GENERAL NOTES:

- DESIGN CODE: NATIONAL BUILDING CODE OF CANADA – LATEST
  ALBERTA BUILDING CODE – LATEST

DESIGN LOADS:

ENVIROMENTAL LOADS	
SNOW	Ss = 1.8 kPa (37.4 psf) + DRIFT Sr = 0.1 kPa (2.1 psf)
RAIN (24HOUR)	1/50 = 95 mm (3.74") (SEE PONDING ON PLAN)
SEISMIC	Sa(0.2) = 0.12 Sa(0.5) = 0.06 Sa(1.0) = 0.02 Sa(2.0) = 0.01 PGA = 0.06 SITE CLASS D
WIND	q(1/50) = 0.45 kPa (9.36 psf) q(1/10) = 0.32 kPa (8.4 psf)

GENERAL

–THE CONTRACTOR SHALL OBTAIN WHATEVER FIELD DIMENSIONS ARE NECESSARY TO COMPLETE THE WORK CALLED FOR ON THE DRAWINGS. –DO NOT SCALE THE DRAWINGS.

–CHECK WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR OPENINGS, INSERTS AND EMBEDMENTS REQUIRED IN CONCRETE.

–VERIFY ALL DIMENSIONS, ELEVATIONS, AND SCOPES OF WORK WITH THE DRAWINGS PRIOR TO COMMENCING CONSTRUCTION.

–IF ANY UNSOUND STRUCTURAL CONDITIONS ARE CREATED OR OBSERVED DURING CONSTRUCTION, REPORT THEM IMMEDIATELY TO TRL & ASSOCIATES LTD.

–STRUCTURAL DRAWINGS SHOW THE COMPLETE STRUCTURE. THEY DO NOT SHOW COMPONENTS WHICH MAY BE NECESSARY FOR SAFETY DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR SAFETY ON AND ABOUT THE WORK SITE DURING CONSTRUCTION.

–THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY RELOCATION OF PIPES, CONDUITS, PIPE HANGERS, ETC., THAT INTERFACE WITH CARRYING OUT THIS WORK.

–THESE NOTES AND DRAWINGS ARE TO READ IN CONJUNCTION WITH ALL OTHER RELATED DOCUMENTS.

–CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY BRACING, SHORING OR STRENGTHENING AS REQUIRED DURING CONSTRUCTION.

CONCRETE NOTES:

GENERAL NOTES:

–ALL CONCRETE, REINFORCEMENT, ACCESSORIES AND PROCEDURES SHALL MEET OR EXCEED THE APPLICABLE CSA STANDARD FOR THAT PRODUCT. USE ONLY PRODUCTS SUITABLE FOR THE INTENDED FINAL USE AND CONDITIONS PREVALENT DURING CONSTRUCTION. PROTECT ALL MATERIALS FROM THE WEATHER DURING STORAGE AND INSTALLATION.

–CEMENT: PORTLAND CEMENT AS REQUIRED CONFORMING TO CSA A3001

–AGGREGATES: CLEAN, WELL-GRADED, UNCOATED SAND AND COARSE AGGREGATES FROM AN APPROVED SOURCE CONFORMING TO CAN/CSA–A23.1–M04.

–WATER: POTABLE FROM AN APPROVED MUNICIPAL SOURCE.

–ADMIXTURES: SHALL CONFORM WITH ASTM C260, 0494 OR C1017 AS APPLICABLE

–READY MIX CONCRETE: DESIGNED AND SUPPLIED BY THE SUPPLIER IN A QUALITY CONTROLLED PLANT CONFORMING TO CAN/CSA–A23.1–M04. UNLESS NOTED OTHERWISE, CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 25 MPa. SEE SCHEDULE THIS DRAWING FOR DETAILED REQUIREMENTS.

–CONCRETE EXPOSED TO FREEZE–THAW CONDITIONS SHALL MEET EXPOSURE CLASSIFICATION F–2, 25 MPa, MAXIMUM WATER/CEMENT RATIO 0.55, AIR CONTENT CATEGORY 2 AS SPECIFIED IN CAN/CSA–A23.1–M04, UNLESS NOTED OTHERWISE.

–CONCRETE EXPOSED TO DEICING CHEMICALS SHALL MEET EXPOSURE CLASSIFICATION C–2, 32 MPa, MAXIMUM WATER/CEMENT RATIO 0.45, AIR CONTENT CATEGORY 1 AS SPECIFIED IN CAN/CSA–A23.1–M04 UNLESS NOTED OTHERWISE.

–CONCRETE EXPOSED TO MULTIPLE EXPOSURE CONDITIONS SHALL MEET COMBINED EXPOSURE CLASSIFICATION REQUIREMENTS TO THE MOST SEVERE COMBINATION AS SPECIFIED IN CAN/CSA–A23.1–M04 UNLESS NOTED OTHERWISE.

–SLUMP SHALL BE WITHIN THE RANGE OF 50mm TO 100mm (2" TO 4"). GREATER SLUMPS SHALL NOT BE ACCEPTED UNLESS OTHERWISE SPECIFIED.

–PROVIDE AN APPROVED WATER REDUCING AGENT IN ALL CONCRETE MIX DESIGNS.

–USE OF FLYASH IS PERMITTED, WITH SUBSTITUTION TO LEVELS AS INDICATED IN THE SPECIFICATIONS. –CONTRACTOR TO USE APPROPRIATE MEASURES FOR CURING AND FINISHING

–PLACE CONCRETE AS A CONTINUOUS OPERATION STOPPING ONLY AT CONSTRUCTION JOINTS. CONSTRUCTION JOINTS SHALL BE ADEQUATELY DOWELLED AND KEYED. DETAILS AND LOCATIONS OF CONSTRUCTION JOINTS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER.

–ALL CONCRETE SHALL BE PLACED IN ITS FINAL POSITION WITHIN 2 HOURS OF ORIGINAL BATCHING.

–CONCRETE TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH CSA STANDARD CAN3–A23.2–M04 "METHODS OF TEST FOR CONCRETE" BY AN INDEPENDENT MATERIALS CONSULTANT, WITH REPORTS SUBMITTED TO THE STRUCTURAL ENGINEER.

–CURING PROCEDURES AND PROTECTION OF CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF CSA STANDARD CAN/CSA–A23.1–M04. NEW CONCRETE SHALL NOT BE ALLOWED TO FREEZE UNDER ANY CIRCUMSTANCES. THE CONTRACTOR SHALL PAY THE COSTS RELATED TO DAMAGE BY UNDER STRENGTH OR IMPROPERLY CURED CONCRETE.

REINFORCEMENT NOTES:

–ALL REINFORCING BARS SHALL BE MANUFACTURED AND MEET THE REQUIREMENTS OF CSA STANDARD G 30.18–M09, BILLET

–STEEL BARS FOR CONCRETE REINFORCEMENT.

–ALL REINFORCING BARS SHALL BE GRADE 400 MPa(60 ksi).

–EPOXY COATED REINFORCEMENT, WHERE SPECIFIED, SHALL BE MANUFACTURED, FABRICATED, STORED, HANDLED, AND INSTALLED IN STRICT ACCORDANCE WITH THE CSA STANDARDS AND INDUSTRY PRACTICE.

–SPLICES, BENDS, AND PLACEMENT SHALL CONFORM TO CAN/CSA–A23.1–M04 AND CAN3 A23.3–M04. REINFORCING SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH THE LATEST VERSION OF THE ACI DETAILING MANUAL. PROVIDE MATCHING CORNER BARS FOR ALL HORIZONTAL BARS AS DETAILED.

–ALL REINFORCING STEEL SHALL BE CHAIRED AND SECURELY TIED IN PLACE USING STANDARD TIES AND CHAIRS.

–ALL WELDED WIRE MESH SHALL BE MANUFACTURED AND MEET THE REQUIREMENTS OF CSA STANDARD G 30.5 WELDED STEEL WIRE FABRIC FOR CONCRETE REINFORCMENT.

–ALL WELDED WIRE MESH (WWM) SHALL BE SUPPLIED IN FLAT SHEETS. ALL WWM SHALL BE CHAIRED IN PLACE TO THE REQUIRED COVER AS SPECIFIED.

PILE FOUNDATIONS

GENERAL:

–ALL PILES SHALL BE DESIGNED BY THE PILING CONTRACTOR AND HIS PROFESSIONAL ENGINEER TO CARRY THE SPECIFIED LOADS INDICATED ON THE STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL UTILIZE THE INFORMATION CONTAINED IN THE SOILS REPORT IF AVAILABLE. IF NO REPORT IS AVAILABLE, THE PILES SHALL BE DESIGNED BASED ON ON THE CONTRACTORS OWN INVESTIGATIONS AND EXPERIENCE IN THIS AREA. THE FINDINGS OF THE SOILS REPORT, CONTRACTOR INVESTIGATIONS, AND ASSUMPTIONS SHALL BE VERIFIED ON AN ONGOING BASIS DURING THE PILE INSTALLATION. THE PILE DESIGNS SHALL BE REVISED TO CARRY THE SPECIFIED LOADS IF CONDITIONS VARY.

–THE PILING CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW BEARING THE SEAL OF A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OF ALBERTA. THE SHOP DRAWINGS SHALL INDICATE PILE CAPACITY AND REINFORCEMENT AS WELL AS PROPOSED LENGTHS AND CUT–OFFS. THE PILING CONTRACTOR SHALL PROVIDE A SEALED CERTIFICATE OF COMPLIANCE AFTER INSTALLATION.

–ALL CONCRETE SHALL FOLLOW THE CONCRETE SCHEDULE THIS DRAWING.

–ALL CONCRETE SHALL BE PLACED AS CLOSE TO ITS FINAL POSITION AS POSSIBLE TO PREVENT SEGREGATION OF THE MIX.

–SUPPLY AND PLACEMENT OF ALL TEMPORARY SHORING AND BRACING IS THE CONTRACTORS RESPONSIBILITY AND SHALL MEET ALL APPLICABLE STANDARDS AND LAWS.

–PILING CONTRACTOR TO DESIGN FOUNDATIONS AS A PROPRIETARY SYSTEM WITH ALLOWABLE SKIN FRICTION AND BEARING VALUES DETERMINED FROM A SOILS INVESTIGATION.

–ALL DISCREPANCIES IN DETAILS AND DIMENSIONS SHALL BE BROUGHT TO THE ATTENTION OF TRL & ASSOCIATES LTD. PRIOR TO COMMENCING RELATED WORK.

–THESE NOTES AND DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELATED DOCUMENTS.

–REFER TO THE SOILS REPORT PREPARED BY HAGSTROM GEOTECHNICAL SERVICES LTD. EDMONTON, ALBERTA DATED APRIL 2012 FILE # H0805–168

GRADE BEAMS:

–ALL CONCRETE SHALL FOLLOW THE CONCRETE SCHEDULE THIS DRAWING.

–LAP TOP BARS 36 BAR DIAMETERS AT MID SPANS AND BOTTOM BARS 12 BAR DIAMETERS AT PILE/PIER SUPPORT LOCATIONS. WHERE SPLICES ARE LOCATED WITHIN TENSION ZONES OF THE CONCRETE, PROVIDE "CLASS B" LAP SPLICES IN ACCORDANCE WITH CAN/CSA–A23.1.

–UNLESS SHOWN OTHERWISE, FOUNDATIONS SHALL BE BACKFILLED EVENLY ON BOTH SIDES TO PREVENT MOVEMENT. BACKFILL HEIGHTS SHALL NOT VARY BY MORE THAN 300mm (12 INCHES) FROM ONE SIDE TO THE OTHER. EXERCISE EXTREME CAUTION DURING BACK FILL OPERATIONS TO PREVENT DAMAGE TO THE CONCRETE.

–DEGRADABLE "STYROFOAM" TYPE VOID FORM WITH CASTILATED (TOOTHED) CONFIGURATION SHALL BE USED BELOW ALL GRADE BEAMS SUBJECTED TO FROST ACTION. VOID FORM IS FORMWORK.

FLOOR SLAB SUPPORTED ON GRADE NOTES:

–REMOVE ALL TOP SOIL, ORGANICS, FROZEN SOIL, WET AND/OR WEAK SOILS. REFER TO THE SOILS REPORT FOR AVERAGE DEPTHS OF POOR SOIL. PROOF ROLL SUB–GRADE TO FURTHER DETECT SOFT AREAS. NATIVE, UNDISTURBED SOILS SHALL BE COMPACTED TO A UNIFORM DRY DENSITY OF 95% STANDARD PROCTOR MAXIMUM DRY DENSITY.

–BACKFILL AS REQUIRED BY CONDITIONS WITH 75mm (3 INCH MINUS) PIT RUN GRAVEL OR OTHER PREVIOUSLY APPROVED SOIL. FINAL 150mm (6 INCHES) SHALL BE 25 mm (1 INCH MINUS) WELL GRADED CRUSHED GRAVEL MIX. BACKFILL SHALL BE COMPACTED TO A UNIFORM DRY DENSITY OF 98% STANDARD PROCTOR MAXIMUM DRY DENSITY, IN COMPACTED LAYERS NOT EXCEEDING 150mm (6 INCHES). BACKFILL DEPTHS EXCEEDING 1200mm (4 FEET) SHALL BE COMPACTED TO A UNIFORM DRY DENSITY OF 100% STANDARD PROCTOR MAXIMUM DRY DENSITY, IN COMPACTED LAYERS NOT EXCEEDING 150mm (6 INCHES).

–ALL OF THE ABOVE SHALL BE REVIEWED BY AN APPROVED SOILS TESTING FIRM INCLUDING ALL LIFTS OF BACKFILLING AT THE OWNERS COST.

–REINFORCEMENT SHALL BE CHAIRED OFF THE SUB GRADE PRIOR TO PLACING CONCRETE. PRE–MOISTEN THE GRAVEL PRIOR TO PLACING CONCRETE IF NO VAPOUR BARRIER IS REQUIRED.

–CONCRETE SHALL BE PLACED, SCREEDED AND FLOATED TO ENSURE A WELL COMPACTED, VOID FREE SLAB. THE FLOOR FINISH TOLERANCE SHALL BE CLASSIFIED AS "CONVENTIONAL" [WITHIN 12mm OF A 3 METER (0.5 INCH OF A 10 FOOT) STRAIGHT EDGE] IN ACCORDANCE WITH CAN/CSA–A23.1–M04.

–FINISH SHALL BE IN ACCORDANCE WITH CSA STANDARDS AND AS SPECIFIED ON THE DRAWINGS.

–FOR SUMPS AND UNDER SLAB WEEPING TILE REQUIREMENTS REFER TO MECHANICAL DRAWINGS AND GEOTECHNICAL REPORT

FORMWORK AND FALSEWORK

– FABRICATE AND ERECT FORM WORK IN ACCORDANCE WITH CAN/CSA–S269.3 TO PRODUCE FINISHED CONCRETE CONFORMING TO SHAPE, DIMENSIONS, LOCATIONS AND LEVELS INDICATED WITHIN TOLERANCES REQUIRED BY CAN/CSA–A23.1.

– CLEAN FORMWORK IN ACCORDANCE WITH CAN/CSA–A23.1, BEFORE PLACING CONCRETE.

– PREPARE ENGINEERED SEALED SHOP DRAWINGS FOR ALL FORMWORK AND FALSEWORK. DRAWINGS TO BE SEALED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OF ALBERTA.

– UNLESS OTHERWISE NOTED LEAVE FORMWORK IN PLACE FOR THE FOLLOWING MINIMUM PERIODS OF TIME AFTER PLACING CONCRETE

– WALLS	7 DAYS
– COLUMNS	1 DAY
– STRUCTURAL BEAMS AND SLABS	7 DAYS OR THREE DAYS WHEN REPLACED BY ADEQUATE RESHORING
– FOOTINGS AND ABUTMENTS	3 DAYS

– REMOVE FORMWORK WHEN THE CONCRETE HAS ACHIEVED 80% OF ITS DESIGN STRENGTH OR MINIMUM PERIODS NOTED ABOVE, WHICHEVER COMES LATER AND REPLACE IMMEDIATELY WITH ADEQUATE RESHORING.

– RESHORING TO REMAIN IN PLACE UNTIL CONCRETE HAS ACHIEVED FULL 28 DAY DESIGN STRENGTH AS VERIFIED BY CONCRETE TEST IN ACCORDANCE WITH A23.1

– PROVIDE ALL NECESSARY RESHORING OF MEMBERS WHERE EARLY REMOVAL OF FORMS MAY BE REQUIRED OF WHERE MEMBERS MAY BE SUBJECTED TO ADDITIONAL LOADS DURING CONSTRUCTION AS REQUIRED.

– SPACE RESHORING IN EACH PRINCIPAL DIRECTION AT NOT MORE THAN 3000 mm APART.

– RE–USE FORMWORK AND FALSEWORK SUBJECT TO REQUIREMENTS OF CAN/CSA–A23.1.

STRUCTURAL STEEL NOTES:

GENERAL:

–ALL STRUCTURAL STEEL, MISCELLANEOUS STEEL, ACCESSORIES AND PROCEDURES SHALL MEET OR EXCEED THE APPLICABLE CSA STANDARD FOR THAT PRODUCT. USE ONLY PRODUCTS SUITABLE FOR THE INTENDED FINAL USE AND CONDITIONS PREVALENT DURING CONSTRUCTION. PROTECT ALL MATERIALS FROM THE WEATHER DURING STORAGE AND INSTALLATION.

–DESIGN, DETAIL, AND FABRICATE ALL CONNECTIONS IN A QUALITY CONTROLLED SHOP TO CISC HANDBOOK OF STEEL CONSTRUCTION. UNLESS OTHERWISE INDICATED ON THE DRAWINGS CONNECTIONS ARE TO BE DESIGNED FOR 50% OF THE FACTORED SHEAR CAPACITY OF THE MEMBER, WITH A MINIMUM CONNECTION OF TWO BOLTS. SHOP DRAWINGS BEARING THE STAMP OF A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OF ALBERTA ARE TO BE SUBMITTED FOR THE DESIGN OF ALL CONNECTIONS.

–PAINTING: ONE COAT SHOP PRIMER TO CISC/CPMA STANDARD 1–73A–COLOR AS PER ARCH.

–STRUCTURAL STEEL: STEEL SECTIONS W,5 & WT CONFORMING TO CSA G40–20 AND CSA–G40.21, GRADE 350W OR ASTM A992 & A572 GRADE 50.

–STRUCTURAL STEEL: HOLLOW STRUCTURAL SECTIONS CONFORMING TO CAN3–G40.20–M81 AND CAN3–G40.21–M81, GRADE 350W.

–STRUCTURAL STEEL: STEEL PIPE SECTIONS CONFORMING TO ASTM A36

–STRUCTURAL STEEL PLATES, RODS, ANGLES & CHANNEL SHAPES SHALL CONFORM TO CSA G40.20–04 & CSA G40.21–04

–ANCHOR RODS: ANCHOR RODS, NUTS AND WASHERS CONFORMING TO ASTM F1554 (HOT DIPPED GALVANIZED WHERE SPECIFIED ON DRAWINGS).

–STRUCTURAL BOLTS: STRUCTURAL BOLTS, NUTS AND WASHERS CONFORMING TO ASTM A325.

–BOLLARDS: PIPE BOLLARDS FABRICATED FROM STANDARD WALL PIPE OR HSS QUALITY STEEL WITH A MINIMUM WALL THICKNESS OF 6.35 mm (0.25 INCH) (HOT DIPPED GALVANIZED WHERE SPECIFIED ON DRAWINGS).

–WELDING: WELDING, MATERIALS AND PROCEDURES CONFORMING TO CSA–W59–1982. ALL WELDING TO BE PERFORMED BY CERTIFIED WELDERS. A COPY OF CERTIFICATE SHALL BE FORWARDED TO TRL & ASSOCIATES LTD. AT THE START OF THE PROJECT WITH THE SHOP DRAWINGS AND AT THE START OF FIELD ERECTION FOR FIELD WELDING

–GALVANIZING: HOT DIPPED GALVANIZING CONFORMING TO CSA–G164–M1981, 2 MINIMUM 600 g/m.

EXECUTION:

–FABRICATE AND ERECT STEEL IN ACCORDANCE WITH CSA S16.1.

–DO NOT FIELD CUT MEMBERS WITHOUT WRITTEN PERMISSION FROM TRL & ASSOCIATES LTD.

–REPAIR ALL DAMAGE TO GALVANIZED FINISHES USING GALVALOY.

STRUCTURAL FIELD REVIEW:

–THE CONTRACTOR SHALL COOPERATE WITH ALL TESTING, INSPECTION AND QUALITY CONTROL PERSONNEL REQUIRED ON THE SITE AND WILL PROVIDE CASUAL LABOUR FORCES AS REQUIRED TO ASSIST IN ALL THE FIELD REVIEW PROCEDURES. THE CONTRACTOR SHALL GIVE REASONABLE NOTICE TO THESE AGENCIES PRIOR TO REQUIRING THEIR SERVICES.

–ALL REINFORCEMENT SHALL BE REVIEWED IN PLACE PRIOR TO PLACING THE CONCRETE BY TRL & ASSOCIATES LTD. ALL REINFORCEMENT SHALL BE IN PLACE AND SECURED AT THE TIME OF THE REVIEW. PROVIDE 24 HOURS NOTICE PRIOR TO POURS.

MATERIALS

–STEEL COATINGS TO A 591 –– STEEL SHEET, COLD–ROLLED, ELECTROLYTIC ZINC–COATED.

–STEEL TO CAN3–S136 AND SHALL BE IDENTIFIED AS TO SPECIFICATION, TYPE, GRADE AND MECHANICAL PROPERTIES.

OPEN WEB STEEL JOISTS AND STEEL DECKING:

–OWSJ SUPPLIER SHALL DESIGN THE JOISTS USING THE SELF WEIGHT OF THE STRUCTURE PLUS THE LIVE LOADS INDICATED PLUS MECH. UNIT LOADS INDICATED ON THE DWGS. THE NOMINAL SPACING AND DEPTH INDICATED ON THE DRAWINGS SHALL BE MAINTAINED. INDUSTRY STANDARD WEB CONFIGURATIONS SHALL BE USED TO ALLOW DUCTWORK TO PASS.

–ROOF JOISTS SHALL BE DESIGNED FOR SECOND ORDER DEFLECTIONS DUE TO ROOF PONDING

–FLOOR JOISTS SHALL BE DESIGNED WITH A MAXIMUM LIVE LOAD DEFLECTION OF L/480. CAMBER ALL JOISTS FOR FULL DEAD LOAD

–ROOF JOISTS SHALL BE DESIGNED WITH A MAX. LIVE LOAD DEFLECTION OF L/360. CAMBER JOISTS FOR 50% LIVE LOAD AND 100% OF DEAD LOAD

–ALL JOISTS MARKED TJ (TIED JOIST) SHALL INCLUDE AN EXTENDED BOTTOM CHORD AND A CONNECTION TO THE ADJACENT COLUMN OR WALL.

–THE JOIST SUPPLIER SHALL SUBMIT ALBERTA ENGINEER SEALED SHOP DRAWINGS PRIOR TO FABRICATION.

–SUPPLY AND INSTALL AN L 75 x 75 x 6 (3" x 3" x 1/4") FRAME FOR ALL OPENINGS IN DECKING.

–SUPPLY AND INSTALL A C150 x 12 (C6 x 8.2) FRAME AT ALL MECHANICAL UNITS THAT ARE SUPPORTED BY OR HUNG FROM THE DECK OR JOISTS. REFER TO FRAMING ON THIS DRAWING.

–PAINTING: ONE COAT SHOP PRIMER TO CISC/CPMA STANDARD 1–73A–COLOR AS PER ARCH.

–ALL DECK MATERIAL AND INSTALLATION SHALL CONFORM TO THE CANADIAN SHEET METAL BUILDING INSTITUTE CODE OF PRACTICE, INCLUDING THE USE OF WELDERS CERTIFIED FOR THE TYPE OF WORK.

–ALL DECKING SHALL BE WELDED TO THE STRUCTURAL STEEL AT A MINIMUM OF 300 mm.(12") CENTRES AND BUTTON PUNCHED AT 450 mm (18") CENTRES, EXCEPT AS SHOWN ON THE DRAWINGS.

–UNLESS OTHERWISE SPECIFIED, ALL DECKING SHALL BE: ROOF 38 mm x 0.76 mm (1.5" x 22 GAUGE) RD 938 AS MANUFACTURED BY VIC WEST OR EQUIVALENT, WITH A ZF075 (WIPE COAT) ZINC COATING. FLOOR 38 mm x 0.76mm (1.5" x 22 GAUGE) HB938 AS MANUFACTURED BY VIC WEST OR EQUIVALENT WITH A 2F075 (WIPE COAT) ZINC COATING.

EXECUTION:

–FABRICATE AND ERECT STEEL IN ACCORDANCE WITH CSA S16.1.

–DO NOT FIELD CUT MEMBERS WITHOUT WRITTEN PERMISSION FROM TRL & ASSOCIATES LTD.

–REPAIR ALL DAMAGE TO GALVANIZED FINISHES USING GALVALOY.

STEEL STUDS:

GENERAL:

–STEEL STUD STEEL FRAMING INCLUDES WIND BEARING STUDS, AXIAL LOAD BEARING STUDS, FLOOR JOISTS, CEILING JOISTS, ROOF JOISTS, BULKHEADS AND ROOF RAFTERS.

–UNLESS NOTED OTHERWISE ON DRAWINGS STUD SUPPLIER TO PROVIDE MIN. 16mm DEFLECTION TRACK BELOW ALL STRUCTURE FOR PARTITION WALLS AND WIND BEARING STUDS. –IN ACCORDANCE WITH CAN3–S136.

–CONFORM TO THE REQUIREMENTS OF SPECIFIED FIRE RATED ASSEMBLIES.

–DESIGN BRIDGING TO PREVENT MEMBER ROTATION AND MEMBER TRANSLATION PERPENDICULAR TO THE MINOR AXIS. PROVIDE FOR SECONDARY STRESS EFFECTS DUE TO TORSION BETWEEN LINES OF BRIDGING.

–MAXIMUM DEFLECTIONS UNDER SPECIFIED LOADS SHALL CONFORM TO THE FOLLOWING:

1. LIVE LOAD DEFLECTIONS OF WALL STUDS SUPPORTING MATERIALS SUSCEPTIBLE TO CRACKING (EG. MASONRY VENEER L/720. WALL STUDS SUPPORTING ALL OTHER MATERIALS L/360 (EG. METAL CLADDING, MANUFACTURED VENEERS).
2. FLOOR JOISTS L/360.
3. ROOF JOISTS AND RAFTERS L/360.
4. BUILDING SWAY DUE TO ALL EFFECTS 1/400 OF BUILDING HEIGHT OR 1/500 OF STOREY HEIGHT.

–THE SPACING OF MEMBERS SHALL NOT EXCEED THE FOLLOWING:

WALL STUDS	400mm (16") O/C
FLOOR JOISTS	400mm (16") O/C
CEILING JOISTS	600mm (24") O/C
ROOF JOISTS	600mm (24") O/C
ROOF RAFTERS	600mm (24") O/C

–WIND BEARING METAL STUDS.

–WIND BEARING METAL STUDS SHALL CONFORM TO THE MINIMUM SIZES AND SPACINGS DEFINED IN THE SCHEDULE BELOW, UNLESS NOTED OTHERWISE.

(A) WIND BEARING WALL STUDS SUPPORTING MATERIALS OTHER THAN BRICK MASONRY VENEER

SUPPORTING MATERIALS OTHER THAN MASONRY SPAN (ft)	SIZE	SPACING	LIVE LOAD DEFLECTION
0–5750	800S162–43	400 o.c.	L/360
5750–6200	800S162–43	300 o.c.	L/360

–CONNECTIONS BETWEEN LIGHTWEIGHT STEEL FRAMING MEMBERS SHALL BE BY BOLTS, WELDING OR SHEET METAL SCREWS. RESISTANCES FOR SHEET METAL SCREWS SHALL BE BASED ON THE MANUFACTURER'S LOWER BOUND TEST VALUES MULTIPLIED BY THE APPROPRIATE RESISTANCE FACTOR, AS GIVEN IN CAN3–S136 M.

–SUBMIT SHOP DRAWINGS BEARING THE STAMP AND SIGNATURE OF A QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ALBERTA. INCLUDE ALL NECESSARY SHOP DETAILS AND ERECTION DIAGRAMS. INDICATE MEMBER SIZES, LOCATIONS, THICKNESS EXCLUSIVE OF COATING, COATINGS AND MATERIALS. INCLUDE CONNECTION DETAILS FOR ATTACHING FRAMING TO ITSELF AND FOR ATTACHMENT TO THE STRUCTURE. SHOW SPLICE DETAILS WHERE PERMITTED. INDICATE DESIGN LOADS.

EXECUTION

–WELDS SHALL CONFORM TO CSA W59 AND/OR ANSI/AWS D1.3, WHICHEVER IS APPLICABLE. TOUCH–UP WELDS WITH ZINC RICH PAINT.

–SCREWS – PENETRATION BEYOND JOINED MATERIALS SHALL BE NOT LESS THAN 3 EXPOSED THREADS.

–LIGHTWEIGHT STEEL FRAMING SHALL BE ERECTED TRUE AND PLUMB WITHIN THE SPECIFIED TOLERANCES.

–ERECTION TOLERANCES IN ACCORDANCE WITH CSSBI 50M.

–CUTTING OF MEMBERS MAY BE BY SAW OR SHEAR. TORCH CUTTING IS NOT PERMITTED.

–SPLICING OF AXIAL LOAD BEARING MEMBERS IS NOT PERMITTED.

HOLLOW CORE PRECAST/PRESTRESSED CONCRETE

1.0 GENERAL

1.1 DESCRIPTION
.1 THE GENERAL CONDITIONS OF THE CONTRACT AND SUPPLEMENTARY GENERAL CONDITIONS APPLY TO THIS DIVISION, EXCEPT AS QUALIFIED HEREIN AND/OR EXCLUDED.
.2 REFER TO THE DRAWINGS AND SPECIFICATIONS.
1.2 RELATED WORK
.1 CAST–IN–PLACE CONCRETE: SECTION 03300
(1) DRYPACKING OF GAP BETWEEN PRECAST/PRESTRESSED SLABS AT ALL LOCATIONS WHERE LOAD BEARING WALLS ARE PARALLEL TO LENGTH OF SLAB.
(2) PERIMETER CAULKING.
(3) ELECTRICAL HOLES.
(4) CONCRETE TOPPING (MINIMUM 37 MM [1 1/2"])
1.3 REFERENCE STANDARDS
.1 DO PRECAST/PRESTRESSED CONCRETE WORK IN ACCORDANCE WITH CSA A23.4 AND CSA A23.3.
.2 DO WELDING IN ACCORDANCE WITH CSA W59 FOR WELDING TO STEEL STRUCTURES AND CSA W186 FOR WELDING REINFORCEMENT.
1.4 QUALIFICATIONS OF MANUFACTURER
.1 FABRICATE PRECAST/PRESTRESSED CONCRETE ELEMENTS CERTIFIED BY THE CANADIAN STANDARDS ASSOCIATION IN THE APPROPRIATE CATEGORY(IES) ACCORDING TO CSA STANDARD A23.4–00 "PRECAST CONCRETE – MATERIALS AND CONSTRUCTION". THE PRECAST CONCRETE MANUFACTURER SHALL BE CERTIFIED IN ACCORDANCE WITH THE CSA CERTIFICATION PROGRAM FOR STRUCTURAL PRECAST/PRESTRESSED CONCRETE PRIOR TO SUBMITTING A TENDER AND MUST SPECIFICALLY VERIFY AS PART OF HIS TENDER THAT HE IS CURRENTLY CERTIFIED IN THE APPROPRIATE CATEGORY(IES):
(A) PRECAST CONCRETE PRODUCTS – ARCHITECTURAL
(I) NON–PRESTRESSED OR (II) PRESTRESSED
(B) PRECAST CONCRETE PRODUCTS – STRUCTURAL
(I) NON–PRESTRESSED OR (II) PRESTRESSED
(C) PRECAST CONCRETE PRODUCTS – SPECIALTY
(I) NON–PRESTRESSED OR (II) PRESTRESSED
ONLY PRECAST CONCRETE ELEMENTS FABRICATED BY CERTIFIED MANUFACTURERS ARE ACCEPTABLE TO THE OWNER. CERTIFICATION MUST BE MAINTAINED FOR THE DURATION OF THE FABRICATION AND ERECTION FOR THE PROJECT. FABRICATE PRECAST CONCRETE ELEMENTS IN ACCORDANCE WITH ALBERTA BUILDING CODE REQUIREMENTS.
.2 THE PRECAST CONCRETE MANUFACTURER SHALL BE A MEMBER IN GOOD STANDING WITH THE CANADIAN PRECAST/PRESTRESSED CONCRETE INSTITUTE (CPCI) AND HAVE A PROVEN RECORD AND SATISFACTORY EXPERIENCE IN THE DESIGN, MANUFACTURE AND ERECTION OF PRECAST CONCRETE FACING UNITS OF THE TYPE SPECIFIED. THE COMPANY SHALL HAVE ADEQUATE FINANCING, EQUIPMENT, PLANT AND SKILLED PERSONNEL TO DETAIL, FABRICATE AND ERECT THE WORK OF THIS SECTION AS REQUIRED BY THE SPECIFICATION AND DRAWINGS. THE SIZE OF THE PLANT SHALL BE ADEQUATE TO MAINTAIN THE REQUIRED DELIVERY SCHEDULE.
1.5 DESIGN CRITERIA
.1 DESIGN PRECAST/PRESTRESSED CONCRETE UNITS TO CSA A23.3 AND TO CARRY HANDLING STRESSES.
.2 DESIGN LOADS IN ACCORDANCE WITH APPLICABLE CODES FOR USE AND OCCUPANCY, WIND, TEMPERATURE, AND EARTHQUAKE.
.3 CONSIDER VIBRATION CHARACTERISTICS IN ACCORDANCE WITH NBC.
.4 DESIGN PRESTRESSED UNITS TO MEET ONE (1) OR TWO (2) HOUR FIRE RESISTANCE RATING
1.6 SOURCE QUALITY CONTROL
.1 UPON REQUEST, PROVIDE ENGINEER WITH CERTIFIED COPIES OF QUALITY CONTROL TESTS AND INSPECTION RELATED TO PROJECT AS SPECIFIED IN CSA A23.4 AND CSA G279.
.2 INSPECTION OF PRESTRESSED CONCRETE TENDONS IS REQUIRED IN ACCORDANCE WITH CSA G279.
.3 UPON REQUEST, PROVIDE ENGINEER WITH CERTIFIED COPY OF MILL TEST REPORT OF REINFORCING STEEL SUPPLIED, SHOWING PHYSICAL AND CHEMICAL ANALYSIS.
1.7 SHOP DRAWINGS
.1 SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH SECTION 01340 SHOP DRAWINGS, PRODUCT DATA.
.2 SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH CSA A23.4 AND CSA A23.3. UPON REQUEST, THE FOLLOWING ITEMS SHALL BE PROVIDED:
.1 DESIGN CALCULATIONS FOR ITEMS DESIGNED BY THE MANUFACTURER
.2 ESTIMATED CAMBER
.3 FINISHING SCHEDULES
.4 METHODS OF HANDLING AND ERECTION
.5 OPENINGS, INSERTS AND RELATED REINFORCEMENT
.6 EACH DRAWING SUBMITTED TO BEAR STAMP OF QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ALBERTA
1.8 WARRANTY
.1 THIS CONTRACTOR HEREBY WARRANTS THAT THE PRECAST/PRESTRESSED ELEMENTS WILL NOT SPALL OR SHOW VISIBLE EVIDENCE OF CRACKING, EXCEPT FOR NORMAL HAIRLINE SHRINKAGE CRACKS, IN ACCORDANCE WITH THE GENERAL CONDITIONS WARRANTY CLAUSE, FOR A ONE–YEAR PERIOD.

2.0 PRODUCTS

2.1 MATERIALS
.1 CEMENT, AGGREGATES, WATER, ADMIXTURES: TO CSA A23.4 AND CSA A23.1.
.2 PRESTRESSING STEEL: UNCOATED 7 WIRE CABLE CONFORMING TO CSA G279.
.3 REINFORCING STEEL: TO CSA G30.18.
.4 ANCHORAGES AND COUPLINGS: TO CSA A23.1.
.5 EMBEDDED STEEL: TO CSA G40.21, TYPE M300W
.6 WELDING MATERIALS: TO CSA W48.1.
.7 BEARING PADS: 3MM MASONITE SMOOTH ONE SIDE.
.8 INSULATION: EXPANDED POLYSTYRENE TO CAN/CGSB–51–20.
.9 AIR ENTRAINMENT ADMIXTURES: TO CSA A266.1.
.10 CHEMICAL ADMIXTURES: TO CSA A266.2.
2.2 CONCRETE MIXES
.1 USE CONCRETE MIX DESIGNED TO PRODUCE 41 MPA (6000 PSI) COMPRESSIVE STRENGTH AT 28 DAYS WITH A MAXIMUM WATER/CEMENT RATIO TO CSA A23.1, TABLE 7 FOR CLASS D EXPOSURE.
.2 AIR ENTRAINMENT OF CONCRETE MIX: TO CSA A266.4.
.3 ADMIXTURES: TO CSA A266.4, CSA A266.5.
.4 DO NOT USE CALCIUM CHLORIDE OR PRODUCTS CONTAINING CALCIUM CHLORIDE.
2.3 GROUT MIX
.1 CEMENT GROUT: ONE–PART TYPE 10 PORTLAND CEMENT 2 1/2 PARTS SAND, SUFFICIENT WATER FOR PLACEMENT AND HYDRATION.
2.4 MANUFACTURE
.1 MANUFACTURE UNITS IN ACCORDANCE WITH CSA A23.4.
.2 MARK EACH PRECAST UNIT TO CORRESPOND TO THE IDENTIFICATION MARK ON SHOP DRAWINGS FOR LOCATION ON A PART OF UNIT WHICH WILL NOT BE EXPOSED.
.3 PROVIDE HARDWARE SUITABLE FOR HANDLING ELEMENTS.
.4 PROVIDE 50MM (2") THICK INSULATION PLUG AT EACH CELL END OF HOLLOW CORE AT EXTERIOR [OPTIONAL].

3.0 EXECUTION

3.1 ERECTION
.1 ERECT ELEMENTS WITHIN THE ALLOWABLE TOLERANCES

INDICATED OR SPECIFIED.
.2 ERECTION TOLERANCES TO BE NON–CUMULATIVE IN ACCORDANCE WITH CSA A23.4, SECTION 10.
.3 INSTALL 3MM MASONITE BEARING PADS, SMOOTH SIDE UP WHEN BEARING ON CONCRETE OR MASONRY SUPPORTS.
.4 SET UNITS IN A TIGHT, LEVEL POSITION ON TRUE LEVEL BEARING SURFACE PROVIDED BY OTHERS. MINIMUM BEARING 90MM (3 1/2") ON MASONRY AND 75MM (3") ON STRUCTURAL STEEL.
.5 FASTEN PRECAST/PRESTRESSED UNITS IN PLACE AS INDICATED ON REVIEWED SHOP DRAWINGS.
.6 LEVEL DIFFERENTIAL ELEVATION OF HORIZONTAL JOINTS WITH GROUT TO SLOPE NOT MORE THAN 1:12.
.7 CLEAN FIELD WELDS WITH A WIRE BRUSH AND TOUCH UP WITH PRIMER.
.8 FIELD CUT HOLES AND OPENINGS UP TO 150MM (6") DIAMETER FOR MECHANICAL TRADES. OPENINGS LARGER THAN 150MM (6") TO BE LOCATED ON SHOP DRAWINGS AT TIME OF APPROVAL TO BE FORMED IN THE PLANT OR CUT IN FIELD. DO NOT CUT REINFORCING WITHOUT PRIOR APPROVAL OF THE PRECAST HOLLOW CORE SLAB MANUFACTURER AND THE ENGINEER.
3.2 TOPPING
.1 THIS CONTRACTOR SHALL PROVIDE A SUITABLE TOP FINISH TO ACCEPT DIRECT APPLICATION OF FINISHED FLOORING/ROOFING AS PER ROOM FINISH SCHEDULE.
.2 WHERE CONCRETE TOPPING (MINIMUM 37MM [1 1/2"]) IS TO BE APPLIED BY OTHERS, REFER TO THE APPROPRIATE SPECIFICATIONS. THE TOP SURFACE OF THE PRECAST/PRESTRESSED SLABS IS TO BE RAKED (ROUGHENED) FOR BONDING OF THE TOPPING.
3.3 EXPOSED CEILINGS
.1 CAULK EXPOSED CEILING LONGITUDINAL JOINTS, USING STANDARD CAULKING.
.2 THE UNDERSIDE OF PRECAST SHALL BE FINISHED AS PER CSA A23.4 (CLAUSE 24.2.2) STANDARD FINISH.
3.4 CLEAN–UP
.1 UPON COMPLETION OF THE WORK OF THIS SECTION, ALL SURPLUS MATERIAL AND DEBRIS SHALL BE REMOVED FROM THE SITE.

MASONRY NOTES:

– ALL MASONRY UNITS, GROUT, MORTAR, REINFORCEMENT, ACCESSORIES AND PROCEDURES SHALL MEET OR EXCEED THE APPLICABLE CSA STANDARD FOR THAT PRODUCT. USE ONLY PRODUCTS SUITABLE FOR THE INTENDED FINAL USE AND CONDITIONS PREVALENT DURING CONSTRUCTION. PROTECT ALL MATERIALS FROM THE WEATHER DURING STORAGE AND INSTALLATION.

MATERIALS:

– CLAY BRICK UNITS SHALL MEET CSA STANDARDS, CSA A82.1–M87

– CONCRETE BLOCK UNITS SHALL MEET CSA A165.1–04 MINIMUM 15MPa.

– MORTAR, MORTAR PRODUCTS, GROUT AND REINFORCEMENT SHALL MEET APPLICABLE CSA STANDARDS AND ALBERTA BUILDING CODE REQUIREMENTS. UNLESS NOTED OTHERWISE, MORTAR SHALL BE TYPE S.

CONSTRUCTION:

– ALL CONSTRUCTION AND ASSEMBLIES OF MASONRY SHALL CONFORM TO THE REQUIREMENTS OF THE CSA STANDARDS AND THE ALBERTA BUILDING CODE.

– EVERY SECOND COURSE (400 mm (16 INCH)) SHALL BE REINFORCED WITH A MINIMUM OF 9 GAUGE LADDER TYPE REINFORCEMENT.
– PROVIDE BLOCK WALL CONTROL JOINTS A MAXIMUM OF 12 METERS APART IN LOCATIONS REVIEWED BY THE OWNERS REPRESENTATIVE. PROVIDE A MINIMUM OF ONE VOID COREFILL EACH SIDE WITH 2 – 15M VERTICAL REINFORCEMENT. CAULK EACH JOINT WITH A FLEXIBLE CAULK DESIGNED FOR THIS PURPOSE INSIDE AND OUT.
– EXTEND ALL COREFILLS AND VERTICAL REINFORCEMENT CONTINUOUSLY FROM FOUNDATION TO TOP OF PARAPET. COREFILLS SHALL BE CAST IN A MAXIMUM OF 1200 mm. (4 FOOT) LIFTS. LAP REINFORCING A MINIMUM OF 600 mm. (24 INCHES).
– PROVIDE A SINGLE COURSE BOND BEAM C/W 2 – 15M REBAR BOTTOM CONTINUOUS AROUND THE TOP OF ALL WALLS AND AT EACH FLOOR LEVEL.
– PROVIDE A 1 COURSE LINTEL ABOVE ALL MAN DOORS LESS THAN 1200 mm. (4 FEET) WIDE C/W 2 – 15M REBAR BOTTOM. EXTEND LINTEL A MINIMUM OF 200 mm.(8 INCHES) BEYOND EACH SIDE.
– ABOVE ALL OPENINGS AND OVERHEAD DOORS, PROVIDE VERTICAL COREFILLS TO MATCH WALL COREFILL FROM LINTEL TO PARAPET. ENSURE A MINIMUM OF A 2 VOID COREFILL WITH 2 – 15M EACH VOID IS PROVIDED AT THE CENTRE OF OVERHEAD DOORS. LINTELS SHALL EXTEND A MINIMUM OF 400 mm.(16 INCHES) BEYOND EACH SIDE (SEE PLANS AND DETAILS FOR LINTEL SIZES AND REINFORCEMENT).
– PROVIDE VERTICAL COREFILLS AS INDICATED ON PLANS AND DETAILS, BUT IN NO CASE SHALL A COREFILL EXCEED 2400 mm (8 FOOT) CENTRES C/W 1 VOID C/W 1 – 15M EACH VOID. AT ADJACENT DOOR OPENINGS PROVIDE VERTICAL COREFILLS C/W 2 VOIDS W/ 1–15M EACH VOID FROM FLOOR TO BOND BEAM.
– ALL MASONRY TIES SHALL BE A MINIMUM OF 22 GAUGE GALVANIZED STEEL, SECURED TO SOLID FRAMING WITH GALVANIZED SCREWS (MINIMUM #10 SCREWS). TIE SPACING TO MEET PART 4 REQUIREMENTS.
– MASONRY UNITS SHALL BE SUPPORTED BY STEEL OR CONCRETE.
– TEMPORARY BRACING AND SHORING SHALL BE DESIGNED AND PROVIDED BY THE CONTRACTOR.
– BLOCK UNDER STRUCTURAL SLABS TO HAVE DEFLECTION SPACE OF +/– 3/8"

CONCRETE SCHEDULE:

LOCATION	TYPE	STRENGTH	% AIR	EXPOSURE	MAX. AGG. SIZE	SLUMP	COMMENTS
PILES	HS (TYPE 50)	30 MPa	4 TO 7	S–3,F–2	25 mm	75±25	NOTE 1,2
GRADE BEAMS	HS (TYPE 50)	30 MPa	4 TO 7	S–3,F–2	25 mm	75±25	NOTE 1,2
SLAB ON GRADE:							
INTERIOR	GU (TYPE 10)	25 MPa	–	–	20 mm	75±25	NOTE 3,4
EXTERIOR	GU (TYPE 10)	32 MPa	5 TO 8	C–2	20 mm	75±25	NOTE 5
TOPPING	GU (TYPE 10)	25 MPa	–	–	20 mm	75±25	NOTE 3

NOTE 1: MODERATE SULPHATE CONTENT CONFIRM CONCRETE TYPE WITH GEOTECHNICAL REPORT
NOTE 2: SULPHATE CONTENT TO BE VERIFIED BY APPROVED TESTING FIRM
NOTE 3: STEEL TROWEL FINISH.
NOTE 4: MIX TO BE ADJUSTED FOR DE–ICING CHEMICALS IF LIKELY.
NOTE 5: LIGHT BROOM FINISH.

CONCRETE COVER TO REINFORCEMENT SCHEDULE:

LOCATION	COVER mm	(INCHES)	COMMENTS
PILES			
SIDES:	50mm	2"	To Ties
BOTTOM:	300mm	12"	
GRADE BEAMS:			
BOTTOM:	50mm	2"	
SIDES:	40mm	1.5"	To Stirrups
SLAB ON GRADE:			
TOP:	40mm	1.5"	
BOTTOM:	40mm	1.5"	

trl & associates
tomecek · roney · little & associates ltd.
consulting structural engineers
100 - 1615 10 th. Avenue S.W. • Calgary • Alberta • T3C 0J7
Phone: (403)244-4944 • Fax: (403)229-2110

No.	Issued For	Int	YY–MM–DD Date
4	RE–ISSUED FOR TENDER	JB	13–02–20
3	ISSUED FOR PILING TENDER	PP	13–01–18
2	ISSUED FOR TENDER	PP	12–10–09
1	ISSUED FOR BUILDING PERMIT	VG	12–09–12

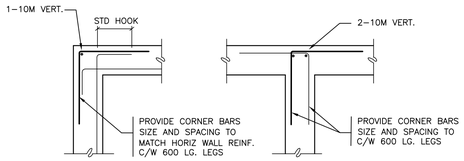
ABUGOV · KASPAR
Suite 200, 422 – 11th Avenue SE Calgary, Alberta, T2G 0Y4
Phone: 237–9227 Fax: 237–9230
info@abugovkaspar.com
architecture
urban design
engineering
interior design

ST. ALBERT Commercial Development
St. Albert Alberta

VISIONS
GENERAL NOTES

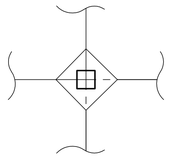
S1.1

2012–092

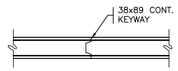


TYPICAL CORNER BAR DETAILS

NOTES:
-TYPICAL ALL CORNERS AND WALL INTERSECTIONS



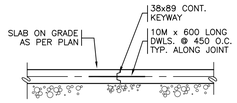
TYP. PLAN FOR SLAB CUT AROUND ALL INT. COLUMNS



NOTE:
* HORIZ REINFORCEMENT TO RUN THROUGH JOINT

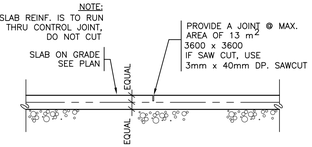
GRADE BEAM CONSTRUCTION JOINT

TYPICAL AS REQUIRED

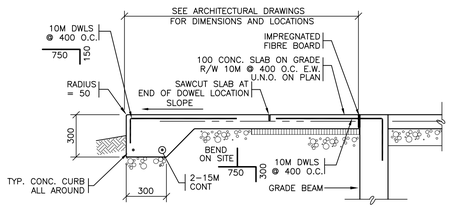


TYPICAL SLAB ON GRADE CONSTRUCTION JOINT

NOTES:
-SEE ALSO NOTES THIS DRAWING

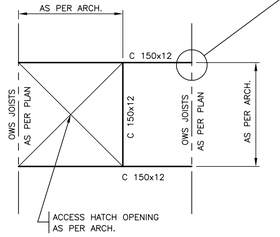


TYPICAL SLAB ON GRADE CRACK CONTROL JOINT



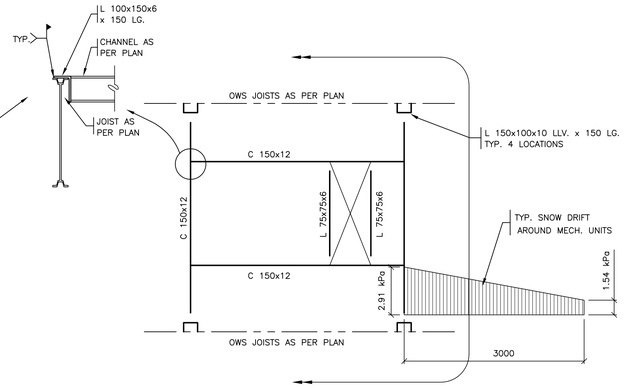
SIDEWALK SLAB

REFER TO ARCH. FOR EXACT SIZE & LOCATION
NOTE: PROVIDE CONT. 50mm RIGID INSULATION FOR 1200mm AWAY FROM FOUNDATION WALL FOR ALL SIDEWALKS



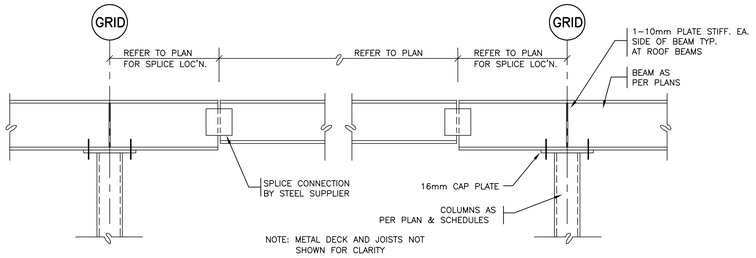
TYP. ROOF ACCESS HATCH FRAME

-REFER TO ARCH. FOR EXACT SIZE & LOCATION



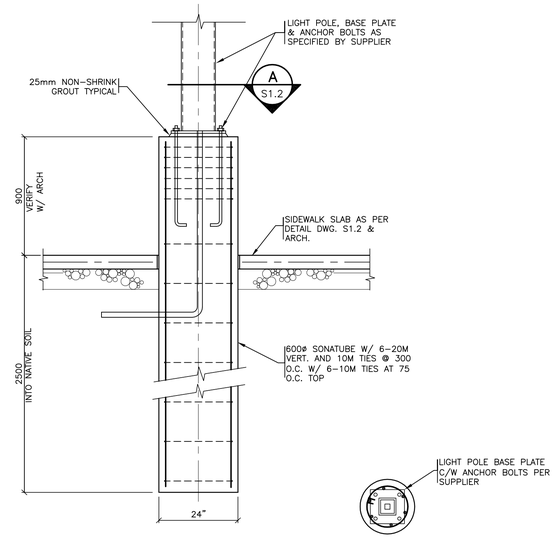
TYP. MECHANICAL SUPPORT FRAME

-REFER TO MECH. FOR SIZE, WEIGHT & LOCATION OF EQUIPMENT AND OPENINGS.



TYPICAL CANTILEVERED SUSPENDED SPAN BEAM DETAIL

NOTE:
REFER TO PLAN FOR COLUMN & BEAM TIE JOIST LOCATIONS



1 S1.2 LIGHT POLE DETAIL
SCALE NTS

A S1.2 PLAN
SCALE NTS

tmc & associates
tomecek · roney · little & associates ltd.
consulting structural engineers
100 - 1615 10 th. Avenue S.W. - Calgary - Alberta - T3C 0J7
Phone: (403)246-4944 - Fax: (403)229-2110

No.	Issued For	Int.	YY-MM-DD Date
4	RE-ISSUED FOR TENDER	JB	13-02-20
3	ISSUED FOR PILING TENDER	PP	13-01-18
2	ISSUED FOR TENDER	PP	12-10-09
1	ISSUED FOR BUILDING PERMIT	VG	12-09-12

ABUGOV · KASPAR
Suite 200, 422 - 11th Avenue SE Calgary, Alberta, T2G 0Y4
Phone: 237-8227 Fax: 237-8230
info@abugovkaspar.com

architecture
urbandesign
engineering
interior design

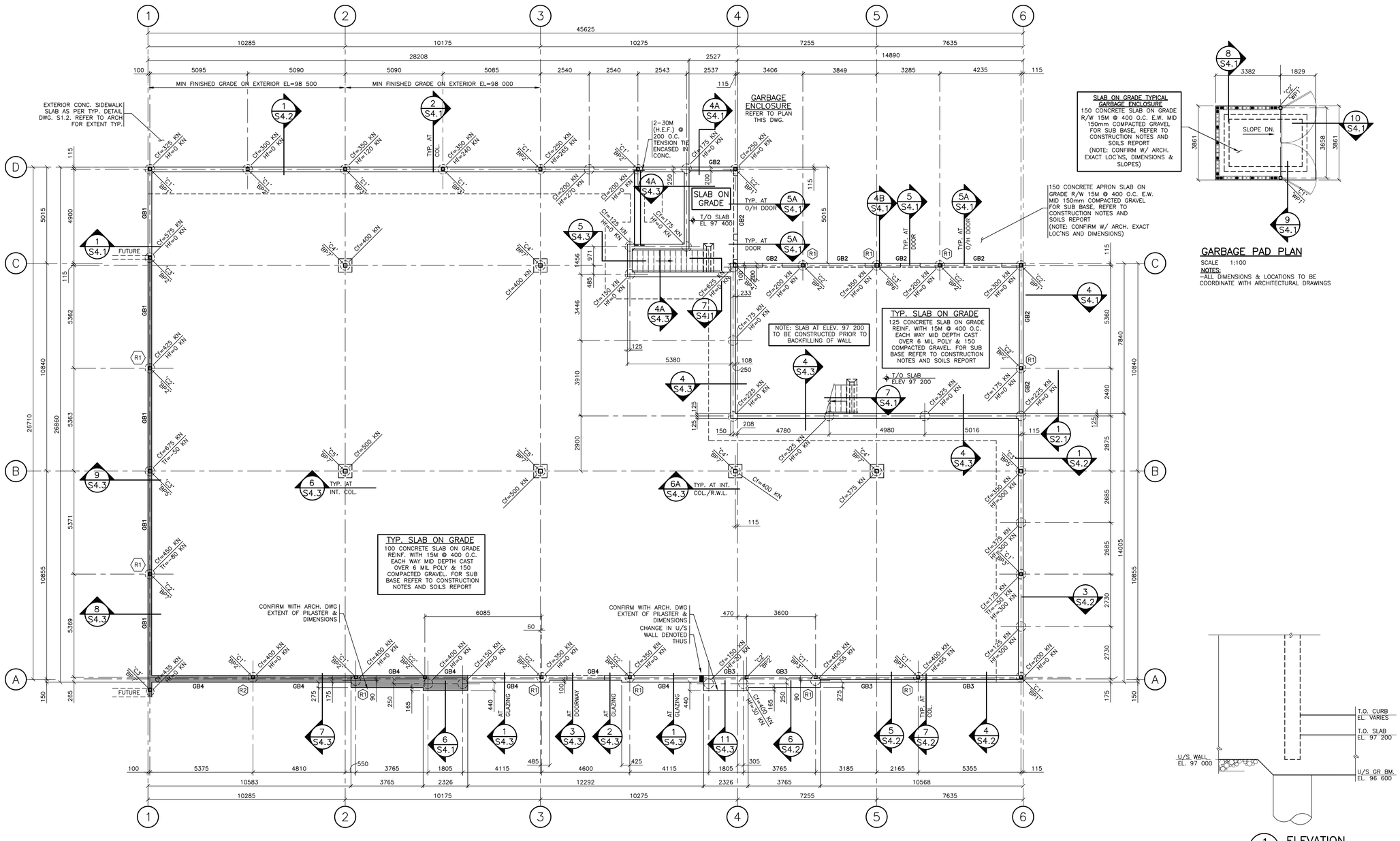
ST. ALBERT
Commercial
Development

St. Albert Alberta

VISIONS
TYPICAL DETAILS

S1.2

2012-092

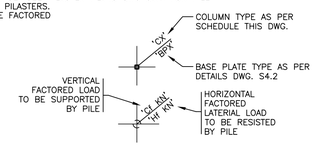


MAIN FLOOR & FOUNDATION PLAN

SCALE 1:100

NOTES:

- TOP OF MAIN FLOOR SLAB ELEV. 100 000 U.N.O. SEE PLAN FOR SLOPE TO DRAIN COORDINATE WITH ARCHITECTURAL
- 'GBX' ON PLAN DENOTES GRADE BEAM TYPE. REFER TO GRADE BEAM SCHEDULE ON THIS DRAWING
- 'CX' ON PLAN DENOTES STEEL COLUMN TYPE. REFER TO STEEL COLUMN SCHEDULE ON THIS DRAWING
- 'BPX' ON PLAN DENOTES BASE PLATE TYPE. REFER TO DRAWING S4.2
- 'WPX' ON PLAN DENOTES WELD PLATE TYPE. REFER TO DRAWING S4.2
- PILES ARE CENTRED BELOW GRADE BEAM TYPICAL UNLESS NOTED OTHERWISE. SEE PILASTER PLANS DWG S4.4 FOR PILE LOCATIONS AT PILASTERS.
- ALL PILE LOADS ARE FACTORED



CONCRETE GRADE BEAM SCHEDULE

MARK	WIDTH	DEPTH	BOTTOM BARS		TOP BARS		STIRRUPS			ADDITIONAL REINFORCING	REMARKS
			CONT.	ADDED	CONT.	ADDED	SIZE	TYPE	SPACING		
'GB1'	200	1200	2–20M	–	2–20M	SEE PLAN	10M	0	@ 300	ADD 15M @ 300 O.C. HORIZ. E.F.	CORNERS BARS AS PER DWG. S1.1
'GB2'	200	600	2–20M	–	2–15M	SEE PLAN	10M	0	@ 250		CORNERS BARS AS PER DWG. S1.1
'GB3'	350	900	2–20M	–	2–20M	SEE PLAN	15M	0	@ 250		CORNERS BARS AS PER DWG. S1.1
'GB4'	350/250	600	2–20M	–	2–20M	SEE PLAN	15M	0	@ 400	ADD 15M @ 300 O.C. HORIZ. E.F.	CORNERS BARS AS PER DWG. S1.1

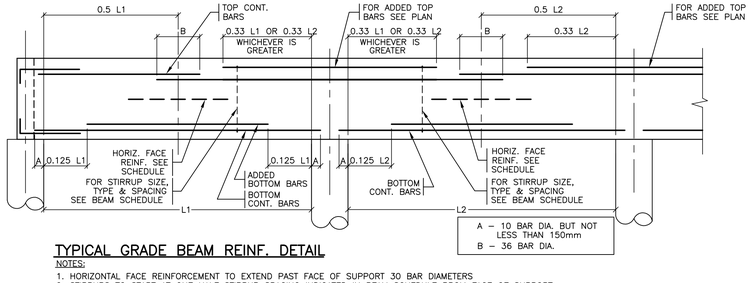
NOTE:
REFER TO TYPICAL CORNER BAR DETAILS DWG. S1.1

(R1) – ADD 1–15M TOP ADD REINF. OVER SUPPORT
(R2) – ADD 1–20M TOP ADD REINF. OVER SUPPORT
(R3) – ADD 1–25M TOP ADD REINF. OVER SUPPORT
(R4) – ADD 1–30M TOP ADD REINF. OVER SUPPORT

STEEL COLUMN SCHEDULE

MARK	DESCRIPTION
'C1'	HSS 152 x 152 x 4.8
'C2'	HSS 152 x 152 x 6.4
'C3'	HSS 178 x 178 x 6.4
'C4'	HSS 203 x 203 x 6.4
'C5'	HSS 203 x 203 x 8.0

–ALL COLUMNS TO BE CLASS 'C' UNLESS NOTED OTHERWISE
–ALL COLUMNS C/W 20mm BASE PLATE W/ A307 BOLTS & 16mm CAP PLATE TYPICAL U.N.O.



TYPICAL GRADE BEAM REINF. DETAIL

NOTES:
1. HORIZONTAL FACE REINFORCEMENT TO EXTEND PAST FACE OF SUPPORT 30 BAR DIAMETERS
2. STIRRUPS TO START AT ONE HALF STIRRUP SPACING INDICATED IN BEAM SCHEDULE PROM FACE OF SUPPORT
3. REFER TO GRADE BEAM SCHEDULE.

tomecek · roney · little & associates ltd.
consulting structural engineers
100 - 1615 10 ft. Avenue S.W. • Calgary • Alberta • T3C 0J7
Phone: (403)246-4944 • Fax: (403)229-2110

No.	Issued For	Int.	YY–MM–DD Date
4	RE–ISSUED FOR TENDER	JB	13–02–20
3	ISSUED FOR PILING TENDER	PP	13–01–18
2	ISSUED FOR TENDER	PP	12–10–09
1	ISSUED FOR BUILDING PERMIT	VG	12–09–12

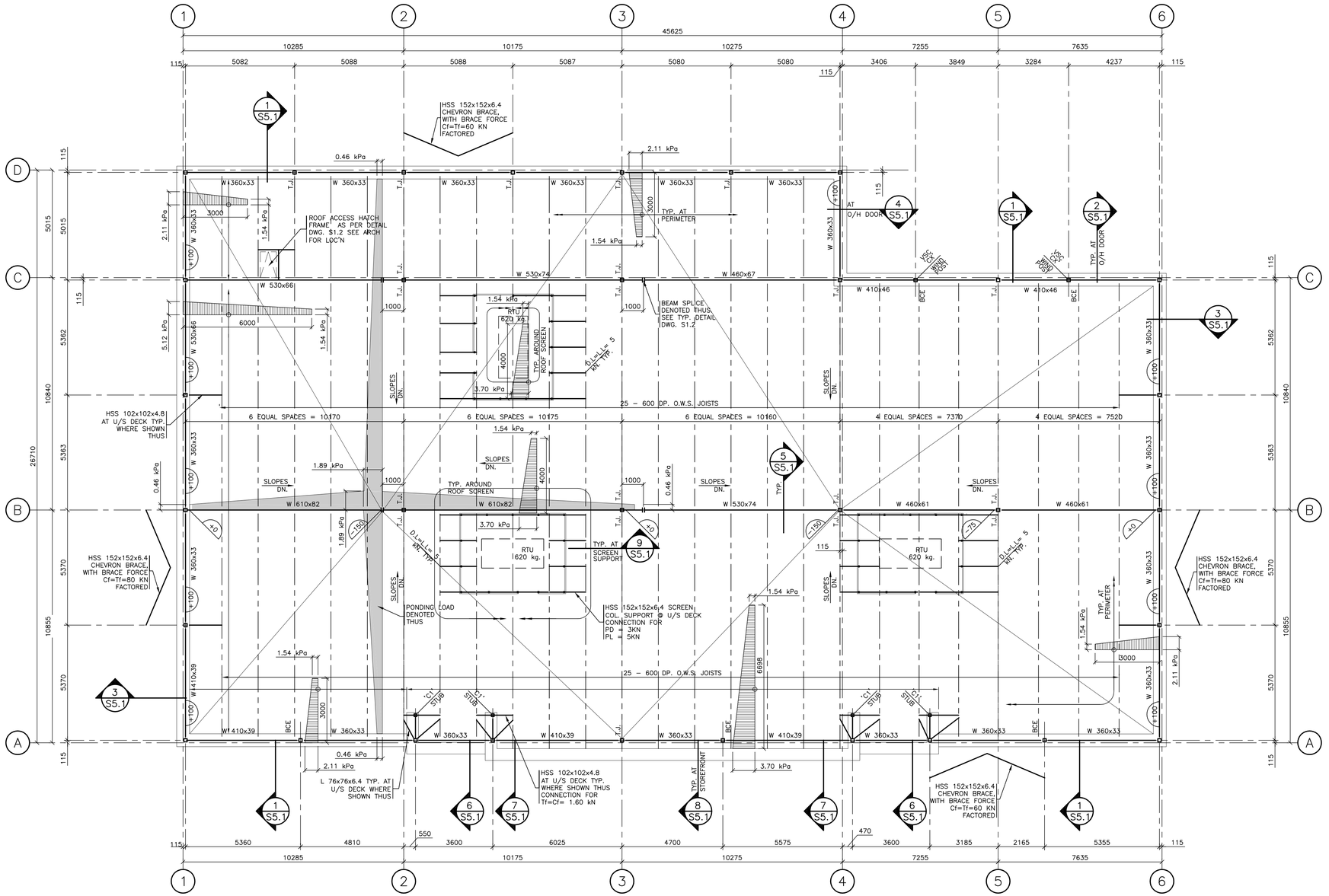
ABUGOV • KASPAR
Suite 200, 422 – 11th Avenue SE Calgary, Alberta, T2G 0Y4
Phone: 237–0227 Fax: 237–0230
info@abugovkaspar.com

architecture
urban design
engineering
interior design

ST. ALBERT
Commercial Development
St. Albert Alberta

VISIONS
MAIN FLOOR & FOUNDATION PLAN

S2.1
2012–092



ROOF FRAMING PLAN

SCALE = 1 : 100

NOTES:

- U/S ROOF DECK ELEV. 105 700
- ROOF DECK TO BE 38mm x 0.76 (22 ga.) STEEL ROOF DECK
- TOP OF ROOF STRUCTURAL STEEL ELEVATION 105 600 TYPICAL UNLESS NOTED THUS ON PLAN (± OR –)
- REFER TO MECH. FOR EXACT SIZE, WEIGHT & LOCATION OF ALL ROOF UNITS & OPENINGS. REFER TO DWG. S1.2 FOR FRAMING REQUIREMENTS NOT SHOWN ON PLAN.
- ALL LOADS SPECIFIED ON THE DRAWINGS ARE UNFACTORED
- T.J. ON PLAN DENOTES TIE JOIST.
- B.C.E. ON PLAN DENOTES BOTTOM CHORD EXTENSION
- FOR GENERAL NOTES & TYPICAL DETAILS REFER TO DWG. S1.1 & S1.2

STEEL DECK WELDING REQUIREMENTS:

- PUDDLE WELD @ 300 O.C. U.N.O.
- BUTTON PUNCH @ 450 O.C.
- LONGITUDINAL WELDS @ 900 O.C. MAX.

ROOF DESIGN LOADS:

DEAD LOAD = 1.35 kPa + MECHANICAL + PAVERS
LIVE LOAD = 1.54 kPa + SNOWDRIFT OR PONDING WHICHEVER PROVIDES THE WORST EFFECT

WEST 18TH ST

tmc & associates
tomecek · roney · little & associates ltd.
consulting structural engineers
100 - 1615 10 th. Avenue S.W. - Calgary - Alberta - T3C 0J7
Phone: (403)246-4944 - Fax: (403)229-2110

No.	Issued For	Int.	YY-MM-DD Date
4	RE-ISSUED FOR TENDER	JB	13-02-20
3	ISSUED FOR PILING TENDER	PP	13-01-18
2	ISSUED FOR TENDER	PP	12-10-09
1	ISSUED FOR BUILDING PERMIT	VG	12-09-12

ABUGOV • KASPAR
Suite 200, 422 – 11th Avenue SE Calgary, Alberta, T2G 0Y4
Phone: 237-9227 Fax: 237-9230
info@abugovkaspar.com

architecture
urban design
engineering
interior design

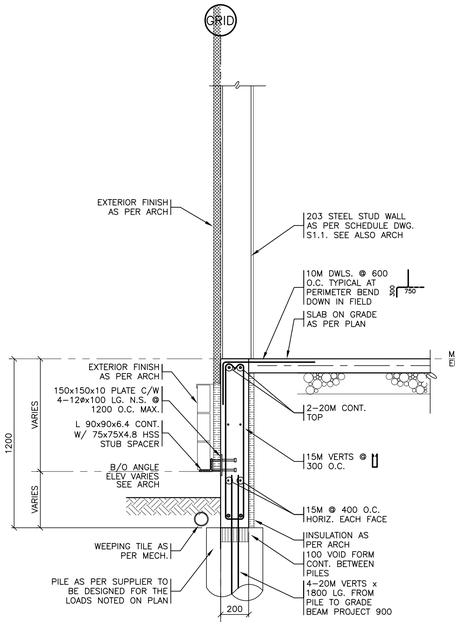
ST. ALBERT
Commercial
Development

St. Albert Alberta

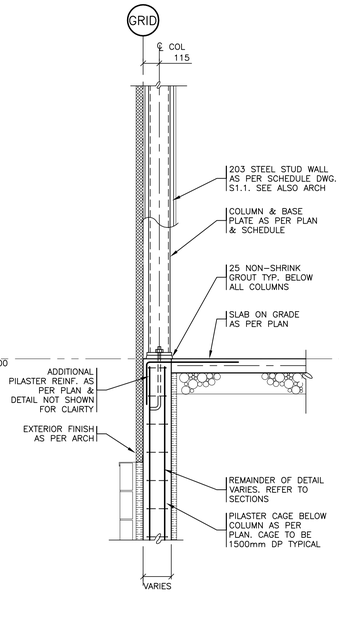
VISIONS
ROOF FRAMING
PLAN

S3.1

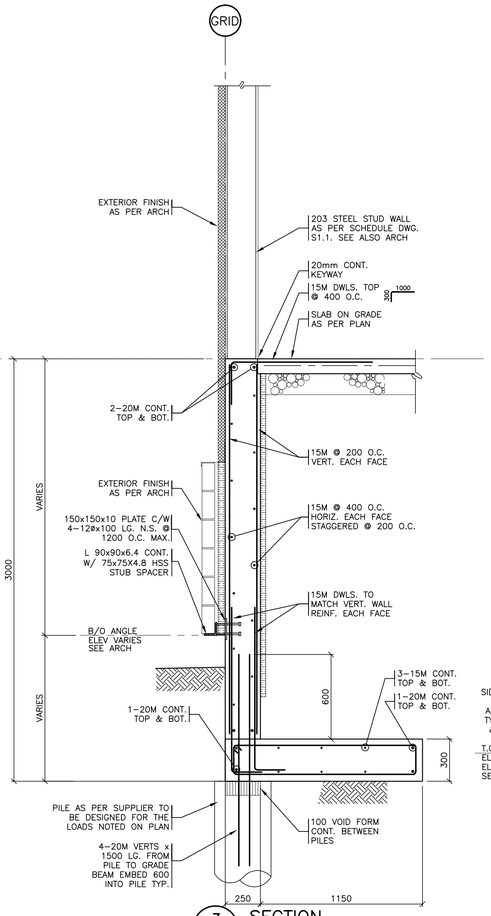
2012-092



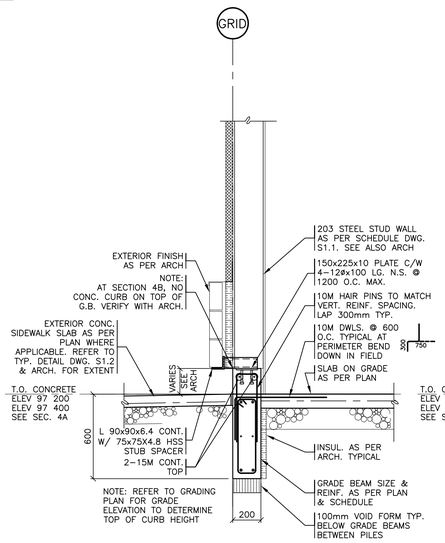
1 S4.1 SECTION
SCALE 1:20



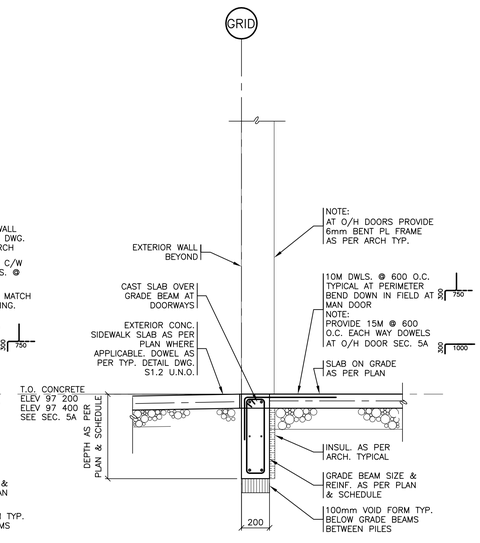
2 S4.1 SECTION AT COLUMN
SCALE 1:20



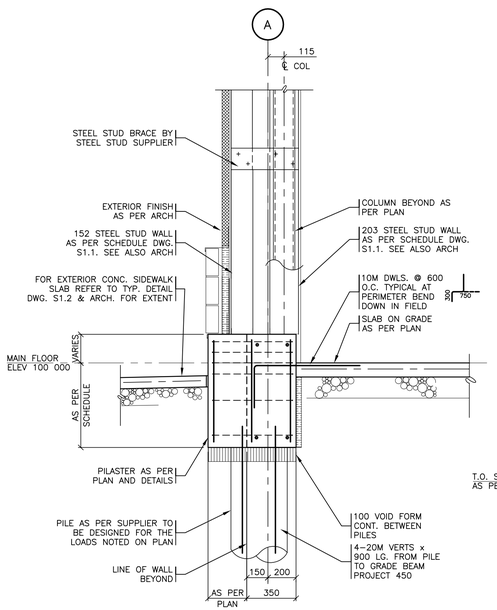
3 S4.1 SECTION
SCALE 1:20



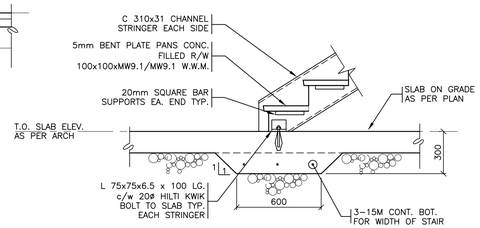
4A S4.1 4B S4.1 4 S4.1 SECTION
SCALE 1:20
NOTE:
SECTION 4B-NO CONC. CURB ON TOP OF G.B. VERIFY WITH ARCH.



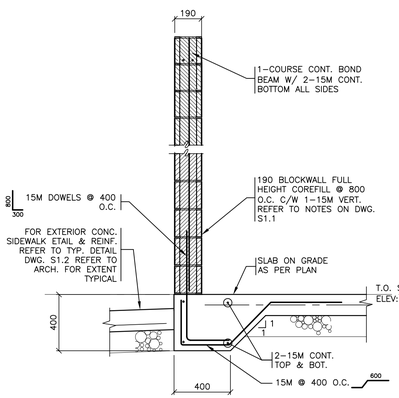
5A S4.1 5 S4.1 SECTION
SCALE 1:20



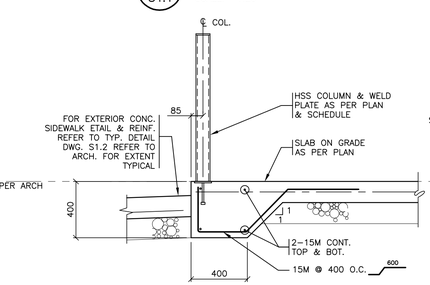
6 S4.1 SECTION
SCALE 1:20



7 S4.1 SECTION AT STAIR BASE
SCALE 1:20

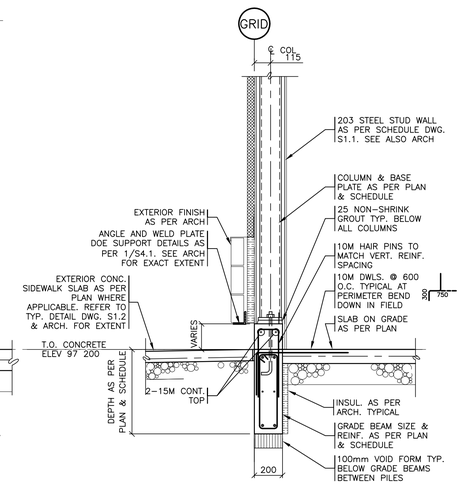


8 S4.1 SECTION AT GARBAGE ENCL.
SCALE: 1:20



10 S4.1 SECTION
SCALE: 1:20

9 S4.1 SECTION AT GARBAGE ENCL. COLUMN
SCALE: 1:20



11 S4.1 SECTION AT COL.
SCALE 1:20

tmc & associates
tomecek · roney · little & associates ltd.
consulting structural engineers
100 - 1615 10 th. Avenue S.W. - Calgary - Alberta - T3C 0J7
Phone: (403)246-4944 - Fax: (403)229-2110

No.	Issued For	Int.	YY-MM-DD Date
4	RE-ISSUED FOR TENDER	JB	13-02-20
3	ISSUED FOR PILING TENDER	PP	13-01-18
2	ISSUED FOR TENDER	PP	12-10-09
1	ISSUED FOR BUILDING PERMIT	VC	12-09-12

ABUGOV · KASPAR
Suite 200, 422 – 11th Avenue SE Calgary, Alberta, T2G 0Y4
Phone: 237-8227 Fax: 237-8230
info@abugovkaspar.com

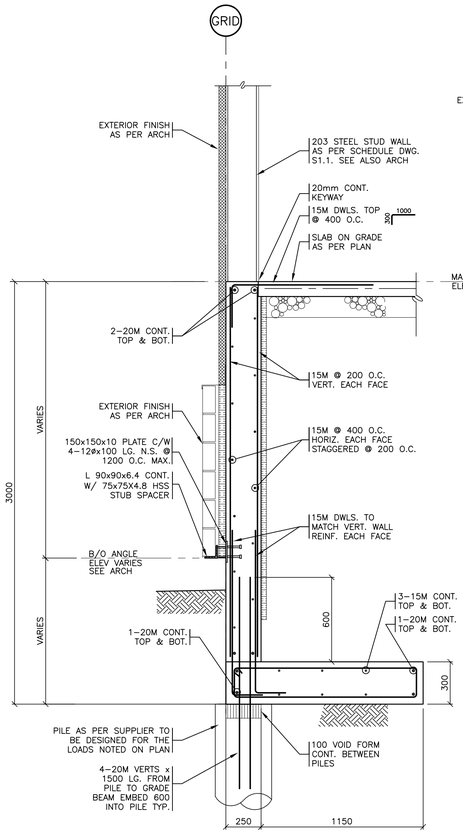
architecture
urbandesign
engineering
interior design

ST. ALBERT
Commercial
Development
St. Albert Alberta

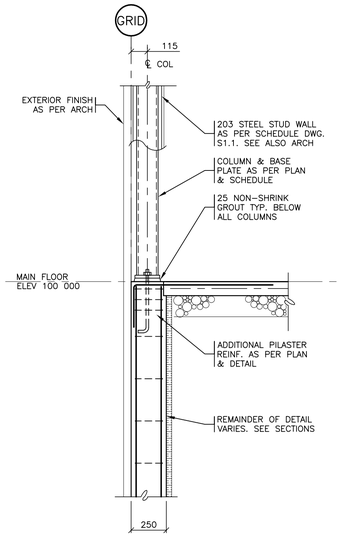
VISIONS
FOUNDATION SECTIONS

S4.1

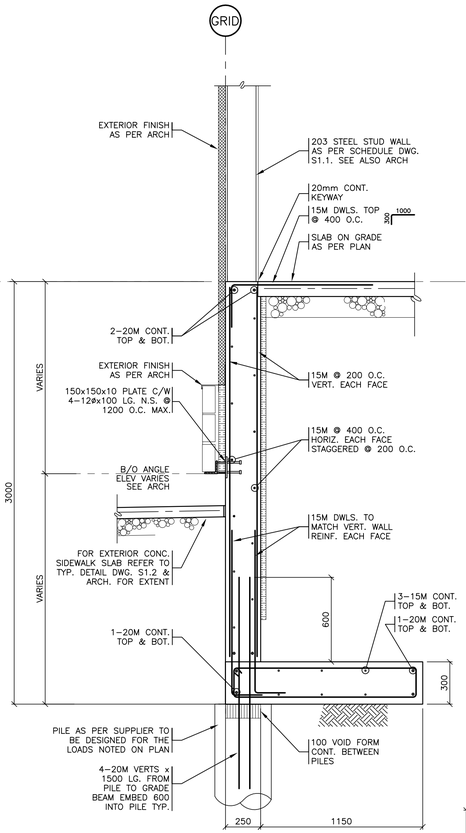
2012-092



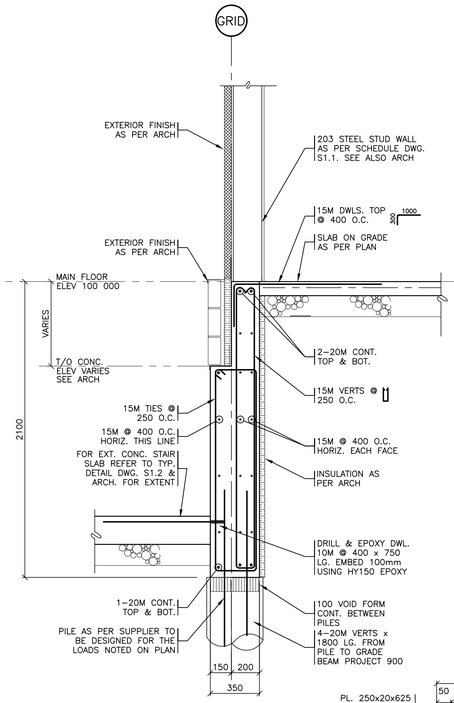
1 S4.2 SECTION
SCALE 1:20



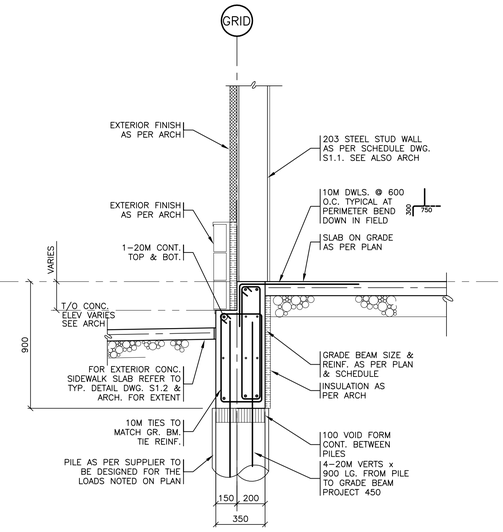
2 S4.2 SECTION AT COLUMN
SCALE 1:20



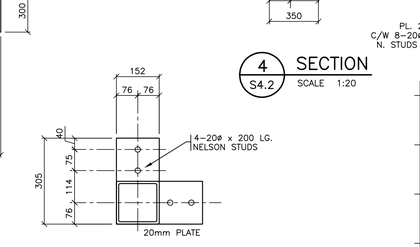
3 S4.2 SECTION
SCALE 1:20



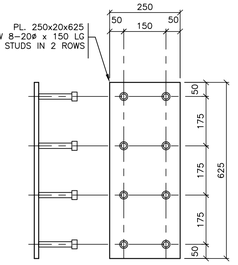
4 S4.2 SECTION
SCALE 1:20



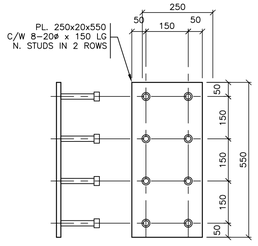
5 S4.2 SECTION
SCALE 1:20



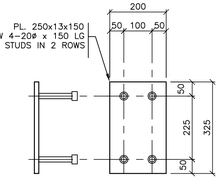
WP1 S4.2 WELD PLATE DETAIL
SCALE 1:10
NOTE:
ORIENTATION VARIES REFER TO PLAN.



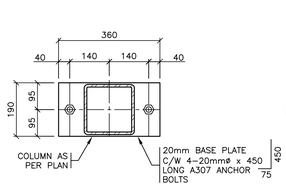
WP2 S4.2 WELD PLATE
SCALE 1:10



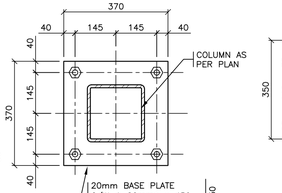
WP3 S4.2 WELD PLATE
SCALE 1:10



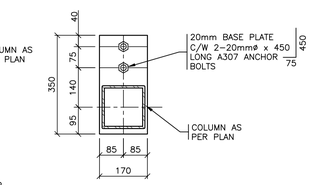
WP4 S4.2 WELD PLATE
SCALE 1:10



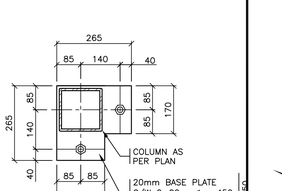
BP6 S4.2 BASE PLATE DETAIL
SCALE: 1:10



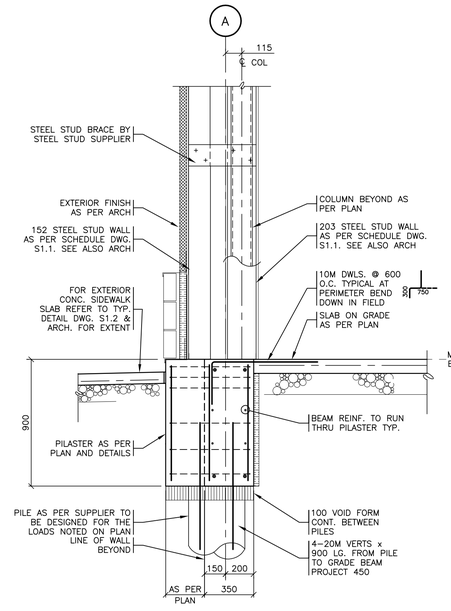
BP7 S4.2 BASE PLATE DETAIL
SCALE: 1:10



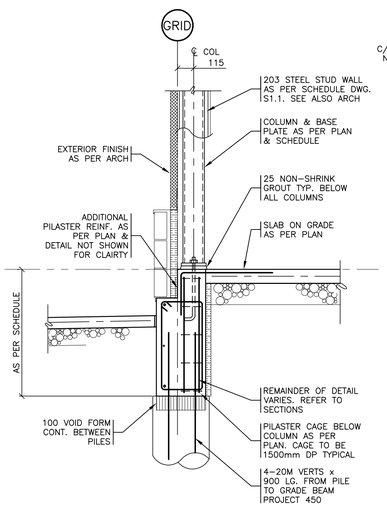
BP8 S4.2 BASE PLATE DETAIL
SCALE: 1:10



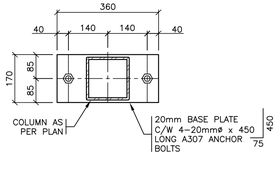
BP1 S4.2 BASE PLATE DETAIL
SCALE: 1:10
NOTE:
ORIENTATION VARIES REFER TO PLAN.



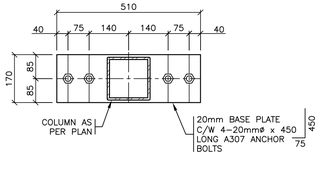
6 S4.2 SECTION
SCALE 1:20



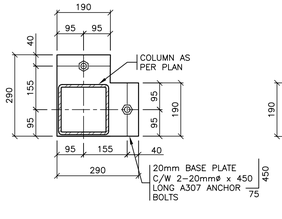
7 S4.2 SECTION AT COLUMN
SCALE 1:20



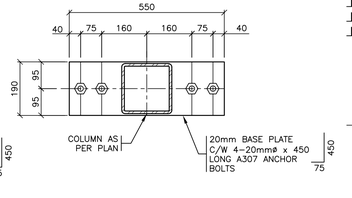
BP2 S4.2 BASE PLATE DETAIL
SCALE: 1:10
NOTE:
ORIENTATION VARIES REFER TO PLAN.



BP3 S4.2 BASE PLATE DETAIL
SCALE: 1:10
NOTE:
ORIENTATION VARIES REFER TO PLAN.



BP4 S4.2 BASE PLATE DETAIL
SCALE: 1:10



BP5 S4.2 BASE PLATE DETAIL
SCALE: 1:10
NOTE:
ORIENTATION VARIES REFER TO PLAN.

tmc & associates
tomecek · roney · little & associates ltd.
consulting structural engineers
100 - 1615 10 th. Avenue S.W. • Calgary • Alberta • T3C 0J7
Phone: (403)244-4944 • Fax: (403)229-2110

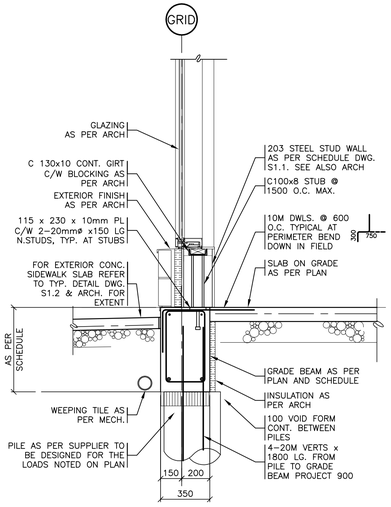
No.	Issued For	Int.	YY-MM-DD Date
4	RE-ISSUED FOR TENDER	JB	13-02-20
3	ISSUED FOR PILING TENDER	PP	13-01-18
2	ISSUED FOR TENDER	PP	12-10-09
1	ISSUED FOR BUILDING PERMIT	VG	12-09-12

ABUGOV • KASPAR
Suite 200, 422 – 11th Avenue SE Calgary, Alberta, T2G 0Y4
Phone: 237-4227 Fax: 237-4230
info@abugovkaspar.com
architecture
urban design
engineering
interior design

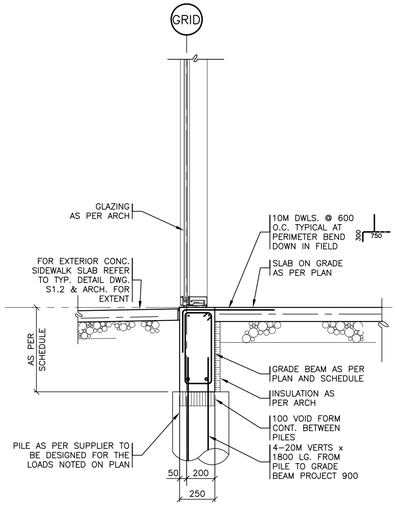
ST. ALBERT
Commercial
Development
St. Albert Alberta

VISIONS
FOUNDATION SECTIONS
& DETAILS

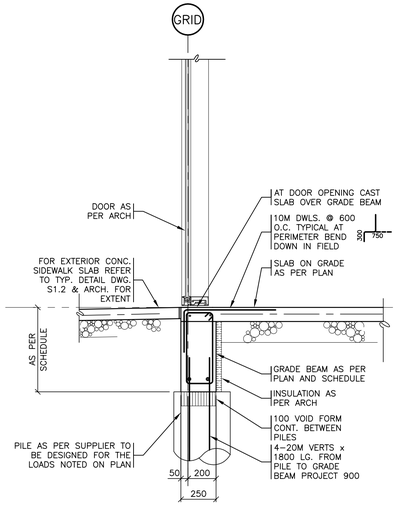
S4.2
2012-092



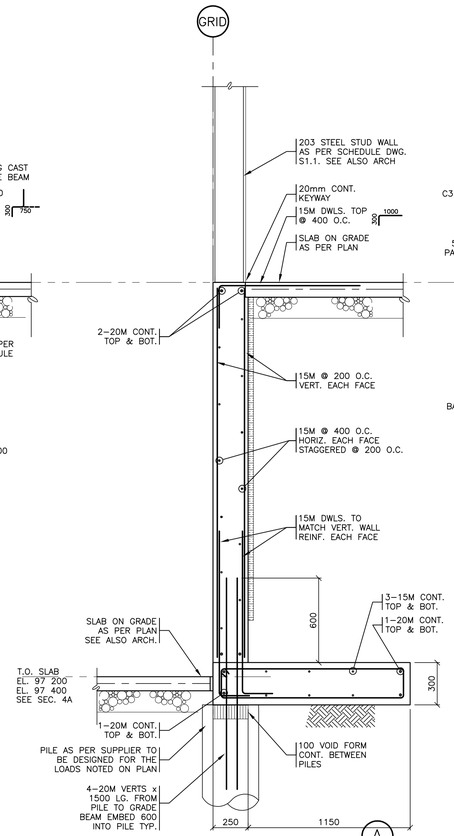
1 S4.3 SECTION AT GLAZING
SCALE 1:20



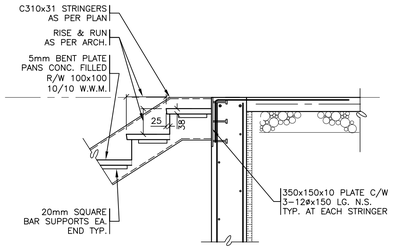
2 S4.3 SECTION AT GLAZING
SCALE 1:20



3 S4.3 SECTION AT DOOR
SCALE 1:20

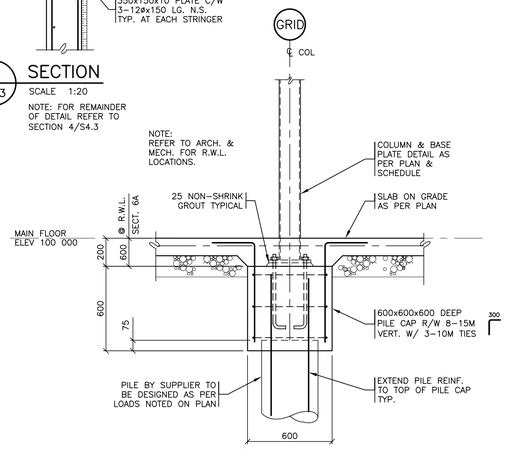


4A S4.3 4 S4.3 SECTION
SCALE 1:20

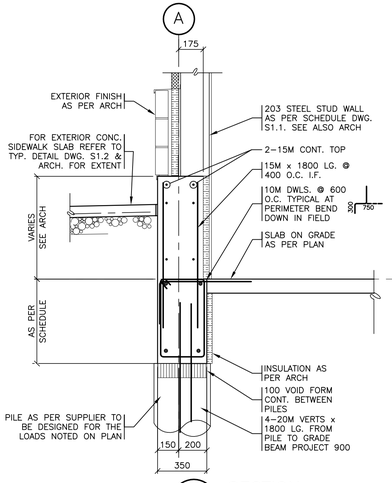


5 S4.3 SECTION
SCALE 1:20

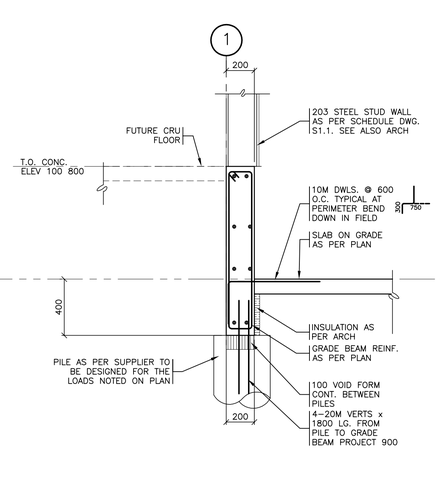
NOTE: FOR REMAINDER OF DETAIL REFER TO SECTION 4/S4.3



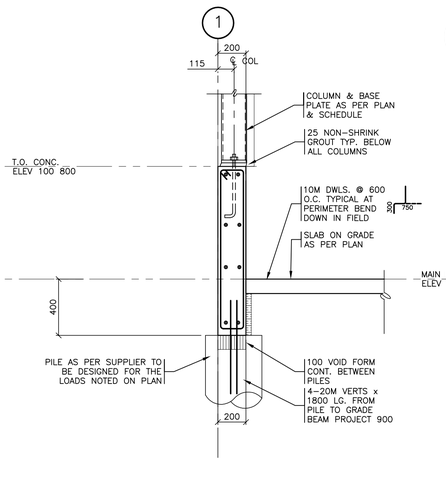
6A S4.3 6 S4.3 SECTION
SCALE 1:20



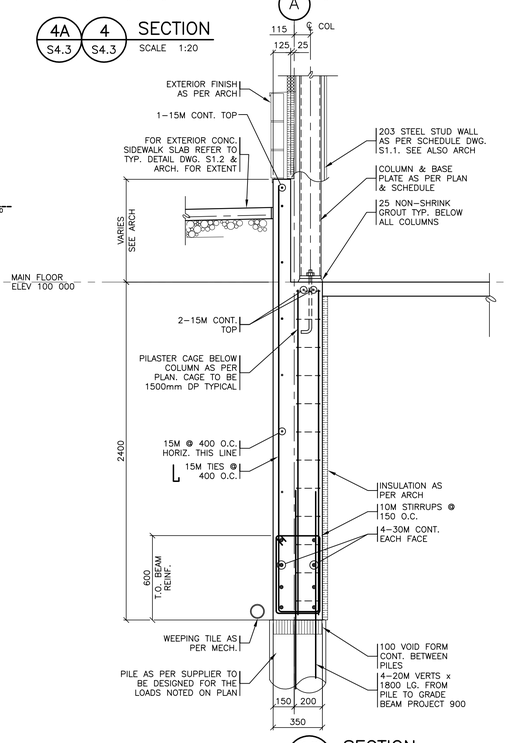
7 S4.3 SECTION
SCALE 1:20



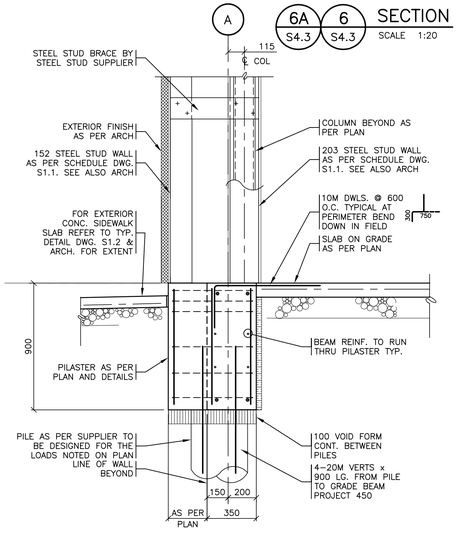
8 S4.3 SECTION
SCALE 1:20



9 S4.3 SECTION
SCALE 1:20



10 S4.3 SECTION
SCALE 1:20



11 S4.3 SECTION
SCALE 1:20

tomecek · roney · little & associates ltd.
consulting structural engineers
100 - 1615 10 th. Avenue S.W. - Calgary - Alberta - T3C 0J7
Phone: (403)246-4944 - Fax: (403)229-2110

No.	Issued For	Int	YY-MM-DD Date
4	RE-ISSUED FOR TENDER	JB	13-02-20
3	ISSUED FOR PILING TENDER	PP	13-01-18
2	ISSUED FOR TENDER	PP	12-10-09
1	ISSUED FOR BUILDING PERMIT	VG	12-09-12

ABUGOV • KASPAR
Suite 200, 422 – 11th Avenue SE Calgary, Alberta, T2G 0Y4
Phone: 237-9227 Fax: 237-9230
info@abugovkaspar.com

architecture
urban design
engineering
interior design

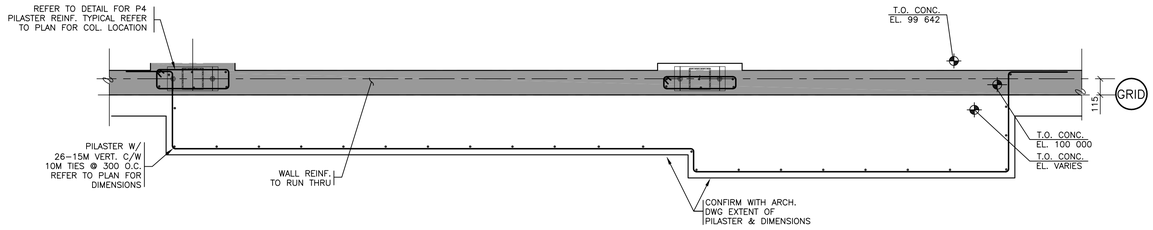
ST. ALBERT
Commercial
Development

St. Albert Alberta

VISIONS
FOUNDATION SECTIONS

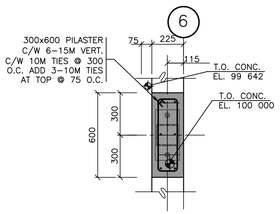
S4.3

2012-092



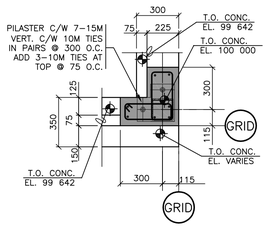
P1 S4.4 PILASTER DETAIL

SCALE 1:20
NOTE:
ORIENTATION VARIES
REFER TO PLAN.



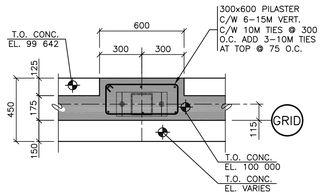
P2 S4.4 PILASTER DETAIL

SCALE 1:20



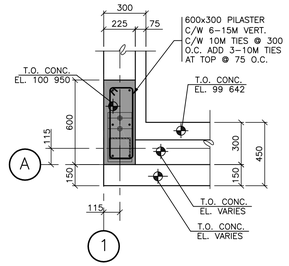
P3 S4.4 PILASTER DETAIL

SCALE 1:20
NOTE:
ORIENTATION VARIES
REFER TO PLAN.



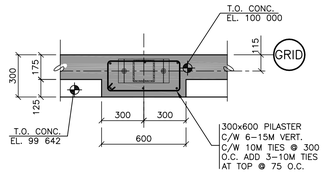
P4 S4.4 PILASTER DETAIL

SCALE 1:20



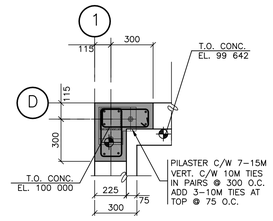
P5 S4.4 PILASTER DETAIL

SCALE 1:20



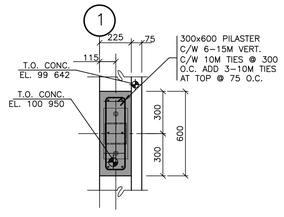
P6 S4.4 PILASTER DETAIL

SCALE 1:20



P7 S4.4 PILASTER DETAIL

SCALE 1:20



P8 S4.4 PILASTER DETAIL

SCALE 1:20

tomecek · roney · little & associates ltd.
consulting structural engineers
100 - 1615 10 th. Avenue S.W. • Calgary • Alberta • T3C 0J7
Phone: (403)246-4944 • Fax: (403)229-2110

No.	Issued For	Int	YY-MM-DD Date
4	RE-ISSUED FOR TENDER	JB	13-02-20
3	ISSUED FOR PILING TENDER	PP	13-01-18
2	ISSUED FOR TENDER	PP	12-10-09
1	ISSUED FOR BUILDING PERMIT	VG	12-09-12

ABUGOV • KASPAR
Suite 200, 422 – 11th Avenue SE Calgary, Alberta, T2G 0Y4
Phone: 237-8227 Fax: 237-8230
info@abugovkaspar.com
architecture
urbandesign
engineering
interior design

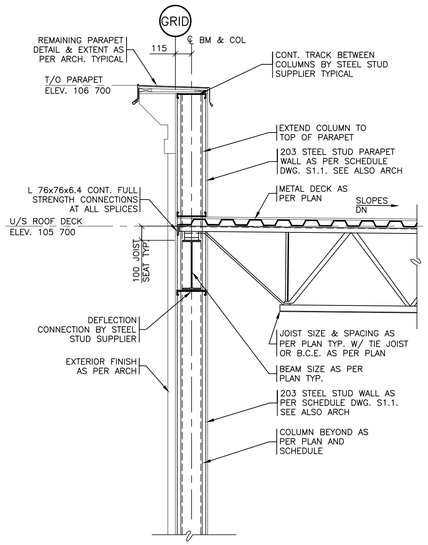
ST. ALBERT
Commercial
Development

St. Albert Alberta

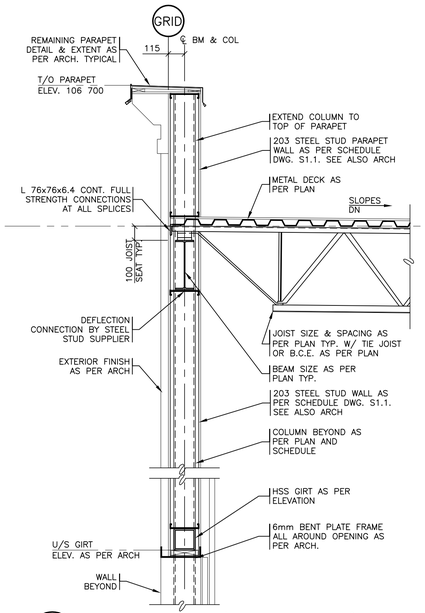
VISIONS
PILASTER DETAILS

S4.4

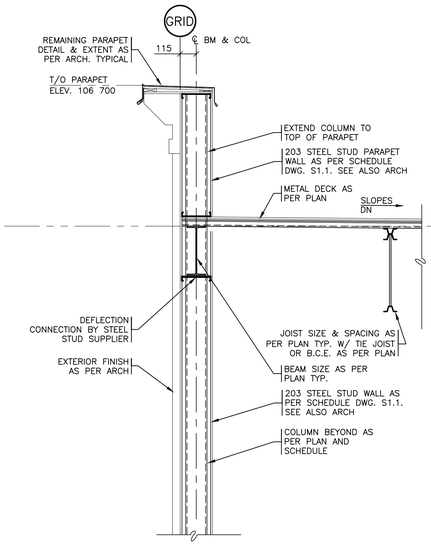
2012-092



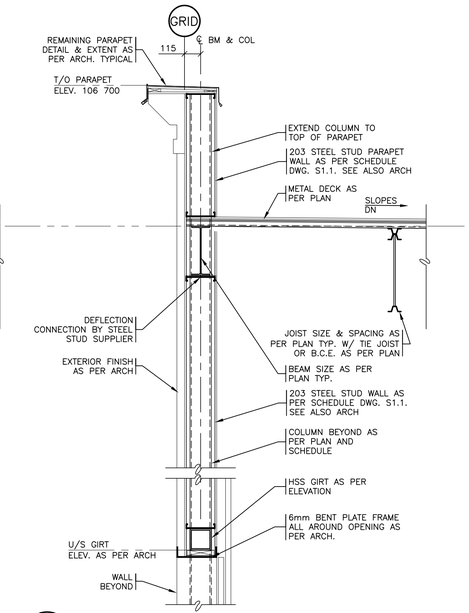
1 S5.1 SECTION
SCALE 1:20



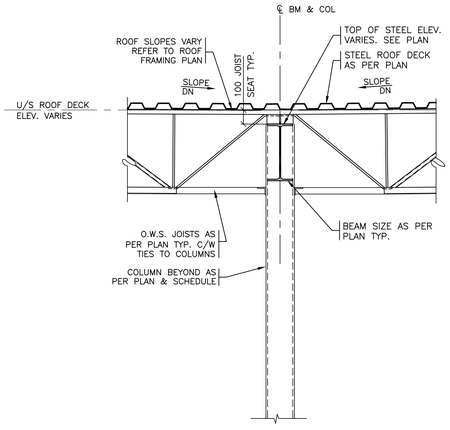
2 S5.1 SECTION AT O/H DOOR OPN'G
SCALE 1:20



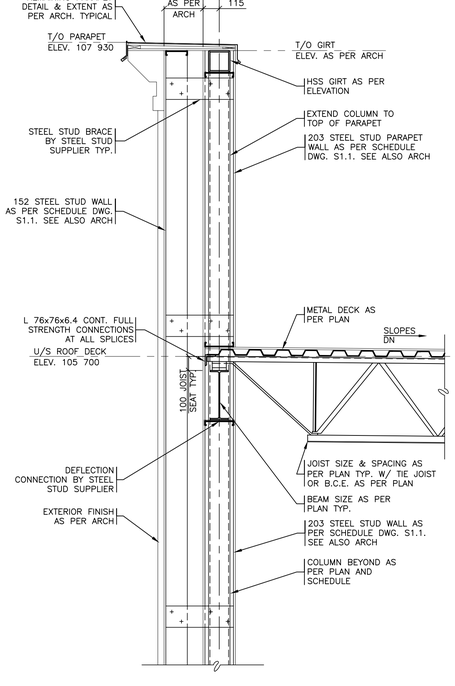
3 S5.1 SECTION
SCALE 1:20



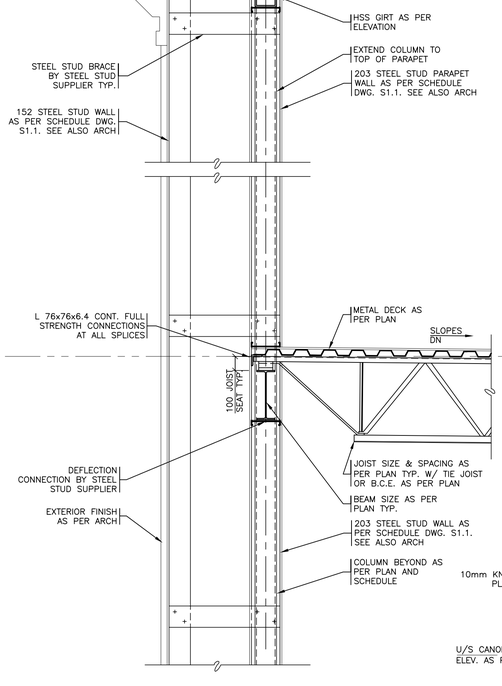
4 S5.1 SECTION AT O/H DOOR OPN'G
SCALE 1:20



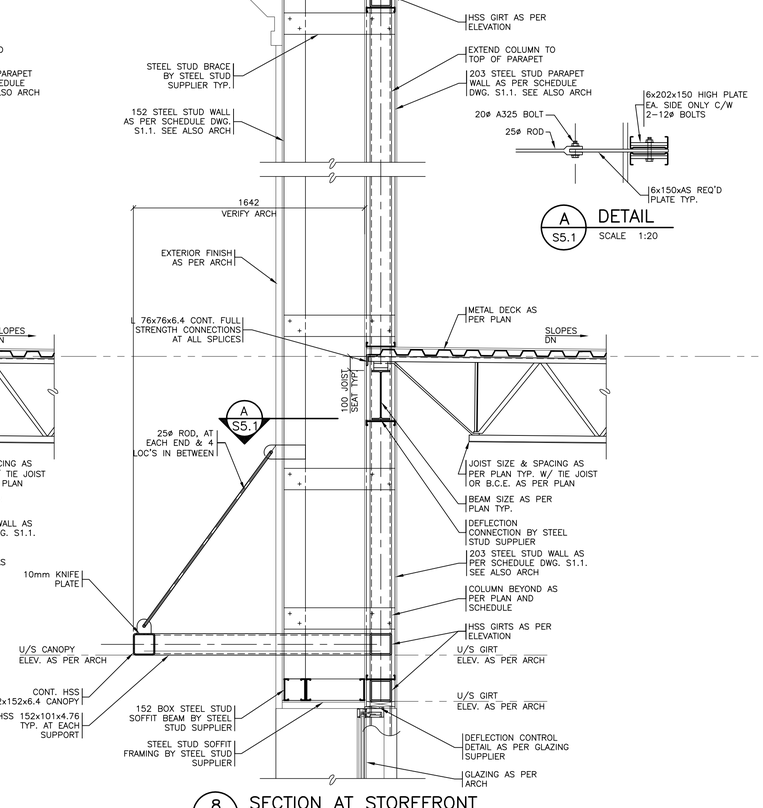
5 S5.1 SECTION
SCALE 1:20



6 S5.1 SECTION
SCALE 1:20

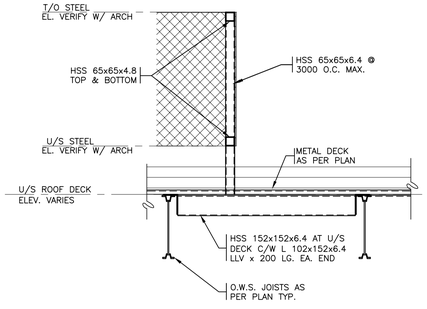


7 S5.1 SECTION
SCALE 1:20



8 S5.1 SECTION AT STOREFRONT
SCALE 1:20

A S5.1 DETAIL
SCALE 1:20



9 S5.1 SECTION AT MECH. SCREEN
SCALE 1:20

tmc & associates
tomecek · roney · little & associates ltd.
consulting structural engineers
100 - 1615 10 ft. Avenue S.W. - Calgary - Alberta - T3C 0J7
Phone: (403)246-4944 - Fax: (403)229-2110

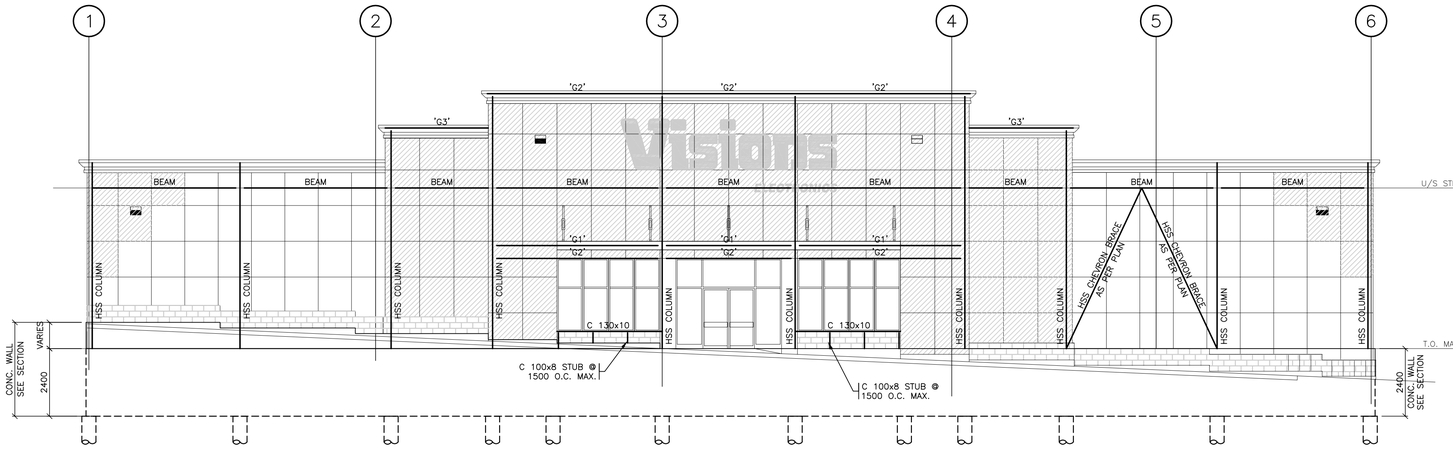
No.	Issued For	Int.	YY-MM-DD Date
4	RE-ISSUED FOR TENDER	JB	13-02-20
3	ISSUED FOR PILING TENDER	PP	13-01-18
2	ISSUED FOR TENDER	PP	12-10-09
1	ISSUED FOR BUILDING PERMIT	VG	12-09-12

ABUGOV • KASPAR
Suite 200, 422 – 11th Avenue SE Calgary, Alberta, T2G 0Y4
Phone: 237-4227 Fax: 237-8230
info@abugovkaspar.com
architecture
urban design
engineering
interior design

ST. ALBERT
Commercial Development
St. Albert Alberta

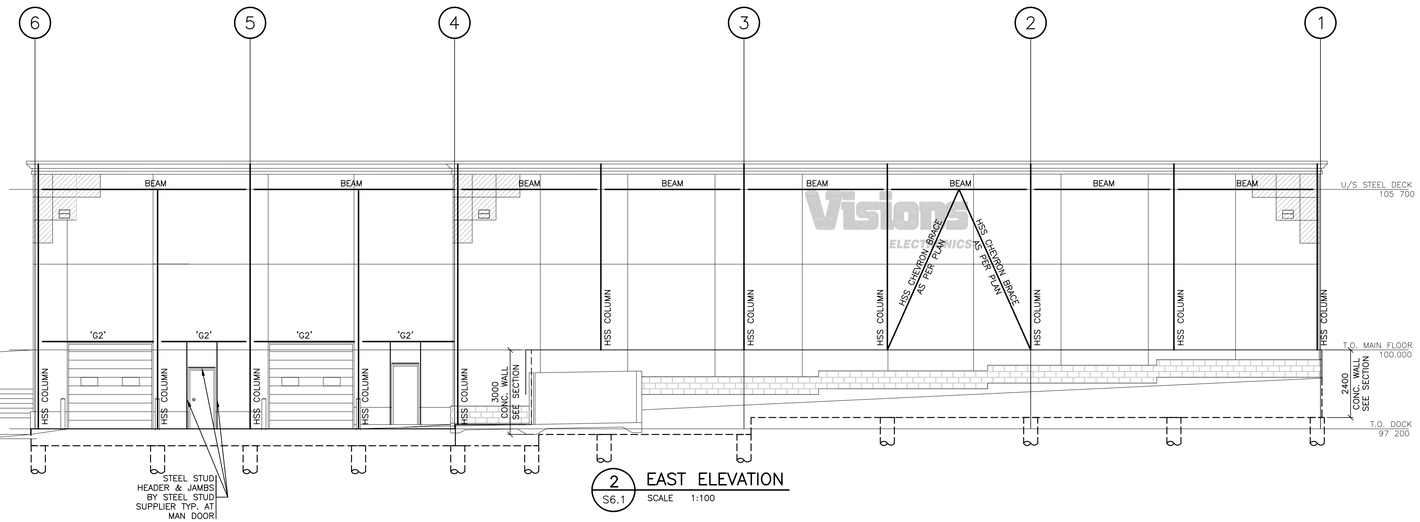
VISIONS
ROOF SECTIONS

S5.1
2012-092

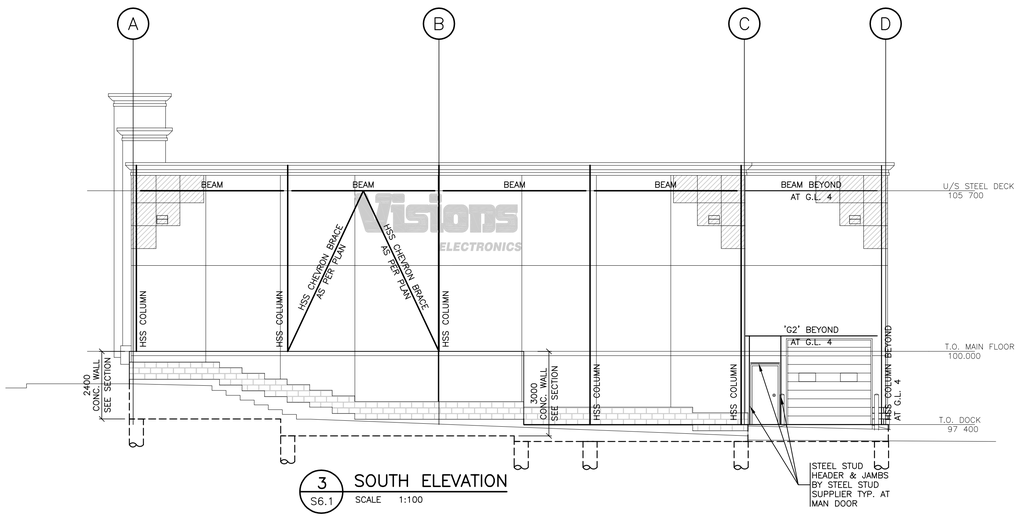


1 / S6.1 WEST ELEVATION
SCALE 1:100

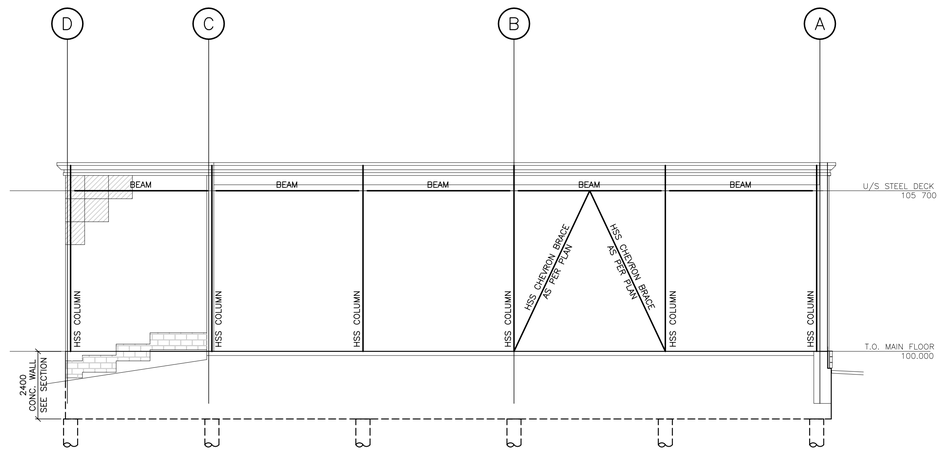
HSS GIRT SCHEDULE	
MARK	DESCRIPTION
'G1'	HSS 203 x 203 x 13.0
'G2'	HSS 152 x 152 x 6.4
'G3'	HSS 152 x 152 x 4.8



2 / S6.1 EAST ELEVATION
SCALE 1:100



3 / S6.1 SOUTH ELEVATION
SCALE 1:100



4 / S6.1 NORTH ELEVATION
SCALE 1:100

tomecek · roney · little & associates ltd.
consulting structural engineers
100 - 1615 10 th. Avenue S.W. - Calgary - Alberta - T3C 0J7
Phone: (403)246-4944 - Fax: (403)229-2110

No.	Issued For	Int	YY-MM-DD Date
4	RE-ISSUED FOR TENDER	JB	13-02-20
3	ISSUED FOR PILING TENDER	PP	13-01-18
2	ISSUED FOR TENDER	PP	12-10-09
1	ISSUED FOR BUILDING PERMIT	VG	12-09-12

ABUGOV • KASPAR
Suite 200, 422 – 11th Avenue SE Calgary, Alberta, T2G 0Y4
Phone: 237-9227 Fax: 237-9230
info@abugovkaspar.com

architecture
urban design
engineering
interior design

ST. ALBERT
Commercial
Development

St. Albert Alberta

VISIONS
FRAMING ELEVATION

S6.1

2012-092