SECTION 09110
METAL SUPPORT ASSEMBLIES

PART 1 - GENERAL

1.1 SUMMARY

.1 Provide light steel framing, furring channels and accessories as required for dropped ceilings, complete assembly, as indicated and specified. No steel stud partitions required.

.2 Provide seismic bracing of suspended ceilings to meet Code requirements.

1.2 RELATED WORK

.1 08110 Metal Doors and Frames.

.2 08140 Wood Doors.

.3 09210 Gypsum Board Assemblies.

.4 Division 15 Mechanical.

.5 Division 16 Electrical

1.3 REFERENCES

.1 Association of Wall and Ceiling Contractors of B.C. (AWCC), Specification Standards Manual, current edition.

.2 ASTM A653/A653M-03, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.3 ASTM A1003/A1003M-02a, Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members.

.4 ASTM C645-00, Standard Specification for Nonstructural Steel Framing Members.

.5 ASTM C754-00, Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.

.6 CAN/CGSB 1.40-97, Anticorrosive Structural Steel Alkyd Primer.

.7 CAN/CGSB 7.1-98, Lightweight Steel Wall Framing Components.

.8 CSA A82.30-M80, Interior Furring, Lathing, and Gypsum Plastering.

1.4 SYSTEM DESCRIPTION

.1 Provide resilient furring channels and dropped ceilings to meet the Fire Performance, sound performance, and serviceability requirements as indicated.

.2 Provide suspended ceiling systems with seismic restraints to meet the requirements of the BC Building Code.

.3 Seismic design, components, and installation: in accordance with ASTM E580, Clause 4 "Areas Subject to Severe Seismic Disturbance" and subsequent Clauses, and meeting all of the following requirements:

.1 Seismic zone: refer to Structural drawings and B.C. Building Code Clause 4.1.9.1.15 and Table 4.1.9.1.D

.2 Coordinate with seismic requirements of other trades, such as for Division 15 and 16, and Section 09530 Acoustic Ceiling Assemblies.

.3 Provide suspension anchoring devices and seismic restraint work designed and certified by a Professional Engineer registered in the province of British Columbia, who shall carry out periodic site reviews during construction and at completion, and submit reports and Municipal Letters of Assurance in accordance with B.C. Building Code.

1.5 SUBMITTALS

.1 Submit in accordance with Section 01330 Submittal Procedures.

.2 Shop Drawings: Shop drawings shall be sealed by a professional structural engineer registered to practice in the Province of British Columbia. Coordinate design with window installation.

1.6 QUALITY ASSURANCE

.1 Steel stud and furring work shall be in accordance with Association of Wall and Ceiling Contractors of B.C. (AWCC), Specification Standards Manual; Section 9.7 Interior Steel Studs and Furring, Section 9.8 Wind Load Bearing Steel Stud Wall System, and Section 9.10 Gypsum Shaft Wall Systems.

.2 Installer Qualifications: Work shall be performed by a qualified specialist firm employing experienced Installers.

.3 Mock-Up: provide mock-up in conjunction with envelope testing of related Sections.

.4 Provide field reviews and Letter of Assurance by engineer sealing shop drawings as to compliance, with shop drawings and requirements of authority having jurisdiction.

1.7 DELIVERY, STORAGE AND HANDLING

.1 Store packaged material in original containers with manufacturer's seals and labels intact.

.2 Prevent damage to materials during handling and storage. Keep materials under cover and free from dampness.

1.8 SEQUENCING AND SCHEDULING

.1 Co-ordinate installation sequence of steel stud partitions and furring with the other work and materials and/or services being installed within the partitions and metal furring.

.2 Coordinate steel stud and furring work with other work on which it is in any way dependent. Ensure correct positioning and installation of other work with which steel stud partitions have to align and upon which subsequent work is dependent.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Non-loadbearing Channel Stud Framing: conforming to CAN/CGSB 7.1, C-shape, hot dipped galvanized steel studs with Z180 (G60) zinc coating to ASTM A653; Grade A steel. Studs to have knurled face and pre-punched pass-through holes for horizontal runs of wiring and piping. Length to suit. No splicing allowed.

.2 Range depth not less than 32 mm (1-1/4"), edges bent back 90 deg. and edges hemmed 5 mm (3/16") minimum.

.3 Widths: As scheduled and indicated.

.4 Gauges: base metal thickness 0.53 mm (25 gauge) except where noted otherwise on drawings and details.

.5 Increase gauge of steel studs at over-height locations, to suit, in order to maintain overall partition dimension as detailed in wall schedule. Studs in exterior walls to be in accordance with gauge requirements prior to galvanizing.

.6 Steel studs shall be colour coded for gauge in accordance with AWCC colour code chart.

.7 Metal channel stiffener: 1.4 mm thick cold rolled steel, coated with rust inhibitive coating.

.8 Metal furring runners, hangers, tie wires, inserts, anchors: to CSA A82.30-M80, galvanized.

.9 Stud Fasteners: Manufacturer's standard, suitable for intended application.

.10 Drywall Furring Channels: Hat section; roll formed from 0.53 mm (25 gauge) hot dipped galvanized steel having a Z180 (G60) coating to ASTM A653; dimensions 68.2 mm (2-11/16") or 66.7 mm (2-5/8") overall width; face width 35 mm (1-3/8") by 22.2 mm (7/8") deep; face knurled.

.11 Gypsum Board Ceiling Framing:

.1 Tie Wire: 1.62 mm (16 gauge) galvanized steel tie wire.

.12 Hangers: 3.65 mm (9 gauge) diameter galvanized soft annealed steel wire, or 4.8 mm (3/16") diameter zinc coated plated steel rods. Ceiling area supported:

AREA	SIZE OF HANGERS
Up to 1.16 m2 (12.5 sq.ft.)	3.65 mm (9 gauge) diameter galvanized wire
Up to 1.48 m2 (16 sq.ft.)	4.8 mm (3/16") diameter rods

.13 Inserts: Able to develop full strength of supported hangers.

.14 Main Carrying Channels: Cold formed steel channels of dimension and weight as follows and protected with rust inhibitive coating. Main carrying channels shall not be less than 38 mm x 12.7 mm x 1.37 mm (1-1/2" x 1/2" x 17 gauge) cold-formed channels.

MAXIMUM SPACING OF HANGERS	MAXIMUM SPACING OF MAIN RUNNERS
900 mm (3'-0")	1200 mm (4'-0")
1000 mm (3'-6")	1000 mm (3'-6")
1200 mm (4'-0")	900 mm (3'-0")

.15 Drywall Cross Furring Members: Drywall furring channels for drywall ceilings. Maximum spacing to requirements based on gypsum board thickness and layers.

.16 Acoustical Separation Tape/Track Sealant Tape: Closed cell vinyl or neoprene foam self-adhering sealant tape 6 mm (1/4") thick x 38 mm (1-1/2") wide Sellotape Insil #400 tape, Behr Manning Bear Sealant Tape, or other approved alternative.

.17 Shaft wall systems from Westroc, GP or approved alternative.

PART 3 - EXECUTION

3.1 EXAMINATION

.1 Examine areas to receive metal support assemblies with installer present. Correct unsatisfactory conditions.

.2 Start of work indicates acceptance of conditions.

3.2 PREPARATION

.1 Install steel studs in accordance with reviewed shop drawings, manufacturer's instructions and Code requirements.

.2 Refer to Wall Schedule for wall types.

3.3 CEILING AND SOFFIT SUSPENSIONS

.1 Fire resistance rated ceilings: Comply with requirements of testing agency for ceiling system detailed on drawings.

.2 Non-rated ceilings:

.1 Hangers:

.1 Hangers for suspended gypsum board ceilings shall support grillage independent of walls, columns, pipes, ducts. Erect hangers plumb and securely anchor to structural frame or imbed in concrete slabs. Powder actuated fasteners and anchors are not permitted.

.2 Space hangers at 1,200 mm (4'-0") maximum centers along runner channels and not more than 150 mm (6") from boundary walls, interruptions of continuity and change in direction.

.3 Provide at least 25 mm (1 ") clearance at walls.

.2 Runner Channels:

.1 Space channels at maximum 900 mm (3'-0") centers and not more than 150 mm (6") from boundary walls, interruptions of continuity and change in direction. Provide a clearance of at least 25 mm (1") at walls.

.2 Run the channels transversely to structural framing members.

.3 Where splices are necessary, lap members at least 200 mm (8") and wire each end with 2 loops. Avoid clustering or lining up splices.

.4 Attach to rod hangers by bending hanger sharply under bottom flange of runner and securely wiring in place with a saddle tie.

.3 Cross Furring:

.1 Erect furring channels transversely across runner channels or other supports.

.2 Space furring channels at 406 mm (16") centers and not more than 150 mm (6") from boundary walls, openings, interruptions in ceiling continuity and change in direction. Provide a clearance of at least 25 mm (1") at walls.

.3 Secure furring channels to each support with clips or double 1.22 mm (18 gauge) diameter wire ties. Splice joints by nesting and tying channels together.

.4 Furring channels shall be level to a maximum tolerance of 1:1000.

.3 At openings, including ceiling access panels, in ceiling suspension system that interrupts the main carrying channels of furring channels, reinforce grillage with 19 mm (3/4") cold rolled channels, wire tie to top and parallel to main runner channels, extend 19 mm (3/4") channels minimum 300 mm (12") past each end of openings.

3.4 WALL FURRING

.1 Furring channels attached to masonry or concrete surfaces shall be 406 mm (16") on centre and not more than 100 mm (4") from corners and openings.

.2 Secure flanges to wall with hardened nails, power actuated fasteners or equivalent fastenings. Maximum spacing 610 mm (24") alternating to opposite flanges.

3.5 ACCESS PANELS

.1 Confirm location and type of access panel with Consultant prior to installation.

.2 Install access panels in gypsum board furred areas and partitions, where indicated.

.3 Align access panels on centre lines with adjacent access panels, light fixtures and sprinklers.

.4 Coordinate work and prepare openings and install access panels in steel stud walls, partitions and ceilings. For access panel locations, see Mechanical and Electrical Drawings.

END OF SECTION