

1 General

1.1 **SECTION INCLUDES**

.1 Design, labour, Products, equipment and services necessary for gypsum board work.

1.2 **REFERENCES**

.1 ASTM A653/A653M, Specification for Steel Sheet, Zinc-coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanealed) by the Hot-Dip Process.

.2 ASTM C475, Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.

.3 ASTM C645, Specification for Nonstructural Steel Framing Members.

.4 ASTM C754, Specification for Steel Framing Members to Receive Screw-Attached Gypsum Board.

.5 ASTM C834, Standard Specification for Latex Sealants.

.6 ASTM C840, Specification for Application and Finishing of Gypsum Board.

.7 ASTM C1002, Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.

.8 ASTM C1177, Specification for Glass Mat Gypsum Substrate for Use as Sheathing.

.9 ASTM C1178, Specification for Glass Mat Water-Resistant Gypsum Backing Board.

.10 ASTM C1278, Specification for Fiber-Reinforced Gypsum Panel.

.11 ASTM C1280, Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing.

.12 ASTM C1396, Specification for Gypsum Board.

.13 CAN/ULC-S102, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

1.3 **DESIGN REQUIREMENTS**

.1 Design gypsum board wall and ceiling systems with a maximum deflection of $l/360$.

.2 Design ceiling suspension system in accordance with manufacturer's printed directions and ASTM C754.

- .3 Design ceiling system for adequate support of electrical fixtures as required by the current bulletin of the Electrical Safety Authority.
- .4 Design hanger anchor and entire suspension system static loading not to exceed 25% of their ultimate capacity including lighting fixture dead loads.
- .5 Design suspension system to support weight of mechanical and electrical items such as air handling boots and lighting fixtures, and with adequate support to allow rotation/relocation of light fixtures.
- .6 Design subframing as necessary to accommodate, and to circumvent, conflicts and interferences where ducts or other equipment prevent the regular spacing of hangers.
- .7 Design wall framing system and reinforce as necessary to accommodate and support items attached to and supported by wall framing system.
- .8 Design wall framing system for wall assemblies with a height greater than 3000 mm and those assemblies incorporating non-standard gypsum board assemblies including, but not limited to, cement board, large format tile applications, etc.

1.4 **REGULATORY REQUIREMENTS**

- .1 Provide fire separations and fire protection exactly as specified in test design specification that validates the specified rating. Verify that work specified in other Sections, as a part of the entire assembly, meets applicable validating test design specification.

1.5 **SUBMITTALS**

- .1 Product data:
 - .1 Submit copies of manufacturer's Product data in accordance with Section 01 10 10 indicating:
 - .1 Performance criteria, compliance with appropriate reference standard, characteristics, and limitations.
 - .2 Product transportation, storage, handling and installation requirements.
 - .2 Shop Drawings:
 - .1 Submit Shop Drawings in accordance with Section 01 10 10 indicating:
 - .1 Wall assemblies, suspension systems, adjacent construction, elevations, sections and details, dimensions, thickness, finishes and relationship to adjacent construction.
 - .2 Framing and blocking for items being supported of wall systems.
 - .3 Fire rated designs.

- .3 Samples:
 - .1 Submit samples in accordance with Section 01 10 10 indicating:
 - .1 Duplicate 300 mm samples of edge trims demonstrating material, finish and colours.
- .4 Certifications: Submit written certification stating that suspended ceiling system is designed for adequate support of electrical fixtures as required by the current bulletin of the Electrical Safety Authority.

1.6 **QUALITY ASSURANCE**

- .1 Qualifications: Execute the work of this Section by skilled, qualified, and experienced workers trained in the installation of the work of this Section.
- .2 Retain a Professional Engineer, licensed in Province of Ontario, with experience in work of comparable complexity and scope, to perform following services as part of work of this Section:
 - .1 Design of wall systems with height greater than 3000 mm and at non-standard gypsum board assemblies including, but not limited to, assemblies incorporating cement board, large format tile applications, etc.
 - .2 Design of suspended gypsum board assemblies.
 - .3 Review, stamp, and sign Shop Drawings and design calculations.
 - .4 Conduct shop and on-site inspections, prepare and submit written inspection reports verifying that this part of Work is in accordance with Contract Documents and reviewed Shop Drawings.

1.7 **SITE CONDITIONS**

- .1 Do not begin work of this Section until:
 - .1 Mechanical and electrical work above the ceiling is complete.
 - .2 Substrate and ambient temperature is above 15°C.
 - .3 Relative humidity is below 80 %.
 - .4 Ventilation is adequate to remove excess moisture.
- .2 Install temporary protection and facilities to maintain Product manufacturer's, and above specification, environmental requirements 24 h before, during, and 24 h after installation.

2 Products

2.1 **MATERIALS**

- .1 General: All materials under work of this Section, including but not limited to, sealants, adhesives, and primers are to have low VOC content limits.
- .2 Steel framing: ASTM C754; ASTM A653/A653-M, Z275; cold rolled, galvanized steel sheet.
 - .1 Bailey Metal Products Limited.
 - .2 Corus Metal Profiles.
- .3 Steel studs and track runners: ASTM C645; Galvanized steel studs and runners, 32 mm wide x depth as indicated on Contract Drawings. Formed from galvanized steel sheet, thicknesses as follows:
 - .1 Studs less than 3000 mm: Minimum 0.53 mm (25 ga.).
 - .2 Studs greater than 3000 mm and non-standard assemblies: Minimum 0.91 mm (20 ga.), unless stud thickness of greater thickness is required to accommodate intended loading, spans, or conditions.
 - .3 Track runners and ancillary components to match stud thickness.
- .4 Sheet steel blocking: Galvanized sheet steel: ASTM A653/A653M Grade A, Z275 Commercial Quality zinc coating. 1.2 mm thick (18 ga.) thick for use as sheet blocking.
- .5 Main carrying channels: ASTM C645; Formed from galvanized steel sheet, 38 x 19 mm cold rolled, channels.
- .6 Resilient channel: ASTM C645; 0.5 mm thick galvanized metal, 57 mm wide x 12 mm deep for walls and ceiling to reduce sound transmission.
- .7 Furring channels: ASTM C645; Formed from galvanized steel sheet, 22 mm winged flange type, cold rolled.
- .8 Furring channels (hat type): ASTM C645; 0.5 mm base steel thickness, galvanized. 70 mm wide x 22 mm deep hat shaped channel.
- .9 Heavy duty furring channels: ASTM C645; 0.9 mm steel thickness, galvanized hat shaped channel with a wider and deeper size as required by manufacturers.
- .10 Hanger wires: 4.1 mm minimum diameter galvanized pencil rod.
- .11 Tie wire: 1.6 mm thick minimum diameter, soft annealed, galvanized steel wire.
- .12 Corner bead, casing bead, and special shapes: Formed from 0.6 mm thick minimum, galvanized steel sheet, designed to be concealed by joint compound.
- .13 Deflection track: ASTM C 645 top runner with 50.8-mm- deep flanges, in thickness indicated for studs and in width to accommodate depth of studs.

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- .14 Deflection track (fire rated): Provide 25 mm deep leg deflection track where indicated on rated walls. 'Fire Trak Shadowline' by Fire Trak Corporation or approved alternative.
 - .15 Ceiling clips: Hot dip galvanized partition attachment clips, in square and reveal edge, to match grid system. Manufactured by Certainteed Gypsum Canada or approved alternative.
 - .16 Gaskets (acoustic partitions): Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 3.2 mm thick, in width to suit steel stud size.
 - .17 Control joint strip: Roll formed from galvanized steel sheet, with a tape protected recess, 6 mm wide x 11 mm deep.
 - .18 Screw fasteners: ASTM C1002 Type S; Corrosion resistant.
 - .19 Concrete anchors: tie wire sleeve anchors, 'Redi-Drive Anchors' by ITW Red Head or approved alternative.
 - .20 Batt insulation: In accordance with Section 07 21 00.
 - .21 Standard sealants:
 - .1 Acoustic sealant (non-rated): Non-hardening acoustic sealant for use at non-rated assemblies, ASTM C834; Lightweight, acrylic, mould resistant sealant, paintable. 'Lightweight Smoke and Acoustic Sealant CS-S SA Light' by Hilti or approved alternative.
 - .2 Standard sealants: In accordance with Section 07 92 00.
 - .22 Fire rated seal: Provide one of the following for use at fire rated assemblies:
 - .1 Fire-rated sealant: Non-hardening sealant for use at fire-rated assemblies: CAN/ULC-S102; Acrylic based firestop sealant, colour: red or white as selected by Consultant. 'Flexible Firestop Sealant CP606' by Hilti or approved alternative.
 - .2 Fire-rated seal: Non-hardening seal for use at fire-rated assemblies: CAN/ULC-S102; Flexible seal for installation between top track and substrate. 'Firestop Top Track Seal CFS-TTS' by Hilti or approved alternative.
 - .23 Gypsum board: ASTM C1396; gypsum board 15.9 mm thick of maximum practical lengths to minimize end joints, unless indicated otherwise. Furnish Board by Certainteed Gypsum Canada, CGC Inc., or Georgia-Pacific Canada LP.
 - .24 Fire rated gypsum board (Type X): ASTM C1396; gypsum board 15.9 mm thick of maximum practical lengths to minimize end joints, unless indicated otherwise. Furnish Type X Board by Certainteed Gypsum Canada, CGC Inc., or Georgia-Pacific Canada LP.

- .25 Cementitious board: ASTM C1177, high strength portland cement building panel with self adhesive glass tape; provide board with heavier mesh reinforcement for suspended applications. 'Durock Cement Board Next Gen.' by CGC Inc., or approved alternative by Certaineed Gypsum
- .26 Moisture and mould resistant board (standard and fire rated):
 - .1 15.9 mm thick, of maximum practical lengths to minimize end joints, unless indicated otherwise; 'M2Tech Moisture and Mould Resistant' by Certaineed Gypsum Canada, 'Sheetrock Mold Tough' by CGC Inc. or 'DensArmor Plus High Performance Interior Panel' by Georgia-Pacific Canada LP.
 - .2 Furnish Type X fire rated version of specified moisture resistant products where indicated or required to meet requirements of authorities having jurisdiction.
- .27 Tile backer: Water resistant tile backer board meeting ASTM C1178 or ASTM C1278, thickness as indicated. 'Diamondback Tile Backer' by Certaineed Gypsum Canada, 'Fiberock Aqua-Tough Underlayment' by CGC Inc. or 'Dens Shield' by Georgia-Pacific Canada LP.
- .28 Flexible gypsum board: ASTM C1396; gypsum board 6 mm thick of maximum practical lengths to minimize end joints, unless indicated otherwise. Furnish Sheetrock Flexible by CGC Inc. or approved alternative by Certaineed Gypsum Canada, or Georgia-Pacific Canada LP.
- .29 Exterior grade gypsum sheathing and screws:
 - .1 Exterior grade gypsum sheathing: ASTM C1177/C1177M, 15.9 mm thick, 'GlasRoc Brand Sheathing' with EGRG by CertainTeed Gypsum Canada, 'Securock Glass-Mat Sheathing' by CGC Inc. or 'Dens-Glass Sheathing' by Georgia-Pacific Canada LP.
 - .2 Sheathing screws: to ASTM C1002, Type S, corrosion resistant, 12.7 mm penetration into steel.
- .30 Shaftwall gypsum system:
 - .1 Steel J-Runner: ASTM C645; Rolled formed sheet steel, 25 gauge, by CGC, Gypsum Corporation or approved alternative.
 - .2 C-H stud: hot-dipped galvanized by CGC, Gypsum Corporation or approved alternative.
 - .3 Liner Panel: ASTM C1396; Gypsum wallboard panel, Thickness: 25.4 mm, Width: 610 mm. 'M2Tech Shaftliner Type X' by Certaineed Gypsum Canada, or approved alternative by CGC or Gypsum Corporation.
 - .4 Face Panel: ASTM C1396; Gypsum wallboard panel, 1 layer, Thickness: 15.9 mm, Width: 1219 mm. 'GlasRoc Shaftliner Type X' by Certaineed Gypsum Canada, or approved alternative by CGC or Gypsum Corporation.
- .31 Special trim pieces: to include, but not limited to, the following:
 - .1 Edge trim: Formed from extruded aluminum alloy 6063. Manufactured by Fry Reglet, Gordon Trims, or approved alternative.

- .32 Primer: Where indicated by board manufacturer, provide primer as required to achieve finishes as defined in ASTM C840.
- .33 Latex fortified mortar: Of type recommended by cementitious board manufacturer to suit application.
- .34 Joint reinforcing tape:
 - .1 Standard gypsum board: ASTM C475; 50 mm wide x 0.25 mm thick, perforated paper, with chamfered edges.
 - .2 Moisture resistant and tile backer boards: ASTM C475; fibreglass mat joint tape as recommended by board manufacturer to suit location.
 - .3 Cement board: Mesh reinforcing tape recommended by cement board manufacturer.
- .35 Bonding adhesive: Type for purpose intended and as recommended and approved by manufacturer.
- .36 Joint and patching compound: ASTM C475; Asbestos-free, supplied by manufacturer of gypsum board used.
- .37 Fast setting patching compound: ASTM C475; Asbestos-free, Sheetrock or Durabond by CGC Inc., 'Moisture and Mold Resistant Setting Compound with M2Tech' by Certaineed Gypsum Canada or approved alternative.
- .38 Access doors: Supplied by other Sections for installation as part of the work of this Section.

3 Execution

3.1 EXAMINATION

- .1 Verify condition and dimensions of previously installed work upon which this Section depends. Report defects to Consultant. Commencement of work of this Section means acceptance of existing conditions.

3.2 SUSPENSION FRAMING

- .1 Install ceiling systems in accordance with reviewed Shop Drawings and manufacturer's written instructions.
- .2 Install hanger wires plumb and securely anchored to the building structural framing, independent of walls, pipes, ducts, and metal deck; install additional framing and hangers to bridge interference items.
- .3 Install hanger wires at 1200 mm maximum centres along carrying channels, not less than 25 mm, and not more than 150 mm from channel ends.

- .4 Install additional hangers at lighting fixture and ductwork locations. Do not attach hanger wires to mechanical or electrical equipment. Do not support mechanical and electrical fixtures and fitting on ceiling without the ceiling manufacturer's written acceptance.
- .5 Install main carrying channels transverse to structural framing members. Lap main carrying channels 200 mm minimum at splices and wire each end with two loops and prevent clustering or lining-up of splices.
- .6 Install furring channels at 400 mm o.c., not less than 25 mm, and not more than 150 mm from perimeter walls, at openings, at interruptions in ceiling continuity, and at change in plane. Install furring channels to a tolerance of 3 mm maximum in 3600 mm.
- .7 Install additional main carrying and furring channels to frame and to reinforce openings such as recessed lighting fixtures, access hatches, ceiling grilles, outlet boxes, ventilating outlets and similar items.

3.3 **STEEL STUDS AND FURRING**

- .1 Install steel studs and furring in accordance with reviewed Shop Drawings and manufacturer's written instructions.
- .2 Provide 1.2 mm (18 ga.) thick galvanized sheet blocking as required for additional support of components.
- .3 Install steel stud partitions to underside of structure unless indicated otherwise.
- .4 Install track runners at floors, ceilings, and underside of structure; align track runners accurately and secure to structure at 600 mm centres maximum.
- .5 Install double top track runner assembly to prevent the transmission of structural loads to steel studs.
- .6 Install steel studs vertically at 400 mm o.c., unless otherwise indicated, and not more than 50 mm from abutting walls, at openings, and at each side of corners. Install studs securely to track runners.
- .7 Schedule and coordinate steel framing installation with mechanical and electrical services installation.
- .8 Install full height, double studs at door and service openings, fastened together and stiffened back to the structure to prevent vibration when doors close.

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- .9 Provide double studs boxed together at all openings, sill, head and jambs and at door jambs, fastened together and stiffened back to the structure to prevent vibration. At each opening exceeding 900 mm in width, double studs shall be 20 ga. extending to structure above, and adequately anchored at each end. Provide steel studs above and below openings spaced at 400 mm oc maximum. All metal stud partitions above doors and screens over 1220 mm wide shall be secured to structure over and reinforced with sway bracing to stabilize walls to prevent lateral movement.
 - .10 Erect three studs at corner and intermediate intersections of partitions. Space 50 mm apart and brace together with wired 19 mm channels.
 - .11 Stiffen partitions over 2440 mm high or 3000 mm long, or both, with horizontal bracing extended for full length of partitions. Provide one line of bracing in partitions. Space lines to provide equal unbraced panels. Provide bracing for portions of partitions over door openings in partitions over 3000 mm high, and bracing both above and below openings in partitions located no greater than 150 mm from top and bottom of opening, and extending two stud spaces beyond each edge of opening for both doors and windows. Wire tie or weld bracing to studs.
 - .12 Frame control joints using back to back double studs at abutting structural elements, at dissimilar backup interface, at dissimilar walls and ceilings, at structural expansion and control joints, at door and other openings, and at 9000 mm maximum spacing in continuous runs. Install control joint strips and secure in place.
 - .13 Install additional support framing at openings and cutouts for built-in equipment, upper cabinet support, access panels and similar items.
 - .14 Attach to framing adequate steel reinforcing members or an 1.2 mm (18 ga.) steel stud mounted horizontally and notched around furring members to support the load of, and to withstand the withdrawal and shear forces imposed by, items installed upon the work of this Section. Such items include, but are not restricted to, miscellaneous metals, coat hooks, washroom accessories, handrail anchors, grab bars, guards, wall-hung cabinets and fitments, shelving, curtain tracks, miscellaneous specialties; Owner supplied equipment; and minor mechanical and electrical work. Heavy mechanical and electrical equipment shall be self-supporting in Divisions 21, 22, 23 and 26.
 - .15 Provide for support and incorporation of flush-mounted and recessed mechanical and electrical equipment and fixtures only after consultation and verification of methods with those performing the work of Divisions 21, 22, 23 and 26.
 - .16 Install cross bracing in accordance with the steel stud manufacturer's recommendations.

3.4 FIRE RATED ASSEMBLIES

- .1 Install Products in fire rated assemblies in strict accordance with reviewed Shop Drawings and applicable tested and approved designs required by Authorities Having Jurisdiction.
- .2 Install firestop fill material behind fire rated acoustical sealant and provide firestop identification tag.
- .3 Stiffen fire rated walls over 3.66 m high, where linear length of wall is greater than 2.44 m between perpendicular wall supports, with diagonal bracing above the ceiling extending perpendicular to wall at a 45° angle to structure above. Locate diagonal bracing at maximum 2.44 m o.c.
- .4 Where double layers of gypsum board are shown, and required for fire rating, screw first layer to studs and furring and laminate the second layer to the first using joint filler as an adhesive. Stagger joints between first and second layers.

3.5 BATT INSULATION

- .1 Install non-rated and fire-rated/acoustic insulation as required for Work of this Project in accordance with Section 07 21 00.

3.6 ACOUSTICAL SEALANT

- .1 Install acoustical sealant to acoustically insulated partitions in accordance with the manufacturer's instructions and Contract Drawings.
- .2 Install acoustical sealant under floor runner track, at partition perimeter both sides and at openings, cut-outs, and penetrations, concealed from view in the final installation.
- .3 Smooth acoustical sealant with trowel prior to skin forming.

3.7 GYPSUM BOARD

- .1 Comply with ASTM C840. Install gypsum board in accordance with reviewed Shop Drawings and manufacturer's written instructions.
- .2 Install gypsum board vertically or horizontally, whichever results in fewer end joints. Locate end joints over supporting members.
- .3 Install gypsum board in lightly butted contact at edges and ends and with 1.6 mm maximum open space between boards; do not force gypsum board into place. Do not install imperfect, damaged or damp boards.
- .4 Install gypsum board butting paired tapered edge joints, and mill-cut or field-cut end joints; do not place tapered edges against cut edges or ends.

- .5 Install vertical joints minimum 300 mm from the jamb lines of openings and stagger vertical joints over different studs on opposite sides of partitions.
- .6 Do not locate joints within 200 mm of corners or openings, except where control joints occur at jamb lines or where openings occur adjacent to corners. Where necessary, place a single vertical joint over the centre of wide openings.
- .7 Install gypsum board over concrete and concrete masonry units with adhesive as recommended by gypsum board manufacturer where indicated on Drawings.
- .8 Cut, drill and patch gypsum board as may be necessary to accommodate the work of other trades.
- .9 Fire separations:
 - .1 Construct gypsum board assemblies, where located, in accordance with tested assemblies to obtain required or indicated fire rated assemblies. As a minimum fire separations shall consist of metal framing covered on both sides by fire-rated gypsum board.
 - .2 Install assemblies tightly to enclosing constructions to maintain integrity of the separations. Install casing beads at all perimeter edges.
- .10 Curved gypsum board applications: Use 2 layers of 6 mm thick flexible gypsum panels, secure tight to framing members. Obtain smooth uniform profile.

3.8 CEMENT BOARD

- .1 Apply cementitious board to framing, with screw fasteners and taped joints in accordance with manufacturers instructions.
- .2 Pre-cut board to required sizes and make necessary cutouts. Fit ends and edges closely but not forced together.
- .3 Fasten board to steel framing with rust proof self-drilling, self-threading case hardened screws at 200 mm oc for walls and 150 mm oc for suspended applications.
- .4 Apply mesh tape centred over all joints and corners but not overlapped.
- .5 Apply 3 mm minimum thick skim coat of latex fortified mortar uniformly over entire cementitious board surfaces. Leave surface smooth and flat to receive subsequent finish.

3.9 EXTERIOR GRADE GYPSUM SHEATHING

- .1 Install sheathing materials in accordance with ASTM C1280, reviewed shop drawings, and manufacturer's written instructions.
- .2 Install sheathing with long dimension perpendicular to metal studs, offset joints and butt tight, centre edges of sheathing over metal studs, mechanically fasten with specified fasteners and washers in accordance with manufacturer's instructions.

3.10 **SHAFTWALL LINER**

- .1 Plan and lay out metal framing components to ensure that all wall sections are plumb and properly aligned.
- .2 Install J-track along the ceiling line and vertically at columns and abutting partitions, positioning the long legs closest to the shaft, using powder actuated fasteners or other approved method. Secure each piece with the appropriate fasteners spaced a maximum 610 mm O.C.
- .3 Attach J-track to the floor with fasteners spaced at 610 mm O.C.
- .4 Install Shaftliner panels vertically. The leading edge of the first panel must be attached to the long leg of the vertical J-track with 41 mm Type S screws spaced 610 mm O.C. Secure the top and bottom edges using the same fasteners and spacing.
- .5 Friction-fit C-H stud into the top and bottom tracks and slide it snugly against the Shaftliner panel. Make sure the edge of the board is in full contact with the centre web of the stud and covered by all the tabs.
- .6 Place the next Shaftliner panel between the tabs and flange on the opposite side of the C-H stud and secure it to the top and bottom track with 41 mm Type S screws spaced 610 mm O.C.
- .7 Install subsequent Shaftliner panels and C-H studs in the same manner. Check periodically to ensure they are plumb.
- .8 At the end of a partition run, cut the last Shaftliner panel slightly narrower and shorter than the opening to facilitate installation.
- .9 For walls exceeding 3.7 m in height, Shaftliner panel end joints shall fall alternately in the upper and lower 1/3 of the partition. Use a C-H stud placed horizontally between panels to secure each joint.
- .10 Frame all cut openings in the shaft side with J-track, providing adequate structural support for openings over 1219 mm.
- .11 Anchor elevator door frames to shaftwall enclosures; however, they must remain independently supported by the building frame.

3.11 **CORNER, CASING BEADS AND TRIM**

- .1 Corner reinforcing bead: Install along all external angles, erect plumb, level and with a minimum of joints. Secure with screws at 225 mm o.c. apply filler over flanges flush with nose of the bead and extending at least 75 mm onto surface of board each side of corner. When filler dries, apply a thin coat of topping cement and blend onto adjoining surfaces.

- .2 Casing bead: Install where wallboard butts against a surface having no trim concealing the juncture and where shown on drawings. Erect casing beads plumb or level, with minimum joints, and secure with screws at 300 mm o.c. apply filler over flange flush with bead and extending at least 75 mm onto surface of board. When dry, apply a thin coat of topping cement and blend onto adjoining surfaces.
- .3 Recess channels and trim: Install recess channels and special metal trim where shown. Secure to substrate. Provide casing beads full height on wallboard edges at recess channels and metal trim.

3.12 JOINT TAPING AND FINISHING

- .1 Install reinforcing tape and a minimum of 3 coats of joint compound over gypsum board joints, metal trim and accessories, and screw fasteners in accordance with the gypsum board manufacturer's instructions.
- .2 Fill gaps between ,and any imperfections in, gypsum boards with joint compound, allow to dry, and sand smooth ready for painting.
- .3 Install finished gypsum board work smooth, seamless, plumb, true, flush, and with square, plumb, and neat corners.
- .4 Finish gypsum board in accordance with ASTM C840 to the following grades:
 - .1 Level 0: No taping, finishing, or accessories required. Use above suspended ceilings and within other concealed spaces, unless the assembly is fire rated, sound rated, sound or smoke controlled, or unless the space serves as an air plenum.
 - .2 Level 1: At joints and interior angles embed tape in joint compound. Leave surface free of excess joint compound. Tool marks and ridges are acceptable. Use above suspended ceilings and within other concealed spaces if the gypsum board assembly is fire rated, sound rated, sound or smoke controlled, or the space serves as an air plenum.
 - .3 Level 2: At joints and interior angles embed tape in joint compound with one separate coat of joint compound applied over joints, angles, fastener heads, and accessories. Use for water resistant gypsum board indicated for use as a substrate for ceramic tile.
 - .4 Level 3: At joints and interior angles embed tape in joint compound with two separate coats of joint compound applied over all joints, angles, fastener heads, and accessories. Apply joint compound smooth and free of tool marks and ridges. Use where heavy grade wall coverings are the final decoration.
 - .5 Level 4: At joints and interior angles embed tape in joint compound with three separate coats of joint compound applied over all joints, angles, fastener heads, and accessories. Apply joint compound smooth and free of tool marks and ridges. Use for all locations except those indicated for other finish levels.

- .6 Level 5: At joints and interior angles embed tape in joint compound with three separate coats of joint compound applied over all joints, angles, fastener heads, and accessories. Apply a thin skim coat of joint compound, or a material manufactured especially for this purpose, to the entire surface. Leave surface smooth and free of tool marks and ridges. Use where semi-gloss or gloss finish coatings are the final decoration.

3.13 **ACCESS DOORS**

- .1 Install access doors, supplied as part of other parts of the work, in accordance with manufacturer's written instructions.

3.14 **SITE TOLERANCES**

- .1 Install metal support systems to ensure that, within a tolerance of +3 mm and -1.5 mm for plaster thickness, finish surfaces will be flat within 3 mm under a 3 m straightedge, and with no variation greater than 1.5 mm in any running 300 mm, and that surface planes shall be within 3 mm of dimensioned location.

3.15 **REPAIR**

- .1 Make good cut-outs for services and other work, fill in defective joints, holes and other depressions with joint compound.
- .2 Make good defective work, and ensure that surfaces are smooth, evenly textured and within specified tolerances to receive finish treatments.

END OF SECTION