



Permit Number \_\_\_\_\_

# Building Permit Application

Site Information				
Project Address		Suite #	Subdivision	Lot Block
Business Name (If Commercial Project)				
Property Owner Name		Property Owner Address		City, State, & Zip
Property Owner Contact Phone			Property Owner Email	
Construction Type				
<input type="checkbox"/> Commercial <input type="checkbox"/> Residential <input type="checkbox"/> Sign <input type="checkbox"/> Temporary Use <input type="checkbox"/> Other: _____				
Permit Type				
<div><div><input type="checkbox"/> Shell <input type="checkbox"/> Shell/Finish Out <input type="checkbox"/> Finish Out <input type="checkbox"/> Multi-Family <input type="checkbox"/> Clean &amp; Show <input type="checkbox"/> Demolition <input type="checkbox"/> Subdivision Wall <input type="checkbox"/> Retaining Wall <input type="checkbox"/> Screening Wall <input type="checkbox"/> Residential Single Family <input type="checkbox"/> Residential Duplex/Townhome <input type="checkbox"/> Other: _____</div><div><input type="checkbox"/> Accessory Building (Shed) <input type="checkbox"/> Addition <input type="checkbox"/> Alteration <input type="checkbox"/> Arbor/Patio/Carport <input type="checkbox"/> Concrete <input type="checkbox"/> Roof <input type="checkbox"/> Donation Bin <input type="checkbox"/> Electric <input type="checkbox"/> Emergency Service <input type="checkbox"/> Fence <input type="checkbox"/> Fireplace/Pit/Grill <input type="checkbox"/> Foundation Repair</div><div><input type="checkbox"/> HVAC/Mechanical <input type="checkbox"/> Irrigation <input type="checkbox"/> Outdoor Kitchen <input type="checkbox"/> Plumbing <input type="checkbox"/> Pool/Spa  <input type="checkbox"/> Sign <input type="checkbox"/> Solar <input type="checkbox"/> Special Event <input type="checkbox"/> Storm Shelter <input type="checkbox"/> Water Heater <input type="checkbox"/> Window Replacement</div></div>				
Description of Work				
Detailed Scope and Location of Work				
Total Value of Work		Total Sq. Ft.	Proposed Use	
Bldg. Fully Sprinkled: <input type="checkbox"/> Yes <input type="checkbox"/> No			TDLR#:	
Responsible Parties				
<b>CONTRACTOR INFORMATION – PLEASE COMPLETE THE OPPOSITE SIDE OF THIS FORM (REQUIRED)</b>				
I have read the completed application and know the same is true and correct and hereby agree that if a permit is issued all provisions of the City Ordinances, Adopted Codes and State Laws will be complied with whether herein specified or not. I agree to comply with all property restrictions. I am the owner of the property or a duly authorized agent. Permission is hereby granted to enter the premises and make all inspections.				
APPLICANT NAME:		SIGNATURE:		DATE:
CONTACT PHONE:			DRIVERS LICENSE #:	
EMAIL:			Applicant is: <input type="checkbox"/> Owner <input type="checkbox"/> Contractor <input type="checkbox"/> Other	
PLAN REVIEW FEE:	RECEIVED BY:		DATE:	
PERMIT FEE:	ROADWAY FEE:		OTHER FEE:	
TOTAL FEE:	ISSUED BY:		DATE:	



Permit Number \_\_\_\_\_

## CONTRACTOR VALIDATION SHEET

	<b>Project Information</b>
	Project Address:
	<b>General Contractor or Sign Company</b>
	Contractor/Sign Company Name:
	Print Name of Authorized Signer:
	<b>Electrical Subcontractor or Electrical Sign Company</b>
	Electrical Contractor Company Name:
	Master Electrician's Name:
	State Contractor License #:
	Print Name of Authorized Signer:
	<b>Plumbing Subcontractor</b>
	Plumbing Contractor Company Name:
	Master Plumber's Name:
	State License #:
	Print Name of Authorized Signer:
	<b>Mechanical Subcontractor</b>
	HVAC Contactor Company Name:
	Master HVAC's Name:
	State License #:
	Print Name of Authorized Signer:
	<b>Irrigation Contractor</b>
	Irrigation Contactor Company Name:
	Irrigation Contractor Name:
	Irrigation License #:
	Print Name of Authorized Signer:



## COMMERCIAL PLAN REVIEW CHECKLIST

2006 IBC, IPC, IFGC, IMC, IECC & 2008 NEC

**\*\* This checklist must be submitted with a Building Permit Application for any commercial construction.**

### Job Information

Property Address:

Suite #

Contractor:

☐ Finished Commercial    ☐ Shell    ☐ Finish-Out    ☐ Multi-Family    ☐ Other

☐ A-1 Assembly (Theater/ Concert Hall)

☐ A-2 Assembly (Restaurant/Night Club/ Bar)

☐ A-3 Assembly (Worship/Amusement/ Community Hall)

☐ B - Business

☐ D/E - Daycare & Educational

☐ I-1 Institutional (Ambulatory)

☐ I-2 Institutional (Non Ambulatory)

☐ M - Department Store / Drug Store

☐ M - Gas Station

☐ M - Retail/ Warehouse

☐ S-1 Storage (Mod. Hazard (Repair Garage)

☐ S-2 Storage (Low Hazard (excluding Parking Garage)

☐ S-2 Storage (Parking Garage)

☐ Other

### Submittal Requirements

The following documents must be submitted with application:

☐ Building Permit Application (3 copies)

☐ Plan Review Checklist (3 copies)

☐ Construction Plans (3 sets, prepared by a registered design professional, Architect or Engineer)

☐ Plan Review Fee (Nonrefundable. Additional permit fee is due at issuance of permit.)

Check which of the following have been included:

Y / N

☐ **Verify Zoning for Proposed Building**                      ☐ **Does the use require an SUP**

☐ ☐ Plans prepared by a registered design professional (Architect or Engineer)

☐ ☐ TDLR number (for projects over \$50,000)

☐ ☐ State Building codes used for design

☐ ☐ Occupancy type

☐ ☐ Type of construction, Floor Plan, Structural Framing Plan

☐ ☐ State UL listing for fire walls & penetrations

☐ ☐ Energy Compliance Report in accordance with requirements stated in IECC 2006

☐ ☐ Asbestos survey if project is a remodel requiring demolition.

☐ ☐ Foundation design based on site specific soils report / state termite treatment method to be used

☐ ☐ Plumbing riser and gas diagram

☐ ☐ Lighting plan including Parking lot lighting

☐ ☐ Electrical power plan/electrical riser plan, Exit and emergency lighting plan

☐ ☐ Mechanical plan

☐ ☐ Typical exterior wall cross section

☐ ☐ Interior Finish schedule, Door schedule with hardware/window schedule

☐ ☐ ADA compliant restroom fixtures and hardware (handicap) (TAS Compliant)

☐ ☐ Elevations of all sides of building showing finishes

☐ ☐ Handicapped parking spaces

☐ ☐ Masonry dumpster enclosure with detail per ALDC standard

☐ ☐ Roof plan giving location of roof mounted equipment and roof drainage with **screening requirements**

☐ ☐ Elevations of all sides of building showing finishes

☐ Signage ☐ Landscaping ☐ Parking spaces ☐ Handicapped spaces ☐ Parking lot lighting

☐ Screening fence requirements ☐ Building address 8" with contrasting color

**Applicant's Signature:** \_\_\_\_\_ **Print Name:** \_\_\_\_\_

**Date:** \_\_\_\_\_ *By signing this you have agreed that all boxes have been checked and all information has been submitted. Failure to submit all information may result in the delay of approving your permit.*



## **New Commercial Submittal Requirements**

### **Site Plan**

- Property Lines and Dimensions
- Easements
- Building locations
- Separation distance from all structures and property lines
- Street and Streets fronting property
- North arrow and scale

### **Structural Plans**

- Types of materials used
- Size & Spacing of framing members
- Ceiling joists/truss layout
- Foundation Plan
- Windbracing/Shear Wall Plans

### **Electrical Plans**

- Electrical layout
- Light fixtures layout
- Panel and Riser diagram
- Electrical load calculations
- Grounding/Bonding detail

### **Plumbing Plans**

- Underground plumbing layout for water, sewer, and gas
- Plumbing riser diagrams for water, sewer, and gas
- Sizing of meters & supply lines for water, sewer, and gas
- Demand calculations for water and sewer
- Establishments serving food or drinks, provide grease trap specifications, location, and calculations
- Plumbing fixture floor plan

### **Architectural Plans**

- Code Compliance Statement
- Listed Assembly specifications or code reference for any required fire separation assemblies
- Building Floor Plan
- Building Elevation Plan
- Egress Plan
- Kitchen and equipment layout (if applicable)

### **Mechanical Plans**

- Duct & Equipment layout
- Exhaust/Ventilation/Outside Air calculations and specifications for each piece of mechanical equipment and CFM

### **Energy Plans**

- 2015 Energy Code Compliance Reports for the Building Envelope, Interior and Exterior Lighting, & Mechanical

**Projects valued over \$50,000 must include registration number from the Texas Department of Licensing and Regulation.**

**All plans must comply with the Texas Engineering Practice Act and Rules, the Texas Board of Architectural Examiners, and the Texas Department of Licensing and Regulation.**



## SAFEbuilt

### Commercial Building Inspection Checklist

The following information has been prepared so as to familiarize the Building Inspectors of SAFEbuilt with Commercial Inspection Procedures. The various required inspections are inspected to meet minimum standards and these guidelines are prepared to act only as a guide for you while in the field with basic inspections practices. The following information outlined is a list of typical inspection practices that must be followed to meet minimum code requirements. This list is not intended to be a complete list of inspected areas. The inspections that will be covered in this handout are as follows.

1 FORM BOARD SURVEY	11 INTERIOR ELECTRICAL WALLS
2 FOUNDATION PIERS	12 INTERIOR PLUMBING TOP OUT
3 PLUMBING ROUGH-IN INSPECTION	13 MECHANICAL ROUGH INISPECTION
4 FOUNDATION SLABS/GRADE BEAMS	14 COMMERCIAL CEILING COVER
5 UNDERGROUND ELECTRICAL	15 UTILITY METER RELEASE PROCEDURES
6 CONCRETE TILT WALL PANALS	16 COMMERCIAL KITCHEN VENT A HOODS
7 STRUCTURAL STEEL FRAMES	17 MECHANICAL FINAL INSPECTION
8 INTERIOR FRAME WALLS	18 ELECTRICAL FINAL INSPECTION
9 FIREWALLS	19 PLUMBING FINAL INSPECTION
10 TENANT SEPARATION WALLS	20 BUILDING FINAL INSPECTION

#### **1. FORM BOARD SURVEY (new free-standing buildings an additions)**

1. Form board surveys are always required for New Free-Standing buildings projects.
2. This is the first requirement before any inspection can be scheduled, made or approved.
3. A survey must be prepared by a licensed land surveyor and submitted to the Plans Examiner for review and approval.
4. If the submitted survey is approved the builder will be notified by the Plans Examiner of the approval and can proceed with the next phase of construction.

5. If form boards are not constructed for the project, then the surveyor may submit a building corners and submit a drawing with distances from each building corner to the adjacent property line and must match the approved site plan.

## **2. FOUNDATION PIERS**

1. Most commercial projects retain a third-party lab inspector to monitor the structural pier installations before poured. The lab that is hired to inspect the piers, must submit a Pier Log that details out the pier depth, diameter, steel reinforcement and pier location that meets the approved Eng. Design at the completion of pier drilling.
2. If the builder does not hire a third-party inspector or lab, then the Allen Building Inspector must inspect each pier before poured and certify they meet the approved pier design as shown on the approved plans. Keep in mind if this approach is selected rather than a third-party inspector all piers are to be left open until the inspector arrives and approves the piers.
3. Submitting the Pier Log is required. Once received a green tag can be issued to the builder for the pier installation.

## **3. PLUMBING ROUGH-IN**

1. All underground sanitary drain waste and vent lines from main sewer lateral connection through entire underground rough-in, is to be inspected before being covered. The plumbing rough-in required water test consists of a five-foot head above the highest fitting. **Section 312.2 IPC, Local.** Any water leaks within the tested rough-in are not acceptable. Plastic pipe shall not be air tested. **Section 312.3 IPC**
2. Where trenches are excavated below the installation level of the pipe such that the bottom of the trench does not form the bed for the pipe, the trench shall be backfilled to the installation level of the bottom of the pipe with sand or fine gravel placed in layers not greater than six inches and tamped. **IPC Section 306.2.1**
3. Floor Drains shall be in Public Restroom, Commercial Kitchens and Coin Operated Laundries. **IPC Section 413.4 Amend**
4. Openings in piping is made in floors and walls or ceilings for the passage of piping, the annular space between the pipe and sides of the openings shall be sealed with caulking materials and closed. **IPC Section 304.4**
5. All Plastic and metallic piping shall not be placed in direct contact with steel framing members, concrete or cinder walls and floors or other masonry unless where sheathing is used to prevent direct contact that penetrates must allow for movement of the piping within the sheathing. **Section 305.1 IPC.**
6. Pipe sleeves thru walls must be two pipe sizes larger than the pipe passing through. **Section 305.3 IPC**
7. Where sheathing protects piping that penetrates concrete or masonry walls or floors, the sheathing shall be installed in a manner that allows movement of the piping within the sheathing. **Section IPC 305.1**
8. All water and sanitary lines are to be sized according to adopted plumbing code minimum standards.
9. Any piping through a foundation wall shall be provided with a pipe sleeve built into the foundation wall. The pipe sleeve shall be two pipe sizes greater than the pipe passing through the wall. **IPC Section 305.3**
10. All sanitary rough-in, are to be backfilled with sand to the spring line of the pipe and all pipe labels facing up for inspector material identification. **IPC Section 306.2.1**
11. Only legal fittings for the plumbing system are to be installed within the drainage system and installed according to the adopted codes and listing. **IPC Section 707.1**

12. Two-way sewer cleanouts (back to back combo fittings) are to be installed within 18 inches of the exterior of the building for NEW free-standing buildings or sewer relays. Additional one-way cleanouts are required along the length of sewer lateral every 100 feet and clean out stacks extended to grade, and water tested. **IPC Section 708**
13. All lines are to have positive fall and be a minimum of 12 inches in depth, **Section 305.4.1.**
14. If the project contains a grease or sand trap due to the type occupancy, then a water test is required to the top of the grease/sand trap including manhole extension rings. A sampling well is required on the outfall side of the grease trap along with double cleanouts. Only those grease lines serving the kitchen prep area are to be drained into the grease trap. All other sanitary lines are to be extending around the grease trap and connected into the out-fall sewer line past the trap. Each grease trap holding chambers are to be vented and extended to the building roof line at time of top out. **IPC Section 1003 an 1003.3.4.1**
15. Sample wells are required and must be water tested along with grease trap installation. Two-way cleanouts are to be installed before the grease trap, after the grease trap, before sample well and after sample well.
16. No leak to any seam is allowed when water tested. Water test required up through any extension rings.
17. Plumbing rough-in on Commercial projects can be installed in phases and inspected in phases however your documentation is clear and outlines what area were requested to be inspected.

#### **4. FOUNDATION SLAB/GRADE BEAMS**

1. Commercial foundation is Engineered designed and must be inspected per the approved plans as contained in the project superintendent job trailer.
2. Depending on the Design Eng., depends which type foundation is designed for the particular lot.
3. Grade beams may be requested to be inspected prior to the actual slab on grade foundation, if so, the beams must have met the designed depth, width, and the required steel must be installed per approved plans an if approved, shown as a partial approval in the computer.
4. If the design calls for carton forms (void boxes) to be placed in the bottom of the beams below the rebar those carton forms must be sealed closed at each end to prevent concrete when poured running into the void box. If the void boxes get water-logged those boxes must be removed and replaced with dry boxes.
5. If piers were inspected in an earlier phase of construction those pier tops must be clean at time of inspection to allow bonding to take place when the grade beams are poured.
6. All grade beam rebar must be supported by stirrups so to maintain separation of steel from each other and proper concrete encasement around the rebar.
7. All steel is to be dirt, mud and over pour concrete free to allow proper bonding of the new concrete to the steel when poured.
8. All beams steel is to be in the center of each beam and strapped and supported to maintain that position when poured.
9. Once poured then the next phase most likely is to pour the finish floor slab that completes the foundation pour.
10. If the grade beams are not designed to be poured separately but monolithically poured as a complete system, the above guidelines still are to be followed when inspecting the complete rebar placement of the foundation.
11. If the Structural Engineer designs post tension cables in lieu of rebar, then inspection procedures differ somewhat and may be multiple inspections and pours.



12. All post tension cables are to be placed per Eng. drawing and spaced per drawings. All interior beam cables if includes Bottom Strand Cables are to be supported per Eng. Design and spacing of support dowel.
13. No cable strands shall be exposed and must be sleeved to protect interior cable from concrete at the live ends to the point of the cable dead head.
14. Grade strings are to be pulled across all slabs to maintain depth of floor slab per approved drawings.
15. Standard inspection procedures are to be followed when inspecting Commercial foundations and shall meet approved plans.
16. Polyethylene vapor barrier is to be always installed between the floor slab reinforcement and the foundation sub grade and all seams taped.
17. Floor slabs, grade beams may be poured in various stages as well which requires you to record each area inspected so to clearly document the area inspected.
18. U-fer grounds must have direct contact with earth below and cannot be separated by poly between earth and U-fer ground.

## **5. ELECTRICAL UNDERGROUND**

1. All electrical conductors including feeder lines and secondary conduit must be inspected by the Building Inspection Division before being covered. Primary service lines are inspected by the utility company.
2. The amount of cover over any underground lines is regulated by the adopted National Electrical Code, **Table 300.50 Minimum Cover Requirements.**
3. Underground conduit below parking lot paving must be 24 inches in depth to top of conduit. **Table 300.50 Colum 6**
4. All electrical feeders to parking lot poll light standards and grounding is to be inspected before covered and sized accordingly. All parking lot light standards are dark bronze in color and square poles heads and bases. The height and number of parking lot lights is mandated by TRC Review Comments and approval.
5. Any electrical conduit covered without inspection is to be uncovered for inspection at owner's expense.
6. Electrical permits should be paid for before installation and have licensed electrician working on the job.
7. Check for licenses on all electrical installers on the job at time of inspection. If in violation of State Electrical License laws, ask them to leave the job site.
8. All parking lot light pole standards that contain electrical conduit are to be grounded with an approved ground rod at time of inspection or ground conductor lugged off to pier steel rebar.
9. Concrete encased electrodes (u-fer) must be 20 feet in length and covered with a minimum of 2 inches of concrete. The ground may be bare copper wire or minimum ½ inch steel rebar. Both type grounds must be visible at time of electrical wall rough and lugged off properly and be accessible.

## **6. CONCRETE TILT WALL PANELS**

1. All tilt wall designed building panels must be inspected by a Third-Party Inspection Agency prior to being poured.
2. All wall reinforcement as designed by the project Structural Engineer, is to be installed per approved plans.
3. All exterior façade reveals designed per approved elevations are to be included in the panel set up and poured as such.

4. Any revision in panel reveal as shown on the approved elevation drawing is to be approved by Planning and Management before being poured.
5. All lab report regarding the tilt wall inspection must be submitted before the Building Structural Frame inspection is approved.

## **7. STRUCTURAL STEEL FRAME**

1. All commercial steel frame building requires building inspections from a Third-Party Inspection Agency prior to requesting any of the structural framing members.
2. The welds and bolting are to be inspected by the Third-Party inspector and all building frame is to be welded by certified welders.
3. Reports are to be submitted before approving structure coverup.

## **8. INTERIOR FRAME WALLS (metal or wood)**

1. All interior framed walls either wood or metal are to be inspected by the Building Inspector prior to covering any walls.
2. The interior walls may be one sided with sheet rock providing the opposite wall side stays open and visible for inspection.
3. All walls are to be supported at the top plate to the main structure and in place at time of inspection. If the building is a Fire Resistive Rated building by design, the above wall or ceiling bracing above fire sprinkler protection cannot be of combustible wood materials unless protected or allowed by code per building type.
4. Depending on gauge of metal stud and height of stud would determine if metal lateral support bracing is required. If required, the lateral bracing is to be installed prior to being inspected and installed per approved plan details.
5. All metal top and bottom plates (tracks) and stud materials are to be securely fastened to the foundation and metal track with approved fasteners both top and bottom tracks at frame inspection.
6. All wood and metal stud walls must be supported to structural members above by diagonal wall support braces spaced 6 feet on center. (metal ceiling grid is not structural and cannot be sole wall support).

## **9. FIRE WALLS**

1. If the plans require Fire Rated Walls according to building design and occupancy, the approved plans should indicate the UL design for the walls and their locations.
2. Always review the approved framing plans on site before making a commercial frame inspection so to make sure the required walls are installed in the approved location.
3. UL design details indicate the make-up of the walls either one or two hours and how the wall assembly is to be constructed. If unsure of the wall assembly, ask Management before approving Fire Rated Assembly.
4. All Fire Rated Walls are to extend from the foundation to the floor or roof deck above and be continuous throughout or as indicated on the approved set of plans.
5. All voids and holes in the fire walls are to be fire caulk and sealed to maintain the required rated assembly by using the approved method of sealing.
6. When making your inspection always ask to see the material to be used to seal the fire walls and make sure the material is approved for the installation.

7. Walls that require to be rated 1 or 2 hours must be constructed per approved plans and the approved UL design.
8. Fire/Smoke Dampers if required and installed are part of the wall frame assembly not the duct system.
9. In large commercial project a third-party fire caulk inspector will be required to inspect all voids in the walls and through penetrations through floors and draft stops to maintain the rated assembly.

## **10. TENANT SEPARATION WALLS**

1. Tenant Separation Walls are constructed between two separate tenant spaces by a common wall within the same building i.e. (Covered or Open-Air Malls or Strip Centers). Each tenant space shall be separated from other tenant spaces by a fire partition as outlined in **2018 IBC, Section 402**
2. Tenant Separation Walls are constructed of materials accordingly to the specific type of construction of the building and the approved plans.
3. The types of materials used in fire partitions are to be consistent with the type of classification of the building. The fire partition shall extend from the top of the foundation or floor/ceiling assembly above.
4. Fire Partitions shall have a fire resistance rating of not less than required in **Section 708.3** Fire-resistance rating or the required separation between the two adjoining occupancy types.
5. All opening or penetrations within the fire resistance wall shall be sealed of approved materials rated to maintain the rated assembly.

## **11. INTERIOR ELECTRICAL (WALLS AND CEILINGS)**

1. According to local policy all commercial electrical conductors installed must be in electrical metallic tubing (EMT) or MC Cable with ground. No Non-Metallic Sheathed Cable NM (Romex) is allowed in commercial construction.
2. Wall and ceiling electrical inspections requires that all conductors be installed and completed at time of inspection.
3. All supports, and strapping are required as per adopted **NEC, Article 358.30 A and B.**
4. Electrical Ceiling inspections all light fixtures are to be in place and secured to ceiling grid in an approved manner (wires to structural members color coded). If the ceiling is to be sheetrock ceilings (hard ceilings) all J-boxes and fixture whips are to be installed in place at time of inspection and supported per code.
5. All fixture whips above ceiling shall be supported up off grid ceiling by clips designed to hold the MC or conduit per code.
6. All existing unused electrical equipment must be removed from ceiling cavity before ceiling inspections.
7. All conductors shall be supported per code.
8. System ground must be visible at time of these inspections.
9. All electricians on site shall have the approved State Electrical License as approved by the State of Texas.

## **12. INTERIOR PLUMBING TOP OUT**

1. All interior plumbing including water piping and sanitary waste and vents are to be completed and includes a water test with a minimum of 5-foot head pressure and water tested from meter to building. If the water meter is not set at time of this inspection the inspection will not be approved.

2. All water lines in metal or wood walls must be insulated according to material specifications and secured as code requires. All piping thru metal studs shall be protected and within 1.5 inches of the edge of stud or plate shall be protected with a metal strap 1.5 inches in width minimum 16-gauge straps.
3. All sanitary vent stacks are to terminate the roof to outside air and be supported per **Table 308** for Hanger Support.
4. All water piping in exterior walls and ceilings/attics spaces shall be insulated at time of inspection. Copper and PEX lines on top-out are required be inspected prior to inspection to determine all joints are complete and protected from unlike materials. At time of frame inspection check to see all lines still are insulated properly.
5. All gas piping if included in the project must be installed at time of plumbing top out and tested for leaks. All stops shall be in the open position at time of test at each appliance and bond wire be ran to the gas riser and exposed. We test all black pipe but do not test through mechanical equipment, cap black pipe and test back.
6. All metallic piping (copper, bronze, black steel or galvanized) through exterior walls shall be protected from masonry products by approved mill warp tape or insulation.
7. All vent piping, lavatory arms etc. cannot be less than schedule 40 PVC. No foam or cell core PVC allowed for any drainage, waste or vents.
8. 2-inch drain lines or larger vent stacks cannot be installed in a 2x4 wall. The bottom and top plates and adjoining studs within the cavity where plumbing is located must be minimum of 2x6.
9. If the design calls for the Return Air Plenum to be within the ceiling/deck cavity, PVC is not allowed in a return chase. An approved pipe wrap designed and tested for this application is acceptable but a copy of the manufacture's product report must be submitted for approval before usage.
10. All waterline materials in wall studs must be protected from unlike materials.
11. If gas lines are installed, they shall be tested for leaks and properly supported and protected.
12. All plumbers working on the project shall carry the approved license from the State Plumbing Board.
13. All metallic piping, except for cast iron, ductile iron and galvanized steel, shall not be placed in direct contact with steel framing members, concrete or cinder walls and floors or other masonry. **Section 305.1 Amend.**
14. Water heaters installed in attics shall be provided a clear access opening with dimensions not less than 20 inches by 30 inches or larger enough to allow removal of the water heater. A catwalk shall be provided and rated and approved by the building official, shall have continuous solid flooring with a minimum thickness of ½ inch plywood or 5/8-inch-thick wafer board. **Section 502.3 Amend**

### **13. MECHANICAL ROUGH INSPECTION**

1. HVAC rigid metal ducts are to be inspected prior to wrapping with insulation.
2. All rigid duct joints must have Mastic mopped on every joint and screws through straps that support the duct. All rigid duct is to be left unwrapped until inspection is approved. If the duct is designed to be left exposed in an open ceiling no mastic is required on the joints.
3. If the building ceiling is a hard lid ceiling (sheetrock) all flex ducts must be installed and supported properly. If the frame consists of open wood bar joists the flex duct can lay and be supported between the web truss supports. Flex duct within an attic must be supported with 6-inch metal saddles and 1-inch metal studs straps and limited to 5-foot maximum length.
4. If the proposed ceiling is designed to be metal grid, then the next duct inspection would occur during the commercial ceiling inspection. At this point all flex duct must be ran and supported with 6-inch metal

saddles and 1-inch metal straps and be supported to structural members. The condensate must to be ran for this inspection as well.

5. All RTU condensates are to be installed and ran to an approved location. Main drain to live active p-trap or mop sink.
6. All RTU condensate materials exposed to sunlight on top of the roof shall be ran in copper and supported on materials other than wood blocks. Condensates ran inside the building can be PVC if properly supported and have required fall to the drain location and not within a Conditioned Air Return Space.
7. No flex duct can be supported by ceiling grid wires.
8. RTU condensate lines on top of the roof must have the required P-Trap and Vent Tee and be copper if exposed to sunlight.
9. Flex duct is limited to 5 feet maximum lengths.

#### **14. COMMERCIAL CEILING COVER**

1. Commercial Ceiling Cover is conducted prior to both sheetrock or lay-in acoustical tile being installed that conceals the various trade work above.
2. All trades, mechanical, electrical, plumbing, vent a hood, refrigeration and framing shall be complete to request this insulation.
3. **Mechanical:** All rigid ducts shall be insulated if not internally lined, all condensate drains above ceiling shall be installed to the approved locations (main drain to sanitary sewer and secondary drain to visible location). All flex duct must be supported by 6-inch metal saddles and 1-inch metal solid straps, all attic units shall be connected to the utility (gas or electrical), all unit vent pipes installed with appropriate clearance from combustible materials, all duct registers shall be installed, all ceiling return boxes shall be constructed of duct board not wood and no wood allowed inside return box, exhaust fans installed and ducted to outside air.
4. **Electrical:** All electrical conductors installed within the ceiling cavity must be properly supported and not loose above the ceiling, all light fixtures are to be in place and secured to the structure by screws or tie wires if lay in fixtures, all recess can lights installed and connected with MC cable or EMT that serve the fixture, all junction boxes covered and made up, any existing electrical not in use above the ceiling shall be removed from ceiling cavity.
5. **Plumbing:** All vent stacks shall be terminated above the roof; all gas lines shall have been tested and properly secured above ceilings. All water lines above ceiling to be insulated and supported properly, all gas lines connecting to attic unit has a gas stop and approved flex connectors.
6. **Commercial Vent a Hood:** All commercial vent a hood shall have been inspected and approved before being concealed by the ceiling materials. Requires a smoke test on Type I welded duct, first fire wrap and second fire wrap with stainless steel bands.
7. **Refrigeration:** All refrigeration equipment located above the ceiling shall have been inspected and approved before being concealed.
8. **Framing:** All structural framing must be complete, by this stage of construction. All holes in fire rated or demising walls are to be properly sealed and all framing complete.
9. **All trades are to be complete above ceilings before approving to cover including Fire Department**

#### **15. UTILITY RELEASE PROCEDURES**

**Electrical:** All electrical fixtures are to be installed and if not installed a blank cover to conceal all open conductors, Service Entrance Conductors installed both primary and secondary service lines, main disconnect installed both main breaker or fused disconnect, rejection pin kits installed if equipment installed requires them, all open J boxes completed or blanked off, address posted with permanent numbers on service equipment, ceiling covers completed and inspected, all breakers installed in panel and panel labeled properly, service grounding complete both U-fer and grounded electrode conductor or building steel. No ceiling cover will be approved until ceiling cover inspection has taken place and no ceiling tiles shall be installed before approval of this inspection this includes ceiling borders.

**Lock Out Tag Out** letter is required if electrical service is requested prior to the entire electrical being complete. All main disconnects and main panels shall be **complete** and all conductors pulled to each can. and switchgear is complete. This is usually requested on large commercial projects and is allowed in certain conditions only. The required Lock Out Tag Out Letter must be on the Electrical Contractors Letterhead and state the electrical room will always be locked when work is not being conducted. The Master is the only person with the room key. If this process is violated the electrical meter can be disconnected. *Only the Building Official or the Assistant Building Official can approve this request.*

**Natural Gas:** Pressure test is required before any gas meter can be approved to be set, all fixture gas stops must be installed, and gas stops in the open position on all black pipe. Building must be in the dry, sheet rocked and weather tight. We do not require testing through the mechanical equipment or flex connectors. Ceilings must have been completed prior to the request and all installation safe as installed.

## **16. COMMERCIAL KITCHEN VENT A HOOD SYSTEMS**

1. All commercial kitchen vent-a-hood systems must comply with the adopted **IMC, Section 506**.
2. Kitchen vent-a-hood are classified in two types, Type I exhaust hoods are designed to exhaust grease laden vapors through a series of filters before going out into the atmosphere. Type II hoods are to exhaust heat or moisture only not grease.
3. Type I ducts serving the hoods shall be constructed of steel with a minimum thickness of 0.0575- 16 gauge, or stainless steel not less than 0.0450 18 gauge. **Section 507.2.3, IMC**
4. All joints are to be liquid tight welds.
5. All duct is required to be protected with an approved fire blanket, two layers thick and of a material tested for this application.
6. Inspection consist of the smoke test. After the smoke test is approved the 1<sup>st</sup> layer fire blanket must be inspected and once approved a second layer of fire blanket must be inspected and approved.
7. Grease duct tests consist of a smoke test inside the welded duct to determine any leaking joints.
8. All grease ducts shall be sloped to prevent grease accumulation inside the duct.
9. Grease duct cleanouts and openings shall be with tight fitted doors consisting of materials not less than that of the duct. All duct offsets require a rated access door.
10. Termination of the grease duct above the roof shall be no less than 40 inches above the roof.
11. Termination out the side wall is allowed if complies to **Section 506.3.13.2, 2015 UMC**.
12. Type II Hoods exhaust moisture laden vapors or waste-heat laden air but not grease.
13. These duct terminations not less than 3 feet in any direction from openings into the building.
14. Type II hoods require a smoke test to determine all joints are sealed.
15. No duct wrap is usually required on Type II hood ducts.

16. Kitchen hood Make-up air shall be equal to the amount of air supplied to the building and equal to the amount of air exhausted. **IMC Section 508 UMC**
17. Roof top Type I hood blower exhaust shall not be within 10 feet of any RTU air intake. **Section 503.3.13.3 UMC**

## **17. MECHANICAL FINAL INSPECTIONS**

1. Mechanical Finals consist of all RTU's if located on the roof, all units have the a disconnect either internally or mounted on exterior of RTU, gas supply (if natural gas) with a cut off valve located adjacent to the unit, condensate line if exposed to sun light be copper and supported on materials or devices other than wood blocks. **Local Policy**
2. Each unit shall be labeled with suite number by a permanent label (no magic marker) and if multiple units also RTU # \_\_ number that matches electrical breaker at the panel. **Section 304.12 UMC**
3. No sanitary vent stack cannot be within 10 feet of the air intake side of the unit. If a vent stack exists within this distance the stack must be raised up above the air intake location so not to draw sewer odor into the building when in operation.
4. All rooftop mechanical units shall be raised and supported independently from the roof deck on non-combustible material.
5. Guard rails shall be provided where various components that require service and roof hatch openings are within 10 feet of edge of roof or open side. The guard shall not be above 42 inches from above the roof surface. **Section 304.11 UMC**
6. Always be extra careful when gaining access to the roof and not to take any chances you may be injured.
7. Once the RTU's have been inspected then the interior of the building must be inspected.
8. All return and supply grills must be installed.
9. Restroom exhaust fans are to be installed and be in working order.
10. Thermostat should be installed as well and in operation.

## **18. ELECTRICAL FINAL INSPECTION**

1. All fixtures, receptacles, switches must be installed, no blank cover plates at this time.
2. All equipment (if restaurant) must be installed and connected.
3. In public restrooms there must be an emergency battery pack light fixture. **Article 700-27 Amend**
4. If an attic is located inside the building the attic must have a light fixture and switch for the light and a receptacle for service availability.
5. All electrical panel covers and disconnect covers shall be attached.
6. All electrical breakers shall be labeled in ink in each panel.
7. All electrical must be complete.
8. Test all GFCI receptacles by tripping the button and their location in required areas.
9. Electrical meter must be installed to approve this inspection.

## **19. PLUMBING FINAL INSPECTION**

1. All plumbing fixtures shall be installed and operational and not leak.
2. All clean out vent caps shall be attached and accessible.
3. On the roof, all gas lines shall be supported with materials other than wood.

4. All gas lines exposed to the sides or rear of a building must be painted and bond wire to gas riser pipe.
5. Gas meter must be installed before this inspection can be passed.
6. All plumbing must be complete.
7. All under sink protection applications must meet / comply with ADA requirements.

## **20. BUILDING FINAL INSPECTION**

1. All MEP inspections must be approved.
2. All Irrigation systems if installed must be complete and approved along with a copy of the Double Check Test report.
3. All Fire Final inspections must be approved.
4. All City Departments Parks, Engineering, Sanitation, Fire and Health if involved with the construction of the project must be final and complete.
5. A copy of the Energy Compliance report must be presented at time of Final Building Inspection.
6. Building Shell must be approved, and Final Building Inspection approved.