



MAGNUM GEO-SOLUTIONS, LLC
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 WWW.MAGNUMPIERING.COM

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PLAN NOT VALID WITHOUT ORIGINAL
 WET STAMP

PROJECT NAME:
 WATER TANK

ADDRESS

CITY, STATE

CLIENT:
 YOUR COMPANY NAME

STREET ADDRESS

CITY, STATE

Contact: Your Name

Your Number

CISTERN FOUNDATION PLAN

NO.	DATE	REVISION/ISSUE

DESIGNED BY: MMB
 DRAWN BY: MMB
 CHECKED BY: HAP
 PROJECT No: CN#15

DATE: 7/9/09
 SCALE: AS SHOWN

SHEET: S1

General Notes:

1. Codes:

This plan was prepared based on most recent versions of the International Building Code and ICC-ES AC308.

2. Loads:

This plan is based upon the following load parameters:
 Roof Load = 25 psf
 Floor Load = 1,118 psf Fluid Load (max water fill height 17'-11")
 Concrete = 145 pcf

3. Subsurface Conditions:

Soils report by: Soils Engineering Company, Project name; dated Month Day, Year.
 Helix sizing based on SPT values obtained in borings.

4. Materials:

This plan is based upon the following material properties (Not all materials may be used in this plan). If there is a conflict between these specifications and plans by others, the more stringent criteria should be followed.

Connectors: All bolts shall be ASTM A325 (U.N.O.). All anchors shall be Simpson Strong-bolt wedge anchors with nominal shear strength of 6,560 lb per wedge anchor or greater.

Helical Piles: All helical piles/anchors and end caps shall be manufactured and supplied by Magnum Piering Inc. Piles, anchors and caps may be bare steel.

Concrete: Concrete shall contain Type II cement, 6% ±1% air entrainment, and a minimum 28 day compressive strength of 3,000 psi.

Grout: All grout shall be non-shrink standard grout or chemical grout with minimum 28 day compressive strength of 1,500 psi.

Reinforcing Steel: Reinforcing steel shall be deformed grade 60 steel unless noted otherwise (U.N.O.) on the plan and shall conform to ASTM A615. Minimum concrete cover shall be 2" U.N.O. on the plan. Overlaps shall be 36 bar diameters but not less than 24". Detail reinforcing bars in accordance to the ACI detailing manual and ACI code, latest edition. All foundation wall reinforcement should be wired in place. Slab and footing reinforcement shall utilize chairs or other acceptable methods to achieve the required cross section location.

Structural Steel: Structural steel beams shall conform to ASTM A50. 3" diameter adjustable steel columns shall be 11GA or better and rated for a safe allowable load of not less than 14 kips for columns up to 8'-0" in height, and 12.5 kips for columns up to 9'-0" in height. 3.5" diameter adjustable steel columns shall be schedule 40 and rated for a safe allowable load of not less than 36 kips for columns up to 10'-0" in height. All adjustable steel columns shall have 1" to 3" of threads exposed.

5. Installation:

Helical piles/anchors shall be furnished and installed at the locations, inclinations, and orientations shown on the plans. Standard tolerance for transverse positioning is ± 1"; for longitudinal positioning the tolerance is ± 0.5", and for declination the tolerance is ± 5". Helical piles/anchors should extend to or beyond the minimum depth shown on the plans or contained in the soil report. Continue installation until installation torque equals or exceeds that shown on the helical pile/anchor schedule. Log installation depth and torque at 3-foot intervals during installation and submit installation logs to Engineer for review prior to completion of the project.

6. Backfill:

Backfill shall be placed and compacted per soil report. At a minimum, backfill may consist of non-expansive on-site soils or imported sandy soils. Backfill materials shall be free of cobbles, boulders, and debris greater than 3" diameter. Backfill materials shall not contain frozen soil or water, organics or any deleterious materials. Backfill shall be placed and compacted in thin (8" max) lifts.

7. Drainage:

The ground surface shall be sloped as much as practical to conduct runoff water away from foundations and retaining walls. For new construction, Magnum Geo-Solutions, LLC, typically recommends a minimum slope of 10% in landscaped areas and 1% for pavements and slab-on-grade. This drainage should be monitored and maintained throughout the life of the structure.

8. Foundation Drains:

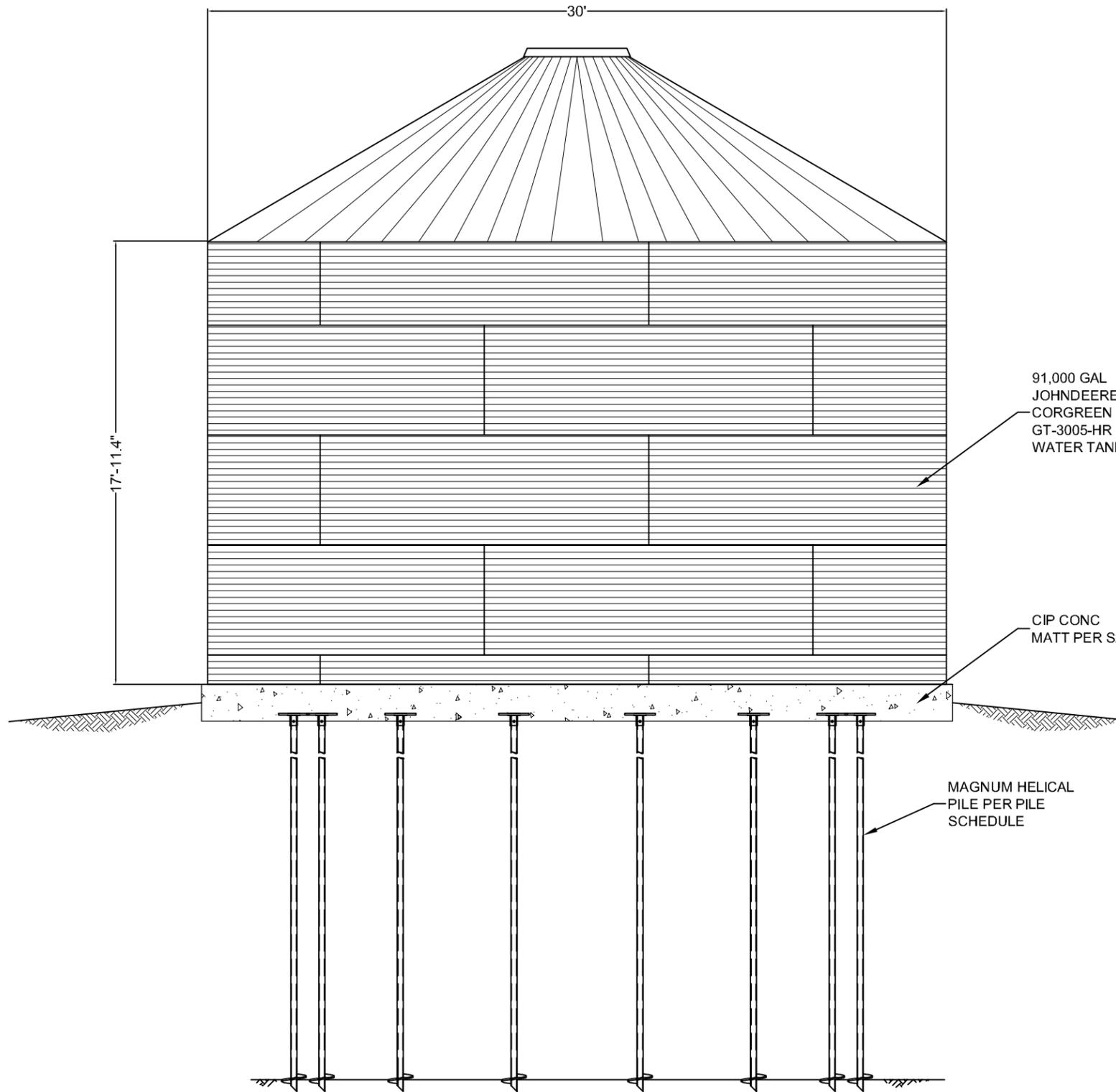
Foundation and retaining wall drains should conform to the geotechnical engineer's report. At a minimum, foundation drains, if any, shall consist of drainage fabric over 12" of clean gravel over a 4" perforated pipe sloped at 1/8" per foot to daylight well beyond the foundation or earth retention system or to a sump pit with pump.

9. Limitations:

This Plan is based on client furnished plans, soil report, and the above referenced specifications. It is the contractors responsibility to verify and coordinate all dimensions prior to construction. Any discrepancies or changes should be brought to the attention of the Engineer. This plan is only a helical pile/anchor plan. Unknowns could exist regarding the construction of the structure and subsurface properties that could affect pile/anchor performance. This plan was prepared to the level of skill and care ordinarily practiced by other engineers in this area at this time. No warrantee is made by Engineer, express or implied.

This plan is based on products manufactured by Magnum Piering, Inc. and methods of installation practiced by Magnum Authorized Dealers. This plan is invalid for products manufactured by others and any other installation contractors.

THESE DRAWINGS AND DETAILS ARE PROVIDED FOR GENERAL ENGINEERING PURPOSES AND SHALL NOT BE USED FOR OR BY ANY MAGNUM COMPETITOR IN ANY WAY OR PUBLISHED OR REVERSE ENGINEERED.



ELEVATION VIEW

Scale: 3/16"=1'



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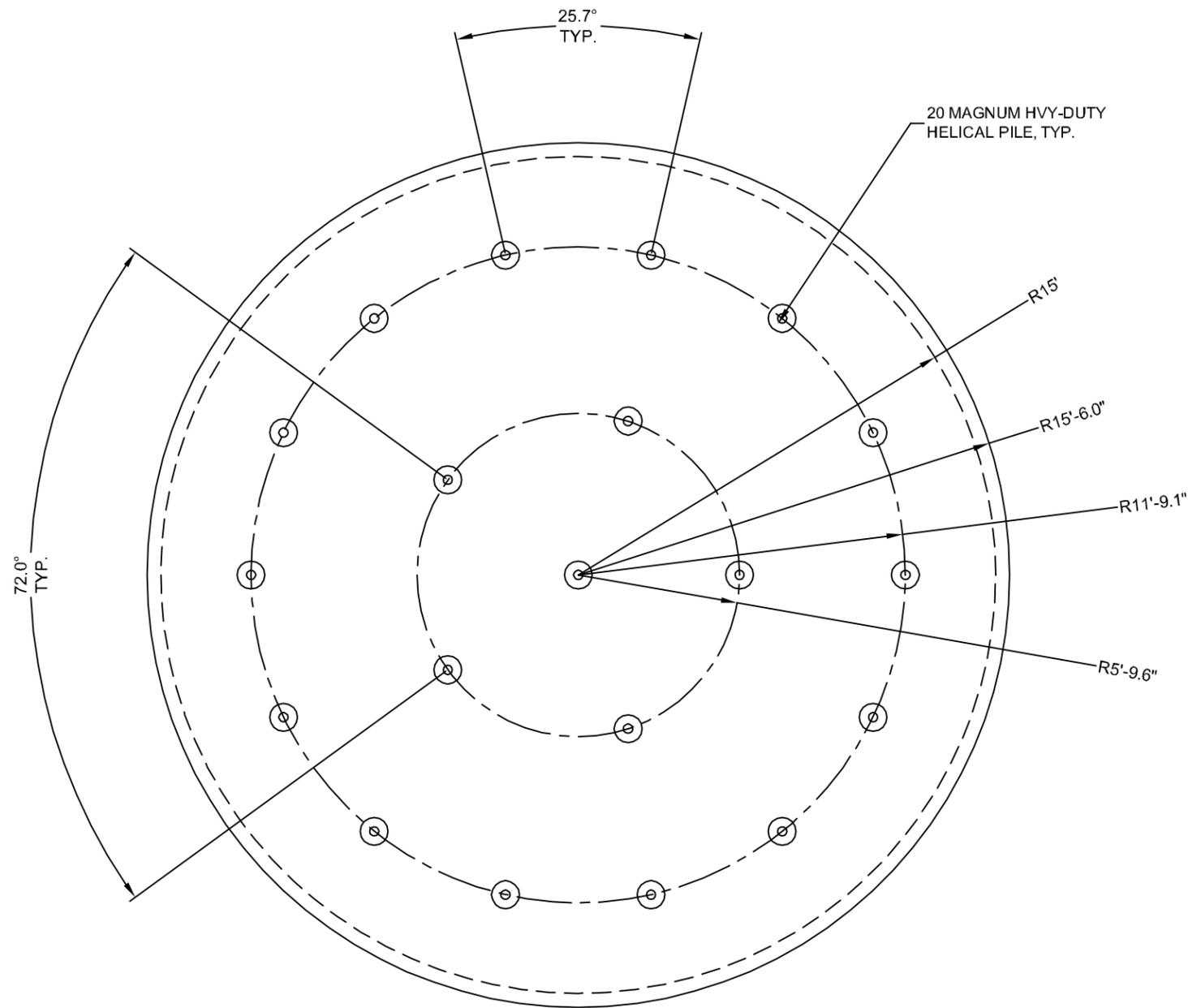
CISTERN FOUNDATION PLAN &
 DETAILS

NO.	DATE	REVISION/ISSUE

DESIGNED BY: MMB
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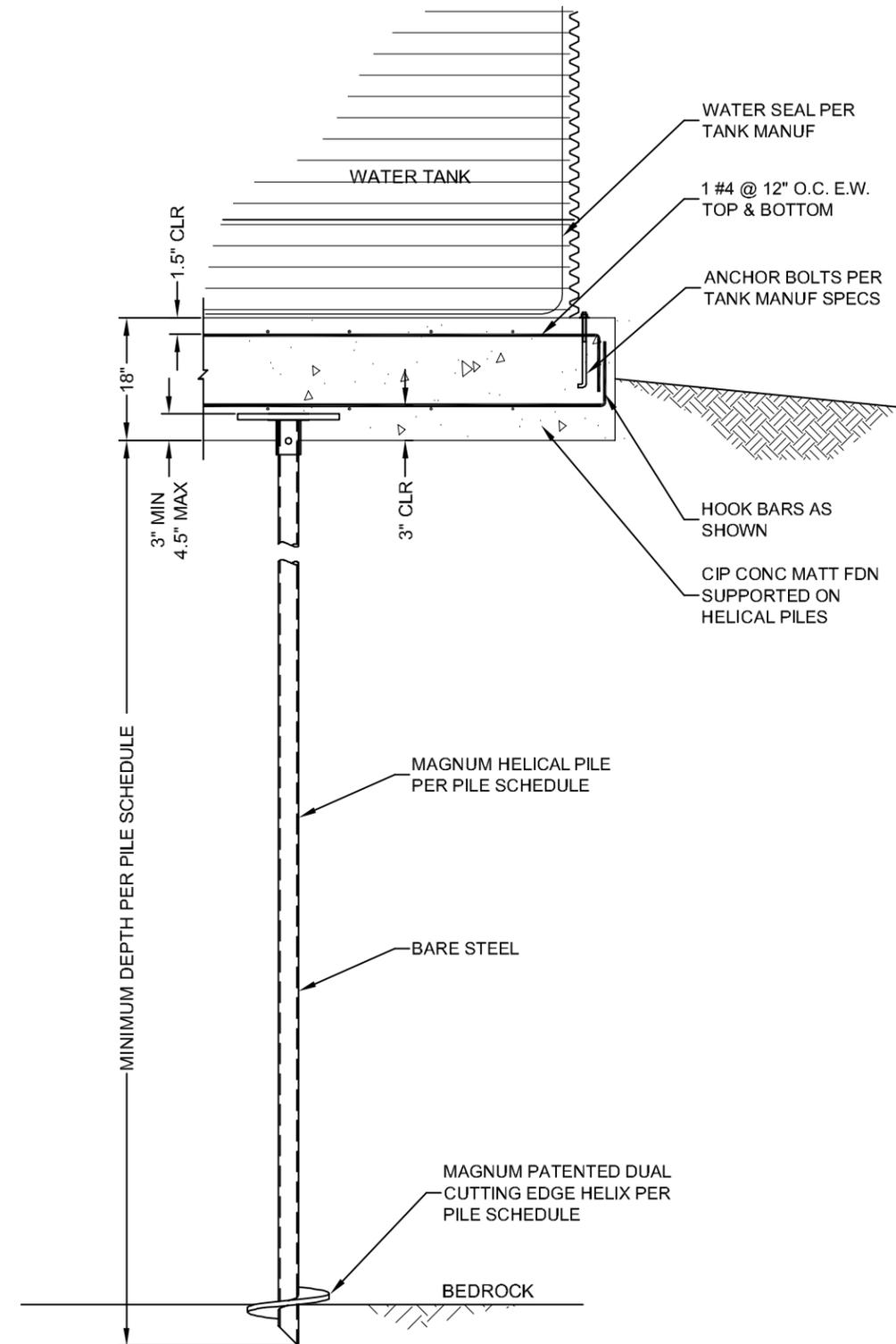


HELICAL PILE LAYOUT

Scale: 1/8"=1'

PILE SCHEDULE								
SYMBOL	No. PILES	ANCHOR / PILE TYPE	HELIX SIZE	BRACKET	MINIMUM DEPTH (FT)	ULTIMATE CAPACITY* (kip)	ALLOWABLE CAPACITY* (kip)	MINIMUM TORQUE (ft-lb)
⊙	20	MH325R	(1) 12D	MHC1000	4	100C	50C	12,500

*C = compression, T = tension, L = lateral



FOUNDATION DETAIL

Scale: 1/2"=1'

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