



# HOUSING SPECIFICATIONS

Prepared by: Oshkosh City Staff  
Community Development Department

For the Project: Redevelopment Authority Infill Lots

Prepared July 2025

## INTENTION

The intention of this document is to set the baseline standard for housing developments that will be located on RDA Infill lots.

The development of infill lots has always been a goal of the RDA. The infill lots have historically been available but underutilized. To maximize these assets, the RDA aims to implement housing specifications that ensure uniformity and safety in new developments. These specifications, initiated by a comprehensive housing study and reviewed by city staff, are intended to align with community needs and enhance neighborhood cohesion. The RDA reserves the right for staff discretion in the implementation of these housing specifications with the ability for staff to adjust the requirements as may be required in unique lot circumstances.

These housing specifications are intended to guide the properties to include the following attributes:

- Basement, whose square footage shall be at a minimum half of the square footage of the ground floor
- Garage, whether attached or detached to match the surrounding properties
- Requirement to still meet all city planning and building inspection code requirements

## **BUILDING CODES**

The City of Oshkosh implements building codes derived from the Wisconsin Commercial Building Code (WCBC). Compliance with the International Building Code (IBC) is essential, forming the foundation for ensuring safety and compliance with structural, fire prevention, and accessibility standards.

## **ELECTRICAL CODES**

Oshkosh follows the National Electrical Code (NEC), which is mandated by Wisconsin Electrical Code. The NEC provides standards for the safe installation of electrical wiring and equipment, aiming to protect people and property from electrical hazards.

## **PLUMBING CODES:**

The Wisconsin Plumbing Code serves as the primary guideline, with integration of the Uniform Plumbing Code (UPC) where applicable. These codes ensure plumbing installations are safe, sanitary, and adequate for public health needs.

## **IMPLICATIONS:**

These codes ensure that infrastructures within the City of Oshkosh uphold the highest standards of safety, legality, and efficiency. Staying updated with any amendments in these codes is critical for all construction, renovation, and installation projects. Further references might include investigation into relevant zoning laws or energy efficiency standards that complement these building-related codes.

Please visit City of Oshkosh Inspections Division to view full codes:

<https://www.oshkoshwi.gov/InspectionServices/CodesAndOrdinances.aspx>

## **DIVISION: GENERAL REQUIREMENTS**

### **0150 00 - Temporary Facilities and Controls**

This work shall consist of the application of temporary measures throughout the life of the project.

### **0151 00 - Temporary Utilities**

All connections and extensions required to provide temporary utilities shall be made by the Contractor at the Contractor's expense.

### **0151 13 -Temporary Electricity**

Contractor to provide and install temporary power for construction site. Connect to existing power service without disrupting local service requirements. Power feeder service characteristics shall be compatible with the service from which it is taken. Size, type, and loading shall be per requirements as established by the National Electric Code (NEC). The contractor shall provide main service disconnect and over-current protection at a convenient location in accordance with the NEC. The Contractor shall provide power outlets for construction operations, with branch wiring and distribution boxes located as necessary and shall provide flexible power cords as required. Provide and install distribution equipment, wiring and outlets to provide single phase branch circuits for power and lighting.

### **0151 26 - Temporary Lighting**

Contractor to provide and install temporary lighting for construction site. Provide and install temporary lighting in all work areas sufficient to maintain a lighting level during working hours not less than the lighting level required by OSHA standards. As permanent lighting facilities are completed, they may be used in lieu of temporary facilities. Provide temporary lighting as required to satisfy safety and security requirements.

### **0152 00 - Construction Facilities**

Field offices and sheds, if provided, shall be portable or mobile buildings, or buildings constructed with floors raised above the ground, securely fixed to foundations, with steps and landings at entrance doors. Structurally sound, secure, weather tight enclosures for office and storage.

### **0158 00 - Project Identification**

Within 15 days after the commencement of work, provide one project identification sign at the locations indicated. Maintain sign throughout the life of the project. On the sign, list two points of contact by name and telephone number. Issued permits to be posted at front of all new housing projects along with address.

### **0160 00 - Product Requirements (Scope of Work)**

All materials shall be installed in strict accordance with the manufacturer's written specifications or Material's Institute Standards. Where the manufacturer's recommended details are used, the manufacturer shall be responsible for the

performance of their product. All Items not specifically mentioned that are required to make the work complete and operational shall be included.

**Installation and Storage** - All materials, supplies and equipment shall be installed per manufacturer's recommendations and per applicable codes and requirements. Material stored on site shall be protected from damage by moisture, wind, sun, abuse, or any other harmful effects.

#### **0164 00 - Owner-Furnished Products**

Contractor is not responsible for products furnished by the owner that are damaged prior to opening or receiving. Additional work required to install owner furnished products will be charged to the owner and due upon installation.

#### **0170 00 - Execution and Closeout Requirements**

The execution of all work shall be in strict accordance with these specifications and manufacturer's written specifications or Material's Institute Standards. Where the manufacturer's recommended details are used, the manufacturer shall be responsible for the performance of their product. All work not specifically mentioned that is required to make the work complete and operational shall be included.

**Codes** - Construction shall comply with all applicable state (WI UDC), and local building/zoning codes. It is the responsibility of the Contractor and Owner to ensure compliance with said codes and modify the specifications as needed to comply with such codes.

**Measurements** - The Contractor shall check and verify all dimensions and conditions before proceeding with construction. Do not scale drawings. Noted dimensions take precedence.

**Workmanship** - Workmanship shall conform to the best and highest standards of quality in each trade and shall include all items of fabrication, construction, and installation. All work shall be completed by skilled tradesmen and mechanics. Installation of all equipment and materials shall be in strict accordance with manufacturers recommendations.

**0180 00 Insurance** - Builders Risk Insurance shall be maintained by the contractor during the course of construction until final acceptance by the owner. All bonding and insurance requirements shall be coordinated with the Owner prior to beginning construction. All bonding and insurance requirements shall be coordinated with the Owner prior to beginning construction.

### **DIVISION: EXISTING CONDITIONS**

#### **0200 00 - Existing Conditions**

Contractor shall review construction documents and provide necessary site work, excavation and grading as required to construct said project.

**0241 00 - Demolition**

Provide all labor, materials, and equipment to perform the required demolition of existing pavement no longer needed for access or parking, abandoned utilities and structures which interfere with the proposed construction. When required install chain link fencing around the area of demolition work. Protect all adjacent areas not to be demolished. Remove all debris from job site before construction begins.

**0280 00 - Facility Remediation**

Contractor to abate any hazardous material or substance before beginning construction. Contactor shall contract with a properly licensed and qualified hazardous material contractor.

**0281 00 - Transportation and Disposal of Hazardous Materials**

Remove and dispose of any hazardous material before beginning construction. Contactor shall contract with a properly licensed and qualified hazardous material contractor.

**0321 00 - Reinforcing Steel**

Reinforcing steel (rebar) shall be minimum ASTM A615, grade 40. All reinforcement splices shall be in accordance with ACI318 for "Strength Design." All reinforcement steel shall be accurately placed, rigidly supported, and firmly tied in place with bar supports and spacers in accordance with ACI 301 and ACI 318, 332 residential concrete.

**0322 00 - Welded Wire Fabric Reinforcing**

Welded wire fabric shall conform to ASTM A105 and be located in the center of the depth. Install at slab on grade conditions.

**0330 00 - Footings**

Poured footings shall be constructed according to ACI 332 for residential concrete. Center all footings on walls, piers, or columns above unless otherwise noted. All footings shall rest on undisturbed virgin soil with minimum soil bearing allowable of 2500 psf, tested for 95 percent compaction, or 3/4" stone compacted in 12" lifts to 95 percent density if fill is required.

**0330 01- Slab on Grade Foundations**

Concrete floor slabs shall be constructed of 4,000 psi concrete, 4" thick. Place slabs over well-compacted granular fill compacted in 12-inch lifts to 95 percent density per AASHTO T-180 Proctor, and a 4 or 6 mil vapor barrier. Construction or control joints shall be provided in slabs on grade so that the maximum area between joints shall be 400 sq. ft. and the length of that area is not more than twice the width. Provide smooth steel trowel finish for all interior slab areas and garage surfaces. Provide broom finish texture for all exterior slabs. Slope exterior patio or porch slabs away from building at 1/4" of drop in elevation for every 1'-0" in distance. At garage slab, provide positive drainage and taper lip at garage/overhead door.

**0330 02- Poured Concrete Basement Walls**

Poured walls shall be constructed according to ACI 332 for residential concrete or of 3000 psi concrete with #5 re bar (reinforcing steel) at 12" x 12" on center (OC) placed in a vertical grid. Thickness of walls shall be a minimum of 8" thick for 8'-0" high, 10" thick for

9'-0" high, 12" thick for 10' -0" high. Patch all voids and depressions exceeding 3/8 inch in any direction. Provide appropriate waterproofing system around the exterior perimeter and install drain tile or form a drain.

### **0335 00 - Concrete Finishing**

Repair of surface defects shall begin immediately after removal of form or pouring of slab foundation. Provide smooth steel trowel finish for all interior slab areas and garage surfaces. Provide broom finish texture for all exterior slabs. Slope exterior patio or porch slabs away from building at 1/4" of drop in elevation for every 1'-0" in distance. At garage slab, provide positive drainage and taper lip at garage/overhead door. Patch all voids and depressions exceeding 3/8 inch in any direction.

## **DIVISION: WOOD, PLASTICS, AND COMPOSITES**

### **0600 00 - Wood, Plastics, and Composites**

Contractor shall review construction documents and provide labor and materials pertaining to carpentry work as required in said documents and as specified herein, while complying with all applicable building codes.

### **0610 00- Rough Carpentry**

Lumber shall be of live, sound stock and properly dried. Pressure treated lumber shall be used where any lumber shall come into contact with concrete, masonry block or soil and when using as support members for decks, porches, or balconies. Lumber for use at exterior shall have a maximum 12 percent moisture content, for dry climates 9 percent is recommended. Provide adequate bracing and shoring during the construction process. Studs and joists cut to install plumbing and/or wiring shall be reinforced by adding metal or wood structural reinforcing to strengthen member back to original capacity and maintain structural integrity. Wood Species should be #2 Spruce-Pine-Fir or better.

### **0611 00 - Wood Framing**

Floor Framing - Install pre-engineered trusses and framing per manufacturer's guidelines, details, and construction documents. Pressure treated lumber shall be used where any lumber shall come into contact with concrete, masonry block, roof curbing or roof blocking.

**Girders:** Install girders in pockets formed in the foundation or on top of the sill plate. The pocket should allow a minimum of 1/2" on both sides for circulation.

**Sills:** Install single 2"x 6", solid pressure treated lumber horizontally over continuous sill seal on foundation. Bore holes in sills for anchor bolts.

**Exterior Walls** - All exterior walls shall be constructed with 2"x 6" wood studs at 16" on center (OC) (unless otherwise noted), with single bottom plates and double top plates throughout. Where interior partitions meet exterior walls, install 2 studs fastened together with 2"x 6" blocks approximately one foot long.

Where exterior openings occur on exterior walls, provide structural headers designed to carry the loads for the openings. At windowsills, provide a single piece of 2"x 6" lumber. Provide double jacks or liners for openings 6'-0" wide or greater, unless otherwise noted. Provide braced wall panels per WI UDC requirements, and submitted wall bracing plan. Provide 7/16" plywood sheathing wall bracing.

**Fascia and Soffit** - Provide and install aluminum fascia and soffit. Wrap all exposed edges to fully enclose sub-fascia structure. See manufacturers recommendations for complete installation guidelines.

### **0643 00 - Wood Stairs and Railings**

Heights of treads, lengths of risers and overall width of stairs shall comply with applicable building codes.

The vertical dimension of one riser (max 8 inches) and the horizontal dimension of one tread (min 9 inches) will total 17" or 17.5". Maintain a minimum of 6'-8" headroom measured from the front edge of the tread to a line parallel to the stair run.

UDC stair requires riser max 8", tread minimum 9". Head room 76".

### **0660 00 - Vinyl Column Wraps**

Store and handle in strict compliance with manufacturer's written instructions and recommendations. Protect from damage due to weather, direct sunlight, excessive temperature, moisture, surface contamination, construction operations and other causes.

Provide and install 8"x8" square x 8' high, expanded cellular PVC square column. Non-tapered, smooth shaft, standard capital, and base, Prime and paint.

**Floors/walls** -- Install R 21 spray foam, polyurethane insulation at box ends of rim joists. If applicable, between crawlspace and first floor, install 5-1/2" batt insulation with an R value of 19. Walls, install R -19 insulation or per submitted ResCheck. If applicable, install 5-1/2" batt insulation in floor system between first and second floor to provide an R value of 19 for sound attenuation.

**Ceilings** – Will depend on ResCheck.

**Foundation** - Will depend on ResCheck. Slope away from building at 1 1/2" or 2" per foot. Install frost wall 48" below finished grade, along garage/overhead door opening.

### **0731 13 - Asphalt Shingles**

Provide 30-year CertainTeed Landmark dimensional shingle, or approved equivalent, over one layer of 15# felt. Support roof system with pre-engineered truss system to meet dead and live load requirements as specified by manufacturer.

Provide and install ice and water shield (one course) on all eaves and valleys.

Provide and install Air Vent, Shingle Vent II, or approved equivalent ridge venting as indicated on plans (no roll shingle vent).



**0746 00 - Siding**

Provide and install engineered exterior siding in accordance with construction documents, applicable building codes and manufacturers guidelines. Provide all necessary starter strips, drip cap, corner detailing, etc. required by manufacturer and as stated in construction documents.

**0760 00 - Flashing and Sheet Metal**

Install appropriate flashing at all joints of chimneys, dormers, walls, vent pipes and other connection points to prevent the infiltration of water. Flashing shall be assembled of 26 gauge minimum galvanized, corrosion resistant sheet metal. Valleys shall be wrapped with 20" wide galvanized flashing and extend 10" in each direction from center-line of valley. Use 4" wide x 4" high x 10' long galvanized flashing between wall siding and roof surfaces and step flashing between masonry and roof surfaces. Keep flashing concealed except where exposed on vertical surfaces or counter flashing.

If copper is used, install 16-ounce hard copper.

**0771 23- Manufactured Gutters and Downspouts**

Install 5", wide metal gutters and 4" downspouts. Attach every 2'-6" on center (OC) with straps and/or fasteners. Metal should be 25-gauge aluminum.

**0772 00 - Roof Accessories**

Contractor shall review construction documents and provide labor and materials pertaining to proper ventilation as required in construction documents and as specified herein, while complying with all applicable building codes. Check ventilation requirements with roof system manufacturer.

**DIVISION: OPENINGS****0800 00 - Openings**

Contractor shall review construction documents and provide labor and materials pertaining to the doors and windows as required in said documents and as specified herein, while complying with all applicable building codes. In all sleeping areas provide an operable egress standard window or door directly to exterior.

**0811 01-Exterior Doors**

All exterior doors shall be solid core, insulated and swing inside with weather-tight thresholds. Install weather-stripping around all doors to match adjacent surface.

**Standard Exterior Door, Steel, Fiberglass with clad frame--**

ThermaTru Smoothstar S960 Fiberglass, or approved equivalent, 1 3/4" thick, with full weather-stripping and metal threshold. Provide necessary hardware per door schedule below. Provide deadbolt and entrance function knob. Door to be finish painted separate color inside and out. Where applicable, door between garage and residence must have a 20-minute fire-rated label.

**Garage Service Door-** Steel, Fiberglass with clad frame jamb and aluminum sill. Deadbolt and entrance function lockset. Door to be finish painted same color each side. (White - can be factory finish).

**Exterior Door Frames -** Install pre-hung door units.

**Exterior casing:** brick mold WM180, 1 1/4" 2", finger joint for paint finish or clear/concealed joint for stain finish

**Interior casing:** S4S flat molding board, typical is 9/16" x 2 1/4" finger joint for paint finish or clear/concealed joint for stain finish

### **0814 00 - Interior Doors**

Interior doors shall be pre-hung split-jamb units, including casing on both sides of the door.

**Standard Interior Door -** Type: Solid Core

**Style:** Five Panel Mission or Shaker

**Material:** Masonite

**Size:** as noted on plans.

**Interior Door Frames -** Install pre-hung split-jamb units with interior casing, S4S flat molding board, typical is 9/16" x 2 1/4" finger joint for paint finish or clear/concealed joint for stain finish

### **0831 00- Attic Access Door**

Install at a minimum 14x24 attic access door per UDC code.

## **DIVISION: FINISHES**

### **0900 00 - Finishes**

Contractor shall review construction documents and provide labor and materials pertaining to the finishes as required in said documents and as specified herein, while complying with all applicable building codes.

### **0929 00- Gypsum Board**

Gypsum board must be held firmly against the framing while fastening to avoid later movement of gypsum board on the shank of the nails or screws.

**Joints:** At gypsum wallboard joints install a 2" tape. Spread gypsum wallboard mud at all tape joints, corner beads, nails, and screw penetrations and where a smooth surface is needed. Apply second coat of wallboard mud after a minimum 24 hours. After drying (minimum 48 hours), sand all joints and other areas to a smooth consistent surface.

**Interior Walls:** Sheath walls with 1/2" gypsum wallboard, ceilings with 5/8" gypsum wallboard, either vertically with long edges parallel to framing, or horizontally with long edges at right angles to framing members. Offset joints between layers at least 10.

Plaster returns on all window jambs and headers per plan (wood sill). Plaster method to accept metal interior door frames. Exterior entry doors to be plaster returned or wood jambs.

**Ceilings:** Apply a single layer of 5/8" gypsum wallboard across the supports and fasten with nails or screws. Offset joints between layers at least 10". Ceiling finish shall be smooth.

**Fire-Rated Gypsum Wallboard:** In garages, around gas water heaters and as required by applicable building codes, install 5/8" Type "X" fire-rated gypsum wallboard. Attached garages install 5/8 drywall to the exterior porch soffit line with all joints sealed if not backed by solid wood. Provide fire rated separation between house and attached garages as required by UDC.

**Water Resistant Gypsum Wallboard:** Around showers, tubs, whirlpools, or as required by applicable building codes, install 1/2" water resistant drywall.

## **DIVISION: SPECIALITIES**

### **1000 00 - Specialties**

Contractor shall review construction documents and provide labor and materials pertaining to the specialties as required in said documents and as specified herein, while complying with all applicable building codes.

### **1028 16- Bath Accessories**

Contractor shall install toilet paper rolls, 24" towel bars and 36" towel bar. Install toilet paper rolls 15" Above Finished Floor (AFF). Install one shower curtain rod.

### **1055 00 - Postal Specialties**

Contractor shall install standard postal mailbox. Metal Mailbox to install as per postal requirements with street number and road visible and easy to read. Install mailbox on wood post, if required. Address tiles provided by Department of Public Works. Contractor shall install 4" house numbers on the front of residence and garage.

### **1057 00 -Wardrobe and Closet Specialties**

Install shelving as indicated on construction documents for all closets, storage areas and pantries. Metal shelving shall be fabricated of heavy-gauge vinyl coated welded steel rod with deck rod spacing having a maximum distance of 1". Provide supports every 3'-6" maximum on center (OC)

## **DIVISION: FURNISHINGS**

### **1230 00- Casework**

Install pre-fabricated, kitchen and bath cabinetry as specified in construction documents. Dimensions of kitchen base cabinets shall be: 24" deep x 36" high U.N.O. Dimensions of overhead cabinets shall be: 12" deep x 42" high U.N.O. Provide concealed hinges and cabinet hardware.

**Note: Contractor to verify all cabinet sizes, locations, layout, and cost with cabinet supplier.**

**re-fabricated:** Provide complete details and website of cabinetry quoted.

**Doors:** Style to be determined, same throughout project.

**Exterior Finish:** Plastic Laminate, PVC or Composite trim. Color: to be determined.

**Interior Finish:** Melamine.

**Knobs:** Pull Handle.

### **1236 00- Countertops**

Plastic laminate, triple cove, standard color, style, and manufacturer to be determined.

Countertops shall be provided and installed per construction documents and finish schedules. Counter surfaces shall be glued onto 3/4 plywood or appropriate substrate as recommended by manufacturer. Edges shall be installed per construction documents and finish schedules. Provide minimum 4" backsplash between counter and wall.

### **2240 00- Plumbing Fixtures**

Provide necessary piping, water and drains for plumbing fixtures as shown on the construction documents and listed herein.

Fixtures and Fittings - Provide and install plumbing fixtures as listed below as well as two exterior house bibbs. Verify with plans.

Location	Fixture/Fittings	Description
Exterior	Hose bib	Frost-proof, locate per plan
Laundry	Hot/cold washer hookup and standpipe	Stainless Steel
Kitchen	Sink	Stainless Steel
Kitchen	Faucet	Chrome
Bathroom	Tub/Shower	1 piece enclosure
Bathroom	Tub/shower	Waste/overflow kit
Bathroom	Tub/shower	Chrome, low flow trim kit
Bathroom	Toilet	White, w/supply and seat
Bathroom	Lavatory	White, self- rimming
Bathroom	Faucet	Chrome

## **DIVISION: ELECTRICAL**

### **2600 00- Electrical**

Contractor shall review construction documents and provide labor and materials pertaining to the electrical system as required in construction documents and as specified herein, while complying with all applicable building codes, local utility requirements and building restrictions.

### **2605 00 - Common Work Results for Electrical**

From electrical meter box, install below ground wiring to building. Verify with WPS prior to installing. Raceways to be buried shall be PVC #2 Plastic Electrical conduit. Where permitted by code, non-metallic sheathed cable may be used. Wiring from the outside meter box shall be SE cable.

### **2605 19 - Conductors and Cables**

Provide and install necessary circuits and breakers for appliances as stated in manufacturer's recommendations per applicable building code requirements.

### **2605 33 - Raceway and Boxes for Electrical Systems**

Flexible or rigid conduits, couplings, supports and nonmetallic ducts. Install conduit concealed in all areas, excluding mechanical and electrical rooms/areas, connections to motors and connections to surface cabinets. Coordinate installation of conduit in masonry work. Unless indicated otherwise, do not install conduit larger than 2 1/2 inches in concrete slabs. Provide a minimum concrete cover around conduits of 2 inches. Install conduit free from dents and bruises. Plug ends to prevent entry of dirt and moisture. Minimize crossovers. Provide flashing and pitch pockets, making watertight joints where conduits pass through roof or waterproofing membranes. Route all exposed conduits parallel or perpendicular to building lines. All fittings shall be UL approved.

Fasten raceways securely in place. Firmly fasten within 3 feet of each outlet, junction box, cabinet, or fitting. Support every 10 feet.

### **2624 00 - Switchboards and Panelboards**

Panel boards shall be Square "D," G.E. or ITE. Provide typewritten directory of circuits mounted in box. Use dead front panelboards with one-piece cabinets constructed from code gauge steel, finished with rust inhibiting primer, and baked enamel finish and manufacturer's standard color. Use factory assembled panelboards with amp rating units indicated. Provide spare units and blank spaces as indicated.

### **2627 26 - Wiring Devices**

Install white receptacles, switches, and cover plates as per construction documents. For exterior receptacles install gray cover plates. When two or more switches or receptacles are located together, gang with one common faceplate. If they cannot be ganged, install with a minimum distance between units. Install all receptacles at 18" on center (OC) above finished floor (AFF), unless otherwise noted. At counters, locate receptacles at 44" on center (OC), above finished floor (AFF). Install switches at 48" on center (OC) above finished floor (AFF). Locate light switch cover plates 6" from frame of door or corner of wall. Switch type: Toggle, unless otherwise noted.

## **DIVISION: EARTHWORK**

### **3110 00 - Site Clearing**

The area of clearing shall be maintained within the limits shown on the appropriate site plans. Remove stumps and matted roots to a depth of 24 inches below existing ground surface. Dispose of trees and shrubs in accordance with applicable garbage, refuse or

weeds ordinance. Do not burn materials on site. Remove material from the site as it accumulates. Do not allow water material to accumulate for more than 48 hours.

**Soil Bearing** - Foundation designs are based on a soil bearing value of 2500 psf. Foundations and slabs are designed to uniformly bear on well-compacted, well-drained non-expansive soils. If required, a certified soils engineer shall review foundation designs and building loads and compare with subsurface soil investigation. Should on-site observations show that foundation designs are not satisfactory, a structural engineer should be contacted immediately to redesign foundations to accommodate conditions.

### **3111 00 - Clearing and Grubbing**

Clear and grub the construction site. Grade building site with appropriate soils. Existing trees to remain shall be marked prior to clearing and protected to prevent damage. If any damage is done to walkways, driveways, etc., needed repairs shall be provided by the contractor. Repair or replace any damaged vegetation or terrain that is indicated to be protected or is more than eight feet from the edge of any construction.

### **3120 00 - Earth Moving**

Excavate bottom of all foundation walls and footings at building perimeter per UDC code requirements. Base of footings shall extend down to undisturbed virgin soil which has been compacted to 95 percent proctor density. All excavation shall be to a level below existing demolition debris. Board form all footing as required by soil conditions.

**For basement walls**, excavate area indicated on construction documents, allowing an additional 18" minimum clearance around the perimeter of foundation walls for proper drainage and waterproofing assembly.

**At slab on grade foundations**, compact sub-grade under slabs to a minimum 95% density. Compact backfill areas not under slabs or foundation to a minimum 90% ASTM D-689. Sub-base directly under concrete slabs on grade shall be a minimum of four inches of compacted granular fill.

### **3122 00 - Grading**

Carefully remove loam and topsoil to be incorporated in the finished work and store separate from the other excavated material. Failure to isolate loam and topsoil from the other excavations shall require that said soils not be used as topsoil.

When excavations are to be made in paved surfaces, remove pavement so as to provide a clean, uniform edge with a minimum disturbance of remaining pavement. Do not mix pavement with other excavated material unless it is broken into pieces measuring 3 inches or less. Dispose large pieces of pavement away from the site of the work immediately.

Backfill as promptly as is consistent with non-damage to the installed structures. Do not place frozen material in the backfill. No material shall be placed or compacted when it is too wet or frozen or when the sub-grade or previously placed material is too wet or frozen. Backfill  $\frac{3}{4}$  wall height with  $\frac{3}{4}$ " stone clay cap.

### **125 00 - Erosion and Sedimentation Controls**

Clear the top layer of soil and place in a designated area for use at the end of the project. Provide swales with positive outfall, and slope grade away from building to allow water to drain away from the foundation. Backfill around building with subsoil graded free of lumps larger than 6", rocks larger than 3" and debris. Keep finished grade elevations a minimum of 6 1/2" below finished floor elevation (see construction documents for exact locations). Foundation cap required to be in place prior to backfilling. Backfill material shall be 3/4 "stone filled up 3/4 of the height of the foundation wall and cap with clay.

### **3131 16- Termite Control**

If required, foundations shall be pre-treated under all slabs and crawlspace areas between vapor barrier and granular sub-base to conform with HUD minimum standards and applicable building codes. Treatments shall not be made when soil is excessively wet or after heavy rains. Contractor shall provide a one-year renewable warranty.

### **3131 16.19 - Termite Control Barriers**

At pier and perimeter foundations, install continuous flashing on all sides and top surface to prevent sub-terrain termites from penetrating the wood structure.

### **3140 00 - Shoring and Underpinning**

Existing footings, foundations, pile caps, grade beams, retaining walls or pavement which may be affected by excavation operations shall be shored or underpinned adequately or otherwise protected against settlement and shall be protected against lateral movement. Provide necessary materials to hold back earth at excavations and as required to prevent cave-ins and earth sloughs.

### **3150 00 - Excavation Support and Protection**

Install excavation support systems for safety preservation of existing improvements. Design criteria of support systems shall consider all loads in a manner which will allow the safe and expeditious construction of permanent structures without movement or settlement of the ground.

As required. Wheel rolling area for sliding gates shall be steel towel smooth finish concrete.

### **3291 13 - Soil Preparation**

Do not plant until finish grades are established and planting areas are properly prepared and graded. When preliminary grading, including weeding and fertilizing, has been completed and the soil may be readily worked, grade all planting areas to a smooth, even, and uniform plane with no abrupt change in surface. Slope soil areas adjacent to buildings away from the buildings, and direct surface drainage as indicated on the drawings. Grading shall provide for natural runoff of water without low spot or pockets. Finish grade of earth in landscaped areas shall be 3 1/2 inches below the top of adjacent pavement, curbs, or headers.

### **3292 19 - Seeding**

Seed only when weather conditions are suitable. All newly seeded turf areas shall be free of broad leaf weeds. Sow seed with mechanical spreaders at the specified rate on a calm day. Sow one half the seed in one direction and the other half at right angles. Seed shall be raked lightly into the soil to a depth of 1/4 inch and rolled with a roller weighing not more than 100 pounds per linear foot of tread. Keep the surface moist by a fine spray until the grass shows uniform germination over the entire area. Wherever poor germination occurs in areas larger than three (3) square feet, reseed, roll and water as necessary to obtain proper germination. Infested areas shall be treated with a selective broadleaf insecticide.