THIS SYSTEM CONSISTS OF:
1) SAFETY ANCHOR
2) DAVIT BASES AND DAVITS
3) RIGGING SLEEVES & ADAPTOR
4) OUTRIGGER WITH TIE DOWN ADAPTOR
5) H.L.L. FOR FALL ARREST / TRAVEL RESTRAINT
6) OVERRAIL SUPPORT FOR PARAPET PROTECTION

NOTE:
SEE FULL SET OF SYSTEM DRAWINGS FOR DETAILS OF EACH COMPONENT

1) THIS SYSTEM CAN BE USED FOR:
a) WINDOW CLEANING USING A BOATSWAIN CHAIR (BOSUN CHAIR) FOR ALL INACCESSIBLE SURFACES THAT ARE TO BE CLEANED ON REGULAR BASIS, INCLUDING BUT NOT LIMITED TO WINDOWS, SPANDREL GLASS PANEL, ALUMINUM/METAL PANELS, BALCONY GUARDRAIL GLASS

FOR AREAS WERE THE SUSPENSION POINT IS MORE THEN 90m FROM AN ADJUSTMENT AREA WINDOW WASHING IS TO BE PERFORMED FROM A SWING STAGE (SUSPENDED PLATFORM).

b) MAINTENANCE USING A SWING STAGE (SUSPENDED PLATFORM) TO ACCESS THE BUILDING FACADE AT ALL INACCESSIBLE AREAS THAT REQUIRE MAINTENANCE ON REGULAR BASIS OR SPORADIC INTERVALS.
c) ACCESS TO BUILDING EDGE WHERE FALL ARREST PROTECTION OR TRAVEL RESTRAINTS REQUIRED
i) FALL PROTECTION IS REQUIRED WHEN A FALL HAZARD EXISTS
1. FALLING MORE THAN 3m
2. FALLING INTO OPERATING MACHINERY
3. FALLING INTO WATER OR ANOTHER LIQUID
4. FALLING INTO OR ONTO A HAZARDOUS SUBSTANCE OR OBJECT.
5. FALLING THROUGH AN OPENING ON WORK SURFACE INCLUDING NON STRUCTURAL SKYLIGHTS.
6. APPROACH TO AN EDGE WHERE THE PARAPET (GUARD) IS LESS THAN 900mm AND THE FALL DISTANCE IS MORE THAN 3m.

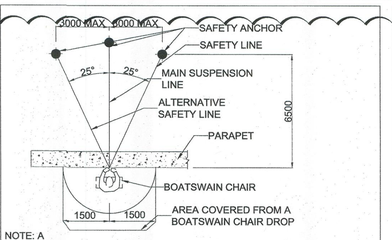
2) EXTEND OF COVERAGE:
a) THIS SYSTEM IS DESIGNED FOR PARTS OF THE BUILDING THAT ARE 8m(26ft) IN HEIGHT OR GREATER FROM AN ADJUSTMENT LANDING / LEVEL FOR THE PURPOSE OF :
1. WINDOW CLEANING
2. MAINTENANCE
(i) SWING STAGE ACCESS TO BUILDING FACAD
(ii) ACCESS TO BUILDING EDGE WHERE FALL PROTECTION OR TRAVEL RESTRAINT IS REQUIRED TO SERVICE THE PARAPET, DRAINS OR ROOFING etc.
(iii) GLASS REPLACEMENT AT LOCATION WHERE GLASS PANELS ARE SET IN PLACE FROM THE EXTERIOR SIDE OF THE WINDOW FRAME
b) FOR PARTS OF THE BUILDING / STRUCTURE THAT ARE 8m OR LESS AND ARE NOT COVERED BY THE BUILDING CODE (OBC 444.1) BUT FALL UNDER THE MINISTRY OF LABOUR (*MOL*) REGULATIONS, THEN THE SYSTEM IS DESIGN FOR FALL PROTECTION AS DESCRIBED IN 1.c. ABOVE AS REQUESTED BY THE CLIENT. IF THE CLIENT DOES NOT REQUESTS A SYSTEM FOR THESE AREAS THEN ALTERNATIVE METHODS , LIKE GUARDS (900mm HEIGHT PARAPETS), SCAFFOLD OR ELEVATING DEVICES ARE TO BE USED TO MET THE *MOL* REQUIREMENTS.
c) WHERE A BUILDING IS LESS THE 8m (26ft) BUT THE BUILDING DESIGN DOES NOT AFFORD A SAFE ACCESS FOR WINDOW CLEANING AND MAINTENANCE THEN THE SYSTEM WILL ALSO BE DESIGN FOR THIS PURPOSE IF REQUIRED BY THE CLIENT.

1) ONTARIO BUILDING CODE 2012 (ONTARIO REGULATION 332/12)
a) 4.4.4. ANCHOR SYSTEMS ON BUILDING EXTERIOR
4.4.4.1. ANCHOR SYSTEM ON BUILDING EXTERIOR
(1) WHERE SUSPENDED MAINTENANCE AND WINDOW CLEANING ARE INTENDED TO BE CARRIED OUT ON THE EXTERIOR OF A BUILDING DESCRIBED IN ARTICLE 1.1.2.2. OF DIVISION A, ANCHOR SYSTEMS SHALL BE PROVIDED WHERE ANY PORTION OF THE ROOF IS MORE THAN 8M ABOVE ADJACENT GROUND LEVEL.
(2) EXCEPT AS PROVIDED IN SENTENCE (3) , THE ANCHOR SYSTEMS IN SENTENCE (1) SHALL BE DESIGNED, INSTALLED AND TESTED IN CONFORMANCE WITH CAN / CSA - Z91, " HEALTH AND SAFETY CODE FOR SUSPENDED EQUIPMENT OPERATIONS".
(3) OTHER ANCHOR SYSTEMS MAY BE USED WHERE SUCH SYSTEMS PROVIDE AN EQUAL LEVEL OF SAFETY.
(4) THE ANCHOR SYSTEM MATERIAL SHALL BE MADE OF STAINLESS STEEL, OR OTHER CORROSION RESISTANT BASE MATERIAL, OR FROM STEEL THAT HI HOT DIPPED GALVANIZED, IN ACCORDANCE WITH CAN / CSA -G164-M, " HOT DIP GALVANIZING OF IRREGULARLY SHAPED ARTICLES".
2) CSA STANDARDS
a) CAN / CSA- Z91- 02 "HEALTH AND SAFETY CODE FOR SUSPENDED EQUIPMENT OPERATIONS"
SECTION 5.4.1
TIEBACK AND LIFELINE ANCHORS SHALL BE IN ACCORDANCE WITH CAN / CSA-Z 271.
b) CAN / CSA - Z 271 " SAFETY CODE FOR SUSPENDED PLATFORMS"
SECTION 9.4.3 STRENGTH REQUIREMENT
AN ANCHORAGE CONNECTOR SHALL:
(a) BE DESIGNED TO RESIST THE APPLICATION OF 22.2 kN (5000 lbf) IN ANY DIRECTION WITHOUT FRACTURE OF ANY COMPONENT OR PULLOUT, OR BOTH, FROM THE ANCHORAGE; AND
(b) RESIST A TEST LOADING OF 11.1 kN (2500 lbf) WITHOUT PERMANENT DEFORMATION OF ANY COMPONENT WHEN SUBJECTED TO TEST LOADING IN THE DIRECTION(S) THAT GENERATE THE MOST CRITICAL EFFECT ON THE ANCHORAGE SYSTEM WITH RESPECT TO STABILITY AND STRENGTH.
Fal - FACTORED LOAD REQUIREMENTS FOR AN ANCHOR POINT IS 22.2 kN (5000lbf) AS DEFINED IN CAN / CSA-Z 271 SECTION 9.4.3 (SEE ABOVE).

RC — RELEVANT CODES

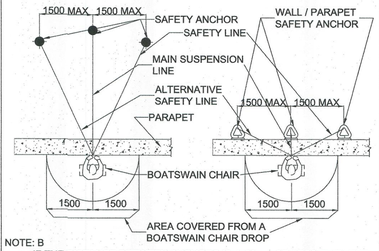
1. A SAFETY LINES SHALL BE SECURED SUCH THAT A WORKER WILL NOT BE EXPOSED TO THE HAZARD OF FALLING MORE THAN 1.5m IN THE EVENT OF FAILURE OF THE PRIMARY SUPPORT LINE.
2. PRIOR TO EACH USE, ALL WORKERS/PERSONNEL USING THIS SYSTEM MUST FAMILIARIZE THEMSELVES WITH ALL COMPONENTS OF THIS SYSTEM AND INSPECT ALL EQUIPMENT AND COMPONENTS FOR DETERIORATION AND/OR SIGNS OF TAMPERING AND SHALL IMMEDIATELY REPORT ALL UNSAFE SYSTEM COMPONENTS TO THE BUILDING OWNER OR HIS/HER AGENT.ALL COMPONENTS IN QUESTION SHALL NOT BE USED UNTIL THE MATTER IS RESOLVED AS PER RELEVANT CODES & REGULATIONS.
3. WHERE THE PARAPET IS LESS THAN 900mm HIGH AND THE RIGGING LOCATION IS CLOSER THAN 2m FROM THE ROOF PERIMETER THE WORKER MUST APPROACH THIS AREA WITH A SAFETY LINE SECURED TO AN ALTERNATE (APPROACH) ANCHOR, LOCATED A MINIMUM OF 2m FROM THE ROOF PERIMETER.
4. THE WORKER MUST BE SECURED TO A SAFETY ANCHOR POINT AT ALL TIMES WHEN A FALL HAZARD EXISTS.
5. ALL EQUIPMENT MUST BE SECURED TO A SAFETY ANCHOR WHEN BEING TRANSPORTED OR INSTALLED WITHIN TWO METRES OF THE BUILDING EDGE.

GN — GENERAL USAGE NOTES



NOTE: A
1) THE TYPICAL MAIN SUSPENSION LINE OF A BOATSWAIN CHAIR IS PERPENDICULAR TO THE PARAPET.
2) THE TYPICAL SAFETY LINE CAN BE POSITIONED AT 25° OR LESS FROM PERPENDICULAR TO A MAXIMUM OFFSET OF 3m.
3) MAIN SUSPENSION LINE AND SAFETY LINE CAN BE POSITIONED AT DIFFERENT ANGLES ONLY IF THERE IS GREATER SAFETY ACHIEVED WHEN THEY ARE AT DIFFERENT ANGLES. FOR EXAMPLE ON AN INNER CORNER.
4) ALL LINES IN CONTACT WITH A CORNER OR EDGE SHALL BE WITH PROTECTED FROM ABRASIONS, CHAFFING, AND/OR CUTS (TYP.)
5) THE DIMENSION 6500 IS THE DISTANCE OF THE ANCHOR FROM THE PARAPET WHICH TAKES FULL ADVANTAGE OF THE 25° ANGLE, ANCHORS AT A GREATER DISTANCE THAN 6500 FROM THE OUTSIDE OF THE PARAPET HAVE TO BE SPACED AT 3000 OR LESS FOR A CONTINUOUS RUN OF WINDOWS. IF WINDOWS ARE NOT CONTINUOUS THE ANCHOR HAS TO BE DESIGNED TO THE ABOVE REQUIREMENT WITH UNEVEN ANCHOR SPACING.

BC-1 — BOATSWAIN CHAIR, MAIN SUSPENSION LINE AND SAFETY LINE SETUP FOR: ANCHOR SPACING 3000mm(3M,10FT) OR LESS



NOTE: B
IF THE DISTANCE BETWEEN ANCHORS IS 1500mm OR LESS THEN THE 25° ANGLE CAN BE DISREGARDED BECAUSE THE STANDARD LANYARD (WITH SHOCK ABSORBER) IS 1500mm OR LONGER.

BC-2 — BOATSWAIN CHAIR, MAIN SUSPENSION LINE AND SAFETY LINE SETUP FOR: ANCHOR SPACING 1500mm(1.5M,5FT) OR LESS

SAFETY ANCHOR POINT SHALL ONLY BE USED FOR:

S1. A SAFETY LINE (IN A FALL ARREST SYSTEM, TRAVEL RESTRAINT SYSTEM, APPROACH TO AN EDGE, WORK AREA etc.)

S2. SUPPORTING THE PRIMARY SUSPENSION LINES FOR A BOATSWAIN CHAIR.

S3. A TIE BACK FOR A COUNTER WEIGHTED OUTRIGGER BEAM SYSTEM.

S4. A TIE DOWN OF AN OUTRIGGER BEAM (REPLACING THE COUNTER WEIGHT). A SECONDARY INDEPENDENT SAFETY ANCHOR POINT SHALL BE USED FOR THE TIE BACK OF THE OUTRIGGER BEAM SYSTEM.

S5. DIRECT SUSPENSION OF SUSPENSION LINE FOR A SWING STAGE WHERE THE SUSPENSION LINE DOES NOT CAME INTO CONTACT WITH ANY BUILDING STRUCTURE AND IS DIRECTLY SECURED TO THE HOISTING SYSTEM OF A SWING STAGE, IN PARTICULAR ANCHOR POINTS UNDER AN OVER HANG OR EXPOSED STRUCTURES.

S6. SAFETY LINE SECURED TO AN ANCHOR POINT FOR APPROACHING TO UNPROTECTED WORK AREA.

SAP — SAFETY ANCHOR POINTS

1. THE USERS OF THIS SYSTEM MUST BE TRAINED.
a) ALL PERSONNEL USING THE SYSTEM MUST HAVE BASIC FALL ARREST TRAINING INCLUDING PSE KNOWLEDGE + TRAINING WITH ALL ITS COMPONENTS.
b) ALL PERSONNEL USING THE SYSTEM MUST BE SPECIFICALLY TRAINED FOR THIS SYSTEM.
c) ALL PERSONNEL USING THE SYSTEM MUST HAVE ACCESS TO A LEGIBLE SET OF THE SYSTEM DRAWING TO BE ABLE TO REVIEW AND FAMILIARIZE THEMSELVES WITH THE SYSTEM.

TRS — TRAINING REQUIREMENTS TO USE THIS SYSTEMS

THE ONTARIO REGULATION 859 AS AMENDED BY 523/92 (OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATION FOR WINDOW CLEANING) AND CAN / CSA-Z 271 RECOMMENDS THAT WINDOW CLEANING SUPPORT SYSTEMS BE INSPECTED BY A PROFESSIONAL ENGINEER OR HIS/HER DESIGNEE PRIOR TO ITS INITIAL USE AND ANNUALLY THEREAFTER EVEN IF THE SAFETY ANCHOR SYSTEM WILL NOT BE USED THAT YEAR.

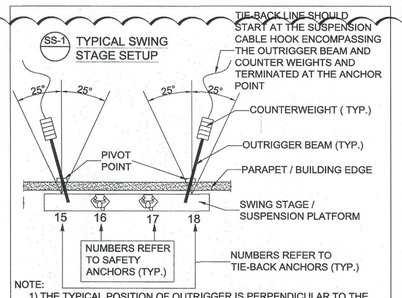
CHECK THE BUILDING STRUCTURE LOCAL TO THE SYSTEM COMPONENTS FOR SIGNS OF DETERIORATION OR DISTRESS, i.e., DECAYING OR HEAVILY CRACKED CONCRETE, RUSTING, WATER DAMAGE, etc.

CHECK THAT ALL COMPONENTS OF THE SYSTEM REFLECT THE AS BUILT DRAWINGS AND ARE IN GOOD LOOKING ORDER.

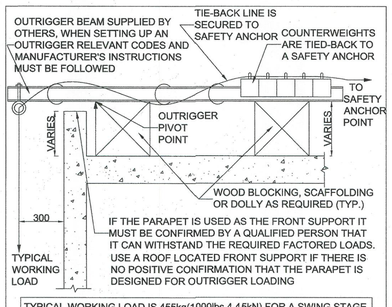
ALL DEFICIENCIES MUST BE RECORDED IN THE LOGBOOK AND THE SYSTEM MUST NOT BE USED UNTIL THE REQUIRED REPAIRS AND OR DEFICIENCIES ARE COMPLETED.

ANS — ANNUAL INSPECTION OF THE SYSTEM

SS-1 — TYPICAL SWING STAGE SETUP

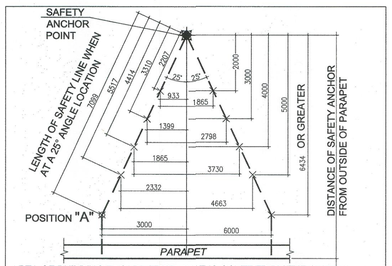


NOTE:
1) THE TYPICAL POSITION OF OUTRIGGER IS PERPENDICULAR TO THE PARAPET / BUILDING EDGE.
2) IF BUILDING CONFIGURATION AND ANCHOR LOCATION REQUIRES THE OUTRIGGER, IT CAN BE POSITIONED AT 25° OR LESS FROM THE PERPENDICULAR.
3) OUTRIGGER CAN BE POSITIONED AT DIFFERENT ANGLES THAN 25° ONLY IF THERE IS A GREATER SAFETY ACHIEVED WHEN THEY ARE AT A GREATER ANGLE. FOR EXAMPLE ON AN INNER CORNER.
4) A SAFETY FACTOR OF 4 TO 1 IS REQUIRED FOR ALL OUTRIGGER SET UPS. FOLLOW INSTRUCTIONS ISSUED BY THE MANUFACTURER WHEN SETTING UP AN OUTRIGGER.



TYPICAL WORKING LOAD IS 455kg(1000lbs,4.45kN) FOR A SWING STAGE MAIN SUSPENSION LINE. A SAFETY FACTOR OF 4 (FOUR) MUST BE MAINTAINED.
OTHER WORKING LOADS ARE POSSIBLE, HOWEVER ALL COMPONENTS OF THE OUTRIGGER AND THE BUILDING STRUCTURE MUST BE DESIGNED FOR THE REQUIRED FACTORED LOADS OF FOUR (4).

OS-1 — OUTRIGGER SETUP



AREA OF BUILDING FACADE EDGE THAT IS COVERED BY THE SAFETY ANCHOR FOR A GIVEN DISTANCE OF SAFETY ANCHOR MEASURED FROM THE OUTSIDE OF THE PARAPET

EXAMPLE:
IF A WORKER IS AT POSITION "A" WHICH IS AT A PERPENDICULAR DISTANCE TO THE PARAPET OF 6435mm HOWEVER THE SAFETY LINE WILL HAVE AN ACTUAL LENGTH OF 7090mm THE DIFFERENCE BETWEEN 7090mm AND 6435mm IS 655mm.
IF THERE IS A FALL ARREST SITUATION THE WORKER WILL FALL 655mm THE SAFETY LINE WILL MOVE TO THE SHORTEST DISTANCE WHICH IS THE PERPENDICULAR POSITION BETWEEN THE SAFETY ANCHOR AND THE PARAPET BEFORE THE SHOCK ABSORBER STARTS DEPLOYING AND ANY SLACK IN THE SAFETY LINE IS TAKE OUT BY THE FALL.
THE FREE FALL DISTANCE IS TO BE NO GREATER THAN 1500mm, THE GREATER THE FREE FALL, THE GREATER THE LOAD ON THE FALLING BODY.

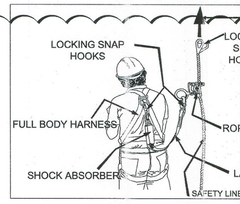
FAC — FALL ARREST COVERAGE FROM A SAFETY ANCHOR

1. STAINLESS STEEL: TYPE 304
2. ALUMINUM: TYPE 6061-T6
3. HOT ROLLED STEEL: CAN3-G40.21-M, GRADE 300W (44W)
4. HOLLOW STRUCTURAL: CAN3-G40.21-M, GRADE 350W (50W)
5. STAINLESS STEEL BOLTS: ASTM A193-B8
6. STAINLESS STEEL NUTS: ASTM A194-GRADE 8
7. STEEL BOLT ASSEMBLY: A325
8. THREADED ROD: A307 OR BETTER
9. HOT DIP GALVANIZING: CSA G164
10. ADHESIVE INSERTS: (HILTI-HVU)

MS — MATERIALS SPECIFICATION

LEGIBLE DRAWINGS OF THE AS BUILD SYSTEM ARE TO BE POSTED BY THE ENTRANCE TO THE WORK AREA (ROOF, TERRACE etc.) THE USERS OF THE SYSTEM ARE TO MAKE THEMSELVES KNOWLEDGEABLE & FAMILIAR WITH THE SYSTEM BEFORE USING IT.
WHEN THE SYSTEM IS IN THE CONSTRUCTION STAGE OR IN A UPDATE OR REPAIR STAGE THE MOST UP DATE DRAWINGS ARE TO BE POSTED WHEN ANY PART OF THE SYSTEM IS USED.

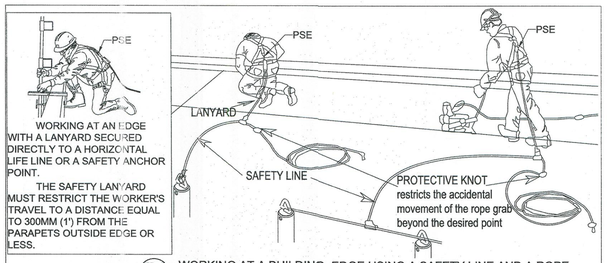
PSD — POSTING OF SYSTEM DRAWINGS



TO ADEQUATE ANCHOR POINT (SAFETY ANCHOR, TRAVEL RESTRAINT LINE, HORIZONTAL LIFE LINE)
1. CERTIFIED FULL BODY HARNESS
2. LANYARD WITH SHOCK ABSORBER
3. CERTIFIED PANIC PROF ROPE GRAB
4. SAFETY LINE WITH LOCKING SNAP ANCHOR

BODY HARNESS, LANYARD WITH SHOCK ABSORBER, & ROPE GRAB MUST HAVE A VALID CSA LABEL

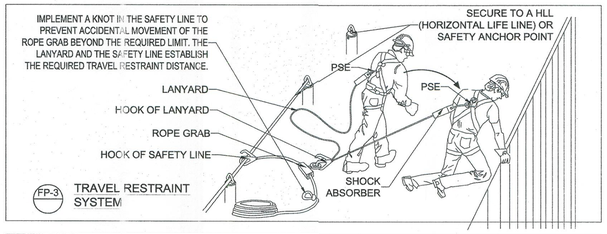
PSE — PERSONAL SAFETY EQUIPMENT REQUIRED FOR EACH USER OF THE SYSTEM



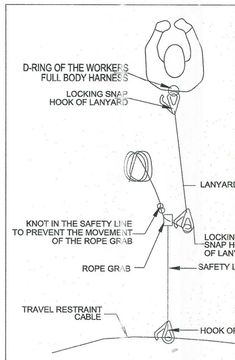
WORKING AT AN EDGE WITH A LANYARD SECURED DIRECTLY TO A HORIZONTAL LIFE LINE OR A SAFETY ANCHOR POINT.
THE SAFETY LANYARD MUST RESTRICT THE WORKER'S TRAVEL TO A DISTANCE EQUAL TO 300MM (1') FROM THE PARAPETS OUTSIDE EDGE OR LESS.

FP-2 — WORKING AT A BUILDING EDGE USING A SAFETY LINE AND A ROPE GRAB TO ACCESS THE DESIRED LOCATION AT THE PARAPET EDGE.

IMPLEMENT A KNOT IN THE SAFETY LINE TO PREVENT ACCIDENTAL MOVEMENT OF THE ROPE GRAB BEYOND THE REQUIRED LIMIT. THE LANYARD AND THE SAFETY LINE ESTABLISH THE REQUIRED TRAVEL RESTRAINT DISTANCE.



FP-3 — TRAVEL RESTRAINT SYSTEM



NOTE 1.
AT ANY GIVEN TIME ONLY TWO WORKERS CAN BE SECURED TO ONE HORIZONTAL LIFE LINE (HLL) USED FOR TRAVEL RESTRAINT SYSTEM.
IF AN ANCHOR IS USED, ONLY ONE WORKER IS TO BE SECURED TO EACH ANCHOR POINT AT A GIVEN TIME

NOTE 2.
THE SAFETY LINE MUST BE ADJUSTED USING THE ROPE GRAB IN SUCH A MANNER THAT IT PREVENTS THE WORKER FROM REACHING ANY POINT WHERE THE WORKER MAY FALL: IT MUST RESTRICT THE WORKER'S TRAVEL TO A DISTANCE EQUAL TO 300mm (1') FROM THE PARAPETS OUTSIDE EDGE OR LESS.
A TRAVEL RESTRAINT SYSTEM MUST RESTRICT THE WORKER FROM MOVING BEYOND THE EDGES OF THE BUILDING.

NOTE 3.
ONTARIO REGULATIONS 213/91 AS AMENDED BY O. REG 527/00 SECTION 26.4 MUST BE FOLLOWED AT ALL TIMES WHEN USING THIS SYSTEM AND WHEN THE WORKER IS AT RISK OF FALLING MORE THAN 3 THREE METERS (10.0').

NOTE 4.
THE INDIVIDUAL ANCHOR POINT THROUGH WHICH THE CABLE IS SECURED CAN BE USED ONLY IF THE TRAVEL RESTRAINT SYSTEM IS NOT USED OR IS NOT IN SOME WAY RELIED UPON AS A SAFETY SYSTEM SIMULTANEOUSLY THE SAFETY ANCHOR AND THE TRAVEL RESTRAINT SYSTEM CANNOT BE USED SIMULTANEOUSLY.

NOTE 5.
IF THE TRAVEL RESTRAINT SYSTEM IS DESIGNED TO BE LOCATED AT A GIVEN DISTANCE, LIKE 2000 FROM THE BUILDING EDGE THEN A SPECIFIC LANYARD LENGTH CAN BE USED TO RESTRICT THE MOVEMENT OF THE WORKER, THE SAFETY LINE AND ROPE GRAB CAN BE OMITTED IN THIS CASE.

FP-4 — SET UP FOR A TRAVEL RESTRAINT SYSTEM

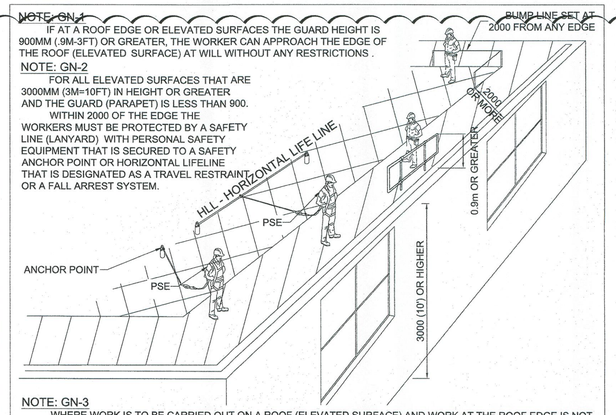
NT1. NUT TIGHTENING (GENERAL)
ALL NUTS THAT ARE EXPOSED TO EXTERIOR ELEMENTS HAVE TO BE CHECKED YEARLY AND TIGHTENED AS REQUIRED. THE TEMPERATURE CYCLING THROUGHOUT THE YEAR LOOSENS NUTS THAT ARE EXPOSED TO EXTERIOR ELEMENTS.
NT2. NUT TIGHTENING (BOX ANCHOR / DAVIT)
ALL NUTS THAT ARE LOCATED IN BOX ANCHOR AND BOX DAVIT BASES THAT ARE EXPOSED TO EXTERIOR ELEMENTS HAVE TO BE CHECKED YEARLY AND TIGHTENED AS REQUIRED.
THE TEMPERATURE CYCLING THROUGHOUT THE YEAR LOOSENS NUTS THAT ARE EXPOSED TO EXTERIOR ELEMENTS. ALSO, AS THE TEMPERATURE CHANGES THE HARDNESS OF THE ROOFING MEMBRANE CHANGES UNDER THE BOX ANCHOR AND THE BOX DAVIT BASE. THIS LOOSENS THE NUTS THAT SECURE THE BOX ANCHOR AND BOX DAVIT BASE EVEN THOUGH THE NUTS WERE PRE-TENSIONED DURING INSTALL.
NT3. TO PREVENT ACCIDENTAL REMOVAL OF THE NUTS ON THE SYSTEM COMPONENTS A THREAD ON THE BOLT & ROD MUST BE DEFORMED AND/OR PINNED AFTER THE EQUIPMENT IS INSTALLED.

NTW — NUT TIGHTENING -THREAD POSITIVE LOCKING

IT IS ANKOR'S OPINION THAT WORKING AT A BUILDING STRUCTURE EDGE, WORKING ON A BOATSWAIN CHAIR, OR WORKING FROM A SWING STAGE SHOULD BE RESTRICTED TO WIND SPEED 20 Km AND LOWER ESPECIALLY AT TALL BUILDINGS / STRUCTURES.
ITEMS THAT HAVE TO BE CONSIDERED WHEN UNDERTAKING THIS WORK ARE:
a) WIND TUNNELING INCREASING SPEED BETWEEN / ADJACENT TALL BUILDINGS / STRUCTURES.
b) WIND SPEEDS ARE USUALLY GIVEN (BROADCAST) AT GROUND LEVELS WHERE AS WIND SPEED USUALLY INCREASES IN SPEED WITH HIGHER ELEVATION ABOVE GROUND.
c) CHANGES IN THE DIRECTION OF THE WIND.
d) WIND GUSTING THAT MAY INCREASE RAPIDLY.
e) CHANGE IN WIND SPEED AND DIRECTION AS THE DAY GOES ON.
f) IS THERE A TIE OFF SYSTEM (TIE IN BUTTONS) STABILIZATION ANCHORS , THAT CAN BE EASILY UTILIZED TO PREVENT LATERAL MOVEMENT OF A SWING STAGE OR BOATSWAIN CHAIR. APPROPRIATE STRENGTH SUCTION CUPS CAN BE UTILIZED FOR LATERAL STABILIZING IF THE GLASS (SMOOTH SURFACE) IN THE FACADE SYSTEM IS DESIGNED TO WITHSTAND THE REQUIRED LOADS.
g) CSA-Z271, SECTION..... RESTRICTS THE USE OF THE BMU (BUILDING MAINTENANCE UNIT) TO 40km/h OR LESS. HOWEVER CONSIDERATION HAS TO GIVE TO LOCAL SIDE CONDITION AND SITE SPECIFIC CONDITIONS.THE ABOVE ITEMS CONDITIONS / EQUIPMENTS HAVE TO BE CONSIDER BEFORE WORK IS COMMENCED AND CONTINUED TAKING INTO CONSIDERATION WORKER + PUBLIC SAFETY.

WS — WIND SPEED

NOTE: GN-1
IF AT A ROOF EDGE OR ELEVATED SURFACES THE GUARD HEIGHT IS 900MM (.9M-3FT) OR GREATER, THE WORKER CAN APPROACH THE EDGE OF THE ROOF (ELEVATED SURFACE) AT WILL WITHOUT ANY RESTRICTIONS .
NOTE: GN-2
FOR ALL ELEVATED SURFACES THAT ARE 3000MM (3M=10FT) IN HEIGHT OR GREATER AND THE GUARD (PARAPET) IS LESS THAN 900. WITHIN 2000 OF THE EDGE THE WORKERS MUST BE PROTECTED BY A SAFETY LINE (LANYARD) WITH PERSONAL SAFETY EQUIPMENT THAT IS SECURED TO A SAFETY ANCHOR POINT OR HORIZONTAL LIFELINE THAT IS DESIGNATED AS A TRAVEL RESTRAINT OR A FALL ARREST SYSTEM.



NOTE: GN-3
WHERE WORK IS TO BE CARRIED OUT ON A ROOF (ELEVATED SURFACE) AND WORK AT THE ROOF EDGE IS NOT REQUIRED, THEN A BUMP LINE IS TO BE UTILIZED TO MARK THE TWO METER (2000) POINT THAT THE WORKER IS NOT TO TRAVEL BEYOND WITHOUT PROPER SAFETY PROTECTIVE EQUIPMENT.
NOTE: GN-4
ALL WORKERS MUST BE PROPERLY TRAINED AS PER RELEVANT REQUIREMENTS & CODES
NOTE: TRD-1
WHERE WORK MUST BE DONE WITHIN 2 METERS (6 FEET) OF AN OPEN UNPROTECTED EDGE, INCLUDING SKYLIGHTS THAT PRESENT A FALL HAZARD, A FALL PROTECTION SYSTEM OR A TRAVEL RESTRAINT SYSTEM MUST BE PROVIDED.
1) THE TRAVEL RESTRAINT SYSTEM LETS A WORKER TRAVEL JUST FAR ENOUGH TO REACH THE EDGE BUT NOT ENOUGH TO FALL OVER THE EDGE. (SEE IMAGES)
a) THE BASIC TRAVEL RESTRAINT SYSTEM CONSISTS OF:
1) CSA APPROVED FULL BODY HARNESS
2) LANYARD
3) LIFE LINE
4) ROPE GRAB TO ATTACH LANYARD TO A LIFE LINE/SAFETY LINE
5) ANCHOR POINT/HORIZONTAL LIFE LINE CAPABLE OF SUPPORTING A STATIC LOAD OF 2 kN=200kg=450 lb.-WITH A RECOMMENDED SAFETY FACTOR OF AT LEAST 2. THAT IS, 4 kN=400kg.= 900 lb.
2) FALL ARREST SYSTEMS UTILIZE AN ANCHOR POINT THAT CAN WITHSTAND A 1500mm VERTICAL FALL OF A WORKER AT A BUILDING EDGE AND TRAVEL RESTRAINT IS NOT POSSIBLE. THE SAFETY ANCHOR OR HORIZONTAL LIFE LINE (HLL) IS TO BE DESIGNED FOR A FACTORED LOAD OF 22.2 kN (2373 kg., 5000lb.)
a) THE BASIC FALL ARREST SYSTEM CONSISTS OF:
1) CSA APPROVED FULL BODY HARNESS
2) LANYARD
3) LIFE LINE
4) ROPE GRAB TO ATTACH LANYARD TO A LIFE LINE/SAFETY LINE
5) SAFETY ANCHOR/ HORIZONTAL LIFE LINE (HLL) CAPABLE OF SUPPORTING A FACTORED LOAD OF 22.2kN AS PER CSA
3) AT A ROOF EDGE OR ELEVATED SURFACE A GUARD IS THE BEST PROTECTION AGAINST ACCIDENTAL FALLS. IF A GUARD IS NOT POSSIBLE THEN TRAVEL RESTRAINT SYSTEM IS TO BE USED TO GUARD AGAINST ACCIDENTAL FALL . IF WORK CONDITIONS RESTRICT THE USE OF A GUARD OR TRAVEL RESTRAINT SYSTEM THEN A FALL ARREST SYSTEM IS TO BE UTILIZED AT A BUILDING EDGE OR AN ELEVATED SURFACE THAT EXPOSES A WORKER TO A FALL OF 3000 (3m, 10ft) OR GREATER

FP-1 — EDGE PROTECTION

NOTE: HLL-1
1. THE HORIZONTAL LIFE LINE (HLL) CAN BE USED FOR TRAVEL RESTRAINT (TR) OR FALL ARREST (FA). IT IS NORMALLY DESIGNED FOR BOTH TR&FA UNLESS OTHERWISE SPECIFIED.
2. THE SYSTEM IS DESIGNED FOR 2 (TWO) USERS AT A GIVEN TIME FOR EACH SYSTEM.
3. EACH SYSTEM CONSISTS OF AN ENERGY ABSORBER AND HARDWARE ON ONE SIDE, ON THE OTHER SIDE THE CABLE IS TERMINATED WITH CABLE CLIPS.
NOTE: HLL-2:
WHEN USING THE HLL - TRAVEL RESTRAINT/FALL ARREST SYSTEM, A MAX OF TWO WORKERS MAY BE SECURED TO IT AT A GIVEN TIME FOR EACH SYSTEM. TWO LANYARDS MUST BE USED WITH THE SYSTEM. THE WORKER MUST ALWAYS BE SECURED TO THE TRAVEL RESTRAINT SYSTEM OR BE SECURED TO A SAFETY ANCHOR TYP.
NOTE: HLL-3
THE HLL IS IN NO WAY TO BE USED AS A SAFETY ANCHOR POINT FOR A SAFETY LINE THAT IS USED FOR A BOATSWAIN CHAIR DROP OR A SAFETY LINE THAT IS PART OF A SWING STAGE SETUP.

HLL — HORIZONTAL LIFE LINE - NOTE

DRAWING REVIEW
The review of this drawing does not in any way relieve the contractor of responsibility for its accuracy or for compliance with the contract documents.
No Comment | See Comment
Amend & Resubmit | Rejected See Remark
Submission No.
Project No.
By HG
Date Nov 23, 2015
JABLONSKY AST & PARTNERS
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LICENSED PROFESSIONAL ENGINEER
J. BUDZIAK
DATE JAN 7 2015
PROVINCE OF ONTARIO

NO.	DATE	REVISIONS	BY
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1	OCT 20/2015	UP