Facilities Reduction Program
Best Practices Toolbox

United Stated Army Corps of Engineers

Facility Reduction Program

Best Practices Toolbox

(Library Document)

Construction Types

October 26, 2005

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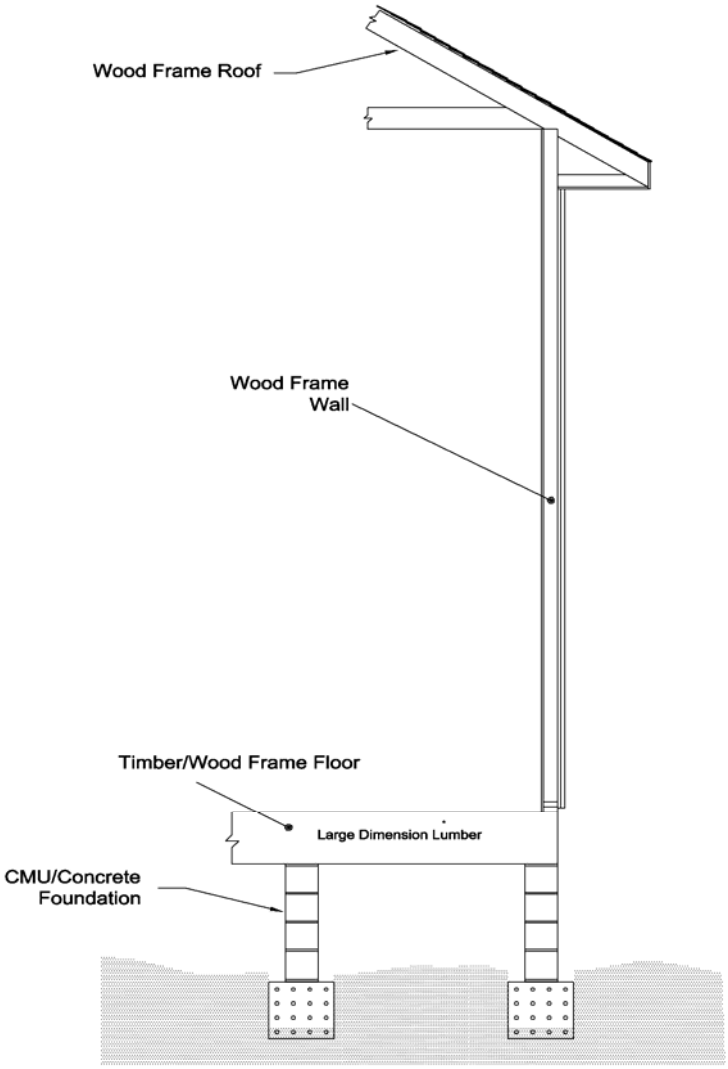
ADMINISTRATIVE FACILITIES

Administrative Facility, Type 1

Foundation: CMU/Concrete
Floor: Timber/Wood Frame
Walls: Wood Frame
Roof: Wood Frame

General Description:

Administrative Facility **Type 1** is a structure that is mainly constructed of wood. With only a concrete foundation, the floor will be built on a crawl space typically 3 feet high. The floor may be constructed with large dimension timber. The walls of this structure will be wood framed, generally covered by sheet rock or gypsum board. The exterior of the building may have vinyl siding, lap siding (transite), or brick veneer. The roof will be a wood frame with asphalt shingles or other typical tile roofing material.

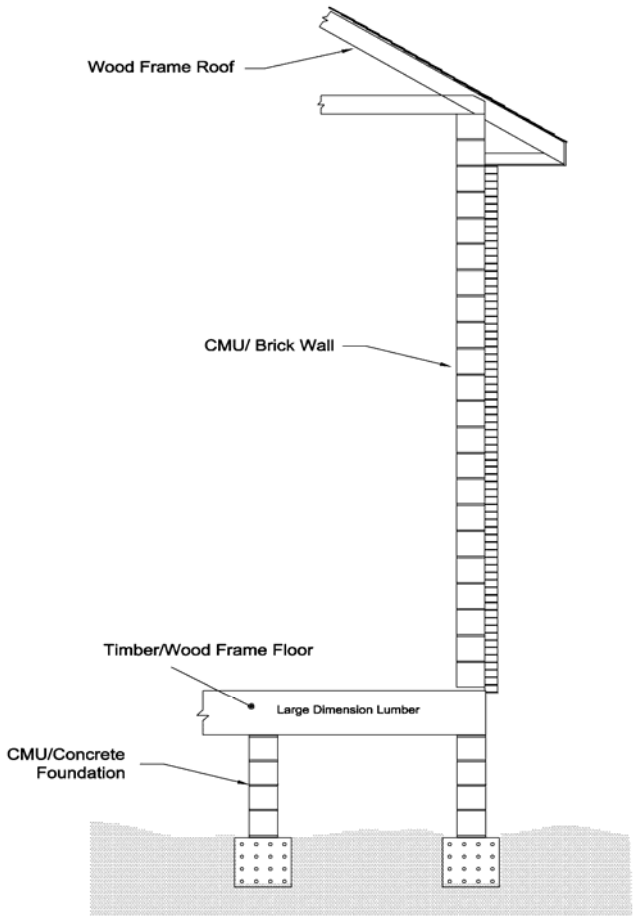


Administrative Facility, Type 2

Foundation: CMU/Concrete
Floor: Timber/Wood Frame
Walls: CMU/Brick
Roof: Wood Frame

General Description:

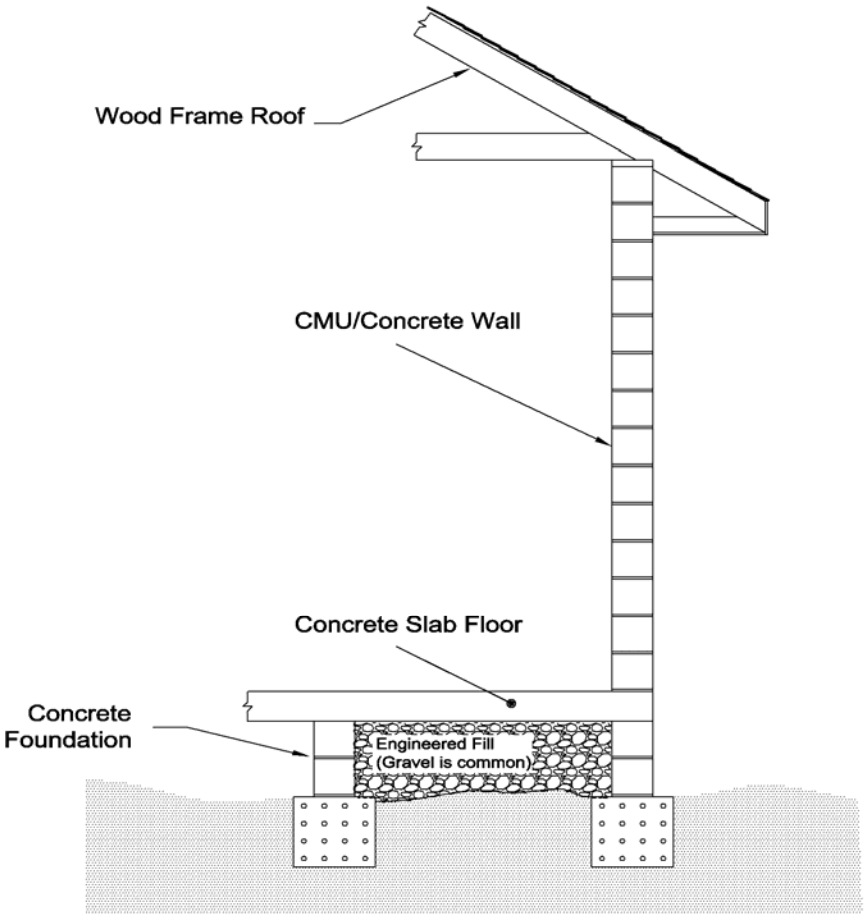
Administrative Facility **Type 2** is a structure that is constructed of both wood and concrete. A concrete foundation consists of steel reinforced footings and stem walls built with CMU (sometimes filled with concrete). This structure contains a wood frame floor, which generally includes a 3 feet high crawl space. The walls of this structure are built with cinder block or other types of CMU. Steel reinforcement, typically in the form of rebar, is placed within the cinder block and set in place with concrete. The roof is constructed of small and some possibly large dimension lumber and is covered with typical roofing materials.



Administrative Facility, Type 3

Foundation: Concrete
Floor: Concrete Slab
Walls: CMU/Concrete
Roof: Wood Frame

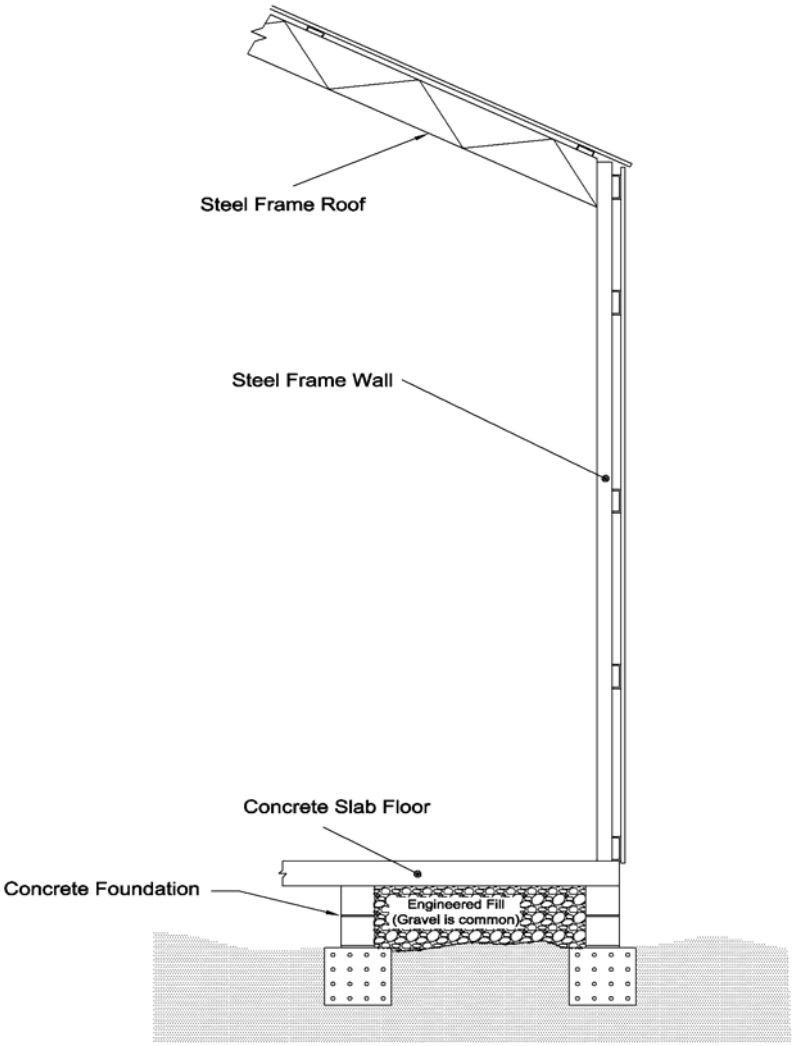
General Description:
Administrative Facility **Type 3** is constructed using mostly Concrete. The concrete foundation is covered with a concrete slab floor. Typically there will be no crawl space. Walls are formed and set in concrete with typical steel reinforcement. A wood frame roof covers the structure.



Administrative Facility, Type 4

Foundation: Concrete
Floor: Concrete Slab
Walls: Steel Frame/Metal
Roof: Steel Frame/Metal

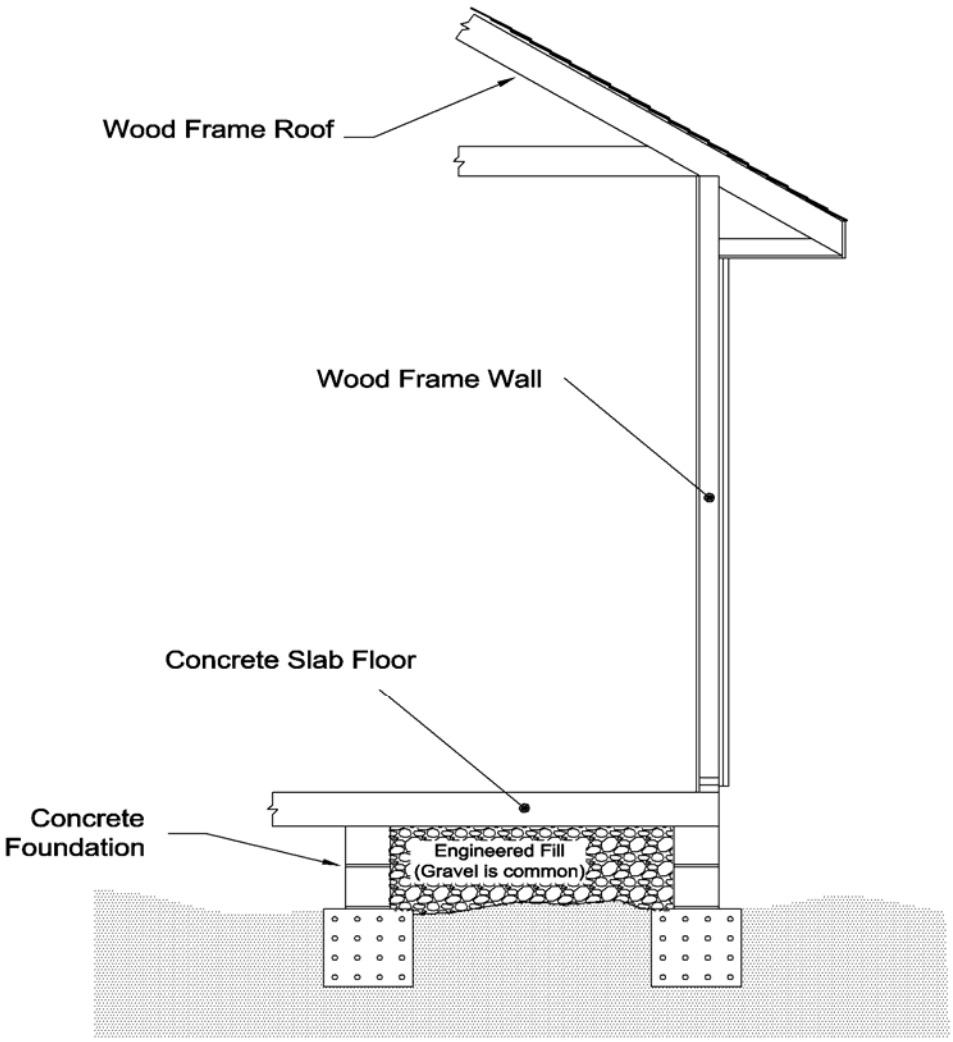
General Description:
Administrative Facility **Type 4** is constructed using Steel. A concrete slab rests on a concrete foundation. Walls are constructed using Steel framing and generally are covered with corrugated sheet metal or other types of metal sheathing. A steel frame roof shelters the structure and is generally covered with industry-standard metal roofing material.



Administrative Facility, Type 5

Foundation: Concrete
Floor: Concrete Slab
Walls: Wood Frame
Roof: Wood Frame

General Description:
Administrative Facility **Type 5** is a wood structure built on a concrete floor and foundation. The walls are framed in wood and covered internally with typical sheathing such as gypsum board or sheet rock. The roof is also framed in wood and will generally be covered with common roofing materials such as asphalt shingles, etc.

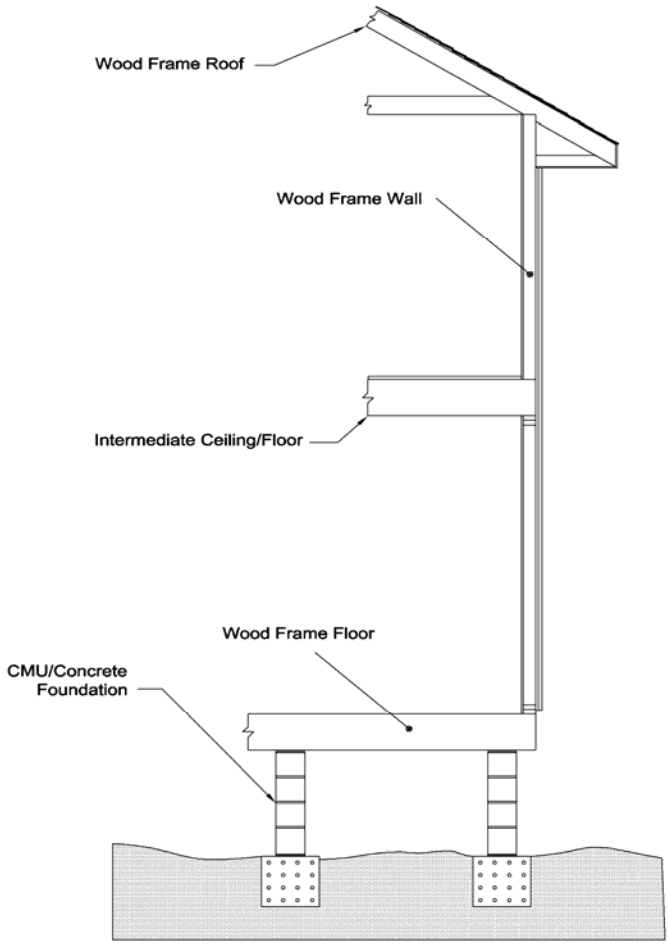


BARRACKS

Barracks, Type 1 (2 story)

Foundation: CMU/Concrete
Floor: Wood Frame
Walls: Wood Frame
Roof: Wood Frame

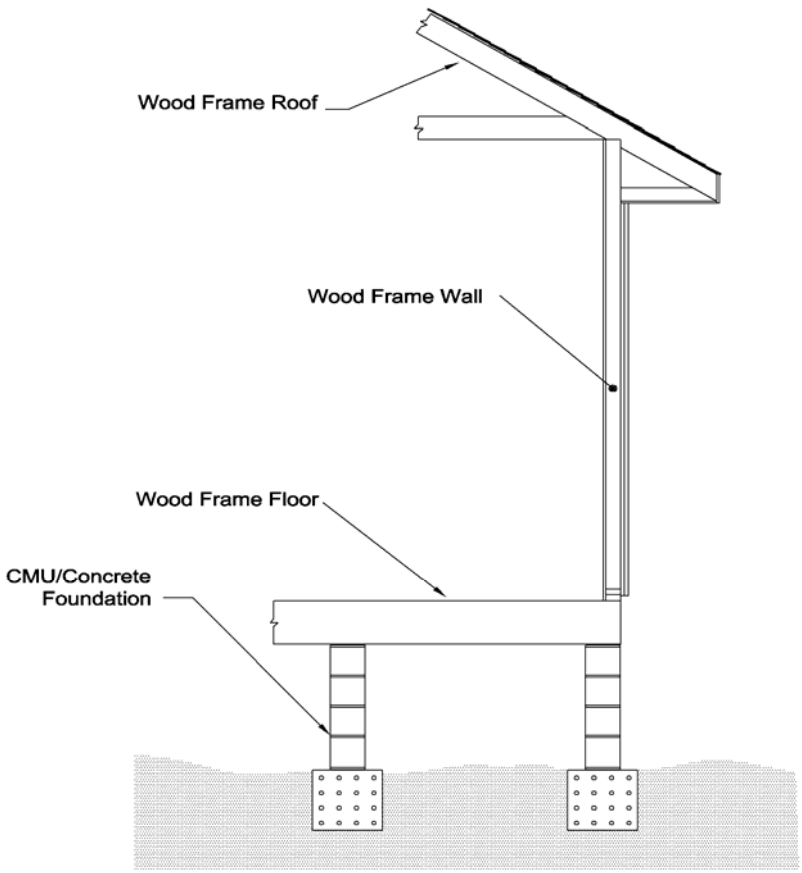
General Description:
Barracks, Type 1 is an all-wood structure, typical of the construction during World War II and the years following. Type 1 has two levels. This structure has a foundation that consists of steel-reinforced footings and CMU/Concrete stem walls. The floor is framed in wood and typically has a crawl space. The walls are wood, generally covered with sheet rock or gypsum board. Externally, the walls may be covered with lap siding (transite board), vinyl siding or a brick veneer. The roof is framed in wood and is covered with typical roofing material such as asphalt shingles, etc.



Barracks, Type 2 (1 story)

Foundation: CMU/Concrete
Floor: Wood Frame
Walls: Wood Frame
Roof: Wood Frame

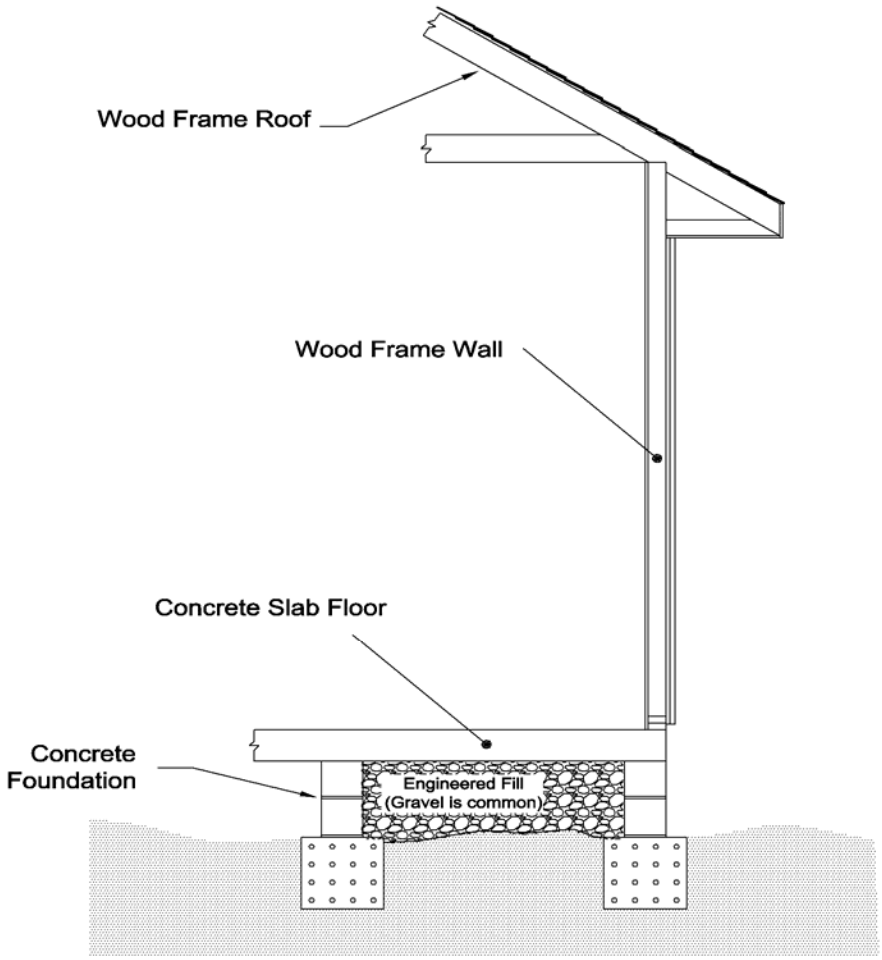
General Description:
Barracks, Type 2 is essentially the same structure as Type 1, however there is only a single level of construction, instead of two stories. This building is an all-wood structure, typical of the construction during World War II and the years following. This structure has a foundation that consists of steel-reinforced footings and CMU/Concrete stem walls. The floor is framed in wood and typically has a crawl space. The walls are wood, generally covered with sheet rock or gypsum board. Externally, the walls may be covered with lap siding (transite board), vinyl siding or a brick veneer. The roof is framed in wood and is covered with typical roofing material such as asphalt shingles, etc.



Barracks, Type 3

Foundation: Concrete
Floor: Concrete Slab
Walls: Wood Frame
Roof: Wood Frame

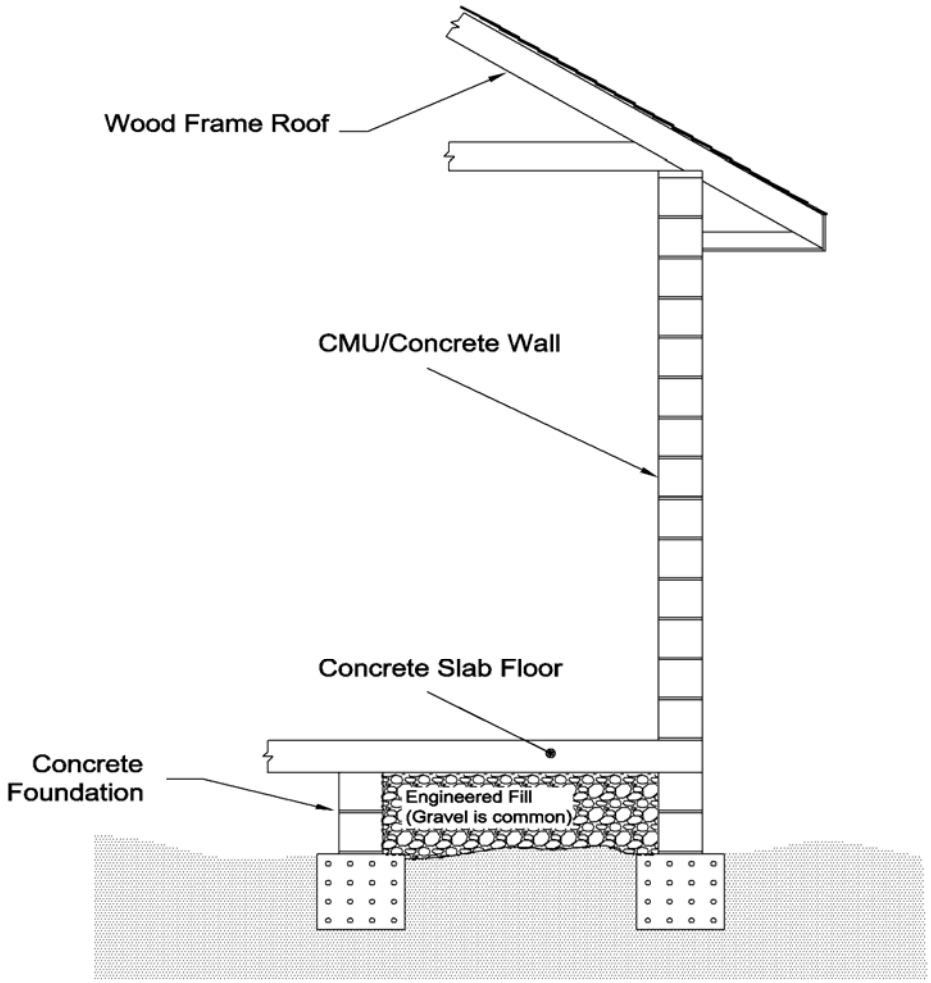
General Description:
The type of floor is the main difference between the first two types and Type 3. Type 3 has a concrete slab floor built on a concrete foundation. The walls are wood frame. Internally, they are covered with typical sheathing material such as sheet rock or gypsum board. Externally, the walls are generally covered with lap siding (transite board), vinyl siding or some type of brick veneer. The roof of this structure is framed with wood and covered with typical roofing materials, such as asphalt shingles, etc.



Barracks, Type 4

Foundation: Concrete
Floor: Concrete Slab
Walls: CMU/Concrete
Roof: Wood Frame

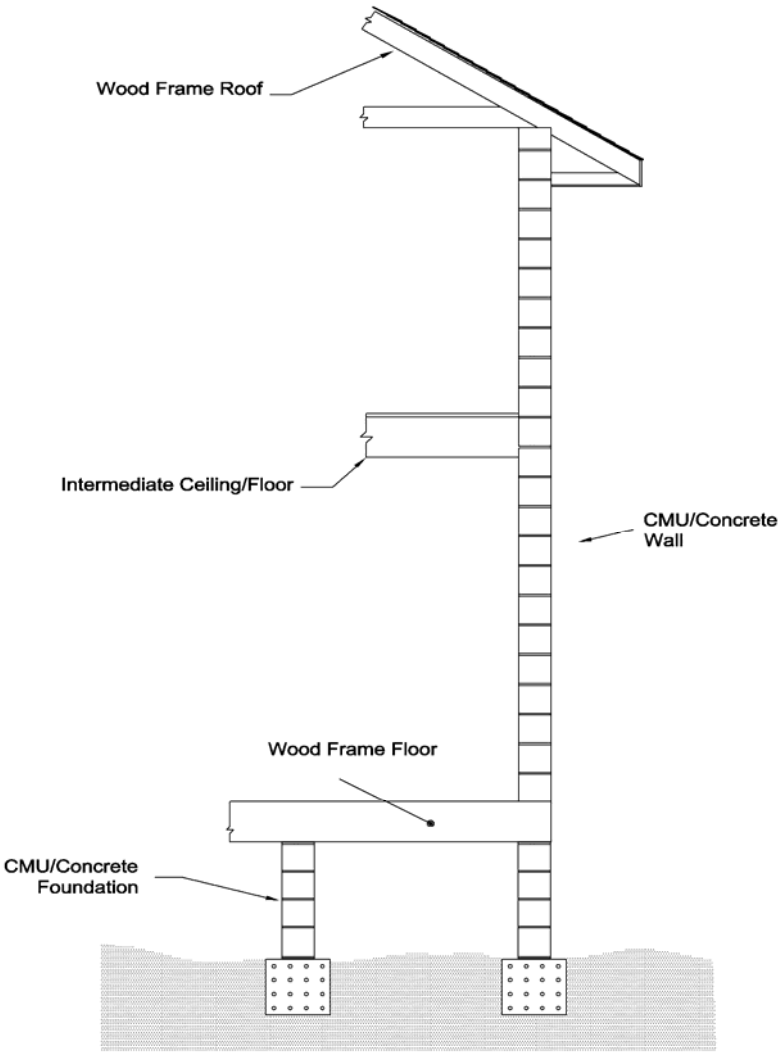
General Description:
The structure of the walls is the main difference in Barracks type 4, compared to previous types of Barracks. The entire structure consists mostly of concrete and CMU. The concrete slab floor covers a concrete foundation. The CMU/Concrete walls are often constructed with cinder block and reinforced with steel. The only wood element in this structure is the roof, which is framed using small-to-medium sized lumber and covered with typical roofing material.



Barracks, Type 5 (2 story)

Foundation: CMU/Concrete
Floor: Wood Frame
Walls: CMU/Concrete
Roof: Wood Frame

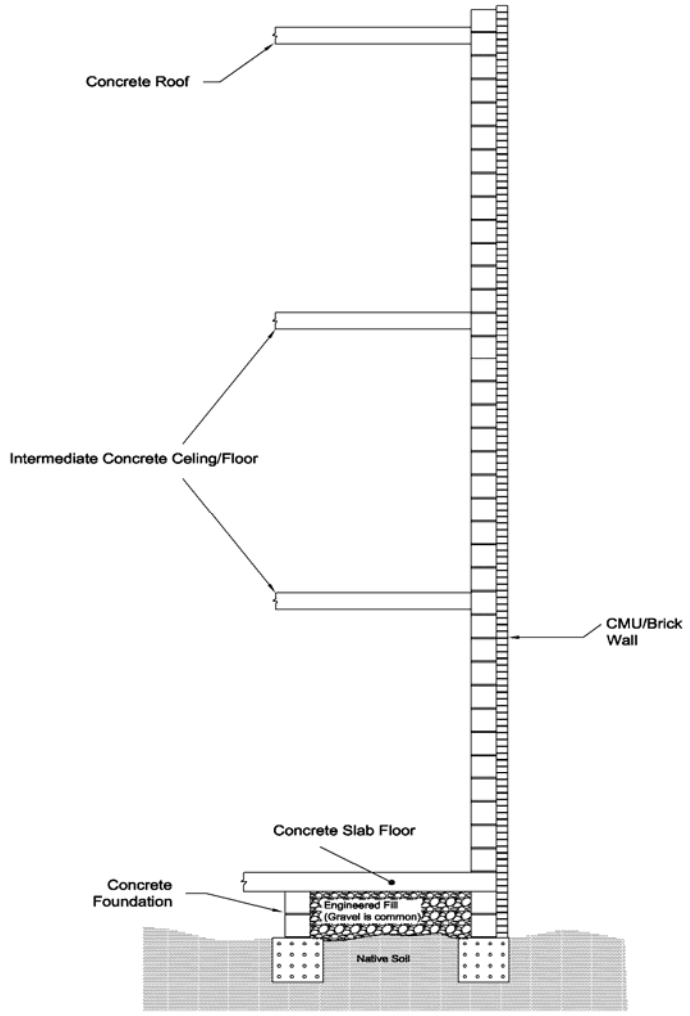
General Description:
Barracks Type 5 has a foundation building with steel-reinforced concrete footings and CMU stem walls. The floor is framed with wood. Generally there will be a crawl space (typically 3 feet high) under the floor. Walls are constructed with either poured concrete or, more typically, CMU blocks with steel reinforcement inserted. The roof is framed in wood and covered with typical roofing material, such as asphalt shingles.



Barracks, Type 6 (3 story)

Foundation: Concrete
Floor: Concrete Slab
Walls: CMU/Brick
Roof: Concrete

General Description:
Barracks Type 6 is a 3-story structure built completely with CMU and concrete materials. The foundation is made of concrete and the floor consists of a concrete slab. The walls are generally built with CMU material (with added steel-reinforcement) and will sometimes be covered externally with brick veneer. The roof of this structure is constructed with formed concrete. The roof will typically contain rebar or other types of steel reinforcement for stability.

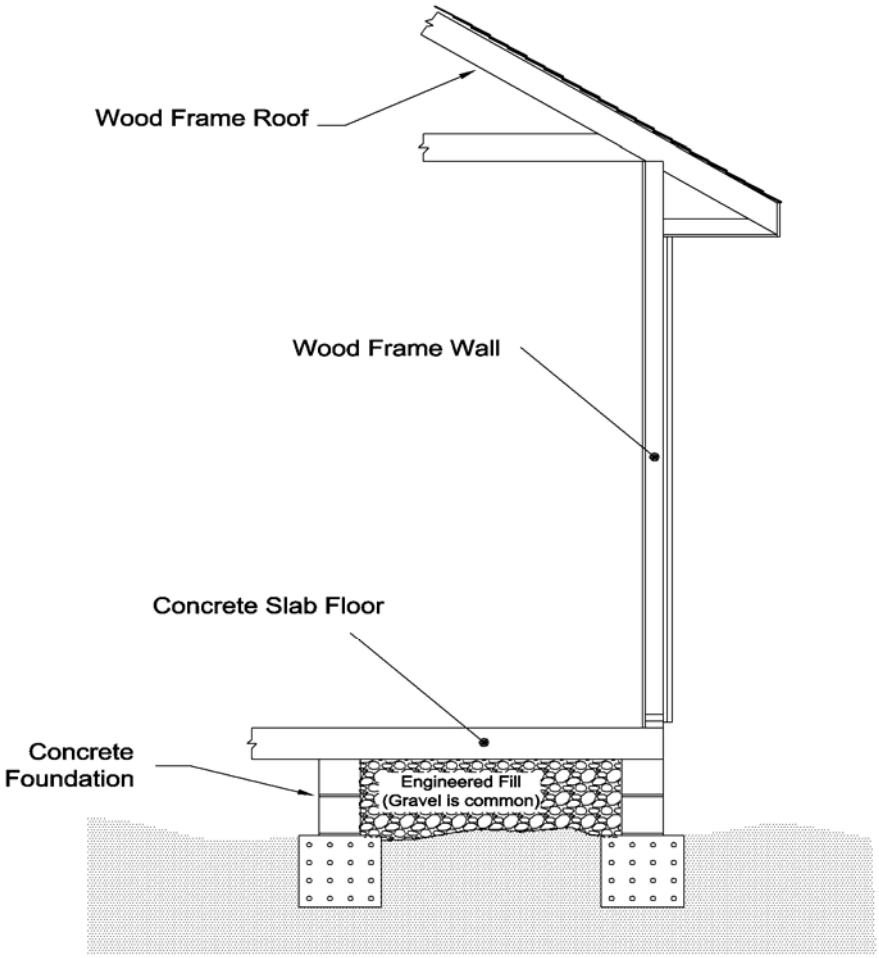


FAMILY HOUSING

Housing, Type 1

Foundation: Concrete
Floor: Concrete Slab
Walls: Wood Frame
Roof: Wood Frame

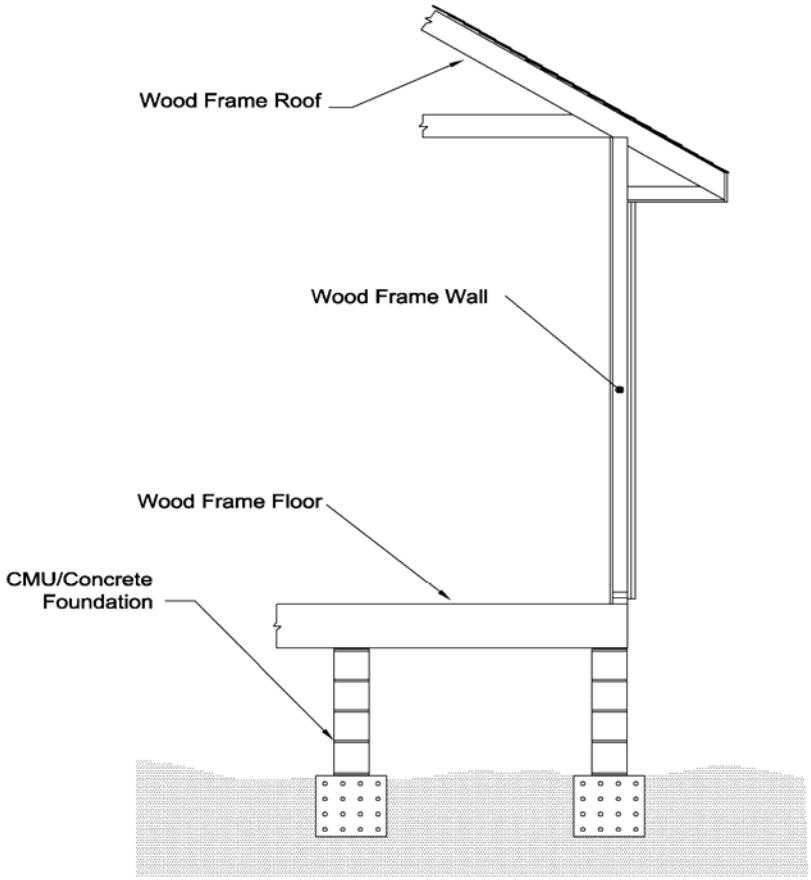
General Description:
The foundation of Type 1, Family Housing is built of concrete. The main difference between the two types in family housing is the types of floor construction. Type 1 has a concrete slab floor that is typically covered with common flooring material, such as vinyl linoleum or carpet. This floor will generally not have a crawl space. The walls consist of wood framing and studs. The interior of the wall partitions are generally covered with sheet rock, while the external walls are generally covered with either vinyl siding or brick veneer. A wood framed roof with typical roofing materials covers this structure.



Housing, Type 2

Foundation: CMU/Concrete
Floor: Wood Frame
Walls: Wood Frame
Roof: Wood Frame

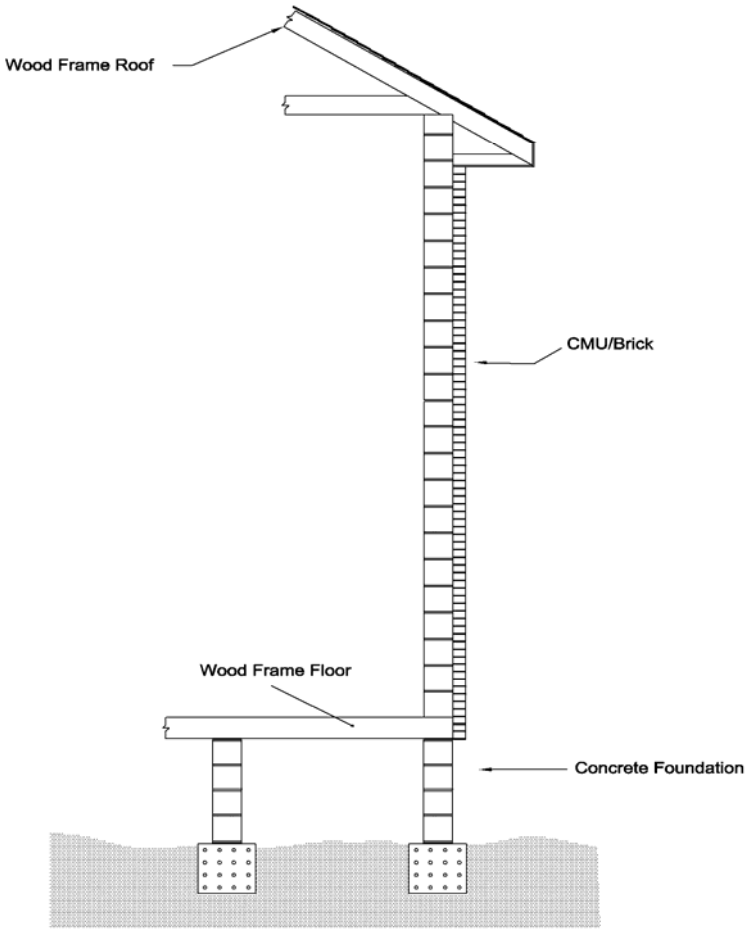
General Description:
The foundation and Floor construction is the main difference between Type 1 and Type 2. The foundation of Type 2 has a steel-reinforced concrete footing with CMU stem walls. The floor of the structure consists mainly of wood. Generally, this floor will contain a crawl space (typically 3 feet high). The floor will be constructed using small to medium dimension lumber and will generally be covered with flooring material, such as carpet or vinyl linoleum. The walls are framed in wood. The inner partitions will generally be covered in sheet rock, while the outside walls will be covered in vinyl siding or brick veneer. The roof is also framed in wood and covered with common roofing materials, such as standard tiles or asphalt shingles.



Housing, Type 3

Foundation: Concrete
Floor: Wood Frame
Walls: CMU/Brick
Roof: Wood Frame

General Description:
Family Housing Type 3 is a home built with CMU/Brick Walls. The walls of this structure may be built using steel-reinforced CMU and covered with a brick veneer. The floor will be constructed using small to medium dimension lumber and will generally be covered with flooring material, such as carpet or vinyl linoleum. The roof is also framed in wood and covered with common roofing materials, such as standard tiles or asphalt shingles.

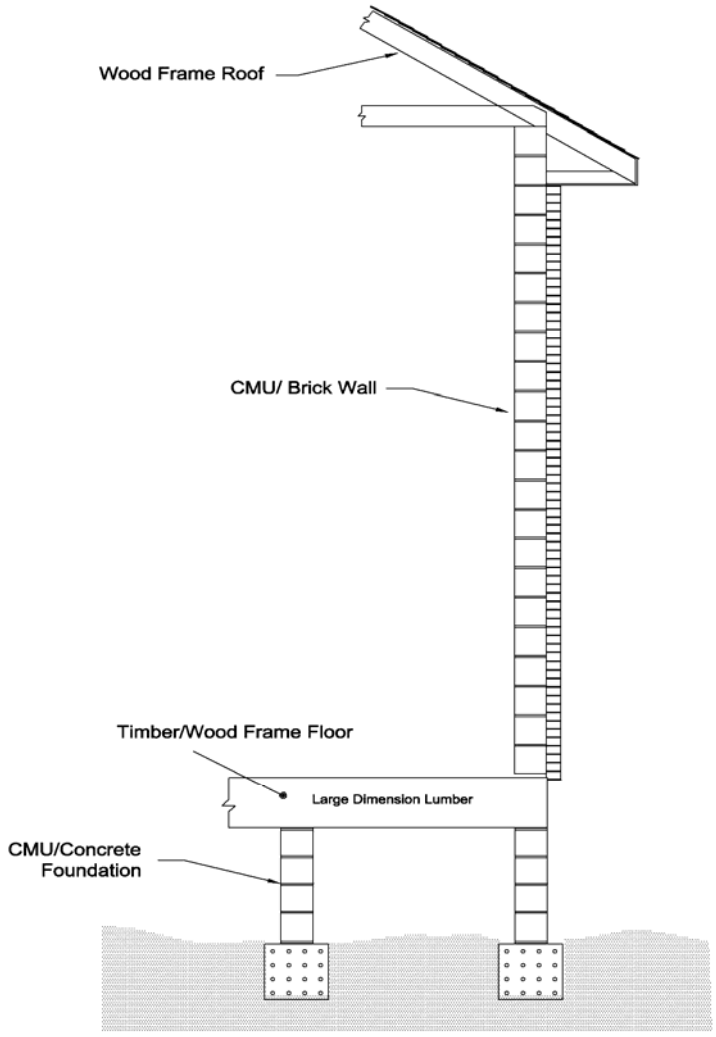


MEDICAL FACILITIES

Medical Facility, Type 1

Foundation: CMU/Concrete
Floor: Timber/Wood Frame
Walls: CMU/Brick
Roof: Wood Frame

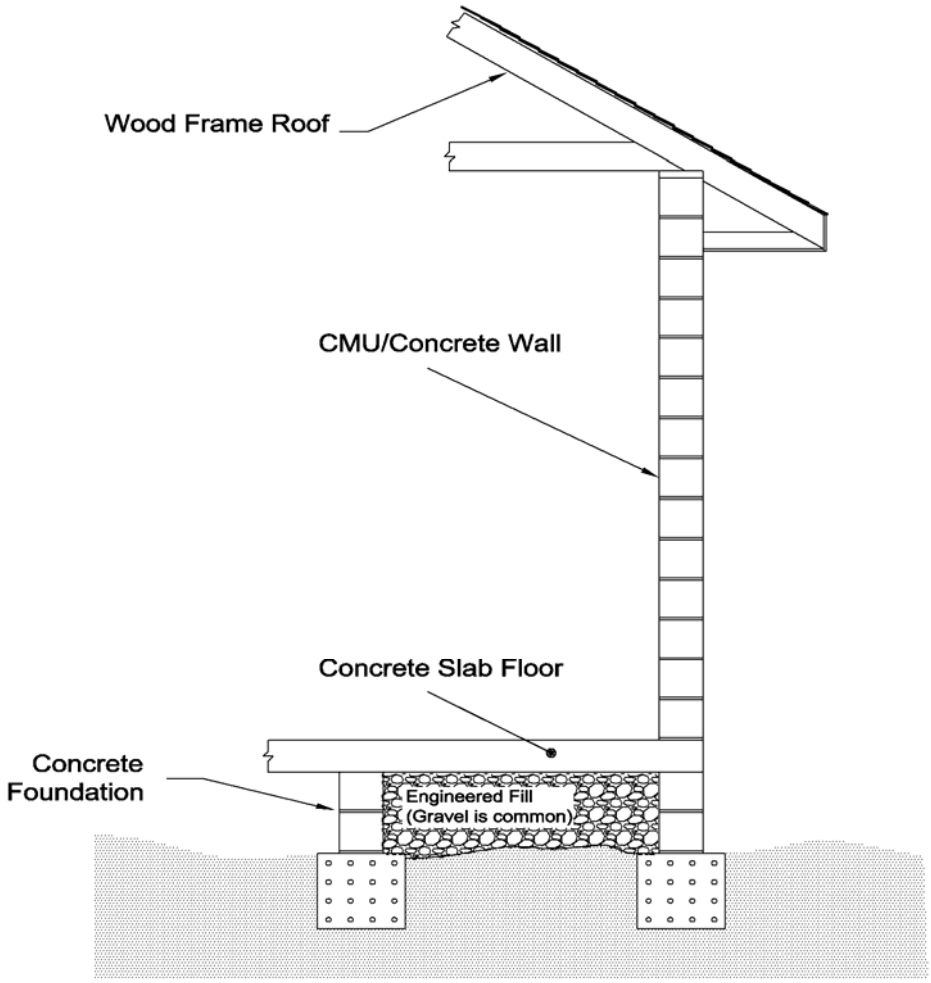
General Description:
Medical Facility, Type 1 is constructed on top of a CMU/Concrete foundation that consists of a steel-reinforced concrete footing and CMU stem walls. This structure has a wood frame floor with a crawl space that is typically 3 feet high. The floor may be built using large dimension timber and lumber. The walls are built with CMU and reinforced with steel and concrete. The roof of this structure is framed with wood and covered with typical roofing material.



Medical Facility, Type 2

Foundation: Concrete
Floor: Concrete Slab
Walls: CMU/Concrete
Roof: Wood Frame

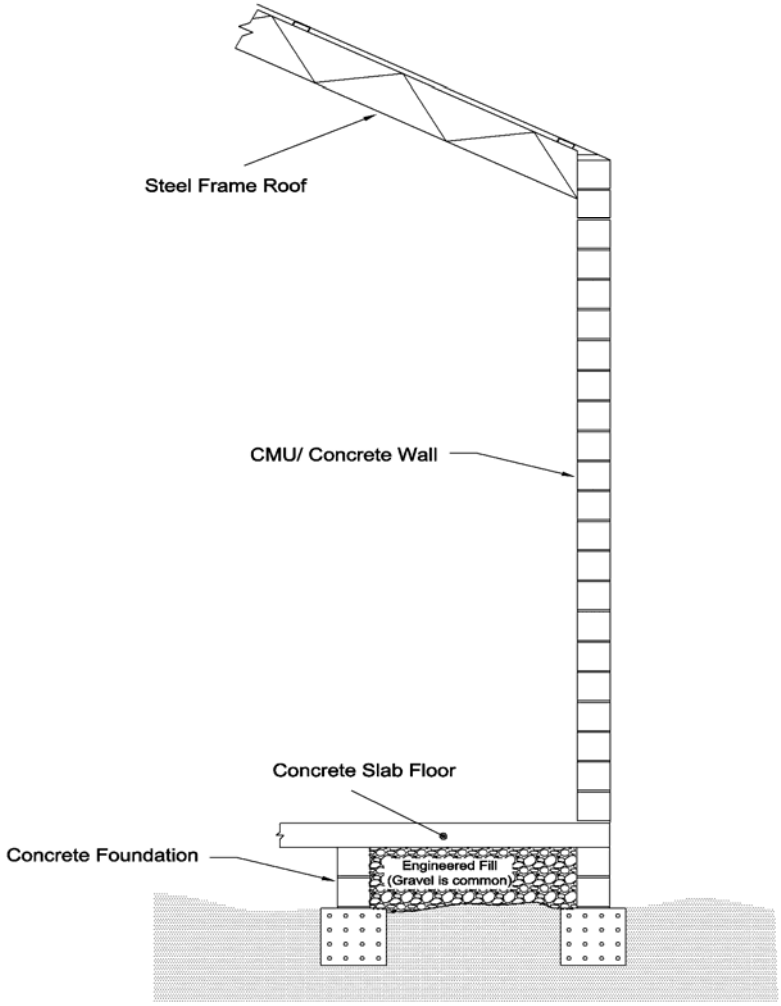
General Description:
Medical Facility, type 2 is mostly constructed with concrete. A concrete slab floor sets on top of a concrete foundation. The walls are constructed of CMU that contains steel reinforcement and concrete for stability. The roof is framed in wood and is covered with typical roofing materials.



Medical Facility, Type 3

Foundation: Concrete
Floor: Concrete Slab
Walls: CMU/Concrete
Roof: Steel Frame/Metal

General Description:
Medical Facility, type 2 is mostly constructed with concrete. A concrete slab floor sets on top of a concrete foundation. The walls are constructed of CMU that contains steel reinforcement and concrete for stability. Type 3 differs from Type 2 because of the construction of the roof. The Type 3 roof is built with a steel frame and is generally covered with corrugated sheet metal or other types of metal roofing.

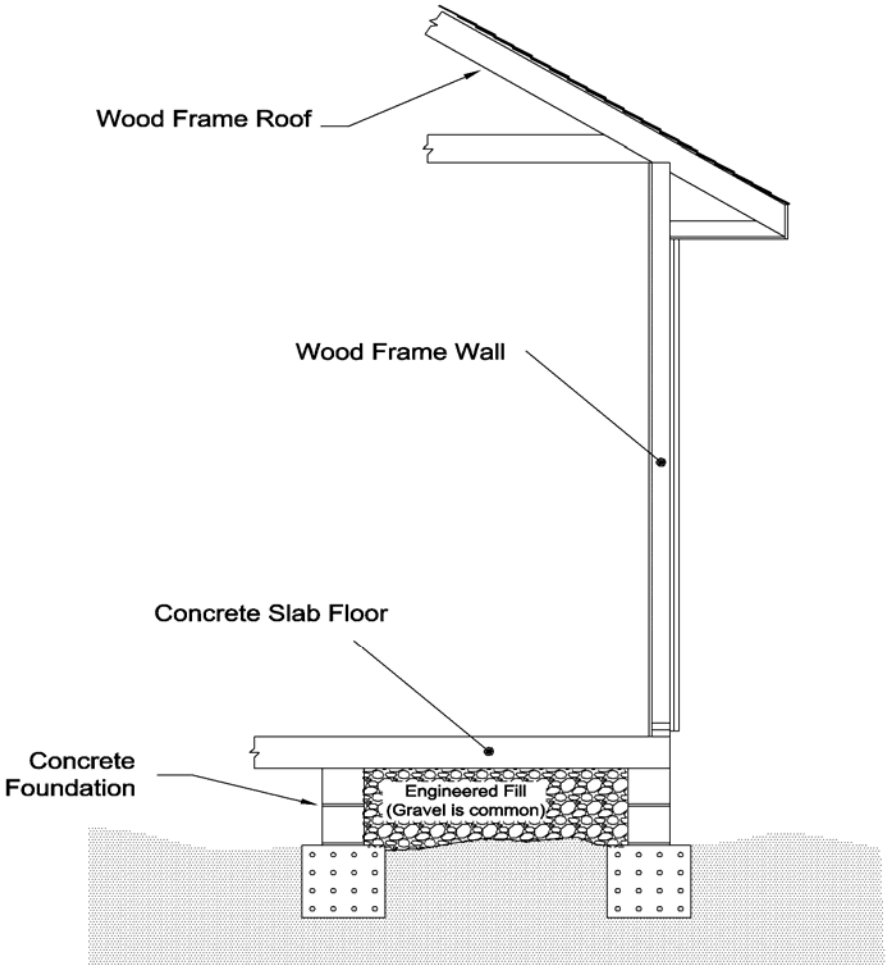


SHEDS AND GARAGES

Shed/Garage, Type 1

Foundation: Concrete
Floor: Concrete Slab
Walls: Wood Frame
Roof: Wood Frame

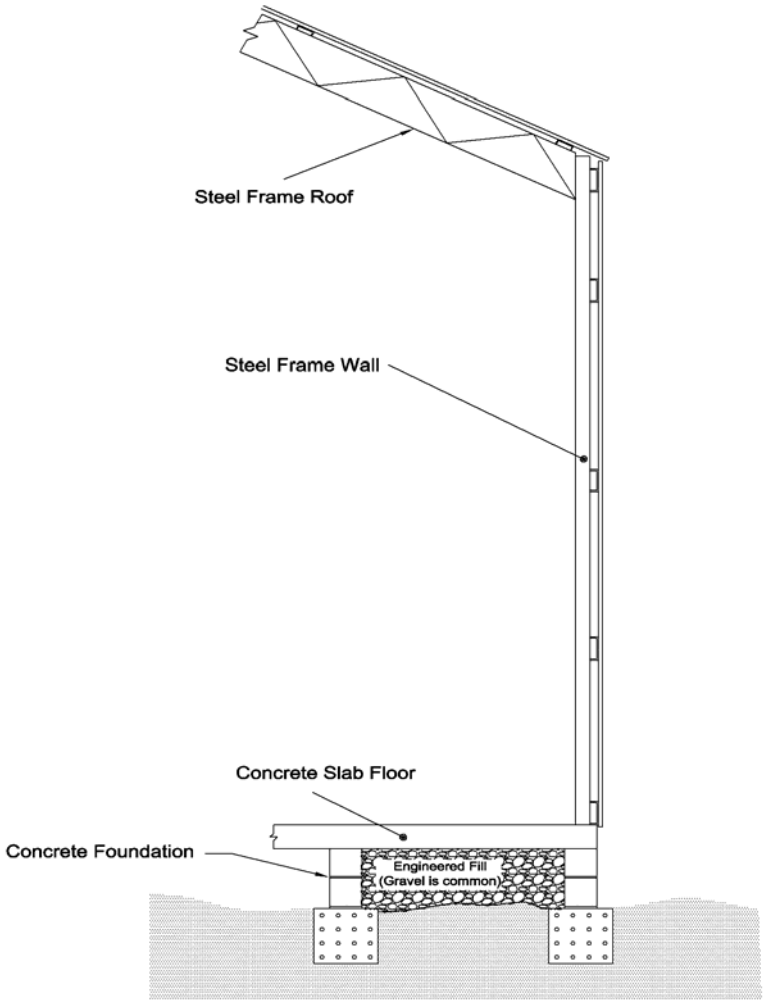
General Description:
There are three types of sheds/garages. One is constructed of wood, one of steel and one of concrete. Type 1 is constructed of wood. The concrete slab floor rests on a concrete foundation. The walls are framed in wood. The interior partitions could be covered with gypsum board, while the exterior is likely to be covered in transite board. The roof is also framed in wood and will be covered with common roofing materials.



Shed/Garage, Type 2

Foundation: Concrete
Floor: Concrete Slab
Walls: Steel Frame/Metal
Roof: Steel Frame/Metal

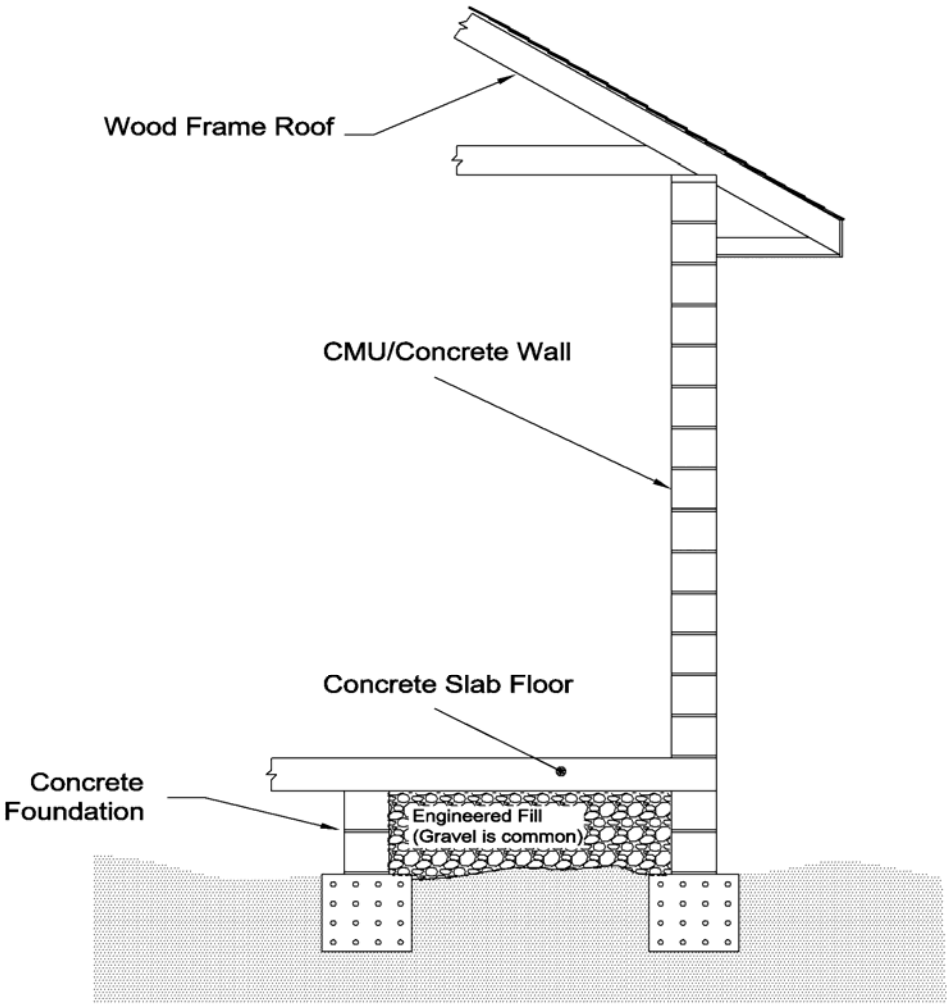
General Description:
The type 2 Shed/Garage is constructed using steel. A concrete slab floor rests on top of a concrete foundation. The walls are constructed of steel framework and studs. The interior of the walls may not be covered at all. In some cases the wall may be covered with sheet rock or gypsum board. The exterior of the wall is usually covered in corrugated sheet metal. The roof is constructed using metal framework and is typically covered with corrugated sheet metal.



Shed/Garage, Type 3

Foundation: Concrete
Floor: Concrete Slab
Walls: CMU/Concrete
Roof: Wood Frame

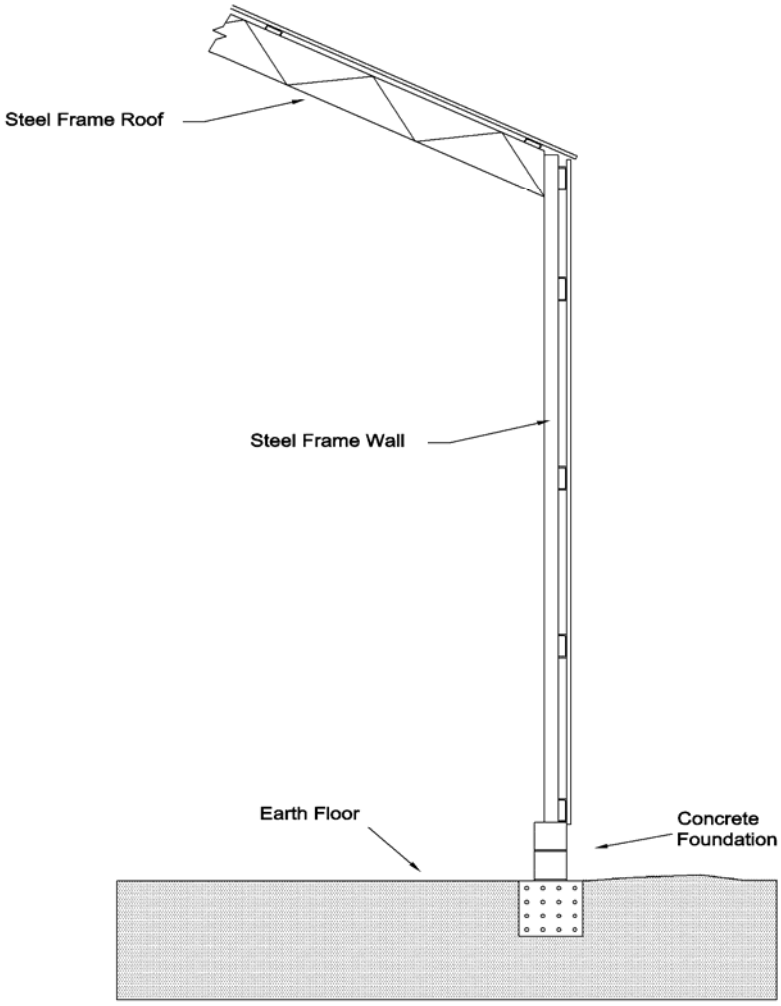
General Description:
Shed/Garage, type 3 is mostly constructed of concrete. A concrete slab floor rests on top of a concrete foundation. CMU/Concrete walls generally contain steel reinforcement and are filled with concrete. These walls are typically painted internally and externally. The roof of this structure is wood framed and covered with typical roofing materials.



Shed/Garage, Type 4

Foundation: Concrete
Floor: Earth
Walls: Steel Frame/Metal
Roof: Steel Frame/Metal

General Description:
Shed/Garage, type 3 is mostly constructed of steel. A concrete foundation supports the walls and roof. The floor consists of only earthen material. The walls are constructed using steel framework and studs. The roof also consists of steel framework and is typically covered with metal roofing material such as corrugated sheet metal.

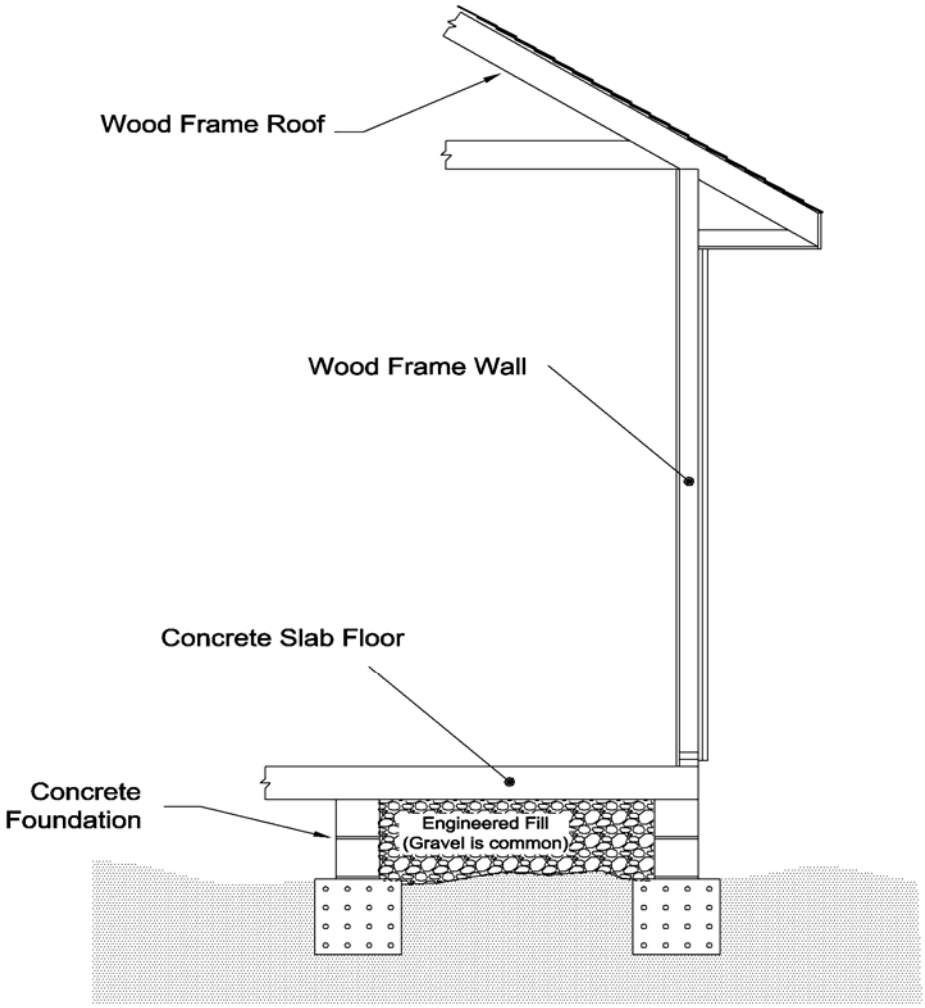


SHOP BUILDINGS

Shop Building, Type 1

Foundation: Concrete
Floor: Concrete Slab
Walls: Wood Frame
Roof: Wood Frame

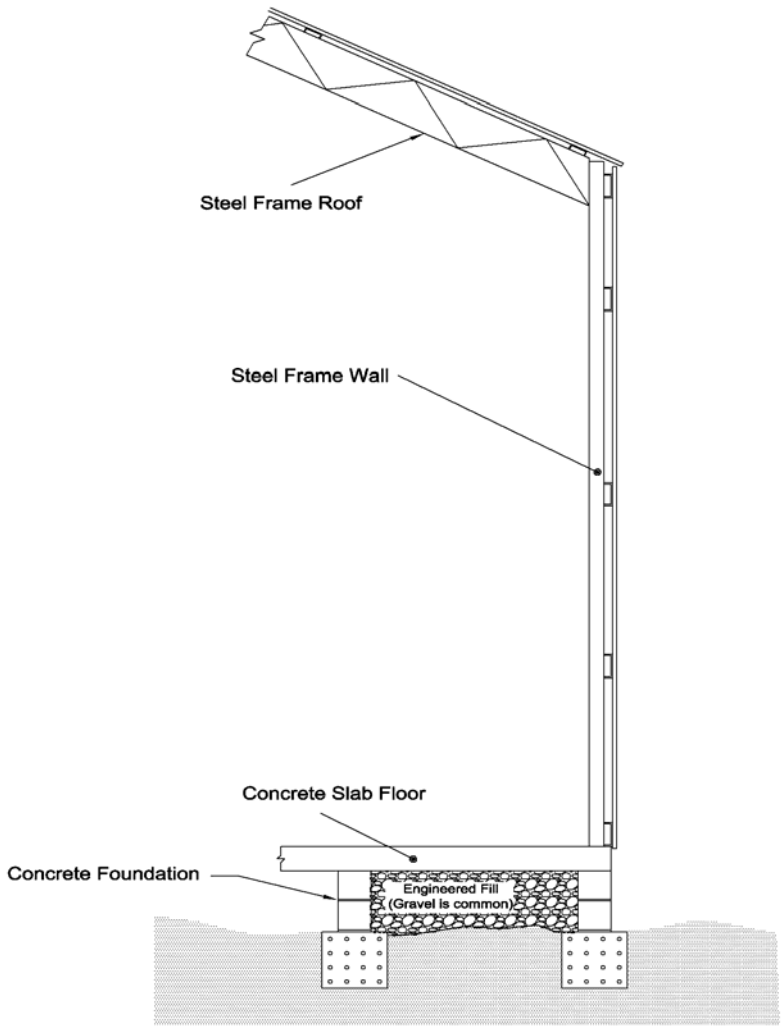
General Description:
Shop Building, type 1 is a wood framed structure. The structure is built on a concrete foundation and has a concrete slab floor. The walls consist of wood framework and can be covered with gypsum board on the interior. Externally, the walls may be covered with vinyl siding, lap siding or transite board. The roof can contain the same type of large-dimension lumber in the framework.



Shop Building, Type 2

Foundation: Concrete
Floor: Concrete Slab
Walls: Steel Frame/Metal
Roof: Steel Frame/Metal

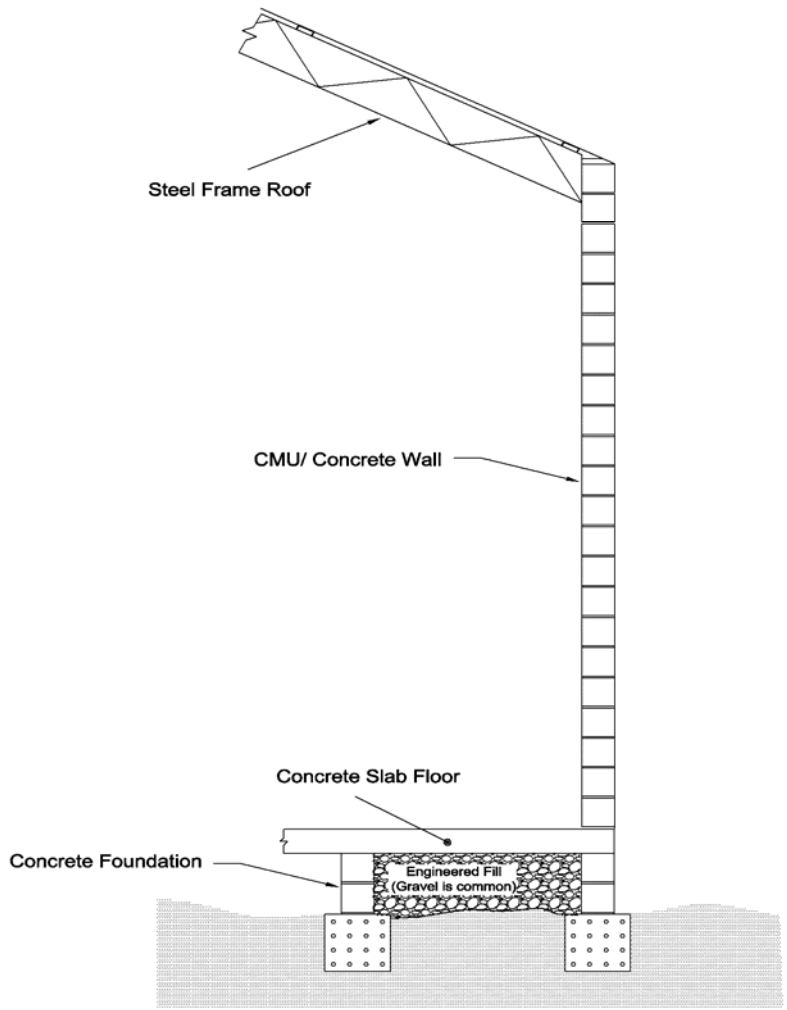
General Description:
The use of steel is the primary difference between shop building types 1 and 2. Type 2 is constructed on a concrete foundation and consists of a concrete slab floor. The walls are built using steel framework and will commonly have no type of internal sheathing. Externally, the walls are covered with corrugated sheet metal. The roof is also built using a metal framework and is also commonly covered with corrugated sheet metal.



Shop Building, Type 3

Foundation: Concrete
Floor: Concrete Slab
Walls: CMU/Concrete
Roof: Steel Frame/Metal

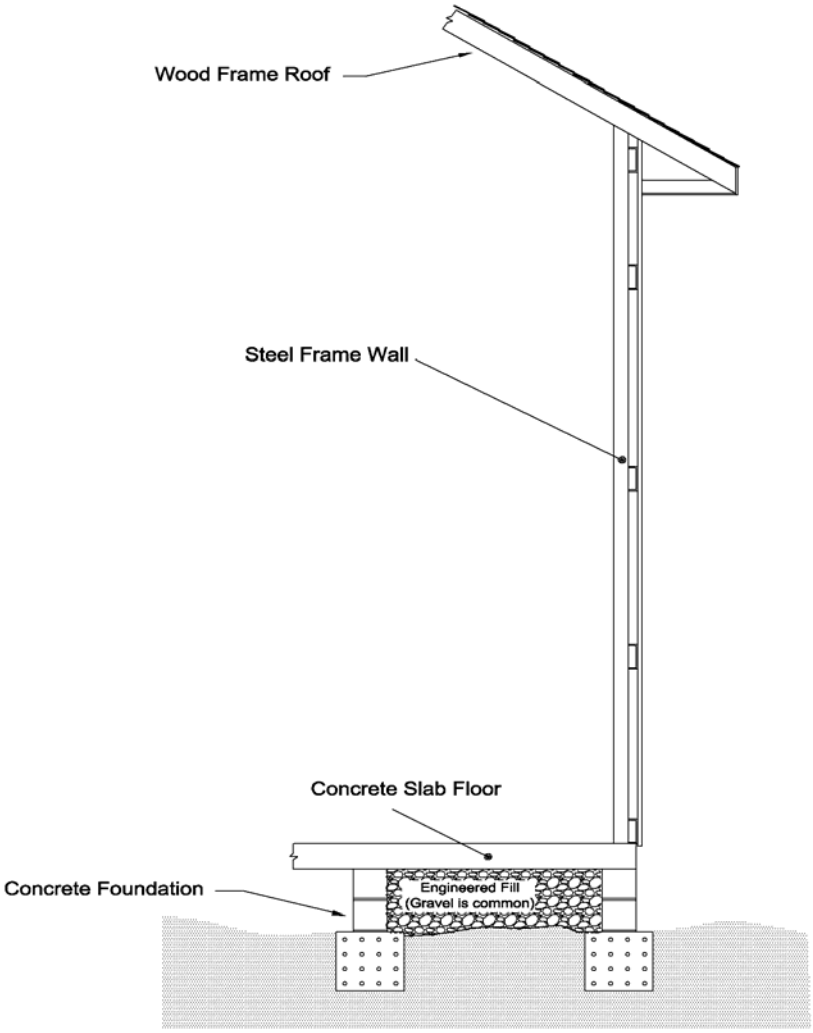
General Description:
The use of CMU/Concrete walls is the primary difference between Type 3 and previous Shop Building types. Type 3 is constructed on a concrete foundation and has a concrete slab floor. The walls are built using CMU material that has typically been reinforced with steel and filled with concrete. The roof is built using a steel framework and is commonly covered with corrugated sheet metal or other metal roofing materials.



Shop Building, Type 4

Foundation: Concrete
Floor: Concrete Slab
Walls: Steel Frame/Metal
Roof: Wood Frame

General Description:
Shop Building, Type 4 is a structure that is built on a concrete foundation and has a concrete slab floor. The walls of the building are framed using steel and are typically covered with corrugated sheet metal. The roof of the structure is framed in wood and is generally covered with common roofing materials such as asphalt shingles.

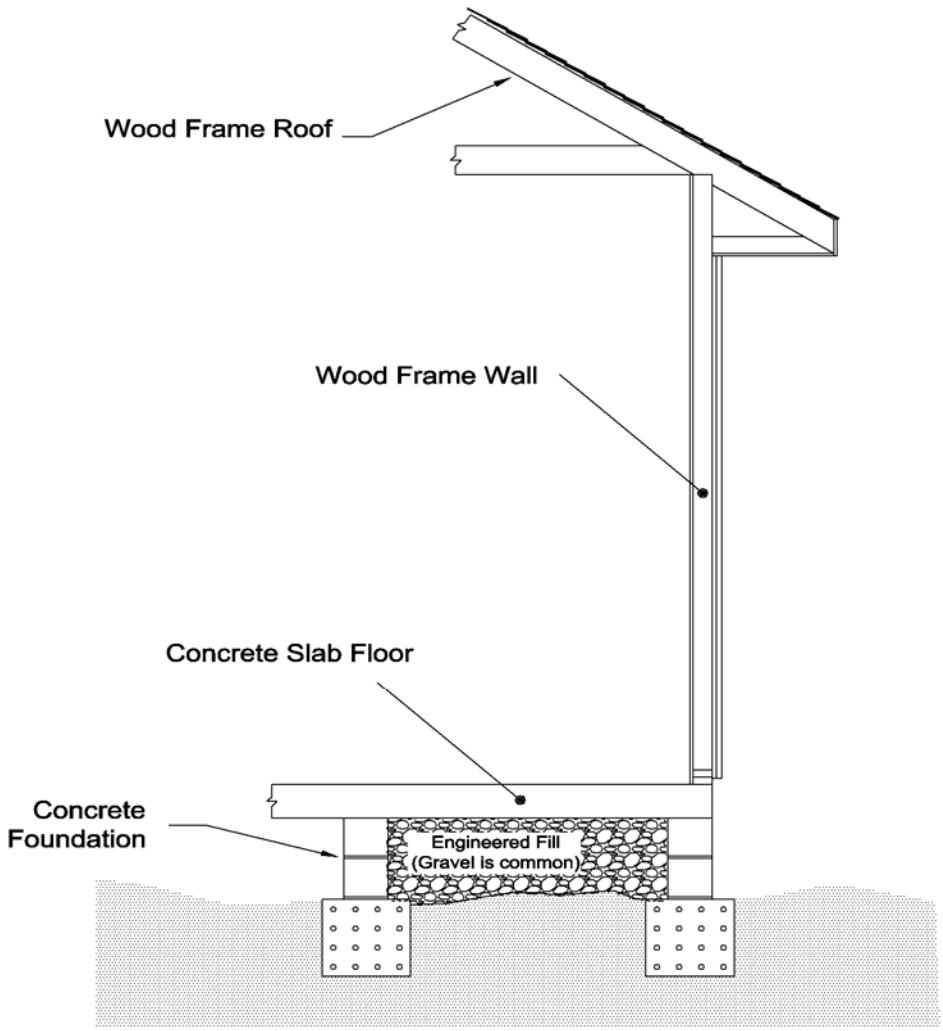


SMALL BUILDINGS

Small Building, Type 1

Foundation: Concrete
Floor: Concrete Slab
Walls: Wood Frame
Roof: Wood Frame

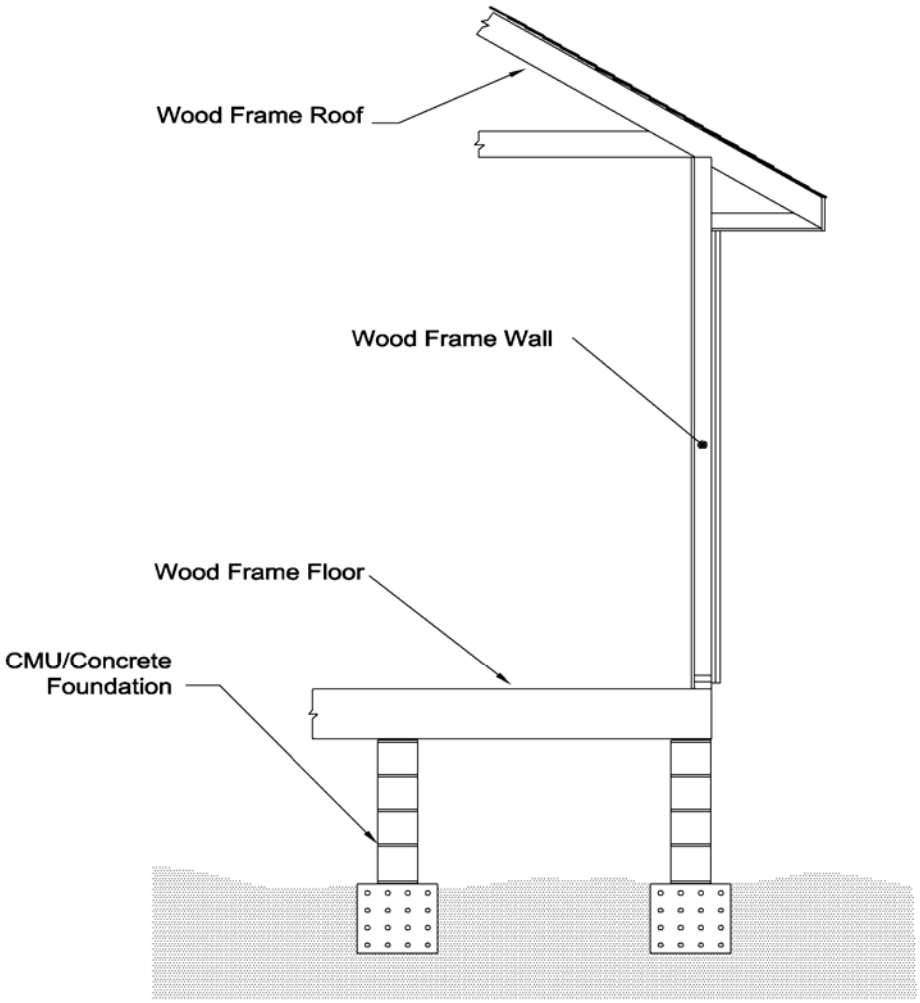
General Description:
A small building is different from a shop building due to the lack of internal wall partitions. Small building, type 1 is built on a concrete foundation and has a concrete slab floor. The interior walls are framed in wood and can be covered in sheet rock or gypsum board. The external walls can be covered in lap siding, vinyl siding, or other types of veneer. The roof is framed in wood and covered with common roofing materials.



Small Building, Type 2

Foundation: CMU/Concrete
Floor: Wood Frame
Walls: Wood Frame
Roof: Wood Frame

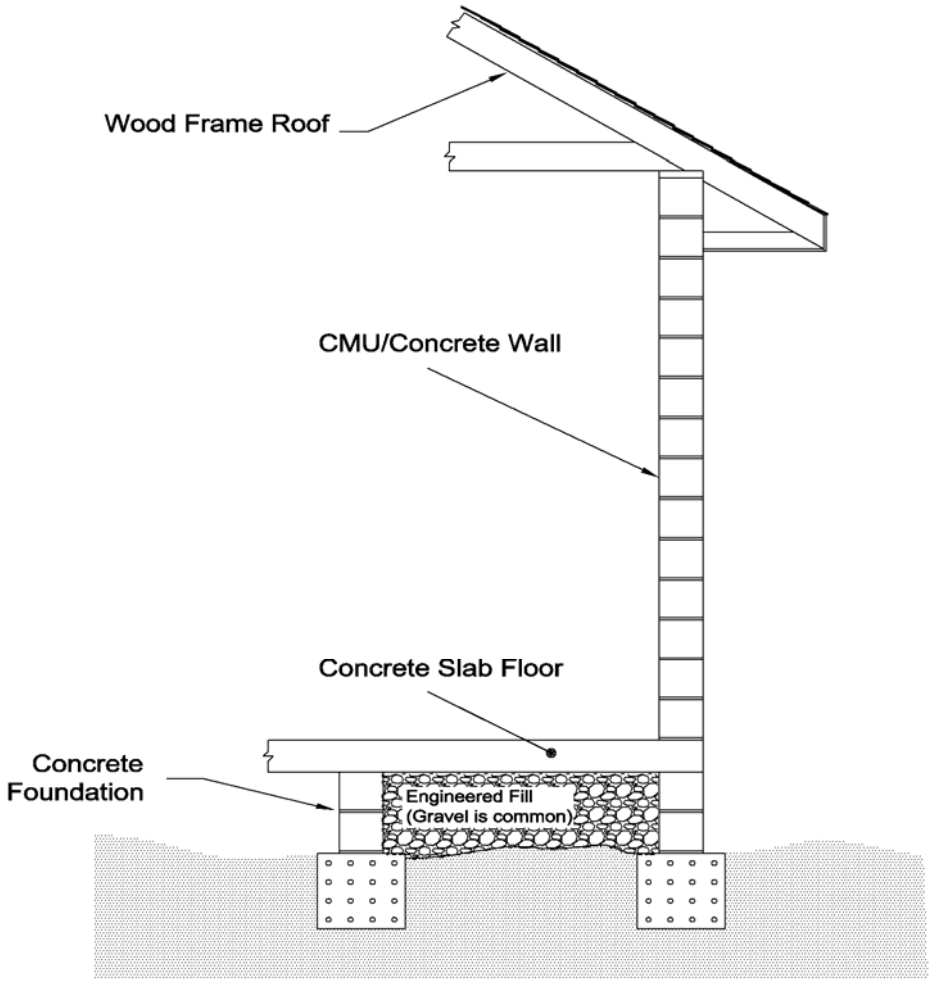
General Description:
Small Building, Type 2 is a wood framed structure. The foundation consists of a steel-reinforced concrete footing with CMU stem walls. A wood framed floor typically provides a 3 feet high crawl space. The walls are constructed with wood framework and are typically covered on the interior with gypsum board or sheetrock. Externally, the walls may be covered with transite board, lap siding or vinyl siding. A small wood framed roof will be covered with common roofing materials.



Small Building, Type 3

Foundation: Concrete
Floor: Concrete Slab
Walls: CMU/Concrete
Roof: Wood Frame

General Description:
A small building is different from a shop building due to the lack of internal wall partitions. Small building, type 2 is built on a concrete foundation and has a concrete slab floor. The interior walls are built from steel reinforced CMU and/or concrete. The external walls can be covered in lap siding, vinyl siding, or other types of veneer, but are often just painted. The roof is framed in wood and covered with common roofing materials.

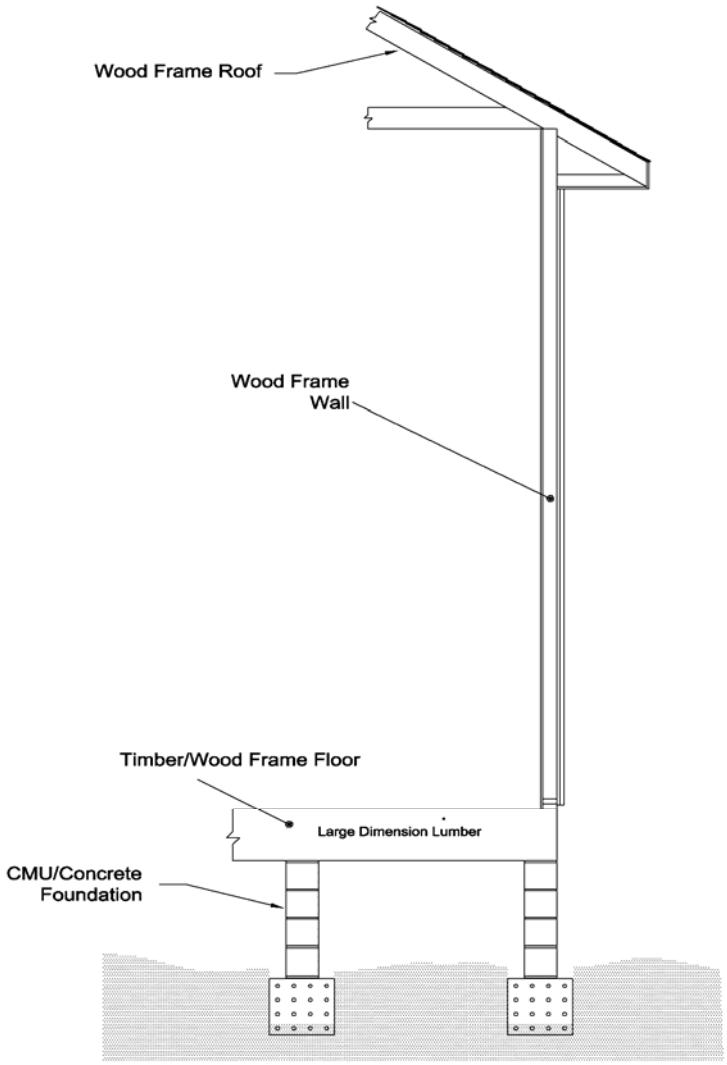


WAREHOUSES

Warehouse, Type 1

Foundation: CMU/Concrete
Floor: Timber/Wood Frame
Walls: Wood Frame
Roof: Wood Frame

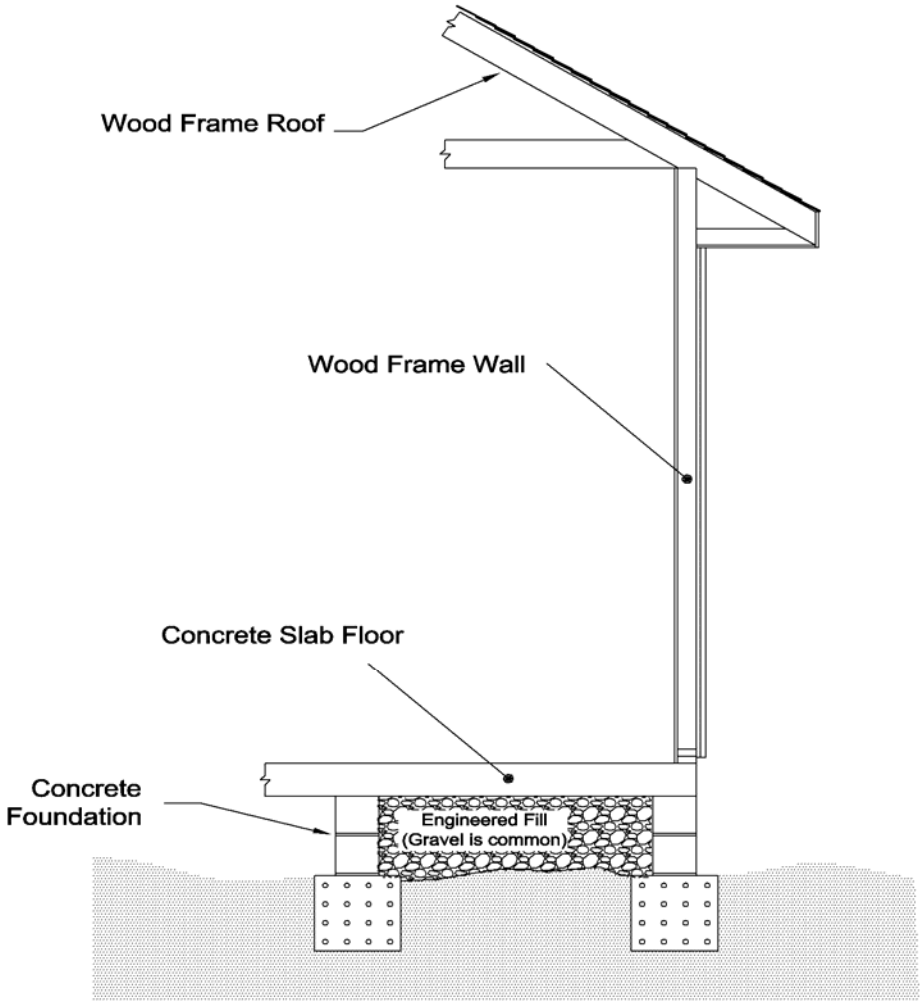
General Description:
Warehouse, Type 1 is mostly constructed of wood. A wood frame floor with a crawl space (typically 3 feet high) rests on a concrete foundation. The floor may be constructed using large dimension timber and lumber. The walls are constructed using a wood framework. The roof is also framed in wood and covered with common roofing materials.



Warehouse, Type 2

Foundation: Concrete
Floor: Concrete Slab
Walls: Wood Frame
Roof: Wood Frame

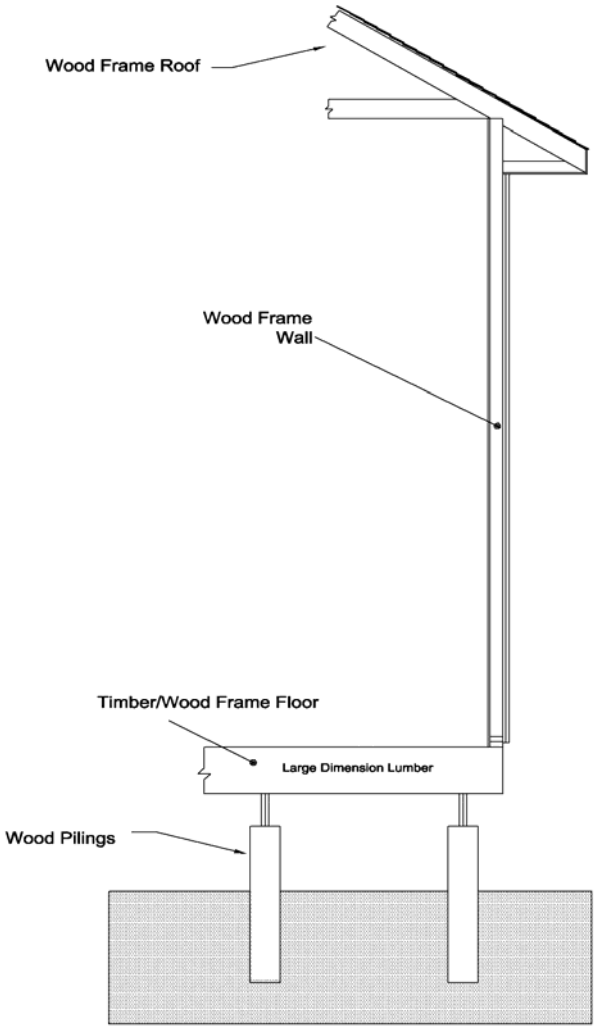
General Description:
The primary difference between types 1 and 2 is the construction of the floor. Type 2 contains a concrete slab floor built on a concrete foundation and will typically have no crawl space. The walls are framed in wood and will generally have gypsum board or sheetrock on the inside and transite board or siding externally.. The roof is also framed in wood and can contain vintage timber as well.



Warehouse, Type 3

Foundation: Pilings
Floor: Timber/Wood Frame
Walls: Wood Frame
Roof: Wood Frame

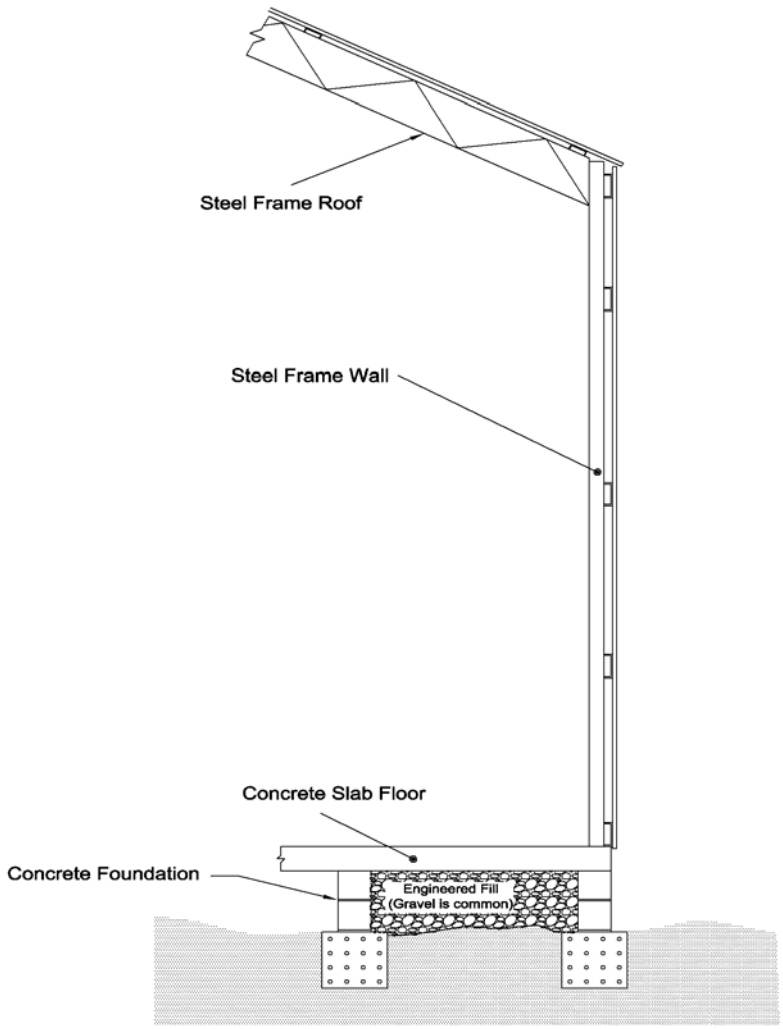
General Description:
Warehouse, type 3 is unique because of its foundation. Pilings support the structure and are covered by a wood frame floor that will commonly contain vintage large-dimension lumber or timber. The walls can also be framed in large-dimension lumber and can be covered in a timber veneer. The roof is constructed of wood and will be covered with common roofing materials.



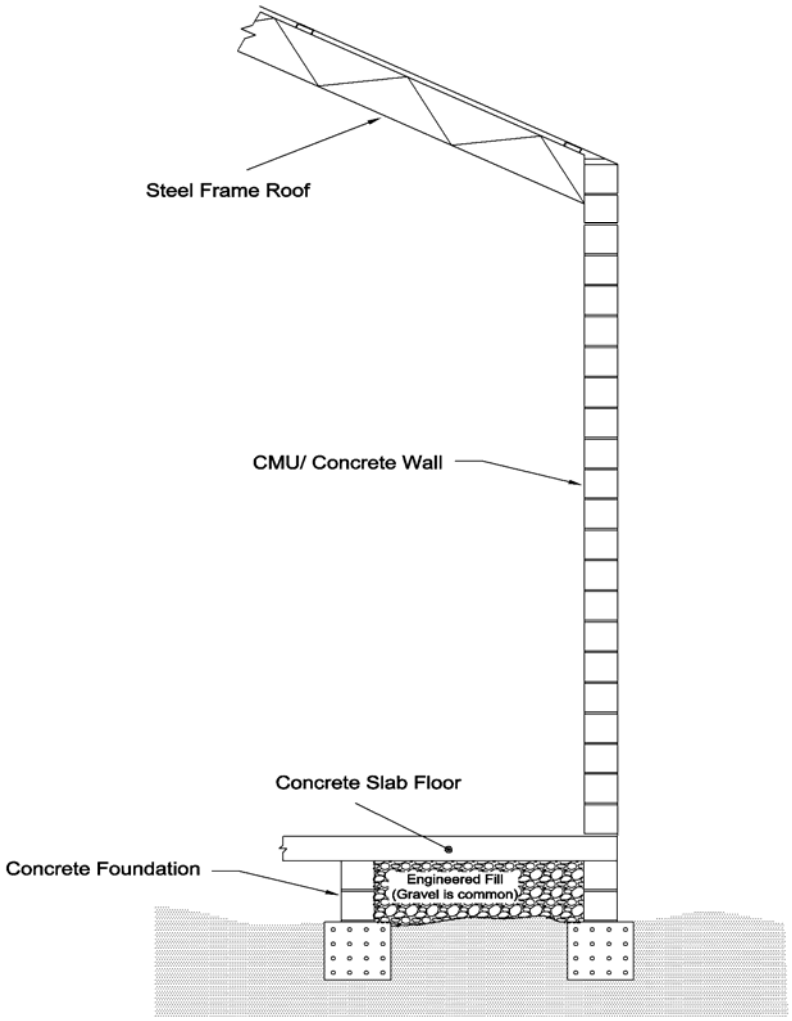
Warehouse, Type 4

Foundation: Concrete
Floor: Concrete Slab
Walls: Steel Frame/Metal
Roof: Steel Frame/Metal

General Description:
Warehouse, type 4 is constructed using steel. A concrete slab floor rests on a concrete foundation. Walls are framed in steel. The interior of the walls will not typically have any type of significant sheathing. Externally, the walls will be covered with corrugated sheet metal. The roof is also built with steel framework and is generally covered with corrugated sheet metal.



Warehouse, Type 5

Foundation: Concrete
Floor: Concrete Slab
Walls: CMU/Concrete
Roof: Steel Frame/Metal

General Description:
Warehouse, type 5 is mostly constructed with concrete. A concrete slab rests on a concrete foundation. Walls are built with CMU and are typically reinforced with steel and filled with concrete for stability. The roof of this structure is framed in steel and is covered with common metal roofing materials such as corrugated sheet metal.