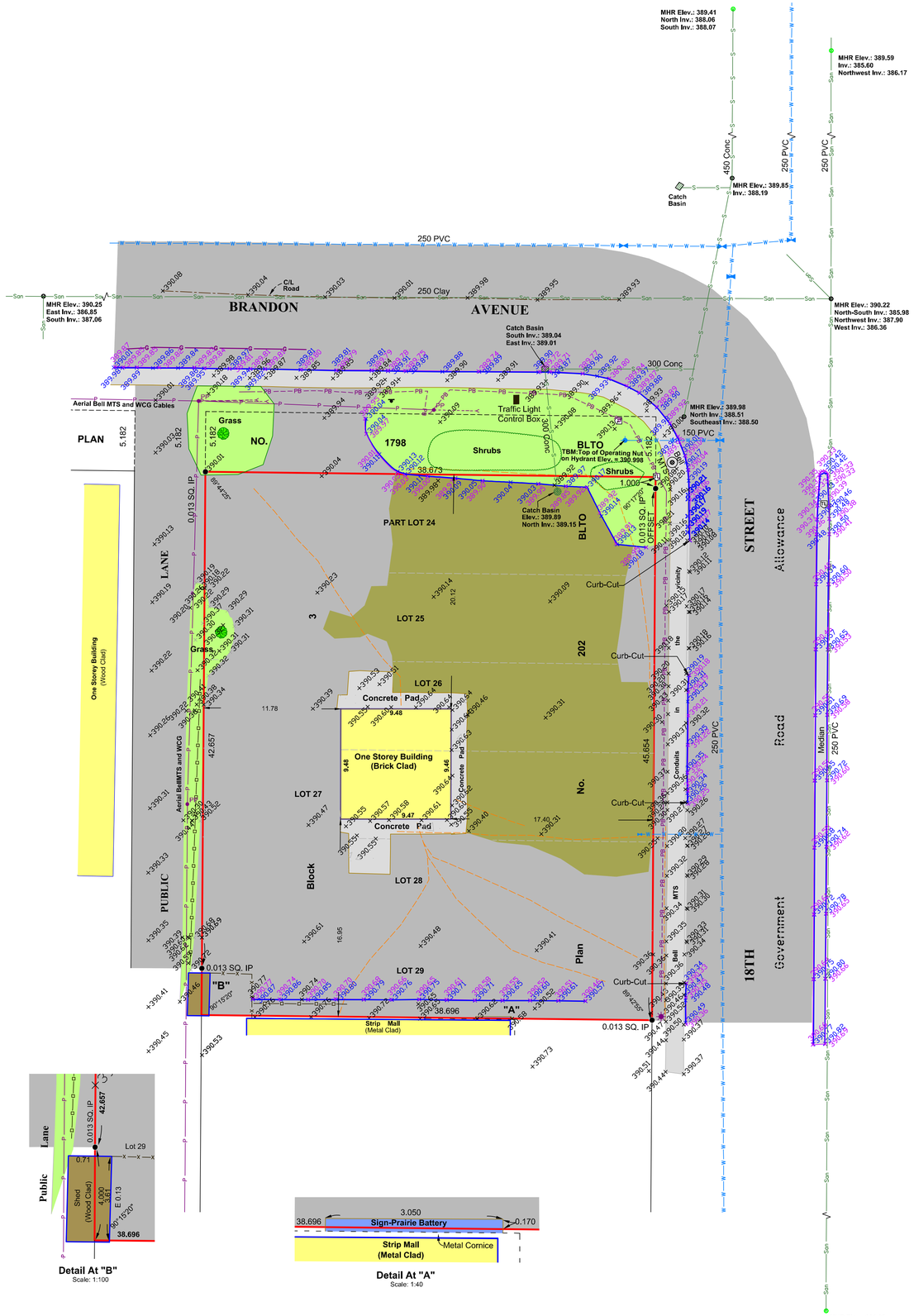
TD BANK
BASE BUILDING

1108 18TH STREET
BRANDON, MANITOBA

RAYMOND S.C. WAN
ARCHITECT

COMM. NO. 18-1921





KEY PLAN
Not To Scale

NOTE:

Measurements are in metres and decimals thereof.
Elevations shown are in metric geodetic datum.

Elevations are referred to Bench Mark at SW Corner of Park Avenue and 26th Street (Bolt in Valve Box : Elev. = 394.545)
Temporary Bench Mark : Hydrant located at SW corner Brandon Ave. and 18th St. (Top of Operating Nut : Elev. = 390.998)

Facilities shown on this plan are those that could be found and located. Other facilities may exist of which we are unaware or unable to locate.

Manhole North Rim = MHR, Invert = Inv

Information shown pertaining to services is approximate only.
Exact location of services should be staked in field prior to any grading or excavation.

LEGEND

- Survey bars found or placed
- Area of Survey (Property Line)
- O/H Power Line
- Buried Gas Line
- Buried Power Line
- Unidentifiable Buried Utility
- Fence
- Post and Plank Parking Fence
- Light Standard
- Traffic Light
- Power Pole
- Anchor
- Fire Hydrant
- Manhole
- Water Valve
- Storm Sewer
- Sanitary Sewer
- Sign
- Asphalt
- Concrete
- Permanent Structure
- Temporary Structure
- Manicured Grass
- Gravel
- Spot Elevation
- Spot Elevation (Bottom of Curb/Gutter)
- Spot Elevation (Top of Curb)

UNDERGROUND SERVICE INFORMATION SUPPLIED BY THE CITY OF BRANDON, MANITOBA HYDRO, WESTMAN COMMUNICATION GROUP AND BELLMTS AND SHOULD BE VERIFIED PRIOR TO DESIGN OR CONSTRUCTION. ON SITE UNDERGROUND SERVICES WERE LOCATED BY THE APPLICABLE UTILITY AND ALTUS GROUP MANITOBA LAND SURVEYORS LTD. ACCEPTS NO RESPONSIBILITY FOR THEIR LOCATION. PRIOR TO CONSTRUCTION IT IS IMPERATIVE THAT INDIVIDUAL UTILITY COMPANIES ARE CONTACTED FOR A LOCATE. IF THERE ARE DISCREPANCIES BETWEEN THE HARD COPY AND THE DIGITAL FILE, THE INFORMATION CONTAINED WITHIN THE HARD COPY SHALL GOVERN.

Click Before You Dig MB.com: 1-800-940-3497

*NOTICE:
Timothy W. Longstaff (Manitoba Land Surveyor) of Altus Group Manitoba Land Surveyors Limited is providing, by agreement with Raymond S.C. Wan Architect, certain material stored electronically. These documents are protected by copy right and further distribution by electronic means or by any other means are prohibited. Ownership of these documents is retained by Altus Group Manitoba Land Surveyors Limited.

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I certify that the survey represented by this plan is correct to the best of my knowledge and was completed October 1st and November 8, 2018

Tim Longstaff
Manitoba Land Surveyor

PERMIT
ALTUS Geomatics Manitoba Land Surveyors Ltd.
No. 2017-10

CERTIFICATES OF TITLE:

Title No.: 1985651 BLTO (1 of 2)
Registered Owner: SHELL CANADA LIMITED
Legal Description: LOT 24 TO 27 AND THE NLY 17 FEET OF LOT 28 IN BLOCK 3 PLAN 202 BLTO EXC OUT OF LOT 24 THE NLY 17 FEET IN SE 1/4 15-10-19 WPM
Encumbrances: Caveat Nos. 1246672, 1249405, 1256864, 1257094, 1269289, 1273265, 1302447, 1330027, 1342689, 1342690, 1342691, 1343855, 1354895, 1354896, 1354897, 1355625, 1355626, 1355628, 1355629, 1355631, 1355632, 1355634 and 1355635 are registered against the above Certificate of Title.

Title No.: 2423923 BLTO (2 of 2)
Registered Owner: SHELL CANADA LIMITED
Legal Description: LOT 28 AND 29 BLOCK 3 PLAN 202 BLTO EXC OUT OF LOT 28 THE NLY 17 FEET IN SE 1/4 15-10-19 WPM
Encumbrances: Caveat Nos. 1256864 and 1257094 are registered against the above Certificate of Title.

NO.	REVISIONS	INITIALS	DATE
3	Clarify MHs in NE	FG	Nov. 13, 2018
2	Clarify the Curb Cut	FG - HB - FG	Nov. 8, 2018
1	Added Elevations along Lane & 18th Street	CJ - HB - FG	Nov. 1, 2018
0	Issued	PM - HB - FG	Oct. 12, 2018

Raymond S.C. Wan Architect

TOPOGRAPHY, UTILITY AND BOUNDARY SURVEY

of

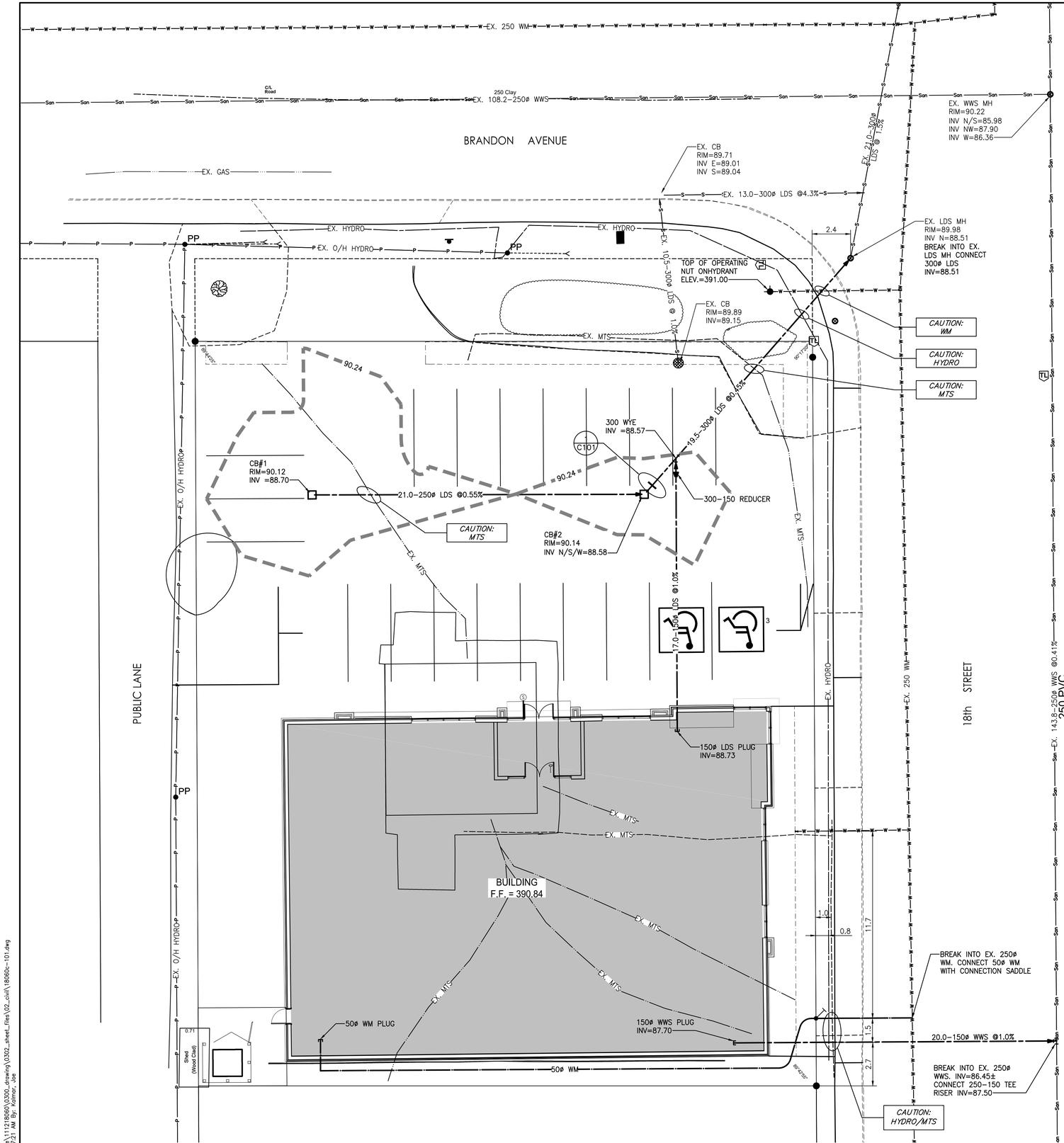
Lots 24-29, Block 3, Plan 202 BLTO
SE 1/4 Section 15
Twp. 10 - Rge. 19 - WPM
City of Brandon
Manitoba

0 2 4 8 12 16 20m.
Scale - 1 : 200

Altus Group
Manitoba Land Surveyors Ltd.
Toll Free: 1-800-465-6233
www.altusgeomaticsmb.com
100-158 11th Street
Brandon, Manitoba
R7A 4J4

Client File No.:
File : 211113-T-R3 (Disclaimer) F.B.: 529/106-117
REV: 2
Job: 211113-BD
Survey Date : Sept. 20 to Nov. 8, 2018

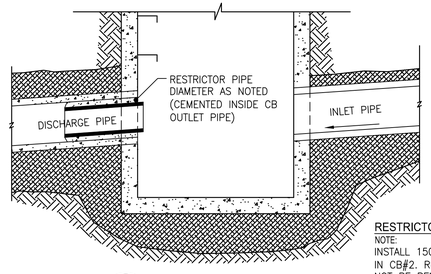
Printed Date: November 13, 2018
Comments:



GENERAL NOTES

1. CONTRACTOR TO VERIFY LOCATION AND TYPE OF ALL EXISTING BURIED UTILITIES.
2. ALL WORK SHALL BE PREFORMED AS STATED IN THE LATEST EDITION OF THE CITY OF BRANDON, STANDARD CONSTRUCTION SPECIFICATIONS.
3. SERVICING WITHIN PRIVATE PROPERTY SHALL COMPLY WITH THE REQUIREMENTS DETAILED IN THE SOP FOR: PRIVATE PROPERTY SEWER & WATER SERVICE PIPE INSTALLATIONS AND ILLUSTRATED ON DRAWING NO. PBS–2015001 WHICH SERVE AS SUPPLEMENTARY DOCUMENTS TO THE CITY OF BRANDON BUILDING BYLAW NO. 6018/55/92.
4. EXISTING SERVICES ARE TO BE REMOVED AND ABANDONED. WATER SERVICE IS TO BE ABANDONED AT THE CITY WM. SEWER SERVICE TO BE ABANDONED AT THE PROPERTY LINE AS PER THE WATER & WASTEWATER BY–LAW 5957.
5. LDS SEWER PIPES TO BE PVC. WWS PIPE TO BE PVC SDR 35. WATER SERVICES TO PEX. MANHOLES BENCHED PER CITY OF BRANDON SPECIFICATIONS.
6. ALL CATCH BASINS TO HAVE 600mm SUMP, TYPICAL.
7. CONTRACTOR TO CONFIRM THE LOCATION, DEPTH AND SIZES OF ALL SERVICE CONNECTIONS WITH BUILDING'S MECHANICAL/PLUMBING CONTRACTOR PRIOR TO SERVICE INSTALLATION.
8. ALL TRENCH BACKFILL FOR WATER, SEWER AND PVC CONDUIT INSTALLATIONS SHALL BE GRANULAR BEDDING AND BACKFILL AS PER CITY OF BRANDON STANDARD SPECIFICATION CONSTRUCTION.
9. SANITARY, STORM AND WATER SERVICES SHALL TERMINATE 1.0m INSIDE THE BUILDING FOOTPRINT.
10. FOR LIGHT STANDARD BASES, ELECTRICAL CONDUITS AND WIRING, SEE ELECTRICAL DRAWINGS.

EXISTING	LEGEND-PLAN	PROPOSED
150 WM	WATERMAIN	150 WM
	HYDRANT	
	VALVE	
300 LDS	LAND DRAINAGE SEWER	300 LDS
250 WWS	WASTE WATER SEWER	250 WWS
	MANHOLE	
	CATCH BASIN	
	CURB INLET	
	CURB STOP	
	PLUG	
	JUNCTIONS	
	CULVERT	
	GAS	
	HYDRO	
	M.T.S.	
	CONCRETE	
	ASPHALT	
	SIDEWALK	
	PROPERTY LINE	
	SURVEY BAR	
	DITCH	
x 390.32	ELEVATION	x 390.22
	BUILDING	
	100 YR. PONDING LIMITS	90.24



1 / C–101 RESTRICTOR DETAIL
N.T.S.

RESTRICTOR LOCATION :
NOTE:
INSTALL 150mm RESTRICTOR IN CB#2. RESTRICTOR MUST NOT BE REMOVED AFTER INSTALLATION.

PLUMBING CALCULATIONS

PROJECT NAME: TD Bank Brandon
PROJECT NUMBER: 1112 18060
INPUT BY: Jeff Schraud

TYPE OF BUILDING: CLUB
TYPE OF USE/OCE: General
DATE: January 3, 2019

FIXTURE NAME	# OF FIXTURES	SAN FU's EACH	TOTAL SAN FU's	EACH WATER FU's	EACH WATER HW FU's	EACH WATER CW FU's	WATER TOTAL SERVICE FU's	WATER TOTAL HW FU's	WATER TOTAL CW FU's	HOT WATER GPH EACH	TOTAL HOT WATER GPH	REMARKS
JANITOR SINK	1	2.00	2.00	4.00	3.00	3.00	4.00	3.00	3.00	40.00	40	
KITCHEN SINK DOMESTIC	1	1.50	1.50	3.00	2.25	2.25	3.00	2.25	2.25	30.00	30	
LAVATORY	2	1.50	3.00	2.00	1.50	1.50	4.00	3.00	3.00	6.00	12	
W.C., FLUSH TANK	4	4.00	16.00	5.00	3.75	3.75	20.00	15.00	15.00	0.00	0	
3" F.L. DRAIN	3	3.00	9.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	
TOTALS	**11**		**31.50**				**31.00**	**23.25**	**23.25**		**82.00**	

* SELECT GPH FROM MANUFACTURERS DATA

HOT WATER DEMAND =	0.25	82	= 20.5	GPH	(RECOVERY RATE)
STORAGE CAPACITY =	0.60	20.5	= 12.3	GAL	(STORAGE CAPACITY)
GROSS TANK SIZE =	1.25	12.3	= 15.375	GAL	(SIZE OF TANK RECOMMENDED)

STORM WATER DISCHARGE CRITERIA

1. ALLOWABLE DISCHARGE DETERMINED BY 5 YEAR PREDEVELOPMENT RUNOFF

Tc = 10 min
A = 0.180 ha
$Q_{ALLOWED}$ = 0.042 m3/s

2. SITE RUNOFF PREDEVELOPMENT

Surface	Area (ha)	C	CA	% IMP
Non-contributing		0.00	0.000	0%
Controlled Roof		0.20	0.000	100%
Grass		0.20	0.000	0%
Gravel		0.70	0.000	50%
Sloped Roof	0.023	0.90	0.021	100%
Paved	0.157	0.95	0.149	100%
Catchment Total	0.180	0.94	0.170	100%

C= 0.94
Tc = 10 min
I_5 = 739/(t+5.5)$^{A0.775}$
= 88 mm/hr
A = 0.180 ha
Q_{PREDEV} = 0.042 m3/s

3. SITE RUNOFF UNRESTRICTED

Surface	Area (ha)	C	CA	% IMP
Non-contributing		0.00	0.000	0%
Controlled Roof		0.20	0.000	100%
Grass	0.010	0.20	0.002	0%
Gravel		0.70	0.000	50%
Sloped Roof		0.90	0.000	100%
Paved	0.028	0.95	0.027	100%
Catchment Total	0.039	0.75	0.029	73%

C= 0.75
Tc = 10 min
I_{100} = 1194/(t+5.6)$^{A0.763}$
= 147 mm/hr
A = 0.039 ha
$Q_{POST1100}$ = 0.012 m3/s

4. SITE RUNOFF RESTRICTED

Surface	Area (ha)	C	CA	% IMP
Non-contributing		0.00	0.000	0%
Controlled Roof	0.065	0.20	0.013	100%
Grass	0.005	0.20	0.001	0%
Gravel		0.70	0.000	50%
Sloped Roof		0.90	0.000	100%
Paved	0.071	0.95	0.068	100%
Catchment Total	0.141	0.58	0.082	96%

C= 0.58
Tc = 10 min
I_{100} = 1194/(t+5.6)$^{A0.763}$
= 147 mm/hr
A = 0.141 ha
$Q_{POST1100}$ = 0.033 m3/s

5. RESTRICTED SITE DISCHARGE

RESTRICTOR DIAMETER = 0.150 m
RESTRICTOR INVERT = 88.58 m
HWL_{100} = 90.24 m
TAILWATER = 89.98 m
HYDRAULIC HEAD = 0.26 m
DISCHARGE COEFFICIENT = 0.60
$Q_{RESTRICTED}$ = 0.024 m3/s

6. TOTAL SITE DISCHARGE

$Q_{UNRESTRICTED}$ = 0.012 m3/s
$Q_{RESTRICTED}$ = 0.024 m3/s
Q_{TOTAL} = 0.036 m3/s

7. STORAGE REQUIREMENT
SURFACE CBs #1, #2
SWMM METHOD SUMMARY

CATCHMENT	0.077 ha
% IMPERVIOUS	93%
PEAK RUNOFF	0.042 m3/s
RUNOFF VOLUME	49 m3
REQUIRED STORAGE$_{100YR}$	9 m3

SURFACE STAGE STORAGE TABLE

ELEV (m)	AREA (m^2)	VOL (m^3)
90.12	1	0
90.15	13	0
90.20	90	2
90.25	229	10

RIM LEVEL = 90.12 m
HWL_{100} = 90.24 m
100 YR. VOL = 9 m^3

STORAGE REQUIREMENT
ROOFS
ISOCHRONE METHOD SUMMARY

CATCHMENT	0.065 ha
% IMPERVIOUS	100%
PEAK RUNOFF	0.036 m3/s
RUNOFF VOLUME	41 m3
REQUIRED STORAGE$_{100YR}$	21 m3

ROOF STAGE STORAGE TABLE

DEPTH (m)	AREA (m^2)	VOL (m^3)
0.00	2	0
0.15	581	31
0.30	581	118

INLET LEVEL = 0.00 m
$DEPTH_{100}$ = 0.10 m
100 YR. VOL = 21 m^3

TOTAL AVAILABLE STORAGE
SURFACE 10 m3
ROOFS 31 m3
TOTAL 41 m3

8. ADDITIONAL NOTES
INSTALL 150 mm RESTRICTOR IN THE OUTLET OF CB#2
RESTRICTORS REQUIRED ON ROOF OUTLETS

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

WARNING
IF POWER EQUIPMENT OR EXPLOSIVES ARE TO BE USED FOR EXCAVATION ON THIS PROJECT THE CONTRACTOR MUST:
1) NOTIFY THE GAS COMPANY OF THE PROPOSED LOCATION OF EXCAVATION.
2) TAKE PRECAUTION TO AVOID DAMAGE TO GAS COMPANY INSTALLATIONS.
SEE PROVINCIAL REGULATION 140/92 FOR DETAILS

ENGINEERS GEOSCIENTISTS MANITOBA
Certificate of Authorization
Stantec Consulting Ltd.
No. 1301

NORTH

No:	Date:	Revision
4	JAN 04, 2019	AS PER CITY'S COMMENTS
3	JAN 11, 2019	REVISED STORM SERVICE TO BUILDING
2	JAN 17, 2019	REVISED WATER SERVICE TO BUILDING
1	FEB 27, 2019	RE–ISSUED FOR CONSTRUCTION

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RAYMOND SIC LYAN ARCHITECT
93 ALLEN AVENUE
WINNIPEG, MANITOBA R3N 0G8
TEL: 204-287-8388 FAX: 204-287-8389

CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AT JOB SITE.

PROVINCE OF MANITOBA
J. F. KALMAR
Member 32203
REGISTERED PROFESSIONAL ENGINEER

CONSULTANT
Stantec
Suite 500, 311 Portage Ave.
Winnipeg MB Canada R3B 2B9
Tel. 204.489.5900
Fax. 204.453.9012
www.stantec.com

TD BANK BRANDON
1108 18TH STREET
BRANDON, MB

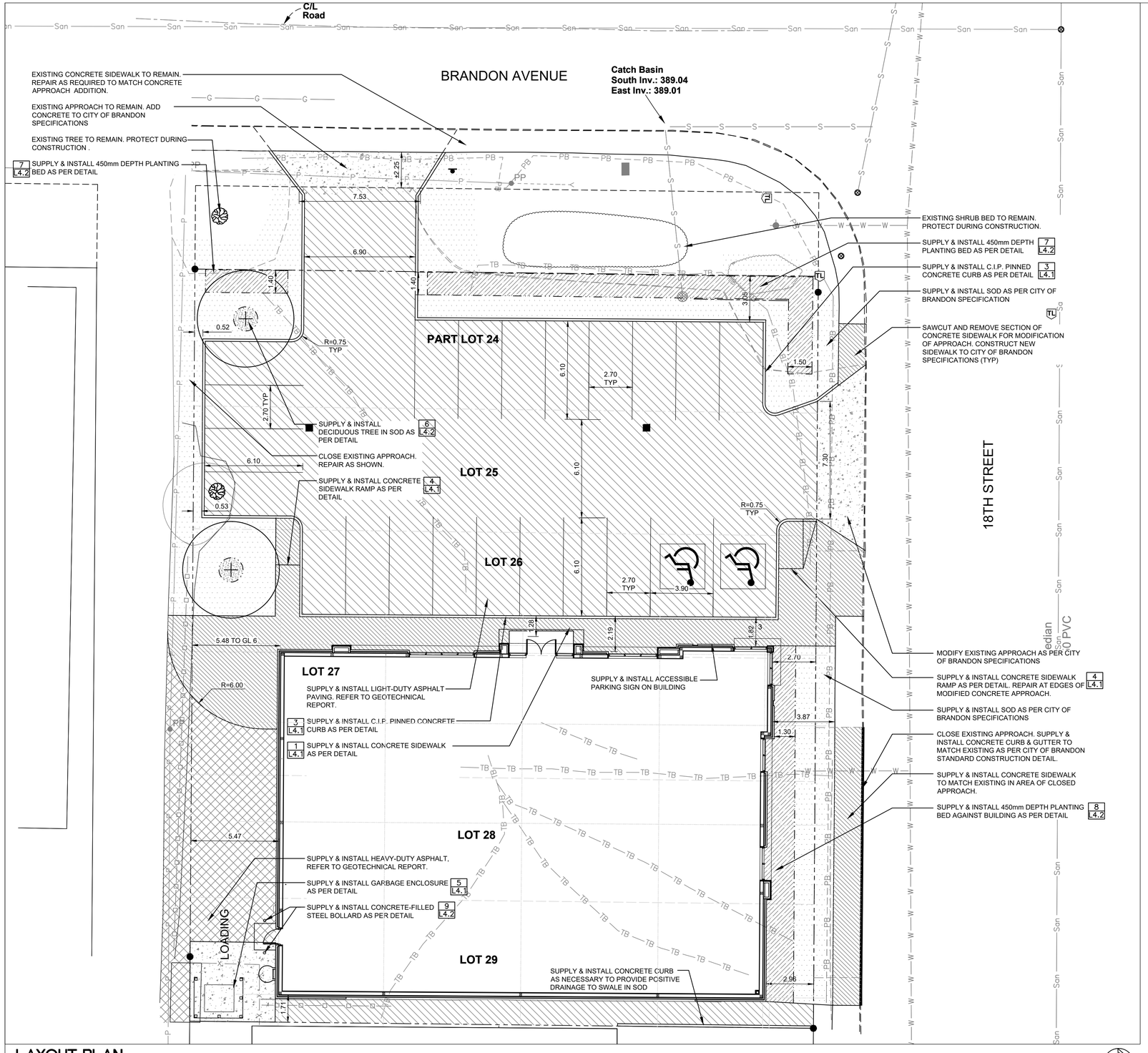
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DRAWN BY : KR	
CHECKED BY : JFK	
DATE: NOV 12 2018	
SHEET 01 OF 01	
PROJECT	SHEET NO.
08-044	C-101

SITE SERVICING PLAN
–
SCALE 1:125
–

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2019/02/27 7:21 AM By: Kalmar, Joe



LAYOUT PLAN
SCALE 1:125

NORTH

LEGEND

- HEAVY DUTY ASPHALT
- LIGHT DUTY ASPHALT
- CONCRETE SIDEWALK
- REINFORCED CONCRETE SLAB
- 900mm DEPTH PLANTING BED
- 450mm DEPTH PLANTING BED
- SOD
- SHRUB PLANTING BED EDGE
- PROPOSED CATCH BASIN
- PROPERTY LINE
- EXISTING CURB
- PROPOSED PINNED CURB
- PROPOSED CURB AND GUTTER TO CITY OF BRANDON SPECIFCATIONS
- PROPOSED DECIDUOUS TREE

GENERAL NOTES

1. CONTRACTOR TO CONFIRM ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO CONTRACT ADMINISTRATOR PRIOR TO CONSTRUCTION.
2. LAYOUT TO BE APPROVED BY CONTRACT ADMINISTRATOR PRIOR TO ANY CONSTRUCTION OR REMOVALS.
3. ALL DIMENSIONS ARE IN METRIC UNLESS OTHERWISE NOTED.
4. REFER ALSO TO WRITTEN SPECIFICATIONS.
5. CONTRACTOR IS RESPONSIBLE FOR ALL EXCAVATIONS, REMOVALS, DISPOSALS, AND ROUGH GRADING AS REQUIRED TO CONSTRUCT ALL WORKS AS SHOWN ON ALL PLANS, DETAILS AND SPECIFICATIONS. SAWCUT EXISTING PAVEMENT AND CURBS TO ENSURE CLEAN EDGE ON PAVEMENT AND CURBS TO REMAIN (NO BROKEN EDGES).
6. ALL PAINTED PAVEMENT MARKINGS SHOWN WITHIN LIMIT OF WORK & AS NOTED ON PLANS, TO BE INCLUDED IN WORK UNDER THIS CONTRACT.
7. LOCATION OF ALL UTILITIES SHOWN FOR ILLUSTRATION ONLY. CONTRACTOR MUST CONTACT ALL UTILITIES REGARDING RULES FOR WORKING IN THE AREA OF THE UTILITIES PRIOR TO COMMENCEMENT OF ANY WORK. CONTRACTOR MUST CONFIRM LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.
8. CONTRACTOR TO LAYOUT PARKING AREAS TO ACHIEVE REQUIRED NUMBER OF STALLS IN EACH ROW. STALLS ARE 2.7m WIDE BY 6.1m DEEP (UNLESS OTHERWISE NOTED). CONTRACTOR TO REPORT ANY DISCREPANCIES TO CONTRACT ADMINISTRATOR PRIOR TO CONSTRUCTION.
9. ALL EXISTING SIDEWALKS, CURBS, AND PAVING TO REMAIN TO BE PROTECTED DURING CONSTRUCTION TO CITY OF BRANDON STANDARDS. AREAS DAMAGED DURING CONSTRUCTION TO BE REPAIRED TO CITY OF BRANDON STANDARDS AT THE CONTRACTORS OWN COST.
10. ALL WORK IN THE PUBLIC RIGHT OF WAY O BE PERFORMED AS STATED IN THE LATEST EDITION OF THE CITY OF BRANDON STANDARD CONSTRUCTION SPECIFICATIONS.
11. FILL ALL HOLES AND LOW AREAS TO DESIGN SUBGRADE WITH COMPACTED FILL (SUITABLE TO SURFACE FINISH). FOR SODDED/PLANTED AREAS USE COMPACTED CLEAN EARTH FILL SUITABLE FOR PLANT GROWTH. FOR PAVED AREAS USE COMPACTED GRANULAR BASE. REFER TO SPECIFICATIONS.
12. USE SPECIFIED BACKFILL IN ALL TRENCHES RUNNING BELOW ALL STRUCTURES, PAVING, SWALES, ETC.
13. REFER TO GRADING PLAN L2 FOR LOCATION OF ALL CURB CUTS, CATCH BASINS, SWALES, ETC.
14. REFER TO PLANTING PLAN L3 FOR LAYOUT OF ALL SHRUB BEDS AND TREES. REFER ALSO TO WRITTEN SPECIFICATIONS.
15. ALL CLAY FILL SHOULD BE PLACED IN MAX 200mm THICK LIFTS AND COMPACTED UNIFORMLY TO A MIN OF 95% STANDARD PROCTOR MAXIMUM DRY DENSITY, AT A MOISTURE CONTENT BETWEEN 5% BELOW AND 5% ABOVE OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698. REFER ALSO TO WRITTEN SPECIFICATIONS.
16. ALL CB WORK, INCLUDING CONNECTION TO EXISTING LDS, TO BE DONE IN ACCORDANCE WITH CITY OF BRANDON DETAILS AND SPECIFICATIONS.
17. REMOVE AND DISPOSE OF ALL PLANT MATERIAL AND ORGANIC MATTER (INCLUDING TOPSOIL, ROOTS, ETC.) AND SILTY SOILS FULL DEPTH IN AREAS OF NEW ASPHALT. FILL ALL SUBGRADE AREAS WITH COMPACTED GRANULAR.

No:	Date:	Revision
1	FEB 27, 2019	ISSUED FOR CONSTRUCTION
2		
3		
4		

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BAUMGUNS S.G. VAN ARCHITECT
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TEL: 204-287-8668 FAX: 204-287-8388

CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AT JOB SITE.

SEAL
the manitoba association of architects
JACQUELINE L. WILKIE
number no. 75

CONSULTANT
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825 ST JOSEPH STREET
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TD BANK
BRANDON

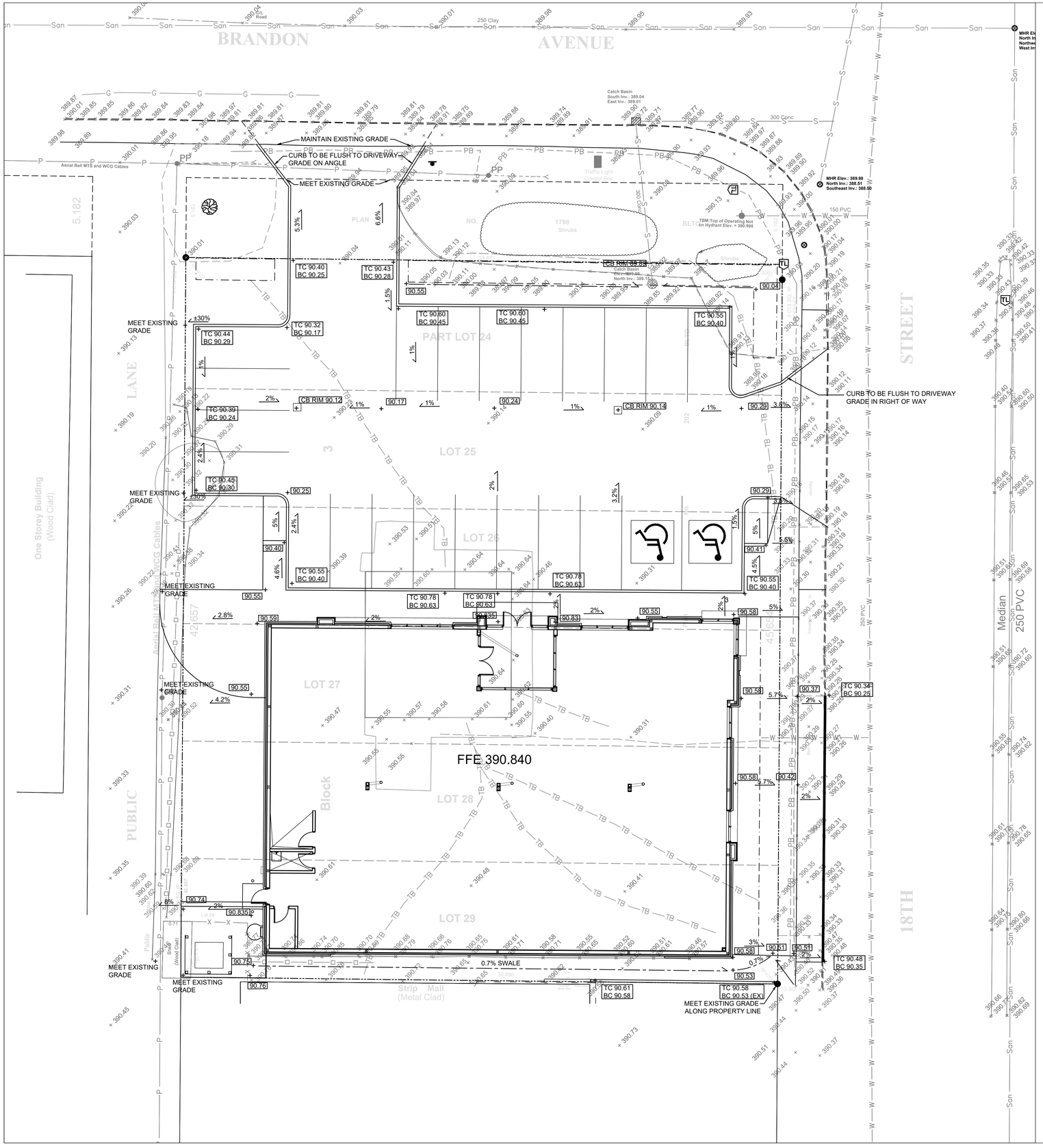
1108 18TH STREET

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ALL DIMENSIONS ARE TO BE CHECKED AND VERIFIED ON THE JOB. CONTRACTOR SHALL NOT SCALE DRAWINGS. NOTIFY CONSULTANTS OF ANY DISCREPANCIES.

DRAWN BY : MD	
CHECKED BY : JW	
DATE: FEB 27 2019	
SHEET 01 OF 03	
PROJECT	SHEET NO.
18-044	L1

SITE LAYOUT PLAN
–
SCALE 1:125
–



LEGEND

========	EXISTING CURB
	PROPOSED PINNED CURB
	CONCRETE CURB & GUTTER
□	PROPOSED CATCH BASIN
390.35	EXISTING SPOT ELEVATION
+ 90.04	PROPOSED SPOT ELEVATION
1%	DIRECTION OF SLOPE
TC	TOP OF CURB
BC	BOTTOM OF CURB
CB RIM	CATCH BASIN RIM

GRADING NOTES

1. ALL ELEVATIONS SHOWN IN METRIC UNITS. NUMBERS WITH DECIMALS INDICATE METERS. WHOLE NUMBERS INDICATE MILLIMETERS.
2. ALL GRADING TO BE STAKED ON SITE FOR REVIEW AND APPROVAL BY CONTRACT ADMINISTRATOR PRIOR TO CONSTRUCTION.
3. REFER TO LAYOUT PLAN L1, FOR LAYOUT OF ALL CURBS, SIDEWALKS, PAVING ETC.
4. CONTRACTOR TO BE ADVISED THAT EXISTING GRADES ARE GIVEN AS INFORMATION ONLY AND SHOULD BE VERIFIED ON SITE. REPORT ANY DISCREPANCIES.
5. ALL PROPOSED ELEVATIONS TO BE FINISHED ELEVATIONS.
6. THE CONTRACTOR SHALL PROVIDE A QUALIFIED CREW TO LAYOUT SITE ELEMENTS. THE CREW SHALL BE EQUIPPED WITH ALL THE NECESSARY EQUIPMENT TO PROVIDE HORIZONTAL AND VERTICAL LAYOUT IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
7. MAINTAIN EXISTING GRADES AT ALL PROPERTY LINES AND LIMIT OF WORK LINES UNLESS OTHERWISE NOTED. ENSURE POSITIVE DRAINAGE IN ALL AREAS TO CATCH BASINS AND CURB INLETS AS NOTED.
8. SIDEWALK SLOPES:
   -MAXIMUM 5%
   -MINIMUM 1%
   -MAXIMUM CROSS SLOPE 2%
   EXCEPT AS NOTED.
9. SODDED AREA SLOPES:
   -MAXIMUM 25%
   -MINIMUM 1%
10. ASPHALT SLOPES:
    -MAXIMUM 5%
    -MINIMUM 1%
    ANY DEVIATION FROM THE ABOVE SLOPES TO BE APPROVED BY CONTRACT ADMINISTRATOR PRIOR TO CONSTRUCTION
11. CONTRACTOR TO ADJUST GRADES OF ALL SERVICES WITHIN LIMIT OF WORK AS REQUIRED. REFER TO ENGINEER'S DRAWINGS AND SPECIFICATIONS FOR ALL MANHOLES, CATCH BASINS, FIRE HYDRANT, CURB STOPS, ETC. REMOVALS, RELOCATIONS AND ADJUSTMENTS.
12. CATCH BASINS, CURB INLETS, MANHOLES, FIRE HYDRANTS AND WATER VALVES TO BE ABANDONED OR ADJUSTED ARE TO BE TO CITY OF BRANDON SPECIFICATIONS.
13. CONTRACTOR IS RESPONSIBLE FOR ALL EXCAVATIONS, REMOVALS, DISPOSALS, AND ROUGH GRADING AS REQUIRED TO CONSTRUCT ALL WORKS AS SHOWN ON PLAN, DETAILS AND SPECIFICATIONS.
14. FILL ALL HOLES AND LOW AREAS TO DESIGN SUBGRADE WITH COMPACTED FILL (SUITABLE TO SURFACE FINISH) FOR SODDED/PLANTED AREAS USE COMPACTED CLEAN EARTH FILL SUITABLE FOR PLANT GROWTH. FOR PAVED AREAS USE COMPACTED GRANULAR BASE. REFER TO SPECIFICATIONS.
15. USE SPECIFIED BACKFILL IN ALL TRENCHES RUNNING BELOW ALL STRUCTURES, PAVING, WALKWAYS, ETC.
16. IF POWER EQUIPMENT IS TO BE USED FOR EXCAVATION ON THIS PROJECT THE CONTRACTOR MUST:
    A) NOTIFY THE GAS COMPANY AND HYDRO COMPANY OF THE PROPOSED LOCATION OF EXCAVATION.
    B) TAKE PRECAUTION TO AVOID DAMAGE TO GAS COMPANY AND HYDRO COMPANY INSTALLATIONS.
17. CONTRACTOR TO OBTAIN LOCATION OF ALL UTILITIES PRIOR TO ANY CONSTRUCTION. REPORT ANY DISCREPANCIES. CONTRACTOR TO BE ADVISED THAT LOCATIONS OF EXISTING SERVICES ARE GIVEN AS INFORMATION ONLY AND THAT NEW SERVICES THAT HAVE BEEN RECENTLY INSTALLED ARE NOT SHOWN.
18. ALL EXISTING TREES, PLANTING BEDS, CURBS, SIDEWALKS, AND ROADS TO REMAIN TO BE PROTECTED DURING CONSTRUCTION TO CITY OF BRANDON STANDARDS. AREAS DAMAGED DURING CONSTRUCTION TO BE REPAIRED TO CITY OF BRANDON STANDARDS AT CONTRACTOR'S OWN COSTS.
10. ALL WORK IN THE PUBLIC RIGHT OF WAY O BE PERFORMED AS STATED IN THE LATEST EDITION OF THE CITY OF BRANDON STANDARD CONSTRUCTION SPECIFICATIONS.
11. REFER TO LAYOUT PLAN FOR LAYOUT OF ALL CURBS, ISLANDS, ETC.
12. REFER TO PLANTING PLAN FOR ALL TREE AND SHRUB BED PLANTING.
13. FINISHED GRADE TO BE TOP OF MULCH GRADE IN ALL PLANTING BEDS.
14. REFER ALSO TO WRITTEN SPECIFICATIONS

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CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AT JOB SITE.

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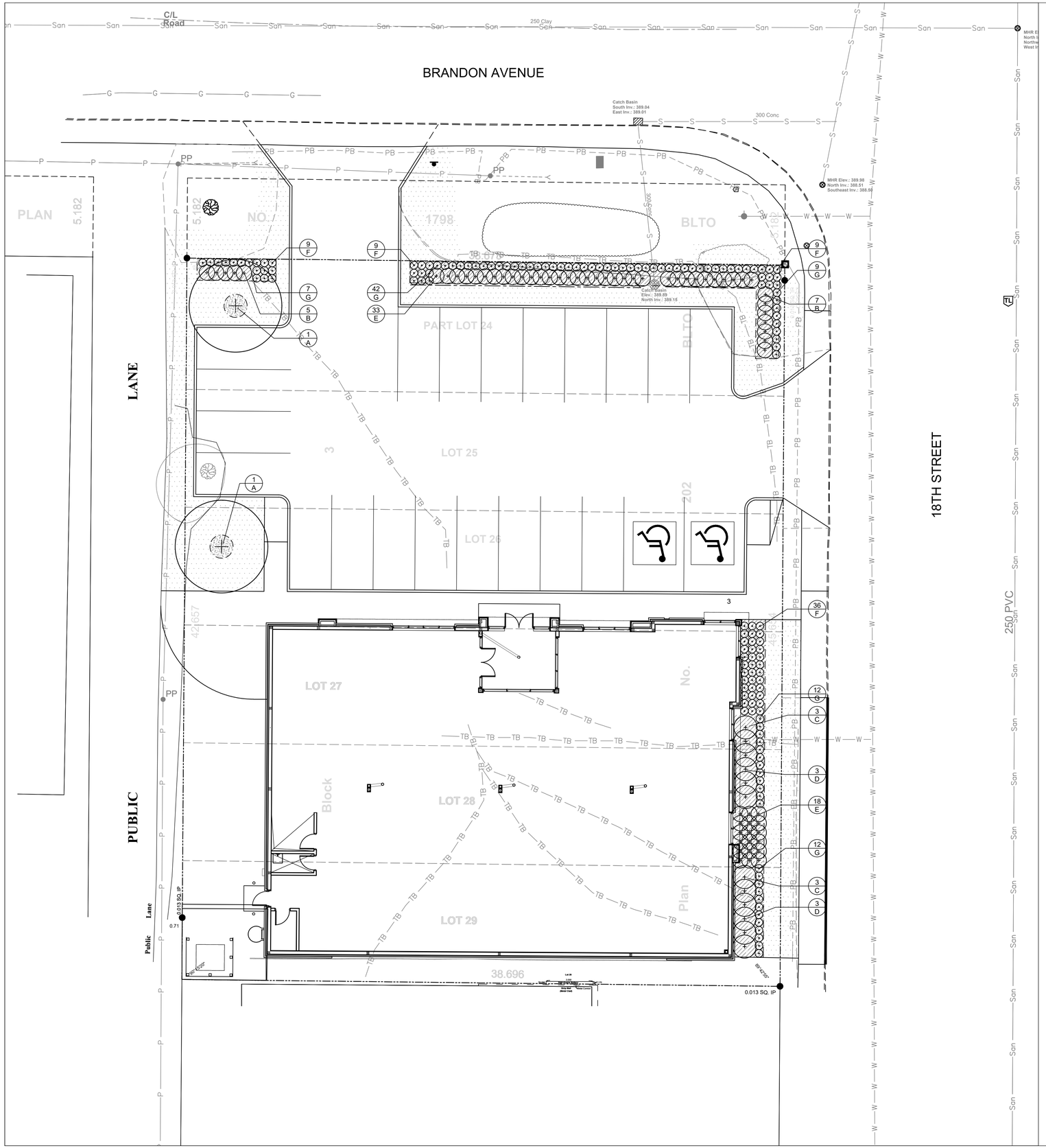
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SITE GRADING PLAN
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SCALE 1:125
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NORTH



LEGEND

- PROPERTY LINE
- EXISTING TREES
- PROPOSED DECIDUOUS TREE
- PROPOSED SHRUBS
- 900mm DEPTH PLANTING BED
- 450mm DEPTH PLANTING BED
- TOPSOIL AND SOD

DETAIL KEY

1 / L5 — DETAIL NUMBER / SHEET NUMBER

PLANT KEY

1 / A — QUANTITY / PLANT TYPE

PLANTING NOTES

1. LOCATION OF ALL PLANT MATERIAL TO BE MARKED OUT ON SITE AND APPROVED BY CONTRACT ADMINISTRATOR PRIOR TO PLANTING.
2. TREES SPACING, UNLESS OTHERWISE NOTED:
   DECIDUOUS TREES: 6.0m MIN.
   CONIFEROUS TREE: 3.0m MIN.
3. SHRUB SPACING
   DECIDUOUS SHRUBS: 600mm O.C.
   CONIFEROUS SHRUBS: 750mm O.C.
2. ALL PLANT MATERIAL TO BE BEST QUALITY. PLANT MATERIAL TO BE REVIEWED ON SITE BY LANDSCAPE ARCHITECT ON SITE PRIOR TO PLANTING. PLANT MATERIAL MUST BE NO.1 GRADE NURSERY STOCK, SUPPLIED AND INSTALLED IN CONFORMANCE WITH THE LATEST EDITION OF THE CANADIAN NURSERY LANDSCAPE ASSOCIATION 'CANADIAN STANDARDS FOR NURSERY STOCK'.
3. PLANTS NOT ACCEPTABLE ARE TO BE REPLACED AND NEW PLANTS APPROVED PRIOR TO PLANTING. REPLACEMENTS ARE AT THE CONTRACTOR'S OWN COST.
4. ALL PLANTING EXCAVATIONS ARE TO BE REVIEWED AND APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PLACEMENT OF DRAINAGE COURSE, FILTER FABRIC AND/OR SOIL
5. ALL SUB DRAINS TO BE CONNECTED TO LDS. REFER TO CIVIL DRAWINGS.
6. SHRUB BEDS AT PARKING AREA TO HAVE PLANTS SET BACK SO THAT THERE IS A 450mm WIDE MULCH EDGE ALONG CURB WITH FULL GROWTH OF PLANTS.
7. ALL PLANTING BEDS (SHRUB BED OR MULCH BED) WITH TREES MUST HAVE MINIMUM 900mm DEPTH PLANTING SOIL FOR THE ENTIRE AREA OF THE BED.
10. ALL WORK IN THE PUBLIC RIGHT OF WAY O BE PERFORMED AS STATED IN THE LATEST EDITION OF THE CITY OF BRANDON STANDARD CONSTRUCTION SPECIFICATIONS.
11. REFER ALSO TO WRITTEN SPECIFICATIONS.

PLANT LIST

KEY	QTY	COMMON NAME/ BOTANICAL NAME	SIZE	REMARKS
DECIDUOUS TREES				
A	2	GOLDEN CASCADE LINDEN / TILIA CORDATA 'GOLDEN CASCADE'	75mm cal	SPECIMEN, W.B. MACHINE DUG WITH MIN. 10 BRANCHES IN WELL BRANCHED HEAD, STRAIGHT TRUNK, MIN. HT. 6.0m BRANCHING HT 1.8m
DECIDUOUS SHRUBS				
B	12	GLOBE CARAGANA/ CARAGANA FRUTEX 'GLOBOSA'	2 gal pot.	SPECIMEN. CONTAINER GROWN,WITH MINIMUM 3 STALKS IN WELL BRANCHED PLANT. MIN 450mm HT., FREE OF PESTS AND DISEASE
C	6	DART'S GOLD NINEBARK/ PHYSOCARPUS OPULIFOLIUS 'DART'S GOLD'	3 gal pot.	SPECIMEN. CONTAINER GROWN,WITH MINIMUM 3 STALKS IN WELL BRANCHED PLANT. MIN 600mm HT., FREE OF PESTS AND DISEASE
D	6	LITTLE DEVIL NINEBARK/ PHYSOCARPUS OPULIFOLIUS 'DONNA MAY'	3 gal pot.	SPECIMEN. CONTAINER GROWN,WITH MINIMUM 3 STALKS IN WELL BRANCHED PLANT. MIN 600mm HT., FREE OF PESTS AND DISEASE
E	51	LITTLE PRINCESS SPIREA/ SPIREA JAPONICA 'LITTLE PRINCESS'	2 gal pot.	SPECIMEN. CONTAINER GROWN,WITH MINIMUM 3 STALKS IN WELL BRANCHED PLANT. MIN 450mm HT., FREE OF PESTS AND DISEASE
PERENNIALS/ GRASSES				
F	63	KARL FOERSTER FEATHER REED GRASS / CALAMAGROSTIS ACUTIFLORA 'KARL FOERSTER'	1 gal pot.	SPECIMEN. CONTAINER GROWN,MIN 600mm HT., FREE OF PESTS AND DISEASE
G	73	HOT ROD SWITCH GRASS/ PANICUM VIRGATUM 'HOT ROD'	1 gal pot.	SPECIMEN. CONTAINER GROWN,MIN 600mm HT., FREE OF PESTS AND DISEASE

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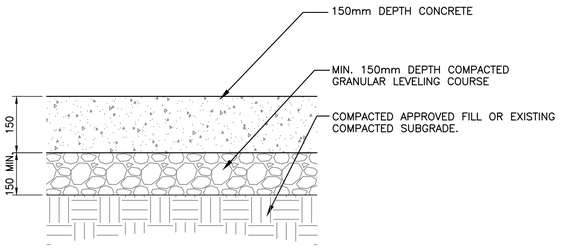
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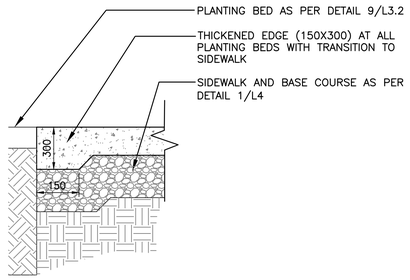
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PLANTING PLAN
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SCALE 1:125
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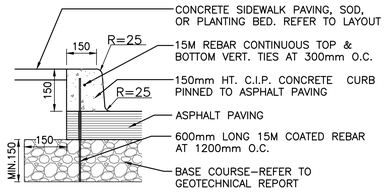
NORTH



1 L1 CONCRETE SIDEWALK
N.T.S.

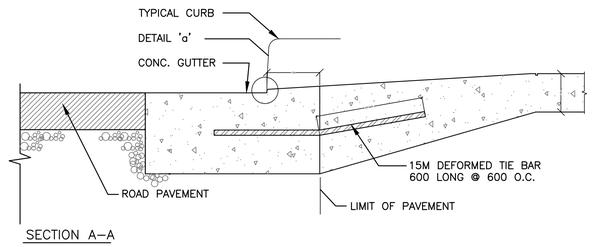


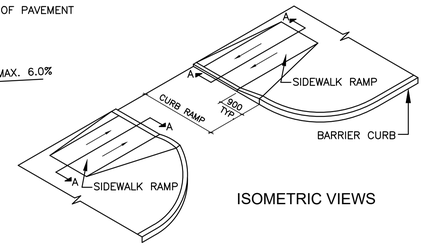
2 L1 THICKENED EDGE OF SIDEWALK AT PLANTING BEDS



NOTES:
1. PROVIDE EXPANSION JOINTS @ 25' O.C. MAX. AND AT CURVES, TANGENTS, AND CORNERS.
2. SACK FINISH EXPOSED SURFACES.
3. RUN BARS CONTINUOUS THRU EXPANSION JOINTS.

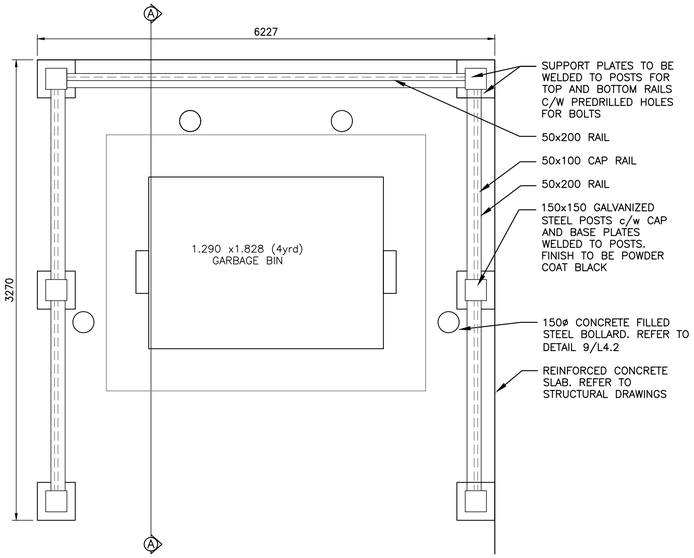
3 L1 CIP CONCRETE CURB
N.T.S.



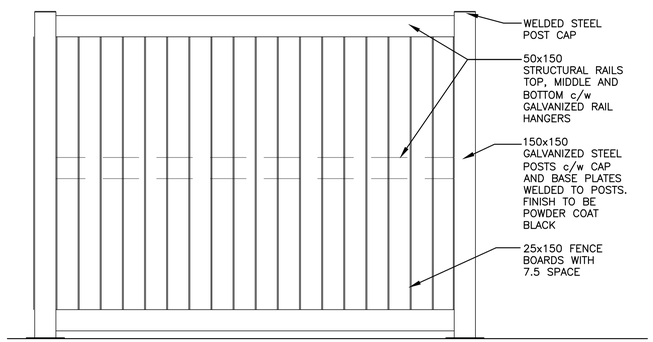


ISOMETRIC VIEWS

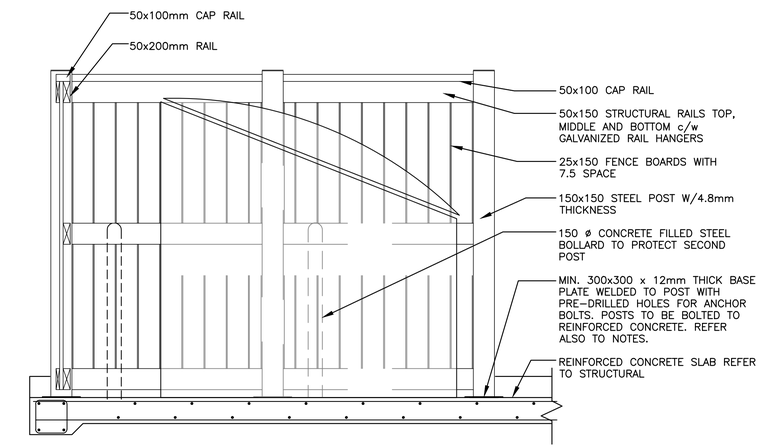
4 L1 SIDEWALK RAMP-TYP.
N.T.S.



PLAN



PARTIAL REAR ELEVATION



SECTION A-A

NOTES:
1. CONTRACTOR TO PROVIDE STAMPED ENGINEERED SHOP DRAWINGS FOR ALL SUPPORT STRUCTURES, MOUNTING BRACKETS AND HARDWARE. DIMENSIONS PROVIDED ARE FOR DESIGN INTENT ONLY.
2. ALL FASTENINGS AND HARDWARE TO BE GALVANIZED AND ARE TO BE INCLUDED WITH THE SUPPLY AND INSTALLATION OF THE POSTS AND FENCE ALL FASTENINGS AND HARDWARE TO BE OF SIZE SUITABLE TO APPLICATION. CONTRACTOR TO ADVISE CONTRACT ADMINISTRATOR PRIOR TO ANY CHANGES. NOMINAL LUMBER SIZES SHOWN.
3. ALL WOOD TO BE PRESSURE TREATED (ACQ-C/D) LUMBER. PAINT ALL CUTS WITH APPROVED WOOD PRESERVATIVE.
4. ALL REINFORCING TO BE REVIEWED AND APPROVED BY STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.
5. CONTRACTOR TO PROVIDE ADDITIONAL STEEL SUPPORT FOR GATE STRUCTURE AND GATE HINGES

5 L1 GARBAGE ENCLOSURE ON REINFORCED CONCRETE SLAB
N.T.S.

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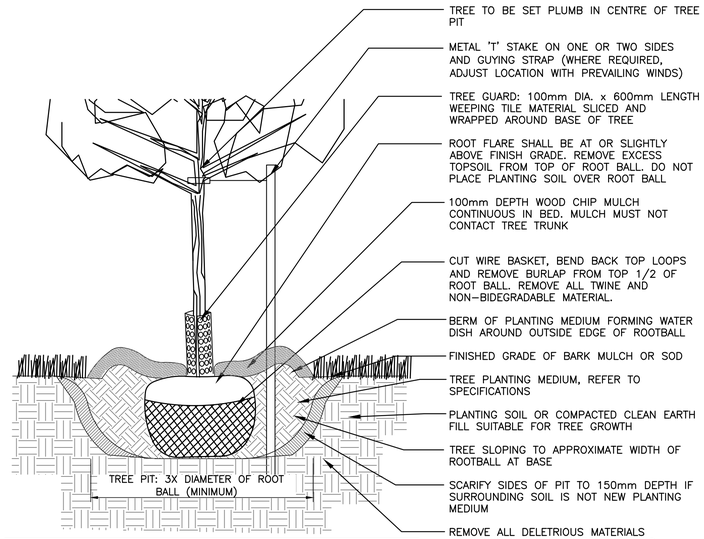
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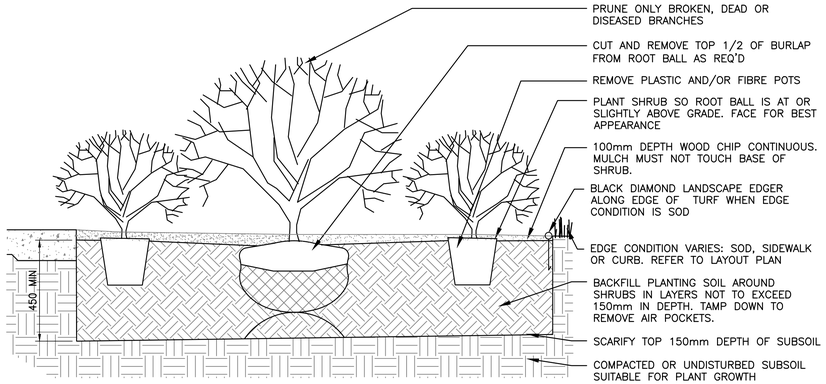
DETAILS
1 OF 2
-
-



NOTE:

1. BARK MULCH TO BE FROM LOCAL SOURCE AND TO BE APPROVED BY CONTRACT ADMINISTRATOR PRIOR TO INSTALL.
2. MINIMUM 8.5cu.m. PLANTING SOIL PER TREE. MINIMUM 900mm DEPTH PLANTING SOIL, 6.3m LENGTH
3. USE 100mm DEPTH BARK MULCH AT ALL TREE PLANTING LOCATIONS IN SOD. MULCH MUST NOT CONTACT TREE TRUNK.

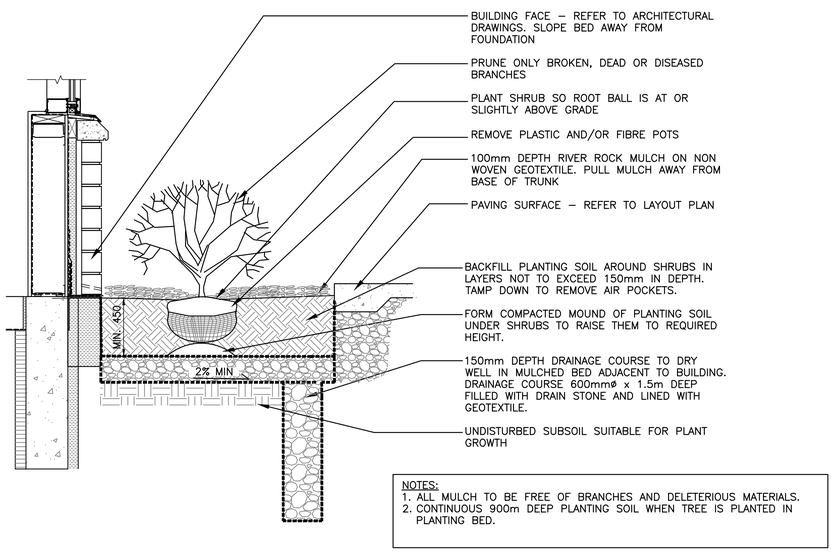
6 L1 TYPICAL DECIDUOUS TREE PLANTING IN SOD
N.T.S.



NOTES:

1. PLANTING BED WITH TREES TO USE SAME PLANTING SOIL AS SHRUB BED. PLANTING SOIL TO BE 900mm DEPTH FOR THE ENTIRE WIDTH AND DEPTH OF PLANTING BED.
2. PLANTING BED WITHOUT TREES TO USE SAME PLANTING SOIL AS SHRUB BED. PLANTING SOIL TO BE 450mm DEPTH AS PER DETAIL.
3. PLANTING BEDS SHALL CONTAIN NO LIMESTONE GRAVEL, WASTE MATERIAL.

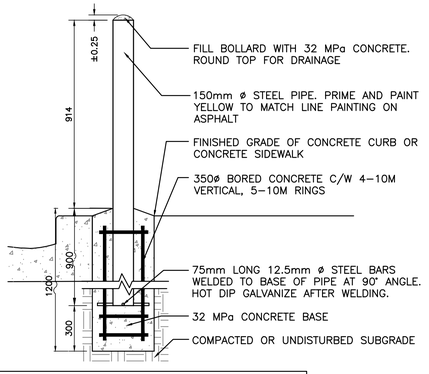
7 L1 TYPICAL SHRUB BED PLANTING
N.T.S.



NOTES:

1. ALL MULCH TO BE FREE OF BRANCHES AND DELETERIOUS MATERIALS.
2. CONTINUOUS 900m DEEP PLANTING SOIL WHEN TREE IS PLANTED IN PLANTING BED.

8 L1 SHRUB BED WITH DRAINAGE COURSE TO DRY WELL
N.T.S.



NOTES:

1. CONCRETE REINFORCING INFORMATION AND ANCHORING REQUIREMENTS TO BE CONFIRMED BY STRUCTURAL ENGINEER.

9 L1 150Ø CONCRETE-FILLED STEEL BOLLARD
N.T.S.

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GENERAL NOTES

1. DO NOT SCALE THESE DRAWINGS
2. ALL DIMENSIONS ARE GIVEN TO GRID LINES, FACE OF CONCRETE, FACE OF CONCRETE BLOCK OR FACE OF STUD. EXCEPT AS NOTED.
3. CONTRACTOR SHALL SATISFY HIMSELF THAT ALL DIMENSIONS, DATUMS & DETAILED INFORMATION GIVEN ON THESE DRAWINGS IS CORRECT. ALL ERRORS & OMISSIONS ARE TO BE REPORTED TO ARCHITECT IMMEDIATELY.
4. VARIATIONS AND MODIFICATIONS TO THE CONSTRUCTION FROM THAT DESCRIBED IN THESE DRAWINGS SHALL NOT BE CARRIED OUT WITHOUT WRITTEN AUTHORIZATION FROM THE PROJECT MANAGER.
5. CONTRACTORS SHALL VERIFY ALL BUILDING & SITE CONDITIONS & REPORT ANY DISCREPANCIES TO THE PROJECT MANAGER PRIOR TO CONSTRUCTION OF ANY RELATED WORK.
6. ALL EXPOSED GYP. WALL BD., STEEL, CONCRETE & CONCRETE BLOCK SHALL PAINTED AND PRIMED ACCORDING TO STANDARD PREPARATION OF EACH MATERIAL. REFER TO ARCHITECT FOR FINAL COLOUR IF NOT IN SCHEDULE.
7. ALL EXPOSED WOOD TRIM, CASING, AND OTHER WOOD FINISH SHALL PAINTED OR STAINED AND PRIMED ACCORDING TO STANDARD PREPARATION OF THIS MATERIAL. REFER TO ARCHITECT FOR FINAL COLOUR IF NOT IN SCHEDULE.
8. ALL PENETRATIONS THROUGH FIRE RATED WALLS, FLOOR AND ROOF SHALL BE CAULKED/SEALED W/ PROPER CAULKING AND OR SEALING MATERIAL'S TO MAINTAIN THE INTEGRITY OF FIRE RATING SEPARATION. SUBMIT SHOP DRAWINGS FOR REVIEW.

ABBREVIATIONS

A.B.	AIR BARRIER	HP	HIGH POINT
ACT.	ACOUSTIC CEILING TILE	HR	HOUR
ADJ.	ADJUSTABLE	H.S.S.	HOLLOW STRUCTURAL STEEL
A.F.F.	ABOVE FINISHED FLOOR		
ALUM.	ALUMINUM	INSUL.	INSULATION
ANOD.	ANODIZED	INT.	INTERIOR
APPROX.	APPROXIMATE	I.D.	INSIDE DIAMETER
ARCH.	ARCHITECTURAL		
A.V.B.	AIR/VAPOUR BARRIER	LAM	LAMINATE
		LAV	LAVATORY
B.F.A.	BARRIER FREE ACCESS	LP	LOW POINT
BLDG.	BUILDING		
BM.	BEAM	M.O.	MASONRY OPENING
B/S	BOTH SIDES	MAX.	MAXIMUM
B/W	BOTH WAYS	MDF	MEDIUM DENSITY FIBRE BOARD
BOT.	BOTTOM	MECH.	MECHANICAL
B/O	BOTTOM OF	MIN.	MINIMUM
		m/m	MILLIMETER (S)
C.B.	CATCH BASIN	MISC.	MISCELLANEOUS
C.G.	CORNER GUARD	MTL	METAL
CPT.	CARPET		
C.I.P.	CAST IN PLACE	N/C	NOT IN CONCTRACT
CONST.	CONSTRUCTION	N/A	NOT APPLICABLE
CONT.	CONTINUOUS	NTS	NOT TO SCALE
COL.	COLUMN	NO.	NUMBER
C.L.	CENTRE LINE		
CLG.	CEILING	O.C.	ON CENTRE
C.B.	CONCRETE BLOCK	OSB	ORIENTED STRAND BOARD
CONC.	CONCRETE	O.D.	OUTSIDE DIAMETER
C.J.	CONTROL JOINT	O/H	OVERHEAD
C.T.	CERAMIC TILE		
C/W	COMPLETE WITH	PLAM	PLASTIC LAMINATE
		PL	PROPERTY LINE
DET.	DETAIL	POLY.	POLYETHYLENE
DIM.	DIMENSION	PREFIN.	PREFINISHED
DIA.	DIAMETER	P.S.	PRESSED STEEL
DN.	DOWN	P.T.	PRESSURE TREATED
D.W.	DRYWALL	PTD	PAINTED
DWG	DRAWING		
		RD.	ROOF DRAIN
EA.	EACH	R.O.	ROUGH OPENING
ELEV.	ELEVATION	RWL.	RAIN WATER LEADER
ELEC.	ELECTRICAL	REQ'D	REQUIRED
EPF.	ELECTRICAL POWER TO FRAME	REV.	REVERSED
EQ.	EQUAL		
EXIST.	EXISTING	SIM.	SIMILAR
EXP.	EXPOSED	S+I	SUPPLY AND INSTALL
EXT.	EXTERIOR	REV.	SPECIFICATIONS
		STRUCT.	STRUCTURAL
F.D.	FLOOR DRAIN		
FIN.	FINISH	T.B.D.	TO BE DETERMINED
F/O	FACE OF	T.O.	TOP OF
F.R.	FIRE RATED	TYP.	TYPICAL
F.R.R.	FIRE RESISTANCE RATING		
		U/N	UNLESS NOTED
G1S	GOOD ONE SIDE	U.N.O.	UNLESS NOTED OTHERWISE
GA.	GAUGE	U/S	UNDERSIDE
GALV.	GALVANIZED		
G.C.	GENERAL CONTRACTOR	VERT.	VERTICAL
		V.B.	VAPOR BARRIER
HT.	HEIGHT		
H.C.	HOLLOW CORE	W/	WITH
H.M.	HOLLOW METAL	W/C	WATER CLOSET
H.M.I.	HOLLOW METAL INSULATED		
HOR.	HORIZONTAL		

DRAWING LIST

SURVEY:

TOPOGRAPHY, UTILITY AND BOUNDARY SURVEY

CIVIL:

C-101 SITE SERVICING PLAN

LANDSCAPE:

L1 SITE LAYOUT PLAN
L2 SITE GRADING PLAN
L3 PLANTING PLAN
L4.1 DETAILS
L4.2 DETAILS

ARCHITECTURAL:

A0.0 COVER SHEET
A0.1 SITE KEY PLAN
A0.2 WALL TYPES, DRAWING LIST, GENERAL NOTES & ABBREVIATIONS
A3.0 MAIN FLOOR FIXTURE PLAN
A3.1 MAIN FLOOR CONSTRUCTION PLAN
A3.1B PLAN DETAILS
A3.2 ROOF PLAN
A3.2B ROOF PLAN DETAILS, TYP. ROOF DETAILS
A4.0 EXTERIOR ELEVATIONS
A4.1 EXTERIOR ELEVATIONS, WINDOW SCHEDULE
A5.0 BUILDING SECTIONS
A6.0 WALL SECTIONS
A6.1 WALL SECTIONS
A6.2 SECTION DETAILS
A6.3 WINDOW DETAILS
A8.0 DOOR & ROOM FINISH SCHEDULE

STRUCTURAL:

S1.1 GENERAL NOTES
S1.2 TYPICAL DETAILS
S1.3 TYPICAL DETAILS
S1.4 SCHEDULES
S2.1 FOUNDATION PLAN
S2.2 MAIN FLOOR FRAMING PLAN
S2.3 ROOF FRAMING PLAN
S2.4 CANOPY FRAMING PLAN/ TOWER ROOF FRAMING PLAN
S3.1 FRAMING ELEVATIONS
S3.2 FRAMING ELEVATIONS 2
S3.3 FRAMING ELEVATIONS 3
S5.1 SECTIONS
S5.2 SECTIONS 2
S5.3 DETAILS

MECHANICAL:

M0.0 MECHANICAL - TITLE PAGE & MECHANICAL SITE DEMOLITION
M1.0 MECHANICAL - ROOF PLAN
M2.0 MECHANICAL - MAIN FLOOR PLAN
M3.0 MECHANICAL - DETAILS & CALCULATIONS
M3.1 MECHANICAL - DETAILS & SCHEDULES
M3.2 MECHANICAL - DETAILS
M4.0 MECHANICAL - SPECIFICATIONS

ELECTRICAL:

E1.0 ELECTRICAL SPECIFICATION AND KEY PLAN
E2.0 ELECTRICAL LAYOUTS AND SCHEDULES
E3.0 ELECTRICAL SCHEDULES AND DETAILS
E3.1 ELECTRICAL DETAILS

DRAWING SYMBOL LEGEND

BUILDING SECTION — 2 / A6.3 — SECTION NO. / SHEET NO. WHERE SECTION IS DRAWN

WALL SECTION — 2 / A6.3 — SECTION NO. / SHEET NO. WHERE SECTION IS DRAWN

PLAN DETAIL — 2 / A6.3 — PLAN DETAIL NO. / SHEET NO. WHERE DETAIL IS DRAWN

EXTERIOR ELEVATION — 2 / A6.3 — ELEVATION NO. / SHEET NO. WHERE ELEVATION IS DRAWN

DRAWING TITLE — 2 / A6.3 — DRAWING NUMBER / DRAWING TITLE / SCALE: 1:100 / SCALE / SHEET NO.

INTERIOR ELEVATION — 3 / A3.4 — ELEVATION NO. / SHEET NO. WHERE ELEVATION IS DRAWN

NEW DOOR — 36M — NEW DOOR / DOOR NUMBER

EXISTING DOOR — EXISTING DOOR

DOOR TO BE REMOVED — EXISTING DOOR TO BE REMOVED

WINDOW TYPE — W1 — WINDOW NUMBER

INTERIOR PARTITION TYPE — 1 — WALL TYPE NUMBER

EXTERIOR WALL ASSEMBLY TYPE — A — WALL TYPE NUMBER

ROOM NUMBER — ROOM / 104 — ROOM TITLE / ROOM NUMBER

GRIDLINE MARKER — 2 — GRIDLINE NUMBER

KEYNOTE MARKER — 1 — KEYNOTE NUMBER

DIMENSION STYLES — ARROW SHOW DIMENSION TO GRIDLINE / SLASH SHOWS DIMENSION TO FACE OF WALL, UNLESS NOTED OTHERWISE

CONSULTANTS

CIVIL:

STANTEC

500-311 PORTAGE AVE
WINNIPEG, MANITOBA
R3B 2B9
TEL: (204) 924-7068

LANDSCAPE:

MCGOWAN RUSSELL

825 ST JOSPEH STREET
WINNIPEG, MANITOBA
R2H 3A8
TEL: (204) 956-0396
FAX: (204) 956-1265

ARCHITECTURAL:

RAYMOND S.C. WAN ARCHITECT

50 WILLOW AVE
WINNIPEG, MANITOBA
R3N 0G8
TEL: (204) 287 8668
FAX: (204) 287 8388

STRUCTURAL:

LAVERGNE DRAWARD & ASSOCIATES INC.

200-193 DUMOULIN STREET
WINNIPEG, MB
R2H 0E4
TEL: (204) 947 2222
FAX: (204) 947 2522

MECHANICAL / ELETRICAL:

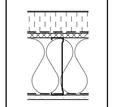
NOVA 3 ENGINEERING LTD.

201-120 FORT STREET
WINNIPEG, MB
R3C 1C7
TEL: (204) 943-6142
FAX: (204) 942-1216

WALL CONSTRUCTION GENERAL NOTES:

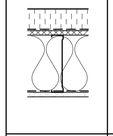
1. ALL WALLS TO EXTEND TO UNDERSIDE OF STRUCTURE ABOVE UNLESS NOTED OTHERWISE.
2. CAULK AND SEAL ALL JOINTS OF FIRE RATED SEPARATIONS W/ APPROPRIATE FIRE RATED SEALANT.
3. EXTERIOR STEEL STUDS TO BE MINIMUM 20ga AND SPACED AT MAX 16" O.C. U.N.O. SUBMIT SHOP DRAWING BEARING THE SEAL OF A PROFESSIONAL ENGINEER IN THE PROVINCE OF MANITOBA COVERING THE DESIGN OF THE STUDS & CONNECTIONS.
4. SEE EXTERIOR ELEVATIONS FOR EXTENT OF FINISHES
5. ALL STEEL STUDS EXPOSED TO OUTDOOR CLIMATE (VENTED AREAS) TO BE GALVANIZED.
6. INTERIOR PARTITIONS EXTEND 6" MINIMUM ABOVE FINISH CEILING. FIRE RATED PARTITIONS TO EXTEND TO U/S STRUCTURE ABOVE. CAULK & SEAL W/ APPROPRIATE FIRE RATED SEALANT.

EXTERIOR WALL TYPES:



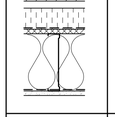
A — EXTERIOR WALL ASSEMBLY
(SEE ELEVATIONS FOR EXTENT OF FINISH)

EIFS SYSTEM
75mm RIGID INSULATION (TYPE II) (R-11.3)
TROUEL-ON AIR BARRIER (PERMEABLE)
16mm DENSGLASS SHEATHING
203mm STEEL STUDS @ 400mm O.C. MAX
FILL W/ BATT. INSULATION (R-25)
10 MIL POLY VAPOUR BARRIER
16mm "M2TECH" MOISTURE & MOLD RESISTANT DRYWALL OR APPROVED EQUAL, TAPED & SANDED, READY FOR TENANT FINISHES



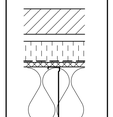
A2 — EXTERIOR WALL ASSEMBLY
(SEE ELEVATIONS FOR EXTENT OF FINISH)
(ONE HOUR FIRE RATED "ULC WALL TYPE W453")

EIFS SYSTEM
75mm RIGID INSULATION (TYPE II) (R-11.3)
TROUEL-ON AIR BARRIER (PERMEABLE)
16mm TYPE 'X' DENSGLASS SHEATHING
203mm STEEL STUDS @ 400mm O.C. MAX
FILL W/ BATT. INSULATION (R-25)
10 MIL POLY VAPOUR BARRIER
16mm TYPE 'X' "M2TECH" MOISTURE & MOLD RESISTANT DRYWALL OR APPROVED EQUAL, TAPED & SANDED, READY FOR TENANT FINISHES



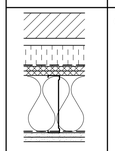
B — EXTERIOR WALL ASSEMBLY
(SEE ELEVATIONS FOR EXTENT OF FINISH)

90mm BRICK VENEER FACE
25mm AIR SPACE
75mm RIGID INSULATION (TYPE IV) (R-11.3)
TROUEL-ON AIR BARRIER (PERMEABLE)
16mm DENSGLASS SHEATHING
203mm STEEL STUDS @ 400mm O.C. MAX
FILL W/ BATT. INSULATION (R-25)
10 MIL POLY VAPOUR BARRIER
16mm "M2TECH" MOISTURE & MOLD RESISTANT DRYWALL OR APPROVED EQUAL, TAPED & SANDED, READY FOR TENANT FINISHES



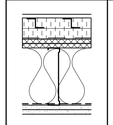
B2 — EXTERIOR WALL ASSEMBLY
(SEE ELEVATIONS FOR EXTENT OF FINISH)
(ONE HOUR FIRE RATED "ULC WALL TYPE W453")

90mm FACE BRICK VENEER
25mm AIR SPACE
75mm RIGID INSULATION (TYPE IV) (R-11.3)
TROUEL-ON AIR BARRIER (PERMEABLE)
16mm TYPE 'X' DENSGLASS SHEATHING
203mm STEEL STUDS @ 400mm O.C. MAX
FILL W/ BATT. INSULATION (R-25)
10 MIL POLY VAPOUR BARRIER
16mm TYPE 'X' "M2TECH" MOISTURE & MOLD RESISTANT DRYWALL OR APPROVED EQUAL, TAPED & SANDED, READY FOR TENANT FINISHES



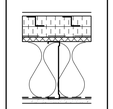
B3 — EXTERIOR WALL ASSEMBLY
(SEE ELEVATIONS FOR EXTENT OF FINISH)
(TWO HOUR FIRE RATED "ULC WALL TYPE W453")

90mm FACE BRICK VENEER
25mm AIR SPACE
75mm ROCKWOOL RIGID INSULATION (R-11.3)
TROUEL-ON AIR BARRIER (PERMEABLE)
2-LAYERS 16mm TYPE 'X' DENSGLASS SHEATHING
203mm STEEL STUDS @ 400mm O.C. MAX
FILL W/ BATT. INSULATION (R-25)
10 MIL POLY VAPOUR BARRIER
2-LAYERS 16mm TYPE 'X' "M2TECH" MOISTURE & MOLD RESISTANT DRYWALL OR APPROVED EQUAL, TAPED & SANDED, READY FOR TENANT FINISHES



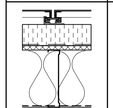
C — EXTERIOR WALL ASSEMBLY - NON LOAD BEARING
(SEE ELEVATIONS FOR EXTENT OF FINISH)
(TWO HOUR FIRE RATED "ULC WALL TYPE W453")

PREFINISHED HORIZONTAL METAL CLADDING
38mm GALV. Z-GIRTS VERT. @ 24" O.C. MAX
38mm GALV. Z-GIRTS HORIZ. @ 24" O.C. MAX.
75mm ROCKWOOL RIGID INSULATION (R-11.3)
TROUEL-ON AIR BARRIER (PERMEABLE)
2-LAYERS 16mm TYPE 'X' DENSGLASS SHEATHING
203mm STEEL STUDS @ 400mm O.C. MAX
FILL W/ BATT. INSULATION (R-25)
10MIL POLY VAPOUR BARRIER
2-LAYERS 16mm TYPE 'X' "M2TECH" MOISTURE & MOLD RESISTANT DRYWALL OR APPROVED EQUAL, TAPED & SANDED, READY FOR TENANT FINISHES



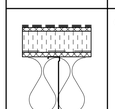
C2 — EXTERIOR WALL ASSEMBLY - NON LOAD BEARING
(SEE ELEVATIONS FOR EXTENT OF FINISH)

PREFINISHED HORIZONTAL METAL CLADDING
38mm GALV. Z-GIRTS VERT. @ 24" O.C. MAX
38mm GALV. Z-GIRTS HORIZ @ 24" O.C. MAX.
75mm RIGID INSULATION (TYPE IV) (R-11.3)
TROUEL-ON AIR BARRIER (PERMEABLE)
16mm DENSGLASS SHEATHING
203mm STEEL STUDS @ 400mm O.C. MAX
FILL W/ BATT. INSULATION (R-25)
10MIL POLY VAPOUR BARRIER
16mm "M2TECH" MOISTURE & MOLD RESISTANT DRYWALL OR APPROVED EQUAL, TAPED & SANDED, READY FOR TENANT FINISHES



D — EXTERIOR WALL ASSEMBLY - NON LOAD BEARING
(SEE ELEVATIONS FOR EXTENT OF FINISH)

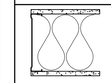
ALUMINUM COMPOSITE PANEL
C/W GALV. FURRING BARS AS REQ'D
75mm GALV. Z-GIRTS HORIZ. @ 24" O.C. MAX
75mm RIGID INSULATION (TYPE IV) (R-11.3)
TROUEL-ON AIR BARRIER (PERMEABLE)
16mm DENSGLASS SHEATHING
203mm STEEL STUDS @ 400mm O.C. MAX
FILL W/ BATT. INSULATION (R-25)
10MIL POLY VAPOUR BARRIER
16mm "M2TECH" MOISTURE & MOLD RESISTANT DRYWALL OR APPROVED EQUAL, TAPED & SANDED, READY FOR TENANT FINISHES



E — EXTERIOR WALL ASSEMBLY - NON LOAD BEARING
(SEE ELEVATIONS FOR EXTENT OF FINISH)

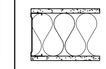
ROOF MEMBRANE CARRIED UP FROM ROOF
13mm DENS DECK SHEATHING
75mm GALV. Z-GIRTS HORIZ. @ 24" O.C. MAX
75mm RIGID INSULATION (TYPE IV) (R-11.3)
TROUEL-ON AIR BARRIER (PERMEABLE)
16mm DENSGLASS SHEATHING
203mm STEEL STUDS @ 400mm O.C. MAX
FILL W/ BATT. INSULATION (R-25)
10MIL POLY VAPOUR BARRIER
16mm "M2TECH" MOISTURE & MOLD RESISTANT DRYWALL OR APPROVED EQUAL, TAPED & SANDED, READY FOR TENANT FINISHES

INTERIOR WALL TYPES:



1 — INTERIOR WALL ASSEMBLY
(TO U/S ROOF DECK C/W CASTLE CUT)

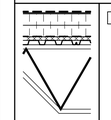
16mm DRYWALL
TAPED & SANDED, READY FOR TENANT FINISHES
203mm STEEL STUDS @ 16" O.C. MAX
-FILL SPACE W/ SOUND BATT INSULATION
16mm DRYWALL
TAPED & SANDED, READY FOR TENANT FINISHES



2 — INTERIOR WALL ASSEMBLY
(ONE HOUR FIRE RATED "ULC WALL TYPE W453")
(TO U/S ROOF DECK C/W CASTLE CUT & FIRE STOP CAULKING)

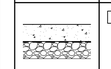
16mm TYPE 'X' DRYWALL
TAPED & SANDED, READY FOR TENANT FINISHES
152mm" STEEL STUDS @ 16" O.C. MAX
-FILL SPACE W/ SOUND BATT INSULATION
16mm TYPE 'X' DRYWALL
TAPED & SANDED, READY FOR TENANT FINISHES

ROOF / FLOOR TYPES:



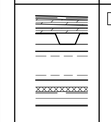
R-1 — TYPICAL ROOF ASSEMBLY:

2-PLY MOD BIT ROOF MEMBRANE
6mm FIBRE COVER BOARD
204mm RIGID INSULATION (POLY-ISO) (R-45)
-FULLY ADHERED SYSTEM
SELF ADHERED MODIFIED VAPOUR BARRIER
13mm DENS DECK SHEATHING
STEEL ROOF DECK - SEE STRUCT
STEEL BEAM + STEEL JOISTS -PTD - SEE STRUCT



F-1 — MAIN FLOOR ASSEMBLY:

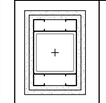
CONCRETE SLAB ON GRADE - SEE STRUCT
10MIL POLY VAPOUR BARRIER
COMPACTED GRAVEL - SEE STRUCT
-SEE GEOTECH. REPORT FOR BASE PREP



C-1 — TYPICAL CANOPY ASSEMBLY:

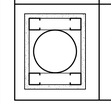
PREFIN. METAL FLASHING C/W DRIP EDGE, GALV
CLEAT + S-LOCK JOINTS
FEEL + STICK AIR BARRIER (PERMEABLE)
2-LAYERS 19mm PLYWOOD SHEATHING
C/W 19mm PLYWOOD SHIM FOR SLOPE
GALV. STEEL ROOF DECK, SEE STRUCT.
GALV. STEEL CHANNEL OUTRIGGER, SEE STRUCT.
16mm DENSDECK SHEATHING
TROUEL-ON AIR BARRIER (PERMEABLE)
ALUMINUM COMPOSITE PANEL
C/W GALV. FURRING BARS AS REQ'D

COLUMN + RWL ENCLOSURE



CO — COLUMN ENCLOSURE
(ONE HOUR FIRE RATED "UL X528")

2-LAYERS 16mm TYPE 'X' DRYWALL
TAPED & SANDED, READY FOR TENANT FINISHES
41mm STEEL STUDS AS REQ'D
HSS COLUMN -SEE STRUCT.



RW — RAIN WATER LEADER ENCLOSURE

16mm TYPE 'X' DRYWALL
TAPED & SANDED, READY FOR TENANT FINISHES
41mm STEEL STUDS AS REQ'D
RAIN WATER LEADER, SEE MECH.

MISC CONSTRUCTION TYPES:

BE — BEAM ENCLOSURE ASSEMBLY:

16mm DRYWALL -PTD
64mm STEEL STUDS @ 406mm O.C. MAX
STEEL BEAM, SEE STRUCT

BE2 — BEAM ENCLOSURE ASSEMBLY:
(2HR FIRE RATED ENCLOSURE ULC 0501)

2-LAYERS 16mm TYPE 'X' DRYWALL -PTD
64mm STEEL STUDS @ 406mm O.C. MAX
STEEL BEAM, SEE STRUCT

BE3 — BEAM ENCLOSURE ASSEMBLY:
(1HR FIRE RATED ENCLOSURE ULC 0501)

16mm TYPE 'X' DRYWALL -PTD
64mm STEEL STUDS @ 406mm O.C. MAX
STEEL BEAM, SEE STRUCT

GB — GRADE BEAM ASSEMBLY:

102mm RIGID INSULATION (TYPE IV)
FULL DEPTH OF GRADE BEAM
DAMPPROOFING MEMBRANE
CONCRETE GRADE BEAM, SEE STRUCT

PL — PILASTER ASSEMBLY:

ALUMINUM COMPOSITE PANEL
C/W GALV. FURRING AS REQ'D
TROUEL-ON AIR BARRIER (PERMEABLE)
16mm DENS GLASS SHEATHING
92mm STEEL STUDS @ 400mm O.C. MAX.
CAVITY
75mm RIGID INSULATION (TYPE IV)
TROUEL-ON AIR BARRIER (PERMEABLE)
16mm DENS GLASS SHEATHING
203mm STEEL STUDS @ 16" O.C. MAX.
FILL W/ BATT. INSULATION (R-25)
10 MIL POLY VAPOUR BARRIER
16mm "M2TECH" MOISTURE AND MOLD RESISTANT DRYWALL OR APPROVED EQUAL, TAPED & SANDED, READY FOR TENANT FINISHES

PA1 — PARAPET ASSEMBLY:

EIFS SYSTEM
75mm RIGID INSULATION (TYPE II)
TROUEL-ON AIR BARRIER (PERMEABLE)
16mm DENSGLASS SHEATHING
203mm STEEL STUDS @ 400mm O.C. MAX.
FILL W/ BATT. INSULATION
13mm DENS DECK SHEATHING
ROOF MEMBRANE CARRIED UP FROM ROOF

PA2 — PARAPET ASSEMBLY:

90mm FACE BRICK VENEER
25mm AIR SPACE
75mm RIGID INSULATION (TYPE IV)
TROUEL-ON AIR BARRIER (PERMEABLE)
16mm DENSGLASS SHEATHING
203mm STEEL STUDS @ 400mm O.C. MAX.
FILL W/ BATT. INSULATION
13mm DENS DECK SHEATHING
ROOF MEMBRANE CARRIED UP FROM ROOF

PA3 — PARAPET ASSEMBLY:

PREFINISHED HORIZONTAL METAL CLADDING
38mm GALV. Z-GIRTS VERT. @ 24" O.C. MAX
38mm GALV. Z-GIRTS HORIZ. @ 24" O.C. MAX
75mm RIGID INSULATION (TYPE IV)
TROUEL-ON AIR BARRIER (PERMEABLE)
2-LAYERS OF 16mm DENSGLASS SHEATHING
203mm STEEL STUDS @ 400mm O.C. MAX.
FILL W/ BATT. INSULATION
13mm DENS DECK SHEATHING
ROOF MEMBRANE CARRIED UP FROM ROOF

PA4 — PARAPET ASSEMBLY:

ALUMINUM COMPOSITE PANEL
C/W GALV. FURRING BARS AS REQ'D
TROUEL-ON AIR BARRIER (PERMEABLE)
16mm DENSGLASS SHEATHING
203mm STEEL STUDS @ 400mm O.C. MAX.
FILL W/ BATT. INSULATION
13mm DENS DECK SHEATHING
ROOF MEMBRANE CARRIED UP FROM ROOF

SP — SPANDREL PANEL ASSEMBLY:

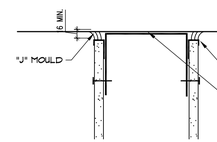
SINGLE GLAZED SPANDREL GLASS UNIT
OPAQUE COATING
20ga. GALV. STEEL BACK PAN
FILL W/ CURTAIN ROCK INSULATION
AIR SPACE AS REQ'D
92mm STEEL STUDS @ 400mm O.C. MAX.
16mm "M2TECH" MOISTURE & MOLD RESISTANT DRYWALL OR APPROVED EQUAL, TAPED & SANDED, READY FOR TENANT FINISHES

SP2 — SPANDREL PANEL ASSEMBLY:

SINGLE GLAZED SPANDREL GLASS UNIT
OPAQUE COATING
20ga. GALV. STEEL BACK PAN
FILL W/ CURTAIN ROCK INSULATION
BACK PANEL TO MATCH FRAME

CW — CURTAIN WALL INFILL ASSEMBLY:

ALUMINUM COMPOSITE PANEL INFILL
20ga. GALV. STEEL BACK PAN
FILL W/ CURTAIN ROCK INSULATION
AIR SPACE AS REQ'D
92mm STEEL STUDS @ 400mm O.C. MAX.
16mm "M2TECH" MOISTURE & MOLD RESISTANT DRYWALL OR APPROVED EQUAL, TAPED & SANDED, READY FOR TENANT FINISHES



TYP. SLIP JOINT DETAIL

SCALE: 1:5

TYPICAL ON NON-LOAD BEARING STEEL STUD WALL



VICINITY MAP — NORTH

★ 1108 18TH STREET, BRANDON, MANITOBA

No:	Date:	Revision
1	2019.01.02	BASE PLANS SENT TO CONSULTANTS
2	2019.12.20	ISSUED FOR PERMIT, TENDER & CONSTRUCTION
A		
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RAYMOND S.C. WAN ARCHITECT
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TEL: 204-287-8668 FAX: 204-287-8388

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PROVINCE OF MANITOBA — 2019-03-01 — RAYMOND S.C. WAN — REGISTERED ARCHITECT

CONSULTANT
RAYMOND S.C. WAN
ARCHITECT
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WINNIPEG MANITOBA
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TEL: 204-287-8668
FAX: 204-287-8388

PROVINCE OF MANITOBA — ASSOCIATION OF ARCHITECTURAL CORPORATION — RAYMOND S.C. WAN ARCHITECT INC. No. 049

OWNER
HARDROCK PROPERTIES CORPORATION

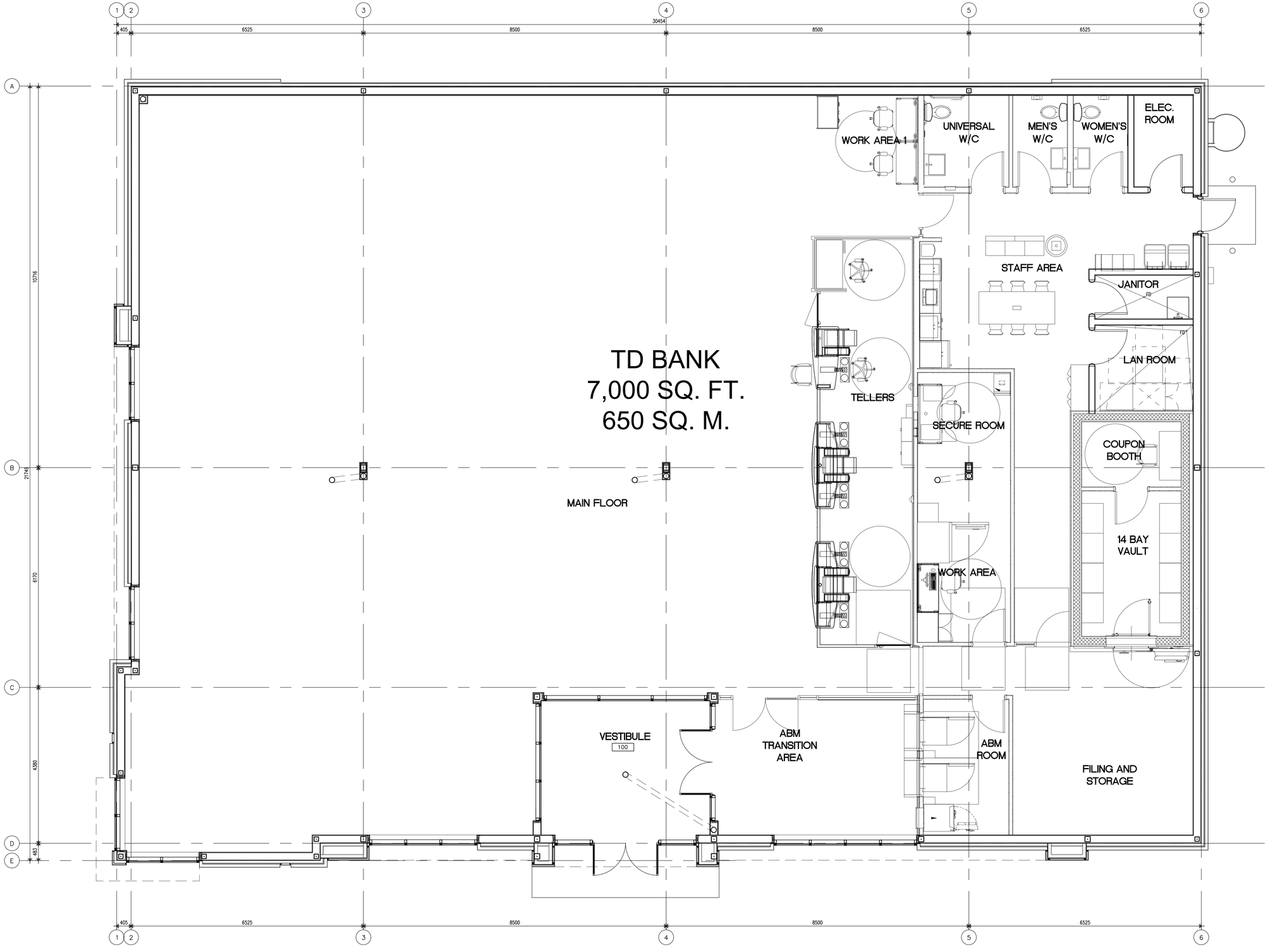
PROJECT
TD BANK
BASE BUILDING
BRANDON, MANITOBA

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PROJECT	SHEET NO.
18-1921	A0.2

WALL TYPES, DRAWING LIST, GENERAL NOTES & ABBREVIATIONS



MAIN FLOOR FIXTURE PLAN - FOR REFERENCE ONLY

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NORTH

No:	Date:	Revision
1	2019 01 02	BASE PLANS SENT TO CONSULTANTS
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RAYMOND S.C. WAN, ARCHITECT
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PROVINCE OF MANITOBA
RAYMOND S.C. WAN ARCHITECT INC. No. 045
ENHANCED ARCHITECTURAL CORPORATION

PROVINCE OF MANITOBA
2019-03-01
RAYMOND S.C. WAN
REGISTERED ARCHITECT

CONSULTANT

RAYMOND S.C. WAN
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FAX: 204-287-8388

OWNER

HARDROCK PROPERTIES CORPORATION

PROJECT

TD BANK
BASE BUILDING

BRANDON, MANITOBA

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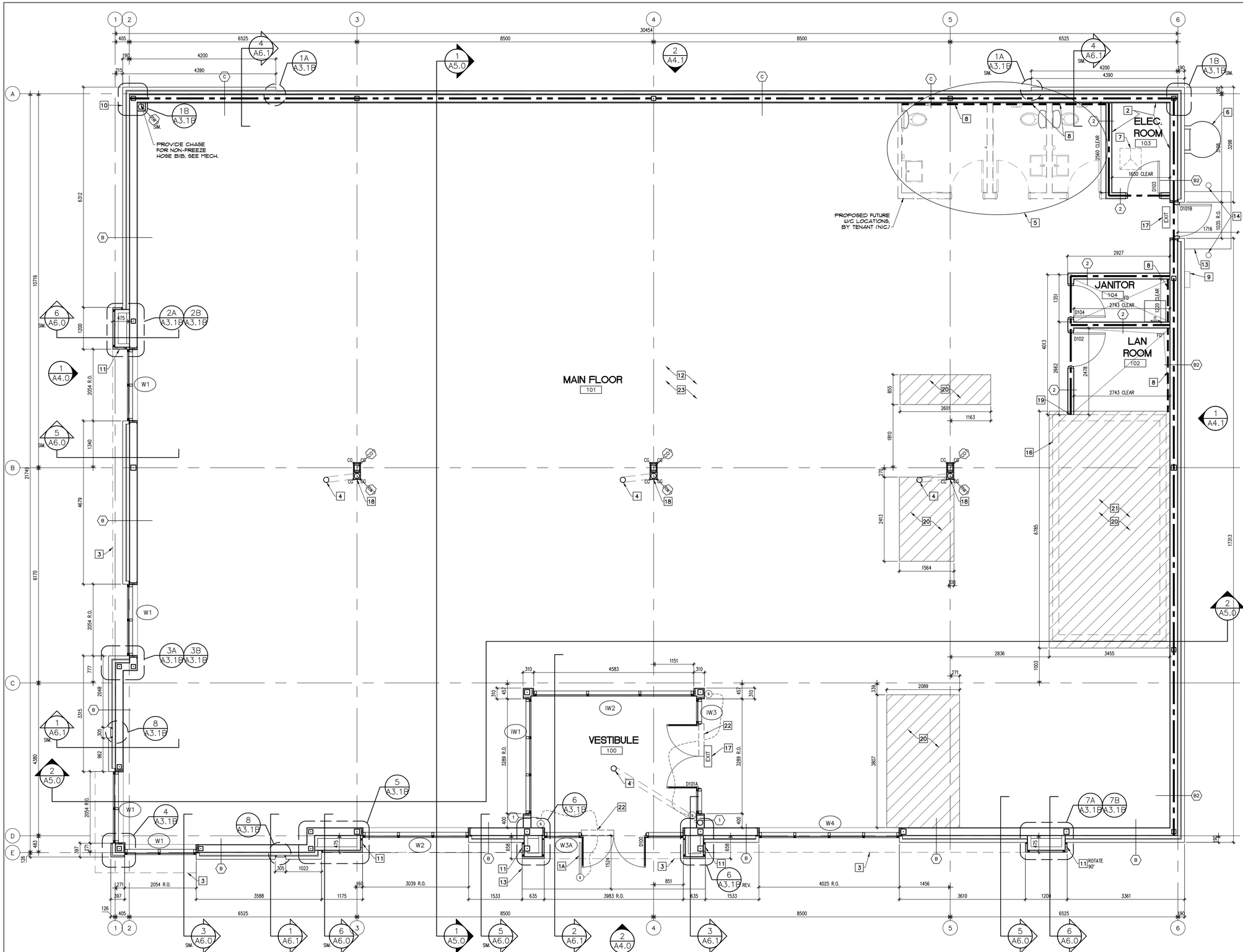
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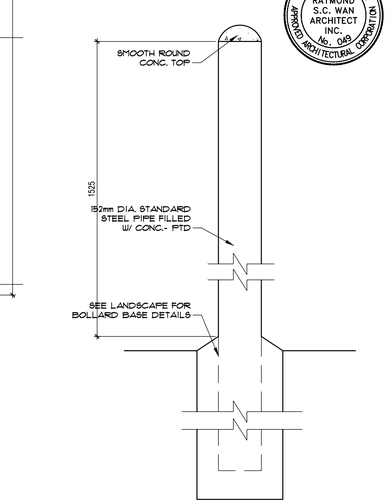
PROJECT	SHEET NO.
18-1921	A3.0

MAIN FLOOR FIXTURE PLAN



MAIN FLOOR CONSTRUCTION PLAN

SCALE: 1:50



BOLLARD SECTION

SCALE: 1:10

FLOOR PLAN KEYNOTE LEGEND

1A BARRIER FREE GUARD RAIL C/W AUTOMATIC DOOR OPERATOR SWITCH, SEE DOOR SCHEDULE

2 ELECTRICAL PANEL LOCATIONS FOR FUTURE TENANTS (SEE ELEC.) ON 19mm x 121mm x 2438mm VERTICAL PLYWOOD BACKBOARDS TO 2438mm A.F.F. C/W FIRE RESISTIVE PAINT FINISH

3 LINE OF CANOPY (ABOVE)

4 ROOF DRAIN TO RAIN WATER LEADER (SEE MECH.) C/W ELECTRICAL HEAT TRACE - SEE ELEC.

5 G.C. TO PROVIDE SANITARY LINE STUBBED WITHIN LEASE PREMISES FOR TENANT'S FUTURE W/C, SEE MECH, FUTURE W/C ROUGH-INS BY TENANT- (N.I.C.)

6 ROOF ACCESS LADDER C/W SAFETY CAGE C/W STEEL DOOR & LOCK (SEE G/A32B)

7 PROVIDE STRUCTURAL SUPPORT FOR SUSPENDED TRANSFORMERS, SEE STRUCT.

8 G.C. TO 841 PLYWOOD BACKING WITHIN STUD SPACE AS REQ'D FOR FUTURE TENANT FIXTURES / ACCESSORIES

9 APPROXIMATE LOCATION OF GAS METER, (SEE MECH.) PTD LINES TO MATCH EXTERIOR FINISH, C/W CONC FILLED STEEL BOLLARDS BY MANITOBA HYDRO.

10 APPROXIMATE LOCATION OF HOSE BIB (SEE MECH.)

11 76mm x 203mm PREFINISHED METAL AIR VENT C/W INSECT SCREEN, @ 600mm A.F.F.

12 CONC. SLAB TO BE POURED WITH 9mm IN 3m TOLERANCE, SEE STRUCT.

13 STRUCTURAL CONCRETE APRON, 1524mm DEPTH FROM GRADE BEAM, EXTEND APRON 600mm PAST ROUGH OPENING, (SEE STRUCT.)

14 152mm CONC. FILLED STEEL BOLLARD -PTD COLOUR: SAFETY YELLOW, SEE DETAIL A/A3.1

15 NOTE NOT USED

16 APPROXIMATE LOCATION OF FUTURE BANK VAULT WALL (N.I.C.)

17 EXIT SIGN AND EMERGENCY LIGHTING (SEE ELEC.)

18 PROVIDE FLUSH STEEL BOX ACCESS PANEL TO RWL CLEANOUTS (SEE MECH.)

19 FIRE RATED SEPARATION TO TERMINATE AT FUTURE BANK VAULT WALL (VAULT BY TENANT)

20 PROVIDE SLAB REINFORCEMENT AT ATMs CASH RECYCLER, COIN COUNTING MACHINE, NIGHT DEPOSITORY AND CLEARING SAFE - SEE STRUCT. G.C. TO COORDINATE W/ TENANT FIXTURE PLAN FOR FINAL LOCATION

21 PROVIDE RECESSED FLOOR AS PER LEASING SCHEDULE "C" - SEE STRUCT FLOOR TO BE ENGINEERED TO SUPPORT THE WEIGHT OF VAULT UNIT C/W DOOR, AND ALLOWANCE FOR ADDITIONAL LIVELOADS - SEE STRUCT REF. TO TENANT SPECIFICATION 80-330 VAULT PIT DETAIL

22 PROVIDE ELECTRICAL ROUGH-INS FOR AUTOMATIC DOOR OPERATOR DYE PACK SECURITY UNIT ANTENNA MODULE ON ENTRANCE FRAMING AND LOW VOLTAGE WIRING FOR PUSH BUTTON REF. TO TENANT SPECIFICATION 80-210 SEC-215 - SEE ELEC., C/U PARALLEL SYSTEM BY B.E.A. CONSISTS OF TWO (2) "SUPERSAN II" DOOR MOUNTED PRESCENCE SENSORS PER ACTIVE DOOR LEAF (ONE PER DOOR FACE) EACH SENSOR TO CONTAIN ONE (1) MASTER MODULE AND ONE (1) SLAVE MODULE

23 BASE BUILDING CONTRACTOR TO COMMUNICATE AND COORDINATE FUTURE TENANTS UNDER-FLOOR CONDUIT INSTALLATION/ROUGH-IN, INCLUDING FLOOR DRAINS (M&E) REQUIREMENT PRIOR TO SCHEDULE POUR OF CONCRETE FLOOR SLAB UNDER CONTRACT.

FLOOR PLAN GENERAL NOTES

1. CONCRETE TO BE POWER TROWEL FINISHED SMOOTH TO ACCEPT TENANT FINISHES, REFER TO STRUCTURAL DRAWINGS FOR MORE INFORMATION
2. ALL TENANT UNDERGROUNDS TO BE COORDINATED IN BASE BUILDING WORK PRIOR TO POURING OF CONCRETE SLAB.
3. ALL INTERIOR D.W. WALLS TO BE TAPE, MUD AND PRIMED.
4. PROVIDE TENANT W/WRITTEN NOTICE AT LEAST 3 WKS PRIOR TO CONCRETE PLACEMENT DATE TO ALLOW THE TENANTS TO ADVISE OF LOCATIONS OF PLUMBING LINES AND ANY REQUIRED ELECTRICAL AND COMMUNICATIONS CONDUITS

NOTE: G.C. TO PROVIDE WOOD BLOCKING WITHIN WALLS TO ACCOMMODATE ALL WALL MOUNTED ACCESSORIES / FURNITURE AS REQ'D

BARRIER FREE DOOR OPERATOR SWITCH, SEE DOOR SCHEDULE

CORNER GUARD

ONE HOUR FIRE RATED CONSTRUCTION, SEE WALL TYPES A62

TWO HOUR FIRE RATED CONSTRUCTION, SEE WALL TYPES A62

PLYWOOD BACKING WITHIN STUD SPACE FOR WALL MOUNTED ACCESSORIES

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PROVINCE OF MANITOBA
2019-03-01
RAYMOND S.C. WAN
REGISTERED ARCHITECT

CONSULTANT
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PROVINCE OF MANITOBA
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PROFESSIONAL ARCHITECTURAL CORPORATION

OWNER
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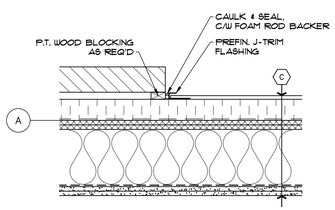
PROJECT
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BRANDON, MANITOBA

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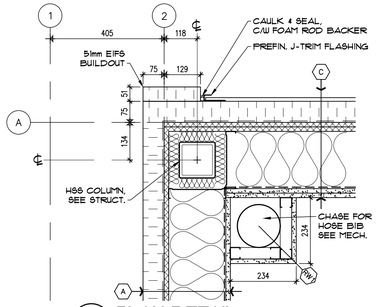
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18-1921	A3.1

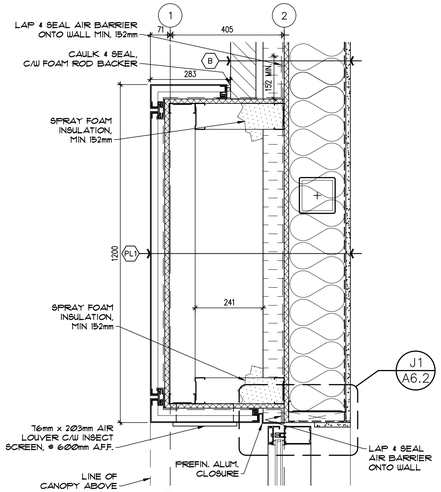
MAIN FLOOR CONSTRUCTION PLAN



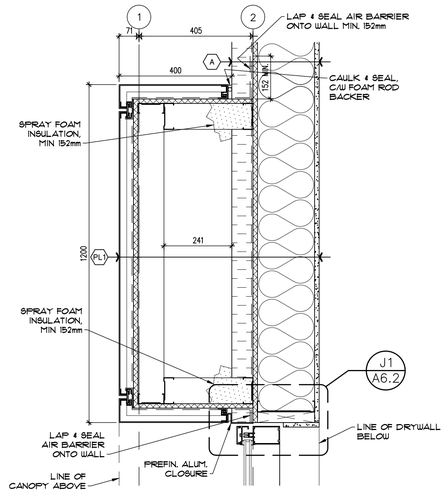
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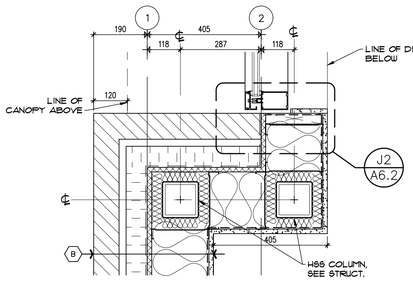
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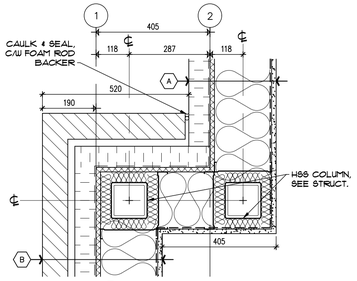
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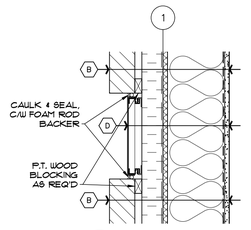
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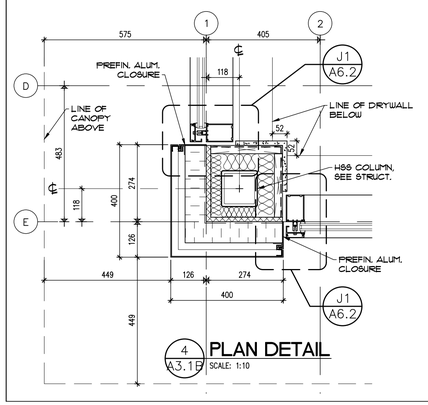
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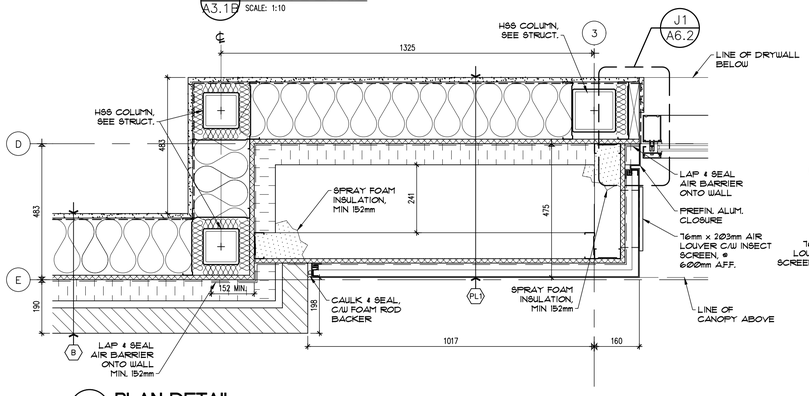
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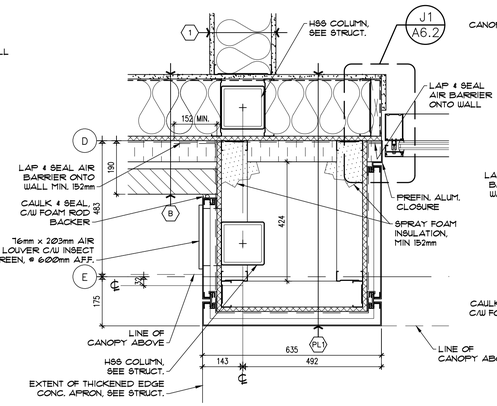
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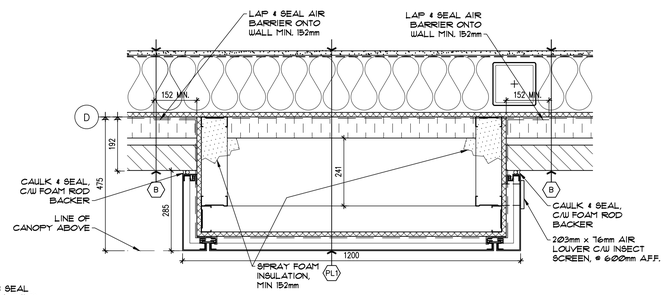
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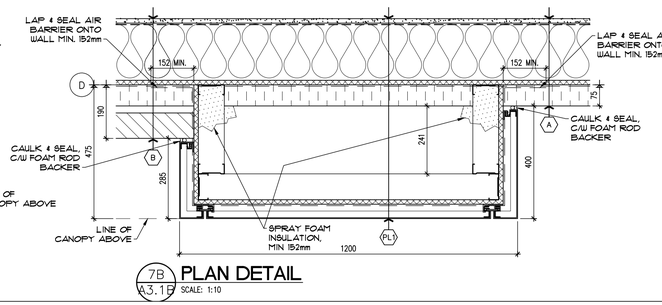
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6 A3.1B **PLAN DETAIL** SCALE: 1:10



7A A3.1B **PLAN DETAIL** SCALE: 1:10



7B A3.1B **PLAN DETAIL** SCALE: 1:10

No:	Date:	Revision
1	2019 01 02	BASE PLANS SENT TO CONSULTANTS
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TEL: 204-287-8668 FAX: 204-287-8388

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SEAL

PROVINCE OF MANITOBA
2019-03-01
RAYMOND S.C. WAN
REGISTERED ARCHITECT

PROVINCE OF MANITOBA
CERTIFICATE OF AUTHORIZATION
RAYMOND S.C. WAN ARCHITECT INC.
No. 049
REGISTERED ARCHITECTURAL CORPORATION

CONSULTANT

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WINNIPEG MANITOBA
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OWNER

HARDROCK PROPERTIES CORPORATION

PROJECT

TD BANK
BASE BUILDING

BRANDON, MANITOBA

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PROJECT	SHEET NO.
18-1921	A3.1B

PLAN DETAILS

ROOF PLAN KEYNOTE LEGEND

1. PREFINISHED METAL PARAPET CAP FLASHING C/W S-LOCK COLOUR: TO MATCH ADJACENT EXTERIOR FINISH
2. ROOF OVERFLOW SCUPPER (SEE F/A3.2B)
3. ROOFTOP ELECTRICAL RECEPTACLE (SEE ELECTRICAL 4 E/A3.2B)
4. INSULATION CRICKET TO PROVIDE POSITIVE WATER DRAINAGE
5. ROOF ACCESS LADDER (SEE DETAIL G/A3.2B)
6. MECHANICAL ROOF TOP EQUIPMENT (SEE TYPICAL SLEEPER DETAILS 4 MECH.)
7. ROOF MEMBRANE WALKWAY PAD BY ROOF SUPPLIER
8. LINE OF CANOPY BELOW

GENERAL NOTES:

1. G.C. TO COORDINATE WITH MECHANICAL, ELECTRICAL AND STRUCTURAL CONTRACTOR TO DETERMINE THE EXACT LOCATION OF ROOF TOP UNITS AND DUCT PENETRATIONS THROUGH ROOF, INCLUDING REQUIRED CURB LENGTHS AND QUANTITY.
2. ROOF CURBS ARE TO BE POSITIONED TO CLEAR ROOF WATER FLOW TO ROOF DRAINS.

ROOF PLAN

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PROVINCE OF MANITOBA — 2019-03-01 — RAYMOND S.C. WAN — REGISTERED ARCHITECT

PROVINCE OF MANITOBA — RAYMOND S.C. WAN ARCHITECT INC. No. 5149 — APPROVED ARCHITECTURAL CORPORATION

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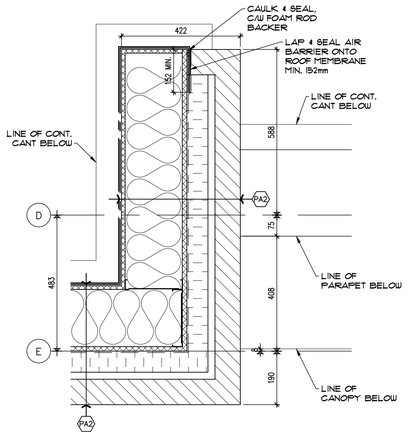
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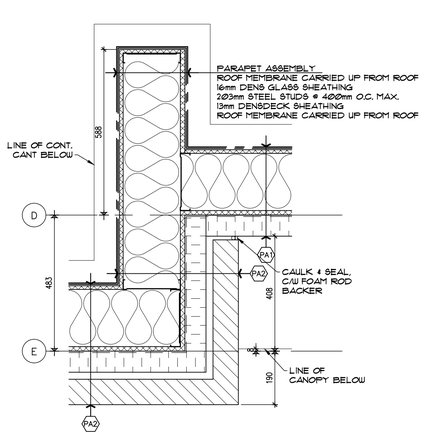
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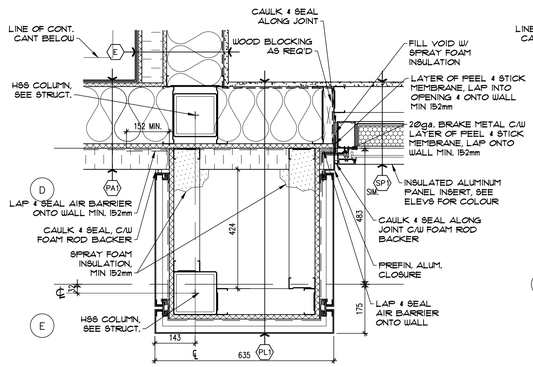
ROOF PLAN



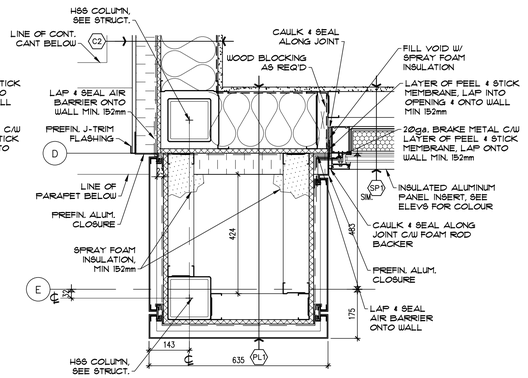
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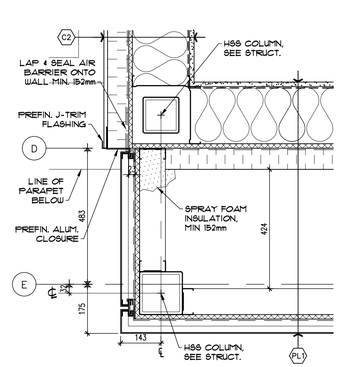
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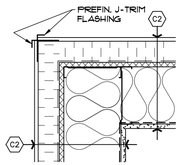
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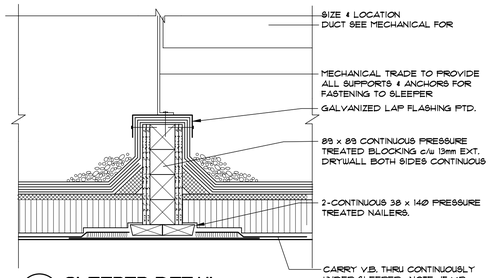
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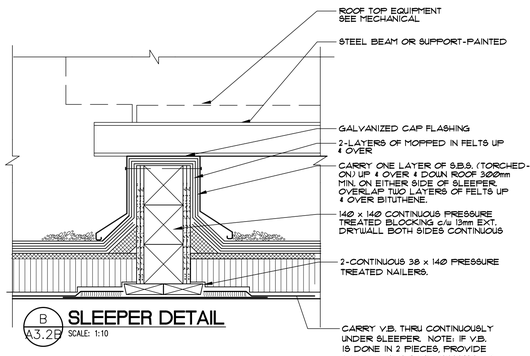
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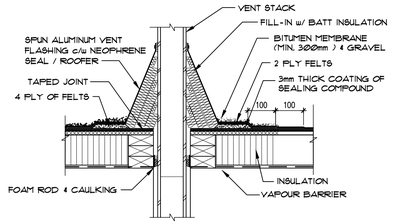
3 A3.2B ROOF PLAN DETAIL
SCALE: 1:10



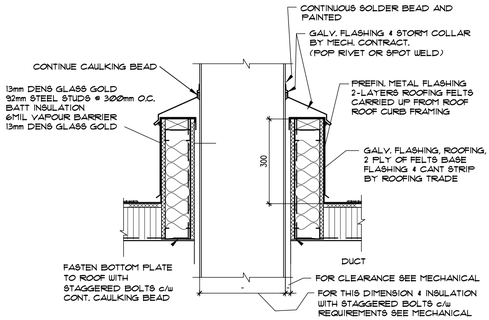
A A3.2B SLEEPER DETAIL
SCALE: 1:10



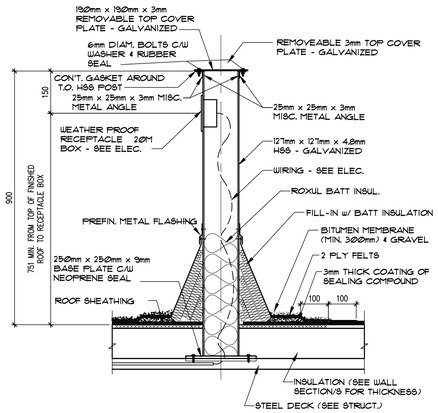
B A3.2B SLEEPER DETAIL
SCALE: 1:10



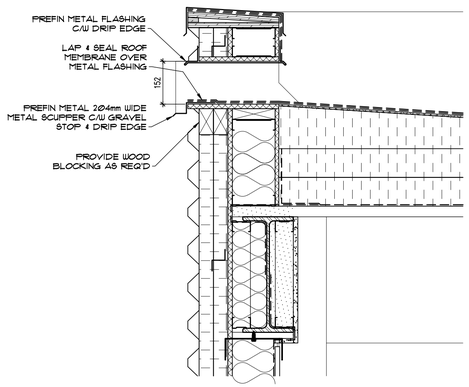
C A3.2B VENT STACK DETAIL
SCALE: 1:10



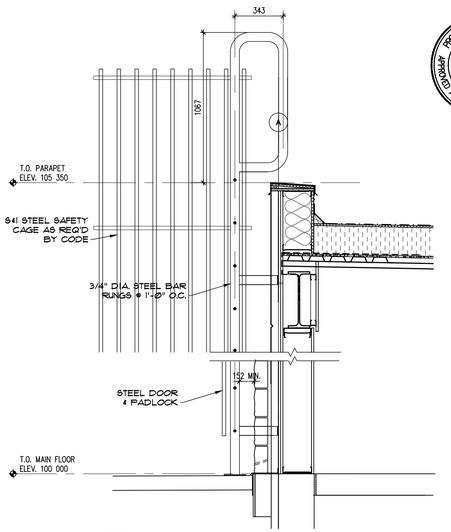
DUCT-ROOF PENETRATION
CHIMNEY-ROOF PENETRATION
D A3.2B SCALE: 1:10



E A3.2B ROOF RECEPTACLE BOX DETAIL - TYP.
SCALE: 1:10
-LOCATION TO SUIT ROOF TOP MECHANICAL UNIT
-SEE MECHANICAL



F A3.2B SCUPPER DETAIL
SCALE: 1:10



G A3.2B ROOF LADDER SECTION
SCALE: 1:20
-LADDER C/W CAGE, ETC. AS PER CODE REQUIREMENTS

No:	Date:	Revision
1	2019 01 02	BASE PLANS SENT TO CONSULTANTS
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TEL: 204-287-8668 FAX: 204-287-8388

CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AT JOB SITE.

SEAL

PROVINCE OF MANITOBA
2019-03-01
RAYMOND S.C. WAN
REGISTERED ARCHITECT

PROVINCE OF MANITOBA
RAYMOND S.C. WAN ARCHITECT INC.
No. CA9
ARCHITECTURAL CORPORATION

CONSULTANT
RAYMOND S.C. WAN
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WINNIPEG MANITOBA
R3N 0G8
TEL: 204-287-8668
FAX: 204-287-8388

OWNER
HARDROCK PROPERTIES CORPORATION

PROJECT
TD BANK
BASE BUILDING
BRANDON, MANITOBA

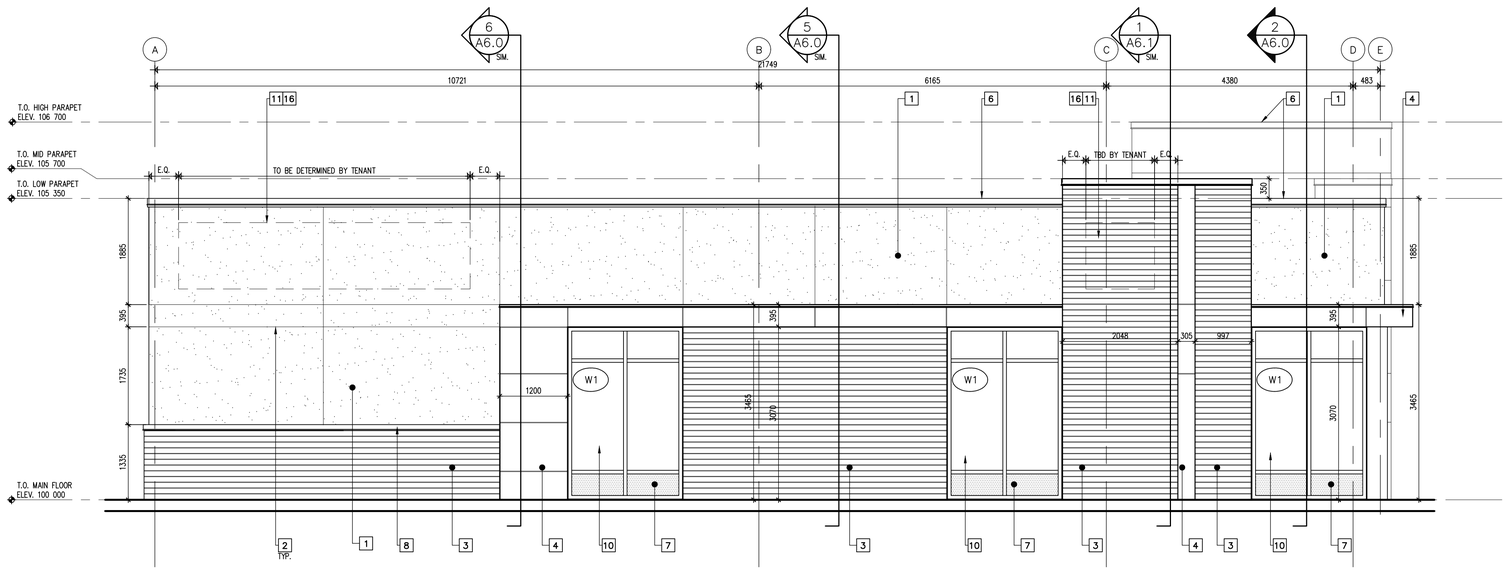
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PROJECT	SHEET NO.
18-1921	A3.2B

ROOF PLAN DETAILS
TYP. ROOF DETAILS

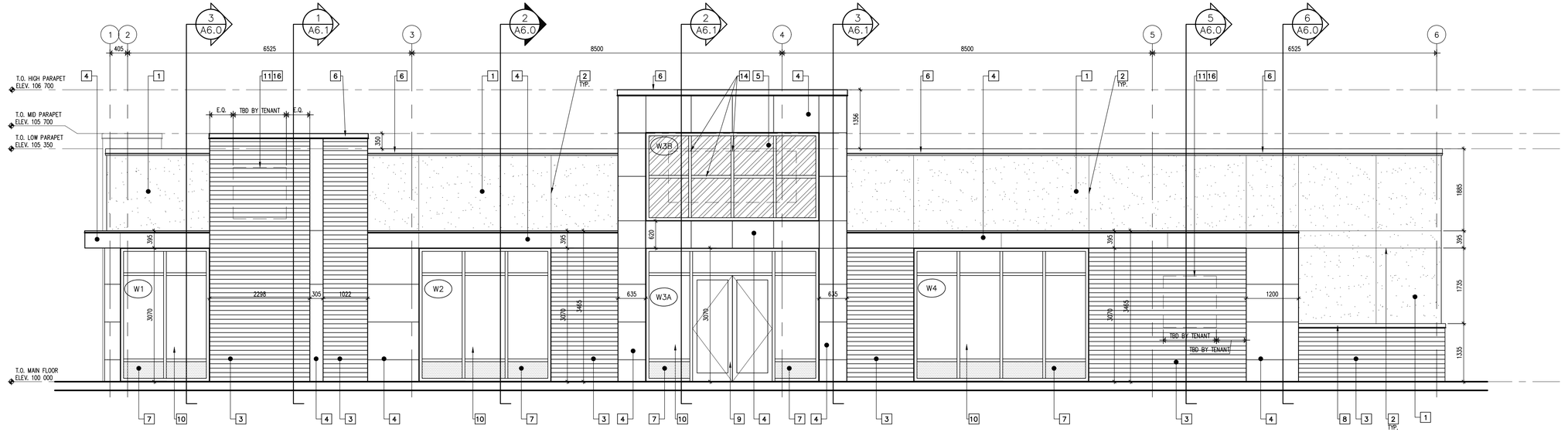


1 / A4.0 EAST EXTERIOR ELEVATION

SCALE: 1:50

EXTERIOR ELEVATION KEYNOTE LEGEND

1. EIFS FINISH SYSTEM
   PRODUCT: DRYVIT
   COLOUR: 615A TATTLETALE
   TEXTURE: SANDBLAST
2. 13mm "V GROOVE" REVEAL
3. FACE BRICK VENEER 102mm x 102mm x 305mm
   PRODUCT: HEBRON
   COLOUR: OPUS MODULAR
   TEXTURE: VELOUR
4. ALUMINUM COMPOSITE PANEL
   PRODUCT: ALPOLIC
   COLOUR: TBD
5. ALUMINUM COMPOSITE CURTAIN WALL PANEL INFILL
   COLOUR: TBD
6. PRE-FINISHED METAL PARAPET CAP FLASHING C/W S-LOCK JOINTS
   COLOUR: TBD
7. SPANDREL PANEL
   COLOUR: OPACICOAT #3-820 GREYLITE
8. PREFINISHED METAL SILL FLASHING
   CHARCOAL
9. ALUMINUM DOOR, SEE DOOR SCHEDULE
   PRODUCT: KAWNEER
   COLOUR: CLEAR ANODIZED
10. ALUMINUM CURTAIN WALL, SEE WINDOW SCHEDULE
11. LOCATION OF TENANT SIGNAGE PROVIDE 16mm PLYWOOD SHEATHING IN LIEU OF 16mm DENSGLASS SHEATHING ¢ ELECTRICAL AS REQUIRED. COORDINATE EXACT LOCATION ¢ SIZE WITH SIGNAGE CONTRACTOR - SEE SCHEDULE "C"
12. PREFIN METAL CLADDING
    PRODUCT: VICUEST - CORRUGATED
    COLOUR: CHARCOAL
13. INSULATED HOLLOW METAL MAN DOOR -PTD, SEE DOOR SCHEDULE
    COLOUR: TBD
14. LOCATION OF TENANT SIGNAGE ON CURTAIN WALL FRAMING. PROVIDE STEEL REINFORCED CURTAIN WALL BACK SECTIONS AS REQ'D TO ACCOMMODATE WEIGHT OF SIGNAGE, WIRE CONDUIT THROUGH BACK SECTION, SEE WINDOW SCHEDULE, STRUCT ¢ ELEC.
15. 152mm CONC. FILLED STEEL BOLLARD -PTD, SEE DETAIL A/A3.1
    COLOUR: SAFETY YELLOW
16. DIMENSION AND EXACT LOCATION OF PLYWOOD SIGNAGE BACKING TO BE CONFIRMED WITH TENANT'S SIGNAGE CONTRACTOR.



2 / A4.0 NORTH EXTERIOR ELEVATION

SCALE: 1:50

No:	Date:	Revision
1	2019 01 02	BASE PLANS SENT TO CONSULTANTS
2	2019 02 28	ISSUED FOR PERMIT, TENDER ¢ CONSTRUCTION
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B		
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WINNIPEG, MANITOBA
TEL: 204-287-8668 FAX: 204-287-8388

CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AT JOB SITE.

SEAL

PROVINCE OF MANITOBA — 2019-03-01 — RAYMOND S.C. WAN — REGISTERED ARCHITECT

PROVINCE OF MANITOBA — RAYMOND S.C. WAN ARCHITECT INC. NO. 049 — APPROVED ARCHITECTURAL CORPORATION

CONSULTANT

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TEL: 204-287-8668
FAX: 204-287-8388

OWNER

HARDROCK PROPERTIES CORPORATION

PROJECT

TD BANK
BASE BUILDING

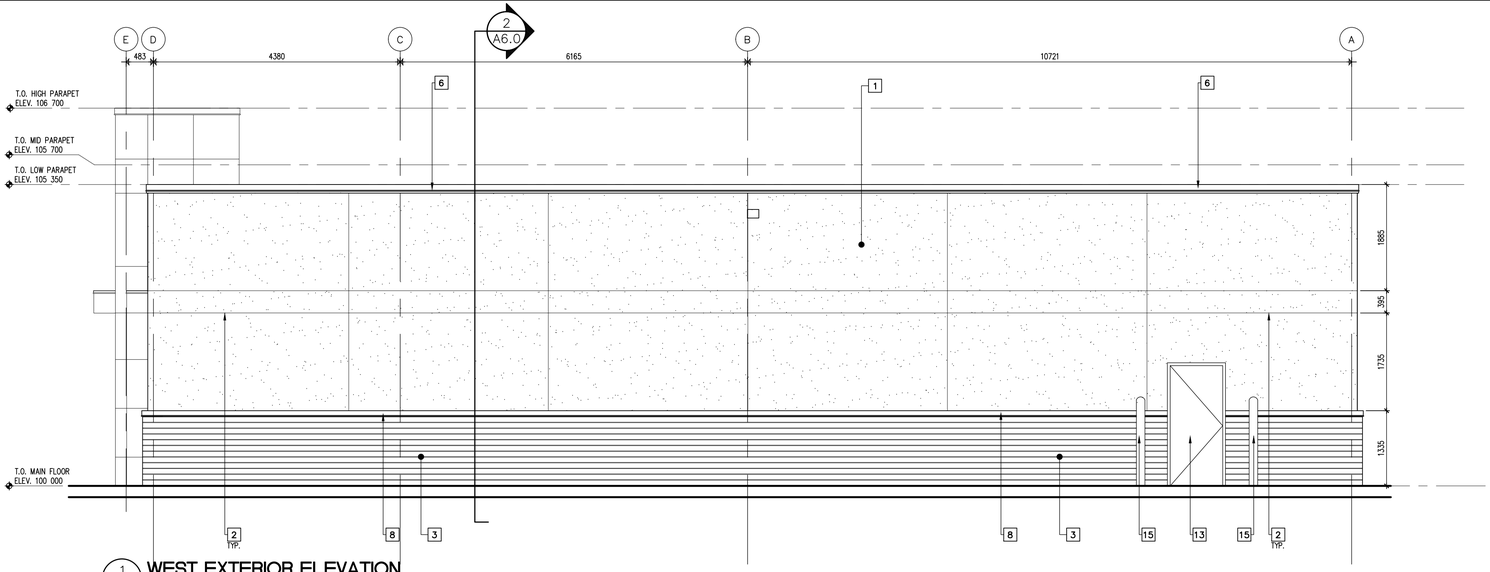
BRANDON, MANITOBA

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DATE: FEBRUARY, 2019	
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PROJECT	SHEET NO.
18-1921	A4.0

EXTERIOR ELEVATIONS

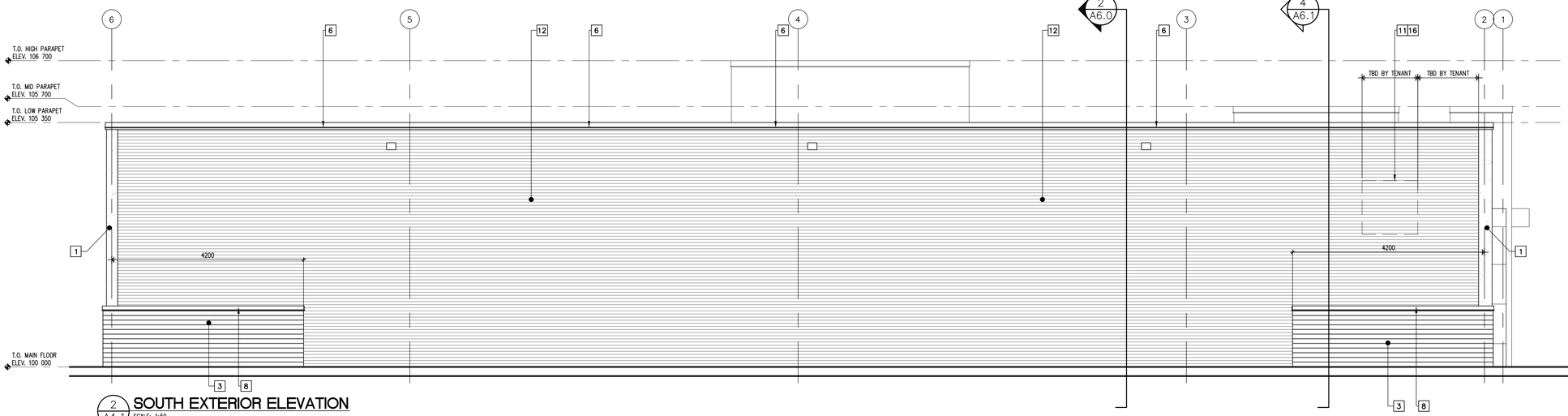


1 A4.1 WEST EXTERIOR ELEVATION

SCALE: 1:50

EXTERIOR ELEVATION KEYNOTE LEGEND

1. EIFS FINISH SYSTEM
   PRODUCT: DRYVIT
   COLOUR: 618A TATTLETALE
   TEXTURE: SANDBLAST
2. 13mm "V GROOVE" REVEAL
3. FACE BRICK VENEER 102mm x 162mm x 305mm
   PRODUCT: HEBRON
   COLOUR: OPUS MODULAR
   TEXTURE: VELOUR
4. ALUMINUM COMPOSITE PANEL
   PRODUCT: ALFOLIC
   COLOUR: TBD
5. ALUMINUM COMPOSITE CURTAIN WALL PANEL INFILL
   COLOUR: TBD
6. PRE-FINISHED METAL PARAPET CAP FLASHING C/W S-LOCK JOINTS
   COLOUR: TBD
7. SPANDREL PANEL
   COLOUR: OPACICOAT #3-820 GREYLITE
8. PREFINISHED METAL SILL FLASHING
   CHARCOAL
9. ALUMINUM DOOR, SEE DOOR SCHEDULE
   PRODUCT: KAWNEER
   COLOUR: CLEAR ANODIZED
10. ALUMINUM CURTAIN WALL, SEE WINDOW SCHEDULE
11. LOCATION OF TENANT SIGNAGE PROVIDE 16mm PLYWOOD SHEATHING IN LIEU OF 16mm DENSGLASS SHEATHING & ELECTRICAL AS REQUIRED, COORDINATE EXACT LOCATION & SIZE WITH SIGNAGE CONTRACTOR - SEE SCHEDULE "C"
12. PREFIN METAL CLADDING
    PRODUCT: VICUESTONE - CORRUGATED
    COLOUR: CHARCOAL
13. INSULATED HOLLOW METAL MAN DOOR -PTD, SEE DOOR SCHEDULE
    COLOUR: TBD
14. LOCATION OF TENANT SIGNAGE ON CURTAIN WALL FRAMING. PROVIDE STEEL REINFORCED CURTAIN WALL BACK SECTIONS AS REQ'D TO ACCOMMODATE WEIGHT OF SIGNAGE, WIRE CONDUIT THROUGH BACK SECTION, SEE WINDOW SCHEDULE, STRUCT & ELEC.
15. 152mm CONC. FILLED STEEL BOLLARD -PTD, SEE DETAIL A/A3.1
    COLOUR: SAFETY YELLOW
16. DIMENSION AND EXACT LOCATION OF PLYWOOD SIGNAGE BACKING TO BE CONFIRMED WITH TENANT'S SIGNAGE CONTRACTOR.



2 A4.1 SOUTH EXTERIOR ELEVATION

SCALE: 1:50

WINDOW TYPES

W1, W2, W3A, W3B, W4

EXTERIOR CURTAIN WALL

FRAME: KAWNEER 1600 UT CURTAINWALL SYSTEM OR APPROVED EQUAL
DOORS: KAWNEER 350 INSULCLAD DOORS OR APPROVED EQUAL
COLOUR: CLEAR ANODIZED
GLAZING: 6mm LOW-E SEALED CLEAR (DOUBLE GLAZED) PPG SOLAR BAN 60

ALL WINDOW INSTALLATION / CONSTRUCTION OF WINDOW ROUGH OPENINGS SHALL BE IN ACCORDANCE WITH WINDOW MANUFACTURERS AIR BARRIER INSTALLATION STANDARDS

6mm TEMPERED GLAZING: T

SPANDREL PANEL:
SINGLE GLAZED C/W GALV. STEEL BACK PAN, FILL W/ ROCKWOOL CURTAIN ROCK INSULATION
COLOUR: GREYLITE

ALUMINUM PANEL INSERT:
INSULATED ALUM. CURTAINWALL PANEL C/W GALV. STEEL BACK PAN, FILL W/ ROCKWOOL CURTAIN ROCK INSULATION
COLOUR: TBD

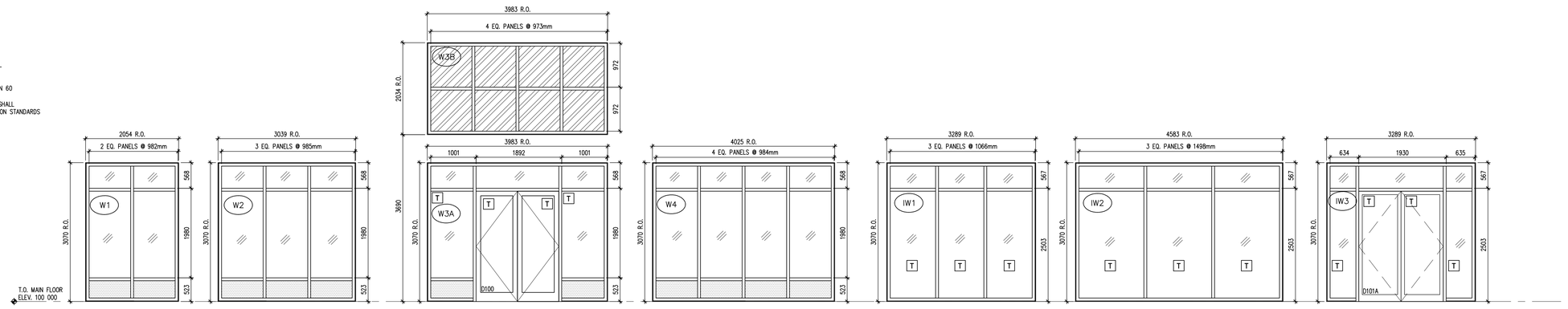
IW1, IW2, IW3

INTERIOR CURTAIN WALL

FRAME: KAWNEER 1600 CURTAINWALL SYSTEM OR APPROVED EQUAL
DOORS: KAWNEER 350 INTERIOR DOORS OR APPROVED EQUAL
COLOUR: CLEAR ANODIZED
GLAZING: CLEAR (SINGLE GLAZED)

ALL WINDOW INSTALLATION / CONSTRUCTION OF WINDOW ROUGH OPENINGS SHALL BE IN ACCORDANCE WITH WINDOW MANUFACTURERS AIR BARRIER INSTALLATION STANDARDS

6mm TEMPERED GLAZING: T



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No:	Date:	Revision
1	2019 01 02	BASE PLANS SENT TO CONSULTANTS
2	2019 02 22	ISSUED FOR PERMIT, TENDER & CONSTRUCTION
A		
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C		

CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AT JOB SITE.

SEAL

PROVINCE OF MANITOBA
2019-03-01
RAYMOND S.C. WAN
REGISTERED ARCHITECT
PROVINCE OF MANITOBA APPROVED ARCHITECTURAL CORPORATION
RAYMOND S.C. WAN ARCHITECT INC. No. 049

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RAYMOND S.C. WAN
ARCHITECT
50 WILLOW AVENUE
WINNIPEG MANITOBA
R3N 0G8
TEL: 204-287-8668
FAX: 204-287-8388

OWNER
HARDROCK PROPERTIES CORPORATION

PROJECT
TD BANK
BASE BUILDING
BRANDON, MANITOBA

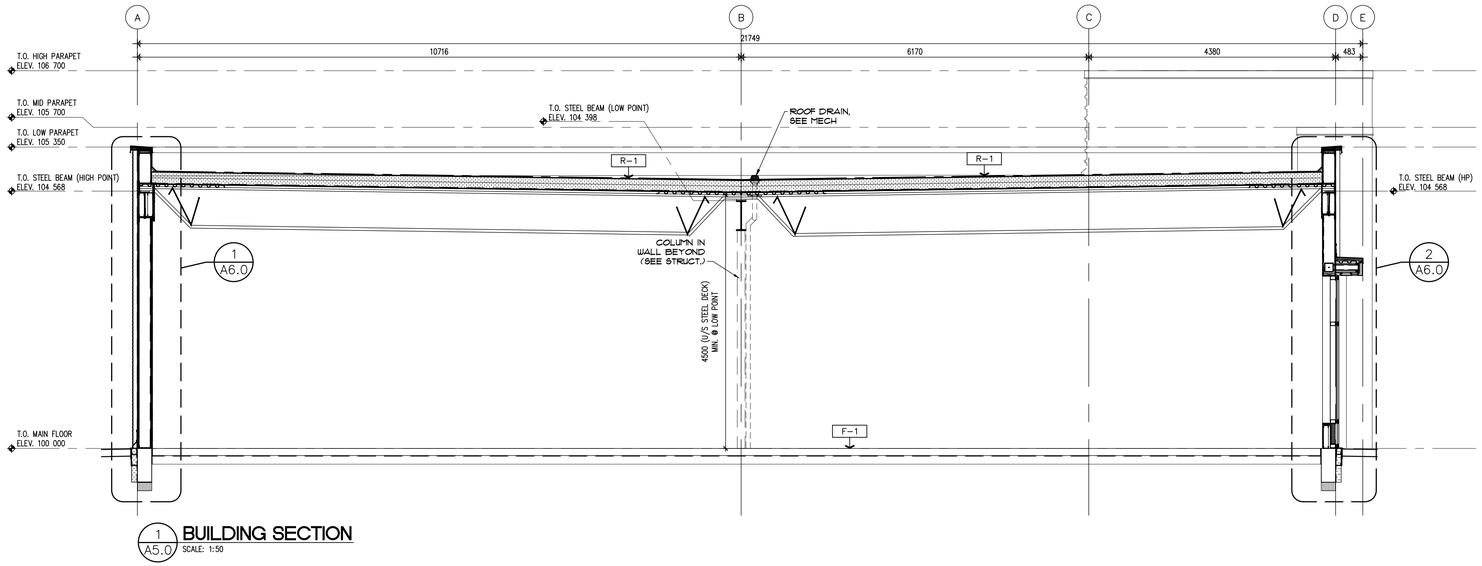
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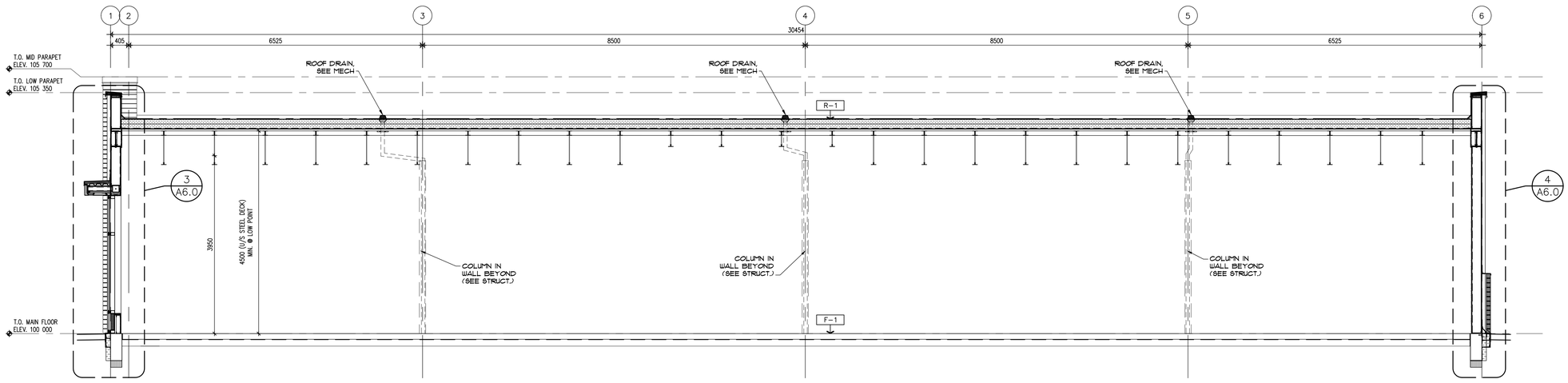
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PROJECT	SHEET NO.
18-1921	A4.1

EXTERIOR ELEVATIONS
WINDOW SCHEDULE



1 A5.0 **BUILDING SECTION**
SCALE: 1:50



2 A5.0 **BUILDING SECTION**
SCALE: 1:50

No:	Date:	Revision
1	2019 01 02	BASE PLANS SENT TO CONSULTANTS
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SEAL

PROVINCE OF MANITOBA
2019-03-01
RAYMOND S.C. WAN
REGISTERED ARCHITECT

PROVINCE OF MANITOBA
APPROVED
RAYMOND S.C. WAN ARCHITECT INC.
No. 049
ARCHITECTURAL CORPORATION

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RAYMOND S.C. WAN
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50 WILLOW AVENUE
WINNIPEG MANITOBA
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TEL: 204-287-8668
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OWNER
HARDROCK PROPERTIES CORPORATION

PROJECT
TD BANK BASE BUILDING

BRANDON, MANITOBA

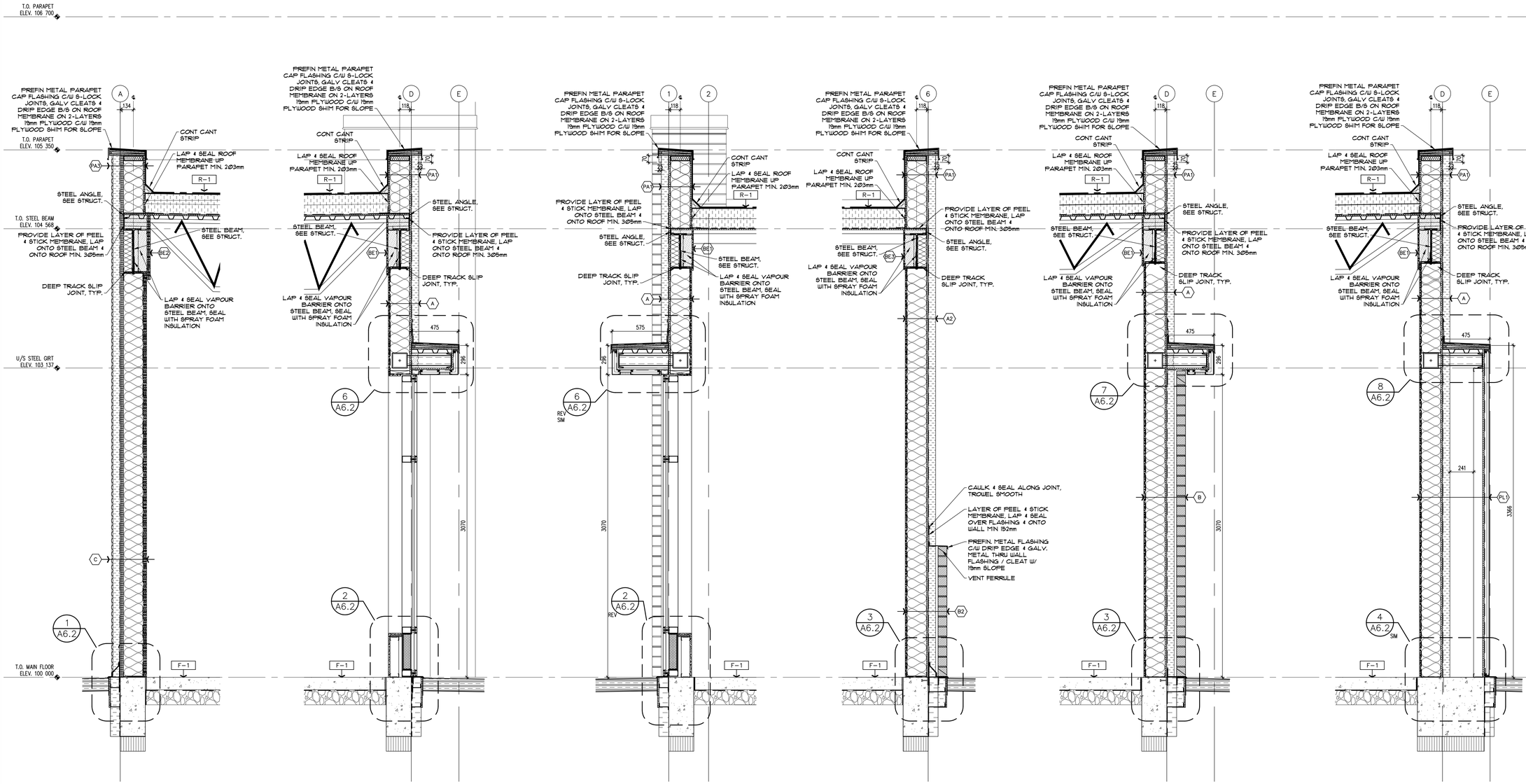
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PROJECT	SHEET NO.
18-1921	A5.0

BUILDING SECTIONS



1 A6.0 **WALL SECTION** SCALE: 1:20

2 A6.0 **WALL SECTION** SCALE: 1:20

3 A6.0 **WALL SECTION** SCALE: 1:20

4 A6.0 **WALL SECTION** SCALE: 1:20

5 A6.0 **WALL SECTION** SCALE: 1:20

6 A6.0 **WALL SECTION** SCALE: 1:20

No:	Date:	Revision
1	2019 01 02	BASE PLANS SENT TO CONSULTANTS
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PROVINCE OF MANITOBA — 2019-03-01 — RAYMOND S.C. WAN — REGISTERED ARCHITECT

PROVINCE OF MANITOBA — RAYMOND S.C. WAN ARCHITECT INC. No. 049 — APPROVED ARCHITECTURAL CORPORATION

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R3N 0G8
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OWNER

HARDROCK PROPERTIES CORPORATION

PROJECT

TD BANK
BASE BUILDING

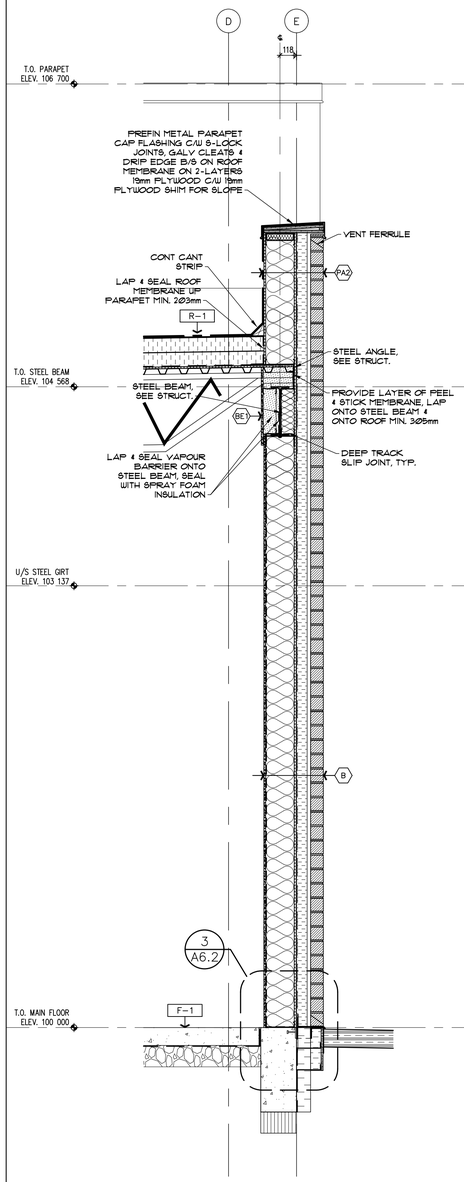
BRANDON, MANITOBA

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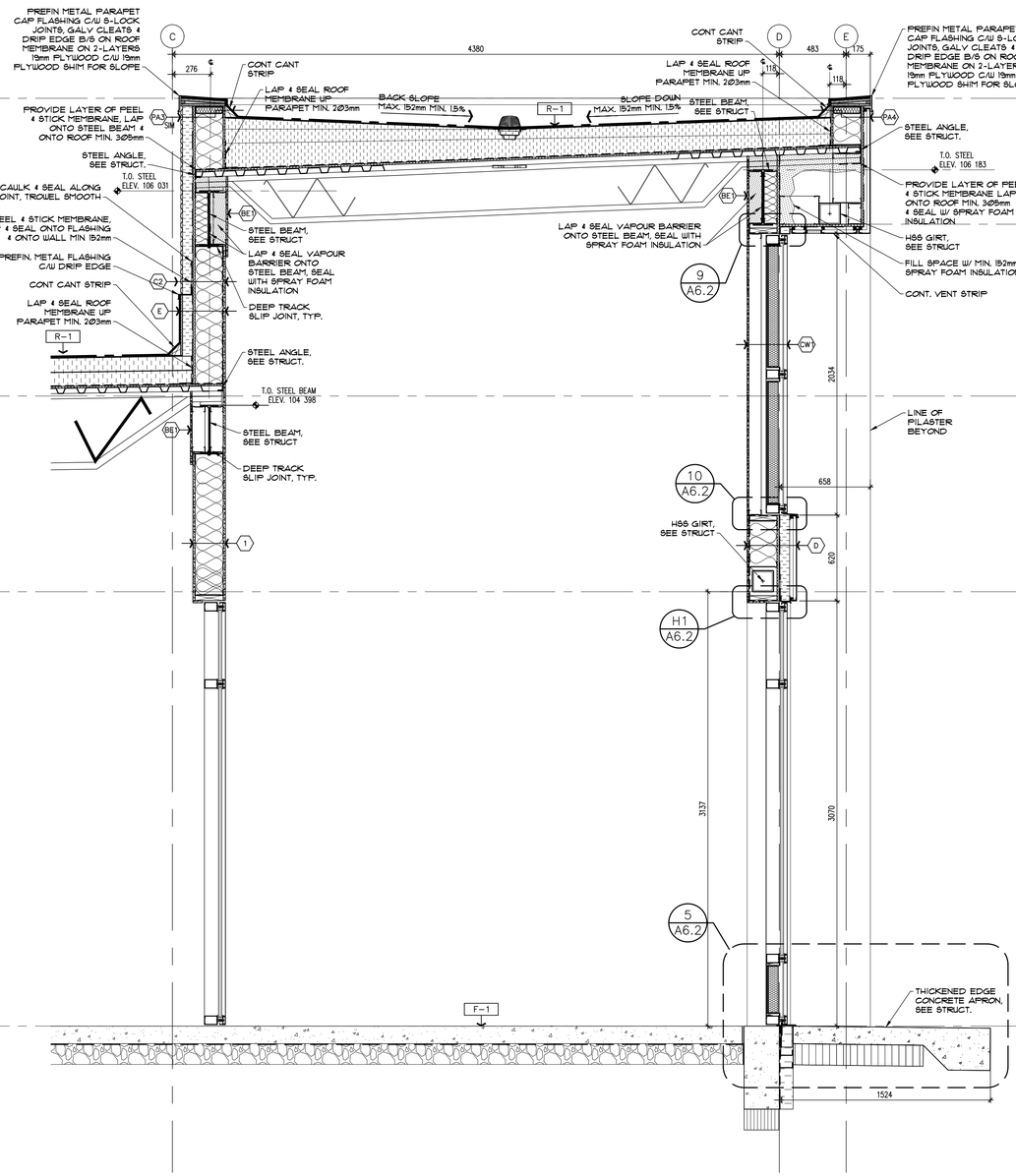
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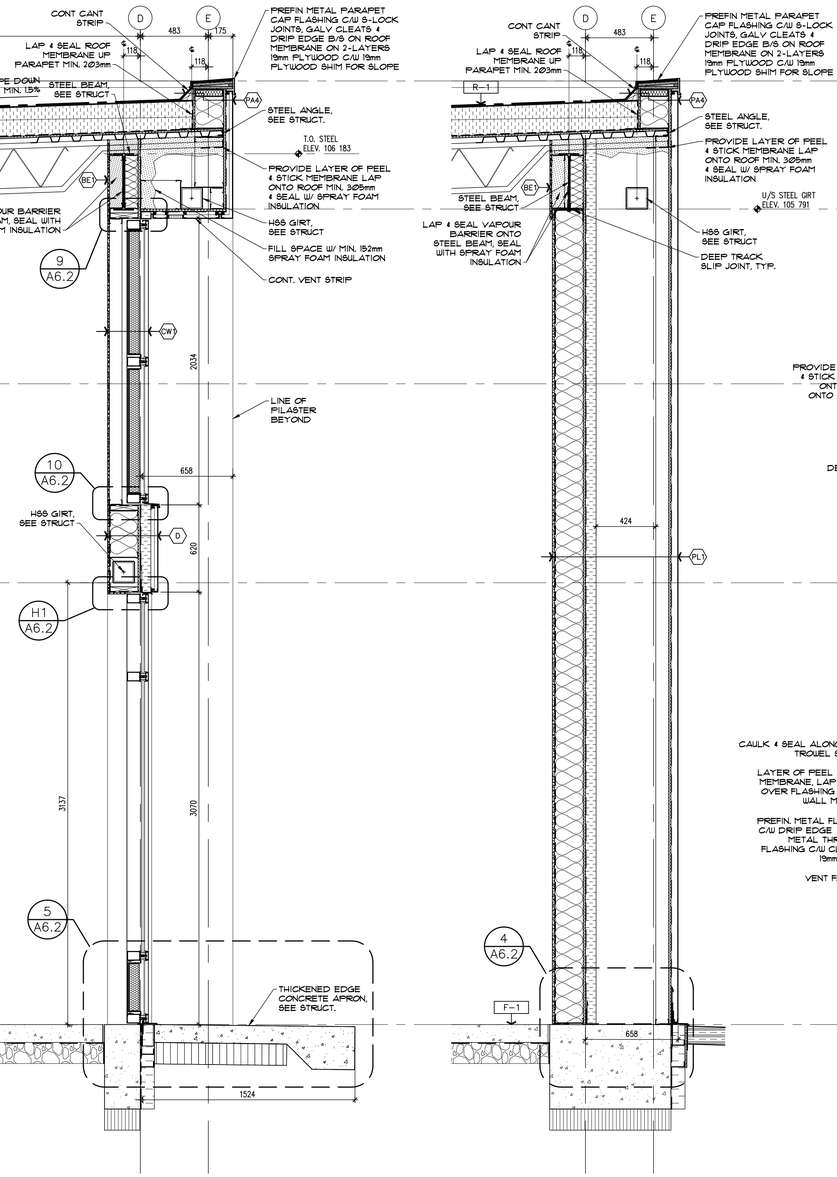
WALL SECTIONS



1 A6.1 **WALL SECTION**
SCALE: 1:20



2 A6.1 **WALL SECTION**
SCALE: 1:20



3 A6.1 **WALL SECTION**
SCALE: 1:20

4 A6.1 **WALL SECTION**
SCALE: 1:20

4 A6.1 **WALL SECTION**
SCALE: 1:20

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1	2019 01 02	BASE PLANS SENT TO CONSULTANTS
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PROVINCE OF MANITOBA
2019-03-01
RAYMOND S.C. WAN
REGISTERED ARCHITECT

PROVINCE OF MANITOBA
RAYMOND S.C. WAN ARCHITECT INC.
No. 049
APPROVED ARCHITECTURAL CORPORATION

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HARDROCK PROPERTIES CORPORATION

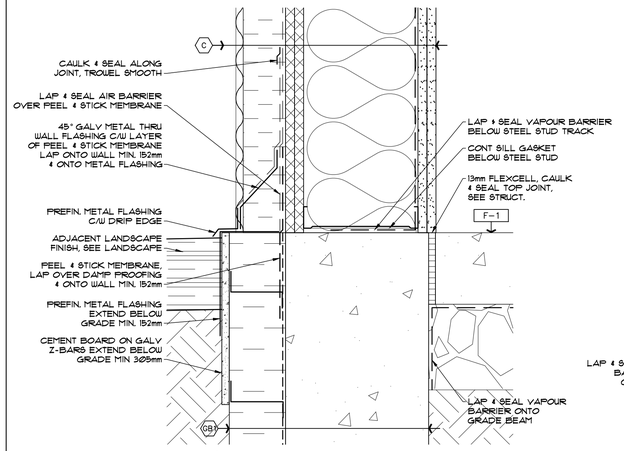
PROJECT
TD BANK
BASE BUILDING
BRANDON, MANITOBA

DO NOT SCALE DRAWINGS

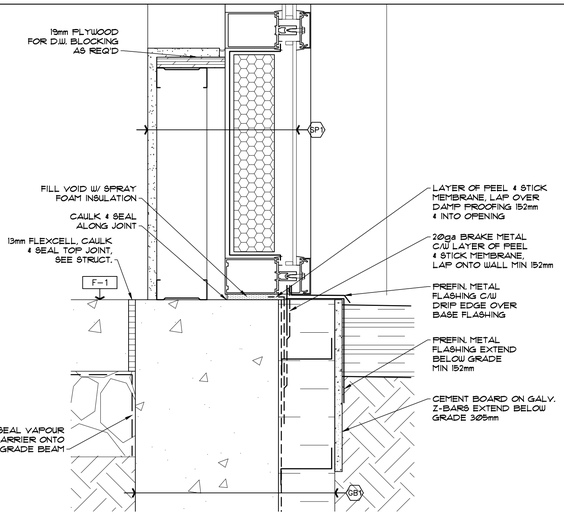
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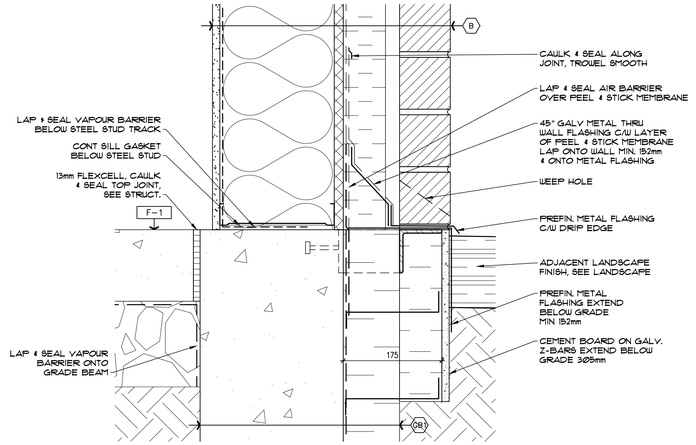
WALL SECTIONS



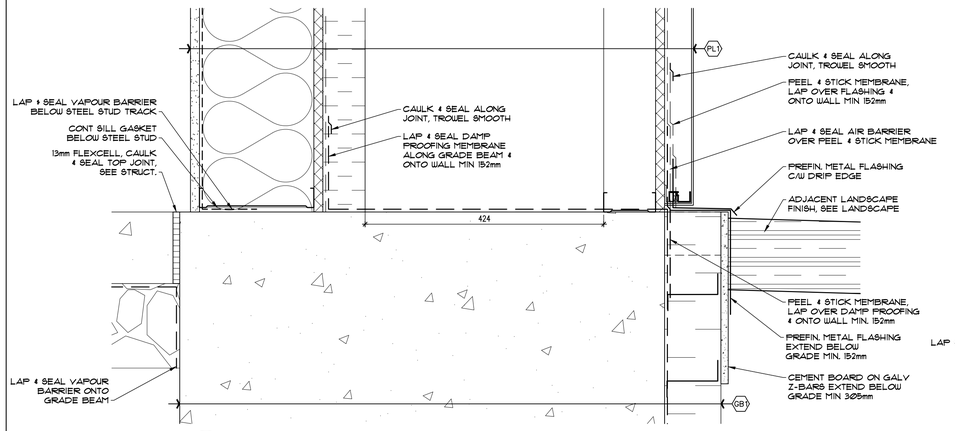
1 A6.2 **SECTION DETAIL**
SCALE: 1:5



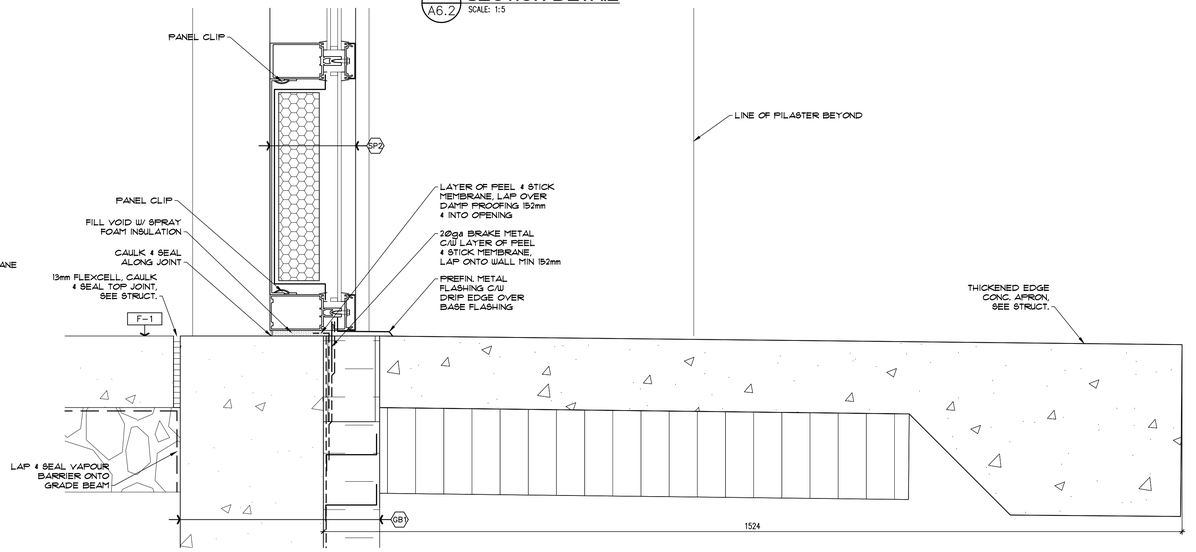
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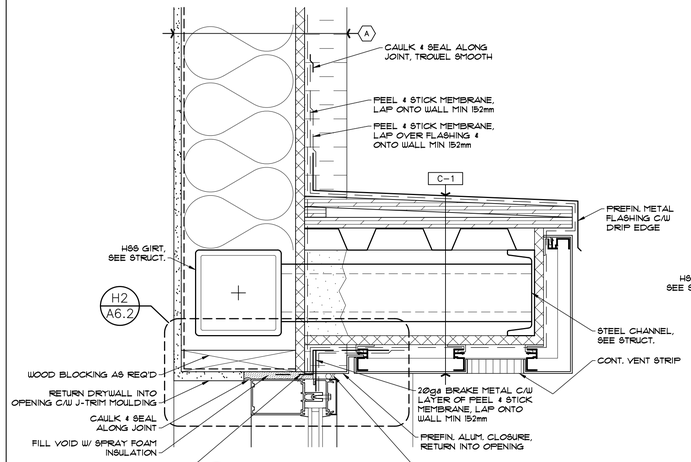
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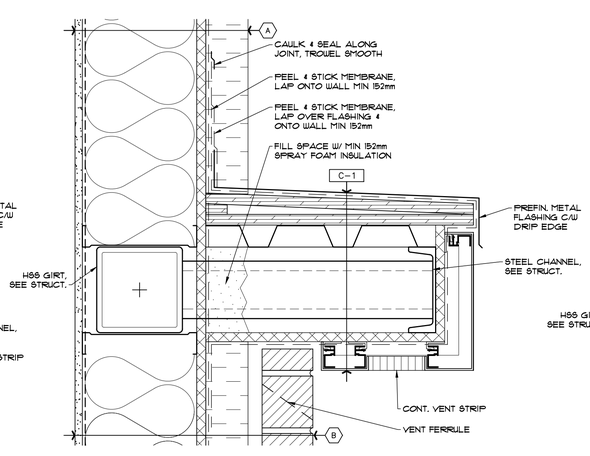
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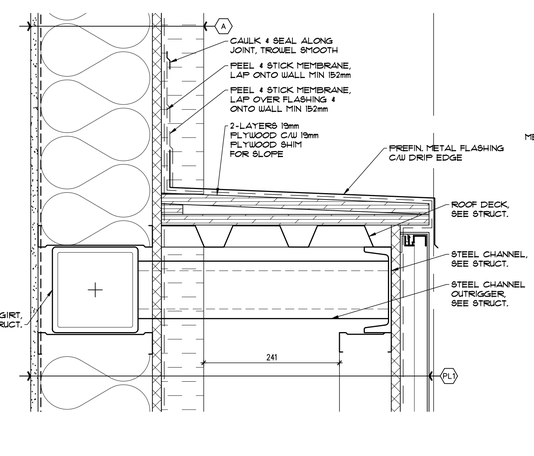
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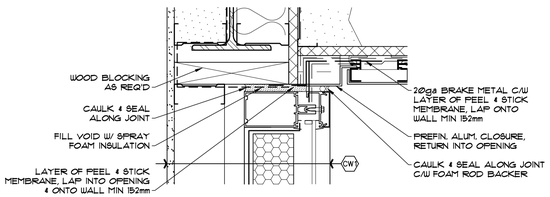
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SCALE: 1:5



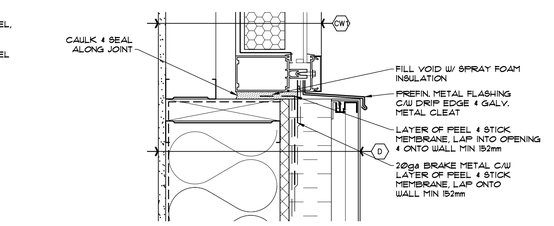
7 A6.2 **SECTION DETAIL**
SCALE: 1:5



8 A6.2 **SECTION DETAIL**
SCALE: 1:5



9 A6.2 **SECTION DETAIL**
SCALE: 1:5



10 A6.2 **SECTION DETAIL**
SCALE: 1:5

No:	Date:	Revision
1	2019 01 02	BASE PLANS SENT TO CONSULTANTS
2	2019 02 22	ISSUED FOR PERMIT, TENDER & CONSTRUCTION
A		
B		
C		

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PROVINCE OF MANITOBA
2019-03-01
RAYMOND S.C. WAN
REGISTERED ARCHITECT

PROVINCE OF MANITOBA
RAYMOND S.C. WAN ARCHITECT INC.
No. 049
ARCHITECTURAL CORPORATION

CONSULTANT

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OWNER
HARDROCK PROPERTIES CORPORATION

PROJECT
TD BANK BASE BUILDING
BRANDON, MANITOBA

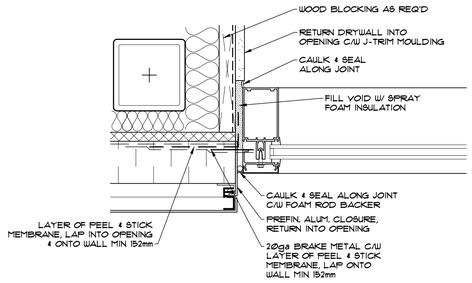
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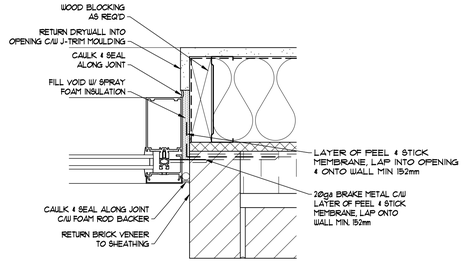
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18-1921	A6.2

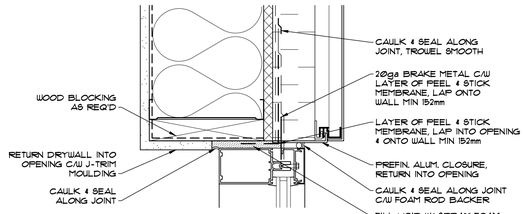
SECTION DETAILS



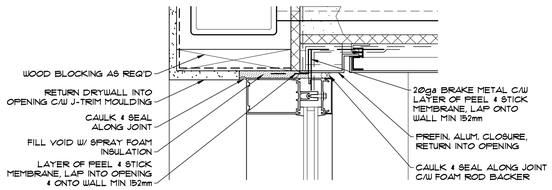
J1 / A6.3 **JAMB DETAIL**
SCALE: 1:5



J2 / A6.3 **JAMB DETAIL**
SCALE: 1:5



H1 / A6.3 **HEADER DETAIL**
SCALE: 1:5



H2 / A6.3 **HEADER DETAIL**
SCALE: 1:5

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2019-03-01
RAYMOND S.C. WAN
REGISTERED ARCHITECT

PROVINCE OF MANITOBA
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PROJECT
TD BANK
BASE BUILDING
BRANDON, MANITOBA

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DATE: FEBRUARY, 2019
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PROJECT	SHEET NO.
18-1921	A6.3

WINDOW DETAILS

DOOR SCHEDULE

No.	DOOR SIZE	TYPE	THICK	MAT.	FRAME TYPE	MAT.	DETAIL	FINISH	HARDWARE	FIRE RATE	COMMENTS	FUNCTION
D100	2-914x2439	1	44	ALUM	WA	ALUM	3	-	1	-	1-2-3	ENTRANCE
D101A	2-914x2439	1	44	ALUM	WI3	ALUM	3	-	2	-	1-3	ENTRANCE
D101B	914x2386	2	44	HM	A	PS	2	PTD	3	45MIN	-	EXIT ONLY
D102	914x2386	2	44	HM	A	PS	1	PTD	4	45MIN	-	STOREROOM
D103	914x2386	2	44	HM	A	PS	1	PTD	4	45MIN	-	STOREROOM
D104	914x2386	2	44	HM	A	PS	1	PTD	5	45MIN	-	STOREROOM

NOTES

1	ELECTRIC POWER TO FRAME FOR BARRIER FREE OPERATOR
2	BARRIER FREE DOOR GUARDRAIL C/W DOOR OPERATOR SWITCH
3	BARRIER FREE DOOR OPERATOR SWITCH WALL MOUNTED
TYP	DOOR HARDWARE TO MEET ALL REGULATORY CODES & STANDARDS
TYP	ALL DOOR HARDWARE TO BE COMMERCIAL GRADE QUALITY
TYP	ALL EXTERIOR PRESSED STEEL FRAMES TO BE THERMALLY BROKEN & INSULATED
TYP	ALL FIRE RATED DOORS SHALL BE C/W WEATHER STRIPPING & DOOR CLOSURE & FIRE RATED HARDWARE
TYP	CONTRACTOR SHALL INSTALL ALL HARDWARE AT MOUNTING HEIGHT AS SPECIFIED UNDER CURRENT BUILDING CODE - NBC ARTICLE 3.8.3.3 (3)
TYP	ALL HOLLOW METAL DOORS TO BE PAINT GRADE U.N.O.

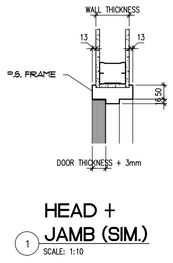
(A) PRESSED STEEL FRAME -PTD

(1) MEDIUM STYLE ALUM. DOOR, 6mm TEMPERED GLASS INFILL

(2) HOLLOW METAL -PTD OR WOOD SOLID CORE -PTD, SEE SCHED

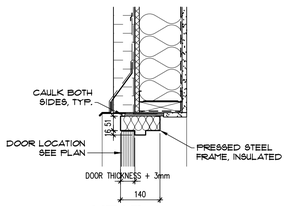
FRAME TYPES

DOOR TYPES



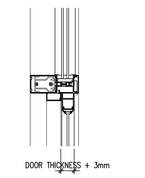
HEAD + JAMB (SIM.)

(1) SCALE: 1:10



HEAD + JAMB (SIM.)

(2) SCALE: 1:10



HEAD + JAMB (SIM.)

(3) SCALE: 1:10

2.1 AUTOMATIC DOOR OPERATORS

1. AUTOMATIC DOOR OPERATORS - VESTIBULE: SURFACE MOUNT, POWER OPEN AND SPRING CLOSE, MAXIMUM UN-ASSISTED OPENING FORCE OF 38N, SW600 BY BESAM CANADA INC., GT 3000HD BY GYRO TECH INC., MAGIC-FORCE BY STANLEY CANADA CORP, 8100 SERIES BY RECORD-USA AND "AUTO SWING" 444-9 BY HUNTER AUTOMATICS INC. FINISH AND COLOUR TO MATCH DOOR

2. SAFETY SENSORS: BY BEA, CONSISTING OF:

   1. TWO SUPERSCAN II, DOOR MOUNTED PRESENCE SNESORS PER AUTOMATED DOOR (ONE EACH DOOR FACE). EACH SENSOR UNIT TO CONTAIN TWO MODULES (ONE MASTER MODULE AND ONE SLAVE MODULE).

   2. ONE LE-21 MODULE COMPLETE WITH DOOR POSITION SWITCH PER APPROACH SIDE SUPERSCAN II (ALLOW THE DOOR TO OPERATE AS A MANUAL DOOR IF PUSH PLATE IS NOT ACTIVATED.) (AS REQUIRED FOR RECORD MODEL OPERATORS)

   3. OPERATOR HOOD: PROVIDE FULL HEADER WITH INTEGRATED END CAPS FOR DOUBLE DOORS. FINISH AND COLOUR TO MATCH ADJACENT DOOR FRAMES.

   4. PUSH PLATE SWITCH (INTERIOR VESTIBULE) RECESSED (AS STANDARD WITHIN HORIZONTAL ALUM. RAIL), ALL-ACTIVE, BRUSHED STAINLESS STEEL FINISH, 6" DIAMETER COMPLETE WITH BARRIER-FREE LOGO AND TEXT "PUSH TO OPEN", FIBRI BY BEA (OR EQUAL)

   5. PUSH PLATE SWITCH (EXTERIOR USE) RECESSED (AS STANDARD WITHIN HORIZONTAL ALUM RAIL), ALL-ACTIVE, BRUSHED STAINLESS STEEL FINISH, 6" DIAMETER, TO INCLUDE WEATHER BOOT PROTECTION, COMPLETE WITH BARRIER-FREE LOGO AND TEXT "PUSH TO OPEN", FIBRI BY BEA (OR EQUAL).

3 EXECUTION

3.1 INSTALLATION

1. PROVIDE THE WORK OF THIS SECTION IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, PLUMB, SQUARE, LEVEL AT CORRECT ELEVATION, IN ALIGNMENT WITH ADJACENT WORK, ANCHORED SECURELY, AND ADJUSTED FOR PROPER FUNCTION.
2. COORDINATE THE WORK OF THIS SECTION WITH THE ELECTRICAL SUB TRADE AND PROVIDE NECESSARY WIRING, CONDUIT AND POWER SUPPLY FEED. CONCEAL WIRING AND CONDUIT FROM VIEW. REFER TO STANDARD ELECTRICAL DETAIL E14A.

3.2 DOOR OPERATION - AUTOMATIC MODE

1. AUTOMATIC EXTERIOR SWING DOORS

   1. NORMAL HOURS AND AFTER HOURS: DOOR OPENS BY PUSH BUTTONS OUTSIDE AND INSIDE, CLOSES BY TIME DELAY.
   2. PRESENCE SENSORS: APPROACH SIDE SUPERSCAN II ACTIVATED BY PUSH BUTTONS. SWING SIDE SUPERSCAN II IS ACTIVE AT ALL TIMES ONCE DOOR IS ACTIVATED. SENSORS STOP DOOR MOVEMENTS FROM HITTING OBJECTS IN PRESENCE ZONES. DOOR MOVEMENTS CONTINUE AFTER OBJECTS LEAVE PRESENCE ZONE.
   3. IF PUSH BUTTON IS NOT ACTIVATED, THE DOOR SHALL OPERATE AS A MANUAL DOOR ONLY.
   4. PROVIDE RECESSED KEY SWITCH JAMB MOUNTED AT +60" TO DISABLE THE OPERATOR. KEY SWITCH TO BE CONNECTED TO PROVIDE ON/OFF UNIT FUNCTION IN LIEU OF MANUFACTURERÂ€™S STANDARD TOGGLE SWITCH WITHIN CABINET.

2. AUTOMATIC VESTIBULE SWING DOOR: (INTO BRANCH)

   1. NORMAL HOURS: DOOR OPENS BY PUSH BUTTONS OUTSIDE AND INSIDE, CLOSES BY TIME DELAY.
   2. AFTER HOURS: OPERATOR DISABLED, DOOR INACTIVE AND LOCKED BY CYLINDER.
   3. PRESENCE SENSORS: APPROACH SIDE SUPERSCAN II ACTIVATED BY PUSH BUTTONS. SWING SIDE SUPERSCAN II IS ACTIVE AT ALL TIMES ONCE DOOR IS ACTIVATED. SENSORS STOP DOOR MOVEMENTS FROM HITTING OBJECTS IN PRESENCE ZONES. DOOR MOVEMENTS CONTINUE AFTER OBJECTS LEAVE PRESENCE ZONE.
   4. IF PUSH BUTTONS ARE NOT ACTIVATED THE DOOR SHALL OPERATE AS A MANUAL DOOR ONLY.
   5. OPERATOR DISABLED BY RELAY SWITCH CONTROLLED BY VAULT ALARM SYSTEM.
   6. PROVIDE RECESSED KEY SWITCH JAMB MOUNTED AT +60" TO DISABLE THE OPERATOR. KEY SWITCH TO BE CONNECTED TO PROVIDE ON/OFF FUNCTION IN LIEU OF MANUFACTURER'S STANDARD TOGGLE SWITCH WITHIN CABINET.

3. AUTOMATIC VESTIBULE SWING DOOR: (INTO ABM TRANSACTION AREA

   1. NORMAL AND AFTER HOURS: DOOR OPENS BY PUSH BUTTONS OUTSIDE AND INSIDE, CLOSES BY TIME DELAY.
   2. PRESENCE SENSORS: APPROACH SIDE SUPERSCAN II ACTIVATED BY PUSH BUTTONS. SWING SIDE SUPERSCAN II IS ACTIVE AT ALL TIMES ONCE DOOR IS ACTIVATED. SENSORS STOP DOOR MOVEMENTS FROM HITTING OBJECTS IN PRESENCE ZONES. DOOR MOVEMENTS CONTINUE AFTER OBJECTS LEAVE PRESENCE ZONE.
   3. IF PUSH BUTTONS ARE NOT ACTIVATED, THE DOOR SHALL OPERATE AS A MANUAL DOOR ONLY.
   4. PROVIDE RECESSED KEY SWITCH JAMB MOUNTED AT +60" TO DISABLE THE OPERATOR (FOR SERVICING.) KEY SWITCH TO BE CONNECTED TO PROVIDE ON/OFF FUNCTION IN LIEU OF MANUFACTURER'S STANDARD TOGGLE SWITCH WITHIN CABINET.

DOOR HARDWARE SETS

QUANTITY	ITEM	CODE	FINISH	MANUFACTURER	COMMENTS
HARDWARE SET 1					
6	HINGE	CB199 NRP 4½ x 4"	630	STANLEY	
1	DEADLATCH	4900	628	ADAMS-RITE	
1	DEADLATCH STRIKE	P/N 24-0137-03	628	ADAMS-RITE	
1	EXIT PADDLE	4590	628	ADAMS-RITE	
1	MORTISE CYLINDER	20-013	626	SCHLAGE	
2	DOOR PUSH & PULL	TD BANK DOOR HANDLE	-	MILLER ZELL	
1	CLOSER	4021 X 4020-18	689	LCN	FIX PUSH & PULL LABELS TO DOOR STILES
1	AUTO OPERATOR	SEE AUTOMATIC DOOR SPEC	-	-	JAMB KEY SWITCH REPLACES STD. TOGGLE SWITCH
1	JAMB SWITCH (KEYED)	SEE AUTOMATIC DOOR SPEC	-	-	
1	PRESENCE SENSORS	SEE AUTOMATIC DOOR SPEC	-	-	SUPERSCAN II SENSORS C/W LE-21 MODULE & DOOR CONTACTS
2	OVERHEAD STOP	104S	630	GLYNN-JOHNSON	
1	THRESHOLD	CT-805 X DOOR WIDTH	AL	K.N. CROMDER	REFER TO DRAWINGS FOR ACTIVE LEAF
2	DOOR SWEEP	W24S X DOOR WIDTH	AL	K.N. CROMDER	
1	WEATHER STRIP	HEAD, JAMB & MEETING STILE	-	KAWNEER	
1	FLUSHBOLT	FB458	626	IVES	
1	CYLINDER GUARD	MS4043	130	ADAMS-RITE	
1	GUIDE RAIL W/ ACTUATOR	SWITCHCURRAN CE-810-H-615-MB	-	CURRAN	
HARDWARE SET 2					
6	HINGE	CB199 NRP 4½ X 4"	630	STANLEY	
2	DEADBOLT	MS 1852S	626	ADAMS-RITE	
2	THUMBTURN	4066	628	ADAMS-RITE	FIX PUSH & PULL LABELS TO DOOR STILES
1	MORTISE CYLINDER	20-013	626	SCHLAGE	JAMB KEY SWITCH REPLACES STD. TOGGLE SWITCH
2	DOOR PUSH & PULL	CP-8 AND CO-12	628	KAWNEER	
1	CLOSER	4021 X 4020-18	689	LCN	SUPERSCAN II SENSORS C/W LE-21 MODULE & DOOR CONTACTS
1	AUTO OPERATOR	SEE AUTOMATIC DOOR SPEC	-	-	
1	JAMB SWITCH (KEYED)	SEE AUTOMATIC DOOR SPEC	-	-	DOOR UNDERCUT IS ?
1	PRESENCE SENSORS	SEE AUTOMATIC DOOR SPEC	-	-	REFER TO DRAWINGS FOR ACTIVE LEAF
1	FLUSHBOLT	FB458	626	IVES	
1	LOCK GUARD	LG11	630	IVES	
HARDWARE SET 3					
3	HINGE	CB191 4 1/2" X 4" NRP	626	STANLEY	
1	EXIT DEVICE	22EO	689	VON DUPRIN	
1	CLOSER	4031-REG	689	LCN	
1	KICKPLATE	GSH 80A 10" X DR WIDTH LESS 1.5"	628	GALLERY	DOOR SIGN TO READ "EMERGENCY EXIT, ALARM WILL SOUND"
1	THRESHOLD	CT-10 X DOOR OPENING WIDTH	AL	K.N. CROMDER	
1	DOOR SWEEP	W24S X DOOR WIDTH	AL	K.N. CROMDER	
1	WEATHERSTRIP	W14 X HEAD & JAMB	AL	K.N. CROMDER	
1	DOOR SIGN	969122-00	-	VON DUPRIN	
HARDWARE SET 4					
3	HINGE	CB179 4 1/2" X 4"	652	STANLEY	
1	LOCKSET	AL70PD NEPTUNE 10-025	626	SCHLAGE	PROVIDE NRP TYPE BUTTS FOR OUTWARD SWINGING DOORS
1	CLOSER	4031-REG	689	LCN	
1	KICKPLATE	GSH 80A 10" X DR WIDTH LESS 1/5"	628	GALLERY	DOOR TO BE 3/4 HR FIRE RATED OF ELECTRICAL TRANSFORMER PRESENT
1	FLOOR STOP	243F	626	HAGER	
HARDWARE SET 5					
3	HINGE	CB179 4 1/2" X 4"	652	STANLEY	
1	LOCKSET	AL53PD NEPTUNE 10-025	626	SCHLAGE	3/4 HOUR FIRE RATED
1	CLOSER	4031-REG	689	LCN	PROVIDE NRP BUTTS FOR OUTWARD SWINGING DOORS
1	FLOOR STOP	243F	652	HAGER	
2	KICKPLATE	GSH 80A10" X DR. WIDTH LESS 1.5"	628	GALLERY	

ROOM FINISH SCHEDULE

ROOM No.	ROOM NAME	FLOOR FINISH	BASE	WALLS NORTH	EAST	SOUTH	WEST	CEILING FINISH	HEIGHT	COMMENTS
100	VESTIBULE	-	-	-	-	-	-	EXPOSED-PTD	-	2-3
101	MAIN FLOOR AREA	-	-	-	-	-	-	EXPOSED-PTD	-	2-3
102	LAN ROOM	-	-	-	-	-	-	EXPOSED-PTD	-	1-2-3
103	ELEC. ROOM	-	-	-	-	-	-	EXPOSED-PTD	-	2-3
104	JANITOR	-	-	-	-	-	-	EXPOSED-PTD	-	1-2-3

NOTES

TYP	G.C. TO PROVIDE WOOD BLOCKING WITHIN STUDS TO ACCOMMODATE ALL WALL MOUNTED ACCESSORIES & FURNITURE AS REQ'D
TYP	ALL EXPOSED STEEL SHALL BE PAINTED, UNLESS NOTED OTHERWISE
TYP	ALL EXPOSED DUCTWORK TO BE PAINTED, UNLESS NOTED OTHERWISE
1	SLOPE FLOOR AS REQ'D FOR DRAINAGE, SEE FLOOR PLANS
2	ALL WALLS TO BE TAPED, SANDED & PRIMED
3	FLOOR TO BE POWER TROWEL FINISH SMOOTH TO ACCEPT TENANT FINISHES, REFER TO STRUCTURAL DRAWINGS

ABBREVIATIONS:

DW	-	DRYWALL
PTD	-	PAINTED
A.F.F.	-	ABOVE FINISH FLOOR
ACT	-	ACOUSTIC CEILING TILE
EXP	-	EXPOSED
FRP	-	FIBRE REINFORCED PLASTIC
RB	-	RUBBER BASE
CPT	-	CARPET
CS	-	CONCRETE (SEALED)
CH	-	CONCRETE (HARDENED)
EPX	-	EPOXY COATING
LVT	-	LUXURY VINYL TILE
SV	-	SHEET VINYL
WD	-	WOOD
VWC	-	VINYL WALL COVERING
WSC	-	WOOD SOLID CORE
STN	-	STAINED

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PROVINCE OF MANITOBA ENCOURAGE ARCHITECTURAL CORPORATION

SEAL

PROVINCE OF MANITOBA
2019-03-01
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PROJECT

TD BANK BASE BUILDING

BRANDON, MANITOBA

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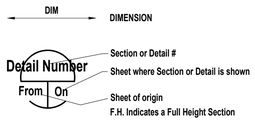
PROJECT	SHEET NO.
18-1921	A8.0

DOOR & ROOM FINISH SCHEDULE

GENERAL NOTES

1. DO NOT SCALE DRAWINGS.
2. Design live loads shall not be exceeded at any time during construction. For concrete structures, design live loads may only be applied after concrete reaches its design strength.
3. Construction loads must not be imposed on structure in excess of specified design live load. Design live loads may only be applied after concrete reached its design strength.
4. The contractor is to verify dimensions, elevations, slopes, details, conditions and other data noted on the structural drawings with conditions on the site, co-ordinate all dimensions with the architectural drawings prior to construction or fabrication of any building component, and is held responsible for reporting any discrepancies that effect structural framing to the engineer before proceeding with the work. Variations and modifications to work shown on the structural drawings shall not be carried out without written permission from the engineer.
5. Modifications, alterations or substitutions must be authorized in writing by the Design Engineer.
6. The General Contractor shall locate all existing site services prior to construction.
7. For openings in slabs, floor, walls, roof, etc. refer to architectural, mechanical, structural and or other pertinent drawings.
8. Location of construction joints not indicated on plans is the responsibility of the general contractor but approval must be obtained from the Design Engineer before proceeding.
9. The contractor shall be responsible for the design and installation of all necessary shoring, bracing and form work. Form work for new construction shall be bridged over existing services.
10. The structure and grade beams shall be braced in all directions to safely withstand all lateral forces which may be encountered during erection. The bracing shall remain in place until all permanent bracing, framing, cladding and backfill are in place.
11. All codes referenced in these notes shall be of the latest applicable revision.
12. All beams, angles and miscellaneous metals indicated on architectural drawings but not shown on structural drawings, shall be included in the tender price. The contractor is responsible for confirming sizes and locations of these members with both the architect and the engineer prior to tender closing.
13. Do not cut or drill any openings into structural members without obtaining written permission from the structural consultant.
14. The Contractor shall retain a manufacturer's representative to provide onsite anchor installation training for all of their products specified. The structural engineer of record must receive documented confirmation that the contractors personnel are trained prior to the commencement of installing anchors.

DIMENSIONS & SYMBOLS



DESIGN SPECIFICATIONS

1. The building is designed in accordance with the 2011 Manitoba Building Code.
2. Importance Category for building = Normal
3. Design specified loads:
   - Live Loads: as per floor plans
   - Dead Loads: as per floor plans
4. All climatic data based on Winnipeg, MB.
5. Snow loads:
   - Design snow load = 39 psf (1.88 kPa)
   - Ground snow load, Ss = 44 psf (2.1 kPa) (1/50 year return)
   - Associated rain load, Sr = 4 psf (0.2 kPa) (1/50 year return)
   - Additional snow loads adjacent higher roofs, walls, mechanical units, etc. as indicated on drawings.
6. Wind loads:
   - Hourly wind pressure, q = 10.2 psf (0.49 kPa) (1/50 year return)
   - Exposure factor, Ce = 0.91, based on open terrain
   - Internal wind pressure category: x, Cpi = -0.45 to 0.3
   - Design wind loads calculated in accordance with NBCC static procedure.
7. Seismic loads: Not applicable - as per 2011 Manitoba Building Code.

CONCRETE

1. Concrete, as specified in A23.1-09, shall have the following properties.

CONCRETE STRENGTH AND MIX SPECIFICATIONS

USE	EXPOSURE CLASS	CEMENT TYPE	MINIMUM COMPRESSIVE STRENGTH	MAXIMUM WATER TO CEMENT RATIO	AIR CONTENT (%)	SLUMP	MAXIMUM AGGREGATE SIZE
PILES, PILECAPS, RETAINING WALLS	S-2	HS	32 MPa AT 28 DAYS	0.45	4 - 7	90 mm	20 mm
GRADE BEAMS	F-2	GU	25 MPa AT 28 DAYS	0.55	4 - 7	90 mm	20 mm
SLABS (STRUCTURAL OR ON GRADE) & TOPPING ON STEEL DECK	N	GU	25 MPa AT 28 DAYS	0.55	NONE	90 mm	20 mm
EXTERIOR SIDEWALKS, CURBS & SUMP PITS	C-2	GU	32 MPa AT 28 DAYS	0.45	5 - 8	90 mm	20 mm

2. Construction joints shall be made and located so as not to significantly impair the strength of the structure. The location of construction joints shall be approved by the Structural Consultant. Slab and beam construction joint details shall be approved by the Design Engineer.
3. Provide 6" (150mm) plastic wrapped cardboard void form or 12" (300mm) plasti-fab geospan compressive fill material (void form) below all beams, walls, structural slabs and pile caps.
4. Place concrete as a continuous operation stopping only at construction joints.Construction joints shall be adequately dowelled and keyed. If not provided as part of this drawing set, details and locations of construction joints shall be provided by the contractor and reviewed by the structural consultant.
5. Reinforcing steel must be reviewed by the structural consultant prior to placing concrete.
6. The general contractor shall notify the Design Engineer at least 48 hours (72 hours for out-of-town projects) prior to all concrete pours.
7. Fins on concrete surfaces shall be removed. Honeycombed or otherwise defected concrete shall be removed sufficiently to expose sound concrete and shall be repaired as directed by the structural consultant.
8. Timing for removal of form work to be based on strength of concrete, as determined by the testing of field cured concrete cylinders. Do not remove form work from footings before concrete has reached 50% of its design strength. For walls and columns not supporting load, remove at 60% of design strength. For suspended structural slabs, form work may be removed at 80% of design strength, provided the slab is re-shored until full strength is reached.
9. Unless noted otherwise, contractor to test concrete for each day's concreting and/or every 40 cubic meters each day concreting. Forward test results to the structural consultant.
10. All freshly placed and consolidated concrete shall be cured in accordance with CSA standard A23.1, latest edition.
11. All freshly placed, consolidated concrete shall be suitably protected during the curing period against damage from adverse weather conditions such as winds, precipitation and extreme temperatures in accordance with CSA standard A23.1, latest edition.

REINFORCING STEEL

1. Reinforcing steel shall be new billet, deformed bars in accordance with CSA Standard CAN/CSA-G30.18-M92 minimum yield strength to be 400 MPa, except 10M bars for stirrups and column ties may be 300 MPa.
2. Reinforcing steel shall be detailed in accordance with the latest RSIC Reinforcing Steel Manual of Standard Practice.
3. Lap top bars at centre span and bottom bars over supports.
4. All reinforcing to be held in place and tied by the use of proper accessories such as hi-chairs, spacers, etc., to be supplied by the reinforcing steel fabricator.
5. Reinforcing in concrete beams/walls and masonry bond beams to be bent 24" (600mm) around corners or use 3'-0" x 3'-0" (900mm x 900mm) corner bars.
6. Frame all openings in concrete beams, walls and/or slabs with 2-20M bars (extra) all four sides. Extend bars 24" (600 mm) beyond edges of openings except as noted.
7. Submit shop drawings which clearly indicate bar sizes, grade, spacing, hooks, bends, and supporting/spacing devices, etc., for review to the Design Engineer prior to fabrication of the reinforcing steel.
8. Pit Walls/Slabs shall be 8" (200mm) thick reinforced with 15M @ 12" (300mm) o.c. each way at center unless otherwise shown.
9. Housekeeping pads shall be a minimum of 4" (100mm) thick and reinforced with 10M @ 12" (300mm) o.c. each way at centre unless otherwise shown.
10. Prior to placing concrete, ensure all reinforcing steel is clean, free of loose scale, rust, mud, oil or other foreign material which would reduce bond.
11. Heating, quenching and bending of reinforcing steel on the site is not allowed.
12. Splices at points of maximum tensile stress shall be avoided wherever possible. Such splices, where used, shall be approved by the consultant, the minimum lap shall be 48 bar diameters.
13. Continuous and temperature reinforcing bars shall be lapped 24 bar diameters, or 18" (450mm) minimum at splice or at corners. Terminate continuous bar at non-continuous ends with standard hook.
14. Minimum clear distance between parallel bars shall be greater than the largest of the following:
    a) 1.4 times bar diameter.
    b) 1.4 times maximum size of aggregates.
    c) 1 3/16" (30mm) minimum.
15. Minimum concrete cover for reinforcing:

Exposure Condition	Exposure Class		
	N	F-1, F-2, S-1, S-2	C-1, C-2, C-3, A-1, A-2, A-3
PILES, FOOTING, RETAINING WALL, AND CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.	--	75mm	75mm
BEAMS, GIRDERS, COLUMNS.	30mm	40mm	60mm
SLABS, WALLS, JOISTS, SHELLS AND FOLDED PLATES	20mm	40mm	60mm

EXCAVATION AND BACKFILL

1. Grade beams or walls shall be backfilled with granular material.
2. Excavation, sub-grade preparation and backfill for slabs on grade shall be provided in accordance with the geotechnical report included with the specifications.
3. For excavation, backfill and compaction, refer to Geotechnical Engineers recommendation and geotechnical report.
4. Excavation, backfill and compaction is to be supervised by a Geotechnical Engineer.
5. All compaction test results are to be forwarded to architect, structural consultant, owner and contractor.

CAST IN PLACE FRICTION PILES

1. The contractor shall confirm the location of sub-grade services prior to commencing drilling for piles.
2. Piles shall be cast-in-place concrete friction piles to diameters and lengths indicated on the plan.
3. Piles have been designed on the basis of shaft adhesion values shown below. Variance in soil conditions from the above shall be reported to the Engineer before proceeding.
4. Pile reinforcing for piles located in unheated areas shall extend the full length of the pile.
5. The upper 10'-0" (3000mm) of all piles shall be consolidated with a mechanical vibrator.
6. Pile installation shall be provided under the full time inspection of a qualified professional geotechnical engineer selected by the structural consultant.
7. Maintain accurate record of each pile. Submit a copy of this record to the structural consultant.
8. A copy of the geotechnical Investigation report is available and included in the project specifications.
9. Full-length steel sleeves should be maintained on site and utilized as required during construction to maintain pile holes in a clean dry state.

FACTORED GEOTECHNICAL RESISTANCE @ ULS VALUES
0m (ft) to Xm (ft) - -0 kPa (PSF)
Xm (ft) to 4m (13 ft)- 14 kPa (292 PSF)
4m (13 ft) to 10m (33 ft) - 20 kPa (418 PSF)
where X= 1.5m (5 ft) for interior piles where X= 2.4m (8 ft) for exterior piles

FLOOR SLAB SUPPORTED ON GRADE

1. Remove all top soil and soils containing organics. Contractor is to refer to geotechnical report, if available, for indication of depths of unsuitable soil and is to remove soft or weak areas to competent material. All of this work is to be carried out under the direct instructions of the Geotechnical Engineer.
2. Proof roll sub-grade as directed by the Geotechnical Engineer.
3. A Geotechnical Engineer must provide a letter of certification with an engineer's seal, stating that the granular layer and sub-base preparation has been installed in accordance to their recommendations and requirements. Lavergne, Draward, & Associates Inc. will not certify these items. The letter of certification is to be forwarded to the Contractor, Architect and Owner.
4. Prepare granular layer and sub-base as per Geotechnical Engineers recommendation and geotechnical report.
5. Slab movement/cracking:
   a) Since the stability of a slab-on-grade is entirely dependent on the nature of the soil upon which it is supported, some movement resulting in displacement and cracking of the slab should be expected.
   b) Accurate limits defining the amount and frequency of movement cannot be given due to unknown and/or uncontrollable factors such as soil moisture content, water table, silt pockets, etc. The owner shall assume all risks associated with this system.

CURTAIN WALL & GLAZING

1. Provide sealed engineered shop drawings to architect for review prior to manufacturing. All drawings shall be sealed by a professional Engineer, licensed to practice in the project Province.
2. Design loads are as follows:
   -Wind q(1/50) - 0.49 kPa (9.4 psf)

STRUCTURAL FIELD REVIEW

1. Structural review shall be undertaken by the structural consultant on behalf of the owner.
2. A review of all reinforcement placing is to be made by the Structural Engineer prior to casting concrete. All re-bar or mesh reinforcement must be in place at the time of review. The contractor shall give the consultant 24 hours notice for review for local projects and 48 hours for out of town projects.
3. Prior to insulating wall cavities, all timber framing shall be reviewed by the Structural Consultant. All posts, studs, beams and blocking should be in place at the time of review. The contractor shall give the consultant 24 hours notice for review for local projects and 48 hours for out of town projects.
4. Structural field reviews are periodic reviews to verify that work is in general conformance with the structural drawings and documents prepared by Lavergne, Draward,& Associates Inc. and does not guarantee the contractor's work.

MASONRY

1. Masonry work shall conform to CSA Standards S304.1 and A371.
2. Masonry work shall comply with S304.1-04 masonry design for buildings (limit states design) including design testing and workmanship. Refer to S304.1 for material specifications.
3. Also refer to architectural drawings for specialty blocks/bricks e.g. acoustic blocks/giant bricks etc.
4. Contractor to be responsible for temporary bracing of all masonry components until all masonry is self supporting or necessary structural elements are in place.
5. LOOSE LINTEL ANGLES FOR 3 1/2" (90) BRICK U.N.O. on the drawings:
   Span L1 clear span - 0 to 52" (1300mm): L 3 1/2"x 3 1/2"x 1/4" (L 90mmx90mmx6.4)
   Span L2 clear span - 52" (1300mm) to 72" (1800mm): L5"x 3 1/2"x 5/16" (127mmx90mmx7.9mm)
   Span L3 clear span - 72" (1800mm) to 84" (2100mm): L6"x 3 1/2"x 3/8" (152mmx90mmx10mm)
   Extend loose lintel angle 8" (200mm) past openings, typical.

EXCAVATION AND BACKFILL

1. Grade beams or walls shall be backfilled with granular material.
2. Excavation, sub-grade preparation and backfill for slabs on grade shall be provided in accordance with the geotechnical report included with the specifications.
3. For excavation, backfill and compaction, refer to Geotechnical Engineers recommendation and geotechnical report.
4. Excavation, backfill and compaction is to be supervised by a Geotechnical Engineer.
5. All compaction test results are to be forwarded to architect, structural consultant, owner and contractor.

OPEN-WEB STEEL JOISTS (O.W.S.J.)

1. Design and fabricate steel joists in accordance with drawings and CSA Standards CAN/CSA-S16.1 & S136. Verify all drawing/site dimensions and conditions prior to fabrication.
2. Joist members shall be fabricated using structural steel conforming to CSA Standard CAN/CSA-G40.21, Grade 300W (minimum).
3. Bridging, bearing plates and angles shall be of structural steel conforming to CSA Standard CAN/CSA-G40.21 Grade 300W (minimum) unless noted otherwise.
4. Welding shall be performed by qualified welders fully approved for structural welding by the Canadian Welding Bureau in accordance with CSA Standard W47.1 and W59.
5. Minimum bearing length of joists to be 2 1/2" (64mm) on steel beams.
6. Strut top and bottom chords of joists at all columns.
7. Weld bridging to joists, steel beams and steel plates fastened to walls.
8. Unless noted otherwise on plans provide 3x3x3/8" (75x75x10) angle frame from joist to joist on each side of all steel deck openings over 16" (450mm), and C5x6.7 (C130x10) frame at all mechanical and electrical units that sit on or hang from the roof or floors.
9. Joist supplier to refer to mechanical and all other pertinent drawings for locations and weights of equipment supported by joists.
10. Joist deflection due to live load shall not exceed 1/360 of the span.
11. Fabricate all joists with camber to offset the deflections due to dead load.
12. Submit shop drawings which clearly indicate joist spacing, depth, loading, camber, bearing, anchorage details, framed openings, accessories, etc., under the seal of a Professional Engineer registered in the project Province, to the Architect for approval prior to fabrication.
13. Design joists to accomodate mechanical ducts which are located within the joist space.
14. Provide Ceiling extensions where required by Architect.
15. Do not connect any members to chords of joist between panel points unless chords have been designed for extra stress or an additional diagonal has been inserted at the point of connection.
16. Professional Engineer whose seal is on shop drawings shall review construction and provide a letter certifying that connections have been provided in accordance with the approved shop drawings.
17. All OWSJ to have 4" nominal seat.
18. All OWSJ to be pre-cambered for dead load.
19. All roof OWSJ to be designed for a minimum net uplift of 0.5 kPa.

STEEL STUDS

1. Studs shall be designed in accordance with the requirements of the National Building Code of Canada CAN/CSA-S136-07 Cold Formed Steel Structural Members.
2. Stud steel to meet the requirements of ASTM A446 Standard Specification for sheet steel, zinc coated (galvanized) by the hot dip process.
3. Grades are as follows:
   -- Grade A, 33 ksi (228 mPa) min. yield, for 0.048" (1.22mm) material and thinner
   -- Grade D, 50 ksi (345 mPa) min. yield, for 0.060" (1.52mm) material and thicker
4. All screws shall be manufactured by "Grabber Construction Products" or "Hilti Products". All screws to be as follows:
   "Grabber Construction Products" "Hilti Products"
   --#10 Waferhead Drivall Self Drilling --#10 Kwik-Pro Self Drilling (PWH - Phillips Waferhead)
   -#14 Hex Head Drivall Self Drilling --6mm (1/4")Ø-14 Hex Washer Head (HWH) Self Drilling
   Note: All screws to be installed in accordance to manufacturers specifications.
5. All power actuated fasteners supplied by Hilti. Install in accordance with manufacturers specifications.
6. Provide 18 ga. internal bridging complete with clip angle at 1220mm (4'-0") on centre.
7. Provide slip track at top of walls where required to accommodate vertical deflection.
8. Location of stud walls as per architectural and structural drawings.
9. Design loads are as follows:
   - Wind Load q (1/50) = 0.45 kPa
10. Drawings are to be read in conjunction with architectural & structural dwgs. Any discrepancies shall be reported to engineer. All steel stud framing shall be coordinated with architectural drawings.
11. Rough opening dimensions of door & window openings to be confirmed with Architectural/Structural drawings.
12. Steel studs to be designed by steel stud supplier.
    (minimum 20 gauge for all steel studs except minimum 18 gauge for 8" steel studs)
13. Steel stud details are a minimum, to be confirmed by steel stud designer.
14. Submit shop drawings which clearly indicate stud depth, gauge, loading, section properties, location, connection details, framed openings, accessories, etc., under the seal of a Professional Engineer registered in the project Province, to the Architect for approval prior to fabrication.
15. Professional engineer whose seal is on shop drawings shall review construction and provide letter certifying that connections and construction have been in accordance with the approved shop drawings.
16. All steel studs to be designed for a minimum deflection criteria of L / 360.

STRUCTURAL STEEL

1. Fabricate & erect structural steel to CSA Standard CAN/CSA-S16-09
2. Structural steel shapes and plates shall conform to CSA Standard CAN/CSA-G40.21, Grade 350W and CAN/CSA-G40.21, Grade 350W for H.S.S., Class C.
3. All welding shall be performed by qualified welders fully approved for structural welding by the Canadian Welding Bureau in accordance with CSA Specifications W47 and W59.
4. Unless shown otherwise on the Drawings, connect all flexural members (beams, channels, etc...) at each end for one half of the total uniformly distributed factored load of the laterally supported beam, in addition to the transfer of factored moments, where shown on the Drawings.
5. Splicing of members not permitted unless otherwise noted.
6. Where beams are continuous over supports, no holes permitted in top flange. Provide 2-3/8" (10mm) welded web stiffener plates each side of beam, aligned with column walls.
7. Column base and cap plates shall be welded to columns. Provide 3/4" (20mm) thick cap plate c/w 4-3/4"Ø (20mm) bolts for all columns supporting cantilevered beams.
8. Structural steel erector shall supply and install all temporary guying and bracing necessary to provide stability for the structure as a whole. These shall remain in place until floor slabs are well cured, steel roof deck is fully welded and/or permanent bracing is installed.
9. Steel stairs, handrails, guardrails shall be designed by G.C.'s supplier. Fabricator shall submit shop drawings under the seal of a Professional Engineer registered in the project Province, to the Architect for approval prior to fabrication.
10. Structural Steel supplier shall submit shop drawings bearing the seal of a Professional Engineer in the project Province showing all design and fabrication details of connections to the Architect for review prior to fabrication.
11. Pipe sections to ASTM A53, minimum yield point 241 MPa (35 ksi).
12. Bolts, nuts, and washers to ASTM A325, minimum bolt diameter 3/4" (20mm).
13. Anchor bolts to ASTM A307.
14. Welding of reinforcing bars to CSA W186-M1990.
15. Primer to conform to the requirements of CGSB or CISC/CPMA standards.
16. Grout bed under base plates to be 35 MPa non shrink grout.
17. All bolted connections shall have a minimum of two bolts in each connected piece and be designed with bearing-type connections with threads included in shear plane, unless noted otherwise.
18. Unless noted otherwise on plans provide 3x3x3/8" (75x75x10) angle frame from joist to joist on each side of all steel deck openings over 16" (450mm), and C8x11.5 (C200x17) frame at all mechanical and electrical units that sit on or hang from the roof or floors.
19. Provide 6"x6"x1/2" (150x150x13) clip angles x 12" (300mm) long at hollow core column openings. Co-ordinate with hollow contractor to ensure adequate bearing.
20. All steel shall receive a shop coat of primer except surfaces to be concreted, welded, light zinc coated or galvanized.
21. Clean all field welds after erection and touch up all unpainted surfaces with one coat of primer paint to match shop coat.
22. There shall be no cutting of the structural steel members for the work of other trades without prior written approval of the structural consultant.
23. Professional Engineer whose seal is on shop drawings shall review construction and provide a letter certifying that connections have been installed in accordance with the approved shop drawings.
24. All exposed steel to be galvanized.

STEEL DECK

1. Unless otherwise noted, Steel Deck shall be 1 1/2" X 22 ga. (38mmx 22 ga.) thick non-cellular, flutes at 6" (150mm) o.c. (minimum). Floor deck to have deformed webs for composite action.
2. Provide Zinc-iron alloy (ZF) coated sheet steel to ASTM/A653/A653M Structural quality grade 230 with ZF75 coating. Z275 where galvanized steel deck is specified on drawings.
3. Supply all closures, cover plates and accessories.
4. Design fabrication & installation of the steel deck to conform to CSA Standard S136 and the CSSBI Code of Practice.
5. Welding Shall Conform to CSA Standard W59.
6. Erector to be Certified to division 1 or 2.1 of CSA Standard W47.1.
7. Mechanically clinch side laps at 12" (300mm) o.c. maximum. Lap end joints minimum 2" (50mm) Provide 3/4" (20mm) diameter fusion welds at 12" (300mm) o.c. at all supports. Minimum bearing on supports to be 1 1/4" (30mm). Spot prime welds immediately after welding.
8. Steel deck supplier shall submit shop drawings bearing the seal of a Professional Engineer in the project province indicating
   a) deck plan, profile, dimensions, base steel thickness, metallic coating designation, connections to supports and spacings, projections, openings, reinforcement details and accessories.
   b) details of shoring of steel deck, such as location, time and duration of placement and removal of shoring for concrete fill decks.
9. Install deck continuous over at least three spans except where otherwise pre-approved by the structural consultant.
10. Paint all welds with an approved zinc-rich paint.
11. Deck gauges shown on plan are suggested only. Supplier to provide deck gauge appropriate for the loadings shown. Deck gauge is to be increased at drift load and other high load areas as required.
12. Provide steel wedges in deck flutes over joists for mechanical roof top units with wood sleepers.

MECHANICAL FASTENERS

1. Install powder-actuated and screw fasteners according to the manufacturer's recommendations.
2. Powder-actuated fasteners shall be manufactured from AISI 1070 modified steel, austempered to a Rockwell C Hardness of 52 - 58. Screw frame fasteners shall be manufactured from Grade 1010 to 1022 or 10B08 to 10B22 carbon steel per ASTM A510.
3. Powder-actuated fasteners shall have full-tip knurled shanks and minimum 12-mm diameter steel washers. Screw frame fasteners shall have wave form cutting edge self-drilling tips and Hex Washer Heads.
4. Powder-actuated and screw frame fasteners shall be zinc plated to a thickness of 5mm in accordance with ASTM B633,Sc. 1, Type III.
5. Powder-actuated and screw frame fasteners shall be CSSBI listed for diaphragm design, UL and FM listed for fire resistance and wind uplift. Sidelap connectors shall be FM listed for wind uplift.
6. Approved frame fasteners shall be Hilti X-HSN 24 or X-ENP-19 powder-actuated fasteners or Hilti S-MD 12-24x1-5/8 HWH5 screw fasteners at locations and spacing shown on drawings.
7. Approved sidelap connectors shall be Hilti S-SLC 01 M HWH or S-SLC 02 M HWH sidelap connectors at locations and spacing shown on drawings.
8. The installer that will be using the tools to attach the powder-actuated frame fasteners shall be trained and certified by fastener manufacturer's representative on the general use of powder-actuated technology and fastening guidelines for the attachment of steel deck. The installer that will be using the tools to attach the screw fasteners shall be trained by fastener manufacturer's representative on the proper tools and fastening guidelines for the attachment of steel deck.

SHOP DRAWING REVIEW

1. Erection and fabrication shop drawings for all building components work are to be submitted to the engineer for approval before commencing with work.
2. As part of the field services, Lavergne Draward and Associates Inc. will review shop drawings pertaining to work shown on Lavergne Draward and Associates Inc. drawings by means of appropriate rational sampling procedures and comment on the accuracy with which the contractor prepared the drawings. Review of the shop drawings is for the sole purpose of ascertaining conformance with the general design concept and is NOT an approval of the detail design inherent in the shop drawings, responsibility for which shall remain with contractor submitting them. Such review shall not relieve the contractor of his responsibility for errors and omissions in the shop drawings OR for meeting all requirements of the contract documents. The contractor is solely responsible for information pertaining to the fabrication process techniques of construction AND installation AND for coordination of the work of all sub-trades.
3. All shop drawings must bear the seal of a professional engineer licensed iin the project Province.
4. The approval of shop drawings does not relieve the contractor from the responsibility of the fitting of building components. Any discrepancies in the shop drawings are the responsibility of the contractor.
5. Unsealed shop drawings will not be reviewed unless alternative arrangements agreed.

THE CONTRACTOR IS TO VERIFY DIMENSIONS AND DATA NOTED ON THE STRUCTURAL DRAWINGS WITH CONDITIONS ON THE SITE, CO-ORDINATE ALL DIMENSIONS WITH THE ARCHITECTURAL DRAWINGS, AND IS HELD RESPONSIBLE FOR REPORTING ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK. VARIATIONS AND MODIFICATIONS TO WORK SHOWN ON THE STRUCTURAL DRAWINGS SHALL NOT BE CARRIED OUT WITHOUT WRITTEN PERMISSION FROM THE ENGINEER.
THIS DRAWING IS NOT TO BE SCALED. ALL BEAMS, ANGLES AND MISCELLANEOUS METALS INDICATED ON ARCHITECTURAL, MECHANICAL AND/OR ELECTRICAL DRAWINGS BUT NOT SHOWN OR NOTED ON STRUCTURAL DRAWINGS, SHALL BE INCLUDED IN THE TENDER PRICE. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING SIZES AND LOCATIONS OF THESE MEMBERS WITH BOTH THE ARCHITECT AND THE ENGINEER PRIOR TO TENDER CLOSING.

DRAWING LIST:

S1.1 - GENERAL NOTES
S1.2 - TYPICAL DETAILS
S1.3 - TYPICAL DETAILS 2
S1.4 - SCHEDULES
S2.1 - FOUNDATION PLAN
S2.2 - MAIN FLOOR FRAMING PLAN
S2.3 - ROOF FRAMING PLAN
S2.4 - CANOPY FRAMING PLANS/TOWER ROOF FRAMING PLAN
S3.1 - FRAMING ELEVATIONS
S3.2 - FRAMING ELEVATIONS 2
S3.3 - FRAMING ELEVATIONS 3
S5.1 - SECTIONS
S5.2 - SECTIONS 2
S5.3 - DETAILS

TYPICAL DRAWING ABBREVIATIONS:

Complete with =	C/W	Galvanized =	GALV.
Elevation =	ELEV.	Anchor Bolt =	A. BOLTS
Existing =	EXIST.	Beam =	BM
Horizontal =	HORIZ.	Long Leg Horizontal =	L.L.H.
Vertical =	VERT.	Long Leg Vertical =	L.L.V.
Maximum =	MAX.	Tongue & Groove =	T&G
Minimum =	MIN.	Top & Bottom =	T&B
Concrete =	CONC.	Specifications =	SPECS
Typical =	TYP.	Gauge =	GA.
Reinforced =	REINF.	Architectural =	ARCH.
Reinforced with =	R/W	Mechanical =	MECH.
Top Of =	T/O	Stiffener =	STIFF.
Outside Face =	O.F.	Grade Beam =	GR.BM.
Inside Face =	I.F.	Compacted =	COMP.
Unless Noted Otherwise =	U.N.O.	Over Head Door =	O.H.D.
Remainder =	REM.	Column =	COL.
Cast In Place =	C.I.P.	Long =	LG.
Open Web Steel Joist =	O.W.S.J.	Continuous =	CONT.
Open Web Wood Joist =	O.W.W.J.	Insulation =	INSUL.
Each End =	E.E.	Pleasure Treated =	P.T.
Each Side =	E.S.	Underside =	U/S
Each Way =	E.W.	Drawing =	DWG
Oriented Strand Board =	OSB	Center Line =	C/L
Laminated Veneer Lumber =	LVL	Truss Joist I joist =	TJI
Hollow Core =	H.C.	Bottom Upper Layer =	B.U.L.
		Bottom Lower Layer =	B.L.L.
		Top Upper Layer =	T.U.L.
		Top Lower Layer =	T.L.L.
		Temperature Steel =	T.S.

No:	Date:	Revision
1	2019 03 01	ISSUED FOR TENDER AND CONSTRUCTION
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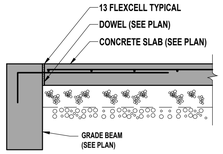
DRAWN BY: JSD
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DATE: FEBRUARY, 2019
SHEET 1 OF 14

PROJECT	SHEET NO.
18-1921	S1.1

GENERAL NOTES

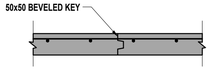
PROVINCE OF MANITOBA
E.J.N. LAVERGNE
Member
36483
REGISTERED PROFESSIONAL ENGINEER
MARCH 1, 2019

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Lavergne Draward & Associates Inc.
No. 1912 Date: MARCH 1, 2019



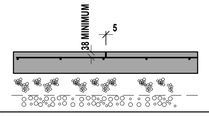
1 S1.2 | S1.2 TYPICAL SLAB ON GRADE DETAIL

SCALE 1:20



2 S1.2 | S1.2 TYPICAL SLAB ON GRADE CONSTRUCTION JOINT DETAIL

SCALE 1:20

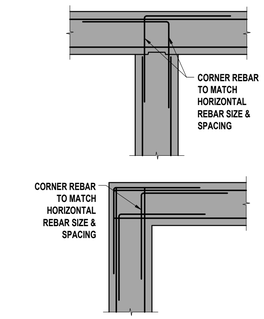


NOTES:

1. SAW CUTTING SHALL BE COMPLETED WITHIN 6 TO 18 HOURS OF PLACING CONCRETE.
1. AFTER THE SLAB IS A MINIMUM 60 DAYS OLD, REMOVE ALL DEBRIS FROM THE SAW CUTS AND FILL WITH MORTAR CONTAINING CEMENT, SAND AND LATEX BONDING AGENT, OR AS NOTED IN SPECIFICATIONS, THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT CONSTRUCTION ACTIVITIES WILL NOT REDUCE QUALITY OR DURABILITY OF FILLED JOINTS.
2. MAXIMUM SPACING OF SAWCUTS IN SLAB ON GRADE SHALL NOT EXCEED THE FOLLOWING, U/N OTHERWISE:
   100 SLAB - MAXIMUM SPACING 3.6m
   125 SLAB - MAXIMUM SPACING 4.5m
3. COORDINATE EXACT LOCATION OF SAWCUTS IN SLAB ON GRADE WITH ARCHITECTURAL FLOOR FINISHES.
4. SAWCUT SLAB ON GRADE AT LOCATIONS NOTED BELOW. ALTERNATE DETAIL SHALL BE SUBMITTED TO ENGINEER FOR REVIEW, WELL IN ADVANCE OF POURING SLAB ON GRADE.
5. PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT GROUT ALL CRACKS IN THE SLAB ON GRADE AND FILL WITH MORTAR CONTAINING CEMENT, SAND AND LATEX BONDING AGENT OR AS NOTED IN SPECIFICATIONS.

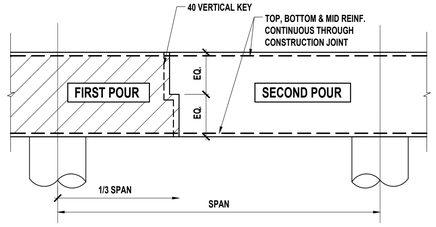
3 S1.2 | S1.2 TYPICAL SAWCUT DETAIL

SCALE 1:20



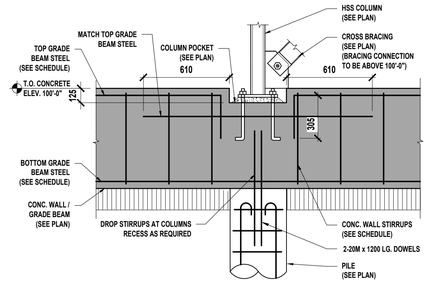
4 S1.2 | S1.2 TYPICAL CORNER REBAR DETAIL

N.T.S.



5 S1.2 | S1.2 TYPICAL CONSTRUCTION JOINT DETAIL

SCALE 1:20



6 S1.2 | S1.2 TYPICAL COLUMN POCKET

SCALE 1:20

7 S1.2 | S1.2 TYPICAL COLUMN TO INTERIOR PILECAP DETAIL

SCALE 1:20

8 S1.2 | S1.2 ISOLATION JOINT AROUND STEEL COLUMN

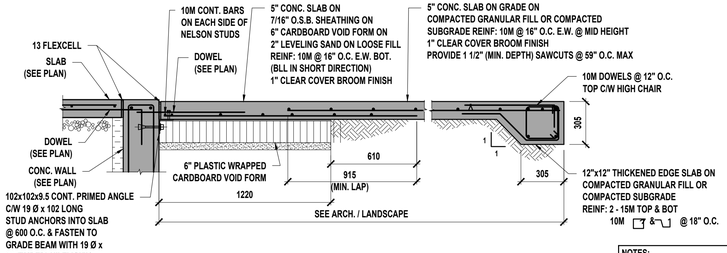
SCALE 1:20

9 S1.2 | S1.2 TYP. BRICK SHELF ANGLE

SCALE 1:20

10 S1.2 | S1.2 TYP. THICKENED EDGE SIDEWALK FRAMING PLAN @ ALL ENTRANCE LOCATIONS

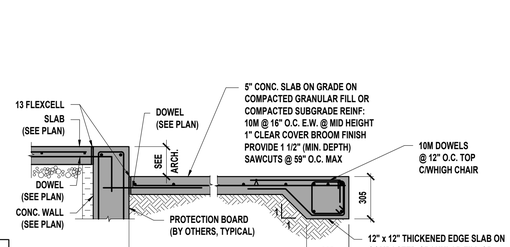
SCALE 1:40



10A S1.2 | S1.2 TYPICAL THICKENED EDGE SIDEWALK DETAIL @ ALL ENTRANCE LOCATIONS

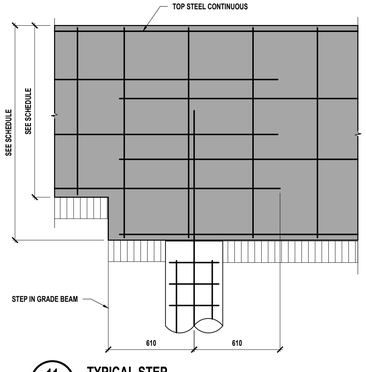
SCALE 1:20

NOTES:
- PROVIDE SLAB SLOPES AS PER ARCHITECTURAL DRAWINGS.
- MAINTAIN MINIMUM SLAB THICKNESS OF 127 THROUGHOUT SLOPES. (TYPICAL)
- SEE ARCH. / LANDSCAPE FOR LOCATIONS.
- SEE LANDSCAPE FOR SAW CUT LOCATIONS.
- SEE ARCH. FOR ALL RIGID INSULATION REQUIREMENTS.



10B S1.2 | S1.2 TYPICAL THICKENED EDGE SIDEWALK DETAIL

SCALE 1:20



11 S2.1 TYPICAL STEP

1.2

NOTE:
ENSURE MAIN REINFORCING STEEL (TOP,BOTTOM, & HORIZONTAL) IS CONTINUOUS FROM PILE TO PILE

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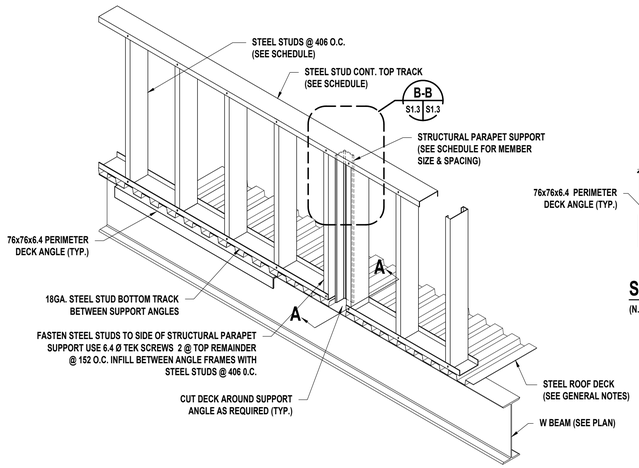
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DATE: FEBRUARY, 2019	
SHEET 2 OF 14	
PROJECT	SHEET NO.
18-1921	S1.2

TYPICAL DETAILS

PROVINCE OF MANITOBA
E.J.N. LAVERGNE Member 36483
REGISTERED PROFESSIONAL ENGINEER
MARCH 1, 2019

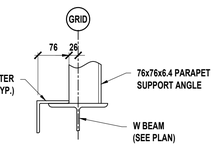
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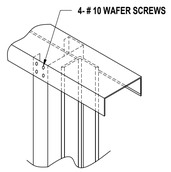
PARAPET HEIGHT	STEEL REINFORCING	STUD WALL (MIN.)
2'-6" (762 mm) TO 3'-0" (914 mm)	2 1/2" (64 mm) x 2 1/2" (64 mm) x 1/4" (6.4 mm) ANGLE @ 6'-0" (1829 mm) O.C.	6" (152 mm) x 20 GA. STUDS @ 16" (406 mm) O.C. TOP & BOTTOM TRACK BY STEEL STUD SUPPLIER. TOP TRACK TO BE DESIGNED TO SPAN FROM SUPPORT TO SUPPORT
3'-0" (914 mm) TO 4'-0" (1220 mm)	3" (76 mm) x 3" (76 mm) x 1/4" (6.4 mm) ANGLE @ 6'-0" (1829 mm) O.C.	6" (152 mm) x 20 GA. STUDS @ 16" (406 mm) O.C. TOP & BOTTOM TRACK BY STEEL STUD SUPPLIER. TOP TRACK TO BE DESIGNED TO SPAN FROM SUPPORT TO SUPPORT
4'-0" (1220 mm) TO 5'-6" (1676 mm)	3" (76 mm) x 3" (76 mm) x 1/4" (6.4 mm) HSS @ 6'-0" (1829 mm) O.C.	6" (152 mm) x 20 GA. STUDS @ 16" (406 mm) O.C. TOP & BOTTOM TRACK BY STEEL STUD SUPPLIER. TOP TRACK TO BE DESIGNED TO SPAN FROM SUPPORT TO SUPPORT
5'-6" (1676 mm) TO 8'-0" (2440 mm)	SEE PLAN	BY STEEL STUD SUPPLIER

NOTE:
- FASTEN BOTTOM STEEL STUD TRACK TO METAL ROOF DECK USE 1/4" (6.4 mm) Ø TEKS @ 12" (305 mm) O.C. STAGGERED
- FASTEN VERTICAL STEEL STUDS TO STRUCTURAL PARAPET SUPPORT USE 1/4" (6.4 mm) Ø SELF TAPPING TEK SCREWS. 2 AT TOP AND REMAINDER STAGGERED @ 8" (203 mm) O.C. VERTICAL
- SEE ARCHITECTURAL DRAWINGS FOR ALL PARAPET HEIGHTS

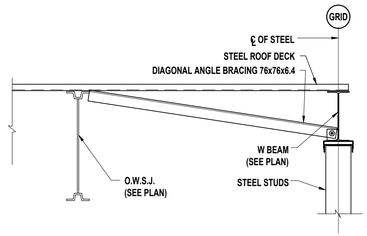
1 S1.3 S1.3 **TYPICAL PARAPET DETAIL**
SCALE 1:20



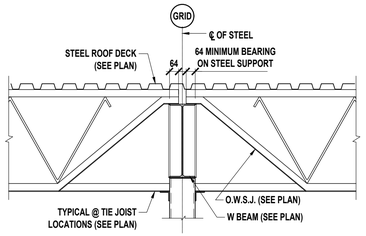
SECTION A - A
(N.T.S.)



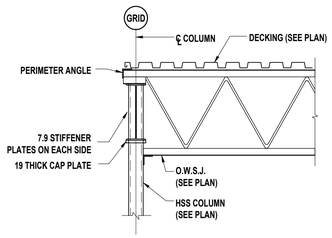
DETAIL B-B
(N.T.S.)



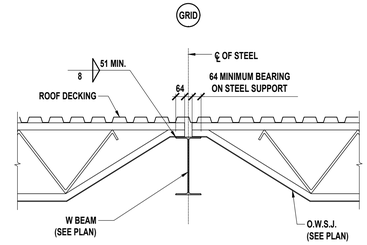
2 S1.2 S1.2 **TYPICAL BRACING DETAIL**
SCALE 1:20



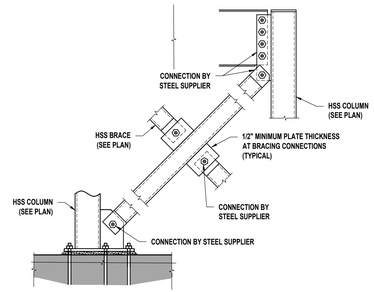
3 S1.2 S1.2 **TYPICAL TIE JOIST SECTION**
SCALE 1:20



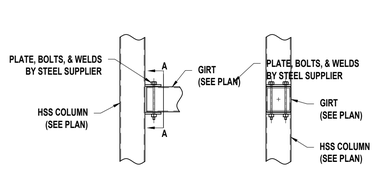
4 S1.2 S1.2 **TYPICAL JOIST AT COLUMN**
SCALE 1:20



5 S1.2 S1.2 **TYPICAL O.W.S.J. AT BEAM SECTION**
SCALE 1:20

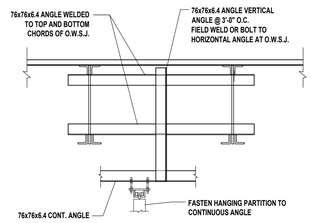


6 S1.3 S1.3 **HSS CROSS BRACE DETAIL**
SCALE 1:20

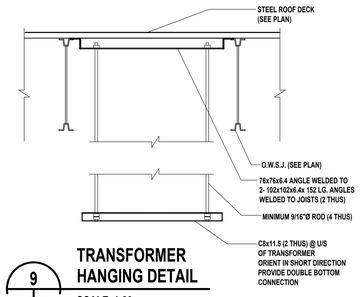


VIEW A - A

7 S1.3 S1.3 **TYPICAL GIRT CONNECTION**
SCALE 1:20

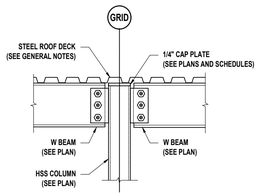


8 S1.3 S1.3 **HANGING PARTITION SECTION**
SCALE 1:20

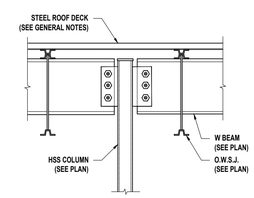


9 S1.3 S1.3 **TRANSFORMER HANGING DETAIL**
SCALE 1:20

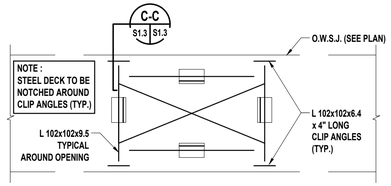
NOTE:
SEE ELEC. DRAWINGS FOR LOCATION
WEIGHT = 1000 lbs (4.5 kN)



10 S1.3 S1.3 **TYPICAL COLUMN CONNECTION**
SCALE 1:20

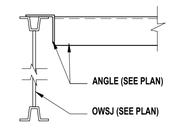


11 S1.3 S1.3 **TYPICAL COLUMN CONNECTION**
SCALE 1:20

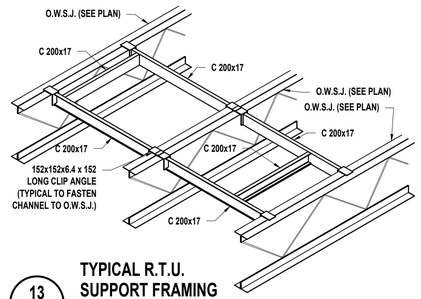


12 S1.3 S1.3 **TYPICAL ROOF ACCESS HATCH FRAMING**
SCALE 1:20

- CO-ORDINATE SIZE, LOCATION AND NUMBER OF ROOF ACCESS HATCHES WITH ARCHITECTURAL DRAWINGS.



C-C S1.3 S1.3 **SECTION**
SCALE 1:10



13 S1.3 S1.3 **TYPICAL R.T.U. SUPPORT FRAMING**
SCALE 1:40

NOTE:
- SEE PLAN FOR LOCATIONS
- CONFIRM ALL LOCATIONS, WEIGHTS, AND UNIT SIZES WITH ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS

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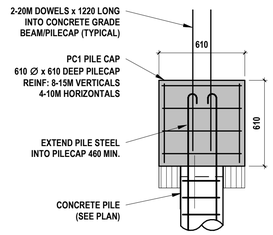
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SHEET 3 OF 14

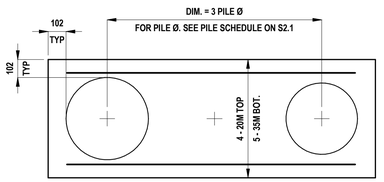
PROJECT	SHEET NO.
18-1921	S1.3

TYPICAL DETAILS



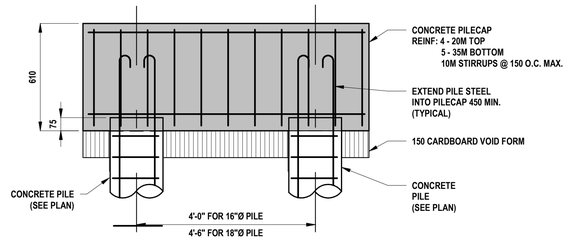
1 S1.4 TYPICAL SINGLE PILE CAP SECTION "PC1"

SCALE: 1 : 20



2 S1.4 TYPICAL DOUBLE PILE CAP DETAIL 'PC2'

SCALE: 1 : 16



3 S1.4 TYPICAL DOUBLE PILE CAP "PC2" SECTION

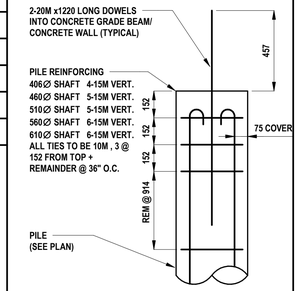
SCALE: 1 : 16

CONCRETE CAST-IN-PLACE PILE SCHEDULE

MARK	SIZE & DEPTH
P1	406Ø x 8000mm
P2	406Ø x 9000mm
P3	406Ø x 10000mm
P4	457Ø x 10000mm
P5	610Ø x 10000mm

NOTE:
- ALL PILES TO BE CENTERED UNDER GRADE BEAMS

P1
100 000
PILE MARK/ELEVATION
PILE



GRADE BEAM SCHEDULE

MARK	DESCRIPTION
GB1	250x600 CONCRETE GRADE BEAM R/W 2-20M TOP & BOTTOM + 10M STIRRUPS @ 350 O.C.
GB2	250x910 CONCRETE GRADE BEAM R/W 2-25M TOP & BOTTOM + 2-15M INTERMEDIATE BARS EACH FACE C/W 10M STIRRUPS @ 350 O.C.

SLAB SCHEDULE

MARK	DESCRIPTION
S1	125 THICK CONCRETE SLAB ON GRADE ON 10MIL POLY V.B. ON COMPACTED FILL OVER COMPACTED SUB-GRADE (SEE GEOTECHNICAL REPORT.) R/W 10M @ 350 O.C. E.W. 38 FROM T.O. SLAB T.O. SLAB ELEVATION 100 000
S2	305 THICK CONCRETE STRUCTURAL SLAB R/W 20M @ 305 O.C. E.W. BOT 15M @ 305 O.C. E.W. TOP ON 10MIL POLY V.B. OVER 150 VOIDFORM C/W REINFORCED EDGES AS PER SECTION T.O. SLAB ELEVATION 99 816
S3	152 ON 10MIL POLY V.B. ON COMPACTED FILL OVER COMPACTED SUB-GRADE (SEE GEOTECHNICAL REPORT.) R/W 10M @ 350 O.C. E.W. 38 FROM T.O. SLAB T.O. SLAB ELEVATION 100 000

DOWEL SCHEDULE

MARK	DESCRIPTION
D1	10M DOWELS x 840 LG. @ 350 O.C. MID DEPTH 610 230
D2	2-15M x 1800 LG. TOP CORNER BARS 1800
D3	15M DOWELS x 1505 LG. @ 350 O.C. MID DEPTH 1200 305

STEEL COLUMN SCHEDULE

MARK	Type
C1	HSS127x127x6.4
C2	HSS127X127X8
C3	HSS152X152X6.4
C4	HSS152X152X8

CROSS BRACE SCHEDULE

MARK	DISCRIPTION
XB1	HSS 127x127x6.4
XB2	L76x76x6.4

GIRT SCHEDULE

MARK	DISCRIPTION
G1	HSS 152x152x6.4
G2	HSS 127x127x7.9
G3	HSS 152x127x6.4 LSV

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OWNER

HARDROCK PROPERTIES CORPORATION

PROJECT

TD BANK
BASE BUILDING

BRANDON, MANITOBA

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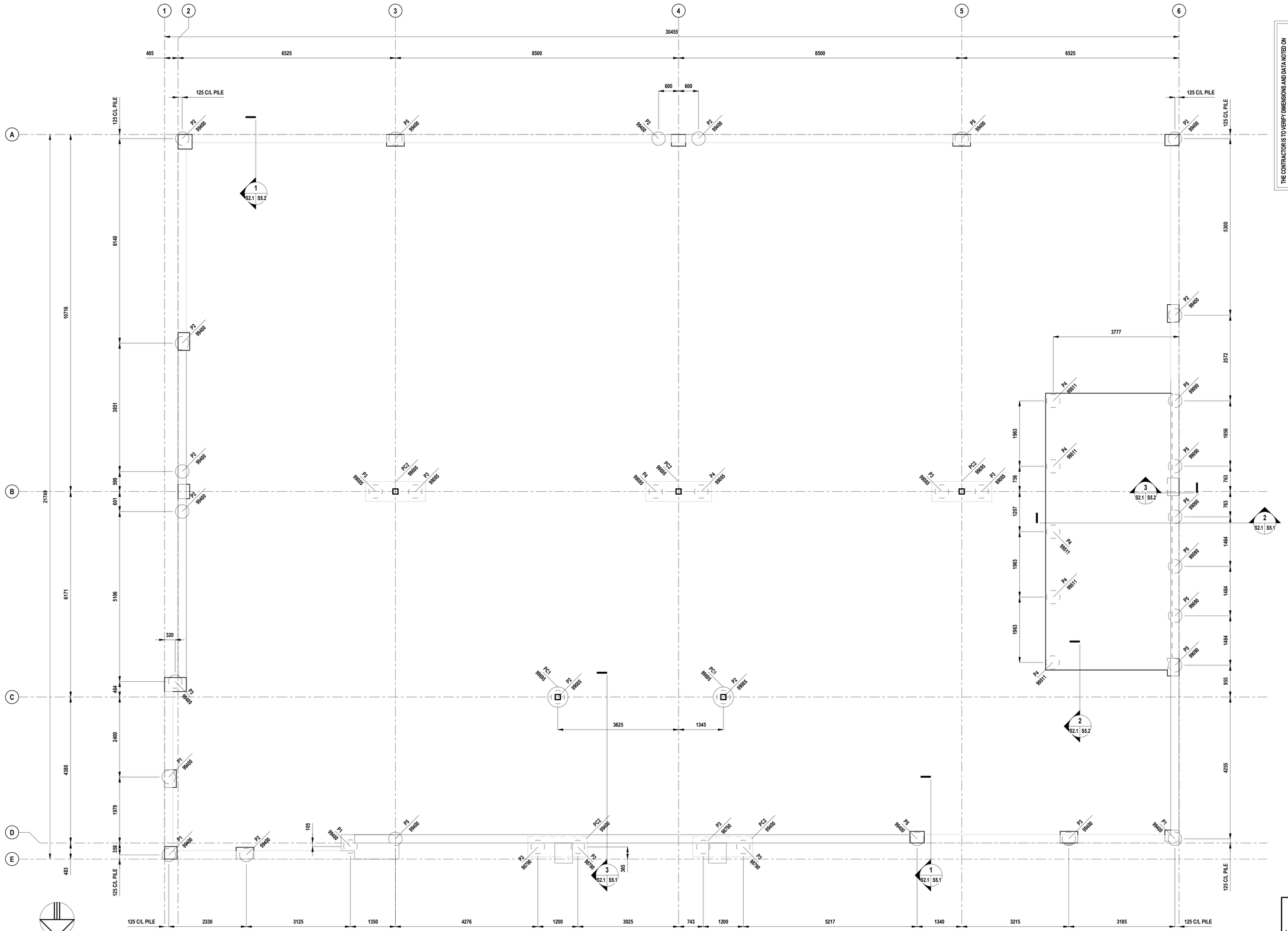
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DATE: FEBRUARY 2019
SHEET 4 OF 14

PROJECT	SHEET NO.
18-1921	S1.4

SCHEDULES

PROVINCE OF MANITOBA
E.J.N. LAVERGNE
Member 36483
REGISTERED PROFESSIONAL ENGINEER
MARCH 1, 2019

APEGM
Certificate of Authorization
Lavergne Draward & Associates Inc.
No. 1912 Date: MARCH 1, 2019



1 FOUNDATION PLAN

SCALE: 1 : 50

N

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1	MARCH 1, 2019	ISSUED FOR TENDER AND CONSTRUCTION
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OWNER

HARDROCK PROPERTIES CORPORATION

PROJECT

TD BANK
BASE BUILDING

BRANDON, MANITOBA

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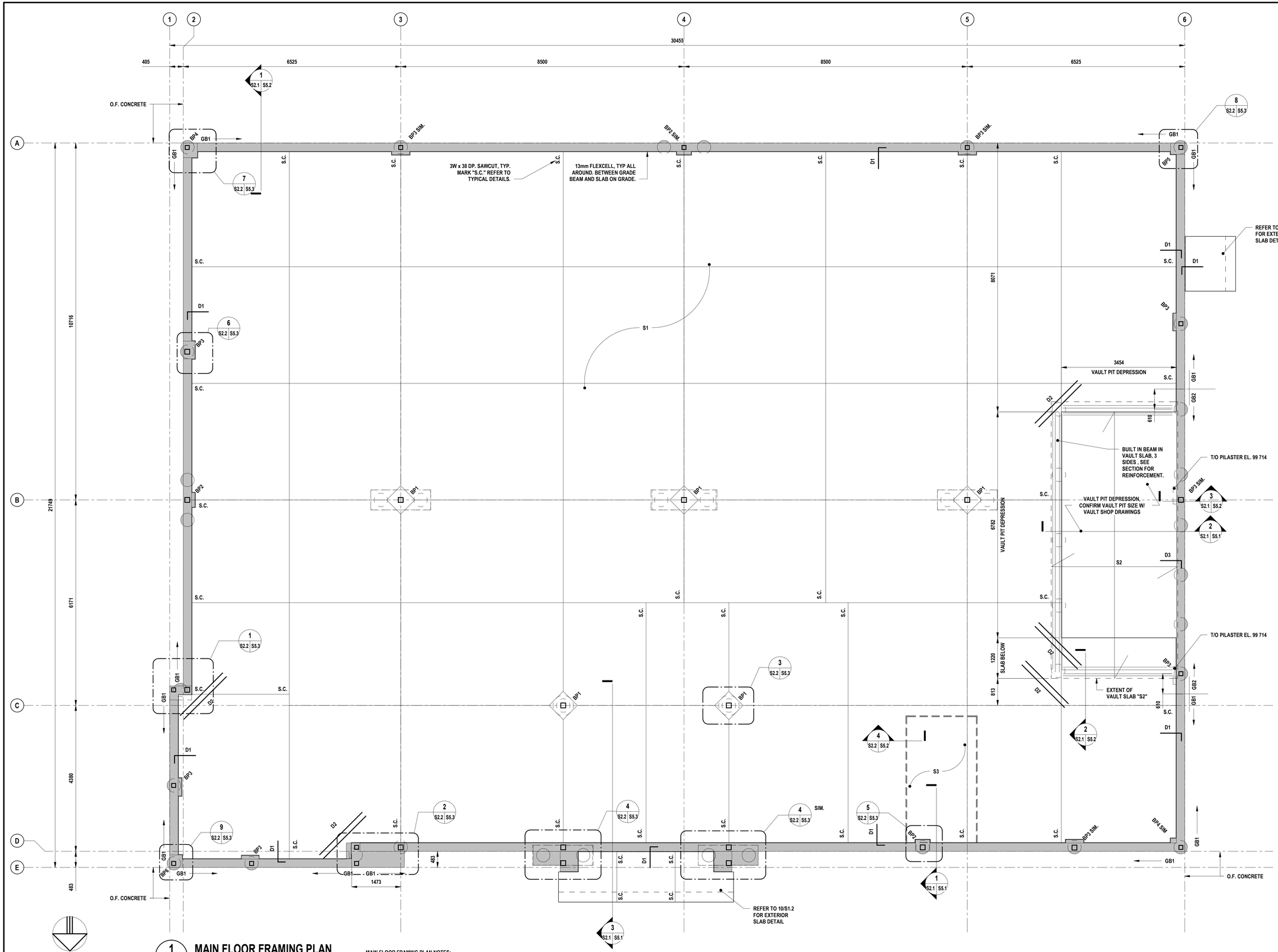
SHEET 5 OF 14

PROJECT	SHEET NO.
18-1921	S2.1

FOUNDATION PLAN

PROVINCE OF MANITOBA
E.J.N. LAVERGNE
Member 36483
REGISTERED PROFESSIONAL ENGINEER
MARCH 1, 2019

APEGM
Certificate of Authorization
Lavergne Draward & Associates Inc.
No. 1912 Date: MARCH 1, 2019



1 **MAIN FLOOR FRAMING PLAN**
S3.1 | S2.2
SCALE: 1 : 50

MAIN FLOOR FRAMING PLAN NOTES:

- DESIGN LIVE LOAD = 4.8 kPa

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OWNER
HARDROCK PROPERTIES CORPORATION

PROJECT
TD BANK
BASE BUILDING
BRANDON, MANITOBA

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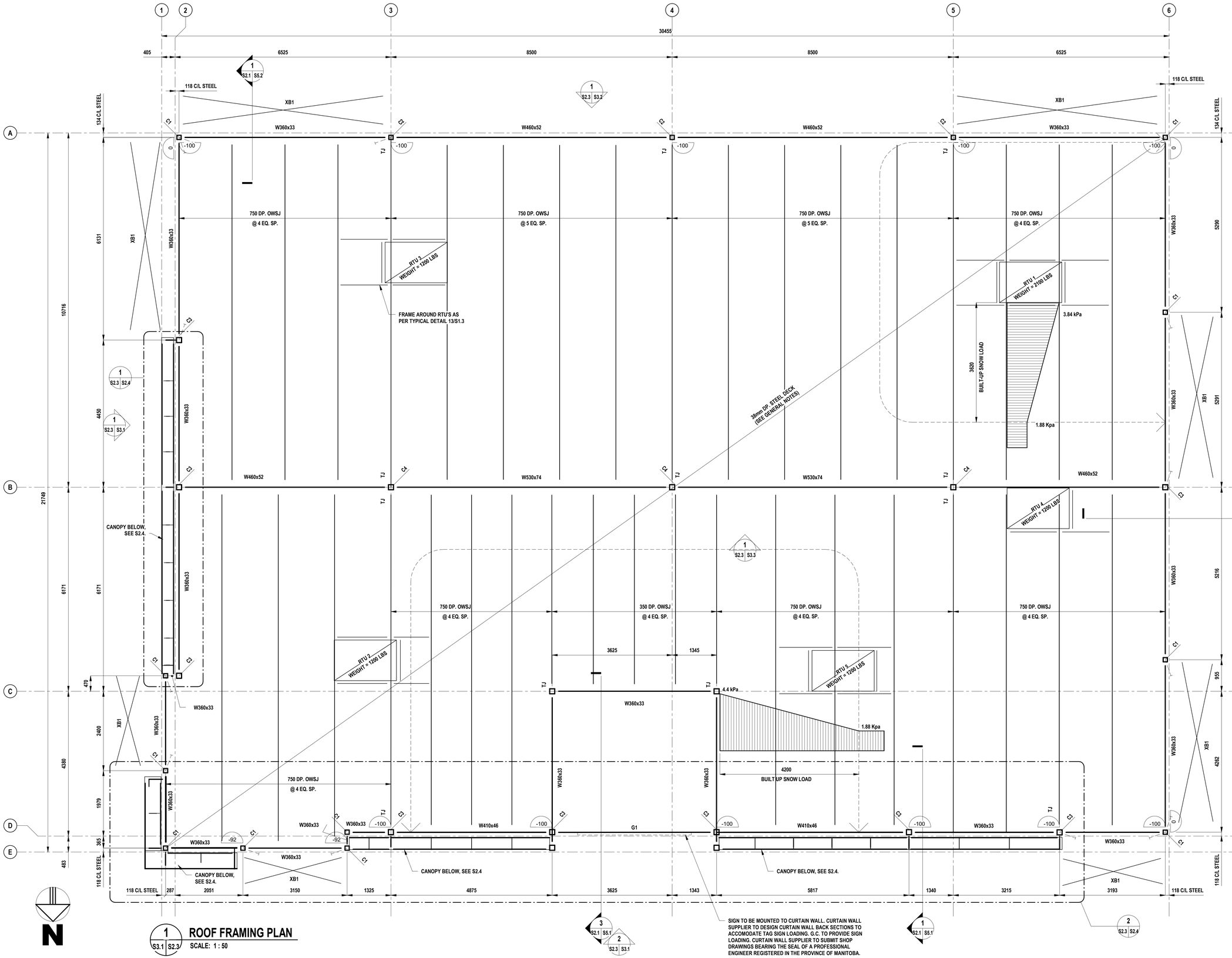
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DATE: FEBRUARY 2019
SHEET 6 OF 14

PROJECT	SHEET NO.
18-1921	S2.2

MAIN FLOOR FRAMING PLAN

PROVINCE OF MANITOBA
E.J.N. LAVERGNE
Member
36483
REGISTERED PROFESSIONAL ENGINEER
MARCH 1, 2019

APEGM
Certificate of Authorization
Lavergne Draward & Associates Inc.
No. 1912 Date: MARCH 1, 2019



1 S3.1 S2.3 **ROOF FRAMING PLAN**
SCALE: 1 : 50

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ROOF FRAMING PLAN NOTES:
- U.S. DECK = SHOWN 104 668 U/N
- DESIGN LIVE LOAD (= SNOW) = 1.88 kPa (39 psf.)
- DESIGN DEAD LOAD = 1.3 kPa (27psf)
- GRIDS ARE CENTRE LINE OF W BEAMS AND COLUMNS TYPICAL U/N.
- FRAME MECHANICAL OPENINGS WITH C 200x17 (TYPICAL).CONFIRM LOCATIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS
- T.J. DENOTES TIE JOIST
- S.J. DENOTES STRUT JOIST
- SNOW BUILD UP TO BE IN ACCORDANCE WITH NATIONAL BUILDING CODE OF CANADA, CURRENT EDITION.
- COORDINATE ALL MISC. STEEL WITH ARCH. DRAWINGS
- JOIST SUPPLIER TO CONFIRM LOCATION'S AND WEIGHTS OF ALL RTU'S WITH MECHANICAL DRAWINGS (TYPICAL)

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OWNER
HARDROCK PROPERTIES CORPORATION

PROJECT
TD BANK BASE BUILDING
BRANDON, MANITOBA

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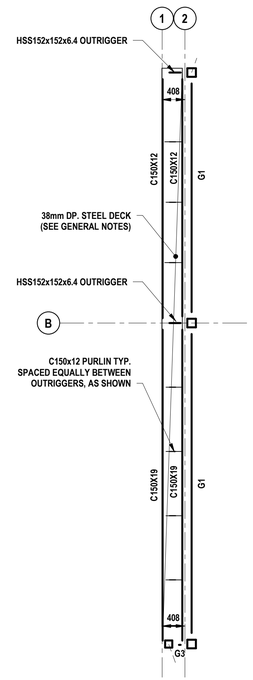
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SHEET 7 OF 14

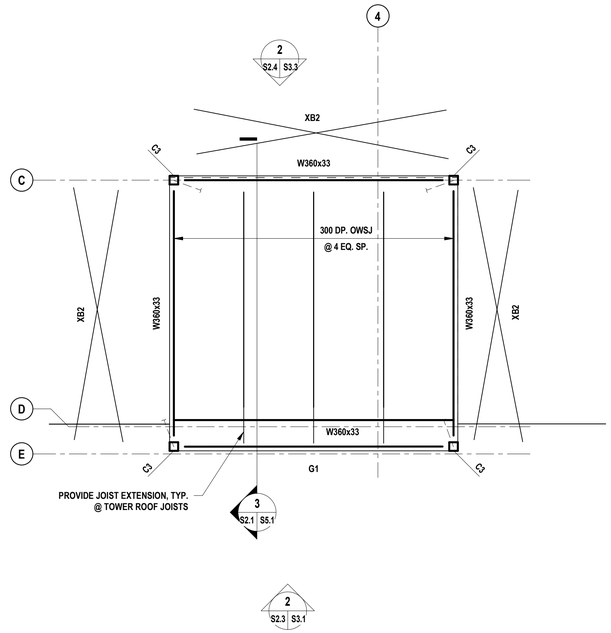
PROJECT	SHEET NO.
18-1921	S2.3

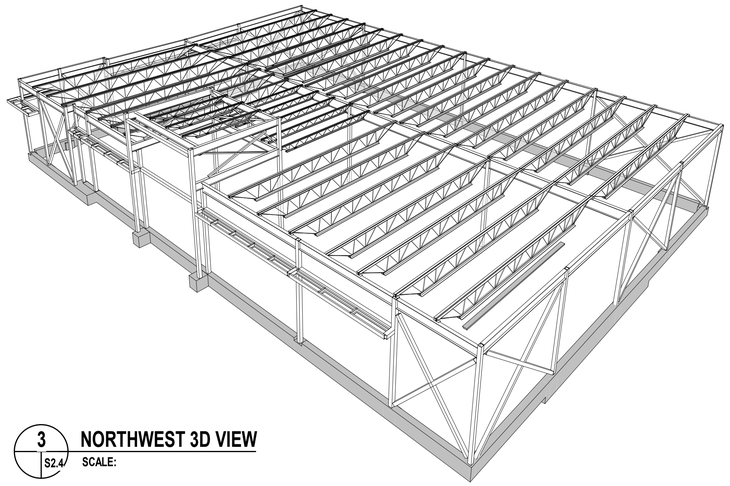
ROOF FRAMING PLAN

PROVINCE OF MANITOBA
E.J.N. LAVERGNE
Member
36483
REGISTERED PROFESSIONAL ENGINEER
MARCH 1, 2019

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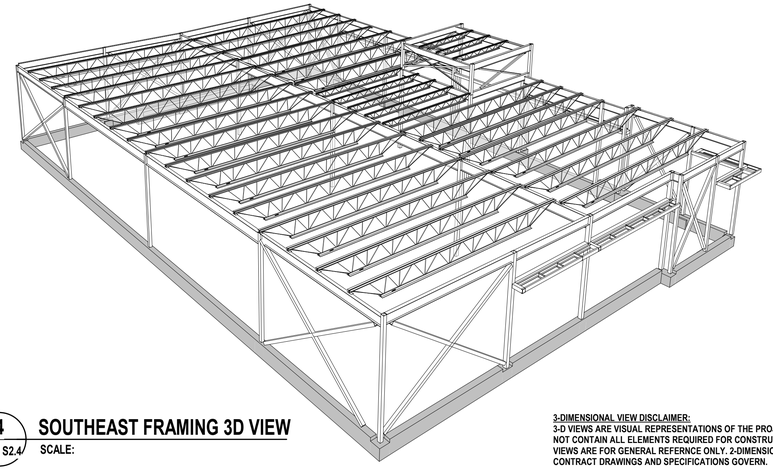






3 NORTHWEST 3D VIEW
S2.4 SCALE:

3-DIMENSIONAL VIEW DISCLAIMER:
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4 SOUTHEAST FRAMING 3D VIEW
S2.4 SCALE:

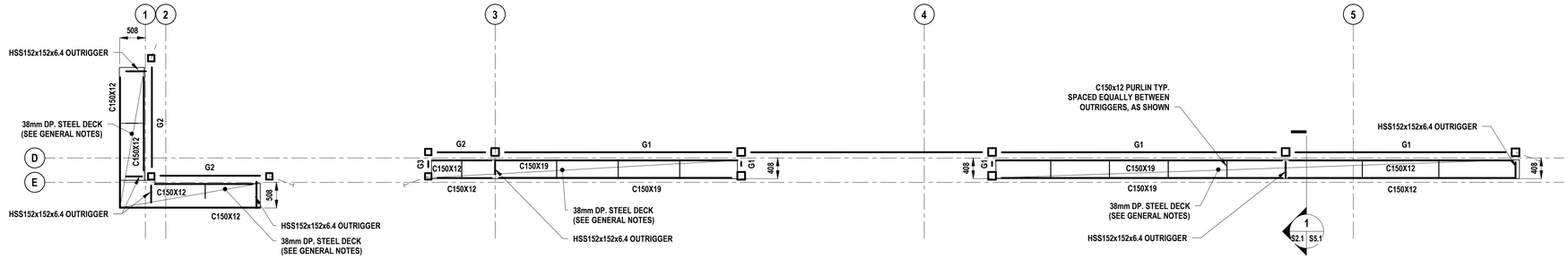
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N

1 CANOPY FRAMING PLAN
S2.3 S2.4 SCALE: 1 : 50

CANOPY FRAMING PLAN NOTES:
-T.O. STEEL ELEVATION = REFER TO SECTION
-DESIGN LIVE LOAD (=SNOW) =6.16 kPA (129 psf)
-DESIGN DEAD LOAD = 1.0 kPa (21 psf)

5 TOWER ROOF FRAMING PLAN
S3.1 S2.4 SCALE: 1 : 50



2 CANOPY FRAMIING PLAN
S2.3 S2.4 SCALE: 1 : 50

CANOPY FRAMING PLAN NOTES:
-T.O. STEEL ELEVATION = REFER TO SECTION
-DESIGN LIVE LOAD (=SNOW) =6.16 kPA (129 psf)
-DESIGN DEAD LOAD = 1.0 kPa (21 psf)

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OWNER
HARDROCK PROPERTIES CORPORATION

PROJECT
TD BANK BASE BUILDING
BRANDON, MANITOBA

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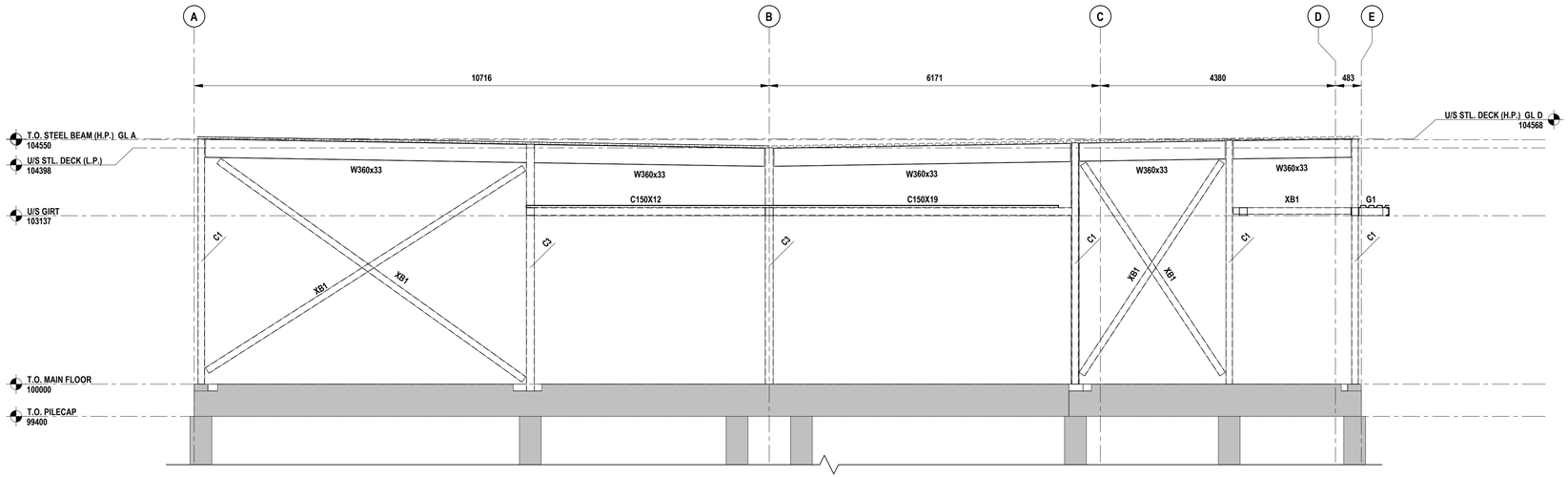
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SHEET 8 OF 12

PROJECT	SHEET NO.
18-1921	S2.4

CANOPY FRAMING PLAN/ TOWER ROOF FRAMING PLAN

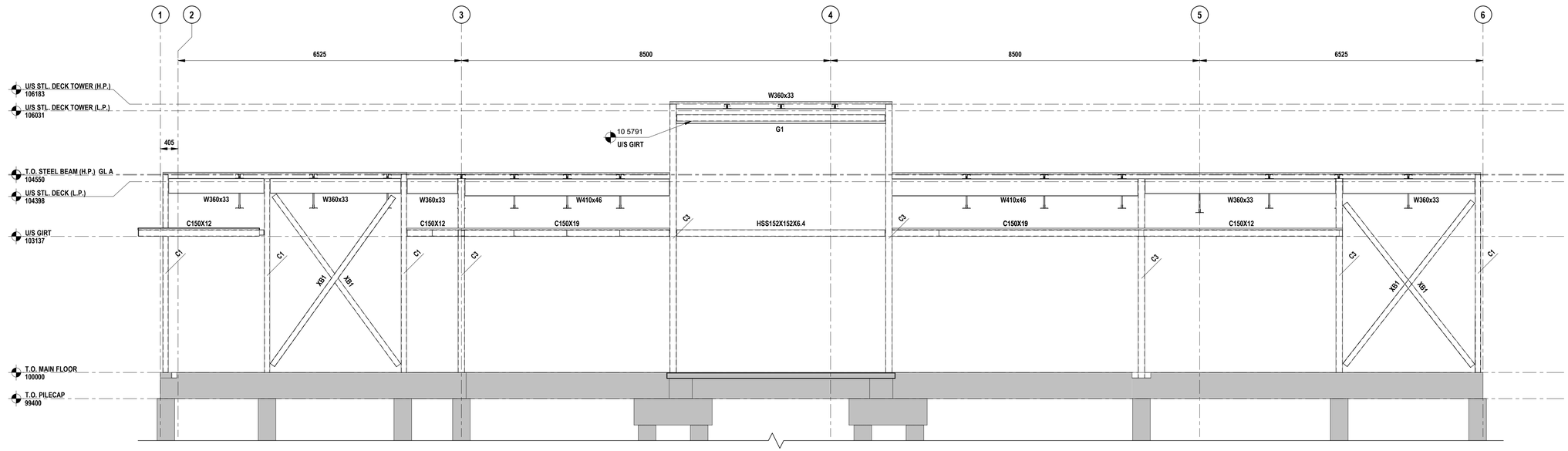
PROVINCE OF MANITOBA
E.J.N. LAVERGNE
Member
36483
REGISTERED PROFESSIONAL ENGINEER
MARCH 1, 2019

APEGM
Certificate of Authorization
Lavergne Draward & Associates Inc.
No. 1912 Date: MARCH 1, 2019



1 / S2.3 / S3.1 **EAST FRAMING ELEVATION GL1**

SCALE: 1 : 50



2 / S2.3 / S3.1 **NORTH FRAMING ELEVATION GL D & E**

SCALE: 1 : 50

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OWNER

HARDROCK PROPERTIES CORPORATION

PROJECT

TD BANK
BASE BUILDING

BRANDON, MANITOBA

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CHECKED BY: EL

DATE: FEBRUARY 2019

SHEET 9 OF 14

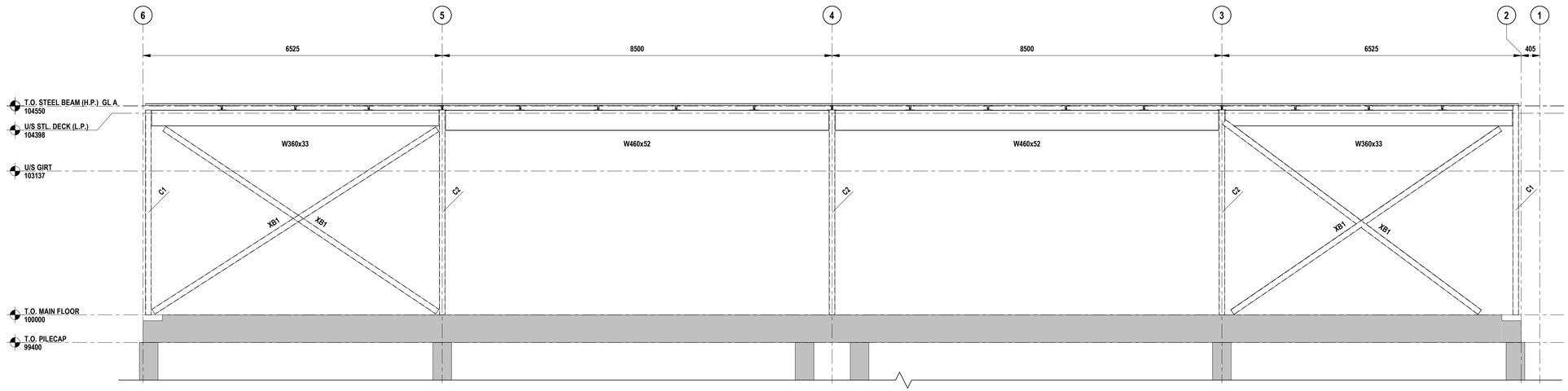
PROJECT	SHEET NO.
18-1921	S3.1

FRAMING ELEVATIONS

PROVINCE OF MANITOBA
E.J.N. LAVERGNE
Member
36483
REGISTERED PROFESSIONAL ENGINEER

MARCH 1, 2019

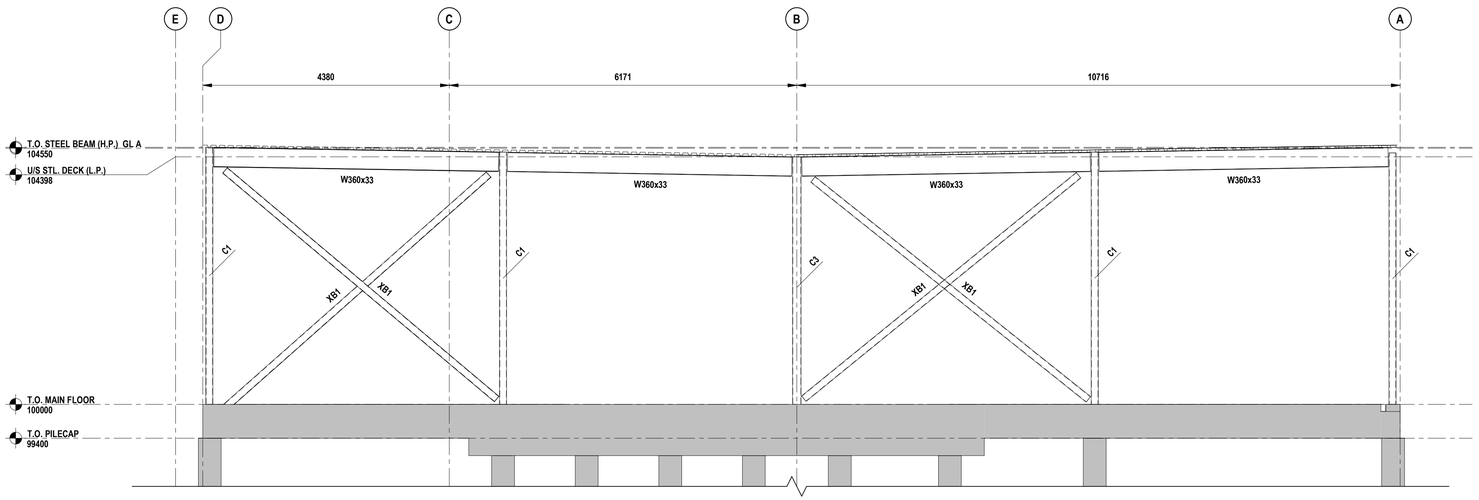
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1 SOUTH FRAMING ELEVATION GL A

S2.3 | S3.2

SCALE: 1 : 50



2 WEST FRAMING ELEVATION GL 6

S2.3 | S3.2

SCALE: 1 : 50

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BASE BUILDING

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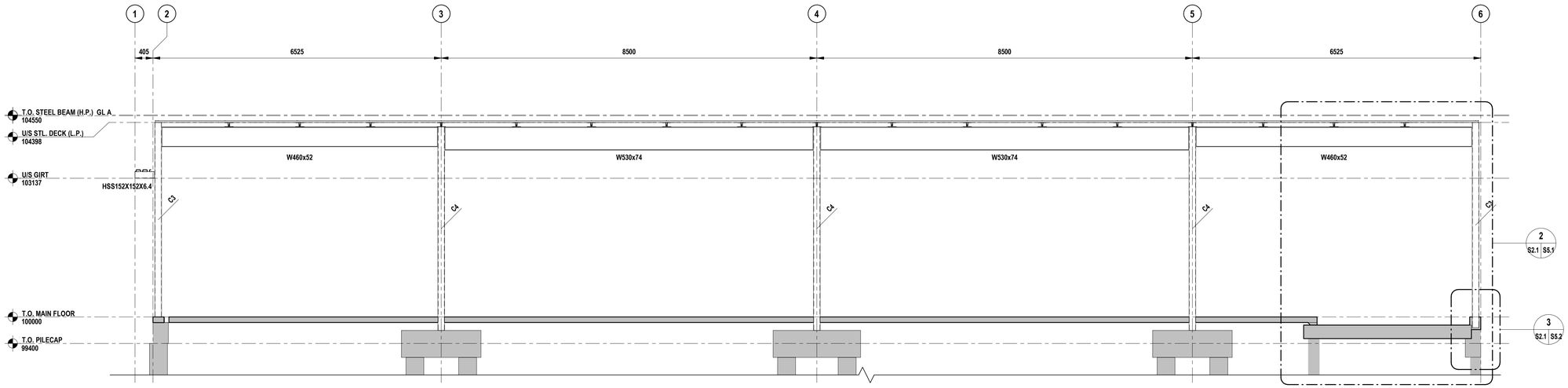
PROVINCE OF MANITOBA
E.J.N. LAVERGNE
Member 36483
REGISTERED PROFESSIONAL ENGINEER

MARCH 1, 2019

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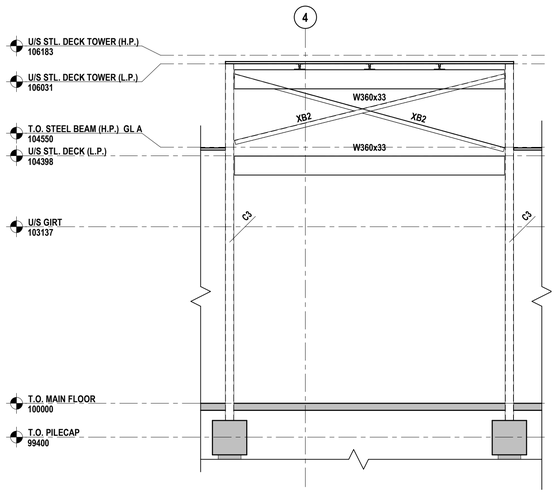
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SHEET 10 OF 14	
PROJECT	SHEET NO.
18-1921	S3.2

FRAMING ELEVATIONS 2



1 S2.3 S3.3 **FRAMING ELEVATION GL B**

SCALE: 1 : 50



2 S2.4 S3.3 **TOWER SOUTH FRAMING ELEVATION**

SCALE: 1 : 50

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BASE BUILDING

BRANDON, MANITOBA

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SHEET 11 OF 14

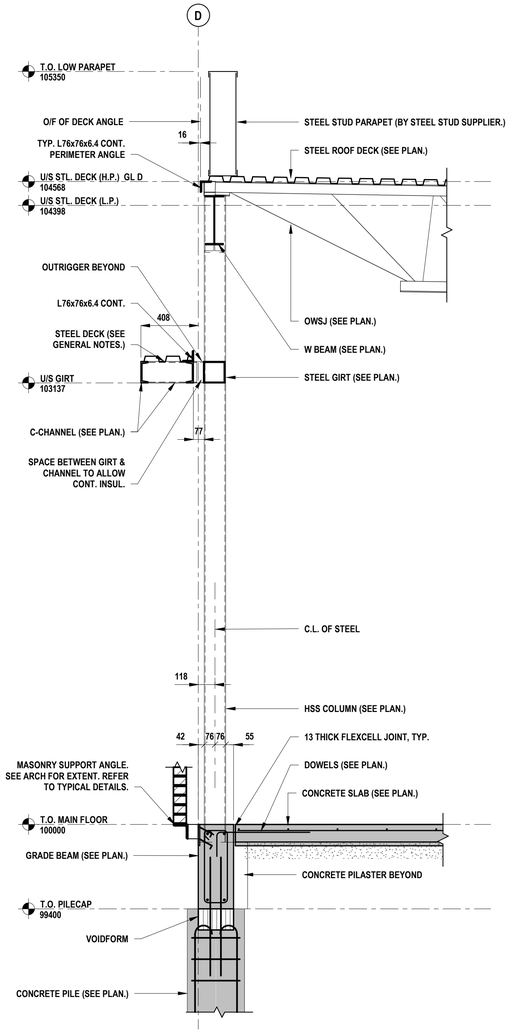
PROJECT	SHEET NO.
18-1921	S3.3

FRAMING ELEVATIONS 3

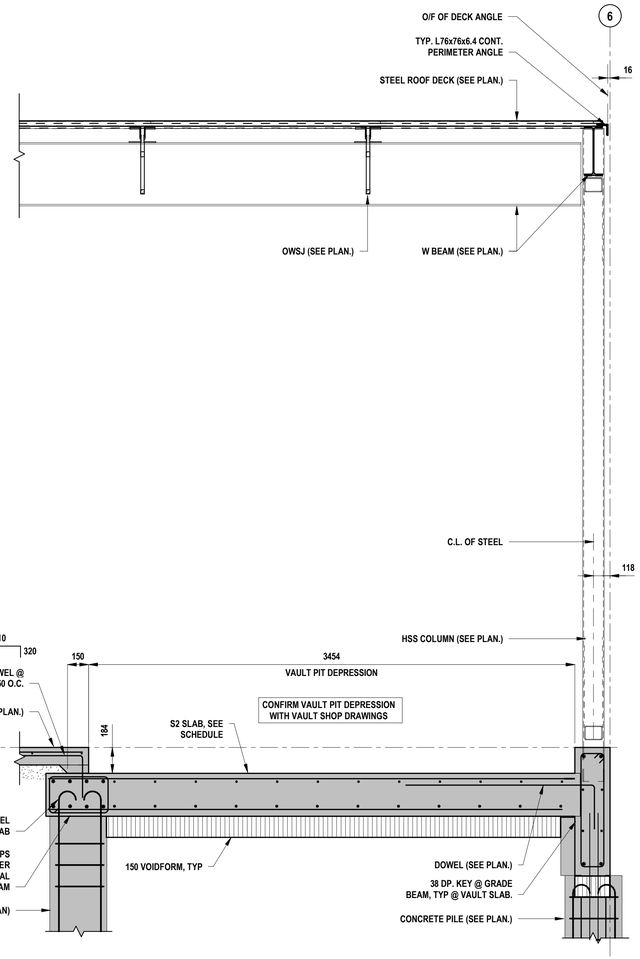
PROVINCE OF MANITOBA
E.J.N. LAVERGNE
Member
36483
REGISTERED PROFESSIONAL ENGINEER

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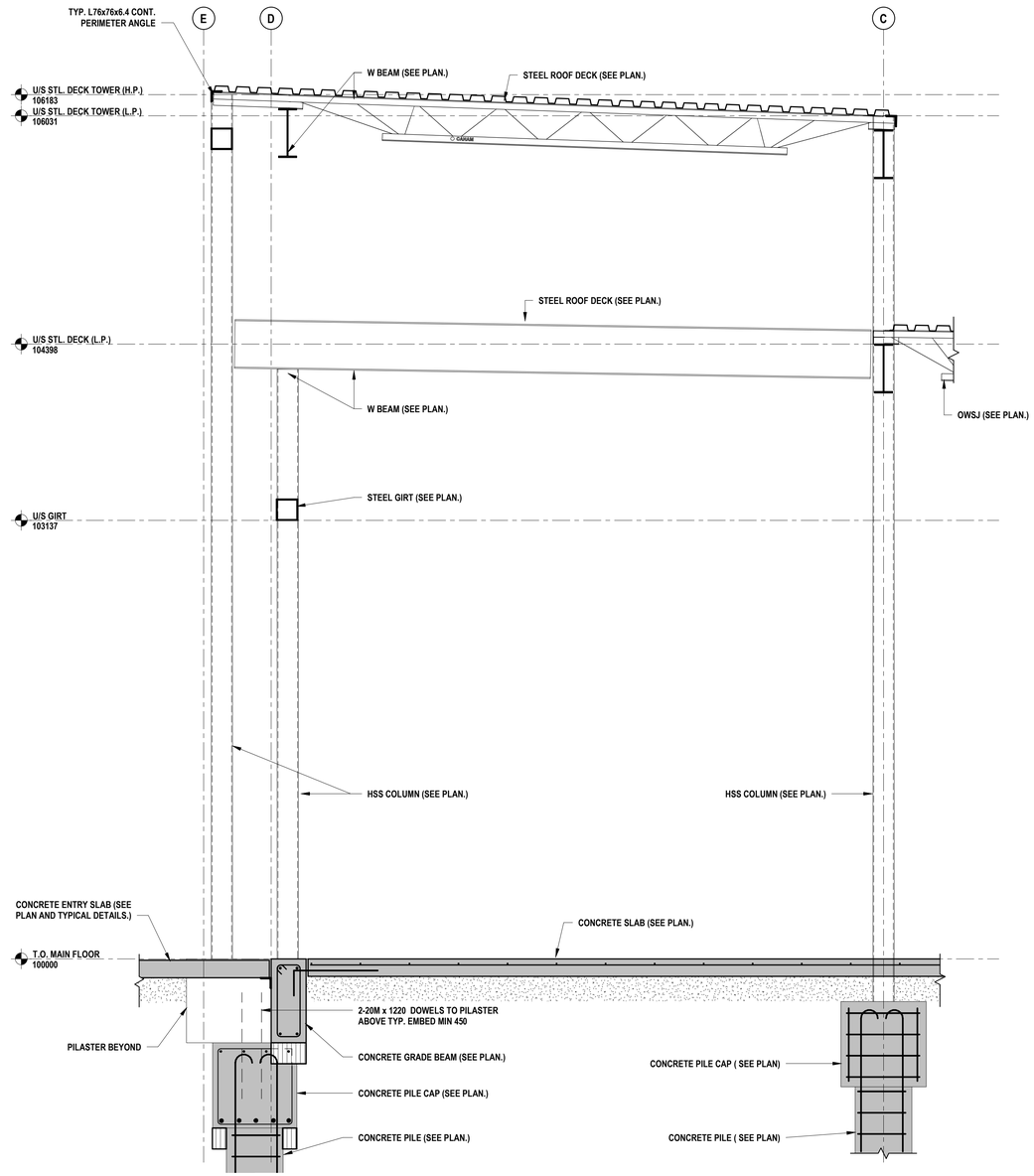
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1 **SECTION**
S2.1 S5.1 SCALE: 1 : 20



2 **SECTION**
S2.1 S5.1 SCALE: 1 : 20



3 **SECTION**
S2.1 S5.1 SCALE: 1 : 20

PROVINCE OF MANITOBA
E.J.N. LAVERGNE
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OWNER
HARDROCK PROPERTIES CORPORATION

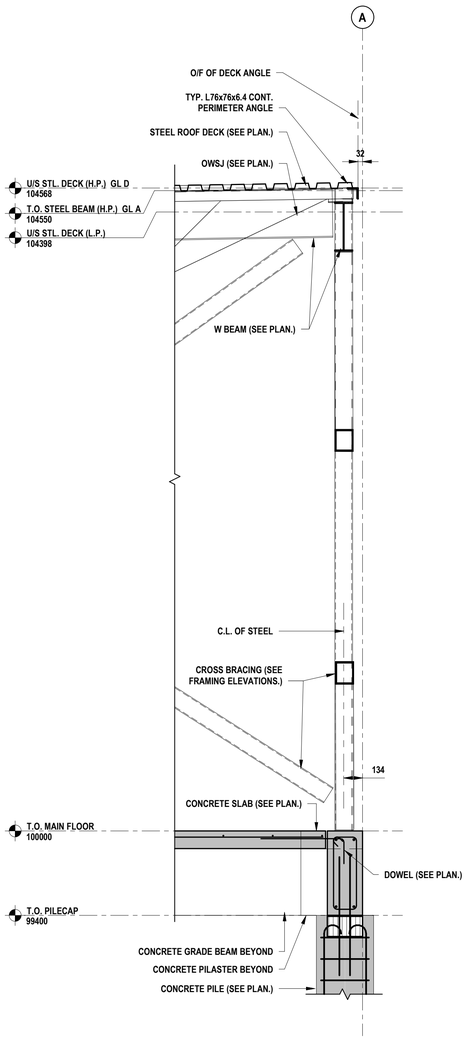
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BASE BUILDING
BRANDON, MANITOBA

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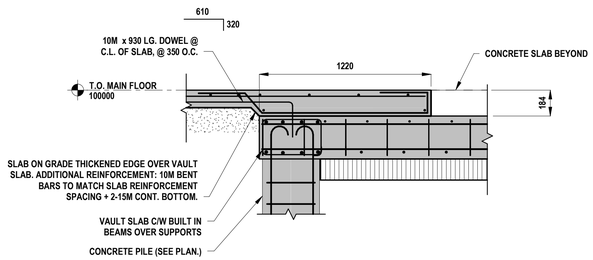
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SHEET 12 OF 14

PROJECT	SHEET NO.
18-1921	S5.1

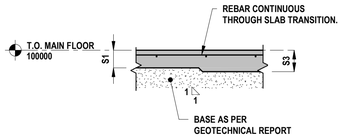
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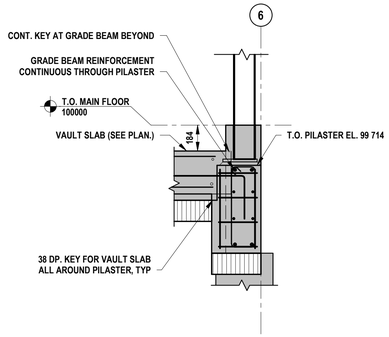
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SCALE: 1 : 20



2 SECTION @ VAULT SLAB (S2.1 | S5.2)
SCALE: 1 : 20



4 SECTION (S2.2 | S5.2)
SCALE: 1 : 20



3 SECTION AT VAULT SLAB PILASTER (S2.1 | S5.2)
SCALE: 1 : 20

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OWNER
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PROJECT
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BASE BUILDING

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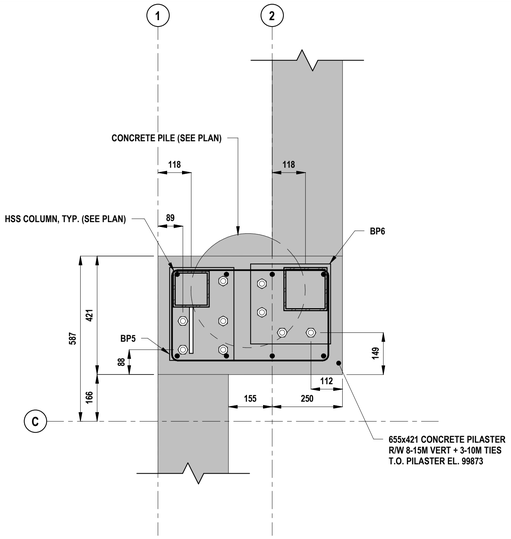
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SHEET 13 OF 14

PROJECT	SHEET NO.
18-1921	S5.2

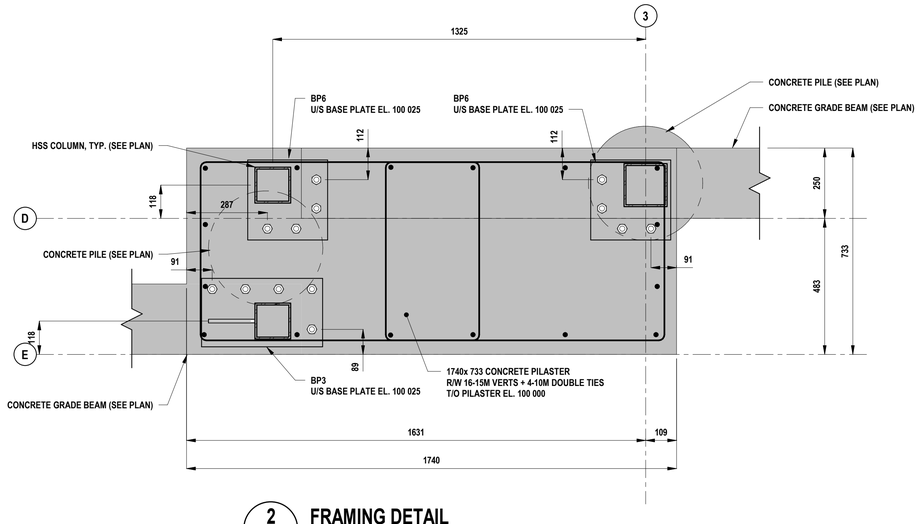
SECTIONS 2

PROVINCE OF MANITOBA
E.J.N. LAVERGNE
Member 36483
REGISTERED PROFESSIONAL ENGINEER
MARCH 1, 2019

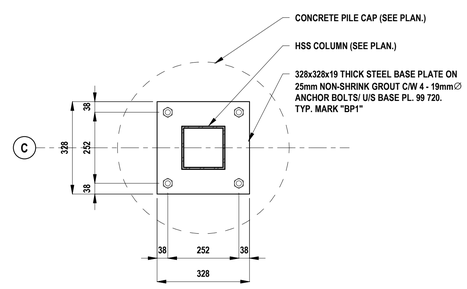
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1 FRAMING DETAIL
S2.2 | S5.3 SCALE: 1 : 10



2 FRAMING DETAIL
S2.2 | S5.3 SCALE: 1 : 10



3 BASE PLATE DETAIL "BP1"
S2.2 | S5.3 SCALE: 1 : 10

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4 FRAMING DETAIL
S2.2 | S5.3 SCALE: 1 : 10

5 BASE PLATE DETAIL "BP2"
S2.2 | S5.3 SCALE: 1 : 10

6 BASE PLATE DETAIL "BP3"
S2.2 | S5.3 SCALE: 1 : 10

7 BASE PLATE DETAIL "BP4"
S2.2 | S5.3 SCALE: 1 : 10

8 BASE PLATE DETAIL "BP5"
S2.2 | S5.3 SCALE: 1 : 10

9 BASE PLATE DETAIL "BP6"
S2.2 | S5.3 SCALE: 1 : 10

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BRANDON, MANITOBA

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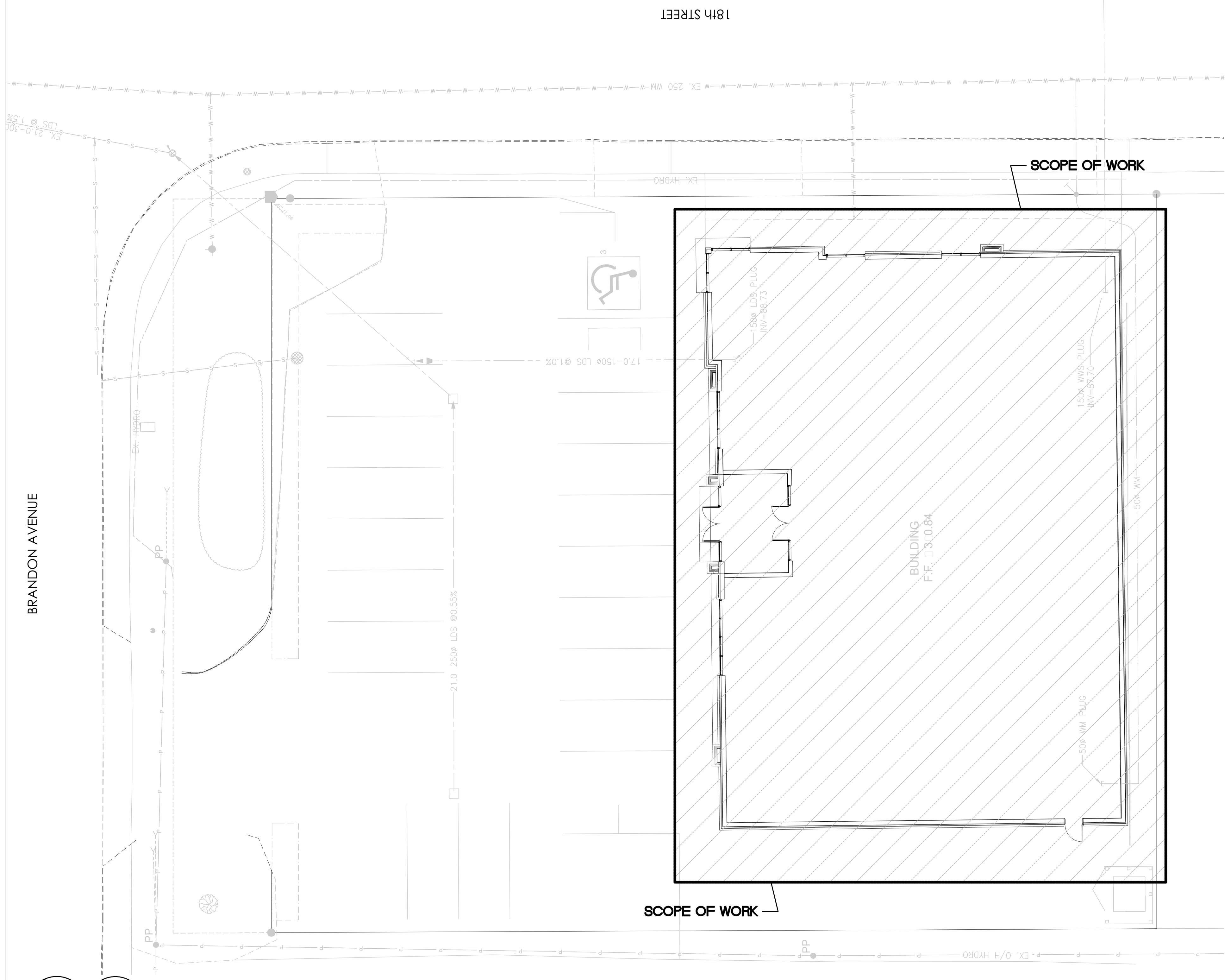
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SHEET 14 OF 14

PROJECT	SHEET NO.
18-1921	S5.3

DETAILS

PROVINCE OF MANITOBA
E.J.N. LAVERGNE
Member 36483
REGISTERED PROFESSIONAL ENGINEER
MARCH 1, 2019

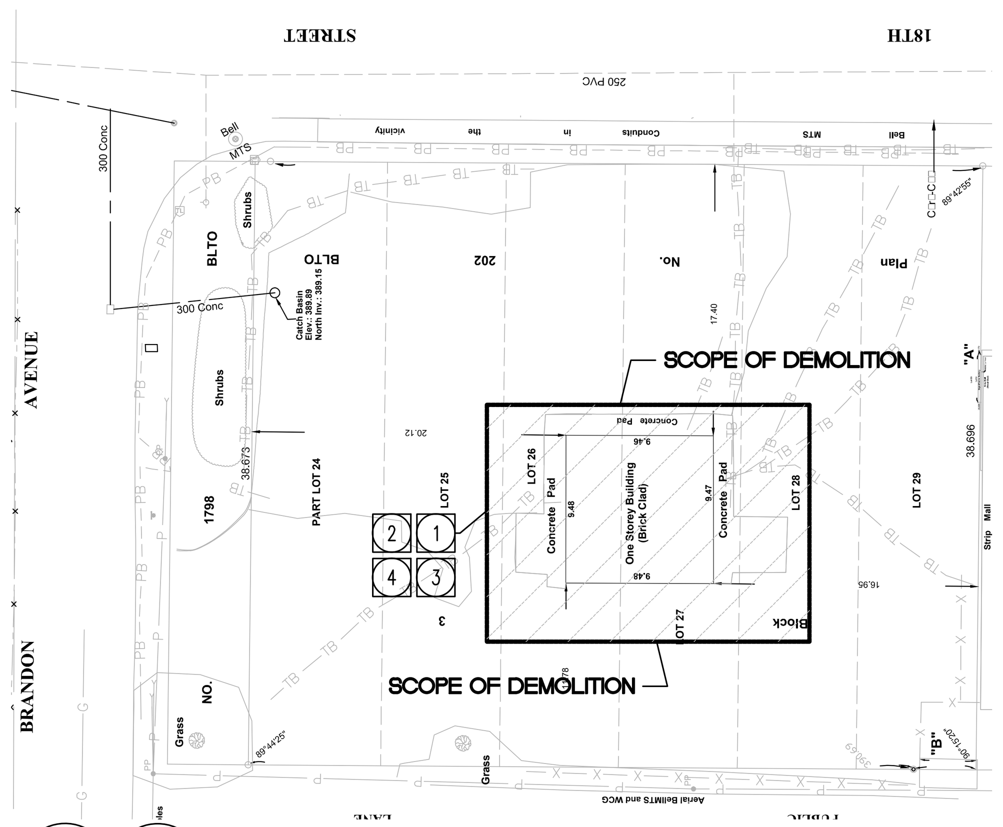
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1 M0.0 SITE PLAN - NEW CONSTRUCTION
SCALE: 1:200

LIST OF ABBREVIATIONS

AC. E.	ACOUSTIC ELBOW
A.F.F.	ABOVE FINISHED FLOOR
AVB	AIR VACUUM BREAKER
BB	BASE BOARD HEATER
BIT	BUILT-IN THERMOSTAT
BTU	BRITISH THERMAL UNITS
BTU/HR	BRITISH THERMAL UNITS PER HOUR
C/W	COMPLETE WITH
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CO	CARBON MONOXIDE
CO2	CARBON DIOXIDE
CWR	CHILLED WATER RETURN
CWS	CHILLED WATER SUPPLY
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RETURN
E/A	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EWT	ENTERING WATER TEMPERATURE
FACP	FIRE ALARM CONTROL PANEL
F	FAHRENHEIT
FF	FORCE FLOW HEATER
FT	FEET
FU	FIXTURE UNIT
G(#)	NATURAL GAS (LINE PRESSURE)
GPM	GALLONS PER MINUTE
HP	HIGH PRESSURE
HPR	HEAT PUMP RETURN
HPS	HEAT PUMP SUPPLY
HR	HOURS
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HX	HEAT EXCHANGER
KW	KILOWATTS
LAT	LEAVING AIR TEMPERATURE
LP	LOW PRESSURE
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBC	MANITOBA BUILDING CODE
MCA	MAXIMUM CURRENT AMPS
MBH	THOUSANDS OF BTU/HR
MECB	MANITOBA ENERGY CODE FOR BUILDINGS
MIN	MINIMUM
MOCP	MAXIMUM OVERCURRENT PROTECTION
MUA	MAKE-UP AIR UNIT
NBC	NATIONAL BUILDING CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
O/A	OUTSIDE AIR
P&T	PRESSURE & TEMPERATURE RELIEF
PRV	PRESSURE REGULATING VALVE
PSI	POUNDS PER SQUARE INCH
R/A	RETURN AIR
RD	ROOF DRAIN
RE/A	RELIEF AIR
RTU	ROOF TOP UNIT
RWL	RAIN WATER LEADER
S/A	SUPPLY AIR
SAN	SANITARY
SM	SMOKE
SPD	SUMP PUMP DISCHARGE
SQ.FT.	SQUARE FEET
TSTAT	THERMOSTAT
W/	WITH
W/O	WITHOUT
WC	WATER COLUMN
WPD	WATER PRESSURE DROP



2 M0.0 EXISTING SITE - DEMOLITION
SCALE: 1:400

DRAWING NOTES - EXISTING SITE STRUCTURE

1. EXISTING BUILDING ON SITE TO BE REMOVED.
2. REMOVE ALL EXISTING MECHANICAL SYSTEMS FROM BUILDING
3. REMOVE SANITARY, STORM, DOMESTIC WATER BACK TO CIVIL SERVICE CONNECTIONS AND CAP OFF. COORDINATE WITH CIVIL AND CITY SERVICES AS REQUIRED.
4. REMOVE GAS BACK TO METER AND COORDINATE WITH UTILITY FOR REMOVAL OR RELOCATION OF EXISTING GAS METER (IF VIABLE WITH UTILITY).

GENERAL NOTES

PLUMBING:

1. MECHANICAL CONTRACTOR SHALL VERIFY EXACT LOCATIONS, SIZES, INVERTS, ETC. PRIOR TO COMMENCEMENT OF WORK. VERIFY ALL CONNECTION POINTS ON SITE.
2. REFER TO ARCHITECTURAL, ELECTRICAL & STRUCTURAL DRAWINGS FOR COORDINATION PURPOSES.
3. ALL CUTTING & PATCHING OF FLOOR SLABS, WALLS ETC. TO BE PERFORMED BY GENERAL CONTRACTOR.
4. ALL VENT PIPING TO BE INSTALLED AS PER CODE.
5. PROVIDE ISOLATION VALVES ON ALL FIXTURES OR FIXTURE GROUP.
6. PROVIDE SURESEAL TRAP SEAL TO ALL FLOOR/HUB DRAINS OR PIPED TRAP SEAL PRIMERS – AS INDICATED.
7. PROVIDE AUTOMATIC AIR VENTS AT ALL HIGH POINTS OF SYSTEM.
8. ALL DOMESTIC WATER LINES TO BE INSULATED TO MANITOBA HYDRO POWER SMART REQUIREMENTS AND MANITOBA ENERGY CODE FOR BUILDINGS REQUIREMENTS.
9. ALL WORK SHALL COMPLY IN EVERY RESPECT WITH ALL NATIONAL, PROVINCIAL AND LOCAL CODES AND BY-LAWS, WHICH SHALL BE CONSIDERED PART OF THE SPECIFICATION. IN THE CASE OF CONFLICTING REQUIREMENTS, BE GOVERNED BY THE MOST STRINGENT REQUIREMENTS.
10. THE MECHANICAL CONTRACTOR SHALL INSTALL PLUMBING SYSTEMS IN COMPLETE ACCORDANCE WITH THE RECOMMENDATIONS OF THE NATIONAL/PROVINCIAL BUILDING CODE, LOCAL PLUMBING CODES, AND MANITOBA OFFICE OF THE FIRE COMMISSIONER REQUIREMENTS.
11. ALL INSULATING MATERIALS, METHODS, SIZES AND TYPES OF INSULATION FOR ALL PIPING SHALL BE INSTALLED TO THE REQUIREMENTS OF THE ASHRAE STANDARDS 90.1-2010 "ENERGY STANDARD FOR BUILDING EXCEPT LOW-RISE RESIDENTIAL BUILDING", STANDARD 90.2 "ENERGY EFFICIENT DESIGN OF LOW-RISE RESIDENTIAL BUILDINGS", THERMAL INSULATION ASSOCIATION OF CANADA (TIAC) STANDARDS AND MANITOBA ENERGY CODE FOR BUILDINGS REQUIREMENTS.
12. GAS PIPING SHALL BE BLACK STEEL PIPE, EQUAL TO ASTM A-53 SCH. 40 WITH 150 LBS. STANDARD BLACK MALLEABLE IRON SCREWED FITTINGS. ALL WORK SHALL COMPLY WITH C.G.A. B149.1-16 "NATURAL GAS AND PROPANE INSTALLATION CODE", COMPLETE WITH DEPARTMENT OF LABOUR GAS NOTICES, AND SHALL BE PERFORMED BY FULLY QUALIFIED GAS FITTERS AND/OR WELDERS LICENSED TO PRACTICE IN THE PROVINCE OF MANITOBA.
13. PROVIDE DI-ELECTRIC COUPLINGS ON ALL PIPING CONNECTIONS TO HOT WATER TANKS.
14. PROVIDE APPROPRIATE FIRE-STOPPING MEASURES ON ALL PIPING PENETRATING FIRE SEPARATIONS SUBMIT SHOP DRAWINGS FOR REVIEW. ACCEPTABLE PRODUCT: HILTI, OR EQUAL.
15. INSULATE VENT PIPING BACK 10'-0" (3.0 M) FROM ROOF PENETRATIONS IN ALL DIRECTIONS.
16. COORDINATE MOUNTING HEIGHT OF ALL FIXTURES ARCHITECTURAL ELEVATIONS.
17. ALL SANITARY WASTE & VENT PIPING AND DOMESTIC WATER PIPING SHALL BE CAPABLE OF MEETING OR EXCEEDING THE FLAME SPREAD RATING OF 25 AND DEVELOPED SMOKE RATING OF 50, AND BE SUITABLE FOR INSTALLATION IN AIR PLENUMS.
18. ALL CONTROL / ELECTRICAL WIRING TO MEET FLAME SPREAD RATING OF 25, DEVELOPED SMOKE RATING OF 50 AND BE RATED FOR USE IN PLENUMS.
19. ALL MECHANICAL EQUIPMENT TO BE INSTALLED TO ACCOMMODATE MANUFACTURER'S RECOMMENDED SERVICE AND INSTALLATION CLEARANCE REQUIREMENTS.
20. ALL INSULATION JACKETS/COVERING/WRAPS SHALL MEET OR EXCEED A FLAME SPREAD RATING OF 25 AND SMOKE RATING OF 50, AND BE SUITABLE FOR INSTALLATION IN AIR PLENUMS.

HEATING AND COOLING

1. MECHANICAL CONTRACTOR SHALL VERIFY EXACT LOCATIONS, SIZES, INVERTS, ETC. PRIOR TO COMMENCEMENT OF WORK. VERIFY ALL CONNECTION POINTS ON SITE.
2. REFER TO ARCHITECTURAL, ELECTRICAL & STRUCTURAL DRAWINGS FOR COORDINATION PURPOSES.
3. ALL CUTTING & PATCHING OF FLOOR SLABS, WALLS ETC. TO BE PERFORMED BY GENERAL CONTRACTOR.
4. PROVIDE ISOLATION VALVES AT ALL EQUIPMENT CONNECTIONS, TO PERMIT REMOVAL/SERVICE.
5. PROVIDE AUTOMATIC AIR VENTS AT EQUIPMENT AND ALL HIGH POINTS OF SYSTEM. PROVIDE HOSE END DRAIN VALVES WITH CAP AND CHAIN, AT ALL EQUIPMENT AND BASE OF RISERS, FOR DRAIN DOWN OF HYDRONIC SYSTEMS.
6. ALL HEATING & COOLING PIPING TO BE INSULATED AS PER SPECIFICATIONS.
7. ALL WORK SHALL COMPLY IN EVERY RESPECT WITH ALL NATIONAL, PROVINCIAL AND LOCAL CODES AND BY-LAWS, WHICH SHALL BE CONSIDERED PART OF THE SPECIFICATION. IN THE CASE OF CONFLICTING REQUIREMENTS, BE GOVERNED BY THE MOST STRINGENT REQUIREMENTS.
8. ALL INSULATING MATERIALS, METHODS, SIZES AND TYPES OF INSULATION FOR ALL PIPING SHALL BE INSTALLED TO THE REQUIREMENTS OF THE ASHRAE STANDARDS 90.1-2016 "ENERGY STANDARD FOR BUILDING EXCEPT LOW-RISE RESIDENTIAL BUILDING", THERMAL INSULATION ASSOCIATION OF CANADA (TIAC) STANDARDS AND MANITOBA ENERGY CODE FOR BUILDINGS REQUIREMENTS.
9. PROVIDE DI-ELECTRIC COUPLINGS ON ALL DIS-SIMILAR METAL PIPING CONNECTIONS.
10. PROVIDE APPROPRIATE FIRE-STOPPING MEASURES ON ALL PIPING PENETRATING FIRE SEPARATIONS SUBMIT SHOP DRAWINGS FOR REVIEW. ACCEPTABLE PRODUCT: HILTI, OR EQUAL.
11. ALL CONTROL / ELECTRICAL WIRING TO MEET FLAME SPREAD RATING OF 25, DEVELOPED SMOKE RATING OF 50 AND BE RATED FOR USE IN PLENUMS.
12. ALL MECHANICAL EQUIPMENT TO BE INSTALLED TO ACCOMMODATE MANUFACTURER'S RECOMMENDED SERVICE AND INSTALLATION CLEARANCE REQUIREMENTS.
20. ALL INSULATION JACKETS/COVERING/WRAPS SHALL MEET OR EXCEED A FLAME SPREAD RATING OF 25 AND SMOKE RATING OF 50, AND BE SUITABLE FOR INSTALLATION IN AIR PLENUMS.

GENERAL NOTES (CONTINUED)

VENTILATION

1. MECHANICAL CONTRACTOR SHALL VERIFY EXACT LOCATIONS, SIZES, ETC. PRIOR TO COMMENCEMENT OF WORK. VERIFY ALL CONNECTION POINTS ON SITE.
2. MECHANICAL CONTRACTOR SHALL ALLOW IN HIS TENDER QUOTATION FOR ALL REQUIRED MODIFICATIONS TO EXISTING HVAC SYSTEMS AND EQUIPMENT (I.E.) RE-ROUTING AND RE-BALANCING OF EXISTING DUCTWORK AS DEEMED NECESSARY DUE TO RENOVATION WORK.
3. REFER TO ARCHITECTURAL, ELECTRICAL & STRUCTURAL DRAWINGS FOR COORDINATION PURPOSES.
4. MECHANICAL CONTRACTOR SHALL CAREFULLY REMOVE & RELOCATE EXISTING EQUIPMENT AS PER OWNERS REQUIREMENTS.
5. ALL CUTTING & PATCHING OF FLOOR SLABS, WALLS ETC. TO BE PERFORMED BY GENERAL CONTRACTOR.
6. COORDINATE THE EXACT LOCATION OF THE GRILLES AND DIFFUSERS ON SITE WITH THE ELECTRICAL CONTRACTOR, GENERAL CONTRACTOR, ARCHITECTURAL CEILING PLAN, LIGHTING LAYOUT, ETC. TO ENSURE THAT THERE ARE NOT ANY CONFLICTS DURING INSTALLATION.
7. PROVIDE BALANCE DAMPER FOR EACH SUPPLY/EXHAUST AIR GRILLE OR DIFFUSER TO ALLOW FOR THE PROPER BALANCING OF THE SYSTEM. PROVIDE OPPOSED BLADE DAMPERS WITH THE DIFFUSER AND ADJUSTABLE FROM THE DIFFUSER FACE WHEN A DUCT MOUNTED BALANCE DAMPER WOULD NOT BE ACCESSIBLE.
8. ALL DUCT DIMENSIONS DENOTE INTERNAL "OPEN" AREA OF THE DUCT.
9. ALL DUCTWORK PENETRATING THE BUILDING THERMAL ENVELOPE SHALL BE INSULATED A MINIMUM 10'-0" BACK FROM THE BUILDING PENETRATION.
10. REFER TO ARCHITECTURAL DRAWINGS AND PROVIDE FIRE DAMPERS IN ALL WALLS DENOTED AS FIRE SEPARATIONS. PROVIDE ACCESS DOORS AT ALL FIRE DAMPERS TO ALLOW FOR INSPECTION/TESTING.
11. COORDINATE THE EXACT LOCATIONS OF EQUIPMENT, DUCT OPENINGS, AND DUCT LOCATIONS WITH THE EXISTING STRUCTURE AND THE STRUCTURAL CONSULTANT.
12. ALL WORK SHALL COMPLY IN EVERY RESPECT WITH ALL NATIONAL, PROVINCIAL AND LOCAL CODES AND BY-LAWS, WHICH SHALL BE CONSIDERED PART OF THE SPECIFICATION. IN THE CASE OF CONFLICTING REQUIREMENTS, BE GOVERNED BY THE MOST STRINGENT REGULATIONS.
13. THE MECHANICAL CONTRACTOR SHALL INSTALL HEATING, VENTILATION, AND AIR CONDITIONING SYSTEMS IN COMPLETE ACCORDANCE WITH THE RECOMMENDATIONS OF THE NATIONAL/PROVINCIAL BUILDING CODE, ASHRAE, SMACNA LATEST EDITION DUCT STANDARDS, AND MANITOBA DEPT. OF LABOUR/O.F.C. REQUIREMENTS.
14. ALL INSULATING MATERIALS, METHODS, SIZES AND TYPES OF INSULATION FOR ALL DUCT WORK SHALL BE INSTALLED TO THE REQUIREMENTS OF THE ASHRAE STANDARDS 90.1-2016 "ENERGY STANDARD FOR BUILDING EXCEPT LOW-RISE RESIDENTIAL BUILDING", STANDARD 90.2 "ENERGY EFFICIENT DESIGN OF LOW-RISE RESIDENTIAL BUILDINGS", THERMAL INSULATION ASSOCIATION OF CANADA (TIAC) STANDARDS AND MANITOBA (NATIONAL) ENERGY CODE FOR BUILDINGS REQUIREMENTS.
15. VENTILATION CONTRACTOR SHALL ENSURE THAT ALL DUCTWORK THAT MAY CONVEY OUTSIDE AIR BE LOCATED A MINIMUM OF 6" (150 MM) AWAY FROM ANY SPRINKLER PIPING. DUCTWORK IN SUCH LOCATIONS SHALL BE PROTECTED WITH A MINIMUM OF 2" (50MM) RIGID DUCT INSULATION WITH VAPOR RETARDING FOIL FINISH. ALTER LOCATION OF DUCTWORK TO SUIT.
16. FOR STRUCTURES REQUIRING OR CONTAINING EXISTING FIRE PROTECTION/SPRINKLER SYSTEMS, THE OWNER, PROPERTY MANAGER, TENANT AND/OR GENERAL CONTRACTOR SHALL RETAIN A SPRINKLER CONTRACTOR TO PROVIDE FREEZE PROTECTION IN ALL MECHANICAL AND SERVICE ROOMS UTILIZING DRY AND/OR GLYCOL SYSTEMS.
17. ALL CONTROL / ELECTRICAL WIRING TO MEET OR EXCEED FLAME SPREAD RATING OF 25 AND DEVELOPED SMOKE RATING OF 50 AND BE SUITABLE FOR INSTALLATION IN AIR PLENUMS.
19. ALL DUCTWORK RUNNING IN CONCEALED/UNCONDITIONED CEILING SPACES TO BE INSULATED
20. ALL MECHANICAL EQUIPMENT TO BE INSTALLED TO ACCOMMODATE MANUFACTURER'S RECOMMENDED SERVICE AND INSTALLATION CLEARANCE REQUIREMENTS.
21. ALL INSULATION JACKETS/COVERING/WRAPS SHALL MEET OR EXCEED A FLAME SPREAD RATING OF 25 AND SMOKE RATING OF 50, AND BE SUITABLE FOR INSTALLATION IN AIR PLENUMS.

LEGEND

PLUMBING

Symbol	Description
	SANITARY LINE BELOW FLOOR/GRADE
	SANITARY LINE ABOVE GRADE
	VENT LINE (CONSTRUCTION DRAWINGS)
ST	STORM SEWER ABOVE GRADE
ST	STORM SEWER BELOW GRADE
C	CONDENSATE LINE ABOVE GRADE
C	CONDENSATE LINE BELOW GRADE
G	GAS LINE (PRESSURE)
	DOMESTIC COLD WATER (HP – HIGH PRESSURE) (LP – LOW PRESSURE)
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RECIRC.
PD	PUMPED DISCHARGE
SPD	SUMP PUMP DISCHARGE
	THERMAL INSULATION
	CLEANOUT
	HOSE BIB/WALL HYDRANT
	PUMP
FS	FLOW SWITCH
PS	PRESSURE SWITCH
	GATE VALVE
	PRESSURE REGULATING VALVE
S	SOLENOID VALVE
	UNION
	STRAINER
	PRESSURE GAUGE
REC	THERMOMETER
F.D.	FLOOR DRAIN
F.F.D.	FUNNEL FLOOR DRAIN
H.D.	HUB DRAIN
R.D.	ROOF DRAIN
	DIRECTION OF FLOW

VENTILATION

Symbol	Description
	DUCT RISE UP / DUCT DROP DOWN
	SUPPLY AIR DIFFUSER
	RETURN AIR GRILLE
	EXHAUST AIR GRILLE
	DOOR GRILLE
T	THERMOSTAT
T	THERMOSTAT C/W GUARD
CO	CARBON MONOXIDE DETECTOR
S	SWITCH
$	ON/OFF SWITCH (DIV. 16)
	EXISTING DUCTWORK
	PROPOSED OR OVERLAPPING NEW DUCTWORK (ON RENO DRAWINGS, PER SPECIFIC NOTES)
	MANUAL BALANCING DAMPER
FD	FIRE DAMPER AND ACCESS DOOR
FSD	COMBINATION FIRE/SMOKE DAMPER AND ACCESS DOOR
BDD	BACK DRAFT DAMPER
M	MOTORIZED DAMPER
	FLEXIBLE DUCT CONNECTION
	THERMAL INSULATION
	ACOUSTIC INSULATION

MECHANICAL TAGS

Symbol	Description
TYPE / SIZE / CFM NECKØ	GRILLE/DIFFUSER/LOUVER TAG
EQ / NO	MECHANICAL EQUIPMENT TAG
AREA NAME / DRAIN TAG / NOTCHES / LEADER SIZE / AREA SQFT / GPM / DDT / HEAD	ROOF DRAINAGE TAG (ANALYSIS FOR 50YR STORM) (AREA NAME: REFERENCE NAME FOR AREA) (DRAIN TAG: SPECIFIED DRAIN, SEE SPEC) (LEADER SIZE: SIZE OF ATTACHED LEADER (IN)) (AREA SQ.FT.: TOTAL CALCULATED AREA SQ. FOOTAGE, INCLUDING SIDE WALLS (FOR ALL DRAINS SERVING AREA)) (GPM: FLOW RATE PER DRAIN IN GPM) (DDT: DRAIN DOWN TIME FOR AREA IN HR) (HEAD: WATER ACCUMULATED DURING STORM EVENT)
TYPE / SIZE / OUTPUT	ALTERNATE EQUIPMENT TAG
1	DRAWING NOTE TAG

DRAWING LIST

M0.0 SERIES - TITLE PAGE	
M0.0	MECHANICAL TITLE PAGE & SITE MECH DEMO
M1.0 SERIES - ROOF PLAN	
M1.0	ROOF PLAN – GAS, DRAINAGE & VENTILATION
M2.0 SERIES - MAIN FLOOR PLAN	
M2.0	MAIN FLOOR – GAS, PLUMBING & VENTILATION
M3.0 SERIES - DETAILS, SCHEDULES AND SUMMARIES	
M3.0	DETAILS AND CALCULATION SUMMARIES
M3.1	DETAILS AND SCHEDULES
M3.1	DETAILS
M4.0 SERIES - SPECIFICATIONS	
M4.0	SPECIFICATIONS

APEGM
Certificate of Authorization
Nova 3 Engineering Ltd.
No. 962 Date: 2019.03.01

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No:	Date:	Revision
1	2019.02.14	ISSUED FOR 50% REVIEW
2	2019.03.01	ISSUED FOR PERMIT, TENDER & CONSTRUCTION
3	–	–
4	–	–

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2019.03.01
MANITOBA REGISTERED ENGINEER

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CLIENT
HARDROCK PROPERTIES CORPORATION

PROJECT
TD BANK BASE BUILDING
BRANDON, MANITOBA

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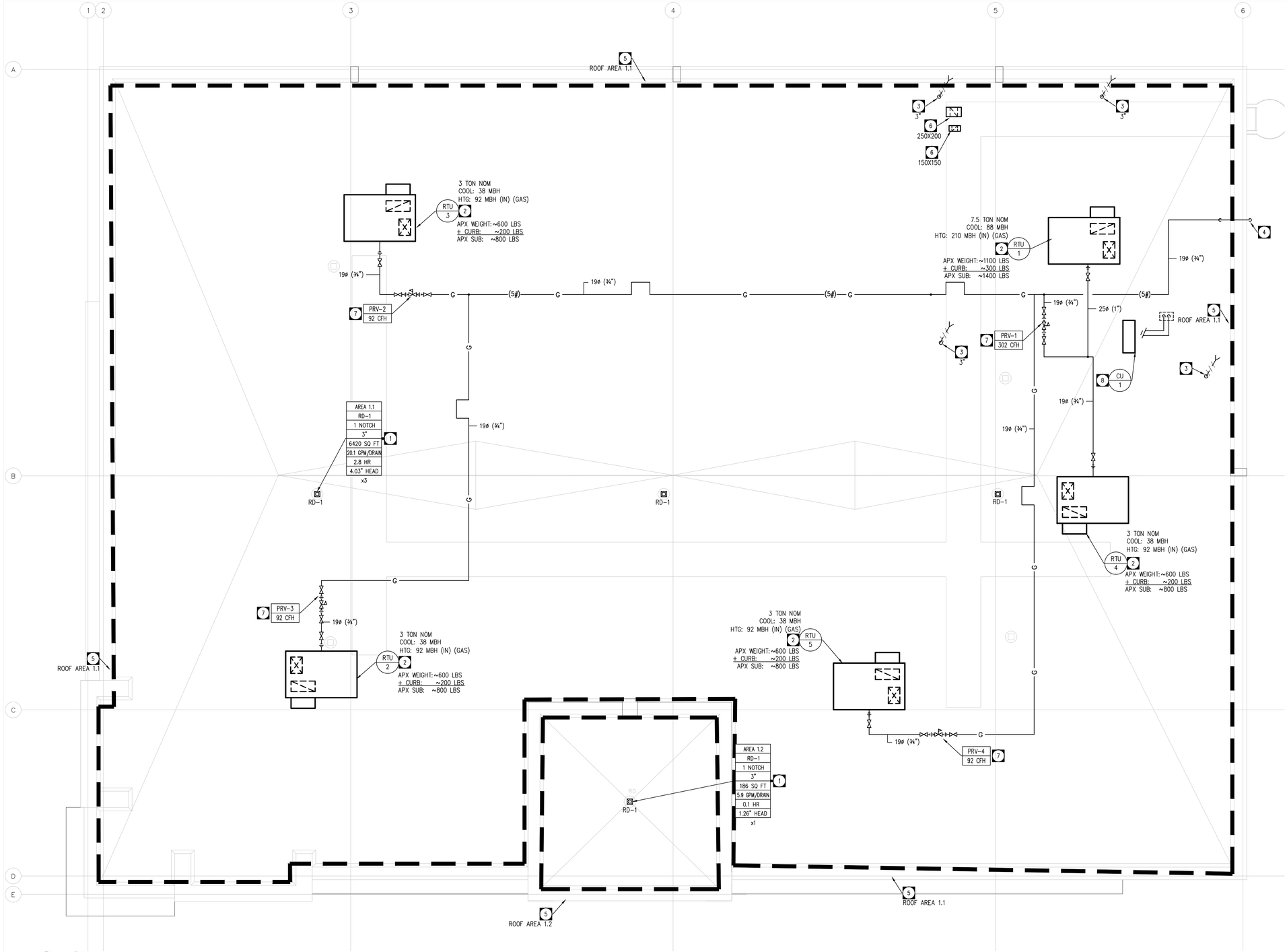
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DRAWN BY : D.D.
CHECKED BY : J.H.G
DATE: MARCH 2019
SHEET: 01 OF 07

PROJECT	SHEET NO.
18-1921	M0.0

MECHANICAL

TITLE PAGE & MECHANICAL SITE DEMOLITION



1 M1.0 **ROOF PLAN**
SCALE: 1:50

NATURAL GAS PRESSURE REDUCING VALVES (FISHER OR APPROVED EQUAL)

TAG	GAS	CAPACITY	INLET PRESSURE	OUTLET PRESSURE
PRV-1	NATURAL GAS	302 CFH	5#	7" WC
PRV-2	NATURAL GAS	92 CFH	5#	7" WC
PRV-3	NATURAL GAS	92 CFH	5#	7" WC
PRV-4	NATURAL GAS	92 CFH	5#	7" WC

DRAWING NOTES

1. CONTROL FLOW DRAIN AT VALLEY OF ROOF. EXTEND INSULATED RWL DOWN THRU WITHIN FURRING TO U/S OF MAIN FLOOR SLAB. SEE MAIN FLOOR PLAN FOR CONTINUATION. CONFIRM LOCATION FROM ARCHITECTURAL PLANS
2. PACKAGED GAS HEAT/ELECTRIC COOL ON ROOF; EXTEND ACOUSTIC LINED SUPPLY/RETURN PLENUM DOWN INTO JOIST SPACE MINIMUM 18" FOR CONNECTION BY FUTURE TENANT. PROVIDE AT LEAST 75 FT THERMOSTAT CONTROL WIRING COILED IN CEILING SPACE FOR FUTURE INSTALLATION BY TENANT. REQUIRED NATURAL GAS PRESSURE: 7"W.C. AT UNIT CONNECTION. PROVIDE UNITS WITH MINIMUM 18" HIGH ROOF CURBS, VIBRATION ISOLATION FRAMES.
3. PROPOSED SANITARY VENT LOCATION, COORDINATE FINAL LOCATION WITH TENANT ENGINEER/LAYOUT. EXTEND THRU ROOF C/W INCREASER AT BUILDING ENVELOPE PENETRATION. TERMINATE INSIDE ENVELOPE FOR FUTURE TENANT CONNECTION. INSULATE AS SPECIFIED. LOCATIONS TO BE MAINTAINED A MINIMUM OF 10'-00" FROM ECONOMIZER HOODS OF ROOF TOP UNITS.
4. NATURAL GAS LINE RISER UP FROM SERVICE/PRV ASSEMBLY AND TENANT GAS METER. COORDINATE FINAL LOCATION WITH GENERAL CONTRACTOR AND UTILITY. EXTEND 5PSI GAS SUPPLY UP EXTERIOR TO ROOF MOUNT EQUIPMENT. PROVIDE C-PORT PIPING SUPPORTS ON ROOF.
5. OUTLINE OF ROOF DRAINAGE AREA, REFER TO ROOF DRAIN CALCULATIONS FOR RAIN WATER FLOW RATE ESTIMATION.
6. EXHAUST HOODS C/W CURB AND MOTORIZED DAMPER AT ENVELOPE PENETRATION. REFER TO DETAIL.
7. PROVIDE PRE-ASSEMBLED/TEST PRESSURE REDUCING VALVE W/ RELIEF VALVE.
8. PROVIDE AND MOUNT CONDENSING UNIT ON MIFAB 'C-PORT' TYPE 'AP' ROOF SUPPORTS APPROXIMATELY WHERE SHOWN. EXTEND REFRIGERANT LINE KIT TO COOLING COIL CONNECTION IN UNIT, PROVIDE PITCH POCKET ON PIPING PENETRATION. INSULATE PIPING OVER ENTIRE RUN. CONFIRM EXACT LOCATION OF UNIT ON SITE. UNIT TO BE INSTALLED TO ACCOMMODATE MANUFACTURER'S RECOMMENDED SERVICE AND INSTALLATION CLEARANCE REQUIREMENTS. REFER TO MECHANICAL UNIT SCHEDULE.

No:	Date:	Revision
1	2019.02.14	ISSUED FOR 50% REVIEW
2	2019.03.01	ISSUED FOR PERMIT, TENDER & CONSTRUCTION
3		
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CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AT JOB SITE.

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DRAWN BY : □.D.
CHECKED BY : J.H.G
DATE: MARCH 201□
SHEET: 02 OF 07

PROJECT	SHEET NO.
18-1921	M1.0

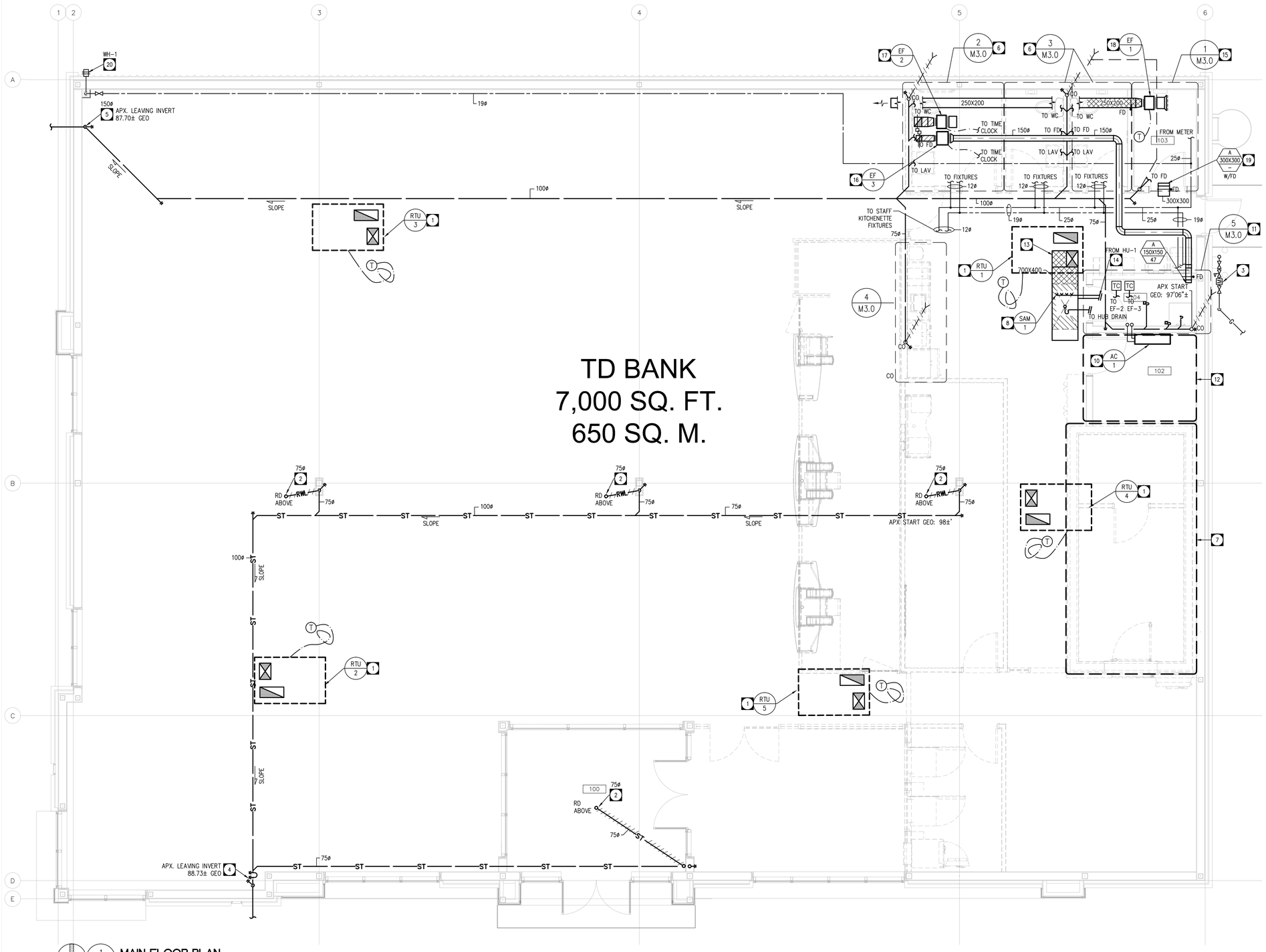
MECHANICAL
ROOF PLAN

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Nova 3 Engineering Ltd.
No.962 Date: 2019.03.01

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1 M2.0 **MAIN FLOOR PLAN**
SCALE: 1:50

DRAWING NOTES

1. OUTLINE OF RTU ON ROOF; EXTEND ACOUSTIC LINED SUPPLY/RETURN PLENUM DOWN INTO JOIST SPACE MINIMUM 18" FOR CONNECTION BY FUTURE TENANT (UNLESS OTHERWISE INDICATED). PROVIDE AT LEAST 75 FT THERMOSTAT CONTROL WIRING (WIRING TO HAVE APPROPRIATE FLAME AND SMOKE RATINGS FOR USE IN PLENUM SPACE) COILED IN CEILING SPACE FOR FUTURE INSTALLATION BY TENANT. PROVIDE HONEYWELL VISIONPRO TH8320 PROGRAMMABLE 7 DAY THERMOSTAT. EXACT LOCATIONS OF INSTALL TO BE BY TENANT. REQUIRED NATURAL GAS PRESSURE: 7"W.C. AT UNIT CONNECTION. PROVIDE BURGLAR BAR WITHIN DUCT MAIN DROPS OF ALL RTU DUCTS. SEE SCHEDULE FOR MORE DETAILS.
2. EXTEND RWL FROM ROOF DRAIN, OFFSET DOWN AT COLUMN TO BELOW SLAB, C/W CLEANOUT AT BASE. INSULATE PIPING FROM SLAB TO ROOF ENVELOPE PENETRATION. PROVIDE FERNCO 'STRONG BACK' COUPLING WITH CLAMP AND RESTRAINT ON CLEAN OUT COVERS.
3. APPROXIMATE LOCATION OF NATURAL GAS SERVICE/PRV ASSEMBLY, CONNECTED TO TENANT GAS METER. COORDINATE FINAL LOCATION WITH GENERAL CONTRACTOR AND UTILITY. EXTEND 5PSI GAS SUPPLY UP EXTERIOR TO ROOF MOUNT EQUIPMENT. SEE ROOF PLAN FOR CONTINUATION.
4. STORM DRAINAGE PIPING BELOW SLAB C/W TRAP AND CLEANOUT AT BUILDING LINE; COORDINATE W/OUTSIDE SERVICES CONTRACTOR FOR EXTENSION/CONNECTION TO SITE SERVICES.
5. SANITARY DRAINAGE PIPING BELOW SLAB C/W CLEANOUT AT BUILDING LINE, COORDINATE W/OUTSIDE SERVICES CONTRACTOR FOR EXTENSION/ CONNECTION TO SITE SERVICES.
6. SEE INDICATED VIEWPORT ON M3.0 FOR FURTHER DETAILS ON TYPICAL MECHANICAL SYSTEMS IN INDICATED AREAS. 3-M3.0 TO BE APPLIED FOR ALL NON BARRIER FREE WASHROOMS.
7. NO PLUMBING (DOMESTIC WATER, SANITARY OR STORM) TO BE RUN WITH IN, ABOVE (IN CEILING SPACE) OR BELOW (BELOW SLAB) INDICATED SPACE.
8. INSTALL STEAM ABSORPTION MANIFOLD IN DUCTWORK TO MANUFACTURER REQUIREMENTS.
9. PROVIDE EXENDED SANITARY STACK UP TO HIGH LEVEL TO TIE IN DRAIN LINE FROM RTU-1 DUCTWORK STEAM ABSORPTION MANIFOLD DUCT DRAIN.
10. SUPPLY AND INSTALL DUCTLESS SPLIT AIR CONDITIONING UNIT, WALL MOUNTED 6'-0" MIN. A.F.F.. EXTEND INSULATED REFRIGERATION PIPING LINE KIT TO ADJACENT JANITOR ROOM, AND EXTEND UP THRU TO ROOF CONDENSING UNIT VIA PITCH BOX. PROVIDE UNIT WITH CONDENSATE PUMP AND PUMP COPPER DRAINAGE PIPING TO FLOOR DRAIN IN JANITOR ROOM. UNIT TO BE INSTALLED TO ACCOMMODATE MANUFACTURER'S RECOMMENDED SERVICE AND INSTALLATION CLEARANCE REQUIREMENTS. REFER TO MECHANICAL UNIT SCHEDULE.
11. LOCATION OF JANITOR ROOM SEE M3.0 FOR FURTHER DETAILS ON MECHANICAL SYSTEMS IN INDICATED AREA.
12. NO PLUMBING TO BE RUN AT HIGH LEVEL WITHIN INDICATED SPACE. REFRIGERANT LINES SERVING SPLIT AIR CONDITIONING UNIT TO BE RUN DOWN WALL FROM HIGH LEVEL OF ADJACENT SPACES.
13. ACOUSTIC LINED SUPPLY DUCT DOWN FROM FROM RTU-1 TO BE RUN WITHIN JOIST SPACE, PROVIDE TURNING VANES AT ELBOW AND EXTEND DUCT TO HUMIDIFICATION SECTION; SECTION TO BE ALUMINUM, 1200MM IN LENGTH, WATERTIGHT CONSTRUCTION, BOTTOM SHALL SLOPE TO DRAIN PORT. MOUNT DISPERSION MANIFOLD TO ALLOW 900MM ABSORPTION DISTANCE DOWNSTREAM OF CONNECTION TO STANDARD GALVANIZED DISTRIBUTION DUCT. COORDINATE DRAIN AND MANIFOLD CONNECTIONS W/ PLUMBING CONTRACTOR, PROVIDE DEEP SEAL TRAP AT DRAIN PORT. PROVIDE ACCESS DOOR FOR INSPECTION/SERVICE.
14. STEAM HUMIDIFICATION AND CONDENSATE PIPING TO DUCT-MOUNT MANIFOLD TO BE INSULATED ALONG ENTIRE RUN AND SLOPED BACK TOWARDS HUMIDIFIER UNIT.
15. LOCATION OF SERVICE/UTILITY ROOM SEE M3.0 FOR FURTHER DETAILS ON MECHANICAL SYSTEMS IN INDICATED AREA. MINIMIZE DOMESTIC WATER LINES WITHIN SPACE TO MAIN LINE FOR METER ENTERING WITHIN ROOM ONLY.
16. INLINE CABINET FAN SUSPENDED FROM STRUCTURE IN JOIST SPACE. EXTEND EXHAUST DUCT FROM SIDEWALL GRILLE IN JANITOR ROOM TO FAN INLET. EXTEND INSULATED DISCHARGE UP THRU TO ROOF HOOD C/W MOTORIZED DAMPER AT ENVELOPE. FAN CONTROL VIA TIME CLOCK IN JANITOR ROOM.
17. INLINE CABINET FAN SUSPENDED FROM STRUCTURE IN JOIST SPACE. TENANT TO PROVIDE EXHAUST GRILLES IN WASHROOMS AND CONNECT TO INLET OF FAN. EXTEND INSULATED DISCHARGE UP THRU TO ROOF HOOD C/W MOTORIZED DAMPER AT ENVELOPE. FAN CONTROL VIA TIME CLOCK IN JANITOR ROOM.
18. INLINE CABINET FAN SUSPENDED FROM STRUCTURE IN UTILITY 103. EXTEND DISCHARGE DUCT IN JOIST SPACE AND TERMINATE OPEN ENDED BEYOND PROPOSED WASHROOM WALL. FAN CONTROL VIA COOLING THERMOSTAT.
19. SIDEWALL TRANSFER GRILLE AT UTILITY 103, W/FIRE DAMPER. GRILLE TO BE OPEN TO CORRIDOR CEILING SPACE.
20. SUPPLY AND INSTALL NON-FREEZE WALL HYDRANT, TO BE RECESSED WITH FLUSH LOCKABLE COVER IN INSULATED BUILDING PANEL C/W ISOLATION VALVE. CONFIRM EXACT LOCATION WITH OWNER. REFER TO SPECIFICATION. COORDINATE INSTALLATION WITH GENERAL CONTRACTOR.

No:	Date:	Revision
1	2019.02.14	ISSUED FOR 50% REVIEW
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3		
4		

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CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AT JOB SITE.

SEAL
PROVINCE OF MANITOBA
J. H. GUENTHER
2019.03.01
REGISTERED ENGINEER

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CLIENT
HARDROCK PROPERTIES CORPORATION

PROJECT
TD BANK
BASE BUILDING
BRANDON, MANITOBA

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DRAWN BY : □.D.
CHECKED BY : J.H.G
DATE: MARCH 201□
SHEET: 03 OF 07

PROJECT	SHEET NO.
18-1921	M2.0

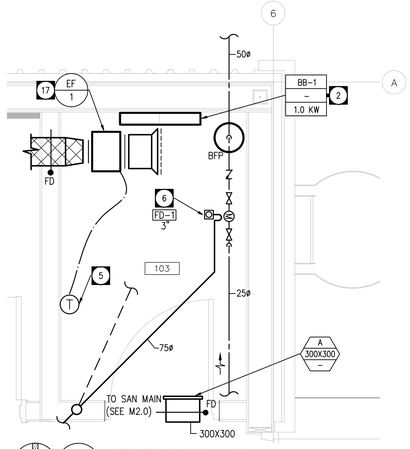
MECHANICAL
MAIN FLOOR PLAN

APEGM
Certificate of Authorization
Nova 3 Engineering Ltd.
No.962 Date: 2019.03.01

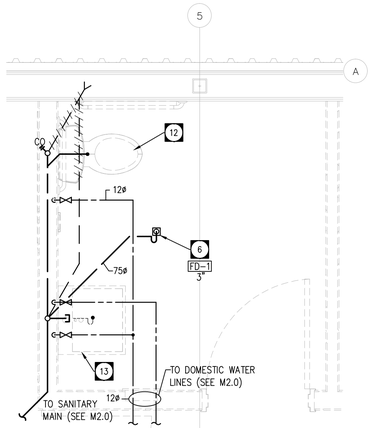
NOVA 3 ENGINEERING LTD.
PROFESSIONAL ENGINEERS
201–120 FORT STREET TEL.: (204) 943–6142
WINNIPEG, MANITOBA R3C 1C7 FAX.: (204) 942–1276
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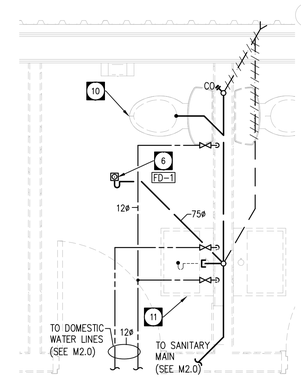
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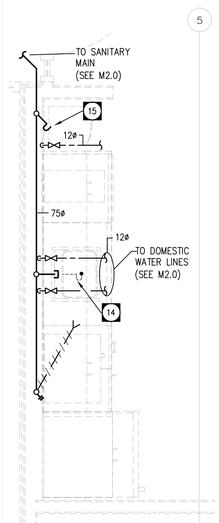
1 M3.0 **UTILITY ROOM 103**
SCALE: 1:25
LOCATION BASED ON PRELIMINARY T.I. PLANS



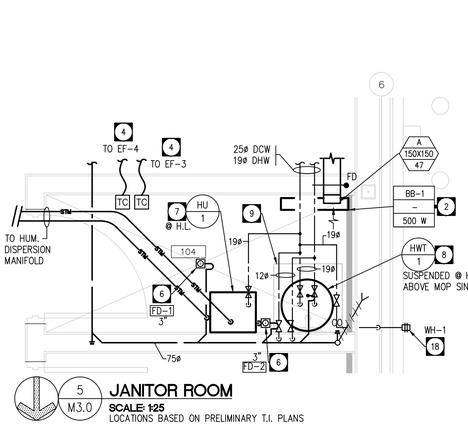
2 M3.0 **WASHROOM - BARRIER FREE (TYP).**
SCALE: 1:25
LOCATIONS BASED ON PRELIMINARY T.I. PLANS



3 M3.0 **WASHROOM - TYPICAL**
SCALE: 1:25
LOCATIONS BASED ON PRELIMINARY T.I. PLANS



4 M3.0 **STAFF ROOM - KITCHENETTE AREA**
SCALE: 1:25
LOCATIONS BASED ON PRELIMINARY T.I. PLANS CONFIRM EXACT LOCATION WITH T.I. CONSULTANTS PRIOR TO COMMENCING WORK IN AREA



5 M3.0 **JANITOR ROOM**
SCALE: 1:25
LOCATIONS BASED ON PRELIMINARY T.I. PLANS

DRAWING NOTES

1. EXHAUST FAN AT HIGH LEVEL IN UTLITY RM; EXTEND INSULATED EXHAUST DUCT TO WALL CAP WITH INTEGRAL BACK DRAFT DAMPER, BIRDSCREEN AT ENVELOPE PENETRATION. FAN AND MOTORIZED INTAKE DAMPER CONTROLLED VIA LINE VOLTAGE WALL MOUNT COOLING THERMOSTAT IN UTILITY ROOM.
2. ELECTRIC BASEBOARD HEATER WITH INDICATED HEATING CAPACITY PROVIDED/INSTALLED BY ELECTRICAL CONTRACTOR.
3. 50ø DOMESTIC WATER SERVICE UP WITHIN FROST BOX AT UTILITY ROOM AND EXTEND TO WATER METER/BACKFLOW PREVENTION ASSEMBLY. REFER TO DETAIL.
4. WALL MOUNT PROGRAMMABLE TIME CLOCK; EXTEND TO EF-2, EF-3, AND THEIR RESPECTIVE MOTORIZED EXHAUST DAMPERS.
5. MOUNT COOLING THERMOSTAT ON WALL IN APPROXIMATE LOCATION SHOWN. CONNECT THERMOSTAT TO EXHAUST FAN.
6. COORDINATE PLACEMENT OF FLOOR DRAIN WITH ARCHITECTURAL ON SITE. EXTEND COLD WATER TRAP PRIMER TUBING IN SLAB FROM TRAP PRIMER IN AREA.
7. SUPPLY AND INSTALL HUMIDIFIER, TO BE LOCATED AT HIGH LEVEL AS INDICATED. OFFSET INSULATED 19ø DOMESTIC WATER PIPING C/W DUAL CHECK VALVES WITH ATMOSPHERIC PORT. OFFSET CONDENSATE AT HIGH LEVEL, SLOPED BACK TO SANITARY. ROUTE STEAM/CONDENSATE MANIFOLD; COORDINATE W/ VENTILATION CONTRACTOR. PROVIDE DRAIN AND DEEP SEAL TRAP FROM DRIP PAN IN DUCTWORK. PROVIDE UNIT C/W CONDENSATE COOLER. REFER TO SPECIFICATION. PROVIDE WALL MOUNTED HUMIDISTAT
8. SUPPLY AND INSTALL ELECTRIC HOT WATER TANK, SUSPENDED FROM UNDERSIDE OF STRUCTURE C/W DRIP PAN BELOW TANK AND DRAIN TO STACK IN AREA. EXTEND P&T RELIEF DOWN TO DRIP PAN. PROVIDE ISOLATION VALVES IN TANK INLET/OUTLET CONNECTIONS. REFER TO SPECIFICATION.
9. APPROXIMATE LOCATION OF FUTURE JANITOR MOP SINK (TO BE PROVIDED AND INSTALLED UNDER T.I.). BASE BUILDING CONTRACTOR TO EXTEND HOT AND COLD WATER LINES AND SANITARY LINES TO APPROXIMATE LOCATION OF FUTURE FIXTURE ALONG WITH ISOLATION VALVES TO FACILITATE CONNECTION OF TENANT HARDWARE. CONTRACTOR TO COORDINATE & CONFIRM EXACT LOCATION WITH TENANT IMPROVEMENT CONTRACTORS ON SITE.
10. APPROXIMATE LOCATION OF WATER CLOSET (ASSUMED TO BE FLUSH VALVE) (TO BE PROVIDED AND INSTALLED UNDER T.I.). BASE BUILDING CONTRACTOR TO EXTEND HOT AND COLD WATER LINES AND SANITARY LINES (WITH FLOOR FLANGE (IF REQUIRED)) TO APPROXIMATE LOCATION OF FUTURE FIXTURE ALONG WITH ISOLATION VALVES TO FACILITATE CONNECTION OF TENANT HARDWARE. CONTRACTOR TO COORDINATE & CONFIRM EXACT LOCATION WITH TENANT IMPROVEMENT CONTRACTORS ON SITE.
11. APPROXIMATE LOCATION OF WASHROOM LAV (TO BE PROVIDED AND INSTALLED UNDER T.I.). BASE BUILDING CONTRACTOR TO EXTEND HOT AND COLD WATER LINES AND SANITARY LINES TO APPROXIMATE LOCATION OF FUTURE FIXTURE ALONG WITH ISOLATION VALVES TO FACILITATE CONNECTION OF TENANT HARDWARE. CONTRACTOR TO COORDINATE & CONFIRM EXACT LOCATION WITH TENANT IMPROVEMENT CONTRACTORS ON SITE.
12. APPROXIMATE LOCATION OF BARRIER FREE WATER CLOSET (ASSUMED TO BE FLUSH VALVE) (TO BE PROVIDED AND INSTALLED UNDER T.I.). BASE BUILDING CONTRACTOR TO EXTEND HOT AND COLD WATER LINES AND SANITARY LINES (WITH FLOOR FLANGE (IF REQUIRED)) TO APPROXIMATE LOCATION OF FUTURE FIXTURE ALONG WITH ISOLATION VALVES TO FACILITATE CONNECTION OF TENANT HARDWARE. CONTRACTOR TO COORDINATE & CONFIRM EXACT LOCATION WITH TENANT IMPROVEMENT CONTRACTORS ON SITE.
13. APPROXIMATE LOCATION OF BARRIER FREE WASHROOM LAV (TO BE PROVIDED AND INSTALLED UNDER T.I.). BASE BUILDING CONTRACTOR TO EXTEND HOT AND COLD WATER AND SANITARY LINES TO APPROXIMATE LOCATION OF FUTURE FIXTURE ALONG WITH ISOLATION VALVES TO FACILITATE CONNECTION OF TENANT HARDWARE. CONTRACTOR TO COORDINATE & CONFIRM EXACT LOCATION WITH TENANT IMPROVEMENT CONTRACTORS ON SITE.
14. APPROXIMATE LOCATION OF KITCHENETTE SINK (TO BE PROVIDED AND INSTALLED UNDER T.I.). BASE BUILDING CONTRACTOR TO EXTEND HOT AND COLD WATER AND SANITARY LINES TO APPROXIMATE LOCATION OF FUTURE FIXTURE ALONG WITH ISOLATION VALVES TO FACILITATE CONNECTION OF TENANT HARDWARE. PROVIDE SANITARY LINE STUBBED OUT FROM SLAB FOR FUTURE CONNECTION. CONTRACTOR TO COORDINATE & CONFIRM EXACT LOCATION WITH TENANT IMPROVEMENT CONTRACTORS ON SITE.
15. APPROXIMATE LOCATION OF KITCHENETTE BEVERAGE STATION (TO BE PROVIDED AND INSTALLED UNDER T.I.). BASE BUILDING CONTRACTOR TO EXTEND COLD WATER AND INDIRECT SANITARY CONNECTION TO APPROXIMATE LOCATION OF FUTURE FIXTURE ALONG WITH ISOLATION VALVES TO FACILITATE CONNECTION OF TENANT HARDWARE. PROVIDE SANITARY LINE STUBBED OUT FROM SLAB FOR FUTURE CONNECTION. CONTRACTOR TO COORDINATE & CONFIRM EXACT LOCATION WITH TENANT IMPROVEMENT CONTRACTORS ON SITE.
16. APPROXIMATE LOCATION OF FURRED OUT PLUMBING WALL FOR USE WITH KITCHENETTE FIXTURES.
17. CEILING MOUNTED EXHAUST FAN IN JOIST SPACE C/W FLEXIBLE DUCT CONNECTION. EXTEND EXHAUST DISCHARGE WITHIN JOIST SPACE AND TERMINATE OPEN-ENDED BEYOND FUTURE WASHROOM LOCATION. PROVIDE BELL-MOUTH FITTING AND SECURITY SCREEN ON INLET.
18. SUPPLY AND INSTALL NON-FREEZE WALL HYDRANT, TO BE RECESSED WITH FLUSH LOCKABLE COVER IN INSULATED BUILDING PANEL C/W ISOLATION VALVE. CONFIRM EXACT LOCATION WITH OWNER. REFER TO SPECIFICATION. COORDINATE INSTALLATION WITH GENERAL CONTRACTOR.

VENTILATION SUMMARY (BASED ON ASHRAE 62.1 2013)

SERVICE	UNIT	OCCUPANCY	# PEOPLE	RATE PER PERSON (CFM/PERS.)	AREA (SQ.FT.)	RATE PER AREA (CFM/SQ.FT.)	TOTAL O/A (CFM)	VENT. EFFECTIVENESS /EFFICIENCY	CORRECTED O/A (CFM)	UNIT S/A (CFM)	PERCENT O/A	NOTES
FUTURE TENANT	RTU-1	RETAIL	25	7.5	1900	0.12	415	0.8	519	3000	21	FOR CENTRAL/SOUTH SPACES (BREAKDOWN BASED ON PRELIM TENANT PLAN)
		OFFICES	7	5.0	480	0.06	64	0.8	80			
		CORRIDOR	0	0.0	510	0.06	31	0.8	38			
								TOTAL:	637			
	RTU-2	OFFICES	10	5.0	370	0.06	72	0.8	90	1200	19	FOR NE CORNER (BREAKDOWN BASED ON PRELIM TENANT PLAN)
		RETAIL	8	7.5	385	0.12	106	0.8	133			
								TOTAL:	223			
	RTU-3	OFFICES	20	5.0	850	0.06	151	0.8	189	1200	16	FOR SE CORNER (BREAKDOWN BASED ON PRELIM TENANT PLAN)
								TOTAL:	189			
	RTU-4	OFFICES/SECURE	6	5.0	550	0.06	63	0.8	79	1200	18	FOR W SIDE (OFFICE/BACK AREA SPACES) (BREAKDOWN BASED ON PRELIM TENANT PLAN)
		STAFF RM	6	5.0	365	0.12	74	0.8	92			
		COMPUTER/LAN	0	0.0	90	0.12	11	0.8	14			
		CORRIDOR	0	0.0	250	0.06	15	0.8	19			
		STORAGE	0	0.0	150	0.06	9	0.8	11			
								TOTAL:	215			
	RTU-5	RETAIL	8	7.5	380	0.12	106	0.8	132	1200	12	FOR ATB AND VESTIBULE
		VESTIBULE	0	0.0	215	0.06	13	0.8	16			
								TOTAL:	148			
								TOTALS	1412	7800	–	
		APX SQ FT SPACE PER TON (@ 400 CFM/TON NOMINAL):							332.564	–		
		OUTDOOR AIR PER 150 SQ FT OF SPACE:							32.654	–		

♦ NOTE: NUMBER OF PEOPLE/PERSON DENSITY BASED ON ASHRAE 62.1 REQUIREMENTS AND PRELIMINARY TENANT PLAN PROVIDED ON FEB. 7, 2019

DOMESTIC WATER FIXTURE UNIT DEMAND SUMMARY

Building Name: TD CanadaTrust — Prepared By: JHGuenther
Location / Address: 18th Street, Brandon, MB — Date: 2/7/2019

Table II - Demand Weights of Fixtures in Fixture Units for Public and Semi-Public Buildings

Fixture Type			Weight in F.U.	No. of Fixtures	F.U. Count (F. Valves)	F.U. Count (Tank/Other)
1 Water closet	a)	Flush Valve	8	0	0	
	b)	Flush Tank	6	3	-	18
2 Lavatory Sink			1	3	-	3
3 Bath Tub			3	0	-	0
4 Shower			2	0		0
5 Urinal	a)	Large Valve	8	0	0	-
	b)	Small Valve	6	0	0	-
	c)	Tank	6	0	-	0
6 Kitchen Sink or Pot Sink			3	1	-	3
7 Bar Sink			2	1	-	2
8 Dish Washer (Domestic)			3	1	-	3
9 Dish Washer (Commercial)			4	0	-	0
10 Glass Washer			3	0	-	0
11 Laundry & Mop Sinks or Janitors Sinks			3	1	-	3
12 Lawn Service			2	1	-	2
13 Laboratory Sinks			2	0	-	0
14 Soft Drink Machines			2	0	-	0
15 Coffee Maker			1	0	-	0
16 Ice Machine			1	0	-	0
17 Drinking Fountain			1	0	-	0
18 Bradley Wash Stall (large public wash basin			4	0	-	0
19 Automatic Clothes Washer (Domestic)			3	0	-	0
Automatic Clothes Washer (Commercial See Guidelines)				0	-	0
20 Small Water Cooled Compressors			3	0	-	0
21 Commercial Food Waste Disposal Units			3	0	-	0
				Total Count	0	34
				Total Calculated GPMs:		20.9

Table III - Correction Factors for Calculated Demands

	Type of Business	Correction Factor
1	Restaurant	40 - 60 %
2	Schools	70 - 75 %
3	Business Premises	60 %
4	Food Processing	65 - 75 %
5	Theatres	40 - 60 %
6	Hotels	40 - 50 %
7	Large Single Family Dwellings	30 - 40 %

Chart I - Chart of Demand Weights in Fixture Units

Based on a Total Fixture Count of: 34 , times a correction factor of (%) 100
the adjusted fixture count is: 34 and the Total Demand in USgpm is: 20.90

Therefore;
The recommended water **METER** size is: 25mm - 1in
The recommended water **CONNECTION** size is: 38mm - 1 1/2in

CONTROL FLOW ROOF DRAINAGE SUMMARY

Roof Drainage Calculations

Province: Manitoba **Storm Type:** 50 Year Storm
Nearest City: Brandon

Roof Area Name	Drainage Area (sq. ft.)	No. of Drains	Area/Drain (sq. ft.)	Roof Type	Flow (GPM)	Area Flow (GPM)	Head (in)	DDT (hr)
Area 1.1	6492	3	2164.00	6 inch Rise	20.16	60.49	4.03	2.80
Area 1.2	200	1	200.00	6 inch Rise	6.32	6.32	1.26	-1.12
			0.00			0.00		
			0.00			0.00		
			0.00			0.00		
			0.00			0.00		
			0.00			0.00		
			0.00			0.00		
			0.00			0.00		
			0.00			0.00		
			0.00			0.00		
			0.00			0.00		
			0.00			0.00		
Totals	**6692.00**	**4.00**		**-**	**-**	**66.81**	**-**	**-**
Averages	**3346.00**	**2.00**	**1182.00**	**-**	**13.24**	**33.41**	**2.65**	**0.84**

CONTROL FLOW NOTES:
AREA 1.2 IS TOO SMALL CURVE FIT EQUATION FOR CONTROL FLOW ROOF DRAINAGE CALCULATION TO PROVIDE ACCURATE VALUE. VALUE HAS BEEN OVER-RIDDEN TO 0.1 HOURS
SEE ROOF PLAN FOR SUMMARIZED ROOF AREAS ON PLAN.

WASTEWATER FLOW SUMMARY

ESTIMATED PEAK WET AND DRY WEATHER WASTEWATER FLOWS
Prepared for the Water and Waste Department by Nova 3 Engineering Ltd.

Building Name: TD Canada Trust — Prepared By: JH Guenther, P. Eng.
Location / Address: 18th Street, Barndon, MB — Date: 2/8/2019

Weights of Fixtures in Fixture Units

Fixture Type			Weight in F.U.	No. of Fixtures	Count
1 Water closet	a)	Flush Valve	6	0	0
	b)	Flush Tank	4	3	12
2 Lavatory Sink (domestic single or double)			1.25	3	3.75
3 Bath Tub			1.5	0	0
4 Shower	a)	One Head	1.5	0	0
	b)	2 or 3 heads	3	0	0
	c)	4 to 6 heads	6	0	0
5 Urinal	a)	Pedestal, siphon-jet or blowout type	4	0	0
	b)	Stall, washout type	2	0	0
	c)	Wall - washout	1.5	0	0
	d)	Wall - other	3	0	0
6 Sink	a)	Residential kitchen	1.5	1	1.5
	b)	Other - 1.5" trap	1.5	0	0
	c)	Other - 2" trap	2	0	0
	d)	Other - 3" trap	3	1	3
7 Bar Sink			1.5	1	1.5
8 Dish Washer (Domestic) - no load when connected to grinder or domestic sink			1.5	1	1.5
9 Dish Washer (Commercial)			3	0	0
10 Glass Washer			1.5	0	0
11 Laundry Tray	a)	Single/double units or 2 single with common trap	1.5	0	0
	b)	3 compartments	2	0	0
12 Autopsy Table			2	0	0
13 Beer Cabinet			1.5	0	0
14 Bidet			1	0	0
15 Clothes Washer			2	0	0
16 Dental Unit			1	0	0
17 Drinking Fountain			0.5	0	0
18 Floor Drain	a)	2" Trap	2	0	0
	b)	3" Trap	3	4	12
19 Garbage Grinder			3	0	0
20 Icebox			1	0	0
21 Macerating Toilet System			4	0	0
22 Potato Peeler			3	0	0
				Total Count	35.25

I	**Peak Dry Flow:**	**17.6**	**USgpm**	=	**1.11 L/s to WWS**
II	**Control Flow:**		☐ N/A		
	Sum of roof drains:	66.8	USgpm	See control flow calculation for details	
	Peak Wet Flow:	**66.8**	**USgpm**	=	**4.21 L/s to LDS**
III	**Non-Control Flow**		☑ N/A		
	Total Roof Area	0	square meters		
	Intensity	28	mm/15min		
	Total Flow	0.0	L/min		
	Peak Wet Flow:	**0.0**	**USgpm**	=	**0 L/s**
IV	**Process/Other Flow**				
	Process Load	0	Usgpm	Process: None Applicable	
	Peak Process Flow:	**0**	**Usgpm**	=	**0.00 L/s to WWS**
VI	**Peak Wet & Dry Flow:**				
	Total Flow to WWS	**17.6**	**USgpm**	=	**1.11 L/s Peak to WWS**
	Total Flow to LDS	**66.8**	**USgpm**	=	**4.21 L/s Peak to LDS**
	Total Building Flov	**84.4**	**USgpm**	=	**5.33 L/s Peak Total Leaving Building**

Affix Seal with signature and date

No:	Date:	Revision
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2	2019.03.01	ISSUED FOR PERMIT, TENDER & CONSTRUCTION
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SEAL
PROFESSIONAL ENGINEER
PROVINCE OF MANITOBA
J. H. GUENTHER
2019.03.01
REGISTERED ENGINEER

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PROJECT
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BRANDON, MANITOBA

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DRAWN BY : Q.D.
CHECKED BY : J.H.G
DATE: MARCH 2019
SHEET: 04 OF 07

PROJECT	SHEET NO.
18-1921	M3.0

MECHANICAL
DETAILS
&
CALCULATIONS

APEGM
Certificate of Authorization
Nova 3 Engineering Ltd.
No.962 Date: 2019.03.01

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PROFESSIONAL ENGINEERS
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ROOF TOP UNITS (BASED ON INDICATED MANUFACTURER OR APPROVED EQUAL)

TAG	MANUFACTURER	LOCATION	MODEL	WEIGHT (LBS)	TYPE	SUPPLY AIR (CFM)	VENTILATION AIR (CFM)	E.S.P. (IN WG) SUPPLY	MOTOR HP (SUPPLY FAN)	VFD	ELECTRICAL				HEATING				COOLING			AMBIENT EAT (F)		RETURN AIR TEMP (F)		EFFICENCY	COMMENTS/OPTIONS
											VOLTAGE (V/ø/HZ)	FLA	MCA	MOCP	HEATING TYPE	GAS INPUT (MBH)	MAX OUPUT HEATING CAPACITY (MBH)	TURNDOWN	NOMINAL TONNAGE	TOTAL COOLING (GROSS) (MBH)	SENSIBLE COOLING (GROSS) (MBH)	DB	WB	DB	WB		
RTU-1	DAIKIN	ROOF	DCG0902107WJMK	~1400 LBS	PACKAGED UNIT	3000 CFM	SEE O/A CALCULATIONS	1.1" WC	2 HP	NO	575V-3ø-60HZ	N/A	13	15	GAS	210	168	6:1	7.5 (TWO STAGE)	88	65	89	73	75	62	13 IEER	1-4, 7-15
RTU-2/3/4/5	DAIKIN	ROOF	DTG0360907HJMK	~800 LBS	PACKAGED UNIT	1200 CFM	SEE O/A CALCULATIONS	1" WC	1.5 HP	NO	575V-3ø-60HZ	N/A	8	15	GAS	92	75	4:1	3 (SINGLE STAGE)	35	28	89	73	75	62	15 SEER	1-4, 6-9, 11-15

1)18" (MIN) EXTENDED ROOF CURB 2) STAINLESS STEEL HEAT EXCHANGER 3) SINGLE POWER CONNECTION 4) NEMA 4 DISCONNECT 5) DIRECT DRIVE BLOWER MOTOR 6)BAROMETRIC RELIEF 7) LOW-LEAK DOWN FLOW MODULATING ECONOMIZER 8) VIBRATION ISOLATION FRAMES BETWEEN RTU AND CURB (MIN DEFLECTION 1" FOR UNITS LESS THAN 5 TONS NOM. AND MIN DEFLECTIONS OF 2" FOR LARGER) 9) CO2 AIR QUALITY SENSOR 10) POWER EXHAUST 12) HIGH STATIC KIT
13) DIGITAL PROGRAMMABLE TOUCH SCREEN T-STAT (HONEYWELL VISIONRPO TH8320 PROGRAMMABLE 7 DAY MULTISTAGE THERMOSTAT, ALTERNATIVES MUST BE APPROVED BY TENANT DESIGNER) 14) BURGLAR BARS TO BE INSTALLED BELOW CURB (MIN ⅜" DIAMETER STEEL RODS 8" ON CENTRE RUNNING ACROSS NARROW DIMENSION OF DUCT), BARS TO BE SECURED TO MIN 2-½"x2-½"x¼" STEEL ANGLE IRON FRAME AND FASTENED TO BUILDING STRUCTURE 15) LOW AMBIENT KIT

FANS (BASED ON INDICATED MANUFACTURER OR APPROVED EQUAL)

TAG	MANUFACTURER	LOCATION	SERVES	TYPE	MODEL NUMBER	DRIVE	AIR FLOW (CFM)	E.S.P. (IN WG)	VOLTAGE	MOTOR HP	VFD	CONTROL	MOUNTING	COMMENT
EF-1	GREENHECK	UTILITY ROOM 103	UTILITY ROOM 103	INLINE CABINET FAN	CSP-A390	DIRECT	350 CFM	0.4	120V-1ø-60Hz	1.33A, 144W	NO	LINE VOLTAGE COOLING THERMOSTAT	CEILING MOUNTED	1,3,4,5,6,8
EF-2	GREENHECK	JOIST SPACE (ABOVE FUTURE WASHROOM)	WASHROOMS	INLINE CABINET FAN	CSP-A390	DIRECT	300 CFM	0.75	120V-1ø-60Hz	0.71A, 80W	NO	7 DAY PROGRAMMABLE TIME CLOCK	SUSPENDED FROM STRUCTURE	1,2,3,5,6,7,8
EF-3	GREENHECK	JOIST SPACE (ABOVE FUTURE WASHROOM)	JANITOR ROOM	INLINE CABINET FAN	CSP-B150	DIRECT	100 CFM	0.6	120V-1ø-60Hz	1.7A, 129W	NO	7 DAY PROGRAMMABLE TIME CLOCK	SUSPENDED FROM STRUCTURE	1,2,3,5,6,7

1) SUSPENDED FROM STRUCTURE W/SPRING TYPE ISOLATION. 2) ROOF HOOD DISCHARGE C/W MOTORIZED DAMPER (W/END SWITCH) AT ENVELOPE PENETRATION. 3) INSULATED CABINET. 4) FAN CONTROL VIA WALL MOUNT COOLING THERMOSTAT. 5) INTEGRAL BACKDRAFT DAMPER. 6)AMCA RATED. 7) FAN AND ASSOCIATED MOTORIZED DAMPER CONTROL VIA 7-DAY PROGRAMMABLE TIME CLOCK IN JANITOR ROOM. 8) PROVIDE FAN W/SPEED CONTROLLER AT FAN/ELECTRICAL DISCONNECT, FOR T.A.B. 9) OPEN-ENDED INLET DUCT FOR CONNECTION BY TENANT.

HOT WATER TANKS (A.O. SMITH OR APPROVED EQUAL)

TAG	MODEL	INPUT	CAPACITY	ELECTRICAL	RECOVERY	OPERATING WEIGHT (LBS)	COMMENTS/ACCESSORIES
HWT-1	A.O. SMITH DEL-10	2.5 KW	15 GAL	208V-1ø-60Hz	10 GAL @ 100F TEMP RISE	~110 LBS	1,2,3,4,5

1) GLASS LINED TANK 2)AUTOMATIC TEMPERATURE CONTROL 3) LOW WATER CUT OFF 4) T&P RELIEF 5) HIGH LEVEL SUSPENDED WITH CATCH PAN 6) LO-BOY TANK

SPLIT COOLING UNIT SCHEDULE (BASED ON DAIKIN OR APPROVED EQUAL)

TAG (INDOOR/ OUTDOOR)	MANUFACTUER	MODEL (INDOOR/ OUTDOOR)	INDOOR UNIT LOCATION	OUTDOOR UNIT LOCATION	EQUIPMENT SERVES	COOLING CAPACITY (MBH)	REFRIDGERANT	EFFICIENCY (SEER)	ELECTRICAL (V/ø/HZ)	MCA	MOCP	CONTROL	MOUNTING REQ'S	NOTES
AC-1/ CU-1	DAIKIN	FTK12NMVJU/R K12NMVJU	LAN ROOM	ROOF	LAN ROOM	13.3	R410-A	19	208 /1ø/60Hz	12.2	15	REMOTE COOLING THERMOSTAT	WALL MOUNTED INDOOR AND SLEEPER MOUNTED OUTDOOR UNIT	1, 2, 3, 4

1) ULTRA LOW AMBIENT (-40C) KIT 2) NEMA 4 DISCONNECT 3) WALL HANGING KIT W/ VIBRATION ISOLATORS 4) EXTERIOR PORTION TO BE SLEEPER MOUNTED WITH VIBRATION ISOLATORS

HUMIDIFIERS (BASED ON NORTEC OR APPROVED EQUAL)

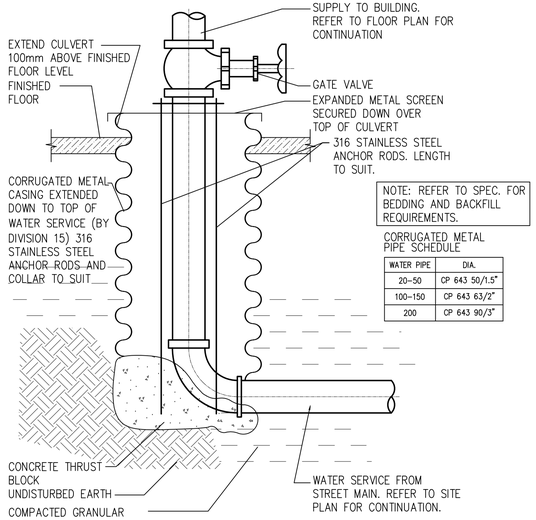
TAG	LOCATION	SERVICING	MODEL NUMBER	LOAD (LBS/HR)	AIR FLOW L/S (CFM)	O/A	SUPPLY WATER CONNECTION	FILL RATE	DRAIN RATE	POWER	TARGET WINTER RELATIVE HUMIDITY	COMMENTS/ACCCESSORIES
HU-1	JANITOR CLOSET (WALL MOUNTED @ H.L.)	RTU-1	RS-015	18	3000 CFM	640 CFM (21%)	½"	3.7 GPM	6.7 GPM	600V/60HZ/3ø 6 KW	30%	1-11

1) ELECTRIC-TO-STEAM HUMIDIFIER 2) CSA LISTED 3)C/W VAPORIZING CHAMBER, COVER AND FITTINGS 3)CONSTRUCTED OF STAINLESS STEEL 4)VAPORIZING CHAMBER TO BE FACTORY INSULATED 5) QUICK REMOVAL COVER SECURED 6) INTEGRAL FILTER SECTION 7) ELECTRIC DRAIN WATER COOLER 8) 120VAC/24VAC PLUG IN TRANSFORMER FOR CONTOLLER 9) ¾" DCW CONNECTION TO DRAIN WATER COOLER 10) 1-1/4" OD WASTE DRAIN. 11) PROVIDE WALL MOUNT HUMIDITY SENSOR W/75' OF CONTROL WIRING COILED AT UNIT, DUCT MOUNT HIGH LIMIT SENSOR, AIR PROVING SWITCH, FOR FIELD INSTALLATION BY TENANT CONTRACTOR.

HUMIDIFIERS MANIFOLD/STEAM DISTRIBUTOR (BASED ON NORTEC OR APPROVED EQUAL)

TAG	LOCATION	SERVICING	MODEL NUMBER	DUCT DIMENSIONS	ABSORPTION DISTANCE	AIR FLOW L/S (CFM)	COMMENTS/ACCCESSORIES
SAM-1	RTU-1 DUCT MAIN	RTU-1	ASD-24	27"X16"	4.7 IN	3000 CFM	1/4/2019

1) AIR PROVING SWITCH 2) INSULATED MANIFOLD 3) DUCT HUMIDISTAT 4)WALL MOUNTED HUMIDISTAT CONTROLLER

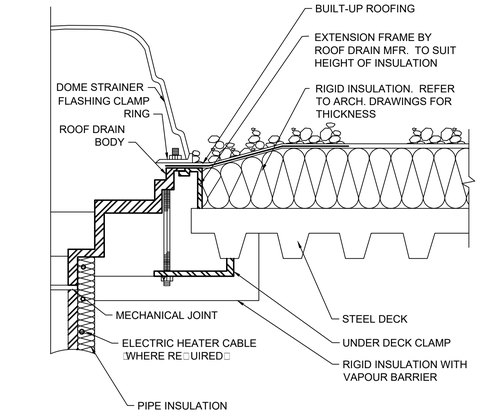


NOTE: REFER TO SPEC. FOR BEDDING AND BACKFILL REQUIREMENTS.

CORRUGATED METAL PIPE SCHEDULE

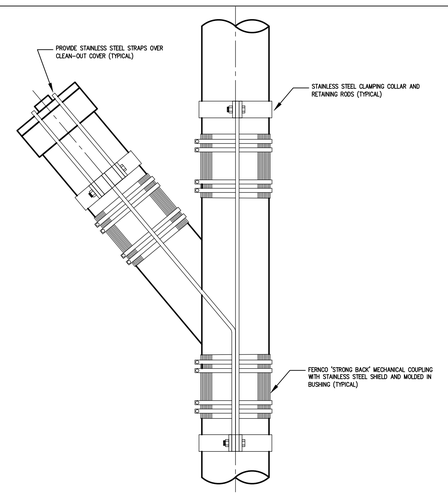
WATER PIPE	DIA.
20-50	CP 643 50/1.5"
100-150	CP 643 63/2"
200	CP 643 90/3"

1 M3.1 **WATER SERVICE AND FROST BOX DETAIL** N.T.S.

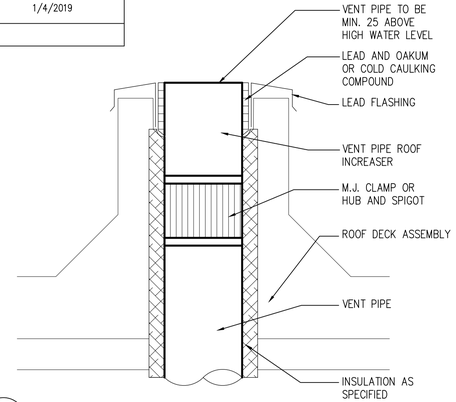


2 M3.1 **DETAIL OF ROOF DRAIN** N.T.S.

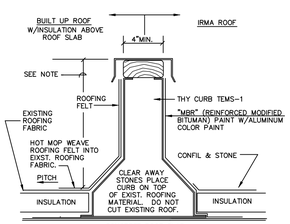
DECK OPENING AS RECOMMENDED BY ROOF DRAIN MANUFACTURER



3 M3.1 **PIPE CLAMPS ON BRANCHED DIRECTION FITTINGS WITH STRAPPED DOWN SANITARY CLEANOUT** N.T.S.

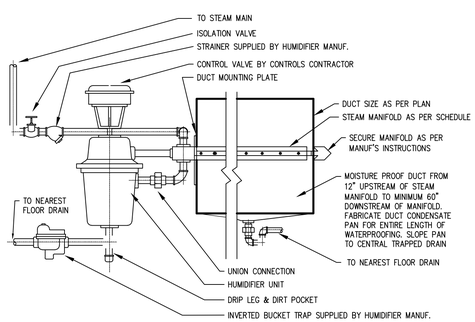


4 M3.1 **PLUMBING VENT DETAIL** N.T.S.

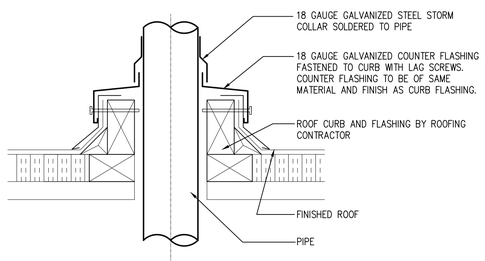


NOTE: THE DISTANCE FROM ROOF SURFACE TO THE BOTTOM OF THE EQUIPMENT MOUNTED ON THE CURB MUST BE A MINIMUM OF 18 INCHES.

5 M3.1 **EQUIPMENT MOUNTING CURB DETAIL** N.T.S.



6 M3.1 **STEAM HUMIDIFIER INSTALLATION DETAIL** N.T.S.



7 M3.1 **PIPE PENETRATION THRU ROOF** N.T.S.

No:	Date:	Revision
1	2019.02.14	ISSUED FOR 50% REVIEW
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SEAL OF THE PROVINCE OF MANITOBA
J. H. GUENTHER
2019.03.01
REGISTERED ENGINEER

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CHECKED BY : J.H.G
DATE: MARCH 201□
SHEET: 05 OF 07

PROJECT	SHEET NO.
18-1921	M3.1

MECHANICAL

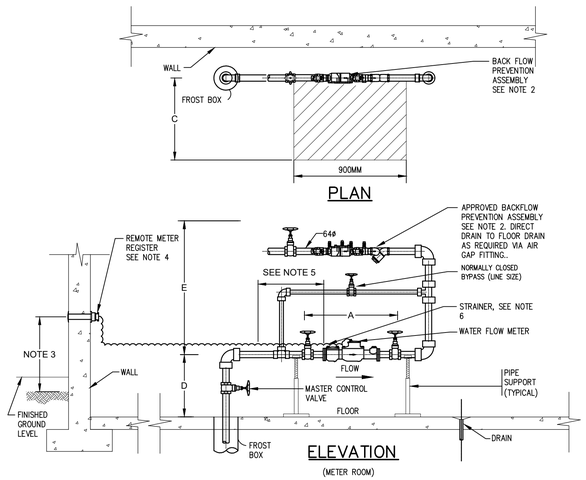
DETAILS & SCHEDULES

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No.962 Date: 2019.03.01

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NOTES:
1. COPPER AND BRASS FITTINGS ONLY.
2. DETAILS OF BACKFLOW PREVENTION
   A.) DOUBLE CHECK VALVE ASSEMBLY FOR MODERATE HAZARD SERVICE.
   B.) REDUCED PRESSURE ASSEMBLY FOR HIGH HAZARD SERVICE.
3. REMOTE METER READOUT LOCATION IN ELEVATION VIEW (EXTERIOR OF BUILDING). METER READOUT MUST BE EASILY ACCESSIBLE FOR METER READING. (WHERE REQUIRED BY UTILITY).
4. CONTRACTOR TO INSTALL WALL CONDUIT FOR METER CABLE WHERE REQUIRED BY UTILITY.
5. MINIMUM 10 PIPE DIAMETERS OF STRAIGHT PIPE BEFORE AND 5 PIPE DIAMETERS AFTER FLOW METER.
6. METER INSTALLATIONS 75mm ø AND LARGER REQUIRE A STRAINER.

MINIMUM WORKING AREA WITH MINIMUM HEIGHT OF 2.0m

A SPACE FOR METER INSTALLATION; COORDINATE WITH UTILITY FOR METER DIMESNIONS.

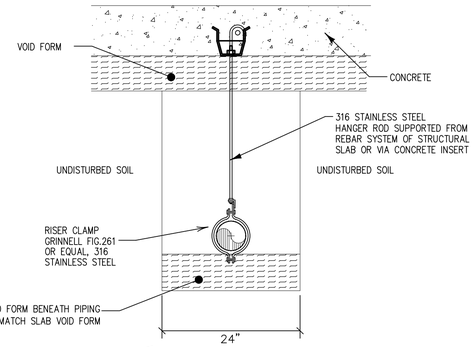
B CLEARANCE FROM BYPASS. (MIN=200mm)

C MINIMUM DISTANCE IN FRONT OF METER TO NEAREST PERMANENT OBSTRUCTION IS 920mm

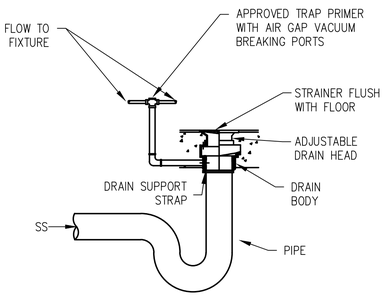
D HEIGHT (MIN=300mm, MAX=1220mm).

E VERTICAL DISTANCE FROM METER TO NEAREST PERMANENT OVERHEAD OBSTRUCTION (MIN=1220mm).

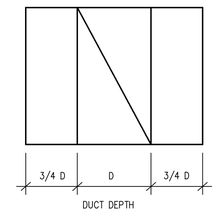
1 M3.2 INCOMING WATER SERVICE DETAIL
N.T.S.

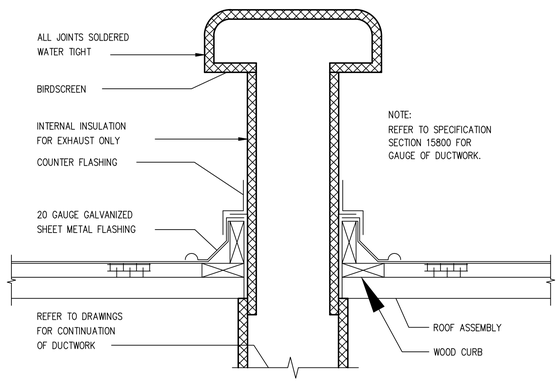


2 M3.2 TYPICAL DRAINAGE LINE BELOW STRUCTURAL SLAB
N.T.S.

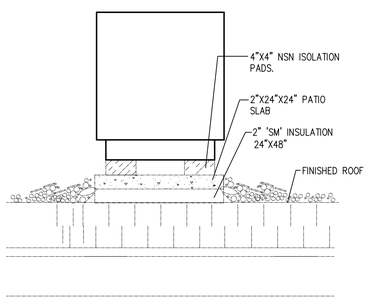


3 M3.2 FLOOR DRAIN TRAP PRIMER DETAIL
N.T.S.

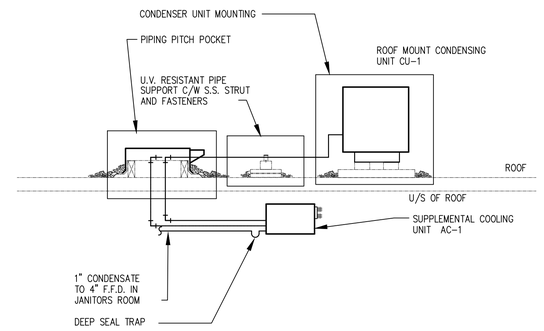




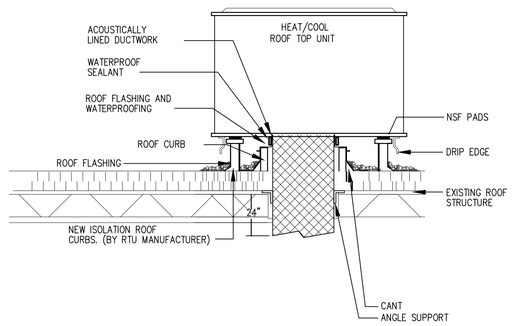
4 M3.2 ROOF HOOD DETAIL
N.T.S.



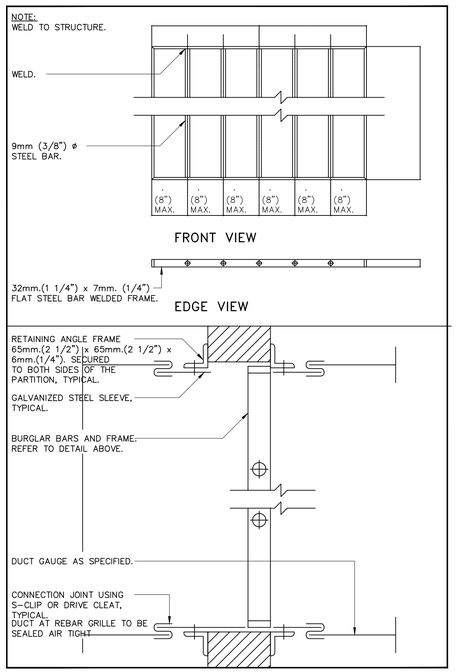
5 M3.2 ROOF MOUNTED CONDENSING UNIT
N.T.S.



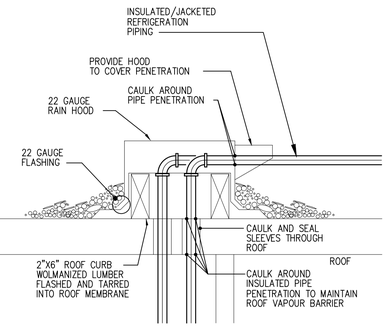
6 M3.2 TYPICAL CONDENSING UNIT
N.T.S.



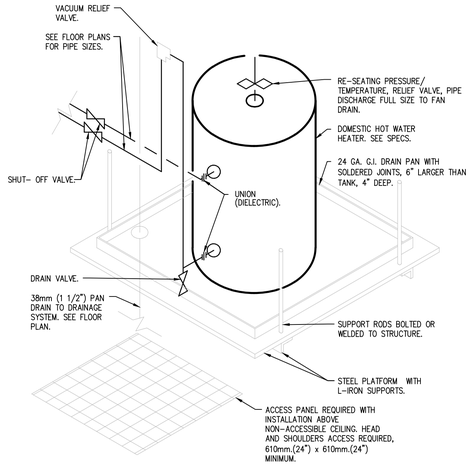
7 M3.2 TYPICAL ROOF TOP UNIT
N.T.S.



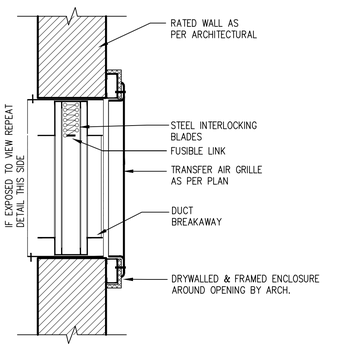
8 M3.2 DUCTWORK SECURITY SCREEN DETAIL
N.T.S.
NOTES: SECURITY BARS TO BE INSTALLED ON ALL PENETRATIONS INTO TENANT SPACE LARGER THAN 100 SQ IN



9 M3.2 PITCH POCKET DETAIL
N.T.S.



HOT WATER TANK HIGH LEVEL MOUNTING
N.T.S.



RETURN AIR GRILLE AT FIRE DAMPER
N.T.S.

No:	Date:	Revision
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MANITOBA
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REGISTERED ENGINEER

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DATE: MARCH 201□
SHEET: 06 OF 07

PROJECT	SHEET NO.
18-1921	M3.2

MECHANICAL

DETAILS

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MECHANICAL SPECIFICATION – BASEBUILDING – 18TH ST BRANDON

MECHANICAL CONTRACTOR SHALL SUBMIT PRICE FOR THE COST OF SUPPLY AND INSTALLATION OF EQUIPMENT AND MATERIAL NECESSARY TO PROVIDE A COMPLETE AND OPERATING MECHANICAL PACKAGE. MECHANICAL PACKAGE TO CONSIST OF EQUIPMENT AND MATERIALS AS DESCRIBED IN THIS OUTLINE SPECIFICATION. REFER TO MECHANICAL PLANS FOR ACTUAL REQUIREMENTS OF EQUIPMENT.

MECHANICAL SCOPE OF WORK

1. INCLUDE IN MECHANICAL SECTION, PROVISION OF LABOUR, NEW MATERIALS, TOOLS, TRANSPORTATION, SERVICES AND FACILITIES FOR A COMPLETE MECHANICAL INSTALLATION. THE INSTALLATION SHALL BE LEFT COMPLETE IN ALL RESPECTS AND READY FOR OPERATION. FINAL INSTALLATION SHALL BE INSTALLED TO COMPLETE SATISFACTION OF THE RESPONSIBLE PROFESSIONAL ENGINEER.

2. THE MECHANICAL SCOPE OF WORK INCLUDES, BUT IS NOT NECESSARILY LIMITED TO THE FOLLOWING PROVISION:

2.1. GENERAL:
- 2.1.1. FAMILIARIZE CREW WITH SITE IN ORDER TO DETERMINE APPROPRIATE LOCATIONS, SITE CONDITIONS, ETC. THAT MAY AFFECT WORK.
- 2.1.2. WORK MAY NEED TO BE PERFORMED AT NON-STANDARD HOURS. DETERMINE SCHEDULE WITH OWNER.
- 2.1.3. O&M MANUALS AND OWNER TRAINING.
- 2.1.4. RECORD DRAWINGS.
- 2.1.5. PROVISION OF FIRE STOPPING AT ALL PIPE, DUCT AND CONDUIT WIRING PENETRATIONS INSTALLED BY THIS TRADE (ONLY).

2.2. PLUMBING:
- 2.2.1. PROVISION OF ALL PIPING, FIXTURES, PLUMBING BRASS, PIPE FITTINGS, LABOR, INSULATION AND MISCELLANEOUS MATERIALS AS REQUIRE TO COMPLETE THE PROJECT.
- 2.2.2. PROVISIONS OF ALL GAS PIPING, REGULATORS, ISOLATION AND VENTING FOR SUPPLIED EQUIPMENT.

2.3. HVAC
- 2.3.1. PROVISION OF ALL AIR HANDLING EQUIPMENT, FANS, DUCTWORK, CONTROL/BALANCE FITTINGS, INSULATION, GRILLES/REGISTERS/DIFFUSERS/LOUVERS, FIRE DAMPERS, LABOR AND MISCELLANEOUS MATERIALS AS REQUIRED TO COMPLETE THE PROJECT.
- 2.3.2. PROVISION OF TAB REPORTS INCLUDING FIRE DAMPER TESTING, CERTIFICATION AND AIR FLOWS.

2.4. CONTROLS
- 2.4.1. PROVISION OF COMPLETE ELECTRONIC CONTROLS AS DESCRIBED.
- 2.4.2. COORDINATION OF ALL CONTROL INTERFACE AND POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR.

GENERAL CONDITIONS

1. PROVIDE ALL LABOUR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK SHOWN ON DRAWINGS AND AS SPECIFIED HEREIN.

2. ALL NECESSARY PERMITS SHALL BE OBTAINED AND ALL FEES SHALL BE PAID TO CARRY OUT THE SPECIFIED WORK.

3. ALL WORK SHALL BE GUARANTEED FOR ONE YEAR FROM DATE OF COMPLETED WORK ACCEPTANCE BY THE OWNER. SUBMIT DOCUMENTATION IDENTIFYING ADDITIONAL EQUIPMENT WARRANTY COVERAGE AND TIME FRAMES.

4. ALL WORK SHALL COMPLY IN EVERY RESPECT WITH ALL NATIONAL, PROVINCIAL AND LOCAL CODES AND BY-LAWS, WHICH SHALL BE CONSIDERED PART OF THIS SPECIFICATION. IN THE CASE OF CONFLICTING REQUIREMENTS, BE GOVERNED BY THE MOST STRINGENT REGULATIONS.

5. ALL CUTTING, PATCHING, FLASHING FOR WORK AS REQUIRED HEREIN SHALL BE BY THE GENERAL CONTRACTOR.

6. THE MECHANICAL CONTRACTOR SHALL INSTALL PLUMBING, HEATING, VENTILATION, AND AIR CONDITIONING SYSTEMS IN COMPLETE ACCORDANCE WITH THE RECOMMENDATIONS OF THE NATIONAL/PROVINCIAL BUILDING CODE, ASHRAE, SMACNA LATEST EDITION DUCT STANDARDS, LOCAL PLUMBING CODES, REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION, AND THE MANITOBA ENERGY CODE FOR BUILDINGS.

7. COORDINATE WORK WITH WORK OF OTHER TRADES TO AVOID CONFLICT.

8. ALTER THE LOCATION OF DUCTS OR PIPES AT THE DIRECTION OF THE CONSULTANT WITHOUT CHARGE TO THE OWNER, PROVIDED THE CHANGE IS MADE BEFORE INSTALLATION AND DOES NOT NECESSITATE ADDITIONAL MATERIALS.

9. QUOTATIONS SHALL BE BASED ON THE USE OF SPECIFIED MANUFACTURERS OR APPROVED EQUAL. THE USE OF AN EQUAL OR ALTERNATE MANUFACTURER SHALL IN NO WAY RELIEVE THE MECHANICAL CONTRACTOR FROM THE RESPONSIBILITY OF PROVIDING ALL WORK THAT MAY BE REQUIRED BY REASON OF DIFFERENT SPACE, WEIGHT, ELECTRICAL, OR OTHER REQUIREMENT FROM THAT OF THE SPECIFIED MANUFACTURER. ALTERNATES SHALL BE APPROVED PRIOR TO THE CLOSE OF TENDERS. NO SUBMITTALS RECEIVED AFTER TENDER CLOSING WILL BE ACCEPTED.

10. THE MECHANICAL CONTRACTOR SHALL SUBMIT ELECTRONIC COPIES OF SHOP DRAWINGS FOR ALL EQUIPMENT FOR REVIEW AND APPROVAL BY CONSULTANTS. CONTRACTOR SHALL STAMP SHOP DRAWINGS "REVIEWED BY CONTRACTOR" PRIOR TO SUBMISSION. CONTRACTOR SHALL IDENTIFY SHOP DRAWINGS WITH THE CORRESPONDING EQUIPMENT LABEL LISTED ON MECHANICAL DRAWINGS, SPECIFICATION, AND/OR SCHEDULES. FAILURE TO COMPLY WILL RESULT IN SHOP DRAWINGS BEING RETURNED "UNREVIEWED" BY CONSULTANT.

11. FURNISH TO THE CONSULTANT THREE (3) HARD-COVERED LOOSE-LEAF BINDERS CONTAINING THEREIN ONE (1) COMPLETE SET OF MANUFACTURERS' OPERATING AND MAINTENANCE INSTRUCTIONS SHOWING ALL MAJOR EQUIPMENT AND APPARATUS REQUIRING MAINTENANCE. INSTRUCTIONS SHALL BE COMPLETE FOR INSTALLATION, OPERATION AND MAINTENANCE AND SHALL INCLUDE PERTINENT INFORMATION SUCH AS DETAILED DRAWINGS AND OPERATION CURVES. SPARE PARTS, SUPPLIER LISTS AND ADDRESSES SHALL BE SUPPLIED. INSTRUCTION SHALL BE REQUIRED WITH THE OWNERS' REPRESENTATIVE TO ENSURE A THOROUGH UNDERSTANDING OF THE EQUIPMENT AND ITS OPERATION.

12. ALL WIRING, SUPPLY AND INSTALLATION OF DISCONNECT SWITCHES FOR EQUIPMENT SPECIFIED HEREIN SHALL BE PERFORMED BY THE ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED.

13. CONTRACTOR SHALL EXAMINE THE SITE AND CONDITIONS AFFECTING WORK, METHODS OF CONNECTION AND LOCATION OF ALL SERVICES INVOLVED UNDER THIS CONTRACT. FAILURE TO MAKE THIS VISIT IN NO WAY ALLEVIATES THE MECHANICAL CONTRACTOR FROM RESPONSIBILITY FOR COMPLETING THE MECHANICAL WORK OF THIS CONTRACT IN A WORKMANLIKE MANNER. NO ALLOWANCE WILL BE MADE AFTER CONTRACT AWARD FOR ANY EXPENSE INCURRED THROUGH A FAILURE TO MAKE THIS EXAMINATION AND INVESTIGATION.

14. SCHEDULING OF ALL WORK SHALL BE ARRANGED WITH THE OWNER, AND THE OWNER SHALL BE NOTIFIED AND HIS APPROVAL OBTAINED PRIOR TO SHUTTING OFF EXISTING SERVICES FOR PURPOSES OF CONNECTING NEW WORK. WORK WITHIN THE BUILDING MAY HAVE TO BE PERFORMED DURING NON-REGULAR WORKING HOURS AND MUST CONFORM TO WORK RULES OF THE BUILDING AS DIRECTED BY THE OWNER.

15. RECORD DRAWINGS:
- 15.1. OBTAIN SETS OF WHITE PRINTS (ONE FOR EACH SYSTEM IE. PLUMBING, HVAC, FIRE PROTECTION) AND KEEP AT JOB SITE AT ALL TIMES.
- 15.2. RECORD ALL ADDITIONS OR DEVIATIONS FROM THE CONTRACT DOCUMENTS INCLUDING ALL CHANGES INCURRED BY ADDENDA, CHANGE ORDERS, FIELD CHANGES, JOB CONDITIONS, ETC.
- 15.3. MECHANICAL SUB CONTRACTORS SHALL BE RESPONSIBLE FOR THE PRODUCTION OF RECORD DRAWINGS WHICH SHALL PROVIDE A COMPLETE AND ACCURATE RECORD OF THE ACTUAL MECHANICAL INSTALLATION. ALL PRINCIPLE BELOW GRADE OR INACCESSIBLE PIPING OR DUCT SYSTEMS, ETC. SHALL BE DIMENSIONED AT EACH CHANGE IN DIRECTION. INCLUDE ALL ROUTING OF SERVICES NOT INDICATED ON ORIGINAL DRAWINGS.
- 15.4. PROJECT RECORD DRAWINGS SHALL BE TRANSFERRED BY MECHANICAL CONTRACTOR TO REPRODUCIBLE BOND DRAWINGS AND LABELED RECORD.
- 15.5. SUBMIT REPRODUCIBLE BOND DRAWINGS TO CONSULTANT FOR REVIEW UPON COMPLETION IF CORRECTIVE MEASURES ARE REQUIRED AFTER THE SECOND CONSULTANT REVIEW (DUE TO MISSING INFORMATION AND/OR IMPROPER DRAFTING STANDARDS), THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR CONSULTANT'S TIME COSTS FOR CORRECTIVE MEASURES, COURIER AND PRINTING COSTS.
- 15.6. CONTRACTOR SHALL EMPLOY CONSULTANT (OR CAD DRAFTING SERVICE)TO PRODUCE ELECTRONIC COPY RECORD DRAWINGS. MECHANICAL CONTRACTOR SHALL BEAR ALL COSTS OF PRODUCTION.
- 15.7. COPY OF FINAL RECORD DRAWING SHALL BE SUBMITTED TO ARCHITECT.
- 15.8. ALL COSTS OF RECORD DRAWINGS PRODUCTION SHALL BE BORNE BY MECHANICAL CONTRACTOR.

16. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, PROVIDE TEMPORARY HEATING AND HOARDING AS REQUIRED FOR THE PROPER PROGRESS OF THE WORK.

17. VERIFY SIZES, INVERTS AND LOCATIONS OF ALL SERVICES PRIOR TO COMMENCEMENT OF WORK. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO SANITARY SEWER, STORM SEWER, DOMESTIC WATER MAINS, FORCE MAINS, ETC.

18. HOISTING OF ALL MECHANICAL EQUIPMENT SHALL BE BY THE MECHANICAL CONTRACTOR.

19. ASSUME FULL RESPONSIBILITY FOR LAYING OUT ALL WORK AND ENSURING THAT NO DAMAGE IS CAUSED TO THE OWNER'S EQUIPMENT AND PREMISES DUE TO IMPROPER LOCATION AND EXECUTION OF WORK IN THIS CONTRACT. PROTECT AND MAINTAIN ALL WORK UNTIL WORK HAS BEEN COMPLETED AND ACCEPTED BY THE OWNER. STORE ALL MATERIALS AS REQUIRED, AND CLEAN UP REFUSE CAUSED BY ALL WORK.

20. IDENTIFY ALL NEW PIPING WITHIN BUILDING INSTALLED IN THIS CONTRACT SHOWING SERVICE, PIPE SIZE, AND FLOW DIRECTION. USE CAPITAL LETTERS USING EITHER FIRE RESISTANT HIGH GLOSS INTERIOR ENAMEL PAINT OR WATERPROOF, HEAT RESISTANT PLASTIC MARKER TAGS (SIMILAR TO: W.H. BRADY IDENTIFICATION TAPES, BANDS, MARKERS.) IDENTIFY AT MAXIMUM OF EVERY 50 FT. AND AT LEAST ONCE IN EACH ROOM. LOCATE AND SIZE LETTERING SUCH THAT IT CAN BE SEEN FROM FLOOR.

21. IN THE CASE OF DISCREPANCY BETWEEN ARCHITECTURAL AND MECHANICAL DRAWINGS TO NUMBER, TYPE, OR LOCATION OF HVAC EQUIPMENT AND SYSTEMS COMPONENTS, OBTAIN WRITTEN RULING.

22. ALL TIME/DATE SENSITIVE ELECTRONIC EQUIPMENT AND SOFTWARE PROVIDED ON THIS PROJECT SHALL BE 4 DIGIT YEAR INPUT COMPATIBLE AND SHALL BE BASED ON THE USE OF FULL, UNABBREVIATED, UNAMBIGUOUS DISCRETE TIME AND DATE CODES.

23. MECHANICAL CONTRACTOR SHALL COORDINATE PROVISION OF POWER TO BUILDING CONTROL TRANSFORMERS WITH ELECTRICAL CONTRACTOR AND CARRY ALL INCREMENTAL COSTS.

24. ALL CONTROL WIRING TO COMPLY IN EVERY RESPECT WITH THE LATEST EDITION OF THE CANADIAN ELECTRICAL CODE. REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR ROOM HAZARD CLASSIFICATIONS. ALL ELECTRICAL/MECHANICAL EQUIPMENT, CONTROL WIRING, ACTUATORS, CONTROL DEVICES ETC. SHALL BE INSTALLED IN STRICT CONFORMANCE WITH SECTION 18 OF THE CANADIAN ELECTRICAL CODE FOR EACH ZONE THEREIN. IN CASE OF ANY DISCREPANCIES OBTAIN A WRITTEN RULING FROM THE CONSULTANTS.

25. COORDINATE THE ELECTRICAL REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE THE FOLLOWING:
- 25.1. ALL POWER WIRING TO EQUIPMENT.
- 25.2. ONE 15 AMP 120V/1PH/60HZ FUSED POWER SUPPLY TO EACH MECHANICAL EQUIPMENT AND/OR JANITOR ROOM.

26. PROVIDE FIRE STOPPING AT ALL PIPING, CONDUIT (CONTROLS) AND DUCTWORK PENETRATIONS OF ALL REQUIRED FIRE SEPARATIONS WITH APPROVED MATERIAL SYSTEMS. ACCEPTABLE MATERIALS: 3M, DOW, CORNING, APS.

27. MECHANICAL CONTRACT DOCUMENTS ARE DIAGRAMMATIC AND APPROXIMATE TO SCALE; REFER TO ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS, AND SITE VERIFY ALL CRITICAL DIMENSIONS. THE DRAWINGS AND SPECIFICATIONS ESTABLISH SCOPE FOR MATERIAL AND INSTALLATION QUALITY AND ARE NOT DETAILED INSTALLATION INSTRUCTIONS. ANY DISCREPANCIES MUST BE BROUGHT TO THE CONSULTANT'S ATTENTION IN WRITING PRIOR TO THE CLOSE OF TENDERS.

28. SHOULD ANY DISCREPANCY APPEAR BETWEEN THE DRAWINGS AND SPECIFICATIONS, WHICH LEAVE THE CONTRACTOR IN DOUBT AS TO THE TRUE INTENT AND MEANING OF THE PLANS AND SPECIFICATIONS, THE CONTRACTOR SHALL OBTAIN A WRITTEN RULING FROM THE CONSULTANT PRIOR TO TENDER SUBMISSION. IF WRITTEN APPROVAL IS NOT PROVIDED, THE MOST EXPENSIVE ALTERNATIVE SHALL BE INCLUDED IN THE TENDER PRICE.

29. FIELD VERIFY ALL BUILDING AND SITE DIMENSIONS AND REVIEW MECHANICAL DRAWINGS AND SPECIFICATIONS PRIOR TO ANY FABRICATION OR INSTALLATION OF EQUIPMENT OR MATERIALS. DO NOT ATTEMPT ANY FABRICATION OR INSTALLATION UNTIL SUCH CLARIFICATION IS PROVIDED. NO CONTRACT REVISIONS WILL BE CONSIDERED FOR FAILURE TO VERIFY THESE DIMENSIONS ON SITE.

30. DRAWINGS AND SPECIFICATIONS ARE COMPLIMENTARY EACH TO THE OTHER, WHAT IS CALLED FOR BY ONE SHALL BE BINDING AS IF CALLED FOR BY BOTH.

31. MECHANICAL WORK SHALL BE COMPLETED IN CONFORMANCE WITH, AND SUBJECT TO, ALL CAUTIONARY NOTES AVAILABLE TO THE READER INCLUDING THOSE AVAILABLE ON THE WEBSITES OF THE MANUFACTURERS AND CONSULTANTS.

INSULATION

ALL INSULATING MATERIALS, METHODS, SIZES AND TYPES OF INSULATION FOR ALL PIPING AND DUCT WORK SHALL BE INSTALLED TO THE REQUIREMENTS OF THE ASHRAE STANDARDS 90.1-2010 "ENERGY STANDARD FOR BUILDING EXCEPT LOW-RISE RESIDENTIAL BUILDING", MANITOBA ENERGY CODE FOR BUILDINGS AND THERMAL INSULATION ASSOCIATION OF CANADA (TIAC) STANDARDS.

1. PROVIDE THICK RIGID PIPE INSULATION ON ALL DOMESTIC WATER PIPES C/W VAPOUR BARRIER.
   INSULATION ON PIPING MINIMUMS:

PIPE SIZE	INSULATION THICKNESS
UP TO 2" (50MM)	1" (25 MM)
2" (50MM) AND GREATER	1½" (38 MM)

2. PROVIDE 1" (25 MM) THICK PIPE INSULATION ON ALL PLUMBING VENTS PASSING THROUGH ROOF FOR A DISTANCE OF 10'-0" (3 M) INSIDE FROM POINT OF COLD TO WARM SURFACE PENETRATION. INSULATION C/W VAPOUR BARRIER.

3. PROVIDE 1" (25MM) THICK PIPE INSULATION ON ALL HORIZONTAL RAIN WATER PIPING, OR FOR A MINIMUM DISTANCE OF FIRST 10'-0" (3M) (COMBINED HORIZONTAL AND VERTICAL PIPING) DROP FROM ROOF DRAIN LOCATIONS. INSULATION C/W VAPOUR BARRIER.

4. PROVIDE 1 1/2" (38 MM) THICK KNAUF ATMOSPHERE DUCTWRAP, 1.0 PCF DENSITY R4.5 (RSI 0.80) 25% COMPRESSED FLEXIBLE DUCT INSULATION C/W RFFRK FACING ON EXHAUST DUCTWORK & ALL SUPPLY DUCTWORK FROM ALL AIR HANDLING EQUIPMENT. EXHAUST DUCTWORK SHALL BE INSULATED FOR A MINIMUM DISTANCE OF 10'-0" (3 M) FROM PENETRATION OF BUILDING THERMAL ENVELOPE. REFER TO DRAWINGS FOR ADDITIONAL INSULATION REQUIREMENTS. ALL SUPPLY AIR DUCTWORK CONVEYING AIR-CONDITIONED AIR SHALL BE INSULATED.

5. PROVIDE 2" (50 MM) THICK KNAUF ATMOSPHERE DUCTWRAP, 1.5 PCF DENSITY, R6.4 (RSI 1.13) 25% COMPRESSED THERMAL FACED INSULATION ON ALL DUCTWORK CONVEYING OUTSIDE AIR COMPLETE WITH RFFRK FACING FACING. DUCTWORK SHALL BE INSULATED OVER ENTIRE RUN FROM PENETRATION OF BUILDING THERMAL ENVELOPE TO UNIT CONNECTION.

6. ACOUSTICALLY INSULATE DUCTWORK WITH 1" (25 MM) FLEXIBLE DUCT INSULATION WITH FLAME – ATTENUATED FIBRES BONDED WITH THERMOSETTING RESIN; BLACK PLASTIC-COATED MAT FINISH. PROVIDE WHERE NOTED ON DRAWINGS OR AS SHOWN AS HATCHED DUCTWORK OR ALLOW FOR UP TO 10 FT. (3 M) FROM SUPPLY AND RETURN AIR OPENINGS OF ROOF MOUNTED EQUIPMENT. ACCEPTABLE PRODUCT: KNAUF AIR DUCT BOARD.

7. DO NOT EXTERNALLY INSULATE ANY DUCTWORK WHICH IS SPECIFIED OR SHOWN TO BE INTERNALLY INSULATED UNLESS NOTED OTHERWISE.

8. INSULATION COVERINGS:
- 8.1. DUCTWORK RUNNING OUTSIDE THE BUILDING THERMAL ENVELOPE AND EXPOSED TO THE WEATHER – AS DESCRIBED BELOW OR TO TIAC BEST PRACTICES GUIDE.
- 8.2. COVER EXPOSED INSULATION WITH APPROVED INSULATION DUCT JACKETING TAPE WITH ZERO PERMEABILITY, PUNCTURE AND TEAR RESISTANCE. STANDARD OF ACCEPTANCE – 3M VENTURECLAD INSULATION JACKETING TAPE.
- 8.3. ALL ADJOINING UNINSULATED SURFACES MUST BE COMPLETELY WATER-PROOFED AND FLASHED EITHER BY EXTENDING THE VI-CRYL CP-10/11 WEATHER BARRIER COATING AND FABRIC MEMBRANE A MINIMUM OF 4" (102 MM) ONTO THE ADJOINING SURFACE, OR, IF THAT SURFACE WILL ATTAIN TEMPERATURES IN EXCESS OF 180 DEGREES F (82 DEGREES C), USE CHIL-JOINT CP-70 SEALANT AS THE FLASHING COMPOUND.
- 8.4. ALL INSULATION IN EXPOSED LOCATIONS, AND ALL DUCTWORK IN FAN ROOMS, SERVICE ROOMS, GARAGES, ETC., SHALL BE COVERED WITH CANVAS WRAP. INSULATION EXPOSED TO THE MOISTURE SHALL BE COMPLETE WITH COVER AS ABOVE.
- 8.5. ALL DUCTWORK RUNNING OUTSIDE THE BUILDING THERMAL ENVELOPE SHALL BE INSULATED TO AN OVERALL THERMAL RESISTANCE OF R-27 (MECB ZONE 7A/7B) OR R-31 (MECB ZONE 8).

9. PIPE INSULATION:
- 9.1. ALL PIPING IN EXPOSED LOCATIONS SHALL BE COVERED WITH CANVAS WRAP. THIS SHALL INCLUDE PIPING IN FAN ROOMS, SERVICE ROOMS, GARAGES, ETC.
- 9.2. INSULATION EXPOSED TO MOISTURE SHALL BE PROVIDED WITH PVC JACKET (PROTO, OR EQUAL).
- 9.3. ALL PIPING EXPOSED TO OUTDOOR CONDITIONS SHALL BE PROVIDED WITH ALUMINUM JACKETING.

PLUMBING

1. PROVIDE COMPLETE FUNCTIONAL PLUMBING SYSTEM COMPRISED OF DOMESTIC WATER PIPING, SANITARY DRAIN WASTE AND VENT PIPING, STORM DRAIN AND RAIN WATER LEADERS, ETC.

2. PLUMBING SIZING SHOWN ON DRAWINGS IS BASED ON COPPER PIPING FOR DOMESTIC WATER, AND CAST IRON PIPING FOR SANITARY AND STORM. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR RESIZING PLUMBING AS REQUIRED WHEN USING ALTERNATE MATERIALS.

3. ACCEPTABLE MATERIALS SHALL BE USED AS DESCRIBED BELOW.
   - 3.1. DRAINAGE WASTE AND VENT (DWV) MATERIALS
     - 3.1.1. UNDERGROUND PIPING
       - 3.1.1.1. PVC MEETING CSA B181.2
       - 3.1.1.2. CAST IRON MEETING CSA B70
     - 3.1.2. FOR ABOVEGROUND DWV APPLICATIONS (COMBUSTIBLE CONSTRUCTION)
       - 3.1.1.1. ABS MEETING CSA B181.1
       - 3.1.1.2. PVC MEETING CSA B181.2
     - 3.1.2. FOR ABOVEGROUND DWV APPLICATIONS (NON-COMBUSTIBLE CONSTRUCTION)
       - 3.1.1.1. ALL PIPING TO HAVE A FLAME SPREAD RATING OF LESS THAN 25.
       - 3.1.1.2. PVC MEETING CSA B151.2, CAN/ULC S102.2
     - 3.1.2. FOR DWV APPLICATIONS IN AIR PLENUMS
       - 3.1.1.1. ALL PIPING TO HAVE A FLAME SPREAD RATING OF LESS THAN 25 AND A SMOKE DEVELOPED CLASSIFICATION OF LESS THAN 50.
       - 3.1.1.2. PVC MEETING CSA B151.2, CAN/ULC S102.2
   - 3.2. DOMESTIC WATER PIPING MATERIALS
     - 3.2.1. ALL PRODUCTS SHALL BE UL CLASSIFIED IN ACCORDANCE WITH ANSI/NSF-61 FOR POTABLE WATER SERVICE, AND SHALL BE CERTIFIED TO THE LOW LEAD REQUIREMENTS OF NSF-372.
     - 3.1.1. COPPER
       - 3.1.1.1. ABOVE GROUND: COPPER TUBE, HARD DRAWN, TYPE L: TO ASTM B88M.
       - 3.1.1.2. BURIED OR EMBEDDED: : COPPER TUBE, SOFT ANNEALED, TYPE K: TO ASTM B88M, IN LONG LENGTHS AND WITH NO BURIED JOINTS. TO MEET CSA B181.2.

4. SANITARY DRAIN WASTE AND VENT PIPING, STORM DRAIN AND RAIN WATER LEADERS, ABOVE GROUND INSIDE BUILDING, SHALL BE CAST IRON CLASS 4000, OR PVC PLASTIC. VENT PIPING AND FIXTURE RUN-OUTS MAY ALSO BE DWV COPPER. FITTINGS SHALL BE MECHANICAL JOINT FOR CAST IRON, SOLVENT CEMENT FOR PVD, AND SOLDER FOR DWV COPPER.

5. ALL PVC PLASTIC PIPING AND FITTINGS USED SHALL HAVE A FLAME SPREAD RATING OF 25, AND A SMOKE DEVELOPED RATING OF 50. PIPING AND FITTINGS SHALL BE OF ONE MANUFACTURER. STANDARD OF ACCEPTANCE: IPEX XFR, ROYAL HRS2550.

6. MECHANICAL CONTRACTOR SHALL VERIFY ON SITE ALL CONNECTION POINTS TO EXISTING BUILDING SERVICES. COORDINATE ALL NEW PIPING RUNS WITH CONSULTANT OR OWNER'S REPRESENTATIVE.

7. SOLDERED FITTINGS IN POTABLE WATER SYSTEMS
   - 7.1. PROVIDE LEAD, ANTIMONY, CADMIUM AND ZINC FREE SOLDERS COMPOSED OF TIN, COPPER, SILVER OR NICKEL COMPONENTS THAT ARE ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION.

8. VALVES
   - 8.1. SHALL BE BY ONE MANUFACTURER. STANDARD OF ACCEPTANCE: APOLLO VALVES.
   - 8.2. SHALL BE UL CLASSIFIED IN ACCORDANCE WITH ANSI/NSF-61 FOR POTABLE WATER SERVICE, AND SHALL BE CERTIFIED TO THE LOW LEAD REQUIREMENTS OF NSF-372.

9. MANUFACTURED SHOCK ABSORBERS, AUTOMATIC AIR VENTS, AND PARTITION STOPS SHALL BE INSTALLED AT THE TOP OF ALL RISERS, AND ON ALL FIXTURES OR BATTERY OF FIXTURES.

10. MECHANICAL CONTRACTOR SHALL ALLOW FOR IN TENDER QUOTATION ANY ADDITIONAL LABOUR, MATERIALS, ETC. DEEMED NECESSARY DUE TO EXACT SITE CONDITIONS WHICH HAVE NOT BEEN REFLECTED IN MECHANICAL DRAWING OR IN MECHANICAL SPECIFICATION. NOTIFY CONSULTANT OF ALL DISCREPANCIES PRIOR TO TENDER CLOSE.

11. ON COMPLETION, ALL PIPING SYSTEMS SHALL BE CLEANED & FLUSHED OUT TO REMOVE ANY FOREIGN MATERIAL IN THE PIPING.

12. GAS PIPING SHALL BE BLACK STEEL PIPE, EQUAL TO ASTM A-53 SCH. 40 WITH 150 LBS. STANDARD BLACK MALLEABLE IRON SCREWED FITTINGS. ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF C.G.A. B149.1 "NATURAL GAS AND PROPANE INSTALLATION CODE", COMPLETE WITH DEPARTMENT OF LABOUR GAS NOTICES, AND SHALL BE PERFORMED BY FULLY QUALIFIED GAS FITTERS AND/OR WELDERS LICENSED TO PRACTICE IN THE PROVINCE OF MANITOBA.

13. VALVES IN GAS PIPING SHALL BE GRINNELL FIG. C.G.A. OR EQUAL.

14. RUN GAS PIPING TO SERVE OWNER'S EQUIPMENT. TAKE-OUT PERMITS AND CONNECT EQUIPMENT READY FOR USE. PROVIDE GAS REGULATORS TO SERVE NEW GAS FIRED EQUIPMENT. GAS REGULATORS SHALL BE C.G.A APPROVED AS MANUFACTURED BY FISHER, OR EQUAL. PROVIDE GAS COCK DIRT LEG AND FLEXIBLE CONNECTIONS AT EACH PIECE OF EQUIPMENT.

15. CONTRACTOR SHALL COORDINATE SERVICE INSTALLATIONS AND/OR MODIFICATIONS WITH LOCAL UTILITY PRIOR TO COMMENCEMENT OF WORK. PAY ALL COSTS AND/OR FEES.

16. ROOF MOUNTED PIPING SHALL BE SUPPORTED WITH C-PORT UV RESISTANT RUBBER MOUNTS OF SUITABLE WIDTHS TO ACCOMMODATE INSTALLATION REQUIREMENTS, AS MANUFACTURED BY CLEARLINE TECHNOLOGIES OR APPROVED EQUAL. INSTALLATIONS TO CAN/CSA-B149.1 (LATEST EDITION)

17. CONTRACTOR SHALL PROVIDE PRE-ASSEMBLED AND PRE-TESTED OVER-PRESSURE RELIEF REGULATORS AND VENT ASSEMBLIES ON ALL NATURAL GAS PIPING SYSTEMS GREATER THAN 7" W.C., INSTALLED AT EACH APPLIANCE AND/OR EQUIPMENT. INSTALLATION AND REQUIREMENTS TO MEET THE CAN/CSA-B149.1 (LATEST EDITION) AND MANITOBA. OFFICE OF THE FIRE COMMISSIONER REQUIREMENTS.

18. PROVIDE DIELECTRIC COUPLINGS WHEREVER PIPES OF DISSIMILAR METALS ARE JOINED.

19. USE THE FOLLOWING ROD DIAMETER AND SPACING SCHEDULE TO ESTABLISH MINIMUM HANGING STANDARDS FOR HORIZONTAL PIPING:

PIPE SIZE (DIA)	ROD	STEEL (LIQUID)	COPPER (LIQ/VENT)	PLASTIC (LIQUID)	PLASTIC (VENT)
< 1"	3/8"	7'	5'	4'	
1" TO 1¼"	3/8"	7'	8'	4'	6'
1½" & 2"	3/8"	9'	10'	5'	6'
2½" & 3"	1/2"	10'	10'	5'	6'
4" & 5"	5/8"	10'	10'	6'	8'
6"	3/4"	10'	10'	7'	8'

20. PIPE HANGERS WHERE REQUIRED SHALL BE GRINNEL FIG.65 FOR STEEL PIPE AND FIG.117 EXPANSION CASE SET IN HOLES DRILLED IN CONCRETE OR ATTACHED TO FIG.225 OR 227 CLAMP ATTACHED TO FLOOR JOIST AND ROOF JOIST. FOR INSULATED PIPING, PROVIDE PROTECTION FIG.167 SADDLES SIZE HANGER TO ACCOMMODATE INSULATION WHERE APPLIED.

21. THE NEW BUILDING DOMESTIC WATER SERVICES ARE TO BE PROTECTED BY A BACKFLOW PREVENTION (CROSS CONTAMINATION) SYSTEM AS PER THE LATEST EDITION OF CSA B64 "SELECTION AND INSTALLATION OF BACKFLOW PREVENTERS/MAINTENANCE AND FIELD TESTING OF BACKFLOW PREVENTERS". BASED ON THE ANTICIPATED BUILDING OCCUPANCY/HAZARD, THE BUILDING SHALL BE PROVIDED WITH A REDUCED PRESSURE BACKFLOW PREVENTOR. CONFIRM EXACT REQUIREMENTS WITH LOCAL AUTHORITY.
   - 21.1. EACH CRU (ZONE) AND TENANT PLUMBING FIXTURES ARE TO BE PROVIDED WITH BACKFLOW PREVENTION BASED ON THE FIXTURE HAZARD TYPE DEFINED IN CSA B64. BACKFLOW PREVENTION SHALL BE:
     - 21.1.1. VACUUM BREAKER (HCVB) FOR MINOR HAZARD,
     - 21.1.2. DOUBLE CHECK VALVE BACKFLOW PREVENTER (DCVA) FOR MEDIUM HAZARD,
     - 21.1.3. REDUCED PRESSURE BACKFLOW PREVENTER (RP) FOR HIGH HAZARD FIXTURES.

PLUMBING FIXTURES AND EQUIPMENT:

RD-1 ROOF DRAINS – FLOW CONTROL

ZURN Z-105-C-EA-R CONTROL-FLO ROOF DRAIN, WITH DURA-COATED STEEL ROOF SUMP RECEIVER, DURA-COATED CAST IRON UNDERDECK CLAMP AND DURA-COATED CAST IRON ADJUSTABLE EXTENSION AND CLAMP RING WITH NEOPRENE O-RING SEAL. PROVIDE WATTS MODEL RD-900 NEOPRENE EXPANSION COUPLING OR FERNCO XJ EXPANSION JOINT BETWEEN ROOF DRAIN AND RAIN WATER LEADER.

FD-1 FLOOR DRAIN

SMITH SERIES 2005A FLOOR AND FUNNEL DRAIN, ALL DUCO COATED CAST IRON BODY, REVERSIBLE FLASHING CLAMP WITH SEEPAGE OPENINGS AND ADJUSTABLE 5" (127MM) DIAMETER NICKEL BRONZE 1/4" (6.35MM) THICK STRAINER, SECURED WITH S.S. SCREWS. (WHERE REQUIRED BY LOCAL CODE PROVIDE TRAP SEAL).

FD-2 FLOOR DRAIN – WITH COMBINATION FUNNEL

SMITH SERIES 2005A-3580NB FLOOR AND FUNNEL DRAIN, ALL DUCO COATED CAST IRON BODY, REVERSIBLE FLASHING CLAMP WITH SEEPAGE OPENINGS AND ADJUSTABLE 5" (127MM) DIAMETER NICKEL BRONZE 1/4" (6.35MM) THICK STRAINER, SECURED WITH S.S. SCREWS, WITH 4" (102MM) DIAMETER NICKEL BRONZE FUNNEL. (WHERE REQUIRED BY LOCAL CODE PROVIDE TRAP SEAL).

WH-1 NON-FREEZE WALL HYDRANT – BOX – EXTERIOR

SMITH SERIES 5509QT BOX TYPE WALL HYDRANT, 1/4 TURN NON-DRIP, CERAMIC CARTRIDGE, 3/4" (19MM) NON-FREEZE WALL TYPE WITH BRONZE FACE AND STAINLESS STEEL WITH FULL 180 DEG. COVER OPENING BOX, ADJUSTABLE WALL-FLANGE OPERATING KEY AND SELF-DRAINING INTEGRAL VACUUM BREAKER. LENGTH TO SUIT WALL THICKNESS.

CO-1 FLOOR CLEANOUT (UNFINISHED AND OUTSIDE AREAS)

SMITH 'TWIS-TO-FLOOR' SERIES 4220 FLOOR CLEANOUT, DUCO COATED CAST IRON BODY AND REMOVABLE POSITIVE GASKET SEAL CLOSURE PLUG AND HEAVY DUTY 6" (150MM) ROUND ADJUSTABLE SCORIATED CAST IRON COVER SECURED WITH STAINLESS STEEL SCREWS, C.O. CAST IN COVER. (FOR WATER-PROOFED AREAS PROVIDE 'FC' FLANGE WITH FLASHING CLAMP).

CO-2 FLOOR CLEANOUT (TILED AREAS)

SMITH SERIES 4140 FLOOR CLEANOUT, DUCO COATED CAST IRON BODY AND REMOVABLE POSITIVE GASKET SEAL CLOSURE PLUG AND HEAVY DUTY 6" (150MM) ROUND NICKEL BRONZE COVER AND FRAME WITH 1/8" (3MM) TILE RECESS. (FOR MEDIUM LOAD TRAFFIC) COVER CAN BE ADJUSTED TO SUIT FLOOR LINES WHEN INSTALLING FINISHED FLOOR. (MOSAIC TILE PROVIDE SERIES 4160 WITH SQUARE COVER.)

CO-3 FLOOR CLEANOUT (TERRAZZO AREAS)

SMITH SERIES 4180 FLOOR CLEANOUT, DUCO COATED CAST IRON BODY AND REMOVABLE POSITIVE GASKET SEAL CLOSURE PLUG, HEAVY DUTY 6" (150MM) ROUND NICKEL BRONZE COVER AND FRAME WITH 1/2" (12MM) TERRAZZO RECESS (FOR MEDIUM LOAD TRAFFIC). COVER CAN BE ADJUSTED TO SUIT FLOOR LINES WHEN INSTALLING FINISHED FLOOR.

CO-4 FLOOR CLEANOUTS (CARPETED AREAS)

SMITH SERIES 4020Y FLOOR CLEANOUT, DUCO COATED CAST IRON BODY AND REMOVABLE POSITIVE GASKET SEAL CLOSURE PLUG, HEAVY DUTY 6" (150MM) NICKEL BRONZE COVER AND FRAME AND CARPET MARKER (FOR MEDIUM LOAD TRAFFIC).

CO-5 STACK CLEANOUT

SMITH SERIES 4510 STACK CLEANOUT, IN BASE OF CAST IRON STACKS WITH NEOPRENE GASKETED PLUG. WHERE CLEANOUTS ARE CONCEALED BEHIND FINISHED WALLS ACCESS SHALL BE MADE BY SMITH 4530 ROUND STAINLESS STEEL PLATE AND SLOTTED FLAT HEAD STAINLESS STEEL SCREW.

TS-1 TRAP SEAL DEVICE

WADE MODEL #4405 TRAP SEAL DEVICE (OR EQUAL), REGULARLY FURNISHED: ELASTOMERIC TRAP SEAL DEVICE WITH FITTING.

WHA WATER HAMMER ARRESTORS

SMITH 'HYDROTROL' WATER HAMMER ARRESTORS SERIES #5000, STAINLESS STEEL, PRESSURIZED CHAMBERS, BELLOWS, SIZE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS CHART BELOW TO ELIMINATE WATER HAMMER AND SHOCK FROM PIPING SYSTEM. PROVIDE WATER HAMMER ARRESTORS ON HOT AND COLD WATER SUPPLIES TO ALL QUICK VALVES, SOLENOIDS, AND PLUMBING FIXTURES, AND LOCATE IN AN UPRIGHT POSITION BETWEEN THE LAST TWO FIXTURES ON A LINE, OR HORIZONTALLY AT THE END OF LINE CLOSEST TO SUPPLY SOURCE.

SIZE	FIXTURE UNITS	MODEL NO.	CONN. SIZE
A	1 – 11	5005	1/2" (12MM)
B	12 – 32	5010	3/4" (19MM)
C	33 –60	5020	1" (25MM)
D	61 – 113	5030	1-1/4"(32MM)
E	114 – 154	5040	1-1/2"(38MM)
F	155 – 330	5050	2" (50MM)

HEATING, VENTILATION & AIR CONDITIONING

1. PROVIDE SUPPLY, RETURN AND EXHAUST AIR DUCT SYSTEMS FROM AIR HANDLING EQUIPMENT AND FANS AS SHOWN.

2. ALL DUCTWORK INSTALLATION SHALL BE PERFORMED IN ACCORDANCE WITH ASHRAE, SMACNA LATEST EDITION DUCT STANDARDS. AND THE MANITOBA ENERGY CODE FOR BUILDINGS.

3. THIS CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK INCLUDING APPURTENANCES, HANGERS, DAMPERS, ETC.

4. DUCT CONSTRUCTION:
   - 4.1. RECTANGULAR DUCTWORK SHALL BE CONSTRUCTED FROM GALVANIZED SHEET METAL OF THE FOLLOWING U.S. STANDARD GAUGES:

     DUCTS UP TO 12" ON LONGEST DIMENSION 26 GA.
     DUCTS 13" TO 28" ON LONGEST DIMENSION 24 GA.
     DUCTS 29" TO 54" ON LONGEST DIMENSION 22 GA.
     DUCTS 55" TO 84" ON LONGEST DIMENSION 20 GA.

   - 4.2. ROUND AND OVAL DUCTWORK SHALL BE SPIRAL CONDUIT CONSTRUCTION OF ZINC COATED STEEL OF THE FOLLOWING U.S GAUGES:

CONDUIT SIZE	GAUGE OF METAL
8" AND SMALLER	26
9" TO 22"	24
24" TO 36"	22

5. BACK-DRAFT DAMPERS SHALL BE (FACTORY FABRICATED) PROVIDED WITH THE FOLLOWING MINIMUM REQUIREMENTS:
   - 5.1. BALANCING DAMPERS SHALL BE CONSTRUCTED FROM GALVANIZED STEEL 2 GAUGES HEAVIER THAN THE DUCTWORK IN WHICH THEY ARE INSTALLED C/W LOCKING QUADRANT AND INDICATING DEVICE.
   - 5.2. 16 GA. GALVANIZED STEEL OR ALUMINUM CHANNEL FRAME; 16 GA. GALVANIZED BLADES C/W STIFFENERS, FULL BLADE-LENGTH SHAFT; BRASS, BALL OR NYLON BUSHING; FELT OR NEOPRENE ANTI-CHATTER BLADE STRIPS; ADJUSTABLE COUNTER-BALANCE.
   - 5.3. SHALL BE BY ONE MANUFACTURER. STANDARD OF ACCEPTANCE: VENTEX, PRICE, TITUS.

6. TURNING VANES SHALL BE CONSTRUCTED TO THE FOLLOWING REQUIREMENTS:
   - 6.1. USE DUCT ELBOWS WHICH HAVE A THROAT RADIUS OF 1-1/2 TIMES THE DUCT DIAMETER.
   - 6.2. WHERE SPACE IS LIMITED, USE DUCT ELBOWS FABRICATED WITH SPACE THROATS AND BACKS AND FITTED WITH ROVANE TURNING VANES.

7. THE FOLLOWING DUCT JOINING METHODS SHALL BE USED:
   - 7.1. PITTSBURGH LOCK OR DOUBLE SLIDE LOCK HAMMERED FLAT FOR LONGITUDINAL JOINTS ON STRAIGHT DUCTWORK.
   - 7.2. PITTSBURGH LOCK FOR CORNER LOCK OF FITTING.
   - 7.3. FLAT DRIVE CLEAT JOINT ON ALL SIDE JOINTS 18" (450MM) AND UNDER IN LENGTH.
   - 7.4. FLAT SLIP CLEAT JOINT ON ALL TRANSVERSE JOINTS 18" (450MM) AND UNDER IN LENGTH.
   - 7.5. ANGLE "S" OR STANDING DRIVE CLEATS ON ALL SIDE JOINTS 19"(475MM) TO 30"(750MM) ON HEIGHT.
   - 7.6. STANDING "S" OR STANDING DRIVE CLEATS ON ALL TRANSVERSE JOINTS 19"(475MM) TO 30"(750MM) IN LENGTH.
   - 7.7. ANGLE "S" OR STANDING DRIVE CLEATS ON ALL TRANSVERSE AND SIDE JOINTS 31"(725MM) TO 72"(1800MM).
   - 7.8. STANDING "S" OR STANDING DRIVE CLEATS REINFORCED WITH 1 1/2"(38MM) X 4.5MM MILD STEEL BAR ON ALL TRANSVERSE AND SIDE JOINTS 73"(1825MM) AND OVER.

8. PROVIDE FIRE DAMPERS WHICH CONFORM TO NFPA REGULATIONS, BEAR ULC LABEL, AND HAVE APPROVAL OF AUTHORITY HAVING JURISDICTION. DAMPERS TO BE TYPE 'B' AND 'C' (UNLESS OTHERWISE NOTED)AND INSTALLED IN DUCTWORK AT FIRE SEPARATIONS WHETHER SHOWN OR NOT. VERIFY LOCATIONS ON ARCHITECTURAL DRAWINGS. ALL FIRE DAMPERS SHALL BE BY ONE MANUFACTURER. STANDARD OF ACCEPTANCE: NAILOR, PRICE, TITUS.

9. ALL NEW DUCTWORK SHALL BE SEALED USING DUCT BOND II HIGH PRESSURE, NON-TOXIC, DUCT SEALER THROUGHOUT ALL SEAMS AND JOINTS.

10. SUPPORT HORIZONTAL DUCTS ON MAXIMUM 8'-0" (2.4 M)CENTERS BY PERFORATED GALV. STEEL RIVETTED STRAP FOR DUCTWORK 36" (915 MM) (EITHER DIMENSION) OR LESS, AND MINIMUM 1" X 1" X 1/8" (25 X 25 X 2 MM) GALV. IRON UNDER DUCTS OVER 36" (915 MM) (EITHER DIMENSION) WITH 3/8" (6 MM) DIAM. THREADED RODS SUSPENDING ANGLES FROM STRUCTURE.

11. PROVIDE ACCESS DOORS WHERE REQUIRED FOR SERVING OF EQUIPMENT AND FIRE DAMPERS.

12. PROVIDE 4" (100 MM) FLEXIBLE DUCT CONNECTIONS ON BOTH INLET AND OUTLET DISCHARGE SIDES OF EACH FAN.

13. PROVIDE ONE CLEAN SET OF FILTERS AND ONE SPARE SET OF FILTERS FOR EACH AIR HANDLING UNIT, UPON TURNOVER TO OWNER.

14. DUCT MOUNTED MOTORIZED DAMPERS SHALL BE PROVIDED WITH THE FOLLOWING REQUIREMENTS:
   - 14.1. ALL MOTORIZED DAMPERS SHALL BE INSULATED LOW LEAKAGE TYPE TO TAMCO 9000BF-ECT OR EQUAL.
   - 14.2. MOTORIZED DAMPERS SHALL BE LOCATED AS NEAR AS POSSIBLE TO THE PLANE OF THE BUILDING ENVELOPE FOR ALL AIR INTAKE AND OUTLET TYPES.
   - 14.3. MOTORIZED DAMPERS SHALL CLOSE AUTOMATICALLY WHEN HVAC SYSTEM IS NOT IN OPERATION.
   - 14.4. MOTORIZED DAMPERS SHALL BE PROVIDED ON ALL AIR INTAKES AND AIR OUTLET DUCTS EXCEEDING 12"ø OR 12"x12" IN SIZE, AND WHERE SHOWN.

15. PROVIDE VIBRATION ISOLATORS FOR ALL MECHANICAL EQUIPMENT, INCLUDING PUMPS, UTILITY FANS, AND VENT SETS, AIR HANDLERS, ROOF-TOPS UNITS, CONDENSING UNITS, COMPRESSED, ETC. AS APPLICABLE. SUBMIT SHOP DRAWINGS PRIOR TO INSTALLATION.

16. PROVIDE WALL CAPS IN ALL SIDEWALL DISCHARGE APPLICATIONS AS INDICATED ON DRAWINGS. WALL CAPS TO BE OF STEEL CONSTRUCTION AND BE BY ONE MANUFACTURER. STANDARD OF ACCEPTANCE: REVERSOMATIC, GREENHECK.

17. ALL AIR SYSTEMS SHALL BE BALANCED AND TESTED BY A CERTIFIED A.A.B.C. INDEPENDENT BALANCING AGENCY TO PROVIDE QUANTITIES AS SHOWN. PROVIDE ELECTRONIC SET OF BALANCE AND TESTING REPORTS FOR REVIEW BY THE CONSULTANT. ALL BALANCING REPORTS SHALL INCLUDE FIRE DAMPER TESTING AND CERTIFICATION.

18. AUTOMATIC SPACE TEMPERATURE CONTROL DEVICES SHALL BE PROVIDED WITH THE FOLLOWING REQUIREMENTS:
   - 18.1. SHALL BE ACCURATE TO WITHIN 2°F (1°C).
   - 18.2. SHALL BE INSTALLED BETWEEN 4'-7" (1400MM) AND 4'-11" (1500MM) ABOVE THE FLOOR.
   - 18.3. SHALL BE INSTALLED ON INTERIOR WALLS OR EXTERIOR WALLS WITH R20 (3.5 RSI) AND AWAY FROM DIRECT SUNLIGHT AND HEAT SOURCES.
   - 18.4. SHALL DISABLE SIMULTANEOUS HEATING AND COOLING.

CONTROLS

THE POINTS BELOW DESCRIBE THE CONTROL SEQUENCE OF THE H.V.A.C. EQUIPMENT SPECIFIED IN THE SCHEDULES. ALL CONTROLS TO BE SUPPLIED AND WIRED BY THE MECHANICAL CONTRACTOR UNLESS NOTED OTHERWISE HEREIN. THE CONTROLS CONTRACTOR SHALL BE A SUBCONTRACTOR OF THE MECHANICAL CONTRACTOR. ALL CONTROL WIRING SHALL BE PLENUM RATED IN ACCORDANCE WITH THE LATEST EDITION OF THE CANADIAN ELECTRICAL CODE TO MEET THE DEVELOPED SMOKE/FLAME SPREAD RATINGS OF 25/50. REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR ROOM HAZARD CLASSIFICATIONS. ALL ELECTRICAL/MECHANICAL EQUIPMENT, CONTROL WIRING, ACTUATORS, CONTROL DEVICES ETC. SHALL BE INSTALLED IN STRICT CONFORMANCE WITH SECTION 18 OF THE CANADIAN ELECTRICAL CODE FOR EACH ZONE THEREIN. IN CASE OF ANY DISCREPANCIES OBTAIN A WRITTEN RULING FROM THE CONSULTANTS.

1. ROOFTOP UNIT CONTROL:
   - 1.1. EACH RTU SHALL BE EQUIPPED WITH A PROGRAMMABLE THERMOSTAT WITH NIGHT SETBACK; PROVIDE 15.0M THERMOSTAT CONTROL WIRING COILED IN JOIST SPACE FOR FUTURE INSTALLATION BY TENANT.
   - 1.2. THERMOSTAT SHALL INITIATE HEATING, ECONOMIZER (FREE COOLING) OR MECHANICAL COOLING AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. THERMOSTATS SHALL BE WIRED TO PREVENT SIMULTANEOUS HEATING AND COOLING.
   - 1.3. UNOCCUPIED MODE: OUTSIDE AIR DAMPERS IN UNITS SHALL CLOSE (100% RETURN AIR POSITION). RTU'S SHALL CYCLE IN HEATING OR COOLING, TO MAINTAIN SPACE TEMPERATURE UNOCCUPIED SETPOINT.
   - 1.3. OCCUPIED MODE: OUTSIDE AIR DAMPERS IN UNITS SHALL OPEN TO MINIMUM POSITION (10% O/A, INITIAL AND ADJUSTABLE). RTU'S SHALL CYCLE HEATING, ECONOMIZER OR MECHANICAL COOLING STAGES, TO MAINTAIN SPACE TEMPERATURE UNOCCUPIED SETPOINT. DURING OCCUPIED MODE, UPON DETECTION OF CO2 LEVELS ABOVE SETPOINT, MOTORIZED ECONOMIZER DAMPERS SHALL MODULATE OPEN TO MAINTAIN SETPOINT LEVELS. UPON CO2 LEVELS BELOW SETPOINT, ECONOMIZER SHALL REVERT TO MINIMUM POSITION.

2. WASHROOM EXHAUST FAN CONTROL EF-2:
   - 2.1. PROVIDE AN ELECTRONIC, PROGRAMMABLE 7 DAY TIME CLOCK TO CONTROL THE OPERATION OF EXHAUST FAN AND ASSOCIATED MOTORIZED DAMPER, ON AN OCCUPIED/UNOCCUPIED SCHEDULE. IN OCCUPIED MODE, DISCHARGE DAMPER SHALL OPEN, AND UPON PROOF OF OPEN VIA END SWITCH, FAN SHALL ENERGIZE AND OPERATE CONTINUOUSLY. FAN SHALL REMAIN OFF, AND THE DAMPER SHALL REMAIN CLOSED IN UNOCCUPIED MODE. LOCATE TIME CLOCK IN WHERE INDICATED ON DRAWINGS. TIME CLOCK C/W LOCKING, TAMPERPROOF COVER.

3. UTILITY ROOM FAN CONTROL EF-1:
   - 3.1. PROVIDE COOLING THERMOSTAT (120V) FOR OPERATION OF EXHAUST FAN (120V). MECHANICAL CONTRACTOR SHALL INSTALL THERMOSTAT, FAN; ELECTRICAL CONTRACTOR SHALL WIRE LINE VOLTAGE DEVICES. THERMOSTAT SET TO 85F, INITIAL AND ADJUSTABLE.
   - 3.2. UPON SENSING TEMPERATURE ABOVE THERMOSTAT SETPOINT, EXHAUST FAN SHALL ENERGIZE. UPON SENSING TEMPERATURE BELOW SETPOINT, THE FAN SHALL DE-ENERGIZE.

4. JANITOR ROOM EXHAUST FAN CONTROL EF-3:
   - 4.1. PROVIDE AN ELECTRONIC, PROGRAMMABLE 7 DAY TIME CLOCK TO CONTROL THE OPERATION OF EXHAUST FAN AND ASSOCIATED MOTORIZED DAMPER, ON AN OCCUPIED/UNOCCUPIED SCHEDULE. IN OCCUPIED MODE, DISCHARGE DAMPER SHALL OPEN, AND UPON PROOF OF OPEN VIA END SWITCH, FAN SHALL ENERGIZE AND OPERATE CONTINUOUSLY. FAN SHALL REMAIN OFF, AND THE DAMPER SHALL REMAIN CLOSED IN UNOCCUPIED MODE. LOCATE TIME CLOCK IN WHERE INDICATED ON DRAWINGS. TIME CLOCK C/W LOCKING, TAMPERPROOF COVER.

MECHANICAL EQUIPMENT SCHEDULES:

EQUIPMENT THAT IS SUPPLIED WITH A FACTORY-INSTALLED DISCONNECTING MEANS FOR THE CONNECTION OF THE SUPPLY SIDE FEEDER CONDUCTORS MUST BE CERTIFIED SO THAT THESE CONDUCTORS CAN BE OF EITHER ALUMINUM OR COPPER.

MECHANICAL AND ELECTRICAL CONTRACTORS ARE RESPONSIBLE FOR THE MUTUAL COORDINATION OF ALL ELECTRICAL REQUIREMENTS OF MECHANICAL EQUIPMENT. COORDINATION IS TO INCLUDE THE COMMUNICATION OF ALL FINAL ELECTRICAL NAMEPLATE INFORMATION FROM THE MECHANICAL CONTRACTOR TO THE ELECTRICAL CONTRACTOR, THE COMMUNICATION OF THE DETAILED CONTROL INFORMATION AS WELL AS ANY ANCILLARY INFORMATION REQUIRED FOR THE FINAL SYSTEMS TO OPERATE AS INTENDED BY THE RESPONSIBLE PROFESSIONAL ENGINEER. THE COORDINATION IS TO OCCUR PRIOR TO THE ORDERING OF EQUIPMENT BY EITHER TRADE. NO EXTRA COMPENSATION WILL BE ALLOWED DUE TO FAILURE TO CARRY OUT THIS COORDINATION. REPORT AT ONCE TO THE CONSULTANT ANY DEFECT, DISCREPANCY, OMISSION OR INTERFERENCE AFFECTING THE SATISFACTORY COMPLETION OF WORK.

ROOFTOP UNIT (RTU-1 TO 4):
ROOF TOP UNITS BASED ON DAIKIN DCG COMMERCIAL SERIES, OR APPROVED EQUAL, PACKAGED GAS HEAT/ELECTRIC COOLING UNITS. EQUIPMENT TO BE DOWNFLOW WITH ROOF CURB, STAINLESS STEEL HEAT EXCHANGERS, BELT DRIVE MOTOR, 2-STAGE HEATING, 2-STAGE COOLING (WHERE SCHEDULED), R-410A REFRIGERANT, MERV 13 FILTRATION, POWER EXHAUST, ECONOMIZER, IAQ (CO2 SENSOR), COMMERCIAL GRADE PROGRAMMABLE THERMOSTAT WITH NIGHT SETBACK. 575V/3ø. OUTDOOR AIR DAMPERS SHALL BE FULLY CLOSED SHOULD THE UNITS CYCLE IN UNOCCUPIED MODE TO MAINTAIN THERMOSTATIC SETPOINT.
REFER TO SCHEDULES FOR PERFORMANCE.

EXHAUST FANS:
EXHAUST FAN BASED ON GREENHECK CSP, OR APPROVED EQUAL. INLINE CEILING FANS WITH INSULATED CABINET, DISCHARGE BACKDRAFT DAMPER, VIBRATION ISOLATION, VARIABLE SPEED CONTROLLER FOR FAN TAB, 120V/1ø.
REFER TO SCHEDULES FOR PERFORMANCE.

GRILLES, REGISTERS, DIFFUSERS
TYPE A – PRICE 530/F/L/A/B12 SIDEWALL TRANSFER/EXHAUST GRILLE.

APEGM
Certificate of Authorization
Nova 3 Engineering Ltd.
No.962 Date: 2019.03.01

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No:	Date:	Revision
1	2019.02.14	ISSUED FOR 50% REVIEW
2	2019.03.01	ISSUED FOR PERMIT, TENDER & CONSTRUCTION
3	–	–
4	–	–

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CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AT JOB SITE.

SEAL
PROVINCE OF MANITOBA
J. H. GUENTHER
2019.03.01
REGISTERED ENGINEER

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CLIENT
HARDROCK PROPERTIES CORPORATION

PROJECT
TD BANK BASE BUILDING
BRANDON, MANITOBA

DO NOT SCALE DRAWINGS

ALL DIMENSIONS ARE TO BE CHECKED AND VERIFIED ON THE JOB. CONTRACTOR SHALL NOT SCALE DRAWINGS. NOTIFY CONSULTANTS OF ANY DISCREPENCIES.

DRAWN BY : □.D.
CHECKED BY : J.H.G
DATE: MARCH 201□
SHEET: 07 OF 07

PROJECT	SHEET NO.
18-1921	M4.0

MECHANICAL SPECIFICATIONS

ELECTRICAL SPECIFICATION

Electrical installation shall be in accordance with the current edition of The Canadian Electrical Code, Provincial, Municipal and other codes, rules and regulations.

The contract shall include the furnishing of labor, new material, equipment and services necessary and reasonably implied and/or incidental to the complete installation of the electrical work as shown on the plans and or specified. Supply and install all devices required for the complete approved system, operating to the complete satisfaction of the responsible professional Engineer.

Prepare and submit to the proper authorities all necessary permits and pay all fees. Provide responsible professional engineer a PDF copy of all electrical permits.

Upon completion and before final payment is made, present to Engineer a Certificate of Approval for all electrical work from the inspection department having jurisdiction.

Electrical work shall be completed in conformance with, and subject to, all cautionary notes available to the reader including those available on the websites of the manufacturers and consultants.

Electrical installation including electrical equipment supplied, installed or connected shall be tested in the presence of the Owner on completion of the work.

The Electrical Contractor shall visit the site and ascertain that all work indicated can be carried out without additional cost to the Owner.

The Electrical Contractor shall guarantee the satisfactory operation of all work and apparatus included and installed under this section of the specification for a period of twelve (12) calendar months after the final acceptance of the complete building.

The Electrical Contractor shall be responsible for any damage caused the Owners or their contractors by improperly carrying out this contract.

The Electrical Contractor shall carefully examine all drawings and specifications relating to the work to be certain that the work under this contract can be satisfactorily carried out and prior to the submission of his tender, report at once to the Consultant any defect, discrepancy, omission or interference affecting the work of this section or the guarantee of same.

Submit one set of "as-built" prints or PDF documents to the engineer.

Grounding shall be in accordance with the latest edition of The Canadian Electrical Code.

Panelboards, motor starters, disconnect switches, etc., shall be properly identified by means of engraved lamacoid nameplates.

Supply and install all motor controls unless noted otherwise on the drawings. Refer to Mechanical drawings for exact location of motors and mechanical equipment. Unless otherwise specified and/or shown on the drawings, supply and install the following motor control equipment:
- Manual motor starters.
- Magnetic motor starters which are not part of package equipment. Refer to Mechanical drawings and specifications.
- Pushbutton stations.
- Hand-off-auto selector switches.
- Motor disconnect switches.
- Interlock contacts as required for starters.
- Enclosures.
- Starter heater elements as required for starters.
- Contactors.
- Time clocks, time switches and photoelectric relays.
- Pilot lights for all starters, switches and pushbutton stations.

Mechanical and electrical contractors are responsible for the mutual coordination of all electrical requirements of mechanical equipment. Coordination is to include the communication of all final electrical nameplate information from the mechanical contractor to the electrical contractor, the communication of the detailed control information as well as any ancillary information required for the final systems to operate as intended by the responsible professional engineer. The coordination is to occur prior to the ordering of equipment by either trade. No extra compensation will be allowed due to failure to carry out this coordination. Report at once to the consultant any defect, discrepancy, omission or interference affecting the satisfactory completion of work.

Conduits shall be electric metallic tubing unless otherwise noted on drawings or unless prohibited by regulations. Conduits in direct contact with earth or in concrete shall be rigid PVC. PVC conduit exposed to the extremes of outdoor temperatures shall not be used without prior approval from the responsible engineer. Conduits shall be concealed unless otherwise noted on the drawings. Conduits shall not be exposed in any area where concealed work is required without prior written approval.

Outlet, junction and switch boxes shall be galvanized pressed steel of size and type to suit the requirements of each outlet. Outlet boxes shall be accessible.

All wiring shall be in conduit, except that armoured cable may be used in stud partitions and for drops to recessed luminaires (max. 4 luminaires per drop). Armoured cable drops (including any daisy chain) shall not exceed 9m in total length.

Wire and cable shall be copper of standard AWG sizes with 600V (90 Degree C) insulation. Insulation shall be X-Link Polyethylene unless otherwise noted on drawings or prohibited by regulations. Aluminum conductors will not be accepted, unless otherwise indicated. Minimum wire size shall be # 12 AWG.

Panelboards shall be factory-assembled custom made of size, type and arrangement as shown on drawing. Circuit breakers shall be bolt-in, moulded-case, thermal and magnetic trip. Trip values as shown on drawing. Two or three pole breakers shall have common trip units. Mount a typewritten directory behind a plastic shield on the inside of panelboard doors. All distribution equipment to be sprinkler-proof and c/w lockable door. All tap entry of conduits or cables must utilize rain-tight wiring methods. Minimum fault rating of circuit breakers shall be 22KA S.C.I.C.

Wall-mounted flush switches shall be specification grade 15A,125VAC. White handle, side or back wiring. Mount switches 1200mm (to top of box) above finished floor unless otherwise noted on the drawings.

Duplex receptacles shall be specification grade 15A, 125VAC, parallel slot, U-ground, white, side and back wiring. Mount receptacles 450mm above finished floor or 150mm above counter tops unless otherwise noted on the drawings.

Cover plates for flush-mounted receptacles and switches on concealed conduit system shall be stainless steel. Cover plates for voice/data and A/V outlets to be nylon.

Telephone raceway system shall be in separate and independent conduit system. Empty conduits shall be complete with a #12 AWG pull wire. Install as shown on drawings. Complete entire installation to local telephone utility requirements and satisfaction.

Mount surface mounted equipment such as panelboards, telephone cabinets and other electrical equipment on fireguard mounting boards, c/w grey enamel finish.

Any cutting and patching in existing walls or floors required for the addition or relocation of electrical equipment shall be the responsibility of the Electrical Contractor.

Provide code conforming emergency lighting and exit system. Min. wire size for this system as per manufacturers recommendations. Acceptable manufacturers include: Almlite, Lumacell.

The electrical contractor shall relocate outlets at no additional charge if requested prior to roughing in. The electrical contractor shall relocate outlets at no additional charge if requested by the local authority having jurisdiction.

Electrical installation shall be in conformance with the barrier free requirements applicable in the latest edition of the National Building Code of Canada. Electrical controls shall be mounted at 1200mm to top of box, unless otherwise specified.

Where luminaires are recessed into insulated ceilings, the electrical contractor is responsible for providing luminaires suitable for that use.

Supply and install all indicated electric heaters, standard watt density to be Ouellet, Dimplex, Stelpro or approved equal. Thermostats to be calibrated in degrees Celsius.

Equipment and material shall be installed as specified. Requests for equal status shall be submitted to Engineer 7 days prior to tender submission. No requests will be accepted past the 7 day deadline. Only one request will be considered from each supplier. If rejected for any reason, no substitutes from the same supplier will be reviewed.

Electrical contractor shall submit shop drawings to Engineer for review prior to ordering equipment. At the request of the engineer, the successful electrical contractor shall submit a completed C-1 form (form available from Engineer).

Supply and install, wire and connect all luminaires (to be complete with lamps) as indicated. All luminaires exceeding 150V shall be complete with an integral disconnecting means that will simultaneously open all circuit conductors and conductors supplying the ballast(s). All luminaires exceeding 150V shall be marked in a conspicuous, legible, and permanent manner adjacent to the disconnecting means, identifying the specific purpose. Refer to Canadian Electrical Code rule 30-308(4).

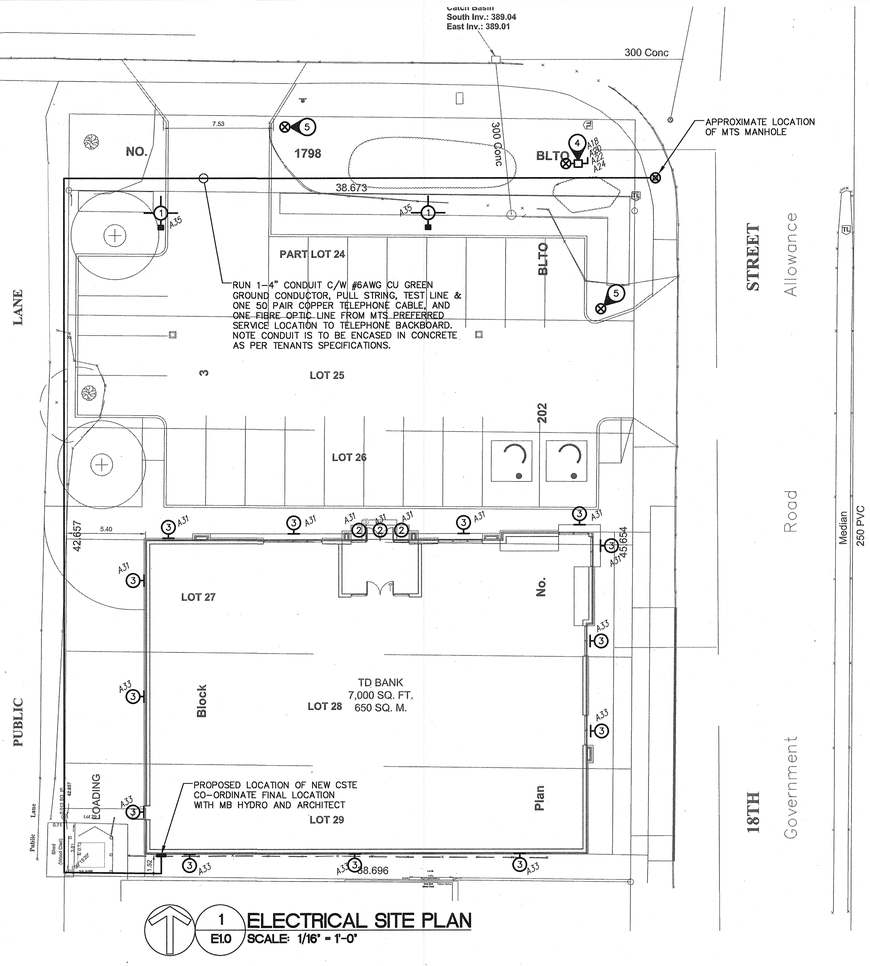
Final connection to all mechanical equipment to be flexible. Obtain and refer to mechanical shop drawings of mechanical equipment for circuit breaker and wire size. Adjust circuit breaker and wire size without additional cost to owner.

All existing and new owners equipment is to be wired and connected. Supply and install, wire and connect matching receptacle for portable equipment complete with cord and cap. Refer to equipment name plate rating for electrical characteristics prior to rough-in. All owners equipment which is non-portable, shall be directly connected via cab tyre cord matching electrical characteristics as determined by nameplate ratings of equipment. Confirm nameplate characteristics prior to rough-in.

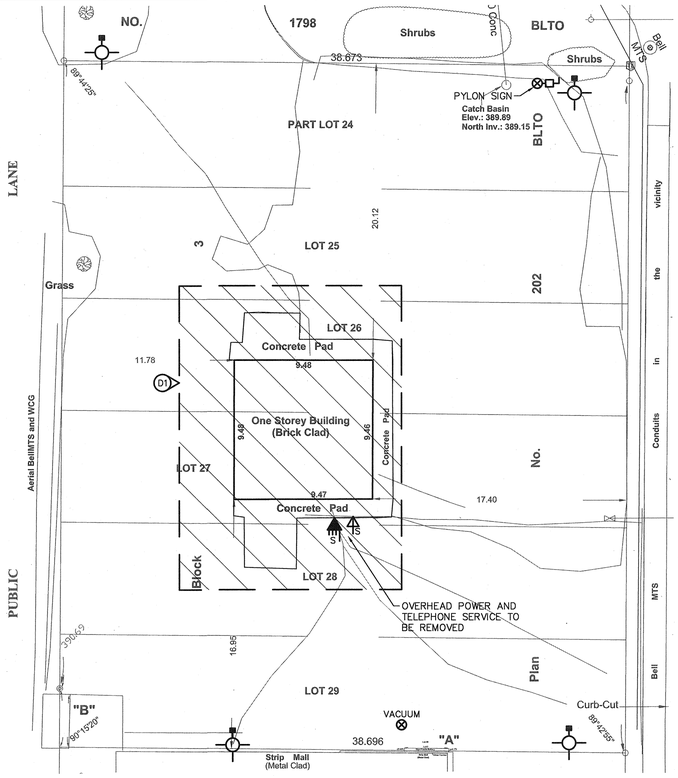
Pay all utility contribution charges for associated power and telephone services. Provide trenching and backfilling as required. Coordinate all requirements with utilities prior to tender close to ensure availability and contribution costs of services.

Owner is responsible for the supply & installation of all communication wiring, unless otherwise noted.

All work shall be in accordance with tenant (TD Bank) details and specifications.



1 E1.0 **ELECTRICAL SITE PLAN**
SCALE: 1/16" = 1'-0"



2 E1.0 **ELECTRICAL DEMOLITION**
SCALE: 1/16" = 1'-0"

SPECIFIC ELECTRICAL NOTES

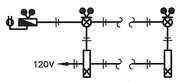
1. PROVIDE CIRCUIT BREAKERS IN PANEL IN ACCORDANCE WITH FINAL TENANT ELECTRICAL DRAWINGS.
2. CONFIRM SIZE OF TRANSFORMER WITH TENANT'S ELECTRICAL ENGINEER, PRIOR TO ORDERING.
3. PROVIDE TVSS (SPD) IN PANEL '100' AND PANEL 'A' IN ACCORDANCE WITH TENANT'S STANDARD DETAIL E81 & SPEC SECTION 16010.
4. WIRE AND CONNECT NEW TENANT PYLON SIGNAGE AS REQUIRED. PROVIDE ONE(1) 2" CONDUIT AND FOUR(4) 15A 120V CIRCUITS. CONFIRM EXACT ELECTRICAL REQUIREMENTS WITH TENANT PRIOR TO ROUGH-IN.
5. PROVIDE 1" BURIED CONDUIT TO FUTURE TENANT ILLUMINATED SIGNAGE FROM ELECTRICAL ROOM, C/W PULL STRING. CONDUITS TO BE TERMINATED 2' A.F.F. BELOW PANEL A. LABEL CONDUITS. CONFIRM EXACT LOCATIONS WITH TENANT PRIOR TO ROUGH-IN.

ELECTRICAL DEMOLITION NOTES

D1. EXISTING BUILDING AND CANOPY ON SITE TO BE REMOVED. PROVIDE ELECTRICAL DEMOLITION AS REQUIRED.

GENERAL DEMOLITION ELECTRICAL NOTES

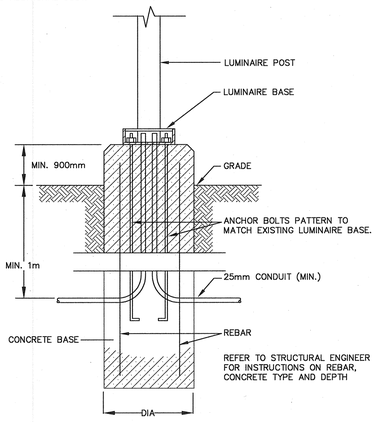
1. ALL ITEMS REQUIRED TO BE DEMOLISHED ARE NOT NECESSARILY SHOWN. THOSE INDICATED ARE FOR REFERENCE ONLY. ALL ITEMS INTERFERING WITH NEW CONSTRUCTION SHALL BE REMOVED AT NO ADDITIONAL COST.



EMERGENCY LIGHTING AND SIGNAGE

N.T.S.

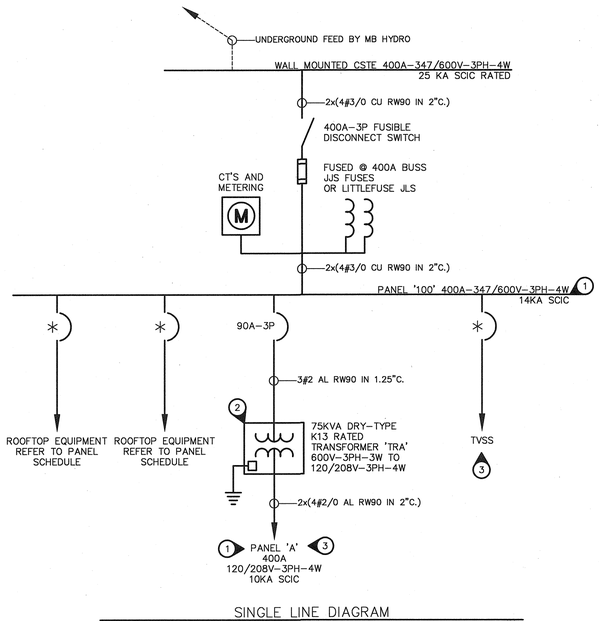
1. CONDUCTORS SIZED TO MANUFACTURERS RECOMMENDATIONS. MAXIMUM 5% VOLTAGE DROP.
2. WIRE AND CONNECT DC TO ALL COMPONENTS.
3. PROVIDE 30 MINUTE CAPACITY UNDER FULL LOAD.
4. INTERLOCK WITH NORMAL LIGHTING CIRCUIT TO ACTIVATE EMERGENCY LIGHTING UPON LOSS OF NORMAL LIGHTING IN THE AREA, FOR EACH EMERGENCY LIGHTING HEAD. PROVIDE ZONE SENSING RELAYS AS REQUIRED.



LUMINAIRE BASE DETAIL

N.T.S

NOTE: CONCRETE DIMENSIONS AND TYPE TO BE SPECIFIED BY STRUCTURAL ENGINEER AND BASED ON AVAILABLE SOIL CONDITIONS.



SINGLE LINE DIAGRAM

N.T.S

* SIZE CIRCUIT BREAKER AND WIRING ACCORDING TO THE FINAL NAMEPLATE RATING ON THE EQUIPMENT.

NOTE: DASHED INDICATES EXISTING/BY OTHERS.

SYMBOL SCHEDULE

- B1-a — Linear luminaire, 'B1-a' denotes panel circuit # and switch.
- N/L — Night light luminaire.
- Ceiling mounted luminaire.
- A — Wall mounted luminaire. 'A' denotes type.
- Post light.
- OC — Single pole switch c/w occupancy sensor control. Auto on/off unless otherwise indicated. Sensorswitch.
- Duplex receptacle.
- WP — Duplex receptacle weather proof.
- GF — Ground fault duplex receptacle.
- 20A T-slot duplex receptacle.
- Fireguard backboard c/w power supply and #6 AWG green ground wire to building ground and c/w one(1) 4" entrance conduit as required by the telephone utility and one(1) 3" entrance conduit as required by the CATV utility.
- Motor. Refer to mechanical for exact location. For roof mounted equipment, supply and install wire and connect a separate circuit GFI receptacle in accordance with C.E.C. rule 26-708 and 26-710.
- Fusible disconnect switch to suit application. By electrical contractor.
- M — Motorized damper control wiring by mechanical contractor, 120V power supply by electrical contractor.
- Junction box.
- 1000 — Electric heater, "C" denotes type, see electric heating schedule. "1000" denotes watts. ● denotes heater c/w built in thermostat. ○ denotes heater controlled by remote thermostat. Provide low voltage relays if required. Refer to mechanical for details.
- Emergency battery bank c/w two(2) 6W (540 lumen) LED heads. 12V, backup battery capacity to suit. Lumacell.
- LED Emergency double head fixture c/w two(2) 6W (540 lumen) LED heads. Wire to battery bank. Lumacell.
- LED pictogram exit sign. Provide AC and DC power supply. Refer to emergency lighting riser diagram for details. Lumacell.
- Combination LED pictogram exit sign/emergency double head fixture c/w two(2) 6W (540 lumen) LED lamps and integral battery backup (minimum 30 minutes). Lumacell.

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1	2019.03.01	ISSUED FOR PERMIT, TENDER & CONSTRUCTION
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CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AT JOB SITE.

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2019.03.01
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OWNER
HARDROCK PROPERTIES CORPORATION

PROJECT
TD BANK BASE BUILDING
BRANDON, MANITOBA

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CHECKED BY: DZ
DATE: MARCH, 2019
SHEET 01 OF 04

PROJECT	SHEET NO.
18-1921	E1.0

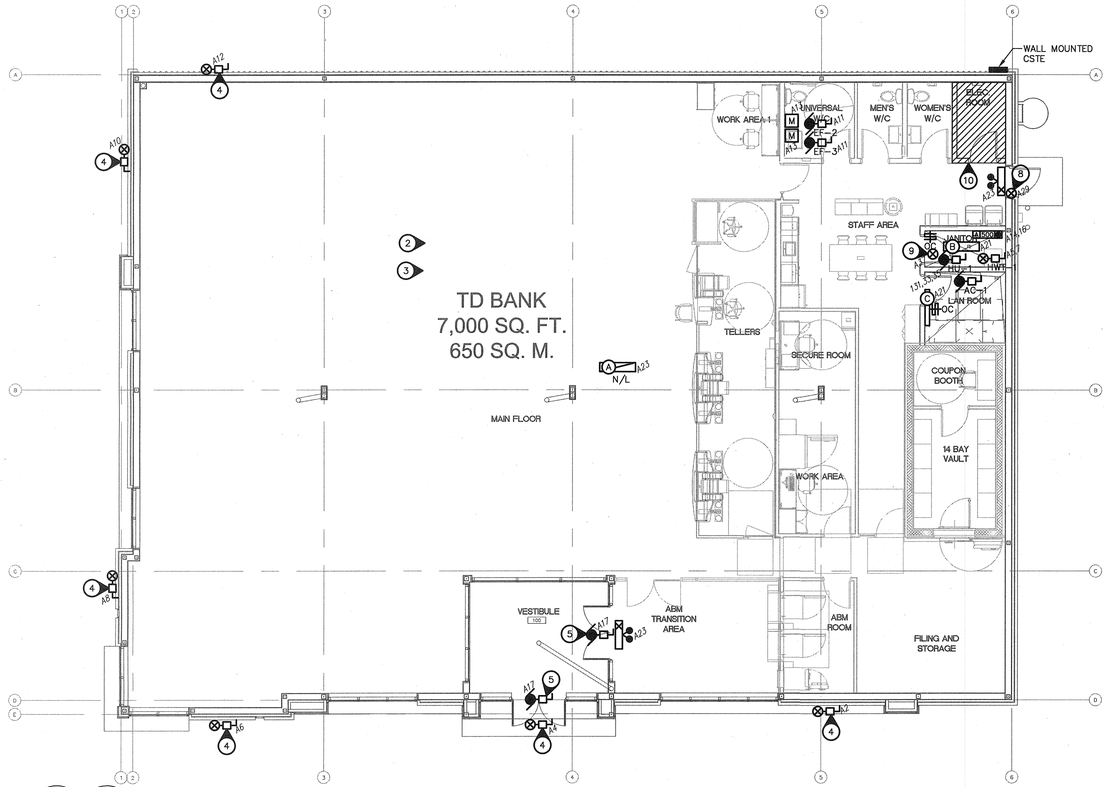
ELECTRICAL SPECIFICATION AND KEY PLAN

APEGM
Certificate of Authorization
Nova 3 Engineering Ltd.
No. 962 Date: 2019.03.01

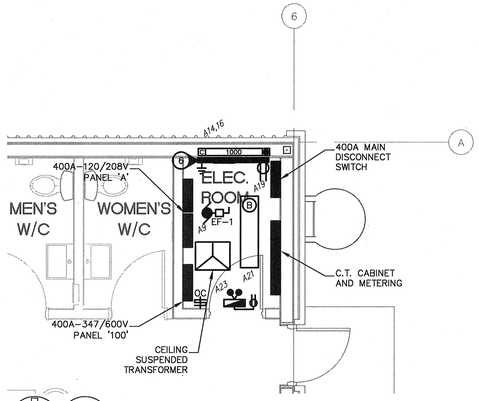
NOVA 3 ENGINEERING LTD.
PROFESSIONAL ENGINEERS
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WINNIPEG, MANITOBA R3C 1C7 FAX.: (204) 942-1276
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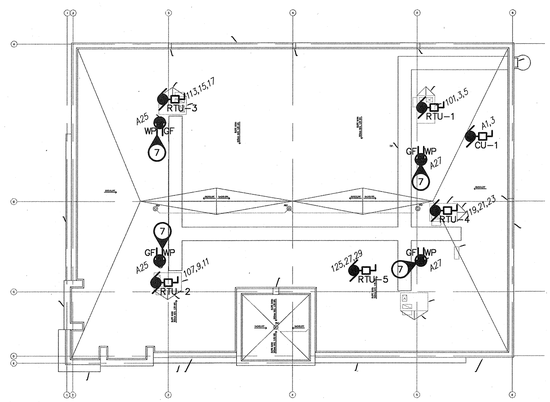
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1 E2.0 ELECTRICAL MAIN FLOOR LAYOUT
SCALE: 1/8" = 1'-0"



2 E2.0 ELECTRICAL MAIN FLOOR LAYOUT
SCALE: 1/4" = 1'-0"



3 E2.0 ELECTRICAL ROOF LAYOUT
SCALE: 1/16" = 1'-0"

HEATING SCHEDULE

TYPE	WATTS	VOLTAGE	DESCRIPTION	MANUFACTURER	CATALOGUE NO.	NOTES
A	500	208V-1PH	BASEBOARD	OUELLET	OFM050	1
C	1000	208V-1PH	BASEBOARD	OUELLET	OFM100	1

SPECIFIC HEATING NOTES:
1. C/W BUILT-IN THERMOSTAT OR WIRED TO REMOTE THERMOSTAT AS SHOWN ON DRAWINGS.
2. RECESSED UNLESS OTHERWISE INDICATED. C/W BUILT-IN THERMOSTAT UNLESS OTHERWISE INDICATED
3. C/W BUILT-IN THERMOSTAT. MOUNT SECURELY WHERE INDICATED TO THE SATISFACTION OF THE ENGINEER.

GENERAL HEATING NOTES:
A. VOLTAGE TO BE AS INDICATED ABOVE UNLESS OTHERWISE NOTED ON DRAWINGS.

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	MOUNTING	CATALOG NUMBER	LAMPS
A	4' FLUORESCENT STRIP	CHAIN SUSPENDED	LITHONIA Z-32-CSA	2-32W T8
B	4' LED STRIP C/W OCCUPANCY SENSOR	CABLE SUSPENDED	LITHONIA ZL1NL48 5000LM FST MVOLT 40K WH C/W ZACVH, LSXR	42W LED
C	4' LED WALL BRACKET	WALL MOUNTED ABOVE DOOR	LITHONIA WL4 40L EZ1 LP840	40W LED
1	LED POLED MOUNTED PARKING LOT FIXTURE	25' POLE MOUNTED	LITHONIA DSX2 LED P6 40K T4M MVOLT RPA DDBXD C/W HAPCO RTA25C7B4-BM	343W LED
2	LED DOWNLIGHT	RECESSED IN SOFFIT	LITHONIA LDN4 40/10 L04AR LSS MVOLT GZ10 WL	30.1W LED
3	LED WALL MOUNTED	WALL MOUNTED	LITHONIA DSXW1 LED 20C 700 40K T2M MVOLT DDBXD	45.7W LED

MOTOR SCHEDULE

NO.	DESCRIPTION	LOCATION	VOLTAGE	HP/W/MCA	C.B.	COND.	STARTER	NOTES
RTU-1	ROOFTOP UNIT	ROOFTOP	600V-3PH	13MCA	15A-3P	#12	PACKAGED	1
RTU-2,3,4,5	ROOFTOP UNIT	ROOFTOP	600V-3PH	8MCA	15A-3P	#12	PACKAGED	1
EF-1	EXHAUST FAN	ELECTRICAL ROOM	120V-1PH	FRAC.	15A-1P	#12	–	1,2
EF-2,3	EXHAUST FAN	UNIVERSAL WASHROOM	120V-1PH	FRAC.	15A-1P	#12	–	1,3
HWT-1	HOT WATER TANK	JANITOR ROOM	208V-1PH	2.5KW	20A-2P	#12	–	1
CU-1/AC-1	SPLIT COOLING SYSTEM	ROOFTOP/LAN ROOM	208V-1PH	12.2MCA	15A-2P	#12	–	1,5
HU-1	HUMIDIFIER	JANITOR CLOSET	600V-3PH	6KW	15A-3P	#12	–	1

SPECIFIC NOTES
1. WIRE AND CONNECT AS REQUIRED. REFER TO MECHANICAL.
2. THERMOSTAT TO CONTROL EXHAUST FAN. SUPPLIED BY MECHANICAL, WIRED AND CONNECTED BY ELECTRICAL.
3. TIME CLOCK TO CONTROL EXHAUST FAN. SUPPLIED BY MECHANICAL, WIRED AND CONNECTED BY ELECTRICAL.
4. COORDINATE INSTALLATION OF PATHWAYS TO PIT FOR SUMP PUMP WIRING.
5. WIRE AND CONNECT INDOOR UNIT TO OUTDOOR UNIT TERMINALS, AS PER MANUFACTURER'S RECOMMENDATIONS. REFER TO MECHANICAL.

GENERAL NOTES
A. MANUAL STARTERS TO BE C/W OVERCURRENT PROTECTION.
B. ALL DISCONNECT SWITCHES TO BE SUPPLIED BY ELECTRICAL CONTRACTOR.
C. ELECTRICAL CONTRACTOR TO PROVIDE CIRCUIT BREAKERS AND WIRING ACCORDING TO THE FINAL NAMEPLATES OF ALL THE MECHANICAL EQUIPMENT.
D. ALL LOW VOLTAGE CONTROL WIRING BY MECHANICAL CONTRACTOR.
E. ALL LINE VOLTAGE CONTROL WIRING BY ELECTRICAL CONTRACTOR – REFER TO MECHANICAL SECTION. CO-ORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTRACTOR.

SPECIFIC ELECTRICAL NOTES

1. OBTAIN TENANT'S APPROVAL OF EXTERIOR LIGHTING DESIGN AND PLACEMENT PRIOR TO ROUGH-IN OR ORDERING OF LUMINAIRES.
2. PROVIDE UNDER-FLOOR ROUGH-INS, WITH RECESSED JUNCTION BOXES WHERE REQUIRED AND FLOOR CUT-OUTS AS INDICATED ON THE TENANT'S ELECTRICAL DRAWINGS, TO SUIT TENANT SUPPLIED COMPONENTS SUCH AS TELLERS' COUNTERS, GREETER(CRC) DESKS AND WAITING AREA(S). ALL SUCH ROUGH-INS SHALL INCLUDE PULL CORDS, AND SHALL BE TERMINATED AT RESPECTIVE ELECTRICAL COMMUNICATION BACKBOARDS.
3. PROVIDE ELECTRICAL EXTERIOR WALL ROUGH-INS CONSISTING OF BX TYPE CABLE FOR TENANT'S FUTURE ELECTRIC BASEBOARD HEATERS AND EMPTY 1" CONDUITS FOR ANY POWER AND DATA OUTLETS IN LOCATIONS TO BE CONFIRMED BY THE TENANT. EACH ROUGH-IN HEATER LOCATION TO ALLOW FOR 5' COILED CABLE AT FLOOR LINE AS WELL AS ABOVE TENANT'S FINISHED CEILING LINE. ROUGH-IN LOCATIONS TO BE COORDINATED WITH LANDLORD BY THE TENANT'S REPRESENTATIVE. ALLOW FOR 18 ROUGH-IN HEATER LOCATIONS AND UP TO 7 POWER AND DATA LOCATIONS. EXACT QUANTITY AND LOCATIONS TO BE CONFIRMED WITH TENANT'S ELECTRICAL DRAWINGS.
4. PROVIDE POWER FEEDS TO AND CONNECTION OF TENANT'S BUILDING SIGNAGE, INCLUDING CONTROL DEVICES FOR THE OPERATION OF THE EXTERIOR SIGNS AND LIGHTING AS PER THE TENANT'S STANDARD SPECIFICATIONS AND STANDARD DETAILS. REFER TO ELECTRICAL SPECIFICATIONS AND DETAIL E35 – TYPICAL CONTROL LIGHTING DIAGRAM.
5. WIRE AND CONNECT DOOR OPERATOR AND ALL ASSOCIATED CONTROLS AS REQUIRED. PROVIDE POWER FOR DYE PACK. CONCEAL ALL WIRING WITHIN DOOR FRAMES. INSTALL IN ACCORDANCE WITH TENANTS STANDARD DETAILS.
6. E.C. SHALL TERMINATE AND CONNECT THE COPPER TELEPHONE CABLE TO PUNCH DOWN BIX BLOCK(S) AS PER TENANT'S SPECIFICATION SECTION 16761 VOICE COMMUNICATIONS SYSTEMS. BIX BLOCK(S) TO BE PROVIDED AND INSTALLED BY LANDLORD ON PLYWOOD BACKBOARD. TENANT TO PROVIDE(IF AVAILABLE AT TIME OF INSTALL) A COPY OF TENANT'S ENGINEERING DRAWING INDICATED THE LAYOUT OF THE ELECTRICAL ROOM EQUIPMENT.
7. PROVIDE ROOFTOP MOUNTED CONVENIENCE RECEPTACLE C/W EXTRA DUTY COVERPLATE IN ACCORDANCE WITH CEC 27.708, AND 26.710.
8. PROVIDE POWER FOR DYE PACK AND EMPTY CONDUIT FOR SECURITY CONTACTS. CONCEAL ALL WIRING WITHIN DOOR FRAMES. INSTALL IN ACCORDANCE WITH TENANTS STANDARD DETAILS.
9. PROVIDE 120V CIRCUIT FOR MECHANICAL SUPPLIED 120VAC/24VAC PLUG IN TRANSFORMER FOR HUMIDIFIER CONTROLS. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
10. REFER TO ENLARGED ELECTRICAL ROOM PLAN 2/E2.0.

GENERAL ELECTRICAL NOTES

1. NO ELECTRICAL CONDUITS OR CABLING SHALL PASS BELOW TENANT'S VAULT(S), ATM(S) NIGHT DEPOSITORY OR WASHROOM AREAS.
2. ALL ELECTRICAL CONDUIT/CABLING WITHIN CEILING SPACE IS TO RUN AT HIGH LEVEL AND SHALL NOT DROP BELOW ROOF STRUCTURE WITHOUT PRIOR WRITTEN APPROVAL.

No:	Date:	Revision
1	2018.03.01	ISSUED FOR PERMIT, TENDER + CONSTRUCTION
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SEAL
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D. P. ZILINSKI
2019.05.01
REGISTERED ENGINEER

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OWNER
HARDROCK PROPERTIES CORPORATION

PROJECT
TD BANK
BASE BUILDING
BRANDON, MANITOBA

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SHEET 02 OF 04

PROJECT	SHEET NO.
18-1921	E2.0

ELECTRICAL LAYOUTS AND SCHEDULES

APEGM
Certificate of Authorization
Nova 3 Engineering Ltd.
No. 962 Date: 2019.05.01

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PANEL '100'

MOUNTING SURFACE
LOCATION ELECTRICAL ROOM

VOLTAGE 347/600V–3PH–4W
MAIN BUS 400A
REMARKS C/W LOCKABLE DOOR

DESCRIPTION	BKR	CIRCUIT		BKR	DESCRIPTION
RTU–1	15	1	2	90	75 KVA TRANSFORMER
		3	4		'TRA'
		5	6		
RTU–2	15	7	8	–	SPACE
		9	10	–	SPACE
		11	12	–	SPACE
RTU–3	15	13	14	–	SPACE
		15	16	–	SPACE
		17	18	–	SPACE
RTU–4	15	19	20	–	SPACE
		21	22	–	SPACE
		23	24	–	SPACE
RTU–5	15	25	26	*	TVSS
		27	28		
		29	30		
HU–1	15	31	32	15	SPARE
		33	34	15	SPARE
		35	36	15	SPARE
SPACE	–	37	38	15	SPARE
SPACE	–	39	40	15	SPARE
SPACE	–	41	42	15	SPARE

* SIZE BREAKER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

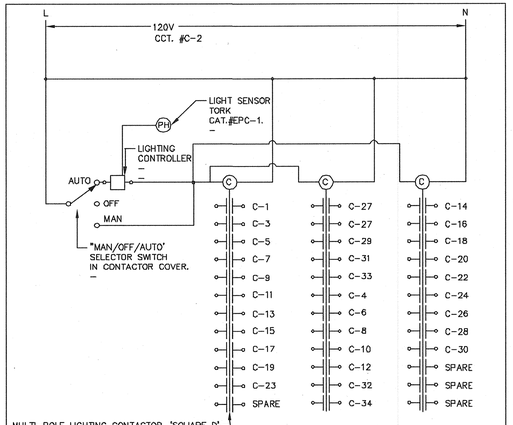
PANEL 'A'

MOUNTING SURFACE
LOCATION ELECTRICAL ROOM

VOLTAGE 120/208V–3PH–4W
MAIN BUS 400A
REMARKS C/W LOCKABLE DOOR

DESCRIPTION	BKR	CIRCUIT		BKR	DESCRIPTION	
CU–1/AC–1	15	1	2	15	EXTERIOR SIGNAGE	**
		3	4	15	EXTERIOR SIGNAGE	**
HWT–1	20	5	6	15	EXTERIOR SIGNAGE	**
		7	8	15	EXTERIOR SIGNAGE	**
EF–1	15	9	10	15	EXTERIOR SIGNAGE	**
EF–2,3	15	11	12	15	EXTERIOR SIGNAGE	**
MOTORIZED DAMPERS	15	13	14	20	BASEBOARD HEATERS	
SPARE	15	15	16			
POWER DOOR OPERATORS	15	17	18	15	PYLON SIGN	
TELEPHONE BACKBOARD	15	19	20	15	PYLON SIGN	
LIGHTING	15	21	22	15	PYLON SIGN	
EMERGENCY/NIGHT LIGHTING	15	23	24	15	PYLON SIGN	
WP GF T–SLOT RECEPTACLES	20	25	26	–	SPACE	
WP GF T–SLOT RECEPTACLES	20	27	28	–	SPACE	
DYE PACK	15	29	30	–	SPACE	
EXTERIOR BUILDING LIGHTING	15	31	32	–	SPACE	**
EXTERIOR BUILDING LIGHTING	15	33	34	–	SPACE	**
EXTERIOR BUILDING LIGHTING	15	35	36	–	SPACE	**
MECHANICAL TRANSFORMER	15	37	38	–	SPACE	
SPACE	–	39	40	–	SPACE	
SPACE	–	41	42	–	SPACE	
SPACE	–	43	44	–	SPACE	
SPACE	–	45	46	–	SPACE	
SPACE	–	47	48	–	SPACE	
SPACE	–	49	50	–	SPACE	
SPACE	–	51	52	–	SPACE	
SPACE	–	53	54	–	SPACE	
SPACE	–	55	56	–	SPACE	
SPACE	–	57	58	–	SPACE	
SPACE	–	59	60	–	SPACE	
SPACE	–	61	62	–	SPACE	
SPACE	–	63	64	–	SPACE	
SPACE	–	65	66	–	SPACE	
SPACE	–	67	68	–	SPACE	
SPACE	–	69	70	15	SPARE	
SPACE	–	71	72	15	SPARE	
SPACE	–	73	74	15	SPARE	
SPACE	–	75	76	15	SPARE	
SPACE	–	77	78	15	SPARE	
TVSS	*	79	80	15	SPARE	
		81	82	15	SPARE	
		83	84	15	SPARE	

* SIZE BREAKER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
** CONTROLLED BY CONTACTOR. REFER TO DETAIL E35.

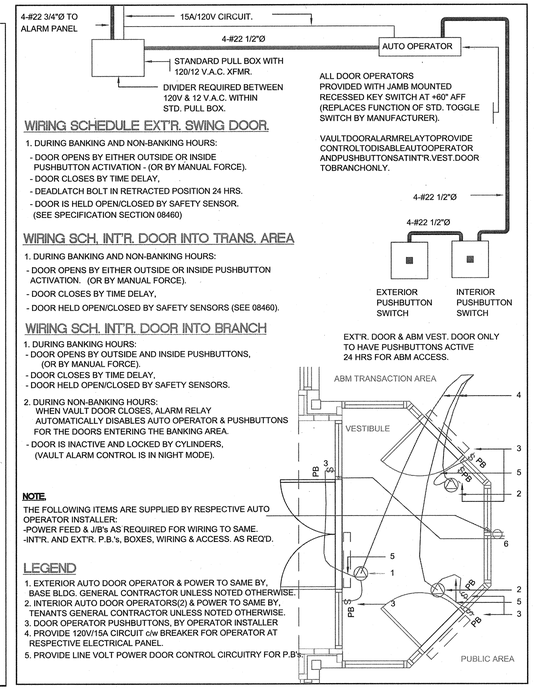


MULTI–POLE LIGHTING CONTACTOR, 'SQUARE D' CLASS 8903, TYPE LG–1200 IN EEMAC #1 ENCLOSURE. UNUSED CONTACTS SHALL BE SPARE.

EXTERIOR LIGHTING CONTROL DIAGRAM

NOTES:
LIGHTING CONTROLLER ALL BE TORK MODEL #LC200 COMPLETE WITH ELECTRONIC LIGHT SENSOR #EPC1 ELECTRONIC CONTROL, "TORK," LC200, WITH DUAL OUTPUTS FOR TWO (2) LIGHTING ZONES.
EACH OUTPUT SHALL BE CAPABLE OF A DIFFERENT USER SETTABLE TURN–ON LIGHT LEVELS, FROM TWO (2) TO ONE HUNDRED (100) FOOTCANDLES. TURN–ON TO TURN–OFF RATIO IS 1:2. CONTROLLER SHALL ALSO OFFER TWO (2) DIGITAL INPUTS WHICH CAN ACCEPT A CONTACT ENCLOSURE FROM AN INDEPENDANT TIME SWITCH OR EMS, THEREBY ALLOWING FOR INDEPENDANT TIME OF DAY CONTROL.
– PLACE CONTROLLER IN ELECTRICAL ROOM.
SINGLE "TORK," #EPC1, REMOTE ELECTRONIC LIGHT SENSOR WITH SWIVEL, REMOTELY MOUNTED N ROOF FACING NORTH, SETTING FOR;
– ON AT THIRTY (30) FOOTCANDLES.
– OFF AT SIXTY (60) FOOTCANDLES.
MUNICIPALITIES WITH EXTERIOR LIGHTING BYLAWS:
– INSTALL PHOTOCELL TO TURN THE EXTERIOR LIGHTS AND OR ILLUMINATED SIGNAGE ON AT DUSK, AND A LIGHT CONTROL SWITCH TO CONTROL HOW MANY OF THE LIGHTS AND OR SIGNAGE, ARE TO BE TURNED OFF AND AT WHAT TIME, TO LOCAL MUNICIPAL CODES.
– OPTIONAL ONLY TO BE USED AT THE SPECIFIC REQUEST OF THE PROJECT MANAGER.

Canada Trust RETAIL REAL ESTATE				Title:	Scale:
Drawn By:	Checked By:	Approved By:	Date Issued:	TYPICAL LIGHTING CONTROL DIAGRAM.	N.T.S.
N. WALLIS	DG		04 FEB 2004		Dwg. No.: E35



WIRING SCHEDULE EXT'R. SWING DOOR.

1. DURING BANKING AND NON–BANKING HOURS:
- DOOR OPENS BY EITHER OUTSIDE OR INSIDE PUSHBUTTON ACTIVATION - (OR BY MANUAL FORCE).
- DOOR CLOSES BY TIME DELAY,
- DEADLATCH BOLT IN RETRACTED POSITION 24 HRS.
- DOOR IS HELD OPEN/CLOSED BY SAFETY SENSOR. (SEE SPECIFICATION SECTION 08460)

WIRING SCH, INT'R. DOOR INTO TRANS. AREA

1. DURING BANKING AND NON–BANKING HOURS:
- DOOR OPENS BY EITHER OUTSIDE OR INSIDE PUSHBUTTON ACTIVATION. (OR BY MANUAL FORCE).
- DOOR CLOSES BY TIME DELAY,
- DOOR HELD OPEN/CLOSED BY SAFETY SENSORS (SEE 08460).

WIRING SCH, INT'R. DOOR INTO BRANCH

1. DURING BANKING HOURS:
- DOOR OPENS BY OUTSIDE AND INSIDE PUSHBUTTONS, (OR BY MANUAL FORCE).
- DOOR CLOSES BY TIME DELAY,
- DOOR HELD OPEN/CLOSED BY SAFETY SENSORS.

2. DURING NON–BANKING HOURS:
WHEN VAULT DOOR CLOSES, ALARM RELAY AUTOMATICALLY DISABLES AUTO OPERATOR & PUSHBUTTONS FOR THE DOORS ENTERING THE BANKING AREA.
- DOOR IS INACTIVE AND LOCKED BY CYLINDERS, (VAULT ALARM CONTROL IS IN NIGHT MODE).

NOTE
THE FOLLOWING ITEMS ARE SUPPLIED BY RESPECTIVE AUTO OPERATOR INSTALLER:
-POWER FEED & J/B's AS REQUIRED FOR WIRING TO SAME.
-INT'R. AND EXT'R. P.B.'s, BOXES, WIRING & ACCESS. AS REQ'D.

LEGEND

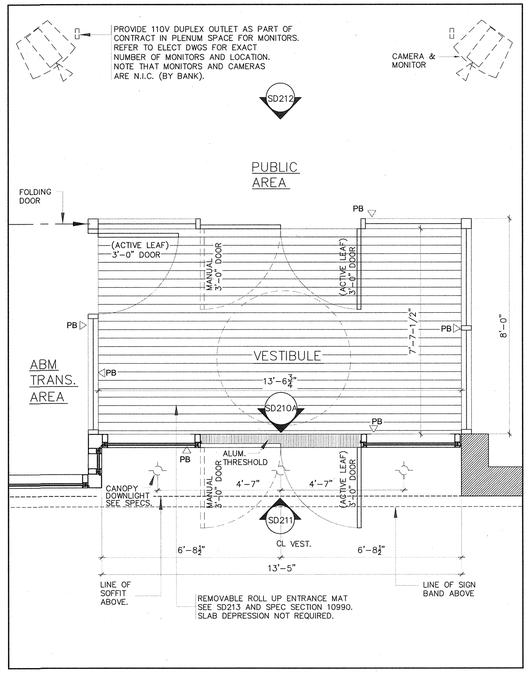
1. EXTERIOR AUTO DOOR OPERATOR & POWER TO SAME BY, BASE BLDG. GENERAL CONTRACTOR UNLESS NOTED OTHERWISE.
2. INTERIOR AUTO DOOR OPERATORS(2) & POWER TO SAME BY, TENANTS GENERAL CONTRACTOR UNLESS NOTED OTHERWISE.
3. DOOR OPERATOR PUSHBUTTONS, BY OPERATOR INSTALLER
4. PROVIDE 120V/15A CIRCUIT c/w BREAKER FOR OPERATOR AT RESPECTIVE ELECTRICAL PANEL.
5. PROVIDE LINE VOLT POWER DOOR CONTROL CIRCUITRY FOR P.B's.

ALL DOOR OPERATORS PROVIDED WITH JAMB MOUNTED RECESSED KEY SWITCH AT +60" AFF (REPLACES FUNCTION OF STD. TOGGLE SWITCH BY MANUFACTURER).

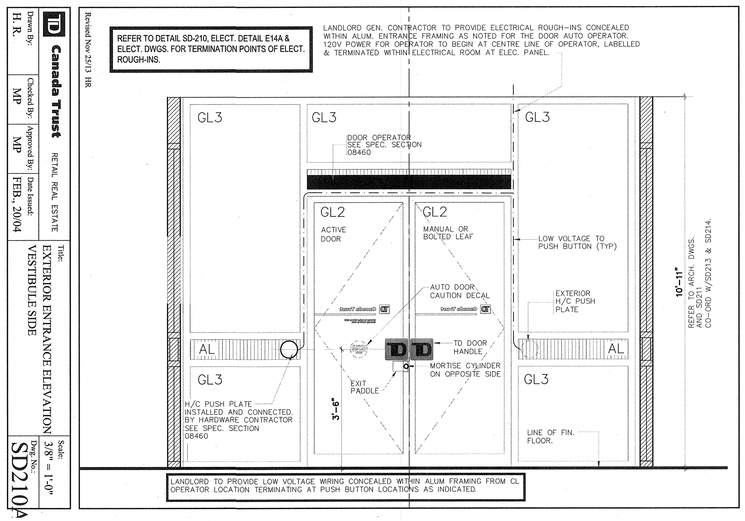
VAULTDOORALARMRELAYTOPROVIDE CONTROLTODISABLEAUTOOPERATOR ANDPUSHBUTTONSATINT'R.VEST.DOOR TOBRANCHONLY.

EXTR. DOOR & ABM VEST. DOOR ONLY TO HAVE PUSHBUTTONS ACTIVE 24 HRS FOR ABM ACCESS.

Canada Trust RETAIL REAL ESTATE				Title:	Scale:
Drawn By:	Checked By:	Approved By:	Date Issued:	AUTOMATIC DOOR OPERATORS FUNCTION AND SCHEMATIC AND POWER FOR DYE PACK	1/4" = 1'-0".
N. WALLIS	DG	D.G.	17 JUN 2005	REV 3 NOV 22, 2013 BA.	Dwg. No.: E14A.

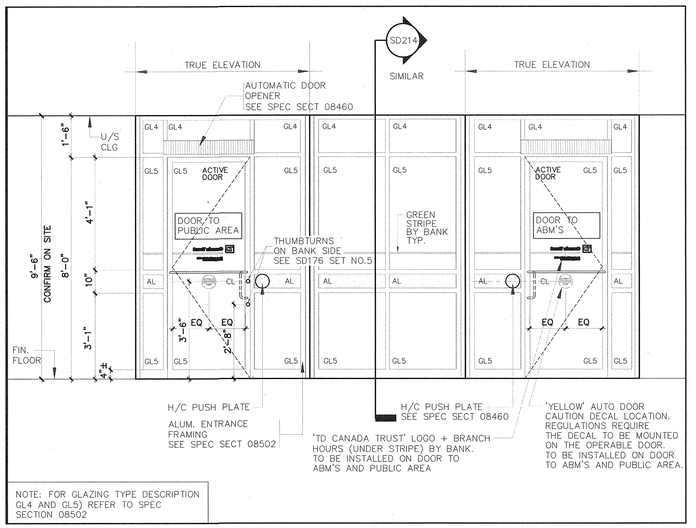


Canada Trust RETAIL REAL ESTATE				Title:	Scale:
Drawn By:	Checked By:	Approved By:	Date Issued:	MAIN ENTRANCE AND VESTIBULE PLAN	3/8" = 1'-0"
HR	MP	MP	FEB., 20/04	REVISED NOV 25, 2013 – HR	Dwg. No.: SD210



Revised Nov 25/13 HR.

Canada Trust RETAIL REAL ESTATE				Title:	Scale:
Drawn By:	Checked By:	Approved By:	Date Issued:	EXTERIOR ENTRANCE ELEVATION VESTIBULE SIDE	3/8" = 1'-0"
H.R.	MP	MP	FEB., 20/04		Dwg. No.: SD210A



NOTE: FOR GLAZING TYPE DESCRIPTION GL4 AND GL5) REFER TO SPEC SECTION 08502

Canada Trust RETAIL REAL ESTATE				Title:	Scale:
Drawn By:	Checked By:	Approved By:	Date Issued:	VESTIBULE ELEVATION FROM PUBLIC AREA	3/8" = 1'-0"
H.R.	D. G.	A. M.	FEB., 20/04	Revised Nov., 25/13 HR	Dwg. No.: SD212

SPECIFIC ELECTRICAL NOTES

1. PROVIDE BASE BUILDING CIRCUIT BREAKERS AS INDICATED. IN ADDITION, OBTAIN TENANT'S ELECTRICAL FIT UP DRAWINGS AND PROVIDE ALL INDICATED CIRCUIT BREAKERS, INCLUDING "SPARES".

No:	Date:	Revision
1	2018.03.01	ISSUED FOR PERMIT, TENDER & CONSTRUCTION
2		
3		
4		

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PROVINCE OF MANITOBA
D.P. ZILINSKI
2019.03.01
REGISTERED ENGINEER

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PROJECT
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BRANDON, MANITOBA

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DRAWN BY: ITS
CHECKED BY: DZ
DATE: MARCH, 2019
SHEET 03 OF 04

PROJECT	SHEET NO.
18-1921	E3.0

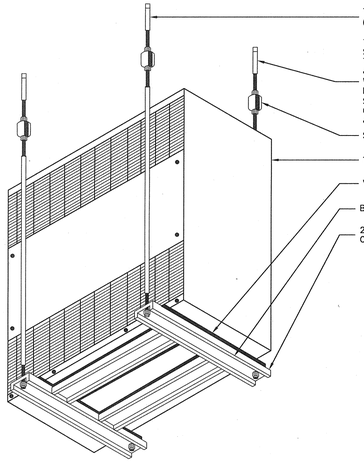
ELECTRICAL SCHEDULES AND DETAILS

APEGM
Certificate of Authorization
Nova 3 Engineering Ltd.
No. 962 Date: 2019.03.01

NOVA 3 ENGINEERING LTD.
PROFESSIONAL ENGINEERS
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WINNIPEG, MANITOBA R3C 1C7 FAX.: (204) 942–1276
WWW.NOVA3.CA JN.: 39017e

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THREADED ROD HANGERS. PROVIDE LENGTH AS REQUIRED. (TYPICAL)

TRANSFORMER TO BE HUNG AT HIGH LEVEL FROM OPEN WEB STEEL JOIST TOP CHORD OR FROM CONCRETE SLAB ABOVE. IF THE TRANSFORMER IS SUSPENDED FROM OPEN WEB STEEL JOISTS. THE TRANSFORMER TO BE CENTRED BETWEEN THE OPEN WEB STEEL JOISTS AND BE SUPPORTED BY 2–C75x6 (OR AS REQUIRED BY STRUCTURAL TO ACCOMMODATE WEIGHT OF SPECIFIC TRANSFORMER) CHANNELS SPANNING BETWEEN AND CONNECTED TO THE TOP CHORD OF THE JOIST AT A PANEL JOINT

SPRING ISOLATION (TYPICAL)

TRANSFORMER

VIBRATION MOUNTING PAD (TYPICAL)

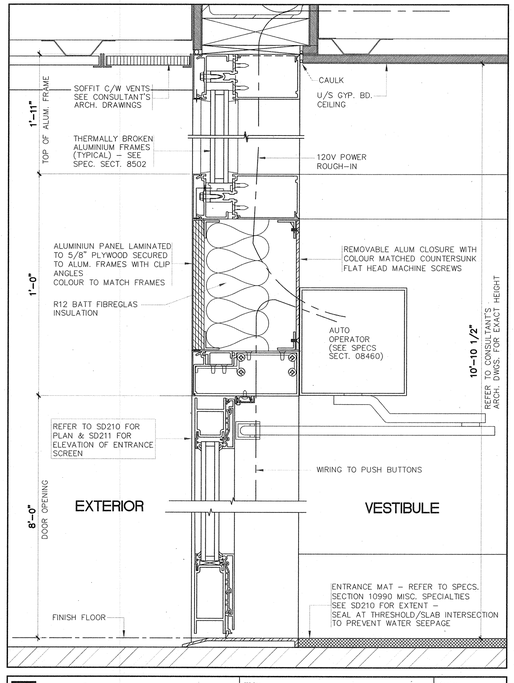
BOLT TRANSFORMER TO PLATFORM (TYPICAL).

2"x4" CHANNEL IRONS WELDED TOGETHER TO MAKE PLATFORM OR EQUIVALENT STRUCTURAL SUPPORT USING UNI–STRUT.

NOTES:

1. SPACE CHANNEL IRONS SO THAT TRANSFORMER IS PROPERLY SUPPORTED.
2. ALLOW ADEQUATE ACCESS SPACE BETWEEN RODS AND TRANSFORMER FOR REMOVAL OF FRONT COVER.
3. CO–ORDINATE TRANSFORMER LOCATION AND MOUNTING WITH STRUCTURAL PRIOR TO START OF WORK.
4. PROVIDE FLEXIBLE CONDUIT FOR PRIMARY AND SECONDARY CONNECTIONS TO THE TRANSFORMER.
5. PROVIDE LARGE LAMACOID LABEL ON TRANSFORMER CASE: "CAUTION: OPEN VENTILATED TRANSFORMER. ENSURE TRANSFORMER IS NOT INCORPORATED INTO A RETURN AIR PLENUM"

1 / E3.1 **TYPICAL TRANSFORMER MOUNTING DETAIL**
SCALE: N.T.S.



TD Canada Trust RETAIL REAL ESTATE				Title: SECTION DETAIL AT ENTRANCE DOOR (Revised Nov., 26, 2013 - H.R.)	Scale: 3" = 1'-0"
Drawn By: HR	Checked By: MP	Approved By: MP	Date Issued: FEB., 20/04		Dwg. No.: SD213

No:	Date:	Revision
1	2019.03.01	ISSUED FOR PERMIT, TENDER, & CONSTRUCTION
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DRAWN BY: ITS
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DATE: MARCH, 2019
SHEET 04 OF 04

PROJECT	SHEET NO.
18-1921	E3.1

ELECTRICAL DETAILS

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