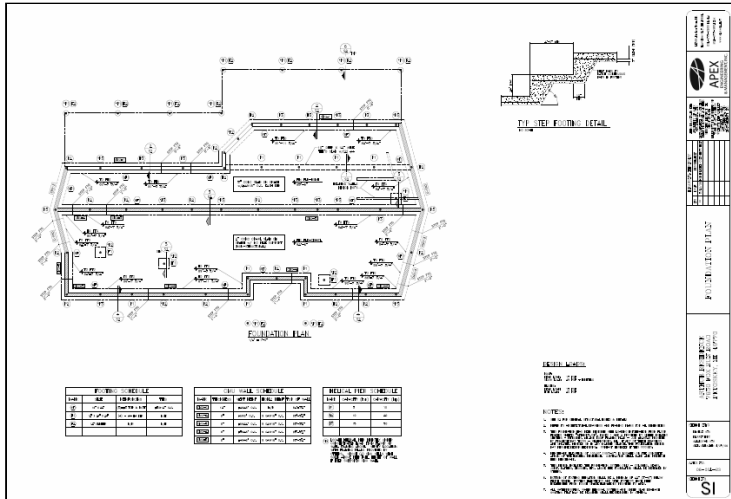


Arthur Residence

PROJECT PROFILE



Foundation Plan

Apex Engineering & Management, Inc. was retained by the contractor, Woods & Water Construction to provide structural engineering services for the foundation design of this new residence.

This Walloon Lake site posed several design challenges. The sloping grade, high water table and unsuitable soils did not allow the use of typical residential style foundation construction. After careful consideration, the best design solution for this project was determined to be helical screw-in type steel piers. The screw-in piers consist of steel shaft pipe sections that penetrate through the unsuitable soils to bearing strata that is capable of supporting the given loads. The piers are capped with steel plate brackets that are encased in reinforced concrete pier cap type footings. Traditional masonry walls can then be constructed on top of the concrete pier cap footing, with wood walls above.

The (62) helical screw-in piers proved to be an economical solution when compared to steel, wood or concrete piles for this residence.

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|-------------------------|--|
| Project: | Arthur Residence |
| Location: | Walloon Lake, MI |
| Contractor: | Woods & Water Construction Petoskey, MI |
| Helical Pier Installer: | Concrete Designs Traverse City, MI |
| Project Type: | Residential |
| Foundation System: | Helical Screw-in piers Reinforced concrete |
| Design Obstacles: | Severely sloping grade High water table Unsuitable bearing soils |
| Foundation Completion: | July 2006 |



Foundation under construction



Foundation under construction