Williamson County
Emergency Services District No. 4
Liberty Hill Fire Department
www.libertyhillfire.org

SITE PLAN SUBMITTAL GUIDELINES (COMMERCIAL PROJECTS)

This guide is intended as a resource for the civil construction drawings submittal requirements for commercial developments. Civil construction plans are reviewed to determine compliance with WCESD No.4 Fire Marshal's Office requirements as they relate to site construction, layout, building size, fire lanes, fire department access, fire hydrants, and other issues as designated. These requirements can be found in the 2021 International Fire Code, as adopted and amended by the WCESD No.4. In an effort to expedite the civil plan review process, please ensure the following list of items are incorporated into the proposed civil construction plans. Please submit all plans to www.lhfdpermits.com.

GENERAL COMMENTS

- Plat in the civil construction drawing set shall match the Plat approved by the City of Liberty Hill and/or Williamson County Engineering Department.
- The address on the site plan must be approved by Williamson County 911 Addressing Coordinator.

FIRE DEPARTMENT ACCESS

- Fire lane construction shall be in accordance with the Fire Department *Fire Lane Guidelines* and the construction detail shall be indicated on the submittal drawings.
- Approved, unobstructed fire department access (fire lane) shall be provided such that all portions of the exterior of the building shall be within 150 feet, as the hose lays, of a fire lane and/or public street. WCESD No.4 will allow this distance to be increased to 200 feet if the building(s) have a fire sprinkler system installed.
- Additional fire lanes may be required based upon the layout of the site and size of the building(s) with regards to Fire Department access, mutual/cross access, and special hazards or as designated by the Fire Marshal.
- Fire lanes must be shaded, or otherwise, clearly marked on the plans.
- Fire lanes must meet the following criteria:
    - Minimum width for fire lanes in WCESD No.4 District is 26 feet, if narrower widths are requested the Fire Chief must approve this request.
    - Turning Radii is 25 feet inside/ 50 feet outside.
    - Minimum unobstructed vertical height clearance is 13 feet 6 inches.
    - Provide an all-weather driving surface of concrete or asphalt only.
    - Support a minimum of 75,000 lbs.
    - Maximum grade of 10% unless approved by Fire Chief.
    - Aerial Apparatus Access Roads. Buildings or portions of buildings exceeding 30 feet in height above the lowest level of fire department vehicle access shall be provided with a 26 feet wide fire lane. The fire lane shall be a minimum of 15 feet to a maximum of 30 feet from the building and shall be positioned parallel to one entire side of the building.

- Fire lane construction detail drawings, including temporary emergency access easements.
- Emergency access easements shall be approved by the Fire Marshal's Office under a separate instrument.
- Dead end fire lanes in excess of 150 feet shall be provided with an approved turnaround.
- Size, type and location of turnarounds are required to be approved by the Fire Marshal's Office.

Fire Hydrant and Water Lines

- Existing and proposed fire hydrants shall be indicated on the plans.
- Location of valves.
- Fire hydrant type and construction detail. Please include WCESD No.4 Hydrant Detail on the detail sheet. Primary features required include: factory installed integral 5-inch STORZ pumper nozzle; 1.5 inch pent operating nut on nozzle cap; open left; factory painted silver.
- Type and size of underground water lines serving the fire hydrants and other utility services.
- Size and location of the underground water line, Fire Service, for the fire sprinkler system.
- Location of Backflow prevention.
- A minimum required fire-flow of 1,500 GPM for 2 hours is required. (IFC Appendix B, Section B105).
- Minimum of two (2) fire hydrants are required for each project. One (1) within 300 feet of the property and one (1) within 500 feet.
- Proposed location of the Fire Department Connection (FDC),including required manhole, shall be noted on the plans. Note that the FDC is required to be on the addressed side of the building along a fire lane and within 100 feet, as the hose lies, of a fire hydrant.
- Fire Department Connection (FDC) is required to have a 5 inch STORTZ connection on a 30 degree downturn with a Knox brand locking cap.
- Install a sign to the fire department connection stating "FDC". The sign shall have reflective white letters upon a reflective red background. The lettering shall be a minimum 2 inch stroke and minimum 6 inches in height. The sign shall also have the building number of the structure protected if more than one remote FDC is located on the property. The building number lettering shall be minimum 4 inch.
- All Fire Department Connections (FDCs) shall be marked as approved by the Fire Code Official. Two red street lane reflectors (stimsonite model 88AB or similar) shall be installed six inches from centerline of the fire apparatus access roadway on the side closest to the FDC. Markers shall be parallel to the FDC having the reflective ends of the street markers facing the direction of traffic.

Building Size, Height and Location Requirements

- Building or facility size, in square feet, to be indicated on the site plan.
- Building or facility building construction type (As Defined in the International Building Code) shall be indicated on the site plan.
- Building height shall be indicated on the site plan.

- Will the building(s) require an automatic fire sprinkler system? Please refer to 2021 IFC Chapter 9 Section 903 Automatic Sprinkler Systems for fire sprinkler requirements. Or if the required fire-flow from Appendix B Table B105.1(2) cannot be met because of the building construction type and square footage then a fire sprinkler system can be installed to reduce the required fire-flow down to a minimum of 1,500 GPM for 2 hours.

Vertical Construction

- Fire hydrants shall be installed, approved by WCESD No.4, and maintained PRIOR TO VERTICAL CONSTRUCTION of any building or structure.

KNOX System

- WCESD NO.4 utilizes the KNOX System. Any gate located on the property must be provided with KNOX access.
- All automatic gates must be provided with a KNOX Key Switch.
- All manual gates must be provided with a KNOX padlock.
- Show on plans if gates will be automatic or manual.

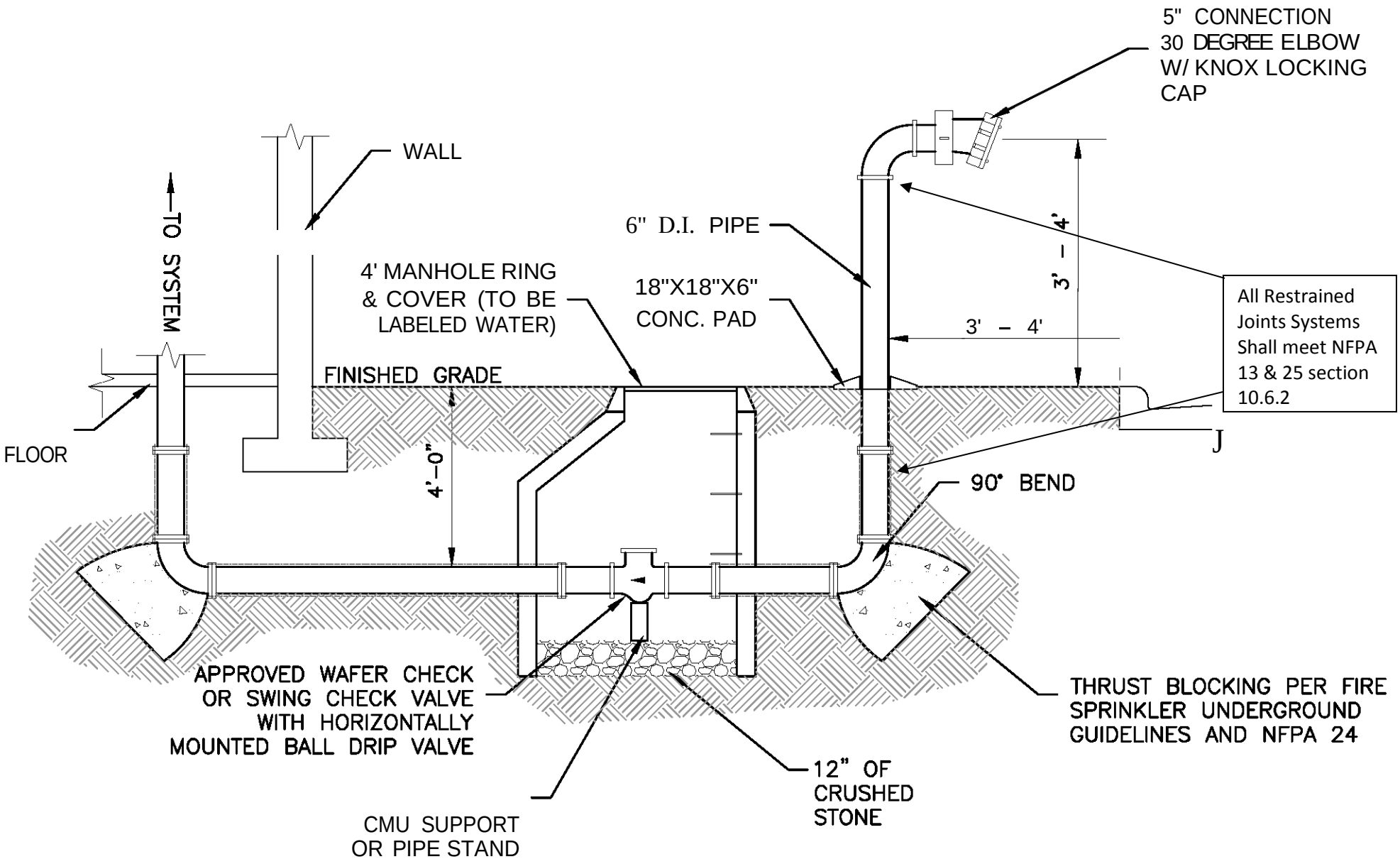
Fuel Stations

- Underground tanks containing any fuel will require a separate submittal and permit.
- All underground tanks will be required to be inspected and approved by the fire code official prior to any fuel being placed into the tanks.

- All above ground fuel tanks located on the property will require a separate submittal and permit.
- All above ground fuel tanks will be required to be inspected and approved by the fire code official prior to any fuel being placed into the tanks.

Above Ground Water Storage for Fire Protection

- All above ground water tanks used for fire protection are to be sized according to the requirements set forth in NFPA 1142.
- Tanks are to be designed to the standards set forth in NFPA 22.
- All above ground tank designs are required to be a separate submittal and permit.
- Tanks will be required to be inspected and approved by the fire code official prior to operation.



FIRE DEPARTMENT CONNECTION

NOT TO SCALE

FIRE HYDRANTS LACKING INTEGRAL STORZ CONNECTOR SHALL BE REJECTED (NO STORZ ADAPTERS ALLOWED)

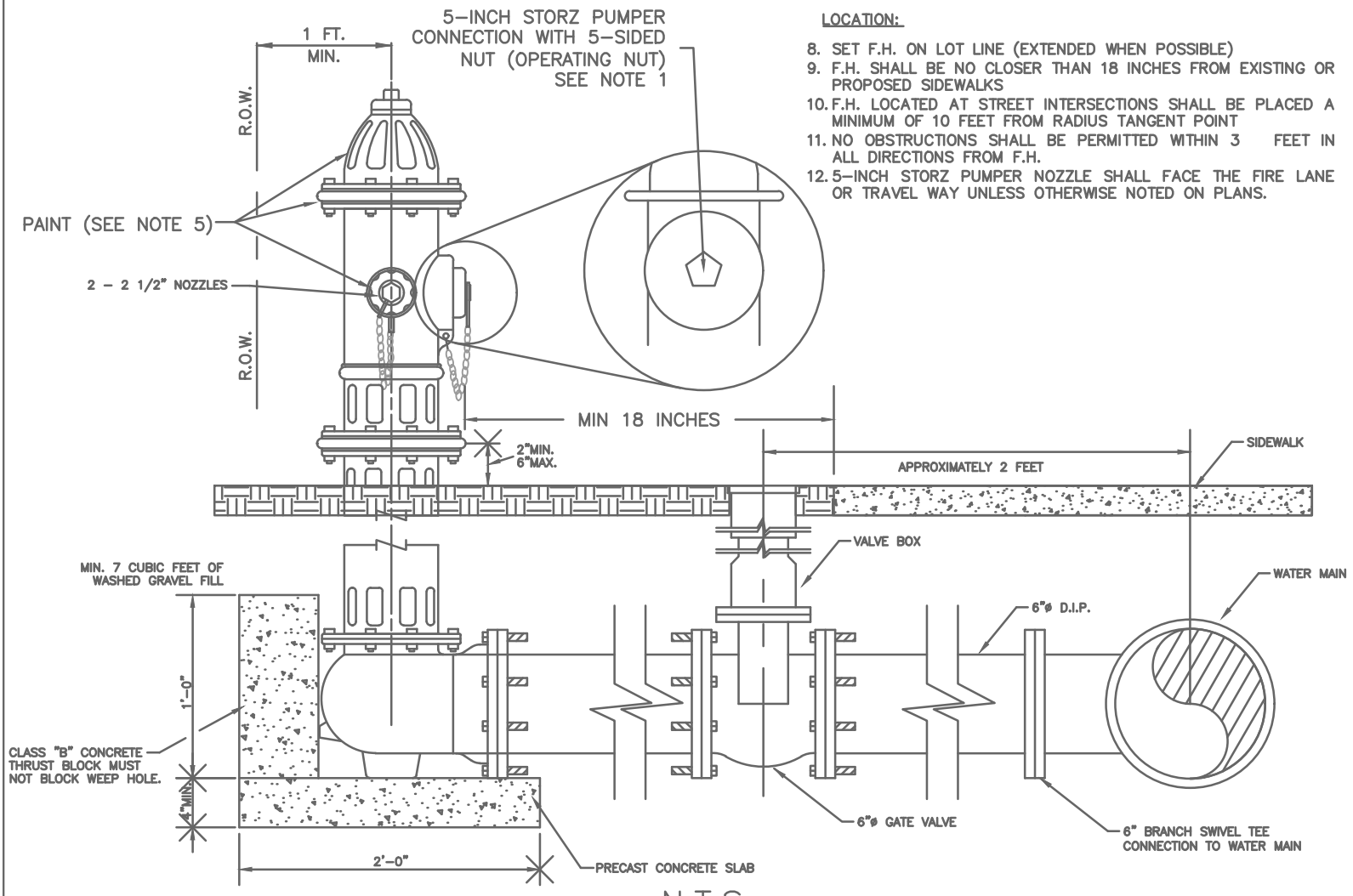
RATED FLOW	FIRE HYDRANT BONNET COLOR
1,500 G.P.M. +	LIGHT BLUE
1000 – 1499 G.P.M.	GREEN
500 – 999 G.P.M.	ORANGE
BELOW 500 G.P.M.	RED

NOTES:

1. FIRE HYDRANT BRAND AND MODEL SHALL BE APPROVED BY THE LOCAL WATER AUTHORITY DISTRICT. THE PRIMARY FEATURES REQUIRED INCLUDE: FACTORY INSTALLED INTEGRAL 5–INCH STORZ PUMPER NOZZLE; 1.5–INCH PENT OPERATING NUT ON NOZZLE CAP; OPEN LEFT; FACTORY PAINTED.
2. HYDRANTS SHALL BE ORDERED SILVER IN COLOR. HYDRANTS WILL NOT BE ACCEPTED IF PAINTED AFTER DELIVERY.
3. ALL DUCTILE OR CAST IRON FITTINGS AND/OR PIPE SHALL BE POLYWRAPPED.
4. ALL HYDRANTS SHALL BE EQUIPPED WITH A BREAKAWAY FLANGE. ALL FITTINGS SHALL BE EQUIPPED WITH JOINT RESTRAINT "MEGALUG" OR APPROVED EQUAL. ALL ANCHOR FITTING TO BE CONCRETE THRUST BLOCKED.
5. AFTER COMPLETION OF FIRE HYDRANT INSTALLATION, A FIRE FLOW TEST SHALL BE CONDUCTED BY A THIRD PARTY COMPANY. BASED ON FIRE FLOW TEST, THE FIRE HYDRANT BONNET SHALL BE PAINTED ACCORDING TO THE CHART ON THIS SHEET. THE HYDRANT BONNET TO FLANGE AND NOZZLE CAPS SHALL BE PAINTED THE APPROVED COLOR CORRESPONDING WITH THE APPROPRIATE FLOW RATE AS NOTED ON THE TABLE ON THIS SHEET.
6. BLUE, BI–DIRECTIONAL REFLECTIVE PAVEMENT MARKER, ULTIMATE WET NIGHT VISIBILITY SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATION AT THE CORRESPONDING ROADWAY STATION OFFSET 6 INCHES FROM CENTER OF STREET TO THE SIDE HYDRANT IS LOCATED. AT
7. INTERSECTIONS, MARKERS SHOULD BE PLACED ON BOTH ROADWAYS ADJACENT TO HYDRANT.

LOCATION:

8. SET F.H. ON LOT LINE (EXTENDED WHEN POSSIBLE)
9. F.H. SHALL BE NO CLOSER THAN 18 INCHES FROM EXISTING OR PROPOSED SIDEWALKS
10. F.H. LOCATED AT STREET INTERSECTIONS SHALL BE PLACED A MINIMUM OF 10 FEET FROM RADIUS TANGENT POINT
11. NO OBSTRUCTIONS SHALL BE PERMITTED WITHIN 3 FEET IN ALL DIRECTIONS FROM F.H.
12. 5–INCH STORZ PUMPER NOZZLE SHALL FACE THE FIRE LANE OR TRAVEL WAY UNLESS OTHERWISE NOTED ON PLANS.



N.T.S.

PER ORDER NO. 2007–01
(2) SECTION C105.2 INSTALLATION.
FIRE HYDRANTS MUST BE INSTALLED WITH THE CENTER OF THE FIVE (5) INCH STEAMER OPENING AT LEAST 18 INCHES ABOVE FINISHED GRADE. THE FIVE (5) INCH OPENING MUST FACE THE DRIVEWAY OR STREET AND MUST BE TOTALLY UNOBSTRUCTED TO THE STREET. FIRE HYDRANT DESIGN SHALL BE 2– 2.5" NST OUTLETS, 1 – 5.0" STORZ CONNECTION WITH A CAP TO INCLUDE A HEX NUT TO FIT A HYDRANT WRENCH ALONG WITH A REFLECTIVE BAND. THE FIRE HYDRANT SHALL BE PAINTED SILVER IN COLOR AND DESIGNATED BY A BLUE REFLECTOR IN THE CENTER OF THE STREET.

NOTE: STANDARD FIRE HYDRANT ASSEMBLY INCLUDES ALL COMPONENTS SHOWN HEREIN, EXCEPT WATER MAIN, INSTALLED COMPLETE AND IN–PLACE.

WILLIAMSON COUNTY EMERGENCY SERVICE DISTRICT NO. 4

STANDARD FIRE HYDRANT ASSEMBLY