flat Panel Underdrain System	-	-	-	3,534	L.F.	\$10.00	L.F.	\$35,340.00	
In ground Automated Irrigation	-	-	-	1	L.S.	\$35,000.00	L.S.	\$35,000.00	
Amended Topsoil	95000	0.5	47500	1,759	C.Y.	\$25.00	C.Y.	\$43,981.48	
Seed/Fertilize/ Mulch Field	95000	-	-	10,556	S.Y.	\$1.25	S.Y.	\$13,194.44	
Turf Collector Storm Sewer System w/ basins	-	-	-	1,214	L.F.	\$75.00	L.F.	\$91,050.00	
Interior Concrete Curb w/ Slot Drain and Nailer	-	-	-	0	L.F.	\$55.00	L.F.	\$0.00	
1.5" Finish Drainage Stone	0	-	-	0	S.Y.	\$5.00	S.Y.	\$0.00	
6" Base Drainage Stone w/Separation Fabric	0	-	-	0	S.Y.	\$12.00	S.Y.	\$0.00	
Synthetic Turf w/ Infill	0	-	-	0	S.F.	\$5.00	S.F.	\$0.00	
Shock Pad	0	-	-	0	S.F.	\$1.30	S.F.	\$0.00	
Goal Post	-	-	-	1	Set	\$30,000.00	Set	\$30,000.00	
									\$271,158.52
Subtotal									\$313,158.52
Design/Con Admin/Contingency (20%)									\$62,631.70
PROJECT TOTAL									\$375,790.22

CONSTRUCTION COSTS Artificial

LET'S DEBATE! Natural VS Artificial Turf

Description	Square Feet	Depth Feet	Cubic Feet	Quantity		Unit Price		Total	Base Total
SITE DEMOLITION									
Mobilization	-	-	-	1	L.S.	\$10,000.00	L.S.	\$10,000.00	
									\$10,000.00
SITE UTILITIES									
Waterman Service	-	-	-	0	L.F.	\$35.00	L.F.	\$0.00	
Storm water Management Area	-	-	-	1	L.S.	\$25,000.00	L.S.	\$25,000.00	
									\$25,000.00
TRACK/FOOTBALL STADIUM									
Site Grading	95000	1	95000	3,519	C.Y.	\$6.00	C.Y.	\$21,111.11	
Strip Topsoil	95000	0.5	47500	1,759	C.Y.	\$4.00	C.Y.	\$7,037.04	
Export Soil	95000	0.5	47500	1,759	C.Y.	\$10.00	C.Y.	\$17,592.59	
Erosion Control	-	-	-	1	L.S.	\$5,000.00	L.S.	\$5,000.00	
Flat Panel Underdrain System	-	-	-	3,534	L.F.	\$10.00	L.F.	\$35,340.00	
In ground Automated Irrigation	-	-	-	0	L.S.	\$35,000.00	L.S.	\$0.00	
Amended Topsoil	0	0.5	0	0	C.Y.	\$25.00	C.Y.	\$0.00	
Seed/Fertilize/ Mulch Field	0	-	-	0	S.Y.	\$1.25	S.Y.	\$0.00	
Turf Collector Storm Sewer System w/o basins	-	-	-	1,214	L.F.	\$55.00	L.F.	\$66,770.00	
Interior Concrete Curb Nailer	-	-	-	1,240	L.F.	\$55.00	L.F.	\$68,200.00	
1.5" Finish Drainage Stone	95000	-	-	10,556	S.Y.	\$5.00	S.Y.	\$52,777.78	
6" Base Drainage Stone w/Separation Fabric	95000	-	-	10,556	S.Y.	\$12.00	S.Y.	\$126,666.67	
Synthetic Turf w/ Infill	95000	-	-	95,000	S.F.	\$5.00	S.F.	\$475,000.00	
Shock Pad	95000	-	-	95,000	S.F.	\$1.30	S.F.	\$123,500.00	
Goal Post	-	-	-	1	L.S.	\$30,000.00	L.S.	\$30,000.00	
									\$1,028,995.19
Subtotal									\$1,063,995.19
Design/Con Admin/Contingency (20%)									\$212,799.04
PROJECT TOTAL									\$1,276,794.22

DEBATE PANEL QUESTIONS

Maintenance Processes

MAINTENANCE PROCESS Natural

LET'S DEBATE! Natural VS Artificial Turf

NATURAL

Routine & Annually

Mow

Fertilize

Irrigate

Irrigation Blowout

Aerate

Overseed

Topdress



MAINTENANCE PROCESS Artificial

LET'S DEBATE! Natural VS Artificial Turf



ARTIFICIAL
Routine & Quarterly
Sweep & Drag Brush
Infill Leveling
Visual Inspections

Optional
Infill Decompaction
Disinfectant
G-Max Testing



DEBATE PANEL QUESTIONS

Maintenance Costs

MAINTENANCE COSTS

LET'S DEBATE! Natural VS Artificial Turf

COSTS BASED ON 95,000 SF

NATURAL

1. Mow
2. Fertilize
3. Irrigate
4. Irrigation Blowout
5. Aerate
6. Overseed
7. Field Paint
8. Topdress
9. G-Max Testing

\$38,850

ARTIFICIAL

1. Field Inspection
 2. Sweep & Drag Brush
 3. Infill Leveling
 4. Turf Repairs
 5. Snow Removal
 6. G-Max Testing
- Optional**
1. Infill Decompaction
 2. Disinfectant

\$9,970

MAINTENANCE COSTS Natural

LET'S DEBATE! Natural VS Artificial Turf

MAINTENANCE							
<i>NOTE: Estimated natural turf maintenance season -> May 1 - Oct 31 (26 weeks)</i>							
NATURAL	Weeks per Season	Applications per Season	Hours per Maintenance Event	Material Quantity per Maintenance Event	Cost per Hour	Annual Costs per Maintenance Event	Comments
Mowing - Labor	36	-	4	-	\$ 30.00	\$ 4,320.00	
Mowing - Equipment	-	-	-	-	-	\$ 2,500.00	Lump Sum
Fertilization - Labor	-	7	4	-	\$ 30.00	\$ 840.00	
Fertilization - Material	-	-	-	7	\$ 140.00	\$ 980.00	LBS (TBD)
Irrigation Automated - Labor	-	-	-	-	\$ -	\$ -	
Irrigation Automated - Maintenance	-	-	-	-	\$ -	\$ 2,500.00	Lump Sum
Aerification - Labor	-	3	4	-	\$ 30.00	\$ 360.00	
Aerification - Equipment	-	-	-	-	-	\$ 2,500.00	Lump Sum
Aerification Overseeding - Labor	-	3	4	-	\$ 30.00	\$ 360.00	
Aerification Overseeding - Material	-	3	-	400	\$ 2.10	\$ 2,520.00	LBS (80/20 Mix)
Overseeding - Labor (Football)	-	5	2	-	\$ 30.00	\$ 300.00	
Overseeding - Material	-	14	-	50	\$ 2.00	\$ 1,400.00	LBS (Rye Perennial)
Field Paint Striping - Labor	25	-	16	-	\$ 30.00	\$ 12,000.00	
Field Paint Striping - Material	-	25	-	200	\$ -	\$ 5,000.00	
Top Dressing Sand - Labor	3	-	8	-	\$ 30.00	\$ 720.00	
Top Dressing Sand - Material	-	3	-	30	\$ 15.00	\$ 1,350.00	Yards
G-Max Testing - Labor	-	1	-	-	\$ -	\$ 1,200.00	
TOTAL ANNUAL NATURAL TURF MAINTENANCE COST						\$ 38,850.00	

MAINTENANCE COSTS Artificial

LET'S DEBATE! Natural VS Artificial Turf

MAINTENANCE							
<i>NOTE: Estimated artificial turf maintenance season -> March 1 - Nov 30 (39 weeks)</i>							
ARTIFICIAL	Weeks per Season	Applications per Season	Hours per Maintenance Event	Material Quantity per Maintenance Event	Cost per Hour	Annual Costs per Maintenance Event	Comments
Routine Cleaning / Inspection - Labor	39	-	3	-	\$ 30.00	\$ 3,510.00	
Routine Cleaning / Inspection - Main.	-	-	-	-	-	\$ -	
Drag & Sweep - Labor	-	4	3	-	\$ 30.00	\$ 360.00	
Drag & Sweep - Maintenance	-	-	-	-	\$ -	\$ -	
Drag & Sweep - Equipment	-	-	-	-	\$ -	\$ 2,500.00	Includes Side-by-Side
Infill Replacement - Labor	-	1	3	-	\$ 90.00	\$ 270.00	After 4-5 Years
Infill Replacement - Material	-	1	-	Bucket of Rubber / Bag of Sand	-	\$ 750.00	1-2 Bags of Rubber left behind after install
Turf Repairs - Labor	-	5	1	-	\$ 30.00	\$ 150.00	
Turf Repairs - Material	-	As Needed	-	> 1 tube or 1 SF of tape	-	\$ 50.00	Construction Adhesive Seam Tape
Snow Removal - Labor	2	-	3	-	\$ 30.00	\$ 180.00	
Snow Removal - Equipment	-	-	-	-	\$ -	\$ 1,000.00	
G-Max Testing - Labor	-	1	-	-	\$ -	\$ 1,200.00	
TOTAL ANNUAL ARTIFICIAL TURF MAINTENANCE COST						\$ 9,970.00	

DEBATE PANEL QUESTIONS

Uses & Playability

USES & PLAYABILITY

LET'S DEBATE! Natural VS Artificial Turf

EVENTS

NOTE: Estimated natural turf playing season -> May 1 - Oct 31 (26 weeks)

NATURAL	Events per Season	Hours per Event	Annual Event Hours
Football (Varsity / JV)	13	2.5	32.5
Middle School Football	4	2	8
Youth Football	4	3	12
Soccer (Varsity / JV)	-	-	-
Middle School Soccer	-	-	-
Youth Soccer	5	2	10
La Crosse	-	-	-
Youth La Crosse	-	-	-
Ultimate Frisbee	-	-	-
Band	5	1	5
Cheer	0	0	0
PE Classes	0	0	0
Recess	-	-	-
Baseball	-	-	-
Softball	-	-	-
Track & Field	-	-	-
Graduation	-	-	-
Misc. Events	-	-	-
TOTAL EVENTS	31	TOTAL HOURS	67.5

ESTIMATED USE PER YEAR – 67.5 hours

ESTIMATED USE OVER 20 YEAR SPAN – 1,350 hours

USES & PLAYABILITY

LET'S DEBATE! Natural VS Artificial Turf

ESTIMATED USE PER YEAR – 889 hours
ESTIMATED USE OVER 20 YEAR SPAN – 17,780 hours

EVENTS			
<i>NOTE: Estimated synthetic turf playing season -> March 1 - November 30 (39 weeks)</i>			
SYNTHETIC	Events per Season	Hours per Event	Annual Event Hours
Football Games (Varsity / JV)	13	2.5	32.5
Football Practice (Varsity / JV)	56	2.5	140
Middle School Football	4	2	8
Youth Football	4	3	12
Soccer Boys - Girls Games (Varsity / JV)	24	2	48
Soccer Boys - Girls Practice (Varsity / JV)	86	2	172
Middle School Soccer	3	1.5	4.5
Youth Soccer	2	2	4
La Crosse	-	-	-
Youth La Crosse	-	-	-
Ultimate Frisbee	-	-	-
Band	5	1	5
Cheer	8	2.5	20
PE Classes	770	0.5	385
Recess	0	1	
Baseball	6	2	12
Softball	6	2	12
Track & Field Practice	7	2	
Graduation	1	2	2
Misc. Events (Facility Rental)	8	4	32
TOTAL EVENTS	1003	TOTAL HOURS	889

USES & PLAYABILITY

LET'S DEBATE! Natural VS Artificial Turf

Hourly cost comparison of natural turf vs synthetic turf over a 20 year life span taking into consideration Construction Cost – Maintenance Cost – Estimated Hours of Use

	Con Cost	Main Cost 20 yrs	Turf Replace In Year 10	Total Cost	Hours of Use Over 20 yr Span	Cost/Hr
Natural Turf	\$375,790.22	\$ 777,000.00	\$0.00	\$1,152,790.22	1350	\$853.92
Synthetic Turf	\$1,276,794.22	\$ 199,400.00	\$617,500.00	\$2,093,694.22	17780	\$117.76

The estimated costs for construction and maintenance were developed from POB's library of recently bid projects. The uses and playability scheduling are based on pre vs post construction for the Falcon pride project – Tomorrow River School District. Uses, playability and maintenance cost(s) may differ from district to district depending site location and other factors/elements.

QUESTIONS / COMMENTS

THANK YOU!