

Inspection Report Repair List: 1311 W Bell , Houston, TX 77019

The builder reserves the right to reject inspector opinions that do not coincide with City of Houston Building Code at the time the home was permitted as defined in the contract. Please make sure that you review and understand the “Notes Key” before reviewing the full repair list. The repair numbers listed below correspond to a numerical list that we have added in red on your inspection report that follows this page. Item 1 marked on your inspection report, coincides with item 1 below and so on. Your home has been designed, engineered, permitted, and built to code and inspected at all phases by the City of Houston building inspection division. It will have passed all required city inspections along with the all important “building final” inspection prior to closing. Your superintendent will gladly answer any questions that you have in regards to the inspection report or the repairs of the inspection report items as they accompany you on your punch out and final walks of the home. WE ENCOURAGE YOU TO ASK THEM QUESTIONS, SO PLEASE DON’T HESITATE!

If there are cosmetic items mentioned in your report keep in mind that we don’t pay attention to cosmetic items from your inspector. The reason being is that we are aware there are going to be more cosmetic items that you bring up at your walk through and we want to begin addressing all cosmetic items at once in order to maintain an efficient schedule.

Notes Key:

N = No Action Taken

Y = Will Repair as Requested

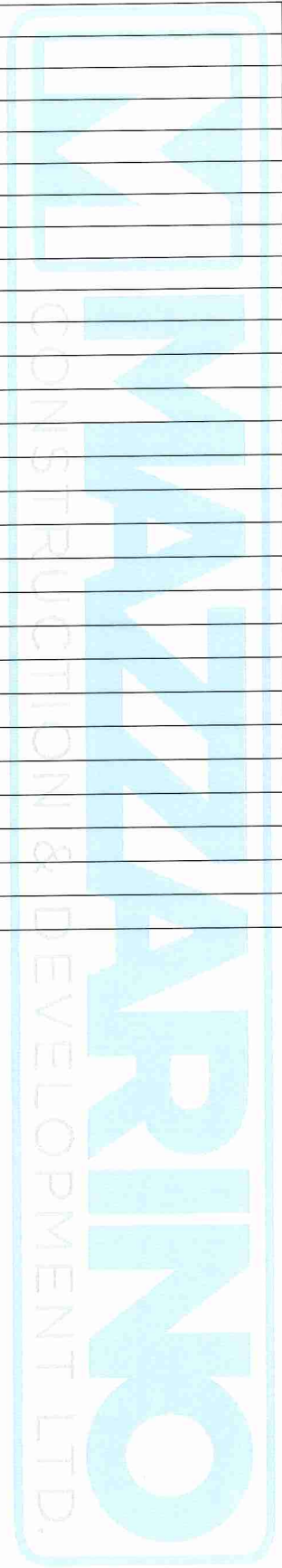
WI = Will Investigate Further and Correct if Necessary

N/A = Not Applicable (May be an inspector statement, opinion or note)

C = Cosmetic (no action taken at this time, but want to make sure this ends up on final punch list)

Number or Item	Builder Action	Explanation:
1.	Y	
2.	Y	
3.	Select	
4.	WI	We will adjust the damper and inspect for any other items. If there are additional items that need repair these will be done.
5.	Y	
6.	C	
7.	Y	
8.	Select	
9.	Y	
10.	Y	
11.	C	
12.	N	Exterior penetrations are sealed and caps are placed on top of and sealed on the exterior

13.	C	
14.	C	
15.	Y	
16.	WI	
17.	N	Per manufactures specifications joints are correctly installed
18.	C	
19.	Y	
20.	WI	
21.	C	
22.	WI	
23.	Select	
24.	Select	
25.	Select	
26.	Select	
27.	Select	
28.	Select	
29.	Select	
30.	Select	
31.	Select	
32.	Select	
33.	Select	
34.	Select	
35.	Select	
36.	Select	
37.	Select	
38.	Select	
39.	Select	
40.	Select	





December 1, 2020

Mr. Geoff Berg
1311 West Bell Street
Houston, Texas 77019

Dear Mr. Berg:

Re: 1311 West Bell Street, Houston, Texas

As requested, we are pleased to send you the attached report for the quality of workmanship inspection performed on the above property. The inspection includes: the structure, foundation, roof, load-bearing walls, ceilings, floors, potential and/or existing water penetration, plumbing system (excluding water wells, septic tanks, yard sprinkler systems, or foundation watering systems), electrical power system, heating and cooling equipment, and where applicable, the fireplace, built-in range, ovens, dishwasher, disposal, oven/range exhaust fans, and trash compactor. This inspection specifically excludes any hazardous gases or materials, such as asbestos, radon, etc. A leak test of the gas lines, if desired, should be made by a qualified plumber who has the equipment and time to install a pressure gauge and pressurize the system.

We understand the reason for the inspection was to view and evaluate the quality of workmanship indicated in construction of the house prior to purchase. As pointed out in the stated purpose of the report, all of the comments and observations are strictly my opinions, and they may not necessarily agree with other professionals.

Professional Engineering Inspections, Inc. does not warrant or guarantee the continued performance of any property inspected beyond the day of inspection. If an extended warranty is desired, please contact a home warranty company that provides the level of service you desire.

If the building were to be left unoccupied for an extended period of time, provision should be made to have the yard watered frequently during dry periods.

This report concludes all obligations related to inspection work provided for the above property for the fee paid. Thank you for asking PROFESSIONAL ENGINEERING INSPECTIONS, INC. to perform this inspection work. If you have further questions, please feel free to call on us.

Sincerely yours,



Digitally signed by
Edward Robinson, P.E.
Date: 2020.12.02
19:49:15 -06'00'

Edward Robinson, P.E.
President

EGR/sl
Attachments

PROFESSIONAL ENGINEERING INSPECTIONS, INC.

P. O. BOX 859
FRIENDSWOOD, TEXAS 77549
<http://www.profengineering.com>
Firm Registration #1503
(713) 664-1264

QUALITY OF WORKMANSHIP INSPECTION REPORT

Mr. Geoff Berg
1311 West Bell Street
Houston, Texas
December 1, 2020

I. INTRODUCTION

A. Property Description

The property inspected is a house, having wood framing, fiberboard siding, a composition shingle roof, and a post-tensioned cable reinforced concrete slab on grade foundation. The structure is finish work stage.

B. Purpose

The purpose of this inspection was to make visual on-site observations of the workmanship evident in the construction of the building, which would provide information as to the overall quality of workmanship utilized in the fabrication of the building, with the most significant irregularities being pointed out for your consideration. A list of these observed irregularities and suspected defects is provided. These observations are made to provide a basis for the opinions which will be stated in the body of this report. Most of the observed irregularities will be in need of repair or correction to some extent, but it is suggested that the extent and need for repair be discussed with the general contractor responsible for the construction of the property. This list of anomalies is not claimed to be the complete list of irregularities that exist, but a representative list used to form an opinion as to the quality of workmanship utilized in the building fabrication.

C. Scope

On-site visual observations of evidences of workmanship utilized in fabrication of the building included, but were not necessarily limited to, the following: the building structure, evidences and consequences of differential movement in the building foundation, the roof, finish work at the interior and exterior of the building, site work, mechanical and electrical equipment installation (including the built-in appliances), the insulation, and other aspects of the building fabrication process which have a bearing on the overall quality of the building fabrication. Mechanical and electrical equipment were not operated since they are new and under warranty for an extended period of time. The plumbing was checked and operated where possible. This information is provided for the use of the person to whom this report is addressed and is in no way intended to be used by a third party, who may have different requirements.

Inspection for hazardous gases or materials, such as radon or asbestos, or for latent defects in the roof, foundation, or structure, is considered beyond the scope of this inspection. This inspector has not been trained to detect such materials, and no tests were performed to discover any latent defects in the

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foundation, structure, roof, or maintenance of the building that may become evident after the owner takes possession of the building.

The photographs included in the photo attachment to this report and referenced by some items in the report are only intended to provide a general representation of the condition discussed in the referencing paragraph. The referenced photographs do not necessarily represent all locations where described conditions exist and such should not be assumed. Photographs are taken at the discretion of the inspector and are not provided for all irregularities observed during the inspection or included in this report.

II. OPINION

A. Quality of Workmanship

The quality of workmanship indicated in the fabrication of the building appears to be equal to the workmanship found in most buildings of comparable size and price in this area. Finish work was incomplete at the time of this inspection which may have resulted in a greater number of irregularities, but they are considered correctable. The number and type of irregularities, which are provided in the observations portion of this report, are the basis for this opinion.

B. Significant Exceptions

The following exceptions are some of the more significant of the anomalies noted that have a bearing on my opinion of the quality of workmanship indicated in the building:

1. The damper control system for the air conditioning system did not appear to be functioning properly at the time of this inspection. This should be further evaluated by the installer.
2. The furnace equipment was not operating properly at the time of this inspection, operating intermittently, requiring repair.
3. GFI outlets were missing at some locations where they are required, as indicated in the Observations section of this report, and should be installed as required.
4. Finish work was incomplete at the time of this inspection, including paint finishes. Interior finishes should be evaluated by the client after completed and cleaned to ensure they are acceptable.
5. The cabinet fit and finish was poor at some locations in the building, with the most severe area occurring in the kitchen, where it may be necessary to reset cabinetry because the doors dragged adjacent finishes and due to damage to cabinet facings.
6. Insulation in the attic space was thinner than required and should be improved.

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III. OBSERVATIONS

The following observations are not claimed to be all the irregularities that existed during the inspection, but a representative list of observations made that form a basis for the quality of workmanship opinion:

A. FOUNDATION

The foundation has had very little time to demonstrate its performance, but any indications of differential movement will be pointed out below. The method of construction for the foundation cannot be determined through a visual inspection of the type performed.

1. There was no evidence or consequence of differential settlement observed during inspection of the building. It is pointed out that there has been little time for the building to exhibit indications of differential settlement. Since the performance of the foundation depends on support from the soil on which it rests, maintenance of the foundation should be in accordance with the guidelines contained in the enclosed Foundation Care Information sheet, as this may keep the rate of differential settlement to a minimum.
2. There were cracks at the entry porch that are not unusual and are usually found in the floor of any porch or deck attached to the house in the manner of the porch or deck that was observed.
3. Because the building is believed to be resting on expansive soil which exists in this area, it is recommended that an automatic watering system be installed to maintain a uniform moisture content in the soil. Maintaining a uniform moisture content in the soil will prevent it from shrinking and causing cracks to develop in the walls, floors, and siding.
4. Differential settlement of building foundations is a common problem in the greater Houston area because of soil and weather conditions. As a building ages, no matter how well it was constructed or what its present condition is, the foundation will probably continue to experience differential movement. Constant care should be taken to help maintain that movement to a minimum. If the building is to be left unoccupied for an extended period of time, provision should be made to have the yard watered frequently during dry periods. See attached Foundation Care Information sheet for suggestions.
5. There are large trees growing near the building site that may adversely affect the performance of the building foundation. Construction research has indicated that the foundations of buildings resting on expansive clay soil are adversely affected by trees that grow closer to the building than their mature height. If the soil on which the building rests has been determined to be expansive clay, a qualified tree expert should be consulted to determine if it is practical to cut and cap the tree roots. If it is not practical, the trees should be removed. Large trees have been known to adversely affect the foundation performance even if the building has been constructed on piers and with great care.

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4. Evidences of current or previous roof leaks were not observed from the interior; however, this does not rule out the possibility of current or previous roof leaks.
5. Gutter downspouts should not be emptied onto the roof at locations such as at the carport at the north side of the building, which creates a greater potential for water penetration, and the high flow of water from the downspouts will wear away the roof surface prematurely. Gutter downspouts should be terminated at ground level or in gutters at a lower roof edge.
6. Roof jacks at the surface of the roof were not adequately laced, leaving nails exposed along their lower edges prone to leak.
7. The PVC pipe penetrations through the roof were not painted to prevent premature deterioration due to exposure from the sun.
8. There appeared to be damage to the metal roof jack used at the furnace flue penetration at the attic, which could allow water penetration into the attic and should be replaced. Reference Photograph 2

D. APPLIANCES

1. There was no sufficient trap nor loop in the dishwasher drain hose to prevent water from draining from the kitchen sink into the dishwasher.
2. The kitchen oven was not installed at the time of this inspection; therefore, comments concerning its installation could not be included.
3. The discharge point for the range vent flue was not observed.
4. The overhead door latch was not secured from operations, which could allow the door to be latched in the closed position and damaged by the operator.
5. The range vent fan vibrated when operating, indicating a need for adjustment or repair.
6. The safety beam at the overhead door of the garage was installed too high above the floor at one side of the door, indicating a need for adjustment.

E. PLUMBING

1. There was no cap on the gas outlet at the utility room. The outlet should be capped if a gas-fired clothes dryer is not used.
2. There was no ready access opening to the heads of the bathtubs, so the drain traps and the plumbing behind the tubs could not be viewed.
3. The floor around the drain at the utility room was apparently not properly graded to cause spilled water to flow into the floor drain. If the floor is

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- not adequately sloped toward the inlet of the drain, then water spilled on the floor by an appliance, such as a washing machine, will probably accumulate and run off onto the floors around the utility room.
4. The main sewer drain cleanout was observed to be located at the northwest corner of the building at the drive adjacent to the garage. This cleanout is usually required when the main sewer line to the building becomes clogged.
 5. Some of the water supply pipes in the attic are not insulated and are subject to freezing during cold weather. The exposed pipe should be insulated.
 6. The water supply service valve at the house was located at the east interior of the garage.
 7. Hot water for the building was provided by a single on-demand gas-fired water heater having a maximum input capacity of 199,000 BTU/hr. Determining the adequacy of the water heater was beyond the scope of this inspection and should be designed based upon the maximum flow anticipated and the required temperature rise for an on-demand water heater. The equipment appeared to be of a size typical for the number of bathrooms likely to be used simultaneously. Reference Photograph 3
 8. Sealant around the tub at the master bath pedestal was insufficient, allowing the tub to separate from the pedestal. Caution is advised this could indicate inadequate support for the tub if flexing of the tub occurs when filled.
 9. The gas supply at the water heater was not adequately supported at its termination point, which could create a greater potential for it to be damaged.
 10. The sewer cleanout cap was missing at the sewer cleanout at the northwest corner of the building at the drive. The cap should be installed to prevent clogging of the drain.
 11. The shower enclosure at the master bathroom was only run for a short time because the caulk joints in the shower had recently been caulked and were not cured.
 12. The water level at the toilet tanks was high at the standpipes, which can allow water to run into the standpipes and result in water loss. The water level is normally adjusted in accordance with the manufacturer's recommendations or 1 inch below the top of the standpipe.
 13. There was a water hammer detected at the kitchen sink when the faucet was turned on and off abruptly, indicating the PEX tubing was not adequately secured in the framing or cabinet below this faucet.
 14. Valve handles were loose at faucets, including the at the hall bath tub.

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15. Water distribution pipe in the building appeared to be provided by PEX tubing installed in a branch configuration. PEX tubing is considered an acceptable water distribution pipe when properly installed with no latent defects, although installation in a branch configuration reduces some benefits.

F. AIR CONDITIONING

1. The air conditioning is an electrically powered system that will provide cooling controlled by a thermostat located in the house
2. The air conditioning system did not appear to be properly balanced for adequate airflow to each room of the house. The contractor should be asked to balance the airflow to various rooms so that each will be as comfortable as the other.
3. Heating for the building is provided by a gas-fired furnace that also provides air flow for the air conditioning system.
4. The fresh air makeup for the air conditioning system was located at the roof. This is a poor location for installations due to the high temperatures at the roof, which reduces energy efficiency. Fresh air makeups are normally made through the side wall of the building.
5. Air conditioning for the building is provided by a single air conditioning system with airflow from the equipment controlled by a damper control system controlling airflow to two zones. The zones appeared to be defined by the first and second floor, with controls at each floor.
6. Air was blowing into the drain at the master bathroom lavatory. This indicates that the trap for the primary condensate drain, which terminates at the lavatory drain, is empty or inadequate. The trap should hold condensate that prevents air from blowing into the bathroom area, creating undesirable noise.
7. Airflow at the first floor registers was not detected when the first floor zone thermostat was set for heating and demand. This may indicate a malfunction in the damper control system that should be investigated by the installation contractor for repair.
8. Heating for the building was provided by a gas-fired furnace having an output capacity of 65,400 BTU/hr. A determination of adequacy of capacity was beyond the scope of this inspection and should be based on Manual J heat loss calculations for the building, which should be obtained from the builder. Manual S should also be obtained to ensure that the equipment is a match for the design.
9. Retaining screws were missing at the furnace access cover.
10. The 1/2 bathroom ventilator fan outlet had a bent damper and did not close tightly against the damper, and the vent flue was not flashed to the

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water-resistant barrier. Because the hood is not flashed to the water-resistant barrier, this increases the potential for water entry and may result in energy loss since the damper does not close tightly. Reference Photograph 4

11. The area vent for the 1/2 bathroom did not appear to fully penetrate through the exterior wall, as observed at the vent hood opening. Reference Photograph 5
12. The cap was missing from the vent of the primary condensate drain at the evaporator coil, allowing conditioning air to be discharged to the attic.
13. The furnace operated intermittently at the time of this inspection, and an error code could be observed at the control board inside the access cover. This appears to indicate a malfunction at the furnace that should be brought to the attention of the builder for repair.
14. The size of the condensing unit was not identified at the time of this inspection. It is recommended that the Manual J heat load calculations for the building be obtained from the builder along with the Manual S equipment selection to ensure that the equipment is an adequate match for the design of the air conditioning system. A determination as to the adequacy of capacity of the equipment could not be determined based on a rule of thumb or visual inspection.
15. The vent cover was loose in the ceiling at the 1/2 bathroom.
16. There appeared to be a fresh air ventilation discharging to the ceiling of the living room area adjacent to the kitchen and through the east outer wall of the building. It does not appear that the ventilation air provides any function since it did not open when the range vent was operated, and there were no visible static pressure controls at the range vent flue. Ventilation air is required where range vents exceed 400cfm, which should typically be designed by a MEP engineer with adequate inflow adequately tempered for energy efficiency to meet the discharge rate of the vent flue. It appears this vent may provide no function under its current condition.
17. There was a media filter installed at the inlet end of the furnace in the attic space. The media filter will require periodic replacement by the homeowner.

G. ELECTRICAL

1. The capacity of the main circuit breaker was noted to be 200 amps, and the box was noted to be rated at 200 amps, which is considered adequate for the normal load expected in a building of this size and price.
2. Light bulbs were observed to be missing at the following locations: at the center bedroom. Light bulbs are usually provided at all light fixtures.

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3. The function of the light switch at the upstairs den was unknown. Further inquiry should be made of the builder.
4. Ground fault interrupters did not appear to have been installed at the carport, the disposal, and the utility room. Ground fault interrupters are required by code where one can easily be exposed to electrical shock.
5. It appears that there were too many electrical outlets on the circuit controlled by the GFCI at the master bathroom, which controls outlets at the master bathroom, hall bathroom, and 1/2 bathroom. The normal distribution for GFCI control is the kitchen outlets on one circuit, the master bath on another, the guest bath on a separate one, and the exterior outlets on another. It is pointed out that each circuit controlled by a GFCI is also controlled by one (usually 20 ampere) circuit breaker at the main breaker panel.
6. There was no metal conduit on the electrical power wire at the outlet under the cabinets at the kitchen counter.
7. The determination of wiring sizes for various uses is beyond the scope of this inspection. It will likely become evident soon after equipment is placed in service if the wiring sizes are not sufficient. In most cases, the size of the wiring cannot be determined because the wiring is not visible.
8. There was no outlet observed at the mudroom cabinetry. Outlets are often installed at this location.
9. Screws were not fully driven at the outlet cover plates in the master bedroom.
10. The light fixture at the lavatory at the master bathroom was loose on the wall and should be secured.

H. FINISH WORK

1. The finish on walls, cabinets, exterior siding, floors, and other surfaces should be closely observed for defects that are not necessarily included in this report. The cosmetic finish on various parts of the house should conform to the normal industry standard for this area.
2. The wall finish was rough and scarred at the living room south wall and at the south bedroom. Touchup and/or refinishing of the wall may be required.
3. Cabinet were observed to have scars at the hall bathroom and at the utility room which were considered abnormal. The scarring should be evaluated by the client to determine if it is within an acceptable degree. Cabinets should be repaired or replaced if unacceptable to the client.

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4. The paint on the exterior of the building did not appear to be very heavy. The builder should be asked to have the painter check the paint to determine if sufficient coats of paint have been applied.
5. There was paint on the natural wood finish at the stair treads. This paint should be removed and the finish repaired as necessary.
6. There was paint overspray on the electrical outlets at the kitchen. The effected outlets should be cleaned and replaced as necessary for improved appearance.
7. Paint overspray or paint overlap was observed at the threshold at the door between the house and the garage, at the 1/2 bathroom recessed light fixture, and at the kitchen cabinetry. Touchup is suggested to obtain a satisfactory appearance.
8. Scars could be observed in the surface of the siding at the front porch. Repair may require it to be replaced where damaged.
9. Scratches were observed at the south windows at the living room and at the dining room. The windows at these locations should be replaced. The remainder of the windows should be cleaned and examined closely for scratches if they had not been cleaned prior to this inspection.
10. Window screens were missing at all windows. It is not desirable to open windows in this area without screens because of the possibility of insects entering the occupied space.
11. Areas where finish work was observed to be substantially incomplete included at the soffit at the front and rear porches, at the soffit at the carport, at the door jamb at the entry door, at the siding at the rear porch, at the flashings at the carport roof, at the trim in the garage, at the garage walls, and at the kitchen refrigerator opening.
12. Cabinet door fits were irregular, requiring repair or refitting of cabinet doors at the 1/2 bathroom, the kitchen, hall bathroom, utility room, and the master bathroom.
13. Cabinet doors at the kitchen cabinetry dragged the range vent hood, requiring adjustment of the cabinetry.
14. Cabinet facing trim was missing over the dishwasher installation at the kitchen.
15. Cabinet facings around the oven and microwave oven had been installed with fasteners driven through the face of the facings that were prefinished. This creates an irregular appearance that may not be repairable without replacement of the facings. Reference Photograph 6
16. Cabinet pulls were loose at cabinetry at locations, including at the 1/2 bathroom.

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17. Carpeting had not been installed at the upstairs rooms, leaving floor decking exposed. Caution is advised that damage to finishes can occur during installation of carpeting.
18. Caulking and paint was missing around door hinges at the casings and jambs at the interior doors.
19. Clear windows had been installed at the master bath tub and water closet. Privacy windows are often used at these locations.
20. Door finishes were scarred or irregular at some locations, requiring refinishing. The most significant locations were observed at the kitchen pantry, the hall bathroom, and the master bathroom.
21. Door trim was scarred or damaged at the garage door jamb, at the mirror at the 1/2bathroom, and at the mirror at the master bathroom.
22. Finish work was incomplete at the time of this inspection, including incomplete painted surfaces. The interior of the building should be carefully evaluated by the client after finish work is considered complete and has been cleaned.
23. Gaps could be observed between the treads and trim at the stairs. These should be evaluated to determine if they are acceptable in appearance.
24. Insulation in the attic space was measured to be less than the R=38 specified on the data tag in the attic and the R=30 specified on the data tag at the panel box. R=38 is the minimum prescriptive depth of insulation acceptable in the Houston area, and there is an apparent need to add insulation at the attic. Reference Photograph 7
25. It appeared pickets at the east fence were applied to old fencing. It is possible that the fence frame may deteriorate before the pickets. Reference Photograph 8
26. It appears finish nails had been used to secure some siding at the south side of the building. Nails could be observed at other locations. Finish nails are not considered an acceptable fastener for securing siding. Reference Photograph 9
27. Penetrations through the fiber cement siding visible along the east side of the building were apparently made without adequate flashing to the water-resistant barrier behind the siding. The rough edges of the sheathing were visible around some penetrations. This increases the potential for water entry and is generally difficult to properly repair without removal of siding materials. Reference Photograph 10
28. Soffit finishes were incomplete at the front porch and rear porch areas. The drywall ceiling covering at the rear porch appeared to be a mix of fire-rated sheetrock and exterior-rated sheetrock rock. Exterior-rated sheetrock is normally used at exterior locations. Reference Photograph 11

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29. Staining could be observed at the front and rear porch concrete surfaces. If the stains cannot be removed, coating of the concrete with an epoxy finish or other finish may be desirable.
30. The air conditioning flashing hood did not extend behind the siding to the water-resistant barrier. This could leave the opening without adequate flashing that could allow water entry to the wall structure at the condensing unit. Reference Photograph 12
31. The base trim was uneven along the east side of the upstairs hall adjacent to the master bathroom, creating a poor appearance. Reference Photograph 13
32. The door casing was scarred by the door stop at the entry to the garage from the entry hall.
33. The drain inlet box at the rear yard was above the soil height, which may allow water to stand around the inlet box.
34. The entry gate installation was incomplete.
35. The finish was irregular at the end of the stair risers visible at the guardrail at the entry foyer stairs, creating an irregular appearance.
36. The fit of the floor tiles at the master bathroom shower enclosure was poor in appearance, where there were irregular tile joints and poorly cut tiles. Reference Photograph 14
37. The furrdown finish was incomplete over the cabinetry at the upper cabinets at the kitchen. It appears that a valance may be missing or that the cabinets may have been installed too close to the furrdown since the cabinet doors dragged the furrdown. There may be a need to reset the cabinets lower with a valance to improve the performance and appearance. Reference Photograph 15
38. The glazing strip around the perimeter of the fixed glass at the sliding glass door of the living room was wrinkled and upset. This may help secure the glass in place and should be repaired.
39. The gutter system at the west side of the building adjacent to the upstairs hall bathroom area was partially crushed, apparently due to a lack of adequate clearance to the adjacent unit. This will reduce its cross-sectional area and increase the potential for it to become clogged. This may increase the need for cleaning. Access to the gutters appears to be only from the roof and will be difficult. Reference Photograph 16
40. The handrail at the stairs had a rough finish, indicating it may not have received its final finish.
41. The joint cuts in the siding trim components were not made at 45-degree angles, typically intended to maintain alignment and create a good

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appearance. Because the cuts were made at 90 degrees, they were uneven at some locations around the building, creating a poor appearance. Reference Photograph 17

42. The kitchen counter made a popping noise when load was placed on its surface at the south end of the west counter, indicating it is not uniformly supported over the cabinetry.
43. The latch plate was missing over the edge of the deadbolt door latch at the main entry door.
44. The newel posts at the base of the stairs had a poor quality finish, where it appears filler was used, creating an irregular appearance. Reference Photograph 18
45. The paint finish quality was poor at some locations in the building, with the most significant areas occurring at the door casing at the south bedroom closet, at the door jamb at the entry to the hall bathroom, at the interior door casing at the south bedroom closet, and at the center bedroom closet door casing. Runs or irregularities could be observed at these locations and should be evaluated by the client to determine if they are acceptable.
46. The pre-finished cabinet facings were chipped or damaged at some locations in the kitchen, including around the area of the oven, requiring replacement.
47. The trim boards used at the fiber cement siding were not fiber cement around the perimeter of the building and appeared to be an OSB engineered wood material. Some wood components materials may have a shorter life expectancy than fiber cement siding and may have a lesser ability to hold paint, requiring more frequent paint cycles.
48. The window frame was scarred, apparently as a result of dragging hoses across the bottom of the frame at the south bedroom.
49. The window stop was missing at some windows, including at the master bedroom. The window stops are intended to prevent the windows from fully opening to prevent persons from falling out of them. Reference Photograph 19
50. There was a poor fit at the vinyl window at the master bedroom, where a large gap existed between the sash and the frame of the window. This appears to be affecting the ability of the window to remain open and may be difficult to correct without rehanging of the window. Reference Photograph 20
51. There was insufficient clearance between the side of the building and the west adjacent building to allow for inspection. This area was generally considered inaccessible by most persons due to the narrow opening.

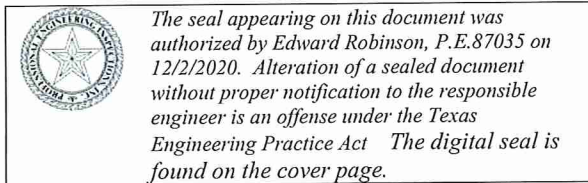
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52. There was unevenness in the base trim at the base of the wall at the kitchen island, creating a poor appearance. Reference Photograph 21
53. There were irregularities in the finish of the sheetrock around the recessed light fixtures in the ceiling at the master bedroom.
54. There were no cleanouts at the gutter downspout drains. This may make cleaning the drains more difficult.
55. Tile was uneven at the walls at the tub/shower of the hall bathroom and at the floor at the master bathroom, where there was excessive lippage of the tile. The tile should be evaluated by the client to determine if this is acceptable.
56. Treads at the top of the stairs to the second floor had a slope toward the risers of more than 2%. This can pose a trip hazard, and 2% is considered the maximum allowable slope.
57. Trim at the east side of the carport extended past the upper trim without a flashing detail. This may allow water entry behind the trim components at the corners of the column and front wall. Reference Photograph 22

IV. SPECIAL NOTICE

Opinions and comments contained in this report are based on observations of evidences of workmanship employed in construction of the building inspected. Quality standards are based on knowledge gained through experience and professional studies of the inspector. Opinions related to compliance with specifications, legal, and/or code requirements are specifically excluded as being a part of our agreement to perform this inspection. There is no guarantee or warranty as to future performance, life, and/or need for repair of any item inspected, nor should same be assumed.

PREPARED BY:



Edward Robinson, P. E.
Registered Professional Engineer, #87035



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Attachment

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FOUNDATION CARE INFORMATION

Maintenance Recommendations For Foundations On Expansive Clay Soil

INTRODUCTION

Differential movement of building foundations is a common problem in this area, because of the highly expansive clay soil and changing weather conditions, and costs owners thousands of dollars a year in repair bills. As the building ages, it is probable the foundation will continue to experience differential movement, regardless of how well it was constructed or its present condition. This differential movement does not stop as buildings become older; older structures with a history of minimal differential movement have been known to develop foundation problems in a very short time due to changing conditions at the perimeter of the building foundation.

REASON FOR FOUNDATION PROBLEMS

The primary reason for foundation problems is the highly expansive nature of the clay soil on which the building rests. The clay expands or contracts as its moisture content changes with the weather. Depending on the area, the amount of contraction or shrinkage ranges from minimal to upwards of 65% of the total wet volume. The average amount of shrinkage that can be expected in this region is approximately 35%, with wide variation depending on the location. For example, a sample of water-saturated clay will shrink up to an average of 35% when dried completely. This shrinkage accounts for the large cracks that form in the soil after an extended dry period. The more expansive the clay, the larger the cracks.

EFFECT OF PLANTS ON FOUNDATION PERFORMANCE

Because of the highly expansive nature of the soil, trees and other large plants can significantly contribute to differential settlement of a foundation. The roots of trees and large plants consume the moisture from the soil, causing the soil to shrink much faster than other soil areas exposed to the weather. The soil where the moisture is lost more rapidly will sink lower than the surrounding soil, causing evidences and consequences of differential settlement in building structures. Research studies indicate that a tree should be at least as far away from a building as the mature height of the tree to minimize the effect of drying caused by the tree.

EFFECT OF WET SPOTS AT THE SIDE OF A FOUNDATION

Wet spots caused by dripping faucets, leaking drains, air conditioning condensate drains, leaking water pipes, etc., can cause differential settlement at the location where the soil has been kept wet. The foundation may sink into the soil at a wet area while the soil dries and shrinks at other locations because the drying soil allows the foundation to move downward and overload the wet area.

EFFECT OF POOR DRAINAGE AT THE PERIMETER OF A FOUNDATION

Water standing or running alongside a foundation after rains may cause differential settlement of a foundation. If soil grading is such that water runs alongside a foundation during rains, the water will run under the edge of the foundation and carry away soil supporting the foundation. The effect is much more pronounced if the soil was very dry prior to the beginning of the rain. In addition, if water is allowed to stand alongside a foundation, it will flow below the foundation and dissolve the clay supporting the foundation, carrying it into the cracks that develop in the yard outside the foundation area during extended dry periods. This problem is more severe if the soil in the general area has been very dry, but it is less severe if the soil has been maintained moist.

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FOUNDATION MAINTENANCE RECOMMENDATIONS

An owner can significantly reduce the rate of differential settlement by observing the following recommendations:

1. Try to maintain a constant moisture content in the soil around the foundation. Water the soil evenly and around the entire foundation during extended dry periods. This should prevent a gap from opening between the soil and foundation edge. However, if a gap does appear, water frequently (at least daily) around the entire foundation during extended dry periods (6 to 7 days in the summer). Do not apply water directly into the gap. Instead, water 1 to 2 feet away from the foundation edge. Some homeowners choose to install a fully automated foundation watering system to eliminate the need to remember to water. It is best to add water about three times per day to insure that the applied water has time to soak into the soil.
2. Cut and cap the roots of any large trees growing closer to the foundation than the mature height of the trees. The roots from a large tree or several medium size trees can consume more water from the soil than can be added with a watering system. This will limit the consumption of water from the soil below the foundation and may prevent excessive differential settlement and cracks in the structure. It is recommended that a professional tree expert be used to prevent damage to the trees. When a tree grows too close to a building to allow cutting and capping of the roots, it is advisable to remove the tree or make special provision for watering the soil below the foundation.
3. Properly grade the soil by filling in low spots and leveling off high spots adjacent to the foundation so that the surface of the soil slopes gradually away from the building. A recommended slope is 1 inch per foot for a distance of 3 to 4 feet from the foundation.
4. Control roof water runoff and help prevent soil erosion by using a gutter and downspout system. This is especially important if a building has no eaves which overhang the walls or if the eaves are less than 1 foot wide.
5. Water trees and shrubs growing near a building during extended dry periods as they cause shrinking of the soil due to their high water consumption. Keep in mind that moderate to large trees consume 50 to 75 gallons of water from the soil every day.

SUMMARY

Remember: the intent of foundation maintenance is to maintain a constant moisture content in the soil around and below the entire foundation and to prevent soil erosion that can result from water flowing off the roof or other large flat surfaces near the building.

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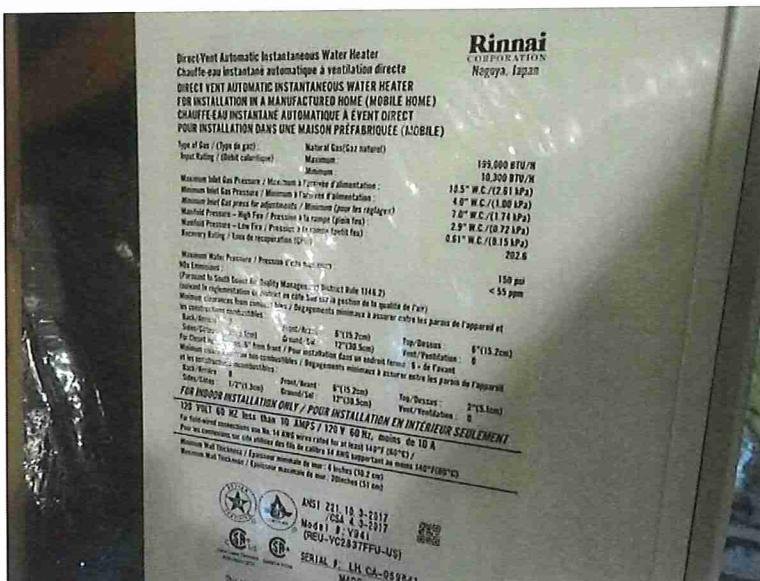


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1. The roof head flashings had fasteners driven exposed in the lower surfaces to hold the flashing down against the roof. If the flashings had been properly constructed, there would have been no need for fasteners in the exposed surfaces of the flashings. As a minimum, the heads of the fasteners should be covered with a high quality caulk.

2. There appeared to be damage to the metal roof jack used at the furnace flue penetration at the attic, which could allow water penetration into the attic and should be replaced.

(7)



3. Hot water for the building was provided by a single on-demand gas-fired water heater having a maximum input capacity of 199,000 BTU/hr. Determining the adequacy of the water heater was beyond the scope of this inspection and should be designed based upon the maximum flow anticipated and the required temperature rise for an on-demand water heater. The equipment appeared to be of a size typical {...full text in report}

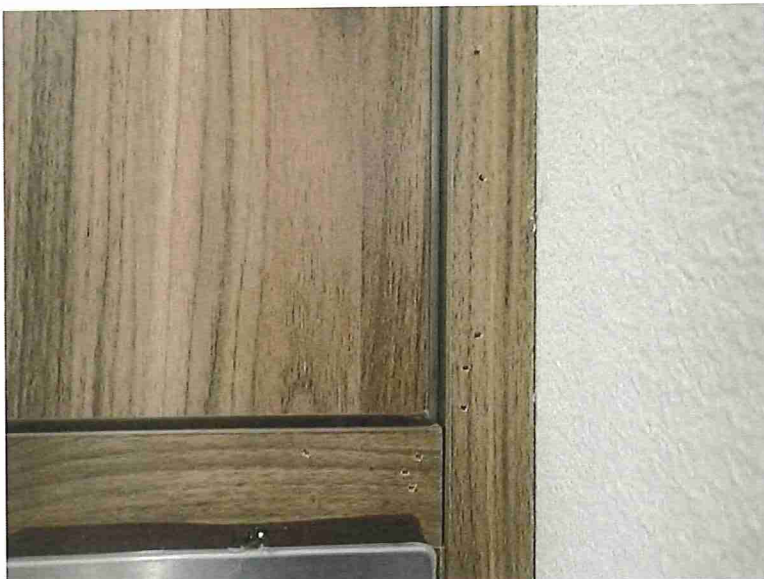


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4. The 1/2 bathroom ventilator fan outlet had a bent damper and did not close tightly against the damper, and the vent flue was not flashed to the water-resistant barrier. Because the hood is not flashed to the water-resistant barrier, this increases the potential for water entry and may result in energy loss since the damper does not close tightly.

5. The area vent for the 1/2 bathroom did not appear to fully penetrate through the exterior wall, as observed at the vent hood opening.

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6. Cabinet facings around the oven and microwave oven had been installed with fasteners driven through the face of the facings that were prefinished. This creates an irregular appearance that may not be repairable without replacement of the facings.

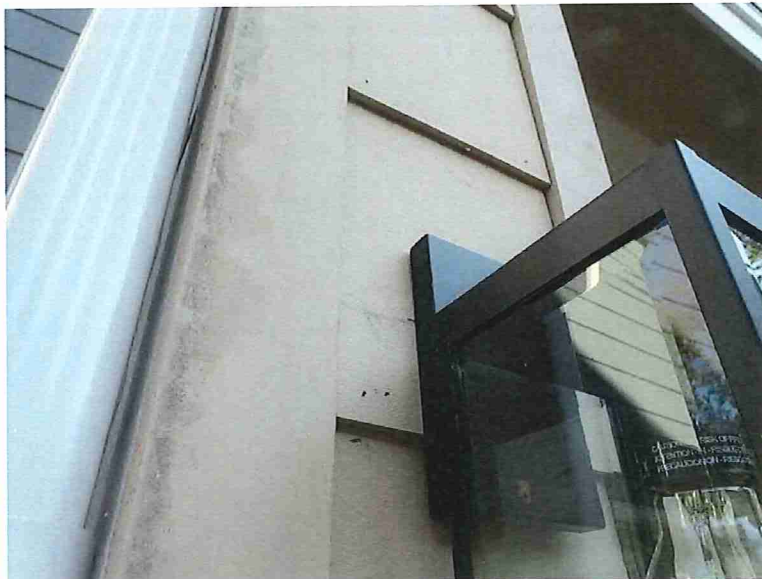
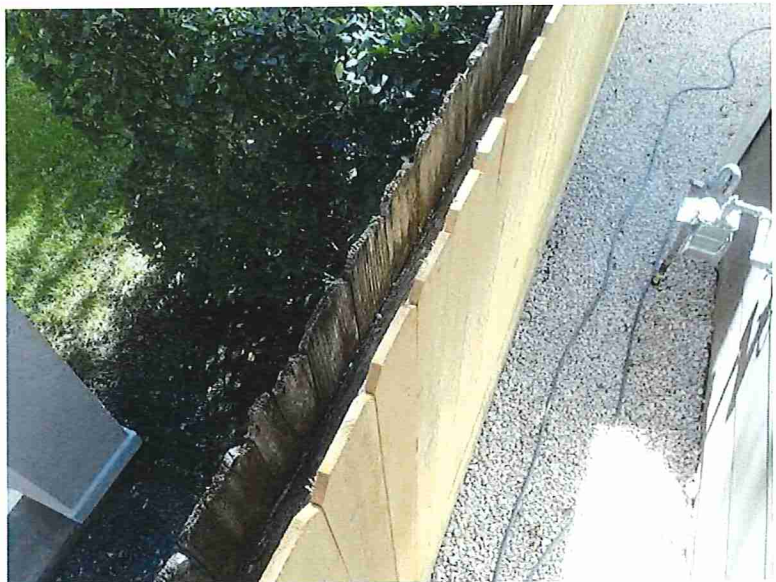
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7. Insulation in the attic space was measured to be less than the R=38 specified on the data tag in the attic and the R=30 specified on the data tag at the panel box. R=38 is the minimum prescriptive depth of insulation acceptable in the Houston area, and there is an apparent need to add insulation at the attic.

Y

8. It appeared pickets at the east fence were applied to old fencing. It is possible that the fence frame may deteriorate before the pickets.



9. It appears finish nails had been used to secure some siding at the south side of the building. Nails could be observed at other locations. Finish nails are not considered an acceptable fastener for securing siding.

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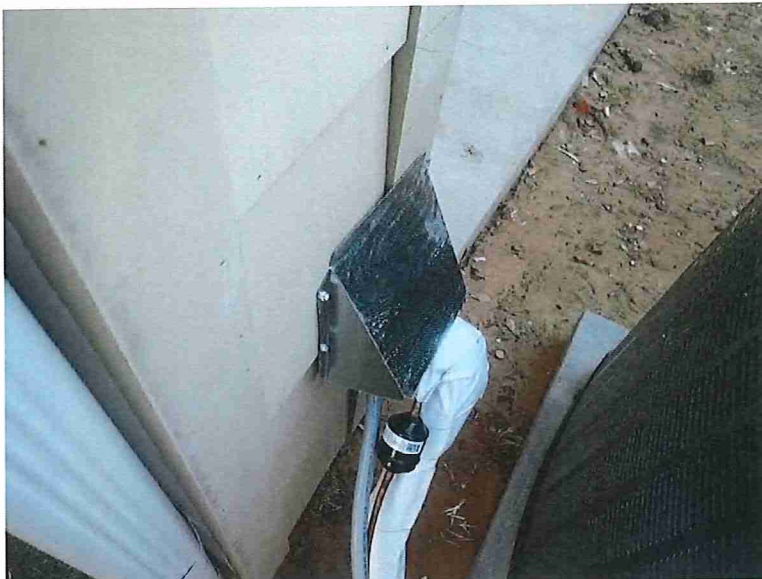


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10. Penetrations through the fiber cement siding visible along the east side of the building were apparently made without adequate flashing to the water-resistant barrier behind the siding. The rough edges of the sheathing were visible around some penetrations. This increases the potential for water entry and is generally difficult to properly repair without removal of siding materials.

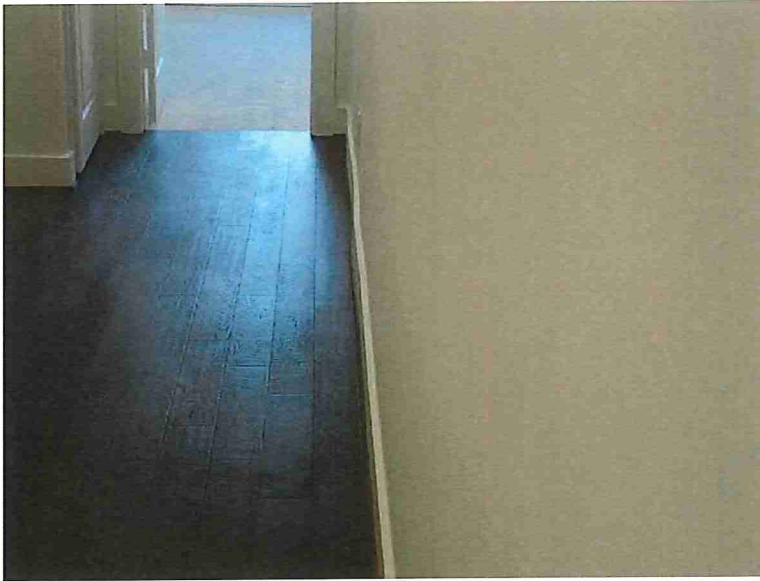
11. Soffit finishes were incomplete at the front porch and rear porch areas. The drywall ceiling covering at the rear porch appeared to be a mix of fire-rated sheetrock and exterior-rated sheetrock rock. Exterior-rated sheetrock is normally used at exterior locations.

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12. The air conditioning flashing hood did not extend behind the siding to the water-resistant barrier. This could leave the opening without adequate flashing that could allow water entry to the wall structure at the condensing unit.

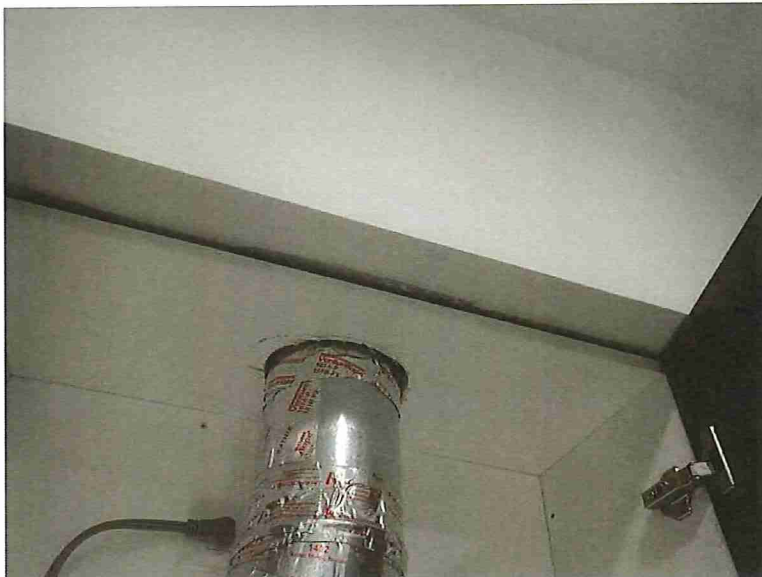
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- 13. The base trim was uneven along the east side of the upstairs hall adjacent to the master bathroom, creating a poor appearance.



- 14. The fit of the floor tiles at the master bathroom shower enclosure was poor in appearance, where there were irregular tile joints and poorly cut tiles.



- 15. The furrdown finish was incomplete over the cabinetry at the upper cabinets at the kitchen. It appears that a valance may be missing or that the cabinets may have been installed too close to the furrdown since the cabinet doors dragged the furrdown. There may be a need to reset the cabinets lower with a valance to improve the performance and appearance.





16. The gutter system at the west side of the building adjacent to the upstairs hall bathroom area was partially crushed, apparently due to a lack of adequate clearance to the adjacent unit. This will reduce its cross-sectional area and increase the potential for it to become clogged. This may increase the need for cleaning. Access to the gutters appears to be only from the roof and will be difficult.

17. The joint cuts in the siding trim components were not made at 45-degree angles, typically intended to maintain alignment and create a good appearance. Because the cuts were made at 90 degrees, they were uneven at some locations around the building, creating a poor appearance.



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18. The newel posts at the base of the stairs had a poor quality finish, where it appears filler was used, creating an irregular appearance.

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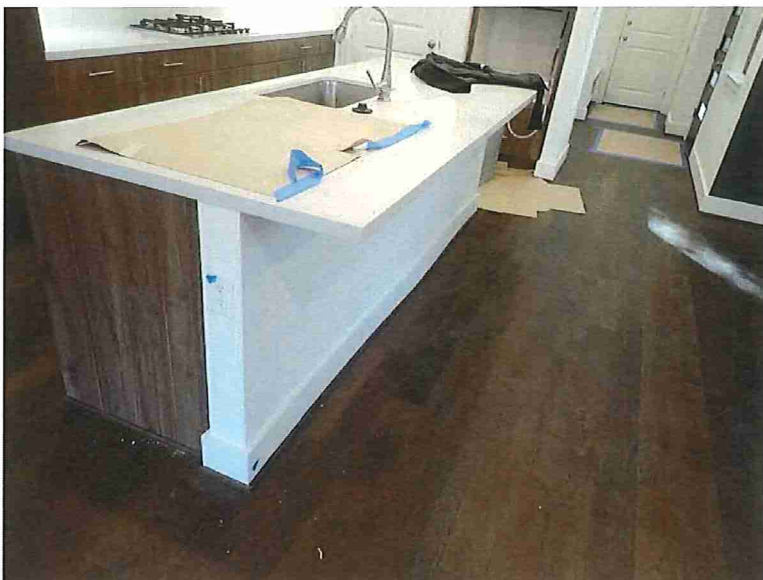


19. The window stop was missing at some windows, including at the master bedroom. The window stops are intended to prevent the windows from fully opening to prevent persons from falling out of them.

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20. There was a poor fit at the vinyl window at the master bedroom, where a large gap existed between the sash and the frame of the window. This appears to be affecting the ability of the window to remain open and may be difficult to correct without rehang of the window.

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21. There was unevenness in the base trim at the base of the wall at the kitchen island, creating a poor appearance.

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22. Trim at the east side of the carport extended past the upper trim without a flashing detail. This may allow water entry behind the trim components at the corners of the column and front wall.

WT