

GENERAL NOTES

CONTRACTS

- ALL CONTRACTS SUPERCEDE ANY DEVIATIONS BETWEEN THIS DRAWING SET AND THE CONTRACT.
- THE CONTRACTOR IS RESPONSIBLE FOR THE FULL REVIEW OF THE EQUIPMENT APPLICATION DETAILS AND PROCEDURES OUTLINED HEREIN TO DETERMINE IF ADJUSTMENTS ARE NEEDED TO ADHERE TO THE PROJECTS CONSTRUCTION METHODS, SCHEDULES, AND SITE CONDITIONS. VERIFICATIONS SHOULD BE MADE WELL IN ADVANCE OF THE ERECTION OF EQUIPMENT IN ORDER TO PREVENT DELAYS RESULTING IN ERECTION AND CONSTRUCTION.
- THE CONTRACTOR IS TO VERIFY THE PRELIMINARY DRAWING AND NOTIFY MORROW EQUIPMENT CO. L.L.C.'S ENGINEERING DEPARTMENT TO ISSUE "FOR CONSTRUCTION" DRAWINGS. IF NO NOTIFICATION IS RECEIVED WITHIN 10 DAYS FROM THE ISSUE DATE, PRELIMINARY DRAWING SETS MAY BE ISSUED "FOR CONSTRUCTION". REQUESTS FOR REVISIONS TO THE DRAWING SETS MUST BE MADE IN WRITING TO MORROW EQUIPMENT COMPANY, L.L.C.'S ENGINEERING DEPARTMENT.
- THESE DRAWINGS CONTAIN IDEAS, DESIGNS, ARRANGEMENTS, AND PLANS THAT WERE CREATED AND ARE TO BE USED ONLY FOR THE SPECIFIED PROJECT AND SITE, AND ARE OWNED BY AND THE PROPERTY OF MORROW EQUIPMENT COMPANY, L.L.C. NONE OF THE IDEAS, DESIGNS, ARRANGEMENTS, AND PLANS CONTAINED HEREIN ARE TO BE REPRODUCED OR COPIED IN WHOLE OR PART OR DISCLOSED TO ANY PERSON, FIRM, OR CORPORATION FOR ANY PURPOSE WHATSOEVER WITHOUT EXPRESS WRITTEN PERMISSION. THESE DRAWINGS ARE TO BE RETURNED UPON REQUEST.
- ALL PRELIMINARY DRAWINGS ARE FOR ILLUSTRATIVE PURPOSES ONLY. THEY ARE NOT INTENDED TO BE REPRESENTATIVE OF FINAL WORKING DRAWINGS. ALL HOOK HEIGHTS, NUMBER OF CLIMBS, CONFIGURATIONS, AND INVENTORY OF COMPONENT PIECES AND THEIR ACCESSORIES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

TOWER CRANE OPERATIONS

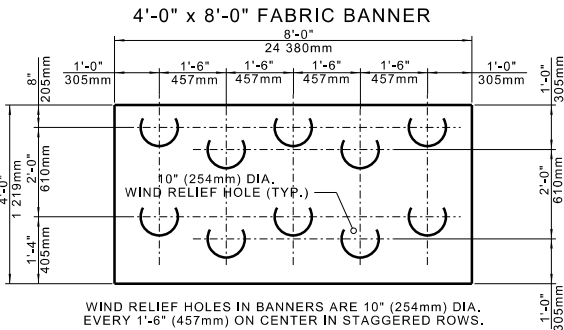
- IN OPERATION WIND SPEED RESTRICTIONS ARE FOUND IN THE OPERATIONS MANUAL. IF WIND SPEEDS EXCEED, OR ARE ANTICIPATED TO EXCEED THE RESTRICTION, THE TOWER CRANE SHALL BE PLACED OUT OF OPERATION AND ALLOWED TO WEATHERVANE 360 DEGREES.
- THE CONTRACTOR IS TO VERIFY THAT THE TOWER CRANE MAY OPERATE AND/OR WEATHERVANE OVER ADJACENT PROPERTY, EXISTING BUILDINGS, POWER LINES, STREETS, NEIGHBORING OBSTACLES, ETC.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SITE CONDITIONS PRIOR TO STARTING WORK. ANY DEVIATIONS FROM THIS DRAWING SET SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF MEC'S ENGINEERING DEPARTMENT.
- ALL HOOK HEIGHTS ARE CALCULATED FROM THE TOP OF THE TOWER CRANE'S FOOTING.
- FOR PROJECTS WITH MULTIPLE TOWER CRANES, WHEN SLEWING THE UPPER CRANE, THE HOOK BLOCK MUST BE POSITIONED SO THAT IT WILL CLEAR THE LOWER CRANE.
- CONSULT THE OPERATION MANUAL FOR ADDITIONAL INFORMATION NECESSARY FOR SAFE OPERATIONS OF THE TOWER CRANE.
- DRAWINGS SHOULD ONLY BE SCALED FOR ESTIMATION PURPOSES. SCALED DIMENSIONS SHOULD BE VERIFIED.
- PER USDOL OSHA § 1926.1417(a): "THE EMPLOYER MUST COMPLY WITH ALL MANUFACTURERS PROCEDURES APPLICABLE TO THE OPERATIONAL FUNCTIONS OF THE EQUIPMENT, INCLUDING ITS USE WITH ATTACHMENTS."

EMERGENCY WEATHER PRECAUTIONS

- WE RECOMMEND PLACING THE FOLLOWING PROCEDURES IN A SITE SAFETY PREPAREDNESS PLAN FOR UNUSUAL WEATHER EVENTS.
- IF YOUR PROJECT SITE IS FORECASTED TO ENCOUNTER UNUSUAL WIND CONDITIONS, ACCORDING TO THE NATIONAL HURRICANE CENTER, <http://www.nhc.noaa.gov>, WE RECOMMEND THAT YOU PREPARE YOUR MACHINERY WITH THE FOLLOWING PROCEDURES TO MINIMIZE THE EFFECTS OF THE WIND ON YOUR MACHINERY.
 - PREVENT THE BASE OF THE MACHINERY AND SURROUNDING AREA FROM BEING ERODED BY WIND AND / OR WATER.
 - VISUALLY INSPECT THAT THE STRUCTURAL SUPPORT BOLTING OF THE MACHINERY IS TIGHT AND SECURE:
 - FOUNDATION ANCHOR BOLTS
 - MAST BOLTING
 - BUILDING TIE-IN AND CONNECTION PLATE BOLTING.
 - CLIMB DOWN TOWER CRANES TO THE LOWEST POSSIBLE POSITION TO REDUCE WIND EFFECTS, AS LONG AS THEY ARE FREE TO WEATHERVANE AND CLEAR FIXED OBSTRUCTIONS. REMOVE OR LOWER THE TOP CLIMBING UNIT TO THE LOWEST POSSIBLE POSITION.
 - LOWER THE CONSTRUCTION HOIST CARS TO THE BASE.
 - REMOVE ALL SIGNAGE ON THE MACHINERY.
 - REMOVE THE RIGGING FROM THE TOWER CRANE'S HOOK, AND POSITION THE HOOK AT MINIMUM RADIUS AND MAXIMUM HEIGHT. FOR LUFFING CRANES, PLACE THE BOOM AT THE LOWEST BOOM ANGLE WHICH THE BOOM CAN WEATHERVANE.
 - RELEASE THE SLEWING BRAKE AND ALLOW THE TOWER CRANE TO WEATHERVANE 360°.
 - PLACE THE MACHINERY OUT OF OPERATION.
 - DISCONNECT THE ELECTRICAL POWER AND SECURE ALL CABLES AT THE BASE OF THE MACHINERY.
 - REMOVE OR SECURE LOOSE CONSTRUCTION MATERIALS AND EQUIPMENT THAT COULD IMPACT THE MACHINERY.
 - ONCE THE WEATHER DANGER HAS SUBSIDED OR THE WEATHER HAS PASSED THROUGH, INSPECT THE MACHINERY AND CONTACT YOUR LOCAL MORROW SERVICE MANAGER TO REPORT AND DISCUSS THE CONDITION OF THE MACHINERY. IN THE EVENT YOU HAVE SUSTAINED DAMAGES, IT MAY BE NECESSARY TO HAVE A MORROW SERVICE TECHNICIAN VISIT YOUR SITE FOR A MORE DETAILED INSPECTION.

SIGNAGE

- ADDITIONAL SURFACES EXPOSED TO THE WIND ON THE TOWER CRANE'S STRUCTURE MAY AFFECT ITS STABILITY. THE CREATION OF ADDITIONAL SURFACES EXPOSED TO THE WIND ON THE COUNTER-JIB CAN PREVENT THE CRANE FROM TURNING INTO THE WIND PROPERLY WHEN IT IS OUT OF SERVICE, OR AFFECT THE TOWER CRANE'S PROPER OPERATION WHEN IN USE. IF A SIGN IS TO BE PLACED ON THE TOWER CRANE WITHOUT THE CALCULATION OF ADDITIONAL CRANE STRUCTURE STRESSES, THE FOLLOWING MUST BE FOLLOWED:
- SIGNS MUST BE NO LARGER THAN 4'-0" (1,219mm) X 8'-0" (2,438mm) FABRIC BANNER WITH AIR RELIEF HOLES. A LONGER BANNER MAY BE USED WITH A CORRESPONDING REDUCTION IN WIDTH. FOR A MAXIMUM BANNER AREA OF 32 sq.ft. (2.97 sq.m). SIGNS MUST NOT COVER THE EXISTING MORROW SIGNS MOUNTED ON THE LOWER BEAMS OF THE COUNTERJIB. VERIFY LOCATION OF MORROW SIGNS SPECIFIC TO THE MODEL CRANE THE CONTRACTOR'S SIGNS WILL BE INSTALLED ON. ANY SIGNS OR MOUNTING BRACKETS INSTALLED MUST NOT BLOCK WALKWAYS OR CREATE A TRIPPING HAZARD.
- ONE SIGN MAY BE LOCATED ON EACH SIDE OF THE COUNTER-JIB NEAREST THE TOWER TOP. SIGNS ARE NOT TO BE ATTACHED TO HAND RAILINGS.
- SIGNS MAY ALSO BE ATTACHED TO, AND COVER AN AREA NO LARGER THAN, THE COUNTERWEIGHTS.
- SIGNS CONSTRUCTED OF SOLID WOOD, METAL, OR SIMILAR MATERIALS ARE NOT PERMITTED.
- SIGNS ARE NOT PERMITTED ON TOWER SECTIONS OR TOWER TOPS.
- SIGNAGE MUST NOT AFFECT THE NORMAL SAFE OPERATION OF THE TOWER CRANE. IF THE TOWER CRANE OPERATOR IS NOT ABLE TO SAFELY CONTROL THE TOWER CRANE FOR ITS NORMAL INTENDED OPERATION, THEN THE SIGNAGE MUST BE REMOVED.



FOOTING

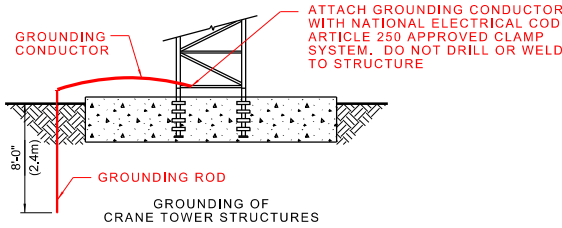
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER DESIGN AND CONSTRUCTION OF THE TOWER CRANE FOOTING, OBSERVING ALL LOCAL, STATE OR PROVINCIAL AND FEDERAL CODES.
- THE TOWER CRANE FOOTING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED WITH THE LOCAL JURISDICTION. THE ENGINEER SHALL ACCOMMODATE PROJECT SPECIFIC CONDITIONS SUCH AS ALLOWABLE SOIL BEARING PRESSURE, SETTLEMENT, AND WATER TABLE INFLUENCE. THE CONCRETE STRENGTH SHALL BE A MINIMUM OF 4500 PSI BEFORE ERECTION OF THE TOWER CRANE. A REDUCED VALUE MAY BE APPLIED BASED ON SITE SPECIFIC CRITERIA.
- PER USDOL OSHA § 1926.1435(b)(4)(I), THE CONTROLLING ENTITY RESPONSIBLE FOR THE INSTALLATION OF THE FOUNDATIONS AND STRUCTURAL SUPPORTS MUST SUPPLY A LETTER, TO THE A/D DIRECTOR STATING THAT THE TOWER CRANE FOUNDATIONS AND STRUCTURAL SUPPORTS ARE INSTALLED IN ACCORDANCE WITH THEIR DESIGN, PRIOR TO CRANE ERECTION.
- THE FOUNDATION ANCHORS SHALL BE SECURED TO THE TOWER SECTION AND HELD PLUMB AND SECURE TO A TOLERANCE OF 1:500 VERTICALLY WHILE THE FOUNDATION IS BEING CONSTRUCTED AND CURING. FAILURE TO FOLLOW THIS PROCEDURE COULD RESULT IN MISALIGNMENT OF THE TOWER CRANE AND COSTLY CORRECTIVE MEASURES.
- VERTICAL TENSION REINFORCING IS REQUIRED TO TRANSFER CRANE ANCHOR UPLIFT FORCES WHEN THE FOOTING IS DEEPER THAN THE MINIMUM FOOTING DEPTH.
- FOUNDATION ANCHORS ARE NOT TO BE REUSED.

ELECTRICAL

- THE CRANE TOWER MUST BE GROUNDED PRIOR TO ERECTING THE TOWER CRANE. GROUND THE CRANE TOWER BY LINKING TO A GROUNDING ROD WITH A GROUNDING CONDUCTOR.
- GROUNDING CONDUCTORS MUST BE A MINIMUM OF 1 3/16" (30mm) WIDE AND 1/8" (3.5mm) THICK GALVANIZED STEEL STRIP, OR A MINIMUM AWG #4 COPPER CABLE (INSULATED).
- GROUNDING RODS MUST BE A MINIMUM OF 3/4" (19mm) DIAMETER GALVANIZED STEEL OR COPPER ROD AND DRIVEN A MINIMUM OF 8'-0" (2.4m) INTO THE GROUND.
- SURGE DIVERTERS MAY BE INSTALLED AT THE SITE JUNCTION BOXES TO PROTECT ELECTRICAL EQUIPMENT ON THE SITE.
- PERMANENT ON-SITE FIXTURES LIKE EQUIPMENT, MACHINES, METAL PIPES, ETC. WITHIN 65'-7" (20.0m) OF THE TOWER CRANE MUST BE COMMONLY GROUNDED WITH THE CRANE TOWER.
- PROVIDE 3 PHASE, 60 Hz POWER SUPPLY PLUS GROUND.
- PROVIDE 480 VOLTS PHASE TO PHASE, 277 VOLTS EACH PHASE TO GROUND, WITH 120° PHASE SHIFT BETWEEN PHASES.
- THE USE OF OPEN DELTA TRANSFORMERS ARE PROHIBITED.

WARNING: ELECTRICAL INSTALLATION AND CONNECTION WORK MUST BE COMPLETED BY QUALIFIED PERSONS, AND MUST COMPLY WITH ALL RELEVANT LOCAL, STATE OR PROVINCIAL, AND FEDERAL RULES, REGULATIONS, AND CODES. THE TOWER CRANE'S ELECTRICAL SYSTEM MUST BE PROPERLY GROUNDED PRIOR TO ERECTING THE TOWER CRANE IN ORDER TO PROTECT PERSONNEL FROM DANGER OF ELECTRICAL SHOCK. FAILURE TO FOLLOW THESE INSTRUCTIONS IS EXTREMELY DANGEROUS AND COULD LEAD TO AN ACCIDENT RESULTING IN PROPERTY DAMAGE, SERIOUS INJURY, OR LOSS OF LIFE.

POWER REQUIRED:
SEE EQUIPMENT SPECIFICATION SHEETS FOR REQUIRED POWER SUPPLY.



- THE CONTRACTOR HAS VERIFIED THAT THE TOWER CRANE WILL NOT INTERFERE WITH NEIGHBORING POWER LINES.

DESIGN WIND CRITERIA

IN SERVICE WIND PER MANUFACTURERS OPERATION MANUAL				
MODE	SPEED MPH / km/H	MONITORED Y/N	PRESSURE psf / kN/m²	HEIGHT
IN SERVICE	45 / 72	Y	5.2 / 0.25	FULL HEIGHT

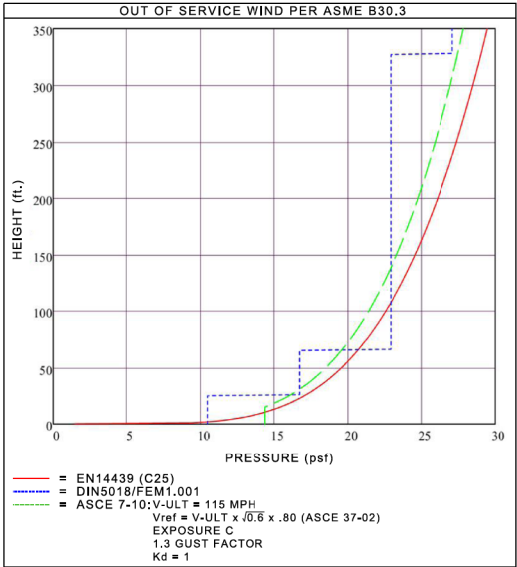


FIGURE 1. WIND PRESSURE PROFILES

PER ASME B30.3 STANDARD FOR TOWER CRANES CALCULATION FOR PROOF OF STRENGTH AND STABILITY SHALL BE PER EN14439:2006+A2 SECTION 5.2 OUT-OF-SERVICE WIND VELOCITY SHALL BE APPROPRIATE TO THE INSTALLATION SITE AS GIVEN IN ASCE/SEI 7. REDUCTIONS FOR THE SHORT- TERM DURATION OF A TEMPORARY INSTALLATION CAN BE TAKEN INTO ACCOUNT PER ASCE/SEI 7.

DESIGN SHALL COMPLY WITH THE MANUFACTURERS MINIMUM DESIGN REQUIREMENTS PER FEDERAL OSHA CONSTRUCTION CRANE RULE STANDARD NUMBER 1926.1417(a) "THE EMPLOYER MUST COMPLY WITH THE MANUFACTURER PROCEDURES APPLICABLE TO THE OPERATIONAL FUNCTIONS OF THE EQUIPMENT, INCLUDING USE AND ATTACHMENTS".

MORROW

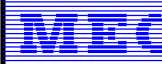
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BARRIE, ONTARIO
CANADA

Customer



Dr. by: / Ck. by:
CAC MK

Title:

GENERAL NOTES

Issue Purpose:
BID DRAWING "2"

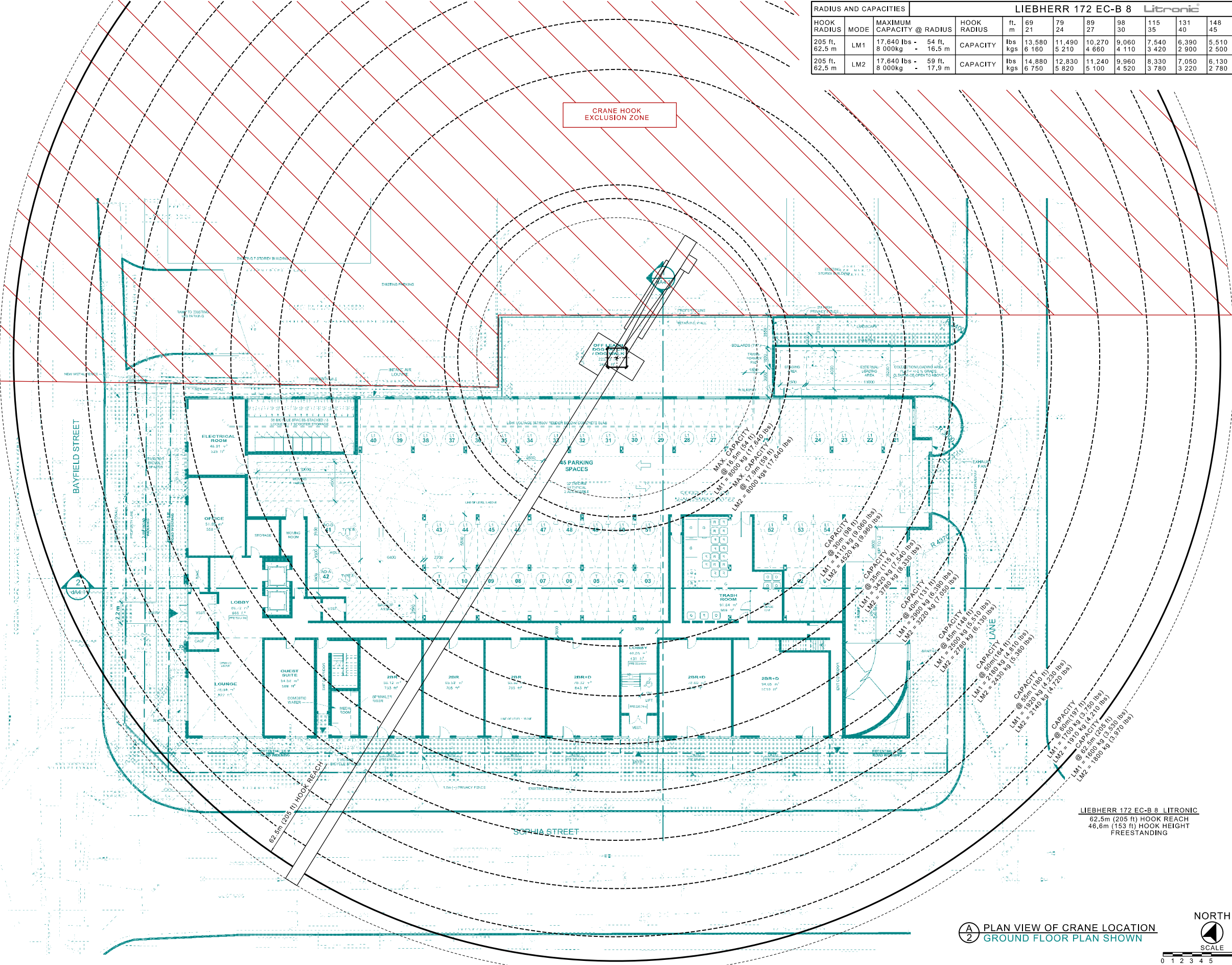
Date:
02-24-21

Rev. No. Rev. Date: Rev. By: Ck. By:

Job number:
2021-0034

Sheet:

RADIUS AND CAPACITIES			LIEBHERR 172 EC-B 8 															2 PART LINE	
HOOK RADIUS	MODE	MAXIMUM CAPACITY @ RADIUS	HOOK RADIUS	ft.	69	79	89	98	115	131	148	164	180	197	205				
205 ft. 62.5 m	LM1	17,640 lbs - 54 ft. 8 000kg - 16.5 m	CAPACITY	lbs	13,580	11,490	10,270	9,060	7,540	6,390	5,510	4,810	4,230	3,750	3,530				
				kgs	6 160	5 210	4 660	4 110	3 420	2 900	2 500	2 180	1 920	1 700	1 600				
205 ft. 62.5 m	LM2	17,640 lbs - 59 ft. 8 000kg - 17.9 m	CAPACITY	lbs	14,880	12,830	11,240	9,960	8,330	7,050	6,130	5,360	4,720	4,210	3,970				
				kgs	6 750	5 820	5 100	4 520	3 780	3 220	2 780	2 430	2 140	1 910	1 800				



PLAN VIEW OF CRANE LOCATION
GROUND FLOOR PLAN SHOWN



CORAL SOPHIA HOUSING
115 BAYFIELD
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CANADA

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Dr. by: / Ck. by:
CAC / MK

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PLAN VIEW OF
CRANE LOCATION

Issue Purpose:
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