

ELECTRIC LOAD ANALYSIS

1. LIGHTING LOAD AS PER N.E.C. 2005, ART. 220.12
11,116 S.F. × 3 × 1.25 = 41,685 VA

2. HVAC LOAD AT 100% = 100,045

3. RECEPTACLE LOAD 11,116 S.F. x 2 = 22,232 4. HOT WATER HEATER 4,500x6 = 27,000 5. ENTRY SIGNES 12 x 1200 = 14,400 6. 25% OF LARGEST MOTOR = 2,500 TOTAL LOAD = 207,862 VA

AT 208 V, 3ø —► 577 AMPS

SERVICE CAPACITY IS GOOD FOR 1260 AMPS

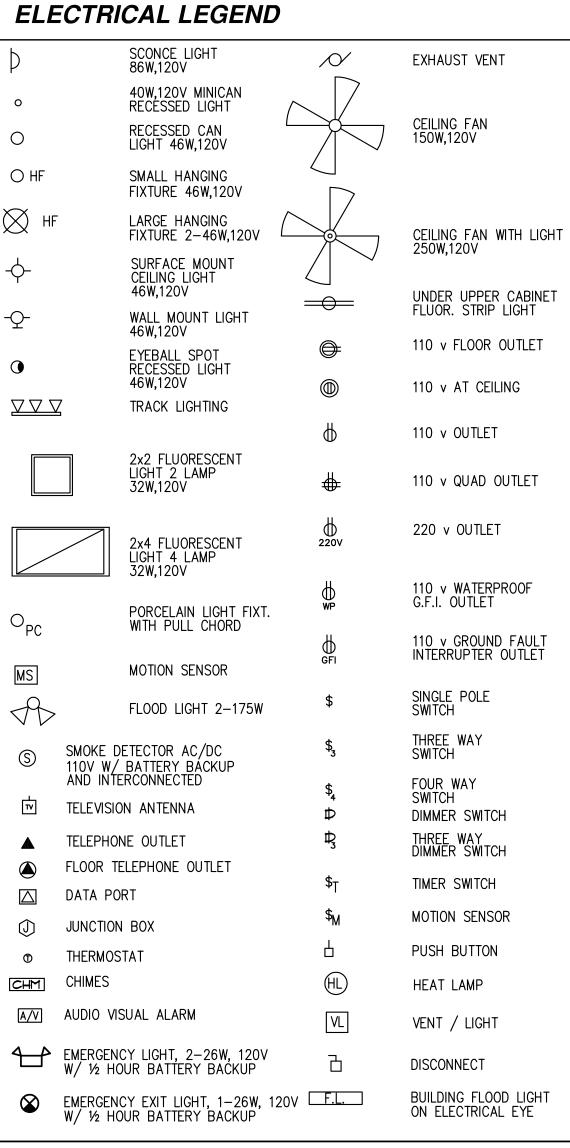
SHORT CIRCUIT CURRENT

TRANSFORMER IS 200 KVA WITH 5% IMPEDANCE

FULL LOAD AMPS = $\frac{200 \times 1000}{208 \times \sqrt{3}}$ = 556 AMPS

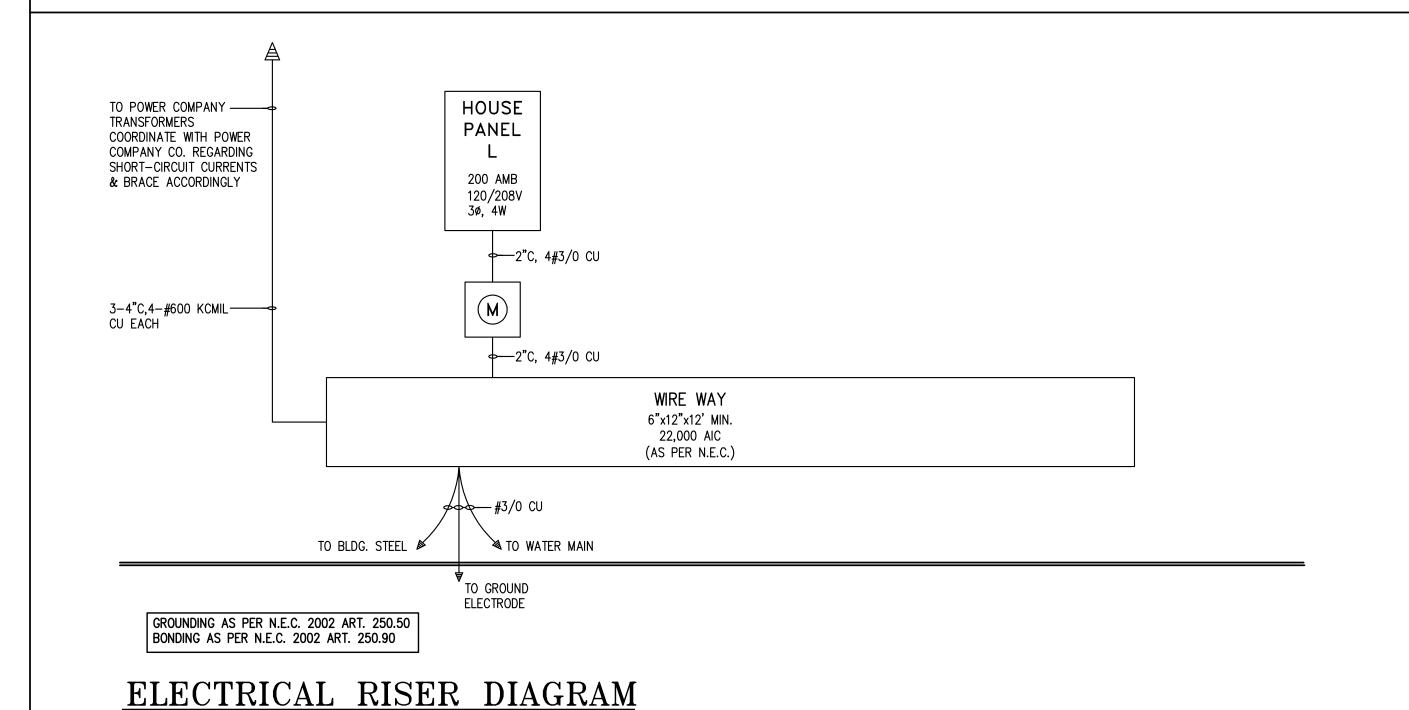
ISC AT LOAD SIDE = $\frac{556 \times 100}{5}$ = 11,112 AMPS SYMM.

ALL PANELS HAVE 14,000 AIC & GUTTER HAVE 22,000 AIC

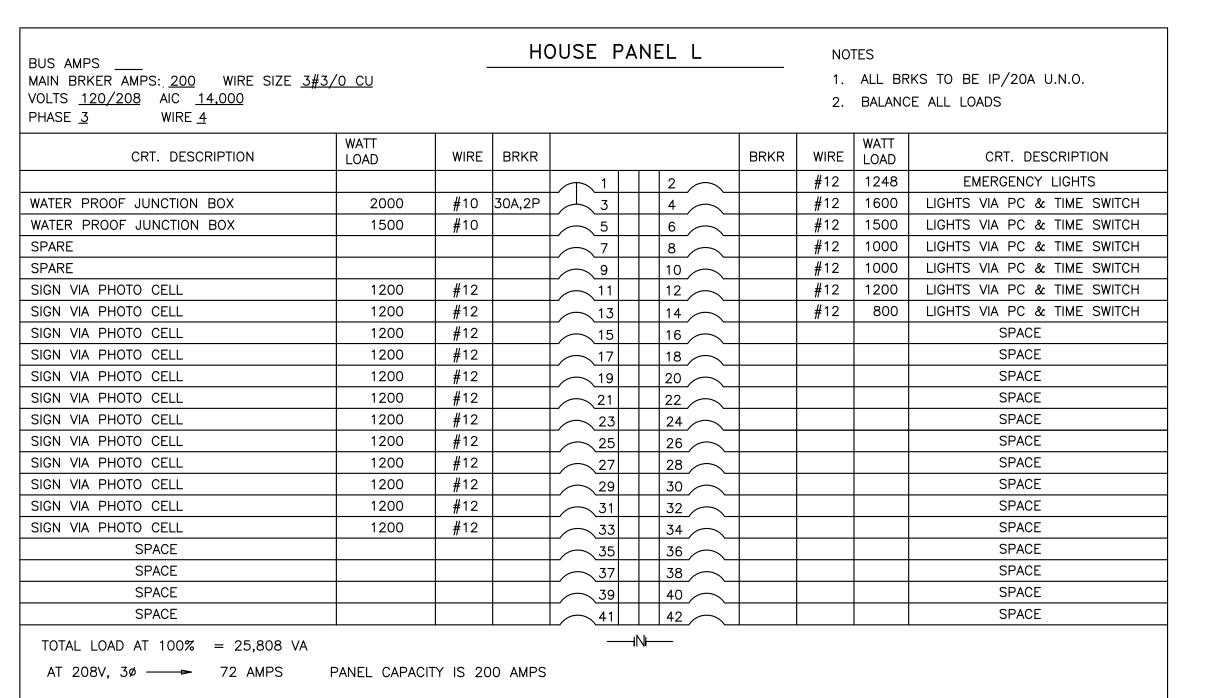


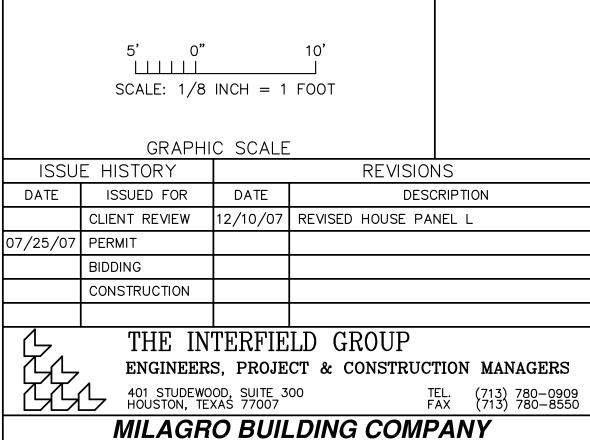
PLAN NOTES

- 1. MAXIMUM LOADING OF 1800 WATTS PER 20 A, 1P, 120V CIRCUIT.
- 2. COORDINATE LOCATION OF AHUS WITH MECHANICAL SUBCONTRACTOR AND FOLLOW EQUIPMENT SUPPLIERS RECOMMENDATIONS BEFORE FINAL CONNECTIONS.
- 3. ALL RECEPTACLES INPATIENT CARE AREAS SHALL BE GROUNDED BY AN INSULATED COPPER CONDUCTOR. AS PER N.E.C. ART. 517.13 (A) & (B) AND ARTICLE 517.3.



NOT TO SCALE

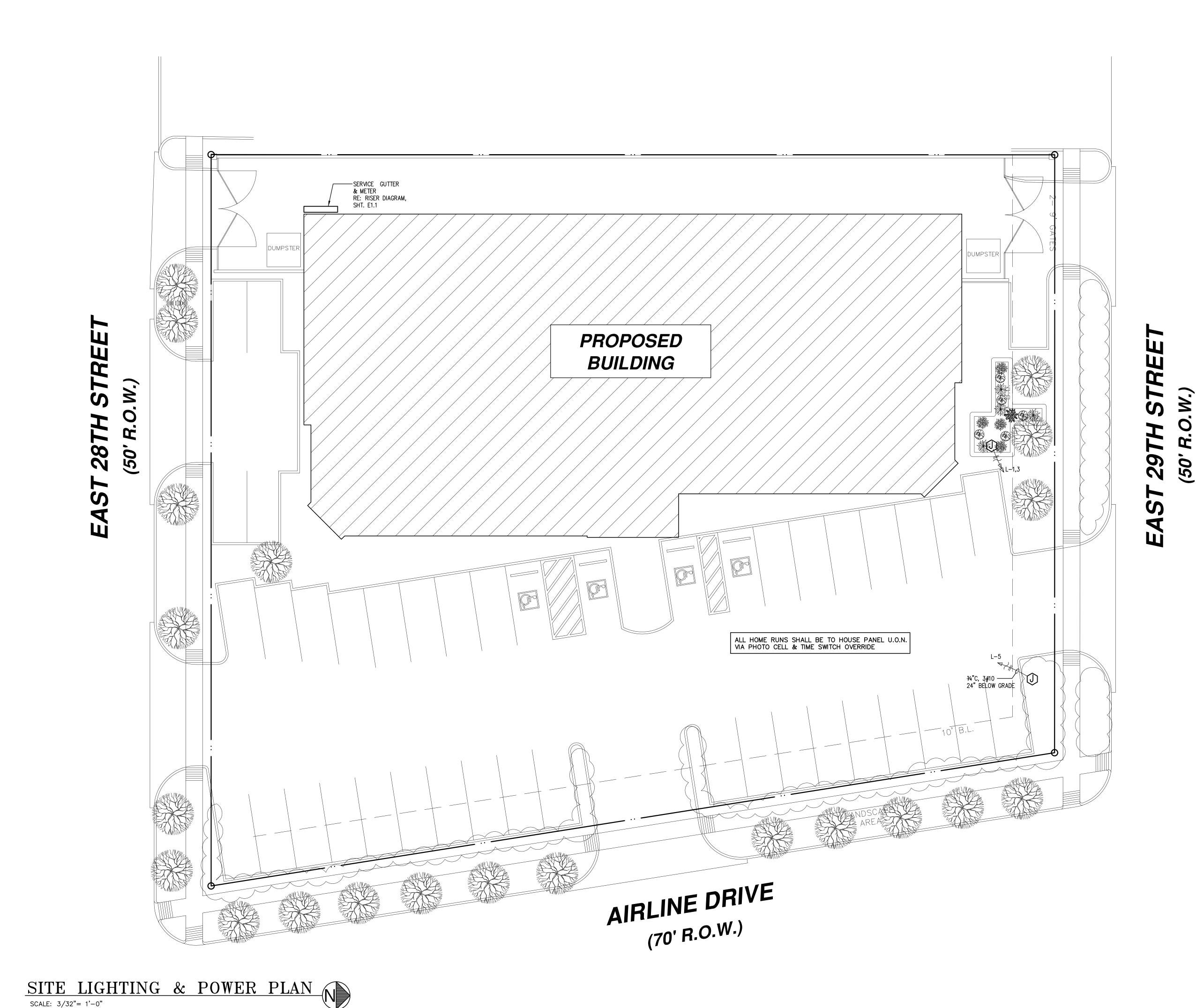




MILAGRO BUILDING COMPANY
PROPOSED NEW RETAIL CENTER

AIRLINE DRIVE @ 28TH STREET HOUSTON, TEXAS

DRAWN BY: RT DATE: 07/16/07 SHEET:
CHECKED BY: MFQ PROJ. NO.: 07038.10



OUTLINE SPECIFICATIONS: ELECTRICAL SYSTEM

<u>GENERAL</u>

ALL ELECTRICAL WORK SHALL BE IN COMPLIANCE WITH:

- A. THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NEC)
- B. LOCAL CODES & ORDINANCES
- C. OWNER'S SPECIFICATIONS D. STANDARDS, INSTRUCTIONS & SPECIFICATIONS OF THE LOCAL UTILITY COMPANY.
- PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO EXECUTE WORK ON THE DRAWINGS AND SPECIFICATIONS, AND AS REQUIRED FOR A COMPLETE SYSTEM.
- 5. THIS WORK INCLUDES. BUT IS NOT LIMITED TO: ELECTRICAL SERVICE AND DISTRIBUTION SYSTEMS.
- PANEL BOARDS & DISCONNECT SWITCHES, LIGHTING FIXTURES,
- POWER AND CONTROL WIRING WITH FINAL CONNECTIONS TO ALL EQUIPMENT.
- 4. ELECTRICAL CONTRACTOR SHALL VERIFY:
- A. TYPE OF POWER SERVICE REQUIREMENTS, SYSTEMS VOLTAGE RATING (I,E, 208/120VOR 30) AND MAXIMUM SHORT CIRCUIT CURRENT WITH POWER COMPANY PRIOR TO SUBMITTING A
- B. TYPE OF TELEPHONE SERVICE AVAILABLE PRIOR TO SUBMITTING A PROPOSAL; C. METERING, IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS, FOR "GENERAL SERVICE" SCHEDULE.
- 5. ELECTRICAL CONTRACTOR SHALL PROVIDE:
- A. 3-PHASE 4-WIRE 120/208V WYE SERVICE. CHECK SYSTEM VOLTAGE AT SERVICE END
- B. LABELS 3/16 INCH HIGH, ON ALL PANEL BOARDS AND BRANCH CIRCUITS.

- CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIRED ELECTRICAL CONDUIT AND WIRING FOR ALL MOTORS, STARTERS AND ELECTRICAL CONTROLS, AND SHALL MAKE ALL LOW VOLTAGE ELECTRICAL CONNECTIONS AS REQUIRED FOR HVAC SYSTEMS.
- 2. CONTRACTOR SHALL COMPLETE THE CONNECTIONS TO ALL RECEPTACLES. COUNTERS. AND FINAL CONNECTIONS TO ALL FIXTURES AFTER FIXTURES ARE IN PLACE.
- 3. VERIFY EXACT LOCATION OF ALL SIGNS WITH OWNER'S REPRESENTATIVE. FURNISH AND INSTALL ALL
- CONDUITS AND WIRES WITH STUB-UPS AS DIRECTED BY OWNER.
- A. ALL WORK SHALL BE COMPLETED IN A NEAT AND WORKMAN-LIKE MANNER. B. ALL WIRING SHALL BE RUN IN APPROVED METALLIC RACEWAY OR CONDUIT AND SHALL BE UNIFORMLY COLOR-CODED THROUGHOUT THE ENTIRE SYSTEM. SPLICES, TAPS, AND TERMINALS SHALL BE MADE ONLY IN "J" BOXES, OUTLETS AND PANEL BOARDS.
- C. ALL CONDUCTORS SHALL BE COPPER WITH A MINIMUM WIRE SIZE OF STRANDED #12 AWG THHN/THWN(CU). ALUMINUM CONDUCTORS SHALL NOT BE USED. CONTRACTOR SHALL ENSURE THAT THE CONDUCTORS UTILIZED ARE IN KEEPING WITH GOOD PRACTICE FOR THE CIRCUIT/PROTECTIVE DEVICES EMPLOYED. THE NEUTRAL CONDUCTOR (WHERE USED) SHALL HAVE THE SAME AMPACITY AS THE ASSOCIATED PHASE CONDUCTORS (I.E. NEUTRAL REDUCTION SHALL NOT BE PERMITTED).
- D. CONTRACTOR SHALL ENSURE THAT CIRCUIT AMPACITY AND SHORT CIRCUIT/OVERLOAD PROTECTION ARE APPROPRIATE FOR THE EQUIPMENT BEING INSTALLED. UL LISTING CONDITIONS SHALL BE OBSERVED.
- E. ALL FUSES SERVING MOTOR LOADS SHALL BE OF THE DUAL-ELEMENT TYPE.
- F. DUE TO DIFFERENT INTERRUPTING CHARACTERISTICS, PANELBOARD CIRCUIT BREAKERS MAY BE RATED HIGHER THAN THE DUAL ELEMENT FUSES THEY SUPPLY, TO ENSURE SUFFICIENT STARTING CURRENT.
- E. CONDUCTORS SHALL BE SELECTED SUCH THAT THE MAXIMUM VOLTAGE DROP BETWEEN THE PANELBOARD AND LOAD (AT FULL LOAD AMPS) SHALL NOT EXCEED THE FOLLOWING GUIDELINES:
- MOTOR LOADS (AIR CONDITIONING, REFRIGERATION, ETC.): 2% OF CIRCUIT VOLTAGE AT PANELBOARD. ALL OTHER LOADS: 5% OF CIRCUIT VOLTAGE AT PANELBOARD.

TESTING AND INSPECTION

1. TESTING

- A. ELECTRICAL CONTRACTOR SHALL TEST, PRIOR TO ENERGIZING FOR THE FIRST TIME, ALL PIECES OF ELECTRICAL EQUIPMENT TO ENSURE THEM TO HAVE THE PROPER PHASE-TO-PHASE AND PHASE-TO-GROUND INSULATION AND TO BE FREE OF SHORTS. AFTER ENERGIZING, EACH LUMINAIRE SHALL BE LIGHTED AND TESTED.
- B. THE VARIOUS CIRCUITS SERVED FROM THE PANELBOARDS VARY IN LOADING. THE CONTRACTOR SHALL CAREFULLY BALANCE THE LOAD ON EACH LEG OF THE SERVICE. WHEN ALL LOAD IS TURNED ON AND THE SYSTEM IS OPERATING AT 100%, THE INITIAL UNBALANCE SHALL NOT EXCEED 10%.
- A. ELECTRICAL CONTRACTOR SHALL FURNISH AT THE COMPLETION OF THE PROJECT OR EACH INSPECTION POINT OF THE PROJECT, AN INTERMEDIATE OR FINAL INSPECTION CERTIFICATE FROM THE LOCAL INSPECTING AUTHORITY. OWNER AND/OR HIS REPRESENTATIVE SHOULD BE PRESENT AT THE TIME OF TESTING. OWNER SHOULD BE INFORMED AT LEAST

<u>GUARANTEES</u>

CONTRACTOR SHALL GUARANTEE HIS WORK UNCONDITIONALLY FOR A PERIOD ON ONE (1) YEAR AFTER FINAL ACCEPTANCE. IF, DURING THIS PERIOD, ANY MATERIALS, EQUIPMENT, OR ANY PART OF THE SYSTEM FAILS TO FUNCTION PROPERLY, THE CONTRACTOR SHALL MAKE GOOD THE DEFECTS PROMPTLY AND WITHOUT ANY EXPENSES TO THE OWNER

PLAN NOTES

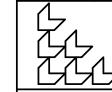
1. ALL HOME RUNS TO HOUSE PANEL (U.N.O.) 2. RE: ARCHITECTURAL DRAWINGS FOR ALL BUILDING AND SITE DIMENSIONS

48 HRS. BEFORE THE STARTING AT TESTING AND INSPECTION.

5' 0" 5' 10 SCALE: 3/32 INCH = 1 FOOT

GRAPHIC SCALE

ISSUE HISTORY REVISIONS DATE DATE ISSUED FOR DESCRIPTION CLIENT REVIEW 12/10/07 SITE LIGHTING REVISION PER ARCHITECT 07/25/07 PERMIT 01/18/08 PARKING @ SOUTH SIDE OF PROPERTY BIDDING CONSTRUCTION



THE INTERFIELD GROUP

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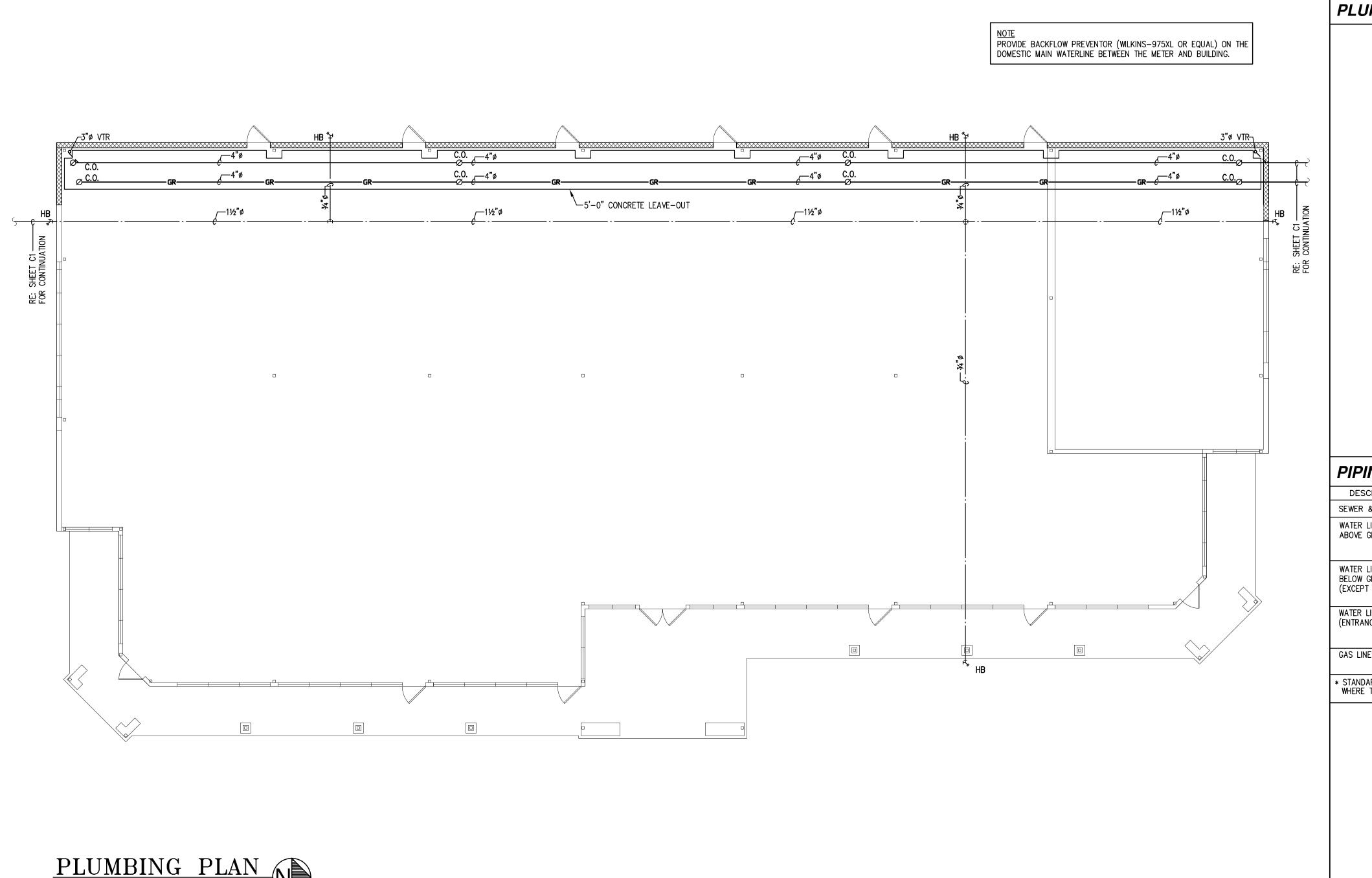
MILAGRO BUILDING COMPANY PROPOSED NEW RETAIL CENTER

AIRLINE DRIVE @ 28TH STREET HOUSTON, TEXAS

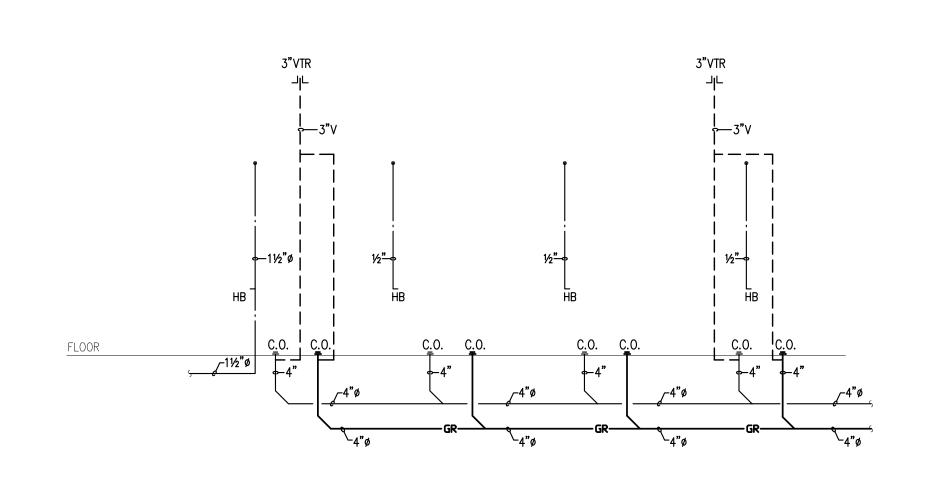
SITE LIGHTING & POWER PLAN DRAWN BY: RT DATE: 07/16/07

PROJ. NO.: 07038.10 CHECKED BY: MR

E1.0



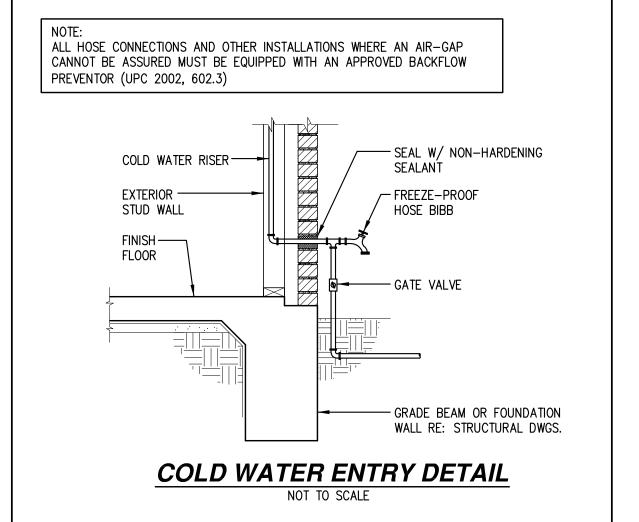
SCALE: 1/8"= 1'-0"



PLUMBING RISER DIAGRAM

PLUMBING FIXTURE SCHEDULE

| MARK | FIXTURE UNLESS SPECIFIED, G.C. TO SUBMIT CUT SHEET TO ARCH. | CW | PIPE HW | SIZES VENT | S&W | REMARKS | WSFU | |
|------|---|---|------------|--|-----|--|------|--|
| СО | FLOOR CLEANOUT ZURN Z—1400 | 3" ROUND NICKEL BROI SCORIATED COVER | | ROUND NICKEL BRONZE SCORIATED COVER | 0 | | | |
| НВ | HOSE BIB ZURN 7-1320 | 3/4" | - | _ | - | W/ STAINLESS STEEL BOX & VACCUM BREAKER | 2.5 | |



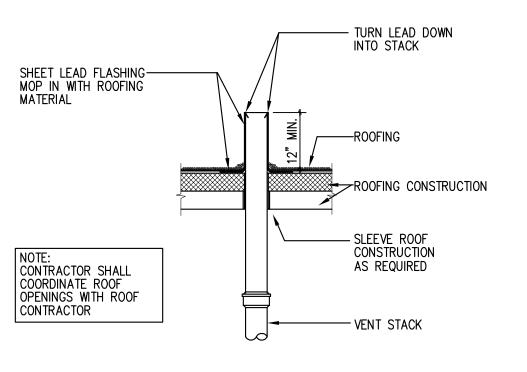
PLUMBING LEGEND

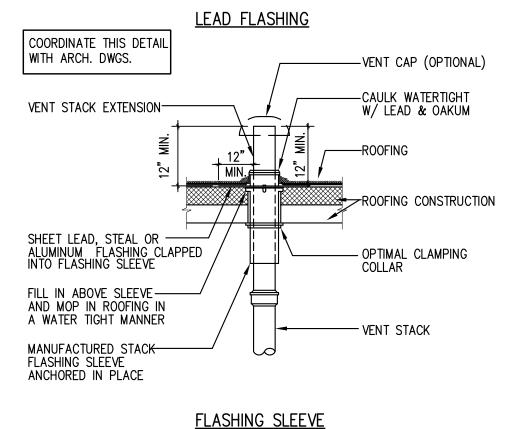
| SYMBOL | DESCRIPTION | | | | |
|---------------------------------------|---|--|--|--|--|
| | - COLD WATER SUPPLY | | | | |
| | HOT WATER SUPPLY | | | | |
| | HOT WATER RETURN | | | | |
| ——GR—— | GREASE WASTE LINE | | | | |
| —— D —— | T & P RELIEF OR CONDENSATE DRAIN | | | | |
| —— G —— | GAS LINE | | | | |
| | PLUMBING VENT | | | | |
| | SOIL OR WASTE BELOW FLOOR | | | | |
| | SOIL OR WASTE ABOVE FLOOR | | | | |
| ——SS—— | SITE SANITARY SEWER | | | | |
| ——SD—— | STORM DRAIN BELOW FLOOR | | | | |
| ——SD—— | INTERIOR ABOVE FLR. OR SITE STORM DRAIN | | | | |
| ⊱ 13- © F.D. | FLOOR DRAIN | | | | |
| ⊱ +∋- ¶ F.S. | FLOOR SINK | | | | |
| > Ø C.O. | FLOOR CLEANOUT GATE VALVE CHECK VALVE | | | | |
| ── ₩── | | | | | |
| | | | | | |
| | UNION | | | | |
| -₹, ⊱-⊕ <u>HB</u> | HOSE BIBB | | | | |
| + + | GAS COCK | | | | |
| <u> </u> | BOX WALL HYDRANT | | | | |
| , H | YARD HYDRANT IN CONC. PAD | | | | |
| ⊱ +⊃⊙ F.D. | HUB DRAIN | | | | |
| — | O.S. & Y GATE VALVE | | | | |
| | FIRE DEPARTMENT CONNECTION | | | | |
| | BALANCING VALVE | | | | |
| <u>—</u> и— | BACKFLOW PREVENTOR | | | | |
| NOTE: THIS IS A STANDARD SYMBOL LIST. | | | | | |
| 1012. 11110 10 /1 01/111 | | | | | |

PIPING SPECIFICATIONS

| DESCRIPTION | PIPING | FITTINGS | VALVES | REMARKS | |
|--|--|----------------------------|------------------------------|---|--|
| SEWER & VENT LINES | PVC PIPE * | PVC * | | | |
| WATER LINES ABOVE GROUND | COPPER TUBE TYPE "L" SOFT TEMPER 250 PSI MAX. | SOLDER FITTINGS | S.E. BRONZE GATE 125# SWP | ALL CONNECTIONS, ADAPTER AND INSULATION COUPLINGS | |
| WATER LINES BELOW GROUND (EXCEPT ENTRANCE) | COPPER TUBE TYPE "K" SOFT TEMPER 250 PSI MAX. | SOLDER FITTINGS | S.E. BRONZE GATE 200# SWP | | |
| WATER LINES (ENTRANCE) | COPPER TUBE TYPE "K" HARD TEMPER 400 PSI MAX. | SOLDER FITTINGS | S.E. BRONZE GATE 200# SWP | | |
| GAS LINES | SCHEDULE 40 BLACK STEEL | SCHEDULE 40 BLACK STEEL | SCHEDULE 40 BLACK STEEL | | |

* STANDARD SEWER & VENT LINES ARE SCHEDULE 40 PVC-DWV EXCEPT IN RETURN AIR PLENUM AREA WHERE THEY MUST BE OF NON-COMBUSTIBLE MATERIAL.





VENT THRU ROOF NOT TO SCALE

OUTLINE SPECIFICATIONS: PLUMBING SYSTEM

GENERAL

- 1. ALL WORK SHALL BE IN COMPLIANCE WITH: A. UNIFORM PLUMBING CODE (OR INTERNATIONAL PLUMBING CODE)——LATEST EDITION B. LOCAL CODES & ORDINANCE

C. OWNER'S SPECIFICATIONS & INSTRUCTIONS.

- 2. CONCEAL PIPING WHENEVER POSSIBLE UNLESS NOTED OTHERWISE. 3. ALL PIPING SHALL BE UNDERSLAB, ABOVE CEILINGS, OR IN AREAS WITH DROPPED CEILINGS.
- 4. FIELD-VERIFY ALL MEASUREMENTS AND CONDITIONS BEFORE PROCEEDING W/ FABRICATION OF WORK.
- 5. PIPING LAYOUT IS ONLY SCHEMATIC. EXACT LOCATION OF PIPES SHALL BE COORDINATED
- W/ BUILDING STRUCTURE AND WORK OF OTHER CONTRACTORS.
- 6. PROVIDE ALL ADDITIONAL STEEL HANGER MATERIALS, RODS & CLAMPS AS REQUIRED FOR COORDINATION W/ WORK OF OTHER TRADES.
- 7. CONTRACTOR IS RESPONSIBLE FOR FIRESTOPPING AT ALL PENETRATIONS OF FIRE-RATED FLOORS AND WALLS, AS DESIGNATED IN ARCHITECTURAL DRAWINGS.
- 8. NO LIQUID TRANSMISSION PLUMBING PIPING IS TO RUN ABOVE ELECTRICAL SWITCH GEAR OR PANELS. MAKE ADJUSTMENTS NECESSARY TO REROUTE PIPING AS REQUIRED FOR THE ACTUAL INSTALLATION OF ELECTRICAL EQUIPMENT.

WASTEWATER LINES

- PROVIDE CLEANOUTS AT THE BASE OF ALL SANITARY STACKS.
- PROVIDE CLEANOUTS AT A MAXIMUM OF 50 FEET APART IN SANITARY SEWER LINES
- 4" SIZE OR LESS, AND A MAXIMUM OF 100 FEET APART FOR LARGER PIPES. 3. PROVIDE CLEANOUTS AT EACH CHANGE OF DIRECTION 45° OR LARGER IN THE
- BUILDING DRAIN LINES (SANITARY PIPING BELOW FLOOR SLAB). 4. CLEANOUT SIZES:
- a. MATCH PIPE SIZE FOR PIPE LESS THAN 4"ø.
- b. 4" FOR PIPE 4" OR LARGER. 5. ALL VENT PIPING SHALL BE SLOPED TO GRAVITY-DRAIN BACK TO DRAINAGE PIPING.
- 6. LOCATE VENTS AT A MINIMUM DISTANCE OF 6" FROM FIXTURE TRAP WEIR. WATER LINES
- 1. SUPPLY WATER LINE SIZES ARE BASED ON A MINIMUM PRESSURE @ THE WATER METER OF 40 PSI. CONTRACTOR SHALL VERIFY THAT THIS MINIMUM PRESSURE IS AVAILABLE AND.
- IF NOT, INFORM ENGINEER PRIOR TO WATER PIPE INSTALLATION. 2. RUN ALL WATER LINES LEVEL. ALL FIXTURES SHALL BE EQUIPPED WITH STOP VALVES INSTALLED IN ACCESSIBLE LOCATIONS.
- UNLESS OTHERWISE SHOWN ON DRAWINGS. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING DOMESTIC WATER PIPING IN CHASES, ETC. TO INDIVIDUAL FIXTURES. WHEN PIPING SERVES FLUSH VALVES, COLD WATER PIPES SHALL BE EXTENDED FULL-SIZE TO END OF PIPE CHASE RUN AND A SHOCK ABSORBER INSTALLED. WHEN COLD WATER PIPE IS 2" OR LARGER AND SERVES FLUSH VALVES, PIPE MAIN IN CHASE CAN ONLY
- BE REDUCED TO 11/2" SIZE. 4. 1/2" HOT WATER PIPE MAY SERVE UP TO FOUR (4) LAVATORIES. OTHER PIPE SIZING CRITERIA SHALL BE AS OUTLINED IN "ASHRAE FUNDAMENTALS HANDBOOK"

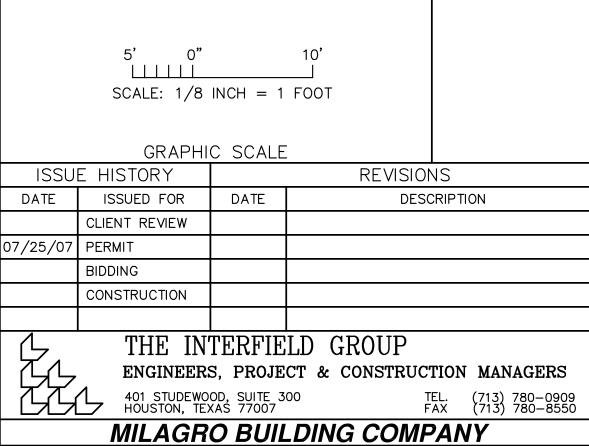
5. INSTALL SHOCK ABSORBERS & ACCESS DOOR AT FLUSH-VALVE WATER CLOSETS OR URINALS.

OUTLINE SPECIFICATIONS: PLUMBING FIXTURE

- CONTRACTOR SHALL FIELD-VERIFY ELEVATIONS AND DIMENSIONS OF FINISHED FLOORS AND WALLS. INSTALL ALL DRAINS, ROUGH-INS AND CARRIERS IN ACCORDANCE WITH PROPOSED ELEVATIONS AND FINISHED SURFACES.
- MOUNTING HEIGHT OF ALL WALL-HUNG OR COUNTER-MOUNTED FIXTURES SHALL BE COORDINATED WITH ARCHITECT PRIOR TO INSTALLATION OF ROUGH-IN-WORK.
- 3. AT ALL FIXTURES AND EQUIPMENT, WITH ASSOCIATED TRIM OR ACCESSORIES, PROVIDED BY OTHER TRADES AND REQUIRING PLUMBING CONNECTIONS: THIS CONTRACTOR SHALL FIELD COORDINATE EXACT REQUIREMENTS OF, MAKE PROVISIONS FOR, AND SUPPLY ALL MATERIALS AND LABOR FOR MAKING FINAL CONNECTIONS.
- 4. CONTRACTOR SHALL REFER TO EQUIPMENT MANUFACTURER'S SHOP DRAWINGS AND/OR INSTALLATION INSTRUCTIONS FOR FINAL COORDINATION OF ALL ROUGH-IN OPENINGS PRIOR TO BEGINNING HIS WORK.
- ALL FIXTURES AND EQUIPMENT STUB-OUTS SHALL BE PROVIDED WITH A STOP VALVE. ALL FIXTURE STOPS SHALL BE SOLID BRASS, LOOSE KEY OPERATED, CHROME PLATED (WHERE EXPOSED), AND FITTED TIGHT TO CHROME PLATED BRASS WALL ESCUTCHEON PLATES.
- 6. ALL ROUGH-IN OPENING SHALL BE FITTED WITH CHROME PLATED, HEAVY GAGE BRASS ESCUTCHEON PLATES FITTED TIGHT TO THE PIPE.
- 7. ALL EXPOSED BRASS SHALL BE CHROME PLATED.
- 8. PROVIDED DEEP SEAL P-TRAP FOR ALL DRAINS REQUIRING TRAP PRIMING DEVICES.
- 9. HANDICAPPED ACCESSIBILITY / ADA COMPLIANCE A. ALL HANDICAPPED ACCESSIBLE FIXTURES INDICATED WITH SHALL BE OF

INCLUDE 2.2 GPM FLOW CONTROL.

- APPROVED TYPE AND WITH REQUIRED CONTROLS AND INSTALLED TO HEIGHT AND CLEARANCE, AS PRESCRIBED BY AMERICANS WITH DISABILITIES ACT (ADA). FIXTURES SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL ADA CODE REQUIREMENTS. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONED ADA MOUNTING HEIGHT AND SPECIFIED
- B. ALL WHEELCHAIR LAVATORIES EXPOSED PIPING SHALL BE INSULATED. OFFSET DRAIN FITTINGS ARE REQUIRED TO PROVIDE MINIMUM CLEARANCES.
- C. ORIENT ADA WATER CLOSET FLUSH WITH OPERATOR ON LARGE SIDE OF ENCLOSURE. 10. PLUMBING FIXTURES SHALL BE OF WATER CONSERVATION TYPE IN ACCORDANCE WITH SENATE BILL 587 FOR WATER SAVING PERFORMANCE. LAVATORY AND SINK FAUCETS SHALL
- 11. SEAL ALL SPACES BETWEEN PLUMBING FIXTURES AND MOUNTING SURFACES WITH WHITE LATEX CAULK WIPED SMOOTH AND FLUSH WITH FIXTURES.



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