LOADING DOCK AND SITE PAVING RENOVATION REGINA, SASKATCHEWAN

WSP GROUP

KEY PLAN AND DRAWING INDEX

SURFACE PLAN

SITE GRADING PLAN

C01 C02 C03

NUMBER TEN ARCHITECTURAL GROUP

MAIN FLOOR LOCATION PLAN

PLANS, SECTIONS & DETAILS

A1.0

DEMOLITION & NEW CONSTRUCTION

STRUCTURAL **BROWLEE BEATON KREKE** CONSULTING ENGINEERS

SECTIONS

S2

SPECIFICATIONS PLANS & SECTIONS

PLANS & SECTIONS

LEGENDS AND SCHEDULES SCHEMATIC STORM DRAINAGE M-2

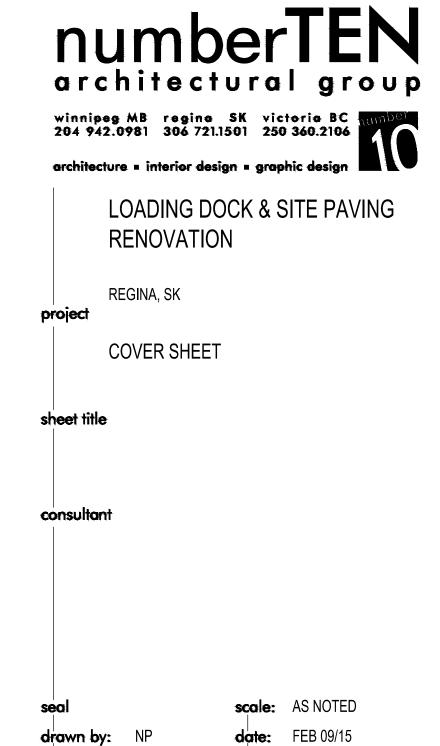
R J ENGLAND CONSULTING LTD.

MECHANICAL

HYDRONIC FLOOR PLANS SCHEMATIC AND DETAILS M-3

RITENBURG & ASSOCIATES LTD. CONSULTING ELECTRICAL ENGINEERS

BASEMENT & SUB BASEMENT POWER AND SYSTEMS PLAN



checked by: MF

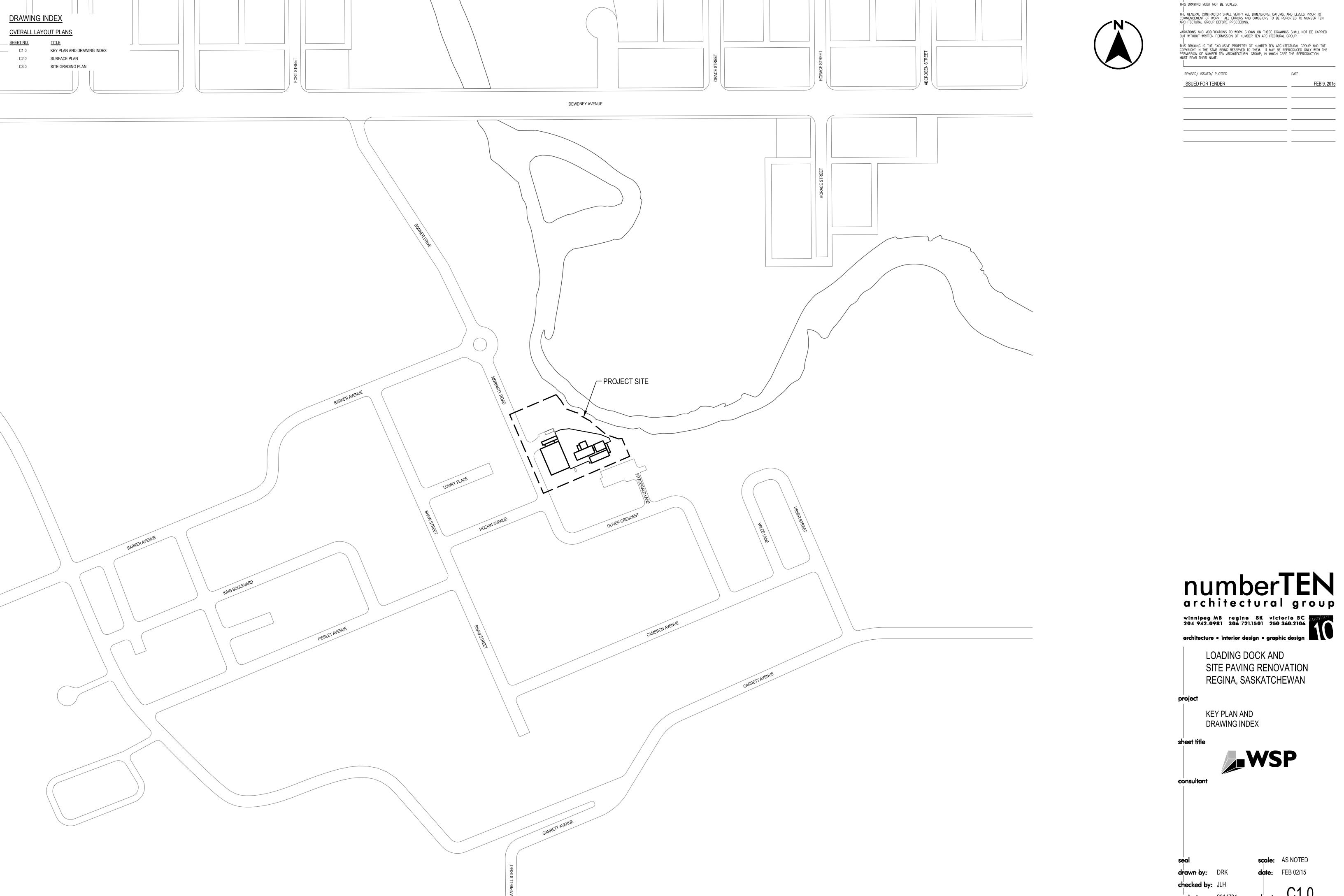
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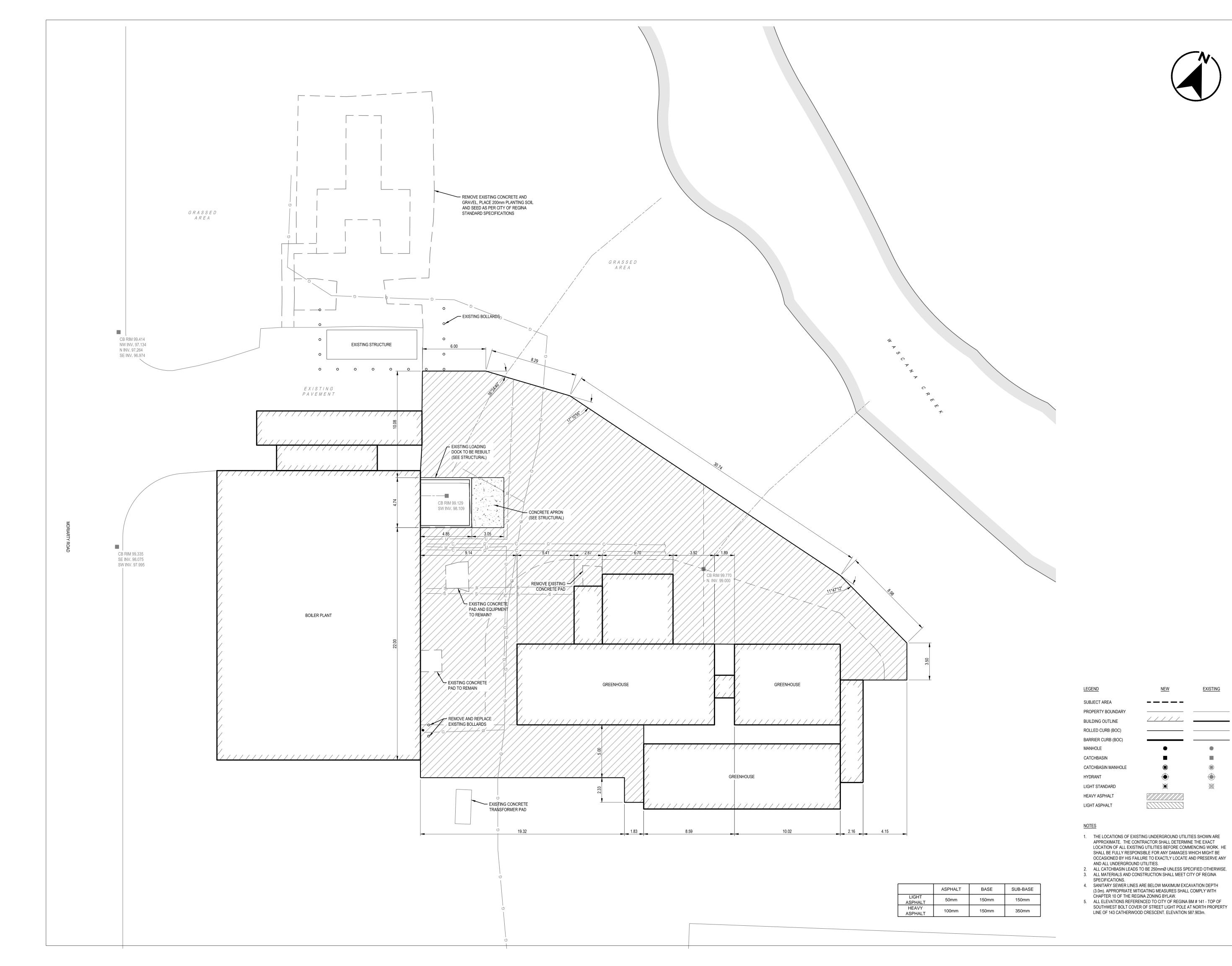
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numberTEN architectural group

winnipeg MB regine SK victoria BC number 204 942.0981 306 721.1501 250 360.2106 architecture = interior design = graphic design

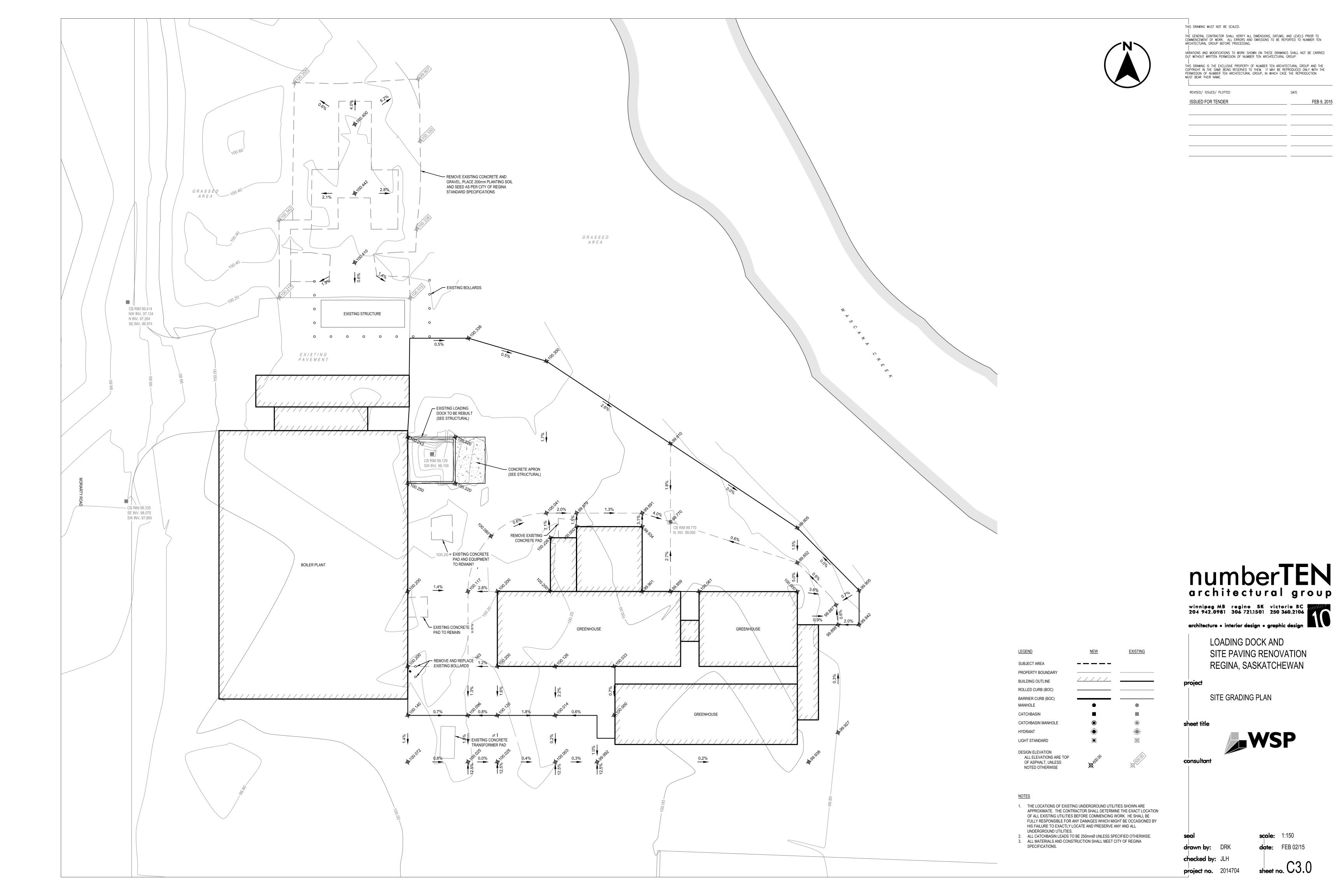
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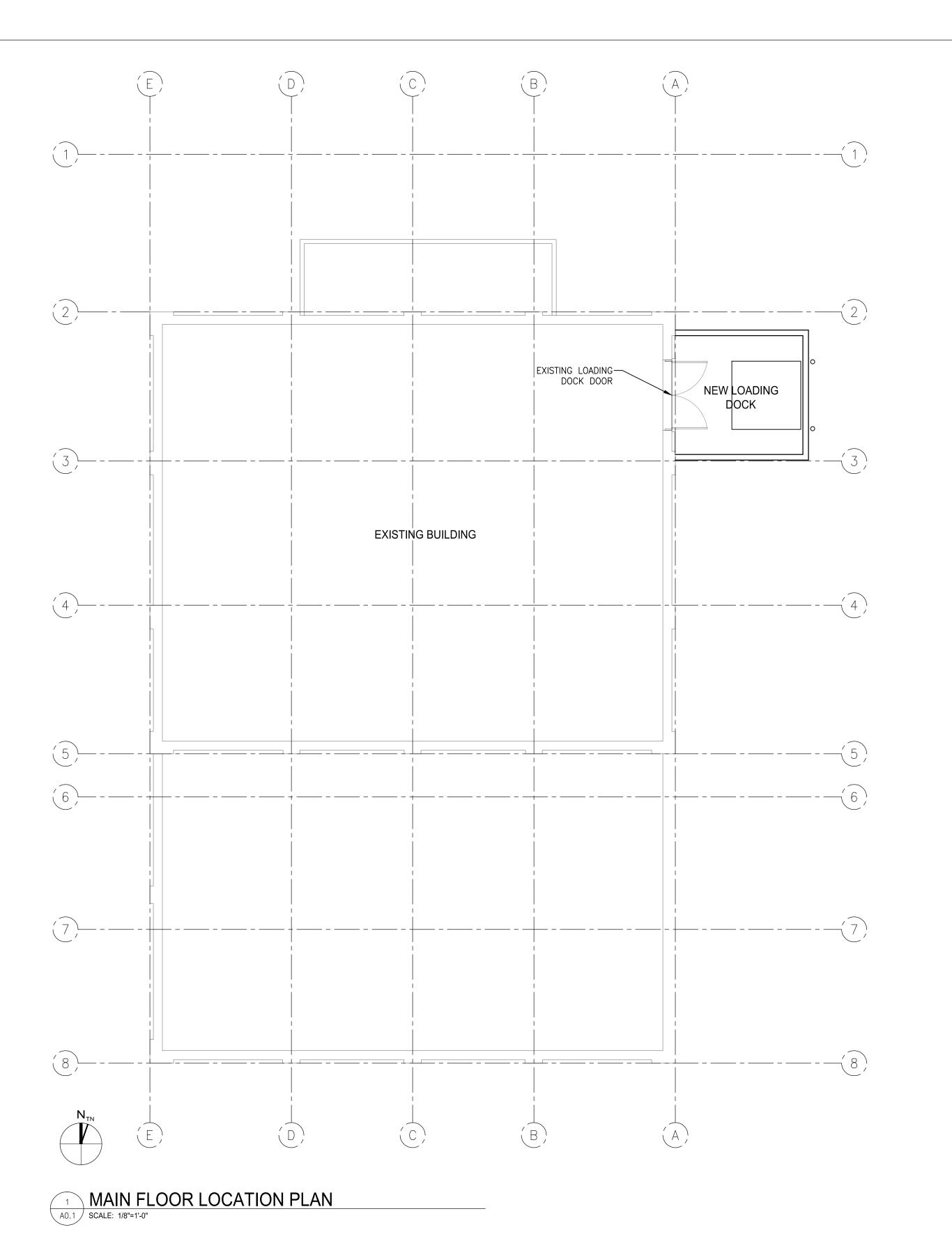
EXISTING

SURFACE PLAN



scale: AS NOTED





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ISSUED FOR TENDER		FEB 9, 20

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architecture = interior design = graphic design

LOADING DOCK & SITE PAVING RENOVATION

REGINA, SK

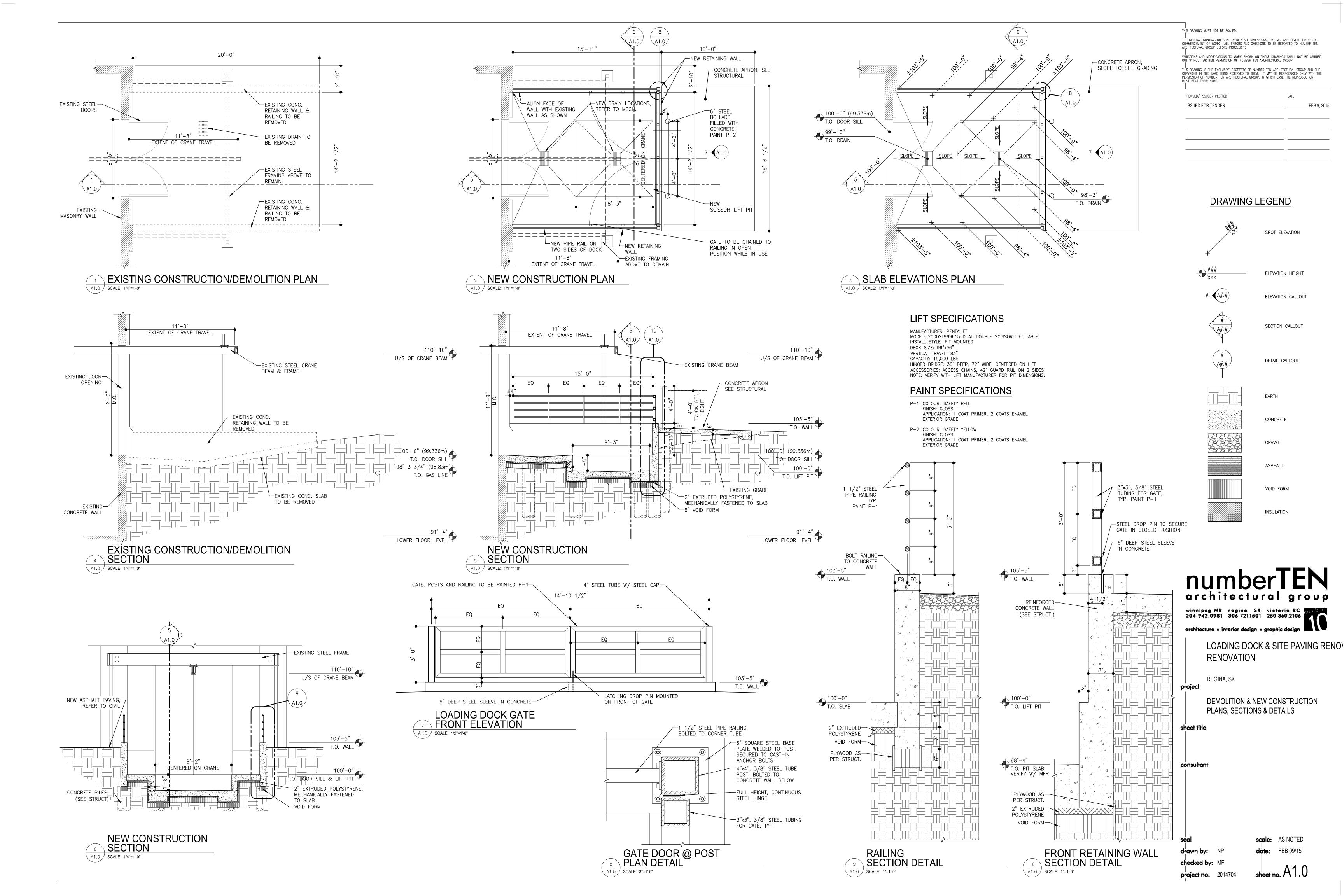
MAIN FLOOR LOCATION PLAN

sheet title

consultant

eal
rawn by: NP
hecked by: MF

scale: AS NOTED date: FEB 09/15



DRAWING SPECIFICATIONS

DIVISION 1 - GENERAL REQUIREMENTS

1.1 General Notes

.1 General Specifications — National Building Code of Canada 2010. Contractor shall read Structural drawings in conjunction with Architectural, Mechanical and Electrical drawings. Unless noted otherwise, typical details apply throughout. All dimensions in imperial.

.1 Report any discrepancies to the Consultant before proceeding with the work.

1.3 Existing Construction

.1 All information concerning existing construction has been taken from original drawings and site measurements. Contractor to confirm on site all existing dimensions, elevations and details prior to commencing work. Should information differ significantly from those shown, consult the Consultant prior to proceeding. All existing construction altered or damaged during course of work to be made good to

1.4 Shop Drawings

.1 Contractor to submit paper or pdf copies of premanufactured structural materials to the Consultant for review prior to fabrication.

1.5 Temporary Works

.1 Contractor is responsible for the design, construction and maintenance of all temporary works as may be required during the course of construction. Temporary works include, but are not limited to, shoring, scaffolding and bracing required to stabilize the structure until permanent structure is in place. Contractor to engage professional design services where required to comply with applicable Code requirements.

<u>DIVISION 2 - SITEWORK</u>

2.1 Bored Piles

.1 Protect public and construction personnel, adjacent structures and work of other sections from hazards attributed to piling operations.

.2 Friction piles have been designed for the following ASSUMED skin friction values: 500psf

.3 No site specific soils information is available. Soil conditions are ASSUMED from information available to be clay till and capable of developing assumed pile design criteria noted above. Soil conditions encountered during construction must be confirmed and documented by the Contractor as noted herein. Deviations from assumed conditions must be brought to the Engineer's attention immediately and confirmed in writing so that appropriate changes to the foundation system may be made. Unless so advised, BROWNLEE BEATON KREKE assumes no responsibility whatsoever for the performance of foundations installed in conditions deviating from those stated above.

.4 Maintain accurate field records of each pile placed. Records are to include the

- following: .1 Pile size, depth and location
- Excavated soil penetrated.
- Water seepage.
- Date and time of drilling.
- Date and time of placing concrete.
- Tested concrete strengths, slumps, etc. Reinforcement size and length.
- .5 Provide Engineer with one (1) copy of records.
- .6 Bore holes to diameters and depths indicated. Use steel sleeves as required to
- prevent sloughing of soil and entry of water. Advise Engineer of all sleeving requirements.
- .7 Remove all excavated material from the site. .8 Install steel reinforcing as detailed. .9 Fill pile excavations with concrete to elevation indicated. Vibrate top 10 feet of
- .10 Replace rejected piles as directed by the Engineer at no additional cost to the Owner.

<u>DIVISION 3 – CONCRETE</u>

3.1 Concrete Reinforcement

- .1 All reinforcing steel, unless noted otherwise, shall be deformed bars of high strength new billet steel conforming to CSA G30.18-09, Grade 400.
- .2 Minimum lap splice for 10M bars to be 18". Minimum lap splice for 15 M bars and
- larger to be 36 bar diameters or 27", whichever is greater. .3 All reinforcing bars to be continuous, unless noted otherwise.
- .4 Lap reinforcing where noted on drawings. Otherwise, lap top bars at midspan; bottom bars at supports as required for length.
- .5 Column and pile ties and beam stirrups shall conform to CSA G30.18-09. Grade
- .6 Welded wire mesh to G30.5-M1983. Minimum lap splice 8". Provide in flat sheets
- .7 Perform concrete reinforcing in accordance with CAN/CSA-A23.1-09.

3.2 Cast-in-Place Concrete

- .1 Perform cast—in—place concrete work in accordance with CAN/CSA A23.1—09,
- "Concrete Materials and Methods of Concrete Construction"
- .2 Cement to CSA A3000-08, "Portland Cements", and aggregates to CAN/CSA-A23.1-09, "Concrete Materials and Methods of Concrete Construction".
- .3 Submit concrete mix designs to Consultant for review.
- .4 Proportion normal density concrete in accordance with CAN/CSA A23.1-09
- Alternative 1, to give the properties in accordance with the following table: Exposure Strength Aggregate Slump Total

<u> Type</u>	Location	<u>Class</u>	f'c(MPa)	max(in)		Air %
.1	Piling	S-2	32 @ 56d	1½"	3"±1"	3 to 6
.2	Exterior Slabs, Grade Be	ams C—1	35 @ 28d	3/4"	3"±1"	5 to 8

3.3 Concrete Testing

- .1 Contractor to arrange and pay for concrete tests. Take 1 set of tests for each 50 cubic yards of concrete cast or each days casting. Tests to include: .1 3 test cylinders plus 1 additional cylinder for cold weather concreting.
 - Additional cylinder to be cured under job conditions.
 - .2 1 slump test. .3 1 air content test.
- .2 Submit test results to Consultant.
- .3 Tests to be performed by CSA approved agency. .4 Concrete testing to CSA A23.2-09.

3.4 Concrete Formwork

.1 To conform to applicable requirements of CAN/CSA-A23.1 Concrete Materials and Methods of Construction and CAN/CSA S269.3 Falsework for Construction Purposes.

3.5 Concrete Floor Finishing

- .1 All interior slabs to be steel trowel finished to flatness of $\frac{1}{4}$ " in $10^{2}-0$ ".
- .2 All non-hardened concrete floors to have minimum 2 applications of acrylic sealant (CPD Acryl Cure & Seal or equivalent).
- .3 All floors noted as receiving hardener to be finished with coloured (light grey) non-metallic dry shake hardener applied at rate of 3.0 kg/sm (60 lb/100sf) and compatible sealer.
- .4 All exterior slabs to have medium broom finish.

3.6 Concrete Accessories

- .1 Concrete Anchors: Sizes as detailed on drawings, Standard embedment and
- installation as per Manufacturers Specifications. .1 Expansion Wedge Anchors to be Hilti Kwik Bolt 3 or approved alternate.
- .2 Drop In Anchors to be Hilti HDI Anchors or approved alternate.
- .3 Heavy Duty Sleeve Anchors to be Hilti HSL 3 or approved alternate.
- .4 Undercut Anchors to be Hilti HDA or approved alternate
- .5 Hollow Masonry Adhesive Anchors to be Hilti HIT HY 20 or approved alternate. .6 Adhesive Anchors to be Hilti HIT HY 150 Max (fast set, hammer drilled holes), Hilti HIT RE 500 (slow set, cored holes), Hilti HIT ICE (cold weather below -10C) or approved alternate complete with specified rod (HAS-E, HAS Super, SS304/316), washer and nut.

.2 Concrete Patching Material

Pre-packaged, polymer modified, cementitious product containing graded natural agaregate. EMACO R300 — Rapid Setting Mortar as manufactured by Master Builders or approved equal.

.3 Cement Grout Capsules

Reinforcing steel detailed to be installed in pre-placed concrete to be anchored using Lafarge Fondu Cement Grout Capsules M3RR or approved equal.

3.7 Void Form: to comply with either of the following.

.1 Biodegradable Void Form

6" deep, structurally sufficient to support weight of wet concrete and other superimposed loads without collapsing until concrete has gained sufficient strength to support these loads after which time the form must promptly degrade. Do not wrap void form. UNDER NO CIRCUMSTANCES may void form be installed over poly ground sheet, substitute with Compressible Void Form. The onus is entirely on the Contractor and Supplier to ensure that the void form is installed to perform as intended.

.2 Compressible Void Form

GeoVoid (below slabs) or GeoSpan (below walls & grade beams) compressible void form by Plasti-Fab designed by supplier for 6" soil heave, installed to suppliers specifications.

3.8 Grade Supported Slabs, Walks and Pads

.1 Cast over 6" compacted granular fill. All grade supported concrete slabs, sidewalks and landing pads, unless noted otherwise, to be 5" thick and reinforced with 15 M at 16" on centre each way at middepth. Refer to Architect for exact size and location of all sidewalks and pads.

EL. 99'-10"
T/O GRATING

2-15M DOWELS

MIN. 6"

EPOXY GROUTED

EMBEDMENT, TYP.

15'-11"

EXISTING CONC.

EXISTING CONC.

4'-4"

FOUNDATION PLAN

8" MIN. REINFORCED CONCRETE SLAB

2. T/O MAIN FLOOR CONCRETE @ ELEVATION VARIES.

4. SITE CONFIRM LOCATION OF EXISTING CRANE SUPPORTS.

DEAD LOAD = 100psf

LIVE LOAD = 250psf

REFER TO TYPICAL STRUCTURAL SLAB REINFORCING DETAIL C/SO.

2" RIDGE INSULATION, SEE ARCH.

1. FLOOR CONSTRUCTION TO BE:

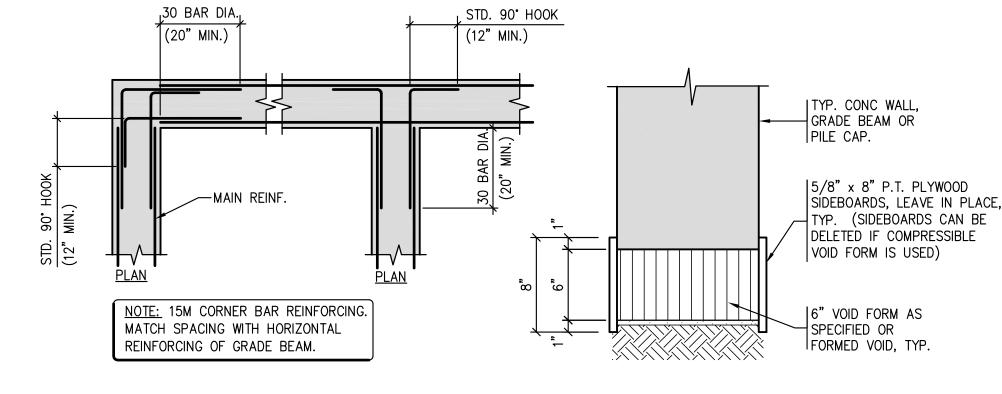
FLOOR DESIGN LOADS:

CRANE SUPPORTS

CRANE SUPPORTS

6'-8"

EL. 100'-0" T/O SLAB





10'-0"

-†BOLLARD SEE DÉTAIL^ 4/S2, CONFIRM

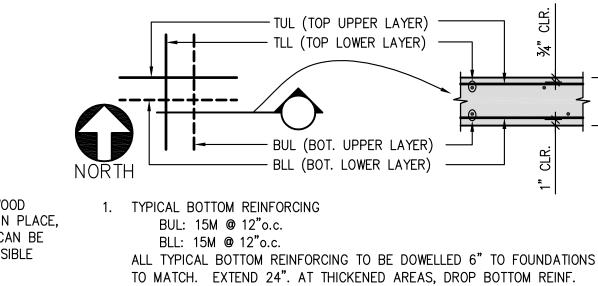
LOCATION w/ ARCH.

T/O GRATING

DENOTES CHANGE IN

U/S OF GRADE BEAM

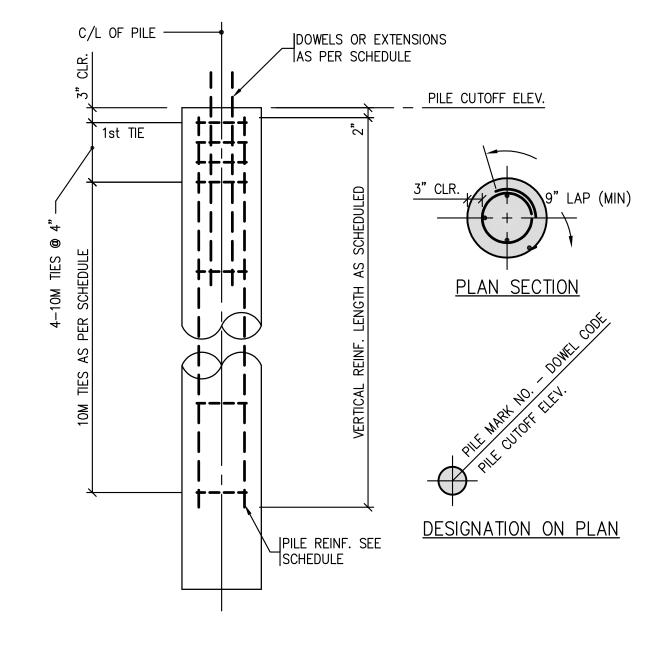




AND LAP MIN. 24" WITH TYPICAL BOTTOM BARS. 2. TYPICAL TOP REINFORCING TUL: 15M @ 12"o.c. TLL: 15M @ 12"o.c.

ALL TYPICAL TOP REINFORCING TO BE DOWELLED TO FOUNDATIONS TO MATCH. EXTEND 36".





DEPTH BELOW GRADE (ft) SKIN FRICTION (psf) 0 - 7'-0" NEGLECT	PILE DESIGN CRITERIA (ASSUMED)							
	DEPTH BELOW GRADE (ft)	SKIN FRICTION (psf)						
BFI()W / -()	0 — 7'—0" BELOW 7'—0"	NEGLECT 500						

PILE REINFORCING SCHEDULE									
PILE MARK No.	PILE SHAFT DIA.	LENGTH	VERTICAL REINF.	HORIZONTAL TIES	REMARKS				
P401	16"	18'-0"	4-15Mx15'-0"	10M @ 16"					
•									

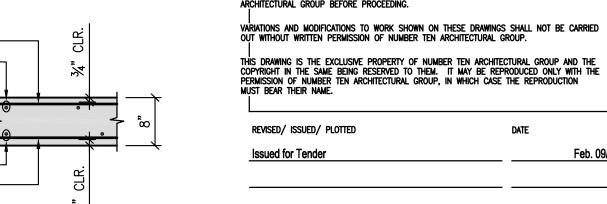
1. ALL PILES TO BE CUTOFF AT ELEVATION DENOTED ON SCHEDULE U.N.O. ON PLAN.

2. REINFORCING LENGTHS <u>DO NOT INCLUDE</u> EXTENSIONS OR HOOKS. 3. CONTINUOUS SPIRAL TIES ACCEPTABLE ALTERNATE TO HORIZONTAL TIES.

DOWEL NOTES:

A. $4-20M \times 3'-8"$ Ig. EXTEND 22" ABOVE PILE CUTOFF. B. EXTEND VERTICAL REINF. 2'-5" INTO STRUCTURAL SLAB AND BEND DOWN ON SITE.

TYPICAL FRICTION PILE DETAIL



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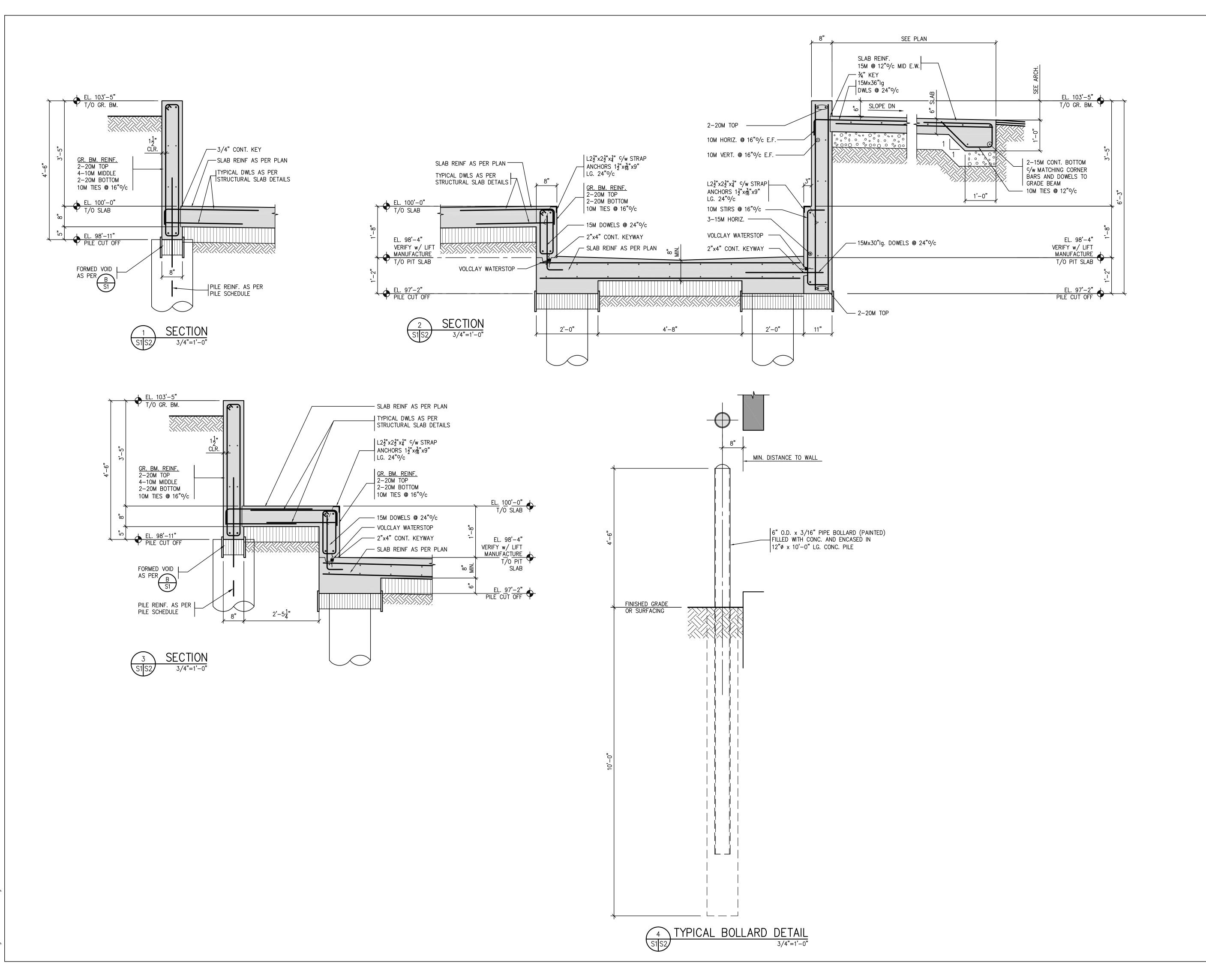
architecture = interior design = graphic design
LOADING DOCK AND
SITE PAVING RENOVATION

SPECIFICATIONS PLANS & SECTIONS

consultant

date: Feb 02/15

drawn by: CS checked by: DS **project no.** 2014704



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Association of Professional Engineers & Geoscientists of Saskatchewan

CERTIFICATE OF AUTHORIZATION

BROWNLEE BEATON KREKE (REGINA) LTD.

NUMBER 525

PERMISSION TO CONSULT HELD BY:

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LOADING DOCK AND

SITE PAVING RENOVATION

project

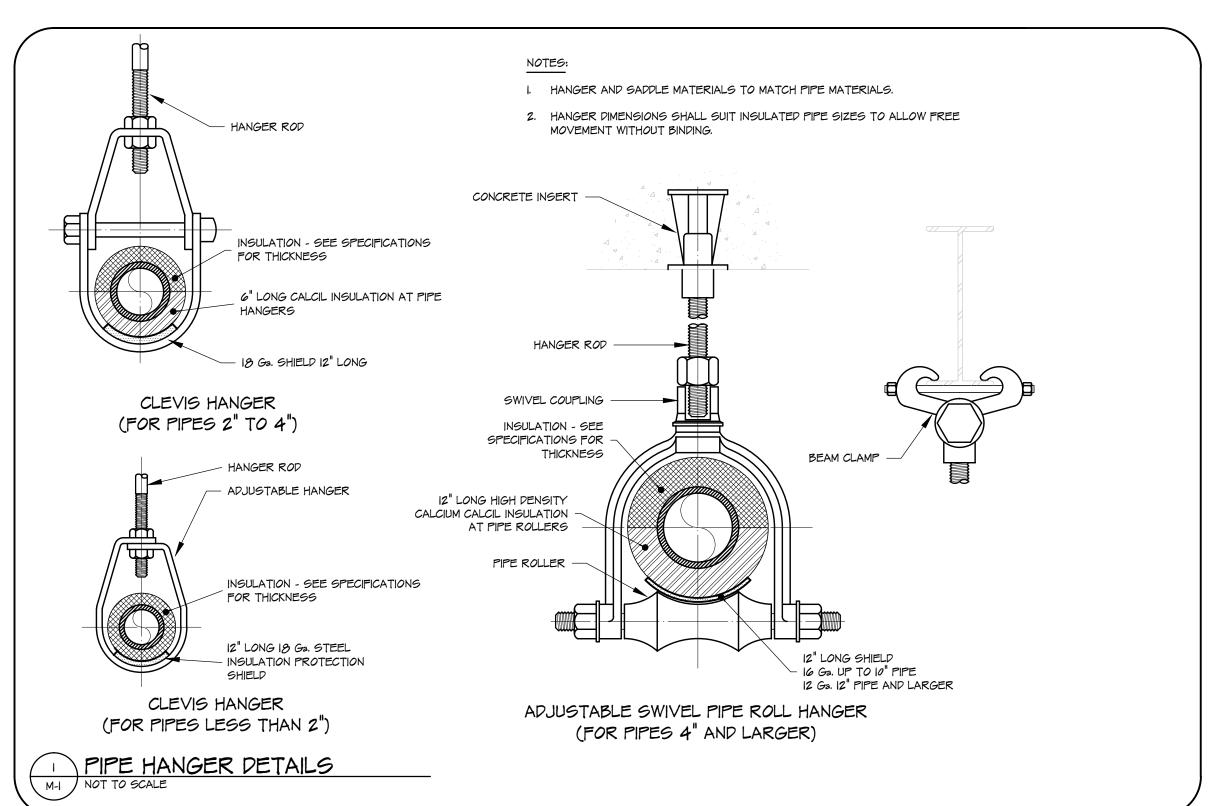
SECTIONS
PLANS & SECTIONS

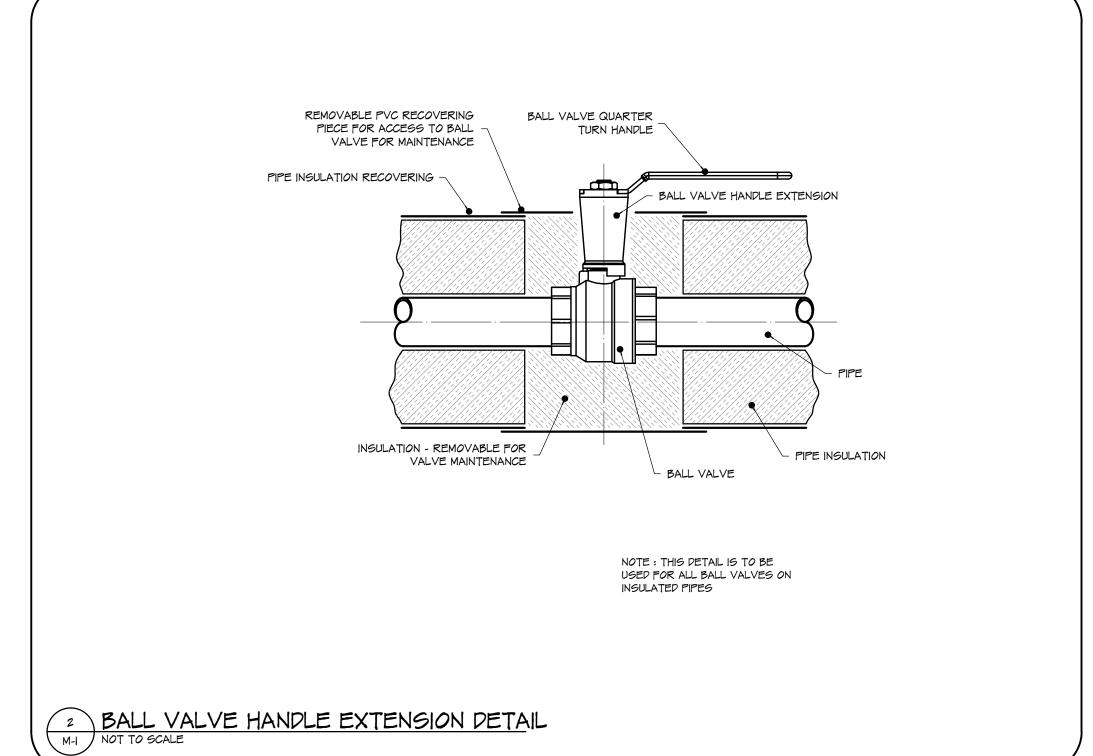
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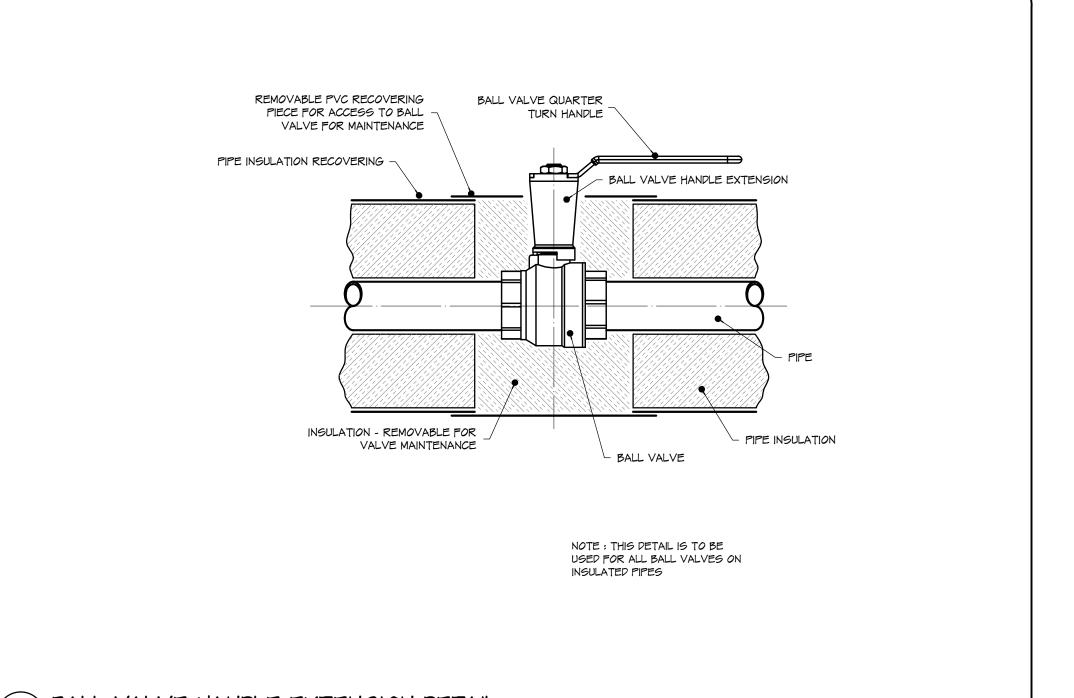
consultant

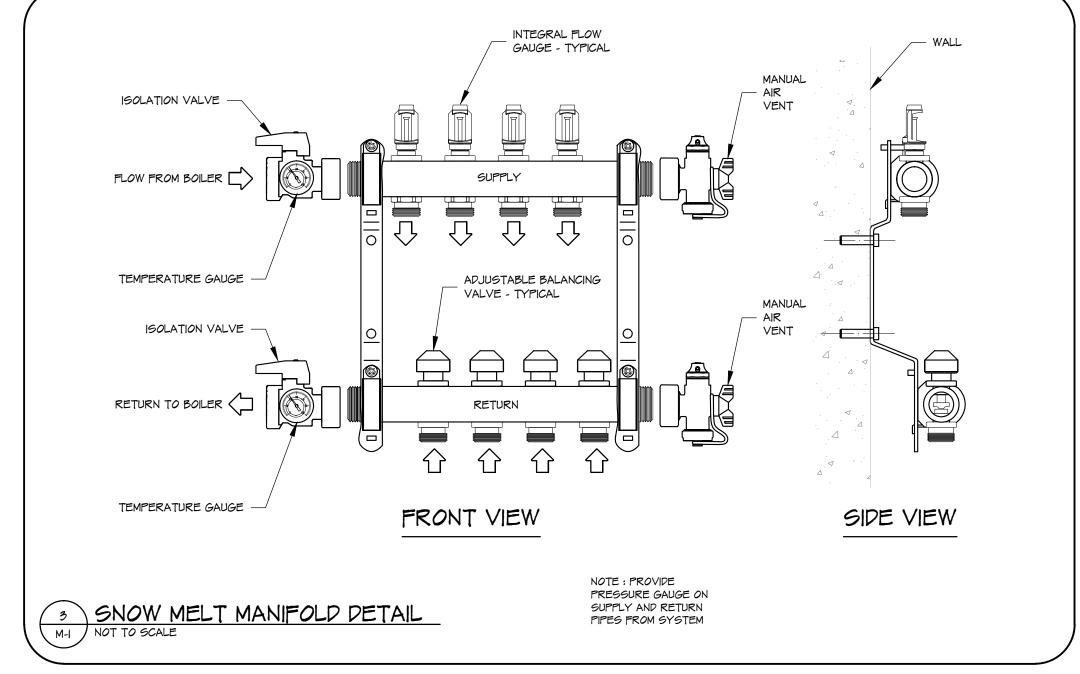
seal scale: AS NOTED drawn by: CS date: Feb 02/15 checked by: DS

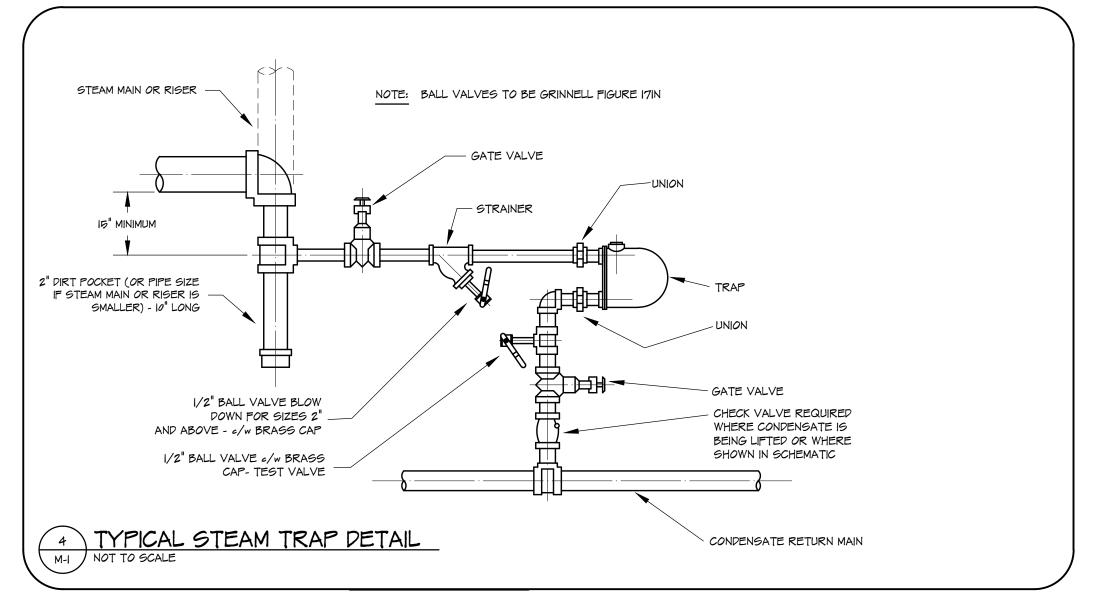
by: DS o. 2014704 **sheet no.**

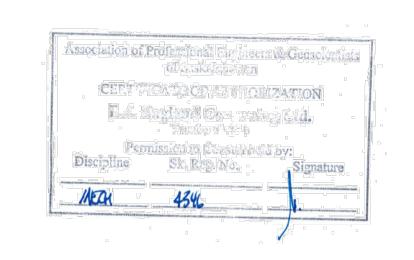












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2015.02.27

ISSUED FOR TENDER - MODIFIED TITLE BLOCK

architectural group

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> LOADING DOCK AND SITE PAVING RENOVATION

MECHANICAL LEGENDS AND SCHEDULES SCHEMATIC

204 - 1945 Scarth Street

scale: AS NOTED

checked by: RJE

PIPING LEGEND ITEM DESCRIPTION EQUIPMENT DRAIN GLYCOL HEATING SUPPLY GLYCOL HEATING RETURN LOW PRESSURE STEAM LOW PRESSURE CONDENSATE DOMESTIC COLD WATER STORM PIPING - EXPOSED STORM PIPING - BURIED

PIP	ING SYMBOL LEGEND
ITEM	DESCRIPTION
—————————————————————————————————————	GATE VALVE BALL VALVE
	CHECK VALVE CONTROL VALVE CIRCUIT BALANCING VALVE
	PRESSURE RELIEF VALVE VACUUM BREAKER
	STRAINER UNION / CONCENTRIC PIPE REDUCER FLOAT AND THERMOSTATIC (F&T) TRAP
→ J	DIRECTION OF FLOW PIPE CAP
<u> </u>	AIR VENTS - MANUAL AND AUTOMATIC
	CONNECT NEW PIPE TO EXISTING
──	CLEAN-OUT
	PIPE DROP
	PIPE RISE
 	PIPE TEE
\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	PIPE ELBOW
──~≀	PIPE CONTINUATION
TO DRAIN 1% SLOPE 1% SLOPE	CONNECT TO DRAIN - INDIRECT PIPE SLOPE
	TEMPERATURE GAUGE
\ <u></u>	PRESSURE GAUGE
\	

EQUIPMENT SCHEDULE

HX-I BELL & GOSSETT BRAZED PLATE HEAT EXCHANGER MODEL NUMBER BP400-20. HEATING FLUID: STEAM AT 2 PSIG, 30.0 PPH. HEATED FLUID: 50% PROPYLENE GLYCOL, 3.3 USGPM AS 2' W.P.D. 110°F EWT, 90°F LWT. 20.7 MBH CAPACITY. 20 PLATES, 435 PSIG DESIGN PRESSURE, 5.3 LB. OPERATING WEIGHT, 316L PLATE MATERIAL WITH COPPER BRAZING

P-IA HIGH EFFICIENCY LARGE WET ROTO CIRCULATOR WITH ELECTRONICALLY COMMUTATED MOTOR MODEL XL20-140. 4.3 USGPM AT 20' HEAD. 3300 RPM. CAST IRON OR LEAD FREE BRONZE BODY, STAINLESS STEEL IMPELLER, STAINLESS STEEL SHAFT, CARBON SLEEVE BEARING, EPDM GASKET/O-RING, ALL OTHER WETTED PARTS STAINLESS STEEL. 0.5 HP, 208V/3PH/60HZ. WEIGHT: 31 LBS.

P-IB AS P-IA.

AS-1 BELL & GOSSETT IN-LINE AIR SEPARATOR MODEL IAS-1. LESS THAN I PSI PRESSURE DROP AT 4.3 USGPM FLOW.

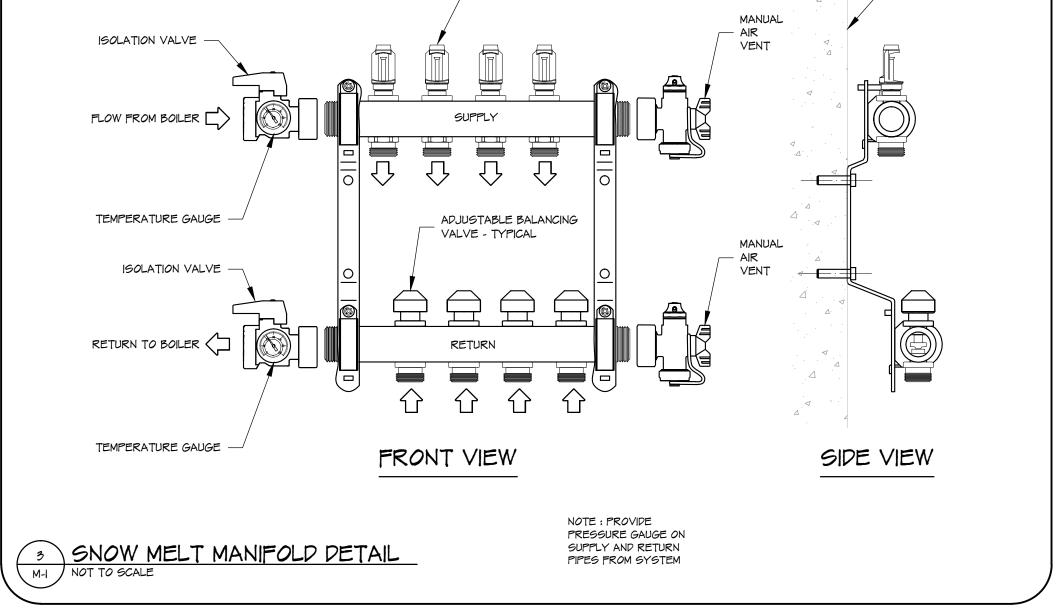
TK-I AMTROL "RADIANT EXTROL" MODEL RX-30. 4.4 USGAL TANK VOLUME, 3.2 USGAL MAXIMUM ACCEPTANCE VOLUME.

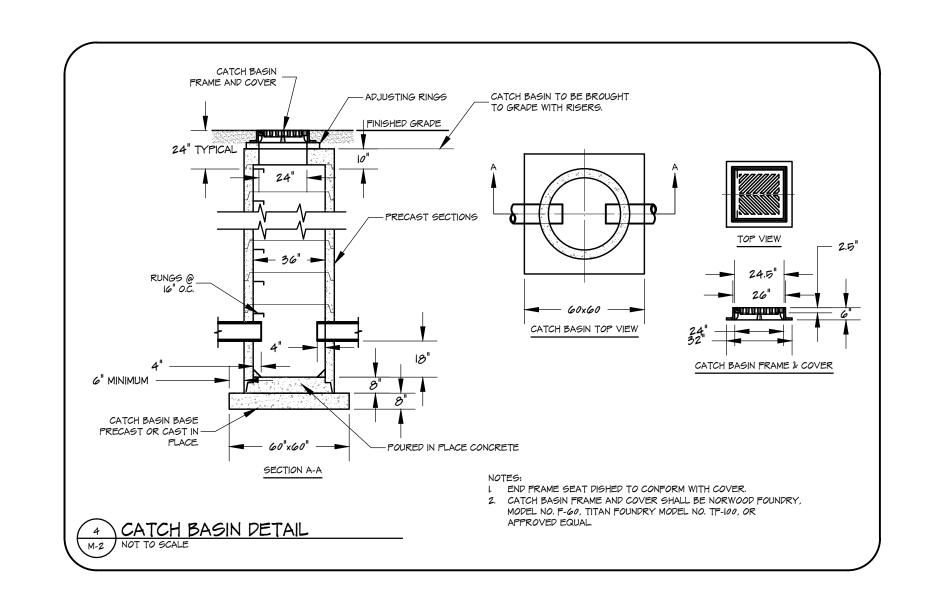
TK-2 AXIOM INDUSTRIES MODEL "MF-200" GLYCOL MAKE-UP PUMP AND TANK. 6.6 USGAL. UNIT. UNIT COMPLETE WITH MOLDED-IN LEVEL GAUGE, 5" FILL/ACCESS OPENING AND COVER, PUMP SUCTION HOSE WITH INLET STRAINER AND CHECK VALVE, PRESSURE PUMP WITH FUSE PROTECTION, LOW FLUID LEVEL PUMP CUT-OUT FLOAT SWITCH, MANUAL DIVERTER VALVE FOR PURGING AIR AND AGITATING CONTENTS OF STORAGE TANK, PRESSURE SWITCH WITH SNUBBER ADJUSTABLE FROM 10 PSIG TO 170 PSIG; 25 PSIG CUT-OUT PRESSURE (FACTORY SET TO 17 PSIG); LIQUID FILLED PRESSURE GAUGE. UNIT TO BE a/w FUSED POWER SUPPLY ADAPTER WITH LED POWER INDICATOR LIGHT, 115V/60HZ/IPH. FEEDER SHALL BE COMPATIBLE WITH GLYCOL SOLUTIONS OF UP TO 50% CONCENTRATION. PUMP SHALL BE CAPABLE OF RUNNING DRY WITHOUT DAMAGE. UNIT SHALL BE COMPLETE WITH THE FOLLOWING OPTIONS: TANK MOUNTING SHELF AND LOW LEVEL ALARM PANEL WITH REMOTE MONITORING DRY CONTACTS AND SELECTABLE AUDIBLE ALARM. ELECTRICAL: IIDV/IPH/60HZ 50 WATTS. ELECTRICAL SUB-TRADE TO PROVIDE SWITCHED OUTLET,

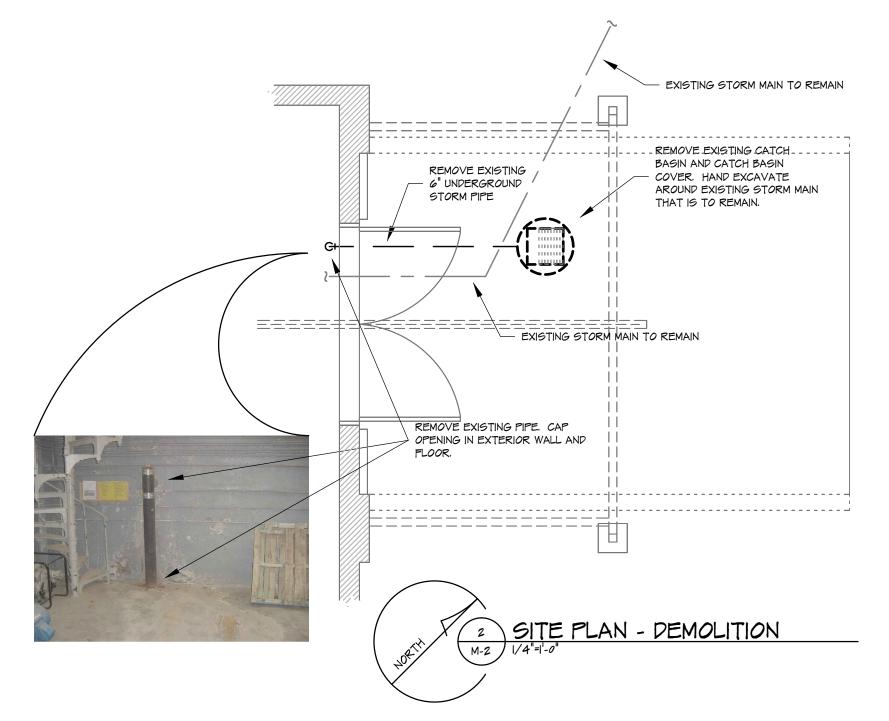
GSF-I AXIOM INDUSTRIES MODEL SFP-10 SIDESTREAM FILTER PACKAGE, SYSTEM SHALL INCLUDE FILTER, SIGHT FLOW INDICATOR, BALL VALVE, AND BALANCING VALVE. FILTER SHALL BE CONSTRUCTED OF STAINLESS STEEL WITH BRASS HEAD, AND SHALL INCLUDE TWO EPDM O-RINGS, BRASS DRAIN VALVE WITH BARB FITTING AND CAP. BALL VALVE SHALL BE OF BRASS CONSTRUCTION. MANUAL BALANCING VALVE SHALL BE OF BRASS CONSTRUCTION AND SHALL COME WITH AN INTEGRAL AIR VENT, MEMORY STOP, AND SHALL BE ABLE TO PROVIDE FLOW METERING, FLOW BALANCING, AND FILTER CARTRIDGE ISOLATION. PROVIDE 25 MICRON CARTRIDGE FOR START-UP AND FLUSHING, AND 5 MICRON FILTER FOR OPERATING. PROVIDE OPENING TOOL AND SIX (6) UNUSED 5 MICRON FILTER CARTRIDGES.

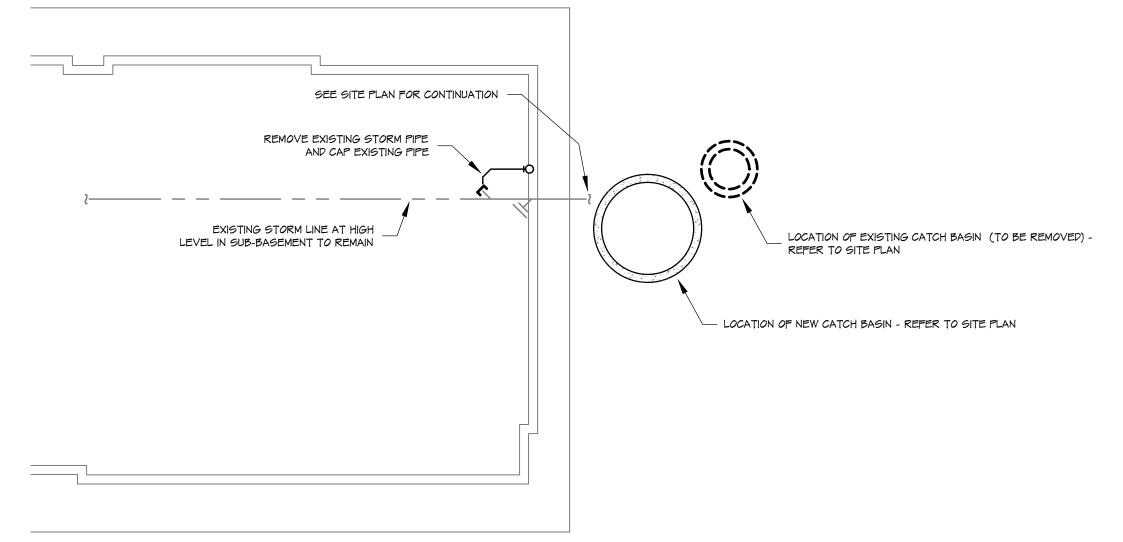
CR-I BELL & GOSSETT CONDENSATE RETURN UNIT MODEL 62CC. CAST IRON RECEIVER (14 USGAL) DUPLEX CENTRIFUGAL PUMPS, 1/3 HP 115V/IPH/60HZ EACH CAPABLE OF 6 USGPM AT 20 PSIG DISCHARGE PRESSURE. DOUBLE POLE EXTERNALLY ADJUSTABLE FLOAT SWITCHES (2) - SEAMLESS FLOAT AND STAINLESS STEEL ROD. UNIT TO BE COMPLETE WITH WATER LEVEL GAUGE WITH SHUTOFF VALVE, DIAL THERMOMETER, INLET BASKET STRAINER, DISCHARGE PRESSURE GAUGE, SUCTION BUTTERFLY VALVE, NEMA2 CONTROL PANEL MOUNTED AND WIRED WITH LIQUID TIGHT FLEXIBLE CONDUITS COMPLETE WITH ELECTRICAL AUTOMATIC ALTERNATION OF PUMPS (NOT MECHANICAL ALTERNATION). MAGNETIC STARTERS IN CONTROL PANEL WITH FUSEABLE DISCONNECT SWITCHES. AUTO-OFF-LEADLAG" SWITCH.

	EQUIPMENT
ITEM	DESCRIPTION
TAG	EQUIPMENT TAG
	PUMP
	/

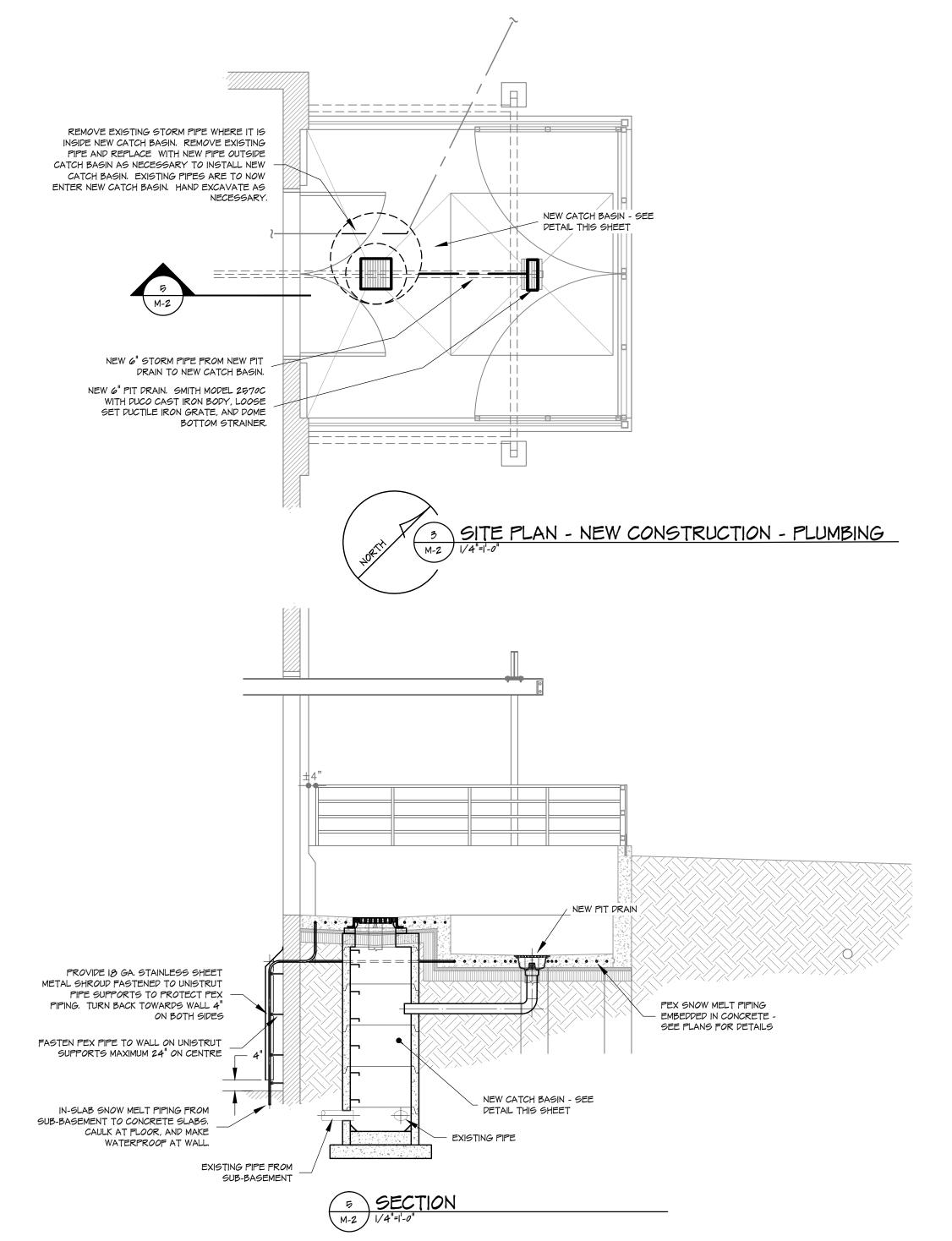








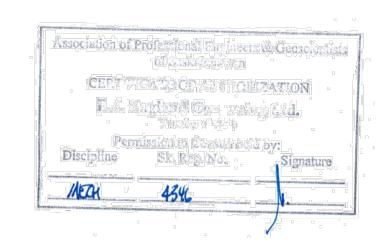




THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DATUMS, AND LEVELS PRIOR TO COMMENCEMENT OF WORK. ALL ERRORS AND OMISSIONS TO BE REPORTED TO R. J. ENGLAND CONSULTING LTD. BEFORE PROCEEDING.

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architectural group

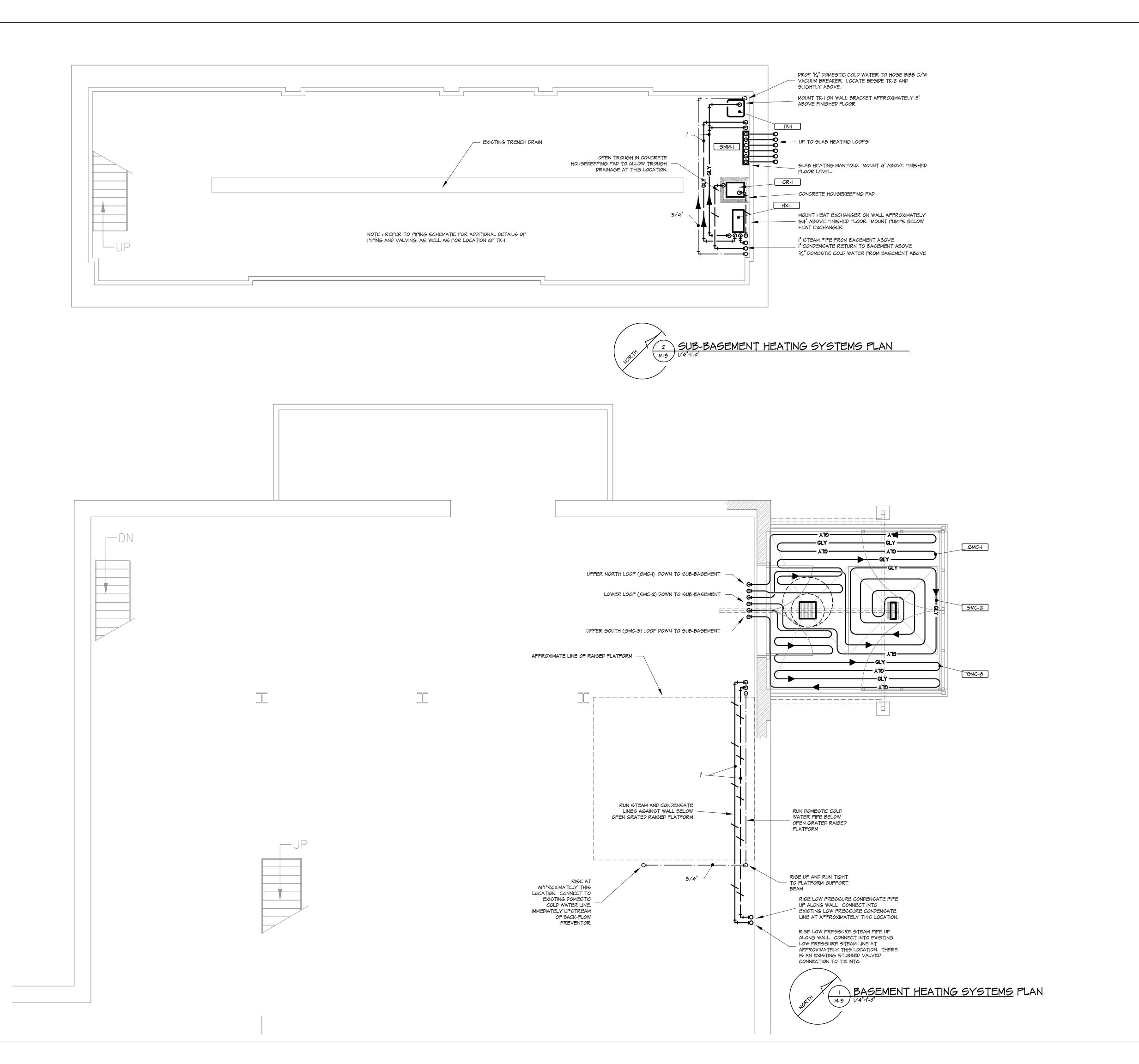
winnipeg MB regine SK victorie BC number 204 942.0981 306 721.1501 250 360.2106

architecture = interior design = graphic design

LOADING DOCK AND SITE PAVING RENOVATION

MECHANICAL STORM DRAINAGE

204 - 1945 Scarth Street Regina, Saskatchewan CANADA S4P 2H1

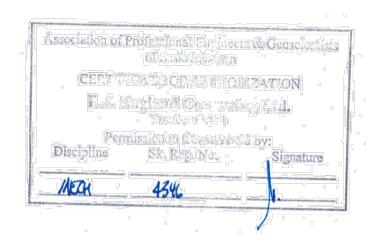


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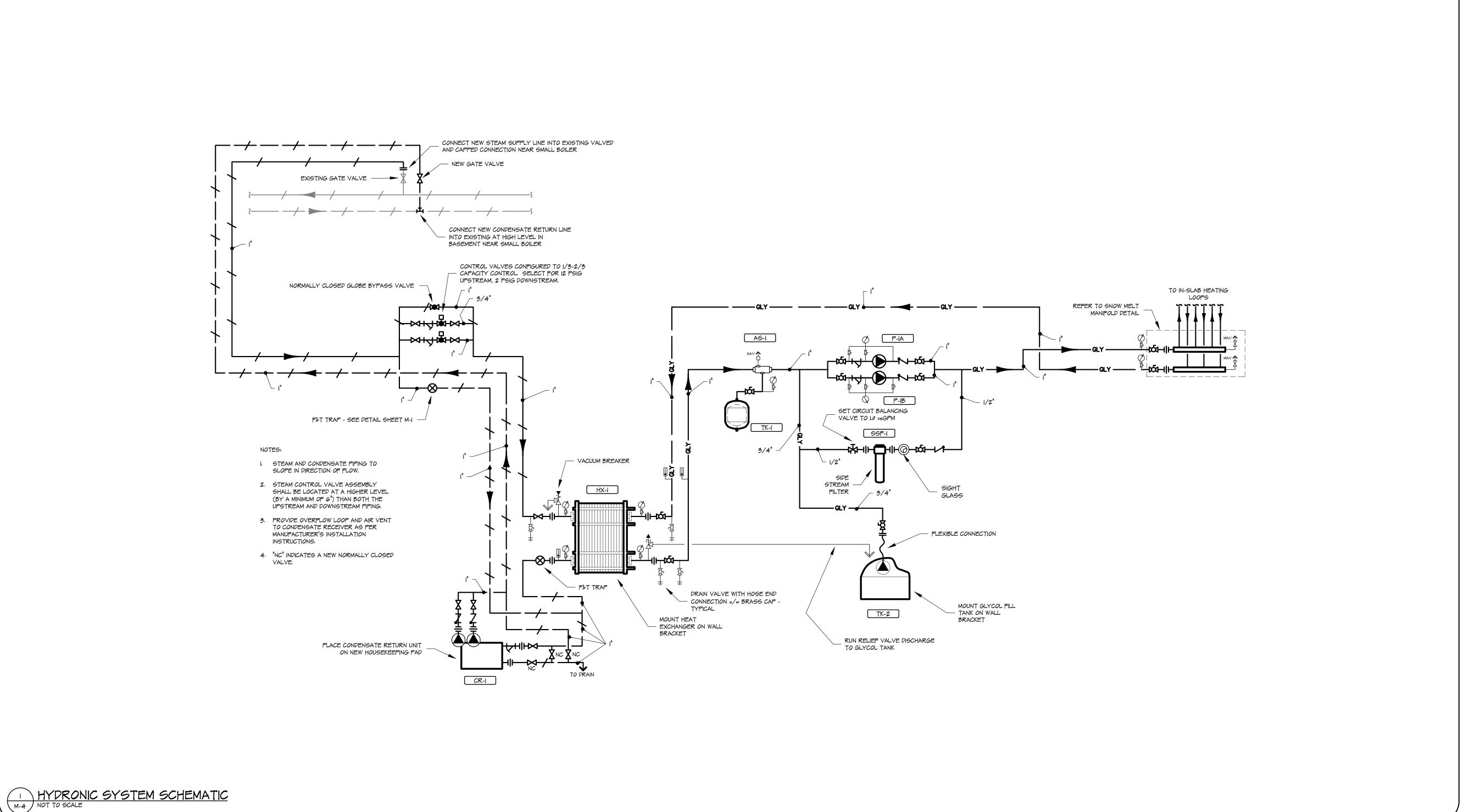
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architecture = interior design = graphic design LOADING DOCK AND

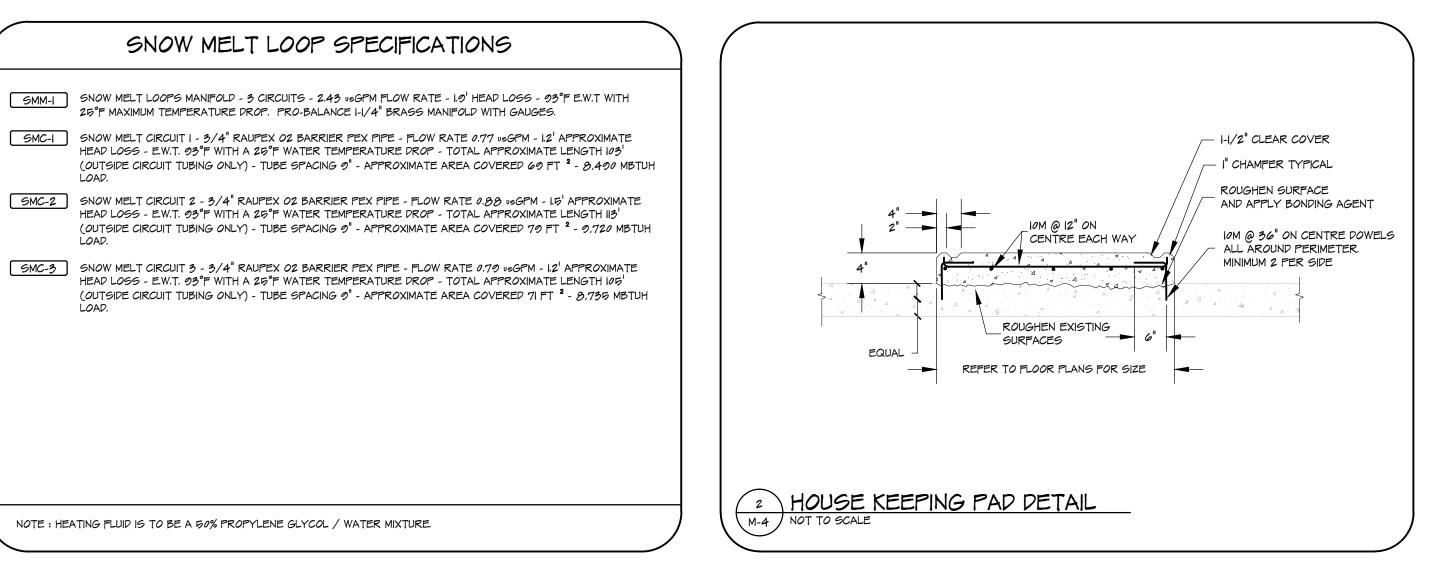
SITE PAVING RENOVATION

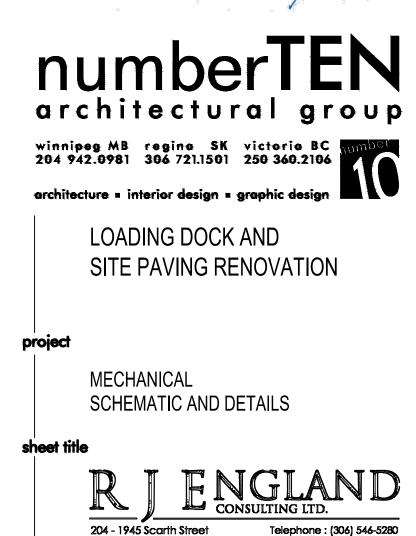
MECHANICAL HYDRONIC FLOOR PLANS

204 - 1945 Scarth Street Regina, Saskatchewan CANADA S4P 2H1



NOTE : HEATING FLUID IS TO BE A 50% PROPYLENE GLYCOL / WATER MIXTURE.





checked by: RJE

scale: AS NOTED

Association of Professional Engineers to Geoscionasts

CELTIFICATION

Permission of Consulting by:

Discipline Sk.Rep.No.

THIS DRAWING MUST NOT BE SCALED.

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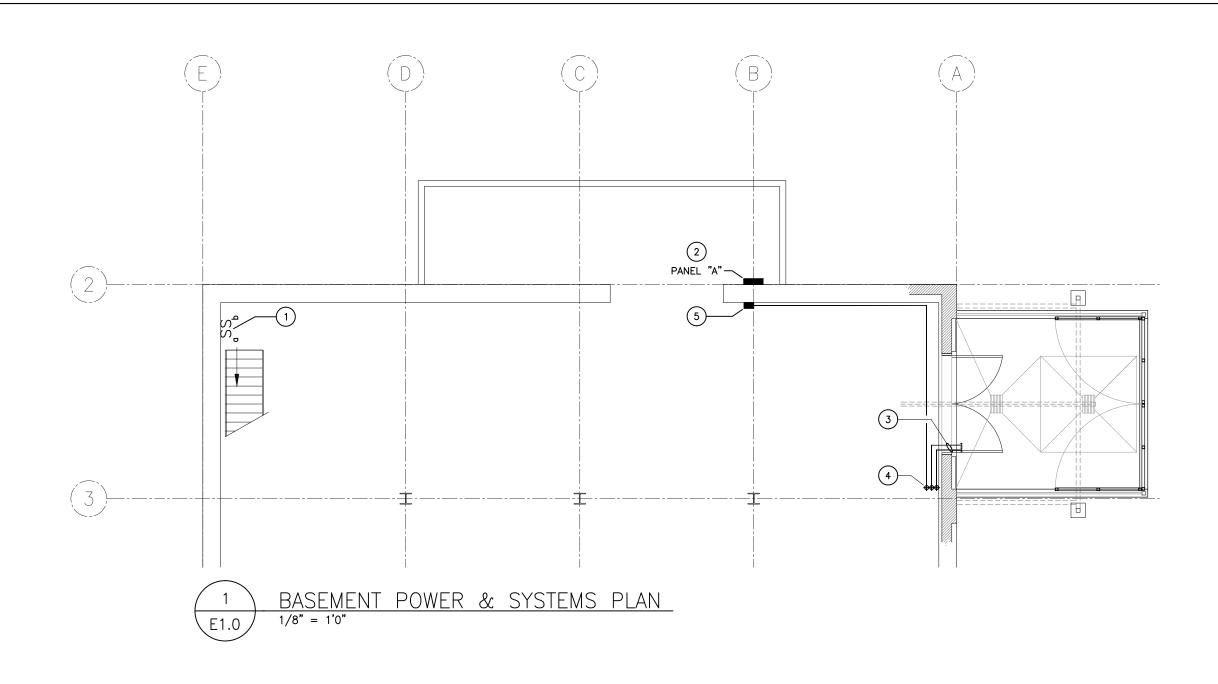
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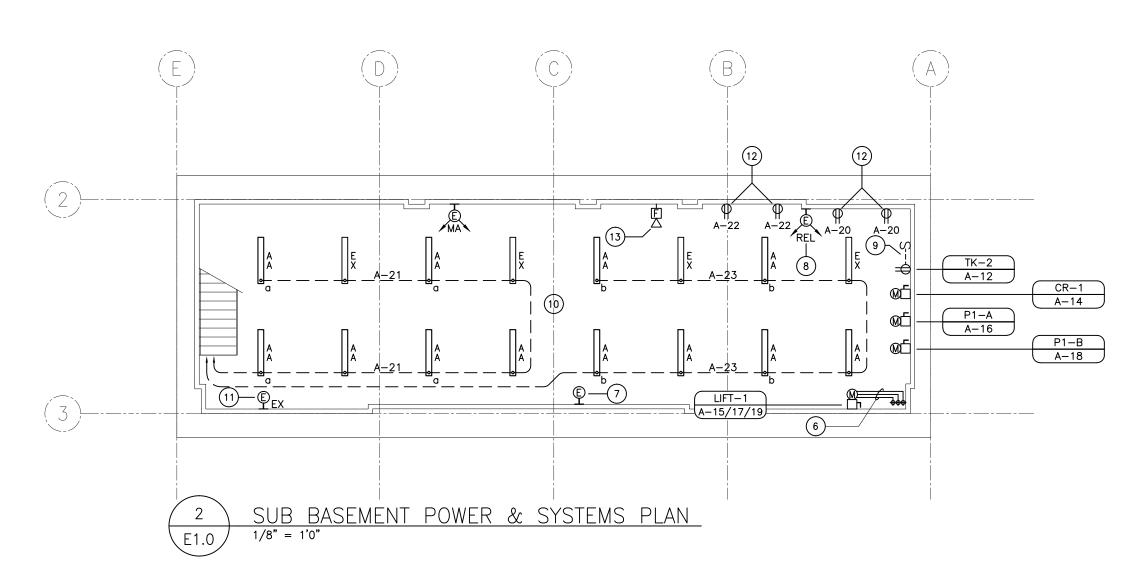
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	MECHANICAL SCHEDULE										
ITEM	DESCRIPTION	MCA	HP	KW	VOLTAGE	ø	FLA	BREAKER	FEEDERS	NOTES	
LIFT-1	HYDRAULIC LIFT	-	10 H.P	_	208V	3	28	40A-3P	(3) #8AWG RW90 + #10 INSULATED BOND IN 21mm CONDUIT.		
TK-2	GLYCOL MAKE-UP PUMP	-	_	0.05	115V	1	-	15A-1P	(2) #12AWG RW90 + #12 INSULATED BOND IN 21mm CONDUIT.		
CR-1	DUPLEX CENTRIFUGAL PUMPS	-	1/3 H.P	_	115V	1	_	15A-1P	(2) #12AWG RW90 + #12 INSULATED BOND IN 21mm CONDUIT.		
P1-A	ROTO CIRCULATOR PUMP	_	1/2 H.P	_	115V	1	_	15A-1P	(2) #12AWG RW90 + #12 INSULATED BOND IN 21mm CONDUIT.		
P1-B	ROTO CIRCULATOR PUMP	_	1/2 H.P	_	115V	1	_	15A-1P	(2) #12AWG RW90 + #12 INSULATED BOND IN 21mm CONDUIT.		

SYMBOL SCHEDULE:

WEATHERPROOF.

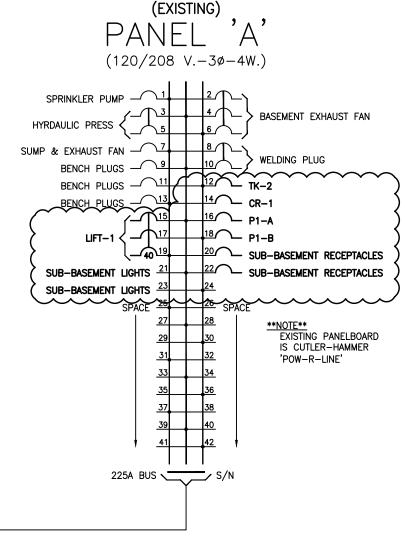
AA SURFACE MOUNTED FLUORESCENT FIXTURE. (E) WALL MOUNTED MASTER EMERGENCY FIXTURE.

S S.P.S.T SWITCH MOUNTED UP 1200mm.

- DUPLEX GROUNDED RECEPTACLE MOUNTED UP 450mm
- ELECTRICAL DISTRIBUTION PANEL, SURFACE/RECESSED. WP DISCONNECT SWITCH. SUFFIX 'WP' INDICATES
- FIRE ALARM HORN/STROBE SIGNAL DEVICE MOUNTED UP 2290mm A.F.F.
- MOTOR CONNECTION. COORDINATE FINAL LOCATION ON SITE. REFER TO MOTOR CONTROL SCHEDULE - 'STP' DESIGNATES MOTOR THERMAL SWITCH MOUNTED AT UNIT. MOLDED CASE TYPE CIRCUIT BREAKER, 15 AMP UNLESS
- OTHERWISE NOTED. FIXTURE SCHEDULE:
- FIXTURE TYPE 'AA' SURFACE MOUNTED VAPOUR TIGHT FLUORESCENT STRIP LIGHT, 1312MM IN LENGTH. 2 x 32W T8
- LAMPS, INSTANT START ELECTRONIC BALLAST. FIXTURE SHALL BE SURFACE MOUNTED. COOPER 'METALUX' VT SERIES
 - OR APPROVED EQUAL.
- FIXTURE TYPE 'MA' EMERGENCY LIGHTING UNIT, 2 X 12 WATT 12 VOLT QUARTZ HALOGEN LAMPS MOUNTED IN FROSTED POLYCARBONATE CUBES. 144 WATT CAPACITY FOR 60 MINUTES, SEALED LONG LIFE BATTERY WITH 10 YEARS LIFE EXPECTANCY. SOLID STATE CHARGER AND BATTERY PROTECTION CIRCUIT, AUTO-TESTING SELF-DIAGNOSTICS AND REMOTE TESTING. HOUSING IN WHITE FINISH.
 - AIMLITE #EBQV SERIES BEGHELLI #GI SERIES EMERGI-LITE #12DEL SERIES LUMACELL #RG12 SERIES READY-LITE #LDX12 SERIES

DRAWING NOTES:

- CONTRACTOR SHALL REMOVE EXISTING SWITCH AT THIS OCATION, PROVIDE NEW SWITCHES FOR SUB-BASEMENT LIGHTING. CONTRACTORS SHALL REMOVE ALL ABANDONED CONDUIT/WIRING AS A RESULT OF THIS WORK.
- PANEL IS IDENTIFIED AS PANEL 'A' FOR REFERENCE PURPOSE ONLY. ACTUAL PANEL NAME IS: "05-212-0-PNL.W.S"
- PROVIDE ONE(1) 53mm RIGID PVC CONDUIT FOR LIFT DECK MOUNTED CONTROLS C/W EMERGENCY STOP AND ONE(1) 78mm RIGID PVC CONDUIT FOR LIFT HYDRAULICS CONFIRM EXACT REQUIREMENTS WITH LIFT MANUFACTURER PRIOR TO INSTALLATION.
- CONDUIT STUBBING DOWN INTO SUB-BASEMENT TO LIFT
- PROVIDE AND INSTALL SECONDARY PUSHBUTTON CONTROL FOR HYDRAULIC LIFT C/W EMERGENCY STOP. CONTRACTOR TO PROVIDE (4) #18AWG IN 21mm CONDUIT. CONTRACTOR SHALL CONFIRM CONTROL WIRING REQUIREMENTS WITH MANUFACTURER. EXACT LOCATION TO BE CONFIRMED WITH OWNER ON SITE.
- CONDUIT FOR CONTROLS/HYDRAULICS FOR LIFT FROM
- EXISTING MASTER EMERGENCY LIGHT TO BE RELOCATED D LOCATION IDENTIFIED BY DRAWING NOTE 8.
- RELOCATE EXISTING MASTER EMERGENCY LIGHT TO THIS LOCATION. PROVIDE NEW DUPLEX RECEPTACLE FOR EMERGENCY LIGHT POWER.
- PROVIDE SWITCHED RECEPTACLE FOR GLYCOL MAKE-UP PUMP "TK-2".
- CONTRACTOR SHALL RECONFIGURE EXISTING LIGHTS INTO THE LAYOUT SHOWN IN DETAIL 2. REMOVE ALL EXISTING ABANDONED CONDUIT/WIRNG AS A RESULT OF THIS WORK.
- EXISTING EMERGENCY LIGHT TO REMAIN. CONTRACTOR SHALL MOUNT RECEPTACLES UP 1000mm
- CONTRACTOR SHALL PROVIDE NEW FIRE ALARM HORNSTROBE DEVICE AND PROVIDE VERIFICATION THAT THE FIRE ALARM DEVICES IN THE RENOVATED AREA ARE IN PROPER WORKING CONDITION.



SPECIFICATIONS:

GENERAL CONDITIONS AND INTENT

- 1. PROVIDE LABOUR AND MATERIALS REQUIRED TO INSTALL, TEST AND PLACE INTO OPERATION A COMPLETE ELECTRICAL SYSTEM WITH FACILITIES AND SERVICES TO MEET THE REQUIREMENT DESCRIBED HEREIN, AS SHOWN ON THE DRAWINGS, AND IN COMPLETE ACCORD WITH APPLICABLE CODES AND ORDINANCES
- 2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE 2012 CANADIAN ELECTRICAL CODE, SASKATCHEWAN HUMAN RIGHTS ACCESSIBILITY STANDARD, LÓCAL BY-LAWS, AND UTILITY REQUIREMENTS. WORK INVOLVING FIRE PROTECTION SHALL ALSO BE IN ACCORDANCE WITH UNDERWRITERS' LABORATORY OF CANADA, NATIONAL BUILDING CODE, NATIONAL FIRE CODE, NATIONAL STANDARD OF CANADA/UNDERWRITERS' LABORATORIES OF CANADA STANDARDS CAN/ULC-S524-06, CAN/ULC-S536-04. AND CAN/ULC-S537-04.
- 3. ALL WORK SHALL COMPLY WITH SASKPOWER'S REQUIREMENTS AND REGULATIONS. SUBMIT TO SASKPOWER THE NECESSARY NUMBER OF DRAWINGS AND SPECIFICATIONS FOR EXAMINATION AND APPROVAL PRIOR TO COMMENCEMENT OF WORK. PA ASSOCIATED FEES. IN THE EVENT OF ANY INSPECTION AUTHORITY REQUESTING DEVIATION FROM THE DESIGN, NOTIFY THE CONSULTANT, AND OBTAIN APPROVAL BEFORE PROCEEDING WITH
- 4. ALL WORK SHALL BE EXECUTED IN A WORKMANLIKE AND SUBSTANTIAL MANNER, NEAT IN ITS MECHANICAL APPEARANCE AND ARRANGEMENT. A COMPETENT REPRESENTATIVE SHALL CONSTANTLY SUPERVISE THE WORK OF THIS DIVISION FROM BEGINNING TO COMPLETION AND FINAL ACCEPTANCE. SO FAR AS POSSIBLE, THE SAME SUPERVISOR AND WORKMEN SHALL BE EMPLOYED THROUGHOUT THE PROJECT'S DURATION MATERIAL AND WORKMANSHIP NOT MEETING THE STANDARD INTENDED AND REQUIRED BY THIS SPECIFICATION SHALL, UPON INSTRUCTION FROM THE CONSULTANT, BE PROPERLY REPLACED WITHOUT FURTHER CHARGE OR CONSIDERATION
- 5. ALL REFERENCES TO KNOWN STANDARD SPECIFICATIONS SHALI MEAN AND INTEND THE LATEST EDITION OF SUCH SPECIFICATION. 6. EXAMINE ALL DRAWINGS TO ENSURE THAT WORK UNDER THIS IVISION CAN BE PROPERLY INSTALLED WITHOUT INTERFERENC WHERE DISCREPANCIES, AMBIGUITIES, OBVIOUS OMISSIONS OR ERRORS HAVE BEEN MADE IN DRAWINGS AND SPECIFICATIONS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CLARIF SAME PRIOR TO TENDER CLOSING. NO ALLOWANCE WILL BE MADE AFTER CONTRACT AWARD FOR ANY EXPENSE INCURRED BY HE CONTRACTOR FOR HAVING TO ADJUST THE WORK TO
- 7. ELECTRICAL DRAWINGS FOR THE WORK UNDER THIS DIVISION ARE DIAGRAMMATIC AND APPROXIMATELY TO SCALE, UNLESS DETAILED OTHERWISE. THEY ESTABLISH SCOPE, MATERIAL AND INSTALLATION QUALITY, AND ARE NOT DETAILED INSTALLATION INSTRUCTIONS. FOLLOW MANUFACTURER'S RECOMMENDED NSTALLATION DETAILS AND PROCEDURES FOR FOUIPMENT SUPPLEMENTED BY DETAILS GIVEN HEREIN AND ON PLANS SUBJECT TO APPROVAL OF THE CONSULTANT.

PROPERLY CONFORM.

- 8. ASSUME FULL RESPONSIBILITY FOR LAYOUT OF THIS WORK, AND FOR ANY DAMAGE CAUSED TO THE OWNER OR OTHER DIVISIONS BY IMPROPER LOCATION OR CARRYING OUT OF THIS WORK.
 WHERE OUTLETS OR EQUIPMENT MAY EFFECT ARCHITECTURAL OR SITE TREATMENT DESIRED, CONTACT THE CONSULTANT AND FOR INSTRUCTIONS OR DETAILED DRAWINGS.
- 9. THE ELECTRICAL CONTRACTOR SHALL CONNECT TO EQUIPMENT FURNISHED IN OTHER DIVISIONS AND BY OWNER. COOPERATE FULLY WITH THE CONSULTANT AND OTHER TRADES OF ELECTRICALLY OPERATED EQUIPMENT TO ENSURE PROPER RRANGEMENT OF, AND PROVISIONS FOR ALL ELECTRICAL
- 10. BEFORE COMMENCING THE WORK, THE ELECTRICAL ONTRACTOR SHALL EXAMINE THE WORK OF OTHER SUB-TRADES, AND REPORT AT ONCE ANY DEFECTS OR INTERFERENCE FFECTING THE WORK UNDER THIS CONTRACT, OR THE GUARANTEE OF SAME.
- 11. INSTALL EQUIPMENT GENERALLY IN LOCATIONS AND ROUTES INTERFÉRENCE WITH OTHER SERVICES OR FREE SPACE. REMOVE AND REPLACE IMPROPERLY INSTALLED EQUIPMENT TO THE SATISFACTION OF THE CONSULTANT AT NO EXTRA COST.
- 12. CEILING AND FLOOR OUTLET SYMBOLS ARE SCALED TO CENTRE LINE OF SYMBOL; SYMBOL DOES NOT INDICATE THE SIZE OR SHAPE, MOUNTING HEIGHT SHALL BE MEASURED TO THE LOWEST POINT OF CEILING MOUNTED EQUIPMENT 13. WALL OUTLETS ARE SCALED TO THE PERPENDICULAR CENTRE LINE OF THE SYMBOL. MOUNTING HEIGHTS FOR ALL WALL MOUNTED OUTLETS SHALL BE MEASURED TO THE HORIZONTAL
- 14. LOCATION OF LIGHTING OUTLETS AND RECEPTACLES IN MECHANICAL OR EQUIPMENT ROOMS AND SIMILAR AREAS SHALL FINALIZED DURING CONSTRUCTION TO GIVE OPTIMUM ARRANGEMENT. THE CONSULTANT SHALL APPROVE FINAL OCATION BEFORE INSTALLATION.
- 15. CHANGE LOCATION OF OUTLETS AT NO EXTRA COST OR CREDIT, PROVIDING DISTANCE DOES NOT EXCEED 3000 MM, AND INFORMATION IS GIVEN BEFORE INSTALLATION. 16. AS THIS PROJECT INVOLVES A RENOVATION TO AN OCCUPIED EXISTING BUILDING, THE CONTRACTOR SHALL VISIT THE SITE DURING THE TENDERING PERIOD, AND THOROUGHLY SATISFY HIMSELF THAT THE WORK CONTAINED IN THESE DRAWINGS AND SPECIFICATIONS CAN BE CARRIED OUT. NO ALLOWANCE WILL B

MADE AFTER CONTRACT AWARD FOR ANY EXPENSE INCURRED B

HE CONTRACTOR FOR HAVING TO ADJUST THIS WORK TO

- PROVIDE A COMPLETE, FULLY OPERATIONAL INSTALLATION. 17. SHOULD ANY CUTTING OR REPAIRING OF EITHER UNFINISHED OR FINISHED WORK BE REQUIRED, THE CONTRACTOR SHALL EMPLOY THE PARTICULAR TRADE WHOSE WORK IS INVOLVED, TO O SUCH CUTTING AND PATCHING, AND SHALL PAY FOR ANY
- 18. HOLES REQUIRED IN EXISTING CONSTRUCTION TO ACCOMMODATE CONDUITS OR WIREWAYS SHALL BE CUT NEATLY OR DRILLED BY THIS DIVISION. 1. PROVIDE MATERIALS AND EQUIPMENT IN ACCORDANCE WITH
- SPECIFICATION REQUIREMENTS. ALL GOODS AND MATERIALS SHALL BE NEW UNLESS OTHERWISE NOTED. ALL MATERIALS SHALL CARRY CSA APPROVED SEAL. EQUIPMENT AND MATERI, TO BE CSA CERTIFIED. WHERE THERE IS NO ALTERNATIVE TO UPPLYING EQUIPMENT WHICH IS NOT CSA CERTIFIED, OBTAIN SPECIAL APPROVAL FROM THE CONSULTANT AND THE ELECTRICAL
- 2. ALL FIRE ALARM EQUIPMENT SHALL CARE ULC APPROVAL SEAL. 3. IN NO INSTANCE SHALL THE STANDARD ESTABLISHED BY THE DRAWINGS AND SPECIFICATIONS BE REDUCED BY ANY CODE OR ORDINANCE. ALL REFERENCES TO CODES SHALL BE TO THE
- 4. ALL TENDERS SHALL BE BASED ON MATERIALS SPECIFIED, EXCEPT WHERE APPROVAL OF EQUIVALENT PRODUCTS HAS BEEN OBTAINED IN WRITING FROM THE CONSULTANT. 5. NO DEVIATION FROM SPECIFIED MATERIALS SHALL BE ALLOWED,
- EXCEPT WHERE ALTERNATIVE MATERIALS HAVE BEEN SPECIFICALLY 6. WHERE MATERIALS ARE NOT DIRECTLY SPECIFIED BY CATALOGUE NUMBER AND MANUFACTURER'S NAME, A HIGH INDUSTRY SPECIFICATION GRADE PRODUCT SHALL BE PROVIDED. THE ONSULTANT SHALL BE THE SOLE JUDGE OF WHETHER THIS STANDARD IS BEING MET.
- SHOP DRAWINGS 1. SUBMIT SHOP DRAWINGS FOR NEW EQUIPMENT REQUIRED. THESE SHOP DRAWINGS SHALL BE SUFFICIENTLY DETAILED TO PERMIT THE OWNER'S TECHNICIANS TO TROUBLESHOOT AND REPAIR THE FOUIPMENT, FOUIPMENT SHALL NOT BE ORDERED AND/OR FABRICATED UNTIL THE CONSULTANT HAS REVIEWED SHOP
- 2. ALL SHOP DRAWINGS MUST BEAR AN APPROVAL STAMP AND BE SIGNED BY THE CONTRACTOR. THIS REVIEW DOES NOT RELIEVE HIS DIVISION FROM THE RESPONSIBILITY FOR THE FINAL INSTALLATION BEING CORRECT IN ALL DETAIL, AND FULLY CCEPTABLE TO THE CONSULTANT.
- 3. SHOP DRAWINGS SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING SYSTEMS: SWITCHES, FUSED AND NON-FUSED EQUIPMENT FOR EMERGENCY LIGHTING AND FIRE ALARM SYSTEMS. PROGRESS CLAIMS
- 1. ELECTRICAL PROGRESS CLAIMS SHALL BE BROKEN DOWN INTO TWELVE (12) PARTS TO FACILITATE ASSESSMENT OF WORK DONE AND MATERIAL SUPPLIED. THE BREAKDOWN SHALL INDICATE LABOUR AND MATERIAL TO THE NEAREST DOLLAR. OVERHEAD, PARTS. THE BREAKDOWN SHALL BE AS FOLLOWS: 1. MAIN SERVICES
- 2. DISTRIBUTION / PANELS 3. CONDUIT AND BOXES 4. WIRE AND CABLE 6. WIRING DEVICES
- 8. ALARM SYSTEMS 9. COMMUNICATIONS SYSTEMS SPECIALS

MISCELLANEOUS - 8% MAXIMUM 12. EXTRAS AND CREDITS

AS BUILT DRAWINGS

- 1. MAINTAIN, ON A DAILY BASIS, A COMPLETE SET OF MARKED-UP PRINTS AS AS-BUILT DRAWINGS THAT SHOW IN COMPLETE DETAIL THE FINAL ARRANGEMENT AND LOCATION OF ALL ELECTRICA COMPONENTS AND THE INTERCONNECTING WIRING. ALL RISER CONDUITS, PANEL FEEDS, CONDUIT RUNS OVER 200 AMP AND MAIN COMMUNICATIONS SHALL BE MARKED ON PLANS. THESE ARE TO BE MAINTAINED IN A NEAT AND SUBSTANTIAL MANNER SO AS TO PROPERLY AND FULLY ILLUSTRATE THE WAY IN WHICH
- I. ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION. OTHER WORK WHICH BECOMES DEFECTIVE DURING THE TERM OF WARRANTY. SERVICE ON EQUIPMENT OR SYSTEMS CRITICAL TO THE OWNER'S OPERATION SHALL BE PROVIDED ON EMERGENCY BASIS WHICH MAY NECESSITATE OVERTIME AND SERVICE OUTSIDE IE NORMAL WORKING HOURS. THE CONTRACTOR SHALL ENSUR THAT ALL SUPPLIERS COMPLY WITH THIS REQUIREMENT. MAINTENANCE MANUALS
- 1. UPON COMPLETION OF THE INSTALLATION, PROVIDE THREE (3) COMPLETE AND COMPREHENSIVE IDENTICAL SETS OF OPERATING ND MAINTENANCE MANUALS TO BE REVIEWED BY T CONSULTANT PRIOR TO THE MANUALS BEING SENT TO THE
- 2. THE OPERATING AND MAINTENANCE MANUALS SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING INFORMATION:

a. CERTIFICATION REPORTS.

- b. DOCUMENTATION INDICATING OWNER'S RECEIPT OF OPERATING INSTRUCTIONS.
 c. COMPLETE LIST OF ALL MATERIALS TURNED OVER TO THE OWNER C/W RECEIPTS FOR SAME d. SHOP DRAWINGS PROPERLY INDEXED AND CONTAINED IN SUITABLY SIZED ENVELOPES. e. MANUFACTURER'S INSTALLATION MANUALS AS SUPPLIED WITH THE FOUIPMENT OR DEVICE
- f. SCHEMATIC DRAWINGS FOR ALL SYSTEMS INDEXED AND CONTAINED IN SUITABLY SIZED ENVELOPES g. CATALOGUE BROCHURES FOR LIGHT FIXTURES, PANELBOARDS, SWITCHES, RECEPTACLES, FUSES, ETC.
 h. OVERCURRENT COORDINATION AND ARC FAULT STUDY AND DOCUMENTATION OF ASSOCIATED TESTS.

 i. PHASE ROTATION CONFIRMATION BY THE CONTRACTOR. CERTIFICATE OF OWNER'S ELECTRICAL EQUIPMENT TRAINING.
- 3. THE ABOVE INFORMATION SHALL BE BOUND IN BLACK, HARD-BACKED, THREE-RING, LETTERHEAD SIZE BINDERS. INCOMPLETE OR POORLY REPRODUCED MANUALS WILL BE

k. ACCEPTANCE TESTING REPORTS.

- 1. ALL CONDUCTORS SHALL BE COPPER AND MINIMUM #12 AWG 4. OPERATING AND MAINTENANCE MANUALS, AS WELL AS ALL OWNER (COPPER). ALL CONDUCTORS #12 AWG TO #8 AWG SHALL BE INSTRUCTIONS, SHALL BE COMPLETE BEFORE SUBSTANTIAL RATED FOR MINIMUM 600V RW-90 XLPE, CONDUCTORS #6 AWG COMPLETION (AS OUTLINED BY THE BUILDERS' LIEN ACT) WILL B CONSIDERED. ALSO, PRELIMINARY MAINTENANCE MANUALS MUST AND LARGER SHALL BE RATED FOR MINIMUM 1000V RW-90 XLPE. WIRING IN CHANNEL BACK OF FLUORESCENT FIXTURES SHALL BE 600V TYPE GTF OR TEW. SIZE, GRADE OF BE SUBMITTED PRIOR TO 70% COMPLETION. NO FURTHER PROGRESS PAYMENTS WILL BE PERMITTED UNTIL THESE INSULATION, VOLTAGE AND MANUFACTURER'S NAME SHALL BE PRELIMINARY MAINTENANCE MANUALS HAVE BEEN SUBMITTED AND MARKED AT REGULAR INTERVALS.
- IDENTIFICATION I. THIS CONTRACTOR SHALL INCLUDE IDENTIFICATION OF ALL NEW OWNERS IN FOLLOW UP MAINTENANCE OF THE SYSTEM. 2. LAMECOID NAMEPLATES SHALL BE PROVIDED FOR ALL NEW

ELECTRICAL EQUIPMENT INCLUDING DISCONNECT SWITCHES AND

MISCELLANEOUS SYSTEMS. LAMECOID LABELS TO IDENTIFY SUCH

- EQUIPMENT SHALL AS FOLLOWS: a. NORMAL POWER EQUIPMENT: BLACK SHEET WITH WHITE
- LAMECOID NAMEPLATES, APPROXIMATELY 75 MM X 25 MM, SHALL BE PROVIDED ON FRONT DOORS OF EACH SWITCH FOR DENTIFICATION, SHOWING THE NAME AND RATING. . NAMEPLATES FOR DISCONNECTS SHALL INDICATE EQUIPMENT BEING CONTROLLED AND VOLTAGE.
- 4. BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED TO PERFORM AT A MAXIMUM VOLTAGE DROP OF 3% BASED ON THE CIRCUIT LOAD 5. LAMECOID NAMEPLATES SHALL BE FASTENED TO EQUIPMENT IN A OF 80% OF THE CIRCUIT PROTECTIVE DEVICE. CONSPICUOUS LOCATION WITH SELF TAPPING METAL SCREWS. 5. FEEDER PULL BOXES AND JUNCTION BOXES SHALL BE IDENTIFIED 5. ALL CONDUCTOR SIZES SHOWN ARE BASED ON THE 75°C WITH WATERPROOF INK, SHOWING FEEDER OR SYSTEM CONCERNED. CONDUIT ENTERING JUNCTION BOXES FOR THE VARYING ELECTRICAL EQUIPMENT TERMINATION RATINGS.
- OMMUNICATIONS SYSTEMS SHALL BE IDENTIFIED WITH THE ROOM NUMBER THAT EACH CONDUIT SERVES. 7. BRANCH CIRCUIT IDENTIFICATION SHALL BE PROVIDED ON ALL PLUG-IN TYPE RECEPTACLES AND LOCAL SWITCHES, AND SHAL BE IDENTIFIED BY A CLEAR 12MM LAMINATED MARKER TAPE WITH ONTRASTING BLACK LETTERING.

OWNER, UNLESS OTHERWISE NOTED, AND SHALL BE STOCKPILED

DEMOLITION

OTHERWISE.

- 6. WHERE CONDUCTOR SIZES ARE SHOWN ON DRAWINGS THEY HAVE BEEN BASED ON A MAXIMUM OF 3 HOT CONDUCTORS INSTALLED 1. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE IN A CONDUIT, THESE CONDUCTOR SIZES ARE BASED ON TABLES DEMOLITION OF ALL EXISTING LIGHTING AND ELECTRICAL SYSTEMS IN C.E.C. WHERE ADDITIONAL CONDUCTORS ARE INSTALLED WITHIN WITHIN THE RENOVATION AREA AS OUTLINED IN THE ELECTRICAL, A CONDUIT CONDUCTORS SIZES MAY NEED TO BE INCREASED TO MECHANICAL, AND ARCHITECTURAL DRAWINGS. ECT THE NEW CORRECTION FACTOR. FOR ALL CIRCUITS EXCEEDING 15A CONTRACTOR SHALL CONFIRM WITH THE 2. ALL SALVAGED MATERIALS SHALL REMAIN THE PROPERTY OF THE
- AS PER THE OWNER'S INSTRUCTIONS. THE SALVAGEABLE MATERIALS SHALL BE REMOVED FOR THE PURPOSES OF REUSE. SHALL MORE THAN 6 HOT CONDUCTORS BE INSTALLED IN ONE AND UNUSED MATERIALS SHALL BE RETURNED AS PER THE OWNER'S INSTRUCTIONS. THE FOLLOWING MATERIALS SHALL BE SALVAGED AND RETURNED TO OWNER: LIGHTING FIXTURES, WIRING 7. ALL CONDUCTORS SHALL BE INSTALLED WITHIN EMT UNLESS DEVICES AND COVERPLATES. NOTED OTHERWISE. TECK CABLE AND FLEXIBLE ARMOURED CABLE MAY BE INSTALLED ONLY WHERE SPECIFICALLY INDICATED ON 3. EXISTING LIGHTING FIXTURES AND WIRING DEVICES BEING DRAWINGS OR SPECIFICATIONS OR WHERE THE BUILDING REMOVED SHALL BE RE-USED/RELOCATED AS SHOWN ON THE CONSTRUCTION DOES NOT ALLOW FOR THE PROPER INSTALLATION FLOOR PLANS. UNUSED FIXTURES AND WIRING DEVICES
- (SWITCHES, DUPLEX RECEPTACLES) SHALL BE TURNED OVER TO 4. ALL ABANDONED CONDUIT, DUCTS, BOXES, WIRE AND CABLE (EXISTING CONDITIONS AND AS A RESULT OF THE RENOVATIONS) SHALL BE COMPLETELY REMOVED BACK TO THE SOURCE OR
- 5. ALL EXISTING CEILING POWER DISTRIBUTION (CONDUIT, CABLE, OUTLET BOXES) THAT IS ABANDONED BY THE RENOVATION SHALL BE COMPLETELY REMOVED BACK TO THE EXISTING ELECTRICAL
- 6. EXISTING ELECTRICAL DEVICES ON WALLS NOT AFFECTED BY THE RENOVATION THAT ARE NOT SHOWN ON THE DRAWINGS SHALL 7. ALL EXISTING EXIT SIGNS SHALL REMAIN UNLESS NOTED
- FIRE BARRIERS I. ALL CONDUIT AND CABLE PENETRATIONS IN HORIZONTAL AND VERTICAL FIRE BARRIERS SHALL BE SEALED WITH AN APPROVED FIRE SEAL SYSTEM CONSISTING OF A FIREPROOF CEMENT AND/OR SEALANT, ALL FIRE SEALS SHALL COMPLY WITH THE REQUIREMENTS OF THE PROVINCIAL FIRE COMMISSIONER AND THE
- LOCAL AUTHORITY HAVING JURISDICTION, COORDINATE WITH GENERAL CONTRACTOR AND CONFIRM FIRE BARRIER LOCATIONS 2. WHERE POWER OR COMMUNICATION CABLES PASS THROUGH A FIRE BARRIER WITHOUT THE PROTECTION OF CONDUIT, A MULTI-CABLE TRANSIT SHALL BE USED WITHIN THE SLEEVED OPENING, AS MANUFACTURED BY HILTI, STI - SPECIFIED FECHNOLOGIES INC. OR LEGRANDE WIRELMOLD. 3. ALL ELECTRICAL OUTLET BOXES INSTALLED IN PARTITIONS IDENTIFIED ON THE ARCHITECTURAL DRAWINGS AS A FIRE BARRIER
- R SEPARATION SHALL BE PROTECTED WITH A NON-HARDEN INTUMESCENT MOLDABLE FIRESTOP PUTTY COMPOUND. FIRESTOP PUTTY PADS SHALL BE MANUFACTURED BY HILTI, STI SPECIFIED TECHNOLOGIES INC., OR APPROVED EQUAL 4. FIRE PROOFING AND FIRE STOPPING OF ELECTRICAL RACEWAYS, CABLING, AND OUTLET BOXES FOR THIS DIVISION SHALL BE
- COMPLETED BY A UL CERTIFIED FIRE STOP CONTRACTOR FOR HIS DIVISION AND SHALL BE INSTALLED AS RECOMMENDED BY THE MANUFACTURER'S RECOMMENDED INSTALLATION DETAILS AND
- CONDUIT/RACEWAYS/CONNECTIONS I. CONDUIT FOR ALL POWER, COMMUNICATIONS AND SIGNAL SYSTEMS SHALL BE SUPPLIED AND INSTALLED AS HEREIN
- 2. CONDUIT AND CABLES IN FINISHED AREAS SHALL BE RUN CONCEALED, ABOVE FINISHED CEILINGS, AND IN WALLS AND PARTITIONS. CONDUIT AND CABLES IN UNFINISHED AREAS SUCH AS ELECTRICAL/ COMMUNICATION ROOMS, SHALL BE RUN EXPOSED. ALL CONDUIT/CABLING SHALL BE RUN AT RIGHT ANGLES OR PARALLEL TO BUILDING LINES AND MECHANICAL DUCTWORK, ACCURATE IN LINE AND LEVEL.
- 3. RUNS OF CONDUIT AND CABLES, WHERE SHOWN, ARE INDICATED ONLY BY GENERAL LOCATION AND ROUTING. CONDUITS AND ABLES SHALL BE INSTALLED TO PROVIDE MAXIMUM HEADROOM AND SPACE WITHIN ACCESSIBLE CEILINGS. AND TO INTERFERE AS ITTLE AS POSSIBLE WITH FREE USE OF SPACES THROUGH WHICH THEY PASS. WHERE SPACE IS INDICATED FOR FUTURE EQUIPMENT,
- 4. CONDUIT SHALL NOT BE BENT OVER SHARP OBJECTS. IMPROPERLY FORMED BENDS AND RUNNING THREADS WILL NOT BE ACCEPTED. BENDS AND FITTINGS SHALL NOT BE USED
- 5. PROPER SUPPORTS OF MANUFACTURED CHANNELS SHALL BE INSTALLED, AND SHALL BE SPACED IN COMPLIANCE WITH THE CANADIAN ELECTRICAL CODE.

6. CONDUIT AND CABLES SHALL BE INSTALLED TO AVOID PROXIMITY

TO WATER AND HEATING PIPES. THEY SHALL NOT RUN WITHIN 150MM OF SUCH PIPES, EXCEPT WHERE CROSSINGS ARE

UNAVOIDABLE, IN WHICH CASE THEY SHALL BE KEPT AT LEAST

REMOVAL OF CONDUCTORS AT ANY TIME. CONDUIT SIZES, WHERE

CONDUIT SHALL BE OF SUFFICIENT SIZE TO PERMIT EASY

SHOWN ON DRAWINGS, ARE MINIMUM AND SHALL NOT BE

REDUCED. THE MINIMUM SIZE OF CONDUIT SHALL BE 21MM.

9. NOT MORE THAN FOUR (4) 90 DEGREE BENDS OR EQUIVALENT

OFFSETS WILL BE PERMITTED BETWEEN PULL BOXES. WHEN

. JUNCTION BOXES OR CABLE ANCHOR BOXES SHALL BE

INSTALLED WHEREVER NECESSARY FOR PROPER PULLING OR ANCHORING OF CABLES. THEY SHALL BE INSTALLED TO BE

CONDUIT TO OUTLETS BOXES SHALL NOT BE RUN

EMT COUPLINGS AND CONNECTORS SHALL BE SET-SCREW

3. FLEXIBLE CONDUIT AND EMT CONNECTORS SHALL BE OF THE

14. ALL CONDUITS SHALL BE TERMINATED WITH A SUITABLE

16. PVC CONDUIT AND NON-METALLIC TUBING SHALL NOT PASS

PASS THROUGH A FIRE BARRIER, A HILTI FIRE STOP COLLAR

SHALL BE PROVIDED FOR EITHER SIDE OF THE FIRE BARRIEF

THROUGH A FIRE PARTITION OR FLOOR SEPARATION. WHERE I

IS NECESSARY FOR PVC CONDUITS OR NON-METALLIC TUBING TO

ALSO. PVC CONDUIT AND NON-METALLIC TUBING SHALL NOT BE

2. CONDUCTORS SHALL BE COLOR CODED. CONDUCTORS #2 AWG

AT TIME OF MANUFACTURE. CONDUCTORS SIZE NO. 1 AWG AND

LARGER MAY BE COLOR CODED WITH ADHESIVE COLOR CODING

EMPLOYED IN THIS CASE, EXCEPT FOR NEUTRALS, WHICH SHALL

PHASE 'B' - BLACK NEUTRAL - WHITE

PHASE 'C' - BLUE CONTROL - ORANGE

3. HOME RUNS TO 120/208 VOLT LIGHTING AND RECEPTACLE

MINIMUM NO. 10 GAUGE.

PANELS WHICH EXCEED 30000 MM IN LENGTH SHALL BE

AMPACITY RATING AS REQUIRED BY THE C.E.C. CONTRACTOR

OF CONDUIT OR RACEWAY. THE USE OF TECK AND FLEXIBLE

ARMOURED CABLES SHALL BE APPROVED BY THE CONSULTANT

8. TECK CABLE SHALL BE IN ACCORDANCE WITH CAN/CSA_C22.2

NO. 131. ALL CABLES SHALL INCLUDE A GROUND CONDUCTOR

SIZED IN ACCORDANCE WITH THE 2012 CEC. ALL CONDUCTORS

SHALL BE COPPER WITH RW90 XLPE INSULATION, CONDUCTORS SIZED #12 TO #10 GAUGE SHALL BE RATED FOR MINIMUM 600V.

CONDUCTORS SIZED #8 AND LARGER SHALL BE RATED FOR

WITH TWO HOLE STEEL STRAPS FOR CABLES LARGER THAN 50

CABLES. THREADED RODS SHALL BE 6 MM DIA. TO SUPPORT

11. ALL CONNECTIONS TO SWITCHES, OUTLETS, ETC SHALL BE

12. CONDUCTORS UTILIZED IN CONDUIT RUN UNDER SLAB ON

GRADE OR IN CONDUIT UNDERGROUND SHALL BE TYPE 'RWU-90'

OF APPROVED SOLDERLESS CONNECTOR LUG. FOR PARALLEL

14. WIRE SHALL BE AS MANUFACTURED BY NEXANS OR BICC

1. PROVIDE OUTLET BOXES SUITABLE FOR THE APPLICATION AND

LOCATION OF THE DEVICES. ALL BOXES SHALL BE SIZED IN

2. WHERE BOXES ARE SURFACE MOUNTED IN UNFINISHED AREAS,

SUCH AS FURNACE OR BOILER ROOMS, STAMPED GALVANIZED

3. PROVIDE BLANK COVER PLATES FOR BOXES WITHOUT WIRING

4. WHERE SURFACE WIRING METHODS ARE ALLOWED AND APPROVED

DRAWINGS C/W SUITABLE ADAPTER FOR WIREWAY ENTRANCE.

1. METAL WALL PLATES SHALL BE PROVIDED FOR ALL SWITCHES, RECEPTACLES, BLANKS, TELEPHONE AND SPECIAL PURPOSE

2 BLANK COVER PLATES IN FINISHED CEILING AREAS SHALL BE

COLUMBIA ELECTRIC #9002 BAKED WHITE ENAMEL FOR WHITE

3. WHERE SURFACE WIRING METHODS NEED TO BE EMPLOYED IN A HIGH FINISH AREA, STAINLESS STEEL WALL PLATES SHALL BE

USED IN CONJUNCTION WITH WIREMOLD SURFACE BOX TO SUIT

METAL WALL PLATES SHALL BE STAINLESS STEEL.

OUTLETS. THE WALL PLATES SHALL BE OF SUITABLE
CONFIGURATION FOR THE DEVICE FOR WHICH IT IS TO COVER

WITH COLOR MATCHED MOUNTING SCREWS. USE GANGED PLATE WHERE MORE THAN ONE DEVICE OCCURS AT ONE LOCATION.

IN FINISHED AREAS, USE HUBBELL OR WIREMOLD BOXES AS PER

STEEL 100 MM SQUARE BOX TO ACCEPT #8300 SERIES RAISED

TERMINATION FOR #8 AWG AND LARGER SHALL BE BY MEANS

ONDUCTORS, A COMMON LUG WITH SEPARATE TERMINATION FOR

MADE VERTICALLY THROUGH THE WALL STRUCTURE.

EACH CONDUCTOR SHALL BE EMPLOYED.

ACCORDANCE WITH CSA C22.1.

COVERS SHALL BE USED.

OUTLET BOXES

THE DEVICE.

TECK CABLE CONNECTORS SHALL BE WATERTIGHT APPROVED

9. TECK CABLES SHALL BE FASTENED WITH ONE HOLE STEEL

DEGREE LUGS AND CABLE PRIOR TO INSTALLATION.

PHASE 'A' - RED GROUND - GREEN OR BARE

TAPE, BUT ONLY BLACK INSULATED CONDUCTORS SHALL BE

BE WHITE WHEREVER POSSIBLE. COLOR CODING SHALL ALSO APPLY TO BUSING IN PANELS. COLOR CODING SHALL BE AS

15. EMT ENTERING BOXES OR ENCLOSURES SHALL BE

TERMINATED WITH NYLON INSULATED CONCRETE TIGHT

PULL BOXES SHALL NOT EXCEED 18000 MM.

INSULATED THROAT TYPE.

USED IN RETURN AIR PLENUMS.

8. ALL EMPTY CONDUIT PROVIDED SHALL BE COMPLETE WITH PULL

25MM FROM COVERING OF PIPE CROSSE

- THE ENTIRE INSTALLATION SHALL BE GROUNDED IN ACCORDANCE WITH THE 2012 CANADIAN ELECTRICAL CODE AND DETAILS AS
- 4. ALL GROUND CONDUCTORS SHALL BE BARE OR INSULATED, STRANDED, MEDIUM HARD DRAWN COPPER WIRE. ALL INSULATED
- 6. ALL BRANCH CIRCUITS SHALL INCLUDE A BONDING CONDUCTOR.

- 1. BRANCH CIRCUIT BREAKER SHALL HAVE QUICK-MAKE QUICK-BREAK TOGGLE MECHANISM WITH SINGLE, TWO OR THREE POLE COMMON TRIP THERMAL MAGNETIC UNITS IN AMPERE RATINGS AS DESIGNATED ON THE DRAWINGS. BREAKER HANDLES SHALL HAVE THREE POSITIONS: 'ON', 'OFF' AND 'TRIPPED'. ALL CIRCUIT BREAKERS AND PANEL BUS SHALL HAVE AN ACCESSIBLE AFTER BUILDING IS COMPLETED, AND SHALL BE SET TO COME WITHIN FINISHED LINES OF THE BUILDING.
- HORIZONTALLY WITHIN WALLS. ALL CONNECTIONS SHALL BE MADE VERTICALLY THROUGH THE WALL STRUCTURE. WRITING ON THE PANEL DOOR IS NOT ACCEPTABLE.

- LOCKABLE DISCONNECTING DEVICE.
- 25 MM DIAMETER) LAMPS WITH A COLOUR RENDERING INDEX 40,000 HOUR NOMINAL LIFE RATING @ 12HRS/START
- LAMPS SHALL BE MANUFACTURED BY OSRAM-SYLVANIA, PHILIPS, OR GENERAL ELECTRIC.
- ALL FLUORESCENT BALLASTS SHALL BE ENERGY EFFICIENT ELECTRONIC BALLASTS DESIGNED TO OPERATE T8 LAMPS. BALLASTS SHALL HAVE A POWER FACTOR GREATER THAN 97%, LAMP CURRENT CREST FACTOR LESS THAN 1.7, BALLAST FACTOR OF 1.00, AND TOTAL HARMONIC DISTORTION LESS THAN 10%
- 2. ALL FLUORESCENT ELECTRONIC BALLASTS ULC LISTED, CLASS P AND CSA APPROVED AND EQUIPPED WITH EMI AND RFI FILTERING. BALLASTS SHALL WITHSTAND LINE TRANSIENTS AS DEFINED IN ANSI/IEEE C62.41 (CATEGORY A TRANSIENT PROTECTION) AND COMPLY WITH FCC PART 18 FOR NON-CONSUMER EQUIPMENT
- NSTANT START BALLASTS OSRAM—SYLVANIA "QTP" SERIES OR EQUAL BY ADVANCE OR UNIVERSAL LIGHTING TECHNOLOGIES
- 1. THE ELECTRICAL CONTRACTOR SHALL CONFIRM EXISTING FIXTURE COUNT PRIOR TO TENDER CLOSING TO ENSURE THAT LAYOUT SHOWN CAN BE CARRIED OUT. NEW FIXTURES SHALL BE
- MEMBERS OF THE BUILDING OR CEILING. 4. FACH FIXTURE SHALL HAVE A SEPARATE FEED FROM THE NEAREST JUNCTION BOX ABOVE THE REMOVABLE CEILINGS.
- THROUGH BALLAST CHANNEL WILL NOT BE ACCEPTED. AL A CONDUIT. IN NO CASE UNLESS APPROVED BY THE CONSULTANT OTHER BRANCH CIRCUITRY SHALL BE WITHIN EMT CONDUIT

- GROUND WIRES SHALL BE GREEN.
- PANELBOARDS
- MAXIMUM NUMBER OF BENDS IS USED, THE TOTAL RUN BETWEEN
- TYPE EXCEPT IN ELECTRICAL, MECHANICAL, COMMUNICATION, AND SPRINKLER ROOMS, WHICH SHALL BE WATER—TIGHT.

 - 2. CHECK OTHER DIVISIONS TO ENSURE THAT SUITABLE PROVISIONS HAVE BEEN PROVIDED FOR ALL MOTORS. IT IS POSSIBLE THAT SOME MOTORS MAY VARY IN SIZE, NUMBERS AND HARACTERISTICS, DEPENDING ON THE EQUIPMENT MANUFACTURER'S SPECIFIC REQUIREMENTS. ANY VARIATIONS IN
 - . FLUORESCENT LAMPS SHALL BE T8 MEDIUM BI-PIN (1 INCH OR (CRI) OF AT LEAST 85. UNLESS OTHERWISE NOTED ALL LAMPS SHALL HAVE A COLOUR TEMPERATURE OF 3500°K AND HAVE A

 - LIGHTING FIXTURES
 - DRDERED AS REQUIRED TO SUIT LAYOUT SHOWN. 2. ALL LIGHT FIXTURES WITHIN THE RENOVATION AREA SHALL BE CLEANED AND RE-LAMPED BY THE CONTRACTOR. ANY DAMAGE
 - 3. ALL FIXTURES SHALL BE SUPPORTED FROM STRUCTURAL

- CONDUIT SHALL NOT BE USED AS A BOND OR GROUND.
- INTERRUPTING CAPACITY OF 10,000 AMPS SYMMETRICAL
- UPDATED. PROVIDE A NEW UPDATED TYPED PANEL DIRECTORY WITHIN A CLEAR PLASTIC COVER AS REQUIRED. STICKERS OR
- OVERLOAD PROTECTION AND DISCONNECTING DEVICES AT MOTORS. ALL MOTOR DRIVEN EQUIPMENT SHALL BE PROVIDED WITH A
- (24,000HOURS @ 3HRS/START). LAMPS SHALL BE POWERED BY ELECTRONIC BALLASTS DESIGNED FOR THE T8 LAMP. LUORESCENT LAMPS SHALL BE IMPERIAL DIMENSION UNLESS
- BALLAST SHALL OPERATE WITHOUT VISIBLE LAMP FLICKER AND SHALL BE INSTANT START OR PROGRAMMED RAPID START.
- BE OF THE SAME MANUFACTURER AND SHALL BE MANUFACTURED
- LENSES AND SOCKETS, DAMAGED AS AN EXISTING CONDITION OF DURING RELAMPING SHALL BE REPLACED. SHALL CONFIRM WITH THE CONSULTANT THAT THEY ARE USING 90
- BRANCH WIRING TO LIGHTING FIXTURES FROM CEILING JUNCTION BOXES MAY BE FLEXIBLE ARMORED CABLE OR FLEXIBLE CONDUIT 12MM SIZE MINIMUM, AND SHALL BE A MAXIMUM LENGTH OF 3000MM. LOOPING BETWEEN FIXTURES OR WIRING ROWS REQUIRED PRIOR TO INSTALLING MORE THAN 3 CONDUCTORS IN

- 5. ALL METALLIC RACEWAYS AND CONDUITS FOR COMMUNICATIONS.
- 2. ALL PANEL DIRECTORIES AFFECTED BY THIS PROJECT SHALL BE
- 1. PROVIDE ALL MOTOR CONNECTIONS, INCLUDING STARTERS,
- BUSHING TO PROTECT CONDUCTORS OR CABLE FROM ABRASION. THIS REGARD WILL NOT CONSTITUTE CAUSE FOR FURTHER
- AND SMALLER SHALL HAVE COLOR IMPREGNATED INTO INSULATION
 - 3. ALL FLUORESCENT ELECTRONIC BALLASTS FOR T8 LAMPS SHAL
- ON 900C RATINGS BUT IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE TERMINATIONS RATINGS FOR ALL EQUIPMENT IS COORDINATED WITH THE APPROPRIATE CONDUCTOR AND BONDING

 - 5. THE LIGHTING FIXTURES SHALL BE AS SPECIFIED IN THE FIXTURE SCHEDULE, AND THE MANUFACTURER'S NUMBERS SHOWN SHALL NOT REDUCE OR AMEND THE REQUIREMENTS AS OUTLINED UNDER

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BASEMENT & SUB BASEMENT

POWER AND SYSTEMS PLANS

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scale: AS NOTED