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GENERAL

- STRUCTURAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND DOCUMENTS INCLUDED IN THIS CONTRACT.
- CONTRACTOR TO VISIT THE SITE AND EXAMINE ALL CHARACTERISTIC FEATURES AFFECTING THE PROPOSED NEW CONSTRUCTION. COMPARE EXISTING GRADE ELEVATIONS WITH THOSE SHOWN ON THE CONTRACT DRAWINGS.
- OBTAIN ALL DETAILS AND DIMENSIONS OF EXISTING WORK IN FIELD AND INCORPORATE SAME INTO NEW CONSTRUCTION. CHECK ALL DIMENSIONS, LEVELS AND DETAILS SHOWN ON STRUCTURAL DRAWINGS AGAINST ARCHITECTURAL, MECHANICAL, ELECTRICAL, SITE PLAN, LANDSCAPING AND OTHER RELEVANT DRAWINGS.
- REPORT ANY DISCREPANCIES TO THE CONSULTANT BEFORE SUBMITTING THE TENDER PRICE. NO ALLOWANCE WILL BE MADE FOR DIFFICULTIES ENCOUNTERED OR EXPENSES INCURRED RESULTING FROM CONDITIONS CONSIDERED KNOWN AT THE TIME THE TENDERS ARE SUBMITTED. MCINTOSH PERRY CONSULTING ENGINEER LTD. IS NOT RESPONSIBLE FOR ANY WORKS NOT DESIGNED BY MCINTOSH PERRY CONSULTING ENGINEER LTD.
- CONTRACTOR MUST INFORM MCINTOSH PERRY CONSULTING ENGINEER LTD. OF ANY CHANGES AND FUTURE WORKS WHICH ARE NOT DESIGNED AND SHOWN ON DRAWINGS. CONTRACTOR MUST INFORM MCINTOSH PERRY CONSULTING ENGINEER LTD. IN WRITING WHEN CONSTRUCTION WORK BEGINS, AND ARRANGE FOR PERIODIC SITE REVIEWS IN ACCORDANCE WITH OBC REQUIREMENTS.
- CONTRACTOR IS RESPONSIBLE TO ARRANGE FOR THE TESTING OF CONCRETE, COMPACTION, INSPECTION OF STRUCTURAL STEEL FOR ALIGNMENT, BOLTS AND WELDING CONNECTION BY INDEPENDENT INSPECTION AGENT AND SUBMIT PROMPTLY ALL REPORTS TO THE PROJECT ARCHITECT AND ENGINEER.
- CONTRACTOR IS FULLY RESPONSIBLE FOR THE DESIGN, SUPPLY, INSTALLATION AND MAINTENANCE OF ADEQUATE TEMPORARY SHORING, BRACING AND RE-SHORING DURING CONSTRUCTION UNTIL STRUCTURE IS STABLE. SUBMIT SHORING/RE-SHORING DRAWINGS SEALED BY P. ENG. FOR APPROVAL PRIOR TO CONSTRUCTION OF CONCRETE WORK. SHORING MUST COMPLY WITH OHSA AND REGULATIONS FOR CONSTRUCTION PROJECTS.
- AT THE CONTRACTOR'S EXPENSE, THE CONSULTANT WILL SELECT AN INDEPENDENT TESTING AGENCY TO REVIEW STRUCTURAL STEEL WORK IN THE SHOP AND IN THE FIELD. THE CONTRACTOR WILL NOTIFY THE CONSULTANT TWO WEEKS IN ADVANCE OF THE DATE OF THE WORK WILL BE READY FOR INSPECTION.
- STRUCTURAL DESIGN AND CONSTRUCTION SHALL CONFORM TO:
 - ONTARIO BUILDING CODE (OBC-2012)
 - NATIONAL BUILDING CODE OF CANADA, WHERE APPLICABLE.
 - CONCRETE AND MASONRY
 - DESIGN OF CONCRETE STRUCTURES FOR BUILDINGS - CAN/CSA-A23.3
 - CONCRETE MATERIALS & METHODS OF CONCRETE CONSTRUCTION/ METHODS OF TEST FOR CONCRETE AND MASONRY.
 - CSA-A23.1/1A23.2
 - CSA S304-14 - DESIGN OF MASONRY STRUCTURES
 - PRECAST CONCRETE MATERIALS AND CONSTRUCTION - CAN/CSA-A23.4M
 - STEEL
 - CAN/CSA-S16-14 DESIGN OF STEEL STRUCTURES
 - COLD FORMED STRUCTURAL STEEL MEMBERS - CSA/CAN/S-136 & GUIDE SPECIFICATION-CSSBI
 - CAN/CSA-C30-18 - BILLET STEEL BARS FOR CONCRETE REINFORCEMENT
 - TIMBER
 - CAN/CSA-086- ENGINEERING DESIGN IN WOOD
 - ENGINEERING DESIGN IN WOOD CAN3-086-MALL CODES SHALL BE CURRENT CODES APPLICABLE AT THE TIME OF SUBMISSION FOR BUILDING PERMIT APPLICATION, INCLUDING ALL NEW AND REVISED ARTICLES.
- THIS SET OF DRAWINGS SHOWS THE COMPLETED PROJECT. THE DRAWINGS DO NOT SHOW COMPONENTS THAT MAY BE NECESSARY FOR CONSTRUCTION SAFETY. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR SAFETY IN AND ABOUT THE JOB SITE DURING CONSTRUCTION, AND THE DESIGN AND ERECTION OF ALL TEMPORARY STRUCTURE, FORMWORK, FALSE WORK, SHORING, ETC. REQUIRED TO COMPLETE THE WORK.
- CONTRACTOR MUST INFORM MCINTOSH PERRY CONSULTING ENGINEER LTD. IN WRITING WHEN CONSTRUCTION WORK BEGINS, AND ARRANGE FOR PERIODIC SITE REVIEWS IN ACCORDANCE WITH OBC REQUIREMENTS.
- SEE THIS DRAWING FOR DESIGN LOADS. DO NOT EXCEED DURING CONSTRUCTION.
- MAKE GOOD ALL EXISTING FINISHES AND STRUCTURE AFTER WORK IS COMPLETE.
- BEFORE SUBMITTING THE TENDER PRICE, CONTRACTOR IS RESPONSIBLE FOR MAKING ALL REQUIRED MEASUREMENTS ON SITE FOR QUANTITIES OF MATERIAL REQUIRED TO COMPLETE THE WORK.

SHOP DRAWINGS REVIEW

- MCINTOSH PERRY WILL REVIEW SHOP DRAWINGS PERTAINING TO THE WORK SHOWN ON THE STRUCTURAL DRAWINGS BY MEAN OF RATIONAL SAMPLING PROCEDURES AND COMMENTS ON THE ACCURACY OF THE CONTRACTOR- PREPARED DRAWINGS. SHOP DRAWINGS ARE REVIEWED ONLY AS TO GENERAL CONFORMITY WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION PROVIDED IN THE CONTRACT DOCUMENTS. MCINTOSH PERRY'S REVIEW IS NOT AN APPROVAL OF THE ACCURACY OF THE INFORMATION PRESENTED, RESPONSIBILITY OF WHICH REMAIN WITH THE CONTRACTOR SUBMITTING THE DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR ALL DIMENSIONS, QUANTITIES AND PERFORMANCE REQUIREMENTS TO BE CONFORMED AND CORRELATED AT THE JOB SITE. FOR ALL INFORMATION THAT PERTAINS SOLELY TO THE FABRICATION PROCESSES OR TO TECHNIQUES OF CONSISTENCY WITH THE CONTRACT DOCUMENTS.
- ALL CONNECTIONS TO BE DESIGNED BY FABRICATOR UNLESS NOTED OTHERWISE. FABRICATOR SHALL SUBMIT SUMMARY DESIGN DRAWINGS FOR REVIEW OF THE CONNECTIONS AND THEIR CAPACITIES. THESE DRAWINGS ARE IN ADDITION TO THE REGULAR SHOP DRAWINGS. ALL SUBMITTED CONNECTIONS DRAWINGS SHALL BE SIGNED AND SEALED BY A REGISTERED ENGINEER IN THE JURIDICITION OF THE PRESENT PROJECT.
- CONTRACTOR SHALL ALLOW A MINIMUM OF 5 BUSINESS DAY FOR MCINTOSH PERRY TO REVIEW THE SUBMITTED SHOP DRAWINGS.
- ALL SHOP DRAWINGS COMPRISING A REVISED SUBMISSION SHALL INDICATE THE REVISED CONTENT BY MEANS OF CLOUDING OR OTHER SUITABLE MARKINGS.

TEMPORARY WORKS

- THE CONTRACTOR SHALL DESIGN, PROVIDE, ERECT, MAINTAIN, REMOVE AND ASSUME FULL AND SOLE RESPONSIBILITY FOR ALL TEMPORARY WORKS REQUIRED FOR THE SAFE AND COMPLETE EXECUTION OF THE WORKS.
- IN THE EXECUTION OF THE TEMPORARY WORKS AND FOR THE DURATION OF THE CONTRACT, THE CONTRACTOR SHALL MAKE ADEQUATE PROVISION FOR ALL LIKELY CONSTRUCTION LOADING AND PROVIDE SUFFICIENT BRACING AND PROPS TO KEEP THE WORKS IN PLUMB AND ALIGNMENT AND FREE FROM EXCESSIVE DEFLECTION
- COSTS OF ALL TEMPORARY WORKS ARE DEEMED TO HAVE BEEN INCLUDED IN THE CONTRACT PRICE.
- PILING OF CONSTRUCTION MATERIAL ON THE FLOOR ARE NOT PERMITTED WITHOUT WRITTEN APPROVAL OF MCINTOSH PERRY. ACCESS OF HEAVY CONSTRUCTION EQUIPMENT SHALL BE PLANNED AND SUBMITTED TO MCINTOSH PERRY FOR REVIEW OF EFFECT ON BASE STRUCTURE.

CONSTRUCTION REVIEW, SITE INSPECTION AND TEST REPORTS

- THE CONTRACTOR WILL FINISH FORMING AND PLACING ALL FOUNDATION REINFORCEMENT FOR REVIEW BY THE CONSULTANT DURING SCHEDULED SITE VISITS.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PREPARING SHOP DRAWING DESIGN AND COMPLETING WORK ON SITE AS PER THE CONTRACT DOCUMENTS. REVIEW BY THE CONSULTANT IS NOT TO PROVIDE A DETAILED CHECK OF THE WORK BUT FOR THE CONSULTANT TO BECOME GENERALLY FAMILIAR WITH THE WORK AS IT RELATES TO THE CONTRACT DOCUMENTS.
- THE O.B.C. BUILDING CODE 2012 SPECIFIES THAT FIELD REVIEWS OF THE BUILDING BE CARRIED OUT DURING THE COURSE OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF THE START OF CONSTRUCTION TO FACILITATE SUCH REVIEWS BY THE STRUCTURAL ENGINEER.
- THE CONTRACTOR SHALL FURNISH TO THE STRUCTURAL ENGINEER, ON SEPIA AND TWO PRINTS STAMPED NY A PROFESSIONAL ENGINEER PRIOR TO POURING OF CONCRETE OR ERECTION OF STRUCTURAL ELEMENTS:
 - SOIL BEARING TEST REPORTS
 - REINFORCING STEEL PLACING DRAWINGS AND BARS LISTS
 - ROOF AND FLOOR JOIST DESIGN AND FABRICATION.THE CONTRACTOR SHALL ALSO FURNISH THE ENGINEER WITH CONCRETE CYLINDER TEST REPORTS FOR ALL STRUCTURAL CONCRETE USED IN THE BUILDING.
- AT THE CONTRACTOR'S EXPENSE, THE CONSULTANT WILL SELECT AN INDEPENDENT TESTING AGENCY TO REVIEW STRUCTURAL STEEL WORK IN THE SHOP AND IN THE FIELD. THE CONTRACTOR WILL NOTIFY THE CONSULTANT TWO WEEKS IN ADVANCE OF THE DATE OF THE WORK WILL BE READY FOR INSPECTION.

NON-STRUCTURAL ELEMENTS

- NON-STRUCTURAL ELEMENTS ARE NOT PART OF THE STRUCTURAL DESIGN SHOWN ON THE PRESENT DRAWINGS. DESIGN, DETAILING, AND FIELD REVIEW OF SUCH ELEMENTS ARE NOT BY MCINTOSH PERRY. THOSE ELEMENTS APPEAR ON DRAWINGS OTHER THAN THESE STRUCTURAL DRAWINGS, WHERE STRUCTURAL ENGINEERING IS REQUIRED FOR THESE ELEMENTS AND THEIR CONNECTIONS TO BASE STRUCTURE, THIS SHALL BE PROVIDED BY A SPECIALTY ENGINEER, WHO SHALL ALSO PROVIDE ANY LETTER REQUIRED BY THE AUTHORITY HAVING JURISDICTION ON THE PROJECT
- SHOP DRAWINGS OF NON STRUCTURAL ELEMENTS THAT AFFECT OR ATTACH TO THE BASE STRUCTURE SHALL BE SUBMITTED TO MCINTOSH PERRY FOR REVIEW FOR IMPACT ON BASE STRUCTURE.
- MAXIMUM DEFLECTION OF CLADDING, STUDS, PARTITION WALLS AND CURTAIN WALLS UNDER THE WIND LOAD SHOWN ON S.I.1 SHALL MEET THE ARCHITECTURAL SPECIFICATION AND SHALL NOT EXCEED THE FOLLOWING:
 - SUPPORT FOR BRICK VENEER - MAX (25mm, L/360)
 - SUPPORT FOR PRECAST PANELS - MAX(25mm, L/360)
 - SUPPORT FOR GLAZING - MAX(25mm, L/360)
- EXAMPLE OF NON-STRUCTURAL ELEMENTS INCLUDE (NOT LIMITED TO):
 - GUARDRAIL, HANDRAILS, FLAG POSTS, CANOPES, CEILING, MILLWORK, ETC
 - LANDSCAPE ELEMENTS
 - CLADDING, GLAZING, MULLIONS, STUD WALLS
 - ARCHITECTURAL PRECAST, PRECAST CLADDING
 - NON-LOAD BEARING MASONRY
 - BRICK OR VENEER AND THEIR ATTACHMENTS

FOUNDATION

- FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT #P64772-1 DATED MARCH 7, 2019 PREPARED BY PATERSON GROUP. REPORT TO THIS REPORT FOR SOILS CONDITIONS AND FOUNDATION CONSTRUCTION RECOMMENDATIONS. CONTRACTOR SHALL READ AND UNDERSTAND THIS REPORT BEFORE STARTING WITH THE FOUNDATION WORK.
- ALL FOOTINGS TO REST ON THE SOUND BEDROCK. REFER TO FOOTING SCHEDULE AND FOUNDATION PLAN FOR ALLOWABLE BEARING PRESSURE REQUIRED. ENGINEERED FILL OF SAME BEARING MAY BE ACCEPTABLE IF APPROVED BY GEOTECHNICAL CONSULTANT.
- CONTRACTOR MUST HAVE THE ALLOWABLE BEARING VERIFIED BY AN INDEPENDENT TESTING AGENCY AT THE CONTRACTORS EXPENSE PRIOR TO CASTING OF CONCRETE.
- FOOTING ELEVATIONS AND WALL DEPTHS ARE SUGGESTED ONLY. THESE MUST BE CONFIRMED ON SITE BY COMPETENT GEOTECHNICAL CONSULTANT SO AS TO ACHIEVE THE SOIL BEARING CAPACITY NOTED ABOVE, WHERE NEW FOOTING ABUTS OR IN CLOSE PROXIMITY TO EXISTING UNDERGROUND STRUCTURE, THE FOOTING SHALL BE STEPPED TO MATCH EXISTING FOOTING LEVEL, AND MUST BE BELOW THE LINE OF REPOSE FROM THE EXISTING FOOTING LEVEL AS DETERMINED BY GEOTECHNICAL ENGINEER ON SITE.
- UNLESS SHOWN OTHERWISE, FOUNDATION WALLS ARE NOT DESIGNED TO CARRY CANTILEVER LOADS. THESE WALLS CAN BE BACKFILLED IN 150 mm (6") LIFTS ON EITHER SIDE AND SHALL NOT BE MORE THAN 150 mm (6") OUT OF BALANCE AT ANY POINT ALONG THE WALL.
- TEMPORARY BRACING AND SHORING TO BE PROVIDED DURING CONSTRUCTION, BRACING AND SHORING DESIGN IS THE CONTRACTORS RESPONSIBILITY.
- PROVIDE ADEQUATE FROST PROTECTION TO NEWLY CAST FOOTINGS AND BOTTOM OF EXCAVATION THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD.
- ADHERE TO RECOMMENDATIONS AND DETAILS IN THE SOIL REPORT.
- PROVIDE VERTICAL DOVELS TO MATCH VERTICAL REINFORCEMENT IN COLUMNS AND WALLS ABOVE
- EXTERIOR FOOTING SHALL EXTEND A MINIMUM 1200 BELOW FINISHED GRADE UNLESS OTHERWISE NOTED.
- PROTECT FOOTINGS, WALLS, SLABS-ON-GRADE AND ADJACENT SOIL AGAINST FREEZING AND FROST ACTION AT ALL TIMES DURING CONSTRUCTION.
- CENTRE FOOTINGS AND PIERS UNDER CENTROID OF COLUMNS, UNLESS OTHERWISE NOTED.

FORMWORK

- PROVIDE FORMWORK FOR ALL CONCRETE WORK WHEN REQUIRED. CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, FABRICATION AND ERECTION OF FORMWORK TO CAN/CSA-A23.1/1A23.2 AND CSA S299.3 REQUIREMENTS. SHORING AND RESHORING DRAWINGS TO BE SUBMITTED TO MCINTOSH PERRY FOR REVIEW FOR EFFECT ON BASE STRUCTURE ONLY.
- CLEAN FORMS AS ERECTION PROCEEDS, TO REMOVE FOREIGN MATTER.
- DURING COLD WEATHER, REMOVE ICE AND SNOW FROM WITHIN FORMS.
- DO NOT REMOVE FORMS AND BRACING UNTIL CONCRETE HAS GAINED SUFFICIENT STRENGTH TO SUPPORT ITS OWN WEIGHT, AND CONSTRUCTION AND DESIGN LOADS WHICH ARE LIABLE TO BE IMPOSED UPON IT. NO SLAB FORM OF BEAM FORM SHALL BE REMOVED BEFORE CONCRETE HAS REACHED 75% OF SPECIFIED STRENGTH, UNLESS APPROVED BY MCINTOSH PERRY. ALL SLABS, BEAMS AND SLAB BANDS TO REMAIN SHORED UNTIL CONCRETE HAS REACHED SPECIFIED 28 DAYS STRENGTH.
- FORM TIES WILL BE REMOVABLE. THE FORM RELEASE AGENT WILL BE COLOURLESS MINERAL OIL THAT WILL NOT STAIN OR IMPAIR NATURAL BONDING OF CONCRETE COATINGS.
- REFER TO PROJECT SPECIFICATION DOCUMENTS FOR CONCRETE MATERIAL TESTING

FORMWORK ERECTION AND SHORING

- CONSTRUCT FORMWORK, SHORING AND BRACING TO MEET DESIGN AND CODE REQUIREMENTS.
- ALIGN JOINTS AND MAKE WATERTIGHT. KEEP FORM JOINTS TO A MINIMUM.
- WHEN USING EARTH FORMS, HAND TRIM SIDES AND BOTTOMS, AND REMOVE LOOSE DIRT PRIOR TO PLACING CONCRETE.
- PROVIDE BRACING TO ENSURE STABILITY OF FORMWORK. SHORE OR STRENGTHEN PREVIOUSLY CONSTRUCTED FORMWORK LIABLE TO BE OVER STRESSED BY CONSTRUCTION LOADS.
- PROVIDE CHAMFER STRIPS ON EXTERNAL CORNERS OF BEAMS, JOISTS, AND COLUMNS, AS NEEDED.
- APPLY FORM RELEASE AGENT PRIOR TO PLACING REINFORCING STEEL, ANCHORING DEVICES, AND EMBEDDED ITEMS.
- PROVIDE FORMED OPENINGS WHERE REQUIRED FOR PIPES, CONDUITS, SLEEVES, AND OTHER WORK TO BE EMBEDDED IN AND PASSING THROUGH CONCRETE MEMBERS.
- PLACE ITEMS WHICH WILL BE CAST DIRECTLY INTO CONCRETE.
- COORDINATE WORK OF OTHER SECTIONS INVOLVED IN FORMING AND SETTING OPENINGS, SLOTS, CHASES, SLEEVES, BOLTS, ANCHORS, AND OTHER INSERTS.
- INSTALL WATERSTOPS CONTINUOUS WITHOUT DISPLACING REINFORCEMENT. HEAT SEAL JOINTS WATERTIGHT.
- PLACE FORMED CONSTRUCTION JOINTS IN FLOOR SLAB PATTERN POURING SEQUENCE. SET TOP SCREED TO REQUIRED ELEVATIONS.

CONCRETE

- CONFORM TO CSA STANDARD A23.1. CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION A23.2. METHODS OF TEST FOR CONCRETE A23.3. DESIGN OF CONCRETE STRUCTURES IN DETAILING BENDS, PLACEMENT, SPACING, SPLICING AND PROTECTION OF REINFORCING.
- COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS (UNLESS OTHERWISE NOTED):

LOCATION	STRENGTH	MAXIMUM AGGREGATE SIZE (mm)	EXPOSURE CLASS
FOOTINGS	30 MPa	19	N
FOUNDATI ON WALLS	35 MPa	19	F2C-1
EXTERIOR WORKS	35 MPa	19	C-1
- CONCRETE COVER FOR REINFORCING STEEL BARS AND PLACING TOLERANCES SHALL BE IN ACCORDANCE WITH CSA STANDARD A23.1.
- CEMENT: PROVIDE PORTLAND CEMENT OF CANADIAN MANUFACTURE CONFORMING WITH CSA-A3001, NORMAL TYPE.
- AGGREGATES: PROVIDE CLEAN, UNCOATED SAND AND COARSE AGGREGATES FROM APPROVED SOURCES WHICH CONFORM WITH CSA/CAN-A23.1/1A23.2. NOMINAL SIZE OF COARSE AGGREGATES TO BE 19 mm (3/4").
- WATER: CLEAN, AND FREE FROM INJURIOUS MATERIAL.
- READY MIX CONCRETE: PRE-MIXED CONCRETE SHALL BE QUALITY CONTROLLED CONCRETE CONFORMING WITH CSA STANDARD CAN/CSA-A23.1/1A23.2. GENERALLY CONCRETE NOT EXPOSED TO ELEMENTS TO BE OF MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 25 MPa AS NOTED ON THE DRAWINGS. DESIGN TO BE SUBMITTED FOR TESTING & APPROVAL BY THIRD PARTY & SUBMITTED TO ENGINEER OF RECORD PRIOR TO COMMENCING WORK. CALCIUM CHLORIDE SHALL NOT BE USED AS AN ADDITIVE TO CONCRETE.
- EXPOSURE F-1: CONCRETE SUBJECT TO FREQUENT CYCLES OF FREEZING AND THAWING IN SATURATED CONDITION-CONCRETE WITH MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 30 MPa. MAXIMUM WATER CEMENT RATIO OF 0.45. THIS CONCRETE SHALL BE AIR ENTRAINED 5% TO 8% FOR 19 mm MAXIMUM SIZE AGGREGATE AND 7% TO 10% FOR 10 mm MAXIMUM SIZE AGGREGATE.
- EXPOSURE F-2: CONCRETE SUBJECT TO FREQUENT CYCLES OF FREEZING AND THAWING IN UNSATURATED CONDITION-CONCRETE WITH MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 25 MPa. MAXIMUM WATER CEMENT RATIO OF 0.55. THIS CONCRETE SHALL BE AIR ENTRAINED 3% TO 6% FOR 19 mm MAXIMUM SIZE AGGREGATE AND 3% TO 6% FOR 10 mm MAXIMUM SIZE AGGREGATE.
- EXPOSURE C-1: CONCRETE EXPOSED TO DEICING CHEMICAL-CONCRETE WITH MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 35 MPa. MAXIMUM WATER CEMENT RATIO OF 0.4. THIS CONCRETE SHALL BE AIR ENTRAINED 5% TO 8% FOR 19 mm MAXIMUM SIZE AGGREGATE AND 7% TO 10% FOR 10 mm MAXIMUM SIZE AGGREGATE.
- EXPOSURE C-2: SIDEWALK AND PAVEMENT CONCRETE EXPOSED TO DEICING CHEMICAL-CONCRETE WITH MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 32 MPa. MAXIMUM WATER CEMENT RATIO OF 0.45. THIS CONCRETE SHALL BE AIR ENTRAINED 5% TO 8% FOR 19 mm MAXIMUM SIZE AGGREGATE AND 7% TO 10% FOR 10 mm MAXIMUM SIZE AGGREGATE.
- AIR ENTRAINMENT: AS PER ASTM C260. CORROSION INHIBITORS TO BE USED IN CONCRETE AS NOTED ON THE STRUCTURAL DRAWINGS AND IN ALL STAIRLANDING IN THE PARKING AREAS. ALTERNATIVELY, CLASS C-XL CONCRETE CAN BE USED.
- UNLESS OFFICIALLY APPROVED OTHERWISE, SLUMPS SHALL BE CONSISTENT AT 80 mm x20 mm. GREATER SLUMPS ARE NOT ACCEPTABLE AND THE LOADS SHALL BE REJECTED. ADMIXTURES, WHERE PERMITTED, SHALL CONFORM WITH CSA STANDARD CAN S-408M.
 - PROVIDE AN APPROVED WATER-REDUCING AGENT IN ALL CONCRETE.
 - PROVIDE WHERE SPECIFIED, AN APPROVED AIR ENTRAINING AGENT.
 - FLY-ASH AND SLAG.
- DO NOT INCORPORATE FLY-ASH OR SLAG INTO CONCRETE MIX DESIGNS WITHOUT PRIOR APPROVAL IN WRITING.
- FLY-ASH AND SLAG MAY BE CONSIDERED AS ACCEPTABLE IN NON-SUSPENDED CONCRETE OR IN SLABS WHICH ARE NOT TO BE SUBJECTED TO AN ACCELERATED POURING SEQUENCE. THIS IS DEPENDENT ON PROVEN PERFORMANCE AND PREVALENT WEATHER CONDITIONS.
- PERFORM CAST-IN-PLACE CONCRETE WORK IN ACCORDANCE WITH CSA-A23.1/1A23.2 UNLESS SPECIFIED OTHERWISE IN THIS SECTION.
- CONFORM TO CAN/CSA-A23.1/1A23.2 IN THE USE OF ADMIXTURES.
- ALL CONCRETE SHALL BE CONSOLIDATED WITH INTERNAL VIBRATOR, AND FINISH TO ARCHITECT'S REQUIREMENTS.
- ALL CONCRETE SURFACE MUST BE CURED FOR MINIMUM 3 DAY AT MINIMUM 10°C. ADDITIONAL 4 DAY CURING IS REQUIRED FOR CONCRETE OF F-1, C-1, C-2, S-1 AND S-2 EXPOSURE. CURING AS PER CAN/CSA-A23.1/1A23.2.
- PLACEMENT & CONSOLIDATION SHALL BE IN ACCORDANCE WITH CSA A23.1/1A23.2. MAINTAIN RECORDS OF POURED CONCRETE ITEMS, RECORD DATE, LOCATION OF POUR, QUANTITY, AIR TEMPERATURE, AND TEST SAMPLES TAKEN. POUR CONCRETE CONTINUOUSLY BETWEEN PRE-DETERMINED CONSTRUCTION AND CONTROL JOINTS.
- IMMEDIATELY AFTER PLACEMENT, PROTECT CONCRETE FROM PRE-MATURE DRYING, EXCESSIVE HOT OR COLD TEMPERATURES AND MECHANICAL DAMAGE.
- CONFORM TO CAN/CSA-A23.1/1A23.2 WHEN CONCRETING DURING HOT WEATHER.
- CONFORM TO CAN/CSA-A23.1/1A23.2 WHEN CONCRETING DURING COLD WEATHER.
- PROVIDE A POWERED STEEL TROWEL FINISH FOR ALL INTERIOR CONCRETE SLABS. REFER TO ARCHITECTURAL.
- FORM TIES WILL BE REMOVABLE. THE FORM RELEASE AGENT WILL BE COLOURLESS MINERAL OIL THAT WILL NOT STAIN OR IMPAIR NATURAL BONDING OF CONCRETE COATINGS.
- PLACE CONCRETE IN ACCORDANCE WITH CAN/CSA-A23.1/1A23.2. MAINTAIN RECORDS OF POURED CONCRETE ITEMS, RECORD DATE, LOCATION OF POUR, QUANTITY, AIR TEMPERATURE, AND TEST SAMPLES TAKEN. PROVIDE ALL RECORDS AND TEST DATA TO THE CONSULTANT. PREPARE PREVIOUSLY PLACED CONCRETE BY CLEANING WITH STEEL BRUSH AND APPLYING BONDING AGENT. APPLY BONDING AGENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. POUR CONCRETE CONTINUOUSLY BETWEEN PRE-DETERMINED CONSTRUCTION AND CONTROL JOINTS.
- FILLETS FOR CHAMFERED CORNERS SHALL BE 19mm. PROVIDE CHAMFER TO ALL BOTTOM EDGE OF EXPOSED SLABS AND BEAMS, CORNERS OF WALLS AND COLUMNS, TOP EDGES OF EXPOSED SLABS, BEAMS, CURBS AND STAIRS TO BE TOOLED TO ARCHITECTURAL FINISH SPECIFICATIONS
- MODIFY OR REPLACE CONCRETE NOT CONFORMING TO REQUIRED LINES, DETAILS AND ELEVATIONS.
- REPAIR OR REPLACE CONCRETE WITH EXCESSIVE HONEYCOMBING AND OTHER DEFECTS.
- THE VERTICAL HEIGHT OF FREE FALL CONCRETE SHALL NOT EXCEED 1800 UNLESS OFFICIALLY APPROVED OTHERWISE.
- CORROSION INHIBITORS ARE TO BE USED IN CONCRETE IN AREAS NOTED ON THE STRUCTURAL DRAWINGS, AS WELL AS IN STAIRS AND STAIR LANDINGS WITHIN PARKADES. USE 10 L/m3 OF 100'S BY GRADE. CONSTRUCTION PRODUCTS OR MASTERLIFE C-1 30' BY BASF CONSTRUCTION CHEMICALS. ALTERNATIVELY, USE C-XL CONCRETE WITH CURING TYPE 3 (EXTENDED) PER TABLE 20 OF CAN/CSA-A23

CONCRETE REINFORCEMENT NOTES

- PERFORM CONCRETE REINFORCING WORK AND FABRICATION IN ACCORDANCE WITH CAN/CSA-A23.1/1A23.2 UNLESS SPECIFIED OTHERWISE IN THIS SECTION.
- REINFORCING STEEL SHALL BE GRADE 400R DEFORMED BILLET - STEEL (EXCEPT REINFORCING TO BE WELDED SHALL BE 400W) CONFORMING TO CAN/CSA - G30.18 AND FREE OF RUST, OIL OR ANY OTHER DELETERIOUS MATERIAL.
- ALL REINFORCING TO BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH THE LATEST RSIO DETAILING MANUAL. SUBMIT PLACING SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION OF REBAR.
- PROVIDE ALL NECESSARY BAR SUPPORTS AND TIE IN ACCORDANCE WITH THE LATEST RSIO DETAILING MANUAL.
- REINFORCING WORK TO BE INSPECTED BY THE ENGINEER. NOTIFY THE ENGINEER 48 HOUR IN ADVANCE. CONTRACTOR MUST ENSURE MINIMUM 95% STEEL ARE IN PLACE FOR THE INSPECTION.
- SPLICES IN REINFORCEMENT SHALL BE STAGGERED WHERE POSSIBLE. SPLICES SHALL BE IN ACCORDANCE WITH CSA 23.04 CLAUSE 12, CLASS B TENSION SPLICE AS SHOWN ON STANDARD DETAIL.
- WELDED WIRE FABRIC SPLICES SHALL BE MADE BY OVERLAPPING ONE MESH OR 180mm, WHICHEVER IS GREATER.
- WELDED WIRE FABRIC SHALL CONFORM TO ASTM A1064M - STANDARD SPECIFICATION FOR CARBON-STEEL WIRE AND WELDED WIRE REINFORCEMENT, PLAIN AND DEFORMED, FOR CONCRETE.
- EPOXYED REINFORCEMENT FABRICATION AND INSTALLATION SHALL CONFORM ASTM A775M AND ASTM D3963
- THE MINIMUM CLEAR COVER FOR REINFORCEMENT SHALL BE IN ACCORDANCE WITH CSA A23.1 AND FOR NON-PRESTRESSED CONCRETE, UNLESS NOTED OTHERWISE, SHALL BE:

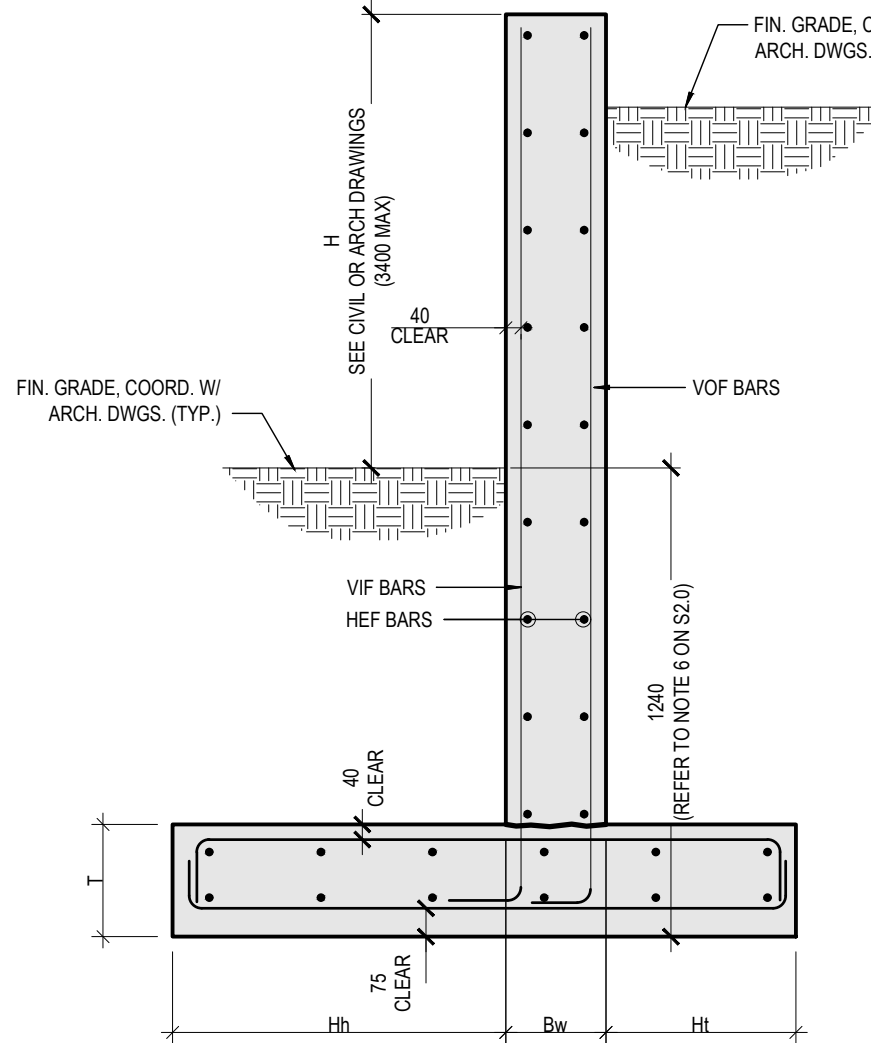
THE FOLLOWING ADDITIONAL REQUIREMENTS APPLY TO MINIMUM CONCRETE COVER:

- CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH -> 75mm
- UNPROTECTED CONCRETE EXPOSED TO CHLORIDES (C-AL, C-1 AND C-3) -> MAX(50mm, 2.0Ds)
- CONCRETE EXPOSED TO WEATHER (F-1, F-2, S-3, S-2, S-3) -> MAX(1.5Ds, 40mm)
- FOR AGGREGATE SIZE LARGER THAN 25mm, CLEAR COVER NOT TO BE LESS THAN 1.0ag FOR NON EXPOSED CONCRETE (TO WEATHER OR EARTH) AND 1.5ag FOR EXPOSED CONCRETE

- BEFORE ANY NEW CONCRETE IS ADDED, THE SURFACE OF THE EXISTING CONCRETE SHALL BE ROUGHENED, THOROUGHLY CLEANED WITH ALL LAITANCE REMOVED AND A BONDING AGENT APPLIED. PROVIDE WATERSTOPS IN SUPPLEMENTAL JOINTS IN STRUCTURES DESIGNATED AS "WATERTIGHT".
- ALL EXISTING REINFORCING SHALL BE CLEANED TO BE FREE OF RUST, OIL OR ANY OTHER DELETERIOUS MATERIAL
- SUPPORT REINFORCING WITH CHAIRS, ACCESSORIES AS REQUIRED TO ACHIEVE SPECIFIED COVER. PROVIDE SUFFICIENT SUPPORTS TO MAINTAIN SPECIFIED CONCRETE COVER ALONG THE REINFORCEMENT BAR. ALL REBAR SHALL BE TIED TO MAINTAIN STEEL IN PLACE DURING CONCRETE PLACEMENT.
- FOR SUSPENDED PARKING SLABS AND ANY CLORIDES EXPOSED SLAB, SUPPORT CHAIRS SHALL BE PLASTIC, PLASTIC COATED OR TIED DOBIES WITH EQUAL QUALITY TO THE SPECIFIED CONCRETE.
- FOR SUPPORTING EPOXY COATED REINFORCEMENT, PLASTIC OR PLASTIC COATED SUPPORT TIES SHALL BE USED
- REFER TO THE PROJECT SPECIFICATION DOCUMENTS FOR TESTING OF THE REINFORCING STEEL

NOTES:

- BASED ON A MINIMUM BEARING CAPACITY OF 100kPa. REFER TO GEOTECHNICAL REPORT FOR BASE PREPARATION
- FOR CONCRETE CAST AGAINST EARTH, PROVIDE 75mm COVER
- CONCRETE STRENGTH AND EXPOSURE: PER S.O.3



	WALL HEIGHT ABOVE GRADE, MM			
	UP TO 1000	1000 TO 1800	1800 TO 2100	2100 TO 3400
Bw, mm	250	300	350	450
Hh, mm	400	950	1200	2600
Hl, mm	400	150	150	400
T, mm	300	350	400	500
VVF REBAR	10M@300	15M@300	15M@300	15M@250
VVF REBAR	10M@300	15M@400	15M@400	15M@300
HEF REBAR	10M@300	10M@300	15M@300	15M@250
TUL REBAR	10M@300	15M@150	15M@150	20M@125
TLL REBAR	4-10M	4-15M	4-15M	4-20M
BUL REBAR	4-10M	4-15M	4-15M	4-20M
BLL REBAR 15M@297	10M@300	15M@300	15M@250	20M@250

CD-121

TYPICAL RETAINING WALL DETAIL UNO (MAX 3400 HIGH)

APPROVED

By Kersten Nitsche at 3:27 pm, Dec 16, 2024

Kersten Nitsche

KERSTEN NITSCHKE, MCIP RPP
MANAGER (A), DEVELOPMENT REVIEW WEST
PLANNING, DEVELOPMENT AND BUILDING SERVICES
DEPARTMENT, CITY OF OTTAWA

2	ISSUED FOR BUILDING PERMIT	2024-01-24
1	ISSUED FOR APPROVAL	2023-11-29
No.	Revision/Issue	Date

Check and verify all dimensions before proceeding with the work Do not scale drawings

McINTOSH PERRY

115 Walgreen Rd. Carp, ON K0A 1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.McIntoshPerry.com

Stamp:

LICENSED PROFESSIONAL ENGINEER
2024-01-24
H. H. NAMI
100593049
PROVINCE OF ONTARIO

Client:	
Project:	KANATA HAMPTON INN & SUITES RETAINING WALLS
1305 MARITIME WAY	KANATA, ONTARIO
Drawing Title:	

GENERAL NOTES & TYPICAL DETAILS

Scale: AS NOTED	Project Number:	CCO-180534-01
Drawn by: TE		
Checked By: HN	Drawing Number:	S1.0
Designed By: HN		
Date: NOV. 2023	SHEET of	

TO BE READ IN CONJUNCTION WITH CONTRACT DOCUMENTS