Stormwater Management for Synthetic Turf Fields

Santa Clara Valley Urban Runoff Pollution Prevention Program

Annual C.3. Workshop

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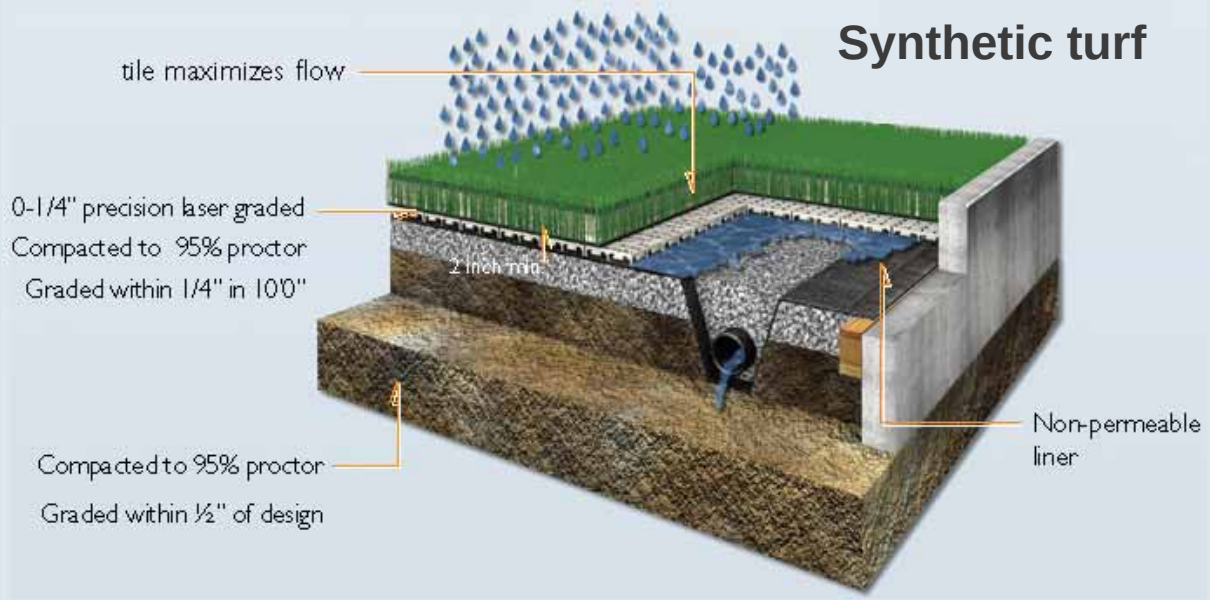

GOAL:
Creation of sportsfields capable of accommodating elevated use levels.

PRACTICE:
Rapidly convey stormwater away from fields.

Santa Clara Valley
Urban Runoff
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GOAL:
Preserve groundwater recharge.

PRACTICE:
Detain stormwater onsite to maximize percolation.

The Project: Conversion of 5 high school track & field bowls

Location: Campbell Union High School District – campuses in San Jose, Campbell, and Saratoga

Construction: 2006

Drainage Design Goals

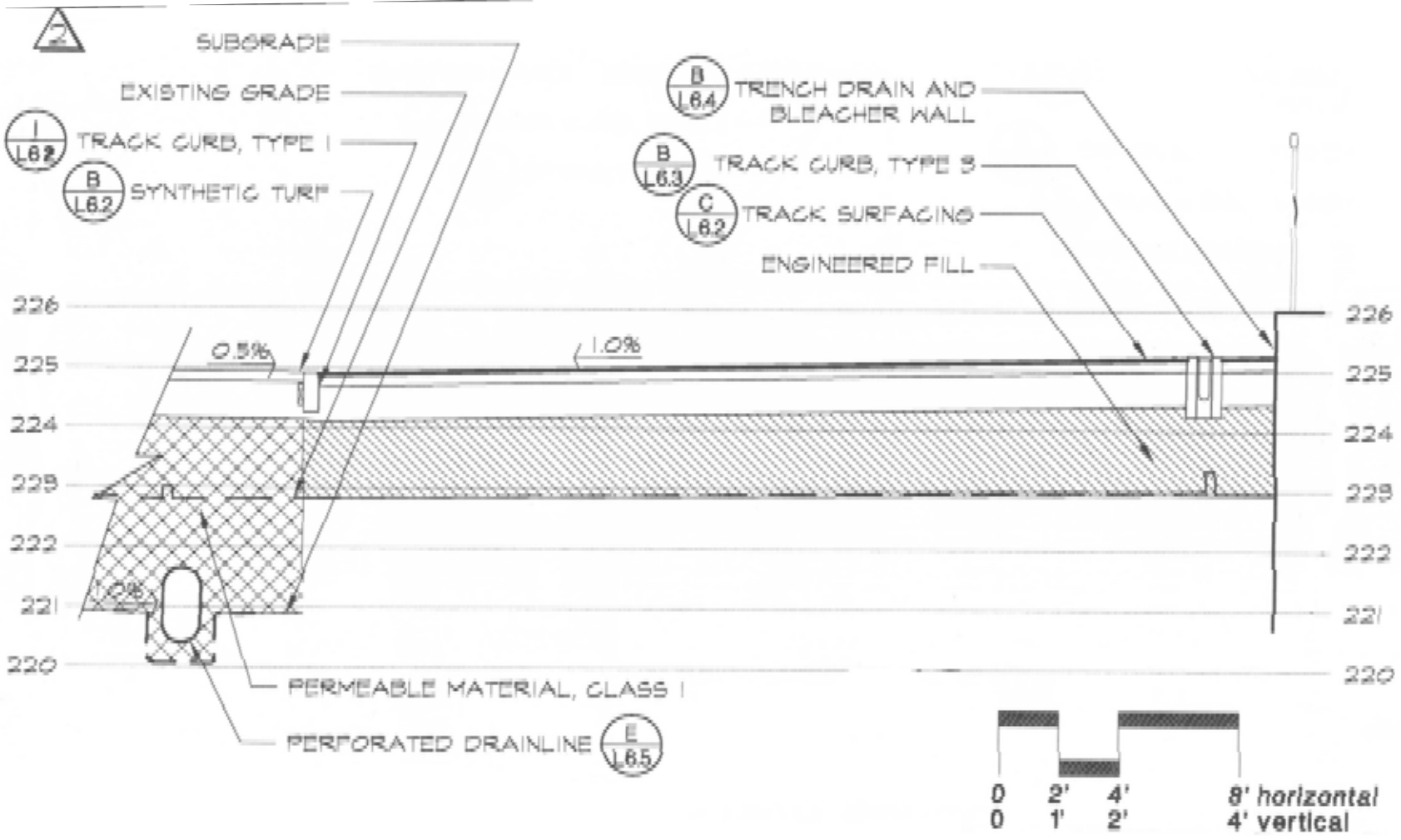
- A sound storm drainage system that operates as expected and can be maintained
- A playing surface that can be used in a variety of rainfall conditions
- Prevent the migration and loss of field materials
- Reduce storm runoff to the pre-project conditions

Method of Discharge

HIGH SCHOOL	PRIMARY OUTFLOW	OVERLAND RELEASE	DETENTION	PERCOLATION	PUMP
LEIGH	PUMP		X		X
PROSPECT	PIPE	X	X		
DEL MAR	INFILTRATION		X	X	
WESTMONT	INFILTRATION		X	X	
BRANHAM	PIPE	X	X		

- Detention used at each site to reduce the flow to pre-project conditions for a 25-year storm event

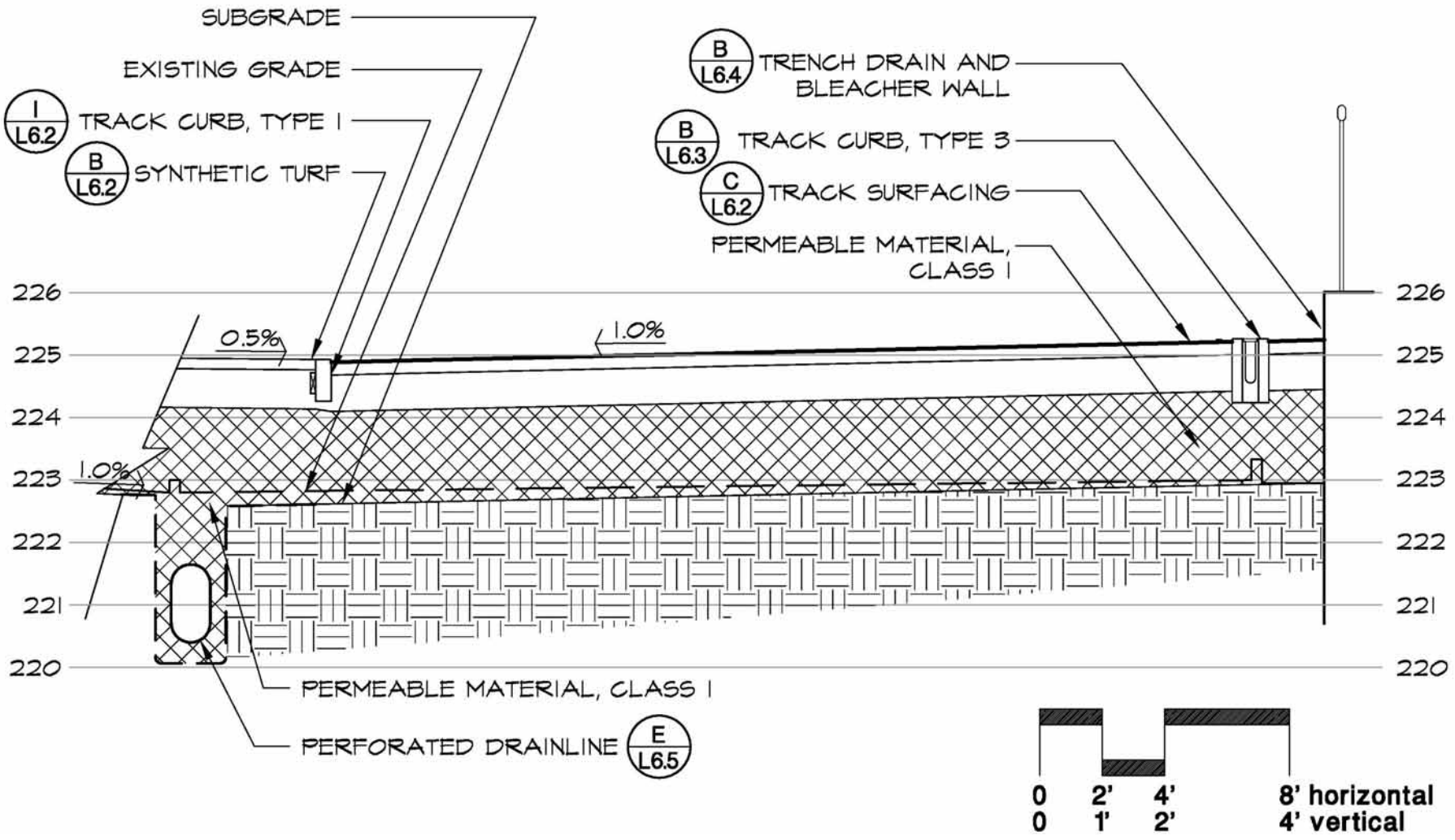
The Plan: Stormwater detention beneath the field only



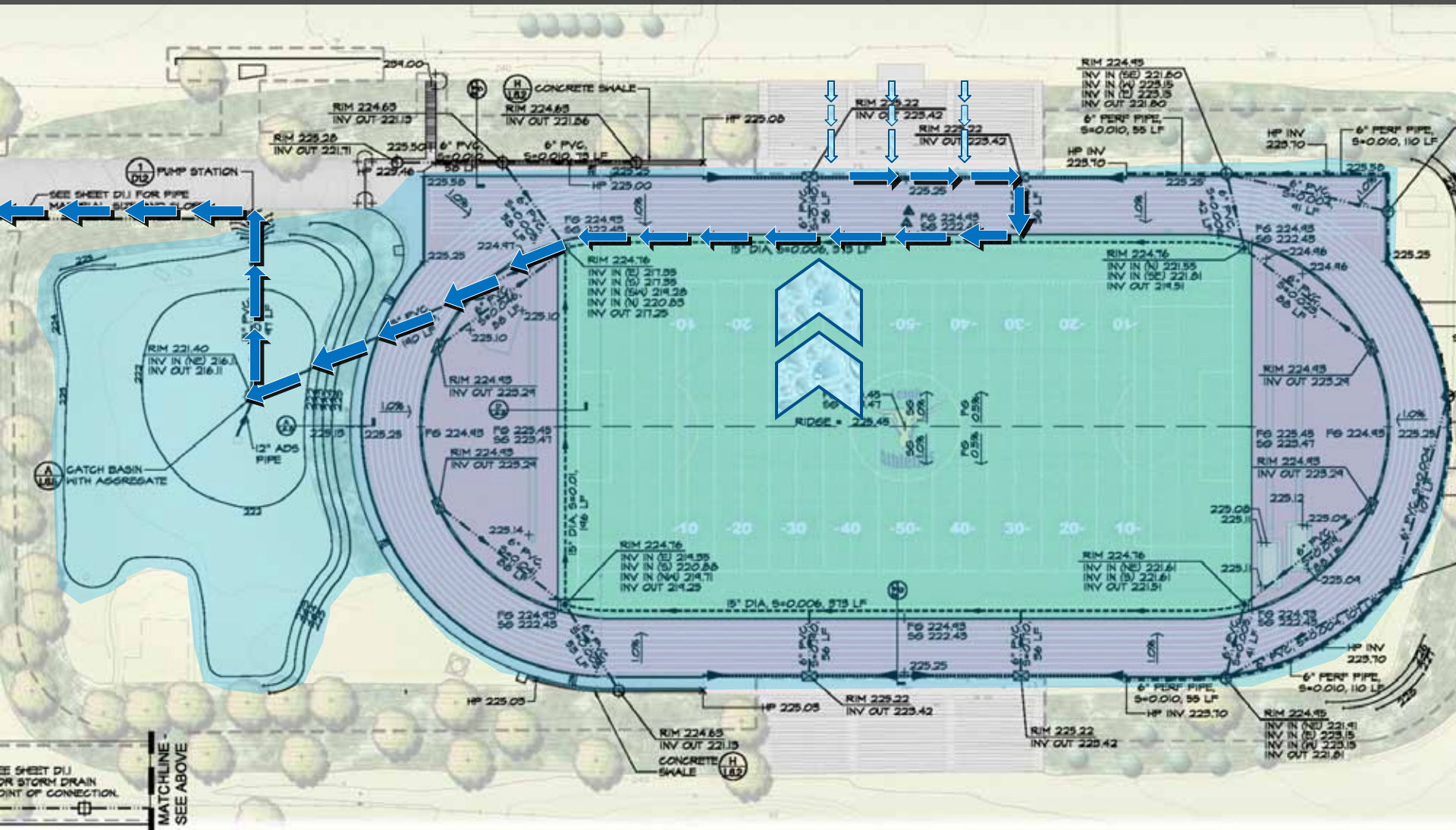
The Reality:

- Extremely shallow groundwater necessitated a shallower, wider detention area

Plan ‘B’


SUBGRADE
EXISTING GRADE
I L6.2 TRACK CURB, TYPE I
B L6.2 SYNTHETIC TURF
B L6.4 TRENCH DRAIN AND BLEACHER WALL
B L6.3 TRACK CURB, TYPE 3
C L6.2 TRACK SURFACING
PERMEABLE MATERIAL, CLASS I
226
225
224
223
222
221
220
0.5%
1.0%
1.0%
PERMEABLE MATERIAL, CLASS I
PERFORATED DRAINLINE E L6.5
0 2' 4' 8' horizontal
0 1' 2' 4' vertical

Executing the Plan



Further refinements

- Geotechnical evaluation
- Test pads
- Geogrid incorporation

Drainage system installation

Subgrade achieved

Edge modifications

Accommodating grade change

Pump station installation

Pump being installed

Storm drain system tie-in

Line installed

Field nearing completion

Additional considerations