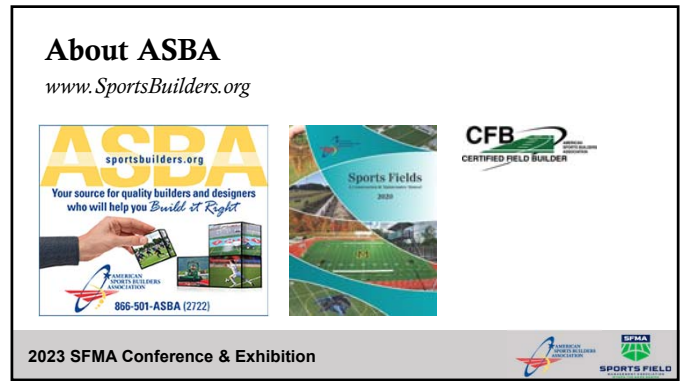
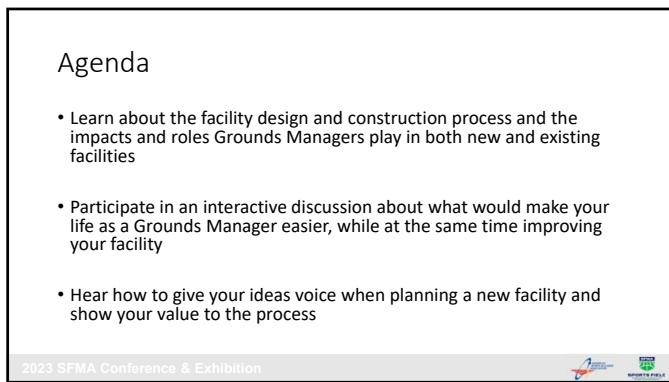




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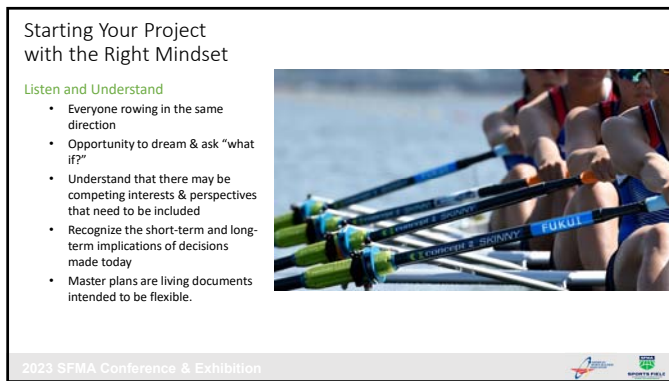
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6

Starting with a Master Plan

Why is a Master Plan Important?

- Master Plans are a roadmap
- Snapshot in time
- Flexible & adaptive
- Budget
 - Today dollars & future dollars
- Recognizes current & future adjacent uses
- Allows you to plan logically

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Understanding the Project Flow

Concept and Schematic Stage Phase

- Site Investigation
- Programming and stakeholder involvement
- Bubble diagrams – Schematic Design

Design Development Phase

- Design decisions are largely complete
 - Materials and finishes determined
 - Budget verified
- Construction Documents
 - Design is refined and finalized gradually
 - Agency review

Construction Phase

- Advertise, Bid, Award
- Construction

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Budgeting

Cost Estimates as a Planning Tool

- Bringing projects in budget without losing programming

Item	Quantity	Unit	Unit Cost	Subtotal	Allowance	Quantity	Unit Cost	Subtotal
Site Preparation	100	sq ft	10.00	1,000.00	1,000.00	100	10.00	1,000.00
Site Work	100	sq ft	20.00	2,000.00	2,000.00	100	20.00	2,000.00
Site Work - Excavation	100	sq ft	30.00	3,000.00	3,000.00	100	30.00	3,000.00
Site Work - Foundation	100	sq ft	40.00	4,000.00	4,000.00	100	40.00	4,000.00
Site Work - Structure	100	sq ft	50.00	5,000.00	5,000.00	100	50.00	5,000.00
Site Work - Finishes	100	sq ft	60.00	6,000.00	6,000.00	100	60.00	6,000.00
Site Work - Landscaping	100	sq ft	70.00	7,000.00	7,000.00	100	70.00	7,000.00
Site Work - Utilities	100	sq ft	80.00	8,000.00	8,000.00	100	80.00	8,000.00
Site Work - Security	100	sq ft	90.00	9,000.00	9,000.00	100	90.00	9,000.00
Site Work - Other	100	sq ft	100.00	10,000.00	10,000.00	100	100.00	10,000.00

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Budgeting

Planning for Operations

- Mowing equipment
 - Does it fit through the door?
- Quick couplers
- Washout drains in maintenance yard
- Fertigation system
- Irrigation controls
 - Head by head common for golf courses but is seen sometimes for athletics
- What else do you need to plan for?

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Budgeting

Planning for Events and Alternative Field Uses

- Planning for the first event
 - Decking, temporary fencing
- Storage for these materials
- Other uses such as concerts, graduations, corporate events...
- What else do you need to plan for?

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Phasing

Phasing and Budget

- Anticipated funding will determine if phasing is required

Phasing Campus Master Plans with Athletic Master Plans

- Should be separate plans, but preferably designed in tandem
- Often built at different times, but utilities and infrastructure can be shared

Revising and Updating as Phasing is Implemented

- As programs and anticipated funding change/update

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Cost Phasing

Entry	\$1,342,461
Area 1 - Softball	\$3,648,451
Area 2 - Baseball	\$4,919,071
Area 3 - Multi-use	\$7,496,438
Area 4 - Tennis	\$2,161,727
Area 5 - Stadium	\$1,208,428
Total Cost for Master Plan:	\$ 21,361,484

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Cost Comparison

BASKETBALL COURT OPTIONS
FAIR OAKS PARK RENOVATION AND ENHANCEMENT

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Budgeting

Vertical vs Hooded Backstop

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Budgeting

CMU vs Chain Link Dugouts

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Schedule

Good things to know

- When does the facility or field need to be open?
- When does the grass need to be installed to allow for proper growth?
- Public and private bid schedule
 - Allow enough time to complete the construction project
 - Manufacturing lead times
- Weather impacts
- What other scheduling challenges have you encountered?

Bid Item #	Item Description	Est. Qty	Unit	Est. Value	Start Date	End Date
SB-0001	Remove Existing Softball Field	1	Lot	\$8,000,000	07/20/22	07/20/22
SB-0002	Remove Existing Softball Field	1	Lot	\$8,000,000	07/20/22	07/20/22
SB-0003	Remove Existing Softball Field	1	Lot	\$8,000,000	07/20/22	07/20/22
SB-0004	Remove Existing Softball Field	1	Lot	\$8,000,000	07/20/22	07/20/22
SB-0005	Remove Existing Softball Field	1	Lot	\$8,000,000	07/20/22	07/20/22
SB-0006	Remove Existing Softball Field	1	Lot	\$8,000,000	07/20/22	07/20/22
SB-0007	Remove Existing Softball Field	1	Lot	\$8,000,000	07/20/22	07/20/22
SB-0008	Remove Existing Softball Field	1	Lot	\$8,000,000	07/20/22	07/20/22
SB-0009	Remove Existing Softball Field	1	Lot	\$8,000,000	07/20/22	07/20/22
SB-0010	Remove Existing Softball Field	1	Lot	\$8,000,000	07/20/22	07/20/22

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Permitting

What do you need check (understanding)

- Local, state and federal requirements
- SWPPP/Notice of Intent (NOI)
- Lead times on the permit process
- Green Building Code

What challenges with permits have you had in the past?

- Not having the proper paperwork in place
- Knowing the regulations and if you are within certain city / county limits
- Owner doesn't want to get permits (slows things down)


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Procurement , Bidding, & Project Delivery

Project Delivery Types

- Design-Bid-Build
- Design-Build
- Negotiated contract
- CO-OP
 - A "purchasing cooperative" is a type of cooperative arrangement, often among businesses, to agree to aggregate demand to get lower prices from selected suppliers. Retailers' cooperatives are a form of purchasing cooperative. Cooperatives are often used by government agencies to reduce costs of procurement
- Union / Non-union



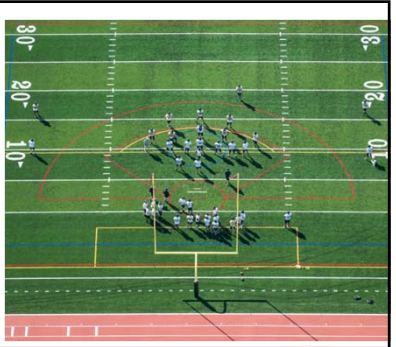
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Contractor Selection

Important Factors to Consider

- Experience for your desired outcome
- Best fit for the ownership group
- Qualification forms
 - List of project
 - Selection process
- CO-OP purchasing – what procurement method
- Budgeting assistance from the contractor



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Planning Your Facility

Making Your Project a Reality




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Site Investigations

Doing Your Due Diligence to Identify Red Flags Early

- As-builts
- Arborist report
- Utility survey
- Topographic survey
- Environmental review
- Soils analysis




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Outreach

Stakeholders

- User groups
 - Athletes
 - Spectators
 - Coaches
 - Educators
 - Community Members
 - Facilities & Operations
 - Alumni & Donors



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Outreach

Engaging & Coordinating with Local Municipalities

- Planning departments
- Soccer clubs, baseball clubs – private groups (pay to play)
- Public / private partnership
- Parks and Rec

Engaging & Coordinating with Utilities



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Outreach

Types of Outreach

- In-person or virtual meetings
- Online surveys
- Design charrettes
- Pop-up events
- Email

Communicating Design

- Bubble diagrams
- Aspirational imagery
- 2D site plans
- 3D renderings
- Flythrough animations



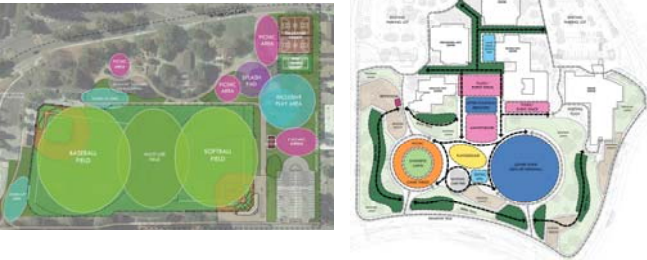
www.VerdeDesignInc.com

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Communicating Design

Bubble Diagrams



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Communicating Design

2D Plans



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Communicating Design

3D Renderings



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Programming

User Considerations

- Main Users
 - Athletes
 - Spectators
 - Maintenance & Operations

Additional Users

- Administration
- Facilities
- Site Staff
- Vendors

Project Programming

#	Description	Y/N	Comments
1	Can the fields be selected to prelearned	Y/N	
1	North-Southfoot to south?		
2	Field Usage		
a.	Game only	Y/N	N
b.	Practice and Games	Y/N	Y
c.	Physical Education	Y/N	N
d.	Multi-use (other sports)	Y/N	Y
3	Field(s) available?	Y/N	
ii.	Soccer?	Y/N	Y
iii.	Lacrosse?	Y/N	N
iv.	Field Hockey?	Y/N	N
4	Type of Material?		
a.	Synthetic Turf?	Y/N	Potentially, need to explore cost/impairance
i.	Infill Type		
ii.	100% Rubber	Y/N	N
iii.	EPDM	Y/N	N
iv.	Organic	Y/N	Y
5	Is Storm/ Shock Pad/Drainage Pad?	Y/N	Y
iii.	Height		2.5' recommended for outfield; 2' for infield
iv.	Color		
ii.	Infield?	Y/N	Brown
ib.	Outfield?	Y/N	Summer Green

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Programming

Athletic Considerations

Big Picture Items

- Natural or synthetic?
- Which sports will be using the facility?
- Dedicated or multi-use?
- Sports lighting?
- Televised or not?

Other Field Use Considerations

- Festivals
- Art fairs
- Food trucks
- Field days



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Programming

Athletic Considerations

Facility Elements

- Fencing & netting for safety
- Equipment & goal storage
- Player seating areas
- Warm-up areas
- Sports lighting
- Scoreboards
- Television Cameras
- Drinking Fountains
- Trash receptacles and enclosure
- Locker rooms/restrooms
- Shade



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Programming

Athletic Considerations

Support Facilities

- Visiting athlete arrival
- Parking/ Path of travel
- Pathway and security lighting
- Security cameras
- Wi-Fi / internet



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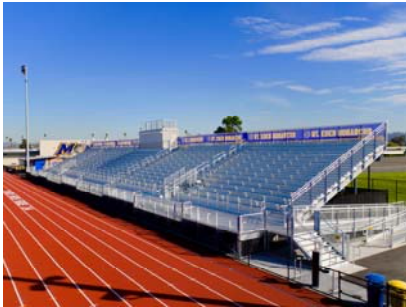
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Programming

Spectator Considerations

Facility Elements

- Spectator seating
- Control point/ticketing
- Concessions
- Restrooms
- Parking/Path of Travel
- Shade
- Wi-Fi / internet
- Device chargers



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Programming

Parking Considerations

- Zoning code requirements
 - ADA parking
 - EV charging stations
 - Tree/shade requirements
- Regional tournament parking
 - 100+ per field
- NCAA Stadium
 - Campus parking
 - Game day parking
- Professional stadium
 - 1 per 3 seats
 - 15-minute walk




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Programming

Operations & Maintenance Considerations

- Understanding your existing maintenance & operational systems
- Understanding the maintenance requirements for each sport
- Maintenance access points
- Creating/working with your school or district standards
- Developing a "kit of parts" for ease of repair and replacement while unifying sports complex elements
- Creating a centralized maintenance yard
- Emergency access



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Programming

Infrastructure Considerations


- Stormwater management
- Utility design
- Coordinate with overall Campus Improvement Plans

Athletic Standards

- NFHS requirements
- NCAA requirements
- Other standards
- Title IX

Other Facility Considerations

- Accessibility
- Safety issues
- Qualitative/Quantitative
- Future needs



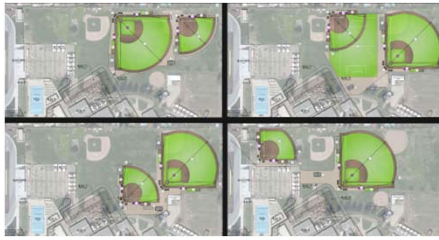
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Programming

Exploring Options

- Design charrettes with various user groups
- Iterative design process that can continue as phases are implemented
- Making informed decisions



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Sport Specific Items

- Level of play
- Grass or synthetic (or both)
- Materials
- Field slopes
- Drainage
- Irrigation
- Heat systems
- Fencing
- Lighting – levels
- Support facilities



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Field Layout

Layout & Orientation

- North-South
 - Tennis, volleyball, soccer, football, lacrosse, etc
- Northeast/Southeast
 - Baseball, softball, etc
- Sun Angle
 - Glare / reflection
 - Athlete & Spectator
- Accessibility
- Multiple Field




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Turf Options

Natural Grass Considerations

- Turf Profile
 - Type of root zone
 - Type of grass
 - Level of play
- Transitions
- Maintenance budgets



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Turf Options

Synthetic Turf Considerations

- Slit vs mono - pad vs no pad
- Infill material
- Warning track material
- High wear areas
- Maintenance practices



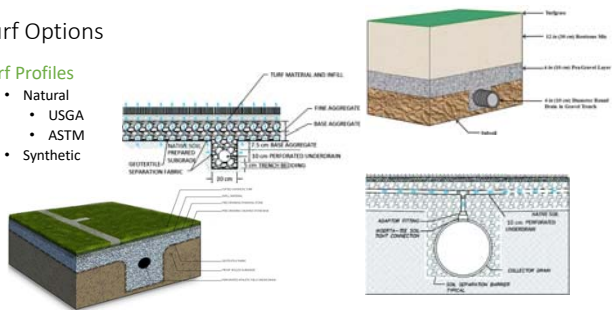
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Turf Options

Turf Profiles

- Natural
 - USGA
 - ASTM
- Synthetic



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Turf Options

Turf Grading

- Ideal slope depends on field surface profile, drainage system, sport(s) being played, and surrounding elevations

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Site Elements

Fencing & Security

- Why?
 - Access gates, location
 - Sizes
 - Can't get the turtle thru the fence
- Windscreen / wind loads

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Fencing

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Site Elements

Utilities

- Storm Sewer
 - Underdrains
 - Collector Drains
 - Size, Slope, Friction, Capacity
 - Line & Grade
 - Panel Drains
 - Inlet Type & Location
- Stormwater Management
- Sanitary Sewer
- Water (Potable / Non-Potable)
 - Access Locations
 - Type of Access / Fittings
- Irrigation Water

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Site Elements

Field Lighting/ Scoreboard/ Electric

- Level of play & Sports
 - How much lighting is needed?
- Scoreboard
 - What sports will be played?
- Extra power for secondary clocks or timers

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Site Elements

Data/ Telecom/ Wi-fi

- Identify Source
 - Existing Facilities
 - New Service
- Identify Coverage Area Needed
- Are Points of Hard Connection Needed
- IT & Media Professionals


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Site Elements

Storage

- What needs to be stored inside vs. outside
 - Dry goods – e.g. fertilizer and seed
 - Equipment
- How much space do you really need
 - Map it out



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Site Elements

Site Amenities

- Trash Receptacles
- Drinking Fountains
- Flag Poles
- Benches
 - Protecting the Track




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Site Elements

Memorials & Donor Recognition

- Ease of Maintenance
- Permanence
- Moveability



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Site Elements

Material Selection and performance of those materials

- Warning track, infield mix design and selection
- Happiness of the grounds manager
- Their budget for aftercare
- Grass decision, what is it based on?



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CONSTRUCTION PHASE

BUILD IT RIGHT THE FIRST TIME




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Site Logistics Layout and Verification of the Project

- Loading and storage of materials as close to the site as possible
- Provide benchmark for all trades to use from one licensed survey company




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Quality Control Planning

- On-site inspections, QC inspections, 3rd party testing
 - Conformance survey, double ring test, compaction testing, pressure test, proof roll
- Performance Soil Testing (root zone, uniformity coefficient)



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KEY FIELD ELEMENTS TO FOCUS ON

- Grading, Subgrade and Field Profile
- Irrigation System
- Drainage System
- Turfgrass Selection
- As Built/Survey/Recordkeeping
- Field Managers role during construction




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GRADING

- Varies by sport, and level of play
- Move water away from play
- Surface Drainage vs Infiltration
- Conformance Survey
- Verify with laser
- Keep as built plans on file
- Keep it Simple (makes construction and renovation easier)

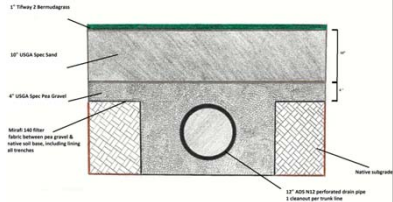


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SUBGRADE & FIELD PROFILE

- Generally, all layers should be uniform
- Moisture, compaction + proof roll/test essential
- Filter Fabric
- Materials Testing procedures 3rd party testing




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IRRIGATION SYSTEM

- Mainline location is key
- Locate valves off field
- Loop mainline when possible
- Trench compaction is crucial
- Quick couplers
- Must have accurate as built.
- System depth essential
- Verify trench depths before backfill
- Don't skimp on pipe




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IRRIGATION SYSTEM

- Stock up on spare parts
- Synthetic turf on lids
- Concrete utility boxes with vehicular traffic
- Proper valve zoning
- Tracer wire or detection tape
- Strategic gate valve placement
- Avoid Running too many pipes in the same trench.
- Survey before backfill
- Flush lines before head install
- Take plenty of photos



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Drainage System

- In conjunction with grading
- Make or break
- Don't skimp on the drainage system
- Concrete utility boxes
- Remember cleanouts
- Tracer wire or Detection tape all lines
- Test before backfill
- Trench compaction essential
- Avoid running irrigation pipes in drainage trenches
- Survey all utilities
- Take plenty of photos



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Turfgrass Selection & Sod Day

- Based on level of play
- Maintenance budget
- Equipment
- Climate
- Inspect sod prior to sod date
- Flag issues immediately during install
- Protect finished grade at all costs
- Wait for ideal harvest weather
- Refrigerated trucks if necessary



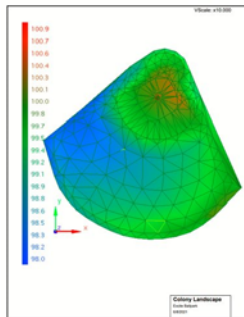
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As Built, Survey, Recordkeeping

- Take a ton of photos and videos
- Keep record of all surveys and as built plans
- Maintain control points and survey data
- GPS or Total Station for as built docs
- Email communication for everything



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Sports Field Managers Involvement

- Be prepared, memorize the game plan
- Build a rapport with all parties
- Attend all meetings
- Request copies of all documentation
- Periodically check accuracy of work
- Feel free to speak up, point out mistakes
- Keep a calm demeanor



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Take Aways

Things to Keep in Mind

- Once in a generation opportunity
- Enjoy the experience
- Add value
- Show your expertise
- Listen and understand
- Don't get discouraged
- Help problem solve



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Understanding Expectations

- Communicate with builder, administration/stakeholders throughout construction on realistic timeline for field use
- Construction doesn't always go as planned – Field use start date may change (forward or back). No surprises to user groups
- Safety should be the main priority when deciding to open a new field

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Variables to Consider For Opening Field For Use

- Time of year?
- Natural grass or synthetic?
 - Warm or cool season grass
- How was it established?
 - Seed, sprigs, sod (thick or regular cut?)
- These are things to consider during planning and design that will impact field usage start date
 - Could change during construction process

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Establishment and Grow-In

- Pre-plant/starter fertilizer
 - High in Phosphorus
- Frequent irrigation
 - Monitor moisture levels until roots are established
- Once grass has sufficient roots growth, cultural practices can begin



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Cultural Practices

Mowing

- Height of cut must be appropriate for type of grass
- Start higher and work to desired height of cut
- Follow 1/3 rule
- Grass is stressed already – don't add to it

Other Practices

- Roll with 1 or 3-ton roller
 - This can be done until smooth
- Aerification - break through sod layer and promote root growth
- Topdressing – Level out uneven areas

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Cultural Practices



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Final approval For Field Use

- Goal is to meet scheduled date
- Testing before use
 - Contractor, Sports Field Manager, or 3rd party
 - Shear test, G-Max, etc..
- Final sign off from all parties involved



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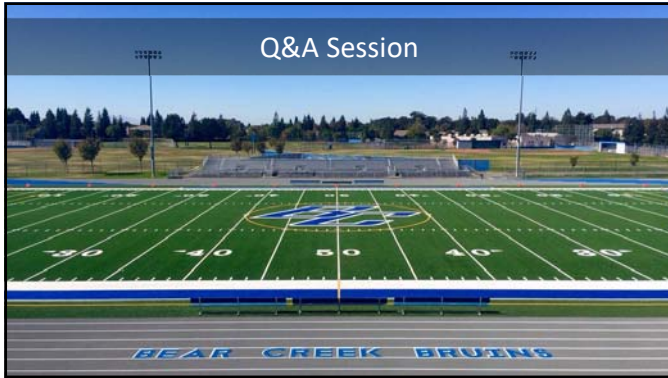
Play Ball!



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