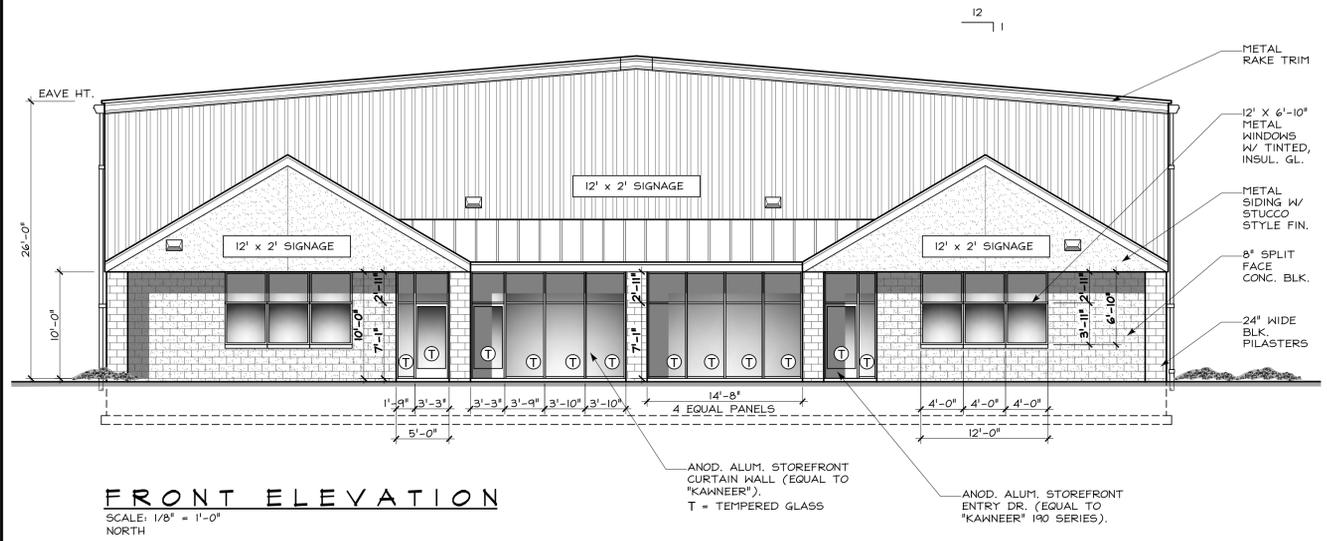
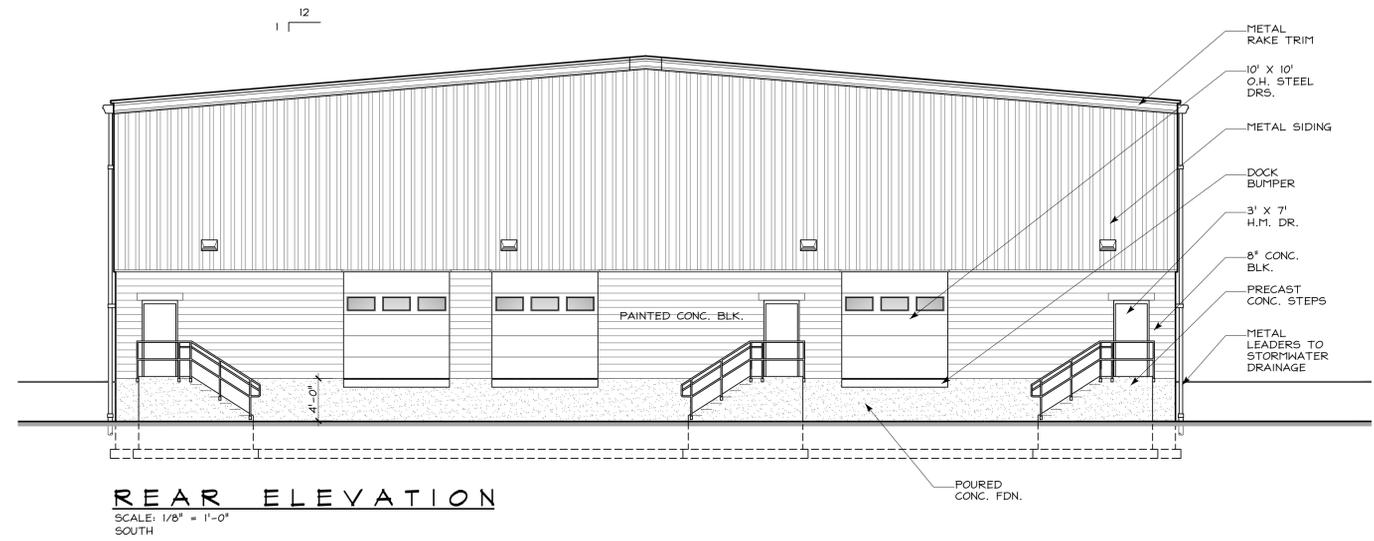


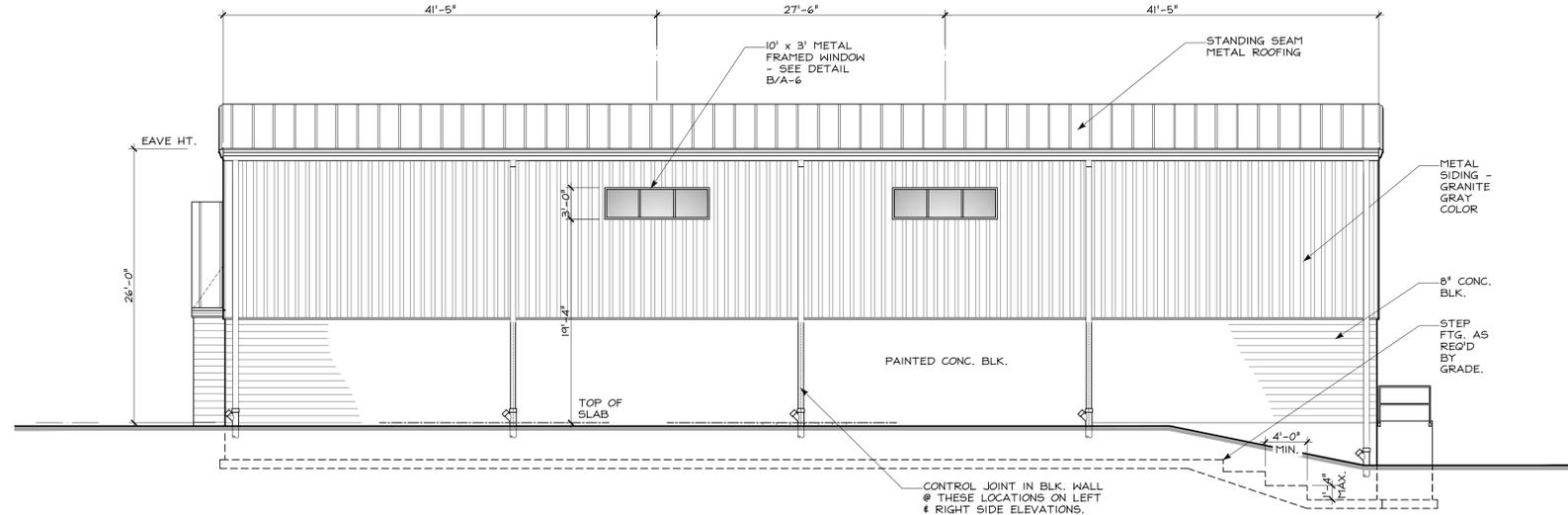
- A-1 ELEVATIONS
- A-2 FOUNDATION PLAN
- A-3 FOUNDATION DET.
- A-4 FLOOR PLAN
- A-5 DETAILS
- A-6 DETAILS
- A-7 DETAILS
- A-8 NOTES
- ME-1 ELEC. & MECH.
- ME-2 ELEC. & MECH.



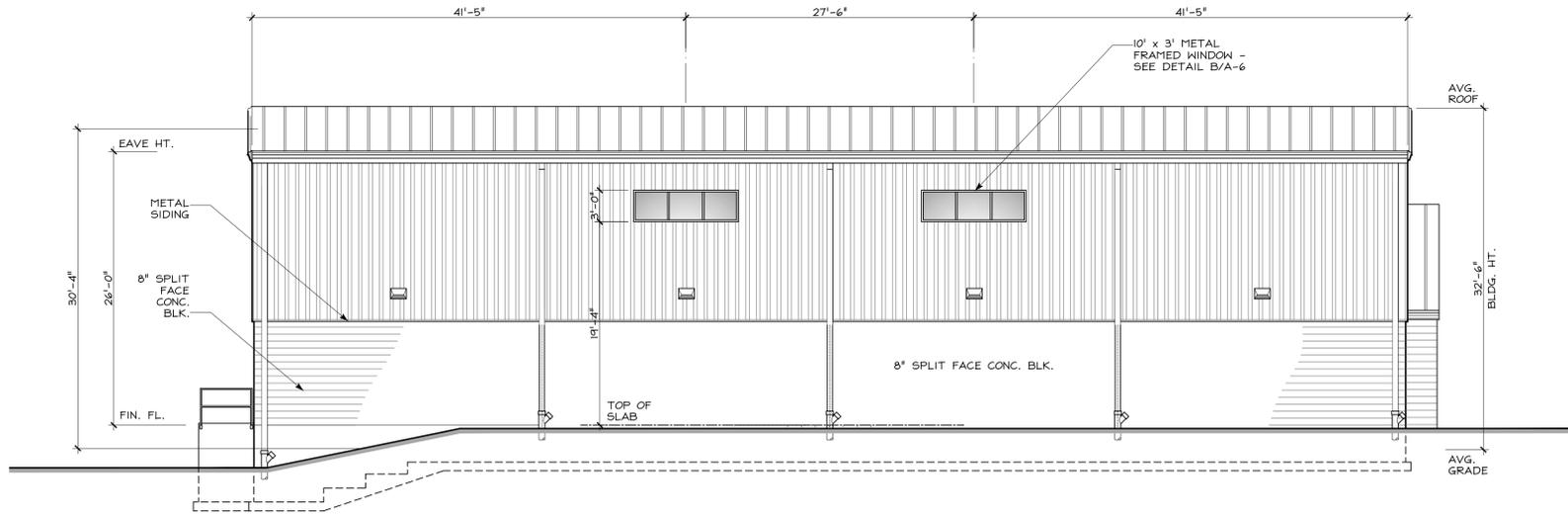
**FRONT ELEVATION**  
SCALE: 1/8" = 1'-0"  
NORTH



**REAR ELEVATION**  
SCALE: 1/8" = 1'-0"  
SOUTH



**RIGHT SIDE ELEVATION**  
SCALE: 1/8" = 1'-0"  
WEST



**LEFT SIDE ELEVATION**  
SCALE: 1/8" = 1'-0"  
EAST

**INSULATION SCHEDULE**

LOCATION	MINIMUM VALUES
ROOF	R-32.9
SIDING	R-19
FLOOR	R-10
FURRING	R-15
O.H. DR.	R-10 (U=0.1)
SKING DR.	R-3 (U=0.375)
GLASS	U=0.3/VT=0.4/SHGC=0.5

**BUILDING CODE DATA**

USE GROUP: S-1 USE  
 CONSTRUCTION CLASSIFICATION: TYPE IIB  
 BUILDING HEIGHT: 1 STORY, 30'-4"

**AREAS:**

WAREHOUSE	9,000 S.F.
OFFICE	2,000 S.F.
<b>TOTAL:</b>	<b>11,000 S.F.</b>

**TOTAL OCCUPANCY LOAD:**

9,000 S.F. WAREHOUSE (S-1 USE): 1/500 S.F. = 18 OCC. MAX.  
 2,000 S.F. OFFICE (B USE): 1/150 S.F. = 13 OCC. MAX.

**BUILDING VOLUME:** 333,630 C.F.  
 ROOF THERMAL FACTOR: 1.0  
 SNOW LOAD IMPORTANCE FACTOR: 1.0  
 SNOW EXPOSURE FACTOR: 1.0  
 GROUND SNOW LOAD: 40 P.S.F.  
 FLOOR LIVE LOAD: 125 P.S.F.  
 COLLATERAL LOAD: 5 P.S.F.

**WIND SPEED:** V3s = 115 MPH  
 WIND IMPORTANCE FACTOR: 1.00  
 WIND EXPOSURE: C  
 INTERNAL PRES. COEFFICIENT: ±0.18

**SEISMIC USE GROUP:** I  
**SEISMIC SITE CLASS:** D, UNLESS OTHERWISE DETERMINED BY SOILS ENG.  
**SEISMIC DESIGN CATEGORY:** C  
**SEISMIC RESISTING SYSTEM:** STEEL FRAME

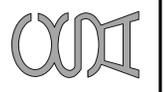
\*COMCHECK\* DATA UNDER SEPARATE ATTACHMENT

2018 INTERNATIONAL BUILDING CODE, NJ EDITION  
 2018 INTERNATIONAL MECHANICAL CODE  
 2018 INTERNATIONAL ENERGY CONSERVATION CODE  
 2017 NATIONAL ELECTRICAL CODE  
 2018 NATIONAL STANDARD PLUMBING CODE  
 2018 INTERNATIONAL FUEL GAS CODE  
 ICC/ANSI A117.1-2009 BARRIER FREE SUBCODE

A-1

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 NEW BUILDING FOR:  
**26 WILSON DRIVE LLC**  
 26 WILSON DR., SPARTA, NJ



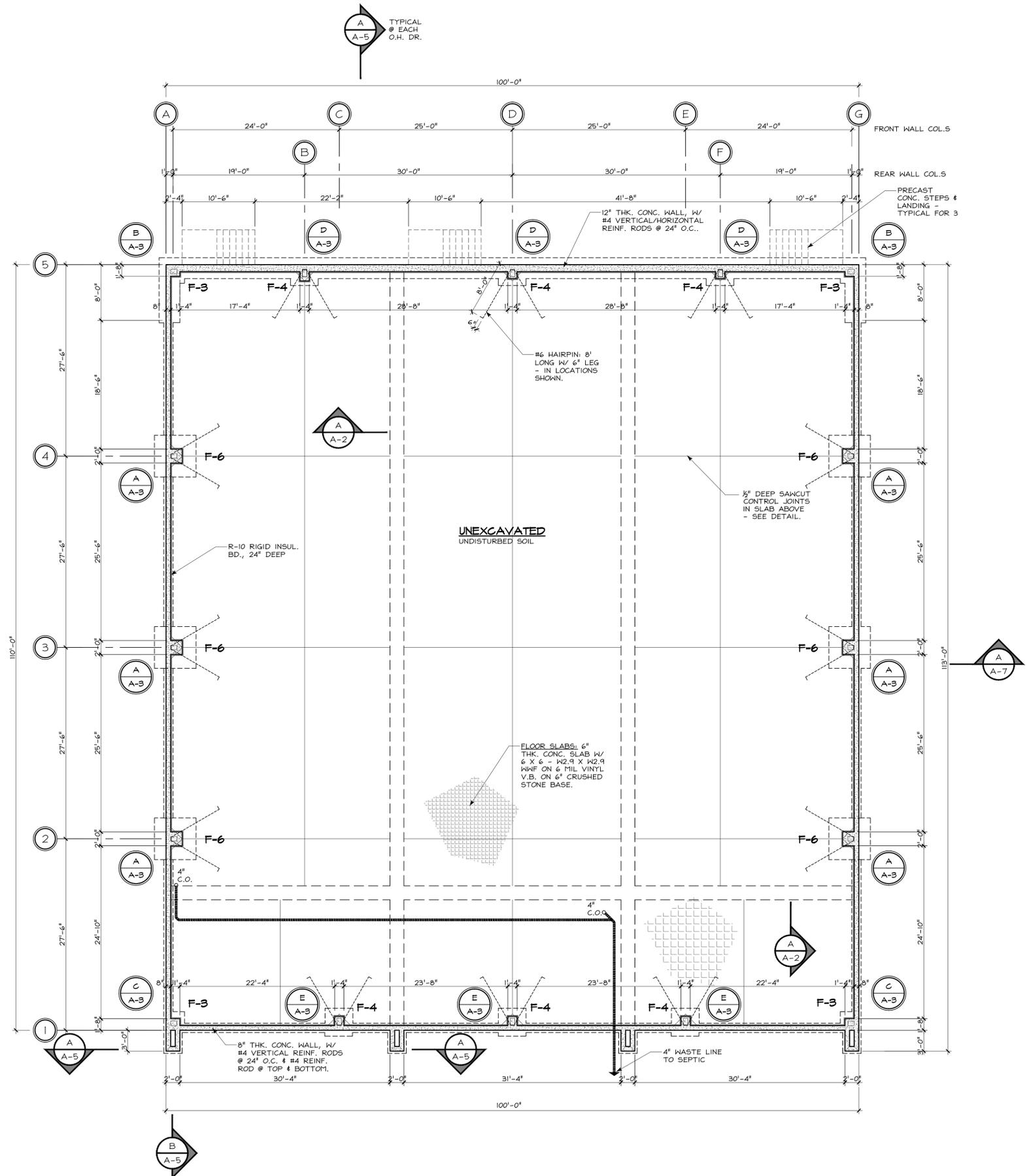
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- A-6 DETAILS
- A-7 DETAILS
- A-8 NOTES

- ME-1 ELEC. & MECH.
- ME-2 ELEC. & MECH.

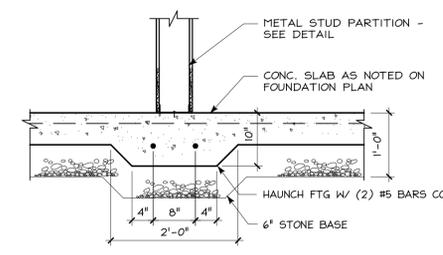
FOOTING SCHEDULE			
MARK	ANCHOR BOLTS	FOOTING SIZE	FOOTING REINFORCING
F-3	5/8" DIA. x 15" LONG	3'-0" x 3'-0" x 10" THICK	(4) #4 BARS EACH WAY AT 10" O.C.
F-4	1" DIA. x 21" LONG	4'-0" x 4'-0" x 10" THICK	(6) #4 BARS EACH WAY AT 8 1/4" ON CENTER
F-6	1" DIA. x 21" LONG	6'-0" x 6'-0" x 12" THICK	(6) #6 BARS EACH WAY AT 13 1/4" ON CENTER

NOTE: ALL REACTIONS & PIER/FTG. LOCATIONS FROM THE SELECTED METAL BUILDING MFR. SHALL BE REVIEWED & APPROVED BY THE ARCHITECT PRIOR TO CONSTRUCTION.

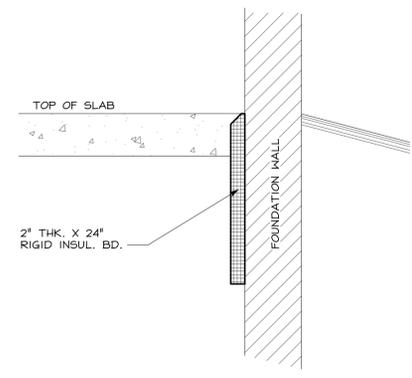
TOPS OF ALL PIERS ARE AT FINISHED CONCRETE SLAB ELEVATION



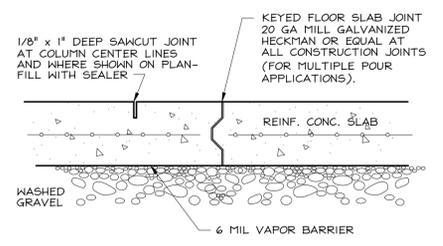
**FOUNDATION PLAN**  
SCALE: 1/8" = 1'-0"



**HAUNCHED SLAB DETAIL**  
SCALE: 3/4" = 1'-0"



**SLAB INSULATION DETAIL**  
SCALE: 1" = 1'-0"



**TYPICAL CONTROL JOINT DETAIL**  
SCALE: 1 1/2" = 1'-0"

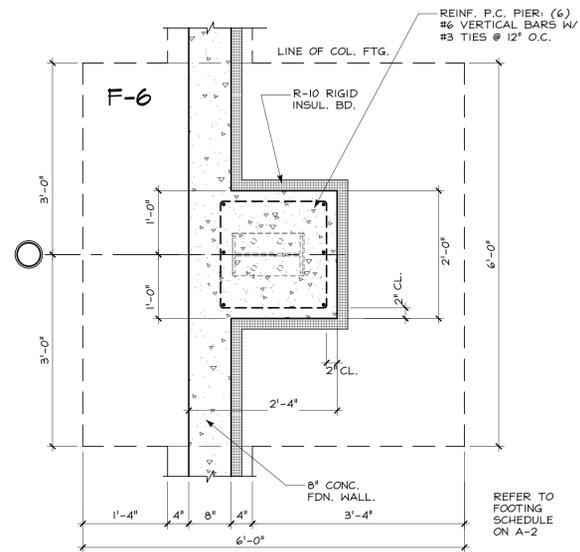
A-2

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0223256-1

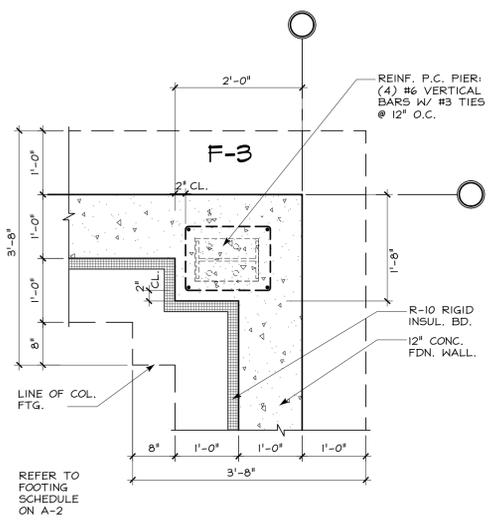
**CHARLES SCHAFER ASSOCIATES LLC**  
architect · planner  
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NEW BUILDING FOR:  
**NEW WILSON DRIVE LLC**  
26 WILSON DRIVE, SPARTA, NJ



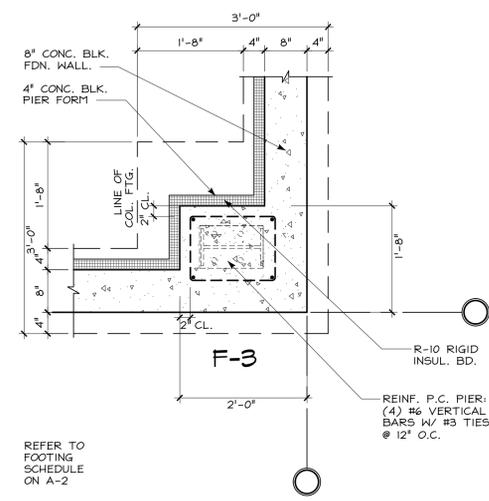
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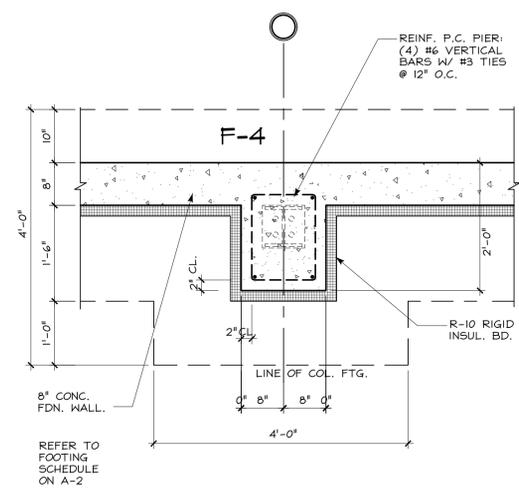
**A** PIER DETAIL  
SCALE: 3/4" = 1'-0"



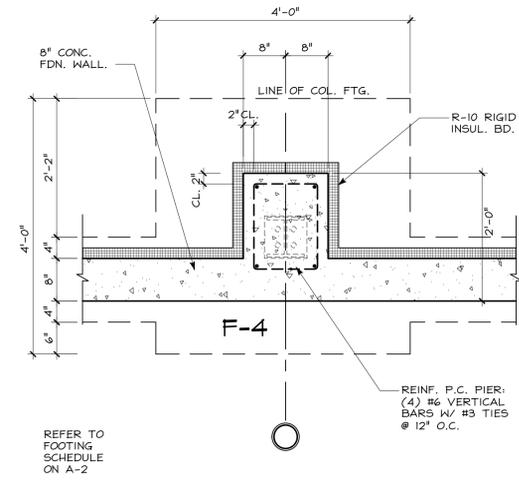
**B** PIER DETAIL  
SCALE: 3/4" = 1'-0"



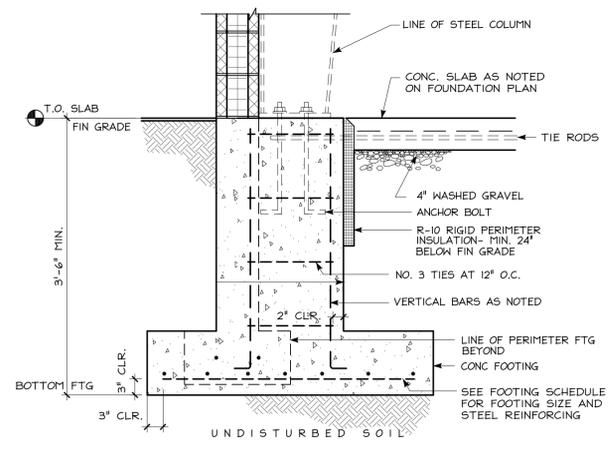
**C** PIER DETAIL  
SCALE: 3/4" = 1'-0"



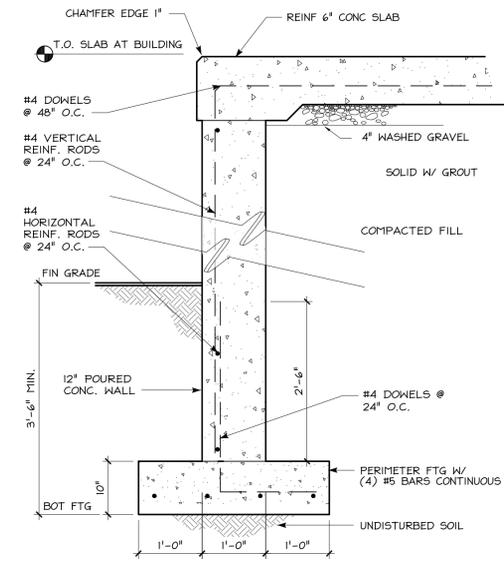
**D** PIER DETAIL  
SCALE: 3/4" = 1'-0"



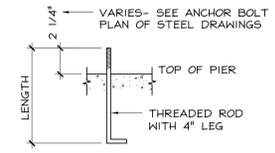
**E** PIER DETAIL  
SCALE: 3/4" = 1'-0"



**TYPICAL PIER DETAIL**  
SCALE: 3/4" = 1'-0"



**F** LOADING DOCK WALL DETAIL  
SCALE: 3/4" = 1'-0"  
@ OVERHEAD DOORS

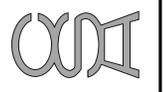


**ANCHOR BOLT DETAIL**  
NOT TO SCALE

A-3

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022326-1

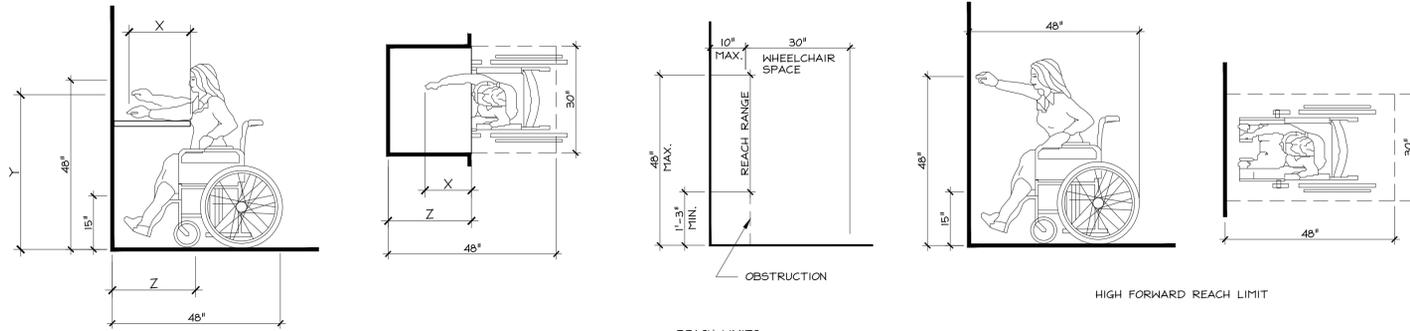
CHARLES SCHAFER ASSOCIATES LLC  
architect · planner  
268 NEWTON - SPARTA ROAD · NEWTON · NEW JERSEY 07860 973-385-7255  
NEW BUILDING FOR:  
26 WILSON DRIVE LLC  
26 WILSON DR., SPARTA, NJ





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- A-8 NOTES

- ME-1 ELEC. & MECH.
- ME-2 ELEC. & MECH.

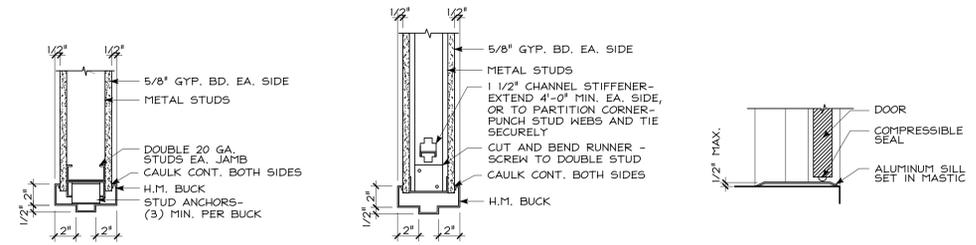


HIGH FORWARD REACH OVER AN OBSTRUCTION  
 NOTE: "x" SHALL BE  $\leq 25"$ ; "z" SHALL BE  $\geq 4"$  WHEN "x"  $\leq 20"$ , THEN "y" SHALL BE 48" MAX. WHEN "x" IS 20" TO 25", THEN "y" SHALL BE 44" MAX.

REACH LIMITS  
 THE 30" X 48" WHEELCHAIR CLEAR FLOOR SPACE IS LOCATED 10" MAX. FROM THE WALL

**BARRIER-FREE CONTROL HEIGHT GUIDELINES**

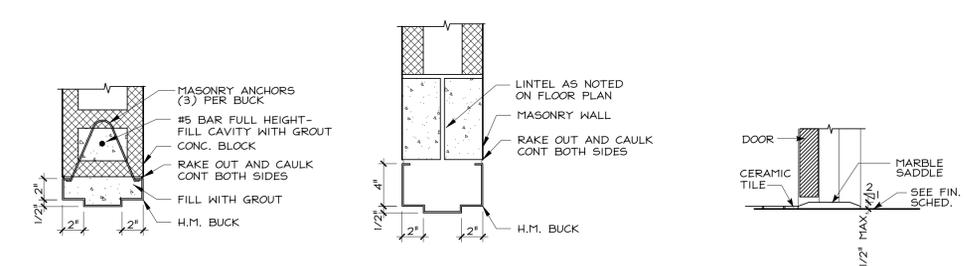
N.T.S.  
 ADA REACH RANGE DIAGRAM(S) - ALL CONTROLS (OUTLETS, SWITCHES, ETC...) MUST BE WITHIN THESE HEIGHTS FOR THEIR RESPECTIVE APPROACHES.



**JAMB DETAIL**  
 SCALE: 1 1/2" = 1'-0"

**HEAD DETAIL**  
 SCALE: 1 1/2" = 1'-0"

**EXT. SILL DETAIL**  
 SCALE: 1 1/2" = 1'-0"

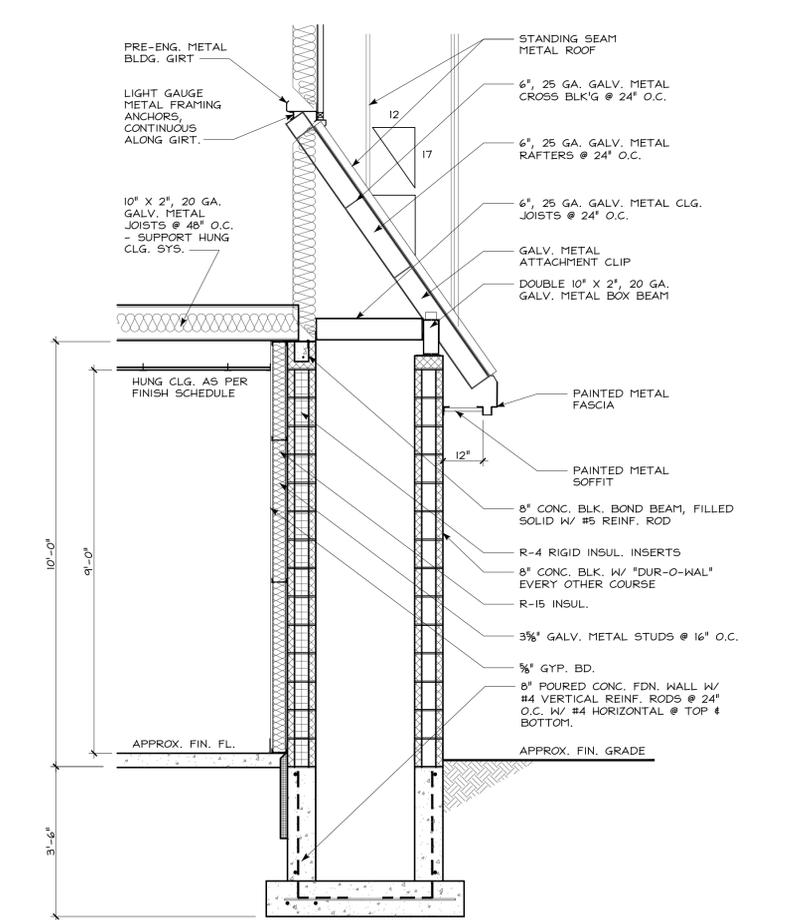


**JAMB DETAIL**  
 SCALE: 1 1/2" = 1'-0"

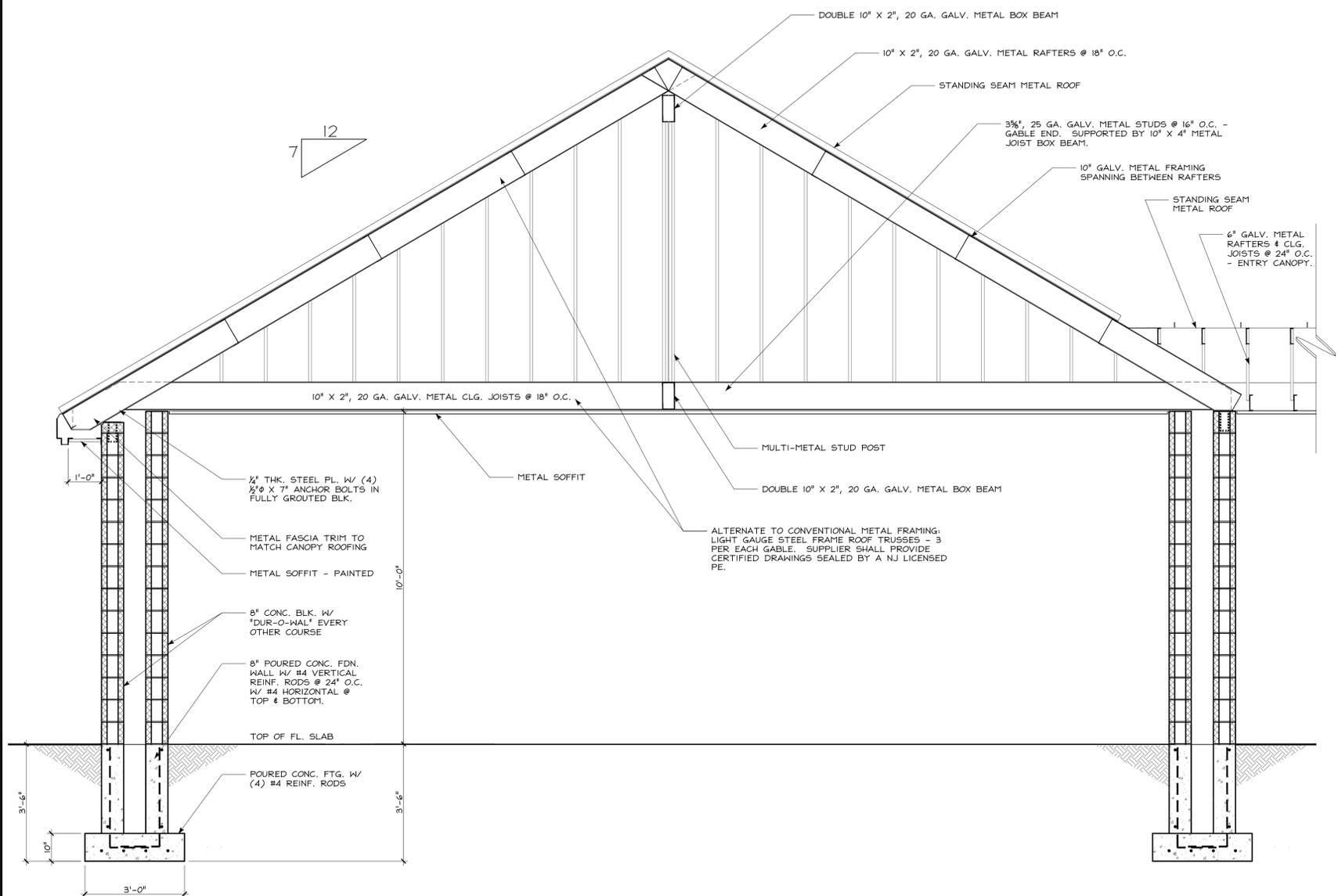
**HEAD DETAIL**  
 SCALE: 1 1/2" = 1'-0"

**LAV. SILL DETAIL**  
 SCALE: 1 1/2" = 1'-0"

**DOOR DETAILS**



**CROSS SECTION @ ENTRY CANOPY**  
 SCALE: 1/2" = 1'-0"



**CROSS SECTION @ ENTRY CANOPY**  
 SCALE: 1/2" = 1'-0"

A-5

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 NEW BUILDING FOR:  
 26 WILSON DRIVE LLC  
 26 WILSON DR., SPARTA, NJ



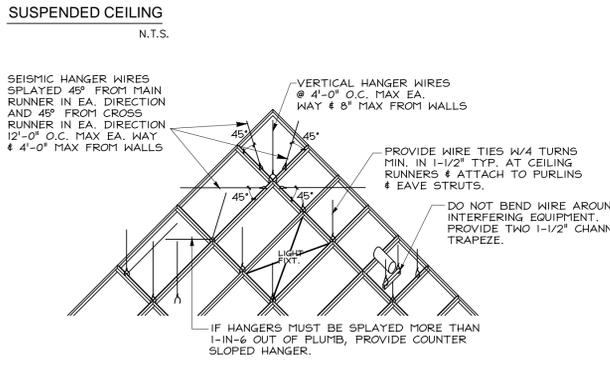
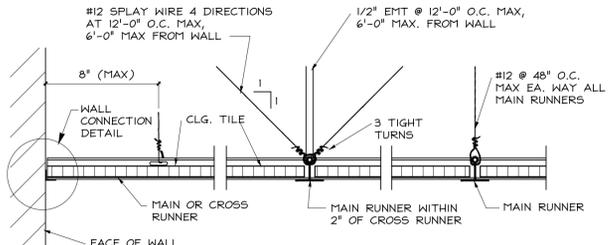
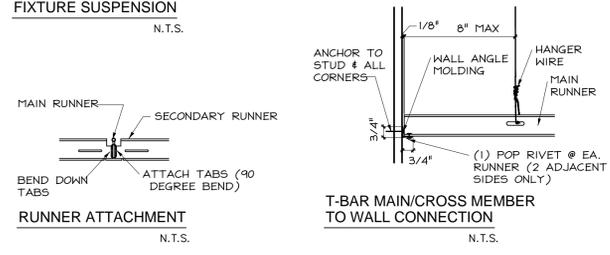
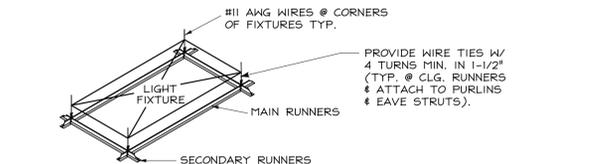
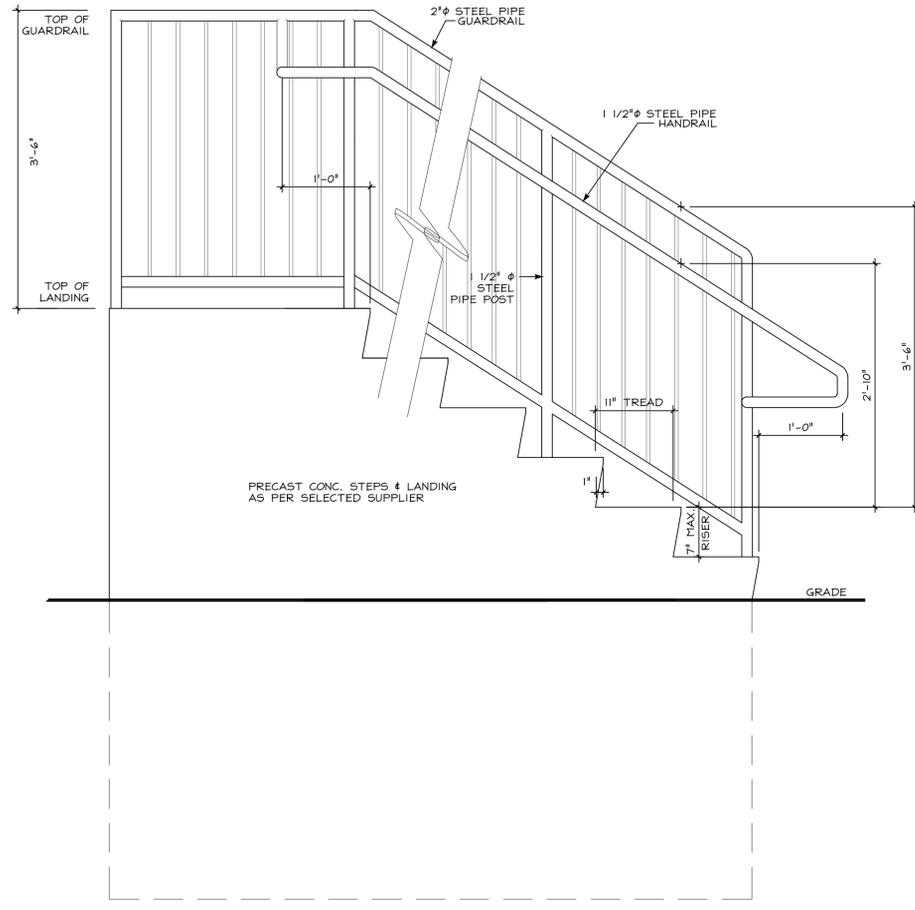
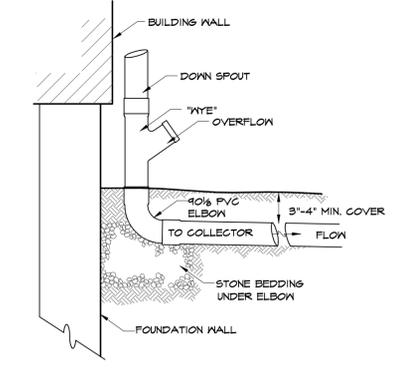
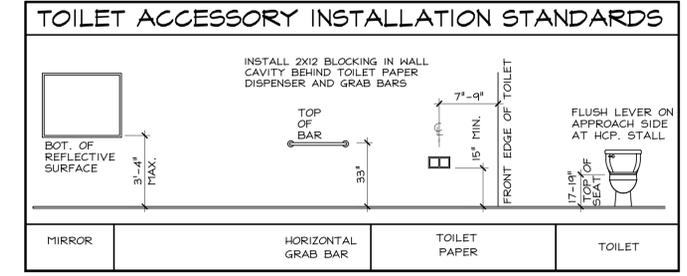
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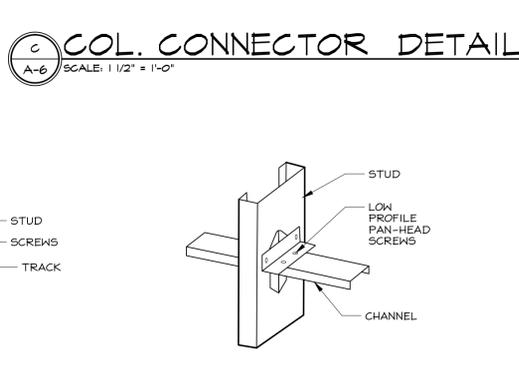
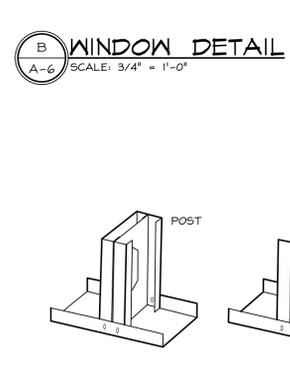
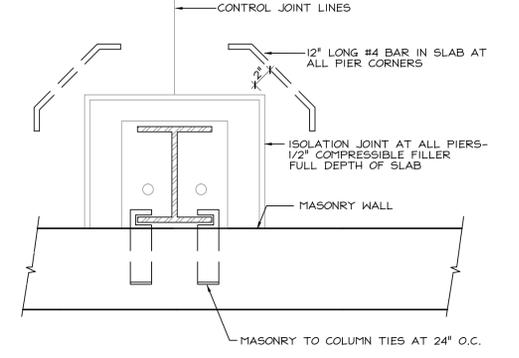
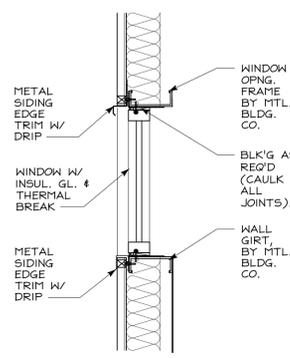
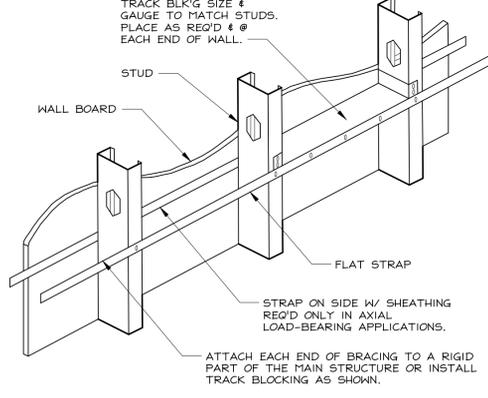
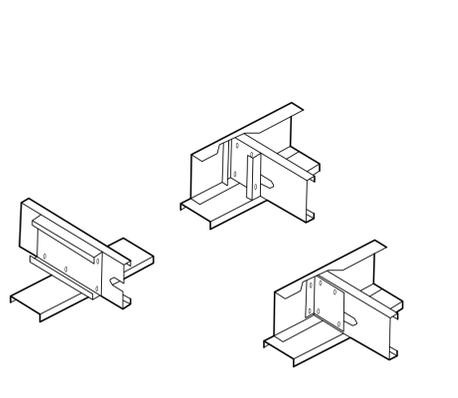
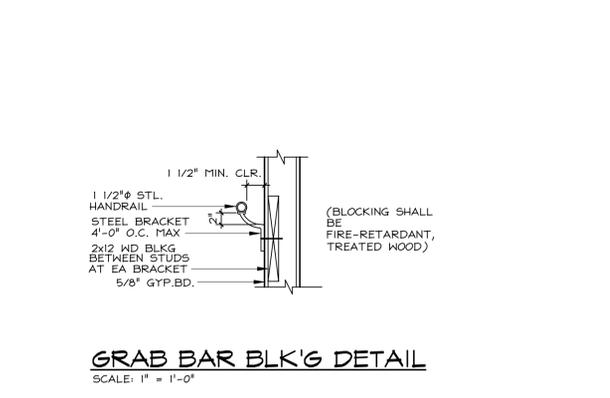
A-6

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 r) 022326-1

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 NEW BUILDING FOR:  
 26 WILSON DRIVE LLC  
 26 WILSON DR., SPARTA, NJ



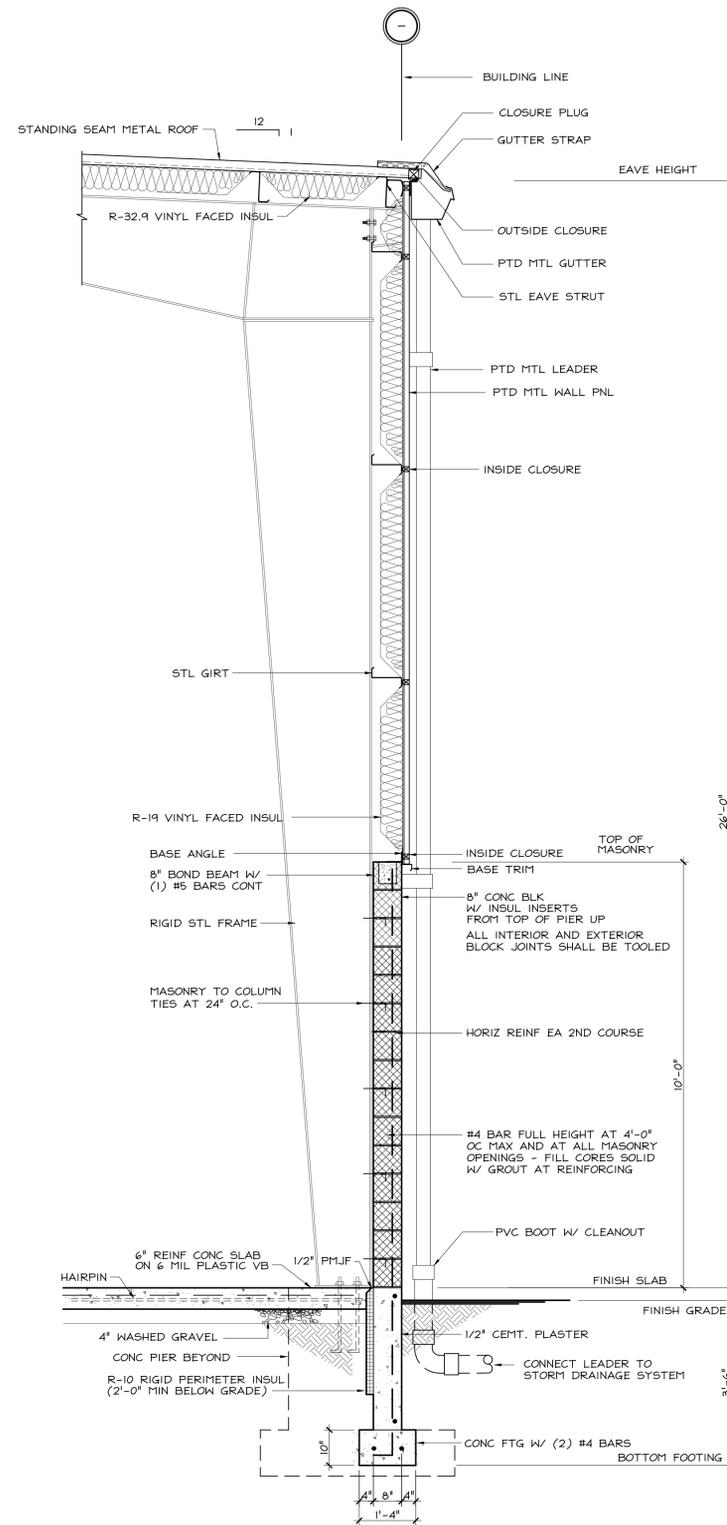
- HANGER WIRES MUST BE NO. 12 GA. MIN. SOFT-ANNEALED, MILD STEEL WIRE. WIRES SHALL BE WRAPPED TIGHTLY AT RUNNERS AND SUPPORTS & TIED WITH A MIN. OF 3 TURNS.
  - CLIPS SHALL HOLD RUNNERS TIGHTLY TOGETHER. SPLICE CLIPS SHALL BE CAPABLE OF RESISTING AT LEAST 50 LBS. IN TENSION OR COMPRESSION.
  - LOCAL KINKS AND BENDS SHALL NOT BE MADE IN HANGER WIRES FOR LEVELING.
  - RUNNERS SHALL BE CAPABLE OF SUPPORTING CEILING SYSTEM WITH DEFLECTIONS LESS THAN 0.133 INCH.
- N O T E S : SEISMIC BRACING REQUIREMENTS AND DETAILS ARE BASED ON THE INTERNATIONAL BUILDING CODE.



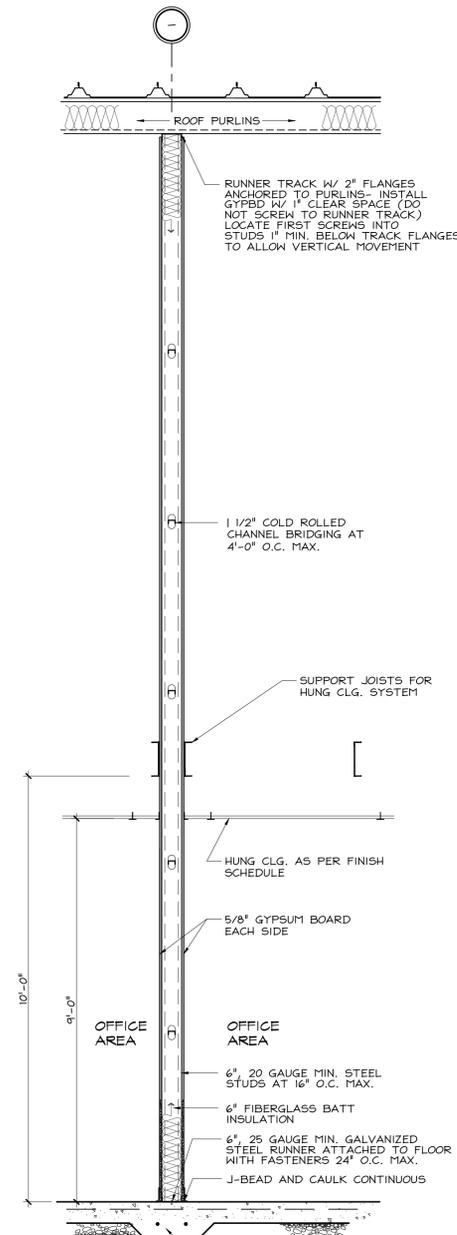
INDEX TO DRAWINGS

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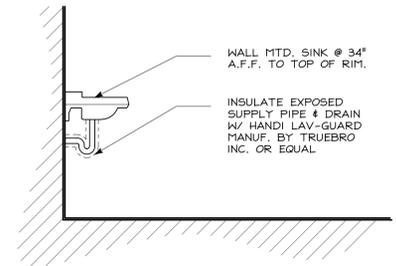
ME-1 ELEC. & MECH.  
ME-2 ELEC. & MECH.



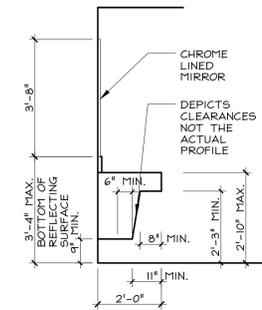
**A WALL SECTION @ WAREHOUSE**  
A-T SCALE: 1/2" = 1'-0"  
SIDEWALL



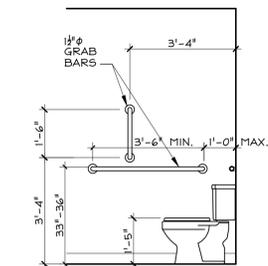
**B WALL SECTION**  
A-T SCALE: 1/2" = 1'-0"  
OFFICE WALL



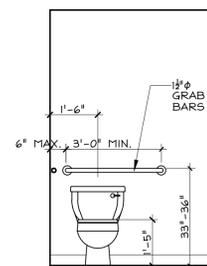
**WALL MOUNT SINK DIAGRAM**  
NO SCALE



**KNEE-SPACE DETAIL**



**ELEVATION**



**ELEVATION**

**BARRIER-FREE DETAILS**  
SCALE: 3/8" = 1'-0"

A-7

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NEW BUILDING FOR:  
26 WILSON DRIVE LLC  
26 WILSON DR., SPARTA, NJ



**GENERAL NOTES**

All work shall be done in conformance with the regulations and requirements of the N.J. Uniform Construction Code and all local ordinances.

Contractor shall field verify all dimensions prior to any construction. Notify Architect of any discrepancies.

Contractor shall provide a chain link safety fence around work area.

DO NOT SCALE FROM DRAWINGS.

**CLEANING**

Retain stored items in an orderly arrangement allowing maximum access, not impeding traffic or drainage, and providing required protection of materials.

Provide adequate storage for all items awaiting removal from the job site.

Building structure shall be kept as clean as possible. Remove all traces of soil, waste materials, smudges, and other foreign matter accumulated by new construction. Remove all traces of splashed materials from adjacent structures.

Visually inspect interior surfaces and remove all traces of soil, waste materials, smudges and other foreign matter. Remove paint droppings, spots, stains, and dirt from finished surfaces.

Following the installation of finish floor materials, clean the finish floor at all times while work is being performed in that specific area.

Schedule final cleaning as approved by the Owner to accept a completely clean work. Finish cleaning shall be interpreted as meaning the level of cleanliness generally provided by skilled cleaners using commercial quality building maintenance equipment and materials.

Contractor shall follow the manufacturer's instructions for the cleaning of individual materials, and he shall verify that cleansing methods or agents will not damage the materials being cleaned. Contractor shall maintain progress cleaning during construction, not allowing the accumulation of scrap, debris, and excessive dirt.

**EARTHWORK AND FILL**

Excavate along perimeter walls as shown on the Foundation Plan. All trenching shall extend to virgin soil. Excavation and pouring of the footings shall be performed in close sequence due to the nature of the soil. Prevent surface water and non-surface or ground water from flowing into excavation and from flooding site and surrounding area. Do not allow water to accumulate in excavations. Remove water to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to the stability of sub-grades and foundations. Provide and maintain pumps, suction and discharge lines, and other de-watering system components necessary to convey water away from excavation.

Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with the Owner and utility companies in keeping respective services and facilities in operation. Repair damage to utilities to the satisfaction of the utility owner.

Stockpile satisfactory excavated materials where directed, until required for backfill or fill. Place, grade and shape stockpiles for proper drainage. Locate and retain soil materials away from edge of excavations. Dispose of excess soil material and waste material from site.

All fill placed within the building shall be bank-run gravel or crushed stone with 90% of the stones less than 2" in diameter. All fill shall be placed in 12" maximum lifts and each layer of backfill or fill material at 95% maximum dry density or 90% relative dry density. Take care to prevent wedging action of backfill or fill against structures by carrying material uniformly around structure approximately same elevation in each lift. Grade earthwork to elevations as shown.

**POURED CONCRETE**

Provide cast-in-place concrete, including form work and reinforcing, as required to complete the construction indicated.

Provide forms as required to pour footings as shown on the drawings. Use steel forms or other smooth material approved in advance by the Architect. The Contractor has the option of using the earth as form work for all building footings. To do this, the Contractor must add one extra inch of concrete to all sides of the footing at no extra cost to the Owner. Over excavation shall be filled with concrete at no extra cost to the Owner.

Mixing will be done at the site and not while in transit. Concrete must be completely deposited within one hour after introduction of mixing water. The ready mixed concrete producer shall furnish legible duplicate delivery tickets for each batch of concrete delivered to the site.

All concrete shall be made with crushed stone, and shall attain its required compressive strength at 28 days. Provide concrete that is dense and free from honeycomb and other defects.

Poured concrete footings shall achieve a strength of 3000 psi at 28 days.

Poured concrete floor shall be 4000 psi @ 28 days. 3,500 psi in Office area.

Workability of concrete shall be such that concrete may be handled, placed and worked into corners, around reinforcing steel and inserts without segregation and without excess bleeding.

Maintain a temperature of between 50 and 70 degrees F. for the duration of the curing period. Concrete placed at temperatures below 50 degrees F. will be manufactured using Type III High Early Cement. Absolutely no anti-freeze agents will be allowed in concrete slabs.

Footings are designed for 2000 lbs. per sq. foot bearing capacity. If suitable bearing for foundation is not encountered at 3'-6" below finished grade, the Contractor shall immediately notify the Architect and shall not proceed further until instructions are given.

Footings shall be level and of depths shown on the plans. Remove all loose earth and foreign matter before pouring. Footings may be poured in trenches if dug clean and true.

Concrete slab thickness shall be as shown on drawings. Lay slabs over level and well compacted fill and gravel. Reinforce all slabs as indicated on drawings. Provide necessary saw-cuts to prevent cracking and control shrinkage of interior slabs. Protect concrete from frost and rapid drying.

**SEALANT**

Silicone caulking shall be used at all locations (doors, windows, etc.) except at brick and other locations as per materials mfr. requirements. Silicone caulk shall be clear and equal to "GE Silicon II".

**FINISH CARPENTRY**

Provide finish carpentry materials and labor as required for proper completion of the Work. Perform all work as per detailed Drawings, applicable trade standards, and pertinent regulations.

Provide wood free of significant defects or deviations from grade standards. Align and exactly match miter joints at edges and corners. Install running trim in maximum lengths; do not use short pieces or splicing of scraps. Saw cuts straight and clean. Provide tight fits without gaps. Splices shall be tight and staggered (not side by side).

Fasten all pieces straight, true and secure. Coordinate backing and blocking with other trades having interfacing work, i.e., counters, fixture, etc.

Where sanding is required, sand with the grain to totally smooth, unblemished surface. Set finish nails prior to painting.

Handle and store wood with care to avoid damage. Store wood as required to prevent water absorption. Protect finish work from construction damage.

**CONCRETE BLOCK**

Masonry Walls: Concrete block shall be as shown on the plans. They shall be hollow concrete blocks with a compressive strength of not less than 1200 psf. Top course shall be solid. All mortar shall be composed of one part Portland cement, three parts sand and not more than 10% lime by volume.

Do not lay masonry when temperature of outside air is below 40 degrees F. unless suitable means approved by the Architect are provided to heat materials, protect work from the cold or frost and insure the mortar will harden without freezing. No anti-freezing ingredient shall be used in mortar.

Provide "Dur-O-Wal" or equal horizontal joint reinforcing in every other block course. Joint reinforcing shall be truss type with diagonal cross rods.

Lay out wall in advance for accurate spacing of surface bond patterns, with uniform joint widths and to properly locate openings, movement type joints, returns and offsets. Avoid the use of less than half size units at corners, jambs and wherever possible at other locations.

Lay-up walls plumb with courses level, accurately spaced and coordinated with other work.

Lay horizontal masonry units with full mortar coverage on horizontal and vertical face shells. Bed webs in mortar in starting course on footings and foundation walls.

Maintain joint widths shown, except for minor variations required to maintain bon alignment. If not otherwise indicated, lay walls with 3/8" joints. Cut joints flush for masonry walls which are to be concealed or covered by other material. Tool exposed joints slightly concave using a jointer larger than joint thickness.

Plastering shall be done in a neat and workmanlike manner, covering all joints and voids. Thickness of plaster shall be 1/2".

**METAL STUD FRAMING**

Framing Members, General: Comply with ASTM C645-09 for conditions indicated. Steel Sheet Components: Comply with ASTM C645-09 requirements for metal unless otherwise indicated.

Comply with ASTM C645-09; roll-formed from hot-dipped galvanized steel; complying with ASTM A1003/A1003M and ASTM A653/A653M G40 (Z120) or equivalent corrosion resistant coating. A40 galvanealed products are not acceptable.

Minimum Base-Metal Thickness: Alternative flat products that can show certified third party testing with 1/2" regular gypsum board in accordance with ICC ES AC86 and conform to the limiting height tables in Specification C754.

Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.

Headers and Jambs: Manufacturer's proprietary shape used to form header beams and jambs, columns or posts, of web depths indicated, unpunched, with stiffened flanges.

Carrying Channels: Cold-formed, commercial-steel sheet.

Cold-Formed Channels: uncoated-steel thickness, with minimum wide flanges, deep. Steel Studs and Runners: ASTM C645-09.

Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.

Install bracing at terminations in assemblies. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

Install studs so flanges within framing system point in same direction. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.

Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.

Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs. Install two studs at each jamb unless otherwise indicated. Install cripple studs at head adjacent to each jamb stud, with a minimum clearance from jamb stud to allow for installation of control joint in finished assembly. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.

At exterior corners, attach wide flange of furring members to wall with short flange extending beyond corner; on adjacent wall surface, screw-attach short flange of furring channel to web of attached channel. At interior corners, space second member no more than from corner and cut insulation to fit. Installation Tolerance: Install each framing member so fastening surfaces vary not more than from the plane formed by faces of adjacent framing.

Flat Hangers: Secure to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices and fasteners that are secure and appropriate for structure and hanger, and in a manner that will not cause hangers to deteriorate or otherwise fail.

**GYPSUM WALLBOARD**

Provide and install gypsum wallboard (equal to Georgia Pacific) in the thickness and types as indicated on the Drawings and as specified herein. Include all accessories, i.e. metal trim, channel-shaped casing beads, corner beads, and edge beads, etc. as required for a complete and proper installation.

Jointing system with reinforcing tape and compound shall be as supplied or recommended by gypsum board manufacturer.

Keep wallboard materials dry and protected from moisture. Keep work of trades such as conduit, pipe, and ducts clear of the inside face of wall panels. Leave open those walls or ceilings that will require field installation of pipes, connections, etc.

Attachment of gypsum board shall be by 1 1/4" long screws, spaced 8" o.c. along edges and 12" o.c. elsewhere. Make cut-outs for switch boxes, outlets, pipe, etc., tightly to size.

All finished walls shall receive 3 coats spackle. Sand as required ready to accept new finish. Taping and spackling shall follow applicable trade standards and manufacturer's instructions. Maintain 55 degrees minimum during spackling process.

Underlayment for tile walls shall be 1/2" cement board.

Gypsum board installed in bathrooms shall be water-resistant type.

**PAINTING**

All surfaces shall be prepared ready to accept paint. Clean all working surfaces as per manufacturer's instructions.

Gypsum wallboard (new): Prime coat: Latex Quick Dry Prime Seal. Finish coat: 2 coat Regal Aquaglo.

All colors shall be as selected by the Owner from standard colors.

Undercoat must be from the same manufacturer as the finish coat. Thinners must be as recommended by the paint manufacturer and used only as recommended. Apply primer or sealer to knots and pitch pockets on wood that is to be painted.

Store all paint materials with ample ventilation, in fire-protected space, secure from damage. Use painting tools and equipment only as recommended by the paint manufacturer. Prior to work, verify that proposed equipment is compatible with material to be applied.

Maintain proper work environment, dry, clean, well ventilated, free of airborne construction dust, well lighted, in temperature and humidity ranges required by paint manufacturer. Keep humidity low enough to prevent moisture condensation on work surfaces. Never apply paint to damp or wet surfaces.

**BUILDING INSULATION**

Provide fiberglass batt insulation in locations as noted on the plans and as specified herein.

Fiberglass insulation shall be as manufactured by "Certaainteed" or approved equal, foil faced with stapling flange. Insulation at Pre-Engineered Metal Building shall as supplied from them.

**PRE-ENGINEERED METAL BUILDING SYSTEM - EQUAL TO VP BUILDINGS**

**GENERAL**

- A. Pre-engineering building and components including the following:
1. Structural steel frame.
2. Roof covering system including exterior roof panels, panel attachments, sealants, mastics, trim and flashings.
3. Exterior wall system including wall panels, panel attachments, sealants, mastics, trim and flashings.
- B. General:
1. Provide pre-engineered metal building frame, metal wall panels, metal roof panels, accessories and miscellaneous materials for a complete enclosure including supports for building components specified in other sections.
2. Design structural systems according to professionally recognized methods and standards and legally adopted building codes.
3. Design under supervision of professional engineer licensed in the jurisdiction of the Project.

- 4. Dead loads, including the weight of all indicated permanent construction:
a. Elements required for support of lights and light battens, hanging fixtures, mechanical equipment, piping, ceiling hanger wires, and all other items required to provide a complete building and not specifically indicated on the drawings.
5. Wind loads:
a. Roof Wind Load: 115 MPH.
b. Roof System tested and certified to meet Factory Mutual FM wind classification.
c. Roof System tested and certified to meet Underwriters Laboratories UL 90 wind uplift rating.

- C. Performance Requirements:
1. Provide frame with design roof profile after vertical dead load deflection has occurred.
2. System to withstand gravity and lateral loads in compliance with contract documents.
3. Refer to contract drawings for additional concentrated loads to pre-engineered building hanger beams and support jacks.
4. Allowable Deflections:
a. Metal building standard deflections
b. Lateral frame movement: for a 25 year mean recurrence wind load.
5. Construct assembly to permit movement of components without buckling, failure of joint seals, undue stress on fasteners or other detrimental effects, when subject to temperature range of 100 degrees F.

**SUBMITTALS**

- A. Shop Drawings: Show building layout, primary and secondary framing member sizes and cross-sections, and product and connection details.
1. Anchor Bolt Installation Drawings: Layouts with minimum bolt diameters.
B. Design Data: Provide detailed design criteria and calculations prepared by a licensed structural engineer.
C. Certification: Manufacturer certification that the building conforms to the contract documents and manufacturer's standard design procedures.

**QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Not less than 5 years experience in the actual production of specified products.
1. Member of the Metal Building Manufacturer's Association (MBMA).
2. Certified by AISC in the Metal Building category.
B. Installer Qualifications - Firm experienced in application or installation of systems similar in complexity to those required for this project, acceptable to or licensed by manufacturer.

**WARRANTY**

- A. Manufacturer shall warrant installed system for the periods described herein, starting from Date of Substantial Completion against all the conditions indicated below. When notified in writing from Owner, manufacturer/installer shall, promptly and without inconvenience and cost to Owner, correct said deficiencies.
1. Materials and Workmanship Warranty: 3 years.
2. Finish & Performance Warranty: 20 years

**STRUCTURAL STEEL FRAMING**

- A. Primary Framing: Rigid Frame solid web framing consisting of tapered or uniform depth rafters rigidly connected to tapered or uniform depth columns.
B. End Wall Framing: Corner posts, end posts and rake beams.

**SECONDARY FRAMING**

- A. Purlins: Zee-shaped; depth as required; with minimum yield strength of 55,000 psi; simple span or continuous span as required for design.
B. Girts: Zee- or Cee-shaped; depth as required, with minimum yield strength of 55,000 psi; simple span or continuous span as required for design.
C. Primary Frame Flange Bracing: Attached from purlins or girts to the primary framing, minimum yield strength as required for design.
D. Wind Bracing: Portal, torsional, diagonal bracing or diaphragm in accordance with manufacturer's standard design practices; utilizing rods, angles, and other members, with minimum yield strengths as required for design.

**MISCELLANEOUS FRAMING**

- A. Base Angles: 2" by 3" by 0.059" steel angles, with minimum yield strength of 55,000 psi, anchored to the floor slab or grade beam with power driven fasteners or equivalent at a maximum spacing of 4 feet on center.
B. Door Headers and Jambs: Zee- or Cee-shaped; depth as required; with minimum yield strength of 55,000 psi.
C. Sag Angles and Bridging: Steel angles, with minimum yield strength of 36,000 psi.

**ROOF COVERING SYSTEM**

- A. Roof Panels: Standing Seam Roof Panels; 24" wide net coverage, with 3 inches high major ribs formed at the panel side laps, formed for field seaming using electrically operated seaming machine.
1. Side joints: Factory applied sealant for field seaming.
2. Thickness: 24 gage.
3. Panel-to-roof purlin structural attachments: clips with movable tabs which interlock with seamed panel ribs and provide for 1-1/2" of panel movement in either direction from center of clip to compensate for thermal effects.
4. Ridge assembly for high end of slopes: Ridge; draw-formed aluminum seam caps factory-attached to ridge panels that are seamed together along the center of the ridge, utilizing only one weather sealed joint and providing a true expansion joint for panel movement.

**WALL COVERING SYSTEM**

- A. Wall Panels: 36" wide net coverage, with 1-3/16" high major ribs at 12" on center with minor ribs spaced between the major ribs.
1. Material: Galvanized steel, with G90/Z275 coating.
2. Thickness: 24 gage.
3. Cut panels square at each end; provide base trim at sill.
B. Soffit Panels: Match wall panels.

**INSULATION**

- A. Schedule:
1. Roof insulation: Blanket insulation - 6 inches; R-value: 19 w/ thermal blocks.
2. Wall insulation: Blanket insulation - 6 inches; R-value: 19.
B. Blanket insulation: Glass fiber, with factory laminated facing material.
1. Glass fiber: Odorless, neutral colored, long filament, flexible resilient, produced in compliance with NAIMA 202.
2. Flame spread Index: 25 or less, when tested in accordance with UL 723.
3. Smoke Developed Index: 50 or less, when tested in accordance with UL 723.
4. UL Classified.
5. Facing: White vinyl; embossed, 0.0032 inch thick plus or minus 10 percent; permeance in compliance with ASTM E 96 1.00 perm. Composite fiberglass and facing meeting Flame Spread of 25 or less, Smoke Developed of 50 or less, when tested in accordance with UL 723.

**ROOF ACCESSORIES**

- A. Eave Gutters: Roll-formed 26 gage steel sheet, with gutter straps, fasteners and joint sealant; manufacturer's standard bronze color.
1. Downspouts: 4 by 5 inches with downspout elbows and downspout straps; same color as wall panels.

**MATERIALS**

- A. Structural Steel Plate, Bar, Sheet, and Strip for Use in Bolted and Welded Constructions: ASTM A 572/A 572M, A 529/A 529M, A 1011 or A 36/A 36M Modified 50, with minimum yield strength of 50,000 psi.
B. Structural Steel Material for Use in Roll Formed or Press Broken Secondary Structural Members: ASTM A 607, with minimum yield strength of 55,000 psi.
C. Galvanized Steel Sheet for Roll Formed or Press Broken Roof and Wall Coverings, Trim & Flashing: ASTM A 653/A 653M, with min. yield strength of 50,000 psi.
D. Flashing and Trim: Match material, finish, and color of adjacent components. Provide trim at rakes, including peak and corner assemblies, high and low eaves, corners, finished appearance.
E. Hot Rolled Steel Shapes: W, M and S shapes, angles, rods, channels and other shapes: ASTM A 500, ASTM A 572/A 572M or ASTM A 36/A 36M as applicable; with minimum yield strengths required for the design.
F. Structural Bolts and Nuts Used with Primary Framing: High strength, ASTM A 325.
G. Bolts and Nuts Used with Secondary Framing Members: ASTM A 307.
H. Panel Fasteners:
1. For roof panels: Stainless steel-capped carbon steel fasteners with integral sealing washer.
2. Provide fasteners in quantities and location as required by the manufacturer.
3. For wall panels: Coated carbon steel.
4. Color of exposed fastener heads to match the wall panel finish.
5. Concealed Fasteners: Self-drilling type, of size as required.

**FINISH**

The purpose of standard shop coat is to provide protection for the structural steel members during transportation, during temporary jobsite storage and during erection.

The shop coat does not provide the uniformity of appearance or the durability and protection of appropriate field finish coat(s) of paint. The erector is responsible for field touch-up painting that may be required; and for any protection that may be necessary to avoid deterioration of the shop coat.

- A. Shop Coat: Manufacturer's standard rust inhibitive primer paint; manufacturer's standard
1. Finish all structural steel members using one coat of manufacturer's standard shop coat, after cleaning of oil, dirt, loose scale and foreign matter.

**EXAMINATION**

- A. Verification of Conditions: Examine areas and conditions under which Work is to be performed and identify conditions detrimental to proper and or timely completion.
1. Verify foundations are properly installed, to correct dimensions and within acceptable tolerances.
2. Verify location of covered or built-in work.
3. Do not proceed until unsatisfactory conditions have been corrected.

**METAL ROOFING**

Factory formed metal roof panels: Batten-seam hidden fastener. Finish must conform to the "Metal Construction Association Certified Premium Painted" Standard.

Wind-Uplift Resistance: Capable of resisting design negative uplift pressures based upon maximum wind speeds of 90 MPH. Provide clips, fasteners, and clip spacing of type indicated and with capability to sustain, without failure, a load equal to 2 times the design negative uplift pressure. Capable of producing sheet metal roofing assemblies that comply with UL 580 for Class 90 wind-uplift resistance.

Shop Drawings: Show layouts of sheet metal roofing, including plans, elevations, and keyed references to termination points. All fastening patterns shall be clearly designated to meet the specified wind speed requirements.

Installer Qualifications: Installer of sheet metal roofing for a minimum of 10 years.

Sheet Metal Roofing Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" and NRCA Waterproofing Manual and manufacturer's installation guidelines.

Field Measurements: Verify locations of roof framing and roof opening dimensions by field measurements before metal roof panel fabrication and indicate measurements on Shop Drawings.

Warranty on Finishes: Fluoropolymer Finish Warranty Period: 30 years from date of Substantial Completion.

Special Installer's Warranty: Specified form in which Roofing Installer agrees to repair or replace components of custom-fabricated sheet metal roofing that fail in materials or workmanship within 5 years from date of Substantial Completion.

General: Provide factory-formed metal roof panel assembly designed to be field assembled by covering vertical side edges of adjacent panels with battens and mechanically attaching panels to supports using concealed clips. Include accessories required for weathertight installation.

Integral-Batten-Seam Metal Roof Panels: Formed with integral ribs at panel edges and flat pan between ribs; designed for sequential installation by mechanically attaching panels to supports using concealed clips located under one side of panels and lapping and interconnecting side edges of adjacent panels.

Basis-of-Design Product: ATAS International, Inc.; Monarch Batten Seam; MRB160 or a comparable product.

Material: 24 gage metallic coated Steel Texture: Smooth, Pan Coverage: 16", Seam Height: 2" Batten, KYNAR 5000 PDVF or HYLAR 5000 Finish

Felt: minimum 30 pound or high strength synthetic material conforming to ASTM D 226

Manufacturer shall provide or authorize all fasteners utilized with the sheet metal roofing system.

Exposed Fasteners: Heads matching color of sheet metal roofing by means of plastic caps or factory-applied coating. Fasteners for Flashing and Trim: Blind fasteners or screws spaced to resist wind uplift loads.

Sealing Tape: Pressure-sensitive, 100 percent solid polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, non-sag, non-toxic, non-staining tape.

Elastomeric Joint Sealant: ASTM C 920, of base polymer, type, grade, class, and use classifications required to produce joints in sheet metal roofing that will remain weathertight.

Expansion-Joint Sealant: For hooked-type expansion joints, which must be free to move, provide non-setting, non-hardening, non-migrating, heavy-bodied polyisobutylene sealant.

Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15 mil dry film thickness per coat.

Sheet Metal Roofing Accessories: Provide components required for a complete sheet metal roofing assembly including trim, copings, fasciae, corner units, ridge closures, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of sheet metal roofing, unless otherwise indicated. All trim and flashing components shall be supplied in a minimum of 12'-0" lengths and shall conform to manufacturer's standard part dimensions and details.

Closures: Closed-cell, expanded, cellular, rubber or cross linked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch thick, flexible closure strips; cut or preformed to match sheet metal roofing profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

Flashing and Trim: Formed from matching materials as sheet metal roof panel in gauges noted. Provide flashing and trim in heavier gauge materials as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, boses, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent sheet metal roofing.

Snow Guards: Prefabricated, non-corrosive units designed for compatibility with metal roof panels.

Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.

# 119-19  
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ME-1 ELEC. & MECH.  
ME-2 ELEC. & MECH.  
A-8  
Charles Schaffer  
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NEW BUILDING FOR:  
26 WILSON DRIVE LLC  
26 WILSON DR., SPARTA, NJ  
CHARLES SCHAFFER ASSOCIATES LLC  
architect planner  
2808 NEWTON-SPARTA ROAD • NEWTON, NJ 07860 973-385-7355  
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CHARLES SCHAFFER ASSOCIATES LLC  
architect · planner  
268 NEWTON - SPARTA ROAD · NEWTON · NEW JERSEY 07860 973-885-7355  
DATE 12-18-19  
DRAWN BY  
CHECKED BY



NEW BUILDING FOR:  
26 WILSON DRIVE LLC  
26 WILSON DR., SPARTA, NJ

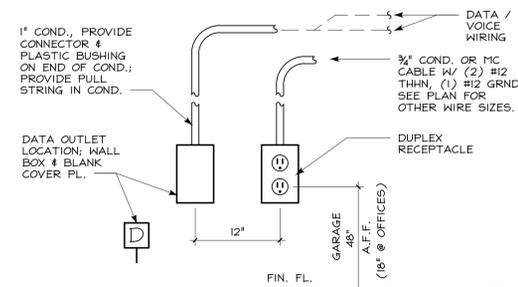
ELECTRICAL SYMBOL LIST

- 2' x 4' RECESSED LED LAY-IN TROFFERS, 3000K COLOR TEMP., 33W, 2200 LUMENS.
- "LITHONIA" LED HIGH BAY LIGHT FIXT., 4K COLOR TEMP., 36K LUMENS, 25fc DESIGN, 24' MTG. HT.
- WALL PACK, 34 LED W/ FULL CUT-OFF, MTD. @ 12' A.F.F. - SEE SITE ENGINEER'S DRAWING
- EXHAUST FAN, 70 CFM, VENT TO EXT. W/ WEATHERPROOF TERMINATION & BIRD SCREEN.
- DUPLEX OUTLET - 20 AMP  
GFI = GROUND FAULT INTERRUPT
- CLG. MTD. UTILITY LIGHT FIXT., 13W LED
- SINGLE POLE SWITCH 125V  
"3" = 3-WAY SWITCH
- 6' EXT. RECESSED LIGHT FIXT., 13W LED, WET LOCATION LISTED.
- DECORATIVE WALL MTD. EXT. LIGHT FIXT., 13W LED

EMERGENCY FIXTURE SYMBOL LIST

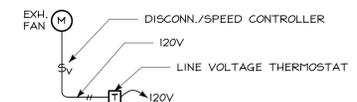
- AUDIBLE ALARM W/ STROBE LIGHT
- SMOKE DETECTOR
- HEAT DETECTOR
- EMERGENCY LIGHTING, WALL MOUNTED, DUAL HEAD, SELF POWERED W/ POWER PACK FOR A MIN. 1-1/2 HOURS OF OPERATION. HARD WIRE AS PER N.E.C.
- WALL MOUNTED, SELF-POWERED EMERGENCY LIGHTS & EXIT SIGN, WHITE FRAME W/ RED LETTERS. PROVIDE POWER PACK FOR MIN. 1 1/2 HOURS OPERATION. HARD WIRE AS PER N.E.C.
- REMOTE WALL MOUNTED, SELF-POWERED EXTERIOR EMERGENCY EXIT LIGHT W/ DUAL HEADS. PROVIDE POWER PACK FOR MIN. 1 1/2 HOURS OPERATION. HARD WIRE AS PER N.E.C.

FINAL LAYOUT AS PER CERTIFIED ALARM CO. PLAN



OUTLET MOUNTING DETAIL

NO SCALE



EXHAUST FAN WIRING DIAGRAM

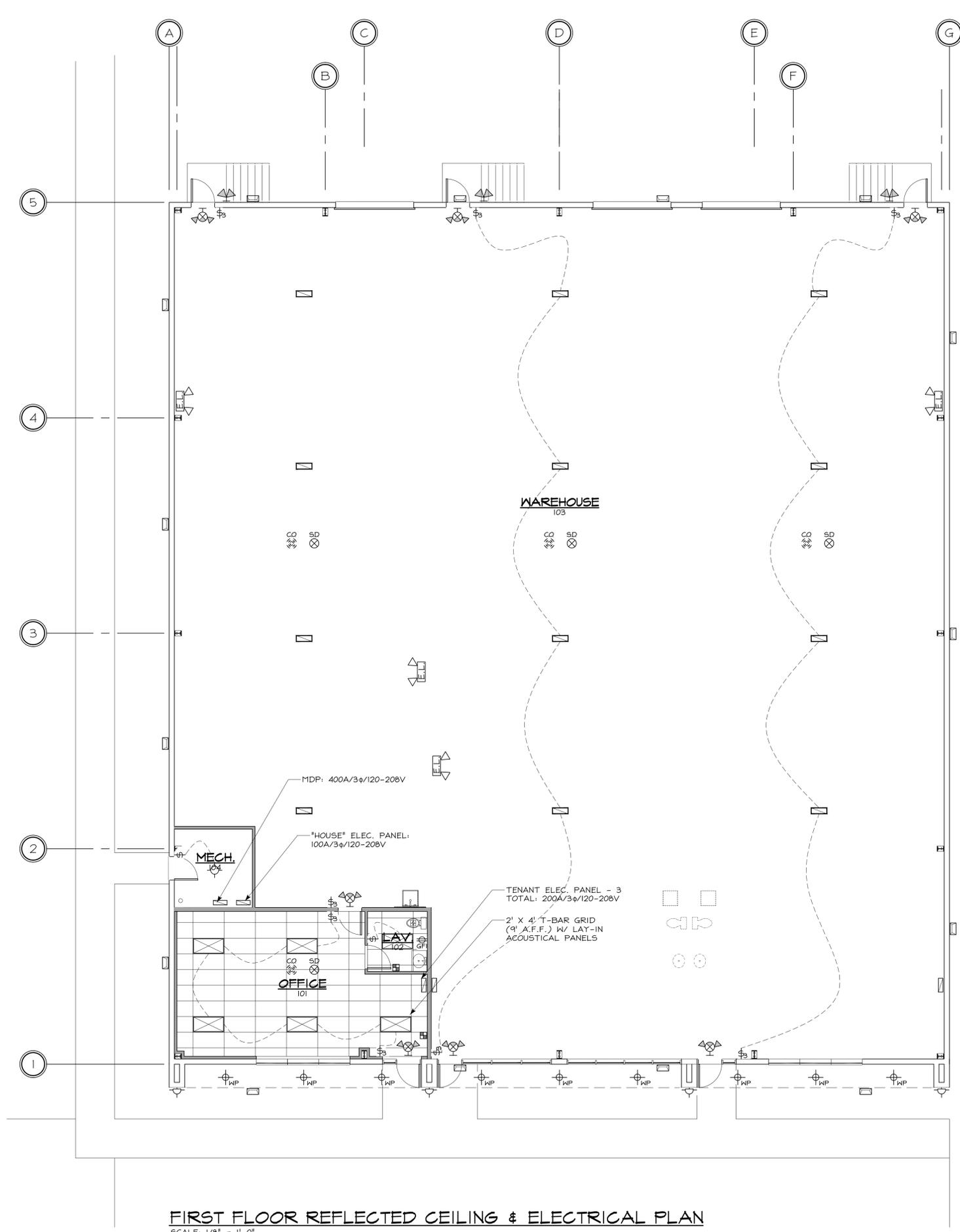
NO SCALE

ELECTRICAL NOTES

1. ELECTRICAL CONTRACTOR SHALL VERIFY AVAILABILITY OF SPECIFIED SERVICE WITH POWER & LIGHT COMPANY.
2. ELECTRICAL CONTRACTOR SHALL VERIFY WITH OWNER PRIOR TO CONSTRUCTION OF FINAL SERVICE REQUIREMENTS.
3. ALL FIXTURES TO HAVE TYPE AND WATTAGE AS INDICATED.
4. ALL NEW WIRING SHALL BE CONCEALED IN WALLS, FLOORS OR CEILINGS WHEREVER POSSIBLE.
5. ALL NEW WIRING SHALL BE MINIMUM #12 AWG COPPER WIRE W/ GROUND WIRE.
6. ALL NEW CONDUCTORS SHALL BE INSTALLED IN "EMT" OR "GREENFIELD", WITH METAL GEM OR JUNCTION BOXES. MINIMUM SIZE CONDUIT SHALL BE 3/4" "EMT" WITH COMPRESSION FITTINGS.
7. ALL RECEPTACLES & SWITCHES SHALL BE "LEVITON" OR EQUAL.
8. GUARANTEE AND WARRANTY: THE ELECTRICAL CONTRACTOR SHALL AND HEREBY DOES WARRANT AND GUARANTEE THAT ALL WORK DONE BY HIM SHALL BE FREE OF DEFECTIVE MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE. THE ELECTRICAL CONTRACTOR SHALL FURTHER WARRANT THAT ALL MATERIALS FURNISHED AND WORK EXECUTED BY HIM IS IN ACCORDANCE WITH ALL STATE AND LOCAL LAWS, ORDINANCES AND REGULATIONS.
9. ALL DEVICE PLATES SHALL BE BRUSHED STAINLESS.
10. THE ELECTRICAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED BY THE LOCAL AND STATE AGENCIES.
11. GROUND CONNECTIONS SHALL BE PROVIDED AS REQUIRED BY THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE FOR ALL DISTRIBUTION SYSTEMS AND ALL METALLIC PARTS OR APPARATUS ENCLOSING "LIVE" ELECTRICAL WIRING AND/OR PARTS.
12. THE ELECTRICAL CONTRACTOR SHALL REPAIR THE CONTINUITY OF ALL CIRCUITS BEING REMOVED AND REVISED AND/OR INSTALLED NEW.
13. ALL ELECTRICAL WORK SHALL BE PERFORMED IN STRICT CONFORMANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND ALL PREVAILING LOCAL CODES.
14. THIS DRAWING IS INTENDED TO INDICATE DIAGRAMMATICALLY THE EXTENT, GENERAL CHARACTER AND APPROXIMATE LOCATIONS OF WORK INTENDED, WORK INTENDED BUT HAVING MINOR DETAILS OBVIOUSLY OMITTED OR NOT SHOWN SHALL BE FURNISHED COMPLETE TO PERFORM THE FUNCTION INTENDED WITHOUT ADDITIONAL COST TO THE OWNER.

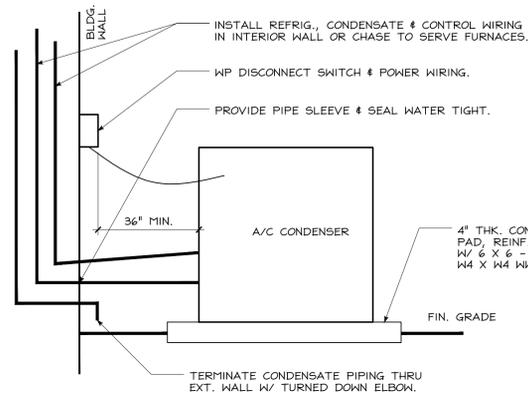
FIRST FLOOR REFLECTED CEILING & ELECTRICAL PLAN

SCALE: 1/8" = 1'-0"

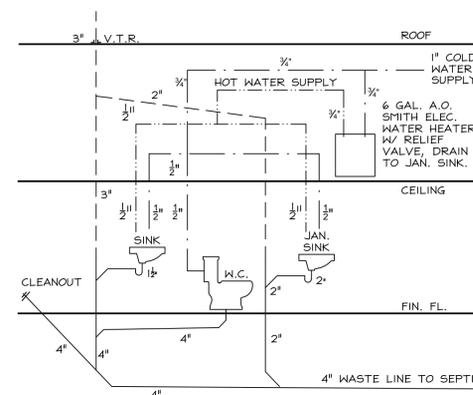


- A-1 ELEVATIONS
- A-2 FOUNDATION PLAN
- A-3 FOUNDATION DET.
- A-4 FLOOR PLAN
- A-5 DETAILS
- A-6 DETAILS
- A-7 DETAILS
- A-8 NOTES

- ME-1 ELEC. & MECH.
- ME-2 ELEC. & MECH.



**A/C CONDENSING UNIT DETAIL**  
NO SCALE



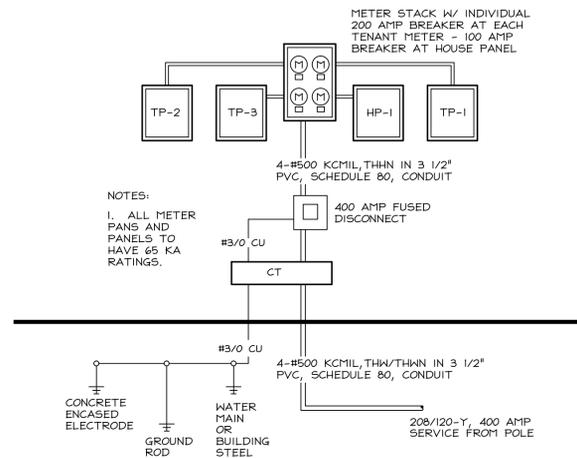
**PLUMBING RISER DIAGRAM**  
NO SCALE

**PLUMBING FIXTURE LIST**

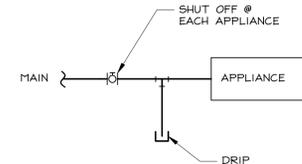
ALL FIXTURES SHALL BE WHITE UNLESS NOTED OTHERWISE. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS.  
 WATER CLOSET - KOHLER "HIGHLINE PRESSURE LIGHT" WHITE W/ MATCHING SEAT.  
 LAVATORY - KOHLER "TAUNTON", WHITE, ENAMELED CAST IRON, WALL MOUNTED W/ "TRITON" WRISTBLADE LEVERS FAUCETS.  
 SERVICE SINK - PLASTIC  
 NOTE: AMERICAN STANDARD FIXTURES MAY BE SUBSTITUTED FOR LIST ABOVE PROVIDED THEY ARE OF EQUAL OR BETTER QUALITY AND ARE A.D.A. COMPLIANT WHERE REQUIRED..

**PLUMBING GENERAL NOTES**

1. BEFORE SUBMITTING A BID, THE CONTRACTOR SHALL CAREFULLY EXAMINE THE SPECIFICATIONS AND DRAWINGS, VISIT SITE OF PROPOSED WORK, AND FULLY INFORM THEMSELVES OF ALL EXISTING CONDITIONS AND LIMITATIONS TO BE MET. FAILURE TO VISIT AND INSPECT THE EXISTING CONDITIONS SHALL NOT BE VALID REASON FOR AUTHORIZATION OF A CHANGE ORDER.
2. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATIVE OF THE WORK AND SHALL BE FOLLOWED AS CLOSELY AS PRACTICAL. NEITHER THE DRAWINGS NOR THE SPECIFICATIONS ARE INTENDED TO SHOW OR DESCRIBE EVERY SMALL CONSTRUCTION DETAIL. IT IS INTENDED THAT THE CONTRACTOR COMPLETE THE WORK IN SUCH A MANNER THAT THE VARIOUS SYSTEMS WILL FUNCTION, OPERATE AND PERFORM TO THE TRUE INTENT AND MEANING OF THE DRAWINGS AND SPECIFICATIONS AND COMPLY WITH ALL APPLICABLE BUILDING CODES AND INDUSTRY STANDARDS.
3. ALL WORK SHALL CONFORM TO ALL PERTINENT LAWS, ORDINANCES, CODES, AND REGULATIONS. EQUIPMENT SHALL BE INSTALLED IN THE STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
4. ALL EXPOSED HANGERS SHALL BE GALVANIZED STEEL.
5. UNLESS OTHERWISE INDICATED, ALL CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF THE PLUMBING WORK IS BY THIS CONTRACTOR. ALL PATCHING SHALL BE RESTORED TO ORIGINAL CONDITIONS. DO NOT CUT STRUCTURAL MEMBERS.
6. INSTALL PIPE SLEEVES IN WALLS AND FLOORS WHERE PIPES PENETRATE. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL NECESSARY HANGERS, SUPPORTS, AND ANCHORS FOR ALL PIPING AND EQUIPMENT.
7. DO NOT LOCATE VALVES, ACTUATORS, OR ANY ITEMS REQUIRING ACCESS IN AN INACCESSIBLE LOCATION UNLESS AN APPROVED ACCESS DOOR IS PROVIDED.
8. CONTRACTOR SHALL UNCONDITIONALLY GUARANTEE IN WRITING ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE BY OWNER.
9. ALL PIPING, WHERE POSSIBLE, SHALL BE CONCEALED IN WALLS, CEILING SPACE, OR SOFFITS. COORDINATE WORK WITH ALL TRADES. DO NOT RUN WATER PIPES IN UNHEATED SPACES.
10. INTERIOR COLD AND HOT WATER IN THE BUILDING SHALL BE TYPE 'L' COPPER, ASTM SPEC, B-88-51 WITH A 150 PSI WORKING PRESSURE. EXTERIOR AND/OR UNDERGROUND PIPING SHALL BE TYPE 'K' COPPER. FITTINGS SHALL BE WROUGHT COPPER OF WEIGHT CORRESPONDING TO PIPE TO WHICH THEY ARE ATTACHED. JOINTS SHALL BE SOLDERED USING LEAD-FREE SOLDER. AFTER ALL PIPING HAS BEEN INSTALLED, BUT BEFORE ANY EQUIPMENT OR FIXTURES HAVE BEEN CONNECTED, THE SYSTEM SHALL BE FILLED WITH MINIMUM PRESSURE OF 150 POUNDS PER SQUARE INCH. THE PRESSURE SHALL BE MAINTAINED FOR A PERIOD OF 60 MINUTES. AFTER SUCCESSFUL TESTING, FLUSH ALL PIPING TO REMOVE DIRT AND FOREIGN MATTER, THEN STERILIZE THE WATER SYSTEM WITH A CHLORINE OR ITH SOLUTION. FLUSH WATER PIPES WITH FRESH WATER TO REMOVE CHLORINE SOLUTION. STERILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH AWWA SPECIFICATIONS C601-53T.
11. THE CONTRACTOR SHALL MAINTAIN A CLEAN AND SAFE WORK AREA AT ALL TIMES. ALL SAFETY PROCEDURES AND ENFORCEMENT IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL MEET ALL OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION STANDARDS.
12. DO NOT INSTALL PIPING OR ANY OTHER PLUMBING EQUIPMENT OVER ELECTRICAL PANELS. MAINTAIN A MINIMUM OF 36" CLEAR IN FRONT OF ELECTRICAL PANELS.
13. ALL SANITARY AND VENT PIPING ABOVE AND BELOW THE GROUND SHALL BE (SCH. 40 DWV PVC PLASTIC PIPE WITH SOLVENT WELD JOINTS AND FITTINGS. MAKE ALL JOINTS WATERTIGHT AND GASTIGHT. WHEN ROUGHING WORK IS COMPLETED AND BEFORE CONNECTION OF FIXTURES OR DRAINS, THE SYSTEM SHALL BE SUBJECTED TO A WATER TEST BY PLUGGING UP ALL OPENINGS AND FILLING ALL OF THE LINES TO THE ROOF LEVEL. ANY DEFECTS SHALL BE CORRECTED.
14. ALL ABOVE GROUND GAS PIPING MATERIALS SHALL BE ASTM A 120, SCHEDULE 40 BLACK STEEL PIPE WITH MALLEABLE-IRON THREADED FITTINGS. INSTALL A DRIP LEG AT POINTS WHERE CONDENSATE MAY COLLECT.
15. INSULATE ALL DOMESTIC HOT AND COLD WATER LINES, ALL FITTINGS AND VALVES. PIPE INSULATION SHALL BE RIGID FIBERGLASS WITH WHITE KRAFT BONDED TO ALUMINUM FOL, K = 0.23 @ 75 F., REINFORCED WITH FIBERGLASS YARN, SUITABLE FOR PAINTING, MANVILLE MICRO-LOK 650 WITH AP-T JACKET OR APPROVED EQUAL, (1" THICK FOR PIPES 1/2" TO 4"). FITTING AND VALVES SHALL BE INSULATED WITH MOLDED ONE-PIECE P.V.C. COVERS WITH FIBERGLASS INSULATION, MANVILLE 'ZESTON 25/50' OR EQUAL.
16. PROVIDE SHOCK ABSORBING DEVICES WHICH WILL PROTECT WATER SUPPLY PIPING FROM WATER HAMMER. SEALED AIR CHAMBER METAL BELOWS TYPE SHALL BE JAY R. SMITH COMPANY "HYDROTROL". LOCATE AT THE ENDS OF ALL BRANCH PIPING RUNS.



**ELECTRICAL DISTRIBUTION RISER DIAGRAM**



**GAS APPLIANCE DETAIL**  
SCHEMATIC ONLY - TYPICAL

**GAS PIPING NOTES**

1. ALL GAS PIPING, VALVES AND CONNECTIONS SHALL BE AS FOLLOWS AND CONFORM TO THE AMERICAN NATIONAL STANDARD INSTALLATION OF GAS PIPING Z 83.1-1968 AND WITH NEPA NO. 54-1969 STANDARD FOR THE INSTALLATION OF GAS APPLIANCES AND GAS PIPING.
2. BEFORE CONNECTION TO THE MAIN, THE SYSTEM MUST BE TESTED AND APPROVED BY THE DISTRIBUTION DEPARTMENT OF THE GAS SUPPLYING UTILITY COMPANY.
3. AFTER THE PIPING HAS BEEN CHECKED AND APPROVED, ALL GAS PIPING SHALL BE FULLY PURGED.
4. ALL GAS PIPING SIZE SHALL BE AS SHOWN ON THE DRAWING AND NO PIPE SHALL BE SMALLER THAN 1/2" NPT.
5. SHUT OFF VALVES SHALL BE LOCATED AS SHOWN ON DRAWINGS AND AS REQ'D
6. ALL GAS PIPING SHALL BE STEEL OR WROUGHT IRON PIPE COMPLYING WITH AMERICAN NATIONAL STANDARD FOR WROUGHT IRON PIPE, B36.10-1969.
7. ALL JOINTS SHALL BE WELDED, FLANGED OR SCREWED AS REQUIRED BY AGA STANDARDS.
8. FITTINGS SHALL BE STEEL, MALLEABLE OR DUCTILE IRON EXCEPT STOPCOCKS OR VALVES).
9. ALL GAS PIPE AND FITTING SHALL BE CLEAR AND FREE FROM CUTTING BURRS AND DEFECTS AND BE THOROUGHLY BRUSHED WITH CHIP AND SCALE REMOVED.
10. DEFECTS SHALL NOT BE REPAIRED (REPLACEMENT ONLY).
11. ALL GAS PIPE THREADS SHALL COMPLY WITH AMERICAN NATIONAL STANDARD FOR PIPE THREADS B2. 1-1960.
12. ALL PIPING SHALL BE LOCATED EXPOSED AS SHOWN ON DRAWINGS.
13. ALL GAS PIPING SHALL BE NOT LESS THAN 1/4" IN 15'-0" TO PREVENT GAS TRAPS. ALL HORIZONTAL LINES SHALL GRADE TO RISERS AND FROM THE RISERS TO THE METER OR TO THE GAS APPLIANCE.
14. ALL GAS PIPING 3/4" OR 1" SHALL BE SUPPORTED NOT MORE THAN 8'-0" AND 1-1/4", AND OVER SHALL BE SUPPORTED NOT MORE THAN 10'-0" SPACING.
15. ALL BRANCH OUTLETS SHALL BE TAKEN FROM THE TOP OR SIDE OF HORIZONTAL LINES AND NOT FROM THE BOTTOM.
16. GAS PIPING SHALL NOT BE USED AS A GROUNDING ELECTRODE.
17. ALL SHUT OFF VALVE SHALL BE MARKED AS TO AREA SERVED WITH METAL TAG.
18. AFTER THE INSTALLATION, ALL GAS PIPING SHALL BE TESTED FOR TIGHTNESS WITH A PRESSURE OF AT LEAST 6" OF MERCURY OR 3 POUNDS GAUGE FOR A PERIOD OF NOT LESS THAN 10 MINUTES WITHOUT SHOWING ANY DROP IN PRESSURE.
19. THE SYSTEM SHALL BE THOROUGHLY TESTED FOR LEAKS AND ANY LEAKS SHALL BE REPAIRED TO CONFORM TO TESTING. MATCHES, CANDLES, FLAME OR OTHER SOURCES OF IGNITION SHALL NOT BE USED FOR TESTING PURPOSE.
20. JOINT COMPOUND SHALL BE RESISTANT TO LIQUEFIED PETROLEUM GASES.

HOUSE PANEL "HP"				SURFACE MOUNT				LOCATION: WAREHOUSE					
208/120 VOLT, 3Ø, 4 WIRE, 100 AMP.				24 POLE W/100 AMP MAIN BKR.									
CIRCUIT	SERVING	TRIP	WIRE	PHASE	CIRCUIT	SERVING	TRIP	WIRE	PHASE	CIRCUIT	SERVING	TRIP	WIRE
1	SITE LIGHTING	20A	2 #12	A	2	EXT. WALL MTD. LIGHTS	20A	2 #12					
3	SIGN	20A	2 #12	B	4	MECH. RM. LIGHTS & OUTLET	20A	2 #12					
5	(SPARE)			C	6	(SPARE)							
7	(SPARE)			A	8	(SPARE)							
23	(SPARE)			C	24	(SPARE)							

ELECTRICAL PANEL: TP-1				SURFACE MOUNT				LOCATION: WAREHOUSE					
208/120 VOLT, 3Ø, 4 WIRE, 200 AMP.				42 POLE W/ 200 AMP MAIN BKR.									
CIRCUIT	SERVING	TRIP	WIRE	PHASE	CIRCUIT	SERVING	TRIP	WIRE	PHASE	CIRCUIT	SERVING	TRIP	WIRE
1	OUTLETS - WAREHOUSE	20A	#12	A	2	HVAC COMPRESSOR	40A	#8					
3	HIGH BAY LIGHTING	20A	#12	B	4	HVAC BLOWER	20A	#12					
5	LIGHTING - LAV.S	20A	#12	A	6	ELEC. WATER HEATER	30A	#10					
7	EMERGENCY CIRCUIT	20A	#12	B	8	RADIANT HEATERS	20A	#12					
9	(SPARE)			A	10	SIGN	20A	#12					
11	(SPARE)				12	(SPARE)							
41	(SPARE)				42	(SPARE)							

NOTE: CONTRACTOR SHALL VERIFY FINAL ELEC. REQUIREMENTS W/ OWNER, ELEC. CONTRACTOR AND POWER CO. PRIOR TO CONSTRUCTION.

ME-2

*Charles Schaffer*  
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