GENERAL

- These notes are to be read in conjunction with the specifications.
- This building has been designed in accordance with the 2011 edition of the Manitoba Building Code.
- The Contractor shall be responsible for the design and installation of all necessary shoring, bracing and formwork. Formwork for new construction shall be bridged over existing services. Procedure must be approved by an Engineer registered in the Province of Manitoba.
- Errors in drawings and/or specifications and/or previously unknown existing conditions shall be brought to the attention of the Contract Administrator as per B4.
- Any unsound structural conditions observed or created during construction are to be reported to the Contract Administrator immediately.
- Contractor shall review, stamp, sign and date all shop drawings prior to forwarding to Contract Administrator. The Contract Administrator's review is to be for conformance with the design concept and general compliance with the relevant contract documents. The Contract Administrator review does not relieve the Contractor of the sole responsibility to review. check and coordinate the shop drawings prior to submission. The Contractor remains solely responsible for errors and emissions associated with the preparation of shop drawings as they pertain to member sizes, details, dimensions, etc..
- Coordinate size and location of all openings in structural members with trades involved. All openings not indicated on 7. structural drawings to be approved by the Contract Administrator.
- Refer to Architectural, Mechanical and Electrical drawings for small openings, sleeves, recesses, depressions, sumps, trenches, curbs, housekeeping pads, equipment basses, and slopes not indicated on the structural drawings.
- Coordinate placement and location of items by subsequent trades. Relevant trades shall review prior to erection and/or installation.
- Confirm the location of all sub-grade services prior to commencing Site Work. 10.
- Verify all dimensions and elevations with architectural drawings prior to construction. Any discrepancies to be reported 11. to the Contract Administrator immediately. Do not scale drawings.
- 12. Do not backfill against structure until main floor is in place.
- 13. Do not exceed, during construction, design live loads shown on plans. Reduce as necessary until materials reach design strength.
- 14. Confirm all existing conditions prior to construction. Any discrepancies or conflicts to be reported to the Contract Administrator immediately.
- Drawings indicate general and typical details of construction. Where conditions are not specifically shown, similar details of construction shall be used, subject to approval by the Contract Administrator.

FOUNDATION

- Foundation design is based on the foundation investigation soils report dated January 18, 2016 as prepared by TREK Geotechnical Inc. Ensure that the requirements outlined in the report are read and understood prior to commencing with foundation work.
- Remove all organic material from the building area as outlined in the geotechnical report.
- Bearing surfaces to be inspected in the field by Professional Geotechnical Engineer registered in the province of Manitoba prior to placing concrete. Where required improve sub-grade as directed in writing by a Professional Geotechnical Engineer registered in the province of Manitoba.
- Unless otherwise shown on plans, foundation elements are to be centered under walls, grade beams, and columns. Provide dowels from footings, grade beams, and pilecaps. Reinforcing to match all vertical reinforcing in walls and
- columns or as noted on drawings.
- Foundation and retaining walls have been design assuming an effective drainage system is provided behind the walls.
- Backfill material to be compacted to 98% of standard proctor maximum dry density in maximum 6" lifts 10.
- 11. Do not backfill behind foundation walls until the floor system or concrete slabs are in place and concrete has reached 28 day design strength.
- 12. Backfill walls below grade evenly on both sides ensuring that no portion of the fill is placed more than 24" above any other portion of the fill during backfilling.
- Concrete for cast-in-place piles shall be 32 MPa @ 28 days using Sulfate Resisting Type HS or HSb cement, 3/4" 14. maximum size aggregate, 3 1/2" slump and 4% to 7% air entrainment. Vibrate the top 10 feet of each pile.
- 15. Piles shall be no more than 2% out of plumb; and no more than 2" out of alignment.
- Pile reinforcing shall extend a minimum of 2'-0" into pilecap or grade beam/wall. 16.
- Geotechnical report compaction requirements govern over these notes. Refer to to report. At minimum, slab sub-base 17 to be built up of 'C-Base' granular fill compacted to 95% Standard Proctor Density in maximum 8" lifts. Final lift to be 6" 'A-Base' granular fill compacted to 98% Standard Proctor Density. All compaction densities to be confirmed by an independent testing agency prior to placement of any concrete.
- 19. All footings shall extend a minimum of 20" into native undisturbed soil, and bear on a level surface capable of supporting the maximum design pressure.

C-I-P CONCRETE PILES

Cast-in-place piles are designed for ULS & SLS values as per table 2 in TREK Geotechnical Report dated Januray 18, 2016. A resistance factor of 0.4 from resistance to axial compression has been utilized in the design.

	Approximate Elevation (m)	ULS Axial Unit Resistance (kPa)			SLS	
Pile Depth Below		Compression (ϕ =0.4)		Uplift (φ=0.4)	Axial-Compressive	
Existing Grade (m)		Shaft Adhesive	End Bearing	Shaft Adhesive	Unit Resistance Shaft Adhesive (kPa)	
0 to 1.5 (int. piles) 0 to 2.5 (ext. piles)	100.5 to 99.0 100.5 to 98.0	0	0	0	0	
1.5 (or 2.5) to 14.5	99.0 to 86.0	14	70	11	14	

Concrete for cast-in-place piles shall be 32 MPa @ 56 days using Sulfate Resisting Type 50 cement, 38mm maximum size aggregate, 90mm slump and 3% to 5% air entrainment. Vibrate the top 3 meters of each pile.

- Piles shall be no more than 2% out of plumb; and no more than 50mm out of alignment.
- Pile reinforcing shall extend a minimum of 900mm into pilecap or grade beam/wall.
- Slab sub-base to be built up of 'C-Base' granular fill compacted to 95% Standard Proctor Density in maximum 200mm lifts. Final lift to be 150mm 'A-Base' granular fill compacted to 98% Standard Proctor Density. All compaction densities to be confirmed by an independent testing agency prior to placement of any concrete.

Provide full time inspection of pile construction by Geotechnical Engineer of record.

CONCRETE

- Concrete work shall be in accordance with CSA A23.1-09 for "Concrete Materials and Methods of Concrete Construction" including cold weather requirements when the temperature falls below 5°C.
- Provide one set of concrete test cylinders in accordance with CSA A23.1-09 for every 50 m3 of concrete placed and
- a minimum of one set for each structural component.

3.	Perform	ance specification as per A23.1-09 Table 5:
	a.	Min. Concrete Strength @ 28 days:

i.	Piles & pile caps	32 MPa
ii.	All other conc.	30 MPa
Exposu	ire Class:	
i.	Piles & pile caps	S-2
ii.	Exterior structural slabs & grade beams	C-1
iii.	Curbs/sidewalks/driveways	C-2
iv.	All other conc.	Ν

For floor slabs, design the concrete mix with aggregate grading and water to cement materials ratio to minimize shrinkage.

- Walls, piers and columns shall be poured a minimum of 24 hours before slabs and beams.
- Provide dovetail anchor slots in concrete walls and columns where masonry abuts.
- All structural slabs framing into concrete walls or beams shall have a minimum 40mm chase into supporting member by the height of the slab.

9.	match beam).
10.	The use of calcium chloride is not permitted.
11.	Construction joint keys in grade beams and concrete walls shall be form
12.	Concrete cold joints below grade in exterior perimeter concrete walls an sealant.
13.	Construction joint keys in structural slabs to be formed at 1/3 span. Pro dowels @ 600 o/c top & bottom.
14.	Saw cuts for slab on grade shall be 25mm deep & 3mm wide. Cutting to after the slab is poured. Cuts to be filled with approved bituminous com
15.	Saw cuts for slab on grade shall be spaced at maximum 6000mm o/c u around all columns unless noted otherwise on drawings.
16.	Slip joint all paving against structural members with 12mm impregnated
17.	Provide minimum 6 mil poly vapour barrier below all slab on grade cond
18.	Coordinate the location of all items embedded in concrete work with Ar
19.	Contract Administrator to be notified at least 48 hours in advance of all
20.	Refer to architectural drawings for concrete surfaces requiring architect
21.	Where voidform is indicated on drawings use cardboard shearmat belo grade beams. 150mm Voidform to be provided below all concrete subgin pilecaps, and pilasters unless noted otherwise.
22.	For structural slabs at grade, plywood over biodegradable wax mat care sufficient strength to support the weight of wet concrete until initial set.
23.	Exterior sidewalks to be 100mm thk. concrete on compacted granular f control joints @ max. 1500 o/c and construction joints @ max. 6100 o/c
24.	Concrete slab at exterior refuse container to be 150mm thick concrete E.W. mid. depth.
REINF	ORCING
1.	All bars to conform to CSA G30.18-M92:
	 15M bars and larger to be grade 400 10M bars and supporting rods to be grade 300 or better
2.	All steel to be detailed in accordance with the current ACI Detailing Man
3.	Reinforcement noted with "C" as C10M is to have a standard hook at o
4.	Reinforcement noted with "E" as 10ME is to be epoxy-coated.
5.	All reinforcing shall be held in place with proper accessories.
6.	
•	In concrete beams, bend horizontal reinforcing 600mm around corners,
7.	In concrete beams, bend horizontal reinforcing 600mm around corners, All openings in concrete walls and/or slabs to have minimum 2-15M ex 600mm past, plus additional 15M diagonal bars each face 1.5 times lor 1500mm in length at each corner unless noted otherwise. Maximum of below top of wall elevation. For all openings greater than 900mm conta all openings with Architectural, Electrical and Mechanical drawings.
-	All openings in concrete walls and/or slabs to have minimum 2-15M ex 600mm past, plus additional 15M diagonal bars each face 1.5 times lor 1500mm in length at each corner unless noted otherwise. Maximum of below top of wall elevation. For all openings greater than 900mm conta
7.	All openings in concrete walls and/or slabs to have minimum 2-15M ex 600mm past, plus additional 15M diagonal bars each face 1.5 times lor 1500mm in length at each corner unless noted otherwise. Maximum of below top of wall elevation. For all openings greater than 900mm conta all openings with Architectural, Electrical and Mechanical drawings.
7. 8.	All openings in concrete walls and/or slabs to have minimum 2-15M ex 600mm past, plus additional 15M diagonal bars each face 1.5 times lor 1500mm in length at each corner unless noted otherwise. Maximum of below top of wall elevation. For all openings greater than 900mm conta all openings with Architectural, Electrical and Mechanical drawings. Do not cut reinforcing at openings where it can be spread continuously
7. 8. 9.	All openings in concrete walls and/or slabs to have minimum 2-15M ex 600mm past, plus additional 15M diagonal bars each face 1.5 times lor 1500mm in length at each corner unless noted otherwise. Maximum of below top of wall elevation. For all openings greater than 900mm conta all openings with Architectural, Electrical and Mechanical drawings. Do not cut reinforcing at openings where it can be spread continuously All openings in grade beams to be confirmed by the Project Administrate
7. 8. 9. 10.	All openings in concrete walls and/or slabs to have minimum 2-15M ex 600mm past, plus additional 15M diagonal bars each face 1.5 times lor 1500mm in length at each corner unless noted otherwise. Maximum of below top of wall elevation. For all openings greater than 900mm conta all openings with Architectural, Electrical and Mechanical drawings. Do not cut reinforcing at openings where it can be spread continuously All openings in grade beams to be confirmed by the Project Administrat Top steel in beams shall be lapped at centre span, bottom steel shall be
7. 8. 9. 10. 11.	All openings in concrete walls and/or slabs to have minimum 2-15M ex 600mm past, plus additional 15M diagonal bars each face 1.5 times lor 1500mm in length at each corner unless noted otherwise. Maximum of below top of wall elevation. For all openings greater than 900mm conta all openings with Architectural, Electrical and Mechanical drawings. Do not cut reinforcing at openings where it can be spread continuously All openings in grade beams to be confirmed by the Project Administrat Top steel in beams shall be lapped at centre span, bottom steel shall be All reinforcing steel shall be cleaned of all dirt, grease and other deleter
7. 8. 9. 10. 11. 12.	All openings in concrete walls and/or slabs to have minimum 2-15M ex 600mm past, plus additional 15M diagonal bars each face 1.5 times lor 1500mm in length at each corner unless noted otherwise. Maximum of below top of wall elevation. For all openings greater than 900mm conta all openings with Architectural, Electrical and Mechanical drawings. Do not cut reinforcing at openings where it can be spread continuously All openings in grade beams to be confirmed by the Project Administrat Top steel in beams shall be lapped at centre span, bottom steel shall be All reinforcing steel shall be cleaned of all dirt, grease and other deleter All reinforcing shall be new billet deformed bars.
 7. 8. 9. 10. 11. 12. 13. 	All openings in concrete walls and/or slabs to have minimum 2-15M ex 600mm past, plus additional 15M diagonal bars each face 1.5 times lor 1500mm in length at each corner unless noted otherwise. Maximum of below top of wall elevation. For all openings greater than 900mm conta all openings with Architectural, Electrical and Mechanical drawings. Do not cut reinforcing at openings where it can be spread continuously All openings in grade beams to be confirmed by the Project Administrat Top steel in beams shall be lapped at centre span, bottom steel shall be All reinforcing steel shall be cleaned of all dirt, grease and other deleter All reinforcing shall be new billet deformed bars. Minimum reinforcing for equipment bases 10M @ 300mm o/c each way
 7. 8. 9. 10. 11. 12. 13. 14. 	All openings in concrete walls and/or slabs to have minimum 2-15M ex 600mm past, plus additional 15M diagonal bars each face 1.5 times lor 1500mm in length at each corner unless noted otherwise. Maximum of below top of wall elevation. For all openings greater than 900mm conta all openings with Architectural, Electrical and Mechanical drawings. Do not cut reinforcing at openings where it can be spread continuously All openings in grade beams to be confirmed by the Project Administrat Top steel in beams shall be lapped at centre span, bottom steel shall be All reinforcing steel shall be cleaned of all dirt, grease and other deleter All reinforcing shall be new billet deformed bars. Minimum reinforcing for equipment bases 10M @ 300mm o/c each way All welded wire fabric shall be transported and delivered in flat sheets. Reinforcing steel supplier to confer with contractor as to desired constru
 7. 8. 9. 10. 11. 12. 13. 14. 15. 	All openings in concrete walls and/or slabs to have minimum 2-15M existence for the state of the

1.	Joists which are resistance welded shall cor
2.	Steel joists design shall allow for all snow bu
3.	Bridging shall conform to the latest code req
4.	Bridging to be connected to all beams and w
5.	Joist supplier to design joists to support med
6.	Where point loads on joists do not occur at p
7.	Camber all joists for specified dead load plus
8.	Design and supply joist seats and bearing pl
9.	The steel joist supplier shall submit drawings - fabrication drawings of each truss type c/w - an erection drawing, showing the location of trusses.

MISCELLANEOUS METAL

- Refer to architectural drawings for miscellaneous metal details
- All steel shall conform to CSA G40.21-04
- Welded rebar anchors to be grade 300 weldable.
- Structural Steel.

STEEL DECK & LIGHT GAUGE METAL FRAMING

- Steel deck and light gauge metal framing to be designed in accordance with the latest issue of CSA 136-07 and CSA 136.1-07 to support the loads indicated on the drawings. and Floor Decks.
- coat designation.
- supports and design loads.
- Mechanically fasten side laps at 300 o/c.
- opening each side.

Where concrete beams frame into concrete walls or other concrete beams and are poured later, provide 40mm chase (height and width to

I concrete walls shall be formed at pile locations only.

r perimeter concrete walls and beams to have continuous swellable hydrophilic waterstop

be formed at 1/3 span. Provide key width equal to half the thickness of the slab. Provide 15M

deep & 3mm wide. Cutting to be done not sooner than 12 hours, and not later than 24 hours h approved bituminous compound or caulking.

at maximum 6000mm o/c unless noted otherwise on drawings. Provide diamond saw cuts on drawings.

pers with 12mm impregnated fibreboard. below all slab on grade concrete slabs unless noted otherwise on drawings.

led in concrete work with Architectural, Mechanical & Electrical drawings

at 48 hours in advance of all major pours.

surfaces requiring architectural finishes.

se cardboard shearmat below structural slabs and low density polystyrene below walls and ided below all concrete subgrade elements, including all walls, gradebeams, structural slabs,

biodegradable wax mat cardboard, complete with moisture resistant treated paper faces, with vet concrete until initial set.

ete on compacted granular fill reinforced with 10m @ 300 o/c E.W. mid-depth. Provide tooled ction joints @ max. 6100 o/c

o be 150mm thick concrete on compacted granular fill reinforced with 15M @ 300 o/c

he current ACI Detailing Manual.

o have a standard hook at one end. Length of bar indicated is exclusive of hook length.

ing 600mm around corners, or use extra corner bars 900mm x 900mm.

to have minimum 2-15M extra reinforcing all around, 1 each face, extend minimum bars each face 1.5 times longer then shortest opening size or min. 500mm and maximum oted otherwise. Maximum opening size 900mm wide; top of opening to be minimum 600mm s greater than 900mm contact the Contract Administrator for further instruction. Coordinate nd Mechanical drawings.

can be spread continuously around opening.

ed by the Project Administrator.

e span, bottom steel shall be lapped at support.

lirt, grease and other deleterious materials prior to placing.

0M @ 300mm o/c each way.

ntractor as to desired construction joint locations and supply dowels and bar lengths to

o drawings for review of fabrication, sizes, dimensions, placement and splice locations.

owels for all structural elements between vertical & horizontal abutting structures. wings.

onform to CAN/CSA W55.3-08.

uild-ups prescribed by the 2010 edition of the National Building Code of Canada.

quirements.

walls.

echanical equipment, all weights & locations to be confirmed by mechanical Contractor.

panel points, strengthen chords as required. Indicate all point load locations on shop drawings.

us half of the specified live load (min. 12mm) according to CSA-S16 unless noted otherwise. plates to suit elevations and skews indicated on drawings.

as bearing the seal of an engineer, registered in the Province of Manitoba for review of: w member sizes, dimensions, and design information. of all truss and other information required by the contractor for the proper installation of the

All exposed miscellaneous metal to be reviewed for architectural appearance as per AISC Specification for Architecturally Exposed

Steel deck work to be performed in accordance with the latest edition of Canadian Sheet Steel Building Institute Standards for Roof

Steel deck to be manufactured from ASTM A525 Grade A structural quality sheet steel; hot-dip galvanized to ZF75 wiped

Submit shop drawings sealed by a Professional Engineer registered in the Province of Manitoba, indicating decking plan, profiles,

Fasten deck to support members with 19mm fusion welds at 300 o/c.

Reinforce deck openings up to 450 square with L55 x 55 x 5 each side. Extend reinforcing angles a minimum of two flutes beyond

All rooftop equipment shop drawings shall be submitted for review prior to commitment of steel deck shop drawing review. Indicate equipment weight, overall dimensions, and connection requirements on shop drawings.

STRUCTURAL STEEL

5.

6.

7.

9.

10.

11.

- All 'W' and 'HSS' sections shall be in accordance with CAN/CSA G40.21-04 M350W, all other sections accordance with CAN/CSA G40.21-04 M300W.
- All welding shall conform to CSA W59-03 (R2008); fabricators to be certified in accordance with CSA W
- Fabrication and erection shall be in accordance with CAN/CSA S16-09, "Limit States Design of Steel St
- 3. Unless noted otherwise, design connections for non-composite beams for factored moment shear force 4. of the total beam load tabulated in the CISC handbook of steel construction.
- Unless noted otherwise, design moment connections for non-composite beams for a factored moment e moment capacity of the smaller member joined.
- Supply steel with properties noted in steel grades table below.

Supply steel with properties noted in steel grades table below.		
<u>Grade</u>		
CSA G40.21 350W OR ASTM A 992 GRADE 50		
CSA G40.21 350W		
CSA G40.21 350W CLASS C		
CSA G40.21 350W		
ASTM A325		
ASTM F1554 GRADE 36		
ASTM A108		
ASTM A36		

- Steel erector shall be responsible for supplying and erecting all temporary bracing to provide stability for a whole, until all related structural framing is erected and completely installed.
- Fabricator shall notify the engineer of any proposed member substitutions or changed connection detail 8.
 - Holes required in steel sections must be approved by the engineer.
 - Provide 9.5mmØ weep holes at top and bottom of all HSS columns.
 - All beams continuous over columns shall have 2 web stiffeners on each side, the same thickness as colu noted, but not less than 10mm.
- 12. No holes permitted in top of beams at columns where beams are continuous over columns, unless loss of by holes is compensated by equal material area welded to side of flange.
- All columns passing thru concrete shall have compressive material to isolate it from surrounding concre 13.
- All structural steel shall receive at least one coat primer to CISC/CPMA standard 1-73a 1975. 14.
- Use asphalt base paint (flintkote 410-02 or eq.) at columns below slab.
- All high strength bolts to be in accordance with the latest edition of ASTM A325M. 16.
- 17. Provide minimum of 2 bolts in bolted connections.
- All bolted connections to use snug-tightened high-strength bolts unless noted on drawings. 18.
- The shear capacity of all shear splices shall be at least equal to the shear capacity of the smaller beam
- 20. Steel supplier is responsible for design and detailing of all structural steel connections not shown on dra
- 21. All miscellaneous steel not detailed on drawings, such as; stairs, railings, awnings and non-structural arc shall be detailed by the steel supplier.
- 22. Anchor bolts shall be supplied by structural steel supplier & set by general contractor. General Contract install 25mm non-shrink grout under all base plates unless noted.
- All grout under bearing plates and base plates shall be non-metallic, non-shrink type with minimum 28 da 23. strength of 31 MPa, installed in accordance with the specification and manufacture's recommendations.
- Expansion anchors to be zinc-plated steel wedge type with the following design values in 30 MPa concre 24. 12mmØ - 9 kN shear. 9 kN pull-out 20mmØ - 18 kN shear, 18 kN pull-out
- 25. All exposed portions of ledge angles and connections to be coated with bituminous paint.
- Provide 75 x 75 x 6mm angle framing around all deck openings greater than 450mm x 450mm unless n 26.
- All steel beams supporting masonry walls to have minimum 19mmØ x 305mm long nelson studs welde at 610mm o/c unless noted otherwise on drawings.
- Structural steel supplier shall submit shop drawings for review of fabrication, sizes, dimensions and place 28. connections not shown on drawings are to be sealed by a Professional Engineer registered in the Provi

STRUCTURAL LIGHT GAUGE STEEL FRAMING

- Supply and install LG (light gauge) steel framing where indicated on structural and architectural drawing 1. Framing members to be cold-formed steel to ASTM A446 grade D and hot dipped galvanized to ASTM
- Minimum 20 ga. (0.033).
- Size of framing member to be sufficient to carry weight of finishing materials (minimum 10psf) plus a hori 3. wind load as per external cladding notes or a vertical snow load as per plans.
- Provide lapped connections and fasten with minimum 3- #12 TEK screws. 4.
- Support horizontal and vertical members at max. 1200 o/c. use clip angles to structural steel framing, co or masonry. Secure with 9.5Ø bolt or other approved fastener. Wire hangers are permitted where adequa lateral bracing is used.
- Submit 4 sets of shop drawings to the engineer and obtain approval prior to fabrication. Show all sizes, 6. connection details, and material specifications. Work and design to conform to CAN S136. External clad

Design external of	ladding/walls to carry the following unfactored wind pressures and se	ections:
Height	Pressure	

0 to 20 ft.	25 psf
20 to 39 ft.	28 psf
39 to 66 ft.	31 psf
66 to 98 ft.	35 psf
98 to 114 ft.	36 psf
144 to 210 ft.	41 psf
210 to 279 ft.	43 psf

7.

9.

11.

Maximum deflection for the above wind loads not to exceed L/360 (L-720 when used as backup for bric Minimum 18 gauge for all studs in veneer back walls.

Stone pilaster framing to be self-supporting and braced to withstand wind and seismic forces.

- 10. Minimum 2 screws required per connection.
- Steel studs to have bridging channel at 1200 o/c maximum.
- No coring or cutting of steel studs unless approved by engineer. 12.
- Use no. 10-16 metal screws for non-load bearing stud connections. 13.
- 14. Erection Tolerances Plumb: 6.4
- Spacing: 3.2 Stud to Web Gap: 6.4
- Double stud at side for all interior openings up to 1200 width. 15.

S = Studor joist sections T = Track sections U = Channel sections

F = Furring channel sections

(c) Flange width in 1/100 ths inches thus 162 means 162/100 = 1.62" (41.28mm)

(d) Designations thickness in 1/1000ths inches thus 54 means 54/1000 = 0.054" (1.367mm)

- Specifications for stud or track size and thickness:
- 600 S 162 54 (a) (b) (c) (d)

(b) Style:

(a) Member depth in 1/100ths inches thus 600 means 600/100 = 6" (152mm)

		HRITT
s shall be in	C.I.P. CONCRETE PILE SCHEDULE P-1: 406Ø x 12200 LG. OR AS NOTED ON DRAWINGS	
W47.1-09.	R/W 5-15M VERT. FULL LENGTH W/ 10M RINGS @ 600 O/C	7W Ann./ourse Ulmipeg Huliche
Structures".	PROVIDE MATCHING DOWELS 450 INTO CONC. ABOVE	nani vice " ant- and vand and fan fan antike stane. Pan
ce equal to 67%	C.I.P. PILECAP SCHEDULE:	
t equal to the full	PC-1: 1675 x 610 x 610 DP. R/W 6-25M TOP & BOTTOM W/ 15M STIRRUPS @ 200 O/C ON 150 VOIDFORM	Owner City of Winnipeg 185 King Street Winnipeg, Manitoba, R3B 1J1 (204) 794-4418 (204) 986-4354
	C.I.P. CONCRETE WALL SCHEDULE	Rev. No. Date Revision Notes
	CW-1: 200 x MAX. 3660 DP. CONC. WALL R/W 2-20M TOP & BOTT, W/ 15M @ 300 O/C, I.F. VERT. W/ 10M @ 300 O/C, I.F. HORIZ. ON 150 VOIDFORM	0 2017.05.02 ISSUED FOR CONSTRUCTION 1 2017.06.08 ADDENDA #3
	CW-1a: 200 x MAX. 1440 DP. CONC. WALL R/W 2-20M TOP & BOTT,	
for the structure as	W/ 15M @ 300 O/C, I.F. VERT. W/ 10M @ 300 O/C, I.F. HORIZ. C/W ADDN'L 10M U-BARS IN UPSTAND W/ 2-15M HORIZ. IN UPSTAND BENT DOWN AT COLUMN POCKETS ON 150 VOIDFORM	
column unless	CW-2: 200 x 5000 DP. CONC. WALL R/W 2-20M TOP & BOTT. W/ 15M @ 300 O/C, MID VERT. W/ 10M @ 300 O/C, MID HORIZ.	
ss of section	PROVIDE ADD'NL SIM REINF. I.F. @ SOIL RETAINING LOC'N ON 150 VOIDFORM	
rete.	C.I.P. CONCRETE GRADE BEAM SCHEDULE	
	GB-1: 200x600 DP. CONC. GB R/W 2-20M TOP & BOTT. W/ 10M STIRRUPS @ 400 O/C ON 150 VOIDFORM	
	GB-2: 200x540 DP. CONC. GB R/W 2-20M TOP & BOTT. W/ 10M STIRRUPS @ 300 O/C ON 150 VOIDFORM	
n, unless noted.	C.I.P. CONCRETE SLAB SCHEDULE	
rawings. architectural steel	SL-1: 150 DP. SLAB ON GRADE R/W 15M @ 400 O/C EA. WAY TOP C/W MATCHING TOP DOWELS ALL AROUND	
actor to supply and	ON COMPACTED GRANULAR AS PER GEOTECH REPORT SL-2: 211/150 DP. @ GRATING STRUCTURAL SLAB GRIND 211 DOWN TO 205	
day compressive s.	R/W 15M @ 300 O/C EA. WAY BOTT. W/ 10M OR EQUIV. Z-BAR DOWELS TOP @ 300 O/C ALL AROUND ADD'NL REINF. AS PER PLAN	
crete:	ON 150 VOIDFORM PROVIDE 38 KEYWAY ALL AROUND	
	SL-3: 300 DP. STRUCTURAL SLAB R/W 15M @ 300 O/C EA. WAY TOP & BOTT.	
noted.	SL-4: 150 DP. STRUCTURAL SLAB R/W 15M @ 300 O/C EA. WAY BOTT. W/ 10M DOWELS TOP @ 300 O/C ALL AROUND INTO G.B. BELOW	
led to beam acement. All	ADD'NL REINF. AS PER PLAN ON 150 VOIDFORM SL-5: 200 DP. STRUCTURAL SLAB	
vince of Manitoba.	R/W 15M TOP & BOTT. @ 200 O/C EACH WAY	WOLFROM ENGINEERING LTD CONSULTING ENGINEERS 345 WINNIEEG,CANADA AVENUE WINNIEEG,CANADA SLOLS
	STEEL JOIST SCHEDULE	(204)452-0041 FAX: 284-8580 E-Mail: info@wolfromeng.com
ngs.	- TYP. PROVIDE 150x150 BEARING POCKET W/ BRG PL9.5x150x150 W/ 2-12Øx100 NELSON STUDS _	
/ A525 G60.	J-1: 350 DP. OWSJ @ 1220 O/C	
orizontal	C/W 38 DP. x 0.76 Ga STEEL DECK W/ 109 CONCRETE TOPPING GROUND TO 102 DEPTH G.C. TO PROVIDE SHORING AT TIME OF GRINDING W/ 6x6x6 WWM & SAWCUTS ALONG GRIDLINES WHERE JOIST LENGTH LESS THAN 3000, SUITABLE ALTERNATE TO J-1 IS MATCHING DEPTH CHANNELS OR HSS BY SUPPLIER	ENGINEERS GEOSCIENTISTS MANITOBA Certificate of Authorization Wolfrom Engineering Ltd. No. 1156
quate	J-2: C6x8.2 @ 1500 O/C MAX. C/W 38 DP. x 0.76 Ga STEEL DECK	
adding.	STEEL BEAM SCHEDULE	TINCE OF WAR
	B-1: W360x45 C/W BRG PL. 150x150x12 W/ 2-19Ø N.STUDS EA. END	J.C.P.
	B-2: W250x67 B-3: W200x27	Member 22314 2017-06-08 Profession
	STEEL COLUMN SCHEDULE	ULUS
ick veneer).	- ALL COLUMNS C/W PL12 TOP PLATE MATCHING COLUMN SIZE	
	C-1: HSS 102x102x13	This drawing must not be scaled. The
	C-2: HSS 168Ø x 13	This drawing must not be scaled. The contractors shall verify all dimensions and other data on site prior to commencement of work. Discrepancies, errors, and omissions
	C-3: HSS 114x114x9.5 W/ 4-L76x76x19 CRUCIFORM AT COLUMN CAPITAL & BASE SEE ARCH & STRUCTURAL FOR ADDN'L DETAILS & REQ'MENTS	are to be reported to Public City Architecture Inc. prior to proceeding with the Work. Drawings and specifications as instruments of service are the property of Public City Architecture
	GIRT SCHEDULE	Inc.; the copyright in the same being reserved. No reproduction or revision to these drawings may be made without the permission of Public City Architecture Inc., and when made, must bear their
	G-1: HSS GIRT 203x152x6.4 C/W PL19 x 203 KNIFE PLATE EACH END	Architecture Inc., and when made, must bear their name. All prints to be returned to Public City Architecture Inc. upon request.
	LINTEL SCHEDULE:	
	L-1: 2-L203x203x9.5 LLV C/W 150 BEARING EACH END ONTO SOLID CONCRETE PROVIDE 13Ø THRU-BOLTS @ 1/3 LOC'NS	ST. JOHN'S LIBRARY RENOVATION
		Drawing GENERAL NOTES
	STEEL STUD WALL SCHEDULE SW-1: 600S162-43 STEEL STUDS @ 400 O/C	& SCHEDULES
	C/W MIN. 12 EXT. GRADE SHEATHING C/W 3-600S162-43 B.U. COLUMN EACH END W/ 12Ø x 300 LG. A.BOLT @ 600 O/C	Drawn By Reviewed By AVP JCR
	 SW-2: 362S162-43 STEEL STUDS @ 600 O/C HORIZ. LADDER FRAMING C/W MATCHING TRACK ALONG INSIDE FACE OF HSS89x89x6.4 W/ #10 TEKS @ 200 O/C STAGGERED EACH SIDE C/W 16 PLYWOOD EXT. GRADE SHEATHING 	Scale Drawing No. Scale Drawing No. S-O Date Project No.
		2017.06.08 W15150