

TSTC Housing Exterior Improvements

10 Units – Bolling



RFP 012815

TSTC Housing Exterior Improvements – 10 Units – Bolling

Exterior – Part 1 - Project Overview

The objective of this project is to improve the **exterior** of select existing houses on the TSTC – Waco campus. **Each** house will be listed separately in the subsequent bid package and will have a **specific scope identified by the individual scope notes**. The General Notes listed shall apply to all houses included in the bid package. The houses included in this bid package and defined separately are as follows:

- 41 Bolling
- 43 Bolling
- 44 Bolling
- 45 Bolling
- 46 Bolling
- 47 Bolling
- 48 Bolling
- 49 Bolling
- 50 Bolling (see separate interior renovation scope to be **included** in this bid.)
- 54 Bolling

This project will be awarded to one contractor as a lump sum agreement.

TSTC Housing Improvements – 10 Units - Bolling

General Notes

1. This project is Tax Exempt.
2. Remove address nameplates, preserve, reinstall after improvements are complete.
3. Stage dumpsters in vacant house driveways only. No staging in occupied houses or curbside.
4. Properly dispose off site of all demolished materials.
5. All new and existing materials shall be painted according to defined individual color schemes indicated, including carports.
6. Shed doors on Bolling to match trim color.
7. Remove and dispose of all coax cable at unoccupied units. In occupied units, remove coax brackets and reattach when complete. Do not disrupt service.
8. Exposed concrete foundation around the perimeter to be painted to match selected trim color at each unit. Use **Sherwin-Williams A6 Series A100 Satin**.
9. All rotten wood **visible from the exterior**, including sills, headers, jambs, fascia, soffit, trim; shall be replaced with new material. **Pre-bid inspections are strongly encouraged.**
10. Contractor shall include an **allowance of \$5,000.00** for any labor and materials needed for hidden damaged wood. This allowance will be used toward labor, per labor price submitted by contractor on page 1 of the Proposal Form and material as price listed below. If the repair of hidden damaged wood is less than the \$5,000.00 allowance, then that balance will go to TSTC. Contractor shall furnish and install material to replace any hidden damaged materials, this will include but not be limited to 2"x6"PT wood sill plate framing, 2"x6" #2 YP or SPF stud framing, and ¾" CDX plywood for repair of any # 105 siding that was removed because of hidden damage. Contractor shall repair hidden damaged wood and siding after TSTC Project Manager determines the area to be repaired. The cost of material used for this hidden damage will be current market price plus 15% markup. Proposer shall issue a price per hour for a carpenter and helper. There is a line item below for contractor to fill in for hourly wages for one carpenter with a carpenter's helper. Contractor will, at the exposure of damaged wood, submit a proposal for how many hours any particular damaged wood area would take for one carpenter with a carpenter's helper. Contractor will submit this to TSTC Project Manager for approval. TSTC reserves the right to utilize others for these repairs.

TSTC Housing Improvements –10 Units - Bolling Finish Schedule

Color Scheme	Siding	Trim	Units
C3	SW# Country Lane Red	SW# 6106 Kiln Beige	41B, 48B, 54B
C4	SW# 7025 Backdrop	SW# 6106 Kiln Beige	44B, 45B
C6	SW# 6235 Foggy Day	SW# 6106 Kiln Beige	43B, 49B, 50B
C8	SW# 6151 Quiver Tan	SW# 6106 Kiln Beige	46B, 47B

- Exterior front entrance doors - **SW 6258 Tricorn Black, Exterior Latex Semi-Gloss.**
- Exterior storage doors - **Match Selected Trim Color**

PRIMERS: (Basis of Design)

- A. Primer, Latex for Interior and Exterior, Wood, Gypsum Board, Plywood:
 Manufacturer: Sherwin Williams
 Product: Multi-Purpose Latex Primer B51-8000 Series
- B. Primer, DTM, Water Based for Exterior Metal:
 Manufacturer: Sherwin Williams
 Product: DTM Acrylic Primer/Finish B66W1

WATER-BASED PAINTS: (Basis of Design)

- A. Latex, Exterior Semi-Gloss (Gloss Level 5):
 Manufacturer: Sherwin Williams
 Product: SuperPaint Exterior Latex Satin A89-100 Series

TSTC Housing Improvements – 10 Units - Bolling

General Scope Notes

- ① Furnish and Install new specified windows per window schedule. Ensure that there is a minimum clearance of 36" from jamb to jamb on the interior. Frame exterior accordingly.
- ② Not used.
- ③ Demo existing siding. Install specified or equal vapor barrier. Install HardiPlank lap siding. Paint and trim per industry standard.
- ④ Not used.
- ⑤ Not used.
- ⑥ Not used.
- ⑦ Install 4"x16" vents for ventilation.
- ⑧ Demo brick. Frame as necessary, including supporting porch posts. Install sheathing substrate and specified siding.
- ⑨ Not used.
- ⑩ Replace all fascia 1x trim with specified product. Salvage/repaint nose board where possible.
- ⑪ Replace any rotted or damaged or missing trim/soffit with specified product.
- ⑫ Not used.
- ⑬ Build out new soffit assembly with specified product. At all door canopies, demo existing and incorporate this assembly. See separate page for detail.

TSTC Housing Improvements – 10 Units - Bolling Specifications

EXTERIOR SIDING, SOFFIT AND TRIM: Basis of Design

1. Exterior Siding:

- a. Product: HardiePlank Lap Siding
- b. Type: Select Cedarmill
- c. Finish: Unfinished
- d. Colors: Reference Exterior Finish Schedule
- e. Width: 7 1/4 inches
- f. Exposure: 6 inches

2. Exterior Trim:

- a. Product: HardieTrim Boards
- b. Type: Rustic
- c. Finish: Unfinished
- d. Colors: Reference Exterior Finish Schedule
- e. Thickness: 3/4 inches
- f. Width: Various-Reference details on

3. Exterior Soffit:

- a. Product: HardiePanel Vertical Siding
- b. Type: Cedarmill
- c. Finish: Unfinished
- d. Colors: Reference Exterior Finish Schedule
- e. Thickness: 5/16 inches

TSTC Housing Improvements – 10 Units - Bolling Specifications

EXTERIOR WEATHER BARRIER SYSTEM: Basis of Design

A. Exterior weather barrier system shall be as manufactured by
JamesHardie, Building Products, Inc,
888-542-7343

1. Weather Barrier:

- a. Products: HardieWrap w/ HardieWrap Seam Tape
- b. Composition: Non-woven, non perforated polyolefin
- c. Water Vapor Permeance: 15 perms.
- d. Air Resistance: >1800 sec/100cc
- e. UV Stability: up to 180 days

2. Flashing:

- a. Products: HardieWrap Flashing and Flex Flashing
- b. Flashing Composition: butyl rubber adhesive with a non-woven polyolefin backing and coated Kraft paper release.
- c. Flex Flashing Composition: butyl rubber adhesive with a creped cross-laminated polyolefin backing and polyethylene film release.

TSTC Housing Improvements – 10 Units - Bolling Specifications

VINYL WINDOWS

Ply Gem Builder Series – Vinyl 1110 Single Hung Window

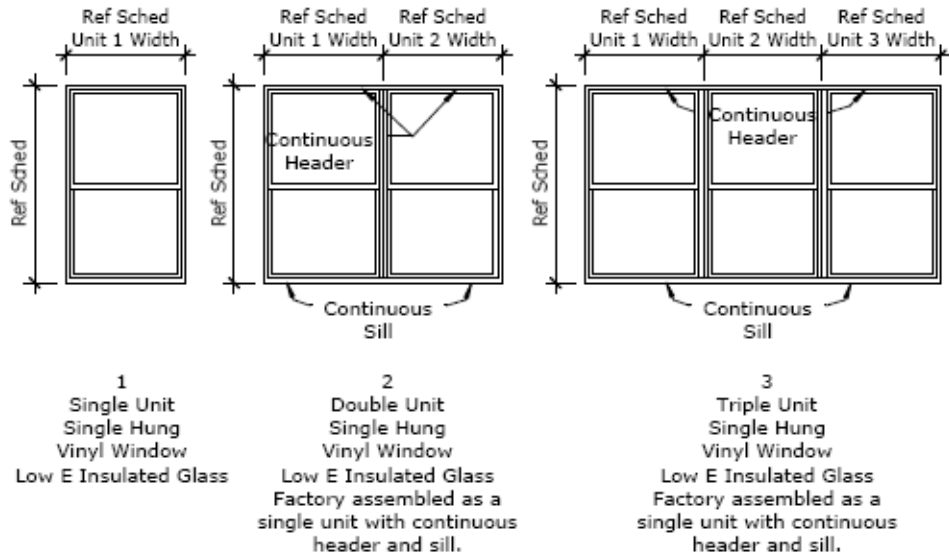
- Rough Opening: 36 W x 60 H
- 3-0 5-0 Builders Series 1100 Single Hung (35.5 W x 59.5 H x 0 Leg), Equal Sash, Almond, Nailing Fin
- Glass: LE SC, Double Glazed, Annealed
- Screen: Half Screen, Charcoal Fiberglass, Shipped Separate
- Performance Rating: H-R40, DP +40/-40; Energy Star – Southern; U-Factor = .035; SHGC = 0.23; VLT = 0.43
- Frame Options: Nail Fin Setback -1"

WINDOW SCHEDULE

Mark	Type	Head Ht	Frame Ht	Unit 1 Frame Width	Unit 2 Frame Width	Unit 3 Frame Width
AA	1	*	36"	24"		
BA	1	*	38"	19"		
BB	1	*	38"	19" VFY**		
BC	1	*	38"	28"		
CA	1	*	42"	36"		
DA	1	*	48"	32"		
DB	1	*	48"	34"		
DC	1	*	48"	36"		
DD	1	*	48"	48"		
EA	1	*	60"	32"		
EB	1	*	60"	36"		
EC	1	*	60"	37"		
ED	1	*	60"	37" VFY**		
EE	1	*	60"	48"		
FA	1	***	39"	36"		
PA	2	*	48"	32"	32"	
PB	2	*	48"	36"	36"	
PC	2	*	60"	32"	32"	
PD	2	*	60"	36"	36"	
PE	2	*	60"	38"	38"	
PF	2	*	60"	38" VFY**	38" VFY**	
PG	2	*	72"	38"	38"	
PH	2	*	72"	38" VFY**	38" VFY**	
PJ	2	*	72"	44"	44"	
PK	2	*	72"	44" VFY**	44" VFY**	
TA	3	*	48"	32"	32"	32"
TB	3	*	48"	36"	36"	36"
TC	3	*	60"	36"	36"	36"
TE	3	*	60"	38"	39" VFY**	38"
TF	3	*	72"	36"	35 1/2"	36"
TG	3	*	72"	36"	35 1/2" VFY**	36"
TH	3	*	72"	38"	39"	38"
TJ	3	*	72"	38"	39" VFY**	38"

WINDOW TYPES

REFERENCE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

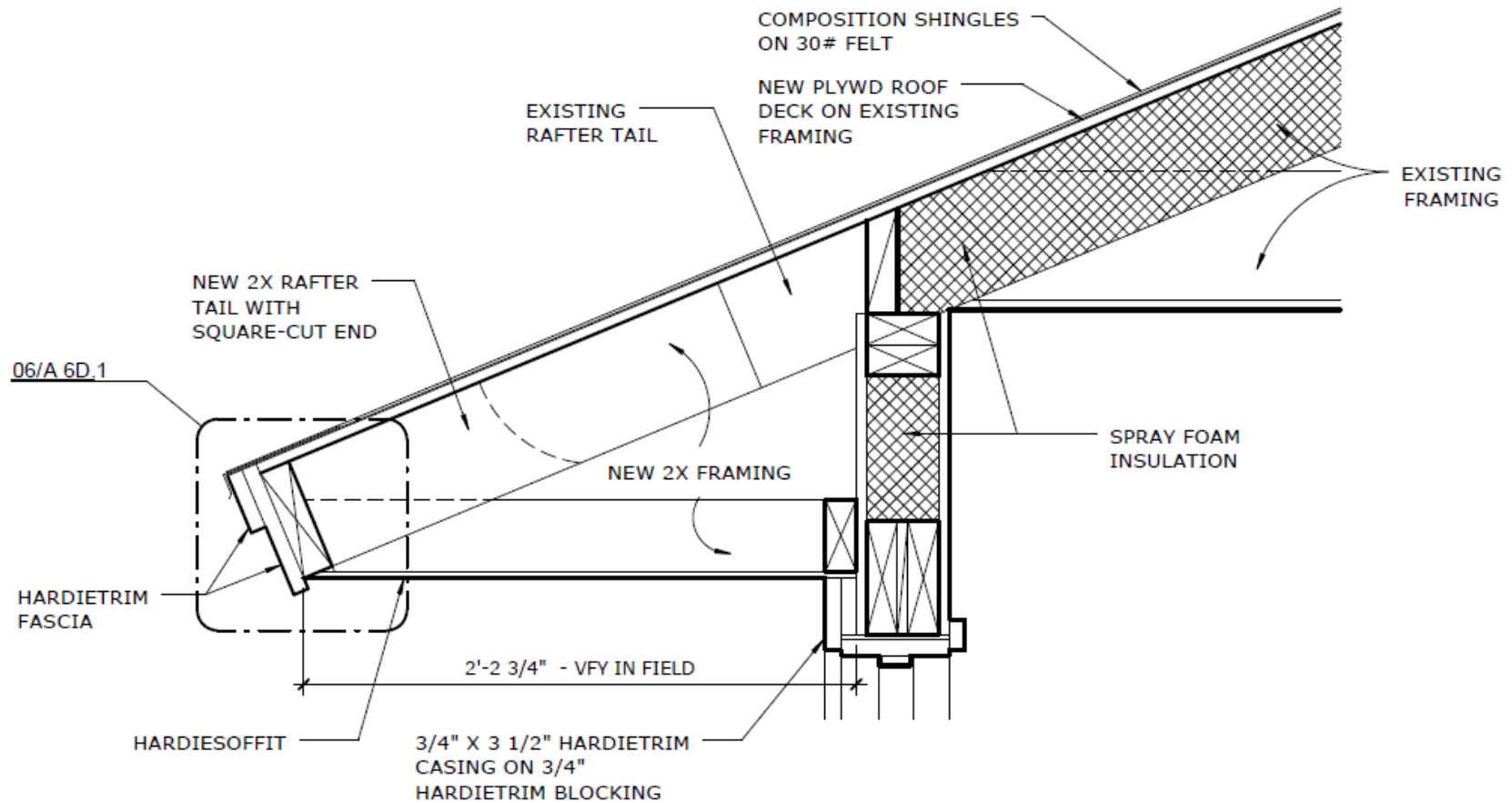


WINDOW SCHEDULE NOTES

- * Head Height Plans 01, 02, 02A, 03, 04, 05: Match Existing
Head Height All Other Plans: 6'-8"
- ** Verify existing masonry opening width to determine overall frame width.
(Masonry Opening Width) - 5 1/2" = Overall Window Frame Width
Window Type 1: Adjust Unit 1 Frame Width
Window Type 2: Adjust both Units 1 & 2 Frame Widths equally
Window Type 3: Adjust Unit 2 Frame Width
- *** Bottom of Frame Height, Kitchen Windows Plans 01, 02, 02A, 03, 04, 05: 3'-5"

TSTC Housing Improvements – 10 Units - Bolling

New Soffit Condition per Note ⑬



04 STOOP OVERHANG @ EXPOSED RAFTER

- 41 Bolling
- 43 Bolling
- 44 Bolling
- 45 Bolling
- 46 Bolling
- 47 Bolling
- 48 Bolling
- 49 Bolling
- 50 Bolling
- 54 Bolling



41B – South Elevation



41B – East Elevation



41B – North Elevation



41B – West Elevation



43B – South Elevation



43B – East Elevation



43B – North Elevation



43B – West Elevation



44B – North Elevation



44B – West Elevation



44B – South Elevation



44B – East Elevation



45B – South Elevation



45B – East Elevation



45B – North Elevation



45B – West Elevation



46B – North Elevation



46B – West Elevation



46B – South Elevation



46B – East Elevation



47B – South Elevation



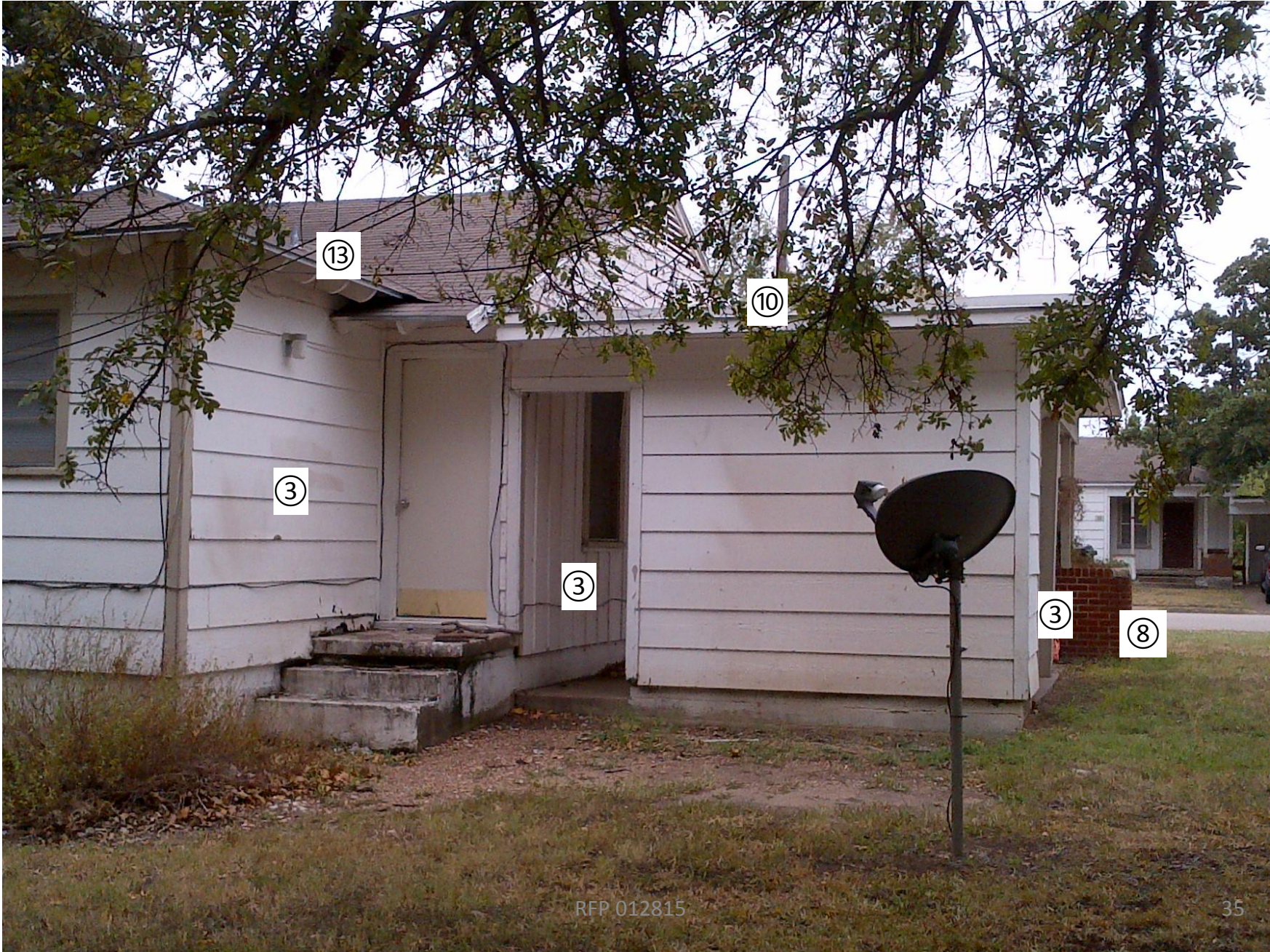
47B – East Elevation



47B – North Elevation



47B – West Elevation



48B – North Elevation



48B – West Elevation



48B – South Elevation



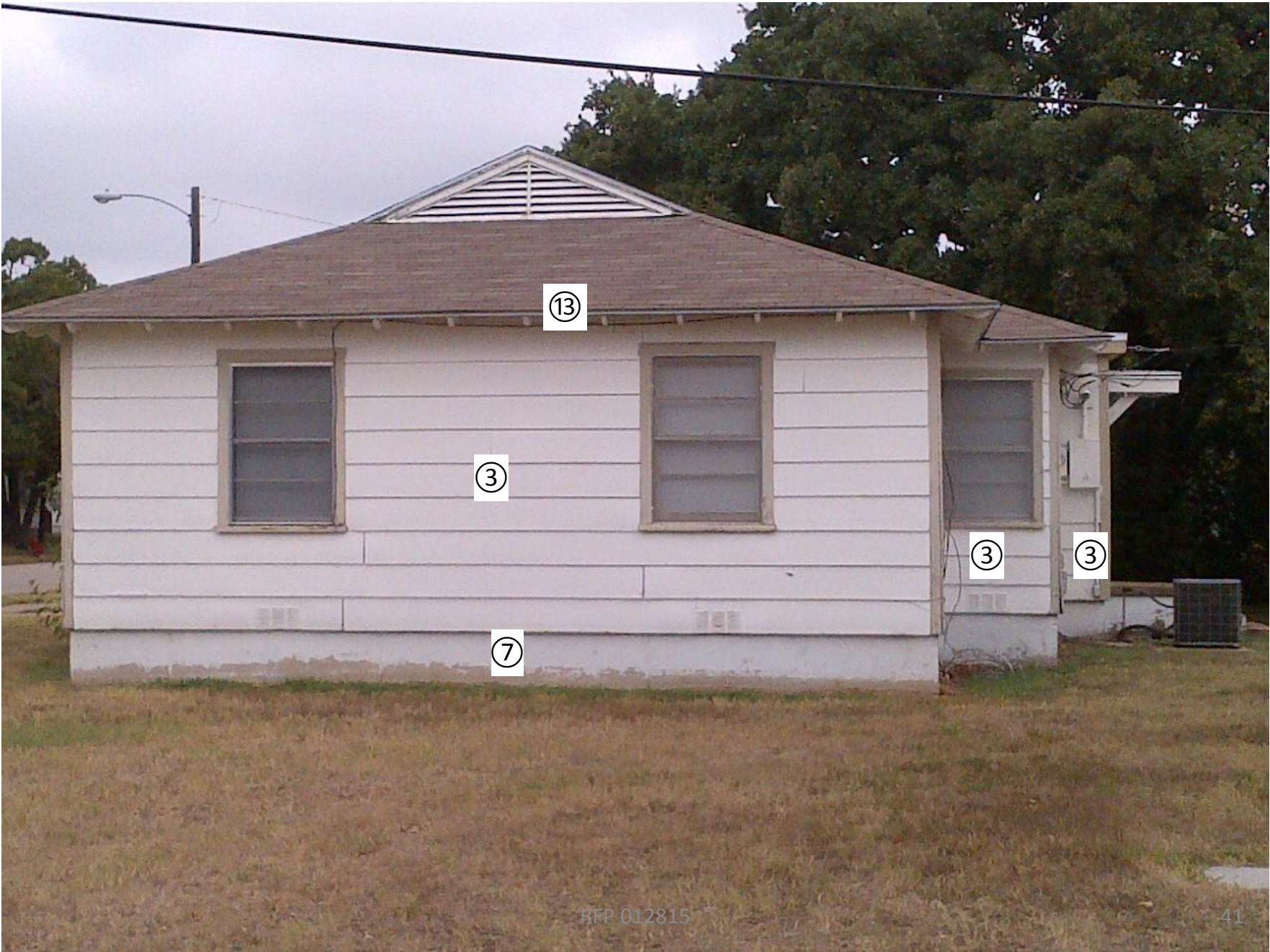
48B – East Elevation



49B – South Elevation



49B – East Elevation



49B – North Elevation



49B – West Elevation



50B – North Elevation



50B – West Elevation



50B – South Elevation



50B – East Elevation



54B – North Elevation



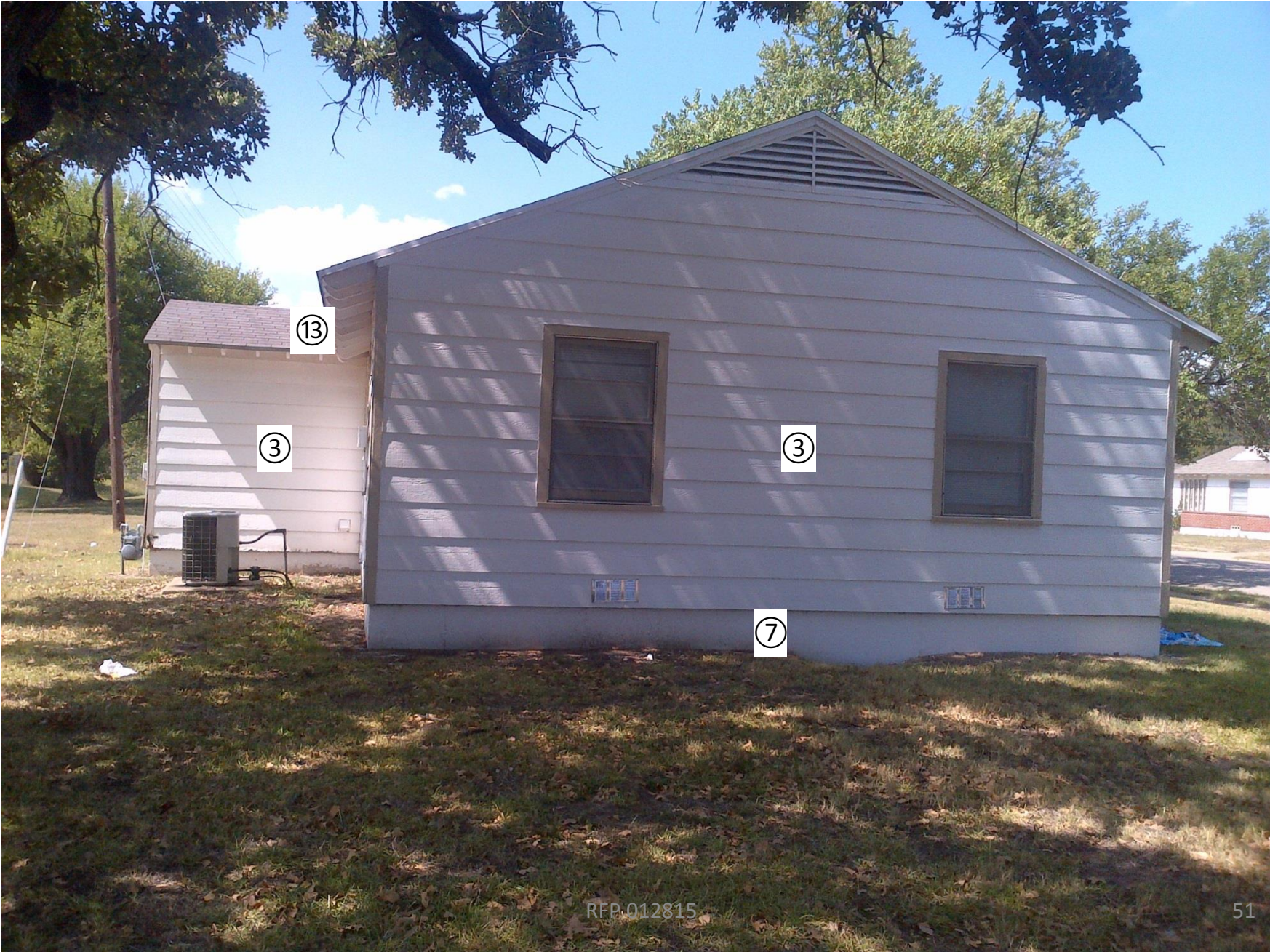
54B – West Elevation



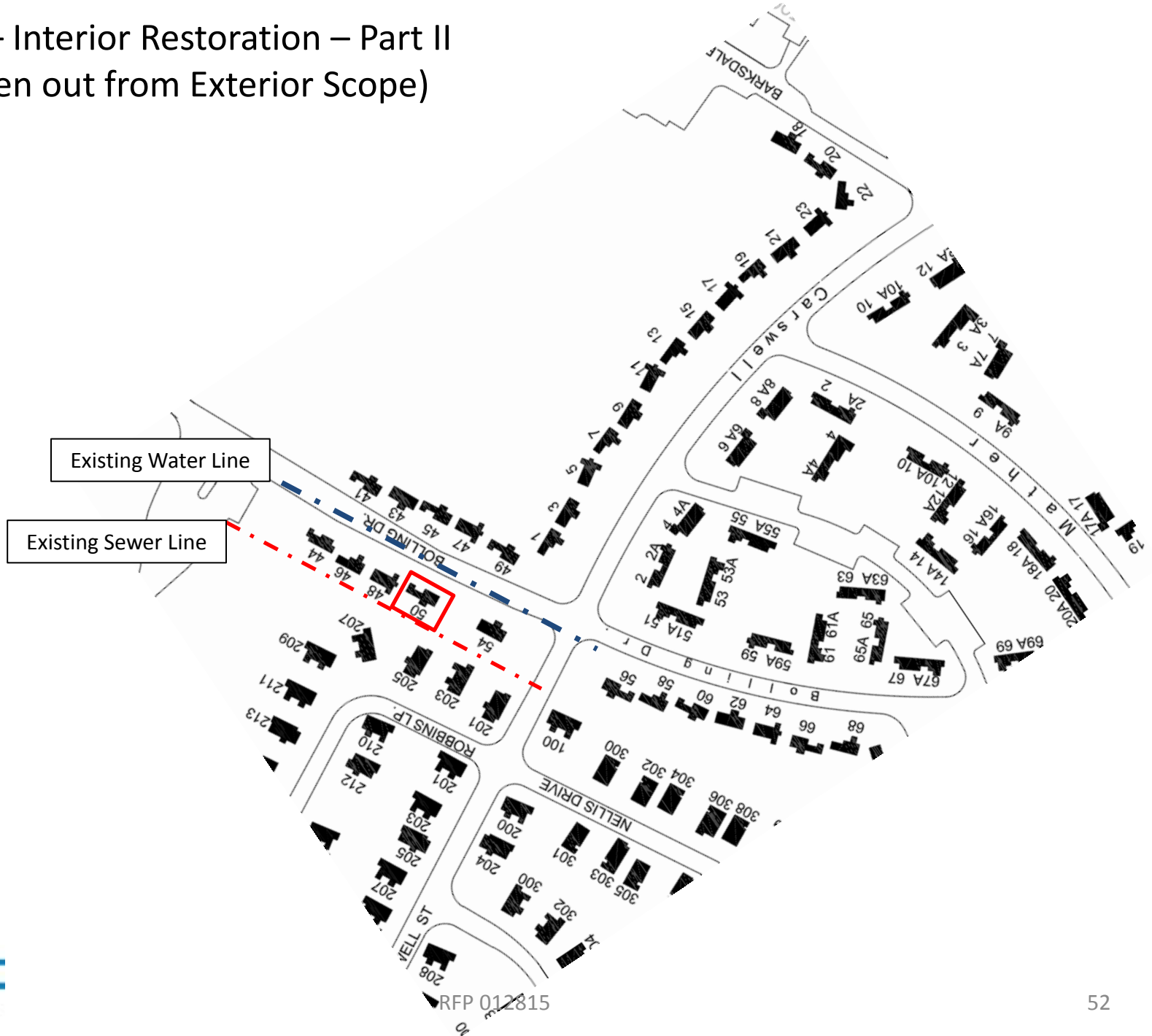
54B – South Elevation



54B – East Elevation



50 Bolling – Interior Restoration – Part II (to be broken out from Exterior Scope)

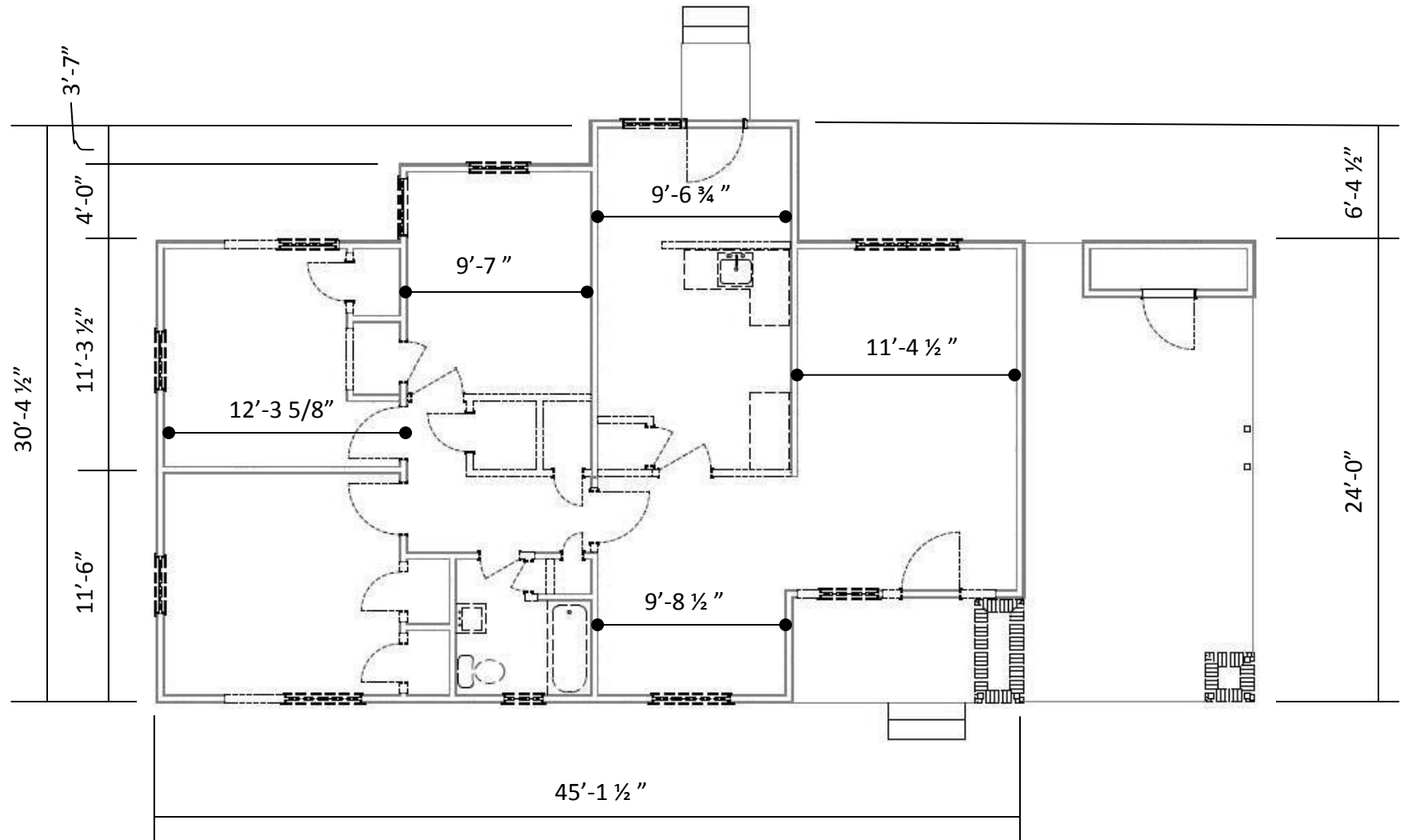


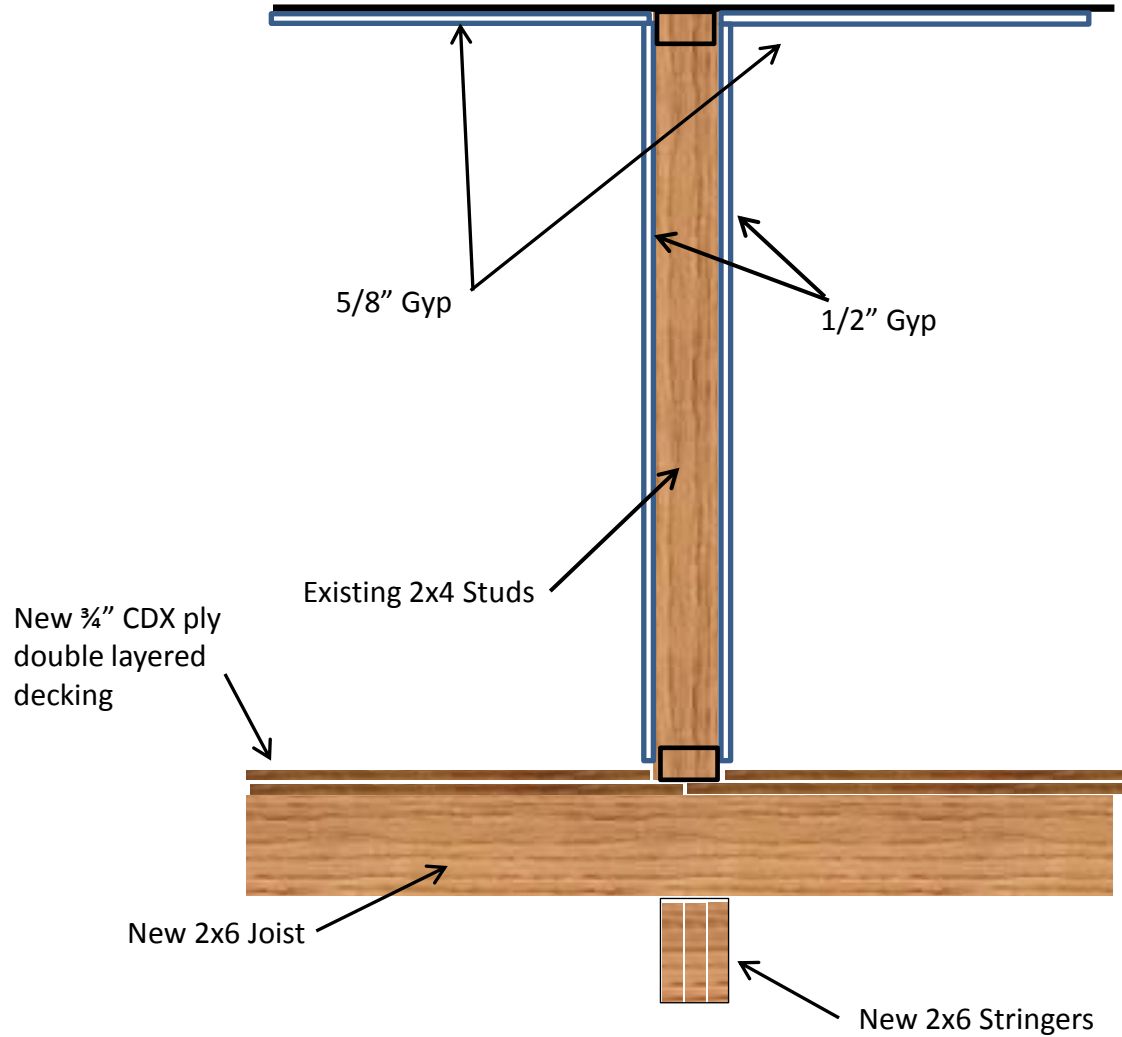
Interior Restoration - 50 Bolling – Project Overview

This portion of the project involves the complete interior restoration of 50 Bolling.

- **General** - After all plumbing piping has been demo'd and new subgrade plumbing/utilities have been installed, contractor is responsible for leveling and smoothing the crawl space dirt. All pre-existing voids and depressions shall be filled and smoothed level with both existing spoils and import fill if necessary.
- **Structural** - Replacement of all floor joists and sill plates. The Contractor will be responsible for shoring the existing walls (interior and exterior) during the joists, sill and stringer replacement. All new materials shall be #2 YP 2x6 pressure treated for the floor joists and girders and ¾" CDX decking for sub-floor (double layered). Spacing and existing configurations to be duplicated.
- **Interiors** - Ceilings and walls will be abated (not included in this scope). Contractor will be responsible for furnishing and installing new interior drywall for walls (½") and ceilings (5/8") as well as the complete tape float and finish. See attached finish schedule for details. All doors/frames/hardware are to be replaced per door schedule. All cabinetry and shelving to be replaced per layout and specifications. Retain/restore crawlspace and attic access panels.
- **Plumbing** - All plumbing fixtures to be demo'd and replaced per attached plumbing schedule. Demo all piping associated and reinstall per code and schematic riser.
- **HVAC** - Replace existing Condenser Unit and Fan Coil Unit using the following: Luxaire 14+ SEER System R-410A, TCJF036S41 (CU), TG8S060A12MP11A (80% Multi-Poise Gas Furnace), MC37A3XH1 (Multi-Poise Evap Coil), 1TVM4G1 (TXV). Existing duct system to remain. Furnish and install a new exhaust fan (Broan, #QTR080) at bathroom directly above toilet fixture. See attached details for more info.
- **Electrical** - All existing electrical to be demo'd and completely restored by a licensed electrician. Metering cabinet at the back of the house to be replaced per local code and coordinated with Oncor Electric Delivery. Provide Telecom equipment and jack provisions as specified.

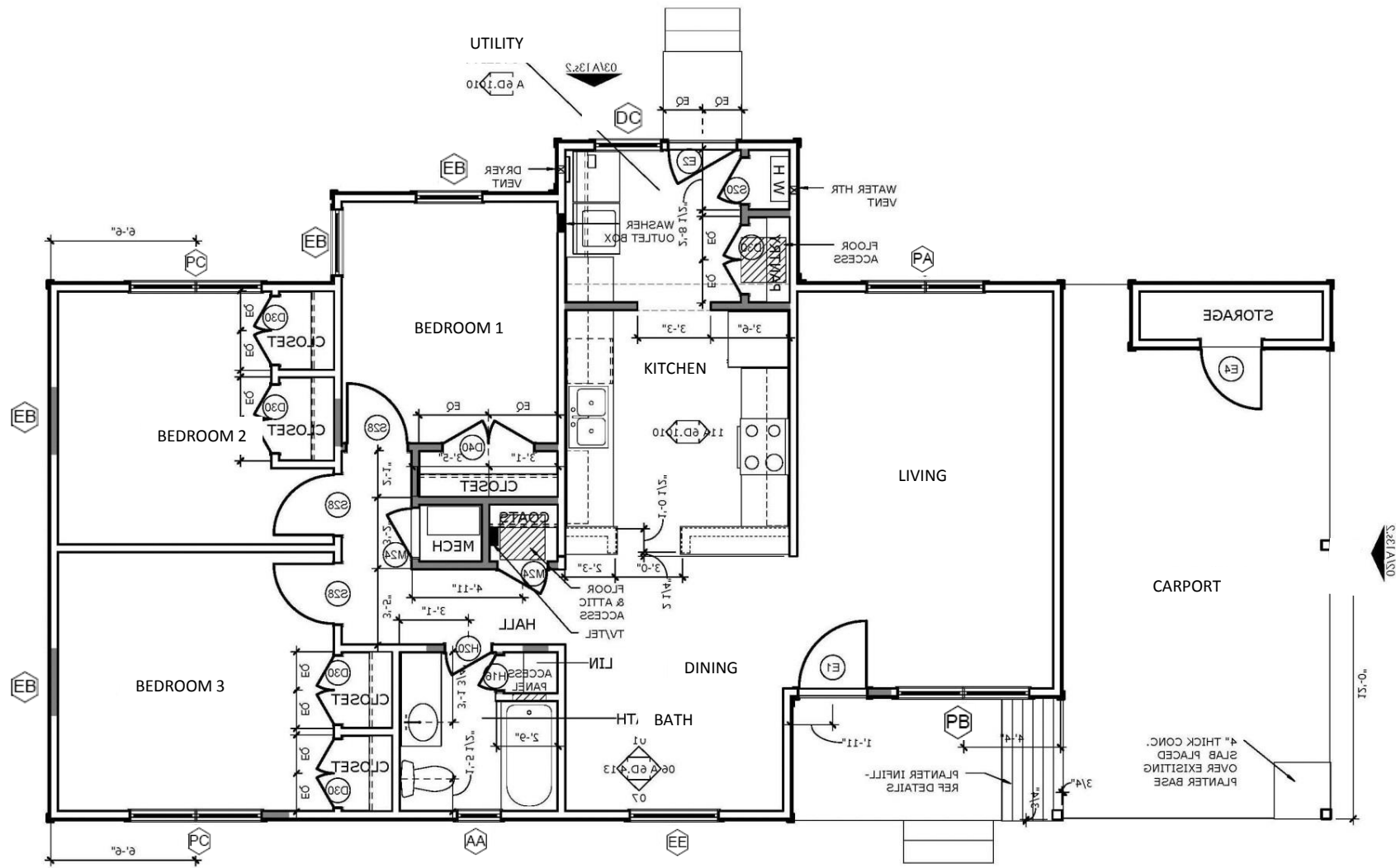
Demo and Dimension Plan





Typical New Detail - Schematic Only

50 Bolling Interior Restoration

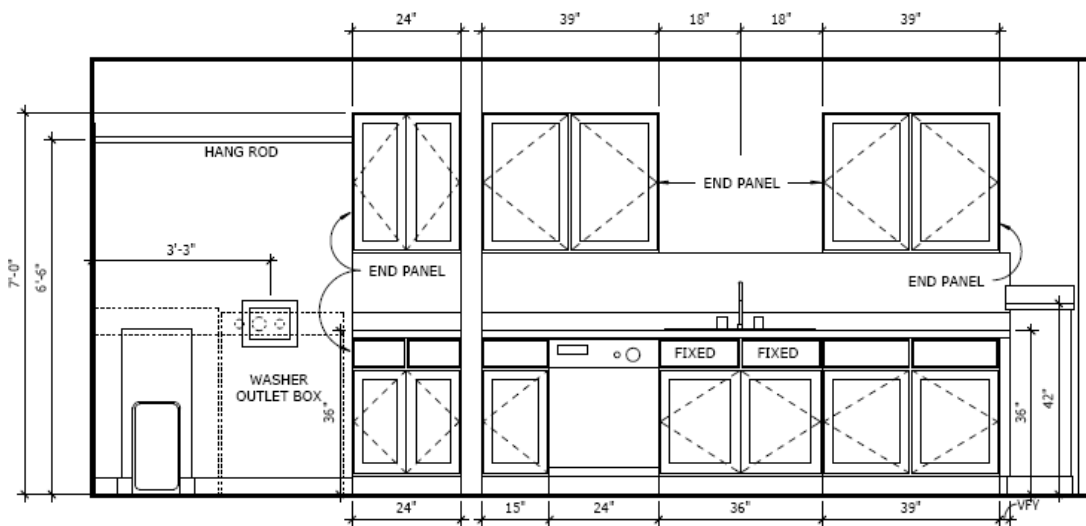


50 Bolling Interior Restoration – Interior Elevations/Finish Schedules

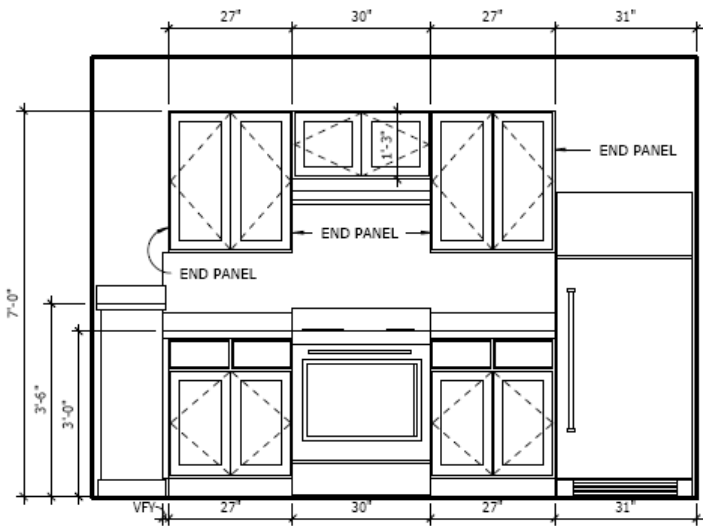
Room Type	Floor	Base	Walls	Ceiling	Doors	Wood Shelves & Trim	Cabinets	Counter Top & 4" Splash	Upper Splash	Bathtub/Shower Surround
Entry	V-1	PT-1	PT-1	PT-1	PT-1	PT-1				
Living/Dining	V-1	PT-1	PT-1	PT-1	PT-1	PT-1				
Kitchen	V-1	PT-1	PT-1	PT-1	PT-1	PT-1	C-1	PL-3	PL-4	
Utility	V-1	PT-1	PT-1	PT-1	PT-1	PT-1	C-1	PL-3		
Hall	V-1	PT-1	PT-1	PT-1	PT-1	PT-1				
Bedrooms	V-1	PT-1	PT-1	PT-1	PT-1	PT-1				
Bath	V-1	PT-1	PT-1	PT-1	PT-1	PT-1	C-1			
Bdrm Closet	V-1	PT-1	PT-1	PT-1	PT-1	PT-1				
Coat Closet	V-1	PT-1	PT-1	PT-1	PT-1	PT-1				
Storage Closet	V-1	PT-1	PT-1	PT-1	PT-1	PT-1				
Linen	V-1	PT-1	PT-1	PT-1	PT-1	PT-1				
Pantry	V-1	PT-1	PT-1	PT-1	PT-1	PT-1				
Mechanical	V-1	PT-1	PT-1	PT-1	PT-1	PT-1				
Water Heater	V-1	PT-1	PT-1	PT-1	PT-1	PT-1				

Mark	Material Type	Manufacturer	Product	Finish/Color	Description
V-1	Vinyl Covered Tile	Azrock	V-211-3	Springer Spaniel	12"x12"
PT-1	Paint-Interior	Sherwin-Williams	SW 7102	White Flour	Interior Latex Semi-Gloss or Water Based Epoxy Semi-Gloss
C-1	Cabinets	Brandom Cabinets	Alpine	Poplar, Chocolate	
PL-3	Plastic Laminate	Wilson Art	4761-60	Mystique Mount	Plam countertop and Splash
PL-4	Plastic Laminate	Wilson Art	D431-60	Alabaster	Plam applied to wall surface at upper splash

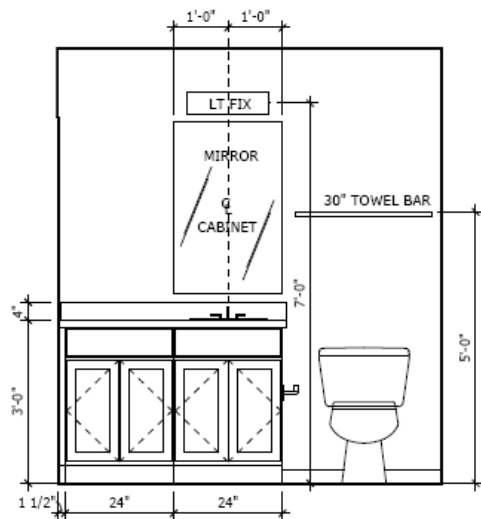
50 Bolling Interior Restoration – Interior Elevations/Finish Schedules



10 PLAN 53s - KITCHEN ELEV - SINK

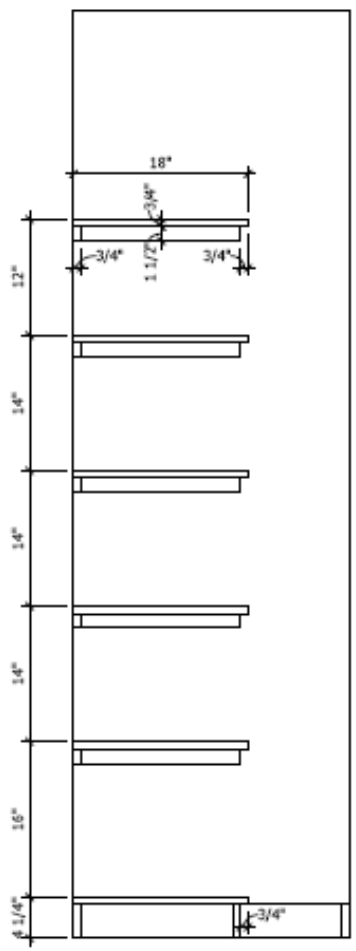


11 PLAN 53s - KITCHEN RANGE

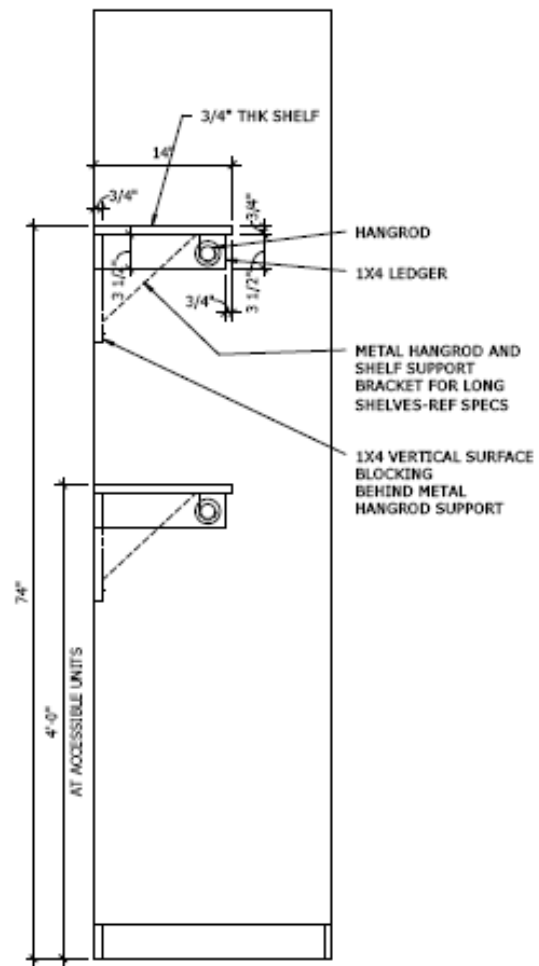


13 PLAN 53s-BATH-VANITY

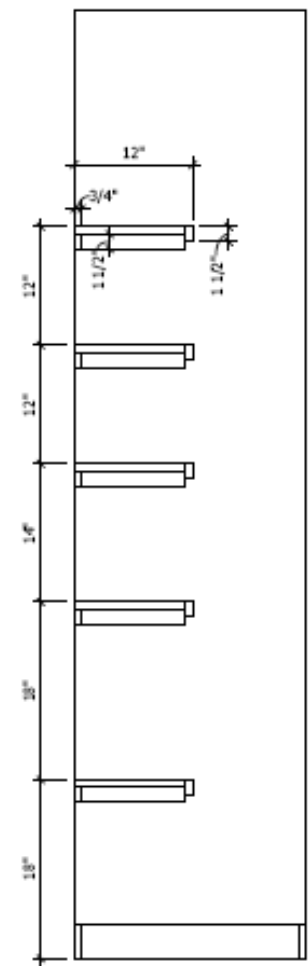
50 Bolling Interior Restoration – Interior Elevations/Finish Schedules



19 LINEN SHELVES



14 COAT CLOSET



13 PANTRY SHELVES

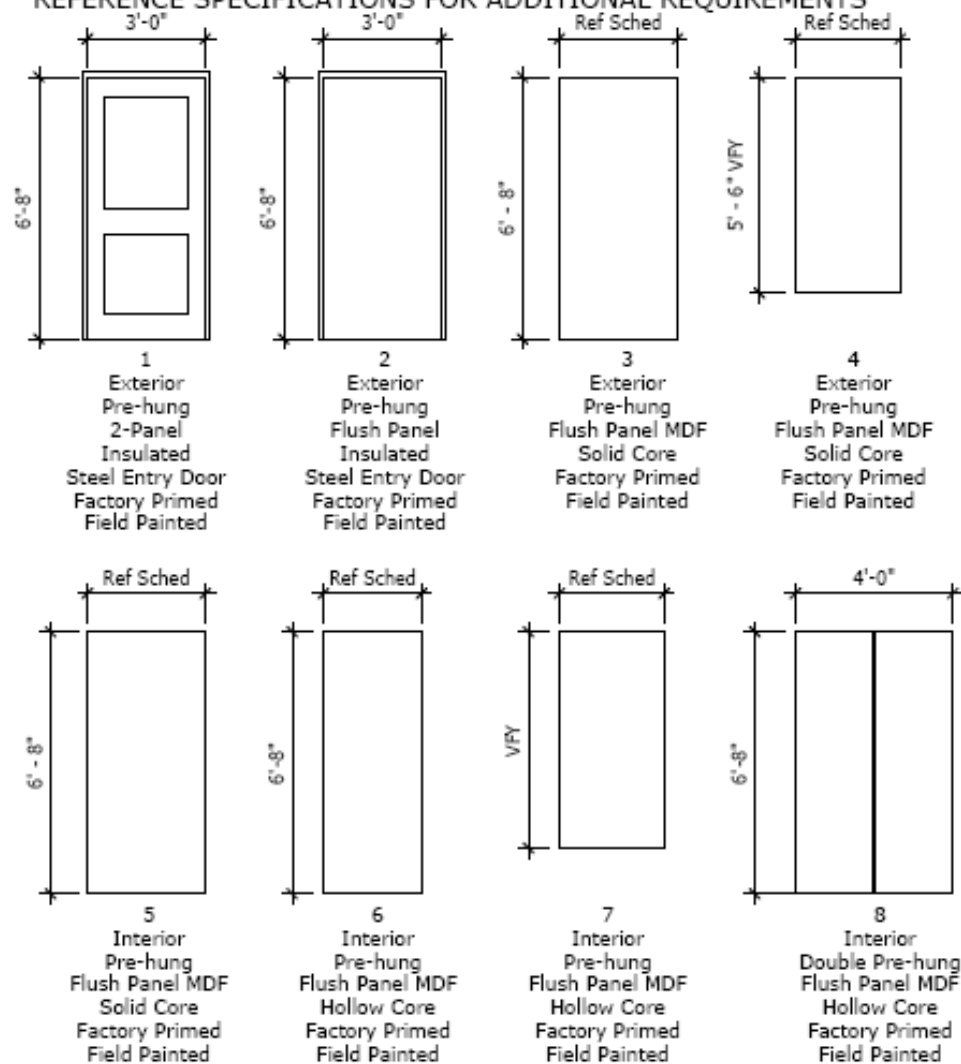
50 Bolling Interior Restoration – Interior Elevations/Finish Schedules

DOOR SCHEDULE

Mark	Location	Type	Width	Ht	Thk
E1	Front Door	1	3'-0"	6'-8"	1 3/4"
E2	Back Door	2	3'-0"	6'-8"	1 3/4"
E3	Exterior Storage	3	3'-0"	6'-8"	1 3/4"
E4	Exterior Storage	3	2'-8"	6'-8"	1 3/4"
E5	Exterior Storage	4	2'-8"	5'-6"	1 3/4"
D30	Closets	8	3'-0" (pr 1'-6")	6'-8"	1 3/8"
D40	Closets	8	4'-0" (pr 2'-0")	6'-8"	1 3/8"
H10	Linen	6	1'-0"	6'-8"	1 3/8"
H16	Linen	6	1'-6"	6'-8"	1 3/8"
H18	Linen	6	1'-8"	6'-8"	1 3/8"
H20	Closets, Linen	6	2'-0"	6'-8"	1 3/8"
H24	Mechanical Closet	6	2'-4"	6'-8"	1 3/8"
H28	Mechanical Closet	6	2'-8"	6'-8"	1 3/8"
H30	Mechanical Closet	6	3'-0"	6'-8"	1 3/8"
M20	Mechanical Closet	7	2'-0"	4'-1 1/2" VFY	1 3/8"
M22	Mechanical Closet	7	2'-2"	4'-1 1/2" VFY	1 3/8"
M24	Mechanical Closet	7	2'-4"	4'-1 1/2" VFY	1 3/8"
M26	Mechanical Closet	7	2'-6"	4'-1 1/2" VFY	1 3/8"
M28	Mechanical Closet	7	2'-8"	4'-1 1/2" VFY	1 3/8"
S20	Bathrooms	5	2'-0"	6'-8"	1 3/8"
S24	Bathrooms	5	2'-4"	6'-8"	1 3/8"
S28	Bedrooms	5	2'-8"	6'-8"	1 3/8"
S30	Accessible Bedrooms & Baths	5	3'-0"	6'-8"	1 3/8"

DOOR TYPES

REFERENCE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS



50 Bolling Interior Restoration – Interior Elevations/Finish Schedules

DOOR HARDWARE SCHEDULE

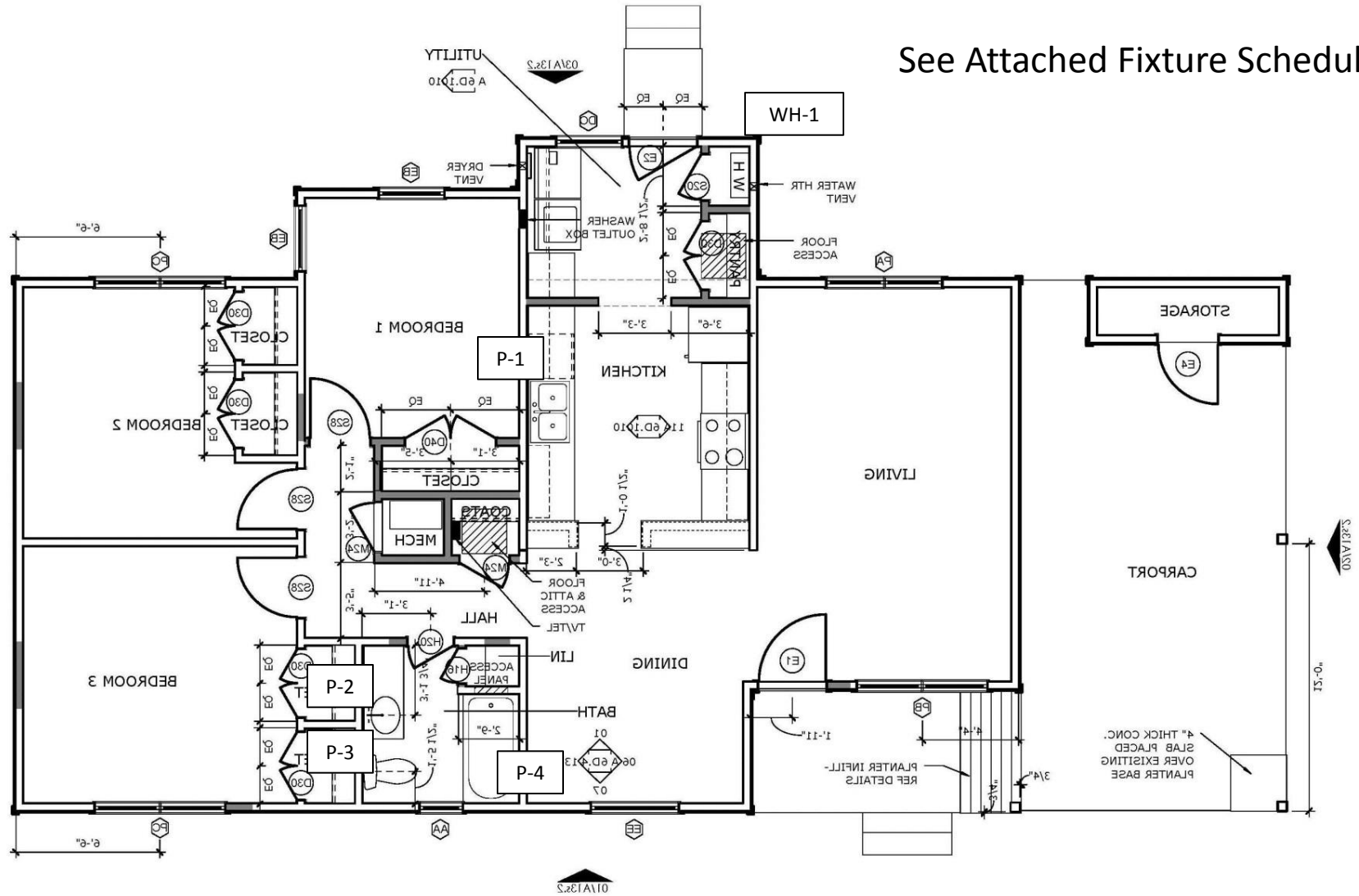
Door Location	Typical & Upgrade Units						Accessible Units					
Exterior Storage	H-1	HSP	PU				H-1	HSP	PU			
Front Entrance	H-1	LKP	DB-1	S	T1	W1	DV	H-1	LLP	DB-1	S	T1A W1 (2)DV
Back Entrance	H-1	LKP	DB-1	S	T1	W1	DV	H-1	LLP	DB-1	S	T1A W1 (2)DV
Bedrooms	H-2	LKV		S				H-2	LLV		S	
Bathrooms	H-2	LKV		S				H-2	LLV		S	
Closets-Single Door	H-2	M	P	S				H-2	M	P	S	
Closets-Double Doors	H-2	M	(2)P	S				H-2	M	(2)P	S	
Coats	H-2	M	P	S				H-2	M	P	S	
Mechanical Closets	H-2	LKP	DB-2	S				H-2	LLP	DB-2	S	
Water Heater Closets	H-2	LKP	DB-2	S	T2	W2	W3	H-2	LLP	DB-2	S	T2 W2 W3
Utility Rooms (Plans 01-05)	H-2	LKP		S				H-2	LLP		S	

DOOR HARDWARE ITEMS

Key Name	Mark	Item	Mfg	Product #	Finishes	Description
1	DB-1	Deadbolt	Medeco	11 C602	Satin Chrome	Single Cylinder "Maxum" Deadbolt, less core. Core provided by Owner. 1 1/8" faceplate, 2 3/4" backset. UL437 listing; exceeds ANSI Grade 1 auxiliary lock standard; solid brass; free turning security collar; 1/4" dia mounting bolts; 1" throw hardened steel bolt.
1A	DB-2	Deadbolt	Schlage	B360	Satin Chrome	Single Cylinder Deadbolt, Strike: 10-092; 1/4" radius corner, full lip, no box. 1 5/8" x 2 1/4"
2	DV	Door Viewer	Ives	U700 B26D		One-Way Door Viewer for doors 1 3/8" to 2 1/16" thick. solid brass body, glass lens. 120 degree view. Mount horizontally in the center of the door. Typical Unit Mounting Ht: 60" AFF Accessible Unit Mounting Hts: 1 at 60" AFF and 1 at 42" AFF
2A	H1	Hinges-Exterior	Generic		Pol Brass	1 1/2 Pair 4"x4" Residential Hinges. Non-rising pin, 5 knuckle, full mortise; 5/8" radius corners; order screws separately
2B	H2	Hinges-Interior	Generic		Gray Primed Steel	1 Pair 4"x4" Residential Hinges. 5 knuckle, full mortise; 5/8" radius corners; order screws separately
2C	HSP	Hasp	Master Lock	730	Zinc	Straight Bar Hasp. Zinc plated hardened steel. Hasp body conceals included mounting hardware. 7 1/4" L
3	LKP	Lockset-Knob Passage	Schlage	F10 ORB 626	Satin Chrome	"Orbit" Passage Set. Function: Both knobs always unlocked. *Note 1
4	LKV	Lockset-Knob Privacy	Schlage	F40 ORB 626	Satin Chrome	"Orbit" Privacy Set. Function: Push-button locking. Opened from outside with a small tool. Turning inside knob releases push-button. *Note 1
5	LLP	Lockset-Lever Passage	Schlage	F10 MNH 626	Satin Chrome	"Manhattan" Passage Set. Function: Both levers always unlocked. *Note 1
6	LLV	Lockset-Lever Privacy	Schlage	F40 MNH 626	Satin Chrome	"Manhattan" Privacy Set. Function: Push-button locking. Opened from outside with a small tool. Turning inside lever releases push-button. *Note 1
7	M	Magnetic Catch	Ives	326 A92	Clear Aluminum	"Mighty-Mite" heavy duty magnetic catch. Dual double pole with two short strikes and one long strike
8	P	Pull	Engineered Products Co (EPCO)	MC401-4-BRC	Brushed Chrome	Steel wire pull. 4" hole spacing, 1 5/16" projection, 4 5/16" L, 5/16" OD. Note: Included screws are size 8-32 x 1" machine screws. Additional screws, size 8-32 x 1 1/2" and 2 SAE flat galv washers for each screw are required
9	PU	Pull-Utility	National Mfg Div Stanley	N116-863	Galvanized	Galvanized steel door pull with screws, 5 1/2" L
10	S	Stop	Ives	61 A92	Clear Aluminum	Base door stop. Rigid, screw in, solid aluminum, white resilient replaceable tip. 3" projection, 7/8" base dia
11	T1	Threshold				Threshold supplied with entry door unit.
12	T1A	Threshold ADA				Threshold supplied with entry door unit. Compliant with Texas Accessibility Standards and ADA.
13	W1	Weatherstrip				Vinyl weatherstripping supplied with entry door unit.
14	W2	Weatherstrip	Thermwell	VA17H	Silver Aluminum & Gray Vinyl	Aluminum and vinyl adjustable door seal set. 3/4" x 17"
15	W3	Door Sweep	Thermwell	A59/36H	Silver Aluminum & Gray Vinyl	Aluminum and vinyl adjustable door sweep.

1. All locksets: Meet ANSI Grade 2 requirements. One piece knob or lever; wrought brass exposed trim; universal backset (use 2 3/4"); field reversible; pressure cast zinc tubular lock housing, 1/2" latch throw; full lip strike. Lifetime mechanical and finish warranty.

See Attached Fixture Schedule



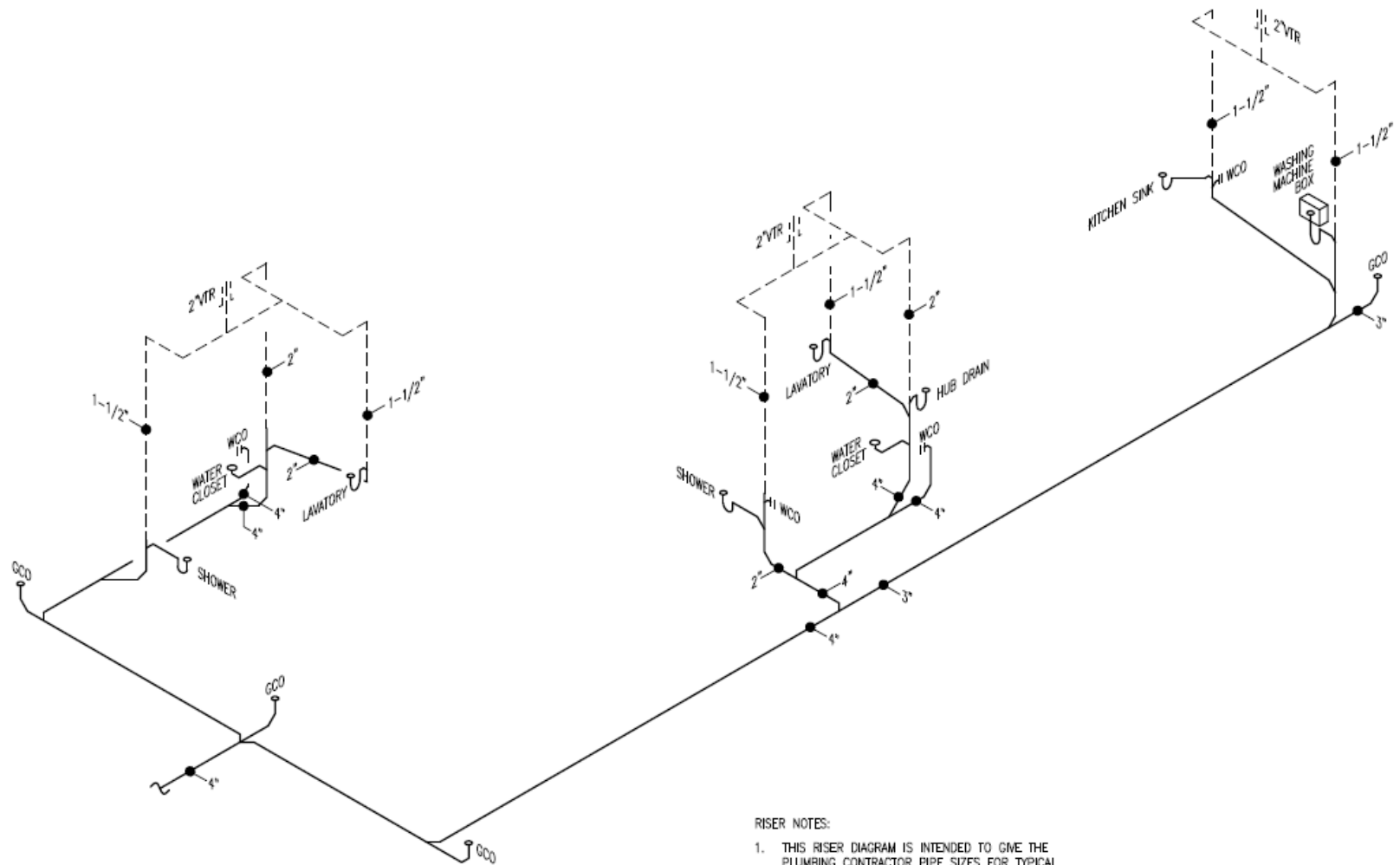
Plumbing – 50 Bolling

Plumbing Fixture Schedule

Description	Designation	Manufacturer/Model #
Kitchen Sink	P-1	Moen: Camelot 22213
Faucet	-	American Standard: 6424F Cadet 2 Handle Kitchen Faucet w/ Gooseneck Spout; Polished Chrome
Swivel Spray	-	Siroflex: New Style Deluxe Double Swivel Sprayer
Bathroom Sink	P-2	InPro: QS Standard Lav P9011 Bright White
Faucet	-	American Standard: 8125F Cadet Centerset Faucet w/ Speed Connect Drain; Polished Chrome
Toilet	P-3	Toto: CST704LX w/ SS114 Seat #01 Cotton
Tub	P-4	Kohler: K-715 White
Tub Faucet/Shower	-	American Standard: 3275 Cadet Two Handle Bath/Shower Fitting; Polished Chrome
Water Heater	WH-1	Rheem 95 Series (Indoor), Gas Fired, Tankless Water Heater, Direct Vent, 199.9 MBH Input

Additional Plumbing Notes:

- Contractor to tie in to existing clay sewer line located behind the unit. Install standard double cleanout between house and tie in point.
- Contractor to tie in to water main locate in front of the unit. Install a valved vault box between unit and tie in point.



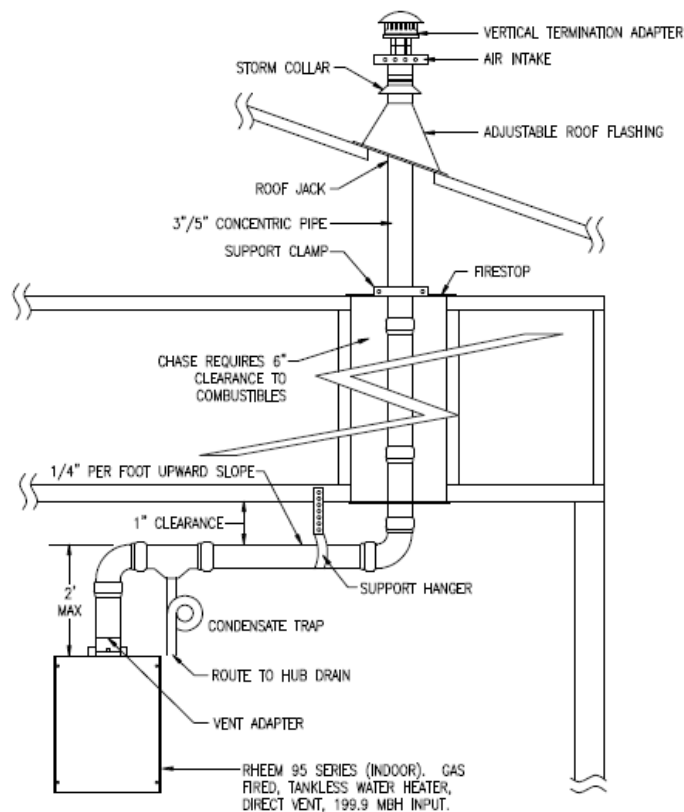
RISER NOTES:

1. THIS RISER DIAGRAM IS INTENDED TO GIVE THE PLUMBING CONTRACTOR PIPE SIZES FOR TYPICAL BATHROOM AND KITCHENS. IT DOES NOT REFLECT THE EXACT INSTALLATION FOR EACH HOUSING UNIT.
2. ALL HORIZONTAL VENT PIPING SHALL BE 2".

03 WASTE AND VENT RISER DIAGRAM

SCALE: NTS

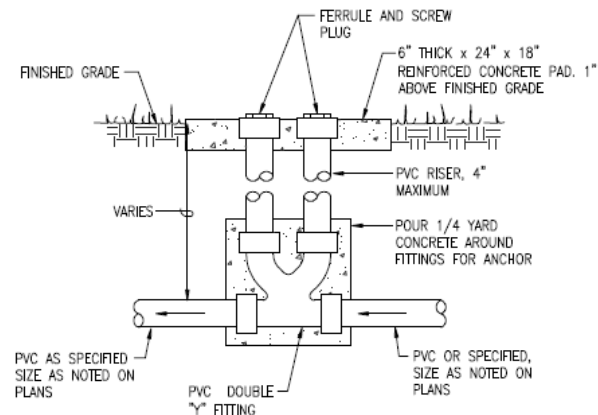
Plumbing – 50 Bolling



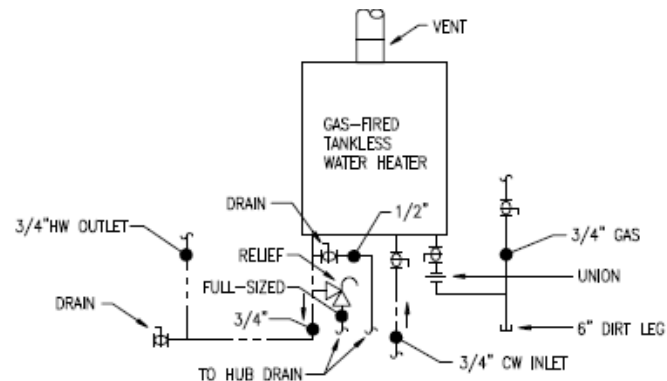
NOTE:

1. REFER TO MANUFACTURES RECOMMENDATIONS FOR FLUE/COMBUSTIONS AIR SIZES AND CONNECTIONS. MECHANICAL CONTRACTOR SHALL PROVIDE FLUE/COMBUSTION AIR DUCT PER MANUFACTURES INSTRUCTIONS.
2. INSTALL DOUBLE CHECK VALVE ON WALL AND ABOVE WATER HEATER.

02 GAS-FIRED TANKLESS WATER HEATER INSTALLATION

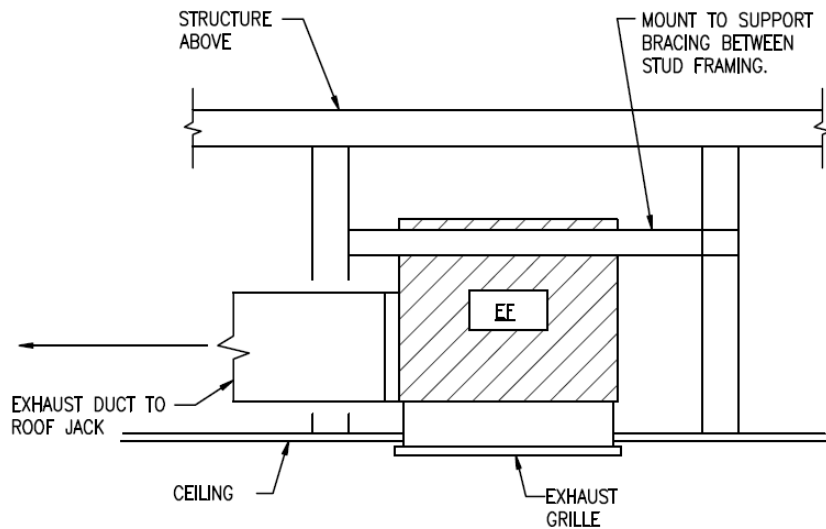


01 TWO-WAY CLEANOUT



04 GAS-FIRED TANKLESS WATER HEATER PIPING

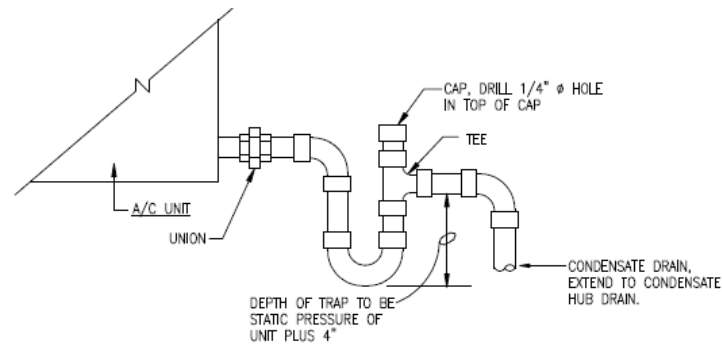
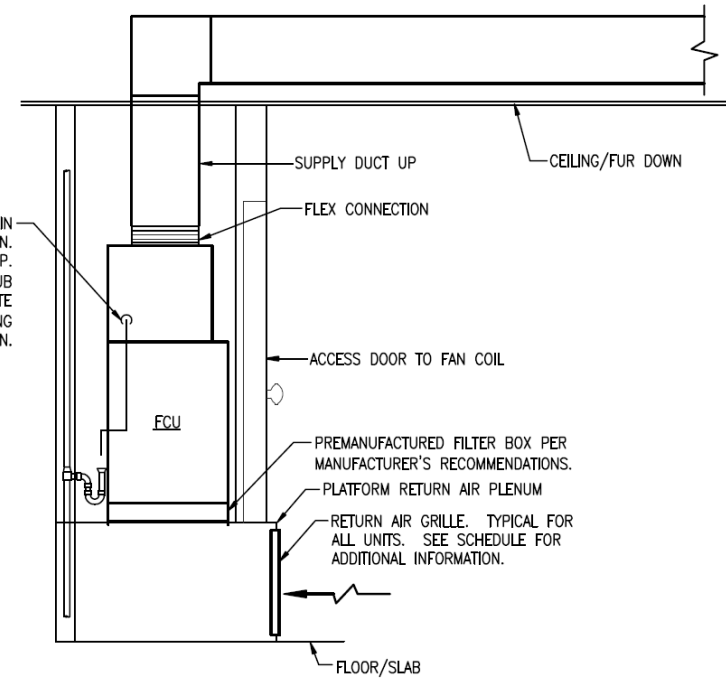
HVAC – 50 Bolling



NOTES:

1. EXHAUST FAN IS PROVIDED WITH BACKDRAFT DAMPER.
2. PROVIDE EXHAUST FAN WITH WHITE PLASTIC EXHAUST GRILLE.

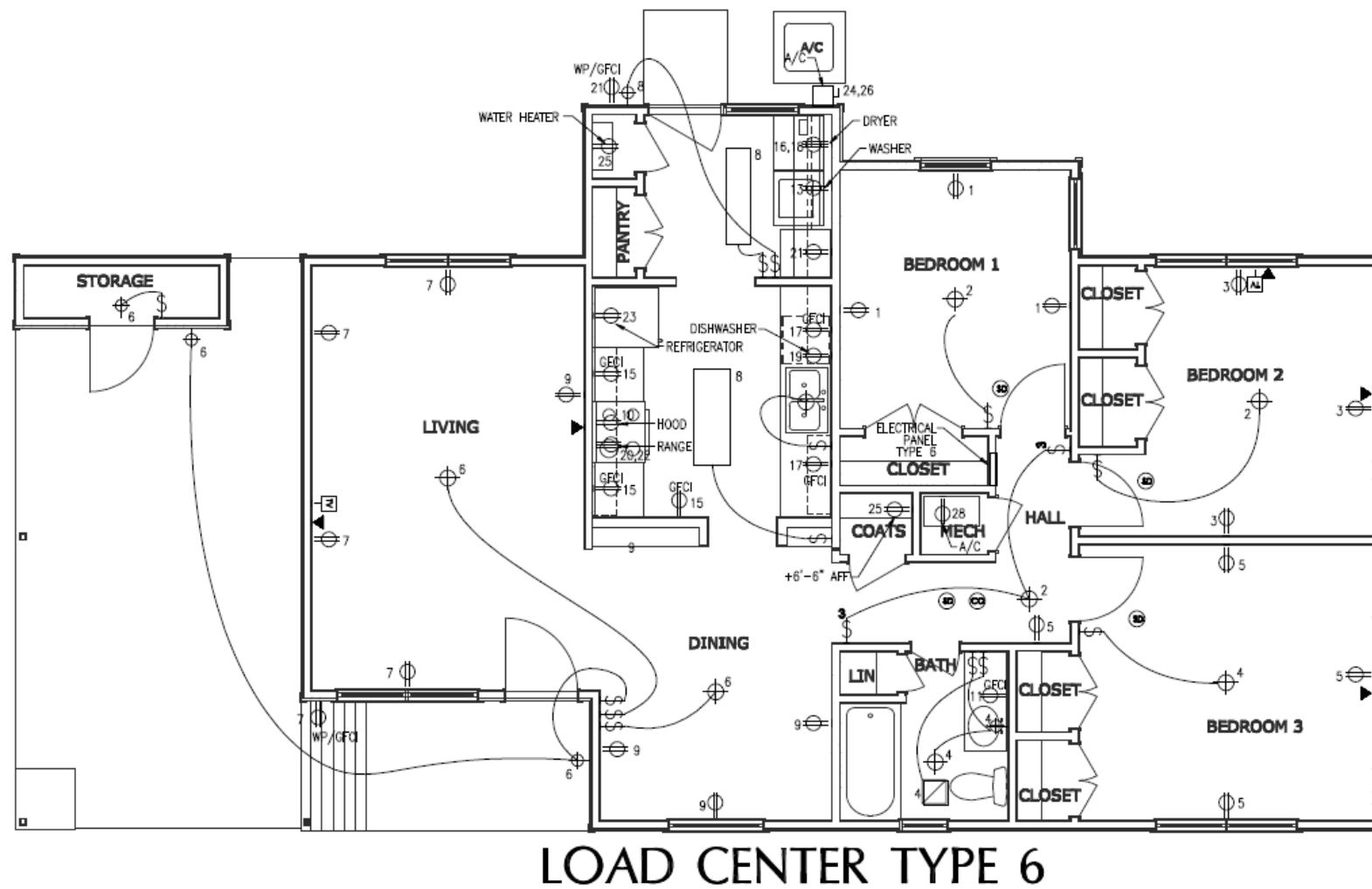
ROUTE 3/4" CONDENSATE DRAIN PIPING INDIRECT TO HUB DRAIN. PROVIDE WITH VENTED P-TRAP. PROVIDE 2" AIR GAP AT HUB DRAIN. INSULATE CONDENSATE WITH 3/4" ARMAFLEX PIPING INSULATION.



03 VENTED P-TRAP

NOT TO SCALE

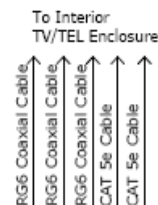
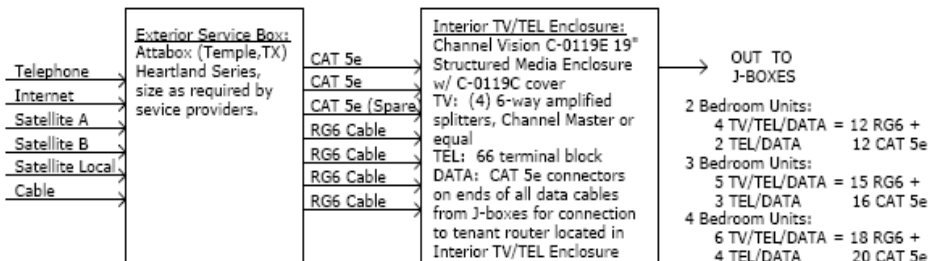
RFP 012815



TV/TEL/DATA DIAGRAM



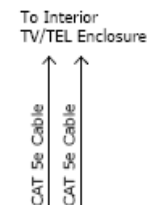
Exterior Satellite Dish Wall Mount Bracket:
Dish Mount Products WM-200 Aluminum Wall Mount Bracket.
Mount 2 units 36" on center on the appropriate side of each unit.
Install Exterior Service Box centered between the two wall mount brackets.



TV/TEL/DATA: Combine into 1 single gang j-box
Wall Plate:
Leviton 41080-6IP
QuickPort Wallplate, 1-gang, 6 port, ivory
Inserts:
(1) Data: Leviton 5G110-R15
GigaMax 5e+ QuickPort connector, CAT 5e, ivory
(1) Tel: Leviton 41106-R16
Voice Grade QuickPort connector, 6P6C, ivory
(1) Blank: Leviton 41084-B1B
Snap-in Blank Module, ivory
(3) TV: Leviton 41084-F1F
QuickPort F-Type Adapter, Nickel-Plated, ivory



Data Tel
Blank TV
TV TV



TEL/DATA: 1 single gang j-box
Wall Plate:
Leviton 40702-B1
QuickPort Wallplate, 1-gang, 2 port, ivory
Inserts:
(1) Data: Leviton 5G110-R15
GigaMax 5e+ QuickPort connector, CAT 5e, ivory
(1) Tel: Leviton 41106-R16
Voice Grade QuickPort connector, 6P6C, ivory



Data
Tel

ELECTRICAL GENERAL NOTES:

1. THESE PLANS ARE SCHEMATIC, VERIFY EXACT EQUIPMENT LOCATION PRIOR TO BID.
2. ALL ELECTRICAL WORK IS REQUIRED TO BE PERFORMED BY A CERTIFIED ELECTRICAL CONTRACTOR. ALL WIRING, EQUIPMENT, DEVICES AND INSTALLATIONS SHALL CONFORM TO LOCAL, STATE AND FEDERAL CODES.
3. PROVIDE ALL WIRING, LABOR AND MATERIALS NOT SHOWN ON PLAN, BUT NECESSARY FOR COMPLETE AND PROPER OPERATIONS OF THE ELECTRICAL SYSTEM. ALL EXTERIOR AND UNDERGROUND WIRING SHALL BE INSTALLED IN CONDUIT.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES AND PERMITS AS NECESSARY TO COMPLETE THIS JOB. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO INSURE A COMPLETE WORKING SYSTEM.
5. ALL ELECTRICAL WORK MUST COMPLY WITH THE REQUIREMENTS OF NFPA 70, N.E.C, NFPA 70B, NFPA 70E, IECC, OSHA IN ADDITION TO OTHER REFERENCES REQUIREMENT BY CONTRACT. ALL INSTALLATION SHALL COMPLY WITH ALL LOCAL, STATE CODES, BUILDING CODE AND AUTHORITIES HAVING JURISDICTION.
6. INSTALLATION OF SWITCHES, OUTLETS AND CONTROL DEVICES SHALL COMPLY WITH LOCAL CODES. IN ACCESSIBLE UNITS, COMPLY WITH TEXAS ACCESSIBILITY STANDARDS.
7. COORDINATE FINAL LOCATIONS OF ALL NON-GENERAL OUTLETS AND LIGHT FIXTURES WITH OWNER.
8. REFER TO MECHANICAL AND PLUMBING SHEET FOR EXACT LOCATION OF ALL MECHANICAL AND PLUMBING EQUIPMENT. PROVIDE ALL LABOR AND MATERIALS REQUIRED TO CONNECT ELECTRICAL POWER TO ALL MECHANICAL AND PLUMBING EQUIPMENT.
9. ALL ELECTRICAL EQUIPMENT, DEVICES AND CIRCUITS SHALL CONTAIN A GROUNDING CONDUCTOR. ALL GROUNDING SHALL BE IN STRICT COMPLIANCE WITH ARTICLE NO. 250 OF THE NATIONAL ELECTRIC CODE.
10. PROVIDE AND INSTALL NEW METER BASE FOR EACH UNIT. COORDINATE LOCATION AND VERIFY REQUIREMENTS OF ALL EXTERIOR EQUIPMENT AND METER BASE WITH OWNER AND UTILITY COMPANY.
11. ALL PANELS AND BREAKERS SHALL HAVE TYPED IDENTIFICATION LABELS.
12. CONTRACTOR IS RESPONSIBLE FOR NEC REQUIREMENT CLEARANCES AROUND AND ABOVE OF ALL ELECTRICAL EQUIPMENT AND DEVICES.
13. SHORT CIRCUIT A.I.C. RATING OF ALL ELECTRICAL PRODUCTS SHALL BE GREATER THAN THE MAXIMUM AVAILABLE SHORT CIRCUIT CURRENT.
14. DO NOT RUN RACEWAYS ON BUILDING EXTERIOR WALLS.
15. WIRE SHALL BE INSTALLED AND SIZED TO COMPENSATE FOR VOLTAGE DROP PER THE N.E.C.
16. ALL 120V CIRCUIT HOMERUNS SHALL BE MINIMUM 2#12, 1#12G., 3/4"C.
17. ALL 240V CIRCUIT HOMERUNS SHALL BE MINIMUM 2#12, #12G., 3/4"C.
18. ALL CONDUCTORS ABOVE SIZE #6 TO BE THW, THWN, THHN AS REQUIRED.
19. ALL CONDUCTORS SHALL BE 98% COPPER (NO ALUMINUM CONDUCTORS WILL BE ACCEPTED).
20. ALL WIRING RUN WITHIN FLUORESCENT LIGHT FIXTURES SHALL BE TYPE "THHN".
21. CONDUCTORS IN UNINSULATED CEILING SPACE AND OUTDOORS SHALL BE DERATED USING A 122 DEGREE AMBIENT TEMPERATURE. CONTRACTOR IS RESPONSIBLE FOR REVISING CONDUCTOR SIZES.
22. ALL OUTDOOR EQUIPMENT SHALL BE WEATHER AND DUST PROTECTED.
23. IF A PROTECTIVE DEVICE RATING IS MARKED ON AN APPLIANCE OR EQUIPMENT, THE BRANCH-CIRCUIT OVERCURRENT DEVICE RATING SHALL NOT EXCEED THE PROTECTIVE DEVICE RATING MARKED ON THE APPLIANCE OR EQUIPMENT.
24. ALL MECHANICAL EQUIPMENT CONTROLS SHALL BE POWERED FROM UNIT.
25. REFER TO ARCHITECTURAL DRAWINGS FOR LIGHT FIXTURE SCHEDULE.
26. PROVIDE GFCI PROTECTED RECEPTACLES IN KITCHEN AND OUTDOOR AREAS AS REQUIRED BY NATIONAL ELECTRIC CODE.
27. REFER TO UNIT PANEL SCHEDULES AND LOAD CALCULATION TABLE ON SHEET E12.
28. ALL SMOKE DETECTORS/ALARMS SHALL BE KIDDE FIREX i5000 MODEL WITH BATTERY BACKUP. INTERCONNECT ALL SMOKE DETECTORS/ALARMS AND CO SENSORS IN EACH UNIT TOGETHER. CONNECT TO 15A BREAKER IN SPACE 30 OF UNIT LOAD CENTER. REFER TO MANUFACTURER SPECIFICATIONS FOR ADDITIONAL CONNECTION REQUIREMENTS.
29. ALL CARBON MONOXIDE DETECTORS/ALARMS SHALL BE KIDDE KN-COB-IC MODEL WITH BATTERY BACKUP. INTERCONNECT ALL SMOKE DETECTORS/ALARMS AND CO SENSORS IN EACH UNIT TOGETHER. CONNECT TO 15A BREAKER IN SPACE 30 OF UNIT LOAD CENTER. REFER TO MANUFACTURER SPECIFICATIONS FOR ADDITIONAL CONNECTION REQUIREMENTS.
30. PROVIDE AND INSTALL JUNCTION BOXES, BRACED AND UL LISTED "FOR USE WITH CEILING FANS", AT ALL BEDROOM, DINING ROOM AND LIVING ROOM LIGHT FIXTURE LOCATIONS.

UNIT EQUIPMENT SCHEDULE

EQUIPMENT	LOAD			DISCONNECT SIZE	CONDUCTORS	COMMENTS
	LOAD	UNITS	VOLTS			
WASHER	12.5	AMPS	120	20A/120V RECEPTACLE	2#12, 1#12G	
DRYER	24	AMPS	240	30A/240V RECEPTACLE	3#10, 1#10G	
WATER HEATER	2	AMPS	120	20A/120V RECEPTACLE	2#12, 1#12G	
REFRIGERATOR	12.5	AMPS	120	20A/120V RECEPTACLE	2#12, 1#12G	
RANGE	32	AMPS	240	40A/240V RECEPTACLE	3#8, 1#10G	
HOOD	4	AMPS	120	20A/120V RECEPTACLE	2#12, 1#12G	
DISHWASHER	10.5	AMPS	120	20A/120V RECEPTACLE	2#12, 1#12G	
A/C (INDOOR)	10	AMPS	120	20A/120V RECEPTACLE	2#12, 1#12G	
A/C (OUTDOOR)	18	AMPS	240	30A/2P/240V/NF/WP DISCONNECT	3#10, 1#10G	UNIT TYPES 12,13,13s,22,23,23s,32,33,42,43,53s
A/C (OUTDOOR)	22	AMPS	240	60A/2P/240V/NF/WP DISCONNECT	3#8, 1#10G	UNIT TYPES 01,02,02A,03,04,05,33s,43s

GENERAL NOTES APPLY TO ALL:

1. VERIFY ALL MOUNTING REQUIREMENTS WITH EQUIPMENT PROVIDER. COORDINATE EXACT LOCATIONS OF ALL EQUIPMENT WITH OWNER.
2. VERIFY ACTUAL EQUIPMENT LOADS AND CONNECTION REQUIREMENTS WITH MANUFACTURER. DO NOT EXCEED THE LOAD VALUE AS SHOWN ON SCHEDULE. ALL CIRCUITS DESIGNED BASED ON ABOVE LOADS FOR EACH EQUIPMENT. CONTRACTOR SHALL NOT CIRCUIT OR CONNECT ANY EQUIPMENT WHICH EXCEEDS THE CONNECTED LOAD AS SHOWN ON TABLE. WIRE AND CONDUIT SIZES SHALL BE SIZED TO COMPENSATE FOR VOLTAGE DROP PER THE NEC.
3. CONTRACTOR SHALL PROVIDE APPROPRIATE RECEPTACLE, JUNCTION BOX, DISCONNECT OR CONNECTION MEANS FOR ALL DEVICES IN EQUIPMENT SCHEDULE EVEN IF NOT NOTED FOR EQUIPMENT INSTALLATION. COORDINATE EXACT REQUIREMENTS WITH EQUIPMENT INSTALLER.

Light Fixtures


Location	Mount	Manufacturer	Product	Finish	Lamp	Description
Exterior - Front Door	Wall	LBL Lighting	5120C-BZ	Bronze	A19 100W or CFL 26W Sprial Warm White	"Large Oval Aluminum Bulk Head" incandescent fixture w/ polycarbonate diffuser. Fully gasketed die-cast powder coated aluminum housing w/ s.s. screws
Exterior - Back Door			Plycarbonate			for wet location. 10.5"x 6.5" x 5.5" Projection
Exterior - Storage						
Exterior - Carport						
Kitchen - Ceiling Center	Ceiling	Lithonia	10642RE	White	(4) T8 32W 2700K	"Litepuff Linear" ceiling fixture with contoured white acrylic diffuser; Electronic instant on ballast. Light + 7x100W incandescent. 16 5/8"x 51 1/2" x 5 1/2".
Kitchen - Over Sink	Ceiling	Access	20656	White	A19 100W or CFL 26W Sprial Warm White	"Vegas Flush Mount" fixture w/ opal glass diffuser. 8" x 8" x 5"
Utility	Ceiling	Lithonia	10640RE	White	(2) T8 32W 2700K	"Litepuff Linear" ceiling fixture with contoured white acrylic diffuser; Electronic instant on ballast. Light + 3.5 x 100W incandescent. 11 1/4"x 51 1/2"
Living Room	Ceiling	Access	20626-BS	Brushed Steel	(2) A19 75W or (2) CFL 26W Sprial Warm White	"Cobalt Flush Mount" incandescent ceiling fixture. Brushed steel base w/ opal glass. 15" dia x 5". Mount on ceiling fan j-box.
Dining Room						
Bedrooms	Ceiling	Access	20626-BS	Brushed Steel	(2) A19 75W or (2) CFL 26W Sprial Warm White	"Cobalt Flush Mount" incandescent ceiling fixture. Brushed steel base w/ opal glass. 15" dia x 5". Mount on ceiling fan j-box.
Bath - Ceiling	Ceiling	Access	20624-BS	Brushed Steel	A19 100W or CFL 26W Sprial Warm White	"Cobalt Flush Mount" incandescent ceiling fixture. Brushed steel base w/ opal glass. 11" dia x 3.6".
Walk-in Closets						
Bath - Above Mirror	Wall	Progress	P7112-30	White	A19 100W or CFL 26W Sprial Warm White	White Glass Quartersphere incandescent scone. 11.5" dia x 5" high x 5 3/4" projection

Electrical – 50 Bolling


ELECTRICAL LEGEND

LIGHT SWITCHES

 SINGLE WAY TOGGLE

 THREE WAY TOGGLE

EXHAUST FAN

 BATHROOM/CEILING MOUNT

LIGHT FIXTURE CIRCUITING

 ## —CIRCUIT NUMBER
(ANY FIXTURE)

FIRE/CO DETECTION

 SMOKE DETECTOR
CEILING MOUNTED

 CARBON MONOXIDE DETECTOR
CEILING MOUNTED

POWER

 DUPLEX RECEPTACLE

 SPECIAL RATED RECEPTACLE
240V

 JUNCTION BOX
SIZED PER N.E.C., TYPICAL = 4"x4"

 DISCONNECT SWITCH
AMPS/POLES/VOLTAGE/FUSED

 UNIT LOAD CENTER

POWER CIRCUITING

 CIRCUIT NUMBER
(ANY OUTLET)

TECHNOLOGY

 DATA/TELEPHONE OUTLET
SINGLE GANG BOX

 TELEVISION CABLE OUTLET
COORDINATE MOUNTING HEIGHT

ABBREVIATIONS

A	= AMPERES	J-BOX	= JUNCTION BOX
V	= VOLTS OR VOLTAGE	V.A.	= VOLT AMPS
P	= POLE	W.	= WATTS
Ø	= PHASE	N.E.C.	= NATIONAL ELECTRICAL CODE
A.F.F.	= ABOVE FINISHED FLOOR	W.P.	= WEATHERPROOF
A.C.T.	= ABOVE COUNTER TOP	TYP.	= TYPICAL
A.F.C.	= ABOVE FINISHED CEILING	M.L.O.	= MAIN LUGS ONLY
C.	= CONDUIT	A.I.C.	= AMPERE INTERRUPT CURRENT
G.	= GROUND	G.F.C.I.	= GROUND FAULT INTERRUPT

LIGHT FIXTURE LOCATIONS

BEDROOM CEILING FIXTURES: CENTER IN ROOM

BATHROOM CEILING FIXTURES: CENTER ON THE DOOR AND THE BATHTUB UNLESS OTHERWISE NOTED

BATHROOM WALL MOUNT FIXTURES: CENTER ABOVE THE SINK, REFER TO ARCHITECTURAL SHEETS FOR MOUNTING HEIGHTS

PORCH WALL MOUNT FIXTURES: 6'-0" A.F.F.

MOUNTING HEIGHTS

SWITCHES = WALLS: 36" AFF TO CENTER OF SWITCH
KITCHEN/BATH/UTILITY: 3" TO CENTER OF SWITCH ABOVE TOP OF SPLASH

RECEPTACLES = WALLS:
TYPICAL UNITS - 12" A.F.F.

ACCESSIBLE UNITS - 20" A.F.F.

KITCH/BATH/UTILITY:
TYPICAL UNITS - 3" TO CENTER OF OUTLET ABOVE SPLASH

ACCESSIBLE UNITS - 3" TO CENTER OF UNIT ABOVE SPLASH (MOUNT HORIZONTALLY)

KITCHEN ABOVE COUNTER AT LOW WALLS - MOUNT HORIZONTALLY IN CENTER OF 4" SPLASH

ALL SYMBOLS OR ABBREVIATIONS ARE NOT NECESSARILY USED.

2.9 METERING EQUIPMENT

- ALL COMPONENTS SHALL BE FACTORY ASSEMBLED AND ALL CURRENT CARRYING PARTS SHALL BE PLATED BUS BARS.
- METER SOCKET JAWS MUST BE SPRING REINFORCED AND FRONT REMOVABLE.
- OBTAIN APPROVAL AND COORDINATE SHORT CIRCUIT CURRENT WITH POWER COMPANY FOR METERING EQUIPMENT.

Electrical – 50 Bolling

PANEL NO.	TYPE	6		MFR			LOCATION	SEE PLANS
SERVICE VOLTAGE	120/240		VOLTS				MOUNTING	RECESSED
A.I.C.	22k		BUS RATING	150 AMPS(S/N)			NEUTRAL BUS	150 AMP
DESCRIPTION	BREAKER	WIRE SIZE	CKT	CKT	WIRE SIZE	BREAKER	DESCRIPTION	
	POLE AMP		NO	NO		POLE AMP		
BDRM RCPT.	1 20*	2 #12, 1 #12 G.	1	2	2 #12, 1 #12 G.	1 20	BDRM LTS.	
BDRM RCPT.	1 20*	2 #12, 1 #12 G.	3	4	2 #12, 1 #12 G.	1 20	BDRM LTS.	
BDRM RCPT.	1 20*	2 #12, 1 #12 G.	5	6	2 #12, 1 #12 G.	1 20	LIVING/DIN LTS.	
LIVING RCPT.	1 20	2 #12, 1 #12 G.	7	8	2 #12, 1 #12 G.	1 20	KIT/UTIL LTS.	
DINING RCPT.	1 20	2 #12, 1 #12 G.	9	10	2 #12, 1 #12 G.	1 20	RANGE HOOD	
BATH RCPT.	1 20	2 #12, 1 #12 G.	11	12				
WASH MACH.	1 20	2 #12, 1 #12 G.	13	14				
KITCHEN RCPT.	1 20	2 #12, 1 #12 G.	15	16	3 #10, 1 #10 G.	2	DRYER	
KITCHEN RCPT.	1 20	2 #12, 1 #12 G.	17	18		30		
DISHWASHER	1 20	2 #12, 1 #12 G.	19	20	3 #8, 1 #10 G.	2	RANGE	
UTILITY	1 20	2 #12, 1 #12 G.	21	22		40		
REFRIG.	1 20	2 #12, 1 #12 G.	23	24	3 #10, 1 #10 G.	2	OUTDOOR A/C	
WATER HTR.	1 20	3 #12, 1 #12 G.	25	26		30		
			27	28	2 #12, 1 #12 G.	1 20	INDOOR A/C	
			29	30	2 #12, 1 #12 G.	1 15	SMK/CO ALARM	
*ARC FAULT CIRCUIT INTERRUPTER BREAKER								
MAIN BREAKER = 150A								