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**Firm Commitment Drawings and Specifications to be Submitted by the Mortgage's Architect****51**

- A. Cover sheet:
1. Project name and identification number.
  2. Spaces for signatures of architect, owner, contractor, and bonding company.
  3. Tabulation of living units:
    - a. Number of units for each type.
    - b. Number of units and type in each building.
    - c. Non-rental living unit.
    - d. Number of parking spaces, open and covered.
- B. Index of drawings by name, numbered consecutively, with date of preparation and latest revision date.
- C. Topographic survey, that is, a "transit survey" at a minimum scale 1" = 40'-0", recent, dated, and signed by a registered surveyor, and including:
1. Contours at one-or two foot intervals, except that for steeply sloping sites, the intervals may be five feet.
  2. City, county, state, and lot and block numbers of the property and adjacent sites.
  3. Distance to the nearest street, dimensioned length of each boundary, such as monuments, markers, fences, etc., and all encroachments or deviations from description of the subject property or conflicts with descriptions of adjacent properties.
  4. Easements, rights-of-way, setback lines, and other restrictions.
  5. Existing streets, alleys, and drives as well as surfacing, curbs, street names, and other data.
  6. Location and sizes of public utilities with invert sewer elevations and direction of flow.
  7. Preservable trees.
  8. Location and description of all existing structures.
  9. Legal description of the property, with total square footage and acreage.

- D. Plot plan at a scale not less than 1"=40'-0", showing:
1. Land boundaries, dimensions, and North Point.
  2. Streets, alleys, or roads adjacent or within the property boundaries, together with walks, curbs, pavements, steps, ramps, play areas, parking areas, and drying yards, and utilities such as gas, water, electric, and sewer lines.
    - a. Dimension or size with distance from location points, material indication for such items as walks and pavements, and extent of each.
    - b. Indications of "new" or "existing" and public dedication of any streets or alleys in the project.
  3. Buildings, building designations, location dimensions, and overall dimensions.
  4. Elevations of first floor, elevations of finish and existing grade at building corners and entrances, elevations of curbs and streets, and invert elevations of main sewer and direction of flow.
  5. Utilities servicing the property, or distance to point of connection and utility lead-ins of service connections; yard lighting; lawn hydrants and lawn sprinkler systems with the pipe sizes and controls; drains; and fire hydrants.
  6. Retaining and garden walls, fences, guard rails, garages and accessory structures, with dimensions.
  7. Existing trees and other natural features and whether to be removed or preserved.
- E. Grading and drainage plan at a scale not less than 1"=40'-0" when essential information cannot be clearly shown entirely on the plot plan.
1. Grade elevations at all building corners and at entrances, walks, drives, parking areas, terraces, yards, walls and steps, and first floor elevations. Existing and proposed grading contours at appropriate intervals.
    - a. Yard and roof drainage with controlling grades and dimensions of drainage lines, culverts, catch basins, drainage inlets, gutters, curbs, drainage disposals, and any existing facilities.
- F. Planting plan at a scale not less than 1"=20'-0", indicating:
1. Outline of buildings and other improvements with physical features of the site to establish the location and relationship of planting and landscape construction.

2. Distribution of plant material, location, quantity and key number of each general species in each group; outline of planting beds, primary lawn areas, secondary lawn areas and existing trees to be preserved or transplanted.
  3. List of plant material using English and Latin names, key number for each variety for reference to plan, and the size, quality or other description.
- G. Basement plans for each building type at a scale not less than 1/8"=1'-0". (Foundation plans when no basements.)
1. Dimensions and names indicating use of spaces, with the layout of permanent equipment.
  2. Location of structural elements with dimensions or notes as to: thickness and size; windows; vents; areaways; doors; lights and switches; drains; sumps; etc. Unless there is a separate foundation plan, show locations and size of footings, piling and other substructure work.
  3. Large-scale drawings or details of spaces not clearly shown.
- H. Floor plans:
1. Unit floor plans at a scale not less than 1/4"= 1'-0" for each basic type living unit and any major variation. Separate unit plans are not required when the general floor plans are provided at 1/4-inch scale and contain all essential information.
    - a. Partitions to scale; rooms, closets and hall dimensions; over-all dimensions; window locations and type designations referring to schedule showing design, thickness, and size; dimensioned stair locations, runs and width, landings and handrails.
    - b. Plumbing fixtures; soil and vent stacks; kitchen cabinets and equipment; electric lights; switches, receptacles, and special power outlets; closet shelving and clothes rods; radiators or other heating devices, chimneys, and all other such items.
    - c. Location of structural elements such as columns, lintels, joists, beams, girders, and bearing partitions. Show sizes, spacing and direction of members. Separate structural drawings are required where the structural information would obscure other information.
    - d. All conditions where units are to join other units; end-unit conditions.
    - e. Identification of living unit types by a number or letter.
  2. General floor plans at a scale not less than 1/8"=1'-0".
    - a. Dimensional relation of living and building units with over-all dimensions of building units and buildings, partition arrangement and fenestration of end units, units at corners and units at offsets; other partitions as necessary to show variations from the

typical unit plans and relation of rooms in adjacent living units, wall separating building units, and their material and thickness.

- b. Buildings and those units identified by numbers or letters.
- I. Roof plans at a scale not less than  $1/8''=1'-0''$ .
    1. Relation of intersection of the various building unit roofs; direction of slopes; parapets, chimneys, vents, and other projections; downspout locations and sizes.
    2. Omit where the essential information can be shown clearly on the plot plan or other drawings.
  - J. Elevations:
    1. General elevations at a scale not less than  $1/8''=1'-0''$ . Exterior design of all sides of buildings with existing and proposed grades at buildings, floor lines and elevations, floor height dimensions, roofs, attic vents, parapets, cornices, downspouts, openings, material notes, and other essential features.
    2. Typical elevations at a scale not less than  $1/4''=1'-0''$  to show portions of facade with a special exterior design. Show materials, jointing, special features, windows, doorways, cornices, parapets, and details.
  - K. Sections:
    1. Outline sections - scale not less than  $1/4''=1'-0''$ . Show various height conditions, cross sectional characteristics, and floor level relations, when other drawing information is not adequate.
    2. Detail sections - scale not less than  $3/8''=1'-0''$ . Show each type of exterior wall and bearing wall or partition, from footings to roof.
    3. Exterior wall sections - scale not less than  $3/8''=1'-0''$ . Show complete construction of walls with thickness at various stories, floors, furring, waterproofing, ceilings, roofs, including pitch and flashings, room heights, anchorage and bearings, cornice and gutter, insulation, vapor barrier, foundation walls and footings, conditions at various basement depths, basement floors or access space, roof space, attic and foundation vents.
  - L. Details at a scale not less than  $3/8''=1'-0''$ . Provide the following except where such features do not occur:
    1. Front and rear entrances, plan of each with elevations and sections.
    2. Stair plans and sections showing stringers, treads, risers, newels, balusters, handrails, rise, run, and headroom.
    3. Kitchen cabinet plans, elevations and sections.

4. Bathroom plans with elevations showing accessories and cabinets.
5. Entrance lobbies.
6. Platforms and areaways.
7. Special exterior and interior details, such as bay windows, dormers, cupolas, vents, fireplaces, and built-in furniture.

M. Schedules:

1. Door schedules - size, thickness, material and design of each door, with plan identification. Fire doors, show rating.
2. Window schedule - size, thickness, materials and design of each window, with plan identification.
3. Finish schedule - material and type finish of floors, base or wainscot (with height), walls, ceilings and trim for various rooms or spaces.

N. Structural: Drawings and details as appropriate, with complete structural information, must be provided when such information cannot be shown on general drawings without obscuring other information.

O. Mechanical: Heating, cooling, plumbing and electrical layouts on separate drawings unless the systems are simple enough to be shown on other drawings. Include all pertinent design data. Show special mechanical installations separately.

1. Heating drawings for each system (information in specification should not be on drawings).
  - a. Location and size of boilers, furnaces, or heaters; the make, model number or type and net output of each.
  - b. Layout, location, and sizes of supply and return piping, ducts, risers, and branches, and insulation locations.
  - c. Location, sizes and output in BTU of radiators, registers, grille and panel surfaces, valves, vents, traps, dampers and other accessories; make, model number or type of each.
  - d. Make, model number, and firing rate of all firing equipment, and similar detailed data on other components of each system, such as, controls, pumps, blowers, and filters.
  - e. Location, type, manufacturer's name, and model number of domestic water heating and related equipment including: storage, arrangement and sizes of connecting piping; make and model number and other pertinent information for control equipment and safety devices.

- f. Design data for the system, including outside design temperature, boiler operating temperature, BTU output, pressure or temperature drops, air temperatures at registers, pump or fan capacities, volumes, and velocities, heat loss of each building and total calculated heat load connected to each heating system; net output in BTU of each boiler and system.
  - g. Design data for each domestic hot water system and, when connected to a heating system, the additional heat load included in the total for the connected system.
2. Plumbing drawings:
- a. Horizontal sewer and drain systems with soil, waste, and vent stacks; branch wastes and vents; drains, cleanouts, traps, sump pumps, etc., connections to sewer, sizes of lines and stacks. Diagram of typical stack including soil, waste, and vents.
  - b. Cold water distribution system, size of mains and branches, location of hose bibs, valves and drains.
  - c. Hot water distribution system together with circulating lines and pumps, valves, sizes of mains and branches.
  - d. Gas distribution system, size of mains and branches, meters, etc.
3. Electrical drawings:
- a. Service lines, primary distribution and secondary distribution, service characteristics and wire sizes.
  - b. Meter and panel locations and manner of mounting.
  - c. Interior distribution and wiring of typical units.
  - d. Lights, receptacles, switches, special purpose outlets, and connections to equipment if not on the architectural plans.
  - e. Yard and grounds lighting and lighting of all public and common spaces and controls.
  - f. Power riser diagram and switchboard schedule.
  - g. Fire detection and alarm system riser diagram and schedule.
  - h. Symbol list.
4. Air conditioning drawings:

- a. Locations, cooling capacity, and horsepower of compressor; cooling tower condensing units; and individual cooling units. Make, model number, and rating.
  - b. Layout of system including ducts, grilles, registers, diffusers, pipe sizes, and location of valves, vents, dampers and controls.
  - c. BTU load for each space, size and rating of equipment.
  - d. Design data for the system, including: CFM space requirements; blower ratings, type condenser cooling; inlet and outlet water temperature; and GPM water-flow rate.
  - e. Electric wiring layout, location of motors, fans, pumps, switches, and their load requirements.
- P. Any other drawings required by lender.
- Q. Appropriate general and supplementary conditions and Davis-Bacon wage rates (where applicable).
- R. Contract specifications: Use 16 basic divisions of the Masterformat Construction Specifications Institute (CSI).
1. Describe all materials, equipment, and construction and include two, and preferably three, comparable products where practicable, or specify by performance characteristics.
  2. Include the latest edition of the "General Conditions of the Contract for Construction", AIA Document A201.
  3. Fully describe all materials, including alternates, and do not use general references to HUD's Minimum Property Standards. Do not include the words "or equal".
  4. Divide into sections separately describing the work to be done by each trade essential to project completion. Consecutively number pages and include:
    - a. A cover sheet: Must include Title of project, the lender project number, project location, and a signature block setting forth:

#### IDENTIFICATION

Architect (Print Name) by (Signature)  
Owner (Print Name) by (Signature and Title)  
Contractor (Print Name) by (Signature and Title)  
Bonding Co.(Print Name) by (Signature and Title)  
Date \_\_\_\_\_

- b. Index.

- (1) Divisions with name.
  - (a) Trade, name and page number.
  - (b) Trade section, name and page number.
- (2) Pages numbered consecutively
- c. Conditions.
  - (1) General Conditions of the Contract for Construction, AIA Document A201, latest edition.
  - (2) Supplementary Conditions of the Construction Contract, Form HUD-2554, latest edition.
  - (3) Architect's Supplementary Conditions, if any.
- d. Trade sections. Include:
  - (1) Complete description of all work to be performed. This will include scope of work, materials and workmanship.
  - (2) Necessary specific instructions for coordinating the work with other trades.
- e. Methods of Specifying.
  - (1) Performance. List required qualities of products and assemblies and end result.
  - (2) Reference Standards. Incorporate references to nationally recognized standards published by industry associations, testing organizations and government, such as American National Standards Institute (ANSI), Underwriters' Laboratories (UL), and Department of Commerce (DOC).
  - (3) Proprietary. List products and assemblies by manufacturer or brand name, and grade or model.
    - (a) Include at least two comparables.
    - (b) Use a single brand only if there is no comparable.
- f. Unacceptable.
  - (1) Use of the words "or equal".
  - (2) Reference to HUD or HUD publications, such as:
    - (a) Minimum Property Standards (MPS),

- (b) Materials Bulleting (UM),
- (c) Materials Releases (MR), and
- (d) Structural Engineering Bulleting (SEB).

(3) Cash or lump sum allowances.

S. Offsite Drawings and Specifications.

1. Offsite improvements are those required to service the project but outside of the property boundary lines.
  - a. Include utilities, walks, curbs, gutters, streets, drainage structures, landscaping, and similar improvements beyond the property lines.
  - b. Do not include short extensions of utilities, walks, drives, drainage structures and similar improvements beyond the property lines which connect with those next to the property lines.
2. Offsite improvements may be included in the contract drawings and specifications but the extent must be clearly defined on the plot plan and in the specifications.
3. Complete, separate offsite drawings and specifications are preferred.

T. Utility Analysis. If required by the Hub Director, the mortgagor's Architect will prepare a utility analysis. For HUD energy efficiency standards see Appendix 5A, Paragraph O. For guidance on the life-cycle cost analysis, see 1999 ASHRAE Applications Handbook, 35.8, and NIST "Building Life-Cycle Cost" Program, Version 4.3 User's Guide and Reference Manual.

## Specification Guide

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### Division 1 - General Requirements

01010 Summary of Work  
 01020 Allowances  
 01025 Measurement and Payment  
 01030 Alternates/Alternatives  
 01040 Coordination  
 01050 Field Engineering  
 01060 Regulatory Requirements  
 01070 Abbreviations and Symbols  
 01080 Identification Systems  
 01090 Reference Standards  
 01100 Special Project Procedures  
 01200 Project Meetings  
 01300 Submittals  
 01400 Quality Control  
 01500 Construction Facilities and Temporary Controls  
 01600 Material and Equipment  
 01650 Starting of Systems/Commissioning  
 01700 Contract Closeout  
 01800 Maintenance

### Division 2 - Sitework

02010 Subsurface Investigation  
 02050 Demolition  
 02100 Site Preparation  
 02140 Dewatering  
 02150 Shoring and Underpinning  
 02160 Excavation Support Systems  
 02170 Cofferdams  
 02200 Earthwork  
 02300 Tunneling  
 02350 Piles and Caissons  
 02450 Railroad work  
 02480 Marine work  
 02500 Paving and Surfacing  
 02600 Piped Utility Materials  
 02660 Water Distribution  
 02680 Fuel Distribution  
 02700 Sewerage and Drainage  
 02760 Restoration of Underground Pipelines  
 02770 Ponds and Reservoirs  
 02780 Power and Communications  
 02800 Site Improvements  
 02900 Landscaping

### Division 3 - Concrete

03100 Concrete Formwork  
 03200 Concrete Reinforcement  
 03250 Concrete Accessories  
 03300 Cast-in-Place Concrete  
 03370 Concrete Curing  
 03400 Precast Concrete  
 03500 Cementitious Decks  
 03600 Grout  
 03700 Concrete Restoration and Cleaning  
 03800 Mass Concrete

### Division 4 - Masonry

04100 Mortar  
 04150 Mortar Accessories  
 04200 Unit Masonry  
 04400 Stone  
 04500 Masonry Restoration and Cleaning  
 04550 Refractories  
 04600 Corrosion Resistant Masonry

### Division 5 - Metals

05010 Metal Materials  
 05030 Metal Finishes  
 05050 Metal Fastening  
 05100 Structural Metal Framing  
 05200 Metal Joists  
 05300 Metal Decking  
 05400 Cold-Formed Metal Framing  
 05500 Metal Fabrications  
 05580 Sheet Metal Fabrications  
 05700 Ornamental Metal  
 05800 Expansion Control  
 05900 Hydraulic Structures

### Division 6 - Wood and Plastics

06050 Fasteners and Adhesives  
 06100 Rough Carpentry  
 06130 Heavy Timber Construction  
 06150 Wood-Metal Systems

06170 Prefabricated Structural Wood  
 06200 Finish Carpentry  
 06300 Wood Treatment  
 06400 Architectural Woodwork  
 06500 Prefabricated Structural Plastics  
 06600 Plastic Fabrications

### **Division 7 - Thermal and Moisture Protection**

07100 Waterproofing  
 07150 Dampproofing  
 07190 Vapor and Air Retarders  
 07210 Insulation  
 07310 Shingles and Roofing Tiles  
 07400 Preformed Roofing and Cladding/Siding  
 07500 Membrane Roofing  
 07610 Sheet Metal Roofing  
 07700 Roof Specialties and Accessories  
 07800 Skylights  
 07900 Joint Sealers

### **Division 8 - Doors and Windows**

08100 Metal Doors and Frame  
 08200 Wood and Plastic Doors  
 08250 Door Opening Assemblies  
 08300 Special Doors  
 08400 Entrances and Storefronts  
 08500 Metal Windows  
 08600 Wood and Plastic Windows  
 08650 Special Windows  
 08700 Hardware  
 08800 Glazing  
 08900 Glazed Curtain Walls

### **Division 9 - Finishes**

09100 Metal Support Systems  
 09200 Lath and Plaster  
 09230 Aggregate Coatings  
 09250 Gypsum Board  
 09300 Tile  
 09400 Terrazzo  
 09500 Acoustical Treatment  
 09540 Special Surfaces  
 09560 Wood Flooring  
 09635 Brick Flooring  
 09660 Resilient Flooring  
 09680 Carpet  
 09700 Special Flooring  
 09780 Floor Treatment

09800 Special Coatings  
 09900 Painting  
 09950 All Coverings

### **Division 10 - Specialties**

10100 Chalkboards and Tackboards  
 10150 Compartments and Cubicles  
 10200 Louvers and Writs  
 10240 Grilles and Screens  
 10250 Service Wall Systems  
 10260 Wall and Corner Guards  
 10270 Access Flooring  
 10280 Specialty Modules  
 10290 Pest Control  
 10300 Fireplaces and Stoves  
 10340 Prefabricated Exterior Specialties  
 10350 Flagpoles  
 10400 Identifying Devices  
 10450 Pedestrian Control Devices  
 10500 Lockers  
 10520 Fire Protection Specialties  
 10530 Protective Covers  
 10550 Postal Specialties  
 10600 Partitions  
 10650 Operable Partitions  
 10670 Storage Shelving  
 10700 Exterior Sun Control Devices  
 10750 Telephone Specialties  
 10800 Toilet and Bath Accessories  
 10880 Scales  
 10900 Wardrobe and Closet Specialties

### **Division 11-Equipment**

11010 Maintenance Equipment  
 11020 Security and Vault Equipment  
 11030 Teller and Service Equipment  
 11040 Ecclesiastical Equipment  
 11050 Library Equipment  
 11060 Theater and Stage Equipment  
 11070 Instrumental Equipment  
 11080 Registration Equipment  
 11090 Checkroom Equipment  
 11100 Mercantile Equipment  
 11110 Commercial Laundry and Dry Cleaning  
 Equipment  
 11120 Vending Equipment  
 11130 Audio-Visual Equipment  
 11140 Service Station Equipment  
 11150 Parking Control Equipment

11160 Loading Dock Equipment  
 11170 Solid Waste Handling Equipment  
 11190 Detention Equipment  
 11200 Water Supply and Treatment Equipment  
 11280 Hydraulic Gates and Valves  
 11300 Fluid Waste Treatment and Disposal  
     Equipment  
 11400 Food Service Equipment  
 11450 Residential Equipment  
 11460 Unit Kitchens  
 11470 Darkroom Equipment  
 11480 Athletic, Recreational and Therapeutic  
     Equipment  
 11500 Industrial and Process Equipment  
 11600 Laboratory Equipment  
 11650 Planetarium Equipment  
 11660 Observatory Equipment  
 11700 Medical Equipment  
 11780 Mortuary Equipment  
 11850 Navigation Equipment

### **Division 12-Furnishings**

12050 Fabrics  
 12100 Artwork  
 12300 Manufactured Casework  
 12500 Window Treatment  
 12600 Furniture and Accessories  
 12670 Rugs and Mats  
 12700 Multiple Seating  
 12800 Interior Plants and Planters

### **Division 13 - Special Construction**

13010 Air Supported Structures  
 13020 Integrated Assemblies  
 13030 Special Purpose Rooms  
 13080 Sound, Vibration, and Seismic Control  
 13090 Radiation Protection  
 13100 Nuclear Reactors  
 13120 Pre-Engineered Structures  
 13150 Pools  
 13160 Ice Rinks  
 13170 Kennels and Animal Shelters  
 13180 Site Constructed Incinerators  
 13200 Liquid and Gas Storage Tanks  
 13220 Filter Underdrains and Media  
 13230 Digestion Tank Covers and Appurtenances  
 13240 Oxygenation Systems  
 13260 Sludge Conditioning Systems  
 13300 Utility Control Systems

13400 Industrial and Process Control Systems  
 13500 Recording Instrumentation  
 13600 Solar Energy Systems  
 13700 Wind Energy Systems  
 13800 Building Automation Systems  
 13900 Fire Suppression and Supervisory Systems

### **Division 14 - Conveying Systems**

14100 Dumbwaiters  
 14200 Elevators  
 14300 Moving Stairs and Walks  
 14400 Lifts  
 14500 Material Handling Systems  
 14600 Hoists and Cranes  
 14700 Turntables  
 14800 Scaffolding  
 14900 Transportation Systems

### **Division 15 - Mechanical**

15050 Basic Mechanical Materials and Methods  
 15250 Mechanical Insulation  
 15300 Fire Protection  
 15400 Plumbing  
 15500 Heating, Ventilating, and Air  
     Conditioning (HVAC)  
 15550 Heat Generation  
 15650 Refrigeration  
 15750 Heat Transfer  
 15850 Air Handling  
 15880 Air Distribution  
 15950 Controls  
 15990 Testing, Adjusting, and Balancing

### **Division 16 - Electrical**

16050 Basic Electrical Materials and Methods  
 16200 Power Generation  
 16300 High Voltage Distribution (Above 600-Volt)  
 16400 Service and Distribution (600-Volt and  
     Below)  
 16500 Lighting  
 16600 Special Systems  
 16700 Communications  
 16850 Electric Resistance Heating  
 16900 Controls  
 16950 Testing