

## Dakota County Community Development Agency (DCCDA)

Mechanical Contractor Pricing - Single Family Homes - December 1, 2021 - September 30, 2023

Code	Measure Name	Units				Description
<b>AC. Air Conditioning</b>			<b>BID Labor</b>	<b>BID material</b>	<b>BID Total</b>	
AC1	A-Coil Cleaning	Each				Clean the A-Coil so it works and is non-restrictive to the airflow.
AC2	A-Coil Pan Replacement	Each				Replace the A-Coil pan that is damaged and/or leaking.
AC3	A-Coil Recharge	Each				Recharge the air conditioning system.
AC4	A-Coil Replacement	Each				Replace the damaged or broken A-Coil with similar model. Recharge A/C unit. If A/C coil was replaced in the winter contractor will need to go back in the spring to recharge.
AC5	Central Air Conditioning Coolant - Per Pound	Each				Price per pound to add coolant to the central air conditioning system during a central air conditioning tune-up.
AC6	Central Air Conditioning Tune-up	Each				Central Air Conditioning Tune-up to include the following: Cleaning of the condenser coil, check coolant level (if needed see price above for up to two pounds), check coolant pressure, check indoor filter, check belt and lube motor (if needed), test all controls, blow out drain lines, perform a visual inspection of the system, and educate the homeowner on proper system operation.
AC7	Replacement - Central Air Conditioning - 1.5 ton	Each				System must achieve SEER 15 as documented by AHRI. Includes platform, all necessary refrigeration piping, evap coil and condenser, wiring, controls and duct work modification. Assume transition from R-22 to R-410A.
AC8	Replacement - Central Air Conditioning - 2 ton	Each				System must achieve SEER 15 as documented by AHRI. Includes platform, all necessary refrigeration piping, evap coil and condenser, wiring, controls and duct work modification. Assume transition from R-22 to R-410A.
AC8	Replacement - Central Air Conditioning - 2.5 ton	Each				System must achieve SEER 15 as documented by AHRI. Includes platform, all necessary refrigeration piping, evap coil and condenser, wiring, controls and duct work modification. Assume transition from R-22 to R-410A.
AC8	Replacement - Central Air Conditioning - 3 ton	Each				System must achieve SEER 15 as documented by AHRI. Includes platform, all necessary refrigeration piping, evap coil and condenser, wiring, controls and duct work modification. Assume transition from R-22 to R-410A.
AC9	Maintenance for window unit	Each				Clean filter and comb bent fins

<b>BO. Boiler</b>			<b>BID Labor</b>	<b>BID material</b>	<b>BID Total</b>	<b>Description</b>
<b>BO. General</b>						
BO1	Aqua Stat Replacement	Each				Replace boiler aquastat with a new one and test the system.
BO2	Pressure and Temperature Gauge - Replacement	Each				Install new pressure and temperature gauge on boiler and test.
BO3	Pressure Relief Valve - Replacement	Each				Install new thirty pound (30#) pressure relief valve on the boiler.
BO4	Relief Drop - Boiler	Each				Install a metal relief drop pipe terminating 6" to 18" from the floor.

<b>BOwh. Water Handling</b>			<b>BID Labor</b>	<b>BID material</b>	<b>BID Total</b>	<b>Description</b>
BOwh1	Auto Air Bleed Valve Replacement	Each				Replace the auto air bleed valve with a new valve.
BOwh2	Back Flow Preventer Install	Each				Replace the back flow preventer with new or install new back flow preventer if none exist.
BOwh3	Baseboard Fin Tube Cleaning	Lin. Ft.				Vacumn and clean the baseboard fin tube distribution to ensure proper air flow.
BOwh4	Baseboard Fin Tube Cleaning - Setup Charge	Lin. Ft.				Setup charge to move objects around baseboard fin tubes before and after vacuuming and cleaning the baseboard distribution.
BOwh5	Baseboard Fin Tube Convactor Cover - Repair	Lin. Ft.				Repair the damaged baseboard fin tube convactor cover.
BOwh6	Baseboard Fin Tube Convactor Cover - Replacement	Lin. Ft.				Replace the damaged baseboard fin tube convactor cover.
BOwh7	Baseboard Fin Tube - Replacement	Lin. Ft.				Replace damaged/missing baseboard fin tube with new.
BOwh8	Bleeder Replacement on Radiator or Baseboard	Each				Replace bleeder valve on cast iron radiator or baseboard with new bleeder valve.
BOwh9	Boiler Pump - Repair Leak	Each				Repair leaky boiler pump then test.
BOwh10	Boiler Pump - Replacement	Each				Replace boiler pump with a new pump and test.
BOwh11	Cast Iron radiator repair (top of radiator cracks or leaks only)	Each				Repair cast iron radiator (top of radiator cracks or leaks only) then test.
BOwh12	Disconnect Heating Source - Radiator/Baseboard	Each				Disconnect and cap off radiator or baseboard that is outside of the thermal envelope of the home. Boiler distribution line must be capped inside of the heated space of the home then test the system.
BOwh13	Drain and Fill Entire System of Boiler	Each				Drain and fill the entire boiler system and verify proper operation, then test.
BOwh14	DT2 Valve Installation	Each				Install new DT-2 Drain-O-Tank Air Charger on the expansion tank.
BOwh15	Expansion Tank - Diaphragm Type - Replacement	Each				Install new diaphragm type expansion tank (Extrol or similar).
BOwh16	Expansion Tank - Drained	Each				Drain the expansion tank so system works properly.
BOwh17	Expansion Tank Shutoff Valve - Repair	Each				Repair the existing expansion tank shutoff valve so it works properly.
BOwh18	Expansion Tank Shutoff Valve - Replacement	Each				Install a new ball valve shutoff valve to the expansion tank.
BOwh19	Expansion Tank - Standard Type - Replacement	Each				Replace existing expansion tank with new tank, must have DT-2 Drain-O-Tank Air Charger on the tank.
BOwh20	Pipe Wrap Insulation Installed on Boiler Pipes	Lin. Ft.				Install boiler pipe wrap insulation onto boiler pipes.
BOwh21	Purge/Flush Leaking Valve on Baseboard Zones - Repair	Each				Repair the leaking purge/flush valve on the baseboard zones.
BOwh22	Purge/Flush Leaking Valve on Baseboard Zones - Replace	Each				Replace the leaking purge/flush valve on the baseboard zones.
BOwh23	Spiro Vent Installation	Each				Install new spiro vent in the boiler system.
BOwh24	Radiator - Cast Iron - Replacement	Each				Replace cast iron radiator with like cast iron radiator.
BOwh25	Radiators - Bleed	Each				Bleed the radiators throughout the house to verify proper heat out of each one.
BOwh26	Radiator - Shut Off Valve - Repair	Each				Repair the shutoff valve on the radiator to work properly.

BOwh27	Radiator - Shut Off Valve - Replacement	Each			Replace the shutoff valve on the radiator.
BOwh28	Valve Handle With Out Handle - Handle Replacement	Each			Replace the broken/missing handle on any water valve.
BOwh29	Boiler Water Inlet Valve - Replacement	Each			Replace the water inlet valve with new ball valve.
BOwh30	Boiler Water Line Leak - Repair	Each			Repair leaking water pipe on the boiler system then test.

<b>CT. Clean and Tune</b>					<b>Description</b>
CT1	Gas Boiler Clean and Tune	Each			Clean and tune the gas boiler per instructions on "Gas Boiler Clean and Tune Form".
CT2	Gas Furnace Clean and Tune	Each			Clean and tune the gas furnace per instructions on the "Gas Furnace Clean and Tune Form".
CT3	HRV/ERV Clean and Tune	Each			Clean and tune the heat recovery ventilator or energy recovery ventilator so operating at manufacturers specifications. Includes changing filter(s) or cleaning washable filter(s).
CT4	Oil Boiler Clean and Tune	Each			Clean and tune the oil boiler per instructions on "Oil Boiler Clean and Tune Form".
CT5	Oil Furnace Clean and Tune	Each			Clean and tune the oil furnace per instructions on "Oil Furnace Clean and Tune Form".
CT7	Space Heater Clean and Tune	Each			Clean and tune the gas furnace per instructions on the "Gas Furnace Clean and Tune Form".
CT8	Stove Top Burners Clean and Tune	Each			Clean and tune the gas stove top burners so it is operating at less than 50 PPM.
CT9	Oven Clean and Tune	Each			Clean and tune the gas oven so it is operating at less then 100 PPM.

<b>CO. Controls</b>					<b>Description</b>
CO1	Programmable Thermostat Replacement	Each			Replace existing thermostat with programmable thermostat. Ensure there is proper wiring for all mechanical systems to work correctly. "Fan on" must function independently from call for heat. Educate the client on how to use the programmable thermostat and leave client with the owner's manual.
CO2	Standard Thermostat Replacement	Each			Replace existing thermostat with non-programmable thermostat. Ensure there is proper wiring for all mechanical systems to work correctly. Educate the client on how to use the thermostat and leave client with the owner's manual.
CO3	Thermostat Moved to New Location	Each			Relocate thermostat to a new location that will take an accurate reading.
CO4	Thermostat Wiring Repair or Replacement	Each			Rewire thermostat so it functions properly with the heating/cooling systems.
CO5	Visually Impaired Non-Programmable Thermostat - Replacement	Each			Replace thermostat with Easy-To-See thermostat. Educate the client on how to use the thermostat and leave the client with the owner's manual.
CO6	Zone Valve Replacement - Boiler	Each			Replace zone valve on boiler system so it functions properly.
CO7	Zone Valve Replacement - Furnace	Each			Replace zone valve on furnace system so it functions properly.
CO8	Zone Valve Repair - Boiler	Each			Repair zone valve on boiler system so it functions properly.
CO9	Zone Valve Repair - Furnace	Each			Repair zone valve on furnace system so it functions properly.

<b>EL. Electrical</b>					<b>Description</b>
EL1	Boiler Emergency Switch Installation	Each			Install a new boiler emergency switch per code, then test.
EL2	Furnace Emergency Switch Installation	Each			Install a new furnace emergency switch per code, then test.
EL3	Hot Surface Igniter Replacement	Each			Replace the hot surface igniter with new, then test.
EL4	Transformer Replaced	Each			Replace transformer on heating system so it functions properly.
EL5	Water Heater GFCI Outlet Wiring	Each			Wire power vented water heater to a GFCI outlet. Use licensed electrician.

<b>FU. Furnace</b>					<b>Description</b>
<b>FU. General</b>					<b>Description</b>
F1	Heat Exchanger Checked for Cracks	Each			Confirm whether the heat exchanger has any cracks and document. Perform this test before any other work. If the heat exchanger is cracked stop all work and contact DCCDA
F2	Condensate Line Replacement	Each			Replace the condensate line with new braided hose.
F3	Condensate Pump Installation	Each			Install a new condensate pump with braided condensate line(s) and verify proper operation. Mechanically secure.
F4	Control Board Replacement	Each			Replace existing control board on heating system with new control board for specific unit.
F5	Flame Sensing Rod - Clean or Replace	Each			Clean or replace the flame sensing rod on the heating system and verify it is properly sensing the flame.
F6	Inducer Motor Replacement	Each			Replace the inducer motor with unit for specific furnace.
F7	Pressure Switch Replacement	Each			Replace the pressure switch on the furnace with new pressure switch for specific unit.

<b>FUah. Air Handling</b>					<b>Description</b>
Fah1	16"x25"x1" Filter Boot Installation	Each			Install a new 16"x25"x1" filter boot with cover on to the existing return drop.
Fah2	16"x25"x1" Filter Boot and Return Drop Installation	Each			Install a new 16"x25"x1" filter boot with cover and new radiused return drop from the main return trunk line.
Fah3	Blower Motor - EC- Motor Upgrade	Each			Upgrade existing blower motor to an Electronically Commutated Motor (ECM), verify proper operation.
Fah4	Blower Motor Replacement - Standard	Each			Replace existing blower motor with similar motor of original equipment and verify proper operation.
Fah5	Disconnect Heating Source - Furnace Ductwork	Each			Disconnect and cap off ductwork that is outside of the thermal envelope of the home.
Fah6	Filter Cover Installation	Each			Install new filter cover that seals tightly around the furnace filter.
Fah7	Filter 1" Standard - Install	Each			Install new 1" Merv 6 or Merv 8 furnace filter.
Fah8	Filter 1" Standard - Leave on site	Each			Leave 1" Merv 6 or 8 filters on site for client - cost per filter
Fah9	Filter 4" Pleated - Install	Each			Install a 4" Merv 6 or Merv 8 furnace filter.

Fah10	Filter 4" Pleated - Leave on site	Each			Leave 4" Merv 6 or 8 filters on site for client - cost per filter
Fah11	Filter Rack Changed to 1" Filter	Each			Install a slot for a 1" furnace filter with cover to fit tightly in the return boot.
Fah12	Humidifier Removal	Each			Remove the existing humidifier on the furnace, disconnect all wiring and plumbing, and patch sheet metal holes.
Fah13	Register/Grill Replacement - Return or Supply	Each			Replace return/supply grill with non-restrictive grill to match the décor in the home.
Fah14	Return Drop Grill Sealed	Each			Remove return grill from the return drop, patch with sheet metal, and seal with duct mastic.

<b>GH. Gas Handling</b>					Description
GH1	Boiler Gas Control Valve Replacement	Each			Replace the boiler gas control valve with new gas control valve designed for the boiler and verify proper operation.
GH2	Furnace Gas Control Valve Replacement	Each			Replace the furnace gas control valve with new gas control valve designed for the furnace and verify proper operation.
GH3	Water Heater Gas Control Valve Replacement	Each			Replace the water heater gas control valve with new gas control valve designed for the water heater and verify proper operation.
GH4	Cast Iron Port Burners - Drill Out All Ports	Each			Drill out and vacuum all the ports on all cast iron port burners so they operate like originally intended.
GH5	Cap Off Gas Line	Each			Cap off gas line that is not in use with permanent cap, verify no gas leaks.
GH6	Dryer Gas Line Replacement	Each			Replace clothes dryer gas line to code.
GH8	Gas Leak Repair	Each			Repair gas leak on the gas piping and verify no leaks with soap bubble solution.
GH9	Gas Line Drip Leg	Each			Install a drip leg on to the specified gas line per code.
GH10	Gas Shut Off Valve Installation	Each			Install new gas shutoff valve on specified gas line per code.
GH11	Thermocouple Replacement	Each			Replace thermocouple with new thermocouple.
GH12	Pressure Regulator Replacement	Each			Replace the pressure regulator on the specified gas line per code.
GH13	Re-Pipe Gas Line	Lin. Ft.			Re-pipe specified gas line per code.
GH14	Secure Loose Gas Line	Each			Secure specified loose gas line per code.

<b>TE. Testing</b>					Description
TE1	Heat Rise Test	Each			Test the furnace heat rise to verify it is within the manufacture data plate. Make recommendation if action steps need to be taken
TE2	Gas Pressure Test	Each			Test appliance gas pressure and tune to manufacturer's specifications and for greatest efficiency
TE3	Test for Gas Leaks	Each			Test all accessible gas piping for leaks
TE3	Static Pressure Test	Each			Perform a static pressure test of furnace to verify it is within the manufacture data plate. Make recommendation if action steps need to be taken.
TE4	Combustion Air Zonal Test (CAZ)	Each			Perform CAZ depressurization testing per Building Performance Institute (BPI) 1200 standards. Record results on mechanical testing form.
TE5	Combustion Analysis	Each			Test the flue gas for temp, O2, CO2, CO, CO-AF, and efficiency

<b>VV. Venting/Ventilation</b>					Description
V1	Chimney Cap	Each			Install a chimney cap on the chimney liner, per code.
V2	Chimney Clean Out Sealed	Each			Seal the chimney clean out door.
V3	Chimney Holes Sealed	Each			Seal all holes in the chimney with the proper mortar/cement.
V4	Chimney Liner and Drip Tee - Cleaned Out	Each			Clean out the chimney liner and drip tee so it is clear and free of restrictions.
V5	Combustion Air - New 6" Insulflex	Each			Install new 6" insulated ducting for combustion air and route for drop with J-trap terminating 18" above the floor.
V6	Combustion Air - New Hood	Each			Install new intake hood for existing combustion air.
V7	Combustion Air - New Hood and 4" Insulflex	Each			Install completely new 4" combustion air including exterior intake hood, insulated ducting with J-trap terminating 18" above the floor.
V8	Combustion Air - New Hood and 6" Insulflex	Each			Install completely new 6" combustion air including exterior intake hood, insulated ducting with J-trap terminating 18" above the floor.
V9	Combustion Air Remove from Return	Each			Remove existing combustion air duct from the return, patch hole, re-route ducting to drop with J-trap terminating 18" above the floor.
V10	Combustion Air J-Trap	Each			Install J-trap onto existing combustion air terminating 18" above the floor.
V11	Dryer Vent - Ducting and Hood Replacement	Each			Replace existing clothes dryer venting with new 4" rigid ducting, supported at a maximum of 4' intervals, and insulate at least 3' of duct from exit point and replace exterior hood.
V12	Dryer Vent - Ducting Replacement	Each			Replace existing clothes dryer venting with new 4" rigid ducting, supporting at a maximum of 4' intervals, and insulate at least 3' of duct from exit point.
V13	Dryer Vent - Hood Replacement Only	Each			Replace clothes dryer exterior hood.
V14	Dryer Vent - Seal Seams and Insulate Duct	Each			Seal all the seams on the metal dryer duct with metal tape and insulate the last 3' of the duct from exit point.
V15	Energy Recovery Ventilator (ERV) New Installation	Each			Install new energy recovery ventilator (ERV) for ASHRAE 62.2, includes new unit, electrical, ducting, necessary connections, and permitting. Use of a licensed electrician to perform wiring as needed per code.
V16	Energy Recovery Ventilator (ERV) Replacement	Each			Replace energy recovery ventilator (ERV) for ASHRAE 62.2, with new unit, electrical, ducting, necessary connections, and permitting. Use of a licensed electrician to perform wiring as needed per code.
V17	Energy Recovery Ventilator (ERV) Repair	Each			Repair energy recovery ventilator (ERV) for ASHRAE 62.2. Use of a licensed electrician to perform wiring as needed per code.
V18	Inline Exhaust Fan - Install New Soler & Palau (Model #TD 100x) or equivalent	Each			Install a new Soler & Palau (Model #TD 100x) or equivalent inline fan for ASHRAE 62.2. Fan must be ENERGY STAR, and rated to 100 CFM on low speed and 130 CFM on high speed. Install 4" metal ducting and cover with 4" insulflex, and exterior 4" dampered roof jack or side vent hood. Readily accessible fan on/off switch and rheostat/variable speed fan control needed to set CFM. Use of a licensed electrician to perform wiring as needed per code.
V19	Inline Exhaust Fan - Install New Soler & Palau (Model #TD 125) or equivalent	Each			Install a new Soler & Palau (Model #TD 125) or equivalent inline fan for ASHRAE 62.2. Fan must be ENERGY STAR, and rated to 149 CFM on low speed and 197 CFM on high speed. Install 5" metal ducting and cover with 5" insulflex, and exterior 5" dampered roof jack or side vent hood. Readily accessible fan on/off switch and rheostat or variable speed fan control needed to set CFM. Use of a licensed electrician to perform wiring as needed per code.

V20	Bath Fan - Install New 50/80/110 CFM Continuous Running Panasonic Whisper Green (Model #FV-05-11 VKS1) or equivalent - Replacing <b>Existing Fan</b>	Each				Replace existing bath fan with a new Continuous Running Panasonic Whisper Green (Model #FV-05-11 VKS1) or equivalent for ASHRAE 62.2. Fan must be ENERGY STAR rated, include variable speed & motion modules, less than one sone, a DC motor, and rated to 50/80/110 CFM. Replace existing fan venting with 6" metal ducting, 6" insulflex over duct, and 6" dampered roof jack or side vent hood. Readily accessible fan on/off switch needed. Use a licensed electrician to perform wiring as needed per code.
V21	Bath Fan - Install New 50/80/110 CFM Continuous Running Panasonic Whisper Green (Model #FV-05-11- VKS1) or equivalent - <b>New Install</b>	Each				Install new bath fan with a new Continuous Running Panasonic Whisper Green (Model #FV-05-11-VKS1) or equivalent for ASHRAE 62.2. Fan must be ENERGY STAR rated, include variable speed & motion modules, less than one sone, a DC motor, and rated to 50/80/110 CFM. Install new fan venting with 6" metal ducting, 6" insulflex over duct, and 6" dampered roof jack or side vent hood. Readily accessible fan on/off switch needed. Use a licensed electrician to perform wiring as needed per code.
V23	Bath Fan - Install New 50/80/110 CFM Continuous Running w/Light Panasonic Whisper Green (Model #FV-05-11-VKL1) or equivalent - <b>New Install</b>	Each				Install new bath fan with a Continuous Running w/Light Panasonic Whisper Green (Model #FV-05-11-VKL1) or equivalent for ASHRAE 62.2. Fan must be ENERGY STAR rated, include variable speed & motion modules, less than one sone, a DC motor, and rated to 50/80/110 CFM. Install new fan venting with 6" metal ducting, 6" insulflex over duct, and 6" dampered roof jack or side vent hood. Readily accessible fan on/off switch needed. Fan light to be on a separate switch from fan. Use a licensed electrician to perform wiring as needed per code.
V24	Bath Fan - Install New 50/80/110 CFM Continuous Running w/Light Panasonic Whisper Green (Model #FV-05-11-VKL1) or equivalent - <b>Replacing Existing Fan</b>	Each				Replace existing bath fan with a Continuous Running w/Light Panasonic Whisper Green (Model #FV-05-11-VKL1) or equivalent for ASHRAE 62.2. Fan must be ENERGY STAR rated, include variable speed & motion modules, less than one sone, a DC motor, and rated to 50/80/110 CFM. Install new fan venting with 6" metal ducting, 6" insulflex over duct, and 6" dampered roof jack or side vent hood. Readily accessible fan on/off switch needed. Fan light to be on separate switch from fan. Use a licensed electrician to perform wiring as needed per code.
V25	Kitchen Exhaust- Flip existing re-circulatory kitchen exhaust fan to vent to the outside	Each				Flip existing re-circulatory kitchen exhaust fan to vent to the outside using existing duct work. .
V26	PVC Venting of Combustion Air for Condensing Furnace	Each				Add PVC combustion air for furnace from the outside to make an existing one pipe furnace a sealed combustion two pipe furnace.
V27	PVC Venting Joint Repair	Each				Repair all loose PVC vent joints.
V28	Shield Combustibles from Vent	Each				Install shielding at combustibles that are too close to vent.
V29	Slope Flue for Better Draft	Each				Repair or re-work existing flue with better slope for improved draft.
V30	Furnace Flue Re-Vent	Each				Re-vent existing furnace with new appropriately sized piping, material, and slope per code. Perform CAZ and spillage tests.

<b>WH. Water Heating</b>						<b>Description</b>
WH1	Atmospherically Vented Replacement - 40 Gallon Water Heater	Each				Install new 40 gallon natural gas atmospherically vented water heater, include venting, pressure relief drop pipe 6" to 18" from the floor, dielectric unions, heat trap within the water heater, and removal/recycling of old equipment. Wiring to be done by licensed electrician.
WH2	Atmospherically Vented Replacement - 50 Gallon Water Heater	Each				Install new 50 gallon natural gas atmospherically vented water heater, include venting, pressure relief drop pipe 6" to 18" from the floor, dielectric unions, heat trap within the water heater, and removal/recycling of old equipment. Wiring to be done by licensed electrician.
WH3	Electric Water Heater Replacement - 40 Gallon Water Heater	Each				Install new 40 gallon electric water heater, include pressure relief drop pipe 6" to 18" from the floor, dielectric unions, heat trap within the water heater, and removal/recycling of old equipment. Wiring to be done by licensed electrician.
WH4	Electric Water Heater Replacement - 50 Gallon Water Heater	Each				Install new 50 gallon electric water heater, include pressure relief drop pipe 6" to 18" from the floor, dielectric unions, heat trap within the water heater, and removal/recycling of old equipment. Wiring to be done by licensed electrician.
WH5	Power Vented Water Heater - 40 Gallon	Each				Install 40 gallon natural gas one pipe with 2" PVC power vented water heater with internal heat trap and low NOx burner in place of existing atmospheric water heater. Unit must be minimum of .67 energy factor. Install pressure relief drop pipe 6" to 18" from the floor, GFCI electrical outlet, dielectric unions, and remove/recycle old unit. Wiring to be completed by licensed electrician. Include secured pipewrap on 6' of hot and 6' of cold waterlines beginning at the top of the tank
WH6	Power Vented Water Heater - 50 Gallon	Each				Install 50 gallon natural gas one pipe with 2" PVC power vented water heater with internal heat trap and low NOx burner in place of existing atmospheric water heater. Unit must be minimum of .67 energy factor. Install pressure relief drop pipe 6" to 18" from the floor, GFCI electrical outlet, dielectric unions, and remove/recycle old unit. Wiring to be completed by licensed electrician. Include secured pipewrap on 6' of hot and 6' of cold waterlines beginning at the top of the tank
WH7	Water Heater - Pressure Relief Valve Replacement	Each				Replace existing relief valve at water heater, use specified pressure rating per manufacturer.
WH8	Water Heater - Relief Drop	Each				Install new water heater pressure relief drop pipe 6" to 18" from the floor.
WH9	Water Inlet Valve Replacement	Each				Replace/install water inlet/shutoff valve to water heater.
WH10	Water Line Leak Repair	Each				Repair water leak on piping to water heater.
WH11	Drain Valve Replacement	Each				Replace existing water heater drain valve with new.
WH12	Flash Door Install/Make	Each				Install new or fabricate a flash door over burner opening at existing water heater.
WH13	Adjust DWH Discharge Temperature	Each				Adjust supply temperature so that discharge targets 120 degrees at nearest faucet.
WH14	Pipe Wrap Installed on Water Pipes	Each				Instal secured pipewrap on 6' of hot and 6' of cold waterlines beginning at the top of the tank.

<b>MI. Miscellaneous</b>						<b>Description</b>
MI1	Smoke Detector Install	Each				Install a lithium battery operated smoke detector per local building and fire code at specified location.
MI2	CO Detector Install	Each				Install a lithium battery operated CO detector per local building and fire code at specified location.
MI3	CO/Smoke Combo Install	Each				Install a lithium battery operated CO/Smoke Combo detector per local building and fire code at specified location.
MI4	Space Heater - Disable or Disconnect Existing	Each				Disable or disconnect existing gas space heater so it cannot be used.
MI5	Mechanical Contractor Labor, Per Person Per Hour	Each				Site-based charge per person per hour for items not on bid list. Must have CDDCA prior approval.
MI6	Electrician Contractor Labor, Per Person Per Hour	Each				Site-base charge per person per hour for items not on the bid list. Must have CDDCA prior approval.

MI7	Plumber Contractor Labor, Per Person Per Hour	Each				Site-base charge per person per hour for items not on the bid list. Must have CDDCA prior approval.
MI8	Trip Charge	Each				Trip charge applies to site-based work orders that are one hour labor or less.

<b>FR. Furnace Replacements</b>						Description
Fr1	96% Furnace w/ECM two stage Natural Gas 30K-49K BTU/HR	Each				Replace existing furnace with 96% furnace w/ECM two stage natural gas 30K-49K BTU/HR according to code and verify correct operation. Included: 2-pipe concentric venting preferred. ACCA/ANSI certified Manual J calculation, modify plenum as needed, sheetmetal manual holder, furnace pad, Merv 6-8 furnace filter, basic cleaning of a-coil and condensate pan, gas reconnect, electrical reconnect with shutoff switch, braided condensate line, secure condensate line, complete "Mechanical Testing Form", setup costs, labor, overhead, permits, removal/recycle of old unit, and complete all manufacturer's warranties. For testing purposes, drill 3/8" threaded hole in PVC vent pipe and install a knurled plastic screw. Use a licensed electrician to perform wiring as needed per code.
Fr2	96% Furnace w/ECM two stage Natural Gas 50K-79K BTU/HR	Each				Replace existing furnace with 96% furnace w/ECM two stage natural gas 50K-79K BTU/HR according to code and verify correct operation. Included: 2-pipe concentric venting preferred. ACCA/ANSI certified Manual J calculation, modify plenum as needed, sheetmetal manual holder, furnace pad, Merv 6-8 furnace filter, basic cleaning of a-coil and condensate pan, gas reconnect, electrical reconnect with shutoff switch, braided condensate line, secure condensate line, complete "Mechanical Testing Form", setup costs, labor, overhead, permits, removal/recycle of old unit, and complete all manufacturer's warranties. For testing purposes, drill 3/8" threaded hole in PVC vent pipe and install a knurled plastic screw. Use a licensed electrician to perform wiring as needed per code.
Fr3	96% Furnace w/ECM two stage Natural Gas 80K-100K BTU/HR	Each				Replace existing furnace with 96% furnace w/ECM two stage natural gas 80K-100K BTU/HR according to code and verify correct operation. Included: 2-pipe concentric venting preferred. ACCA/ANSI certified Manual J calculation, modify plenum as needed, sheetmetal manual holder, furnace pad, Merv 6-8 furnace filter, basic cleaning of a-coil and condensate pan, gas reconnect, electrical reconnect with shutoff switch, braided condensate line, secure condensate line, complete "Mechanical Testing Form", setup costs, labor, overhead, permits, removal/recycle of old unit, and complete all manufacturer's warranties. For testing purposes, drill 3/8" threaded hole in PVC vent pipe and install a knurled plastic screw. Use a licensed electrician to perform wiring as needed per code.
Fr4	96% Furnace w/ECM two stage Propane 30K-49K BTU/HR	Each				Replace existing furnace with 96% furnace w/ECM two stage propane 30K-49K BTU/HR according to code and verify correct operation. Included: 2-pipe concentric venting preferred. ACCA/ANSI certified Manual J calculation, modify plenum as needed, sheetmetal manual holder, furnace pad, Merv 6-8 furnace filter, basic cleaning of a-coil and condensate pan, gas reconnect, electrical reconnect with shutoff switch, braided condensate line, secure condensate line, complete "Mechanical Testing Form", setup costs, labor, overhead, permits, removal/recycle of old unit, and complete all manufacturer's warranties. For testing purposes, drill 3/8" threaded hole in PVC vent pipe and install a knurled plastic screw. Use a licensed electrician to perform wiring as needed per code.
Fr5	96% Furnace w/ECM two stage Propane 50K-79K BTU/HR	Each				Replace existing furnace with 96% furnace w/ECM two stage propane 50K-79K BTU/HR according to code and verify correct operation. Included: 2-pipe concentric venting preferred. ACCA/ANSI certified Manual J calculation, modify plenum as needed, sheetmetal manual holder, furnace pad, Merv 6-8 furnace filter, basic cleaning of a-coil and condensate pan, gas reconnect, electrical reconnect with shutoff switch, braided condensate line, secure condensate line, complete "Mechanical Testing Form", setup costs, labor, overhead, permits, removal/recycle of old unit, and complete all manufacturer's warranties. For testing purposes, drill 3/8" threaded hole in PVC vent pipe and install a knurled plastic screw. Use a licensed electrician to perform wiring as needed per code.
Fr6	96% Furnace w/ECM two stage Propane 80K-100K BTU/HR	Each				Replace existing furnace with 96% furnace w/ECM two stage propane 80K-100K BTU/HR according to code and verify correct operation. Included: 2-pipe concentric venting preferred. ACCA/ANSI certified Manual J calculation, modify plenum as needed, sheetmetal manual holder, furnace pad, Merv 6-8 furnace filter, basic cleaning of a-coil and condensate pan, gas reconnect, electrical reconnect with shutoff switch, braided condensate line, secure condensate line, complete "Mechanical Testing Form", setup costs, labor, overhead, permits, removal/recycle of old unit, and complete all manufacturer's warranties. For testing purposes, drill 3/8" threaded hole in PVC vent pipe and install a knurled plastic screw. Use a licensed electrician to perform wiring as needed per code.

<b>BORE. Boiler Replacements</b>						Description
Br1	80%-84% Boiler Atmospherically Vented Natural Gas 50K-84K BTU/Hr	Each				Replace existing boiler with 80%-84% boiler atmospherically vented natural gas 50K-84K BTU/Hr according to code and verify correct operation. Included: ACCA/ANSI certified Manual J calculations, sheetmetal manual holder, boiler pad, proper flue venting, distribution reconnect, gas reconnect, electrical reconnect with shutoff switch, complete "Mechanical Testing Form", setup costs, permits, labor, overhead, removal/recycle of old unit, and complete all manufacturer's warranties. Use a licensed electrician to perform wiring as needed per code.
Br2	80%-84% Boiler Atmospherically Vented Natural Gas 85K-100K BTU/Hr	Each				Replace existing boiler with 80%-84% boiler atmospherically vented natural gas 85K-100K BTU/Hr according to code and verify correct operation. Included: ACCA/ANSI certified Manual J calculations, sheetmetal manual holder, boiler pad, proper flue venting, distribution reconnect, gas reconnect, electrical reconnect with shutoff switch, complete "Mechanical Testing Form", setup costs, permits, labor, overhead, removal/recycle of old unit, and complete all manufacturer's warranties. Use a licensed electrician to perform wiring as needed per code.
Br3	80%-84% Boiler Atmospherically Vented Natural Gas >100K BTU/Hr	Each				Replace existing boiler with 80%-84% boiler atmospherically vented natural gas >100K BTU/Hr according to code and verify correct operation. Included: ACCA/ANSI certified Manual J calculations, sheetmetal manual holder, boiler pad, proper flue venting, distribution reconnect, gas reconnect, electrical reconnect with shutoff switch, complete "Mechanical Testing Form", setup costs, permits, labor, overhead, removal/recycle of old unit, and complete all manufacturer's warranties. Use a licensed electrician to perform wiring as needed per code.

Br4	>90% Boiler Sealed Combustion Natural Gas 40K-99K BTU/Hr	Each				Replace existing boiler with >90% boiler sealed combustion natural gas 40K-99K BTU/Hr according to code and verify correct operation. Included: ACCA/ANSI certified Manual J calculations, sheetmetal manual holder, boiler pad, proper flue venting, distribution reconnect, gas reconnect, electrical reconnect with shutoff switch, braided condensate line, secure condensate line. For testing purposes, drill 3/8" threaded hole in PVC vent pipe and install a knurled plastic screw. Complete "Mechanical Testing Form", setup costs, permits, labor, overhead, removal/recycle of old unit, and complete all manufacturer's warranties. Use a licensed electrician to perform wiring as needed per code.
Br5	>90% Boiler Sealed Combustion Natural Gas 100K-149K BTU/Hr	Each				Replace existing boiler with >90% boiler sealed combustion natural gas 100K-149K BTU/Hr according to code and verify correct operation. Included: ACCA/ANSI certified Manual J calculations, sheetmetal manual holder, boiler pad, proper flue venting, distribution reconnect, gas reconnect, electrical reconnect with shutoff switch, braided condensate line, secure condensate line. For testing purposes, drill 3/8" threaded hole in PVC vent pipe and install a knurled plastic screw. Complete "Mechanical Testing Form", setup costs, permits, labor, overhead, removal/recycle of old unit, and complete all manufacturer's warranties. Use a licensed electrician to perform wiring as needed per code.
Br6	>90% Boiler Sealed Combustion Natural Gas >150K BTU/Hr	Each				Replace existing boiler with >90% boiler sealed combustion natural gas >150K BTU/Hr according to code and verify correct operation. Included: ACCA/ANSI certified Manual J calculations, sheetmetal manual holder, boiler pad, proper flue venting, distribution reconnect, gas reconnect, electrical reconnect with shutoff switch, braided condensate line, secure condensate line. For testing purposes, drill 3/8" threaded hole in PVC vent pipe and install a knurled plastic screw. Complete "Mechanical Testing Form", setup costs, permits, labor, overhead, removal/recycle of old unit, and complete all manufacturer's warranties. Use a licensed electrician to perform wiring as needed per code.
Br7	Propane Adder	%				Percent of price for increase or decrease of cost if installing propane boiler instead of natural gas. If unclear, propane will be bid case by case.

AD	Additional Measures - Write in any other common measures you expect to encounter:					
	Measure	Units	Bid Labor	Bid Materials	TOTAL PRICE	Description

## Dakota County Community Development Agency (DCCDA)

### Mechanical Contractor Pricing - Mobile Homes - December 1, 2021 - September 30, 2023

Code	Measure Name	Units	Bid Labor	Bid Materials	TOTAL PRICE	Description
<b>MH. Mobile Home - General</b>						
MH1	Condensate Pump Installation - 1 Gallon Size	Each				Install new condensate pump at furnace and route braided condensate line to clothes washer drain or similar and secure with a clamp.
MH2	Exterior Water Heater Room Door Installation	Each				Replace exterior access door to water heater using manufacturer specified type door.
MH3	Furnace Room Walls - Gypsum Board Installation	Each				Isolate furnace room from living space using fire rated gypsum and make room tight against air leakage to living space.
MH4	Furnace Room Walls and Ceiling Sealed	Each				Seal all gaps, holes and cracks between furnace closet and living space at walls and ceiling.
MH5	Water Heater Room Ceiling Repaired	Each				Repair or replace ceiling above water heater room. Includes replacement as needed of all deteriorated framing, ceiling and insulation.
MH6	Water Heater Room Flooring Repair	Each				Install new water heater - Repair or replace floor under water heater. Includes replacement as needed of all deteriorated framing, flooring and insulation.
MH9	Water Heater Room Walls - Gypsum Board Installation	Each				Isolate water heater room from living space using fire rated gypsum and make room tight against air leakage to living space.
MH10	Water Heater Room Walls and Ceiling Sealed	Each				Seal all gaps, holes and cracks between water heater closet and living space at walls and ceiling.

<b>MHac. Mobile Home - Air Conditioning</b>			Bid Labor	Bid Materials	TOTAL PRICE	Description
MHac1	A-Coil Cleaning	Each				Clean the A-Coil so it works and is non-restrictive to the airflow.
MHac2	A-Coil Pan Replacement	Each				Replace the A-Coil pan that is damaged and/or leaking.
MHac3	A-Coil Recharge	Each				Recharge the air conditioning system.
MHac4	A-Coil Replacement	Each				Replace the damaged or broken A-Coil with similar model. Recharge A/C unit. If A/C coil was replaced in the winter contractor will need to go back in the spring to recharge.
MHac5	Central Air Conditioning Coolant - Per Pound	Each				Price per pound to add coolant to the central air conditioning system during a central air conditioning tune-up.
MHac6	Central Air Conditioning Tune-up	Each				Central Air Conditioning Tune-up to include the following: Cleaning of the condenser coil, check coolant level (if needed see price above for up to two pounds), check coolant pressure, check indoor filter, check belt and lube motor (if needed), test all controls, blow out drain lines, perform a visual inspection of the system, and educate the homeowner on proper system operation.
MHac7	Replacement - Central Air Conditioning - 1.5 ton	Each				System must achieve SEER 15 as documented by AHRI. Includes platform, all necessary refrigeration piping, evap coil and condenser, wiring, controls and duct work modification. Assume transition from R-22 to R-410A.
MHac8	Replacement - Central Air Conditioning - 2 ton	Each				System must achieve SEER 15 as documented by AHRI. Includes platform, all necessary refrigeration piping, evap coil and condenser, wiring, controls and duct work modification. Assume transition from R-22 to R-410A.
MHac9	Replacement - Central Air Conditioning - 2.5 ton	Each				System must achieve SEER 15 as documented by AHRI. Includes platform, all necessary refrigeration piping, evap coil and condenser, wiring, controls and duct work modification. Assume transition from R-22 to R-410A.
MHac10	Replacement - Central Air Conditioning - 3 ton	Each				System must achieve SEER 15 as documented by AHRI. Includes platform, all necessary refrigeration piping, evap coil and condenser, wiring, controls and duct work modification. Assume transition from R-22 to R-410A.
MHac11	Maintenance for window unit	Each				Clean filter and comb bent fins

<b>MHct. Mobile Home - Clean &amp; Tune</b>			<b>Bid Labor</b>	<b>Bid Materials</b>	<b>TOTAL PRICE</b>	<b>Description</b>
MHct1	Gas Furnace Clean and Tune	Each				Clean and tune the gas furnace per instructions on the "Gas Furnace Clean and Tune Form".
MHct2	HRV/ERV Clean and Tune	Each				Clean and tune the heat recovery ventilator or energy recovery ventilator so operating at manufacturers specifications. Includes changing filter(s) or cleaning washable filter(s).
MHct3	Space Heater Clean and Tune	Each				Clean and tune the gas furnace per instructions on the "Gas Furnace Clean and Tune Form".
MHct4	Oven Clean and Tune	Each				Clean and tune the gas oven so it is operating at less then 100 PPM.

<b>MHco. Mobile Home - Controls</b>			<b>Bid Labor</b>	<b>Bid Materials</b>	<b>TOTAL PRICE</b>	<b>Description</b>
MHco1	Programmable Thermostat Replacement	Each				Replace existing thermostat with programmable thermostat. Ensure there is proper wiring for all mechanical systems to work correctly. "Fan on" must function independently from call for heat. Educate the client on how to use the programmable thermostat and leave client with the owner's manual.
MHco2	Standard Thermostat Replacement	Each				Replace existing thermostat with non-programmable thermostat. Ensure there is proper wiring for all mechanical systems to work correctly. Educate the client how to use the thermostat and leave client with the owner's manual.
MHco3	Thermostat Moved to New Location	Each				Relocate thermostat to a new location that will take an accurate reading.
MHco4	Thermostat Wiring Repair or Replacement	Each				Rewire thermostat so it functions properly with the heating/cooling systems.
MHco5	Visually Impaired Non-Programmable Thermostat - Replacement	Each				Replace thermostat with Easy-To-See thermostat or equivalent. Educate the client how to use the thermostat and leave the client with the owner's manual.

<b>MHah. Mobile Home - Air Handling</b>			<b>Bid Labor</b>	<b>Bid Materials</b>	<b>TOTAL PRICE</b>	<b>Description</b>
MHah1	AC Crossover Duct - Damper Installation	Each				Install seasonal damper for central AC.
MHah2	AC Crossover Duct - New Installation	Each				Install new crossover for central AC system, assure air tightness and insulate to R-11 or better.
MHah3	AC Crossover Duct - Repair or Replace	Each				Repair or replace crossover for central AC system, assure air tightness and insulate to R-11 or better.
MHah4	Air Distribution System Changed to Central Return	Each				Block and seal all return registers along exterior walls and provide a central return at furnace.
MHah5	Crossover Heat Duct Replaced for Double Wide	Each				Replace the crossover duct In double-wide mobile homes with minimal air leakage and insulate to R-11 or better.
MHah6	Filter Grill Installed in Furnace Access Door	Each				Install pull open filter grill and filter(s) in furnace closet door.
MHah7	Seal Duct Boot	Each				Seal duct boot at floor level to prevent air leakage.
MHah8	Blower Motor Replacement	Each				Replace existing blower motor with equivalent motor similar to the original equipment and verify proper operation.
MHah9	Furnace Ductwork	Each				Disconnect, cap, and seal ductwork that is outside the thermal envelope of the home.
MHah10	Register/Grill Replacement - Return or Supply	Each				Replace return/supply grill with non-restrictive grill to match the décor in the home.

<b>MHel. Mobile Home - Electric</b>			<b>Bid Labor</b>	<b>Bid Materials</b>	<b>TOTAL PRICE</b>	<b>Description</b>
MHel1	Furnace Emergency Switch Installation	Each				Install a new furnace emergency switch per code, then test.
MHel2	Hot Surface Igniter Replacement	Each				Replace the hot surface igniter, then test.
MHel3	IID Replacement	Each				Replace the IID (Intermittent Ignition Device), then test.
MHel4	Transformer Replaced	Each				Replace transformer on heating system, then test.
MHel5	Water Heater GFCI Outlet Wiring	Each				Wire power vented water heater to a GFCI outlet. Use licensed electrician.

<b>MHfu. Mobile Home - Furnace General</b>			<b>Bid Labor</b>	<b>Bid Materials</b>	<b>TOTAL PRICE</b>	<b>Description</b>
MHf1	Heat Exchanger-Check for Cracks	Each				Confirm whether the heat exchanger has any cracks and document. Perform this test before any other work. If the heat exchanger is cracked stop all work and contact DCCDA.
MHf2	Condensate Line Replacement	Each				Replace the condensate line with new braided hose.
MHf3	Control Board Replacement	Each				Replace existing control board on heating system with new control board for specific unit.
MHf4	Fan Limit Control Replacement	Each				Replace the fan limit control on the furnace with control that works within recommended range.
MHf5	Flame Sensing Rod - Clean or Replace	Each				Clean or replace the flame sensing rod on the heating system and verify it is properly sensing the flame.
MHf6	High Limit Switch Replacement	Each				Replace the high limit switch with unit for specific furnace.
MHf7	Pressure Switch Replacement	Each				Replace the pressure switch on the furnace with new pressure switch for specific unit.
MHf8	Furnace Re-vent	Each				Re-vent furnace through roof per manufacturer's specification or mobile home code.
MHf9	Blend-Air Tube - Re-attach	Each				Re-attach existing Blend-Air Tube into the top of the furnace cabinet.
MHf10	Blend Air Ventilation - Install	Each				Install new blend air ventilation for furnace per manufacturer's specification or mobile home code.
MHf11	Blend Air Ventilation - Re-route	Each				Re-route existing blend air ventilation from roof to furnace per manufacturer's specification or mobile home code.

<b>MHgh. Mobile Home - Gas Handling</b>			<b>Bid Labor</b>	<b>Bid Materials</b>	<b>TOTAL PRICE</b>	<b>Description</b>
MHgh1	Gas Leak Repair	Each				Repair gas leak on the gas piping and verify no leaks with soap bubble solution.
MHgh2	Gas Line Drip Leg	Each				Install a drip leg on the specified gas line per code.
MHgh3	Gas Shut Off Valve Installation	Each				Install new gas shutoff valve on specified gas line per code.
MHgh4	Pilot Assembly Replacement	Each				Replace the pilot assembly on the specified unit per code.

MHgh5	Pressure Regulator Replacement	Each				Replace the pressure regulator on the specified gas line per code.
MHgh6	Gas Line - Re-pipe	Lin. Ft.				Re-pipe specified gas line per code.
MHgh7	Gas Line - Re-secure	Each				Re-secure specified loose gas line per code.
MHgh8	Water Heater Gas Control Valve Replacement	Each				Replace the water heater gas control valve with new gas control valve designed for the water heater and verify proper operation.

<b>MHte. Mobile Home - Testing</b>			<b>Bid Labor</b>	<b>Bid Materials</b>	<b>TOTAL PRICE</b>	<b>Description</b>
MHte1	Heat Rise Test	Each				Test the furnace heat rise to verify it is within the manufacture data plate. Make recommendation if action steps need to be taken.
MHte2	Room to Room Pressure Balancing	Each				Perform room to room pressure balancing on all rooms with supply and/or return to ensure they are balanced per State policy specifications.
MHte3	Static Pressure Test	Each				Perform a static pressure test of furnace to verify it is within the manufacture data plate. Make recommendation if action steps need to be taken.
MHte4	Combustion Air Zonal (CAZ) Test	Each				Perform CAZ depressurization testing per State policy specifications. Record results on mechanical testing form.

<b>MHvv. Mobile Home - Venting/Ventilation</b>			<b>Bid Labor</b>	<b>Bid Materials</b>	<b>TOTAL PRICE</b>	<b>Description</b>
MHv1	Bath Fan - Install New 4" Roof Jack	Each				Install a new 4" roof jack and hook up bath fan ducting securely - ASHRAE 62.2.
MHv2	Bath Fan - Install New 50 CFM Panasonic Whisper Green (Model #FV-05K3) or equivalent - <b>Replacing Existing Fan</b>	Each				Replace existing bath fan with a new Panasonic Whisper Green (Model #FV-05K3) or equivalent for ASHRAE 62.2. Fan must be ENERGY STAR rated, have less than one sone, a DC motor, and rated to 50 CFM. Replace existing fan venting with 4" or 6" metal ducting, 4" or 6" insulflex over duct, and 4" or 6" dampered roof jack or side vent hood. Readily accessible fan on/off switch needed. Use a licensed electrician to perform wiring as needed per code.
MHv3	Bath Fan - Install New 50 CFM Panasonic Whisper Green (Model #FV-05K3) or equivalent - <b>New Install</b>	Each				Install new bath fan with a new Panasonic Whisper Green (Model #FV-05K3) or equivalent for ASHRAE 62.2. Fan must be ENERGY STAR rated, have less than one sone, a DC motor, and rated to 50 CFM. Install new fan venting with 4" or 6" metal ducting, 4" or 6" insulflex over duct, and 4" or 6" dampered roof jack or side vent hood. Readily accessible fan on/off switch needed. Use a licensed electrician to perform wiring as needed per code.
MHv4	Bath Fan - Install New 50/80/110 CFM Continuous Running Panasonic Whisper Green (Model #FV-05-11 VKS1) or equivalent - <b>Replacing Existing Fan</b>	Each				Replace existing bath fan with a new Continuous Running Panasonic Whisper Green (Model #FV-05-11 VKS1) or equivalent for ASHRAE 62.2. Fan must be ENERGY STAR rated, include variable speed & motion modules, less than one sone, a DC motor, and rated to 50/80/110 CFM. Replace existing fan venting with 6" metal ducting, 6" insulflex over duct, and 6" dampered roof jack or side vent hood. Readily accessible fan on/off switch needed. Use a licensed electrician to perform wiring as needed per code.
MHv5	Bath Fan - Install New 50/80/110 CFM Continuous Running Panasonic Whisper Green (Model #FV-05-11- VKS1) or equivalent - <b>New Install</b>	Each				Install new bath fan with a new Continuous Running Panasonic Whisper Green (Model #FV-05-11-VKS1) or equivalent for ASHRAE 62.2. Fan must be ENERGY STAR rated, include variable speed & motion modules, less than one sone, a DC motor, and rated to 50/80/110 CFM. Install new fan venting with 6" metal ducting, 6" insulflex over duct, and 6" dampered roof jack or side vent hood. Readily accessible fan on/off switch needed. Use a licensed electrician to perform wiring as needed per code.
MHv6	Bath Fan - Install New 50/80/110 CFM Continuous Running w/Light Panasonic Whisper Green (Model #FV-05-11-VKL1) or equivalent - <b>New Install</b>	Each				Install new bath fan with a Continuous Running w/Light Panasonic Whisper Green (Model #FV-05-11-VKL1) or equivalent for ASHRAE 62.2. Fan must be ENERGY STAR rated, include variable speed & motion modules, less than one sone, a DC motor, and rated to 50/80/110 CFM. Install new fan venting with 6" metal ducting, 6" insulflex over duct, and 6" dampered roof jack or side vent hood. Readily accessible fan on/off switch needed. Fan light to be on a separate switch from fan. Use a licensed electrician to perform wiring as needed per code.
MHv7	Bath Fan - Install New 50/80/110 CFM Continuous Running w/Light Panasonic Whisper Green (Model #FV-05-11-VKL1) or equivalent - <b>Replacing Existing Fan</b>	Each				Replace existing bath fan with a Continuous Running w/Light Panasonic Whisper Green (Model #FV-05-11 VKL1) or equivalent for ASHRAE 62.2. Fan must be ENERGY STAR rated, include variable speed & motion modules, less than one sone, a DC motor, and rated to 50/80/110 CFM. Install new fan venting with 6" metal ducting, 6" insulflex over duct, and 6" dampered roof jack or side vent hood. Readily accessible fan on/off switch needed. Fan light to be on separate switch from fan. Use a licensed electrician to perform wiring as needed per code.
MHv8	Bath Fan - <b>Re-vent Existing Fan</b>	Each				Re-vent existing bath fan with 4" rigid duct, and 4" R-8 minimum insulflex.
MHv9	Bath Fan- Install new 4" Roof Jack and revent existing fan	Each				Install a new 4" roof jack and revent existing fan with 4" rigid duct and 4" R-8 minimum insulflex to existing bath fan per ASHRAE 62.2.
MHv10	Chimney Cap - New Installation	Each				Install chimney cap on the chimney liner, per code.
MHv11	Dryer Vent - Ducting and Hood Replacement	Each				Replace existing dryer venting with new 4" rigid ducting, supported at a maximum of 4' intervals, and insulate all venting and replace exterior hood.
MHv12	Dryer Vent - Ducting Replacement	Each				Replace existing dryer venting with new 4" rigid ducting, supporting at a maximum of 4' intervals, and insulate all venting.
MHv13	Dryer Vent - Hood Replacement Only	Each				Replace dryer exterior hood.
MHv14	Dryer Vent - Ducting and Hood New Installation	Each				Install new dryer vent to outside using new 4" rigid duct, supporting at a maximum of 4' intervals, and insulate all venting using the shortest run with minimal elbows and replace exterior hood.
MHv15	Dryer Vent - Seal Seams and Insulate Duct	Each				Seal all the seams on the metal dryer duct with metal tape and insulate all venting.
MHv16	Inline Exhaust Fan - Install New Soler & Palau (Model #TD 100x) or equivalent	Each				Install a new Soler & Palau (Model #TD 100x) or equivalent inline fan for ASHRAE 62.2. Fan must be ENERGY STAR, and rated to 100 CFM on low speed and 130 CFM on high speed. Install 4" metal ducting and cover with 4" insulflex, and exterior 4" dampered roof jack or side vent hood. Readily accessible fan on/off switch and rheostat/variable speed fan control needed to set CFM. Use of a licensed electrician to perform wiring as needed per code.
MHv17	Inline Exhaust Fan - Install New Soler & Palau (Model #TD 125) or equivalent	Each				Install a new Soler & Palau (Model #TD 125) or equivalent inline fan for ASHRAE 62.2. Fan must be ENERGY STAR, and rated to 149 CFM on low speed and 197 CFM on high speed. Install 5" metal ducting and cover with 5" insulflex, and exterior 5" dampered roof jack or side vent hood. Readily accessible fan on/off switch and rheostat or variable speed fan control needed to set CFM. Use of a licensed electrician to perform wiring as needed per code.
MHv18	Kitchen Exhaust- Flip existing re-circulatory kitchen exhaust fan to vent to the outside	Each				Flip existing re-circulatory kitchen exhaust fan to vent to the outside using existing duct work. .

MHv19	Wall Mount Kitchen Exhaust Fan - Replacement	Each				Replace existing wall mounted kitchen exhaust fan with ASHRAE 62.2 mobile home approved.
MHv20	Wall Mount Kitchen Exhaust Fan - New Installation	Each				Install new wall mounted kitchen exhaust fan with ASHRAE 62.2 mobile home approved.

<b>MHwh. Mobile Home - Water Heating</b>						<b>Description</b>
MHwh1	Mobile Home Direct Vent Replacement - 30 Gallon Water Heater	Each				Install new 30 gallon natural gas direct vent mobile home rated water heater with internal heat trap. Install chimney venting. Install pressure relief drop pipe and combustion air below the belly, seal around the pipes where it penetrates through the belly. Install a water heater drain pan. Drain pan needs to be no greater than 1 1/2" deep, have a minimum length and width of at least 2" greater than the water heater dimensions and must be piped to an adequate drain that goes below the belly, seal penetrations in drain pan with silicone. The pan must not restrict combustion air flow. Secure water heater using two brackets secured to the floor, and one at the top secured to the wall. Install dielectric unions and remove/recycle old equipment. Wiring to be completed by licensed electrician.
MHwh2	Mobile Home Direct Vent Replacement - 40 Gallon Water Heater	Each				Install new 40 gallon natural gas direct vent mobile home rated water heater with internal heat trap. Install chimney venting. Install pressure relief drop pipe and combustion air below the belly, seal around the pipes where it penetrates through the belly. Install a water heater drain pan. Drain pan needs to be no greater than 1 1/2" deep, have a minimum length and width of at least 2" greater than the water heater dimensions and must be piped to an adequate drain that goes below the belly, seal penetrations in drain pan with silicone. The pan must not restrict combustion air flow. Secure water heater using two brackets secured to the floor, and one at the top secured to the wall. Install dielectric unions and remove/recycle old equipment. Wiring to be completed by licensed electrician.
MHwh3	Mobile Home Direct Vent Replacement - 50 Gallon Water Heater	Each				Install new 50 gallon natural gas direct vent mobile home rated water heater with internal heat trap. Install chimney venting. Install pressure relief drop pipe and combustion air below the belly, seal around the pipes where it penetrates through the belly. Install a water heater drain pan. Drain pan needs to be no greater than 1 1/2" deep, have a minimum length and width of at least 2" greater than the water heater dimensions and must be piped to an adequate drain that goes below the belly, seal penetrations in drain pan with silicone. The pan must not restrict combustion air flow. Secure water heater using two brackets secured to the floor, and one at the top secured to the wall. Install dielectric unions and remove/recycle old equipment. Wiring to be completed by licensed electrician.
MHwh4	Mobile Home Electric Replacement - 20 Gallon Water Heater	Each				Install new 20 gallon electric mobile home rated water heater with internal heat trap. Install pressure relief drop pipe below the belly, seal around the pipe where it penetrates through the belly. Install a water heater drain pan. Drain pan needs to be no greater than 1 1/2" deep, have a minimum length and width of at least 2" greater than the water heater dimensions and must be piped to an adequate drain that goes below the belly, seal penetrations in drain pan with silicone. Secure water heater using two brackets secured to the floor, and one at the top secured to the wall. Install dielectric unions and remove/recycle old equipment. Wiring to be completed by licensed electrician.
MHwh5	Mobile Home Electric Replacement - 30 Gallon Water Heater	Each				Install new 30 gallon electric mobile home rated water heater with internal heat trap. Install pressure relief drop pipe below the belly, seal around the pipe where it penetrates through the belly. Install a water heater drain pan. Drain pan needs to be no greater than 1 1/2" deep, have a minimum length and width of at least 2" greater than the water heater dimensions and must be piped to an adequate drain that goes below the belly, seal penetrations in drain pan with silicone. Secure water heater using two brackets secured to the floor, and one at the top secured to the wall. Install dielectric unions and remove/recycle old equipment. Wiring to be completed by licensed electrician.
MHwh6	Mobile Home Electric Replacement - 40 Gallon Water Heater	Each				Install new 40 gallon electric mobile home rated water heater with internal heat trap. Install pressure relief drop pipe below the belly, seal around the pipe where it penetrates through the belly. Install a water heater drain pan. Drain pan needs to be no greater than 1 1/2" deep, have a minimum length and width of at least 2" greater than the water heater dimensions and must be piped to an adequate drain that goes below the belly, seal penetrations in drain pan with silicone. Secure water heater using two brackets secured to the floor, and one at the top secured to the wall. Install dielectric unions and remove/recycle old equipment. Wiring to be completed by licensed electrician.
MHwh7	Mobile Home Electric Replacement - 50 Gallon Water Heater	Each				Install new 50 gallon electric mobile home rated water heater with internal heat trap. Install pressure relief drop pipe below the belly, seal around the pipe where it penetrates through the belly. Install a water heater drain pan. Drain pan needs to be no greater than 1 1/2" deep, have a minimum length and width of at least 2" greater than the water heater dimensions and must be piped to an adequate drain that goes below the belly, seal penetrations in drain pan with silicone. Secure water heater using two brackets secured to the floor, and one at the top secured to the wall. Install dielectric unions and remove/recycle old equipment. Wiring to be completed by licensed electrician.
MHwh8	Water Inlet Shutoff Valve Replacement	Each				Replace water inlet shutoff valve to water heater.
MHwh9	Water Line Leak Repair	Each				Repair water leak on piping to water heater.
MHwh10	Pipe Wrap Insulation Install	Lin. Ft.				Install 6' of pipe wrap on hot water pipes and 6' of pipe wrap on cold water pipes with a 3" clearance from flue.
MHwh11	Combustion Air for Atmospheric Water Heater - Install	Each				Install new combustion air for water heater per manufacturer's specifications or mobile home code.
MHwh12	Combustion Air for Direct Vented Water Heater - Install	Each				Install new combustion air for water heater through belly and seal pipe penetration per manufacturer's specification or mobile home code.
MHwh13	Water Heater Re-vent	Each				Re-vent water heater through roof per manufacturer's specification or mobile home code..
MHwh14	Water Heater Chimney Vent Extension - Install	Each				Install water heater chimney vent extension.
MHwh15	Water Heater Relief Drop - Install	Each				Install water heater relief drop pipe and extend through floor cavity. Any penetration through floor or belly needs to be sealed against air leakage from outside.
MHwh16	Drain Leak - Repair	Hourly				Locate drain leak in belly and repair as needed, test for leaks when completed.
MHwh17	Water Leak - Repair	Hourly				Locate source of water leak in belly and repair as needed, test for leaks when completed.

<b>MHmi. Mobile Home - Miscellaneous</b>	<b>Bid Labor</b>	<b>Bid Materials</b>	<b>TOTAL PRICE</b>	<b>Description</b>
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