

DOCUMENT 00 91 13**Addendum Number One**

DATE: May 16, 2024

PROJECT: ITD Fairfield HUD Manufactured Home Units & Site Development
Fairfield, Idaho

PROJECT NO.: 24626

OWNER: Idaho Transportation Department
11331 W Chinden Department
Boise, Idaho 83714

ARCHITECT: Myers Anderson Architects, PLLC
122 South Main Street, Suite 1
Pocatello, Idaho 83204

TO: Prospective Bidders

This Addendum forms a part of the Contract Documents and modifies the Bidding Documents dated April 2024.

Acknowledge receipt of this Addendum in the space provided in the Bid Form. Failure to do so may disqualify the Bidder.

This Addendum consists of two (2) pages plus attachments. **Total Forty-Six (46) pages.**

General

1. Attached is the Prebid Conference Attendance Sheet for reference.
2. Attached is the Geotechnical Report prepared by Atlas Technical Consultants dated May 8, 2024.

Drawings

1. Replace Structural Drawing Sheets S0.0, S1.0, S1.1 S5.0, and S5.1 in the bid documents with the attached drawing sheets.
2. Replace Mechanical/Plumbing Drawing Sheets M0.0, M0.1, M0.2, M1.0, M2.0, and M5.0 in the bid documents with the attached drawing sheets.
3. Replace Electrical Drawing Sheets E0.0, E0.1, and E1.0 in the bid documents with the attached drawing sheets.

Attachments

Prebid Conference Attendance Sheet

Geotechnical Report

Sheet S0.0 Structural Notes

Sheet S1.0 Typ. Mobile Home Foundation Plan

Sheet S1.1 Pump House Foundation Plan

Sheet S5.0 Mobile Home Foundation Details

Sheet S5.1 Pump House Foundation Details

Sheet M0.0 Basic Mechanical Requirements Specification Section 15010

Sheet M0.1 Basic Mechanical Requirements Specification Section 15010

Sheet M0.2 Plumbing Specifications Section 15400

Sheet M1.0 General Notes and Legend

Sheet M2.0 Plumbing New Site Plan

Sheet M5.0 Plumbing Details
Sheet E0.0 Electrical Cover
Sheet E0.1 Electrical Specifications
Sheet E1.0 Electrical Site Plan

End of Addendum No. 1



ATLAS

GEOTECHNICAL INVESTIGATION

ISP MANUFACTURED HOUSING UNITS

Southeast Corner of 100 North and 100 East
Fairfield, ID

PREPARED FOR:

Jacob Jackson
Idaho Transportation Department
PO Box 7129
Boise, ID 83707

PREPARED BY:

Atlas Technical Consultants, LLC
484 Eastland Drive South, Suite 103
Twin Falls, ID 83301

May 8, 2024
T240613g



May 8, 2024

Atlas No. T240613g

Jacob Jackson
Idaho Transportation Department
PO Box 7129
Boise, ID 83707

**Subject: Geotechnical Investigation
ISP Manufactured Housing Units
Southeast Corner of 100 North and 100 East
Fairfield, ID**

Dear Jacob Jackson:

In compliance with your instructions, Atlas has conducted a soils exploration and foundation evaluation for the above referenced development. Fieldwork for this investigation was conducted on April 22, 2024. Data have been analyzed to evaluate pertinent geotechnical conditions. Results of this investigation, together with our recommendations, are to be found in the following report. We have provided a PDF copy for your review and distribution.

Often, questions arise concerning soil conditions because of design and construction details that occur on a project. Atlas would be pleased to continue our role as geotechnical engineers during project implementation.

If you have any questions, please call us at (208) 733-5323.

Respectfully submitted,

Dax Harris
Staff Geologist

Ethan Salove, PE
Geotechnical Engineer

Jacob Schlador, PE
Geotechnical Practice Manager - Northwest

CONTENTS

1. INTRODUCTION.....	4
1.1 Project Description	4
1.2 Scope of Investigation	4
2. SITE DESCRIPTION.....	5
2.1 Regional Geology.....	5
2.2 General Site Characteristics.....	5
3. SEISMIC SITE EVALUATION	5
3.1 Geoseismic Setting	5
3.2 Seismic Design Parameter Values	6
4. SOILS EXPLORATION.....	6
4.1 Exploration and Sampling Procedures.....	6
4.2 Laboratory Testing Program.....	6
4.3 Soil and Sediment Profile	7
5. SITE HYDROLOGY	7
5.1 Groundwater	7
6. FOUNDATION AND SLAB DISCUSSION AND RECOMMENDATIONS.....	8
6.1 Foundation Design Recommendations.....	8
6.2 Floor Slab-on-Grade.....	9
7. PAVEMENT DISCUSSION AND RECOMMENDATIONS.....	10
7.1 Pavement Design Parameters.....	10
7.2 Flexible Pavement.....	10
7.3 Gravel Pavement Sections	11
7.4 Common Pavement Section Construction Issues	11
8. CONSTRUCTION CONSIDERATIONS	12
8.1 Earthwork.....	12
8.2 Grading	12
8.3 Dry Weather	13
8.4 Wet Weather	13
8.5 Soft Subgrade Soils.....	13
8.6 Frozen Subgrade Soils.....	14
8.7 Structural Fill	14
8.8 Fill Placement and Compaction.....	14
8.9 Backfill of Walls	16
8.10 Excavations.....	16
8.11 Groundwater Control.....	17
9. GENERAL COMMENTS.....	17
10. REFERENCES.....	18



TABLES

Table 1 – Seismic Design Values	6
Table 2 – Typical Soil Profiles	7
Table 3 – Soil Bearing Capacity	8
Table 4 – AASHTO Flexible Pavement Specifications.....	10
Table 5 – AASHTO Gravel Pavement Specifications	11
Table 6 – Fill Material Criteria	14
Table 7 – Fill Placement and Compaction Requirements	15

APPENDICES

Appendix I	Warranty and Limiting Conditions
Appendix II	Vicinity Map
Appendix III	Site Map
Appendix IV	Geotechnical Investigation Test Pit Log
Appendix V	Geotechnical General Notes
Appendix VI	Important Information About This Geotechnical Engineering Report

1. INTRODUCTION

This report presents results of a geotechnical investigation and analysis in support of data utilized in design of structures as defined in the 2018 International Building Code (IBC). Information in support of groundwater and stormwater issues pertinent to the practice of Civil Engineering is included. Observations and recommendations relevant to the earthwork phase of the project are also presented. Revisions in plans or drawings for the proposed structures from those enumerated in this report should be brought to the attention of the soils engineer to determine whether changes in the provided recommendations are required. Deviations from noted subsurface conditions, if encountered during construction, should also be brought to the attention of the soils engineer.

1.1 Project Description

The proposed development is in the City of Fairfield, Camas County, ID, and occupies a portion of the NW $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 11, Township 1 South, Range 14 East, Boise Meridian. The site to be developed is approximately 5.3 acres. Site maps included in the **Appendix** show the project location.

This project will consist of construction of three manufactured homes, each roughly 1,000 square-foot in size, bearing on a raft/mat slab foundation system. Retaining walls are not anticipated as part of the project. Paved areas may be developed for the project. Drainage is expected to be directed to onsite infiltration facilities. Location of the infiltration facilities are unknown at this time. Atlas has not been informed of the proposed grading plan.

1.2 Scope of Investigation

Our scope of work was completed in general accordance with our proposal dated April 5, 2024 and authorized on April 10, 2024. Said authorization is subject to terms, conditions, and limitations described in the Professional Services Contract entered into between Idaho Transportation Department (ITD) and Atlas.

Atlas' scope of services included the following:

- Subsurface exploration via test pits.
- Field and laboratory testing of materials encountered and collected.
- Preparation of this report, which includes project description, site conditions, and our engineering analysis and evaluation for the project.

2. SITE DESCRIPTION

2.1 Regional Geology

The subject site is located in the central portion of the Camas Prairie in south-central Idaho. The Camas Prairie is an extensional graben that is likely associated with the formation of the Snake River Plain. The mountainous regions to the north and south of the prairie are primarily composed of Eocene aged rocks of the Challis Volcanic Group and Cretaceous intrusive rocks of the Idaho Batholith. Pleistocene basalt flows from vents flowed onto the Camas Prairie, periodically damming Camas Creek and the Big and Little Wood Rivers, diverting the flows of these drainages. Following emplacement of the basalt flows, outwash gravels were deposited across the prairie. The project site is underlain by “Alluvial Fan Deposits, High Position” as mapped by Garwood, Kauffman, Othberg, and Lewis (2014). These deposits have been described as moderately sorted and stratified sand and gravel of alluvial fans graded to the ancestral Camas Creek. North of Camas Creek, these deposits range from roughly 80 to 100 feet thick where they are underlain by older sediments and/or bedrock, and grade roughly 10 to 20 feet thick where they overlay Pleistocene basalt flows.

2.2 General Site Characteristics

The following details regarding site conditions are based on visual observations and review of available geologic and topographic maps and imagery:

- **Current Site Conditions:** The site is approximately 5.33 acres and exists as undeveloped land. Based on a review of historical aerial photography, the site was previously used as agricultural land. 100 East bounds the west side of the site and 100 North bounds the north side of the property. Further undeveloped land can be found to the east and south of the site.
- **Vegetation:** Vegetation on the site consists primarily of bunchgrass and other native weeds and grasses.
- **Topography:** The site is relatively flat and level.
- **Drainage:** Stormwater drainage for the site is achieved by percolation through surficial soils. The site is situated so that it is unlikely that it will receive any drainage from off-site sources.

3. SEISMIC SITE EVALUATION

3.1 Geoseismic Setting

Soils on site are classed as Site Class D in accordance with Chapter 20 of the American Society of Civil Engineers (ASCE) publication ASCE/SEI 7-16. Structures constructed on this site should be designed per IBC requirements for such a seismic classification. Our investigation revealed low hazard potential resulting from potential earthquake motions including: slope instability, liquefaction, and surface rupture caused by faulting or lateral spreading.

3.2 Seismic Design Parameter Values

The ASCE 7-16 seismic design parameter values have been provided below.

Table 1 – Seismic Design Values

Seismic Design Parameter	Design Value
Site Class	D "Default"
Site Modified Peak Ground Acceleration, PGA_M	0.228
S_s	0.347 (g)
S_1	0.121 (g)
F_a	1.522
F_v	2.357
S_{MS}	0.528
S_{M1}	0.286
S_{DS}	0.352
S_{D1}	0.191

4. SOILS EXPLORATION

4.1 Exploration and Sampling Procedures

Field exploration conducted to determine engineering characteristics of subsurface materials included a reconnaissance of the project site and investigation by test pit. A site map with test pit locations was provided to Atlas by Jacob Jackson of ITD. Test pit sites were located in the field by means of a Global Positioning System (GPS) device and are reportedly accurate to within ten feet. Upon completion of investigation, each test pit was backfilled with loose excavated materials. Re-excavation and compaction of these test pit areas are required prior to construction.

Samples obtained have been visually classified in the field, identified according to test pit number and depth, placed in sealed containers, and transported to our laboratory for additional testing. Subsurface materials have been described in detail on logs provided in the [Appendix](#). Results of field and laboratory tests are also presented in the [Appendix](#). Atlas recommends that these logs **not** be used to estimate fill material quantities.

4.2 Laboratory Testing Program

Along with our field investigation, a supplemental laboratory testing program was conducted to determine additional pertinent engineering characteristics of subsurface materials. Laboratory tests were conducted in accordance with current specifications. The laboratory testing program for this report included:

- Atterberg Limits Testing – ASTM D4318
- Grain Size Analysis – ASTM C117/C136

4.3 Soil and Sediment Profile

The profile below represents a generalized interpretation for the project site. Note that on site soils strata, encountered between test pit locations, may vary from the individual soil profiles presented in the logs.

Table 2 – Typical Soil Profiles

Soil Horizons	Approximate Depths	Soil Types	Consistency/Relative Density
Surficial Soils	0 to 3.5 feet	Clayey Sand	Medium Dense
Intermediate to Deeper Soils	3.5 to 9 feet	Poorly Graded Sand with Gravel	Medium Dense to Dense

During excavation, sloughing of test pit sidewalls was observed. In general, finer-grained soils remained stable while more granular sediments readily sloughed. However, moisture contents will also affect wall competency with saturated soils having a tendency to readily slough when under load and unsupported.

5. SITE HYDROLOGY

Existing surface drainage conditions are defined in the **General Site Characteristics** section. Information provided in this section is limited to observations made at the time of the investigation. Either regional or local ordinances may require information beyond the scope of this report.

5.1 Groundwater

During this field investigation, groundwater was encountered in test pits at depths ranging from 4.2 to 4.3 feet bgs. According to the Idaho Department of Water Resources (IDWR) well data within approximately ½-mile of the project site, groundwater was measured at depths ranging between 7 and 12 feet bgs. Furthermore, according to the United States Geological Survey (USGS) monitoring well data within approximately ½-mile of the project site, groundwater was measured at depths ranging between 5 and 15 feet bgs.

Based on evidence of this investigation and background knowledge of the area, Atlas has determined that the typical seasonal high groundwater should remain greater than approximately 3 feet bgs. This depth can be confirmed through long-term groundwater monitoring. However, as the site is heavily influenced by the stage and flow of the surrounding drainages, flooding or near flooding conditions may occur during the late spring and early summer runoff season and will result in temporarily higher groundwater elevations.

6. FOUNDATION AND SLAB DISCUSSION AND RECOMMENDATIONS

Various foundation types have been considered for support of the proposed structure. Two requirements must be met in the design of foundations. First, the applied bearing stress must be less than the ultimate bearing capacity of foundation soils to maintain stability. Second, total and differential settlement must not exceed an amount that will produce an adverse behavior of the superstructure. Allowable settlement is usually exceeded before bearing capacity considerations become important; thus, allowable bearing pressure is normally controlled by settlement considerations.

Total settlement should be limited to approximately 1 inch and differential settlement should be limited to approximately ½ inch, provided the following design and construction recommendations are observed.

6.1 Foundation Design Recommendations

Per conversations with ITD, the structures are expected to reside on a raft/mat foundation system. Based on data obtained from the site and test results from various laboratory tests performed, Atlas recommends the following guidelines for the net allowable soil bearing capacity:

Table 3 – Soil Bearing Capacity

Slab Depth	ASTM D1557 Subgrade Compaction	Net Allowable Soil Bearing Capacity
The raft or mat slab must bear on at least 12 inches of compacted granular structural fill. Granular structural fill should bear on competent, native clayey sand sediments or poorly graded sand with gravel sediments. Existing organic soils must be completely removed from below raft or mat slab. ¹ Excavation depths of roughly 1 foot bgs should be anticipated. ²	Not Required for Native Soil 95% for Granular Structural Fill	2,000 lbs/ft ² A ⅓ increase is allowable if the alternative basic load combinations of Section 1605.3.2 of the 2018 IBC are used in design.

¹It will be required for Atlas personnel to verify the bearing soil suitability for each structure at the time of construction.

For raft or mat slabs bearing on at least 12 inches of compacted granular structural fill material, a modulus of subgrade reaction, k value, of 200 pounds per cubic inch (pci) may be used for the slab design based on correlation to values typically resulting from a 1 foot by 1 foot plate load test. However, depending on how the slab load is applied, the value will need to be geometrically modified. The values should be adjusted for larger areas using the following expression:

Modulus of Subgrade Reaction for Square Mat Slabs: $k_s = k \left(\frac{B+1}{2B} \right)^2$

where: k_s = coefficient of vertical subgrade reaction for loaded square area,
 k = coefficient of vertical subgrade reaction for a 1 square foot area, and
 B = effective width of area loaded, in feet.

Modulus of Subgrade Reaction for Rectangular Mat Slabs: $k' = \frac{k_s(1+0.5(\frac{B}{L}))}{1.5}$

where: k' = coefficient of vertical subgrade reaction for loaded rectangular area,
 k_s = coefficient of vertical subgrade reaction for loaded square area,
 k = coefficient of vertical subgrade reaction for a 1 square foot area, and
 B = effective width of area loaded, in feet,
 L = effective length of area loaded, in feet.

Footings should be proportioned to meet either the stated soil bearing capacity or the 2018 IBC minimum requirements. Unsuitable soil types encountered at the bottom of footing excavations should be removed and replaced with granular structural fill. Excessively loose or soft areas that are encountered in the footings subgrade will require over-excavation and backfilling with granular structural fill. To minimize the effects of slight differential movement that may occur because of variations in the character of supporting soils and seasonal moisture content, Atlas recommends continuous footings be suitably reinforced to make them as rigid as possible. For frost protection, the bottom of external footings should be 30 inches below finished grade. Foundations must be backfilled in accordance with the **Backfill of Walls** section. Based on the soil types encountered onsite and the character of the proposed construction, foundation drains are not needed.

6.2 Floor Slab-on-Grade

The following recommendations are meant for floor slabs used outside the mat/raft foundation mentioned above. Organic, loose, or obviously compressive materials must be removed prior to placement of concrete floors or floor-supporting fill. In addition, the remaining subgrade should be treated in accordance with guidelines presented in the **Earthwork** section. Areas of excessive yielding should be excavated and backfilled with granular structural fill or suitable structural fill. Fill used to increase the elevation of the floor slab should consist of granular structural fill and suitable structural fill meeting the requirements detailed in the **Structural Fill** section. Fill materials must be compacted to a minimum 95 percent of the maximum dry density as determined by ASTM D1557.

A free-draining granular mat should be provided below slabs-on-grade to provide drainage and a uniform and stable bearing surface. This should be a minimum of 4 inches in thickness and compacted to at least 95 percent of the maximum dry density as determined by ASTM D1557. The mat must consist of aggregate base material as specified in the **Structural Fill** section. A moisture-retarder should be placed beneath floor slabs to minimize potential ground moisture effects on moisture-sensitive floor coverings. The moisture-retarder should be at least 15-mil in thickness and have a permeance of less than 0.01 US perms as determined by ASTM E96. Placement of the moisture-retarder will require special consideration with regard to effects on the slab-on-grade and should adhere to recommendations outlined in the ACI 302.1R and ASTM E1745 publications. Upon request, Atlas can provide further consultation regarding installation.

7. PAVEMENT DISCUSSION AND RECOMMENDATIONS

7.1 Pavement Design Parameters

Project specific traffic loading information has not been provided. Based on the character of the proposed construction, Atlas has assumed a traffic loading of 40,000 equivalent single axle loads (ESALs) for light duty pavement areas and 100,000 ESALs for moderate duty pavement areas. Light duty pavement should be used for parking areas and moderate duty pavement is to be used for access routes and loading/unloading areas. Atlas can provide a project specific pavement design upon request. Based on experience with soils in the region, a subgrade California Bearing Ratio (CBR) value of 6 has been assumed for near-surface clayey sand sediments on site.

The recommended asphalt pavement sections provided below are based on a 20-year design life. To achieve this design life a routine maintenance program that includes crack sealing on a regular basis and possible seal coating will be required. The following are minimum thickness requirements for assured pavement function. Depending on site conditions, additional work, e.g. soil preparation, may be required to support construction equipment. These have been listed within the Soft Subgrade Soils section.

7.2 Flexible Pavement

The American Association of State Highway and Transportation Officials (AASHTO) design method has been used to calculate the following pavement sections. Atlas recommends that materials used in the construction of asphaltic concrete pavements meet requirements of the ISPWC Standard Specification for Highway Construction. Construction of the pavement section should be in accordance with these specifications.

Table 4 – AASHTO Flexible Pavement Specifications

Pavement Section Component	Light Duty	Moderate Duty
Asphaltic Concrete	2.5 Inches	3.0 Inches
Aggregate Base	4.0 Inches	4.0 Inches
Structural Subbase	6.0 Inches	6.0 Inches
Compacted Subgrade ¹	Not Required	Not Required

¹It will be required for Atlas personnel to verify subgrade competency at the time of construction.

- Asphaltic Concrete: Asphalt mix design shall meet the requirements of ISPWC Section 810. Materials shall be placed in accordance with ISPWC Standard Specifications for Highway Construction.
- Aggregate Base: Material complying with ISPWC Standards for Type 1 Crushed Aggregate Materials.
- Structural Subbase: Material complying with ISPWC Section 801 for 3-inch or 6-inch Uncrushed Aggregate Materials. The maximum material diameter cannot exceed $\frac{2}{3}$ the component thickness.

7.3 Gravel Pavement Sections

Note that gravel pavement sections are typically for low-volume roadways (ESALs of less than 100,000), and are not intended to support large amounts of regular traffic. Regular maintenance in the form of grading will be required to maintain a flat and passable condition. Soft or unstable areas will develop if water is allowed to pond or collect on the surface. Therefore, grading is required to ensure that water is directed off the pavement surface. During and shortly after storm events, tracking of surface materials can be expected. Traffic during wet periods should be avoided to limit damage to the structural section. Damage to the pavement will be in the form of rutting and/or pumping of pavement section materials. Reconstruction of the exposed gravel base should be expected at least every 5 years. The following gravel pavement sections are based off of a 10-year design life and a Level of Reliability of 90.

Table 5 – AASHTO Gravel Pavement Specifications

Pavement Section Component ¹	Light Duty	Moderate Duty
Crushed Aggregate Base	4.0 Inches	4.0 Inches
Structural Subbase	12.0 Inches	14.0 Inches
Compacted Subgrade	Not Required	Not Required

¹It will be required for Atlas personnel to verify subgrade competency at the time of construction.

- Aggregate Base: Material complying with ISPWC Standards for Type 1 Crushed Aggregate Materials.
- Structural Subbase: Material complying with ISPWC Section 801 for 3-inch or 6-inch Uncrushed Aggregate Materials. The maximum material diameter cannot exceed 2/3 the component thickness.

7.4 Common Pavement Section Construction Issues

The subgrade upon which the above pavement sections are to be constructed must be properly stripped, inspected, and proof-rolled. Proof rolling of subgrade soils should be accomplished using a heavy rubber-tired, fully loaded, tandem-axle dump truck or equivalent. Verification of subgrade competence by Atlas personnel at the time of construction is required. Fill materials on the site must demonstrate the indicated compaction prior to placing material in support of the pavement section. Atlas anticipated that pavement areas will be subjected to light traffic. Subgrade clayey and silty soils near and above optimum moisture contents may pump during compaction. Pumping or soft areas must be removed and replaced with granular structural fill.

Fill material and aggregates, as well as compacted native subgrade soils, in support of the pavement section must be compacted to no less than 95 percent of the maximum dry density as determined by ASTM D698 for flexible pavements and by ASTM D1557 for rigid pavements. If a material placed as a pavement section component cannot be tested by usual compaction testing methods, then compaction of that material must be approved by observed proof rolling. Minor deflections from proof rolling for flexible pavements are allowable. Deflections from proof rolling of rigid pavement support courses should not be visually detectable.

Atlas recommends that rigid concrete pavement be provided for heavy garbage receptacles. This will eliminate damage caused by the considerable loading transferred through the small steel wheels onto asphaltic concrete. Rigid concrete pavement should consist of Portland Cement Concrete Pavement (PCCP) generally adhering to ISPWC requirement for Portland Cement Concrete. PCCP should be 6 inches thick and reinforced with welded wire fabric. Control joints must be on 12-foot centers or less. A 4-inch drainage fill course must be placed below the PCCP and must consist of Aggregate Base Material as specified in the **Structural Fill** section.

8. CONSTRUCTION CONSIDERATIONS

8.1 Earthwork

Excessively organic soils, deleterious materials, or disturbed soils generally undergo high volume changes when subjected to loads, which is detrimental to subgrade behavior in the area of pavements, floor slabs, structural fills, and foundations. It is recommended that organic or disturbed soils, if encountered, be removed to depths of 1 foot (minimum) and wasted or stockpiled for later use. Stripping depths should be adjusted in the field to assure that the entire root zone or disturbed zone (plow depths) or topsoil are removed prior to placement and compaction of fill materials. Exact removal depths should be determined during grading operations by Atlas personnel, and should be based upon subgrade soil type, composition, and firmness or soil stability. If underground storage tanks, underground utilities, wells, or septic systems are discovered during construction activities, they must be decommissioned then removed or abandoned in accordance with governing Federal, State, and local agencies. Excavations developed as the result of such removal must be backfilled with fill materials as defined in the **Structural Fill** section.

Atlas should oversee subgrade conditions (i.e., moisture content) as well as placement and compaction of new fill (if required) after native soils are excavated to design grade. Recommendations for structural fill presented in this report can be used to minimize volume changes and differential settlements that are detrimental to the behavior of footings, pavements, and floor slabs. Sufficient density tests should be performed to properly monitor compaction.

8.2 Grading

Positive grades must be maintained surrounding structures and pavements, including exterior slabs. The interface of plant bedding materials and underlying soils should be graded to provide drainage away from site elements. Otherwise, bedding materials may direct water to underlying fine-grained soils, which increases the potential for localized heave. Excessive watering of landscaping should be avoided.

8.3 Dry Weather

If construction is to be conducted during dry seasonal conditions, many problems associated with soft soils may be avoided. However, some rutting of subgrade soils may be induced by shallow groundwater conditions related to springtime runoff or irrigation activities during late summer through early fall. Problems may also arise because of lack of moisture in native soils and fill materials at time of placement. This will require the addition of water to achieve near-optimum moisture levels. Low-cohesion soils exposed in excavations may become friable, increasing chances of sloughing or caving. Measures to control excessive dust should be considered as part of the overall health and safety management plan.

8.4 Wet Weather

If construction is to be conducted during wet seasonal conditions (commonly from mid-November through May), problems associated with soft soils must be considered as part of the construction plan. During this time of year, fine-grained soils such as silts and clays will become unstable with increased moisture content, and eventually deform or rut. Additionally, constant low temperatures reduce the possibility of drying soils to near optimum conditions.

8.5 Soft Subgrade Soils

Shallow fine-grained subgrade soils that are high in moisture content should be expected to pump and rut under construction traffic. Throughout construction, soft areas may develop after the existing asphalt is removed and heavy rubber tired equipment drives over the site. In addition, areas where significant cracking has occurred will likely have soft subgrade soils because of moisture infiltration and will be prone to pumping and rutting. During periods of wet weather, construction may become very difficult if not impossible. The following recommendations and options have been included for dealing with soft subgrade conditions:

- Track-mounted vehicles should be used to strip the subgrade of root matter and other deleterious debris. Heavy rubber-tired equipment should be prohibited from operating directly on the native subgrade and areas in which fill materials have been placed. Construction traffic should be restricted to designated roadways that do not cross, or cross on a limited basis, proposed roadway or parking areas.
- Soft areas can be over-excavated and replaced with granular structural fill.
- Construction roadways on soft subgrade soils should consist of a minimum 2-foot thickness of large cobbles of 4 to 6 inches in diameter with sufficient sand and fines to fill voids. Construction entrances should consist of a 6-inch thickness of clean, 2-inch minimum, angular drain-rock and must be a minimum of 10 feet wide and 30 to 50 feet long. During the construction process, top dressing of the entrance may be required for maintenance.
- Scarification and aeration of subgrade soils can be employed to reduce the moisture content of wet subgrade soils. After stripping is complete, the exposed subgrade should be ripped or disked to a depth of 1½ feet and allowed to air dry for 2 to 4 weeks. Further disking should be performed on a weekly basis to aid the aeration process.

- Alternative soil stabilization methods include use of geotextiles, lime, and cement stabilization. Atlas is available to provide recommendations and guidelines at your request.

8.6 Frozen Subgrade Soils

Prior to placement of fill materials or foundation elements, frozen subgrade soils must either be allowed to thaw or be stripped to depths that expose non-frozen soils and wasted or stockpiled for later use. Stockpiled materials must be allowed to thaw and return to near-optimal conditions prior to use as fill.

The onsite, shallow clayey soils are susceptible to frost heave during freezing temperatures. For exterior flatwork and other structural elements, adequate drainage away from subgrades is critical. Compaction and use of granular structural fill will also help to mitigate the potential for frost heave. Complete removal of frost susceptible soils for the full frost depth, followed by replacement with a non-frost susceptible granular structural fill, can also be used to mitigate the potential for frost heave. Atlas is available to provide further guidance/assistance upon request.

8.7 Structural Fill

The following table defines the types of fill material that is suitable for use on the project. Refer to the **Fill Placement and Compaction** section for recommended placement locations for each fill type listed below.

Table 6 – Fill Material Criteria

Fill Type	Material	Lift Thickness*
Granular Structural Fill	ISPWC Section 801 for 1-inch, 3-inch, or 6-inch Uncrushed Aggregate and ISPWC Section 802 Aggregate Base	12 inches
Aggregate Base	ISPWC Section 802 for Type 1 Crushed Aggregate Base	12 inches
Structural Subbase	ISPWC Section 801 for 3-inch or 6-inch Uncrushed Aggregate	12 inches
Suitable Structural Fill	Onsite/imported SC, ML, SM, and GM soils that are free of organics and debris	6 inches

*Initial loose thickness, prior to compaction.

8.8 Fill Placement and Compaction

Requirements for fill material type and compaction effort are dependent on the planned use of the material. The following table specifies material type and compaction requirements based on the placement location of the fill material.

Table 7 – Fill Placement and Compaction Requirements

Fill Location	Material Type	Compaction
Foundations	Granular Structural Fill	95% of ASTM D1557
Interior Slab-on-Grade and Raft/Mat Slabs	Granular Structural Fill or Suitable Structural Fill	95% of ASTM D1557
Top 4 Inches of Interior and Exterior Slab-on-Grade	Aggregate Base Material	95% of ASTM D1557
Below Flexible Pavement Subgrade and Exterior Flatwork Areas	Granular Structural Fill or Suitable Structural Fill	95% of ASTM D698 or 92% of ASTM D1557
Foundation Wall Backfill*	Granular Structural Fill or Suitable Structural Fill	95% of ASTM D1557
Utility Trench Backfill	Granular Structural Fill or Suitable Structural Fill	Per ISPWC Section 306

*Wall backfill material cannot exceed a maximum particle size of 4-inches.

Prior to placement of fill materials, surfaces must be prepared as outlined in the **Earthwork** section. Fill material must be placed in horizontal lifts not exceeding 6-inches in thickness for fine-grained soils and 12-inches in thickness for granular structural fill, aggregate base material, and subbase material. All fill material must be moisture-conditioned to achieve optimum moisture content prior to compaction. During placement all fill materials must be monitored and tested to confirm compaction requirements have been achieved, as specified above, prior to placement of subsequent lifts. In addition, compacted surfaces must be in a firm and unyielding condition. Atlas personnel should be onsite to verify suitability of subgrade soil conditions, identify whether further work is necessary, and perform in-place moisture density testing.

Sufficient density tests should be performed to properly monitor compaction. At a minimum, Atlas recommends one test per lift as follows:

- Structures – 1 test every 5,000 square feet
- Pavement and Exterior Flatwork Areas – 1 test every 10,000 square feet
- Foundation Wall Backfill – 1 test every 500 square feet
- Utility Trench Backfill – 1 test every 100 linear feet

Silty soils require very high moisture contents for compaction, require a long time to dry out if natural moisture contents are too high, and may also be susceptible to frost heave under certain conditions. Therefore, these materials can be quite difficult to work with as moisture content, lift thickness, and compactive effort becomes difficult to control. If silty or clayey sand soil is used for fill, lift thicknesses should not exceed 6 inches (loose), and fill material moisture must be closely monitored at both the working elevation and the elevations of materials already placed. Following placement, the exposed surface must be protected from degradation resulting from construction traffic or subsequent construction. It is anticipated that fine-grained soils will not be suitable for reuse during the wet season.

Use of silty and clayey sand soils (GM, SM, SC, and ML) as structural fill below footings is prohibited. For structural fill below footings, areas of compacted backfill must extend outside the perimeter of the footings for a distance equal to the thickness of fill between the bottom of foundation and underlying soils, or 5 feet, whichever is less.

If material contains more than 40 percent but less than 50 percent oversize (greater than ¾-inch) particles, compaction of fill must be confirmed per ISPWC Section 202.3.8.C.3. Material should contain sufficient fines to fill void spaces and must not contain more than 50 percent oversize particles.

8.9 Backfill of Walls

Backfill materials must conform to the requirements of structural fill, as defined in this report. For wall heights greater than 2.5 feet, the maximum material size should not exceed 4 inches in diameter. Placing oversized material against rigid surfaces interferes with proper compaction and can induce excessive point loads on walls. Backfill shall not commence until the wall has gained sufficient strength to resist placement and compaction forces. Further, retaining walls above 2.5 feet in height shall be backfilled in a manner that will limit the potential for damage from compaction methods and/or equipment. It is recommended that only small hand-operated compaction equipment be used for compaction of backfill within a horizontal distance equal to the height of the wall, measured from the back face of the wall.

Backfill should be compacted in accordance with the specifications in the **Fill Placement and Compaction** section, except in those areas where it is determined that future settlement is not a concern, such as planter areas. In nonstructural areas, backfill must be compacted to a firm and unyielding condition. Atlas recommends in these areas that the top 12 inches must consist of a low permeability (clay or silt) soil to limit surface water infiltration.

Proper grading away from structures is critical. The surface must be graded away from the structure. In addition, Atlas recommends that roof drains carry stormwater at least 10 feet away from the structure.

8.10 Excavations

Shallow excavations that do not exceed 4 feet in depth may be constructed with side slopes approaching vertical. Below this depth, it is recommended that slopes be constructed in accordance with Occupational Safety and Health Administration (OSHA) regulations, Section 1926, Subpart P. Based on these regulations, on-site soils are classified as type "C" soil, and as such, excavations within these soils should be constructed at a maximum slope of 1½ feet horizontal to 1 foot vertical (1½:1) for excavations up to 20 feet in height. Excavations in excess of 20 feet will require additional analysis. Note that these slope angles are considered stable for short-term conditions only, and will not be stable for long-term conditions.

During the subsurface exploration, test pit sidewalls generally exhibited little indication of collapse; however, sloughing of fill materials and native granular sediments from test pit sidewalls was observed, particularly after penetration of the water table. For deep excavations, native granular sediments cannot be expected to remain in position. These materials are prone to failure and may collapse, thereby undermining upper soil layers. This is especially true when excavations approach depths near the water table. Care must be taken to ensure that excavations are properly backfilled in accordance with procedures outlined in this report.

8.11 Groundwater Control

Groundwater was encountered during the investigation but is anticipated to be below the depth of most construction. Excavations below the water table will require a dewatering program. Dewatering will be required prior to placement of fill materials. It may be possible to discharge dewatering effluent to remote portions of the site, to a sump, or to a pit. This will essentially recycle effluent, thus eliminating the need to enter into agreements with local drainage authorities. Should the scope of the proposed project change, Atlas should be contacted to provide more detailed groundwater control measures.

Special precautions may be required for control of surface runoff and subsurface seepage. It is recommended that runoff be directed away from open excavations. Clayey soils may become soft and pump if subjected to excessive traffic during time of surface runoff. Ponded water in construction areas should be drained through methods such as trenching, sloping, crowning grades, nightly smooth drum rolling, or installing a French drain system. Additionally, temporary or permanent driveway sections should be constructed if extended wet weather is forecasted.

9. GENERAL COMMENTS

Based on the subsurface conditions encountered during this investigation and available information regarding the proposed structure the site is adequate for the planned construction. When plans and specifications are complete, and if significant changes are made in the character or location of the proposed structure, consultation with Atlas must be arranged as supplementary recommendations may be required. Suitability of subgrade soils and compaction of fill materials must be verified by Atlas personnel prior to placement of structural elements. Additionally, monitoring and testing should be performed to verify that suitable materials are used for fill and that proper placement and compaction techniques are utilized.

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APPENDIX I WARRANTY AND LIMITING CONDITIONS

Atlas warrants that findings and conclusions contained herein have been formulated in accordance with generally accepted professional engineering practice in the fields of foundation engineering, soil mechanics, and engineering geology only for the site and project described in this report. These engineering methods have been developed to provide the client with information regarding apparent or potential engineering conditions relating to the site within the scope cited above and are necessarily limited to conditions observed at the time of the site visit and research. Field observations and research reported herein are considered sufficient in detail and scope to form a reasonable basis for the purposes cited above.

Exclusive Use

This report was prepared for exclusive use of the property owner(s), at the time of the report, and their retained design consultants (“Client”). Conclusions and recommendations presented in this report are based on the agreed-upon scope of work outlined in this report together with the Contract for Professional Services between the Client and Atlas Technical Consultants (“Consultant”). Use or misuse of this report, or reliance upon findings hereof, by parties other than the Client is at their own risk. Neither Client nor Consultant make representation of warranty to such other parties as to accuracy or completeness of this report or suitability of its use by such other parties for purposes whatsoever, known or unknown, to Client nor Consultant. Neither Client nor Consultant shall have liability to indemnify or hold harmless third parties for losses incurred by actual or purported use or misuse of this report. No other warranties are implied or expressed.

Report Recommendations are Limited and Subject to Misinterpretation

There is a distinct possibility that conditions may exist that could not be identified within the scope of the investigation or that were not apparent during our site investigation. Findings of this report are limited to data collected from noted explorations advanced and do not account for unidentified fill zones, unsuitable soil types or conditions, and variability in soil moisture and groundwater conditions. To avoid possible misinterpretations of findings, conclusions, and implications of this report, Atlas should be retained to explain the report contents to other design professionals as well as construction professionals.

Since actual subsurface conditions on the site can only be verified by earthwork, note that construction recommendations are based on general assumptions from selective observations and selective field exploratory sampling. Upon commencement of construction, such conditions may be identified that require corrective actions, and these required corrective actions may impact the project budget. Therefore, construction recommendations in this report should be considered preliminary, and Atlas should be retained to observe actual subsurface conditions during earthwork construction activities to provide additional construction recommendations as needed.

Since geotechnical reports are subject to misinterpretation, **do not** separate the soil logs from the report. Rather, provide a copy of, or authorize for their use, the complete report to other design

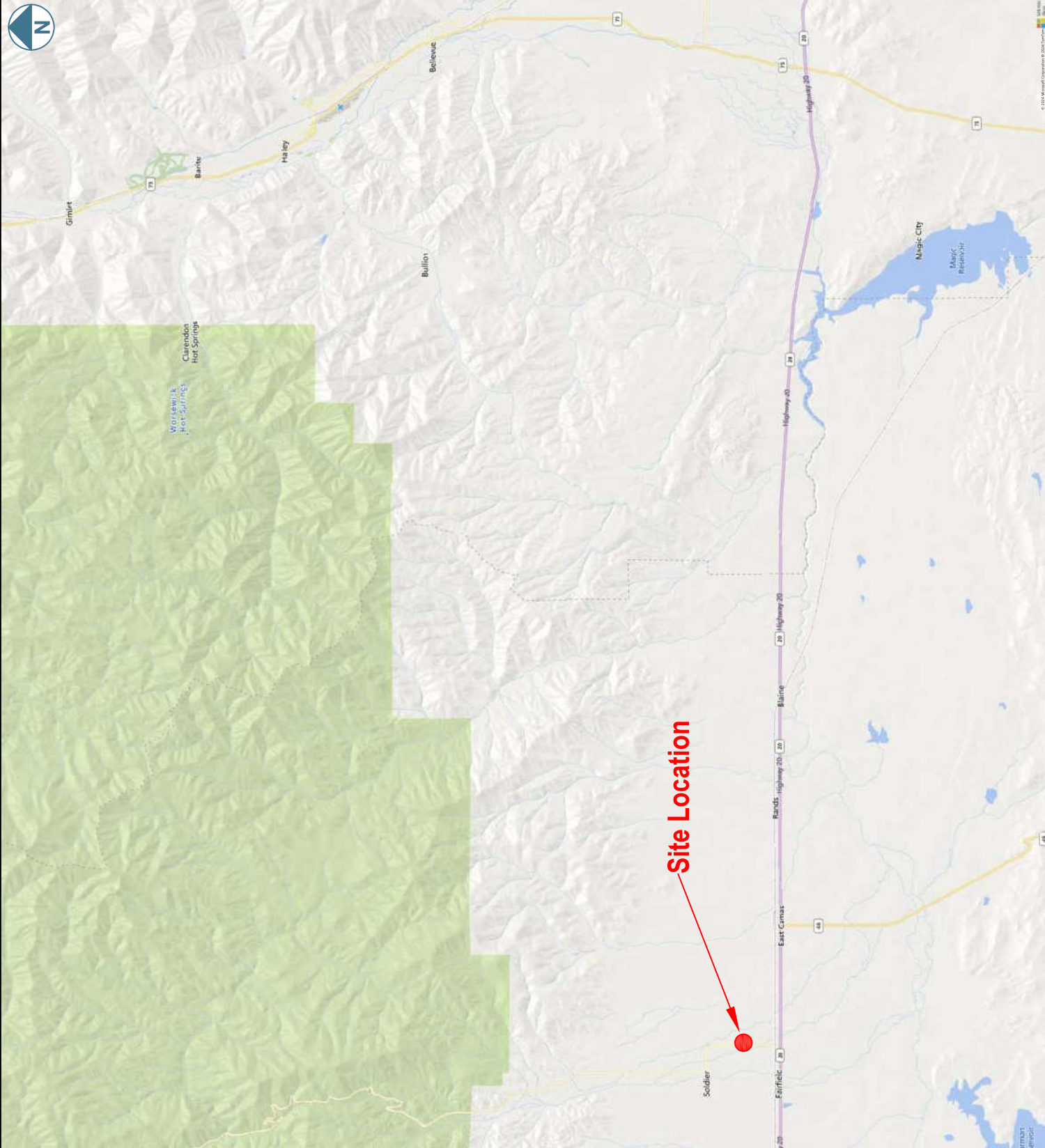


professionals or contractors. Locations of exploratory sites referenced within this report should be considered approximate locations only. For more accurate locations, services of a professional land surveyor are recommended.

This report is also limited to information available at the time it was prepared. In the event additional information is provided to Atlas following publication of our report, it will be forwarded to the client for evaluation in the form received.

Environmental Concerns

Comments in this report concerning either onsite conditions or observations, including soil appearances and odors, are provided as general information. These comments are not intended to describe, quantify, or evaluate environmental concerns or situations. Since personnel, skills, procedures, standards, and equipment differ, a geotechnical investigation report is not intended to substitute for a geoenvironmental investigation or a Phase II/III Environmental Site Assessment. If environmental services are needed, Atlas can provide, via a separate contract, those personnel who are trained to investigate and delineate soil and water contamination.



MAP NOTES:
 • Not to Scale

LEGEND

Approximate Site Location



ISP Manufactured Housing Units
 SEC of 100 North and 100 East
 Fairfield, ID

Drawn by: EJS
 May 3, 2023
 Drawing: T240613g



484 Eastland Drive South
 Suite 103
 Twin Falls, ID 83301
 Phone: (208) 733-5323
 Fax: (208) 733-0564
 Web: oneatlas.com

Site Map

Figure 2



NOTES:

- Not to Scale

LEGEND

Approximate Site Boundary



Approximate Atlas Test Pit Location



100 NORTH

100 EAST

TO ID-20



ISP Manufactured Housing Units

SEC of 100 North and 100 East
Fairfield, ID

Drawn by: KEW
May 3, 2023
Drawing: T240613g



484 Eastland Drive South
Suite 103
Twin Falls, ID 83301
Phone: (208) 733-5323
Fax: (208) 733-0564
Web: oneatlas.com



APPENDIX IV GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-1

Date Advanced: April 22, 2024

Excavated by: Client Provided Excavator

Logged by: Keaton Ward

Latitude: 43.356237

Longitude: -114.771596

Depth to Water Table: 4.2 feet bgs

Total Depth: 8.7 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-3.4	Clayey Sand (SC): Brown, dry to slightly moist, medium dense, with fine to medium-grained sand. --Organics present to 0.5 foot bgs.				
3.4-8.7	Poorly Graded Sand with Gravel (SP): Brown to light brown, moist to saturated, medium dense to dense, with fine to coarse-grained sand and fine to coarse gravel.				

Notes: See Site Map for test pit location.



GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-2
Date Advanced: April 22, 2024
Excavated by: Client Provided Excavator
Logged by: Keaton Ward

Latitude: 43.355614
Longitude: -114.771066
Depth to Water Table: 4.3 feet bgs
Total Depth: 7.2 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-3.8	Clayey Sand (SC): Brown, dry to slightly moist, medium dense, with fine to medium-grained sand. --Organics present to 0.5 foot bgs.	GS	2.0-3.5		A
3.8-7.2	Poorly Graded Sand with Gravel (SP): Brown to light brown, moist to saturated, medium dense to dense, with fine to coarse-grained sand, fine to coarse gravel, and intermittent 3-inch minus cobbles.				

Notes: See Site Map for test pit location.

Lab Test ID	Moisture (%)	LL	PI	Sieve Analysis (% Passing)				
				#4	#10	#40	#100	#200
A	16.2	34	17	90	83	62	51	45



GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-3
Date Advanced: April 22, 2024
Excavated by: Client Provided
Logged by: Keaton Ward

Latitude: 43.355030
Longitude: -114.771536
Depth to Water Table: 4.2 feet bgs
Total Depth: 7.6 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-3.1	Clayey Sand (SC): Brown, dry to slightly moist, medium dense, with fine to coarse-grained sand. --Organics present to 0.8 foot bgs.				
3.1-7.6	Poorly Graded Sand with Gravel (SP): Brown to light brown, moist to saturated, medium dense to dense, with fine to coarse-grained sand, fine to coarse gravel, and intermittent 3-inch minus cobbles.				

Notes: See Site Map for test pit location.

APPENDIX V GEOTECHNICAL GENERAL NOTES

Unified Soil Classification System			
Major Divisions		Symbol	Soil Descriptions
Coarse-Grained Soils < 50% passes No.200 sieve	Gravel & Gravelly Soils < 50% coarse	GW	Well-graded gravels; gravel/sand mixtures with little or no fines
		GP	Poorly-graded gravels; gravel/sand mixtures with little or no fines
		GM	Silty gravels; poorly-graded gravel/sand/silt mixtures
		GC	Clayey gravels; poorly-graded gravel/sand/clay mixtures
	Sand & Sandy Soils > 50% coarse fraction	SW	Well-graded sands; gravelly sands with little or no fines
		SP	Poorly-graded sands; gravelly sands with little or no fines
		SM	Silty sands; poorly-graded sand/gravel/silt mixtures
Fine-Grained Soils > 50% passes No.200 sieve	Sils & Clays LL < 50	SC	Clayey sands; poorly-graded sand/gravel/clay mixtures
		ML	Inorganic silts; sandy, gravelly or clayey silts
		CL	Lean clays; inorganic, gravelly, sandy, or silty, low to medium-plasticity clays
	Sils & Clays LL > 50	OL	Organic, low-plasticity clays and silts
		MH	Inorganic, elastic silts; sandy, gravelly or clayey elastic silts
		CH	Fat clays; high-plasticity, inorganic clays
Highly Organic Soils		OH	Organic, medium to high-plasticity clays and silts
		PT	Peat, humus, hydric soils with high organic content

Relative Density and Consistency Classification	
Coarse-Grained Soils	SPT Blow Counts (N)
Very Loose:	< 4
Loose:	4-10
Medium Dense:	10-30
Dense:	30-50
Very Dense:	> 50
Fine-Grained Soils	SPT Blow Counts (N)
Very Soft:	< 2
Soft:	2-4
Medium Stiff:	4-8
Stiff:	8-15
Very Stiff:	15-30
Hard:	> 30

Moisture Content and Cementation Classification	
Description	Field Test
Dry	Absence of moisture, dry to touch
Slightly Moist	Damp, but no visible moisture
Moist	Visible moisture
Wet	Visible free water
Saturated	Soil is usually below water table
Description	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure
Moderate	Crumbles or breaks with considerable finger pressure
Strong	Will not crumble or break with finger pressure

Particle Size	
Boulders:	> 12 in.
Cobbles:	12 to 3 in.
Gravel:	3 in. to 5 mm
Coarse-Grained Sand:	5 to 0.6 mm
Medium-Grained Sand:	0.6 to 0.2 mm
Fine-Grained Sand:	0.2 to 0.075 mm
Silts:	0.075 to 0.005 mm
Clays:	< 0.005 mm

Acronym List	
GS	grab sample
LL	Liquid Limit
M	moisture content
NP	non-plastic
PI	Plasticity Index
Q _p	penetrometer value, unconfined compressive strength, tsf
V	vane value, ultimate shearing strength, tsf

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer

will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the “Findings” Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site’s subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report’s Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals’ misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals’ plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note*

conspicuously that you’ve included the material for information purposes only. To avoid misunderstanding, you may also want to note that “informational purposes” means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled “limitations,” many of these provisions indicate where geotechnical engineers’ responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a “phase-one” or “phase-two” environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer’s services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, *proper implementation of the geotechnical engineer’s recommendations will not of itself be sufficient to prevent moisture infiltration.* *Confront the risk of moisture infiltration* by including building-envelope or mold specialists on the design team. *Geotechnical engineers are not building-envelope or mold specialists.*



Telephone: 301/565-2733
e-mail: info@geoprofessional.org www.geoprofessional.org

CRITERIA
 1. ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, AND THE 2018 INTERNATIONAL BUILDING CODE.
 2. DESIGN LOADING CRITERIA
 BY DEFAULT, VALUES SHALL BE FOR BOTH PUMP HOUSE AND MANUFACTURED HOME. SEPARATE VALUES SHALL BE NOTED AS SUCH: PUMP HOUSE, [MANU. HOME]

LIVE:
 ROOF.....20 PSF

DEAD:
 PUMP HOUSE.....15 PSF
 MANUFACTURED HOME.....PER MANUFACTURER

SNOW:
 GROUND SNOW LOAD, P_g80 PSF
 SLOPED ROOF FACTOR, C_s1.0
 IMPORTANCE FACTOR, i1.10
 THERMAL FACTOR, C_t1.10
 SNOW EXPOSURE FACTOR, C_e0.90
 FLAT ROOF SNOW LOAD, P_f60.98 PSF
 DESIGN ROOF SNOW LOAD.....80 PSF

WIND:
 BASIC WIND SPEED.....109 MPH [103 MPH]
 MEAN ROOF HEIGHT.....11 FT.
 BUILDING CATEGORY.....III [II]
 EXPOSURE CATEGORY.....C
 ENCLOSURE CLASSIFICATION...ENCLOSED BUILD.

SEISMIC DESIGN DATA:
 OCCUPANCY CATEGORY.....III [II]
 IMPORTANCE FACTOR, I1.25 [1.0]
 MAPPED SPECTRAL RESPONSE, S_s34.7%g
 ACCELERATIONS, S_112.1%g
 SITE CLASS.....D
 SPECTRAL RESPONSE COEFFICIENT, S_{DS}0.352
 S_{D1}0.191
 SEISMIC DESIGN CATEGORY.....C
 BASIC STRUCTURAL SYSTEM.....BEARING WALL
 SEISMIC RESISTING SYSTEM.....SHEAR PANELS

3. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS FOR COMPATIBILITY AND SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
 4. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.
 5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE CONTRACTOR'S WORK. THE STRUCTURAL ENGINEER HAS NO OVERALL SUPERVISORY

AUTHORITY OR ACTUAL AND/OR DIRECT RESPONSIBILITY FOR THE SPECIFIC WORKING CONDITIONS AT THE SITE AND/OR FOR ANY HAZARDS RESULTING FROM THE ACTIONS OF ANY TRADE CONTRACTOR. THE STRUCTURAL ENGINEER HAS NO DUTY TO INSPECT, SUPERVISE, NOTE, CORRECT, OR REPORT ANY HEALTH OR SAFETY DEFICIENCIES TO THE OWNER, CONTRACTORS, OR OTHER ENTITIES OR PERSONS AT THE PROJECT SITE.

6. CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.

7. WHEN A PREFABRICATED COMPONENT IS CALLED OUT, CONTRACTOR SHALL INSTALL ITEM ACCORDING TO MANUFACTURER'S INSTRUCTIONS. IF DRAWINGS CONFLICT WITH INSTALLATION INSTRUCTIONS, PROMPTLY NOTIFY ARCHITECT, PRIOR TO PROCEEDING WITH WORK FOR FURTHER CLARIFICATION OF DESIGN INTENT.

8. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER.

9. ALL STRUCTURAL SYSTEMS WHICH ARE TO BE COMPOSED OF COMPONENTS TO BE FIELD ERECTED SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVER, HANDLING, STORAGE AND ERECTION IN ACCORDANCE WITH INSTRUCTIONS PREPARED BY THE SUPPLIER.

GENERAL
 1. NOTES AND DETAILS ON DRAWINGS TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. IF CONFLICT OCCURS BETWEEN THE CONTRACT DRAWINGS AND THE PROJECT MANUAL, IMMEDIATELY NOTIFY ARCHITECT FOR RESOLUTION. DIMENSIONS TAKE PRECEDENCE OVER SCALED DRAWINGS.
 2. CONTRACT DOCUMENTS INDICATE INFORMATION SUFFICIENT TO CONVEY DESIGN INTENT. REVIEW CONTRACT DOCUMENTS AND VERIFY FIELD AND EXISTING CONDITIONS. PROMPTLY NOTIFY ARCHITECT, PRIOR TO PROCEEDING WITH WORK, IF FURTHER CLARIFICATION OF DESIGN INTENT IS NEEDED.
 3. PERFORM STRUCTURAL RELATED WORK AND DEVELOP SHOP DRAWINGS CONSIDERING CONTRACT DOCUMENTS IN THEIR ENTIRETY. CONDITIONS NOT SPECIFICALLY DETAILED SHALL BE CONSTRUCTED AS DETAILED FOR SIMILAR WORK.
 4. CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE THE MEANS AND METHODS OF CONSTRUCTION. PROVIDE ALL NECESSARY MEASURES TO PROTECT THE STRUCTURE DURING CONSTRUCTION. COMPLY WITH THE STATE OF IDAHO REGULATIONS. CONSTRUCTION MATERIALS, IF PLACED ON FRAMED FLOORS AND ROOFS, SHALL BE SPREAD OUT SUCH THAT THE DESIGN LIVE LOAD PER SQUARE FOOT IS NOT EXCEEDED. PROVIDE ADEQUATE SHORING IF OVERLOAD IS ANTICIPATED OR WHERE STRUCTURAL ELEMENTS HAVE NOT ATTAINED DESIGN STRENGTH. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT CONSTITUTE ACCEPTANCE OF

CONSTRUCTION MEANS AND METHODS.

5. SUBMIT SHOP DRAWINGS FOR REVIEW BEFORE FABRICATION. CONTRACTOR SHALL REVIEW FOR COMPLETENESS AND COMPLIANCE WITH CONTRACT DOCUMENTS PRIOR TO SUBMISSION TO ARCHITECT. STRUCTURAL ENGINEER'S REVIEW IS FOR GENERAL CONFORMANCE WITH DESIGN INTENT AND DOES NOT CONSTITUTE AN AUTHORIZATION TO DEVIATE FROM TERMS AND CONDITIONS OF CONTRACT. WHEN INDICATED, THE SUBMITTAL SHALL BE SIGNED AND SEALED BY A PROFESSIONAL CIVIL OR STRUCTURAL ENGINEER LICENSED IN THE STATE OF IDAHO. MAINTAIN AT SITE A COPY OF REVIEWED AND ACCEPTED SUBMITTALS.

6. MODIFICATIONS AND SUBSTITUTIONS MUST BE ACCEPTED IN WRITING BY ARCHITECT. NO MODIFICATION OR SUBSTITUTION WILL BE ACCEPTED VIA SHOP DRAWING REVIEW. MANUFACTURED MATERIALS SHALL BE APPROVED BY THE GOVERNING CODE AUTHORITY PRIOR TO THEIR USE. ADHERE TO ALL CONDITIONS OF THESE APPROVALS.

7. "TYPICAL DETAILS" ARE APPLICABLE THROUGHOUT CONSTRUCTION DOCUMENTS AND MAY NOT BE SPECIFICALLY REFERENCED THEREIN. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THESE TYPICAL DETAILS AND UNDERSTANDING EXTENT OF THEIR APPLICATION PRIOR TO PERFORMING WORK.

8. UNLESS SPECIFICALLY SHOWN ON THE PLANS NO STRUCTURAL MEMBER SHALL BE CUT, DRILLED OR NOTCHED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER.

9. SEE ARCHITECTURAL DRAWINGS FOR:
 A. DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS.
 10. SEE MECHANICAL, ELECTRICAL, PLUMBING DRAWINGS FOR:
 A. SIZE AND LOCATION OF EQUIPMENT PADS, EQUIPMENT ANCHORAGE TO STRUCTURE AND EQUIPMENT WEIGHTS
 B. ANCHORAGE OF DUCTWORK, PIPING, ELECTRICAL CONDUITS TO STRUCTURE
 C. ELECTRICAL CONDUIT RUNS, OUTLETS AND BOXES IN CONCRETE SLABS AND WALLS.
 D. PIPE SLEEVES, TRENCHES, AND OPENINGS THROUGH WALLS AND SLABS FOR DUCTWORK, PIPE RUNS, ELECTRICAL CONDUIT RUNS.

QUALITY ASSURANCE
 1. AN APPROVED AGENCY, RETAINED BY OWNER AND SATISFACTORY TO ARCHITECT AND GOVERNING CODE AUTHORITY, SHALL PERFORM REQUIRED TESTS AND SPECIAL INSPECTIONS OF THIS CONTRACT AND APPLICABLE CODE. AN APPROVED AGENCY IS AN ESTABLISHED AND RECOGNIZED AGENCY REGULARLY ENGAGED IN CONDUCTING TESTS AND/OR FURNISHING INSPECTION SERVICES, WHEN SUCH AN AGENCY IS APPROVED.
 2. APPROVED AGENCY SHALL KEEP RECORDS OF ALL INSPECTIONS AND SHALL FURNISH INSPECTION REPORTS TO GOVERNING CODE AUTHORITY AND THE ARCHITECT. REPORTS SHALL INDICATE WHETHER THE WORK INSPECTED WAS DONE IN CONFORMANCE OR NONCONFORMANCE WITH APPROVED CONSTRUCTION DOCUMENTS. NONCONFORMITIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF NOT CORRECTED, THE NONCONFORMITIES SHALL BE BROUGHT TO THE ATTENTION OF THE GOVERNING CODE AUTHORITY AND THE ARCHITECT PRIOR TO THE COMPLETION OF THAT PHASE OF WORK. A FINAL REPORT

DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF NONCONFORMITIES SHALL BE SUBMITTED UPON COMPLETION OF WORK.

3. WHERE FABRICATION OF STRUCTURAL MEMBERS AND ASSEMBLIES IS PERFORMED ON THE PREMISES OF A FABRICATOR'S SHOP, SPECIAL INSPECTIONS OF FABRICATED ITEMS ARE REQUIRED. SPECIAL INSPECTIONS ARE NOT REQUIRED WHERE WORK IS DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED BY THE GOVERNING CODE AUTHORITY TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION.

4. CONTRACTOR SHALL SUBMIT MATERIAL CERTIFICATION OR LABORATORY TEST REPORTS CERTIFYING MATERIALS ARE OF IDENTIFIABLE TEST STOCK, COMPLYING WITH PROJECT SPECIFICATIONS, TO OWNER, APPROVED AGENCY, ARCHITECT AND, UPON REQUEST, TO GOVERNING CODE AUTHORITY. IF LABORATORY TEST REPORTS CANNOT BE MADE AVAILABLE, APPROVED AGENCY WILL PERFORM TESTS AS DIRECT BY STRUCTURAL ENGINEER. CONTRACTOR SHALL PAY FOR COSTS RELATED TO TESTS AND INSPECTIONS OF UNIDENTIFIABLE MATERIALS, MATERIALS FURNISHED WITHOUT LABORATORY TEST REPORTS, MATERIALS FOUND DEFICIENT AFTER INITIAL TESTS AND INSPECTIONS, AND/OR MATERIALS REPLACING DEFICIENT MATERIALS.

5. APPROVED AGENCY SHALL SUBMIT MATERIAL TEST REPORTS INDICATING WHETHER TESTED MATERIALS ARE IN COMPLIANCE OR NONCOMPLIANCE WITH CONTRACT DOCUMENTS TO OWNER, CONTRACTOR, ARCHITECT AND, UPON REQUEST, TO GOVERNING CODE AUTHORITY.

6. APPROVED AGENCY SHALL PERFORM SPECIAL INSPECTIONS IN ACCORDANCE WITH IBC SECTION 1704.

FOUNDATION
 1. THE DESIGN OF THE FOOTING WAS BASED ON PRESCRIPTIVE REQUIREMENTS FROM IBC TABLE 1806.2 FOR CLAY SOIL. IF THE SOIL IS MUD, ORGANIC CLAYS, PEAT, OR EXPANSIVE SOILS THEN REPLACE PER GEOTECHNICAL REPORT FROM ATLAS TECHNICAL CONSULTANTS DATED MAY 8, 2024.
 2. ISOLATED SPREAD FOOTING AND CONTINUOUS SPREAD FOOTING DESIGN BASED ON AN ALLOWABLE NET BEARING PRESSURE OF 1500 PSF. BOTTOM OF FOOTINGS SHALL BE A MINIMUM OF 30 INCHES BELOW LOWEST ADJACENT FLOOR OR GRADE.
 3. FOUNDATIONS MAY BE CAST DIRECTLY AGAINST EXCAVATIONS PROVIDED EXCAVATION IS CAPABLE OF MAINTAINING A VERTICAL CUT WITHOUT SLOUGHING. FOUNDATION DIMENSION SHALL BE ENLARGED BY AN ADDITIONAL ONE INCH IN THE DIRECTION OF THE SIDE CAST AGAINST EARTH.
 4. CONCRETE SHALL NOT BE PLACED ON FROZEN GRADE. IF FOOTING IS SUBJECT TO FREEZING TEMPERATURES AFTER FOUNDATION CONSTRUCTION, THEN FOOTING SHALL BE ADEQUATELY PROTECTED FROM FREEZING.
 5. CONTRACTOR TO PROVIDE FOR DEWATERING OF EXCAVATIONS FROM SURFACE WATER, GROUND WATER OR SEEPAGE. DEWATERING SHALL EFFECTIVELY ELIMINATE ANY HYDROSTATIC PRESSURE ON SHORING. ENSURE THAT CONTAMINATED WATER IS NOT DISPOSED OF IN PUBLIC SEWER OR STORM DRAIN SYSTEM AND ENSURE THAT DIRTY WATER IS

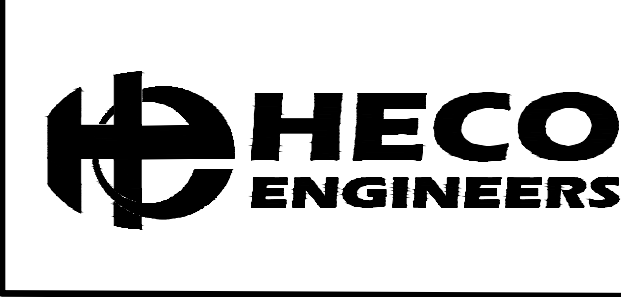
NOT DISPOSED OF INTO PUBLIC RIGHT-OF-WAY.

CAST-IN-PLACE CONCRETE
 1. ALL CONCRETE WORK SHALL CONFORM TO THE STANDARDS OF THE AMERICAN CONCRETE INSTITUTE, ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE" AND ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", WITH MODIFICATIONS AS NOTED IN THE CONTRACT DOCUMENTS.
 2. CONCRETE SHALL ATTAIN THE FOLLOWING MINIMUM COMPRESSIVE STRENGTH AT 28-DAY (f_c) UNLESS NOTED OTHERWISE:
 A. CONTINUOUS FOOTINGS: 4500 PSI, NORMALWEIGHT.
 B. SPREAD FOOTINGS: 4500 PSI, NORMALWEIGHT.
 C. SLABS-ON-GRADE: 3500 PSI, NORMALWEIGHT.
 3. PORTLAND CEMENT SHALL CONFORM TO ASTM C150, TYPE I OR TYPE II, PORTLAND CEMENT.
 4. AGGREGATES FOR NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C33. DRY UNIT WEIGHT OF 150 +/- PCF.
 5. MAXIMUM AGGREGATE SIZE SHALL BE 3/4 INCH FOR FOUNDATIONS AND 3/4" INCHES ELSEWHERE, BUT NO LARGER THAN (A) 1/5 THE NARROWEST DIMENSION BETWEEN SIDES OF FORMS, (B) 1/3 THE DEPTH OF SLABS, OR (C) 3/4 THE MINIMUM CLEAR SPACING BETWEEN INDIVIDUAL REINFORCING BARS OR WIRES, BUNDLES OF BARS, INDIVIDUAL TENDONS, BUNDLED TENDONS, OR DUCTS.
 6. MAXIMUM SLUMP SHALL BE 4 INCHES TYPICALLY, UNLESS A HIGH-RANGE WATER REDUCING ADMIXTURE (SUPERPLASTICIZER) IS USED IN THE CONCRETE MIX PROPORTIONS. THEN MAX SLUMP SHALL BE 6 IN.
 7. CONCRETE SHRINKAGE SHALL BE LIMITED TO 0.005 PERCENT AS DETERMINED BY ASTM C157.
 8. WATER CEMENT RATIO SHALL NOT EXCEED 0.45 FOR ALL CONCRETE.
 9. CONCRETE MIX PROPORTIONING SHALL BE BASED ON FIELD EXPERIENCE AND/OR TRIAL MIXTURES. SUBMIT CONCRETE MIX PROPORTIONING DATA, INCLUDING HISTORICAL STRENGTH RECORDS AND/OR RESULTS OF TRIAL MIXTURES, FOR EACH TYPE AND COMPRESSIVE STRENGTH OF CONCRETE. CONCRETE MIX PROPORTIONING SHALL BE SIGNED AND SEALED BY A PROFESSIONAL CIVIL OR STRUCTURAL ENGINEER LICENSED IN THE STATE OF IDAHO AND SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW AND APPROVAL.
 10. CONCRETE MIXING SHALL CONFORM TO ASTM C94.
 11. PROVIDE SLEEVES FOR ELECTRICAL AND PLUMBING OPENINGS. IF CONFLICT OCCURS BETWEEN REINFORCING AND SLEEVES, REPOSITION REINFORCING OR SLEEVES OR BOTH. DO NOT CUT ANY REINFORCING. CORING IS NOT PERMITTED.
 12. PRIOR TO PLACING CONCRETE, REINFORCING BARS, EMBEDDED PLATES, ANCHOR BOLTS, AND OTHER CONCRETE EMBEDMENTS SHALL BE WELL SECURED IN POSITION.
 13. CONCRETE PLACEMENT SHALL CONFORM TO ACI 304 AND CONTRACT DOCUMENTS.
 14. FORM EXPOSED CORNER OF COLUMNS, BEAMS AND WALLS WITH 3/4 INCH CHAMFER, UNLESS NOTED OTHERWISE ON ARCHITECTURAL DRAWINGS.
 15. CONCRETE SHALL BE MAINTAINED ABOVE 50 FAHRENHEIT AND IN A MOIST CONDITION FOR A MINIMUM OF 7 DAYS

AFTER PLACEMENT UNLESS OTHERWISE ACCEPTED BY ARCHITECT (STRUCTURAL ENGINEER).

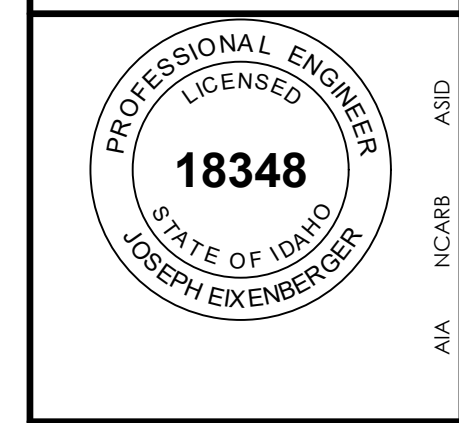
16. CURING COMPOUNDS, SEALERS, HARDENERS, ETC. USED ON CONCRETE THAT RECEIVES A FINISH SHALL BE APPROVED BY THE ARCHITECT BEFORE USE.
 17. HOT WEATHER PLACEMENT SHALL BE IN ACCORDANCE WITH ACI 305R.
 18. COLD WEATHER PLACEMENT SHALL BE IN ACCORDANCE WITH ACI 306R.
 19. AIR ENTRAINMENT SHALL BE 5.5% ±1%.
 20. LAP SPLICES SHALL BE 18" FOR #3 BAR AND 24" FOR #4 BAR.
 21. NO MORE THAN 90 MINUTES SHALL ELAPSE BETWEEN CONCRETE BATCHING AND CONCRETE PLACEMENT UNLESS APPROVED BY THE TESTING AGENCY.
 22. LIMIT ALKALI-SILICA REACTION (ASR) TO 0.1% EXPANSION AT 28 DAYS IN CONCRETE MIX AT ALL EXTERIOR CONCRETE AND INTERIOR CONCRETE EXPOSED TO MOISTURE.

REINFORCING STEEL
 1. REINFORCING STEEL SHALL BE PLACED IN ACCORDANCE TO AMERICAN CONCRETE INSTITUTE ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" AND CONCRETE REINFORCING STEEL INSTITUTE (CRSI) "MANUAL OF STANDARD PRACTICE".
 2. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
 3. MINIMUM CLEARANCES BETWEEN PARALLEL REINFORCING STEEL INCLUDING SPLICED BARS SHALL BE ONE INCH, ONE BAR DIAMETER, OR 4/3 TIMES THE MAXIMUM SIZE AGGREGATE, WHICH IS GREATER. PROVIDE 1 1/2 INCHES OR 1 1/2 BAR DIAMETERS, WHICHEVER IS GREATER, AT COLUMN. FOR BUNDLED BARS, MINIMUM CLEAR DISTANCES BETWEEN UNITS OF BUNDLED BARS SHALL BE SAME AS SINGLE BARS EXCEPT BAR DIAMETER IS DERIVED FROM EQUIVALENT TOTAL AREA OF BUNDLE.
 4. PROVIDE THE FOLLOWING CONCRETE COVERAGE FOR REINFORCING STEEL PLACED IN CAST IN-PLACE CONCRETE:
 A. CONCRETE CAST AGAINST AND
 B. PERMANENTLY EXPOSED TO EARTH: 3 INCHES
 C. CONCRETE EXPOSED TO EARTH OR WEATHER: NO. 6-NO. 18: 2 INCHES. NO. 5 BARS, W31 OR D31 WIRE, AND SMALLER 1.5 INCHES.
 D. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND: NO. 14 AND NO 18 BARS: 1.5 INCHES. NO. 11 BARS AND SMALLER: 1 INCH.
 E. SLAB ON GRADE: MID-HEIGHT OF SLABS.
 5. USE PLASTIC OR PLASTIC COATED SPACERS AND CHAIRS IF RESTING ON EXPOSED CONCRETE SURFACES.
 6. REINFORCING STEEL BENDS SHALL BE MADE COLD. RE-BENDING OF PREVIOUSLY BENT REINFORCING IS NOT PERMITTED.
 7. ALL REINFORCING STEEL SHALL BE SECURELY HELD IN PLACE WHILE PLACING CONCRETE. IF REQUIRED, ADDITIONAL BARS OR STIRRUPS SHALL BE PROVIDED BY THE CONTRACTOR TO FURNISH SUPPORT FOR ALL REINFORCING.
 8. ALL REINFORCING STEEL SHALL BE MARKED SO THEIR IDENTIFICATION CAN BE MADE WHEN FINAL INSPECTION IS CONDUCTED.



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 ■
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ITD FAIRFIELD MOBILE HOME UNITS
 FAIRFIELD, ID

PROJECT NAME:

SHEET TITLE:

STRUCTURAL NOTES

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN OR IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS OR SPECIFICATIONS

REVISION DATE

05/10/2024

CLIENT PROJ. NUMBER: ITD24-0323

ARCH. JOB NUMBER: 24626

SHEET ISSUED DATE: APRIL 2024

SHEET **S0.0**

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN OR IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS OR SPECIFICATIONS

REVISION DATE

05/10/2024

CLIENT PROJ. NUMBER: ITD24-0323

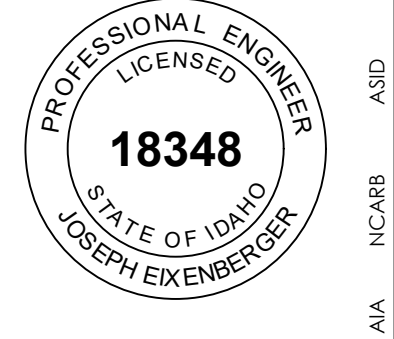
ARCH. JOB NUMBER: 24626

SHEET ISSUED DATE: APRIL 2024

SHEET **S0.0**



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ITD FAIRFIELD MOBILE HOME UNITS
 FAIRFIELD, ID

PROJECT NAME:

SHEET TITLE:

TYP. MOBILE HOME FOUNDATION PLAN

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN OR IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS OR SPECIFICATIONS

REVISION DATE

05/10/2024

CLIENT PROJ. NUMBER: ITD24-0323

ARCH. JOB NUMBER: 24626

SHEET ISSUED DATE: APRIL 2024

SHEET **S1.0**

FOUNDATION PLAN NOTES:

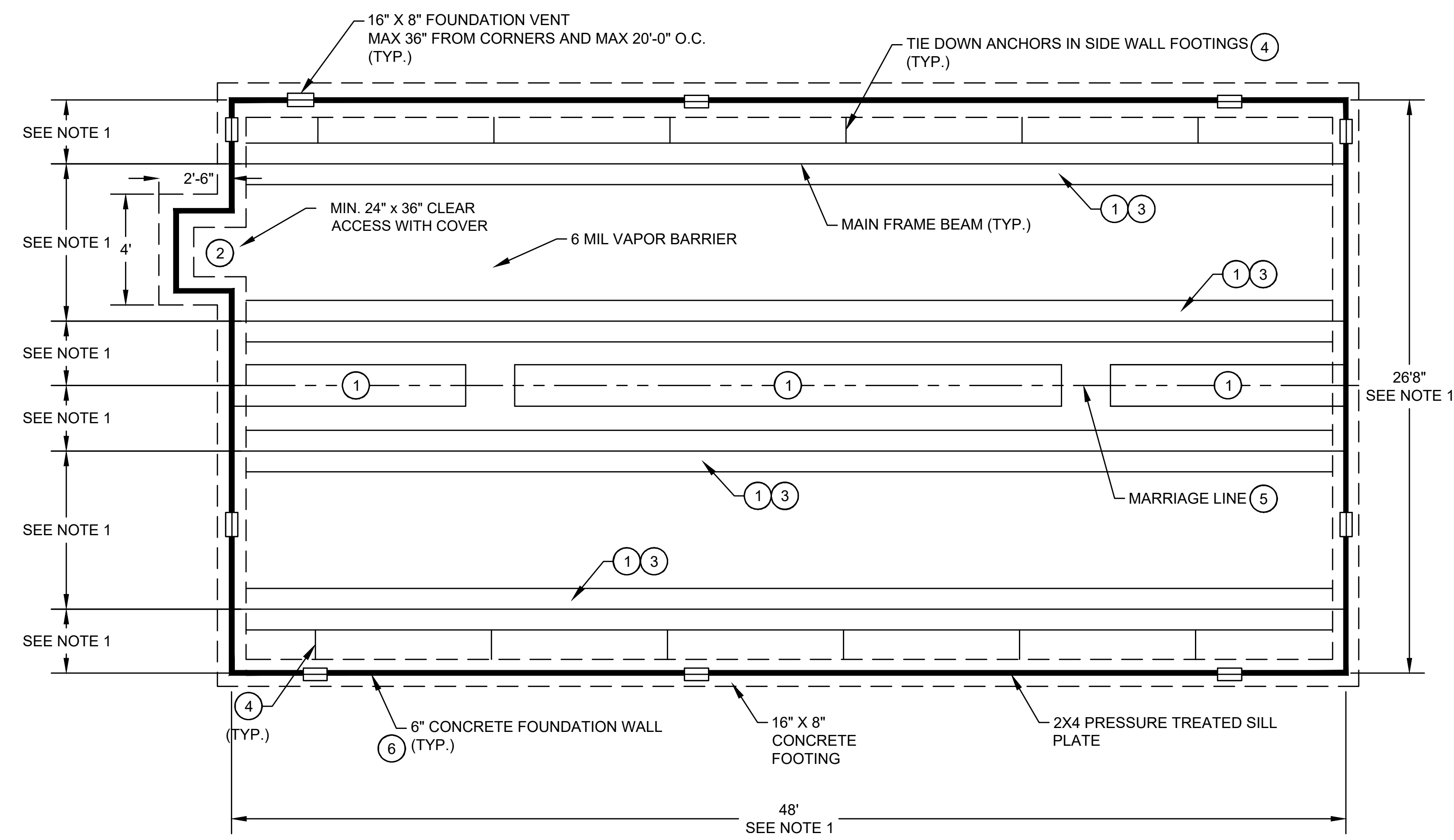
- A. VERIFY ALL DIMENSIONS WITH ALL ARCHITECTURAL DRAWINGS AND MANUFACTURER OF HOME.
- B. THE DEPTH OF FOOTING DIMENSION INDICATED ON THE PLAN IS A MINIMUM. FOUNDATION CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO ENSURE THAT THESE MINIMUMS ARE SUFFICIENT FOR THE WORK.
- C. LATERAL HOLD DOWNS SHALL BE TIE-DOWN ENGINEERING, INC. OR APPROVED EQUAL.
- D. ANCHOR SHALL BE INSTALLED AT THE LOCATION INDICATED ON THE DRAWINGS, WET SET INTO FLOWABLE FILL. THE ANCHOR HAS A MIN. ALLOWABLE HOLDING FORCE OF 3,150 POUNDS (WORKING STRES) HORIZONTAL & VERTICAL STABILIZER DEVICE REQUIRED AT EACH ANCHOR.
- E. FOR SIDEWALK LANDING LOCATION, SEE ARCHITECTURAL DRAWINGS.

F. ALL FOUNDATIONS SHALL BEAR ON 12" OF COMPACTED GRANULAR STRUCTURAL FILL PER THE GEOTECHNICAL REPORT FROM ATLAS. GRADE IS DEFINED AS LOWEST ADJACENT GRADE WITHIN 5 FEET OF THE BUILDING FOR PERIMETER FOOTINGS. WHERE EXTERIOR PAVING OR CONCRETE IS DIRECTLY ADJACENT TO BUILDING, GRADE IS DEFINED AS TOP OF EXTERIOR PAVING AT LEAST 5 FEET FORM BUILDING. CONCRETE FOOTING EXCAVATIONS SHALL BE CLEAN AND FREE OF LOOSE DEBRIS OR UN-COMPACTED MATERIAL AT TIME OF CONCRETE PLACEMENT.

- G. CONCRETE SLABS ON GRADE SHALL BE SUPPORTED ON A 4 INCH (MIN) LAYER OF FREE-DRAINING GRANULAR MAT (DRAINAGE FILL COURSE). THE MAT SHOULD CONSIST OF A WELL GRADED SAND AND GRAVEL MIXTURE WITH MAXIMUM 3/4 -INCH CRUSHED AGGREGATE CONFORMING TO GRANULAR STRUCTURAL FILL OR SUITABLE STRUCTURAL FILL PER THE GEOTECHNICAL REPORT FROM ATLAS. THE GRANULAR MAT SHOULD BE COMPACTED TO NO LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557.
- H. DESIGN IS BASED ON A DOUBLE 14' WIDE MANUFACTURED HOME. CONTRACTOR TO COORDINATE WITH THE MANUFACTURER AND INFORM THE ENGINEER FOR A REDESIGN IF ANY OF THE FOLLOWING IS UNTRUE:
- I. WEIGHT OF THE MANUFACTURED HOME IS BETWEEN 500 LBS AND 805 LBS PER LINEAR FOOT. THE DISTRIBUTED WEIGHT SHALL BE DETERMINED BY TAKING THE TOTAL WEIGHT OF THE HOME, INCLUDING MECHANICAL EQUIPMENT, AND DIVIDING IT BY THE LENGTH OF THE HOME.

KEY NOTES: #

- 1. INSTALL CONTINUOUS CONCRETE FOOTING BENEATH MAIN FRAME BEAM PER DETAIL 1 OF S5.0 AND BELOW MARRIAGE LINE.
- 2. ADJUST DIMENSIONS AND LOCATION OF ACCESS WITH ARCHITECTURAL DRAWINGS.
- 3. ADD PREFABRICATED PIERS @ 5' O.C. UNDER MAIN FRAME BEAMS PER DETAIL 2 OF S5.0.
- 4. ADD TIE DOWN ANCHORS 24" MAX FROM END OF MAIN FRAME BEAM AND THEN 11' O.C. MAX PER DETAIL 3 OF S5.0.
- 5. PONY WALL TO SUPPORT T MARRIAGE LINE RIM JOISTS PER DETAIL 4 OF S5.0.
- 6. FOUNDATION WALL AND FOOTING PER DETAIL 5 OF S5.0.



- NOTES:**
- 1. DIMENSIONS FROM THE EDGE OF HOME, FRAME BREAMS, AND MARRIAGE LINE ARE UNKNOWN AND SUBJECT TO CHANGE BY THE MANUFACTURER. CONTRACTOR TO COORDINATE WITH THE HOME MANUFACTURER TO DETERMINE SPACING. FOOTING SHALL BE CENTERED UNDER THESE AREAS.
 - 2. THE DESIGN IS FOR THE FOUNDATION AND ANCHORS ONLY. THE DESIGN OF THE MANUFACTURED HOME, ITS COMPONENTS, AND CONNECTIONS SHALL BE THE RESPONSIBILITY OF OTHERS.

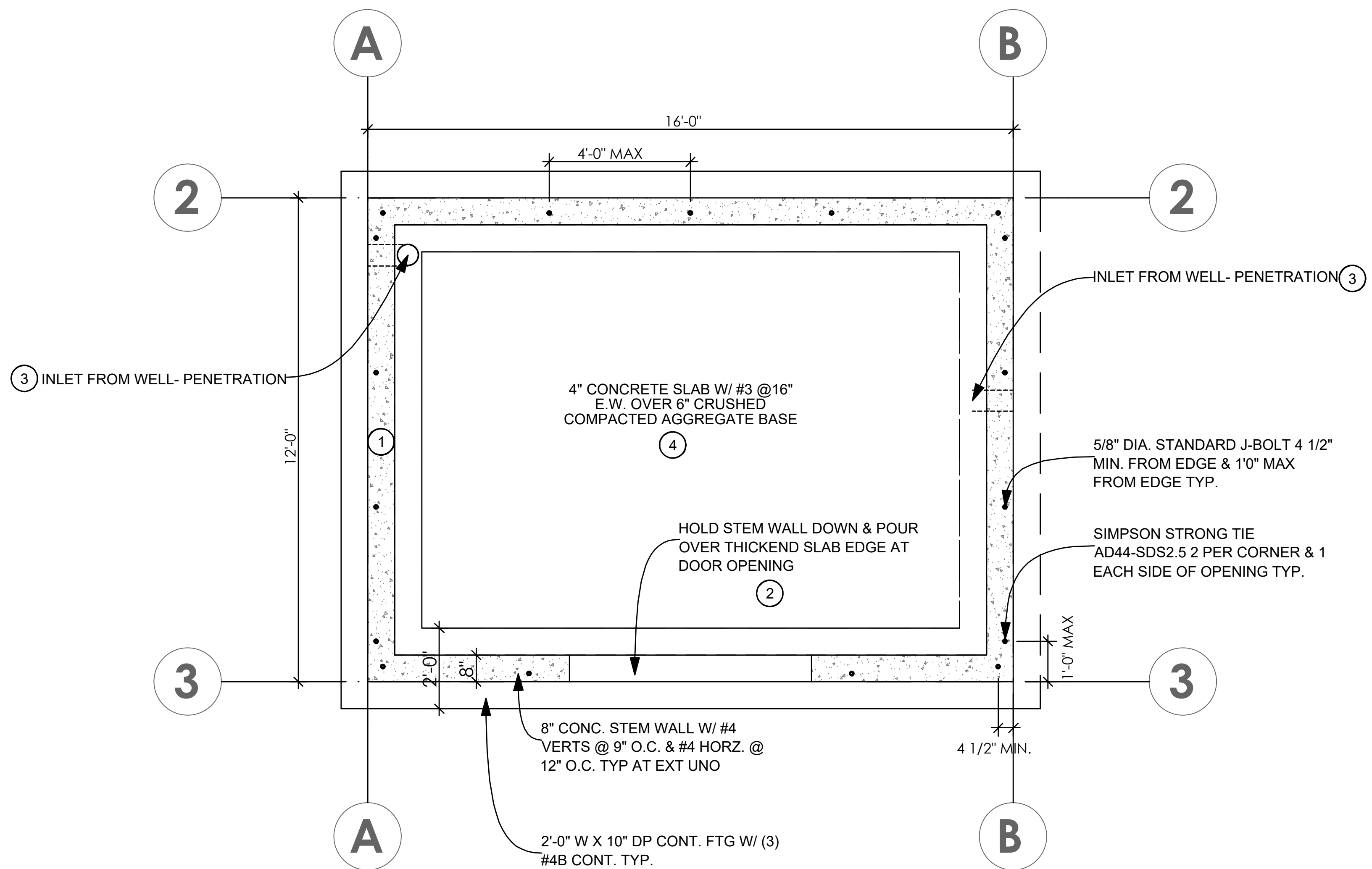
1 PERMANENT FOUNDATION SUPPORT SYSTEM
 S1.0 SCALE: NTS

FOUNDATION PLAN NOTES:

- A. VERIFY ALL DIMENSIONS WITH ALL ARCHITECTURAL DRAWINGS AND MANUFACTURER OF HOME.
- B. THE DEPTH OF FOOTING DIMENSION INDICATED ON THE PLAN IS A MINIMUM. FOUNDATION CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO ENSURE THAT THESE MINIMUMS ARE SUFFICIENT FOR THE WORK.
- C. FOR SIDEWALK LANDING LOCATION, SEE ARCHITECTURAL DRAWINGS.
- D. ALL FOUNDATIONS SHALL BEAR ON 12" OF COMPACTED GRANULAR STRUCTURAL FILL PER THE GEOTECHNICAL REPORT FROM ATLAS. GRADE IS DEFINED AS LOWEST ADJACENT GRADE WITHIN 5 FEET OF THE BUILDING FOR PERIMETER FOOTINGS. WHERE EXTERIOR PAVING OR CONCRETE IS DIRECTLY ADJACENT TO BUILDING, GRADE IS DEFINED AS TOP OF EXTERIOR PAVING AT LEAST 5 FEET FORM BUILDING. CONCRETE FOOTING EXCAVATIONS SHALL BE CLEAN AND FREE OF LOOSE DEBRIS OR UN-COMPACTED MATERIAL AT TIME OF CONCRETE PLACEMENT.
- E. CONCRETE SLABS ON GRADE SHALL BE SUPPORTED ON A 4 INCH (MIN) LAYER OF FREE-DRAINING GRANULAR MAT (DRAINAGE FILL COURSE). THE MAT SHOULD CONSIST OF A WELL GRADED SAND AND GRAVEL MIXTURE WITH MAXIMUM 3/4 -INCH CRUSHED AGGREGATE CONFORMING TO GRANULAR STRUCTURAL FILL OR SUITABLE STRUCTURAL FILL PER THE GEOTECHNICAL REPORT FROM ATLAS. THE GRANULAR MAT SHOULD BE COMPACTED TO NO LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557.
- F. THE STRUCTURAL DESIGN WAS FOR THE FOUNDATION ONLY. THE REST OF THE PUMP HOUSE WAS DESIGNED BY OTHERS.

KEY NOTES: #

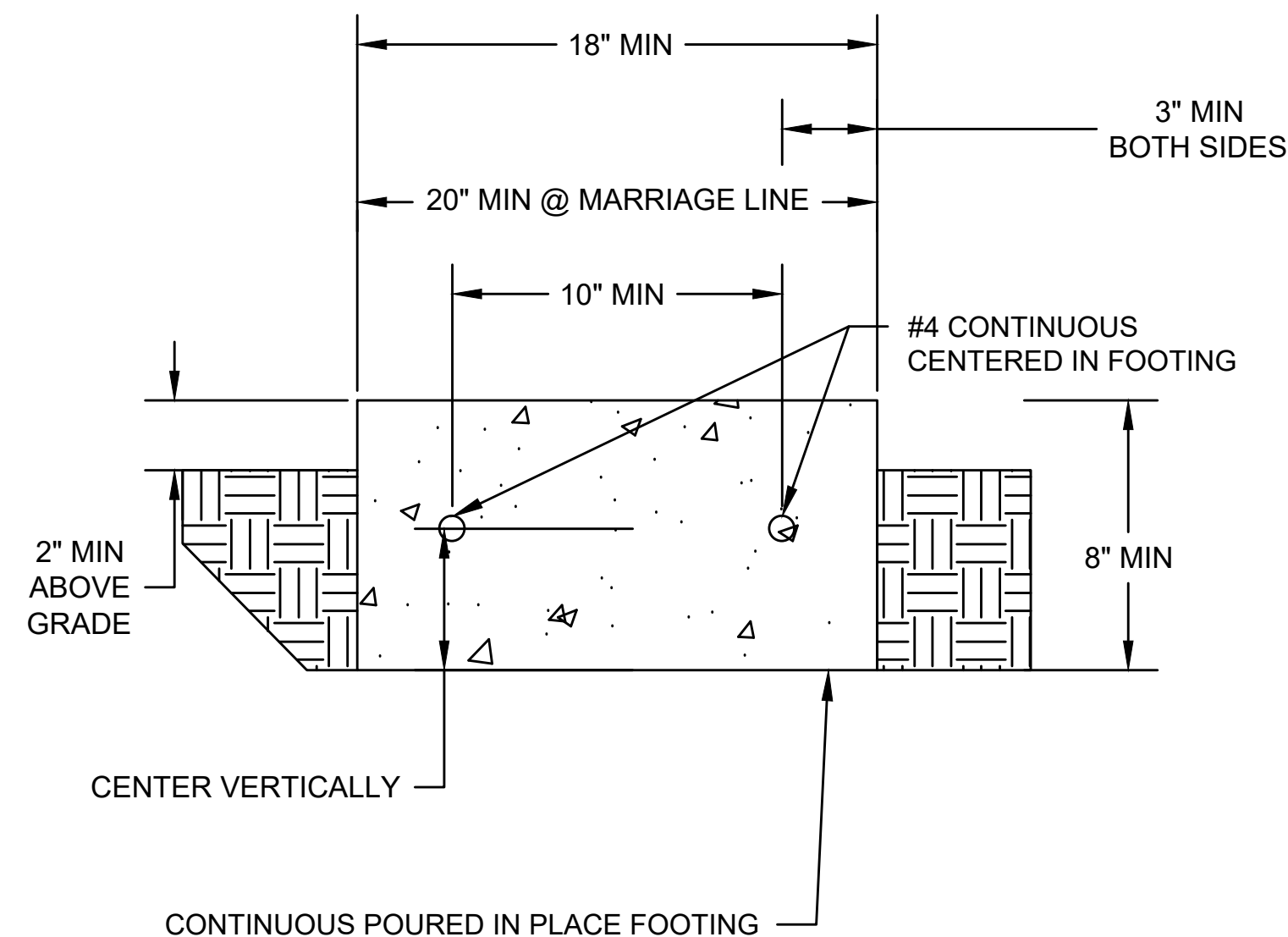
- 1. INSTALL CONTINUOUS CONCRETE FOOTING AND WALL PER DETAIL 1 OF S5.1.
- 2. ADJUST STEM WALL AND THICKEN EDGE OF SLAB PER DETAIL 3 OF S5.1.
- 3. ADD PENETRATION THROUGH WALL PER DETAIL 2 OF S5.1.
- 4. ADD CONCRETE SLAB PER DETAIL 1 OF S5.1.



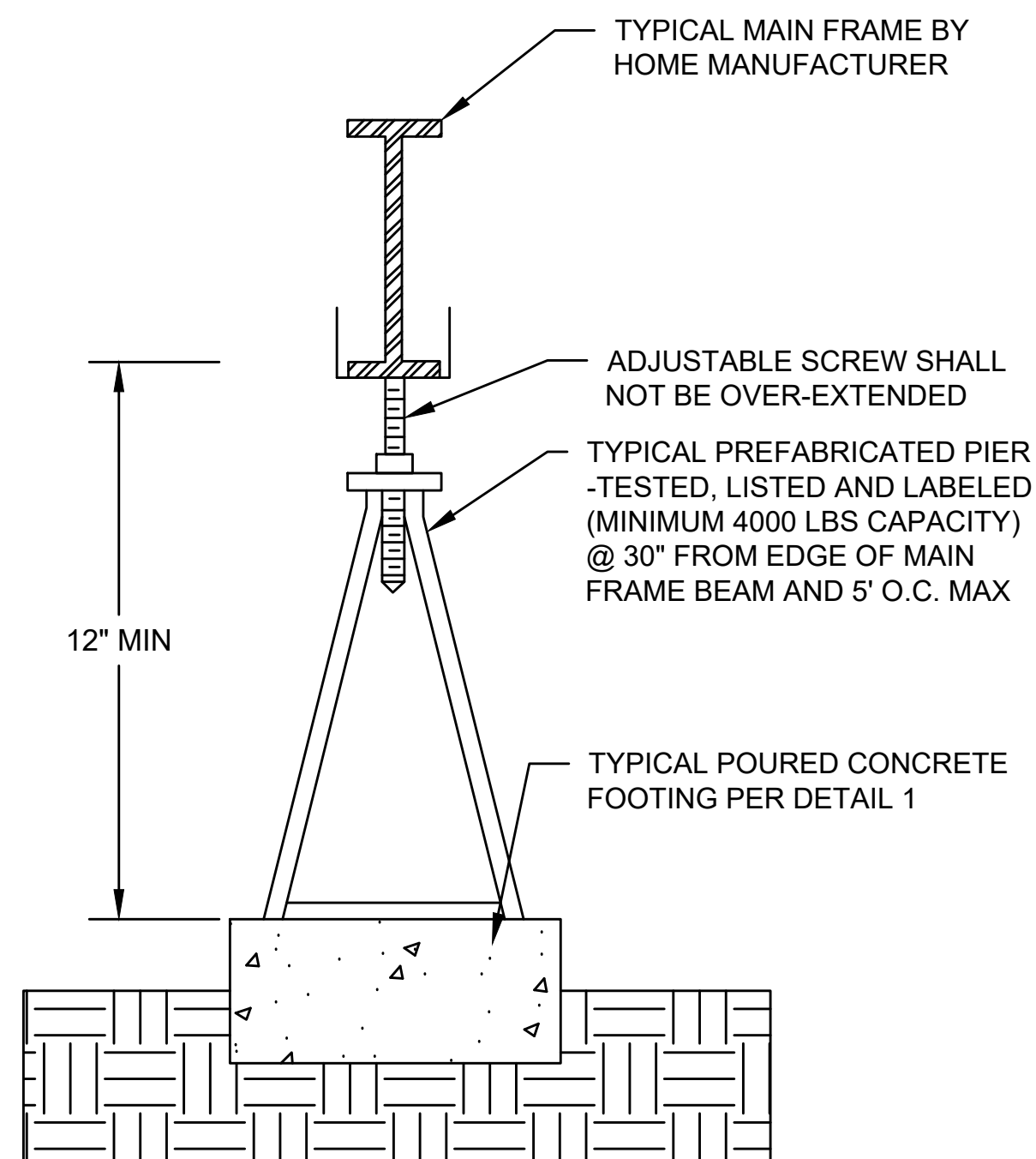
NOTES:
 1. THE DESIGN IS FOR THE FOUNDATION OF THE PUMP HOUSE AND HOLD DOWNS ONLY. THE DESIGN OF THE REST OF THE PUMP HOUSE IS THE RESPONSIBILITY OF OTHERS

1 FOUNDATION PLAN
 S1.1 SCALE: 1/2" = 1'-0"

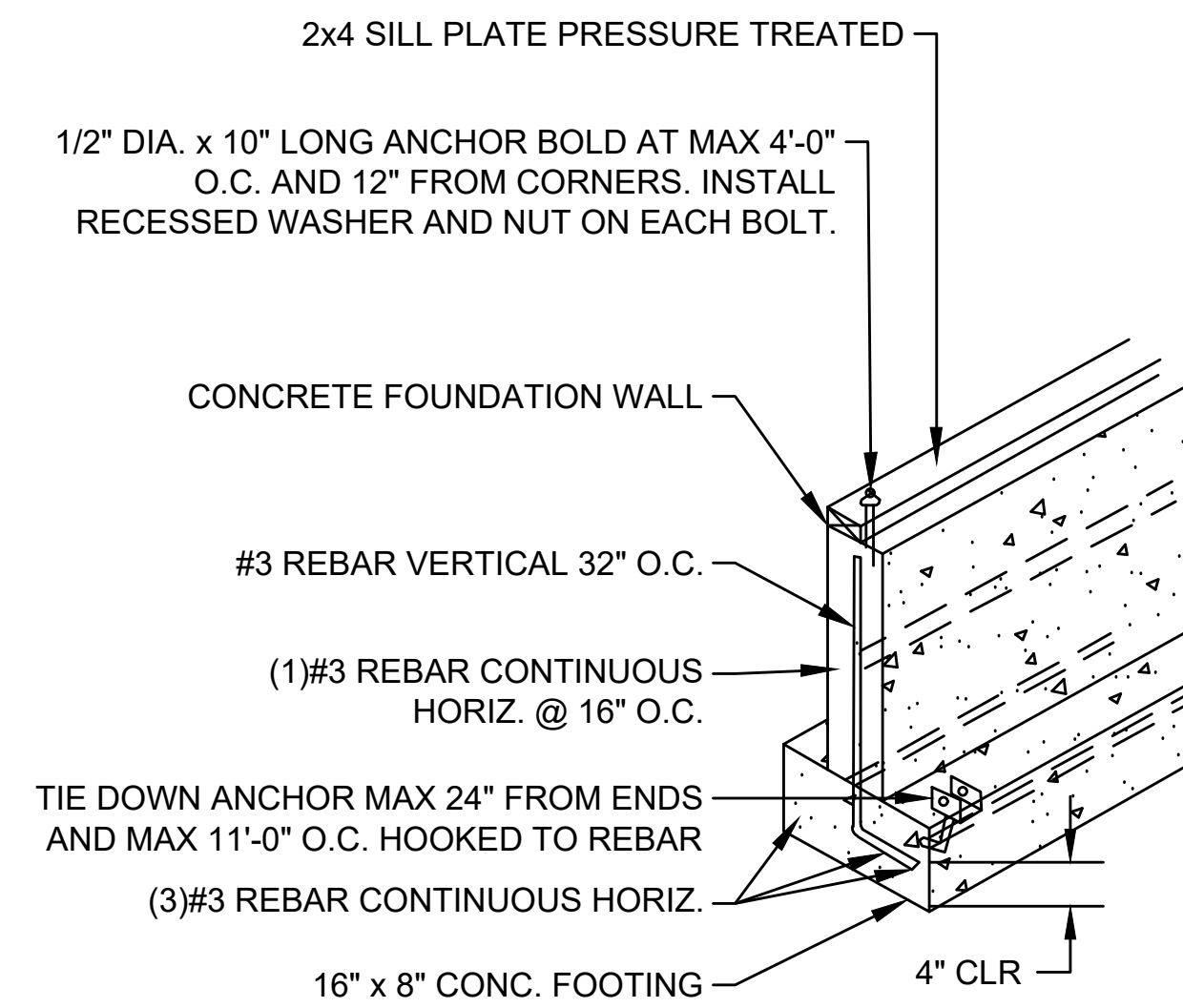




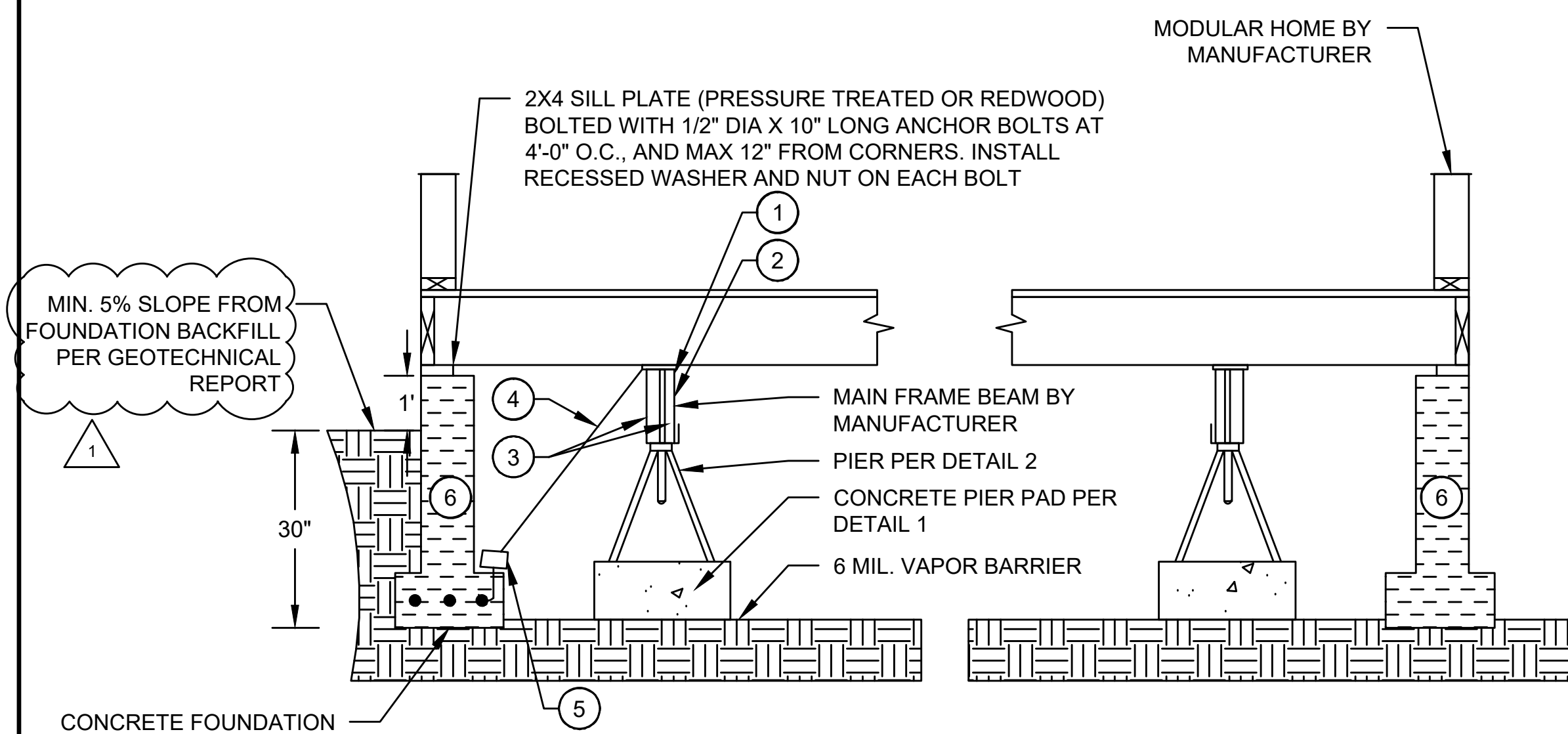
1 CONTINUOUS CONCRETE FOOTING
 S5.0 SCALE: NTS



2 TYPICAL PREFABRICATED PIER
 S5.0 SCALE: NTS



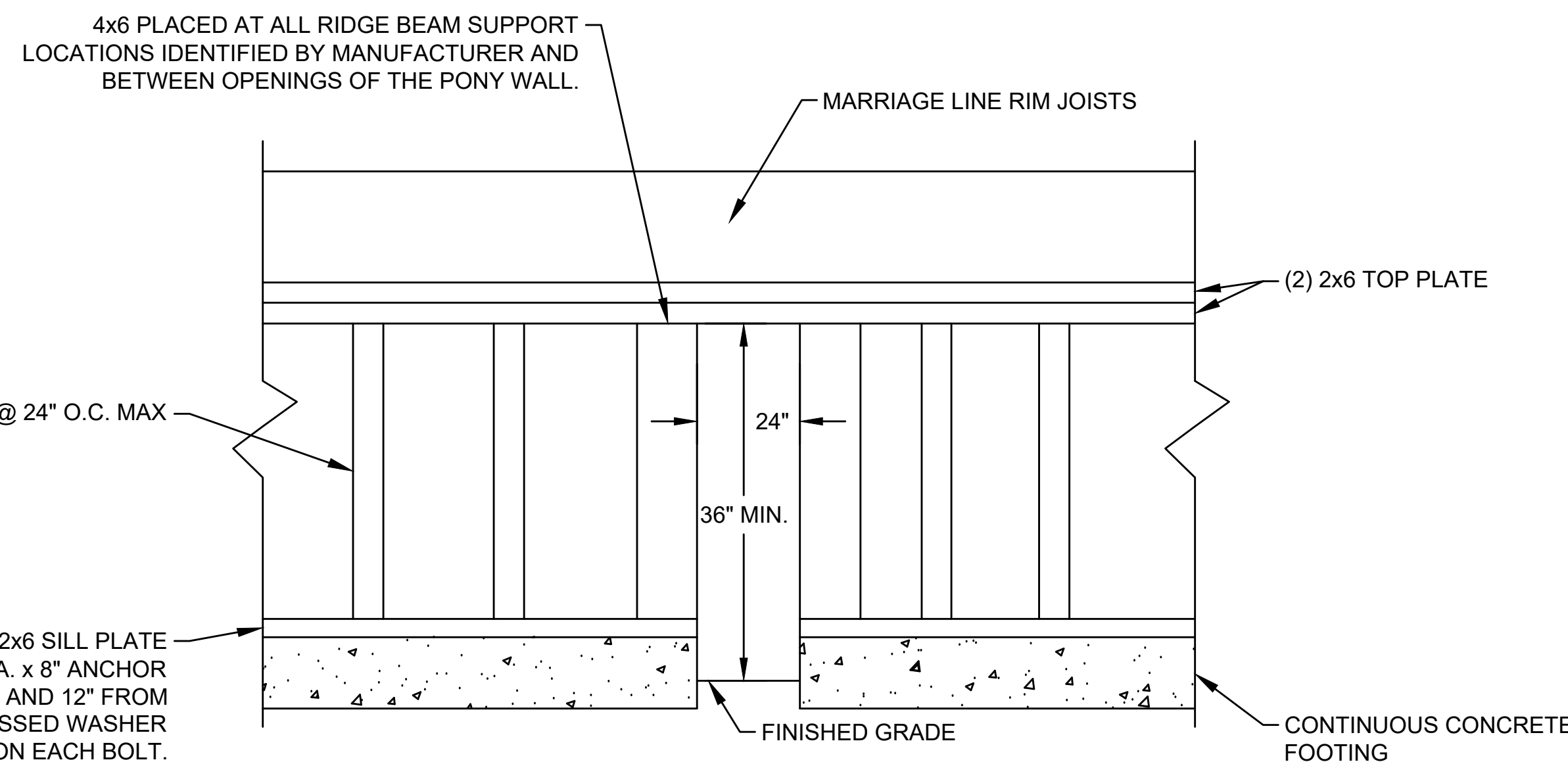
5 POURED CONCRETE FOUNDATION
 S5.0 SCALE: NTS



3 SECTION THROUGH CONCRETE FOUNDATION
 S5.0 SCALE: NTS

KEY NOTES: #

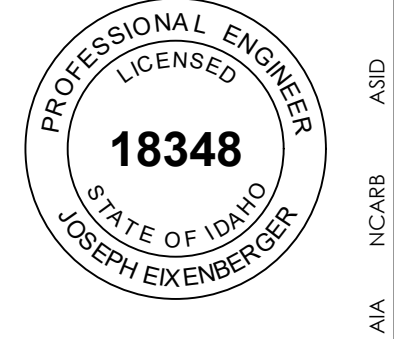
- TIE DOWN BUCKLE OPPOSITE SIDE OF HOLD DOWN ANCHOR.
- METAL HOLD DOWN STRAP THROUGH BUCKLE TWO TIMES.
- METAL HOLD DOWN STRAP AROUND FRAME.
- METAL HOLD DOWN STRIP TO ANCHOR.
- TYP. CONCRETE J ANCHOR BY TIE DOWN ENGINEERING.
- POURED CONCRETE FOUNDATION PER DETAIL 5.



4 MARRIAGE WALL PONY WALL
 S5.0 SCALE: NTS

NOTES:

- ALL WOOD MEMBERS WILL BE DOUGLAS FIR #2 OR BETTER
- CONSTRUCTION OF PONY WALL WILL BE ACCORDING TO INTERNATIONAL BUILDING CODE 2308.5 AND CONNECTIONS PER TABLE 2304.10.1.



ITD FAIRFIELD MOBILE HOME UNITS
 FAIRFIELD, ID

PROJECT NAME:

SHEET TITLE:

PUMP HOUSE FOUNDATION DETAILS

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN OR IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS OR SPECIFICATIONS

REVISION DATE

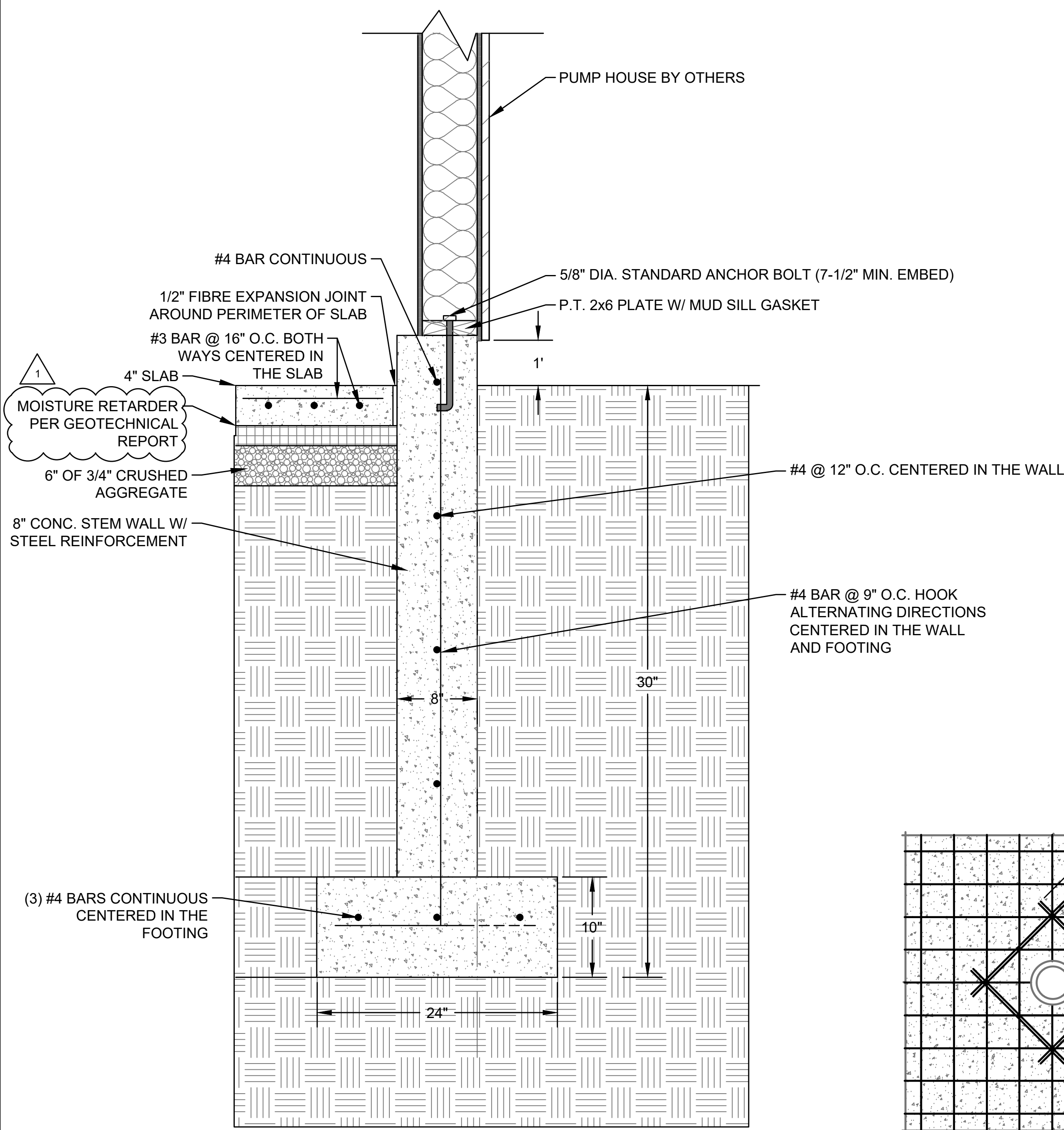
▲ 05/10/2024

CLIENT PROJ. NUMBER: ITD24-0323

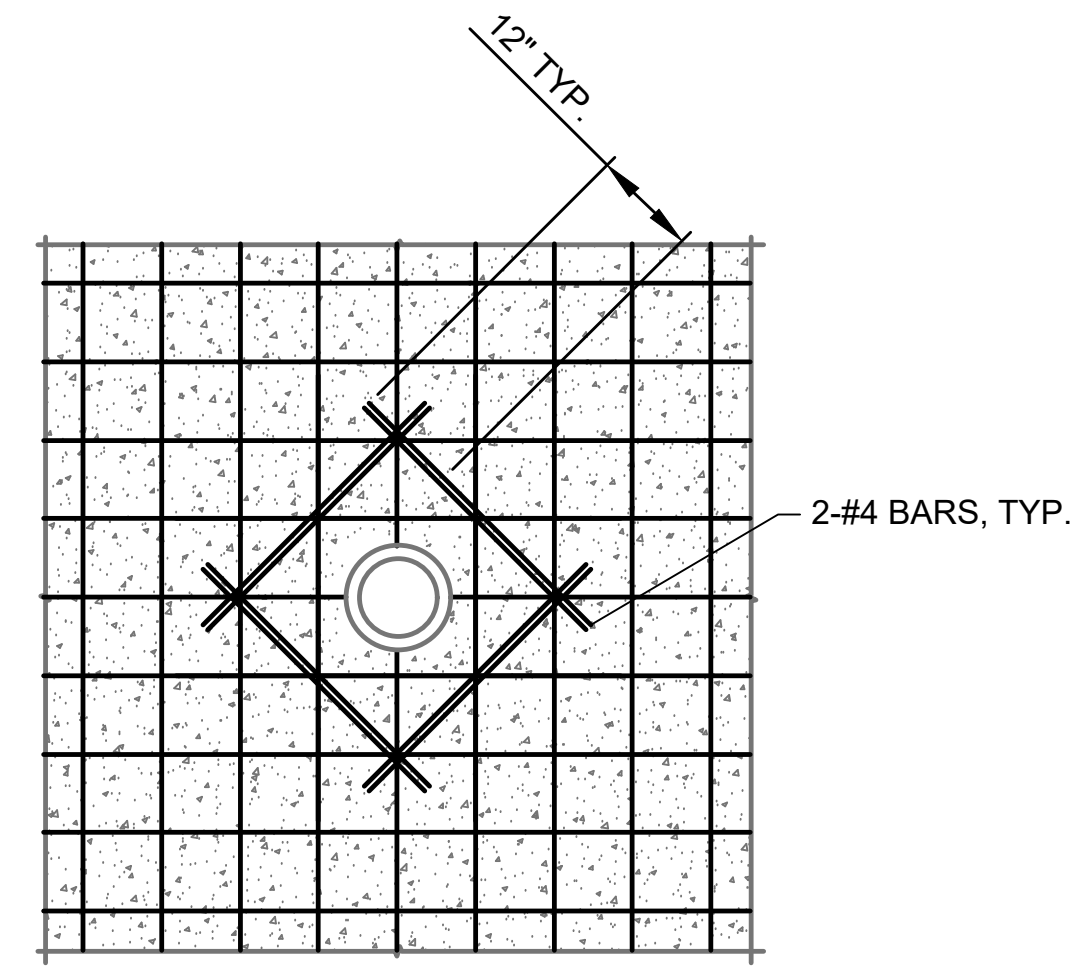
ARCH. JOB NUMBER: 24626

SHEET ISSUED DATE: APRIL 2024

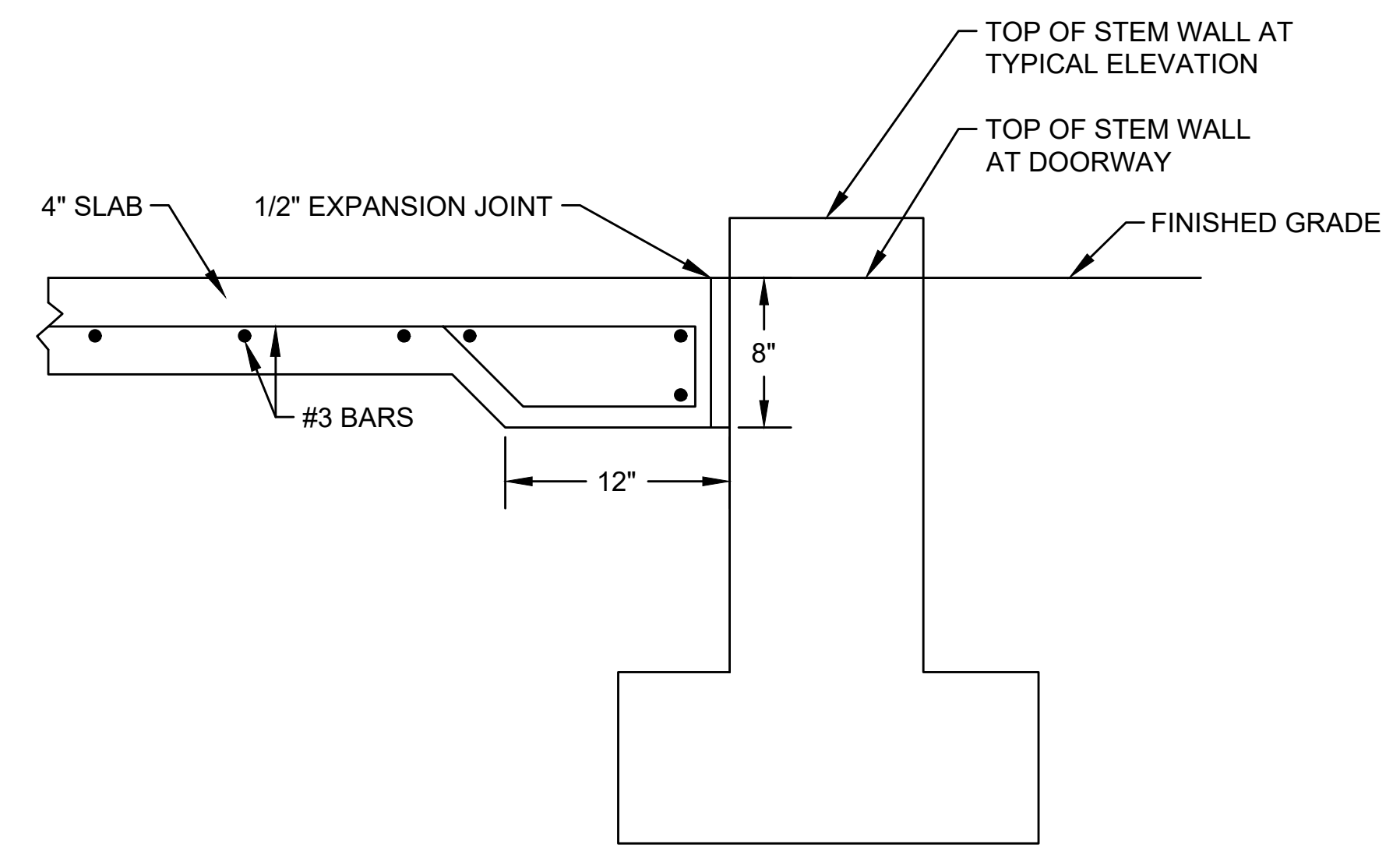
SHEET **S5.1**



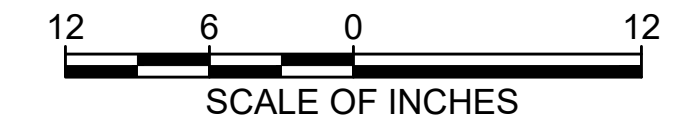
1 STEM WALL FOUNDATION
 S5.1 SCALE: 1-1/2" = 1'-0"



2 PIPE PENETRATION DETAIL
 S5.1 SCALE: NTS



3 THICKENED EDGE AT DOOR EDGE
 S5.1 SCALE: NTS



SECTION 15010: BASIC MECHANICAL REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION-1 SPECIFICATION SECTIONS, APPLY TO THE WORK OF THIS SECTION.

1.02 SUMMARY

- A. FURNISH ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND SERVICES FOR ALL MECHANICAL WORK AS SPECIFIED AND INDICATED, IN ACCORDANCE WITH PROVISIONS OF CONTRACT DOCUMENTS. COMPLETELY COORDINATE WITH WORK OF ALL OTHER TRADES. ALTHOUGH SUCH WORK IS NOT SPECIFICALLY INDICATED, FURNISH AND INSTALL ALL SUPPLEMENTARY OR MISCELLANEOUS ITEMS, APPURTENANCES AND DEVICES INCIDENTAL TO OR NECESSARY FOR A SOUND, SECURE AND COMPLETE INSTALLATION.
- B. FURNISH AND PROVIDE ALL NECESSARY NOTICES, OBTAIN AND PAY FOR ALL PERMITS AND PAY ALL GOVERNMENT SALES TAXES, FEES AND OTHER COSTS INCURRED IN CONNECTION WITH THE WORK. OBTAIN ALL REQUIRED CERTIFICATES OF INSPECTION FOR THE WORK.
- C. DRAWINGS, USE AND INTERPRETATION:
 - 1. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND EQUIPMENT, EXCEPT -WHEN SPECIFICALLY DIMENSIONED OR DETAILED.
 - 2. FOR EXACT LOCATIONS OF BUILDING ELEMENTS, REFER TO DIMENSIONED ARCHITECTURAL AND STRUCTURAL DRAWINGS.
 - 3. FIELD MEASUREMENTS TAKE PRECEDENCE OVER DIMENSIONED DRAWINGS.
 - 4. PIPING AND DUCTWORK PLANS ARE INTENDED TO SHOW SIZE, CAPACITY, APPROXIMATE LOCATION, DIRECTION AND GENERAL RELATIONSHIP OF ONE WORK PHASE TO ANOTHER, BUT NOT THE EXACT DETAIL OR ARRANGEMENT.
 - 5. FIELD VERIFY LOCATIONS AND ARRANGEMENT OF ALL EXISTING SYSTEMS AND EQUIPMENT.

1.03 QUALITY ASSURANCE

- A. PERFORM ALL WORK IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS.

1.04 JOB CONDITIONS

- A. CAUSE AS LITTLE INTERFERENCE OR INTERRUPTION OF EXISTING UTILITIES AND SERVICES AS POSSIBLE. WORK WHICH WILL CAUSE INTERFERENCE OR INTERRUPTION SHALL BE SCHEDULED IN ADVANCE WITH CONSTRUCTION MANAGER.
- B. EXAMINE CONTRACT DOCUMENTS TO DETERMINE HOW OTHER WORK WILL AFFECT EXECUTION OF MECHANICAL WORK.
- C. DETERMINE AND VERIFY LOCATIONS OF ALL EXISTING UTILITIES.
- D. ESTABLISH LINES AND LEVELS FOR EACH SYSTEM AND COORDINATE WITH OTHER SYSTEMS TO PREVENT CONFLICTS AND MAINTAIN PROPER CLEARANCES AND ACCESSIBILITY.

PART 2 - PRODUCTS

2.01 GENERAL

- A. MATERIALS FOR MECHANICAL WORK: USE ONLY PRIME QUALITY, NEW MATERIALS, APPARATUS AND EQUIPMENT.
 - 1. STANDARD PRODUCTS OF MANUFACTURER SPECIFIED.
 - 2. WHERE MORE THAN ONE UNIT IS REQUIRED ON ANY ITEM, FURNISH BY THE SAME MANUFACTURER, EXCEPT WHERE SPECIFIED OTHERWISE.
 - 3. INSTALL SAME MANUFACTURER, EXCEPT AS OTHERWISE SPECIFIED.
 - 4. INSTALL MATERIALS AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- B. FURNISH EQUIPMENT THAT WILL OPERATE UNDER ALL CONDITIONS OF LOAD WITHOUT ANY SOUND OR VIBRATION THAT IS OBJECTIONABLE IN THE OPINION OF THE ARCHITECT/ENGINEER. VIBRATION OR NOISE CONSIDERED OBJECTIONABLE WILL BE CORRECTED BY THE SUBCONTRACTOR AT HIS EXPENSE.
- C. FURNISH AND INSTALL ALL NECESSARY FOUNDATIONS, SUPPORTS, PADS, BASES AND PIERS REQUIRED FOR ALL MATERIALS AND EQUIPMENT FURNISHED UNDER THIS CONTRACT.
- D. PROVIDE ALL REQUIRED FIRE STOPPING AT PIPING AND DUCT PENETRATIONS OF FIRE RATED WALL, FLOORS, CEILINGS AND ROOFS.

2.02 MATERIALS AND EQUIPMENT

- A. DELIVER MATERIALS OR EQUIPMENT TO SITE IN THE MANUFACTURER'S ORIGINAL UNOPENED, LABELED CONTAINERS AND ADEQUATELY PROTECT AGAINST MOISTURE, TAMPING OR DAMAGE FROM IMPROPER HANDLING OR STORAGE. DO NOT DELIVER TO SITE BEFORE ITEMS ARE READY FOR INSTALLATION.
- B. FACTORY APPLIED FINISHES: REPAIR AND/OR REFINISH WORK DAMAGED BY THE WORK OF THIS DIVISION, TO THE ENGINEER'S SATISFACTION. OBTAIN FINISHING MATERIALS FROM EQUIPMENT MANUFACTURER.
- C. COMPLY WITH THE REQUIREMENTS FOR SUBSTITUTIONS SPECIFIED ELSEWHERE IN THIS SECTION.

2.03 MANUFACTURERS

- A. QUALIFICATIONS: FIRMS REGULARLY ENGAGED IN MANUFACTURE OF PRODUCTS SPECIFIED, OF TYPES AND CAPACITIES REQUIRED, WHOSE PRODUCTS HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR NOT LESS THAN 5 YEARS, UNLESS OTHERWISE SPECIFIED.
- B. SUBJECT TO COMPLIANCE WITH REQUIREMENTS SPECIFIED, PROVIDE MATERIAL OR PRODUCT FROM ONE OF THE MANUFACTURERS LISTED FOR EACH ITEM.

2.04 SUBMITTALS

- A. WITHIN THIRTY DAYS AFTER AWARD OF CONTRACT, PROVIDE SIX COPIES OF A COMPLETE LIST OF ALL MATERIALS AND EQUIPMENT PROPOSED FOR THIS PROJECT.
- B. INCLUDE MAKE, TYPE, MANUFACTURER'S NAME, TRADE DESIGNATION, OPERATING WEIGHT AND LOCATION OF THE CENTER OF GRAVITY (WHERE APPLICABLE) OF EACH ITEM OF EQUIPMENT IN MANUFACTURER'S CUT SHEET.
- C. APPROVAL OF SUBMITTALS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY OF DEVIATIONS FROM THE PLANS OR SPECIFICATIONS, UNLESS HE HAS, IN WRITING, CALLED THE ARCHITECTS/ENGINEERS ATTENTION TO DEVIATIONS AT THE TIME OF SUBMISSION, AND OBTAINED HIS WRITTEN APPROVAL. APPROVAL OF SUBMITTALS DOES NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS IN SHOP DRAWINGS OR LITERATURE.
- D. EQUIPMENT REQUIRING SUBMITTALS:
 - 1. PLUMBING FIXTURES.
 - 2. HVAC EQUIPMENT
 - 3. GRILLES, REGISTERS, DIFFUSERS.

2.05 SUBSTITUTION

- A. GENERAL:
 - 1. MODEL, SIZE AND SCHEDULED DATA REFER TO THE MANUFACTURER INDICATED IN EQUIPMENT SCHEDULES.
 - 2. MANUFACTURERS NAMED IN THIS SPECIFICATION ARE ACCEPTABLE, BUT THEIR EQUIPMENT, MATERIALS AND/OR METHODS ARE SUBJECT TO THE ENGINEER'S REVIEW AND ACCEPTANCE.
 - 3. WHERE "OR EQUAL" IS MENTIONED AND MANUFACTURER, MATERIAL AND/OR METHOD OTHER THAN SPECIFIED ARE SUBMITTED FOR APPROVAL, INCLUDE PROOF OF EQUALITY. THE BURDEN OF PROOF AS TO THE EQUALITY OF ANY PROPOSED SUBSTITUTE MANUFACTURER, MATERIAL OR METHOD SHALL REST UPON THE CONTRACTOR.
 - 4. THE ENGINEER'S DECISION SHALL BE FINAL.
- B. REQUESTS FOR SUBSTITUTION REVIEW AND ACCEPTANCE SHALL BE ACCOMPLISHED BY TABLE OF COMPARISON LISTING PERTINENT FEATURES OF BOTH SPECIFIED AND PROPOSED MATERIALS, SUCH AS MATERIAL OF CONSTRUCTION, REPLACEMENT OR MAINTENANCE ACCESS, MOTOR TYPE, HORSEPOWER, VOLTAGE, PHASE, SERVICE FACTOR. REVIEW OF PROPOSED SUBSTITUTIONS WILL NOT BE MADE UNTIL RECEIPT OF SATISFACTORY COMPARISON TABULATION.
- C. SUBMITTAL OF SUBSTITUTIONS SHALL BE LIMITED TO ONE PROPOSAL FOR EACH TYPE OR KIND OF ITEM, UNLESS OTHERWISE PERMITTED BY ENGINEER. IF FIRST PROPOSED PRODUCT SUBMITTAL IS REJECTED, CONTRACTOR SHALL THEN SUBMIT THE FIRST-NAMED OR SCHEDULED PRODUCT.

PART 3 - EXECUTION

3.01 GENERAL

- A. COORDINATE ALL WORK WITH THE VARIOUS TRADES INVOLVED TO PROVIDE A COMPLETE AND SATISFACTORY INSTALLATION.
- C. WHEN CHANGES IN LOCATION OF ANY WORK ARE REQUIRED, OBTAIN APPROVAL OF ENGINEER BEFORE MAKING CHANGE.
- D. DO NOT CHANGE INDICATED SIZES WITHOUT APPROVAL OF ENGINEER.
- E. PROVIDE ALL NECESSARY OFFSETS AND CROSSOVERS IN PIPING AND DUCTWORK, WHETHER INDICATED OR NOT.
- F. INSTALL PIPING PARALLEL TO WALLS AND VERTICALLY PLUMB.
- G. EXAMINE AREAS AND CONDITIONS UNDER WHICH MECHANICAL SYSTEM MATERIALS AND PRODUCTS ARE TO BE INSTALLED. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO INSTALLER.

3.02 ELECTRICAL

- A. ELECTRIC MOTORS REQUIRED FOR EQUIPMENT SPECIFIED IN THIS SECTION SHALL BE PROVIDED AND INSTALLED BY THIS SUBCONTRACTOR. MOTOR STARTERS, DISCONNECTS, RELAYS, PILOT LIGHTS, ETC. ARE, IN GENERAL, TO BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. STARTERS, RELAYS, CONTROLS, ETC. WHICH IS FACTORY ASSEMBLED INTO PACKAGED EQUIPMENT SHALL BE FURNISHED BY THIS SUBCONTRACTOR UNDER THIS SECTION OF THE SPECIFICATIONS.
- B. ALL MOTORS SHALL BE PROVIDED WITH ADEQUATE STARTING AND PROTECTIVE EQUIPMENT AS SPECIFIED OR REQUIRED. MOTOR CAPACITY SHALL BE SUFFICIENT TO OPERATE DRIVEN DEVICE UNDER ALL CONDITIONS OF OPERATION AND LOAD WITHOUT OVERLOAD. MINIMUM HORSEPOWER SHALL BE AS SPECIFIED.

3.03 EXCAVATING, TRENCHING, AND BACKFILLING

- A. GENERAL: LAY PIPE TO REQUIRED LINES AND GRADES. PLACE FITTINGS AND VALVES AT REQUIRED LOCATIONS AND WITH JOINTS CENTERED, SPIGOTS HOME, AND VALVE STEMS PLUMB.
 - 1. SUBSURFACE EXPLORATIONS: WHENEVER NECESSARY TO DETERMINE LOCATION OF EXISTING UNDERGROUND UTILITY STRUCTURES, EXAMINE AVAILABLE RECORDS AND MAKE EXPLORATIONS AND EXCAVATIONS NECESSARY TO DETERMINE UTILITY LOCATIONS.
 - 2. OBSTRUCTIONS CAUSED BY OTHER UTILITY STRUCTURES: WHERE GRADES OR ALIGNMENT OF PIPE IS OBSTRUCTED BY EXISTING UTILITY STRUCTURES SUCH AS CONDUITS, DUCTS, PIPES, BRANCH CONNECTIONS TO MAIN SEWERS, OR MAIN DRAINS, PERMANENTLY SUPPORT, RELOCATE, REMOVE, OR RECONSTRUCT OBSTRUCTION.
 - 3. PROTECTING UNDERGROUND AND SURFACE STRUCTURES: PROVIDE TEMPORARY SUPPORT AND ADEQUATE PROTECTION AND MAINTENANCE OF UNDERGROUND AND SURFACE UTILITY STRUCTURES, DRAINS, SEWERS, AND OTHER OBSTRUCTIONS ENCOUNTERED IN PROGRESS OF THE WORK. PROTECT POLES, FENCES, TREES, AND OTHER PROPERTY UNLESS THEIR REMOVAL IS AUTHORIZED. SATISFACTORILY RESTORE ANY PROPERTY DAMAGED.
 - 4. DEVIATIONS: MAKE NO DEVIATION FROM REQUIRED LINE OR GRADE WITHOUT WRITTEN PERMISSION.

3.04 CUTTING AND PATCHING

- A. PROVIDE ALL CUTTING AND PATCHING NECESSARY TO INSTALL THE WORK SPECIFIED IN THIS SECTION.
 - 1. PATCHING SHALL MATCH ADJACENT SURFACES.
 - 2. NO STRUCTURAL MEMBERS SHALL BE CUT WITHOUT THE APPROVAL OF THE ARCHITECT/ENGINEER.
 - 3. LOCATE OPENINGS AND SLEEVES TO PERMIT NEAT INSTALLATION OF PIPING, DUCTWORK AND EQUIPMENT.

3.05 INSTALLATION OF EQUIPMENT

- A. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- B. PROVIDE ALL NECESSARY ANCHORING DEVICES AND SUPPORTS.
 - 1. USE STRUCTURAL SUPPORTS SUITABLE FOR EQUIPMENT, OR AS INDICATED.
 - 2. CHECK LOADINGS AND DIMENSIONS OF EQUIPMENT WITH SHOP DRAWINGS.
 - 3. DO NOT CUT OR WELD TO BUILDING STRUCTURAL MEMBERS, UNLESS SPECIFICALLY INDICATED OTHERWISE.
 - 4. PROVIDE ALL EQUIPMENT SUPPORTS NOT DETAILED ON ARCHITECTURAL AND MECHANICAL DRAWINGS.
- C. VERIFY THAT EQUIPMENT WILL FIT SUPPORT LAYOUTS INDICATED.
 - 1. WHERE SUBSTITUTE EQUIPMENT IS USED, REVISE INDICATED SUPPORTS TO FIT.
 - 2. COORDINATE SIZE AND LOCATION OF ROOF PENETRATIONS AND WALL OPENINGS WITH WORK OF OTHER SECTIONS.
- D. INSTALL RAIN HOODS AND METAL COUNTER FLASHINGS AS INDICATED AND TO MAKE ALL PENETRATIONS OF MECHANICAL WORK THROUGH WALLS AND ROOFS, WATER AND WEATHER-TIGHT. FURNISH ALL CLAMPS, WATERPROOFING MATERIAL AND LABOR NECESSARY.
- E. INSTALL EQUIPMENT TO PERMIT EASY ACCESS FOR NORMAL MAINTENANCE.
 - 1. MAINTAIN EASY ACCESS TO FILTERS, MOTORS, DRIVES, VALVES, ETC.
 - 2. MINOR CHANGES FROM THE DRAWINGS MAY BE MADE, WITH PRIOR APPROVAL, TO ALLOW FOR BETTER ACCESSIBILITY.
- F. IN MECHANICAL AREAS, COORDINATE LOCATIONS OF FLOOR DRAINS, FLOOR SINKS, ETC., WITH LOCATIONS OF EQUIPMENT AND HOUSEKEEPING PADS. LOCATE DRAINS TO PROPERLY SERVE EQUIPMENT AND TO RESULT IN ORDERLY ROUTING OF DRAIN PIPING, WHILE MINIMIZING TRIPPING HAZARDS, ETC.

3.06 INSTALLATION OF EQUIPMENT FURNISHED BY OWNER OR OTHER DIVISION

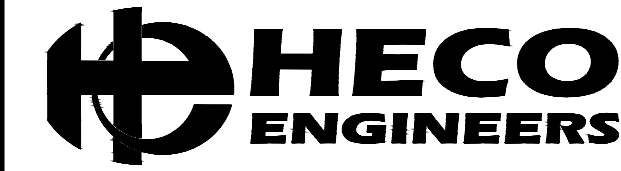
- A. RECEIVE, UN-CRATE, INSPECT, MOVE IN PLACE AND INSTALL ANY OWNER SUPPLIED EQUIPMENT.
- B. PROVIDE ROUGH-IN AND FINAL CONNECTIONS TO ALL EQUIPMENT REQUIRING MECHANICAL SERVICES.
- C. INSTALL ALL FITTINGS, VALVES, AND OTHER ITEMS FURNISHED AS INTEGRAL PART OF EQUIPMENT, BUT SHIPPED LOOSE.

3.07 FIELD QUALITY CONTROL

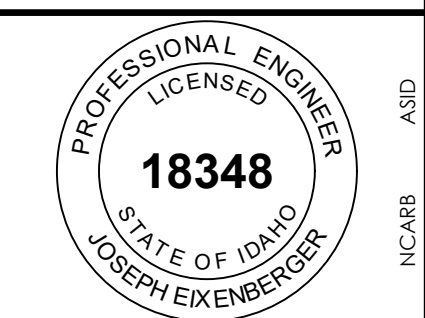
- A. PERFORM INDICATED TESTS TO DEMONSTRATE WORKMANSHIP, OPERATION, AND PERFORMANCE.
 - 1. CONDUCT TESTS IN PRESENCE OF INSPECTORS OF AGENCIES HAVING JURISDICTION, AS REQUIRED.
 - 2. FURNISH ALL LUBRICATING MATERIALS REQUIRED FOR TEST.
- B. REPAIR OR REPLACE EQUIPMENT AND SYSTEMS FOUND INOPERATIVE OR DEFECTIVE AND RE-TEST.
 - 1. IF EQUIPMENT OR SYSTEM FAILS RE-TEST, REPLACE IT WITH PRODUCTS WHICH CONFORM WITH CONTRACT DOCUMENTS.
 - 2. CONTINUE REMEDIAL MEASURES AND RE-TESTS UNTIL SATISFACTORY RESULTS ARE OBTAINED.

3.08 ADJUST AND CLEAN

- A. INSPECT ALL EQUIPMENT AND PUT IN GOOD WORKING ORDER.
- B. CLEAN ALL EXPOSED AND CONCEALED ITEMS:
 - 1. CLEAN FLOOR DRAINS, CLEANOUTS, AND PLUMBING FIXTURES.
 - 2. CLEAN SPECIALTIES SUCH AS TRAPS AND STRAINERS.
- C. EQUIPMENT AND MATERIALS: REMOVE FOREIGN MATERIALS INCLUDING DIRT, GREASE, SPLASHED PAINT, AND PLASTER, ETC. RESTORE TO ORIGINAL CONDITION AND FINISH DAMAGED ITEMS.
- D. DOMESTIC WATER SYSTEMS:
 - 1. STERILIZATION: AFTER ABOVE FLUSHING, DRAINING, AND REFILLING, STERILIZE DOMESTIC WATER SYSTEMS IN ACCORDANCE WITH REQUIREMENTS OF PUBLIC HEALTH AGENCY HAVING JURISDICTION. IF HEALTH DEPT. DOES NOT HAVE SPECIFIC REQUIREMENTS, USE FOLLOWING ALTERNATIVE.
 - a. ALTERNATIVE PROCEDURE: STERILIZE DOMESTIC WATER SYSTEMS WITH 4% CHLORINE SOLUTION INJECTED INTO SYSTEM TO CONCENTRATION OF 50 PARTS PER MILLION AND ALLOW TO STAND FOR 24 HOURS. AFTER THIS PERIOD, PURGE THROUGHOUT ENTIRE STRUCTURE AT OUTLETS; REDUCE SYSTEM CHLORINE CONTENT TO LESS THAN 1 PART PER MILLION.
 - 2. WARNING SIGNS: PROVIDE SIGNS AT OUTLETS DURING CHLORINATION.
- E. GAS: AFTER TESTING OF NATURAL GAS OR PROPANE SYSTEM, AND BEFORE ANY GAS OR PROPANE IS PUT INTO LINE, BLOW OUT ENTIRE SYSTEM OF PIPING TO REMOVE SCALE AND DIRT; PURGE AIR BY FILLING SYSTEM WITH GAS.
- F. ADJUSTING: ADJUST EQUIPMENT AND SYSTEM COMPONENTS AS INDICATED OR AS OTHERWISE REQUIRED TO RESULT IN INTENDED SYSTEM OPERATION. THEREAFTER, AS A RESULT OF SYSTEM OPERATION, OR AS DIRECTED, MAKE READJUSTMENTS AS NECESSARY TO REFINE PERFORMANCE AND TO EFFECT COMPLETE SYSTEM TUNEUP.



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Joseph Eixenberger
 Digitally signed by Joseph Eixenberger
 Date: 2024.05.10 14:28:06 -0500

ITD FAIRFIELD MOBILE HOME UNITS
 FAIRFIELD, ID

PROJECT NAME:

SHEET TITLE:
BASIC MECHANICAL REQUIREMENTS SPECIFICATION SECTION 15010

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

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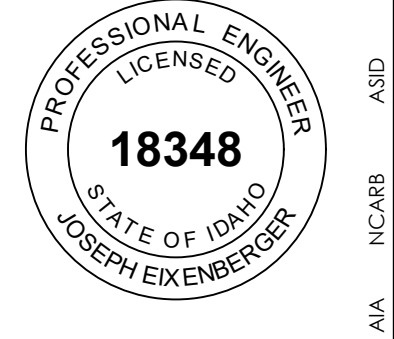
REVISION	DATE

CLIENT PROJ. NUMBER: ITD24-0323
 ARCH. JOB NUMBER: 24626
 SHEET ISSUED DATE: APRIL 2024

SHEET **MO.0**



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SHEET **MO.1**

3.09 TESTING

- A. PIPING:
 1. ALL PLUMBING PIPING SHALL BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE UNIFORM PLUMBING CODE, LATEST EDITION. OTHER PIPING SYSTEMS SHALL BE TESTED TO 1.5 TIMES THE OPERATING PRESSURE, FOR A MINIMUM PERIOD OF TWO HOURS. IF THE TEST PRESSURES FALLS MORE THAT 5 PERCENT DURING THE TEST PERIOD, THE LEAK SHALL BE LOCATED, REPAIRED, AND THE TEST REPEATED.
 2. TEST THERMOMETERS, PRESSURE GAGES, AND WATER METERS FOR ACCURATE INDICATION; AUTOMATIC WATER FEEDERS, AIR VENTS, TRAP PRIMERS, VACUUM BREAKERS, AND OTHER SPECIALTIES FOR PROPER PERFORMANCE.
- B. SYSTEMS:
 1. ALL SYSTEMS, INCLUDING HEATING, VENTILATING, AIR CONDITIONING, AND PLUMBING SYSTEMS, SHALL BE TESTED AT THE COMPLETION OF THE BUILDING TO ESTABLISH THE SYSTEMS OPERATE AS SPECIFIED AND REQUIRED. TESTING SHALL BE PERFORMED AFTER AIR AND WATER BALANCING IS COMPLETED.
 2. ALL CONTROLS SHALL BE CALIBRATED ACCURATELY AND ALL EQUIPMENT SHALL BE ADJUSTED FOR SATISFACTORY OPERATION. EXCESSIVE VIBRATION OR NOISE FROM ANY SYSTEM SHALL BE CORRECTED.
 3. THE AIR CONDITIONING SYSTEM SHALL BE TESTED FOR SATISFACTORY OPERATION WHEN THE OUTSIDE AIR TEMPERATURE REACHES 60 DEGREES F. OR WARMER. ALL OTHER SYSTEMS SHALL BE TESTED AT BUILDING COMPLETION.
 4. ALL TESTS SHALL BE PERFORMED IN THE PRESENCE OF THE ARCHITECT/ENGINEER OR HIS REPRESENTATIVE.
- C. HANGERS AND SUPPORTS:
 1. WITH SYSTEMS IN NORMAL OPERATION, TEST HANGERS, SUPPORTS AND RODS TO INSURE THEY ARE PLUMB AND SUPPORTING PROPER SHARE OF LOAD. ADDITIONALLY SUPPORT SYSTEMS AND EQUIPMENT THAT SWAY, CRAWL, OR VIBRATE.
- D. OTHER MATERIALS AND EQUIPMENT:
 1. TEST AS SPECIFIED; AS RECOMMENDED BY EQUIPMENT MANUFACTURER; AND AS OTHERWISE NECESSARY OR DIRECTED TO ASSURE THEY ARE COMPLETE, OPERABLE, AND READY FOR USE.

3.10 BALANCING

- A. PRIOR TO FINAL ACCEPTANCE BY THE OWNERS, ALL AIR SYSTEMS IN THE BUILDING SHALL BE BALANCED TO DELIVER THE QUANTITIES AS SPECIFIED OR DIRECTED. THE AIR BALANCE SHALL BE PERFORMED BY AN INDEPENDENT AGENCY SPECIALIZING IN BALANCING.
- B. TEST PROCEDURES:
 1. EXAMINE INSTALLED WORK AND CONDITIONS UNDER WHICH TESTING IS TO BE DONE TO ENSURE THAT WORK HAS BEEN COMPLETED, CLEANED, AND IS OPERABLE. DO NOT PROCEED WITH TESTING, ADJUSTING AND BALANCING (TAB) WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO TESTER.
 2. TEST, ADJUST AND BALANCE ENVIRONMENTAL SYSTEMS AND COMPONENTS, AS INDICATED, IN ACCORDANCE WITH PROCEDURES OUTLINED IN APPLICABLE STANDARDS.
 3. TEST, ADJUST AND BALANCE SYSTEM DURING SUMMER SEASON FOR AIR CONDITIONING SYSTEMS AND DURING WINTER SEASON FOR HEATING SYSTEMS, INCLUDING AT LEAST PERIOD OF OPERATION AT OUTSIDE CONDITIONS WITHIN 5 DEGREES F WET BULB TEMPERATURE OF MAXIMUM SUMMER DESIGN CONDITION, AND WITHIN 10 DEGREES F DRY BULB TEMPERATURE OF MINIMUM WINTER DESIGN CONDITION. WHEN SEASONAL OPERATION DOES NOT PERMIT MEASURING FINAL TEMPERATURES, THEN TAKE FINAL TEMPERATURE READINGS WHEN SEASONAL OPERATION DOES PERMIT.
 4. PREPARE REPORT OF TEST RESULTS, INCLUDING INSTRUMENTATION CALIBRATION REPORTS, IN FORMAT RECOMMENDED BY APPLICABLE STANDARDS.
 5. PATCH HOLES IN INSULATION, DUCTWORK AND HOUSINGS, WHICH HAVE BEEN CUT OR DRILLED FOR TEST PURPOSES, IN MANNER RECOMMENDED BY ORIGINAL INSTALLER.
 6. MARK EQUIPMENT SETTINGS, INCLUDING DAMPER CONTROL POSITIONS, VALVE INDICATORS, FAN SPEED CONTROL LEVERS, AND SIMILAR CONTROLS AND DEVICES, TO SHOW FINAL SETTINGS AT THE COMPLETION OF TAB WORK. PROVIDE MARKINGS WITH PAINT OR OTHER SUITABLE PERMANENT IDENTIFICATION MATERIALS.
 7. RETEST, ADJUST, AND BALANCE SYSTEMS SUBSEQUENT TO SIGNIFICANT SYSTEM MODIFICATIONS, AND RESUBMIT TEST RESULTS.

3.11 SYSTEMS START UP

- A. STARTUP REQUIREMENTS APPLY TO CONTRACTOR AND OWNER SUPPLIED EQUIPMENT AND SYSTEMS.
- B. PRIOR TO FINAL ACCEPTANCE, AT TIME AGREED TO BY THE OWNER AND ENGINEER, PUT ALL SYSTEMS INTO SATISFACTORY OPERATION.
- C. AT FIRST HEATING OR COOLING SEASON FOLLOWING FINAL ACCEPTANCE, START UP SYSTEMS NOT STARTED DUE TO LACK OF SEASONAL DESIGN LOAD OR OPERATION OF THE CENTRAL SYSTEM.
- D. OPERATE ALL SYSTEMS IN GOOD WORKING ORDER FOR PERIOD OF FIVE (5) WORKING DAYS.
- E. PROVIDE SERVICES OF AUTHORIZED FACTORY SERVICE REPRESENTATIVE TO PERFORM START-UP AND OPERATION DEMONSTRATION SERVICES.
- F. PERFORM SERVICES IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN START-UP INSTRUCTIONS. TEST CONTROL AND DEMONSTRATE COMPLIANCE WITH REQUIREMENTS. REPLACE DAMAGED OR MALFUNCTIONING CONTROLS AND EQUIPMENT.
- G. MAINTENANCE AND OPERATION TRAINING:
 1. AFTER THE MECHANICAL SYSTEM IS COMPLETELY INSTALLED AND OPERATIONAL, THE MECHANICAL CONTRACTOR SHALL PROVIDE A MINIMUM OF TWO HOURS OF TRAINING AND INSTRUCTION TIME FOR THE BUILDING OWNER OR HIS REPRESENTATIVE. DURING THIS PERIOD, THE CONTRACTOR SHALL INSTRUCT THE OWNER IN THE OPERATION AND MAINTENANCE OF ALL PARTS OF THE MECHANICAL SYSTEM, USING THE O&M MANUAL WHERE APPLICABLE.

3.12 SPECIAL TOOLS

- A. FURNISH TO OWNER NOT LATER THAN WHEN OWNER TAKES POSSESSION OF EQUIPMENT.
- B. DEFINITION OF SPECIAL TOOLS: IDENTIFIED IN OR OTHERWISE IMPLIED BY, THE MANUFACTURER'S OPERATION AND MAINTENANCE MANUALS FOR THE FURNISHED EQUIPMENT, OR WHICH ARE OTHERWISE REQUIRED FOR THE OPERATION, WITH THE MANUFACTURER'S RECOMMENDED PROCEDURES FOR OPERATION, ADJUSTMENT AND MAINTENANCE. SPECIAL TOOLS DO NOT INCLUDE THOSE REQUIRED FOR MAJOR REPAIRS NORMALLY DONE BY FACTORY TRAINED OR OTHERWISE SPECIALIZED SERVICE PERSONNEL, NOR DO THEY INCLUDE THOSE NORMALLY FOUND IN THE POSSESSION OF OWNER'S ON SITE MAINTENANCE PERSONNEL.

3.13 RECORD DOCUMENTS AND OPERATING AND MAINTENANCE MANUALS

- A. THE CONTRACTOR SHALL PROVIDE TWO COPIES OF AN OPERATIONS AND MAINTENANCE MANUAL AT LEAST THIRTY DAYS PRIOR TO COMPLETION OF WORK. THE MANUAL SHALL BE OF THE THREE RING BINDER TYPE, ENTITLED, "OPERATION AND MAINTENANCE MANUAL," WITH THE JOB NAME AND YEAR OF COMPLETION ALSO INCLUDED. THE MANUAL SHALL INCLUDE, AS A MINIMUM:
 1. LIST OF ALL EQUIPMENT WITH MANUFACTURER'S NAME, MODEL NUMBER, AND LOCAL REPRESENTATIVE, SERVICE FACILITIES AND NORMAL CHANNEL OF SUPPLY FOR EACH ITEM.
 2. SYSTEM DESCRIPTION: DESCRIPTION OF START UP AND OPERATING PROCEDURES.
 3. CONTROLS: DIAGRAMS AND DESCRIPTION OF OPERATION SEQUENCE OF EACH SYSTEM.
 4. EQUIPMENT: MANUFACTURER'S BROCHURES, RATINGS, CERTIFIED SHOP DRAWINGS, LUBRICATION CHARTS AND DATA, PARTS LISTS WITH PART NUMBERS, AND BELT AND SHEAVE DATA. MARK EACH SHEET WITH EQUIPMENT IDENTIFICATION NUMBER AND ACTUAL INSTALLED CONDITION.
 5. MATERIALS AND ACCESSORIES: MANUFACTURER'S BROCHURES, PARTS LISTS WITH PART NUMBERS AND LUBRICATION DATA WHERE APPLICABLE. MARK EACH SHEET WITH EQUIPMENT IDENTIFICATION NUMBER OR SYSTEM AND LOCATION OF INSTALLATION; AND TO SPECIFICALLY IDENTIFY WHICH OPTIONS ARE PROVIDED (IN CASE WHERE DATA SHEET SHOWS MULTIPLE OPTIONS).
 6. CERTIFICATE OF FACTORY TEST AND CODE COMPLIANCE AS SPECIFIED.
 7. AIR AND/OR WATER SYSTEM BALANCE REPORT AS HEREIN SPECIFIED.
 8. GUARANTEE LETTER AS HEREIN SPECIFIED.
 9. ANY ADDITIONAL INFORMATION REQUIRED TO ENABLE THE OWNER TO PROPERLY OPERATE AND MAINTAIN THE BUILDING MECHANICAL SYSTEM.
- B. PROVIDE TWO COMPLETE SETS OF BLUELINE AS-BUILT MECHANICAL DRAWINGS.
 1. THE DRAWINGS SHALL INDICATE ALL DEPARTURES FROM THE CONTRACT DRAWINGS, AND SHALL LOCATE ALL UNDERGROUND UTILITY LINES WITH DIMENSIONS FROM ESTABLISHED BUILDING LINES. MAKE ALL NOTATIONS NEAT AND LEGIBLE, WITH RED INDELIBLE PENCIL. AT THE COMPLETION OF THE WORK, THESE AS-BUILT DRAWINGS SHALL BE SIGNED AND DATED BY THE MECHANICAL CONTRACTOR, AND RETURNED TO THE ARCHITECT/ENGINEER.

3.14 GUARANTEE

- A. ALL WORK FURNISHED UNDER THIS SECTION SHALL BE GUARANTEED IN WRITING TO BE FREE FROM DEFECTIVE WORK OR MATERIALS FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE OF THE CONTRACT. ALL REPAIRS OR REPLACEMENTS BECAUSE OF DEFECTIVE MATERIALS OR WORKMANSHIP OR NONCOMPLIANCE WITH CODE SHALL BE PROVIDED WITHOUT ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL FURNISH A LETTER INDICATING ABOVE GUARANTEE WITH SPACE FOR DATE OF ACCEPTANCE AND EXPIRATION OF GUARANTEE. LETTER SHALL BE INCLUDED IN O&M MANUAL.

END OF SECTION 15010

SECTION 15400: PLUMBING

PART 1 - GENERAL

1.01 SUMMARY

A. THIS SECTION COVERS THE WORK NECESSARY FOR THE PLUMBING SYSTEM, COMPLETE. THE MECHANICAL GENERAL PROVISIONS, SECTION 15010, ARE TO BE INCLUDED AS PART OF THIS SECTION OF THE SPECIFICATIONS.

1.02 QUALITY ASSURANCE

A. THE PLUMBING SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE UNIFORM PLUMBING CODE, ANSI STANDARDS, INTERNATIONAL MECHANICAL CODE, NFPA AND IBC, AS APPLICABLE.

PART 2 - PRODUCTS

2.01 GENERAL

A. PLUMBING FIXTURES AND EQUIPMENT SHALL BE AS LISTED ON THE DRAWINGS. IN ADDITION TO THOSE SPECIFICALLY LISTED, THE FOLLOWING MANUFACTURERS ARE APPROVED FOR BIDDING ONLY, WITH FINAL APPROVAL FOR INSTALLATION BASED ON SUBMITTAL DATA FURNISHED.

- 1. FIXTURES: AMERICAN STANDARD, KOHLER, ELJER, ELKAY, JUST, SUNROC, HALSEY-TAYLOR, OASIS, HAWS, CRANE, ACORN, BRADLEY.
- 2. SPECIALTIES: BELL & GOSSETT, CLA VAL CO., FEBCO SALES, HERSEY PRODUCTS, ITT, WATTS, J.R. SMITH
- 3. CARRIERS AND DRAINAGE PRODUCTS: J.R. SMITH, JOSAM, ZURN, AND WADE.
- 4. WATER HEATERS: BRADFORD-WHITE, RHEEM, AO SMITH, STATE AND AMERICAN.
- 5. INSULATION: ARMSTRONG WORLD INDUSTRIES, CERTAINTEED, KNAUF FIBER GLASS, MANVILLE PRODUCTS, OWENS-CORNING FIBERGLASS, PITTSBURGH CORNING
- 6. NATURAL GAS PRODUCTS: DEZURIK CORP, JENKINS BROS, LUKENHEIMER CO, NIBCO, POWELL (THE WM.) CO, ROCKWELL INTERNATIONAL, STOCKHAM VALVES AND FITTINGS, WALWORTH
- 7. ALL OTHER MANUFACTURERS REQUIRE PRIOR APPROVAL.

2.02 FIXTURE AND PIPING STANDARDS

- A. PLUMBING FIXTURES: ANSI A112, ARI 1010, Z358.1 ANSI/ASSE 1011, 1013, 1019, PDI WH-201
- B. PIPING: ASTM D2321, D1527, D2468, D2661, D2235, D2665, D3311, D2564

2.03 PLUMBING FIXTURES AND TRIM

A. ALL PLUMBING FIXTURES SHALL BE PROVIDED COMPLETE WITH ALL REQUIRED TRIM FOR A COMPLETE AND OPERATIONAL SYSTEM. ALL EXPOSED TRIM SHALL BE CHROME PLATED. ALL PIPING PENETRATIONS THROUGH FINISHED WALL SHALL BE PROVIDED WITH CHROME ESCUTCHEONS. ALL PLUMBING FIXTURES SHALL BE CAULKED AND SEALED TO SURROUNDING SURFACES.

2.04 PIPING AND FITTINGS:

A. GENERAL:

- 1. UNDERGROUND SANITARY SEWER AND STORM DRAIN LINES SHALL BE INSTALLED AT 1/4-INCH PER FOOT SLOPE, UNLESS OTHERWISE INDICATED. IF SUCH SLOPE IS NOT POSSIBLE DUE TO EXISTING INVERTS, APPROVAL SHALL BE OBTAINED FROM THE ARCHITECT/ENGINEER AND THE AUTHORITY HAVING JURISDICTION BEFORE ANY PIPING IS INSTALLED AT A LESSER SLOPE.
- 2. CONNECTIONS BETWEEN PIPING OF DISSIMILAR MATERIALS SHALL BE MADE WITH DIELECTRIC UNIONS.
- 3. PROVIDE STANDARD MANUFACTURED WATER HAMMER ARRESTERS AT ALL FLUSH VALVES. SIZE AND LOCATE PER MANUFACTURERS RECOMMENDATIONS. PROVIDE ACCESS PANELS FOR ACCESS TO ALL WATER HAMMER ARRESTERS.

B. DOMESTIC HOT AND COLD WATER:

- 1. PIPING INSIDE BUILDING ABOVE SLAB OR ABOVE GRADE IN CRAWL SPACE SHALL BE ASTM B88, TYPE "L," HARD DRAWN COPPER. FITTINGS SHALL BE ANSI/ASME B16.23 CAST BRASS, OR ANSI/ASME B16.29 WROUGHT COPPER. JOINTS SHALL BE ANSI/ASTM B32 SOLDER, GRADE 95-5, LEAD FREE.
- 2. PIPING UNDERGROUND WITHIN 5 FEET OF THE BUILDING LINE OR BELOW FLOOR SLAB, SMALLER THAN 4 INCHES, SHALL BE ASTM B88, TYPE "K," HARD DRAWN OR SOFT ANNEALED COPPER. FITTINGS SHALL BE ANSI/ASME B16.29 WROUGHT COPPER. JOINTS SHALL BE ANSI/ASTM B32 SOLDER, GRADE 95-5, LEAD FREE. NO JOINTS SHALL BE INSTALLED BENEATH CONCRETE FLOOR SLABS.

C. SANITARY SEWER AND VENT:

- 1. PIPING AND FITTINGS SHALL BE ABS, ASTM D2680 OR D2751 WITH ABS FITTINGS. JOINTS SHALL BE ASTM D2235, SOLVENT WELDED AS PER SOLVENT MANUFACTURER'S INSTRUCTIONS. ALL MAIN SEWER RISERS (1 STORY OR MORE), SHALL BE CAST IRON CISPI 301, HUBLESS, SERVICE WEIGHT, FOR PREVENTION OF NOISE TRANSMISSION. ALL

PIPING PENETRATIONS THROUGH FIRE RATED WALLS, FLOORS, OR CEILINGS SHALL BE CAST IRON OR STEEL, AND SHALL BE FIRE SEALED PER LOCAL BUILDING INSPECTORS REQUIREMENTS. ALL PIPING LOCATED ABOVE CEILINGS IN AREAS USED AS RETURN AIR PLENUMS SHALL BE CAST IRON OR STEEL.

D. HANGERS AND SUPPORTS:

- 1. PIPE HANGERS SHALL BE PROVIDED TO ADEQUATELY SUPPORT ALL PIPING SYSTEMS. HANGERS SHALL BE VERTICALLY ADJUSTABLE TO PROVIDE FOR PROPER PITCH AND DRAINAGE. HANGERS SHALL ALLOW FOR EXPANSION AND CONTRACTION OF THE PIPING SYSTEMS.
- 2. HANGERS FOR PIPE SIZES 1/2 TO 4 INCHES SHALL BE ADJUSTABLE CLEVIS TYPE.
- 3. HANGERS FOR COLD PIPE, SIZES 6 INCHES AND OVER, SHALL BE ADJUSTABLE CLEVIS TYPE.
- 4. HANGERS FOR HOT PIPE 6" AND OVER, SHALL BE ADJUSTABLE STEEL YOKE, CAST IRON ROLL, DOUBLE HANGER TYPE.
- 5. VERTICAL PIPES SHALL BE SUPPORTED WITH STEEL RISERS CLAMPS.
- 6. ALL INSULATED PIPING SHALL BE PROVIDED WITH MINIMUM 18 GAUGE GALVANIZED INSULATION SHIELDS, 12 INCHES LONG, AND OVERSIZED HANGERS.
- 7. HANGER ROD SIZING AND SPACING FOR PIPE SHALL BE AS FOLLOWS:
 - A. PIPE SIZE TO 1-1/4", 3/8" ROD DIAMETER, 6-1/2 FOOT MAX SPACING
 - B. PIPE SIZE TO 2", 3/8" ROD DIAMETER, 10 FOOT MAX SPACING
 - C. PIPE SIZE TO 3", 1/2" ROD DIAMETER, 10 FOOT MAX SPACING
 - D. PIPE SIZE TO 6", 5/8" ROD DIAMETER, 10 FOOT MAX SPACING
 - E. PIPE SIZE TO 12", 7/8" ROD DIAMETER, 14 FOOT MAX SPACING
 - F. PVC/ABS (ALL SIZES), 3/8" ROD DIAMETER, 6 FOOT MAX SPACING
 - G. CAST IRON NO-HUB, 5/8" ROD DIAMETER, 6 FOOT MAX SPACING AND AT JOINTS
- 8. PROVIDE HANGERS WITHIN 12 INCHES OF EACH HORIZONTAL ELBOW.
- 9. PROVIDE HANGERS WITH MINIMUM 1-1/2 INCHES VERTICAL ADJUSTMENT.

2.05 INSULATION:

A. GENERAL:

- 1. ALL INSULATION SHALL HAVE COMPOSITE FIRE AND SMOKE HAZARD RATINGS, AS TESTED BY ASTM E84, NFPA 255, AND UL 723, NOT EXCEEDING
 - A. FLAME SPREAD: 25
 - B. SMOKE DEVELOPED: 50

A. PIPING:

- 1. INSULATION SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
- 2. INSULATION SHALL BE CONTINUOUS THROUGH PENETRATIONS.
- 3. ALL INSULATION SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER.
- 4. ENTIRE LENGTH OF HOT WATER PIPING SHALL BE INSULATED. COLD WATER PIPING WITHIN EIGHT FEET OF WATER HEATER SHALL BE INSULATED.

2.06 VALVES AND STRAINERS:

A. BALL VALVES:

- 1. VALVES 2 INCHES AND SMALLER SHALL BE BRONZE BODY, STAINLESS STEEL BALL, TEFLON SEATS, AND LEVER HANDLE. VALVES OVER 2 INCHES SHALL BE CAST STEEL BODY, CHROME PLATED STEEL BALL TEFLON SEATS, AND LEVER HANDLE.

B. CHECK VALVES:

- 1. VALVES 2 INCHES AND SMALLER SHALL BE BRONZE Y-PATTERN, SWING CHECK, BRONZE DISC, 200 PSI WOG. VALVES OVER 2 INCHES SHALL BE IRON BODY, BRONZE TRIM, SWING CHECK, RENEWABLE DISC AND SEAT.

C. STRAINERS:

- 1. STRAINERS 3 INCHES AND SMALLER SHALL BE IRON BODY, Y-PATTERN, 20-MESH MONEL SCREEN.

PART 3 - EXECUTION

3.01 WORKMANSHIP

A. GENERAL:

- 1. INSTALL ALL PIPING, FIXTURES, EQUIPMENT, AND ACCESSORIES AS SHOWN, AND IN STRICT ACCORDANCE WITH THE PLUMBING LAWS, RULES, AND REGULATIONS OF THE STATE AND/OR CITY. ALL WORK SHALL BE DONE IN A NEAT AND ORDERLY FASHION, AND LEFT IN A CONDITION SATISFACTORY TO THE ARCHITECT/ENGINEER.

B. PIPING:

- 1. ALL PIPING SHALL BE RUN PARALLEL OR PERPENDICULAR TO ESTABLISHED BUILDING LINES. INSTALL PIPING SO AS TO ALLOW FOR EXPANSION. WASTE AND VENT PIPING OCCURRING ABOVE FLOOR SLAB SHALL BE INSTALLED TRUE AND PLUMB. EXTEND VENTS AT LEAST 1 FOOT ABOVE ROOF AND PROVIDE WATERTIGHT FLASHING SLEEVES. EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 15010 OF THESE SPECIFICATIONS.

C. FIXTURES:

- a. INSTALL FIXTURES TRUE AND PLUMB WITH BUILDING WALLS. CAULK ALL PLUMBING FIXTURES AT JOINTS ALONG WALL, COUNTERTOPS, AND OTHER INTERSECTING SURFACE.
- b. LOCATE FIXTURES AS SHOWN AND PER MANUFACTURER'S INSTRUCTIONS.
- c. FURNISH ALL REQUIRED TRIM FOR FIXTURES TO PROVIDE A COMPLETE AND WORKABLE INSTALLATION.

3.02 TESTS

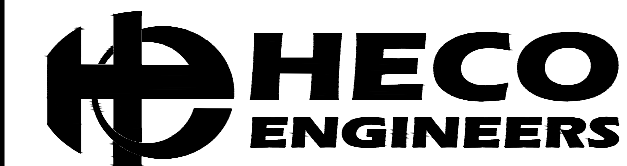
A. GENERAL:

- 1. ALL PIPING, FIXTURES, AND EQUIPMENT SHALL BE INSPECTED AND APPROVED BEFORE CONCEALING OR COVERING. ALL WORK SHALL BE TESTED AS REQUIRED BY SECTION 15010 OF THESE SPECIFICATIONS, AND SHALL BE LEAK PROOF BEFORE INSPECTION IS REQUESTED. ALL TESTS SHALL BE REPEATED IF REQUIRED BY THOSE MAKING THE INSPECTION.
- 2. ALL POTABLE WATER SYSTEMS SHALL BE FLUSHED AND DISINFECTED IN ACCORDANCE WITH SECTION 15010 OF THESE SPECIFICATIONS. FOLLOWING DISINFECTION, SYSTEM SHALL BE FLUSHED AND WATER SAMPLED TO SHOW COMPLIANCE WITH REQUIREMENTS OF PUBLIC HEALTH AUTHORITY HAVING JURISDICTION. IF TESTED WATER DOES NOT MEET REQUIREMENT, DISINFECTING SHALL BE REPEATED UNTIL WATER QUALITY MEETS REQUIREMENTS.

A. FIXTURES AND EQUIPMENT:

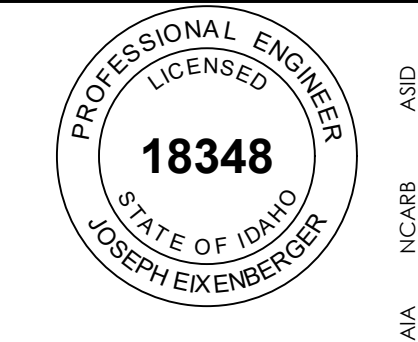
- a. FILL ALL PLUMBING FIXTURES WITH WATER AND CHECK FOR LEAKS OR RETARDED FLOW. REPAIR AS REQUIRED. ADJUST EACH PIECE OF PLUMBING EQUIPMENT AS REQUIRED TO INSURE PROPER FUNCTION. LEAVE ALL FIXTURES AND EQUIPMENT IN FIRST CLASS OPERATING CONDITION.

END OF SECTION 15400



Myers Anderson

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ITD FAIRFIELD MOBILE HOME UNITS
FAIRFIELD, ID

PROJECT NAME:

SHEET TITLE:

PLUMBING SPECIFICATIONS SECTION 15400

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN OR IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS or SPECIFICATIONS

REVISION DATE

CLIENT PROJ. NUMBER: ITD24-0323

ARCH. JOB NUMBER: 24626

SHEET ISSUED DATE: APRIL 2024

SHEET M0.2

ABBREVIATIONS

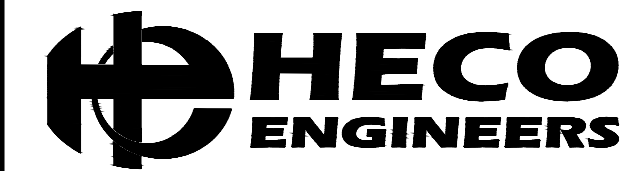
@	AT	CX	CONNECT TO EXISTING	IE	INVERT ELEVATION	PRV	PRESSURE REDUCING VALVE
Ø	DIAMETER/PHASE	DBL	DOUBLE	IGV	INLET GUIDE VANE(S)	PVC	POLYVINYL CHLORIDE
</L	ANGLE	DEPT	DEPARTMENT	IMC	INTERNATIONAL MECHANICAL CODE	PW	POTABLE WATER
#	NUMBER/POUND	DET	DETAIL	IND	INDIRECT	RA	RETURN AIR
°	DEGREE(D) DEPTH	DIM	DIMENSION	IN	INCH	RAD	RADIUS
(E)	EXISTING	DISCH	DISCHARGE	IND	INDIRECT	RD	ROOF DRAIN
(F)	FUTURE	DN	DOWN	INSUL	INSULATION	RDL	ROOF DRAIN LEADER
(L)	LENGTH	DS	DOWNSPOUT	INT	INTERIOR	RE:	REFERENCE
(N)	NEW	DSP	DRY STANDPIPE	IPC	INTERNATIONAL PLUMBING CODE	REFL	REFLECTED
(W)	WIDTH	DWG	DRAWING	IA	INSTRUMENT AIR	REL	RELOCATE
ABS	ACRYLONITRILE BUTADIENE STYRENE	DCBP	DOUBLE CHECK BACKFLOW PREVENTOR	J-BOX	JUNCTION BOX	REM	REMOVE
ABV	ABOVE	DSN	DOWNSPOUT NOZZLE	JST	JOIST	REINF	REINFORCE
ADA	AMERICAN DISABILITIES ACT	E	EAST	KW	KILOWATT	RQD	REQUIRED
ADJ	ADJUSTABLE	EA	EACH	KWH	KILOWATT HOUR	RPM	REVOLUTIONS PER MINUTE
AFC	BOVE FINISHED CEILING	EAT	ENTERING AIR TEMPERATURE	L	LINED	RTU	ROOFTOP UNIT
AFF	ABOVE FINISH FLOOR	EF	EXHAUST FAN	LAV	LAVATORY	R	RISER
AFG	ABOVE FINISH GRADE	EFF	EFFICIENCY	LBS	POUNDS	REFG	REFRIGERATION/REFRIGERANT
AFS	ABOVE FINISH SLAB	EG	EXHAUST GRILLE	LF	LINEAL FEET/FOOT	REQD	REQUIRED
ALT	ALTERNATE	ELECT	ELECTRICAL	LPG	LIQUEFIED PETROLEUM GAS	RFLD	REFLECTED
AL	ALUMINUM	ELEV	ELEVATION	LRA	LOCKED ROTOR AMP	RIO	ROUGH IN ONLY
ANOD	ANODIZED	EMERG	EMERGENCY	L/S	LITERS PER SECOND	RO	REVERSE OSMOSIS
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	ENCL	ENCLOSED/ENCLOSURE	LWT	LEAVING WATER TEMPERATURE	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
APPROX	APPROXIMATE	ENT	ENTERING	LPC	LOW PRESSURE CONDENSATE	RPM	REVOLUTIONS PER MINUTE
ARCH	ARCHITECTURAL	EQ	EQUAL	LPS	LOW PRESSURE STEAM	S	METER
AUTO	AUTOMATIC	EQUIP	EQUIPMENT	MAT	MATERIAL	SCHED	SCHEDULE
AUX	AUXILIARY	ESP	EXTERNAL STATIC PRESSURE	MAX	MAXIMUM	SECT	SECTION
BDD	BACK DRAFT DAMPER	EWC	ELECTRIC WATER COOLER	MECH	MECHANICAL	SER	SERIES
BFF	BELOW FINISH FLOOR	EWT	ENTERING WATER TEMPERATURE	MEZZ	MEZZANINE	SF	SQUARE FOOT
BFS	BELOW FINISH SLAB	EXH	EXHAUST	MFG	MANUFACTURER	SIM	SIMILAR
BG	ELOW GRADE	EXIST	EXISTING	MIN	MINIMUM	SOV	SHUT OFF VALVE
BHP	BRAKE HORSEPOWER	EXP	EXPANSION	MISC	MISCELLANEOUS	SPEC	SPECIFICATION
BI	BACKWARD INCLINED	EXT	EXTERIOR	MM	MILLIMETER	SQ	SQUARE
BLDG	BUILDING	F	FIRE SERVICE	MO	MOTOR OPERATED	SS	SANITARY SEWER
BOD	BOTTOM OF DUCT	FA	FIRE ALARM	MOC	MAX OVERLOAD CURRENT PROTECTION	SST	STAINLESS STEEL
BOS	BOTTOM OF STEEL	FCO	FLOOR CLEANOUT	MTD	MOUNTED	STD	STANDARD
BRD	BOARD	FD	FLOOR DRAIN	MTG	MOUNTING	STL	STEEL
BRG	BEARING	FDC	FIRE DEPARTMENT CONNECTION	MTL	METAL	STRUCT	STRUCTURAL
BTU	BRITISH THERMAL UNIT	FH	FIRE HYDRANT	MC	MECHANICAL CONTRACTOR	SUSP	SUSPENDED
BOP	BOTTOM OF PIPE	FIN	FINISH	MHT	MALE HOSE THREAD	SYS	SYSTEM
BOT	BOTTOM	FINS/IN	FINS PER INCH	MHT	MALE HOSE THREAD	SHT	SHEET
CA	COMBUSTION AIR	FLA	FULL LOAD AMPS	MPC	MEDIUM PRESSURE CONDENSATE	TOS	TOP OF STEEL
CAP	CAPACITY	FLASH	FLASHING	MPS	MEDIUM PRESSURE STEAM	TYP	TYPICAL
CB	CATCH BASIN	FLR	FLOOR(ING)	MSG	MANUFACTURED STANDARD GAUGE	TPW	TEMPERED POTABLE WATER
CD	CONDENSATE DRAIN	FOB	FLAT ON BOTTOM	N	NORTH	TWR	TEMPERED WATER RETURN
CF	CUBIC FEET	FOT	FLAT ON TOP	N/A	NORTH	TWS	TEMPERED WATER SUPPLY
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED	FPM	FEET PER MINUTE	NC	NORMALLY CLOSED	UBC	UNIFORM BUILDING CODE
CFF	CAP FOR FUTURE	FRPF	FIREPROOF	NEC	NATIONAL ELECTRIC CODE	UFC	UNIFORM FIRE CODE
CFM	CUBIC FEET PER MINUTE	FT	FEET/FOOT	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	UL	UNDERWRITERS LABORATORY
CI	CAST IRON	FURR	FURRING	NG	NATURAL GAS	UNFIN	UNFINISHED
CL	CENTER LINE	FS	FLOOR SINK	NIC	NOT IN CONTRACT	UNO	UNLESS NOTED OTHERWISE
CLG	CEILING	GALV	GALVANIZED	NO	NORMALLY OPEN	UPC	UNIFORM PLUMBING CODE
CLR	CLEAR	GC	GENERAL CONTRACTOR	NOM	NOMINAL	U	URINAL
CNT	CENTER	GND	GROUND	NTS	NOT TO SCALE	UG	UNDERGROUND
CO	CLEAN OUT	GCO	GRADE CLEANOUT	NUM	NUMBER	V	VOLT
COL	COLUMN	GPM	GALLONS PER MINUTE	NPW	NON-POTABLE WATER	VAC	VACUUM
CONC	CONCRETE	GW	GREASE WASTE	OB	OPPOSED BLADE DAMPER	VAV	VARIABLE AIR VOLUME
COND	CONDENSATE	HCP	HANDICAP	OC	ON CENTER	VD	VOLUME DAMPER
CONN	CONNECTION	HD	HEAD	OD	OUTSIDE DIAMETER	VEL	VELOCITY
CONST	CONSTRUCTION	HDWR	HARDWARE	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED	VERT	VERTICAL
CONT	CONTINUOUS/CONTINUATION	HORIZ	HORIZONTAL	OH	OVERHEAD	VFD	VARIABLE FREQUENCY DRIVE
CONTR	CONTRACTOR	HP	HORSEPOWER	OZ	OUNCE	VOL	VOLUME
CTC	CENTER TO CENTER	HR	HOUR	ODL	OVERFLOW DRAIN LEADER	VTR	VENT THRU ROOF
CV	VALVE COEFFICIENT	HT	HEIGHT	OH	OVERHEAD	VA	VALVE
CDA	CLEAN DRY AIR	H2O	WATER	OS&Y	OUTSIDE STEM & YOKE	VIF	VERIFY IN FIELD
CFE	CAP FOR FUTURE	HB	HOSE BIB	P	PRESSURE	VRV	VACUUM RELIEF VALVE
CHR	CHILLED WATER RETURN	HGR	HOT GLYCOL RETURN	PH	PHASE(S)	VTR	VENT THRU ROOF
CHS	CHILLED WATER SUPPLY	HGS	HOT GLYCOL SUPPLY	PLBG	PLUMBING	W	WEST
CLK	CAULK(ING)	HPC	HIGH PRESSURE CONDENSATE	POC	POINT OF CONNECTION	W/	WITH
CLR	CLEAR	HORIZ	HORIZONTAL	PSF	POUNDS PER SQUARE FOOT	W/O	WITHOUT
COTG	CLEANOUT TO GRADE	HW	POTABLE HOT WATER SUPPLY	PSI	POUNDS PER SQUARE INCH	WC	WATER CLOSET
CW	DOMESTIC COLD WATER	HWC	DOMESTIC HOT WATER RECIRC	PVC	POLYVINYL CHLORIDE	WP	WATERPROOF
CW/	COORDINATE WITH	HWR	HEATING WATER RETURN	P/T	PRESSURE/TEMPERATURE	WPD	WATER PRESSURE DROP
CWFR	CHEMICAL WATER FEED RETURN	HWS	HEATING WATER SUPPLY	PHWR	POTABLE HOT WATER RETURN	WT	WEIGHT
CWFS	CHEMICAL WATER FEED SUPPLY	IBC	INTERNATIONAL BUILDING CODE	PHWS	POTABLE HOT WATER RETURN	W	WEST/WASTE
CWR	CONDENSER WATER RETURN	ID	INSIDE DIAMETER	PIV	POST INDICATOR VALVE	WCO	WALL CLEANOUT
CWS	CONDENSER WATER SUPPLY	IDW	INDIRECT WASTE			WH	WATERHEATER

NOTE: ALL ABBREVIATIONS LISTED ABOVE MAY NOT APPEAR ON THESE DOCUMENTS.

PLUMBING AND PIPING LEGEND

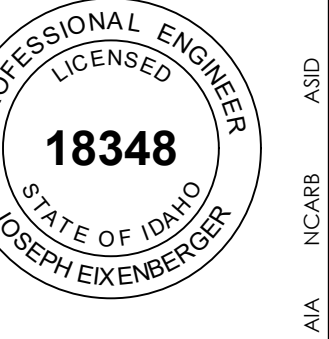
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	COMPRESSED AIR		WATER HAMMER ARRESTOR
	CONDENSATE DRAIN		NON POTABLE WATER
	CLEAN DRY AIR		OVERFLOW DRAIN LEADER
	CARBON DIOXIDE		POTABLE HOT WATER RETURN
	CONDENSER WATER RETURN		POTABLE HOT WATER SUPPLY
	CONDENSER WATER SUPPLY		POTABLE WATER
	CHILLED WATER RETURN		ROOF DRAIN LEADER
	CHILLED WATER SUPPLY		STORM DRAIN
	DOMESTIC COLD WATER		SANITARY SEWER
	DEMO ITEMS		TEMPERED POTABLE WATER
	GREASE WASTE		TEMPERED WATER RETURN
	HELIUM		TEMPERED WATER SUPPLY
	HOT GLYCOL RETURN		VENT
	HOT GLYCOL SUPPLY		THERMOMETER
	HIGH PRESSURE CONDENSATE		CIRCUIT SETTER
	HIGH PRESSURE STEAM		PRESSURE GAUGE
	DOMESTIC HOT WATER		HOSE BIBB
	DOMESTIC HOT WATER RECIRCULATION		IN-LINE PUMP
	HEATING WATER RETURN		IN-LINE PUMP
	HEATING WATER SUPPLY		QUICK DISCONNECT
	INSTRUMENT AIR		BREAK LINE
	INDIRECT WASTE		STEAM VALVE
	LIQUEFIED PETROLEUM GAS		BUTTERFLY VALVE
	LOW PRESSURE CONDENSATE		BALANCE VALVE
	LOW PRESSURE STEAM		DIAPHRAGM VALVE
	MEDICAL AIR		DOWNSPOUT NOZZLE
	MEDIUM PRESSURE CONDENSATE		FLOOR DRAIN ROUND OR SQUARE
	MEDIUM PRESSURE STEAM		FLOW METER
	MEDICAL VACUUM		FLOW SWITCH
	NITROGEN		FLOOR SINK
	NITROUS OXIDE		FLOW VALVE
	NATURAL GAS		GAS METER
	DIRECTION OF FLOW		GLOBE VALVE
	REDUCER		INLINE TEMPERATURE GAUGE
	PIPE DROP		PLUG VALVE
	PIPE DROP		OUTSIDE STEM AND YOKE
	PIPE RISE		RECIRC PUMP
	PIPE RISE		EXPANSION TANK
	VENT THRU ROOF		ROOF DRAIN
	WALL CLEAN-OUT		OVERFLOW DRAIN
	END OF LINE CLEAN-OUT		VERTICAL VALVE
	FLOOR CLEAN-OUT		VACUUM RELIEF VALVE
	GRADE CLEAN-OUT		MANUAL AIR VENT
	PIPE CAP		AUTOMATIC AIR VENT
	CHECK VALVE		POINT OF CONNECTION TO EXISTING
	DOUBLE CHECK ASSEMBLY		
	REDUCED PRESSURE BACK FLOW ASSY.		
	CONTROL VALVE		
	PRESSURE REDUCING VALVE		
	PRESSURE REGULATOR		
	BALL VALVE (NORMALLY CLOSED)		
	BALL VALVE (NORMALLY OPEN)		
	GATE VALVE		
	AGA RATED GAS VALVE		
	THREE WAY CONTROL VALVE		
	FLEXIBLE PUMP CONNECTOR		
	UNION		
	SOLENOID VALVE		
	STRAINER		
	PRESSURE RELIEF VALVE		

NOTE: ALL ABBREVIATIONS LISTED ABOVE MAY NOT APPEAR ON THESE DOCUMENTS.



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ITD FAIRFIELD MOBILE HOME UNITS
FAIRFIELD, ID

PROJECT NAME:

SHEET TITLE:

PLUMBING
NEW SITE PLAN

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN OR IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS OR SPECIFICATIONS

REVISION DATE

CLIENT PROJ. NUMBER: ITD24-0323

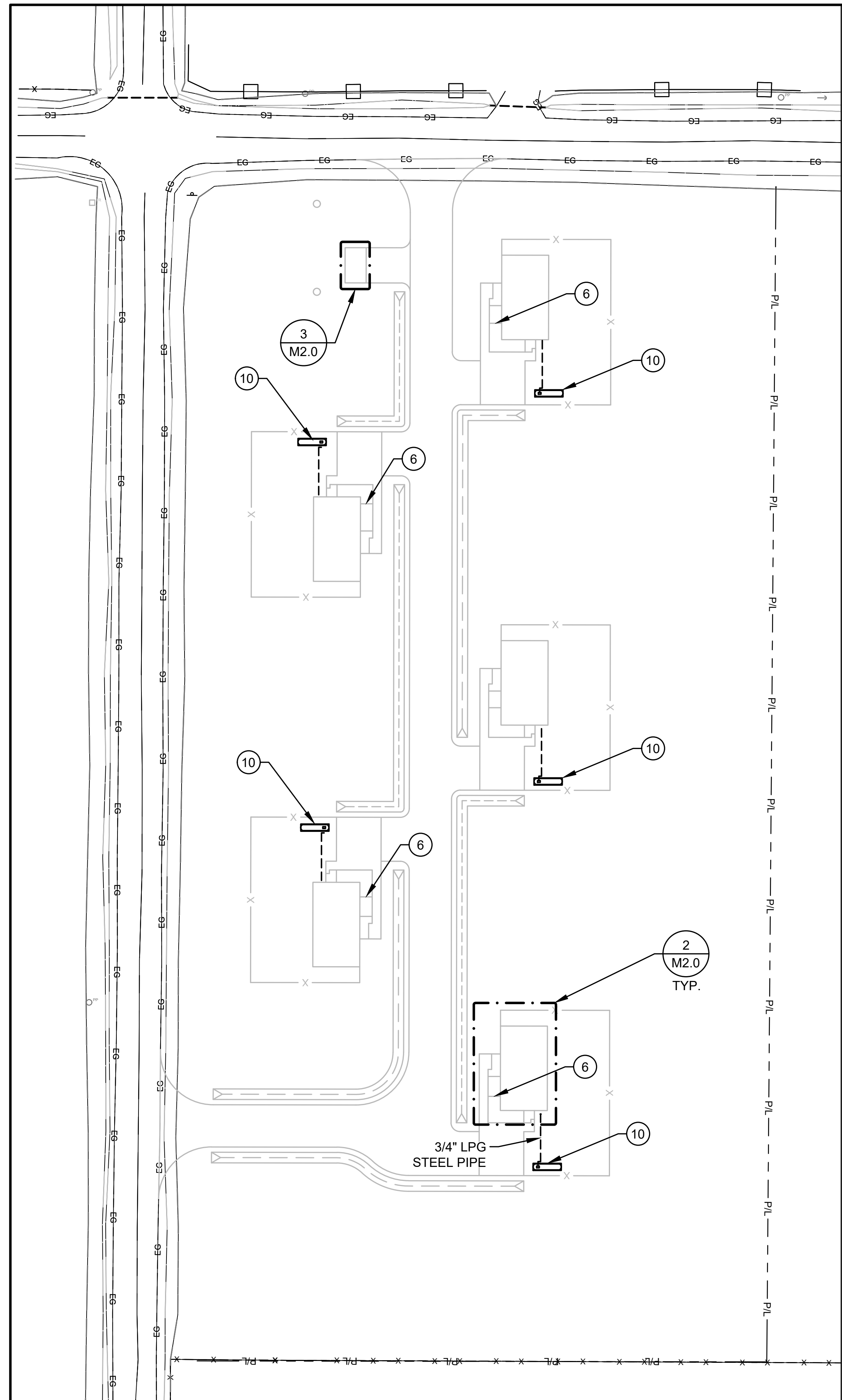
ARCH. JOB NUMBER: 24626

SHEET ISSUED DATE: APRIL 2024

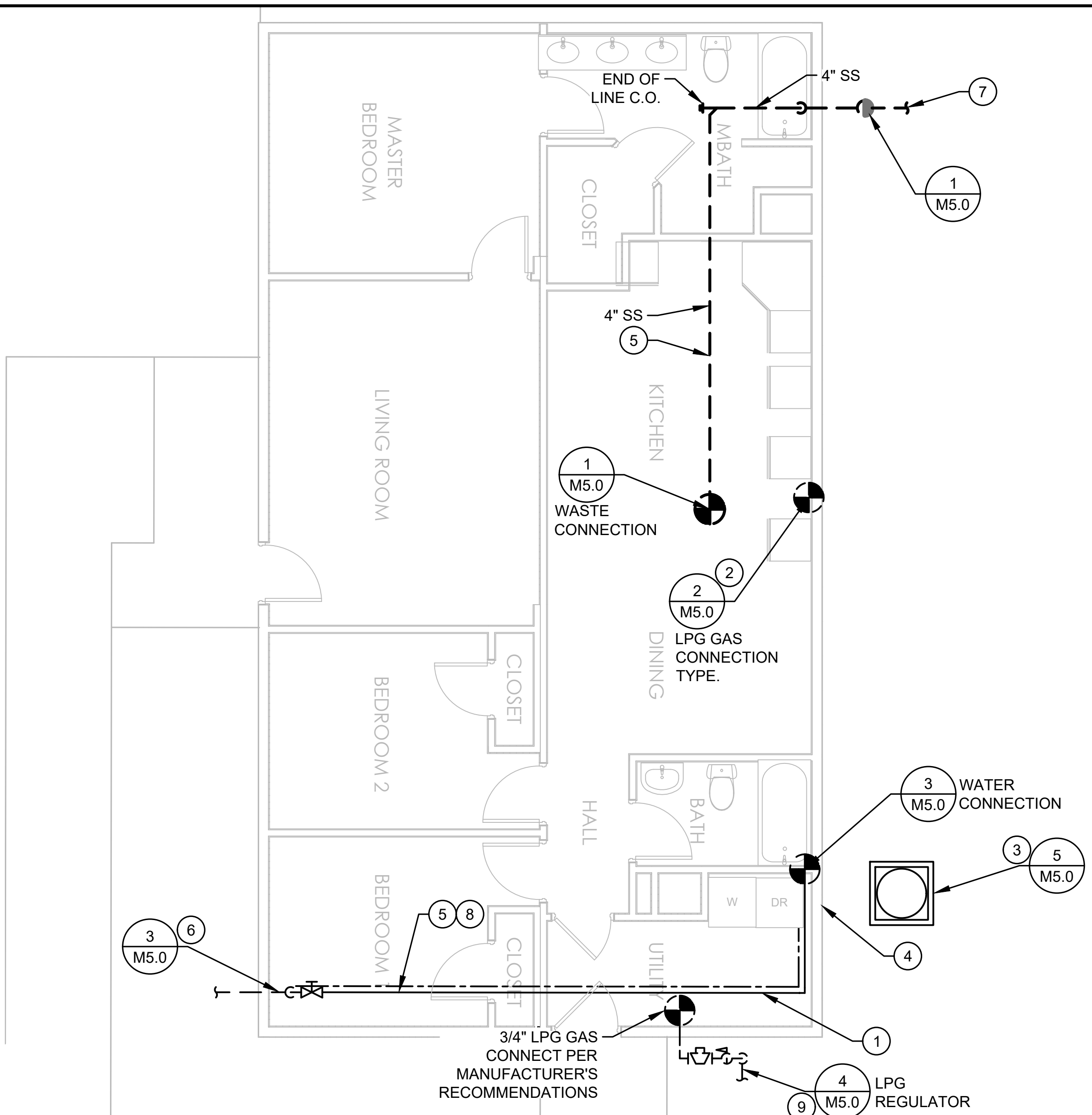
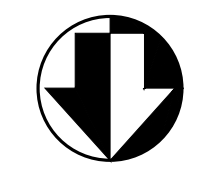
SHEET M2.0

KEYNOTES: #

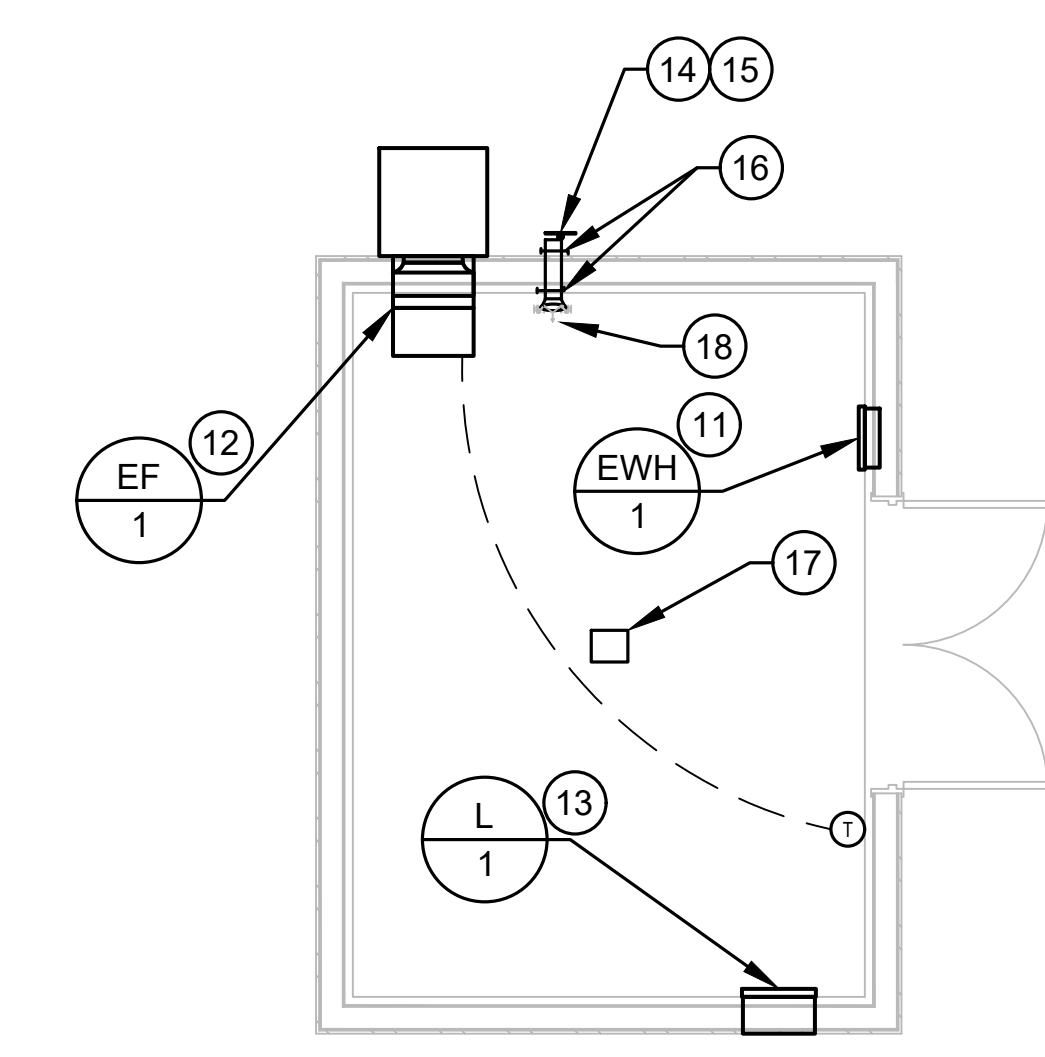
- ALL PLUMBING FIXTURES ARE PLUMBED WITHIN THE BUILDING AND DROPS ARE PROVIDED TO CONNECT PER MANUFACTURED HOME INSTALLATION MANUAL.
- ALL LPG APPLIANCES ARE INSTALLED AND PLUMBED WITHIN MANUFACTURED HOME. CONTRACTOR TO CONNECT TO QUICK DISCONNECTS PER MANUFACTURED HOME INSTALLATION INSTRUCTIONS.
- CONDENSING UNIT INSTALL ON 3'x3' CONCRETE PAD. ROUTE REFRIGERATION UNITS UNDER UNIT TO FAN COIL UNIT IN BUILDING PER MANUFACTURER'S REQUIREMENTS.
- EXTEND CONDENSATION OUT THE BUILDING AND TERMINATE AT AN APPROVED LOCATION PER MANUFACTURED HOME INSTALLATION MANUAL.
- SUPPORT CW/LPG/WASTE LINES UNDER JOIST OF MOBILE HOME TIGHT TO INSULATION.
- CONNECT TO WATER LINE. SEE CIVIL SHEETS FOR CONNECTION LOCATION.
- CONNECT TO SANITARY SEWER. SEE CIVIL PLAN FOR CONNECTION TO SEPTIC SYSTEM.
- INSULATE 1" CW LINE W/ 1-1/2" NEOPRENE INSULATION AND WRAP WITH SELF REGULATING HEAT TAPE.
- INSTALL LPG GAS REGULATOR EXTERIOR TO FOUNDATION AND ROUTE LINE TO LPG TANK AS REQUIRED.
- 1000 GAL LPG TANK INSTALLED ON 4'x16" PAD. MAINTAIN 25' CLEARANCE BETWEEN TANK AND BUILDING.
- EWH-1, MARLEY CWH3180, 120V/1PH/1800W, 15A.
- EF-1, COOK 14XWH26D17, 1300 CFM, .293 SP, 1725 RPM, 1/4 HP, 115/1/60, FLA 5.8, SONE 21, PROVIDE W/ BACKDRAFT DAMPER, WEATHER HOOD, WALL COLLAR TEMP RISE STAT.
- L-1, RUSKIN L375D, 24"H x 18"L W/ MOTORIZED DAMPER, INTERLOCK W/ EXHAUST FAN.
- JOSAM 67720 BACK WATER VALVE SWING-CHECK TERMINAL HUB CONNECTION (TYP.).
- INSTALL WALL ESCUTCHEONS.
- RPBP BY OTHERS. COORDINATE LOCATION OF FUNNEL AND DISCHARGE PIPING WITH RPBP.
- JOSAM FD-212ACP-SQUARE FEET FLOOR DRAIN COORDINATE WITH CIVIL FOR TERMINATION AND PIPE ROUTING
- COORDINATE W/CIVIL FOR LOCATION OF RPBP.



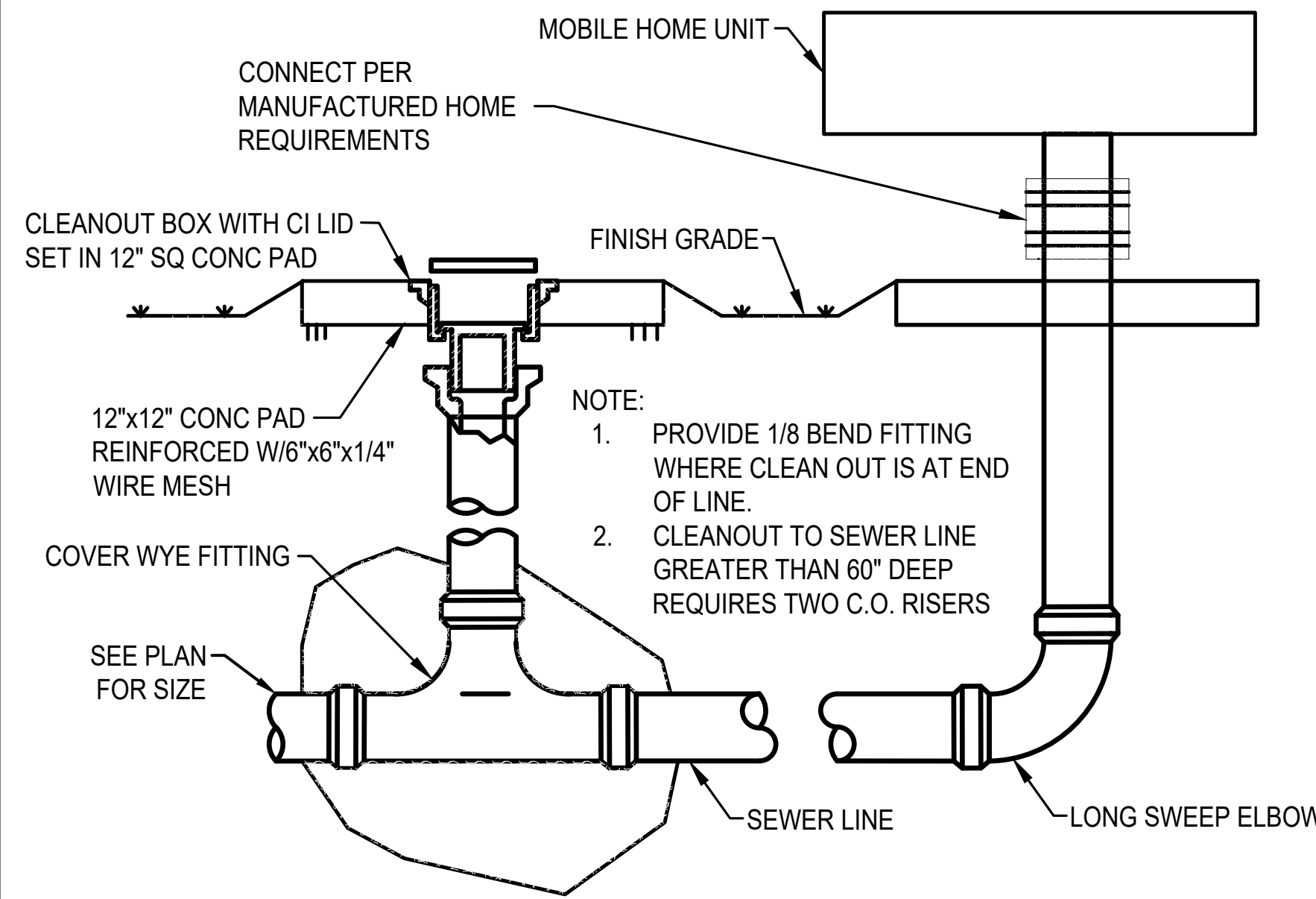
1 PLUMBING & HVAC SITE PLAN
M2.0 SCALE: 1/64" = 1'-0"



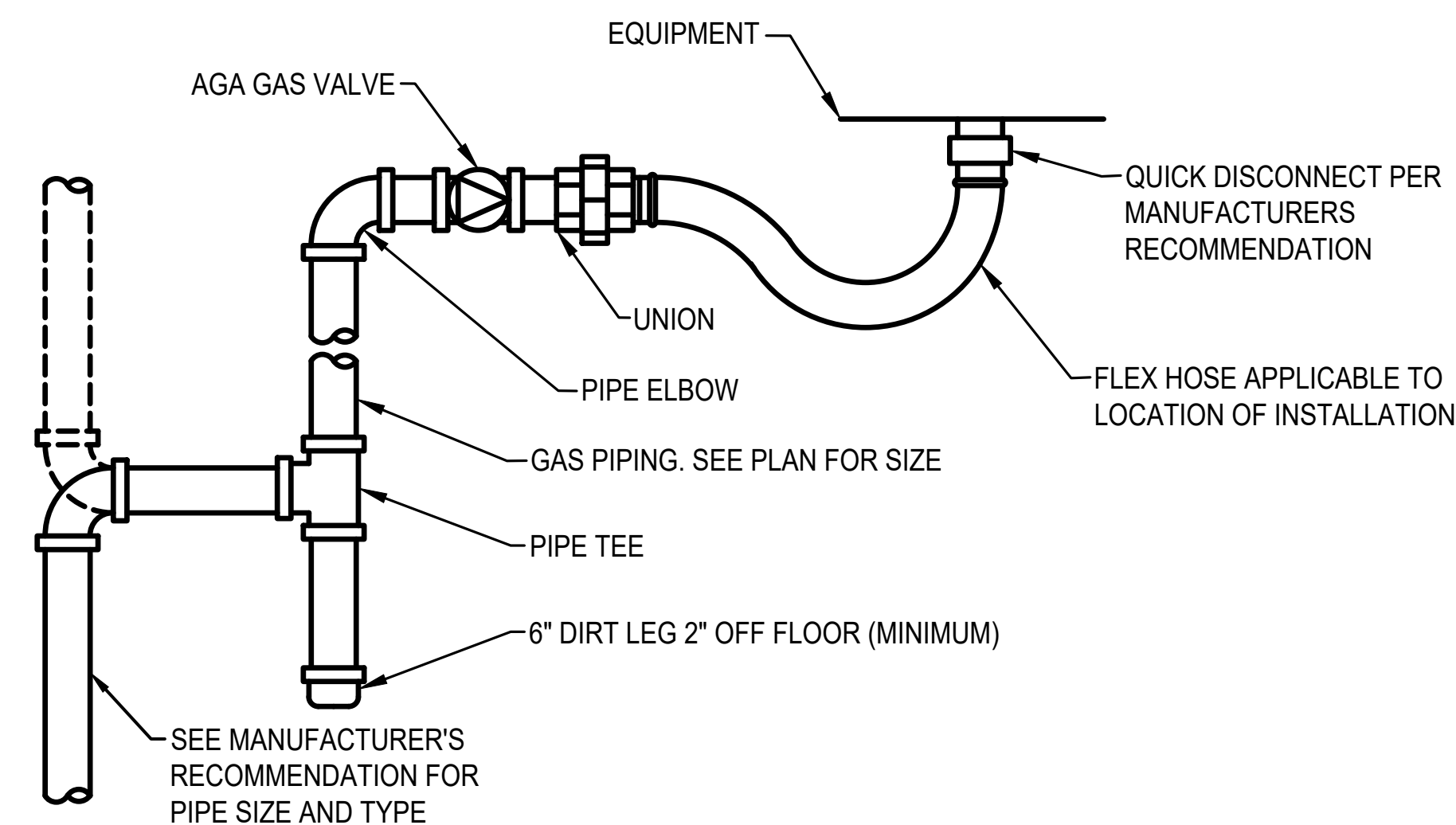
2 TYPICAL HOUSE LAYOUT
M2.0 SCALE: 1/4" = 1'-0"



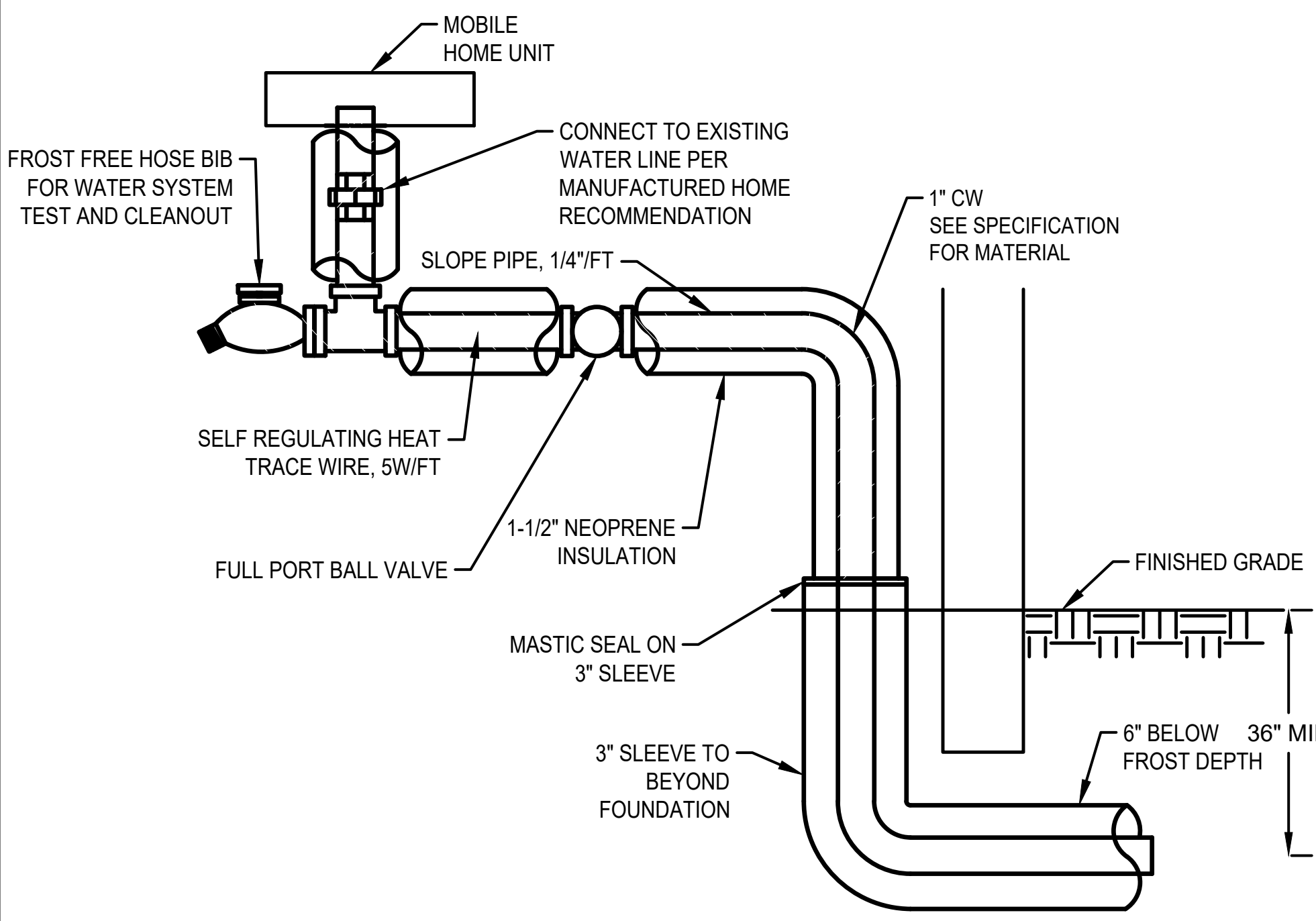
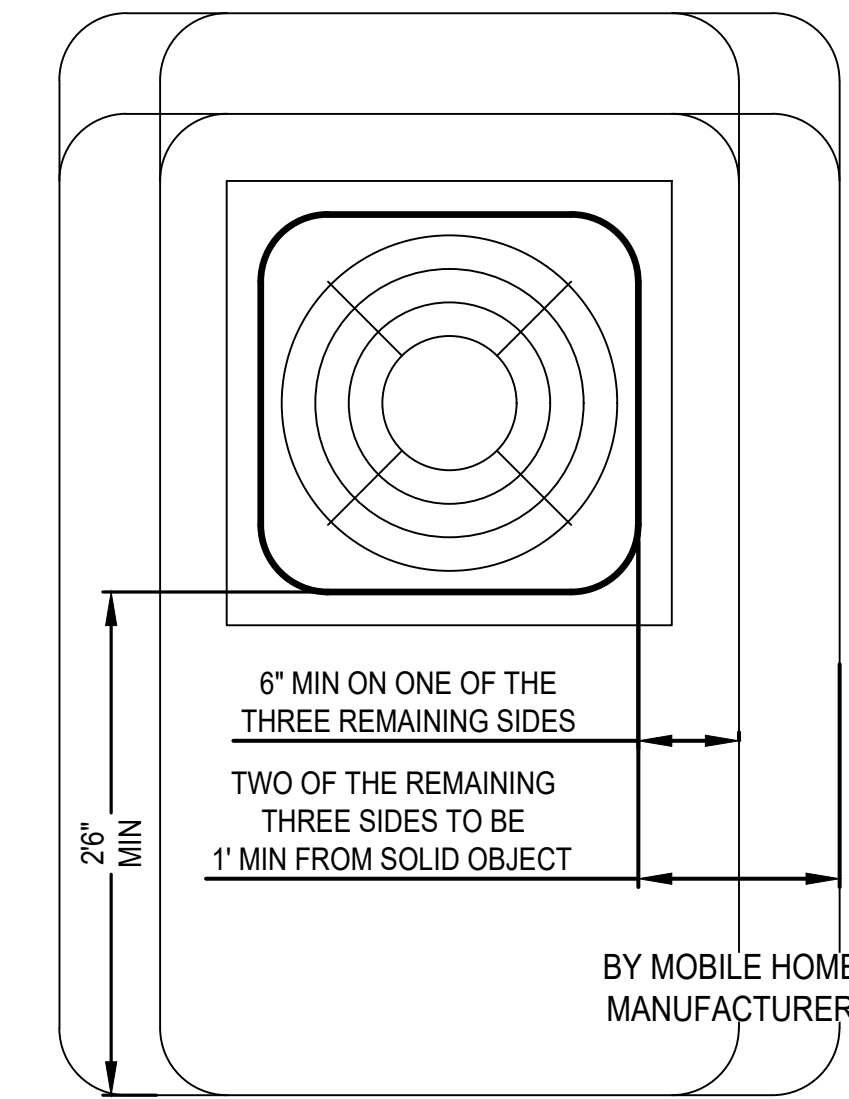
3 PUMP HOUSE
M2.0 SCALE: 1/4" = 1'-0"



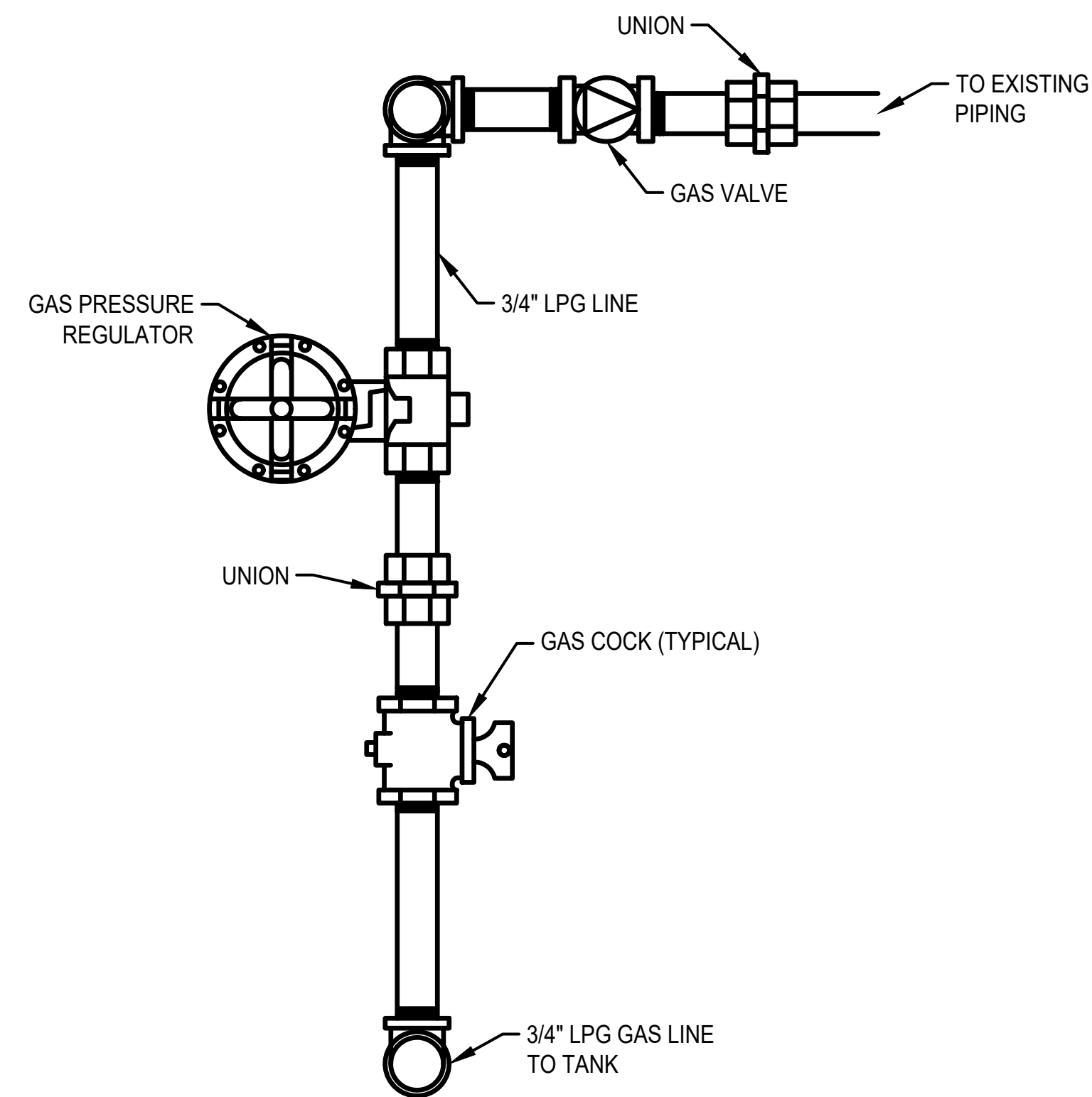
1 GRADE CLEAN OUT
 M5.0 SCALE: NTS



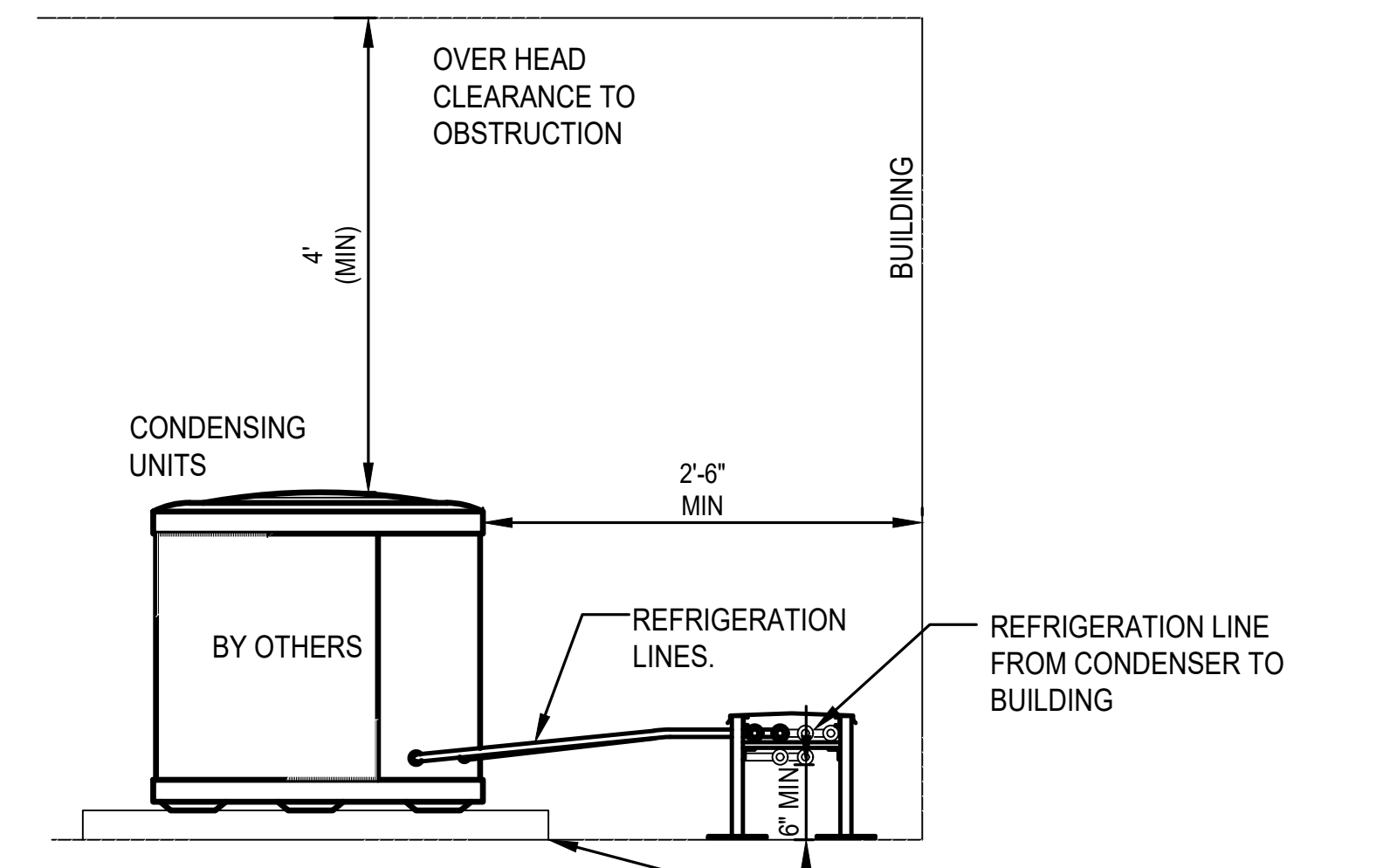
2 GAS CONNECTION DETAIL
 M5.0 SCALE: NTS



3 BELOW FOUNDATION CRAWL ENTRANCE
 M5.0 SCALE: NTS



4 GAS REGULATOR DETAIL
 M5.0 SCALE: NTS



5 CONDENSING UNIT DETAIL
 M5.0 SCALE: NTS

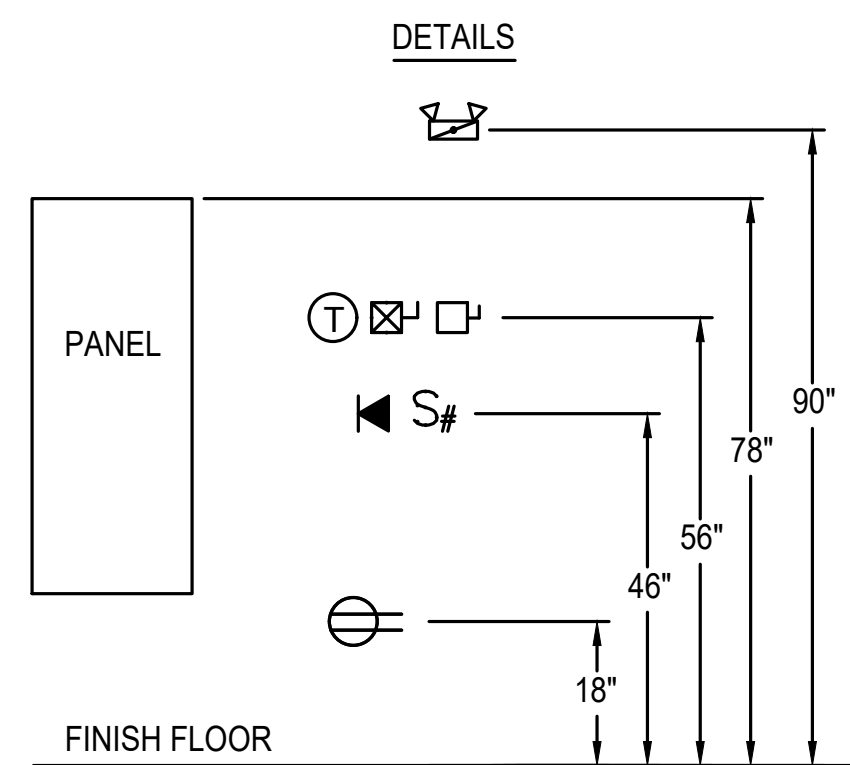
POWER SYSTEM DEVICE SYMBOLS

- DUPLEX OUTLET. +18" AFF UNO.
- FOURPLEX OUTLET. +18" AFF UNO.
- GFI OUTLET. +18" AFF UNO.
- GFI OUTLET. ABOVE COUNTER
- FOURPLEX GFI OUTLET. +18" AFF UNO.
- DEDICATED SIMPLEX GFCI OUTLET. +18" AFF UNO.
- EQUIPMENT CONNECTION
- 120V TWIST LOCK RECEPTACLE.
- TRANSFORMER.
- JUNCTION BOX.
- FLUSH MOUNTED PANELBOARD/ENCLOSURE.
- FUSED DISCONNECT SWITCH. SIZE AS INDICATED, NEMA 1 UNO, 3 POLE UNO.
- NON-FUSED DISCONNECT SWITCH. SIZE AS INDICATED, NEMA 1 UNO, 3 POLE UNO.
- MOTOR.
- VARIABLE FREQUENCY DRIVE.

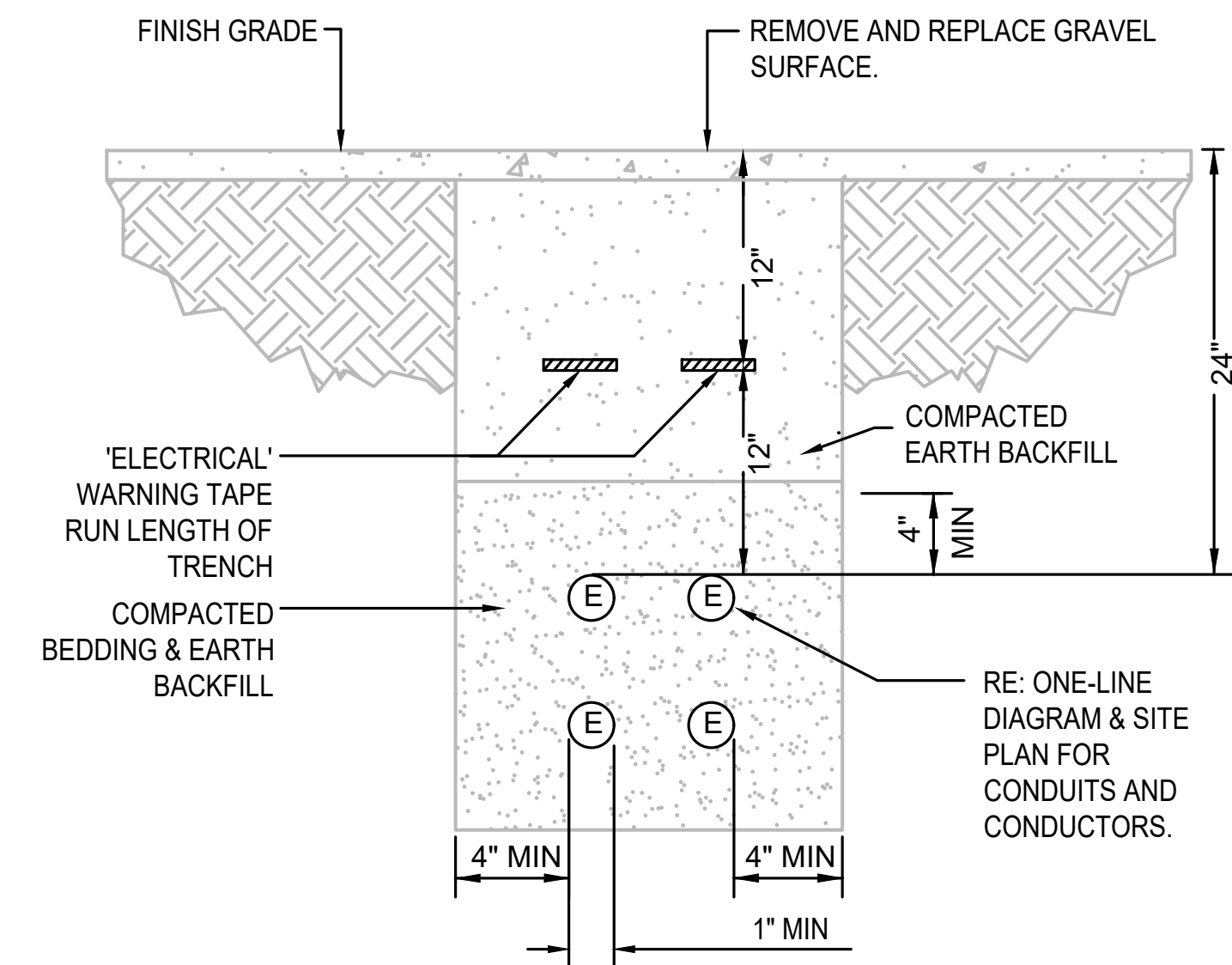
1. COLOR CODE WIRES AS FOLLOWS:

CONDUCTORS	120/208V	480/277V
PHASE A	BLACK	BROWN
PHASE B	RED	ORANGE
PHASE C	BLUE	YELLOW
NEUTRAL	WHITE	GRAY
GROUND	GREEN	GREEN

2. ELECTRICAL DEVICES AND LINWORK ARE SHOWN BOLD FOR NEW, BOLD/DASHED FOR DEMO & RELOCATED AND MEDIUM/DASHED FOR EXISTING.
3. DIMENSIONED LENGTHS SHALL TAKE PRECEDENCE OVER SCALED LENGTHS.
4. FURNISH AND INSTALL A COMPLETE ELECTRICAL SYSTEM AS DEPICTED FROM THE PLANS AND SPECIFICATIONS. COMPLETE AS NOTED OR IMPLIED, NOT LIMITED TO WHAT IS SHOWN.
5. COORDINATE ALL DEVICE/EQUIPMENT LOCATIONS AND SPECIFIC REQUIREMENTS WITH MECHANICAL TRADE PRIOR TO ROUGH-IN.



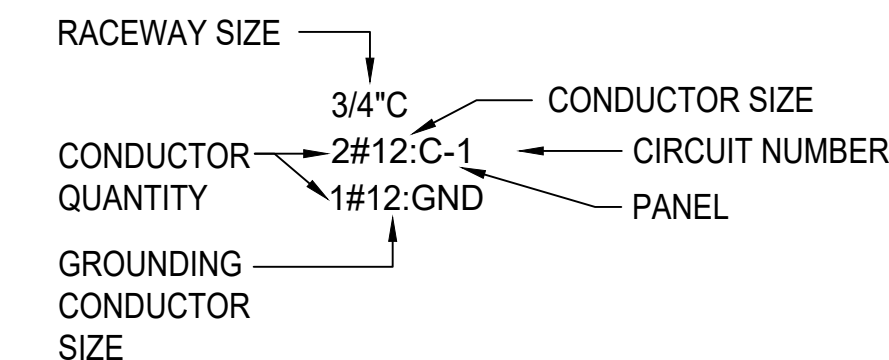
1 TYPICAL HEIGHTS DETAIL
 E0.0 SCALE: NTS



2 TRENCHING DETAIL
 E0.0 SCALE: NTS

CIRCUIT WIRING SYMBOLS

- CONDUIT STUBBED OR SLEEVE, CAPPED, AND MARKED WITH PULL CORD
- CIRCUIT CONCEALED IN CEILING OR WALL. 3/4"C-2#12,1#12G UNO.
- CIRCUIT CONCEALED IN FLOOR OR UNDERGROUND. 3/4"C-2#10,1#10G UNO.



ONE-LINE DIAGRAM SYMBOLS

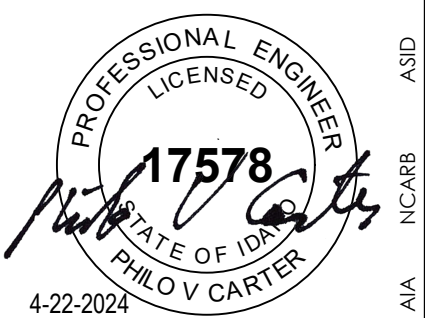
- PANEL ***** BRANCH PANEL.
- CIRCUIT BREAKER. SIZE AND TYPE AS SPECIFIED
- METER AND BASE
- SERVICE GROUND. GROUND PER NEC ARTICLE 250
- TRANSFORMER
- FUSIBLE DISCONNECT
- NON-FUSED DISCONNECT
- DOUBLE-THROW, DOUBLE-POLE DISCONNECT

• UTILITY NAME: IDAHO POWER

RESPONSIBILITIES

	UTILITY	CONTRACTOR
PRIMARY		
• TRENCH/BACKFILL	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• CONDUIT	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• WIRE	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• TERMINATIONS	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• UNDERGROUND PRIMARY LINE	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TRANSFORMER		
• TRANSFORMER	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• VAULT (IF REQUIRED)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• PAD	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• METER BASE	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• METER	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• CT CAN	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SECONDARY		
• TRENCH/BACKFILL	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• CONDUIT	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• WIRE	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• TERMINATIONS	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3 RESPONSIBILITY MATRIX
 E0.0 SCALE: NTS



ITD FAIRFIELD MOBILE HOME UNITS
 FAIRFIELD, ID

PROJECT NAME:

SHEET TITLE:

ELECTRICAL COVER

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN OR IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS OR SPECIFICATIONS

REVISION DATE

CLIENT PROJ. NUMBER: ITD24-0323

ARCH. JOB NUMBER: 24626

SHEET ISSUED DATE: APRIL 2024

SHEET E0.0

ELECTRICAL SHEET SPECIFICATIONS

PART 1 – GENERAL

1.1 SCOPE OF WORK

FURNISH AND INSTALL ALL MATERIALS AND EQUIPMENT AND PROVIDE ALL ASSOCIATED LABOR REQUIRED AND NECESSARY TO COMPLETE THE WORK INTENDED BY OR INFERRED FROM THIS SHEET SPECIFICATION AND DRAWING PACKAGE, AND ALL OTHER WORK AND OR MISCELLANEOUS ITEMS, NOT SPECIFICALLY MENTIONED, BUT REASONABLY INFERRED FOR A COMPLETE INSTALLATION, INCLUDING ALL ACCESSORIES AND APPURTENANCES REQUIRED FOR TESTING OF THE SYSTEM. IT IS THE INTENT OF THE DRAWINGS AND SPECIFICATIONS THAT ALL SYSTEMS BE COMPLETE AND READY FOR OPERATION. THIS PROJECT INCLUDES GENERAL POWER, LIGHTING, AND COMMUNICATIONS SYSTEM RACEWAY. FIRE ALARM SYSTEM, IF REQUIRED, IS TO BE DESIGN/BUILD BY ELECTRICAL CONTRACTOR. COMMUNICATIONS SYSTEM CABLING AND HEAD-END EQUIPMENT IS BY OWNER.

1.2 CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL COMPLY WITH LATEST RULES, CODES AND REGULATIONS, INCLUDING, BUT NOT LIMITED TO THE MOST CURRENT ADOPTED VERSIONS OF OSHA, THE NATIONAL ELECTRICAL CODE, INTERNATIONAL BUILDING AND FIRE CODES, NFPA, AND OTHER APPLICABLE STATE AND LOCAL CODES, LAWS AND REGULATIONS. CODE COMPLIANCE IS MANDATORY. NOTHING IN THESE DRAWINGS AND SPECIFICATIONS PERMITS WORK NOT CONFORMING TO THESE CODES. WHERE WORK IS SHOWN TO EXCEED MINIMUM CODE REQUIREMENTS, COMPLY WITH DRAWINGS AND SPECIFICATIONS.

1.3 LICENSE, FEES AND PERMITS

ELECTRICAL CONTRACTOR IS TO ARRANGE FOR REQUIRED INSPECTIONS AND PAY ALL LICENSE, PERMIT AND INSPECTION FEES.

1.4 CONDITIONS AT SITE

VISIT TO SITE IS REQUIRED OF ALL BIDDERS PRIOR TO SUBMISSION OF BID. ALL BIDDERS WILL BE HELD TO HAVE FAMILIARIZED THEMSELVES WITH ALL DISCERNIBLE CONDITIONS AND NO EXTRA PAYMENT WILL BE ALLOWED FOR WORK REQUIRED BECAUSE OF THESE CONDITIONS, WHETHER SPECIFICALLY MENTIONED OR NOT. LINES OF OTHER SERVICES THAT ARE DAMAGED AS A RESULT OF THIS WORK SHALL PROMPTLY BE REPAIRED AT NO EXPENSE TO THE OWNER TO COMPLETE SATISFACTION OF THE OWNER.

1.5 SAFETY

THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. CONTRACTOR SHALL HAVE AN ESTABLISHED SAFETY PLAN THAT ALL EMPLOYEES ARE TRAINED ON.

1.6 GUARANTEE

GUARANTEE THE INSTALLATION FREE FROM DEFECTS OF WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER DATE OF CERTIFICATE OF FINAL PAYMENT AND PROMPTLY REMEDY ANY DEFECTS DEVELOPING DURING THIS PERIOD, WITHOUT CHARGE.

1.7 SUBSTITUTIONS

WHEREVER POSSIBLE, MORE THAN ONE MANUFACTURER HAS BEEN LISTED FOR VARIOUS ITEMS OF EQUIPMENT, ANY ONE OF WHICH WILL BE ACCEPTABLE. BASE THE BID ON USE OF MATERIALS SPECIFIED. IF, AFTER AWARD OF THE CONTRACT, A SUBSTITUTE IS PROPOSED, THE REQUEST FOR PERMISSION TO SUBSTITUTE SHALL BE ACCOMPANIED WITH A STATEMENT OF THE AMOUNT OF MONEY TO BE RETURNED TO THE CONTRACTOR IF THE SUBSTITUTE IS PERMITTED. THE OWNER IS THE SOLE JUDGE OF ACCEPTABILITY OF PROPOSED SUBSTITUTIONS, IF A SUBSTITUTE ITEM IS PERMITTED, AND ANY REDESIGN EFFORT IS THEREBY NECESSITATED, THE REQUIRED REDESIGN SHALL BE AT THE CONTRACTOR'S EXPENSE.

1.8 SHOP DRAWINGS AND MATERIALS LISTS

SUBMIT TO THE OWNER, SEVEN (7) COPIES OF COMPLETE SHOP DRAWINGS AND MATERIALS LISTS FOR REVIEW WITHIN FOURTEEN (14) DAYS AFTER AWARD OF CONTRACT. ALL PROPOSED DEVIATIONS FROM SPECIFICATIONS MUST BE CLEARLY LISTED UNDER A PROMINENT HEADING ENTITLED "DEVIATIONS".

1.9 WORKMANSHIP

ONLY QUALITY WORKMANSHIP WILL BE ACCEPTED. HAPHAZARD OR POOR INSTALLATION PRACTICE WILL BE CAUSE FOR REJECTION OF WORK.

1.10 COORDINATION

COORDINATE WORK WITH OTHER TRADES TO AVOID CONFLICT AND TO PROVIDE CORRECT ROUGH-IN AND CONNECTION FOR EQUIPMENT FURNISHED BY OTHER TRADES THAT REQUIRE ELECTRICAL CONNECTIONS. VERIFY EQUIPMENT DIMENSIONS AND REQUIREMENTS WITH PROVISIONS SPECIFIED UNDER THIS SECTION. CHECK ACTUAL JOB CONDITIONS BEFORE FABRICATING WORK. REPORT NECESSARY CHANGES IN TIME TO PREVENT NEEDLESS WORK AND OR DELAYS.

1.11 CUTTING AND PATCHING

ALL CUTTING AND PATCHING REQUIRED FOR WORK OF THIS DIVISION IS

INCLUDED HEREIN. COORDINATION WITH GENERAL CONTRACTOR AND OTHER TRADES IS IMPERATIVE.

1.12 SITE CLEANUP

- AFTER ALL OTHER WORK HAS BEEN ACCOMPLISHED, CLEAN ALL EXPOSED CONDUIT, FIXTURES, EQUIPMENT AND SUPPORTS. TOUCH UP PAINT ON ANY EQUIPMENT SCRAPPED OR SCRATCHED DURING CONSTRUCTION. DAMAGED EQUIPMENT CAUSED BY THIS CONTRACTOR WILL BE REPLACED.
- LEAVE ALL AREAS INVOLVING ELECTRICAL WORK IN A CONDITION SATISFACTORY TO THE OWNER. REMOVE ALL CRATES, CARDBOARD, PACKING MATERIAL, WASTE MATERIAL, AND OTHER DEBRIS LEFT OVER FROM CONSTRUCTION DAILY.

PART 2 – PRODUCTS

2.1 MATERIAL APPROVAL

ALL MATERIALS MUST BE NEW AND BEAR U.L. LABEL. MATERIALS THAT ARE NOT COVERED BY UL TESTING STANDARDS SHALL BE TESTED AND APPROVED BY AN INDEPENDENT TESTING LABORATORY OF A GOVERNMENTAL AGENCY APPROVED BY THE AUTHORITY HAVING JURISDICTION.

2.2 WIRES AND CABLES

- CONDUCTORS FOR 600V SYSTEMS AND BELOW SHALL BE STRANDED COPPER (UNLESS NOTED OTHERWISE), #12 AWG MINIMUM.
- INSULATION SHALL BE THWN FOR WET LOCATIONS AND THHN FOR DRY LOCATIONS.

2.3 OUTLET BOXES, JUNCTION AND PULL BOXES

- OUTLET BOXES SHALL BE GALVANIZED OR CADMIUM PLATED STEEL SIZED AS PER N.E.C. OR AS NOTED. UTILIZE RESIDENTIAL-GRADE PLASTIC HANGER BOXES FOR NETWORK/COMMUNICATIONS CONNECTION POINTS. USE FOUR (4) INCH SQUARE OCTAGON BOX FOR FIXTURES AND TILE TYPE DEVICE BOXES.

2.4 WIRING DEVICES

- PROVIDE AND INSTALL ALL WIRING DEVICES WITH COVERPLATES AS NOTED ON THE PLANS. DEVICES AND COVER PLATES SHALL MATCH THE EXISTING COLOR AND TYPE.
- DEVICES: WALL SWITCHES AND CONVENIENCE OUTLETS SHALL BE RATED FOR 20-AMP, 125-VOLT (NEMA 5-20 ANSI C73.12) SPECIFICATION GRADE DEVICES EXCEPT AS NOTED. RESIDENTIAL GRADE DEVICES ARE NOT PERMITTED.
- PROVIDE FACTORY-FABRICATED WIRING DEVICES, IN TYPES, AND ELECTRICAL RATINGS FOR APPLICATIONS INDICATED AND COMPLYING WITH NEMA STDS. PUB. NO. WD1.
- PROVIDE WIRING DEVICES (OF PROPER VOLTAGE RATING) AS FOLLOWS:

MFG/	C.O.'S	1-POLE	3-WAY	4-WAY	W/PILOT
HUBBELL	5362 L	1221 L	1223 L	1234 L	1221-P1 L
P&S	5362 L	20AC1 L	20AC3 L	20AC4 L	20AC1-CPL
LEVITON	5362 L	1223 L	1223 L	1224 L	

- COVER PLATES: ALL DEVICES SHALL HAVE COVERPLATES. THEY SHALL HAVE A PLAIN FLAT SURFACE WITH BEVELED EDGES COMPATIBLE WITH THE DEVICE. THE COVER PLATES IN THE SHOP, PARTS, TOOL ROOM AND FIRE RISER ROOM SHALL BE STAINLESS STEEL. COVER PLATES IN ALL OFFICE TYPE AREAS, SHOWROOM, RESTROOM AND HALLWAYS SHALL BE HIGHLY IMPACT RESISTANT (NYLON OR LEXAN) AND SHALL MATCH THE COLOR OF THE ASSOCIATED DEVICE.

- EMPTY BOXES: SHALL BE COVERED WITH MATCHING COVERPLATES. PROVIDE HARDWARE AS NEEDED.
- EXTERIOR DEVICES SHALL BE 20A GFCI TYPE WITH WATERPROOF HIGHLY IMPACT RESISTANT CLEAR WHILE IN USE TYPE COVER.

2.5 WIRE CONNECTORS

- FOR WIRE SIZES #8 AWG AND SMALLER: INSULATED PRESSURE TYPE (WITH LIVE SPRING) RATED 105°C, 600V, FOR BUILDING WIRING AND 1000V IN FIXTURES, SCOTCHLOK OR IDEAL.
- FOR WIRE SIZES #6 AWG AND LARGER: T&B OR EQUIVALENT COMPRESSION TYPE WITH 3M #33+ OR PLYMOUTH "SLIPKNOT GREY" TAPE INSULATION.

2.6 PANELBOARD

PANELBOARDS SHALL BE AS MANUFACTURED BY SQUARE D, GENERAL ELECTRIC, SIEMENS, OR EATON/CUTLER HAMMER. PROVIDE PANELBOARDS AS INDICATED ON SCHEDULES, WITH THE FOLLOWING FEATURES: TINNED

ALUMINUM BUS (98 PERCENT CONDUCTIVITY), MECHANICAL-TYPE MAIN AND NEUTRAL LUGS, NEUTRAL BUS RATED 100 PERCENT OF PHASE BUS, GROUND BUS BONDED TO ENCLOSURE, BOLT-ON MOLDED-CASE THERMAL-MAGNETIC BREAKERS.

2.7 RACEWAYS

A. OUTDOORS:

EXPOSED: RIGID STEEL OR INTERMEDIATE METAL CONDUIT
CONCEALED: RIGID STEEL OR INTERMEDIATE METAL CONDUIT
UNDERGROUND: RIGID NON-METALLIC CONDUIT
TO VIBRATING EQUIPMENT: LIQUID-TIGHT FLEXIBLE METAL CONDUIT

B. INDOORS:

EXPOSED: ELECTRICAL METALLIC TUBING, RIGID STEEL CONDUIT, PVC-COATED RIGID STEEL CONDUIT
CONCEALED: ELECTRIC METALLIC TUBING, METAL CLAD (WHERE ALLOWED BY AHJ)
DAMP OR WET LOCATIONS: RIGID STEEL CONDUIT
TO VIBRATING EQUIPMENT: FLEXIBLE METAL CONDUIT

2.8 STRUT CHANNEL – MANUFACTURERS

SUBJECT TO COMPLIANCE WITH REQUIREMENTS SET FORTH IN THE DRAWINGS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:

- UNISTRUT
 - COOPER B-LINE
 - ALLIED TUBE & CONDUIT
 - THOMAS & BETTS
 - WESANCO
 - GS GLOBAL METAL
- APPROVED EQUAL

2.9 VARIABLE FREQUENCY DRIVE (VFD)

- AS REQUIRED IN THE DRAWINGS, THE VFD SHALL BE RATED 240V, SINGLE-PHASE, 60HZ AND MINIMUM 3HP.
- ALLEN-BRADLEY POWERFLEX 520-SERIES IS THE NOTED OPTION. ALTERNATIVE PRODUCTS FROM THE FOLLOWING MANUFACTURERS ARE ACCEPTABLE:
 - ABB
 - DANFOSS INC.; DANFOSS DRIVES DIV.
 - MITSUBISHI
 - TOSHIBA
 - APPROVED EQUAL
- SUBMITTALS: PROVIDE PRODUCT DATA AND SHOP DRAWINGS WHICH INCLUDES, BUT NOT LIMITED TO: PERFORMANCE, OPERATING CHARACTERISTICS, DIMENSIONED PLANS, ELEVATIONS, CONDUIT ENTRY LOCATIONS, AND REQUIRED CLEARANCES.
- ENCLOSURE: NEMA 250. INDOOR LOCATION SUBJECT TO DUST, FALLING DIRT, AND DRIPPING NON-CORROSIVE LIQUIDS: TYPE12.
- INSTALLATION: COORDINATE LAYOUT AND INSTALLATION OF VFD WITH OTHER CONSTRUCTION INCLUDING CONDUIT, PIPING, EQUIPMENT, AND ADJACENT SURFACES. MAINTAIN REQUIRED WORKSPACE CLEARANCES AND REQUIRED CLEARANCES FOR EQUIPMENT ACCESS DOORS AND PANELS. INSTALL ON WALL WITH DISCONNECT OPERATING HANDLE NO HIGHER THAN 79 INCHES ABOVE FINISHED FLOOR UNLESS OTHERWISE INDICATED.
- WARRANTY: WARRANTY PERIOD TO REPAIR OR REPLACE VFD FOR FAILURE IN MATERIALS OR WORKMANSHIP IS THREE (3) YEARS FROM THE DATE OF SUBSTANTIAL COMPLETION.

PART 3 – EXECUTION

3.1 – GENERAL

- ELECTRIC SYSTEM LAYOUTS INDICATED ON THE DRAWINGS ARE GENERALLY DIAGRAMMATIC, BUT SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION AND WORK OF OTHER TRADES WILL PERMIT.
- CONSULT ALL OTHER DRAWINGS. VERIFY SCALES AND REPORT ANY DIMENSIONAL DISCREPANCIES OR OTHER CONFLICTS TO ARCHITECT BEFORE SUBMITTING BID.
- ALL HOME RUNS ARE INDICATED AS STARTING FROM THE DEVICE NEAREST THE PANEL AND CONTINUING IN THE GENERAL DIRECTION OF THAT PANEL. CONTINUE SUCH CIRCUITS TO THE PANEL AS THOUGH THE ROUTES WERE COMPLETELY INDICATED.
- AVOID CUTTING AND BORING HOLES THROUGH STRUCTURE OR STRUCTURAL MEMBERS WHEREVER POSSIBLE. OBTAIN PRIOR APPROVAL OF ARCHITECT AND CONFORM TO ALL STRUCTURAL REQUIREMENTS WHEN CUTTING OR BORING THE STRUCTURE IS NECESSARY AND PERMITTED.

3.2 – ELECTRICAL GROUNDING

GROUND ALL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH NEC ARTICLE 250. IN ADDITION PROVIDE A SEPARATE GROUND WIRE FOR ALL FEEDERS AND BRANCH CIRCUITS.

3.3 – ELECTRICAL EQUIPMENT INSTALLATION

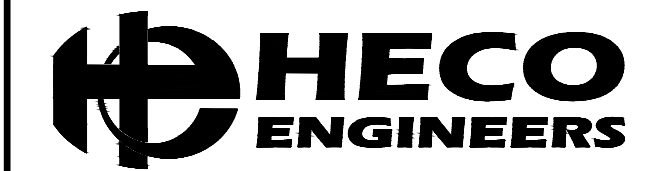
- HEAD ROOM MAINTENANCE: IF MOUNTING HEIGHTS OR OTHER LOCATION CRITERIA ARE NOT INDICATED, ARRANGE AND INSTALL COMPONENTS AND EQUIPMENT TO PROVIDE THE MAXIMUM POSSIBLE HEADROOM.
- MATERIALS AND COMPONENTS: INSTALL LEVEL, PLUMB, AND PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS, UNLESS OTHERWISE INDICATED.
- EQUIPMENT: INSTALL TO FACILITATE SERVICE, MAINTENANCE, AND REPAIR OR REPLACEMENT OF COMPONENTS. CONNECT FOR EASE OF DISCONNECTING, WITH MINIMUM INTERFERENCE WITH OTHER INSTALLATIONS.
- RIGHT OF WAY: COORDINATE INSTALLATION OF ELECTRICAL DEVICES WITH OTHER TRADES.

3.4 – RACEWAY AND CABLE INSTALLATION RACEWAY:

- ABOVE GRADE: RIGID STEEL OR IMC IN WET LOCATIONS, WHERE SUBJECT TO MECHANICAL DAMAGE AND IN CONCRETE OR BLOCK WALLS, EMT IN OTHER LOCATIONS WHERE PERMITTED BY CODE. METAL CLAD ONLY WHERE ALLOWED BY LOCAL AUTHORITY HAVING JURISDICTION.
- CONCEAL RACEWAYS AND CABLES WITHIN FINISHED WALLS, CEILINGS, AND FLOORS, UNLESS OTHERWISE INDICATED.
- INSTALL RACEWAYS AND CABLES AT LEAST SIX (6) INCHES AWAY FROM PARALLEL RUNS OF FLUES AND STEAM OR HOT-WATER PIPES. LOCATE HORIZONTAL RACEWAY RUNS ABOVE WATER AND STEAM PIPING.
- USE TEMPORARY RACEWAY CAPS TO PREVENT FOREIGN MATTER FROM ENTERING.
- MAKE CONDUIT BENDS AND OFFSETS SO INSIDE DIAMETER IS NOT REDUCED. KEEP LEGS OF BENDS IN THE SAME PLANE AND STRAIGHT LEGS OFFSETS PARALLEL, UNLESS OTHERWISE INDICATED.
- USE RACEWAY FITTINGS AND CABLE FITTINGS COMPATIBLE WITH RACEWAYS AND CABLES AND SUITABLE FOR THIS APPLICATION AND LOCATION.
- INSTALL RACEWAYS EMBEDDED IN SLABS IN MIDDLE THIRD OF SLAB THICKNESS WHERE PRACTICAL, AND LEAVE AT LEAST 1-INCH OF CONCRETE COVER.
- SECURE RACEWAYS TO REINFORCING RODS TO PREVENT SAGGING OR SHIFTING DURING CONCRETE PLACEMENT.
- SPACE RACEWAYS LATERALLY TO PREVENT VOIDS IN CONCRETE.
- INSTALL CONDUIT LARGER THAN 1-INCH TRADE SIZE PARALLEL TO OR AT RIGHT ANGLES TO MAIN REINFORCEMENT. WHERE CONDUIT IS AT RIGHT ANGLES TO REINFORCEMENT, PLACE CONDUIT CLOSE TO SLAB SUPPORT.
- TRANSITION FROM NONMETALLIC TUBING TO RIGID STEEL CONDUIT, OR IMC BEFORE RISING ABOVE FLOOR.
- MAKE EXPOSED BENDS FOR BANKED RUNS FROM SAME CENTERLINE IN ORDER THAT BENDS ARE PARALLEL. USE FACTORY ELBOWS ONLY WHERE ELBOWS CAN BE INSTALLED PARALLEL; OTHERWISE, PROVIDE FIELD BENDS FOR EXPOSED PARALLEL RACEWAYS.

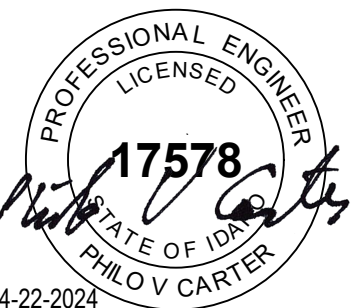
CABLES:

- INSTALL PULL WIRES IN EMPTY RACEWAYS. USE NO. 14 AWG ZINC-COATED STEEL OR MONOFILAMENT PLASTIC LINE WITH NOT LESS THAN 200-LB TENSILE STRENGTH. LEAVE AT LEAST 12-INCHES OF SLACK AT EACH END OF PULL WIRE.
- INSTALL TELEPHONE AND SIGNAL SYSTEM RACEWAYS, 2-INCH TRADE SIZE AND SMALLER, IN MAXIMUM LENGTHS OF 150 FEET (45 M) AND WITH A MAXIMUM OF TWO 90-DEGREE BENDS OR EQUIVALENT. SEPARATE LENGTHS WITH PULL OR JUNCTION BOXES WHERE NECESSARY TO COMPLY WITH THESE REQUIREMENTS, IN ADDITION TO REQUIREMENTS ABOVE.
- CONNECT MOTORS AND EQUIPMENT SUBJECT TO VIBRATION, NOISE TRANSMISSION, OR MOVEMENT WITH A MAXIMUM OF 72-INCH FLEXIBLE CONDUIT. INSTALL LFMC IN WET OR DAMP LOCATIONS. INSTALL A SEPARATE GROUND CONDUCTOR ACROSS FLEXIBLE CONNECTIONS.
- SET FLOOR BOXES LEVEL AND TRIM AFTER INSTALLATION TO FIT FLUSH TO FINISHED FLOOR SURFACE.
- CONDUCTORS: TYPE THHN/THWN INSULATED CONDUCTORS IN RACEWAY.



Myers Anderson

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ITD FAIRFIELD MOBILE HOME UNITS
FAIRFIELD, ID

PROJECT NAME:

SHEET TITLE:

ELECTRICAL SPECIFICATIONS

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN OR IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS OR SPECIFICATIONS

REVISION DATE

CLIENT PROJ. NUMBER: ITD24-0323

ARCH. JOB NUMBER: 24626

SHEET ISSUED DATE: APRIL 2024

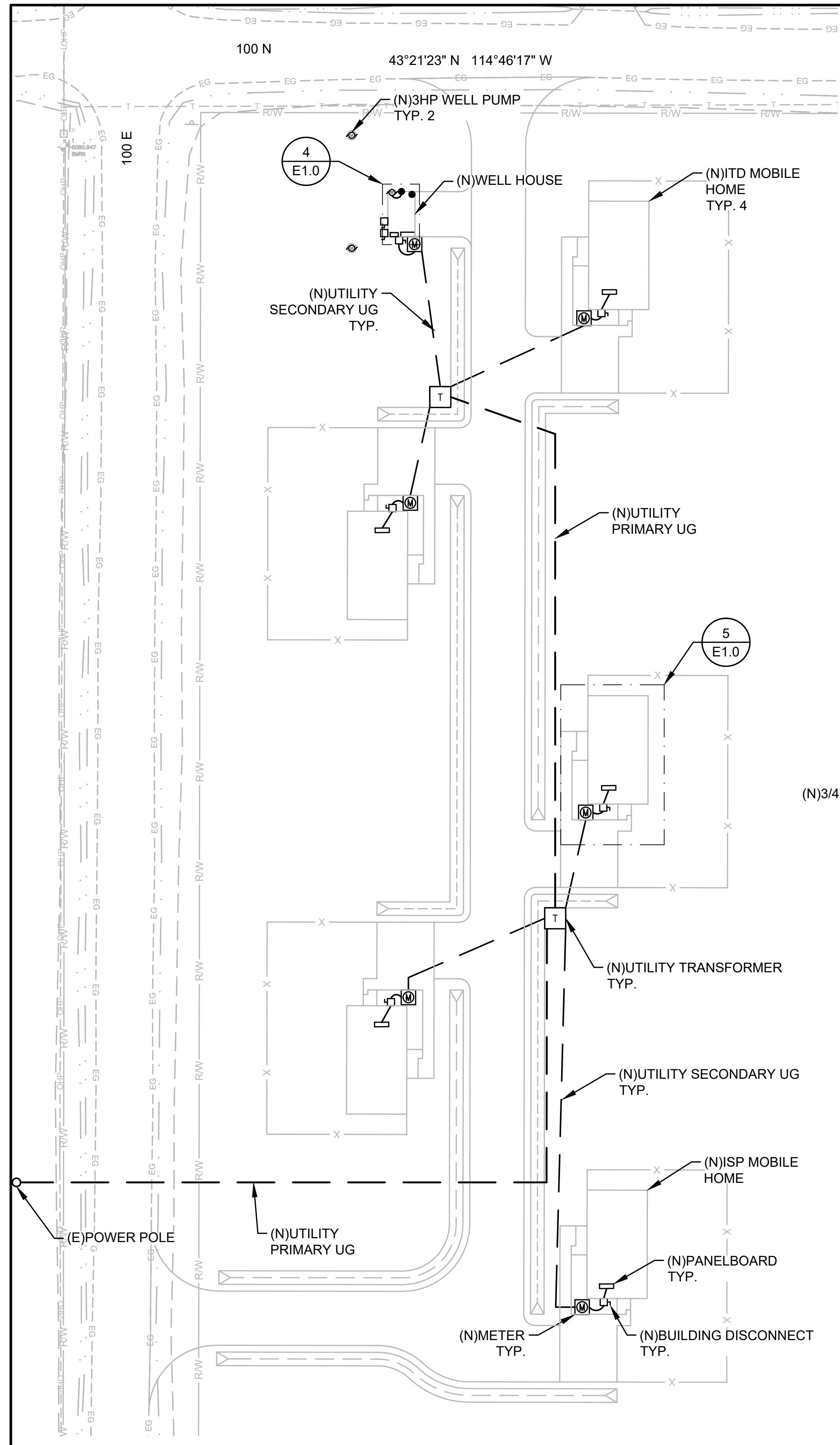
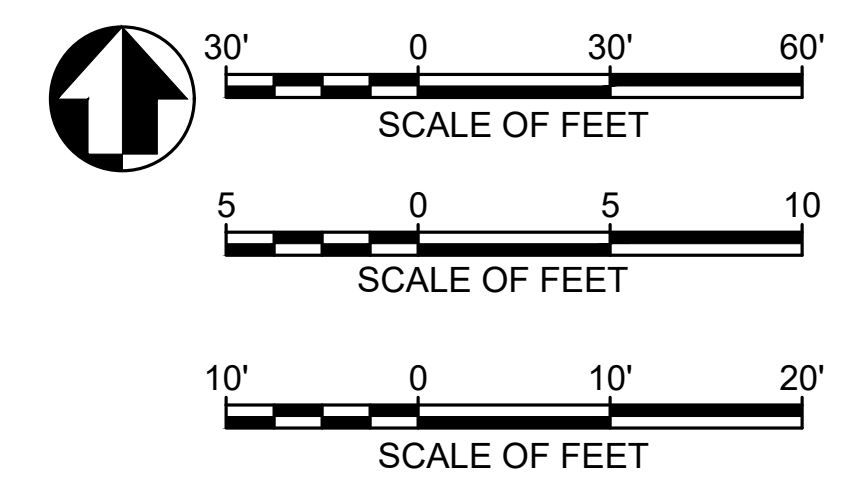
SHEET E0.1

SHEET NOTES:

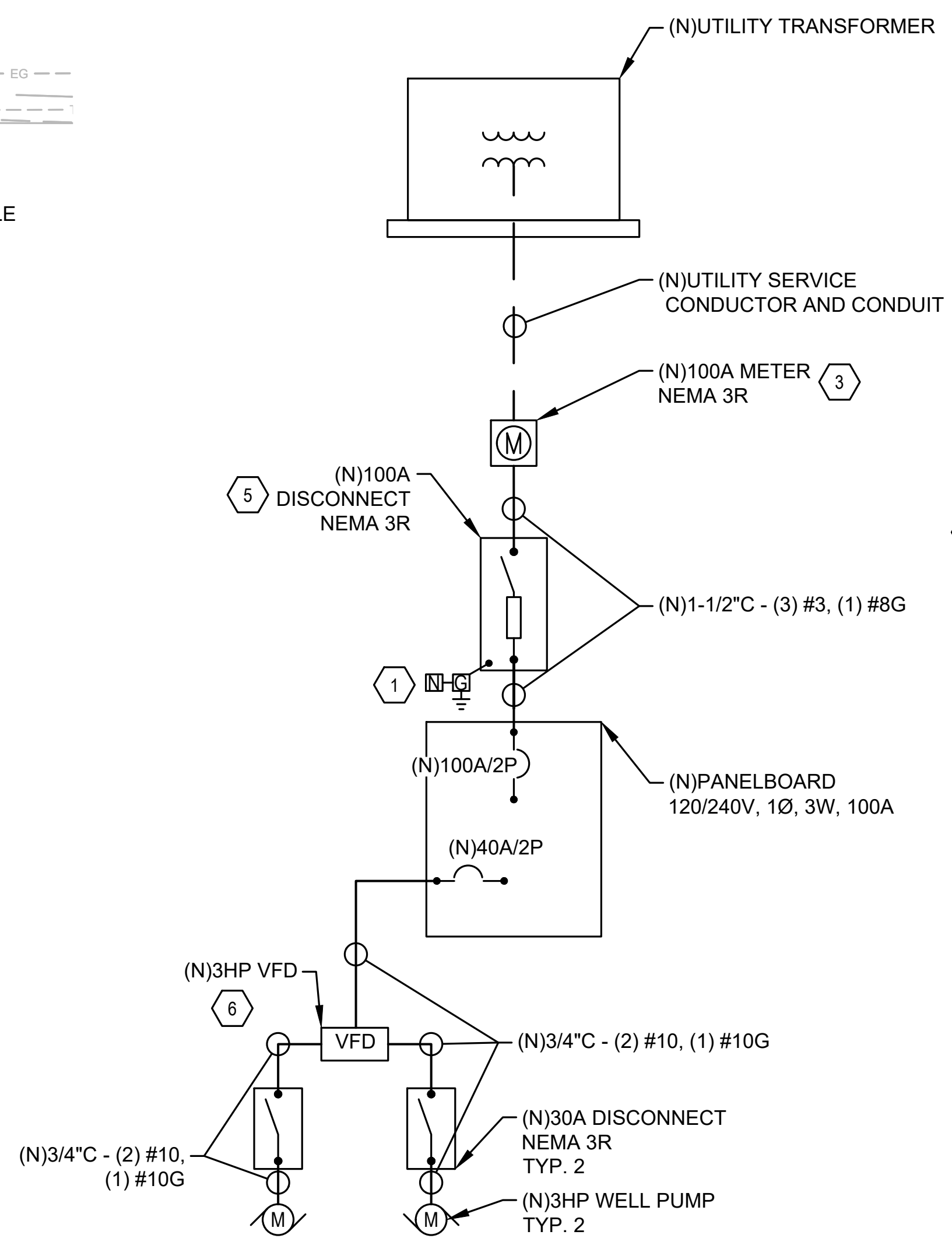
- SITE PLAN SHOWS PROPOSED ELECTRICAL INSTALLATION FOR NEW RESIDENTIAL UNIT AND METER PEDESTAL.
- CONTRACTOR GROUND METER PEDESTAL AND NEW RESIDENTIAL UNIT PER NEC 250.
- CONTRACTOR MAKE ALL CONNECTIONS FROM METER PEDESTAL TO RESIDENTIAL UNIT INDOOR PANEL.
- CONTRACTOR TO LABEL METER PEDESTAL TO MATCH ADDRESS OF NEW RESIDENTIAL UNIT.
- CONTRACTOR VERIFY NEC SERVICE OUTLET REQUIREMENTS MET FOR HVAC INSTALLATION. INSTALL 125V/20A OUTLET IF NECESSARY (GFCI PROTECTION AND WEATHERPROOF COVER REQUIRED FOR AN OUTDOOR OUTLET).
- RESIDENTIAL UNIT MANUFACTURER TO MAKE ALL INDOOR CONNECTIONS.
- UTILITY COMPANY CONTACT INFORMATION: IDAHO POWER 1-800-488-6151

KEYNOTES:

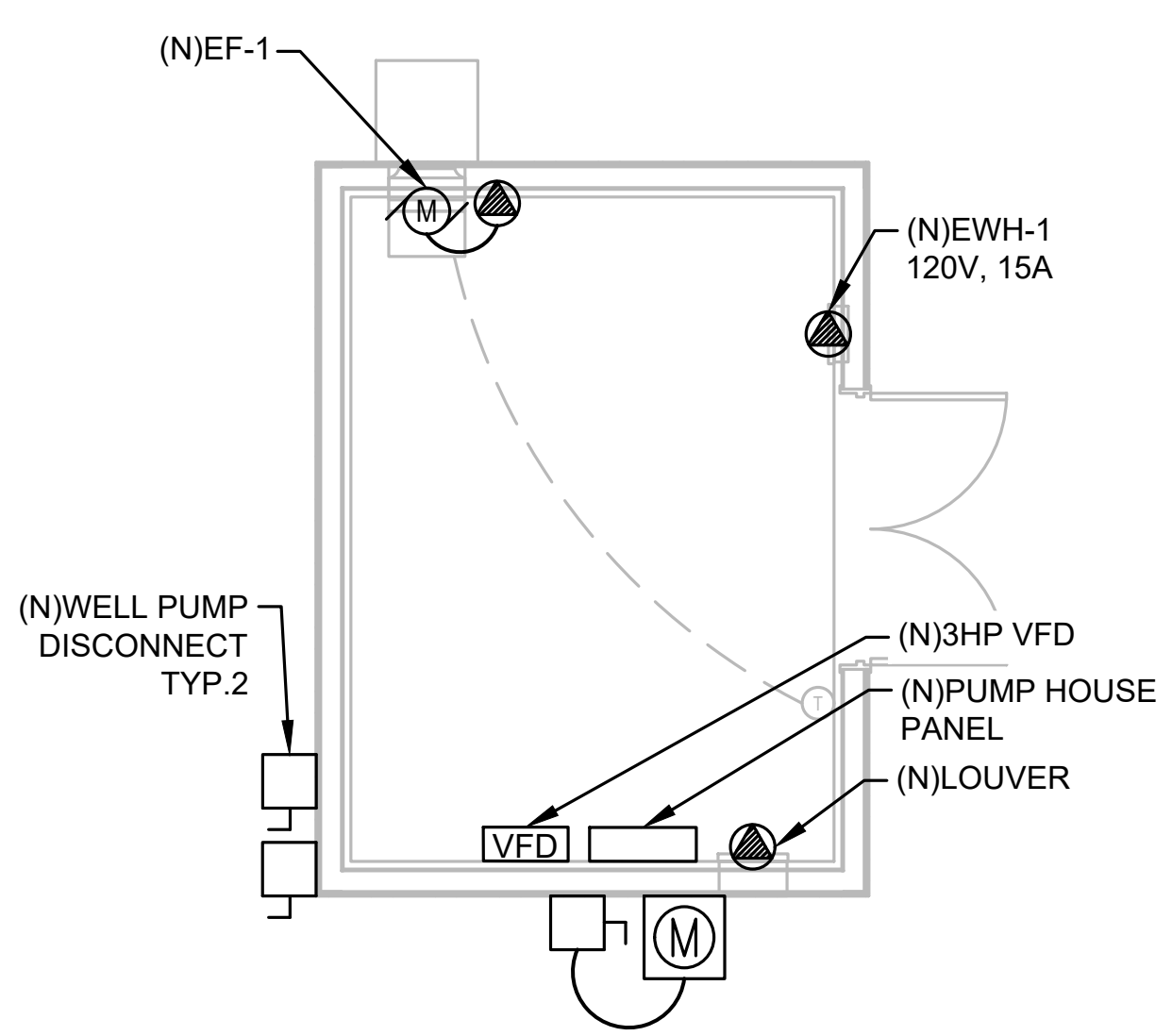
- CONTRACTOR GROUND PER NEC 250.
- THE RESIDENTIAL PANELBOARD SIZE AND CIRCUIT BREAKERS ARE DETERMINED BY THE MANUFACTURER OF THE RESIDENCE. CONTRACTOR ADJUST METER/MAIN BREAKER SIZE, CONDUIT, DISCONNECT, AND CONDUCTOR SIZES FROM METER/MAIN TO RESIDENTIAL PANEL BASED ON FINAL SELECTION OF MAIN BREAKER SIZE IN THE RESIDENTIAL PANEL.
- INSTALL METER PEDESTAL AND ASSOCIATED EQUIPMENT IN ACCORDANCE WITH UTILITY (IDAHO POWER) REQUIREMENTS FOR UNDERGROUND SERVICE. COORDINATE INSTALLATION WITH UTILITY (IDAHO POWER).
- INSTALL 200A/2P BUILDING DISCONNECT, SQUARE D DTU224NRB OR EQUAL. NEMA 3R ENCLOSURE REQUIRED. SEE KEYNOTE NO.2 REGARDING FINAL SIZES OF ELECTRICAL EQUIPMENT.
- SERVICE-ENTRANCE RATED FUSIBLE DISCONNECT, 100A/2P.
- 3HP, 240V, 1Ø, 3W VFD WITH INTEGRAL DISCONNECT FOR WELL PUMPS.



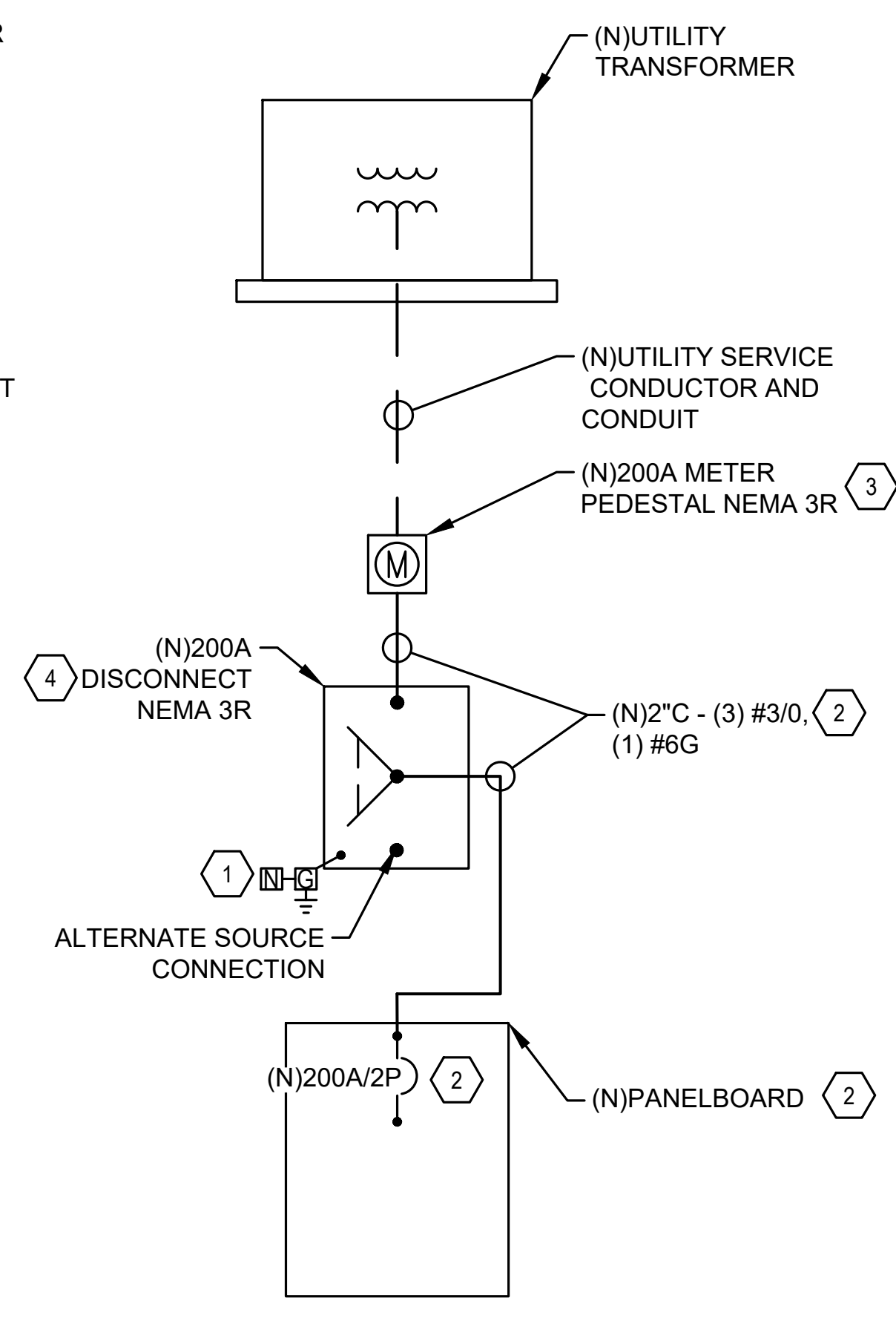
1 ELECTRICAL SITE PLAN
 E1.0 SCALE: 1" = 30'



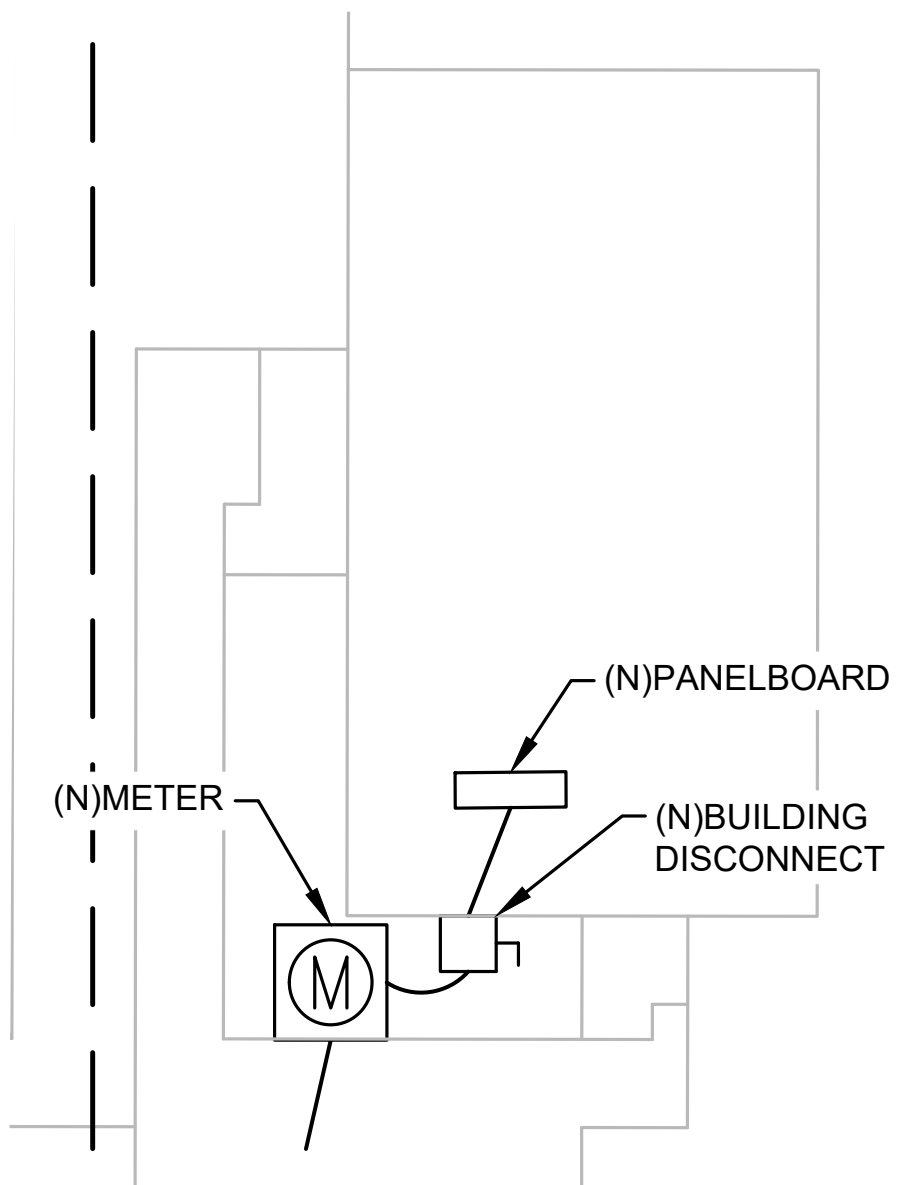
2 ONE-LINE DIAGRAM: WELL HOUSE
 E1.0 SCALE: NTS



4 ENLARGED WELL HOUSE
 E1.0 SCALE: 1" = 5'



3 ONE-LINE DIAGRAM: MOBILE HOME
 E1.0 SCALE: NTS



5 ENLARGED TYP. MOBILE HOME
 E1.0 SCALE: 1" = 10'