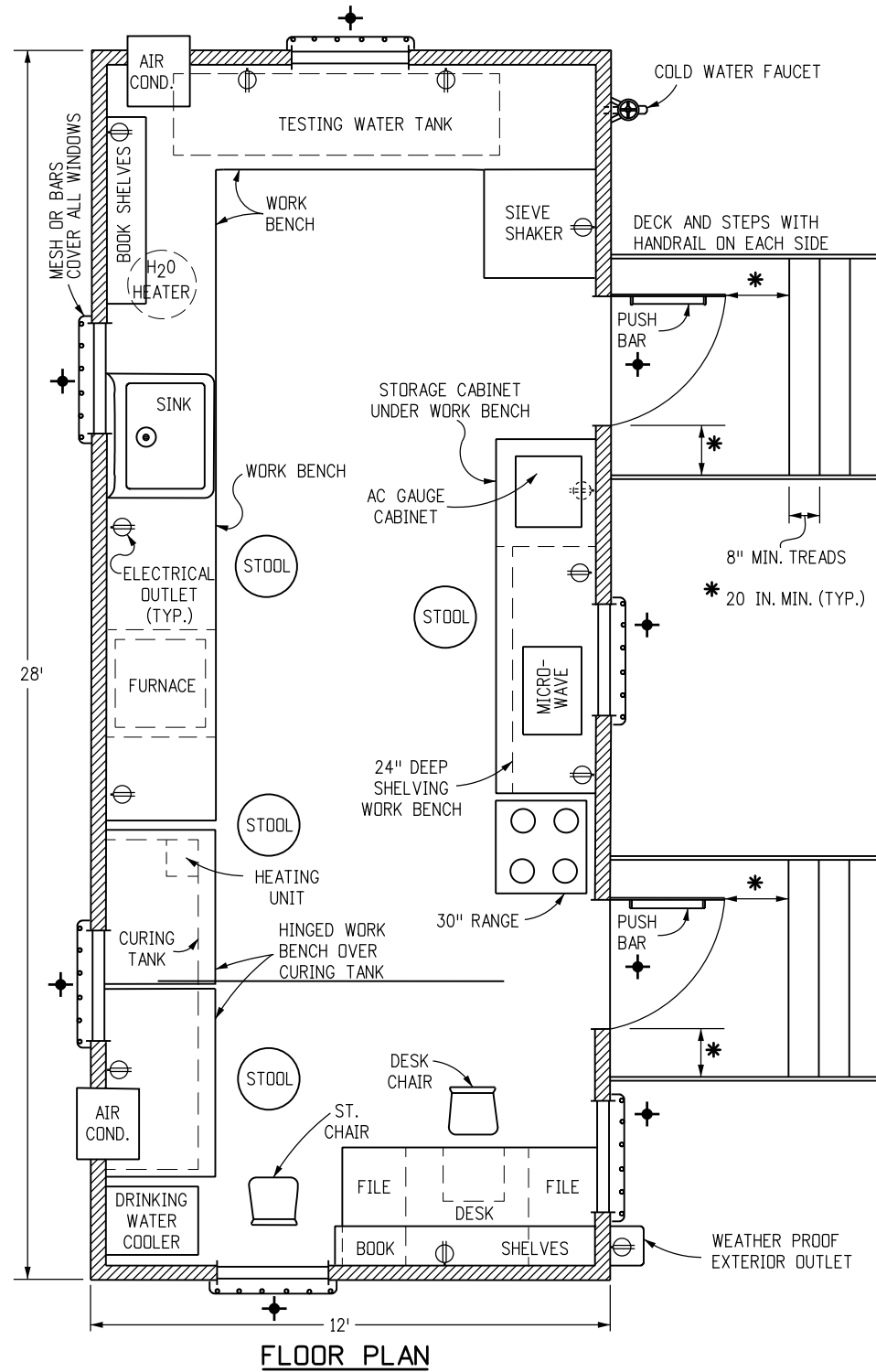


**GENERAL NOTES**



**FLOOR PLAN**

- CLASS 2 FIELD LABORATORIES SHALL CONSIST OF A WEATHERPROOF, INSULATED, TEMPORARY OFFICE TYPE TRAILER, CONSTRUCTED TO THE UNIFORM BUILDING CODE SERIES, WITH FLOOR PLAN AND EQUIPMENT LAYOUT SIMILAR TO THE DRAWING ON THIS SHEET. IT SHALL MEET OR EXCEED THE FOLLOWING REQUIREMENTS.
- DIMENSIONS:** 28 FT. LONG x 12 FT. WIDE OUTSIDE, 7 FT.-6 IN. HEIGHT INSIDE.
- WINDOWS:** SIX, 30 IN x 27 IN., CAPABLE OF OPENING AND LOCKING.
- DOORS:** TWO, EQUIPPED WITH DEADBOLT LOCKS, 36 IN. x 80 IN., INSULATED STEEL WITH SMALL CLEAR GLASS WINDOW. EQUIPPED WITH HORIZONTAL PUSH BAR, HEAVY DUTY DOOR CLOSER, AND PULL HANDLE MOUNTED ABOVE PUSH BAR. EACH DOOR SHALL HAVE A SET OF STEPS WITH DECK, AND HANDRAILS. THE STEPS SHALL BE PLACED SO THE DECK CAN BE ACCESSED EITHER FROM THE SIDE OR FROM THE FRONT. THE DECK, RAILS, AND STEPS SHALL MEET OSHA REQUIREMENTS.
- FLOOR:** ADEQUATE INSULATION UNDER THE FLOOR. FLOOR COVERING SHALL BE SKID RESISTANT.
- HEATING:** FURNACE, 55,000 BTU, FORCED AIR TYPE.
- AIR CONDITIONING:** TWO, 8,300 BTU MINIMUM.
- ELECTRICAL:** WORK SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE FOR 110/220 VOLTS, 60 HZ, APPLICATIONS AND PROVIDE RELIABLE UNIFORM POWER TO PROPERLY OPERATE ALL FIELD LABORATORY EQUIPMENT. ALL TRAILERS CONSTRUCTED AFTER JULY 1, 2006 SHALL HAVE AN APPROPRIATELY SIZED CIRCUIT BREAKER TO HANDLE THE LOAD OF ALL LABORATORY AND ENVIRONMENTAL EQUIPMENT OPERATING AT ONE TIME. PROVIDE A SEPARATE ELECTRICAL CIRCUIT TO SUPPLY POWER TO THE ASPHALT CONTENT GAUGE AND THE OUTLET IN THE STORAGE CABINET UNDER THE WORK BENCH.
- LIGHTING:** ADEQUATE FLUORESCENT LIGHTING DIRECTLY OVER ALL WORK BENCH AND DESK AREAS. THERE SHALL BE ONE 110 VOLT EXTERIOR PORCH LIGHT FIXTURE WITHIN 2 FT. OF EACH EXTERIOR DOOR.
- VENT FAN:** ONE, GENERAL VENTILATION WITH 800 CFM CAPACITY AND 2 SPEED SWITCH. MOUNTED IN THE ROOF OR AT TOP OF WALL NEAR THE RANGE.
- FURNITURE:** TWO, TWO-DRAWER, LEGAL SIZE FILE CABINETS BUILT INTO DESK AREA. DESK SHALL BE BUILT-IN WITH ONE CENTER DRAWER. ONE DESK CHAIR WITH ROLLERS, ONE STRAIGHT CHAIR, AND FOUR STOOLS FOR WORK AREA WITH HEIGHT COMPATIBLE WITH WORK BENCHES. ALL CHAIRS SHALL BE ERGONOMICALLY BUILT.
- BOOK SHELVES:** A MINIMUM OF 10 LINEAR FT. LONG BUILT OVER DESK AREA AND 8 LINEAR FT. LONG BUILT OVER WORK BENCH. ALL SHELVES SHALL BE 10 IN. DEEP. TOP SHELF SHALL BE AT LEAST 14 IN. BELOW CEILING.
- WORK BENCHES:** 30 IN. DEEP x 36 IN. HIGH WITH A DURABLE WORKING SURFACE SUCH AS FORMICA.
- STORAGE CABINETS:** TWO, ONE BUILT-IN UNDER THE WORK BENCH WITH A 28 IN. x 28 IN. LOCK EQUIPPED DOOR, WITH ELECTRICAL OUTLET INSIDE. ONE REMOVABLE, WITH OPEN BOTTOM, LOCK EQUIPPED TO SECURE CABINET TO TOP OF WORK BENCH, AND LARGE ENOUGH TO COVER A 22 IN. x 18 IN. x 18 IN. HIGH ASPHALT CONTENT (AC) GAUGE.
- SINK:** ONE, SINGLE TUB, STAINLESS STEEL, 25 IN. x 22 IN. x 6 1/2 IN. EQUIPPED WITH SPRAY NOZZLE, ONE COMBINATION (MIXING) HOT AND COLD WATER FAUCET AND ONE SINGLE COLD WATER FAUCET. ALL FAUCETS SHALL BE EQUIPPED WITH STANDARD HOSE THREAD SPIGOTS. DRAIN SHALL HAVE NO TRAP.
- DRINKING WATER SUPPLY:** DRINKING WATER DISPENSED FROM AN ACCEPTABLE WATER COOLING DEVICE.
- TESTING WATER SUPPLY:** 300 GALLON WATER CAPACITY, IN ONE OR MORE TANKS LOCATED ALONG THE TRAILER END OR ALONG BOTH SIDES OF THE TRAILER END, VENTED WITH MEANS OF DETERMINING WATER LEVEL, WITH ONE PRESSURE PUMP, MINIMUM 30 PSI DELIVERY PRESSURE. TEN GALLON ELECTRIC WATER HEATER. ONE COLD WATER FAUCET WITH BACK FLOW PREVENTER LOCATED ON OUTSIDE OF TRAILER. WATER PIPES SHALL BE LOCATED SO THEY ARE UNEXPOSED AND PROTECTED FROM DAMAGE. WATER SHALL BE SUPPLIED BY THE CONTRACTOR. USE POTABLE WATER ONLY.
- TELEPHONES:** TWO TELEPHONES. TWO PRIVATE LINES (IFB) WITH TOUCH TONE SERVICE (IF AVAILABLE) FROM THE LOCAL CARRIER. ONE LINE SHALL BE SHARED BY THE TWO TELEPHONES. THE SECOND LINE SHALL BE SHARED BY A COMPUTER AND FACSIMILE MACHINE. THE CONTRACTOR SHALL PROVIDE AN EXCLUSION SWITCH (AB SWITCH) FOR THE COMPUTER AND FAX. TRAILER WIRING SHALL INCLUDE FOUR BOXES EQUIPPED WITH RJ-11 JACKS (TWO WIRE PAIRS PER JACK). TWO AT EACH END OF THE TRAILER. LOCATIONS WHERE PRIVATE LINE SERVICE IS NOT AVAILABLE, PROVIDE ONLY ONE LINE.
- FIRE EXTINGUISHER:** ONE, DRY CHEMICAL, 10 LBS. CLASS ABC, UNDERWRITERS LABORATORIES, INC. APPROVED.
- RANGE:** 30 IN. KITCHEN RANGE, ELECTRIC OR GAS, HAVING FOUR SURFACE BURNERS AND A 3.5 CU. FT. OVEN WITH REINFORCED OVEN RACKS.
- MICROWAVE OVEN:** ONE, 1.5 CU. FT. WITH AT LEAST FIVE POWER LEVELS AND A REVOLVING FLOOR OR ROTATING POWER SOURCE.
- SECURITY:** THIS SYMBOL ON THE FLOOR PLAN DENOTES AREAS ON THE TRAILER WHERE ADEQUATE PROTECTION AGAINST ILLEGAL ENTRY, VANDALISM AND THEFT SHALL BE PROVIDED.
- SIEVE SHAKER:** ONE MOTOR DRIVEN STANDARD PORTABLE SHAKER INCLUDING:
  - A SAFETY SHIELD ON DRIVE BELT.
  - AN ADJUSTABLE TIMED - ON/OFF SWITCH LOCATED NEAR THE SHAKER.
  - ADAPTERS TO HANDLE EITHER 8 IN. OR 12 IN. SIEVES.
 THE SHAKER SHALL BE CAPABLE OF SHAKING A FULL SET OF 8 IN. SIEVES AS WELL AS 12 IN. SIEVES, AND SHALL BE MOUNTED 24 IN. ABOVE THE FLOOR IN A SOUND PROOF, INSULATED ENCLOSURE HAVING HINGED OPENINGS. THE SIEVE SHAKER SHALL BE A RD-TAP, ENDOCOTT FROM SOILTSTEST, SS-12R FROM GILSON OR APPROVED EQUAL. THE SHAKER SHALL BE SECURELY BOLTED TO A RIGID, STURDY SURFACE.
- ELECTRONIC BALANCE:** THE BALANCE SHALL COMPLY WITH ASSHTO M 231 FOR GENERAL PURPOSE, CLASS G2 BALANCES, AND THE FOLLOWING:
  - POWER: 115 VAC
  - MODEL: TOP LOADING
  - CAPACITY: MINIMUM OF 35 LBS.
  - READABILITY AND SENSITIVITY: 0.0005 LB.
  - ACCURACY: 0.001 LB. OR 0.1%
  - DISPLAY PANEL: SHALL BE EQUIPPED WITH THE FOLLOWING: LED DISPLAY, ON/OFF KEY, PRINT KEY, RE-ZERO KEY, WEIGHING MODE KEY, SAMPLE % KEY, SERIAL RS-232C PORT, AND A CALIBRATION SWITCH.
  - WEIGHING MODES: GRAMS, POUNDS, AND PERCENT OF TARGET MASS (WEIGHT).
  - WEIGHING SURFACE DIMENSION: MINIMUM OF 9 IN. WIDE BY 12 IN. DEEP.
  - BASE: SHALL HAVE ADJUSTABLE LEVELING FEET AND A LEVEL VIAL ATTACHED.
 THE BALANCE SHALL BE EQUIPPED WITH AN UNDERHOOK WEIGHING DEVICE AND ONE COPY OF THE OWNER'S MANUAL.
- RECORDING THERMOMETER:** RECORDING THERMOMETER FOR CURING TANKS SHALL BE EITHER ELECTRICAL OR MECHANICAL TYPE.
  - THE ELECTRICAL RECORDING THERMOMETER SHALL BE EQUIPPED WITH THE FOLLOWING:
    - 120 VAC/60 Hz WITH A MINIMUM 3 FT. LONG POWER CORD.
    - MINIMUM 6 IN. DIAMETER CIRCULAR PAPER CHART WITH A BOX OF BLANK CHARTS.
    - A SELECTABLE TEMPERATURE SCALE WITH ONE SCALE THAT HAS A RANGE FROM 50° F. TO 120° F.
    - A SELECTABLE CHART SPEED WITH ONE SPEED OF 24 HOURS AND ONE SPEED OF 7 DAYS. THE SPEED ACCURACY SHALL BE ± 1.5%.
    - THE DISPLAY SHALL BE A MINIMUM 3 DIGIT LED WITH A MINIMUM DIGIT SIZE OF 0.5 IN.
    - THE TEMPERATURE ACCURACY OF THE MONITOR SHALL BE ± 1° F
    - THE MONITOR SHALL HAVE A CHART ADVANCE BUTTON, A TIME POINTER, A PEN ADJUST BUTTON, AND A TEMPERATURE ADJUST KNOB.
 THE RECORDING PEN SHALL BE AN INK TYPE WITH A SPARE PEN INCLUDED. THE TEMPERATURE PROBE SHALL BE SUBMERSIBLE TYPE J THERMOCOUPLE WITH A 15 FT. MINIMUM CORD LENGTH.
  - THE MECHANICAL RECORDING THERMOMETER SHALL BE EQUIPPED WITH THE FOLLOWING:
    - MINIMUM 3 IN. DIAMETER PRESSURE SENSITIVE PAPER CHART WITH A BOX OF BLANK CHARTS.
    - THE STEM OF THE THERMOMETER SHALL BE A MINIMUM OF 12 IN. LONG.
    - THE THERMOMETER SHALL BE A KEY TYPE, WINDING MODEL CAPABLE OF 7 DAY, 24 HOUR RECORDING.
    - THE DRIVE MECHANISM SHALL BE CAPABLE OF OPERATING BEYOND ITS FULL RECORDING RANGE BY A MINIMUM OF 20%.
    - THE THERMOMETER SHALL BE CAPABLE OF OPERATING FROM 0° F TO 200° F.
    - THE CLOCK MECHANISM ACCURACY SHALL BE A MINIMUM OF 2% OF THE FULL-SCALE RANGE BEING USED.
    - THE RECORDING RANGE SHALL BE A MINIMUM OF 20° F TO 220° F.
 THE RECORDING THERMOMETER SHALL BE MOUNTED IN SUCH A WAY THAT A MINIMUM 8 IN. OF THE STEM IS IMMERSED IN THE CURING TANKS AND IS EASILY ACCESSIBLE TO CHANGE THE RECORDING TEMPERATURE CHARTS.
- THE REQUIREMENTS LISTED HEREIN ARE INTENDED TO MEET THE NEEDS OF THE CDOT TESTING PERSONNEL CONCERNING TESTING FACILITIES. THERE IS NO INTENT TO SPECIFY ANY STRUCTURAL PORTIONS OF THE SUBJECT LABORATORY EXCEPT AS NEEDED TO SATISFACTORILY PERFORM THE REQUIRED TESTING OF MATERIALS.

THE GENERAL NOTES ARE CONTINUED ON SHEET 2.

<b>Computer File Information</b>		<b>Sheet Revisions</b>		Colorado Department of Transportation  4201 East Arkansas Avenue Denver, Colorado 80222 Phone: (303) 757-9083 Fax: (303) 757-9820 Project Development Branch DD/LTA	<b>FIELD LABORATORY</b> <b>CLASS 2</b> Issued By: Project Development Branch July 4, 2012	<b>STANDARD PLAN NO.</b> M-620-2 Sheet No. 1 of 2
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**GENERAL NOTES** (CONTINUED FROM SHEET 1)

27. **FORCED AIR CONVECTION OVEN:** REQUIRED ON PROJECTS WITH 5,000 OR MORE TONS OF HMA OR WHEN SPECIFIED IN THE PLANS. THE FORCED AIR OVEN REPLACES THE RANGE. THE OVEN SHALL BE RATED TO AT LEAST 1500 WATTS INCLUDING:

1. AT LEAST ONE BLOWER TO CIRCULATE AIR INSIDE WITHOUT DISTURBING FINE GRAINED SOILS PLACED IN THE OVEN.
2. A MINIMUM INTERIOR CAPACITY OF 4.8 CUBIC FEET.
3. AN EXHAUST CHAMBER ADAPTER TO CONNECT TO A 3 INCH PIPE WHICH SHALL BE VENTED TO THE OUTSIDE.
4. AT LEAST TWO ADJUSTABLE SHELVES.
5. AN OVER-TEMPERATURE PROTECTION DEVICE.
6. AN ELECTRONIC CONTROL SYSTEM WITH DIGITAL TEMPERATURE READ-OUT AND DIGITAL TEMPERATURE SET POINTS TO PRECISELY READ AND SET THE OVEN TEMPERATURE.

THE OVEN SHALL HAVE A TEMPERATURE RANGE FROM 104 °F TO 464 °F AND HAVE A UNIFORM TEMPERATURE OF ± 3 °F AT 230 °F.

THE OVEN SHALL BE CAPABLE OF MAINTAINING A CONSTANT TEMPERATURE, ± 5 °F, THROUGHOUT ITS TEMPERATURE RANGE.

THE OVEN HEATING ELEMENTS SHALL NOT BE ALLOWED TO OPERATE WITHOUT THE BLOWER.

THE FIELD LABORATORY SHALL BE EQUIPPED WITH A SEPARATE ELECTRICAL CIRCUIT TO SUPPLY POWER TO THE FORCED CONVECTION OVEN.

IN ADDITION TO THE ABOVE FORCED AIR CONVECTION OVEN, A HOT PLATE CONFORMING TO THE FOLLOWING SHALL BE PROVIDED:

1. TWO BURNER, PORTABLE, ELECTRICAL "CAL-ROD" OR "RANGETTE" TYPE.
2. AT LEAST ONE BURNER SHALL BE RATED A MINIMUM OF 800 WATTS.
3. EACH HOT PLATE SHALL BE EQUIPPED WITH AN ON-OFF INDICATOR LIGHT.

28. **CURING TANK:** MINIMUM 95 GALLON CAPACITY WITH A CIRCULATING PUMP WITH A 120 GPH RATING. TANK CAPACITY WILL INCREASE FOR LARGE CONCRETE PROJECTS WHEN SPECIFIED IN THE PLANS.

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