

Poynette School District
Poynette High School
Boiler Room Drainage Study



Point *of* Beginning

POYNETTE HIGH SCHOOL – BOILER ROOM

Plumbing Recommendations

Part 1: Scope

Furnish and install a drain tile system at the inside perimeter of the basement boiler room and below the basement boiler room floor slab as indicated on the enclosed sketch. Provide a new concrete floor slab complete with a new area drain in the existing area well as indicated on the enclosed sketch. Foundation drainage work to include inside footing drainage system, area drain in existing area well, clearwater sump pump and connection to the Clearwater sump pump.

Part 2: Products

Drainage Pipe and Fittings:

Inside foundation drainage pipe shall be 4" diameter perforated corrugated polyethylene tubing. Furnish joint screening for each open-joint portion of drain lines.

Soil Materials:

Impervios fill to be a clayer gravel and sand mixture capable of compacting to a dense composite. Drainage fill to be an evenly graded mixture of natural or crushed gravel, crushed stone and natural sand with 100 % passing a ½" sieve and 0-5 % passing a #50 sieve. Filtering material to be an evenly graded mixture of natural or crushed gravel, crushed stone and natural sand with 100 % passing a 1½" sieve and 0-5 % passing a #50 sieve.

Clearwater Sump Pump:

Duplex Clearwater sump pump to consist of two (2) Weil series 1413 sump pumps. Pumps shall have a 2" discharge capable of pumping 85 GPM at 15' of head. Sump pump crock to be a 36" diameter by 60" deep fiberglass basin with a casting ring for concrete slab and ant-flotation tabs. Sump pump control panel shall be for duplex operation in a NEMA enclosure. Control panel shall include fused disconnect switches, magnetic starters, test-off-automatic selector switch, alternator, pump running lights, reset button, alarm bell, silencing switch and battery back-up. Provide four (4) Weil mercury float switches complete with galvanized rod and support bracket. High water alarm shall be a pole mounted mercury float switch with integral alarm bell and step down transformer.

Storm Building Drainage Pipe and Fittings:

Below ground storm drain piping and fittings shall be schedule 40 plastic pipe.
Above ground storm drain piping and fittings shall be schedule 40 plastic pipe.

Area Drain:

Area drain shall be a cast iron drain and grate similar to a Jay R Smith no. 2230.
Area drain shall have a 12" diameter cast iron strainer, cast iron sediment bucket and 4" discharge.

Part 3: Installation

Remove existing surface mounted perimeter drainage system and cap drain pipe below floor slab as required.

Saw-cut and remove all existing concrete floor slab necessary for the installation of new drain tile system and Clearwater sump pump.

Excavate existing materials as required for new systems. Provide and compact impervious fill for new drain tile system. Provide and compact filtering material over compacted sub-grade where drainage pipe is to be installed. Lay drain pipe solidly bedded in filtering material and slope back to Clearwater sump pump.

After testing provide drainage fill over drain piping and compact as required.

Connect drain tile system to the Clearwater sump pump with 4" PVC pipe.

Install sump pump discharge piping exposed in boiler room. Extend new discharge piping thru sidewall of boiler room and connect to storm sewer provided by civil contractor below grade. Patch existing boiler room floor slab to match existing floor slab.

Provide 5 ft. of fill at the bottom of the existing area well and then provide a new 4" thick concrete floor slab at the new elevation in the area well. Install new area drain in center of area well and pitch new concrete to area drain. Connect 4" discharge pipe from area drain to new drain tile system.

Part 4: Estimated Construction Costs

New drain tile system:	\$5,200
Saw cutting and patching:	\$3,300
Duplex Clearwater sump pump:	\$4,600
Area well drainage system:	<u>\$2,200</u>
Total:	\$15,300

Note: The above are based on recommendations given in November 2008