



## SPORTS FIELD SURFACING – POROUS STONE BASE AND DRAINAGE

### PART 1 - GENERAL

#### 1.1 DESCRIPTION OF WORK:

- A. It shall be the responsibility of the Grading, Base and Drainage Contractor to provide all labor, materials, equipment and tools necessary for the complete installation of a vertically draining porous stone base, drainage system and perimeter edge attachment detail. The scope of the project shall consist of but not necessarily be limited to the following:
  - 1. A vertically draining porous aggregate base consisting of two layers of specifically sized stone. The finishing layer is specifically designed to provide a tight uniform finish surface over the base layer without settlement.
  - 2. A water evacuation system consisting of panel drains in a barber pole design with a properly sized perimeter drain connected to an existing storm system.
  - 3. An appropriately designed perimeter edge detail of recycled plastic, treated wood or concrete. Install a concrete twelve-inch by twelve-inch (12" x 12") anchor curb. Secure 2" x 4" TREX boards to concrete curb.

#### 1.2 SUBMITTALS:

- A. The Grading, Base and Drainage Contractor shall be required to submit the following:
  - 1. A list of three (3) completed projects and references involving grading and drainage of similar size and scope within the past 5 years.

#### 1.3 WORKMANSHIP AND QUALITY ASSURANCE:

- A. The Grading, Base and Drainage Contractor or qualified subcontractor must be equipped and experienced in import/export aggregate and fill materials, installation of subsurface drainage systems and of Laser fine grading.

### PART 2 – PRODUCTS

#### 2.1 DESCRIPTION OF POROUS STONE BASE AND DRAINAGE:

- A. Geotextile Membrane:
  - 1. Provide a semi-pervious geotextile fabric, Mirafi 140 N or equal. An impervious liner can also be used in certain soil conditions.
- B. Stone Aggregate:
  - 1. The stone shall be installed in two layers:



- a. 4” Open Graded Stone (OGS) base aggregate.
- b. 2” finish aggregate.

2. The aggregate shall conform to the following:

	BASE (OGS)	FINISH
Sieve Size	% Passing	% Passing
1.24”	100	
3/4”	70-100	
3/8”	35-50	
1/4”		100
1/8”		80-100
#4	20-35	
#8		40-65
#16	12-20	15-35
#100	5-9	5-9
#200	1-5	1-5

C. Drainage Piping:

- 1. Panel drains - 1” x 12” Multiflow™ or equal.
  - a. Performance Drain: AirField AirDrain, AlveoSport Pad, Brock Power Base or equivalent shall be used for enhanced drainage. This will be needed to achieve maximum drainage and performance of system. (optional)
- 2. Perimeter drain - properly sized to 8” to 12” diameter, of corrugated perforated plastic pipe, ADS 120 or equal.

D. Synthetic Nailing Strip: A synthetic 2” x 4”, TREX, Poly-Tuf HDPE or equivalent nailing strip shall be used at all points where the Artificial Turf system meets a sidewalk or other concrete surface and around each post of the installed field equipment.

PART 3 – EXECUTION

3.1 EXCAVATION AND SUBGRADE:

- A. In accordance with the plans approved by the Owner, the entire area shall be excavated. It shall be the Bidders responsibility to stockpile enough suitable material from the existing topsoil to be reused, as necessary, in the restoration process.
- B. All other excavated material shall be properly disposed of, off site or a designated area by owner. The Bidder shall provide the Owner with a cubic yard number for the removal and replacement, with suitable compactable material, of unclassified material.



- C. The sub grade shall slope .5% to 1% toward the perimeter drain and shall not vary more than 1/2" in any 10' direction. The entire excavated area shall be proof rolled to check for any soft spots or un-compacted areas. The sub grade shall test and must achieve a minimum of 95% compaction.
- D. The geotextile fabric shall be installed over a compacted and prepared sub grade. Seams shall be overlapped a minimum of 12". The geotextile shall extend into and completely wrap the perimeter drainage ditch.

### 3.2 DRAINAGE SYSTEM:

- A. Multiflow™ 1" x 12" panel drains shall be installed and secured over the geotextile, 30' on center, diagonally across the playing field in a barber pole design. The drains shall be terminated at the perimeter drain.
- B. A properly sized perimeter drain, 8" to 12" in diameter, shall be installed in a properly excavated ditch, lined with geotextile. The CPPP (corrugated perforated plastic pipe) shall be sloped .05" per lineal foot toward the exit point to the existing storm drain.
- C. One or more 2' x 2' catch basins may be installed at directional changes in the line, at the depth necessary to meet the elevation of the existing storm water evacuation line.

### 3.3 VERTICALLY DRAINING POROUS STONE BASE:

- A. The base (OGS) aggregate layer shall be installed with care to avoid damaging the geotextile or the strip drains. The stone shall conform to the sieve in Section 2.1, B, 2. The base (OGS) layer shall be 4" thick. The surface planarity shall not vary more than 3/8" in any 10' direction.
- B. The finish aggregate layer is 2" thick and shall be installed in a single layer. The stone shall conform to the sieve in Section 2.1, B, 2. The surface planarity must not vary more than 1/4" in any 10' direction. Enough finish stone shall be installed to insure a full 2" above the base (OGS) aggregate. All stone layers must be rolled in both directions to obtain maximum compaction and settlement.

**END OF SECTION**