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*Note to the Designer/Architect/Engineer: These Specifications are basic minimum criteria to be met in preparing the final project specifications for this Section, which is the responsibility of the Designer*

York University Building Standards

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## 1.0 GENERAL

### 1.1 Scope of Work

- .1 This York University Building Standard includes metal support systems for gypsum board partitions, ceilings, shaft walls and bulkheads

### 1.2 Sustainable Design Requirements

- .1 For LEED Credit EQ 4.1 Submit product data sheets for adhesives, including printed statement of VOC content
- .2 For LEED Credits MR 4.1 and MR 4.2 Provide product data sheets indicating percentages by weight of post consumer and pre consumer recycled content for sound attenuation insulation

### 1.3 Submittals

- .1 Submit manufacture's product data sheets for products proposed to be used in the work covered by this Section
- .2 Submit test results for each required fire resistance rated assembly for work covered by this Section
- .3 Shop drawings for shaft walls:
  - .1 Submit written confirmation and design for shaft wall construction showing adequacy of system in meeting fire ratings and its ability to withstand pressures and deflections that may occur in high velocity duct shafts/

- shaft wall design shall be prepared as an engineering shop drawing
- .2 Show clearly suspension location and details
- .3 Show location of control and other joints
- .4 Shop drawings shall bear the stamp and signature of a qualified engineer, member of the provincial association of engineers, for the following:
  - .1 Partitions supporting wall hung cabinets or other elements
  - .2 Walls acting as guards
  - .3 Structural stud supports for vestibule and structural stud supports for top of glass at both vestibule doors and vision panels
  - .4 Structural stud supports for glass doors
  - .5 Structural stud supports for metal doors
  - .6 Structural stud supports for wood doors
  - .7 Structural stud supports for partitions
  - .8 Engineering drawings for curved walls, submit shop drawings for curved walls
- .4 Test Results:
  - .1 Submit certified test results for each required fire resistance rated assembly for work covered by this Section

#### 1.4 Quality Assurance

- .1 Work for this Section shall be executed by a contractor (or subcontractor) having a minimum of 5 years experience in application of products, systems and assemblies specified and with approval and training of product manufacturers
- .2 Where welders are required for work covered by this Section, the welders shall be accredited by the Canadian Welding Bureau as per CSA W47.1/W47.1 S1- Suppl. 1
- .3 Fire resistance rating: where gypsum board systems with fire resistance ratings are indicated or required, provide materials and installations that are identical with those of applicable assemblies tested by fire testing laboratories acceptable to authorities having jurisdiction, as per ASTM E119-12a
- .4 Submit prior proof of qualifications, including proof of certifications
- .5 STC-rated (Sound Transmission Class) assemblies: Provide materials and construction identical to those assemblies tested according to ASTM E90 and classified according to ASTM E413 by a testing and inspection agency

## 1.5 Related York University Standards and Guidelines

- .1 Section 08 11 00 Metal Doors and Steel Frames
- .2 Section 08 14 00 Wood Doors and Wood Frames
- .3 Section 09 30 00 Ceramic Tile
- .4 Section 09 51 00 Acoustical Ceiling Tile
- .5 Section 09 68 00 Carpet Tiles and Rolled Carpet
- .6 Section 09 91 00 Painting
- .7 Section 10 22 00 Washroom Compartment
- .8 Section 12 48 16 Entrance Foot Grille
- .9 Section 12 56 00 Institutional Furniture
- .10 Section 09 29 00 Gypsum board, drywall and cement wall

## 1.6 Performance Standards References

- .1 Comply with latest iteration of the Ontario Building Code
- .2 Comply with all applicable ULC and CSA standards
- .3 ASTM C754-09 Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products
- .4 ASTM C840-11 Standard Specification for Application and Finishing of Gypsum Board
- .5 ASTM E90-09 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
- .6 ASTM C645-13 Standard Specification for Nonstructural Steel Framing Members
- .7 ASTM A641/A641M-09a Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire
- .8 ASTM E488 / E488M-10 Standard test Methods for Strength of Anchors in Concrete Elements
- .9 ASTM A463/A463M – 10 Standard Specification for Steel Sheet, Aluminum-Coated, by the Hot-Dip Process
- .10 ANSI B212.15-1994 Cutting Tools – Carbide-Tipped Masonry Drills for Carbide-Tipped Masonry Drills
- .11 CSA W47.1/W47.1 S1- Suppl. 1 Certification of Companies for Fusion Welding of Steel Structures, and Certification of Companies for Fusion Welding of Steel
- .12 ASTM E119-12a Standard Test Methods for Fire tests of Building Construction and Materials
- .13 ASTM C840-11 Standard Specification for Application and Finishing of Gypsum Board
- .14 ASTM E413-10 Classification for Rating Sound Insulation

- .15 ASTM C 1002-07 (2013) Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs
- .16 ASTM E 1190-11 Standard Test Methods for Strength of Power-Activated Fasteners installed in Structural Members
- .17 ASTM C754 Standard Specifications for Installation of Steel Framing members to receive Screw-Attached Gypsum Panel Products
- .18 CAN/ULC S-101-07 Standard Methods of Fire Endurance tests of Building Construction and Materials

## 1.7 System Description

- .1 Gypsum board shaft systems include special purpose assemblies of gypsum board and metal components designed for erection entirely from room side of shaft (except for application of finished layer on shaft side, where required to form an enclosure)
- .2 Structural Performance: Provide gypsum board shaft systems designed and tested by manufacturer to withstand lateral design loading (air pressure) of 48 kg/m<sup>2</sup> applied transiently and cyclically, for a maximum height of partitions required, within deflection of 1/240 of partition height and in stairways

## 1.8 Qualifications

- .1 The work covered by this Section shall be undertaken by skilled labour, and in accordance with known industry best practices and the instructions of the manufacturer of the products being used

## 1.9 Warranty (Standard Warranty and Extended Warranty)

- .1 Provide manufacturer's standard performance guarantees or warranties for all metal supports for gypsum board and cement board systems. Guarantee in writing for a minimum period of one year on all components and workmanship related to the work covered by this Section

## 1.10 Delivery, Handling and Storage

- .1 For large renovation projects<sup>1</sup> and all new construction:

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<sup>1</sup> Large renovation project, is a project with a minimum budget of \$1 million

- .1 Deliver materials in their original packages, containers and bundles bearing brand name and identification of manufacturer or supplier
- .2 Store materials inside under cover, keep materials dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes of possible damage
- .3 Stack panels flat on level supports off floor or slab to prevent sagging
- .4 Follow materials manufacturer's written instructions for storage and handling

#### 1.11 Environmental Conditions

- .1 Comply with ASTM C840 requirements or with gypsum and shaft wall systems manufacturer's written recommendations, whichever are more stringent
- .2 Maintain a uniform temperature around 10°C during the installation of gypsum board and between 13°C to 21°C for finishing work
- .3 Provide sufficient ventilation to eliminate excess humidity

## 2.0 PRODUCTS

### 2.1 Steel Framing:

- .1 Interior non load bearing channel stud framing - provide framing components that comply with ASTM C645 for material and sizes, unless otherwise indicated
- .2 Components shall be roll formed, of uniform thickness, electro-galvanized steel sheets. Unless otherwise indicated, provide service holes starting at 450 mm from bottom, then 914 mm on centre to tip studs
- .3 Interior floor and ceiling tracks (steel runners): shall comply with ASTM C645 in width to suit stud sizes. Metal thickness shall match studs
- .4 Steel Studs: Shall comply to ASTM C645, shaft wall studs shall have a the following minimum dimensions:
  - .1 thickness of steel studs at backer plate locations shall be 0.836 mm minimum base metal thickness
  - .2 thickness of steel studs at curved walls shall be 1.367 mm minimum base
- .4 For openings wider than 914 mm, provide 0.91 mm minimum thickness for header

- .1 J-track shall comply with the following requirements for minimum thickness of base (uncoated) metal and for depth:
  - .1 Thickness shall match steel studs
  - .2 Depth shall match steel studs
- .5 Runner fasteners
  - .1 to concrete and masonry: Use stud nails or power-drive fasteners
  - .2 to metal concrete inserts: use 10mm Type S-12 Pan Head screws
  - .3 to suspended ceilings: use prefinished clips to match ceiling grid
- .6 Bracing channels: shall be cold rolled galvanized steel
- .7 For non loadbearing steel framing: provide framing components which comply with ASTM C754, steel framing components must also comply with ASTM C645 for material thickness, stud type and size do not apply
- .8 Steel sheet components: provide components that comply with ASTM C645 requirements for metal, unless otherwise indicated
- .9 Provide metal framing components that comply with ASTM S653/A 653M for corrosion protection of steel framing
- .10 For Ceiling Support Materials and Systems:
  - .1 Size ceiling support components to comply with ASTM C754 unless otherwise indicated
  - .2 Main runners shall be steel channels, hot or cold rolled; G60 galvanized where used in washrooms, showers or other potentially wet areas, and outdoors
  - .3 Hanger Wire: Shall comply with ASTM A641/A641M-09a, soft, Class 1 galvanized, minimum 3.26 mm
  - .4 Size all devices to withstand (without failure) 5 times load imposed by completed systems as determined in accordance with ASTM E488-96
  - .5 Note that power actuated systems are not permitted
  - .6 Use only screws, clips, bolts, concrete inserts or other devices for ceiling area and hangers whose suitability for use intended has been proven through standard construction practices or by certified test data
  - .7 Ceiling hangers shall comply with ASTM C754 for maximum ceiling area and load to be supported
  - .8 Fasteners exposed to weather, condensation, and corrosion must be Zinc-plated or stainless steel fasteners
- .11 Tie wire: shall be minimum 1.02 mm Zinc coated, annealed

wire

## 2.2 Furring

- .1 Furring channels shall be 0.91 mm (20 gauge) minimum typical thickness, minimum 0.91 mm (20 gauge) at exterior soffits, cold rolled steel, wiped coated, unless otherwise specified acceptable typical dimensions are 22 mm depth X 35mm face, hat type with knurled face
- .2 Resilient furring channels, shall be RC-1 resilient channel type
- .3 Z-furring members: shall be manufacturer's standard screw type galvanized steel, z-shaped furring members: Z-furring members shall comply with ASTM A653/A653M, shall be G60 galvanized steel with 0.914 (20 gauge) minimum thickness of base metal, of depth indicated, designed for mechanical attachment of insulation board or blankets
- .4 Fasteners for furring members shall be of type and size recommended by furring manufacturer for substrate and application indicated

## 2.3 Auxiliary Materials

- .1 Provide auxiliary materials that comply with referenced product standards and gypsum board shaft-wall assembly manufacturer's written recommendations
- .2 Trim accessories: corner bead, edge trim, and control joints shall be of material and shape that comply with gypsum board shaft-wall assembly manufacturer's written recommendations for application
- .3 Use adhesives that have a low VOC content of 50 g/L or less
- .4 Steel Drill Screws, screws used in work covered by this Section shall comply with ASTM C 1002, unless otherwise indicated
- .5 Track Fasteners: Power-driven fasteners of size and material required to withstand loading conditions imposed on shaft-wall assemblies without exceeding allowable design stress of track, fasteners, or structural substrates in which anchors are embedded
- .6 Expansion Anchors, where these are deemed to be acceptable for use by the project's structural engineer:
  - .1 Expansion Anchors: Shall be fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 5 times design load, as determined by testing per ASTM E 488 conducted by a qualified testing agency
- .7 Power-Actuated Anchors, where these are deemed to be acceptable for use by the project's structural engineer:



- .1 Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with capacity to sustain, without failure a load equal to 10 times design load, as determined by testing per ASTM E 1190 conducted by a qualified testing agency
- .8 Backer plates:
  - .1 Metal backer plates shall be galvanized steel of minimum 150mm wide X 0.91 mm, 1.22 mm minimum lengths to suit size of items to be attached, fastened to studs for attachment of surface mounted fittings and accessories.
  - .2 Plywood backer plates: softwood plywood; 19 mm minimum X lengths suit size of items to be attached, fastened to studs for attachment of surface mounted fittings and accessories
  - .3 Elimination of backer plates or direct attachment of accessories or equipment to studs is not acceptable

#### 2.4 Sound Attenuation Blankets

- .1 Comply with ASTM C665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool
- .2 If assemblies are specified to be fire resistance rated then: Comply with mineral-fiber requirements of assembly
- .3 Acoustical sealant: use acoustical sealant as recommended by gypsum board shaft assembly system manufacturer to achieve the required acoustical seal

### 3.0 EXECUTION

#### 3.1 General Requirements

- .1 Comply with ASTM C745 and manufacturers' written instructions, except as modified herein
- .2 Do not bridge building expansion joints with supports system. Frame both sides of joints with furring and other supports as indicated
- .3 Install shaft wall assembly systems to comply with requirements of fire resistance-rated assemblies indicated
- .4 Install supplementary framing in gypsum board shaft wall assemblies around openings and as required for blocking,

- bracing, and support of gravity and pullout loads of fixtures, equipment, service, heavy trim, furnishings, and similar items that cannot be supported directly by shaft wall assembly framing
- .5 Where the project includes the installation of elevator(s):
    - .1 Fully detail elevator hoistway openings in shaft wall assemblies. Follow manufacturers' written recommendations for framing elevator hoistway entrance door opening
    - .2 At elevator hoistway entrance door frames, provide shaft wall jamb strut on each side of door frame
  - .6 Where the project requires handrails, then:
    - .1 Where handrails directly attach to gypsum board shaft wall assemblies, provide galvanized steel reinforcing strip (shop drawing shall provide minimum steel thickness)
  - .7 Where a fire-resistance is required by project drawings, or per Ontario Building Code requirements, provide assemblies with materials that comply with ASTM E119 and CAN/ULC S-101 as acceptable by local authorities having jurisdiction
  - .8 Allow tolerances for structural deflection, to prevent transmission of structural loads to studs
  - .9 Clean cut joints at junctions with existing surfaces or of dissimilar materials, Install a backer rod and seal with caulking
  - .10 Extend gypsum board (drywall) partitions to underside of structure and apply sealant where indicated
  - .11 At junctions with door frames and vision panels, perform work so that walls maintain uniform thickness
  - .12 Coordinate with other Sections for built-ins or surface mounted items, such as door frames, electrical panels, lighting fixtures, mechanical services, access panes, service panels, accessories, fire hose cabinets as well as for sealing against air and smoke passages. Provide adequate reinforcing and support for such items. Where required provide shop drawings illustrating details

### 3.2 Metal Stud and Furring Installation

- .1 Align partition tracks at floor and ceiling and secure at 600mm on centre maximum, or less to prevent cracking in pressurized areas
- .2 Studs should not be at more than 50mm from abutting walls, and at each side of openings and corners
- .3 Cross brace steel studs to provide rigid installation as required

- .4 Brace adequately those partitions that do not reach the underside of the structure, extending studs to the structure if necessary
- .5 Size framing systems according to manufacturer's engineered load tables, to meet allowable deflection without permanent deformation.
- .6 Erect metal studding plumb and level, to a tolerance of 1:1200
- .7 Attach studs to bottom tracks and horizontal bracing using screws. Do not attach studs permanently to top track where partitions are carried up to the underside of the structure, the steel deck or the concrete slab. Do not leave in place temporary attachments
- .8 Do not pierce the top of steel deck ribs at roof level
- .9 Provide Type ST. STD/RF/GV stiffeners at each row of studs at each 1220mm of height and at 150mm below the structure, or as required. Provide stiffeners, as indicated
- .10 Frame or furr openings 100mm X 100mm (4' x 4") or greater, and around access and service plates, on four sides. Extend framing or furring into reveals
- .11 Install appropriate galvanized backer plates fixed to three (3) studs, at 45°, at all corners of large openings, such as doors, vision panels, etc., to attach thereupon the boards and to avoid cracking
- .12 When partitions are carried to underside of structure, or where indicated, use 64mm or larger leg interlocking or simple tracks, or deflection tracks, as indicated. Provide clearance for deflections, minimum 20mm or as indicated
- .13 Provide two studs face-to-face, extending from floor to ceiling of structure, as indicated, at door jambs and all openings of great height and wider than regular stud spacing. Secure studs together, using column clips or other approved method of fastening placed alongside frame anchor clips
- .14 Wherever a fire-resistance is called for on drawings or as per code requirements, provide assemblies with materials that comply with OBC and with ASTM E119 and CAN/ULC-S101-07 and acceptable to the authorities having jurisdiction
- .15 Provide all necessary framing and furring to support gypsum board in accordance with manufacturer's specifications
- .16 Furr duct shafts, beams, columns, pipes and exposed services where indicated
- .17 Install electrical boxes staggered when specified on both sides of partitions. Install vapour proof electrical boxes and seal perimeter to make them air-tight in exterior walls and to improve acoustical efficiency of partitions walls

- .16 Shim furring as required to achieve required installation tolerances
- .17 Leave finished work rigid, secure, square, level, plumb, curved to detailed radius and erected to maintain finished gypsum board line dimensions and contours. Make allowances for thermal movement
- .18 Thermally separate metal studs from exterior concrete or masonry
- .19 Use resilient furring where indicated

### 3.3 Blocking

- .1 Attach to framing adequate galvanized steel backer plates to be secured between studs for the attachment of and to support the load of, and to withstand the withdrawal and shear forces imposed by, items installed upon the work of this Section. Items that require metal backing include, but are not restricted to:
  - .1 Coat hooks
  - .2 Fixture rims
  - .3 Doorstops
  - .4 Washroom and other types of accessories
  - .5 Mop brackets/shelving
  - .6 Handrail anchors
  - .7 Guards
  - .8 Fitments
  - .9 Cabinetry
  - .10 Shelving
  - .11 Finish hardware
  - .12 Wire closet and utility shelving
  - .13 Toilet partition wall attachment points
  - .14 Urinal screen wall attachment points
  - .15 Miscellaneous specialties
  - .16 Glazing accessories
  - .17 Sliding door hardware
  - .18 Projection screens
  - .19 other items as indicated

### 3.4 Suspended and Furred Ceilings and Bulkheads

- .1 Do not erect ceiling suspension system until work above ceiling has been reviewed and approved by the University's Consultants, specifically air diffusers, lighting fixtures, sprinkler heads, etc.,

- .2 Install work to tolerance of 1:1200
- .3 Arrange hangers for suspended gypsum board ceilings to provide support independent of walls, columns, pipes, ducts; erect plumb, and securely anchored to structural frame, or embed in concrete slabs
- .4 Erect hangers and runner channels for suspended gypsum board ceilings at 1220mm (4'0") maximum spacing and furring at 400mm (16"), in general, and at 305mm (12") spacing in rooms under high pressures, except if indicated otherwise. Run channels transversely to structural framing members. Install "T" grid as recommended by manufacturer
- .5 Keep lateral braces at 914 mm (36") on center, maximum and not more than 150mm (6") from boundary walls, interruptions of continuity, and changes in direction.
- .6 Where splices are necessary, lap members at least 200mm (8") and wire each end with 2 loops. Avoid clustering or lining up splices
- .7 Attach to rod hangers by bending hanger sharply under bottom flange of runner, and securely wiring in place with saddle tie
- .8 Secure furring channels to each support with purpose-made slips or wire tie. Splice joints by lapping channels and tying together
- .9 Level cross furring channels to maximum tolerances of 3mm in 3m (1/8" in 10')
- .10 Double the supporting elements, with independent suspension, at the ceiling control joints, leaving 12.7mm (1/2") space between them
- .11 Provide, in both directions, additional "T" or runner channels and ceiling suspension hangers around light fixtures, diffusers and other openings, within 152mm (6") of each corner, except otherwise indicated. Provide additional hangers for fixtures and equipment as per seismic resistance requirements
- .12 Unless otherwise indicated, frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers, grilles, and other openings, as required, and install all components supplied by others as indicated on drawings
- .13 Furr out or provide stud support for gypsum board faced vertical bulkheads within or at termination of ceilings
- .14 Frame above suspended ceilings for fire resistive gypsum board in fire-stopping assemblies, as indicated
- .15 Install perimeter reveal trims of suspended ceilings as specified and as indicated

### 3.5 Wall Furring

1. Install steel furring for braced walls, free standing walls, walls that are furred out as indicated
2. Frame openings and around built-in equipment, cabinets, access panels, on 4 sides, with channels. Extend furring into reveals.
3. Provide bulkheads and boxed-in duct shafts, for beams, columns, pipes and around exposed services where indicated. Install 19mm (3/4") channels at corners and at 305mm (12") on centre

### 3.6 Resilient Furring

- .1 Erect gypsum board resilient furring maximum 400mm (16") on centre and not more than 150mm (6") from ceiling/wall juncture. Secure to each support with 25mm (1") gypsum wallboard screw
- .2 Install 150mm (6") continuous strip of 12.7mm (1/2") gypsum board along base of partitions where resilient furring is installed
- .3 Provide resilient furring channel transverse to framing members, or as indicated

### 3.7 Metal Stud Partition Framing

- .1 Align accurately and lay out according to partition layout
- .2 Secure runners to concrete access flooring and to concrete slabs, as applicable, with screwed or shot fasteners located 50mm (2") from each end and spaced at maximum 610mm (24") on centre
- .3 At partition corners, extend one runner to end of corner and butt other runners to it; allowing necessary clearance for gypsum board thickness. Runners should not be mitred
- .4 Unless otherwise indicated, place interior studs vertically at centres as follows:
  - .1 Provide studs at 400mm (16") on centre, and as specially spaced in accordance with details indicated
  - .2 Provide studs not more than 50mm (2") from abutting walls, openings and each side of corners
  - .3 provide freedom for 19mm (3/4") deflection under beams, structural slabs and the like to avoid transmission of structural load to studs, or install 500mm (2") leg ceiling tracks
- .5 Install studs in tracks at floor and ceiling
- .6 Where horizontal runs of service lines are scheduled to be installed, arrange with applicable trades and install

- simultaneously with services
- .7 At openings in stud walls, erect track at head and sills to accommodate intermediate studs. At each end of track, cut out flanges, turn up web, and fasten to studs. Install intermediate studs above and below openings in same manner and spacing as wall studs. Install double studs at each jamb, and double tracks at head of door openings
  - .8 At partitions requiring fire rating, erect in accordance with requirements of listing
  - .9 Size studs, connections, and runners to carry loads according to stud manufacturer's load tables, at 24Kg/m<sup>2</sup> (5 lb/ft<sup>2</sup>) live load to meet maximum allowable deflection limits. Where depth of stud is indicated, size metal thickness to meet allowable deflection limits
  - .10 Provide three studs at corner and intermediate intersections of partitions
  - .11 Coordinate work with other trades installing horizontal runs of service lines so that work is done simultaneously. Where standard holes are too small for installed services, notch studs, and splice notched flanges with splice pieces 305mm (12") longer than notches, each fastened with 2 screws
  - .12 Provide metal studding to maximum tolerance of 3mm in 3m (1/8" in 10ft)
  - .13 Coordinate simultaneous erection of studs with installation of service lines. When erecting studs ensure web openings are aligned
  - .14 Coordinate erection of studs with installation of door/window frames and special supports or anchorage for work specified in other Sections
  - .15 Unless otherwise indicated, partitions, together with gypsum board facings, shall extend above ceilings to underside of structure above
  - .16 Maintain clearance to avoid transference of structural loads to studs
  - .17 Chase walls:
    - .1 Provide chase walls where indicated, consisting of two parallel steel stud partitions
    - .2 Provide cross bracing consisting of metal furring, located at quarter points on each pair of studs. Attach cross bracing to studs with metal screws. Coordinate construction of partitions to suit installation of services
  - .18 Lateral support bracing channels:
    - .1 Stiffen partitions over 3m (10') in vertical span, at mid-height to maximum vertical spacing of 2440mm (8') on centre, with at least one 19mm (3/4") horizontal

bracing channel, extending full length of partition, overlapping at least two stud spaces at ends of bracing channels

- .2 Stiffen at not more than 150mm (6") from the top and the bottom of openings and across two full stud spaces at each side of openings with horizontal bracing channel

### 3.8 Concrete Anchors

- .1 Provide anchorage points in reinforced concrete floor slab underside in accordance with gypsum board manufacturer's suspension requirements. Drill holes with carbide-tipped drill bits in accordance with ANSI B212.15-1994
- .2 Provide anchors; minimum installation depth, and method of expansion as recommended by anchorage manufacturer

### 3.9 Coordination

- .1 Coordinate simultaneous erection of studs with installation of service lines. When erecting studs, ensure web openings are lined up
- .2 Coordinate erection of studs with the installation of door and panel frames and specified supports or anchorage for work specified in other Sections, as well as wall mounted mechanical and electrical items

### 3.10 Cleaning

- .1 At completion of work covered by this Section remove all excess material, metal clippings, screws and any debris resulting from the work. Leave space clean.

**End of Section**