Environmental
Geotechnology
Laboratory, Inc.

December 30, 2025

Ms. Lusine Musat
11857 East Trail
Sylmar, California 91342

Subject: **Feasibility Report of Percolation Test for Leach Lines, Proposed Single-Family Residence, an Accessory Dwelling Unit (ADU) and Associated Structures, APN: 2526-011-001, Portion of Lot 442, Tract No. 7342, 11857 East Trail, Sylmar, Los Angeles County, California; EGL Project No.: 22-AA-091P**

Ladies and Gentlemen:

In accordance with your request, EGL, Inc. (EGL) has conducted a percolation test at the subject site to determine the feasibility for an on-site sewage disposal system.

The presoak and percolation testing was conducted on August 11, 2022. The test procedures and test results are attached with this report. Based on the results of the preliminary percolation test, it is our opinion that disposal of on-site generated seepage by the leach lines/pipes is considered feasible from a geotechnical engineering standpoint.

This submittal is intended to represent a complete feasibility report that conforms to the applicable provisions of the Los Angeles County Code – Plumbing Section and the feasibility report requirements of the Department of Public Health - Environmental Health

We hope this information is sufficient for your needs at the present time. If you have any questions pertaining to this report, please call the undersigned.

Respectfully submitted,
Environmental Geotechnology Laboratory, Inc.





Raymond Yang, CEG 2459
Senior Geologist

Ryan Jones, GE 2852
Senior Engineer

Dist: (1) Addressee
RJ/RY/ky

FEASIBILITY REPORT OF PERCOLATION TEST

PROPOSED SINGLE-FAMILY RESIDENCE
AN ACCESSORY DWELLING UNIT (ADU)
AND ASSOCIATE STRUCTURES

AT

APN: 2526-011-001
PORTIONS OF LOT 442, TRACT NO. 7342
11557 EAST TRAIL
SYLMAR, CALIFORNIA

Prepared by
ENVIRONMENTAL GEOTECHNOLOGY LABORATORY, INC.
Project No.: 22-AA-091P
December 30, 2025

1.0 INTRODUCTION

1.1 Purpose

This report presents a summary of our percolation tests for the proposed residential development at 11857 East Trail, Sylmar, California. The purpose of this investigation was to evaluate the subsurface conditions at the primary and 100% future expansion areas for leach lines for the proposed main single-family residence and accessory dwelling unit (ADU) and provide recommendations pertinent to the on-site sewage disposal system.

1.2 Scope of Services

Our scope of services included:

- Review of available soil and geologic data of the area.
- Subsurface exploration includes logging of eight (8) test pits (TP-1 through TP-8) to a maximum depth of 6 feet and one (1) high groundwater trench (GW-1) to a depth of 15 feet below the ground surface. The test pit and high groundwater trench logs are presented in Appendix A.
- Performance of percolation tests on test pits (TP-2 through TP-8). Percolation test results for the leach line are presented in Appendix B.
- Preparation of this report presenting our findings, conclusions, and recommendations for the proposed construction.

1.3 Site Conditions

The project site is located at the northeasterly corner of Kagel Canyon Street and East Trail, west of the partially channelized Kagel Canyon Channel in the unincorporated area of Sylmar, County of Los Angeles, California. The existing one (1) story single-family house with several detached single outhouses and a two (2) story barn structure occupy the central portion of the building pad. A covered horse stall and open horse corral occupy the easterly central and southerly portions of the building pad. Gently to moderate steep slopes ascending west to the upper terrace pad and Kagel Canyon Road occupy the west side of the property. The existing septic system on site consists of a septic tank and leach lines of unknown size, which are located in the northerly portion of the property. Based on information provided to us, the existing septic system will be abandoned as part of the proposed development. A new advanced septic tank and leach line will be installed to service the proposed two (2) story single-family residence, one (1) story ADU and existing two (2) story barn structure at the subject site, and they will be located on the southeast side of the proposed garage area. Detailed configuration of the site is presented on the attached Site & Plot Plans and Cross-Section A-A', Figures 1a, 1b & 2.

Scale 1" = 30'

REGISTERED PROFESSIONAL ENGINEER
RYAN KEITH JONES
No. 2852
GEOTECHNICAL
STATE OF CALIFORNIA

LEGEND

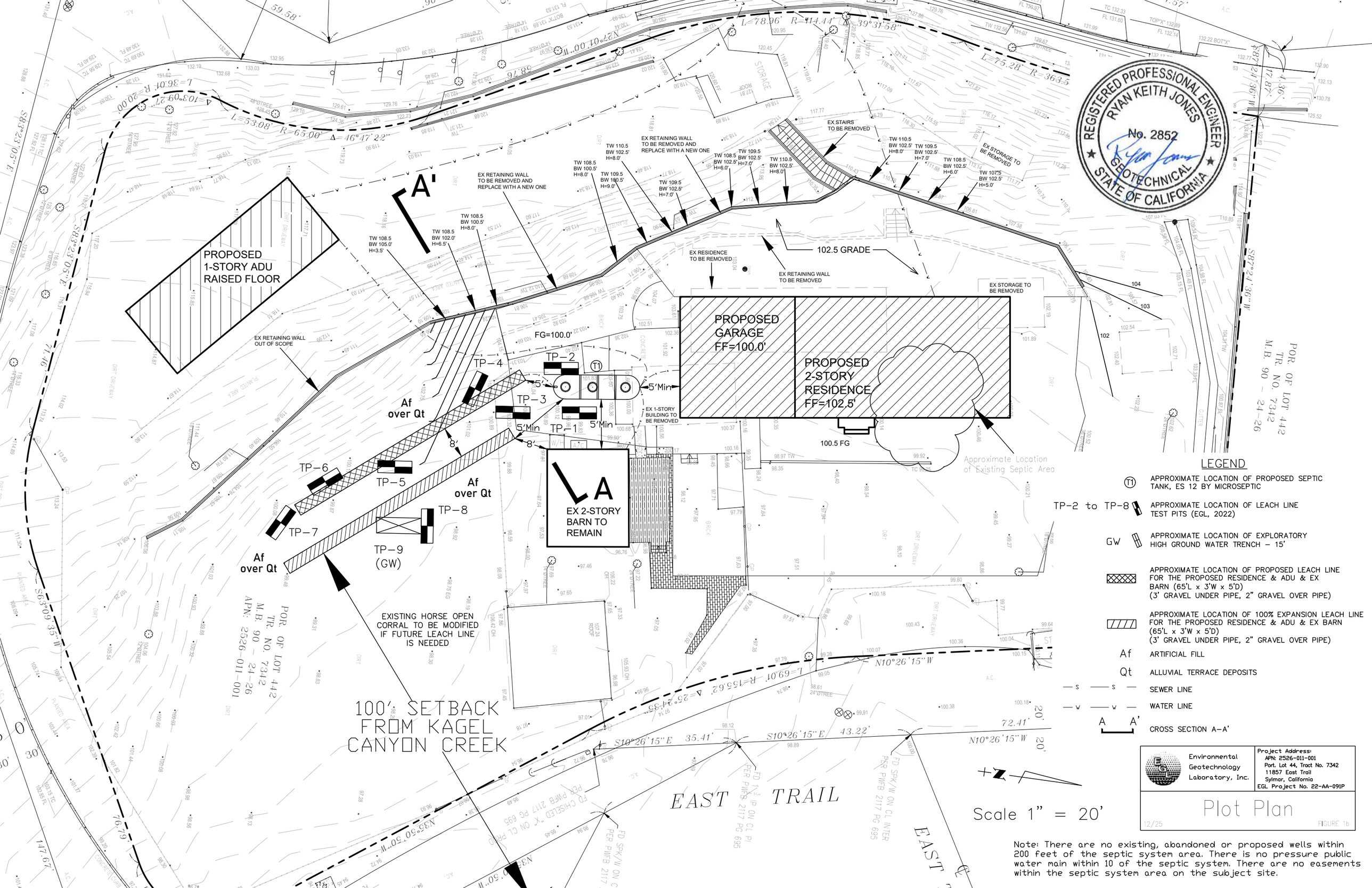
(T1)	APPROXIMATE LOCATION OF PROPOSED SEPTIC TANK, ES 12 BY MICROSEPTIC
TP-2 to TP-8	APPROXIMATE LOCATION OF LEACH LINE TEST PITS (EGL, 2022)
GW	APPROXIMATE LOCATION OF EXPLORATORY HIGH GROUND WATER TRENCH – 15'
	APPROXIMATE LOCATION OF PROPOSED LEACH LINE FOR THE PROPOSED RESIDENCE & ADU & EX BARN (65'L x 3'W x 5'D) (3' GRAVEL UNDER PIPE, 2" GRAVEL OVER PIPE)
	APPROXIMATE LOCATION OF 100% EXPANSION LEACH LINE FOR THE PROPOSED RESIDENCE & ADU & EX BARN (65'L x 3'W x 5'D) (3' GRAVEL UNDER PIPE, 2" GRAVEL OVER PIPE)
Af	ARTIFICIAL FILL
Qt	ALLUVIAL TERRACE DEPOSITS
— s — s — s —	SEWER LINE
— w — w — w —	WATER LINE
A A'	CROSS SECTION A–A'

Environmental Geotechnology Laboratory, Inc.	Project Address: APN: 2526-011-001 Port. Lot 44, Tract No. 7342 11857 East Trail Sylmar, California EGL Project No. 22-AA-091P

Site Plan

12/25 FIGURE 1a

Note: There are no existing, abandoned or proposed wells within 200 feet of the septic system area. There is no pressure public water main within 10 of the septic system. There are no easements within the septic system area on the subject site.



LEGEND

(T1)	APPROXIMATE LOCATION OF PROPOSED SEPTIC TANK, ES 12 BY MICROSEPTIC
TP-2 to TP-8	APPROXIMATE LOCATION OF LEACH LINE TEST PITS (EGL, 2022)
GW	APPROXIMATE LOCATION OF EXPLORATORY HIGH GROUND WATER TRENCH – 15'
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Af	ARTIFICIAL FILL
Qt	ALLUVIAL TERRACE DEPOSITS
— s — s —	SEWER LINE
— w — w —	WATER LINE
A A'	CROSS SECTION A–A'

Scale 1" = 20'

Environmental Geotechnology Laboratory, Inc.

Project Address:
APN: 2526-011-001
Port. Lot 44, Tract No. 7342
11857 East Trail
Sylmar, California
EGL Project No. 22-AA-091P

Plot Plan

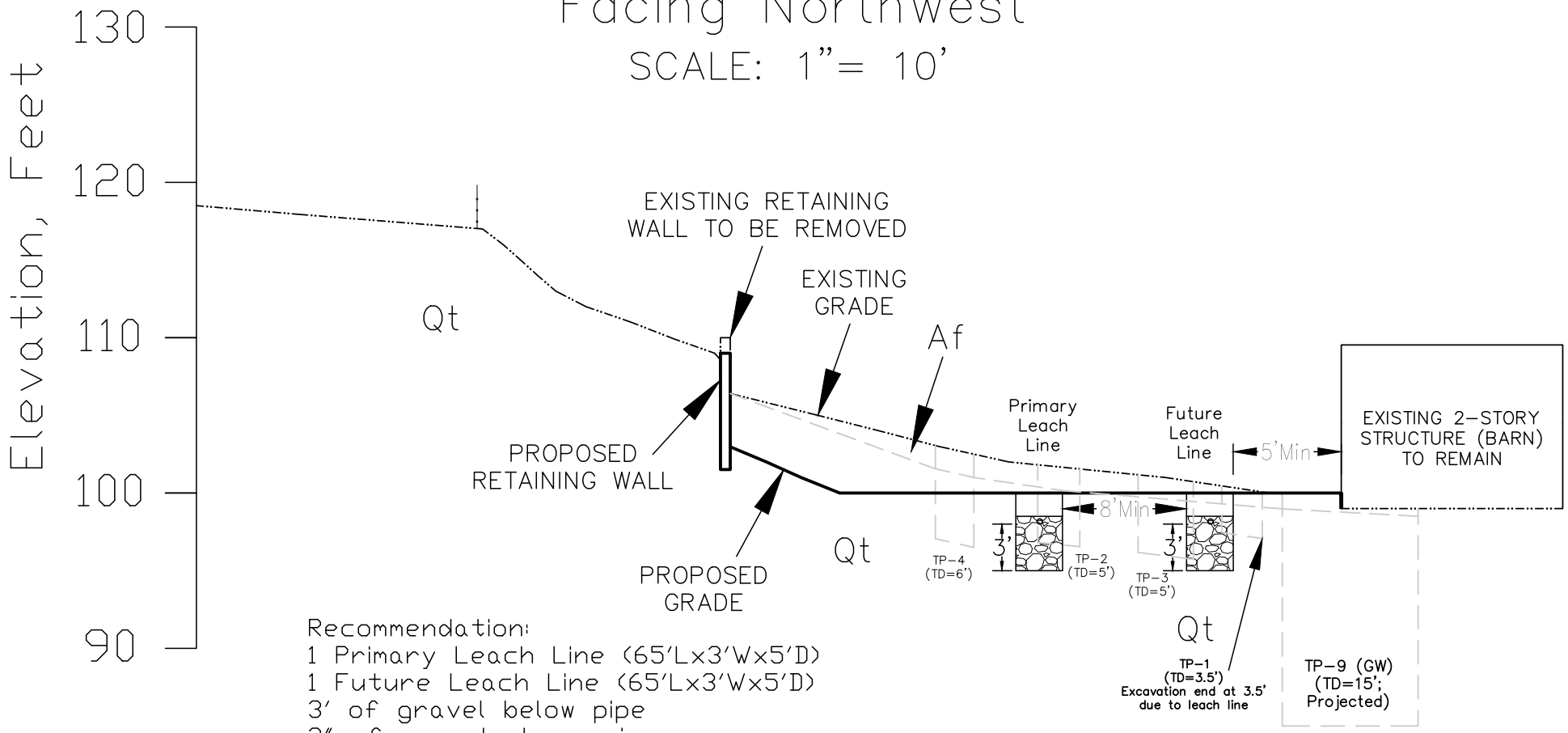
12/25 FIGURE 1b

Note: There are no existing, abandoned or proposed wells within 200 feet of the septic system area. There is no pressure public water main within 10 of the septic system. There are no easements within the septic system area on the subject site.

Cross Section A–A'

Facing Northwest

SCALE: 1"= 10'



Recommendation:
1 Primary Leach Line (65'Lx3'Wx5'D)
1 Future Leach Line (65'Lx3'Wx5'D)
3' of gravel below pipe
2" of gravel above pipe
18" of soil above gravel

LEGEND

Af	ARTIFICIAL FILL
Qt	ALLUVIAL TERRACE DEPOSITS

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Cross Section

12/25

FIGURE 2

1.4 Proposed Development

Based on the current Grading and Drainage Plan provided by SPS Engineering, it is our understanding that the existing one (1) story single-family house and detached single-story storage structures are to be completely demolished and removed. The existing two (2) story barn structure is to remain unchanged. It is also our understanding that the proposed development consists of constructing a 2-story single-family residence, a 1-story accessory dwelling unit (ADU) and associated structures. The proposed single-family residence, ADU and existing barn structure consists of a total of six (6) bedroom equivalents and would require a 1500-gallon septic tank. Due to the fast percolation rate an advanced treatment system will be required for the proposed residential development as discussed herein. Detailed configuration of the site is presented on the attached Site & Plot Plans and Cross-Section A-A', Figures 1a, 1b & 2.

2.0 SUBSURFACE EXPLORATION

The subsurface exploration was observed and logged by an EGL geologist and consisted of excavating eight (8) test pits to a maximum depth of 6.0 feet and one (1) high groundwater trench to a depth of 15 feet and below the ground surface. The purpose of the excavation was to investigate the engineering characteristics of the onsite soils with respect to the primary and 100% future expansion areas for the onsite sewage disposal system. The exploratory trench and test pits disclosed artificial fill (Af) and alluvial terrace deposits (Qt) material. The test pit and high groundwater trench logs are presented in Appendix A.

Groundwater, seeps, seepage, springs and/or surface water were not observed surficially and/or subsurficially in the high groundwater trench to the maximum explored depth of 15 feet below the existing grade. Based on the historically high groundwater depth maps of the San Fernando and Sunland Quadrangles, the historic groundwater is approximately 100 to 150 feet and deeper below ground surface at the subject site. Evidence of previous staining due to chemical alteration and/or oxidation resulting from high groundwater levels was not encountered or observed during downhole logging by EGL 's geologist. The groundwater trench was left open for a minimum of 5 days to observe the presence of groundwater. During and at the end of the 5-day period no groundwater was observed within the high groundwater trench. Groundwater is not expected to be within 10 feet from the point of discharge in the on-site sewage disposal system. It is EGL's opinion that the primary or future on-site sewage disposal systems will not have any impact on groundwater and that no mounding effects are expected below the subject site.

3.0 SUBSURFACE CONDITIONS

Based on our subsurface investigation, the site is underlain with artificial fill (Af) and alluvial terrace deposits (Qt) to the maximum explored depth of 15.0 feet. Artificial fill encountered within test pits consisted predominantly of mottled brown and dark olive brown, fine to coarse grained, dry to slightly moist, and medium dense to dense silty sand (SM) with some clay to the depths of approximately 1.5' to 3' below existing ground surface. Below this, our deep trench encountered layers of dusty brown to yellowish brown, fine to coarse grained, slightly moist, and dense to very dense silty sand (SM), poorly graded sand (SP) and well-graded sand (SW) to the maximum explored depth of 15.0 feet below the existing ground surface. Gravel, cobble and boulder sized rock clasts, 1/2"- to 9"- sized, rocky condition are commonly encountered and/or observed within the exploration. Dibblee (1991) described Pleistocene aged dissected surficial sediment as alluvial gravel and sand of old remnants of elevated alluvial gravels (Qoa; Figure 3). A description of the site material encountered with depth is presented in the attached test pit and trench logs presented in Appendix A.

4.0 PERCOLATION TEST

In order to evaluate the feasibility of the leach line area for the onsite sewage disposal system, we performed seven (7) percolation tests at the locations shown on the attached Site and Plot Plans according to the procedures by County of Los Angeles, Department of Health Services. The percolation testing program consisted of digging seven (7) test pits in the proposed and 100% future expansion leach line areas to the depths of 5 feet to 6 feet. A one cubic foot pit (1'x1'x1') was dug at the bottom of these test pits to run the test. The percolation test pits were initially presoaked 24 hours prior to the percolation test. Additional presoak and actual percolation testing was conducted on August 11, 2022. For the presoak the test pits were filled with 12" of water and then allowed to drain completely prior to the percolation test. For the percolation test, the test pits were filled with 12" of water and the time for each 1" drop was recorded for the first 6 inches. The test results and calculations by the Ryon Formula are included in Appendix B.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Leach Lines

Based on the results of our preliminary percolation tests, it is our opinion that disposal of on-site generated seepage by leach line is considered feasible from a geotechnical engineering standpoint. The following presents our recommendations for the residence.



Qa | Qoa — Qa : Holocene Surficial sediments, Alluvial gravel and sand of valley areas. Qoa: Pleistocene Older Dissected Surficial Sediments; old remnants elevated alluvial gravels.

Tucg | Tush — Middle Miocene Unnamed Marine Strata. Marine clastics. Tush: light grey bedded clay shale, soft, crumbly, poorly exposed. Tucg: rusty brown cobble conglomerate of granitic, some basaltic-andesitic detritus and sandstone

Tm | Tmss — Late Miocene Monterey Shale, marine biogenic and clastic. Tm: white-weathering thin bedded, platy siliceous and semi-siliceous shale. Tmss: light grey to tan, bedded semi-friable

Base map adopted from Dibblee, "Geologic Maps of the Sunland and Burbak (north 1/2) Quads., Los Angeles County, California": 1991, DF-32. Scale 1"=2.000'

Base map adopted from Dibblee, "Geologic Maps of the San Fernando and Van Nuys (north 1/2) Quads., Los Angeles County, California": 1991, DF-33. Scale 1"=2.000'

Scale: 1" = 1,000'

ENVIRONMENTAL GEOTECHNOLOGY LABORATORY

EGL Proj. No.: 22-AA-091
11857 East Trail
Sylmar, California

REGIONAL (GEOLOGY) MAP

05/23

Figure 3

11819 Goldring Road, Unit A, Arcadia, California 91006; Phone (626) 263-3588; E-mail: ryan@eglab.com

Leach Line	Required Leach Line Length (feet)	No. of trenches (Primary Area)	No. of trenches (100% Future Area)
Proposed House & ADU & Existing Barn Structure	63.6	1	1

Based on the percolation tests and calculations it is recommended that one (1) leach line (3 feet wide and 65 feet long) be installed at the site for the proposed single-family house, ADU and existing barn. The perforated pipe should be underlain with 36 inches of gravel. Gravel should also be placed above the perforated pipe up to a depth of 18 inches below the ground surface. The leach lines should maintain proper setbacks such as, 15' to daylight or fill contact, 8 feet from structures, 5' from the onsite domestic water main, 10 feet from nearby trees, etc. per County Plumbing Code. The leach lines should be stepped if needed to maintain proper setbacks. The final plumbing plans should be prepared by the project Civil Engineer.

5.2 Septic Tank

Based on a 3-bedroom equivalent main single-residence, a 2-bedroom equivalent ADU and a 1-bedroom equivalent barn, a septic tank capacity of 1500 gallons was used to calculate the length of the required leach lines. Due to the rapid percolation rate of the soil, an advanced treatment septic tank will be required at the subject site.

5.3 Advanced Treatment System (NOWTS)

Based on a 3-bedroom equivalent main single-residence, a 2-bedroom equivalent ADU and a 1-bedroom equivalent barn, a septic tank of 1500 gallons in size was used in the calculation for the length of leach line needed to serve the proposed single-family residence and ADU, and existing barn as discussed in the previous section. However, based on the design procedures by the County of Los Angeles, Health Department the septic system should be designed to treat 1050 gallons per day [300 + (6 - 1) × 150= 1050] of effluent for the 6-bedroom equivalent residential development. Based on information provided by MicroSepTec the ES12 is capable of treating 1200 gpd of effluent and is sufficient for the proposed 3-bedroom equivalent main single-residence and a 2-bedroom equivalent ADU, and existing a 1-bedroom equivalent barn at subject site. Specifications of the ES12 system are attached with this report.

It is recommended that an advanced treatment system be installed at the site. An ES12 by MicroSepTec or equivalent, can service the 6-bedroom equivalent residential development and

should be installed at the site. Detailed configurations of the site are presented on the attached Site and Plot Plans and Cross-Section A-A', Figures 1a, 1b and 2.

5.4 Flood Hazard

Based on the County of Los Angeles Department of Public Works Flood Zone Determination Website (http://dpw.lacounty.gov/wmd/floodzone/index.cfm) the subject site is partially located within Zone AE and X. Zone AE is defined as "Area inundated by the Base Flood with Base Flood Elevations determined" Zone X is defined as: "Areas determined to be outside the 0.2% annual chance floodplain." Zone AE is located in the northeast corner of the property and won't have any impact on the septic system. Based on this information and the site conditions a flood is not expected to occur at the site or impact the proposed septic system, but a flood risk still exists.

5.5 Remarks

Based on information obtained by EGL's research there are no existing, abandoned or proposed water wells on the site. There is also no pressure public water main within 10 feet of the septic system or easements within the septic system area.

This feasibility report presents an accurate and complete disclosure of all facts known relating to the existing and/or future onsite wastewater treatment system on the property. However, the information and recommendations provided in this report should be considered preliminary. Additional tests or modification of the design plans may be required by the County plan reviewer or Inspector(s).

APPENDIX A
FIELD INVESTIGATION

The subsurface exploration was observed and logged by an EGL geologist and consisted of excavating eight (8) test pits to a maximum depth of 6.0 feet and one (1) high groundwater trench to a depth of 15 feet and below the ground surface. The purpose of the excavation was to investigate the engineering characteristics of the onsite soils with respect to the primary and 100% future expansion areas for the onsite sewage disposal system. The exploratory trench and test pits disclosed artificial fill (Af) and alluvial terrace deposits (Qt) material.

Groundwater, seeps, seepage, springs and/or surface water were not observed surficially and/or subsurficially in the high groundwater trench to the maximum explored depth of 15 feet below the existing grade. Based on the historically high groundwater depth maps of the San Fernando and Sunland Quadrangles, the historic groundwater is approximately 100 to 150 feet and deeper below ground surface at the subject site. Evidence of previous staining due to chemical alteration and/or oxidation resulting from high groundwater levels were not encountered or observed during downhole logging by EGL ’s geologist. The groundwater trench was left open for a minimum of 5 days to observe the presence of groundwater. During and at the end of the 5-day period no groundwater was observed within the high groundwater trench. Groundwater is not expected to be within 10 feet from the point of discharge in the on-site sewage disposal system. It is EGL’s opinion that the primary or future on-site sewage disposal systems will not have any impact on groundwater and that no mounding effects are expected below the subject site.

The excavation of the test pits and trench were supervised by an engineer and/or geologist from this office, who continuously logged the test pit and trench and visually classified the soils in accordance with the Unified Soil Classification System.

EGL

TEST PIT LOG: TP-1

EXCAVATION SERVICE: Best Bobcat Services
DATE EXCAVATED: 08-09-2022
DATE LOGGED: 08-09-2022
EXCAVATION METHOD: Backhoe
SAMPLE METHOD: N / A
ELEVATION: ~ 100.3'
LOGGED BY: KY / RY

PROJECT LOCATION: 11857 East Valley Trail, Sylmar, California (Southerly landscape area, south of detached covered patio)
EGL PROJECT NO: 22-AA-091

S: Standard Penetration Test B: Bulk Sample R: Ring Sample C: Continuous Core

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts, ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	*Earth Material Descriptions*
0 - 1 - 2 - 3 -				SM			Artificial Fill (Af; 0.0' - 2.0'): @ 0.0' Gravelly silty sand with some clay, fine- to coarse-grained, mottled brown, dry to slightly moist, porous, moderately dense; with mixed in scattered rock clasts, trash debris and gravels; with 1/2" O.D. sized irrigation pipe 3" below ground surface. @ 3.2' filter fabric with 3/4"-sized gravel blanket with a 4"-diameter black PVC pipe.
4 - 5 -							Total Depth = 3.5 fee.; Excavation ends at 3.5 feet due to leach line. No Caving; No Groundwater

TEST PIT LOG: TP-2

Location: Westerly Toe Slope Area (South of raised flagstone patio)

Backhoe
Split Tube
~ 102.4'
KY / RY

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts, ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	*Earth Material Descriptions*
0 - 2 -				SM			Artificial Fill (Af; 0.0' - 2.0'): @ 0.0' Silty sand with some clay, fine- to coarse-grained, mottled brown, slightly moist, porous, rocky and moderately dense; with gravels, small cobbles and scattered roots; re-worked alluvial terrace deposits
4 - 6 - 8 -				SM			Alluvial Terrace Deposits (Qt; 2.0' - 5.0'): @ 2.0' Silty sand with some clay, fine- to coarse-grained, dusty brown, slightly moist, moderately dense; with roots, rootlets and angular rock clasts
10 -							Total Depth = 5.0 feet. No Caving; No Groundwater 1'Wx'1Lx1'D wide percolation pit excavated at 5 feet for percolation testing Backfill and tamped after completion of percolation testing

TEST PIT LOG: TP-3

Location: Westerly Toe Slope Area (Southwest of 2-Story barn)

Backhoe
Split Tube
~ 100.5'
KY / RY

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts, ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	*Earth Material Descriptions*
0 - 2 -				SM			Artificial Fill (Af; 0.0' - 2.0'): @ 0.0' Silty sand with some clay, fine- to coarse-grained, mottled brown, slightly moist, porous, rocky and moderately dense; with gravels, small cobbles and scattered roots
4 - 6 - 8 -				SM			Alluvial Terrace Deposits (Qt; 2.0' - 5.0'): @ 2.0' Silty sand with trace of clay, fine- to coarse-grained, olive brown, slightly moist, rocky and dense; with angular rock clasts
10 -							Total Depth = 5.0 feet. No Caving; No Groundwater 1'Wx'1Lx1'D wide percolation pit excavated at 5 feet for percolation testing Backfill and tamped after completion of percolation testing

EGL

TEST PIT LOG: TP-4

EXCAVATION SERVICE: Best Bobcat Services
DATE EXCAVATED: 08-09-2022
DATE LOGGED: 08-09-2022
EXCAVATION METHOD: Backhoe
SAMPLE METHOD: N / A
ELEVATION: ~ 102.0'
LOGGED BY: KY / RY

PROJECT LOCATION: 11857 East Valley Trail, Sylmar, California (Westerly landscape area, northwesterrly open coral area)
EGL PROJECT NO: 22-AA-091

S: Standard Penetration Test B: Bulk Sample R: Ring Sample C: Continuous Core

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts, ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	*Earth Material Descriptions*
0 - 2				SM			Artificial Fill (Af; 0.0' - 1.5'): @ 0.0' Silty clayey sand with gravels, fine- to coarse-grained, mottled dark brown, dry to slightly moist, porous, moderately dense; with mixed in scattered rock clasts and trash debris
4 - 6				SM			Alluvial Terrace Deposits (Qt; 1.5' - 6.0'): @ 1.5' Silty sand with some clay, fine- to coarse-grained, light brown, slightly moist, dense; with gravel-cobble sized rock clasts
8 - 10							Total Depth = 6.0 feet. No Caving; No Groundwater 1'Wx'1Lx1'D wide percolation pit excavated at 6 feet for percolation testing Backfill and tamped after completion of percolation testing

TEST PIT LOG: TP-5

Location: Southwesterly Toe Slope Area (western open coral area)

Backhoe
Split Tube
~ 101.5'
KY / RY

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts, ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	*Earth Material Descriptions*
0 - 2				SM			Artificial Fill (Af; 0.0' - 3.0'): @ 0.0' Silty sand with some clay, fine- to coarse-grained, mottled dark olive brown, slightly moist, porous, rocky and dense; lower depths with gravels and small cobbles sized rock clasts
4 - 6				SM			Alluvial Terrace Deposits (Qt; 3.0' - 6.0'): @ 2.0' Sand with some silt, fine- to coarse-grained, dusty brown, slightly moist, dense; with angular rock clasts, crudely layered
8 - 10							Total Depth = 6.0 feet. No Caving; No Groundwater 1'Wx'1Lx1'D wide percolation pit excavated at 6 feet for percolation testing Backfill and tamped after completion of percolation testing

TEST PIT LOG: TP-6

Location: Southwesterly Toe Slope Area (southwestern open coral area)

Backhoe
Split Tube
~ 100.0'
KY / RY

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts, ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	*Earth Material Descriptions*
0 - 2				SM			Artificial Fill (Af; 0.0' - 1.5'): @ 0.0' Silty sand with some clay, fine- to coarse-grained, dark olive brown, slightly moist, porous, rocky and dense; with scattered gravels and cobbles
4 - 6				SW			Alluvial Terrace Deposits (Qt; 1.5' - 5.0'): @ 1.5' Silty sand, well-graded, fine- to coarse-grained, light brown, slightly moist, very rocky and dense; crudely layered commonly with sandy matrix with gravels and large rock clasts, cobble-boulder sized
8 - 10							Total Depth = 5.0 feet. No Caving; No Groundwater 1'Wx'1Lx1'D wide percolation pit excavated at 5 feet for percolation testing Backfill and tamped after completion of percolation testing

EGL

TEST PIT LOG: TP-7

EXCAVATION SERVICE: Best Bobcat Services
DATE EXCAVATED: 08-09-2022
DATE LOGGED: 08-09-2022
EXCAVATION METHOD: Backhoe
SAMPLE METHOD: N / A
ELEVATION: ~ 100.0'
LOGGED BY: KY / RY

PROJECT LOCATION: 11857 East Valley Trail, Sylmar, California (Southerly open coral area)
EGL PROJECT NO: 22-AA-091

S: Standard Penetration Test B: Bulk Sample R: Ring Sample C: Continuous Core

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts, ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	*Earth Material Descriptions*
0 - 2				SM			Artificial Fill (Af; 0.0' - 1.5'): @ 0.0' Silty sand with some clay, fine- to coarse-grained, dark olive brown, slightly moist, porous, rocky and dense; with scattered gravels and cobbles
4 - 6 - 8				SW			Alluvial Terrace Deposits (Qt; 1.5' - 5.0'): @ 1.5' Silty sand, well-graded, fine- to coarse-grained, light brown, slightly moist, very rocky and dense; crudely layered commonly with sandy matrix with gravels and large rock clasts, cobble-boulder sized
10							Total Depth = 5.0 feet. No Caving; No Groundwater 1'Wx'1Lx1'D wide percolation pit excavated at 6 feet for percolation testing Backfill and tamped after completion of percolation testing

TEST PIT LOG: TP-8

Location: Northerly central portion of open coral area (SE of Residence)

Backhoe
Split Tube
~ 98.9'
KY / RY

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts, ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	*Earth Material Descriptions*
0 - 2				SM			Artificial Fill (Af; 0.0' - 1.5'): @ 0.0' Silty sand with some clay, fine- to coarse-grained, mottled light brown and dark brown, dry to slightly moist, porous, rocky and dense; with scattered gravels and cobbles sized rock clasts at lower depths
4 - 6 - 8				SM-SW			Alluvial Terrace Deposits (Qt; 1.5' - 5.0'): @ 3.0' Silty sand, well-graded, fine- to coarse-grained, dusty brown, slightly moist, dense; locally with rock clasts, gravel, cobble and boulder sized
10 - 12							Total Depth = 5.0 feet. No Caving; No Groundwater 1'Wx'1Lx1'D wide percolation pit excavated at 6 feet for percolation testing Backfill and tamped after completion of percolation testing

EGL

TEST PIT LOG: TP-9 (GW)

PROJECT LOCATION: 11857 East Valley Trail, Sylmar, California

EGL PROJECT NO: 22-AA-091

EXCAVATION SERVICE:	Best Bobcat Services
DATE EXCAVATED:	08-09-2022
DATE LOGGED:	08-09-2022
EXCAVATION METHOD:	Backhoe
SAMPLE METHOD:	N / A
ELEVATION:	~ 98.9'
LOGGED BY:	KY / RY

S: Standard Penetration Test B: Bulk Sample R: Ring Sample C: Continuous Core

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts, ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	*Earth Material Descriptions*
0 - 2				SM			Artificial Fill (Af; 0.0' - 3.0'): @ 0.0' Silty sand with some clay, fine- to coarse-grained, mottled light brown and dark brown, dry to slightly moist, porous, rocky and dense; with scattered gravels and cobbles sized rock clasts at lower depths
4 - 6				SM-SW			Alluvial Terrace Deposits (Qt; 3.0' - 8.0'): @ 3.0' Silty sand, well-graded, fine- to coarse-grained, dusty brown, slightly moist, dense; locally with rock clasts, gravel, cobble and boulder sized
8 - 10				SW-SP			@ 5.0' Gravelly sand, well- to poorly graded, fine- to coarse-grained, dusty brown, slightly moist, dense; commonly with rock clasts, gravel, cobble and boulder sized
12 - 14				SP-SW			@ 8.0' Sandy matrix with gravel, cobble and boulder sized rock clasts, well- to poorly graded, fine- to coarse-grained, yellowish brown, slightly moist, very rocky and dense
16 - 18 - 20 - 22 - 24 - 26							Total Depth = 15.0 feet. No Caving; No Groundwater Test pit securily covered and used for groundwater observation period Backfill on and tamped after completion of groundwater observation

APPENDIX B
PERCOLATION TEST RESULT

Required Percolation Capacity = Tank Capacity = 1,500 gallons

Percolation Rate

Testing Pit	Time from 5th to 6th Inch (Min : Sec)
TP – 2	2 : 51
TP – 3	10 : 57
TP – 4	8 : 43
TP – 5	5 : 29
TP – 6	0 : 57
TP – 7	0 : 31
TP – 8	3 : 32

Slowest Time, T = 10.98 minutes

Septic Tank Capacity, C = 1500 gallons

Gravel below Pipe = 3 feet

Ryon Formula: A= (T+6.24)/29xC/2

Leach Line Area, A = 445.3 ft²

Required Length of Leach Line, A/7 = 63.6 feet

Recommended 1 Leach Line **65 feet** long

Percolation Test for Leach Line

Site: 11857 East Trail, Sylmar, California Project No: 22-AA-091P

Test Pit # TP-2
Depth bgs (ft): 6

Drop (ft)	date/time (hr:min)
Start Presoak	8/11/22 / 9:10
End Presoak/Refill	8/11/22 / 9:21
Percolation Test	(min : sec)
Start Test - 0"	0:00
1"	0:57
2"	1:20
3"	1:45
4"	1:52
5"	2:18
6"	2:51
5" to 6" (min)	**2:51**

Test Pit # TP-3
Depth bgs (ft): 6

Drop (ft)	date/time (hr:min)
Start Presoak	8/11/22 / 9:15
End Presoak/Refill	8/11/22 / 10:05
Percolation Test	(min : sec)
Start Test - 0"	0:00
1"	4:44
2"	5:15
3"	6:06
4"	7:26
5"	9:38
6"	10:57
5" to 6" (min)	**10:57**

Test Pit # TP-4
Depth bgs (ft): 7

Drop (ft)	date/time (hr:min)
Start Presoak	8/11/22 / 10:37
End Presoak/Refill	8/11/22 / 11:21
Percolation Test	(min : sec)
Start Test - 0"	0:00
1"	5:20
2"	6:09
3"	6:50
4"	7:03
5"	7:50
6"	8:43
5" to 6" (min)	**8:43**

Test Pit # TP-5
Depth bgs (ft): 7

Drop (ft)	date/time (hr:min)
Start Presoak	8/11/22 / 10:45
End Presoak/Refill	8/11/22 / 11:10
Percolation Test	(min : sec)
Start Test - 0"	0:00
1"	1:55
2"	2:38
3"	3:07
4"	3:51
5"	4:41
6"	5:29
5" to 6" (min)	**5:29**

Test Pit # TP-6
Depth bgs (ft): 6

Drop (ft)	date/time (hr:min)
Start Presoak	8/11/22 / 9:26
End Presoak/Refill	8/11/22 / 9:31
Percolation Test	(min : sec)
Start Test - 0"	0:00
1"	0:14
2"	0:16
3"	0:19
4"	0:29
5"	0:40
6"	0:57
5" to 6" (min)	**0:57**

Test Pit # TP-7
Depth bgs (ft): 6

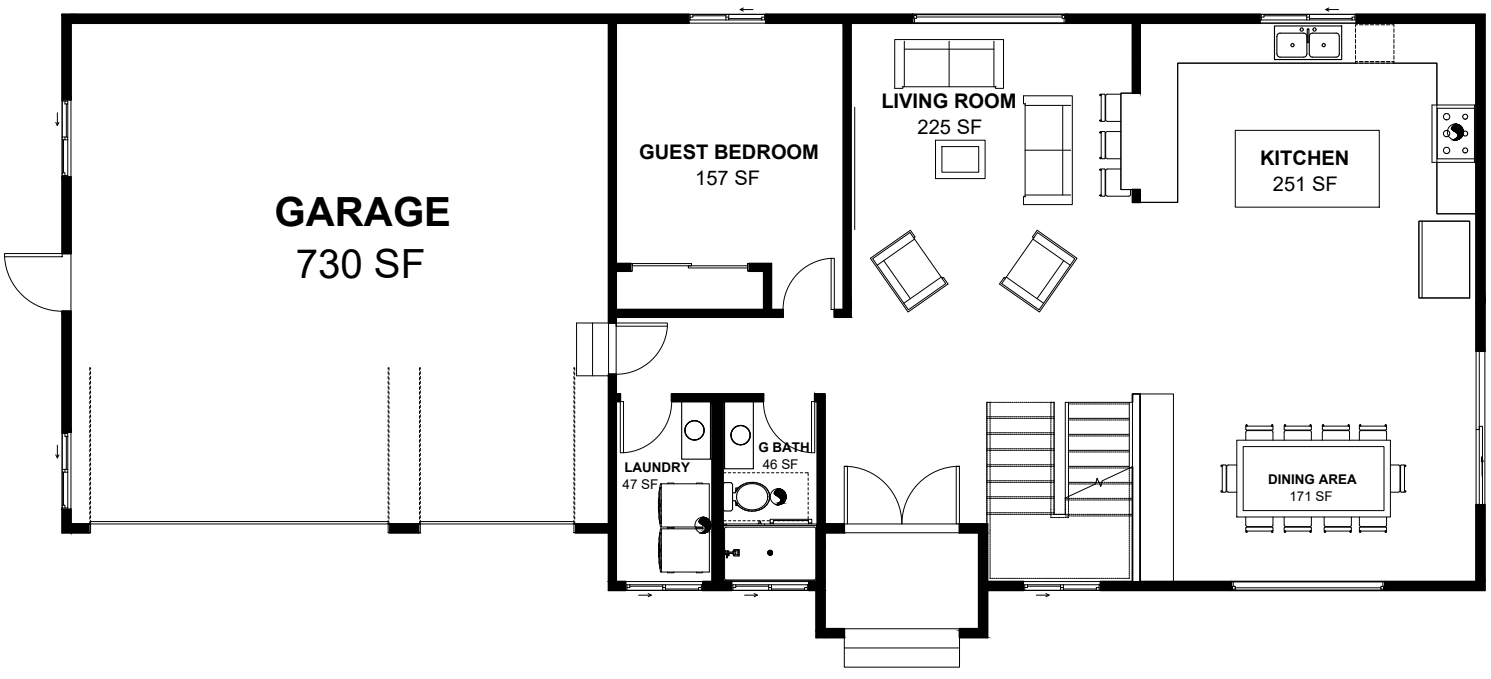
Drop (ft)	date/time (hr:min)
Start Presoak	8/11/22 / 9:22
End Presoak/Refill	8/11/22 / 9:28
Percolation Test	(min : sec)
Start Test - 0"	0:00
1"	0:08
2"	0:12
3"	0:16
4"	0:17
5"	0:26
6"	0:31
5" to 6" (min)	**0:31**

Test Pit # TP-8
Depth bgs (ft): 6

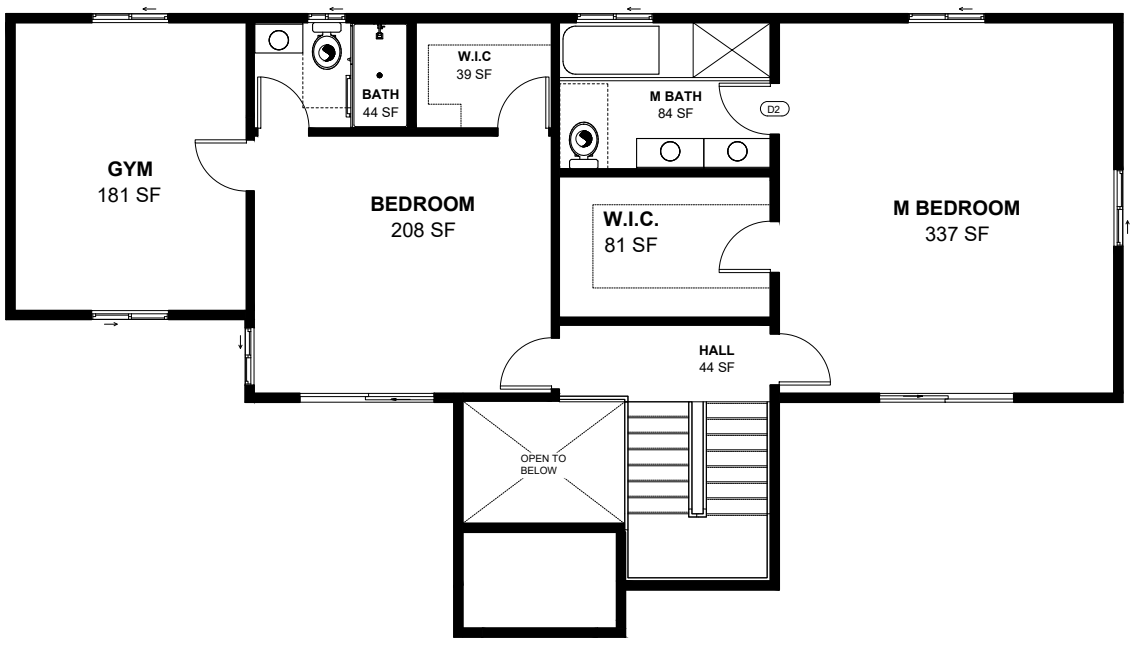
Drop (ft)	date/time (hr:min)
Start Presoak	8/11/22 / 10:47
End Presoak/Refill	8/11/22 / 11:10
Percolation Test	(min : sec)
Start Test - 0"	0:00
1"	0:59
2"	1:45
3"	2:16
4"	2:30
5"	3:00
6"	3:32
5" to 6" (min)	**3:32**

Slowest Time, T =	10.98	minutes
Septic Tank Capacity, C =	1500	gallons
Gravel Below Pipe =	3	feet
Ryon Formula:	A = (T+6.24)/29xC/2	
Leach Line Area, A =	445.3	ft²
Length of Leach Line, A/7 =	**63.6**	feet

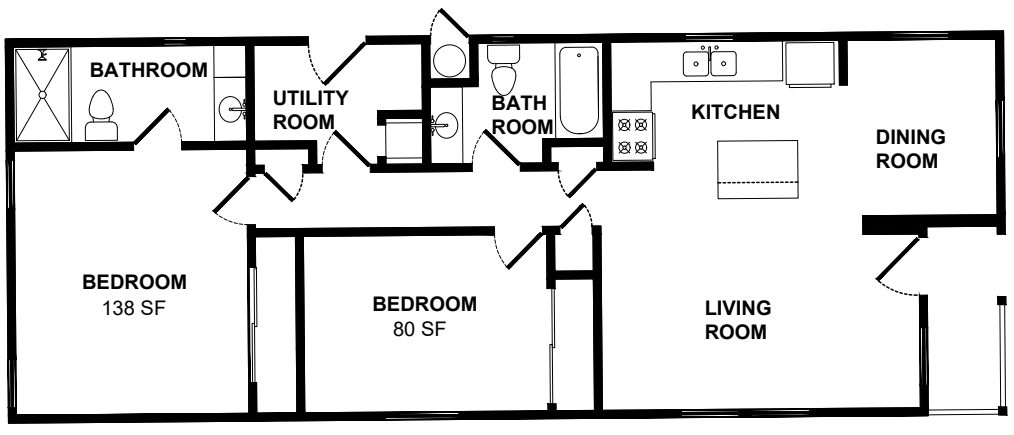
Recommended 1 primary leach line 65 feet long.



MAIN RESIDENCE FIRST FLOOR



MAIN RESIDENCE SECOND FLOOR



ADU FIRST FLOOR

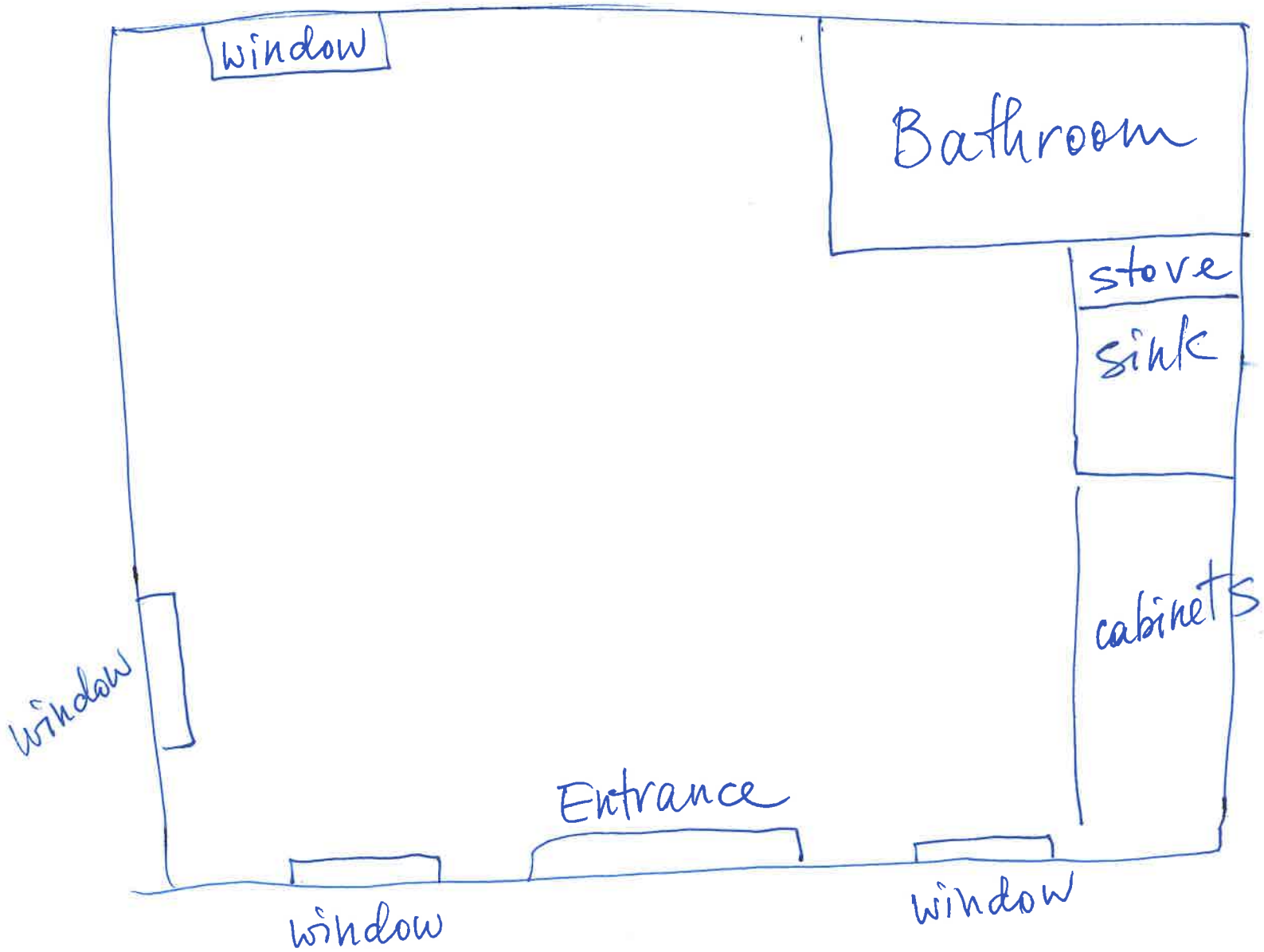
Owner:
Ms. Lusine Musat
11857 East Trail, Sylmar, CA

FLOOR PLAN

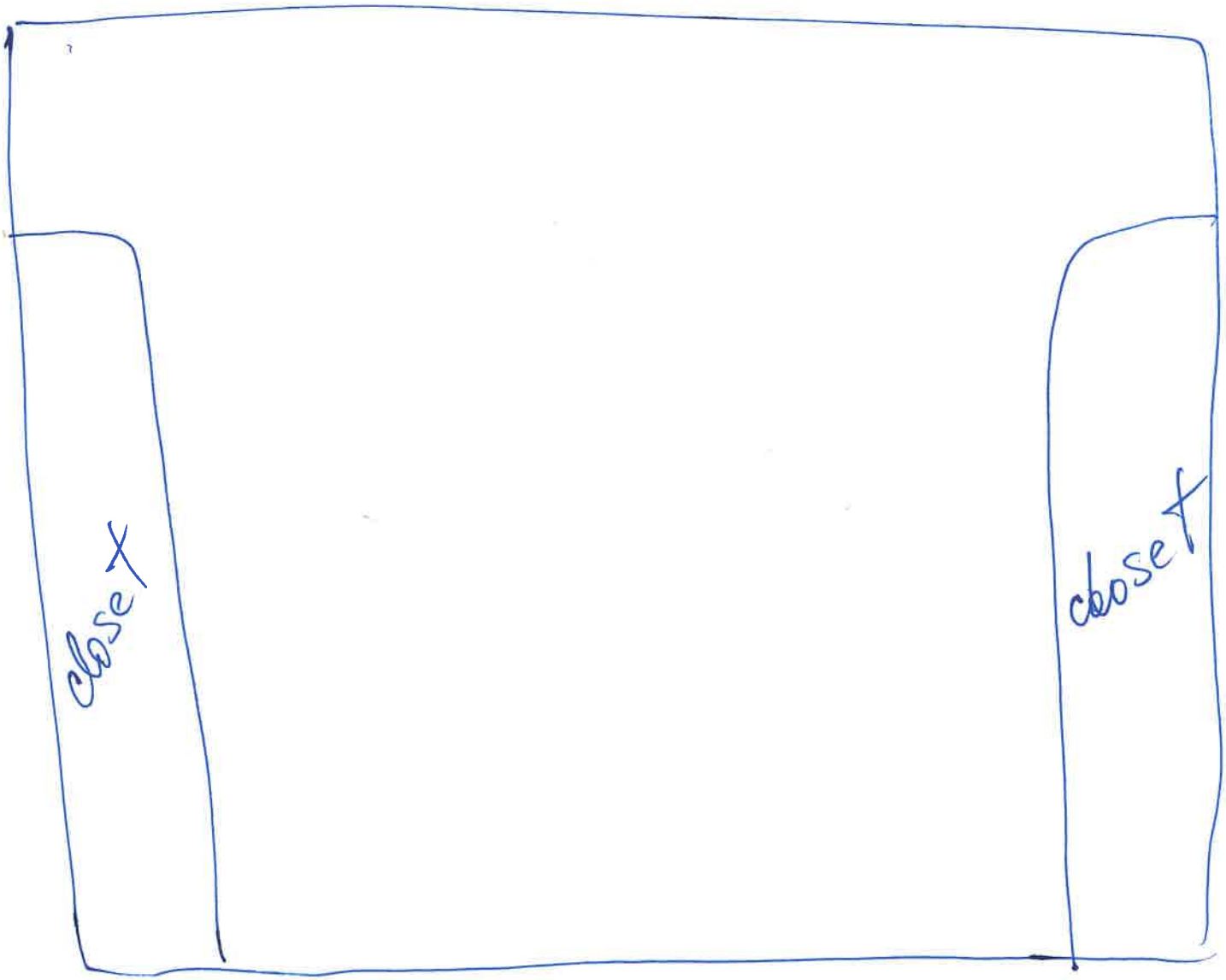
SCALE: 1” = 10’

Floor Plans for the Barn

1st floor



2nd floor



GENERAL

1. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY, AND THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEANS AND METHODS OF CONSTRUCTION AND SHALL TAKE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. INCLUDING, BUT NOT LIMITED TO, SHORING, BRACING, AND TEMPORARY EXCAVATIONS, AND SHALL BE IN ACCORDANCE WITH ALL STATE AND FEDERAL SAFETY REQUIREMENTS.

3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS BEFORE STARTING WORK AND SHALL NOTIFY THE ARCHITECT AND ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

4. ALL OMISSIONS AND CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER BEFORE PROCEEDING WITH WORK SO INVOLVED.

5. ANY CONFLICTS ON THE DRAWINGS MUST BE RESOLVED WITH THE ARCHITECT AND ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.

6. THE CONTRACTOR SHALL DETERMINE THE LOCATION OF UTILITY SERVICES IN THE AREA TO BE EXCAVATED PRIOR TO BEGINNING EXCAVATION.

7. NO PIPES, DUCTS, SLEEVES, CHASES, ETC. SHALL BE PLACED IN SLABS, BEAMS, OR WALLS UNLESS SPECIFICALLY SHOWN OR NOTED. NOR SHALL ANY STRUCTURAL MEMBER BE CUT FOR PIPES, DUCTS, OR OTHER ITEMS UNLESS OTHERWISE NOTED. CONTRACTOR SHALL OBTAIN PRIOR APPROVAL FOR INSTALLATION OF ANY ADDITIONAL PIPES, DUCTS, OR OTHER ITEMS. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATIONS.

8. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF THE LOCAL BUILDING CODE AND SHALL COMPLY WITH AND BE INSTALLED IN ACCORDANCE WITH ALL THE REQUIREMENTS OF ALL LEGALLY CONSTITUTED PUBLIC AUTHORITIES HAVING JURISDICTION, INCLUDING ALL COUNTY AND LOCAL ORDINANCES, AND THE SAFETY ORDERS OF THE STATE INDUSTRIAL ACCIDENT COMMISSION, OSHA.

9. WHERE A SECTION OR TYPICAL DETAIL IS SHOWN FOR ONE CONDITION IT SHALL APPLY FOR ALL LIKE OR SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.

10. NO CHANGES ARE TO BE MADE TO THESE PLANS WITHOUT THE KNOWLEDGE AND WRITTEN CONSENT OF MST MANUFACTURING, LLC.

11. ANY REFERENCE TO THE WORDS APPROVED, OR APPROVAL IN THESE DOCUMENTS SHALL BE HERE DEFINED TO MEAN GENERAL ACCEPTANCE OR REVIEW AND SHALL NOT RELIEVE THE CONTRACTOR AND/OR HIS SUB-CONTRACTORS OF ANY LIABILITY IN FURNISHING THE REQUIRED MATERIALS OR LABOR SPECIFIED.

12. CONCRETE SLAB-ON-GRADE HAS NOT BEEN DESIGNED FOR CONSTRUCTION LOADS OR SPECIFIC OCCUPANT SERVICE LOADS BY THE STRUCTURAL ENGINEER.

13. VIBRATIONAL EFFECTS OF MECHANICAL EQUIPMENT HAVE NOT BEEN CONSIDERED BY THE STRUCTURAL ENGINEER.

14. THIS SHEET AND SUBSEQUENT DRAWINGS CONTAIN MANUFACTURER'S MINIMUM RECOMMENDATIONS ONLY. SPECIFICATIONS OF PROJECT STRUCTURAL ENGINEER SUPERCEDE THESE RECOMMENDATIONS.

15. SEE ENGINEER AND/OR ARCHITECT'S SPECIFICATIONS AND ADDITIONAL REQUIREMENTS.OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE OBSERVATION OF SAFETY METHODS, BRACING, OR SUPPORT AND SHALL NOT BE CONSTRUED AS INSPECTION NOR APPROVAL OF CONSTRUCTION.

INSTALLATION INSTRUCTIONS

1. ALL TANKS MUST BE VISUALLY INSPECTED IN THE FIELD TO ENSURE NO DAMAGE HAS OCCURRED FROM SHIPPING AND HANDLING.

2. IN ADDITION TO THE MANUFACTURER'S INSTRUCTIONS, THE INSTALLATION MUST COMPLY WITH ALL APPLICABLE BUILDING CODES.

3. SHIP TANKS ON SUPPORT SADDLES PROVIDED.

4. PLACE SADDLES NEAR EACH END OF TANK, DISTRIBUTING WEIGHT EVENLY.

5. MOVE TANKS BY LIFTING, USING LIFTING LUGS PROVIDED. DO NOT REMOVE TANKS BY DRAGGING OR ROLLING OFF OF CARRIER. USE DOUBLE SLING WITH A MINIMUM OF 8" OF CABLE ON EACH SIDE FOR LIFTING. PLACE TANKS ON GROUND USING SADDLES PROVIDED, AND CHOCK BOTH SIDES OF TANK TO ENSURE IT WILL NOT ROLL IN WINDY CONDITIONS.

6. RECOMMENDED LIFTING EQUIPMENT:
   - EXCAVATION EQUIPMENT THAT IS CAPABLE OF PRODUCING A LEVEL BOTTOM HOLE AND CAN PLACE BACKFILL MATERIAL AT ALL POINTS OF THE EXCAVATION
   - CRANE AND OR LIFTING EQUIPMENT THAT IS CAPABLE OF LIFTING AND PLACING TANKS AND ANCHORING DEVICES
   - TAPE MEASURE
   - SPIRIT LEVEL OR TRANSIT
   - TAMPING ROD
   - HAND SHOVELS
   - 8' LIFTING CHAIN OR SLING WITH HOOK ENDS. LARGER TANKS REQUIRE USE OF SPREADER BAR
   - SOIL COMPACTING EQUIPMENT.

7. VISUAL INSPECTION:
   ALL TANKS SHALL BE VISUALLY INSPECTED OVER THE ENTIRE VESSEL, PAYING PARTICULAR ATTENTION TO LOCATION OF SHIPPING CRADLES AND STRAPPING. INSPECT FOR THE FOLLOWING DEFECTS:
   - VISIBLE FRACTURES IN THE WALL OR RIBS.
   - DELAMINATING.
   - SCRATCHES, ABRASIONS, OR GAUGES EXTENDING MORE THAN 1/16" INTO THE LAMINATE OF THE FIBERGLASS.
   - STRESS CRACKS (FINE SPIDER WEB LIKE CRACKS DEEP INTO THE STRUCTURE).

8. IF ANY DAMAGE IS PRESENT, THE TANK SHALL NOT BE INSTALLED UNTIL IT IS INSPECTED AND REPAIRED BY AN AUTHORIZED PERSON.

9. BACKFILL SPECIFICATIONS:
   THE CONTRACTOR, ENGINEER, ARCHITECT, OR OWNER SHALL DETERMINE IF A TRAFFIC-RATED INSTALLATION IS REQUIRED. EXCAVATION SIZE AND BACKFILL SPECIFICATIONS WILL DIFFER WHEN TANK IS INSTALLED TO MEET TRAFFIC RATING REQUIREMENTS, AS DETAILED ON SUBSEQUENT DRAWINGS.
   THE TANK MUST BE INSTALLED WITH SPECIFIED PRIMARY BACKFILL ONLY IN THE REGION IMMEDIATELY AROUND THE TANK. THE PRIMARY BACKFILL MUST EXTEND A MINIMUM OF 12 INCHES ON SIDES AND ENDS. PRIMARY BACKFILL UNDER THE TANK IS TO BE A MINIMUM OF 12 INCHES.

10. SPECIFIED BACKFILL MATERIALS:
    PEA GRAVEL:
    NATURALLY ROUNDED AGGREGATE WITH A PARTIAL SIZE OF NOT LESS THAN 1/8 INCH AND NOT GREATER THAN 3/4 INCH. GRAVEL MUST BE CLEAN AND FREE FLOWING, AND FREE FROM DEBRIS.
    CRUSHED STONE:
    CRUSHED STONE OR GRAVEL WITH PARTIAL SIZE NOT LESS THAN 1/8 INCH AND NOT GREATER THAN 1/2 INCH. AGGREGATE MUST BE CLEAN AND FREE FLOWING, AND FREE FROM DEBRIS.

11. SECONDARY BACKFILL SPECIFICATION:
    SECONDARY BACKFILL CAN ONLY BE USED AT THE ABOVE-SPECIFIED DISTANCE FROM THE TANK WALLS. SECONDARY BACKFILL CAN BE USED AT MORE THAN 18 INCHES ABOVE TANK.
    COURSE SAND OR GRAVEL:
    - COURSE SAND OR GRAVEL CONTAINING ROCKS NO LARGER THAN 1 1/2 INCHES.
    - BACKFILL SHALL BE CLEAN AND FREE FROM DEBRIS.
    - DURING PLACEMENT THIS BACKFILL MATERIAL MUST BE COMPACTED TO 95% RELATIVE COMPACTION. (AS MEASURED BY ASTM D1557 PROCEDURE.)

    SELECT NATIVE BACKFILL:
    - SELECT NATIVE BACKFILL CONTAINING ROCKS NO LARGER THAN 1 1/2 INCHES. THIS MATERIAL CAN BE USED OUTSIDE OF ABOVE NOTED DISTANCES FROM THE TANK.
    - DURING PLACEMENT THIS BACKFILL MATERIAL MUST BE COMPACTED TO 95% RELATIVE COMPACTION. (AS MEASURED BY ASTM D1557 PROCEDURE.)

12. ALL BACKFILL MATERIAL MUST BE FREE OF ICE AND SNOW AT TIME OF INSTALLATION, AND SHALL NOT CONTAIN LUMPS OR FROZEN MATERIAL AT ANY TIME DURING INSTALLATION.

13. USE OF BACKFILL AND BEDDING MATERIAL OTHER THAN THAT SPECIFIED ABOVE WITHOUT PRIOR WRITTEN APPROVAL WILL VOID TANK WARRANTY.

14. FILTER FABRIC LINER:
    IT IS GEOLOGIST, GEOTECHNICAL ENGINEER OR OTHER QUALIFIED PROFESSIONAL RESPONSIBILITY TO DETERMINE IF A FILTER FABRIC LINER IS REQUIRED. THE FILTER FABRIC PREVENTS THE MIXING OF PEA GRAVEL WITH NATIVE SOIL AND KEEPS THE BACKFILL STABLE.

15. BEDDING AND BACKFILL INSTRUCTIONS FOR WET HOLE INSTALLATION:
    PREPARE EXCAVATION ACCORDING TO REQUIRED SIZE AND DEPTH. LEVEL BOTTOM OF HOLE. INSTALL APPROPRIATE PUMPING EQUIPMENT AT SIDE OF EXCAVATION LOWER THAN INTENDED BOTTOM OF EXCAVATION. MAINTAIN WATER LEVEL AS LOW AS POSSIBLE. LEVEL BOTTOM OF HOLE USING PRIMARY BACKFILL MATERIAL.

16. PLACEMENT OF TANK ANCHORS:
    PLACE TANK ANCHORS INTO EXCAVATION AT DESIRED DISTANCE APPROPRIATE FOR TANK DIAMETER. USE SETS OF CONCRETE DEADMEN DEPENDING ON THE LENGTH OF TANK. ALWAYS PROVIDE SUFFICIENT CLEARANCE TO ALLOW THE DEADMEN ANCHOR POINT TO BE SET OUTSIDE OF THE TANK "SHADOW". SEE STRUCTURAL DRAWINGS FOR DETAILS.

REINFORCED CONCRETE

1. CEMENT TO BE TYPE V CONFORMING TO ASTM C-150.

2. AGGREGATES SHALL CONFORM TO ASTM C-33 FOR STRUCTURAL NORMAL-WEIGHT CONCRETE (1" MAXIMUM SIZE) AND ASTM C-330 FOR STRUCTURAL LIGHTWEIGHT CONCRETE.

3. READY-MIX CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C-94.

4. CONCRETE DESIGN MIXES SHALL BE IN ACCORDANCE WITH SECTION 1905 OF THE CALIFORNIA BUILDING CODE (CBC) OR APPROPRIATE LOCAL BUILDING CODES AND SHALL BE STAMPED AND SIGNED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF JURISDICTION.

5. ALL CONCRETE SHALL SATISFY THE MINIMUM STRENGTH REQUIREMENTS. THE MINIMUM ULTIMATE COMPRESSIVE STRENGTH (F'C) AT 28 DAYS SHALL BE AS FOLLOWS:
   - 2500 PSI SLABS ON GRADE
   - 2500 PSI CONCRETE BEAMS *

   USE fc'=4500 PSI, W/C=0.45, TYPE V CEMENT WHERE SULFATE IS SEVERE, CORROSIVE SOIL OCCURS. THE TYPE OF CEMENT USED SHOULD BE DETERMINED BY GEOTECHNICAL ENGINEER OR GEOLOGIST.

6. SUBMIT HISTORICAL TEST DATA FOR ALL MIX DESIGNS. TEST DATA SHALL MEET THE REQUIREMENTS OF SEC. 1905.3 OF THE CBC OR APPROPRIATE LOCAL BUILDING CODES WHEN HISTORICAL DATA IS NOT AVAILABLE. THE REQUIRED CONCRETE COMPRESSIVE STRENGTH SHALL BE INCREASED IN ACCORDANCE WITH TABLE 19-A-7. THE CONCRETE SUPPLIER MUST BEAR THE TOTAL RESPONSIBILITY THAT THE MIX DESIGNS WILL ATTAIN THE REQUIRED STRENGTH AND SHRINKAGE CHARACTERISTICS. ACCEPTANCE OF MIX DESIGN WILL BE BASED ONLY ON CONFORMANCE OF SPECIFIED DESIGN STRENGTH AND DESIGN SLUMP.

7. THE MINIMUM CEMENT CONTENT PER CUBIC YARD OF CONCRETE SHALL BE AS FOLLOWS:
   - 5 1/4 SACKS FOR 2500 PSI STRENGTH
   - 5 1/2 SACKS FOR 3000 PSI OR GREATER STRENGTH
   - WATER/CEMENT RATIO NOT TO EXCEED 0.45

8. THE MAXIMUM CONCRETE SLUMP SHALL BE 3" +/- 1" FOR SLABS ON GRADE AND 4" +/- 1" FOR ALL OTHER WORK.

9. THE USE OF FLY ASH SHALL BE CONSIDERED TO IMPROVE CONCRETE WORKABILITY AND DURABILITY ONLY. FLY ASH SHALL NOT BE CONSIDERED TO REDUCE THE MINIMUM CEMENT CONTENT. FLY ASH SHALL NOT BE USED IN POST-TENSIONED CONCRETE. FLY ASH SHALL CONFORM TO ASTM C-618, CLASS F. THE AMOUNT OF FLY ASH USED SHALL NOT EXCEED 15% OF THE CEMENT CONTENT.

10. ADMIXTURES MAY BE USED WITH THE APPROVAL OF THE ENGINEER. ADMIXTURES USED TO INCREASE THE WORKABILITY OF THE CONCRETE SHALL NOT BE CONSIDERED TO REDUCE THE SPECIFIED MINIMUM CEMENT CONTENT. WHEN ADMIXTURES ARE UTILIZED, SUBMIT MANUFACTURER'S PRODUCT INFORMATION WITH THE CONCRETE MIX DESIGN. ADMIXTURES CONTAINING CALCIUM CHLORIDE SHALL NOT BE USED.

11. AIR ENTRAINMENT OF 4% SHALL BE PROVIDED FOR SLABS ON GRADE. AIR-ENTRAINING ADMIXTURES SHALL CONFORM TO ATM C-260.

12. PROJECTING CORNERS OF SLABS, BEAMS, WALLS, COLUMNS, ETC. SHALL BE FORMED WITH A 3/4" CHAMFER UNLESS OTHERWISE NOTED.

13. CONCRETE FORM TOLERANCES SHALL BE WITHIN THE STANDARDS SET FORTH IN ACI 117.

14. ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS AND OTHER INSERTS SHALL BE SECURED IN POSITION AND INSPECTED BY THE LOCAL BUILDING DEPARTMENT INSPECTOR PRIOR TO THE POURING OF ANY CONCRETE.

15. THE LOCATION OF ALL CONSTRUCTION JOINTS, NOT SPECIFICALLY INDICATED ON THE DRAWINGS, SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACING REINFORCING STEEL.

16. REFER TO AND VERIFY WITH ARCHITECTURAL DRAWINGS ANY MOULDS, GROOVES, REVEALS, SCUPPERS, ORNAMENTS, CLIPS OR TEXTURES REQUIRED TO BE CAST INTO CONCRETE AND FOR LOCATION AND EXTENT OF DEPRESSIONS, CURBS, AND RAMPS.

17. WHEN POURING AN ANTI-FLOTATION COLLAR, THE SLAB CAN BE POURED TO ALLOW A TROUGH AROUND THE INLET AND OUTLET PIPES.

18. PIPE MAY PASS THROUGH STRUCTURAL CONCRETE IN SLEEVES, BUT SHALL NOT BE EMBEDDED THEREIN. SLEEVES SHALL BE WRAPPED WITH EXPANSION JOINT FILLER MATERIAL TO ALLOW CONCRETE TO CURE WITHOUT RESTRAINT. PIPES OR CONDUITS EXCEEDING ONE-THIRD THE SLAB OR WALL THICKNESS SHALL NOT BE STRUCTURAL AND/OR ELECTRICAL DRAWINGS FOR LOCATION OF SLEEVES, ACCESSORIES, ETC.

19. CONCRETE FLOOR SLABS VARIATION FROM LEVEL TO BE NOT MORE THAN 1/8" IN TEN FEET.

20. DRY PACK: MIX, IN PROPORTIONS BY VOLUME, ONE PART CEMENT TO TWO-AND-ON-HALF PARTS FINE AGGREGATE. SCREENING OUT MATERIALS RETAINED ON NO. 4 SIEVE. MIX WITH WATER TO CONSISTENCY SUCH THAT, WHEN BALL OF MIXTURE IS COMPRESSED IN HAND, BALL WILL MAINTAIN SHAPE, SHOWING FINGER MARKS, BUT NOT SHOWING SURFACE WATER.

DIMENSIONS

1. DIMENSIONS SHALL BE DEFINED TO INCLUDE BOTH HORIZONTAL DIMENSIONS AND VERTICAL DIMENSIONS (ELEVATIONS).

2. WRITTEN DIMENSIONS SHALL SUPERCEDE SCALED DRAWINGS.

3. SEE MANUFACTURE DRAWINGS FOR DIMENSIONS NOT NOTED ON STRUCTURAL DRAWINGS.

TIE DOWN (IF APPLICABLE)

1. GEOLOGIST OR GEOTECHNICAL ENGINEER OR OTHER QUALIFIED PROFESSIONAL SHALL DETERMINE IF TIE DOWNS ARE REQUIRED AND IF CORROSIVE PROTECTION MATERIALS (GALVANIZED, STAINLESS STEEL OR EPOXY COATING) ARE NEEDED.

2. IF APPLICABLE, 2 STAINLESS STEEL (OR EQUIVALENT) STRAPS WILL BE USED, AS DETAILED ON SUBSEQUENT DRAWINGS.

3. AS WITH ANY ANCHOR, WATER-TABLE HEIGHT AND BURIAL DEPTH MUST BE CONSIDERED IN SIZING THE DEADMAN SYSTEM.

4. ALWAYS PROVIDE SUFFICIENT CLEARANCE TO ALLOW THE DEADMEN ANCHOR POINT TO BE SET OUTSIDE OF THE TANK "SHADOW".

REINFORCING STEEL

1. BAR REINFORCEMENT SHALL CONFORM WITH ASTM A615, GRADE 60 UNO.

2. ALL WELDED REBAR SHALL CONFORM WITH ASTM A706.

3. WELDING OF REINFORCING STEEL SHALL CONFORM WITH AWS D1.4.-92 OR LATEST EDITION.

4. WELDED WIRE FABRIC SHALL CONFORM WITH ASTM A185 GRADE 65 FOR PLAIN WIRE AND ASTM A497 GRADE 80 FOR DEFORMED WIRE. ALL MESH SHALL HAVE A MINIMUM SIDE AND END LAP OF 1 ½" MESH OR 9", WHICHEVER IS GREATER.

5. REINFORCING DETAILING, BENDING AND PLACING SHALL BE IN ACCORDANCE WITH CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE" LATEST EDITION.

6. LAPS AT BAR SPLICES SHALL BE PER LAP SPLICE DETAILS.

7. VERTICAL BARS IN WALLS SHALL BE ACCURATELY POSITIONED AT THE CENTER OF WALL. UNLESS OTHERWISE NOTED ON DETAILS, & SHALL BE TIED IN POSITION AT TOP AND BOTTOM AND AT INTERVALS NOT EXCEEDING 192 BAR DIA.

8. BARS SHALL BE CLEAN OF MUD, OIL OR OTHER COATINGS LIKELY TO IMPAIR BONDING.

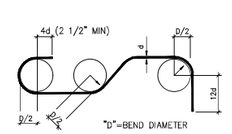
9. REINFORCING BARS SHALL NOT BE RE-BENT WITHOUT APPROVAL OF STRUCTURAL ENGINEER. BENDS SHALL BE MADE COLD.

10. UNLESS SHOWN OTHERWISE, REINFORCING BARS IN CONTINUOUS CONCRETE BEAMS AND SPANDRELS SHALL HAVE TOP BARS SPLICED AT THE MIDSPAN AND BOTTOM BARS SPLICED OVER THE SUPPORTS.

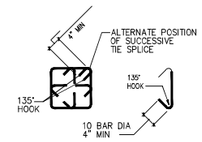
11. REINFORCING STEEL SHALL BE PROVIDED WITH THE FLOWING AMOUNTS OF CONCRETE CLEAR COVER, UNLESS NOTED OTHERWISE:
    FOOTINGS (CONCRETE DEPOSITED AGAINST EARTH).....3"
    CONCRETE SURFACE (FORMED) EXPOSED TO EARTH OR WEATHER....2"
    CONCRETE REINFORCING (INCLUDING COLUMN TIES.....1 1/2"
    BEAMS AND GIRDERS.....1 1/2"
    SLAB (#11 OR SMALLER).....3/4 " BOTTOM
    1" TOP

12. ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS, AND INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE OR GROUT.

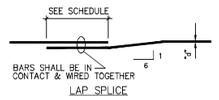
13. UNLESS OTHERWISE NOTED IN DETAILS, FURNISH #3 SPACER TIES AT APPROXIMATELY 2'-6" ON CENTER IN ALL BEAMS AND FOOTINGS TO SECURE REINFORCING IN PLACE.



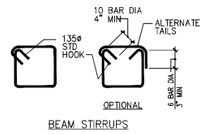
HOOKS & BENDS



COLUMN TIE TYPES



LAP SPLICE



OPTIONAL

BEAM STIRRUPS

NOTE: FOR SIZE AND SPACING OF ALL TIES AND STIRRUPS REFER TO FOOTING SCHEDULE AND/OR DETAILS.

BEND DIAMETER SCHEDULE	
BAR SIZE	BEND DIAMETER
#3 THRU #5	D = 4d
#6 THRU #8	D = 6d
#9 THRU #11	D = 8d
#14 THRU #18	D = 10d

3000 PSI MIN. CONCRETE / REINFORCING BAR LAP SPLICE				CONCRETE BLOCK
BAR #	MINIMUM CLEAR BAR SPACING (BAR DIAMETER)	LAP SPLICE LENGTH (INCHES)		BAR LAP IN INCHES
		* TOP BARS	OTHER BARS	
#4	MORE THAN 2	30	23	24"
#5	MORE THAN 2	37	29	30"
#6	MORE THAN 2	44	34	54"
#7	MORE THAN 2	81	62	63"
#8	MORE THAN 2	93	72	72"
#9	MORE THAN 2	104	80	82"
#10	MORE THAN 2	116	89	92"
#11	MORE THAN 2	127	98	102"

* HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE DEVELOPMENT LENGTH OR SPLICE

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REGISTERED PROFESSIONAL ENGINEER QIANG XIAO NO. S 5289 EXP. 6/30/20 STRUCTURAL STATE OF CALIFORNIA

AQX PREPARES THIS SET OF PLANS FOR THE STRUCTURAL ELEMENTS OF THE CONCRETE SLAB AND CONCRETE ANCHOR BEAM. SEE MANUFACTURE SPECIFICATIONS FOR PROPERTIES AND STRENGTHS OF THE SEPTIC TANK AND ASSOCIATED PARTS.

DRAWN BY: KL JOB NO. 2017-XXX DATE: AUGUST 14, 2017
REVIEWED BY: XQ

REVISION:

REVISION:	DATE: / BY:	DESCRIPTION:

SITE INFORMATION:

ES 12
SEPTIC TANK DESIGN

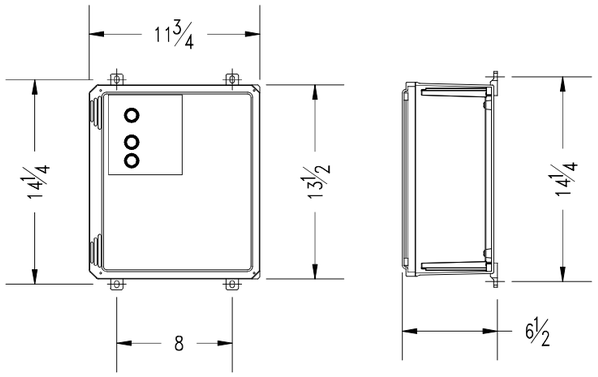
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GENERAL NOTES

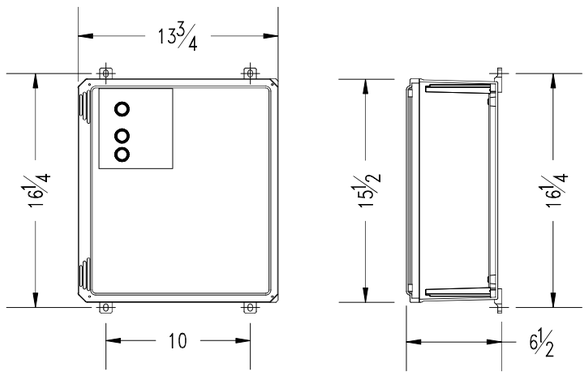
SHEET NUMBER:

IN12-01

STANDARD CONTROLLER
(NO PUMP/REMOTE PUMP RELAYS)

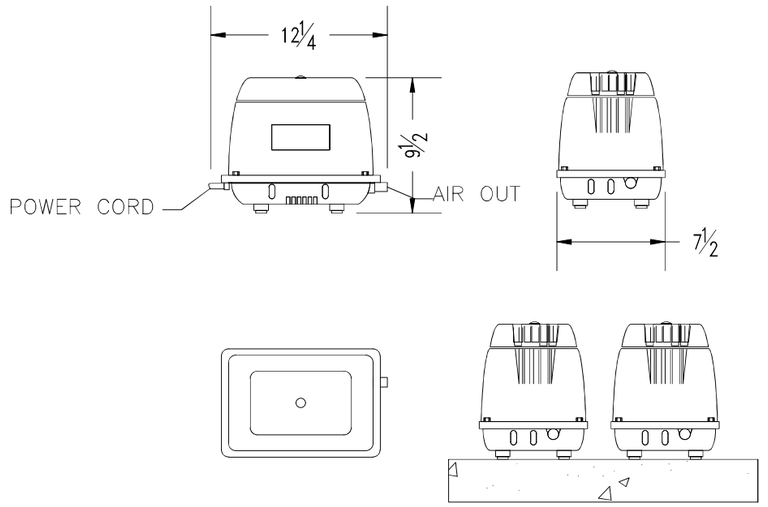


LARGE CONTROLLER
(INTERNAL PUMP RELAYS)



CONTROLLER DETAILS | SCALE 1:5 | 1

AIR COMPRESSOR



1. COMPRESSORS SHOULD BE LOCATED IN A WELL–VENTILATED SHADY PLACE.
   AN INDOOR LOCATION LIKE A SHED OR GARAGE IS IDEAL.
2. COMPRESSORS MUST BE ELEVATED OFF THE GROUND SO THAT SURFACE WATER CANNOT ENTER THE ELECTRICAL TERMINALS WITHIN THE COMPRESSOR.
3. COMPRESSORS SHOULD BE LOCATED AS CLOSE TO THE TANK AS POSSIBLE. DO NOT EXCEED 50' DISTANCE FROM TANK.
4. 1" SCH 80 PVC PIPE IS REQUIRED FOR PLUMBING THE COMPRESSOR(S) TO THE MIDDLE RISER; ONE PIPE PER COMPRESSOR.
5. THE PIPE MUST FALL TOWARD THE TANK WITH NO LOW POINTS.
6. COMPRESSORS MUST BE LOCATED AT THE SAME ELEVATION OR HIGHER THAN THE LID OF THE MIDDLE RISER.

COMPRESSORS | SCALE 1:5 | 2

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QIANG XIAO
NO. S. 5289
EXP. 6/30/20
STRUCTURAL
STATE OF CALIFORNIA

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DRAWN BY: KL JOB NO. 2017-XXX DATE: AUGUST 14, 2017
REVIEWED BY: XQ

REVISION:

REVISION:	DATE: / BY:	DESCRIPTION:

SITE INFORMATION:

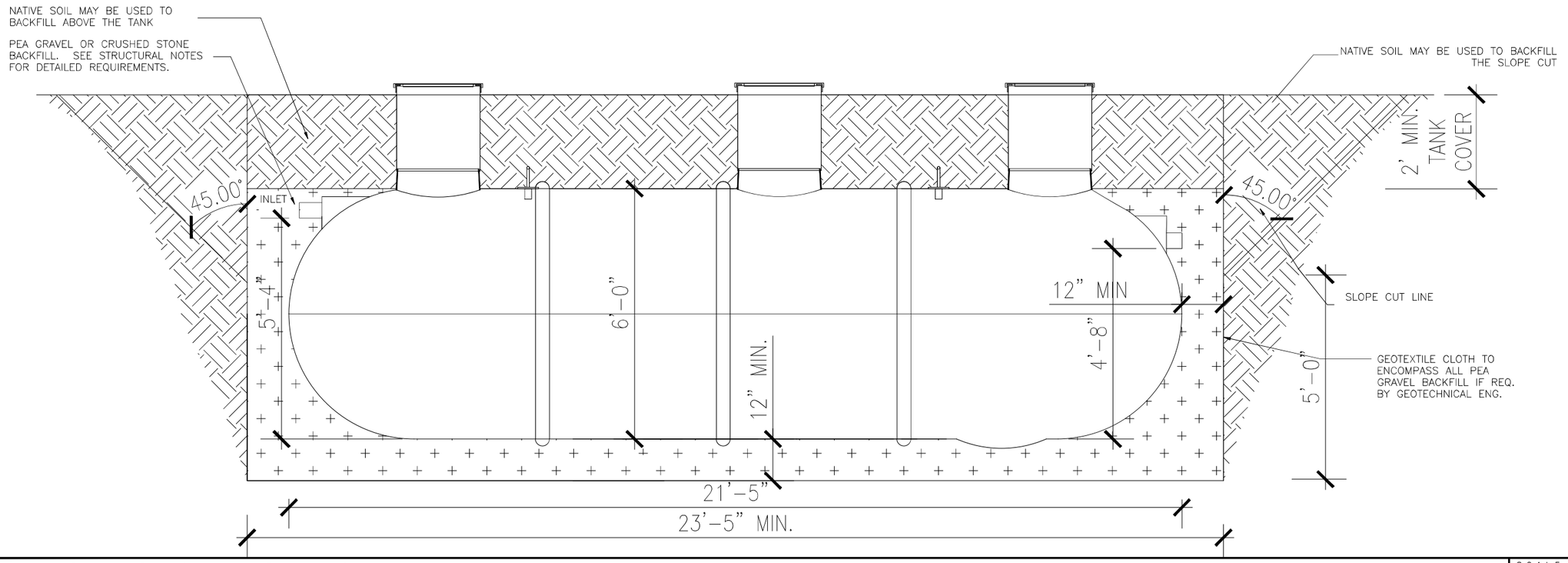
ES 12
SEPTIC TANK DESIGN

SHEET TITLE:

CONTROLLER & COMPRESSOR DETAILS

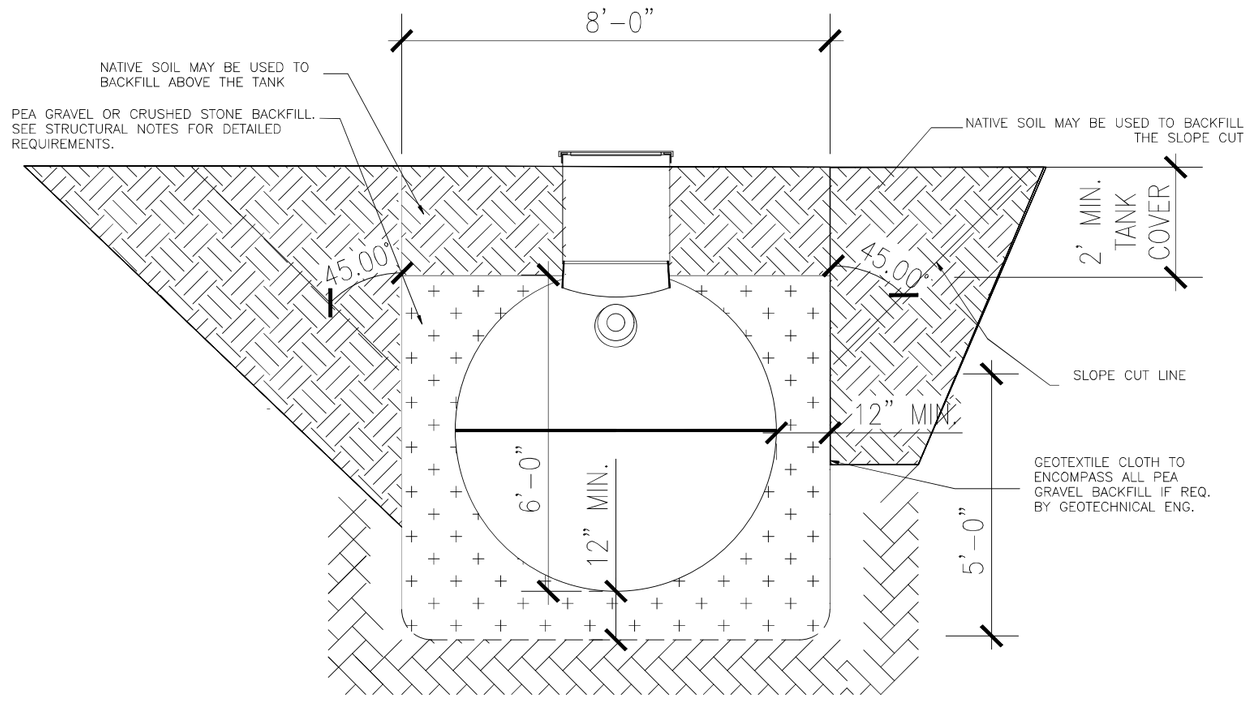
SHEET NUMBER:

IN12-02



TANK INSTALLATION LAYOUT (ELEVATION VIEW)

SCALE 1:16 | 1



NOTE:
1. THE DESIGNED TANK BURY DEPTH IS 2' TO 6'. ANY TANK BURIED BEYOND THAT RANGE NEEDS TO BE ANALYZED BY A CIVIL/GEOTECHNICAL ENGINEER.
2. GEOLOGIST OR GEOTECHNICAL ENG. SHOULD DETERMINE IF ANCHORS AND TEXTILE FILTER ARE REQUIRED.

NOTE: VERTICAL CUT FOR FILL HEIGHT CAN BE DONE IF LOCAL CODE ALLOWS OR SOIL ENGINEER APPROVES.

SLOPE CUT DEPTH PER LOCAL CODE OR SOIL REPORT.

TANK INSTALLATION LAYOUT (TRANSVERSE VIEW)

SCALE 1:16 | 2

MicroSepTec

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DRAWN BY: KL JOB NO. 2017-XXX DATE: AUGUST 14, 2017
REVIEWED BY: XQ

REVISION:

REVISION:	DATE: / BY:	DESCRIPTION:

SITE INFORMATION:

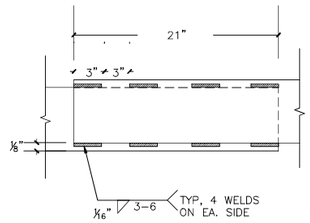
ES 12
SEPTIC TANK DESIGN

SHEET TITLE:

INSTALLATION DRAWING
NON TRAFFIC

SHEET NUMBER:

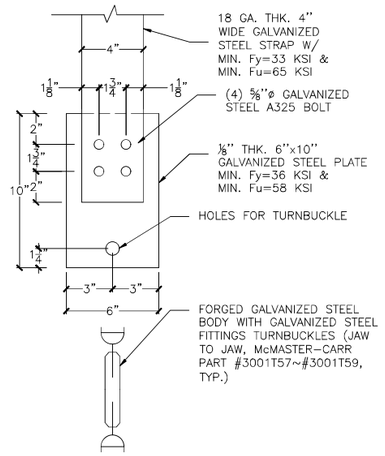
IN12-03



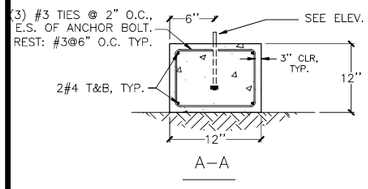
STRIP SPLICE DETAIL

SCALE: NONE | 4

TIE DOWN AND ANCHOR BEAM ARE DESIGNED BASED ON THE TANK BEING 80% FULL OF SUBMERGED



ELEVATION VIEW

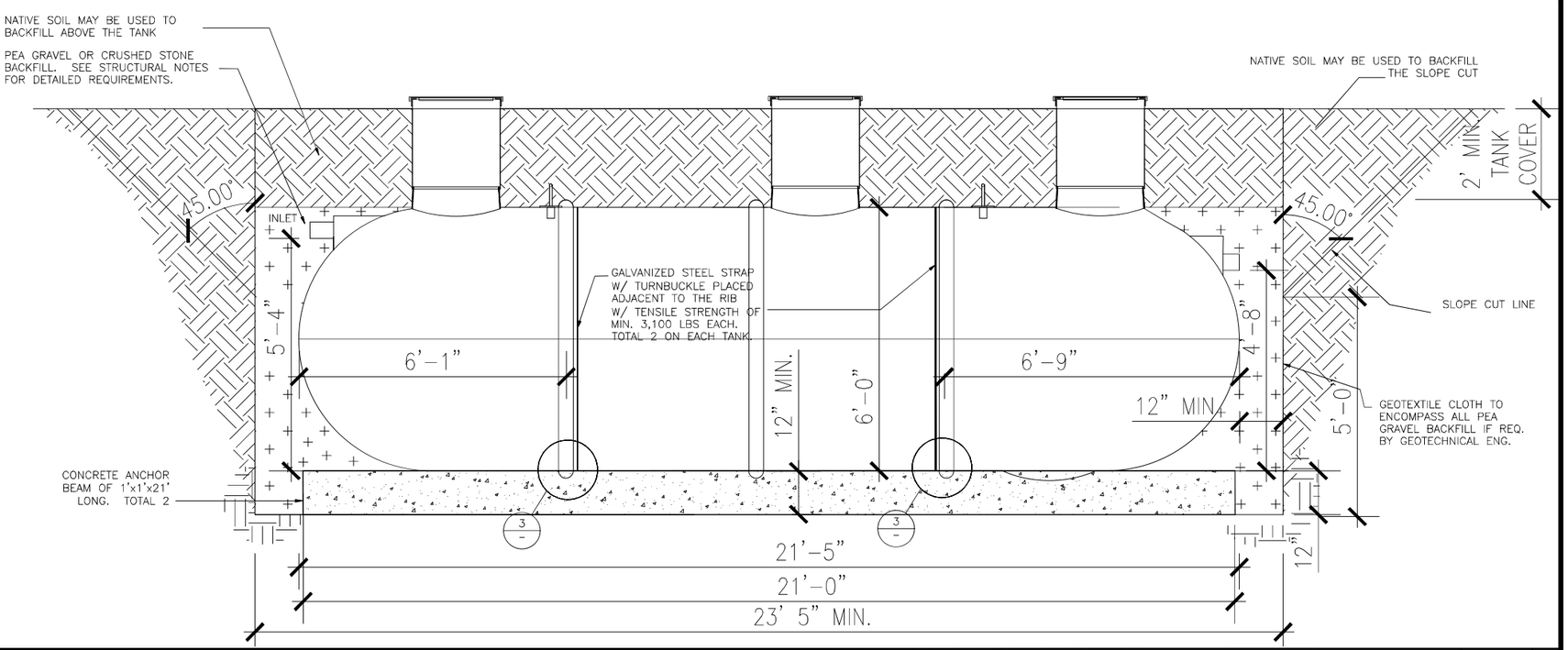


A–A

NOTE: ABOVE HARDWARE IS NOT INTENDED TO USE IN CORROSIVE SOIL. GEOLOGIST OR GEOGRAPHICAL ENGINEER SHOULD DETERMINE IF CORROSIVE RESISTANT MATERIAL(SUCH AS STAINLESS STEEL, OR SPECIAL COATING) SHOULD BE USED IN ANY STEEL PARTS EXPOSED IN THE SOIL. SEE SHEET IN12-01.

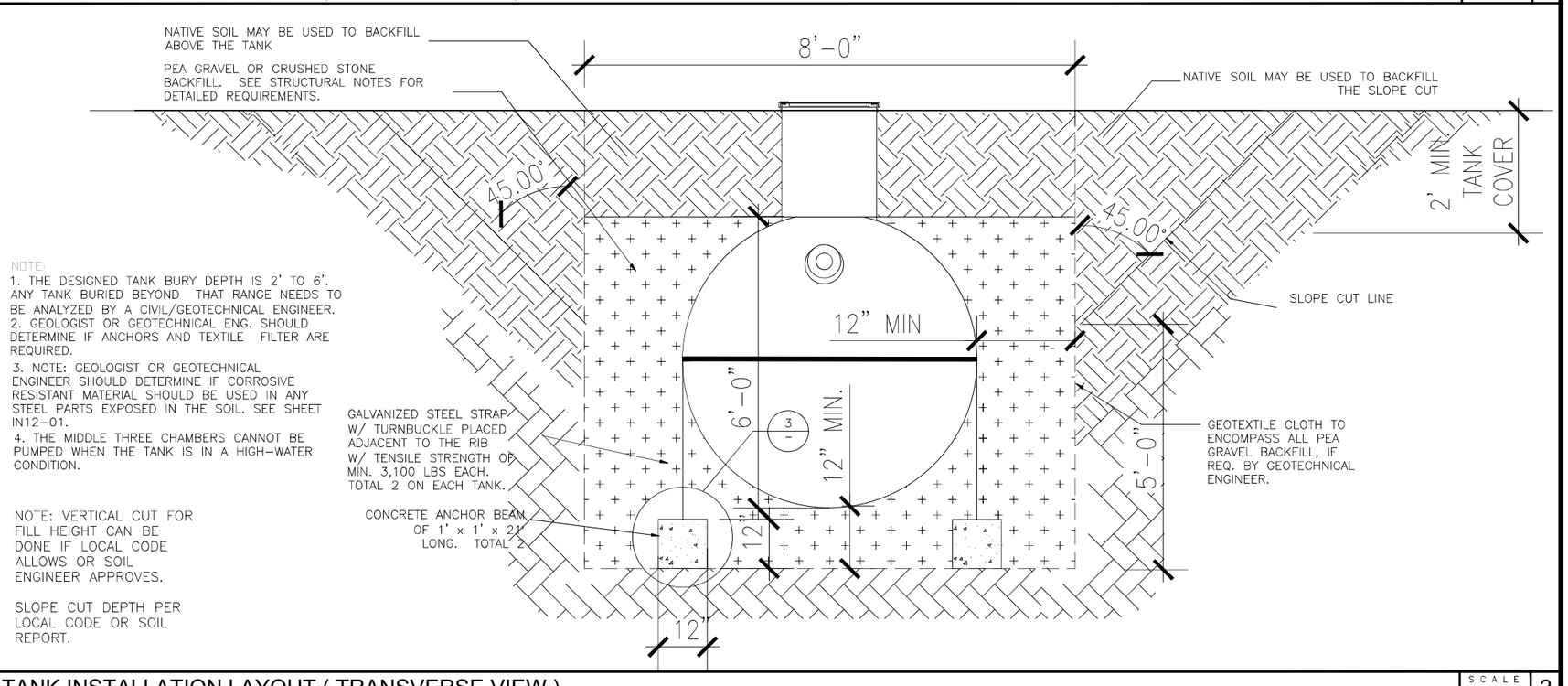
ANCHOR DETAIL

SCALE: NONE | 3



TANK INSTALLATION LAYOUT (ELEVATION VIEW)

SCALE: 1:16 | 1



NOTE:
1. THE DESIGNED TANK BURY DEPTH IS 2' TO 6'. ANY TANK BURIED BEYOND THAT RANGE NEEDS TO BE ANALYZED BY A CIVIL/GEOTECHNICAL ENGINEER.
2. GEOLOGIST OR GEOTECHNICAL ENG. SHOULD DETERMINE IF ANCHORS AND TEXTILE FILTER ARE REQUIRED.
3. NOTE: GEOLOGIST OR GEOTECHNICAL ENGINEER SHOULD DETERMINE IF CORROSIVE RESISTANT MATERIAL SHOULD BE USED IN ANY STEEL PARTS EXPOSED IN THE SOIL. SEE SHEET IN12-01.
4. THE MIDDLE THREE CHAMBERS CANNOT BE PUMPED WHEN THE TANK IS IN A HIGH-WATER CONDITION.

NOTE: VERTICAL CUT FOR FILL HEIGHT CAN BE DONE IF LOCAL CODE ALLOWS OR SOIL ENGINEER APPROVES.

SLOPE CUT DEPTH PER LOCAL CODE OR SOIL REPORT.

TANK INSTALLATION LAYOUT (TRANSVERSE VIEW)

SCALE: 1:16 | 2

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REGISTERED PROFESSIONAL ENGINEER — JIANG XIAO — NO. S. 5289 — EXP. 6/30/20 — STRUCTURAL — STATE OF CALIFORNIA

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DRAWN BY: KL JOB NO. 2017-XXX DATE: AUGUST 14, 2017
REVIEWED BY: XQ

REVISION:

REVISION:	DATE: BY:	DESCRIPTION:

SITE INFORMATION:

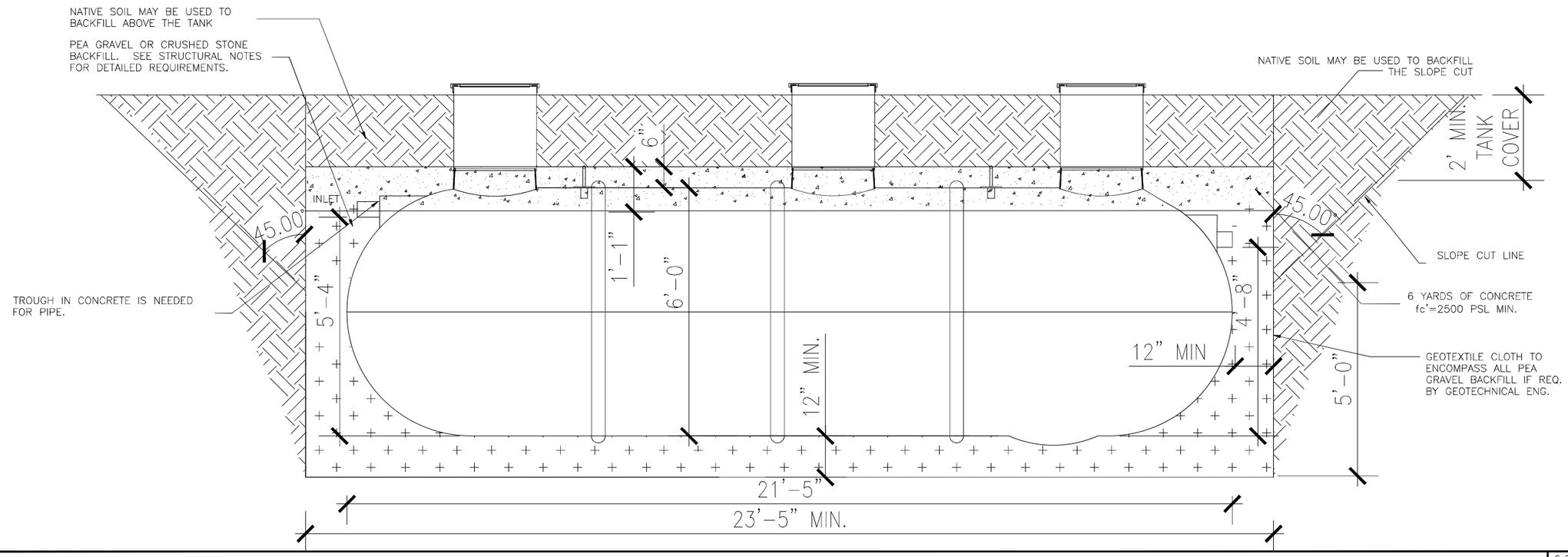
ES 12
SEPTIC TANK DESIGN

SHEET TITLE:

INSTALLATION DRAWING NON TRAFFIC WITH ANCHORS

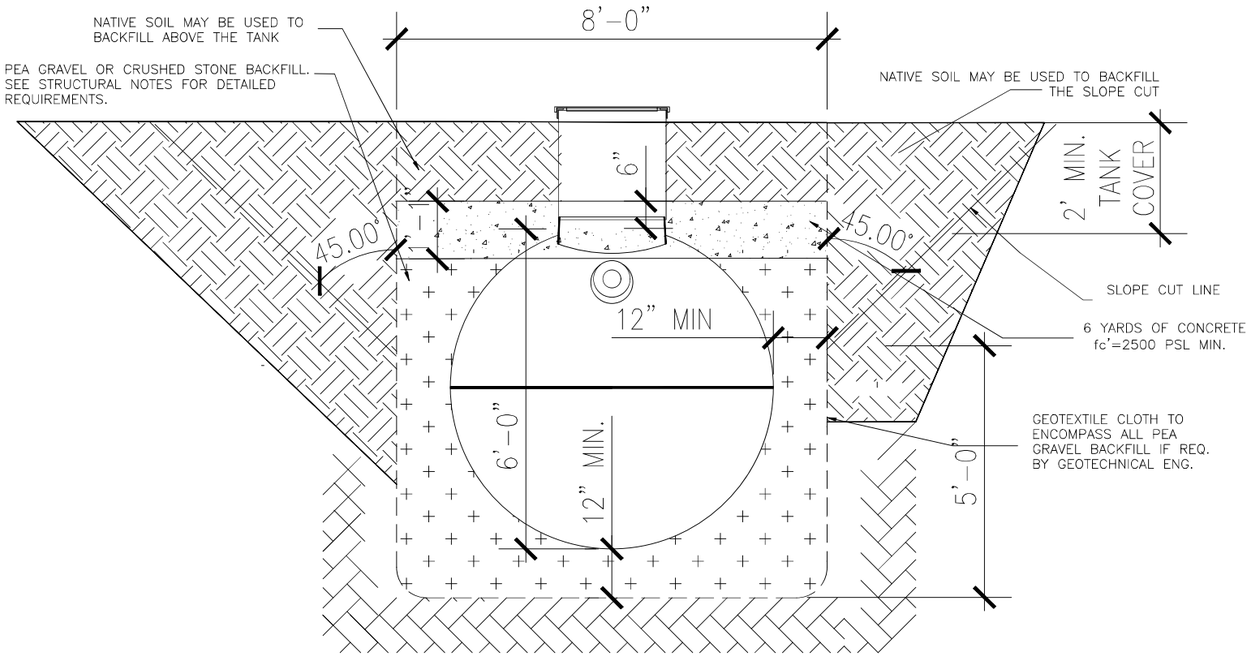
SHEET NUMBER:

IN12-04



TANK INSTALLATION LAYOUT (ELEVATION VIEW)

SCALE 1:16 | 1



NOTE:
1. THE DESIGNED TANK BURY DEPTH IS 2' TO 6'. ANY TANK BURIED BEYOND THAT RANGE NEEDS TO BE ANALYZED BY A CIVIL/GEOTECHNICAL ENGINEER.
2. GEOLOGIST OR GEOTECHNICAL ENG. SHOULD DETERMINE IF ANCHORS AND TEXTILE FILTER ARE REQUIRED.
3. THE MIDDLE THREE CHAMBERS CANNOT BE PUMPED WHEN THE TANK IS IN A HIGH-WATER CONDITION.

NOTE: VERTICAL CUT FOR FILL HEIGHT CAN BE DONE IF LOCAL CODE ALLOWS OR SOIL ENGINEER APPROVES.

SLOPE CUT DEPTH PER LOCAL CODE OR SOIL REPORT.

TANK INSTALLATION LAYOUT (TRANSVERSE VIEW)

SCALE 1:16 | 2

MicroSepTec

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REVISION:	DATE: BY:	DESCRIPTION:

SITE INFORMATION:

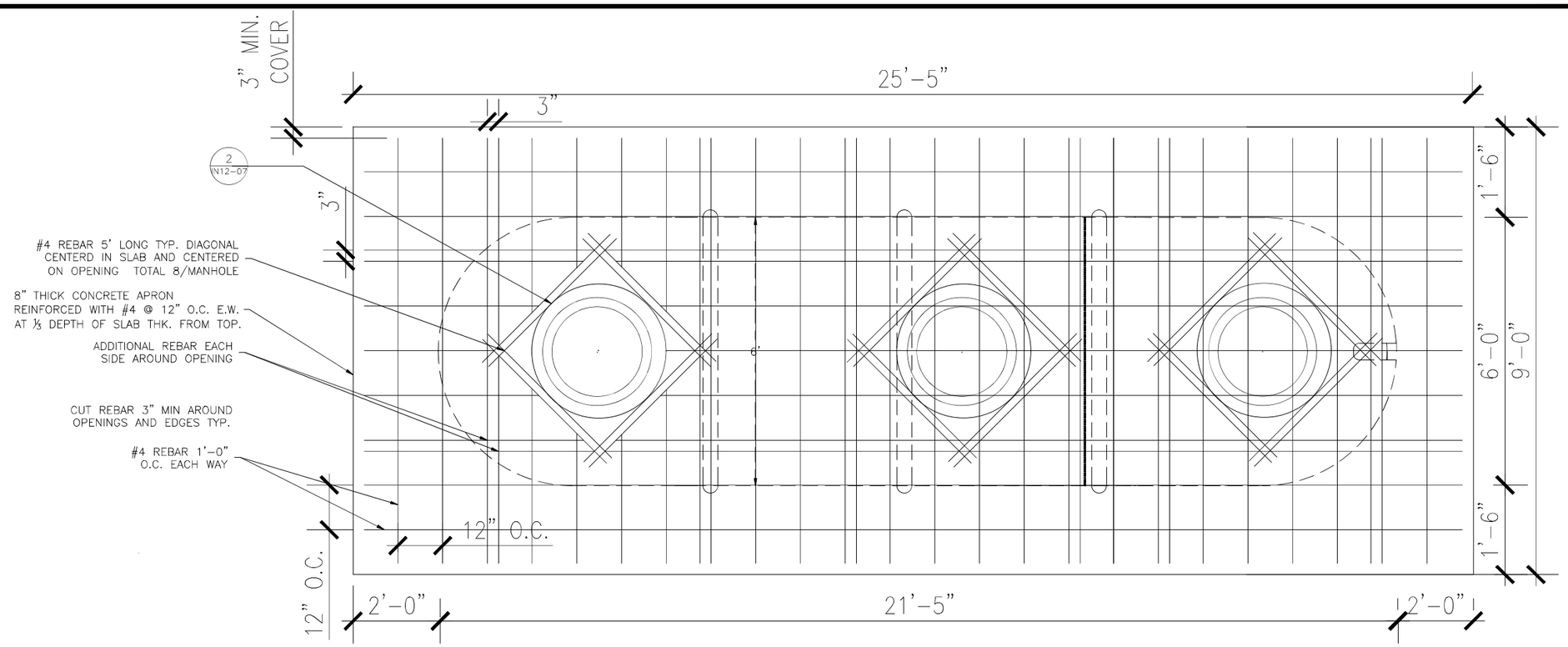
ES 12
SEPTIC TANK DESIGN

SHEET TITLE:

INSTALLATION DRAWING
ANTI-FLOTATION COLLAR

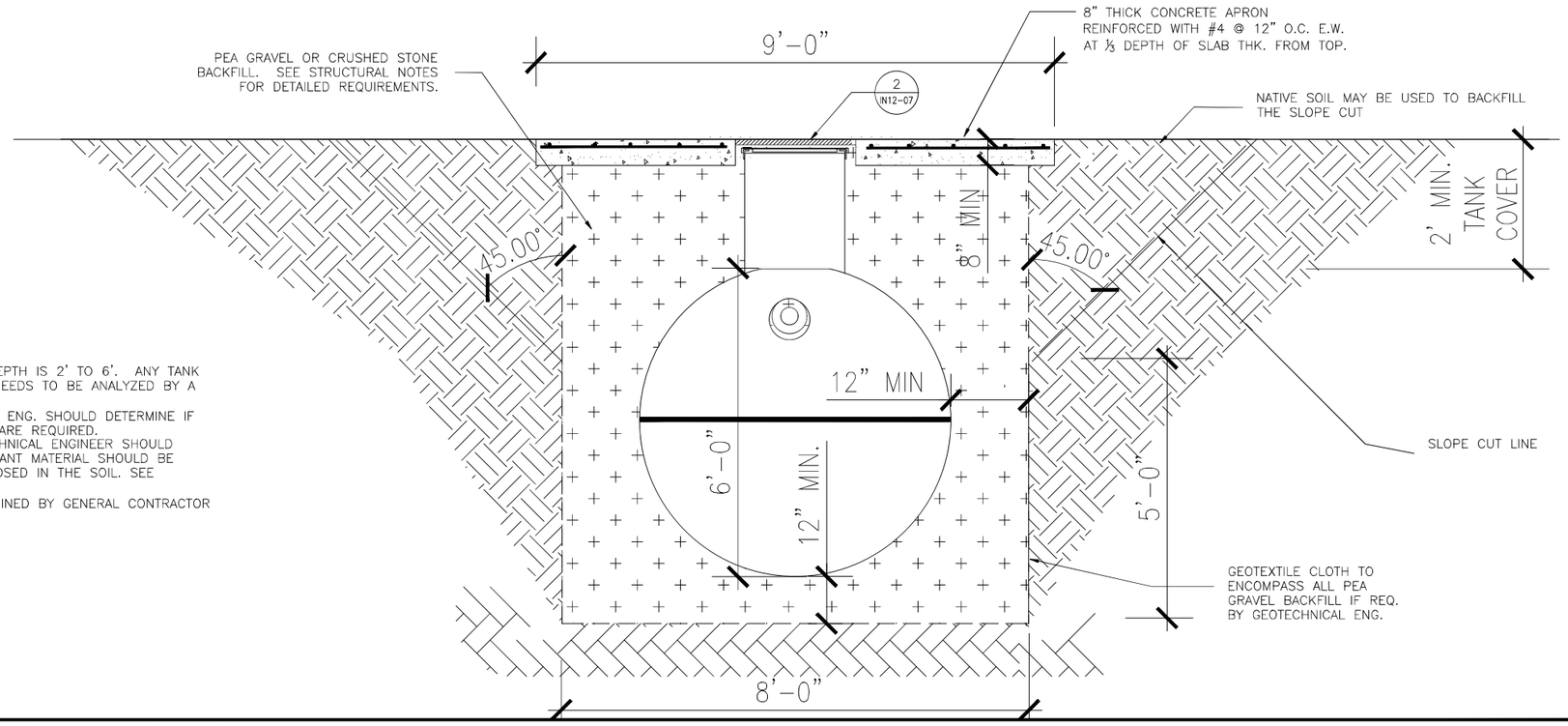
SHEET NUMBER:

IN12-05



TANK INSTALLATION LAYOUT (PLAN VIEW)

SCALE 1:16 | 1



NOTE:
1. THE DESIGNED TANK BURY DEPTH IS 2' TO 6'. ANY TANK BURIED BEYOND THAT RANGE NEEDS TO BE ANALYZED BY A CIVIL/GEOTECHNICAL ENGINEER.
2. GEOLOGIST OR GEOTECHNICAL ENG. SHOULD DETERMINE IF ANCHORS AND TEXTILE FILTER ARE REQUIRED.
3. NOTE: GEOLOGIST OR GEOTECHNICAL ENGINEER SHOULD DETERMINE IF CORROSIVE RESISTANT MATERIAL SHOULD BE USED IN ANY STEEL PARTS EXPOSED IN THE SOIL. SEE SHEET IN12-01.
4. CONTROL JOINTS ARE DETERMINED BY GENERAL CONTRACTOR

NOTE: VERTICAL CUT FOR FILL HEIGHT CAN BE DONE IF LOCAL CODE ALLOWS OR SOIL ENGINEER APPROVES.

SLOPE CUT DEPTH PER LOCAL CODE OR SOIL REPORT.

TANK INSTALLATION LAYOUT (TRANSVERSE VIEW)

SCALE 1:16 | 2

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SITE INFORMATION:

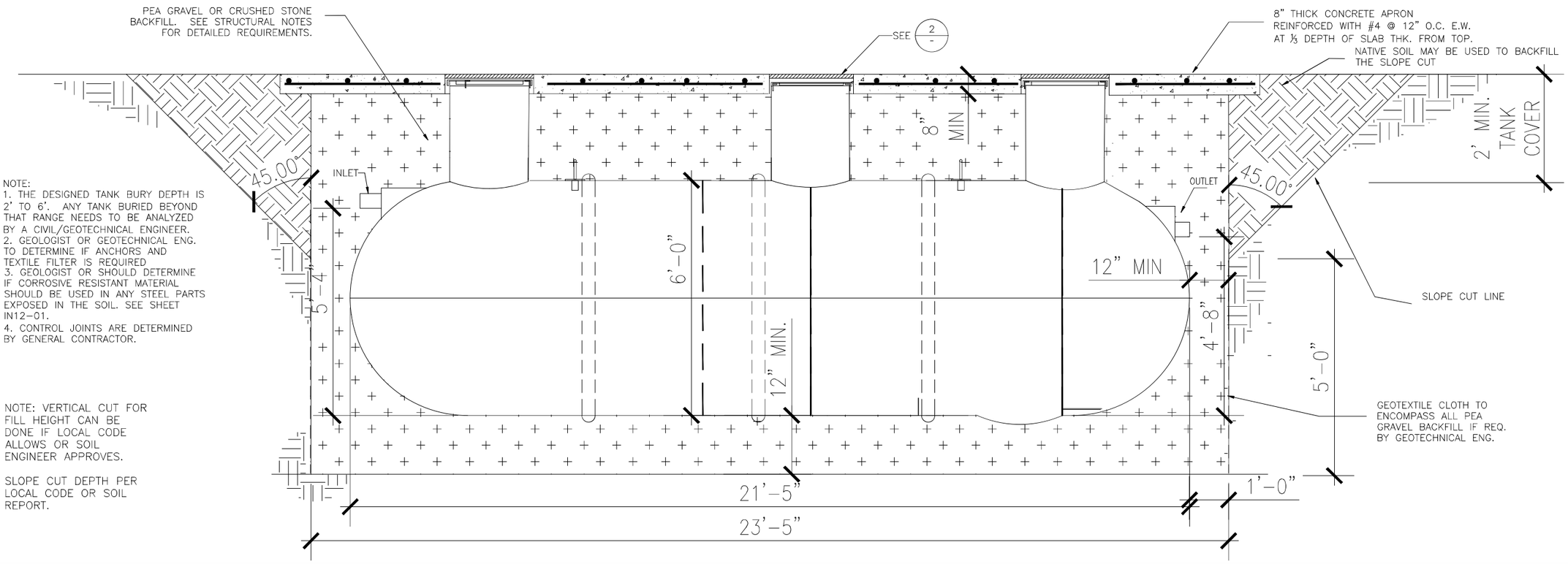
ES 12
SEPTIC TANK DESIGN

SHEET TITLE:

INSTALLATION DRAWING
H-20 TRAFFIC SLAB

SHEET NUMBER:

IN12-06



NOTE:
1. THE DESIGNED TANK BURY DEPTH IS 2' TO 6'. ANY TANK BURIED BEYOND THAT RANGE NEEDS TO BE ANALYZED BY A CIVIL/GEOTECHNICAL ENGINEER.
2. GEOLOGIST OR GEOTECHNICAL ENG. TO DETERMINE IF ANCHORS AND TEXTILE FILTER IS REQUIRED
3. GEOLOGIST OR SHOULD DETERMINE IF CORROSIVE RESISTANT MATERIAL SHOULD BE USED IN ANY STEEL PARTS EXPOSED IN THE SOIL. SEE SHEET IN12-01.
4. CONTROL JOINTS ARE DETERMINED BY GENERAL CONTRACTOR.

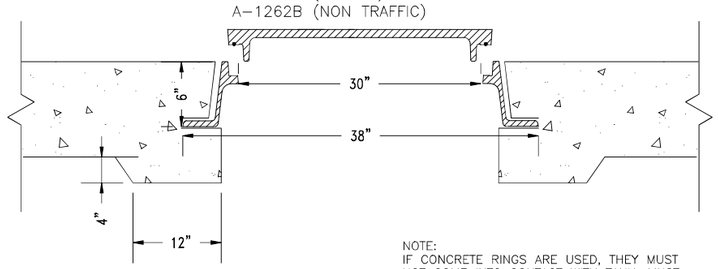
NOTE: VERTICAL CUT FOR FILL HEIGHT CAN BE DONE IF LOCAL CODE ALLOWS OR SOIL ENGINEER APPROVES.

SLOPE CUT DEPTH PER LOCAL CODE OR SOIL REPORT.

TANK INSTALLATION LAYOUT (ELEVATION VIEW)

SCALE 1:16 — 1

30" WATER-TIGHT MANHOLE. CAST IRON COVER AND FRAME. H-20-RATED
ALHAMBRA FOUNDRY OR EQUAL.
A-1252B (TRAFFIC)
A-1262B (NON TRAFFIC)



NOTE:
IF CONCRETE RINGS ARE USED, THEY MUST NOT COME INTO CONTACT WITH TANK, MUST BE A MINIMUM OF 18" ABOVE THE TOP OF THE TANK, AND MUST BE TIED TO SLAB WITH REBAR.

MANHOLE BASE & COVER

SCALE NONE — 2

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REVISION:	DATE: / BY:	DESCRIPTION:

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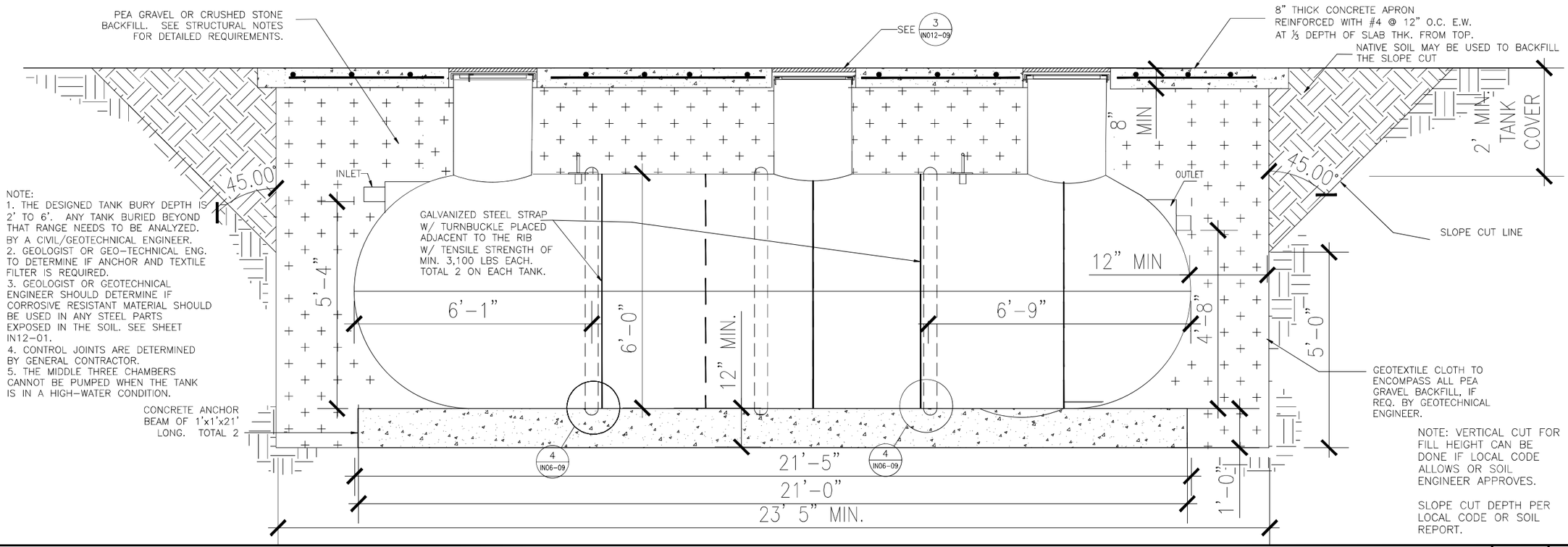
ES 12
SEPTIC TANK DESIGN

SHEET TITLE:

INSTALLATION DRAWING
H-20 TRAFFIC SLAB

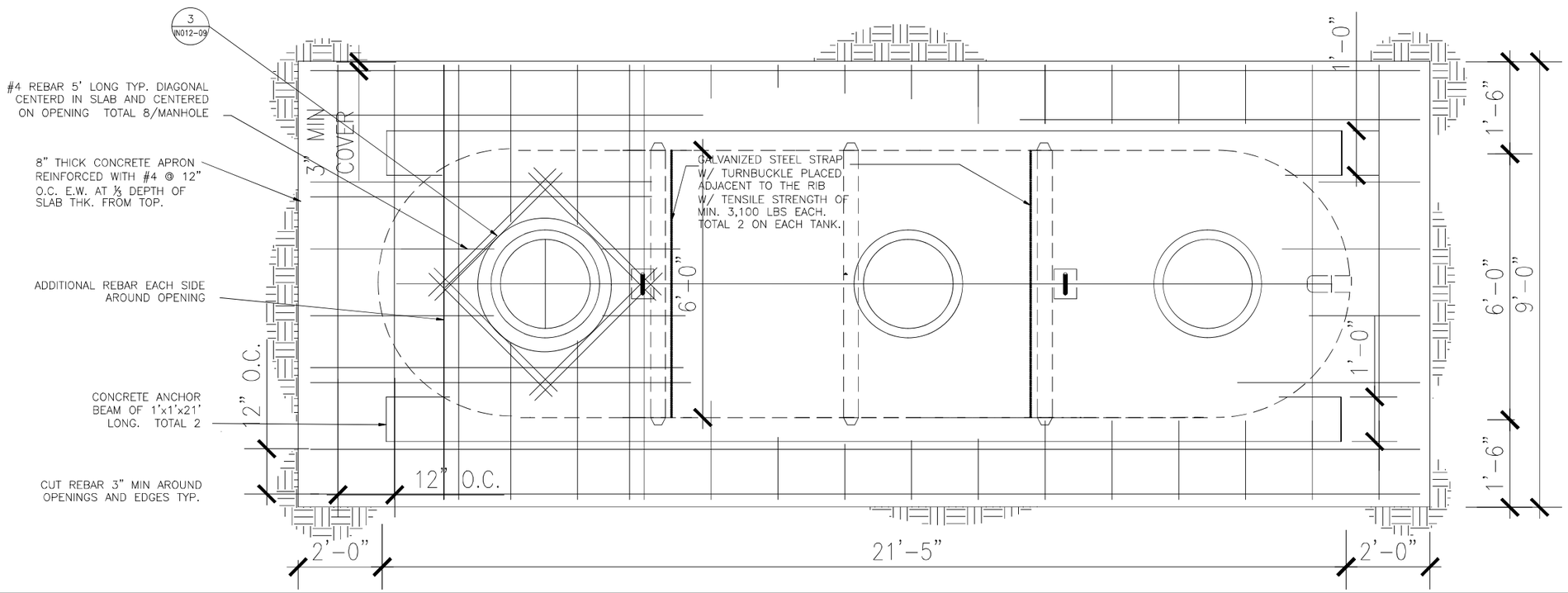
SHEET NUMBER:

IN12-07



TANK INSTALLATION LAYOUT (ELEVATION VIEW)

SCALE 1:16 | 1



TANK INSTALLATION LAYOUT (PLAN VIEW)

SCALE 1:16 | 2

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REVISION:

REVISION:	DATE: BY:	DESCRIPTION:

SITE INFORMATION:

ES 12
SEPTIC TANK DESIGN

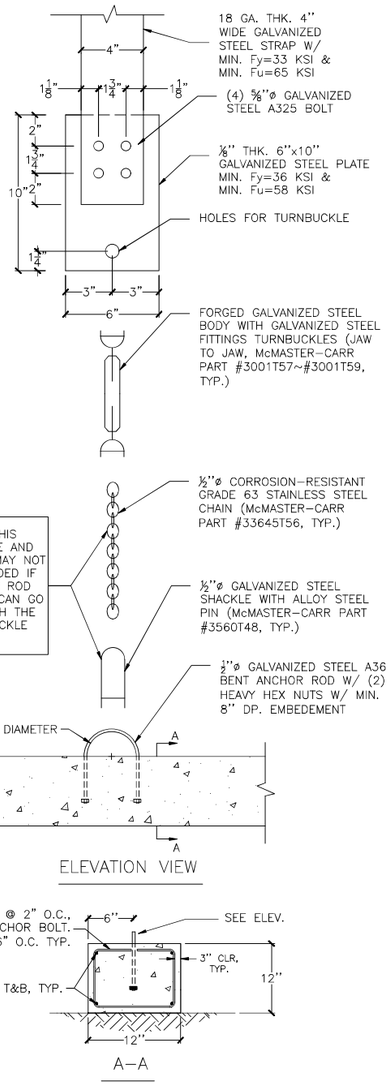
SHEET TITLE:

INSTALLATION DRAWING H-20 TRAFFIC SLAB WITH ANCHORS

SHEET NUMBER:

IN12-08

TIE DOWN AND ANCHOR BEAM ARE DESIGNED BASED ON THE TANK BEING 80% FULL OF SUBMERGED

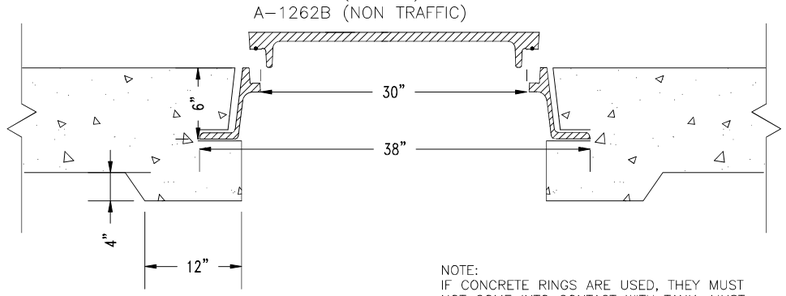


NOTE: ABOVE HARDWARE IS NOT INTENDED TO USE IN CORROSIVE SOIL. GEOLOGIST OR GEOGRAPHICAL ENGINEER SHOULD DETERMINE IF CORROSIVE RESISTANT MATERIAL(SUCH AS STAINLESS STEEL, OR SPECIAL COATING) SHOULD BE USED IN ANY STEEL PARTS EXPOSED IN THE SOIL. SEE SHEET IN12-01.

ANCHOR DETAIL

SCALE NONE | 4

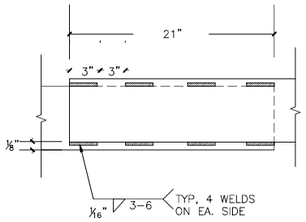
30" WATER-TIGHT MANHOLE. CAST IRON COVER AND FRAME. H-20-RATED ALHAMBRA FOUNDRY OR EQUAL.
A-1252B (TRAFFIC)
A-1262B (NON TRAFFIC)



NOTE:
IF CONCRETE RINGS ARE USED, THEY MUST NOT COME INTO CONTACT WITH TANK, MUST BE A MINIMUM OF 18" ABOVE THE TOP OF THE TANK, AND MUST BE TIED TO SLAB WITH REBAR.

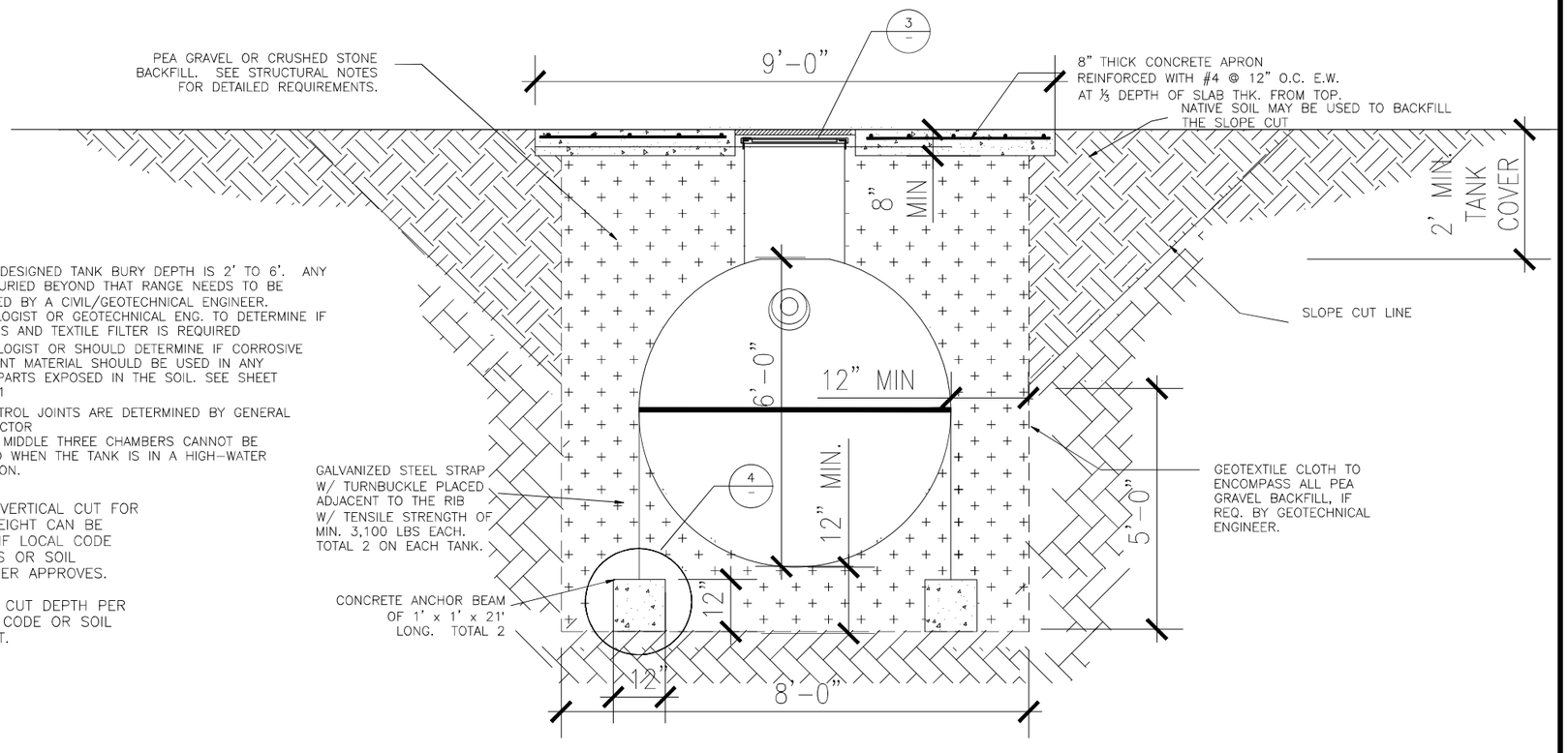
MANHOLE BASE AND COVER

SCALE NONE | 3



STRIP SPLICE DETAIL

SCALE NONE | 2



NOTE:
1. THE DESIGNED TANK BURY DEPTH IS 2' TO 6'. ANY TANK BURIED BEYOND THAT RANGE NEEDS TO BE ANALYZED BY A CIVIL/GEOTECHNICAL ENGINEER.
2. GEOLOGIST OR GEOTECHNICAL ENG. TO DETERMINE IF ANCHORS AND TEXTILE FILTER IS REQUIRED
3. GEOLOGIST OR SHOULD DETERMINE IF CORROSIVE RESISTANT MATERIAL SHOULD BE USED IN ANY STEEL PARTS EXPOSED IN THE SOIL. SEE SHEET IN12-01
4. CONTROL JOINTS ARE DETERMINED BY GENERAL CONTRACTOR
5. THE MIDDLE THREE CHAMBERS CANNOT BE PUMPED WHEN THE TANK IS IN A HIGH-WATER CONDITION.

NOTE: VERTICAL CUT FOR FILL HEIGHT CAN BE DONE IF LOCAL CODE ALLOWS OR SOIL ENGINEER APPROVES.

SLOPE CUT DEPTH PER LOCAL CODE OR SOIL REPORT.

TANK INSTALLATION LAYOUT (TRANSVERSE VIEW)

SCALE 1:16 | 1

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REGISTERED PROFESSIONAL ENGINEER QIANG XIAO NO. S. 5289 EXP. 6/30/20 STRUCTURAL STATE OF CALIFORNIA

AQX PREPARES THIS SET OF PLANS FOR THE STRUCTURAL ELEMENTS OF THE CONCRETE SLAB AND CONCRETE ANCHOR BEAM. SEE MANUFACTURE SPECIFICATIONS FOR PROPERTIES AND STRENGTHS OF THE SEPTIC TANK AND ASSOCIATED PARTS.

DRAWN BY: KL JOB NO. 2017-XXX DATE: AUGUST 14, 2017
REVIEWED BY: XQ

REVISION:

REVISION:	DATE: BY:	DESCRIPTION:

SITE INFORMATION:

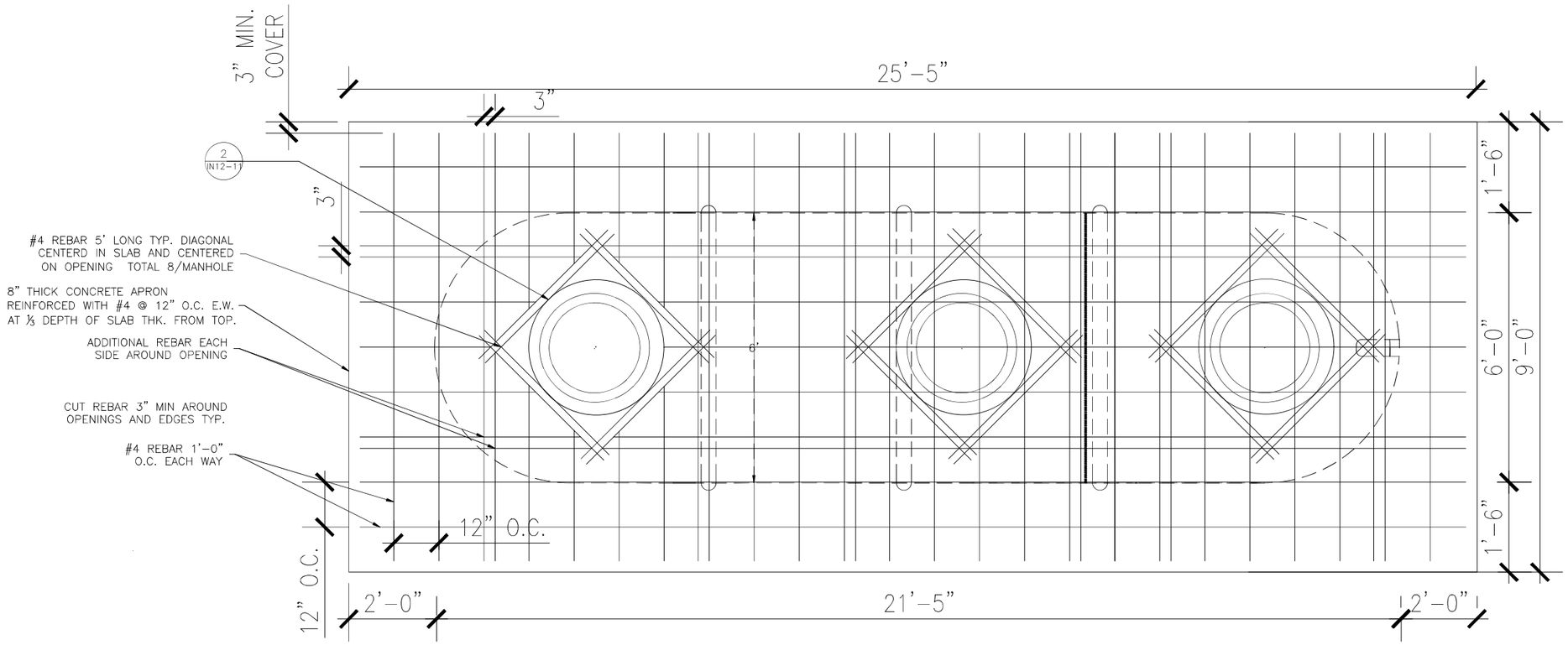
ES 12
SEPTIC TANK DESIGN

SHEET TITLE:

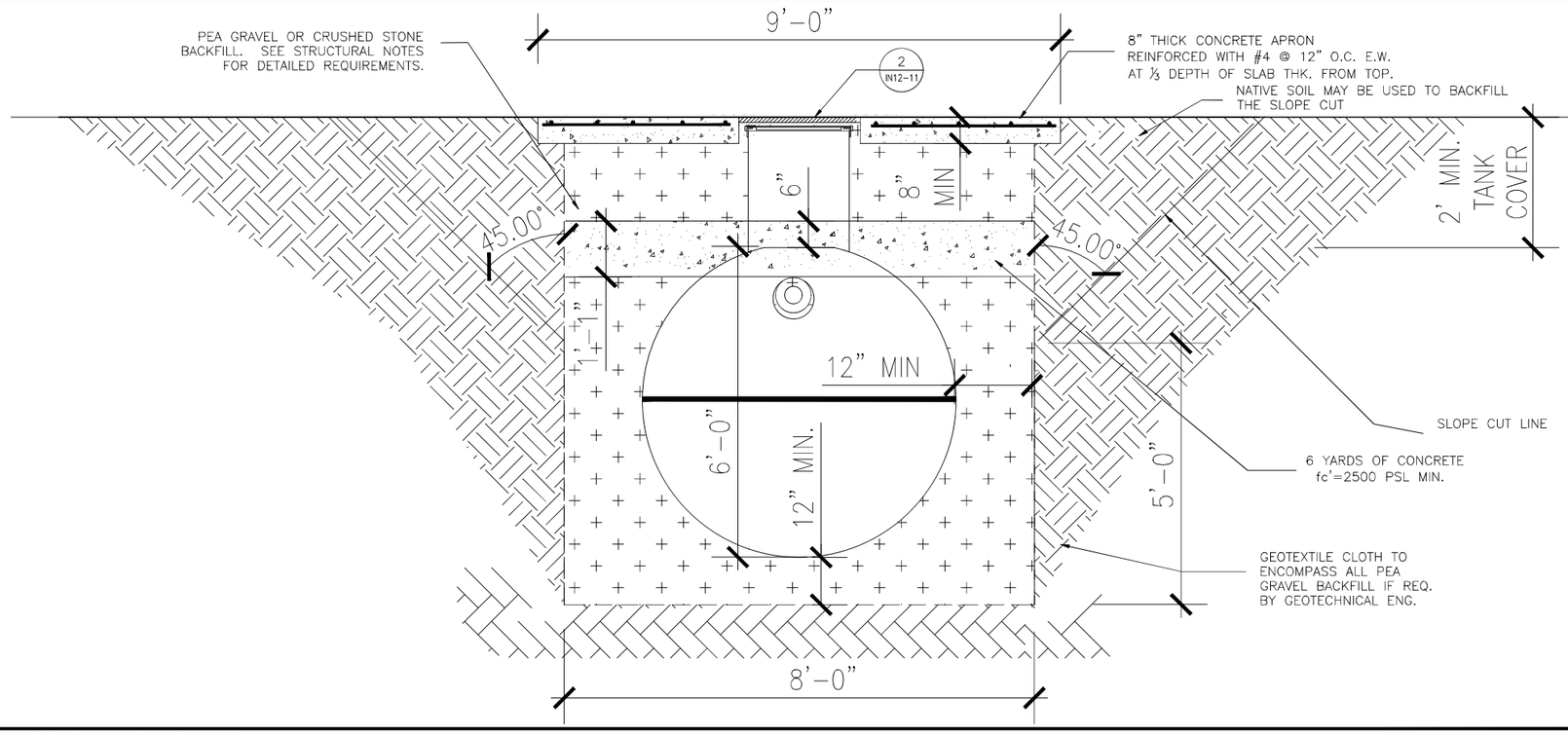
INSTALLATION DRAWING H-20 TRAFFIC SLAB WITH ANCHORS

SHEET NUMBER:

IN12-09



TANK INSTALLATION LAYOUT (PLAN VIEW) — SCALE 1:16 — 1



NOTE:
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3. NOTE: GEOLOGIST OR GEOTECHNICAL ENGINEER SHOULD DETERMINE IF CORROSIVE RESISTANT MATERIAL SHOULD BE USED IN ANY STEEL PARTS EXPOSED IN THE SOIL. SEE SHEET IN12-01.
4. CONTROL JOINTS ARE DETERMINED BY GENERAL CONTRACTOR.
5. THE MIDDLE THREE CHAMBERS CANNOT BE PUMPED WHEN THE TANK IS IN A HIGH-WATER CONDITION.

NOTE: VERTICAL CUT FOR FILL HEIGHT CAN BE DONE IF LOCAL CODE ALLOWS OR SOIL ENGINEER APPROVES.

SLOPE CUT DEPTH PER LOCAL CODE OR SOIL REPORT.

TANK INSTALLATION LAYOUT (TRANSVERSE VIEW) — SCALE 1:16 — 2

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DRAWN BY: KL JOB NO. 2017-XXX DATE: AUGUST 14, 2017
REVIEWED BY: XQ

REVISION:

REVISION:	DATE: / BY:	DESCRIPTION:

SITE INFORMATION:

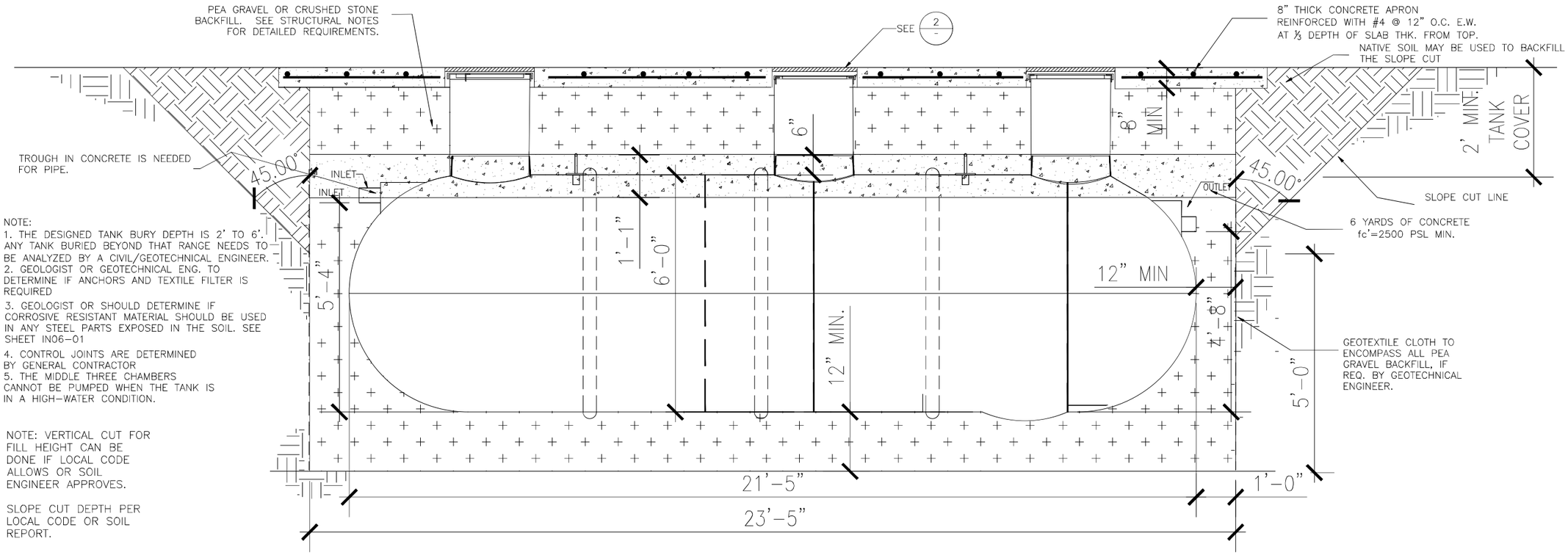
ES 12
SEPTIC TANK DESIGN

SHEET TITLE:

INSTALLATION DRAWING
H-20 TRAFFIC SLAB
ANTI-FLOTATION COLLAR

SHEET NUMBER:

IN12-10



NOTE:
1. THE DESIGNED TANK BURY DEPTH IS 2' TO 6'. ANY TANK BURIED BEYOND THAT RANGE NEEDS TO BE ANALYZED BY A CIVIL/GEOTECHNICAL ENGINEER.
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3. GEOLOGIST OR SHOULD DETERMINE IF CORROSIVE RESISTANT MATERIAL SHOULD BE USED IN ANY STEEL PARTS EXPOSED IN THE SOIL. SEE SHEET IN06-01
4. CONTROL JOINTS ARE DETERMINED BY GENERAL CONTRACTOR
5. THE MIDDLE THREE CHAMBERS CANNOT BE PUMPED WHEN THE TANK IS IN A HIGH-WATER CONDITION.

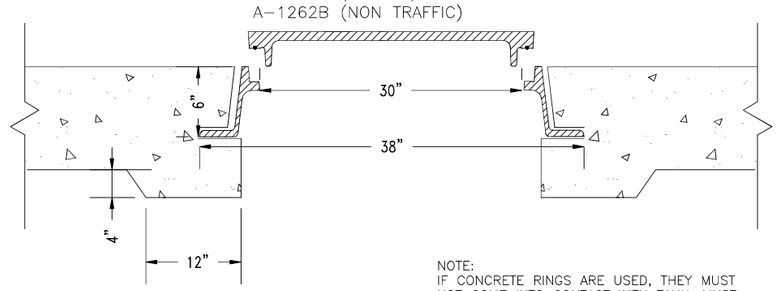
NOTE: VERTICAL CUT FOR FILL HEIGHT CAN BE DONE IF LOCAL CODE ALLOWS OR SOIL ENGINEER APPROVES.

SLOPE CUT DEPTH PER LOCAL CODE OR SOIL REPORT.

TANK INSTALLATION LAYOUT (ELEVATION VIEW)

SCALE 1:16 — 1

30" WATER-TIGHT MANHOLE. CAST IRON COVER AND FRAME. H-20-RATED ALHAMBRA FOUNDRY OR EQUAL.
A-1252B (TRAFFIC)
A-1262B (NON TRAFFIC)



NOTE:
IF CONCRETE RINGS ARE USED, THEY MUST NOT COME INTO CONTACT WITH TANK, MUST BE A MINIMUM OF 18" ABOVE THE TOP OF THE TANK, AND MUST BE TIED TO SLAB WITH REBAR.

MANHOLE BASE & COVER

SCALE NONE — 2

MicroSepTec

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DRAWN BY: KL JOB NO. 2017-XXX DATE: AUGUST 14, 2017
REVIEWED BY: XQ

REVISION:

REVISION:	DATE: / BY:	DESCRIPTION:

SITE INFORMATION:

ES 12
SEPTIC TANK DESIGN

SHEET TITLE:

INSTALLATION DRAWING
H-20 TRAFFIC SLAB
ANTI-FLOTATION COLLAR

SHEET NUMBER:

IN12-11