

tech-check architectural | Tilt-ups

This is a template, so some items will apply to your project, and others won't or will be missing. When using the list, make the changes needed for your project.

Content of the Tech-Check Lists is based on several sources including MASTERSPEC®.

1 GENERAL

□ REFERENCE DOCUMENTS

- **DIMENSIONING** - CHECK the "Dimensioning Guidelines - Tilt-ups Projects".
- **OTHER CHECK LISTS** – "Building Code" and "Accessibility."
- **NOTATION HELP** – "Drawing Notation," "General Notes for Tilt-ups."
- Coordinate abbreviations with list in Cover Sheet

□ ALWAYS DO THIS:

- **TAG** components of the same type with the same name and number them: Ladder 1, Ladder 2; Storefront 1, Storefront 2, etc. Use these tags in the Schedules of Finishes and where referring to the components throughout the set.
- **TALK** to the manufacturers, reps or call technical departments. Confirm capacities, sizes, configuration, availability, use. Send your plans or details for review by manufacturer's technical department when you are not sure or you want to check something.
- **If an item is typical and you know it, do not add UON unless you know that there is, or probably is, a different condition or materials from the one documented.**

□ GRAPHICS

- Indicate with dashed lines and label overhead components at building exterior: canopies, awnings, and such. Label them, for example, "CANOPY ABOVE".
- Wall and roof openings: Indicate with an "X" and label "OPEN".
- "North" arrow in every floor plan – oriented in the same way.
- Graphic bars (these are required by some agencies - check).
- Indicate areas in Project Site which are not included in the Contract and label: NIC ("BY OTHERS" can be confusing. Use "NIC" instead.)
- Project Site indicated clearly in building plans.

□ TITLE BLOCK

- Project name and Address.
- Owner's legal name and address. (check with Google)
- Issue Number, Description (Issue for Bid, Addendum A, etc.) and date of issue.
- Additional information such as general contractor, when known and approved by Principal.
- Initials in "Drawn By" and "Checked By"; plot date.
- Stamp.
- Scale, Project Number.
- Drawing Title / Drawing Number.
- Deltas for Addenda and subsequent Bulletins when applicable.

□ **DIMENSIONING**

- Height dimensions are from top of slab (TOC), top of parapet, or top of roof deck.
- Horizontal dimensions for architectural work are to face of concrete or structural framing, face of plywood sheathing, and such, except critical dimensions at exiting or interiors in attached offices which are to “face of finish”.
 - First String: Total building dimension (wall-to-wall), closed string.
 - Second String: Dimensions to concrete panels, closed string.
 - Next Strings: Components in order of importance; tied to the structure to fix them, opened strings. Critical dimensions (exiting, accommodate equipment, and such) are labeled “CLEAR”.
 - Generally, do not set dimensioning to less than 1/8”. Go to 1/16” only when you know it can be done in the field or it can be manufactured to that precision level
- Refer to RMW Standard Dimensioning Guidelines for Architectural Projects. Check that:
 - Dimensions in the elevations and sections are indicated in the same format as in the floor plans.
 - Major components are located with a dimension to a face of concrete or a framing element.
- **ATTACHED OFFICES TAGS**
 - Partitions are located and tagged.
 - Doors not in a room corner are located by the dimension to the side of the opening.
 - Openings in horizontal or vertical components are located to “edge of slab” or framing.
 - Use annotations such as “ALIGN” and “XX EQ SPACES” instead of numerical dimensions when applicable. Count carefully!

□ **COST MANAGEMENT**

- Include a **SUMMARY OF ALTERNATES AND ALLOWANCES** where it is easily found and read.
- **ALTERNATES**
 - Base Bid work is clearly described throughout the set, including in the Schedules and specifications (book or sheet).
 - Alternate work is clearly described, including installation when applicable.
 - The cost of alternate work is calculated by the contractor, and given to the Owner to decide if the alternate work proceeds or not.
- **ALLOWANCES**
 - Allowance work is clearly described with drawings or in writing or both.
 - Allowance type is indicated as Unit Price (cost per area or per unit) or as a Fixed Sum.
 - The allowance amount is fixed by the Owner and the contractor confirms if the allowance is enough.

□ **CONSISTENCY**

- Terminology is the same throughout.
 - Components TAGS are same throughout the set.
 - Work type TAGS are the same throughout the set.
- Address only the contractor, no one else, as if he was in front of you: “Do this”, “Do that”.
- Graphics representing the same item or work are consistent: Size, type, etc., (for example, finishes, types of partitions, and such).

□ **NO-NOS**

- Do not describe building envelope finishes and other elevation information in the floor plans.
 - Do not use periods in the abbreviations: (UON not U.O.N).
 - **DO NOT INCLUDE RATED ASSEMBLIES THAT DO NOT HAVE A UL NUMBER (or other number by any other testing agency). NEVER DESIGN YOUR OWN RATED ASSEMBLIES!**
 - **DO NOT use the UON all the time, use ONLY WHEN NEEDED.** When you use UON you are telling the contractor that somewhere in the documents there is or there might be a condition which is different to the one tagged with UON, so the contractor has to search all the documents for it. So unless this is the case, drop the UON.
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2 COVER SHEET and FRONT-END SHEETS

☐ COORDINATION WITH THE SET

- Coordinate abbreviations used in the set with list in Cover Sheet

☐ TITLE BLOCK

- Project name and Address.
- Owner's legal name and address. (check with Google)
- Issue Number, Description (Issue for Bid, Addendum A, etc.) and date of issue.
- Additional information such as general contractor, when known and approved by Principal.
- Initials in "Drawn By" and "Checked By"; plot date.
- Stamp.
- Scale, Project Number.
- Drawing Title / Drawing Number.
- Deltas for Addenda and subsequent Bulletins when applicable.

☐ COVER

- Abbreviations
- General notes – check that they are applicable to the project.
- Project name and address.
- Title 24 notes.
- Drawing List.
- Project Directory.
- Vicinity Map.
- Project Information and code data.
- Separate permits and deferred submittals.
- Project Legend - Graphic symbols used on the project.

☐ REQUIREMENTS

- Code Analysis and calculations
- Calculations (Exiting requirements) and if applicable, fixture requirements.
- CALGreen Checklist - Separate Sheet
- ADA/ Accessibility Path of Travel Layouts
- Accessibility Standard Details (maneuvering clearances, signage, etc.)
- Compliance Statements if required by the local Authority Having Jurisdiction

☐ ACCESSIBILITY

- Accessibility Standard Details (maneuvering clearances, signage, etc.)
- Door and wall accessible toilet signs as applicable to the Project.
- Exit signage - Route and stairs when applicable
- REFERENCE ONLY:
 - Accessibility clearances in bathroom floors.
 - Showers accessibility clearances.
- Enlarged bathrooms or toilet plans showing accessibility clearances.

☐ SIGNAGE

- Door and wall accessible toilet signs as applicable to the Project.
- Exit signage - Exit route and stairs when applicable.

3 SITE PLAN(S). FOR PROJECTS WHERE SITE WORK IS **NOT** INCLUDED

☐ **COORDINATION WITH CONSULTANTS**

- Soils report: Read recommendations on soil work, waterproofing, etc.
 - Building footprint.
 - Property lines and easements.
 - Site topography (grading).
 - Ramps, curb ramps, sidewalks/ walkways, steps or stairs: Locations and configurations.
 - Parking layout and sloping.
 - Trees and planting areas.
 - Utilities.
 - Exterior lighting.
 - Signage.
 - Landscape areas are indicated with footage if required by AHJ.
 - Utility lines or service points of connection.
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☐ **SHOW THESE**

- Building footprint, main access, secondary access.
 - Ramps, curb ramps, sidewalks/walkways, steps or stairs: Locations and configurations.
 - Signage.
 - Stripping.
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☐ **MINOR WORK IF INCLUDED**

- Re-stripping.
 - New sign
 - Adding or remodeling access ramps.
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☐ **TAG THESE (AS APPLICABLE)**

- Access to site from point of connection to public road.
 - Access roads, driveways, turn-arounds, including with and slope.
 - Location of entrance signage.
 - Driveways, access, exiting.
 - Pedestrian traffic.
 - Accessible path of travel.
 - Accessible parking signage.
 - Stripping.
 - Accessible Details
 - Site Entry Sign.
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4 SITE PLAN(S). FOR PROJECTS WHERE SITE WORK IS INCLUDED

☐ COORDINATION WITH CONSULTANTS

- Soils report: Read recommendations on soil work, waterproofing, etc.
- Building footprint.
- Property lines and easements.
- Site topography (grading).
- Ramps, curb ramps, sidewalks/ walkways, steps or stairs: Locations and configurations.
- Parking layout and sloping.
- Trees and planting areas.
- Utilities.
- Exterior lighting.
- Signage.
- Areas for Contractor's use – IF determined by Owner.
- Landscape areas are indicated with footage if required by AHJ.
- Utility lines or service points of connection.

☐ COORDINATE THIESE (AS APPLICABLE)

- Building footprint, main access, secondary access.
- Ramps, curb ramps, sidewalks/walkways, steps or stairs: Locations and configurations.
- Signage.
- Stripping..
- Access to site from point of connection to public road.
- Access roads, driveways, turn-arounds, including with and slope.
- Location of entrance signage.
- Driveways, access, exiting.
- Pedestrian traffic.
- Accessible path of travel.
- Accessible parking signage.
- Stripping.
- Accessible Details
- Site Entry Sign.

☐ COORDINATION WITHIN THE SET

- Where Plans are subdivided into segments due to size or configuration, insert a "KEY PLAN" with "Match Lines" that show the segments (numbered) and where they are in the Set.

☐ SITE INFORMATION:

(WHEN POSSIBLE obtain a list of what should be shown in the site plan from the local jurisdiction.)

- Parcel number.
- Access to site from point of connection to public road.
- Access roads, driveways, turn-arounds, including with and slope.
- Property lines:
 - Distance between buildings and property lines.
 - Required fire rating in selected portions of the building due to distance from property lines.
 - Easements, dimensioned, located in plan, and labeled (utilities, right-of-way, etc.)
 - Setbacks.

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- **SITE CONSTRUCTION**
 - Trash enclosure, elevations, plans, and details. Check if the trash enclosures are required to have a roof and drains. (Trash enclosures do not have doors, they have gates).
 - Bicycle lockers and racks.
 - Accessibility details: Signage, and tactile surfacing.
 - Accessible parking stalls plans.
 - Access ramps and pipe railings.
 - Location of entrance signage.
 - Fences and gates located in reference to property lines when applicable.
 - References to details are coordinated.
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- **PARKING:**
 - Driveways, access, exiting.
 - Pedestrian traffic.
 - Parking layout, number of slots, dimensions, flow of traffic, signage.
 - Accessible path of travel.
 - Parking signage.
 - Parking appurtenances.
 - Fire hydrants if required by permitting agency.
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5 FLOOR PLANS

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- **COORDINATION WITHIN THE SET, AS APPLICABLE**
 - The following key references are indicated and correctly labeled:
 - Building elevations - show arrow perpendicular to elevation ("go around" the building to check) Tag elevations by location (North, South, Southeast)
 - Building sections - end arrows pointing the right way.
 - References to building sections.
 - References to details are coordinated.
 - Ladders and exterior stairs are indicated and tagged.
 - Dock pit is indicated and tagged showing extent of excavated area.
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- **COORDINATION WITH THE PROJECT TEAM**
 - Coordinate with electrical engineer for locations of electrical service to architectural components, including lighting, motor operated doors, motor operated dock equipment, etc.
 - Location of floor, ceiling, and wall mounted electrical components.
 - Coordinate dimensions of roof openings with the structural engineer.
 - ATTACHED OFFICES:
 - Coordinate dimensions of chase walls with mechanical / plumbing engineers, if already part of the Project team, **PARTICULARLY WHERE PLUMBING FIXTURES ARE BACK-TO-BACK ROWS OF WATER CLOSETS.**
 - Coordinate location of light fixtures, outlets, equipment or furnishings that require power, etc..
 - Coordinate location of light fixtures and controls with furnishings.
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□ **GRAPHIC INFORMATION AND SHEET NOTATION**

- North Arrow in all floor plans in the same direction.
- NIC areas clearly marked by shading or any other graphic way.
- Move notes and Information describing items located in walls, partitions, and ceilings to Elevations and RCPs sheets.
- Sheet Notes and Key Notes:
 - Review notes to check they all apply to the project.
 - Notes that address the same thing should be repeated exactly (copy-paste) and if possible with the same number throughout. If a note is not used in a sheet, leave the number in and write "NOT USED".
 - Check that the terminology is the same as the terminology on the drawings (tags, schedules and notes). BASICALLY CALL THE SAME THING THE SAME WAY THROUGHOUT.
 - Indicate overhead components at building exterior (awnings, roof components, etc) with dash-lines and label, for example: "CANOPY ABOVE".
- Indicate with an "X" and label floor openings "OPEN".
- Indicate overhead components at building exterior (awnings, roof components, etc) with dash-lines and label, for example: "CANOPY ABOVE".
- Indicate with an "X" and label floor openings "OPEN".

DIMENSIONING

- Dimensions in architectural drawings are from structural element (columns, face of concrete, etc.), face of framing (studs, etc.) or face of sheathing (plywood, gypsum).
 - Heights are from top of slab, top of roof deck, top of parapet.
 - Order of dimension strings:
 - First String: Total building dimension (wall-to-wall), closed string.
 - Second String: Dimensions to panels or structural elements at attached offices(columns, etc.), closed string.
 - Next Strings: Components in order of importance; tied to the structure to fix them, open strings.
 - Critical dimensions (exiting, accommodate equipment, and such) are labeled "CLEAR". Dimensions in the elevations and sections are indicated in the same format as in the floor plans.
-

□ **DOORS**

- Door tags are coordinated with the Door & Frame Schedule and the Hardware Groups.
 - Required clearances at doorways (doors and gates) are correct and labeled.
 - Direction of door swing meets code.
 - Tagged correctly in the following categories: Hollow Metal (not "man doors", overhead coiling doors (motor operated or manually operated), or sectional doors.
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□ **DOCKS**

- Location of dock bumpers
 - Location (footprint) of dock leveler (if motor operated coordinate with electrical consultant).
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6 ROOF PLAN

□ **COORDINATION WITHIN THE SET**

- The following key references are indicated and correctly labeled:
 - Details.
 - Enlarged plans.
 - Type of roofing assembly has been confirmed with the specifier and the roofing manufacturer representative.
 - Details shown correspond to the applicable roof type.
 - Roof dimensions are shown.
 - References to building sections.
 - References to details.
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☐ **TERMS**

- Roof Membrane: Single Ply (TPO or PVC)
 - Board insulation.
 - Protection board if under the roofing membrane; cover board if over the roofing membrane
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☐ **ROOF CONSTRUCTION**

- Heights are to top of sheathing for plywood deck, top of steel for steel deck, top of concrete for composite deck.
 - Parapets.
 - Perimeter drainage.
 - High and low points of the roof.
 - Slope directions and slope ratios. Cricketing.
 - Roof drains and overflow drains
 - Mechanical/ Electrical/ Plumbing units (future location - dashed - if not in the contract)
 - Roof equipment screens.
 - Maintenance pads.
 - Guardrails and fall protection rails when required.
 - Hatches and ladders.
 - Expansion Joints.
 - Seismic Joints.
 - Walking pads.
 - Stairs over equipment.
 - Skylights.
 - Ladders at roof perimeter.
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7 BUILDING ELEVATIONS

☐ **NO-NOS**

- Do not indicate building envelope finishes and other elevation information in the floor plans.
 - DO NOT describe materials in the elevation notations, just identify them (GL1, GL2, etc.) UNLESS IT IS NECESSARY FOR CLARITY. Describe materials in the Exterior Finishes Schedule.
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☐ **COORDINATION WITH THE DESIGN TEAM**

- Structural components.
 - Exterior levels.
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☐ **DIMENSIONING**

- Horizontal Dimensions: First and second strings as floor plan,
 - Vertical Dimensions:
 - Heights: To top of sheathing, top of concrete, top of parapet, top of equipment screen.
 - Heights of canopies, and other appurtenances.
 - Openings: To face of opening concrete.
-

☐ **ITEMS INDICATED**

- Gridlines.
 - Materials tagged on all sides of the building by type.
 - Exterior ladders are indicated and tagged (LAD1, LAD2, etc.)
 - Exterior doors are indicated and tagged
-

9 BUILDING DETAILS - GENERAL

☐ **GRAPHICS**

- Details are grouped by families.
- Graphic representation of items is consistent.
- Terminology is consistent and correct.
- Tags are correct.
- Detail titles are correct and the same terminology is used throughout the set.

☐ **ROOF**

- Parapet showing coping and transition to roof.
- Roof drain.
- Downspout
- Skylight, plan and section at curb.
- Scooper at roof, including scupper box and flashing box.
- Roof hatches - show post and railings.

☐ **CONCRETE PANELS**

- Dimensions are face of concrete.
- Label inside and outside sides of panels.
- Typical: In-line joints, 90 degree corner joints straight and mitered.
- Typical: Reveals
- Typical: Joint between base of concrete panel and adjacent concrete slab. Joint shown with full length filler and sealant at top, minimum 1/2 inch wide.
- Project Specific: Joints at fire-rated construction: Call TREMCO for a recommendation of sealant to use according to the joint width, and the rating required. Show UL number (or another agency).
- Typical: Openings:
 - Hollow metal doors, heads and sills. Note that hollow metal door frames are grouted.
 - Overhead coiling doors, heads and sills.
 - Sectional doors, head and sills.
- Transitions to adjacent construction.

☐ **LADDERS**

- DO NOT detail ladders: Ladders have strict OSHA requirements so are pre-manufactured. O'Keeffe's. Is the basis of design product. Choose a ladder model - call for recommendations if unsure - and insert cut sheet in the drawings. <http://okeeffes.com/>

☐ **STAIRS - UTILITARIAN**

- Stairs are pre-manufactured: Easier to comply with code.
- Code compliance: railings and treads.
 - Stringers: Plate.
 - Treads: Welded to stringers; grating (steel plate is slippery, so avoid)
 - Handrails: Pipe.
- Landing and adjacent doors: Accessibility clearance.
- Plan, elevation, and section.

☐ **DOCKS**

- Location of dock bumpers
- Location (footprint) of dock leveler (if motor operated coordinate with electrical consultant).

☐ **DOOR STANDARDS**

- Typical: Door signage (Doors to remain unlock, etc.): Storefront entrance.
- Typical: Location of door devices.
- Typical: Door clearances.

☐ **PIPE AND TUBE RAILINGS (INTERIOR OR EXTERIOR)**

- Locations and the extent of railings with adequately dimensioned plans and details. Show guard infill design to the extent it is not specified.
- Material sizes and types.
- Finishes: Galvanized for exteriors, primed for interiors. Location of each metal finish if more than one.
- Locations of removable railing sections, if any.
- Railing details at bends and returns, handrail bracket design and connections, and connections of railings to building structure.
- Infill panels type.

☐ **LADDERS**

- DO NOT detail ladders: Ladders have strict OSHA requirements so are pre-manufactured. O'Keeffe's. Is the basis of design product. Choose a ladder model - call for recommendations if unsure - and insert cut sheet in the drawings. <http://okeeffes.com/>

☐ **METAL GRATING STAIRS (THESE ARE OUR STANDARD PRE-MANUFACTURED UTILITARIAN STAIRS)**

Basis of Design Manufacturer: American Stair.

- Extent of metal grating stairs. Include plans, elevations, and details. Indicate types of metal grating stairs if more than one type.
 - Extent of railings. Include plans, elevations, and details.
 - Profiles of treads and risers.
 - Types of treads and landings if more than one type.
 - Types of nosings. Include profiles and dimensions.
 - Finishes: Primed for field painting for interiors; galvanized for exteriors.
 - Supporting construction and methods of attachment.
-

10 ATTACHED OFFICES

☐ **DIMENSIONING**

- Dimensions are to column grid. Critical dimensions are "clear."
- Heights are to top of concrete (for composite decks) or top of steel (for steel decks).

☐ **DOORS**

- Doors are tagged - only in the floor plans.
 - Interior door numbers correspond to the room numbers. Exterior door numbers are tagged correctly.
 - Doors in rooms with multiple doors are tagged sequentially, for example, doors in Room 1001 are tagged as 1001A, 1001B, 1001C, etc.
 - Door tags are coordinated with the Door & Frame Schedule and the Hardware Groups.
 - Required clearances at doorways (doors and gates) are correct and labeled.
 - Direction of door swing meets code.
-

☐ **PARTITIONS**

- Partition types selected do not exceed the maximum height indicated in the partition details. If you have questions on this, call Gloria or Josie
 - Partitions are tagged one by one or in group (note "PARTITION TYPE A").
 - Fire rated partitions are correct for the fire ratings required.
 - Depths required for recessed items (fire extinguisher cabinets, bathroom accessories, etc.) are coordinated with the partition types assigned.
-

☐ **EXITING WIDTHS**

- Required minimum clear exiting widths at stairs, hallways and corridors are provided or exceeded and labeled as "CLEAR".
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☐ **FIRE EXTINGUISHERS**

- Travel distances to nearest fire extinguisher are indicated (max. 75').
 - Cabinet types are labeled: Rated or non-rated, recessed; semi-recessed; surface-mounted.
 - Partition type widths are sufficient to accommodate recessed and semi-recessed cabinets.
 - References to drawing and detail number that shows accessible mounting heights for cabinets are correct.
-

☐ **SUSPENDED CEILINGS**

- Schedule: Products including tiles or panels and suspension system.
 - "Heavy Duty" type for all.
 - References to details are coordinated.
 - Layout does not include tiles or panels smaller than ½ a unit or are cut in a way they cannot be suspended.
 - Extent of each new ceiling is shown.
 - Ceiling and Soffit heights indicated; +9'-0" AFF.
 - Light fixtures
 - Layout of ceiling grids.
 - Ceiling-mounted items, such as air supply diffusers, return air grilles, exit signs, are indicated.
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☐ **FINISHES**

- Coordinate with the interior designer.
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☐ **INTERIOR STAIRS - COMPLIANCE WITH THE CBC:**

- Widths.
- Projections on the width.
- Headroom clearances.
- Tread size and configuration.
- Handrails configuration and heights.
- Handrails extensions at top and bottom of stairs.

SPACE UNDER STAIRS IS OPEN.

☐ **DETAILS**

- Typical: Openings:
 - Storefront and windows, heads and sills (jambs similar)
 - Hollow metal doors, heads and sills. Note that hollow metal door frames are grouted.
 - Transitions to adjacent construction are detailed.
 - NOTE: It is not necessary to detail the aluminum mullions on their own.
 - Typical: Metal panels at concrete panels:
 - Horizontal / vertical section showing attachment to panels showing panel joints aligned with panel joints.
 - Corner (metal panel to metal panel).
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11 EXTERIOR FINISHES SCHEDULE

EXTERIOR FINISHES SCHEDULE SAMPLE

- Materials are grouped by types (all glass types, etc).
- Tags in the elevation are the same as in the Exterior Finishes Schedule.

These are examples to illustrate nomenclature and listing; products named are also examples.

GLASS - SINGLE PANEL

- Glass Type: Clear, fully tempered.
- Thickness: 1/2 inch

GLASS - INSULATING

- Glass Type:
- Exterior Panel: 1/2" thick, tinted with Low E coating in #2 Surface.
- Interior Panel: 1/2" thick, clear
- Interspace: Air, dehydrated
- Total Thickness: 1".
- Product: [Solarban 60 by PPG] [insert]

ALUMINUM FRAMING:

- Product: X by Kawneer.
- Dimensions: 2" by 4-1/2".
- Assembly: Stick.
- Finish: [Clear anodized] [insert]

CONCRETE PANELS:

- Face Up Finish: Troweled.
- Face Down Finish: Smooth, as cast.
- Concrete Coating: Elastomeric, colors [insert].
- Product: [TEX-COTE®] [insert]

FORMED METAL ROOF PANELS - CANOPIES: (these panels are fabricated by "folding" metal sheet)

- Type: Exposed Fasteners.
- Material: Galvanized steel sheet.
- Finishes: [Manufacturer's standard] [insert]
- Product: [AEP Span, HR-36® Roof & Wall] [Insert]

12 DOOR SCHEDULE GRAPHICS

- Doors:
 - Sizes and types of units, by elevation.
 - Details of head, jamb at door and sidelight.
 - Hardware mounting heights.
 - Security and access systems mounting heights.
 - Aluminum or hollow metal frames.
 - Vision panels and louvers shown.
 - Frames material and finish.

END OF TECH-CHECKING LIST