CT WAP	QUALITY CONTROL	QCI FINAL INSPECTION

Agency:

_____

DATE: _____   OUTSIDE TEMP: ____

JOB NO. _____

JOB NAME: _____

ADDRESS: _____

PHONE: _____

CITY: _____

CONTRACTORS: _____

CONDUCT PRE-INSPECTION DESK REVIEW

		PASS	FAIL	NA
☐ Confirm the Inspection Appointment. Date: Time:		☐	☐	☐
☐ Perform Desk Review on Client File.		☐	☐	☐
☐ Review Energy Audit Input Document for completeness and assigned measures.		☐	☐	☐
☐ Review the Work Order and SIR Report.		☐	☐	☐
☐ Do the prescribed measures match the information in the Audit Input Document?		☐	☐	☐
☐ Review diagnostic test results with Interim and Final readings on the Work Order.		☐	☐	☐

PERFORM IN-PROGRESS/FINAL CLIENT INTERVIEW

PASS   FAIL   NA

Note: Much of this will be repeated for In-Progress and Final

☐ Conduct announced or unannounced inspection on about 1/3 or 33% of total jobs

☐ Perform random sampling of Job Site documents for In-Progress Inspection (WO, MSDS, Certificates)

☐ Specifically ask about the professionalism of the workers.

☐ Determine homeowners final work satisfaction level: ☐   ☐   ☐

				PASS	FAIL	NA
Excellent ☐ Good ☐ Fair ☐ Poor ☐ How would you rate the professionalism of the contractor and his work?				☐	☐	☐
Excellent ☐ Good ☐ Fair ☐ Poor ☐ What was your comfort level with the Contractor?				☐	☐	☐
Excellent ☐ Good ☐ Fair ☐ Poor ☐ Did they schedule the work appropriately, time wise?				☐	☐	☐
Excellent ☐ Good ☐ Fair ☐ Poor ☐ Did they clean up after themselves every day?				☐	☐	☐

Record Client's answers and note for Client File.   ☐   ☐   ☐

☐ Inform Client about your QC inspection process and that you will share your results   ☐   ☐   ☐

IN-PROGRESS CONTRACTOR WORK ORDER REVIEW

	PASS	FAIL	NA
☐ Observe worker's installation skills, safety and professionalism.	☐	☐	☐
☐ Identify measures that would have required fall protection.	☐	☐	☐
☐ Identify appropriate respirator requirements for measures in Work Order.	☐	☐	☐
☐ Identify appropriate PPE in relation to work in confined spaces.	☐	☐	☐
☐ Identify appropriate PPE in relation to the measures in Work Order.	☐	☐	☐
☐ Identify any potential Jobsite Hazards or Health & Safety Hazards.	☐	☐	☐
☐ Random sample of job site documents: PMI, MSDS, and Worker Certifications.	☐	☐	☐
☐ Verify the installed measures listed on the work order	☐	☐	☐
☐ Review the work in-progress in relation to the work plan	☐	☐	☐
☐ Discuss whether there is a need to run additional diagnostic tests	☐	☐	☐
☐ Check whether there are any missed opportunities in the audit or work plan	☐	☐	☐
☐ Note any discrepancies with the audit	☐	☐	☐
☐ Note any damage to the house that may have been from the contractor	☐	☐	☐
☐ Document any non-conformances issues on the home or work order from audit so far	☐	☐	☐

☐ *Review Findings with homeowner, Discuss Call Backs - Return To Office - Review the Invoices*

PERFORM EXTERIOR AND INTERIOR INSPECTION IN-PROGRESS/FINAL

	PASS	FAIL	NA
☐ Perform exterior inspection/walk around.	☐	☐	☐
☐ Activate Gas Sniffer and Test Outside Meter/Lines While Outside	☐	☐	☐
☐ Activate Personal CO Monitor before entering house.	☐	☐	☐
☐ Test outdoor ambient CO level. **(35 PPM Max.) Document results:** ____	☐	☐	☐
☐ Perform interior inspection/walk around.	☐	☐	☐
☐ Test indoor ambient CO level. **(35 PPM Max.) Document results:** ____	☐	☐	☐
☐ Activate Gas Sniffer Outside and Test Inside Appliances/Lines	☐	☐	☐
☐ Utilize soap or other leak detection liquid/spray to verify leakage areas.	☐	☐	☐

WH & FURNACE COMBUSTION SAFETY ACTION LEVELS

|	
0 - 25 PPM = PASS PROCEED	100 - 400 OR FAIL STOP WORK FIX
26 - 100 & DRAFT OK = PASS SUGGEST GET FIXED	> 400 DRAFT OK = STOP WORK
26 - 100 DRAFT FAIL - SERVICE CALL	> 400 DRAFT FAIL = EMERGENCY SHUT DOWN

100 - 300 AS MEASURED MUST INSTALL CO DETECTOR AND RECOMMEND SERVICE

GENERAL HEALTH & SAFETY	OVENS 200 PPM as measured 800 PPM Air Free	PASS	FAIL	NA

☐ Observe interior of gas oven and boiler for items or excessive debris.   ☐ ☐ ☐

☐ Turn Exhaust Fan On. Observe condition of burners and flame on gas stove range top.   ☐ ☐ ☐

☐ Fire stove top observe condition of burners and flame - then shut off   ☐ ☐ ☐

☐ Conduct CO test for oven. **Steady State 2-5 Min. Record Results:**   ☐ ☐ ☐

☐ Measure the Temperature of the Hot Water at the Faucet **(120 Max)**   ☐ ☐ ☐

(Kitchen/bathroom/laundry). **Record Results.**   ☐ ☐ ☐

☐ Suggest owner to set Water Temperature to 120 degrees (Energy Saver)

DIAGNOSTICS AND HEALTH & SAFETY TESTING

	PASS	FAIL	NA

BLOWER DOOR DEPRESSURIZATION TEST

Pf/Pf @50

☐ Set combustion appliances to pilot or disable them.   ☐ ☐ ☐

☐ Prepare home like winter - open interior doors.   ☐ ☐ ☐

☐ Disable exhaust fans, remove 1 ceiling tile

A   B

☐ Set up the blower door frame/shroud/fan.   ☐ ☐ ☐

☐ Set manometer Pr/Flow @50   ☐ ☐ ☐

☐ Measure Baseline Pressure - then Zero Adjust   ☐ ☐ ☐

☐ **Measure pressure at CFM 50**   **Document Results:**   ☐ ☐ ☐

☐ Conduct walk through in home during test to identify any potential problem areas.   ☐ ☐ ☐
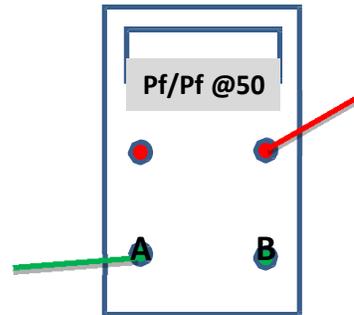
PRESSURE PAN TEST	Pressure Pan	PASS	FAIL	NA

Pr/Pr

☐ Identify Supply/Return ducts contained in unconditioned areas.   ☐ ☐ ☐

☐ Disable furnace and remove filter, tape filter slot.

☐ Open grills, registers, and dampers   ☐ ☐ ☐

☐ Depressurize Home to - 50 Pa - Verify Manometer Setup   A   B

☐ Measure registers/grills in unconditioned areas. Record Results   ☐ ☐ ☐

☐ Identify needed corrective actions/measures.   ☐ ☐ ☐
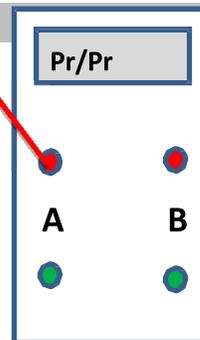
No more than half of the readings shall be higher than 4.0 and   No

Pressure reading shall be greater than 8.0   **To Zone**

Pr/Pr Adj

ZONE TESTING	(WRTO 0-5 GOOD)	PASS	FAIL	NA

☐ Identify any unconditioned zones in home.   ☐ ☐ ☐

☐ Verify manometer setup for zone testing. Adjust Baseline   **WRTO**   ☐ ☐ ☐

☐ Depressurize Home to - 50 Pa - Verify Manometer Setup   A   B

☐ Measure zone pressure and compare results to QCI Standards Table.   ☐ ☐ ☐

☐ Identify needed corrective actions/measures.   ☐ ☐ ☐
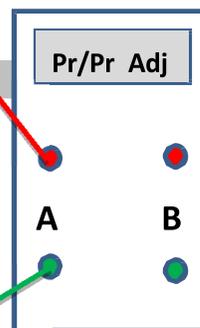
ATTIC   **CRAWL**   **GARAGE**

0 - 5	45 - 50

Zone Max - Attic, Knee Walls, Crawl Space, Garages, Basement Walls   **WRTO W R T I**

(Comments, Details)

CAZ TEST - (Check Furnace Filter and Dryer Lint Screen)	CAZ Zone	PASS	FAIL	NA
☐ Identify CAZ. Disable Appliances		☐	☐	☐
☐ Prepare home setup for winter (natural) conditions.		☐	☐	☐
☐ Verify manometer setup for CAZ testing. **Pr/Pr**		☐	☐	☐
☐ Measure baseline pressure. **Record Reading:** **Adjust**		☐	☐	☐
☐ Initiate all exhaust fans/dryer **Record Reading:**	Outside	☐	☐	☐
☐ Initiate HVAC air handler. **Record Reading:**		☐	☐	☐
☐ Position interior doors to place home in Worst Case Draft (WCD) condition.		☐	☐	☐
☐ Measure worst-case CAZ depressurization. **Record Reading:**		☐	☐	☐
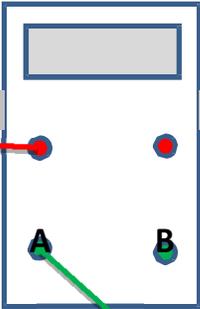
COMBUSTION SAFETY AND EFFICIENCY TESTS	PASS	FAIL	NA
☐ Conduct visual inspection of flue system for problems.	☐	☐	☐
☐ Identify any pre-test HVAC System component safety concerns.	☐	☐	☐
☐ Identify any pre-test Water Heater (DWH) system components safety concerns.	☐	☐	☐
☐ **Monitor Ambient CO Levels in the CAZ During All Test Procedures.** **Record:**	☐	☐	☐
☐ **FIRE-UP WATER HEATER FOR TESTING**	☐	☐	☐
☐ Observe Water Heater for Spillage Under WCD conditions.	☐	☐	☐
☐ **Measure waterheater spillage (60 Sec BPI/2 Min SWS)** **Record Time:**	☐	☐	☐

CAZ LIMITS

Orphaned Natural Draft Waterheater - 2.0 Pa		
Natural Draft Waterheater vented with a Natural Draft Furnace or Boiler - 3.0 Pa		
Stand Alone Natural Draft Waterheater or Vented with Fan Assisted Furnace - 5.0 Pa		
Natural Draft Wood Stove - 7.0 PA		
ACCEPTABLE DRAFT TEST RANGES - AT TEMPERATURES		*OUTSIDE TEMPERATURE?*	**F**
<10	-2.5		
10-90	(Outside Temp/40) - 2.75	CALCULATE IT:	**Pa**
>90	-0.5		

	PASS	FAIL	NA
☐ **MEASURE WATER HEATER WORST CASE DRAFT.** **RECORD READING:** Pa	☐	☐	☐
☐ **MEASURE CO IN WH FLUE GAS (200 PPM)** **RECORD CO:** PPM	☐	☐	☐
☐ Identify corrective actions/measures if HW does not PASS spillage, draft, or CO test.	☐	☐	☐
☐ **PERFORM COMBUSTION TEST AT STEADY STATE ON WATER HEATER**	☐	☐	☐

		✅	❌	🟧
☐	**FIRE-UP FURNACE FOR TESTING**	☐	☐	☐
☐	Observe heating system for spillage under WCD conditions (natural draft only).	☐	☐	☐
☐	Measure time for heating system spillage: **60 Sec If Applicable** _____ Sec	☐	☐	☐
☐	**MEASURE FURNACE DRAFT - (existing weather conditions) - RECORD:** _____ Pa	☐	☐	☐
☐	**MEASURE CO IN FURNACE (200 PPM) - RECORD LEVEL:** _____ CO	☐	☐	☐
☐	Identify corrective actions if heating system does not PASS spillage, draft, or CO test.	☐	☐	☐
☐	**RE-TEST WATERHEATER DRAFT WHILE FURNACE IS RUNNING RECORD:** _____ Pa	☐	☐	☐
☐	Measure Heat Rise Delta T in Heating System - **Record Number** _____ F	☐	☐	☐

Inadequate Heat Rise Condensation Corrosion 20 - 40	Heat Rise Good For Both 40 - 70	Heat Rise Excessive, Check Fan, Air Flow, Fan Speed 70 - 95

DUCT PRESSURIZATION TEST (DUCT BLASTER)   Hose to Duct   Hose to Blaster Fan

DB B   **25 CFM TEST**

- ☐ Turn Furnace Off/Remove Filter/Fans Off
- ☐ Open Window or Door To Allow WRT Outside
- ☐ Seal All Supply Registers
- ☐ Attach Flex to Return with Template Attach
- ☐ Flex Hose to Fan No Rings ALL OPEN
- ☐ Verify manometer setup for Duct Pressurization
- ☐ **CONDUCT DUCT PRESSURIZATION TEST - RECORD:**

DB B

A   B

Open   Open

CONDITIONED SQUARE FEET /100 X 8 = TOTAL DUCT LEAKAGE LIMIT

	PASS	FAIL	NA
☐ Identify needed corrective actions/measures.	☐	☐	☐

ASHRAE 62.2 and EXHAUST FAN FLOW TESTING

	PASS	FAIL	NA

Mode 1x - Device 5x - Config for Opening Size

		✅	❌	🟧
☐	Complete ASHRAE Spreadsheet with final BD readings, determine final fan settings.	☐	☐	☐
☐	Set manometer to EX and Config for Flow H **Pr/CFM**	☐	☐	☐
☐	Verify manometer setup for fan flow testing.	☐	☐	☐
☐	Measure fan flow and adjust fan to required ventilation flow.			
☐	**FAN HIGH** **FAN LOW** **FAN TIME**	☐	☐	☐

Pr/CFM EX

Hose To Flow Meter

Evaluate Installed Weatherization Measures	PASS	FAIL	NA
☐ Review all installed measures against those listed on Work Order.	☐	☐	☐
☐ Verify installed measures listed on Work Order	☐	☐	☐
☐ Document any assessment/energy audit discrepancies or missed opportunities.	☐	☐	☐
☐ Document any damage potentially caused by workers.	☐	☐	☐
☐ Compare work completed to Weatherization Standards, SWS or state and local codes.	☐	☐	☐
☐ Document any non-conformances to WX Standards, SWS or State and Local Codes.	☐	☐	☐
☐ Determine if any problems were Material or Work related.	☐	☐	☐
☐ Document any work problems that FAIL for quality, quantity, or non-conformance.	☐	☐	☐
☐ Create (if needed) a Callback/Rework Punch List for any required corrections.	☐	☐	☐

Determine PASS/FAIL of the Work - Identify Work Problems	PASS	FAIL	NA
☐ Review the results of your inspection observations and documents.	☐	☐	☐
☐ Compare original assessment/energy audit diagnostic tests with your QCI results.	☐	☐	☐
☐ Make a determination of PASS or FAIL of the work based on the QCI results.	☐	☐	☐
☐ Complete any addition items on the Callback/Rework Punch List.	☐	☐	☐
☐ Turn Furnace and Water Heater Back to Pre-Inspection Settings			

Final Client Interview	PASS	FAIL	NA
☐ Interview Client regarding the level of satisfaction with the Program.	☐	☐	☐

Excellent ☐	Good ☐	Fair ☐	Poor ☐	☐	☐	☐
Were you satisfied with the overall Weatherization Program?						
Excellent ☐	Good ☐	Fair ☐	Poor ☐	☐	☐	☐
Do you notice any comfort changes or lower utility Bills?						
Excellent ☐	Good ☐	Fair ☐	Poor ☐	☐	☐	☐
Is there anything we could do to improve the Program?						

	PASS	FAIL	NA
☐ Share a summary of your inspection results with the Client.	☐	☐	☐
☐ Explain the operation and maintenance smoke/CO detectors, furnace filters, etc.	☐	☐	☐
☐ Ensure client has all information, operation manuals, for measures installed.	☐	☐	☐
☐ Obtain the Client's signature and comments on the required documentation.	☐	☐	☐

Close Out the Project and Maintaining File and Records	PASS	FAIL	NA
☐ Callback Items were completed and inspected before closing the job.	☐	☐	☐
☐ All items were installed and costs from the Work Order match up with the invoices.	☐	☐	☐
☐ Ensure that all relevant signatures were obtained, and the file is complete.	☐	☐	☐
☐ Ensure that all job logs, notes, and documentation is retained and complete.	☐	☐	☐
☐ Ensure that any job anomalies are documented.	☐	☐	☐
☐ Ensure that any information on active complaints is maintained and documented.	☐	☐	☐

SUMMARY OF INSPECTION AND NOTES

Client Name: (Printed)

Signature:

Local Agency QCI: (Printed)

Signature:

State Agency QCI: (Printed)

Signature:

State Agency Monitor: (Printed)

Signature:

Comments: (Continued on next page if needed)   Field Guide, SWS Reference #, Variance Req.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____