SERRES HARNOIS GREENHOUSES

MANUFACTURER'S SPECIFICATION ONLYSEE STRUCTURAL PLANS FOR SEALED BY WASHINGTON STRUCTURAL ENGINEER FOR CONSTRUCTION.

EMIS POUR / ISSUED FOR:

- INFORMATION ☐
- APPROBATION / APPROVAL ☐
- PERMIS / PERMIT ☐
- CONSTRUCTION ☒
- PLANS FINAUX / AS BUILT ☐

REFERENCE ONLY

(1) FOUNDATION LUMINOSA (S9) 30' x 144'
(12' UNDER GUTTER)

THE APPROVED CONSTRUCTION PLANS, DOCUMENTS AND ALL ENGINEERING MUST BE POSTED ON THE JOB AT ALL INSPECTIONS IN A VISIBLE AND READILY ACCESSIBLE LOCATION.

FULL SIZED LEDGIBLE COLOR PLANS ARE REQUIRED TO BE PROVIDED BY THE PERMITEE ON SITE FOR INSPECTION

Step by Step
13407 80th Street East
Puyallup,
WA, USA
98271

No.Commande/Order No. **212503**

No.Client/Customer No. **U1S018**

PJ-5251

Description / Structure

Largeur / Width	30'
Longueur / Lenght	144'
Espacement / Spacing	12' C/C
Modèle / Model	LUMINOSA S9 30' – HD14 – 12GI
Fondation / Foundation	CONCRETE PIERS
Recouvrement de Structure / Structure Recovery	PCSS
Recouvrement de Pignon / Gables Recovery	PCSS

Charge de Vent / Wind Load	110 mph, ASCE 7-10, cat II Exp B
Charge de Neige / Snow Load	30 psf, HEATED GREENHOUSE
Autre / Other	

NOT ACCEPTED SEAL

INGÉNIEUR ENGINEER
Carl Savard
122194
QUÉBEC

Structural
2021-06-21

21-juin-2021

USE STRUCTURAL PLANS/ CALCULATION BY ANDREW MCEACHERN 03/08/2022 WASHINGTON STATE STRUCTURAL ENGINNER.

GREENHOUSES HARNOIS

WARNINGS

IMPORTANT:

PLEASE, BEFORE STARTING YOUR PROJECT, READ CAREFULLY THESE INSTRUCTIONS. KEEP THEM IN A SAFE PLACE FOR FUTUR REFERENCES.

ATTENTION:

This structure is made to stand alone once assembled with all the required components and secured to the anchors as indicated in the plan booklet. During the construction it is the installer's responsibility to ensure the stability of the structure against winds and imposed or implied forces. Observe and follow all the security codes required in your jurisdiction as well as those related to working height practices. Consider any risks of electric shocks when working close to tension lines or in case of electric storms. We recommend that all electric connections to be performed by a certified electrician. It is also recommended to wear all necessary protective equipment at all time such as protective glasses, ear plugs, hard hat, protective boots and any other required protection equipment.

DANGER:

Parts of this structure are not engineered to serve as a point of attachment in case of falling. Use a safety net or adequate platform.(ie: scissor lift or approved scaffold)

DANGER :

Wind can throw someone down when manipulating large objects which could result in severe injuries or even death. Choose calm weather days to work on your project.

ASSEMBLY PROCEDURE OVERVIEW

It is a fact that all sites and structures are unique but one of the best methods is to first assemble the arches on the ground and then to lift them over their anchors which were installed prior to this step. Be advise that this operation may be dangerous when accomplished by someone without any qualification. If you are not at ease with the installation of the structure, it is highly recommended to hire a general contractor, carpenter or other person trained to install temporary braced structures

FOUNDATIONS:

Our plans give minimal dimensions for the type of required foundation according to soil types. These dimensions are good for most regions;it's your responsibility to ensure they meet your local conditions and/or requirements. Depending of your jurisdiction, a construction permit may be mandatory. It is possible that your municipality authority requires stamped plans in order to get a construction permit. Regions that often require stamped plans are the ones with frost zones, flooding, permafrost, severe storm area, liquefied grounds and clay saturated grounds. Even if it is not required, it is strongly suggested to get help from qualified structure contractor or from an engineering firm for adequate foundations. Defective foundation will result in structure damages. It is very expensive to replace or repair foundations.

LES INDUSTRIES HARNOIS INC.
1044, Principale, St-Thomas (Joliette), QC, J0K 3L0, Canada
Tel:(450) 756-1041 * 1-888-HARNOIS (1-888-427-6647) * Fax:(450) 756-8389
info@harnois.com * www.harnois.com

Reception of Material

1. When the transport co. delivers the material, please check that you have received all the quantities indicated on the waybill and there is no trace of damage before accepting the delivery by signing the waybill. You must note on the waybill any missing part or any trace of damage and immediately communicate it to us. If this is not done, we will not be able to replace the missing or damaged material.

2. Prior to installation, it is advised to take some time to do a complete inventory of the material using the packing list. As mentioned in paragraph #10 of our general provisions found on the back of all invoices, ***"Any apparent defect or non-delivery of a part of the property shall be notified in writing within 5 days upon the delivery. In case of default, the Consumer is presumed having accepted the property in its condition."***.

3. Here is how the information is listed on the packing list;

   a. 1st column "LINE-LOCALISATION" indicates the line number for each item and the alpha numeric location used by our staff to prepare the order before shipping.
   b. 2nd column "DESCRIPTION" you will find the part # along with its description. If we have sheets of poly, the number of rolls and length will be indicated.
   c. 3rd column "ORDERED - Unit of Measure". Indicates the unit of measure and the quantity required for the order.
   d. 4th column "SHIPPED - QTY AVAIL" indicates the quantity shipped.
   e. 5th column "BACK ORDER - WEIGHT" indicates the quantity on back order if any and the total weight of the quantity ordered.
   f. 6th column "BOX - ROLL" indicates the box number or the roll number where each item can be found
   g. 7th column "BUNDLE" indicates the bundle number where the item can be found
   h. 8th column "SKID" indicates the skid number where the item can be found

Suggested Tools for installation:

Dumpy and /or Rope Level
Plumb Bob
Hammer, Sledge Hammer
An Auger may be required depending on the ground density.
Electric Metal Band Saw
Electric Grinder with blades to cut and rectify.
Standard (SAE) set of wrench
Standard (SAE) set of ratchet
Battery and Electric Drill
Set of drill bits.
Nylon Straps
Duct Tape

It is highly recommended to read the plan booklet entirely before starting assembly.

Each section has general views and detailed drawings. For the assembly, refer to the general views following their numerical order. Take the time to read all the notes and understand the assembly steps before starting. If, at any point during installation and afterwards, you find yourself in need of guidance or additionnal information, contact our customer service.Ensure you have your plan booklet in hands.

Customer Service : 1-888-427-6647 ext 151

GREENHOUSES HARNOIS

Luminosa Serie 8 - Serie 9 Plan Booklet's Structures;

The plan booklet is customized to the type of structure you ordered. It is divided in sections. Each of them will show how to assemble parts and their assembly sequence. Look for notes referring to other plans or sections of the booklet(depending on chosen options).If the structure is installed parallel to another structure, make sure you have enough space in between to processd with snow removal and prevent accumulation.Proximity to structure may act as a wind breaker, causing unusual snow accumulations that may require particular actions.

ZM SECTION : Special equipment information & instructions
This section indicates how to operate certain parts and equipment such as the method to secure the plastic, advice on polycarbonate sheet's handling etc…

SECTION A : Foundations.
This section will indicate how to prepare the foundation for your structure. Pay attention to the different types of anchors used and to their elevation.

SECTION B : Posts and Gutters
This section will indicate how to assemble the posts and gutters. It is very important to identify the different gutters and where are installed before final assembly. It is also very important to respect the position of the different bracings such as the “X”, “V” bracings or any other type of reinforcement included in your structure.

Section C : Roof
In this section you will find general views showing the assembly of the roof type for your structure and those plans will show more detailed plans for assembly. Because the plans are full of information it is strongly recommended to read and understand all notes and tables. This section may also include plans for different equipment.

Section D : Side Walls
In this section you will find general views showing the assembly of wall type for your structure and those plans will show more detailed plans for assembly. Because the plans are full of information it is strongly recommended to read and understand all notes and tables. This section may also include plans for different equipment.

Section E : Gable Ends
In this section you will find general views showing the assembly of gable end type for your structure and those plans will show more detailed plans for assembly. Because the plans are full of information it is strongly recommended to read and understand all notes and tables. This section may also include plans for different eqipment.

Take the time to read and understand each note.

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GREENHOUSES HARNOIS

RECOMMANDED PRELOAD TORQUE FOR BOLTS

ø BOLT	T (in-pounds)	T (ft-pounds)
1/4''	77	6
5/16''	203	17
3/8''	316	26
7/16''	504	42
1/2''	713	59
5/8''	1408	117
3/4''	2435	203
1''	6046	504

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OWNER'S MANUAL

GREENHOUSES HARNOIS

LES INDUSTRIES HARNOIS INC.

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OWNER'S MANUAL
GUTTER-CONNECTED and/or TUNNEL TYPE GREENHOUSES

The following use and maintenance recommendations apply for all gutter connected type and/or tunnel type greenhouses. Tunnel type greenhouses comprise our Ovaltech and Cold Frame models. Gutter connected greenhouses include our Luminosa model S8, S9, S11 along with our Nordique NG models.

1. INTRODUCTION

This guide will provide you with general tips on how to inspect and ensure a proper maintenance for optimal use of your greenhouse structures, be it either gutter connected and/or tunnel type. Unless otherwise indicated, the term “greenhouse” in this guide comprises both models previously outlined. By following these recommendations, you will maximize the life expectancy of your structure and ensure years of good and hassle-free service. We recommend to inspect your structure at least twice yearly in order to swiftly detect any anomaly, thus giving you the opportunity to promptly correct the situation. As well, an inspection must be done after an important storm (strong winds or significant snow accumulation).

We recommend using the enclosed form “Annex A” to document your inspection. It will also serve as a memory aid to cover all structure components.

When in doubt, call our Customer Service Department at 1-888-427-6647. Our Agents will help you conduct a safe and efficient maintenance of your structure.

To report a problem or address a claim issue, the following information concerning your structure shall be required and should be noted below to have them at hand when you contact our Customer Service Department.

Your authorized Representative: _____

Purchase date of your Greenhouse: _____

Project or Order Number : _____

2. FOUNDATION

2.1 CONCRETE PIERS / CONCRETE RETAINING WALL/ CONCRETE BEAM / FLOATING FOUNDATION/ CONCRETE SLAB

- Check the concrete foundation of your structure for any cracks. They can show sooner or later and are generally due to shrinkage. All concrete, even shrinkage-compensating concrete, shrinks due to a loss in volume as it dries. This is a normal situation and does not require any corrective measures to be undertaken. Mostly all concrete foundation types (except for concrete piers) are reinforced, thus preserving their strength.

- However, should you note a level variation between both sides of your structure, or that some cracks either expand or that they are located directly under the anchors, contact the company which has performed the foundation work for your structure without further delay. These signs could be the symptoms of a more serious failure and your supplier will know how to deal with it.

- Concrete piers which tend to slump indicate that the ground bearing capacity has been under evaluated. Contact your Harnois Representative to obtain his advice before undertaking any restoration work.

- Check soil erosion around your foundations as it may reduce its bearing capacity. If required, add some backfill and compact it.

- Ensure that the French drain around your foundation is functioning properly in order to avoid any frost heave.

- If your greenhouse is designed with an insulated retaining wall, make sure that there is no frost heave.

3. STEEL STRUCTURE

Unless otherwise indicated, the steel structure of your building has been designed according to the Building Code's regulations and standard requirements of your province/locality along with the usage and engineering information provided and confirmed by the buyer during the purchasing process. Harnois shall not be held responsible for any change in usage and/or basic parameters used for design and which could influence the structure's resistance. These modifications include, without being limited to:

- The addition of any equipment, conduits/pipes or other installations fixed to the structure which would add weight to the structure, without having been validated by our engineering department first;
- The addition of openings and/or doors other than those originally planned;
- A relocation in another town;
- A change in use;
- A modification to the structure's environment such as the construction of new building, planting tree(s), or the addition or removal of any other element which could act as windbreaker, etc.

3.1 STRUCTURAL INTEGRITY

A visual inspection should also be conducted twice a year and after a storm. Pay close attention to any functioning anomaly for panels or door openings. The structural inspection of the greenhouse should comprise, without being limited to, the following items:

a) Axial deformation in columns, braces, gutters, arches, which appear permanent or abnormal
b) Water which does not evacuate from the gutter
c) Deformation of the stiffener or truss
d) Deformation of the stiffener's plates support (tunnel type greenhouse)
e) Sliding of the U-bolt on the stiffener (tunnel type greenhouse)
f) Junction of the stiffener in the arch
g) Deformation and state of the stiffener and/or beams' brackets
h) Deformation of the curved braces
i) Deformation of the gable ends' bracings
j) Deformation of the X-bracings at the end of the greenhouses
k) Bolted fasteners of the X-bracings
l) Alignment of the racks
m) Panels alignment and their proper functioning
n) Any other items which appear to be damaged or which raise any questioning

Refer to the control list provided in Annex A (page 9) and make copies of it.

These elements being vital to your greenhouse's structural integrity, you must repair them as soon as possible, if need be. If you must tighten bolts, please refer to the pertinent chart provided in your set of plans. Contact your greenhouse Representative or our Customer Service Department in order to obtain parts or a price quotation to perform the repair.

3.2 MANAGEMENT OF CORROSIVE ENVIRONMENTS

When you purchased your greenhouse, your Representative will have validated with you whether the intended application of the structure would create a highly corrosive environment, such as the use of fertilizer, manure, etc. The steel we use is protected by a surface galvanization process which considerably increases its resistance to corrosion. Despite such protection, there exists no steel structure entirely rust free and the following recommendations are valid for all structures.

A regular inspection and bringing swift corrective measures, if necessary, will ensure that your structure preserves its strength and durability for years to come.

3.2.1 The greenhouse posts embedded in concrete must be coated with bitumen as specified in the drawings provided to the customer.

3.2.2 Check regularly that corrosives are not in direct contact with any of the structure's components, especially the posts or any other structural elements close to the ground. Potentially corrosive elements could be, amongst other things: fertilizer, manure, saline mist (sea side), etc.

3.2.3 Should you find rust on some components, thoroughly clean the rusted surface with an abrasive element and cover it with zinc rich paint. This type of paint is available in hardware stores or through your greenhouse Representative. This procedure will ensure that your pre-galvanized structure or your hot-dip galvanized structure will serve you carefree for several years.

4. GREENHOUSE COVERING

4.1 POLYETHYLENE COVERING

4.1.1 Polyethylene must be inspected at the same frequency as your structure and must be replaced if there is any breakage or tears which cannot be repaired.

4.1.2 The air pressure between the double polyethylene films must be adjusted to 0.15'' of water and must never go beyond 0.20''. Overpressure could entail breakage/tears in the polyethylene and damage the wirelocks retaining the film. It could as well prevent the proper functioning of the vent panels or even damage them. Inspect the air blower polytubes, the blower itself and clean, if necessary. Check that the pressure regulator is also functioning properly.

4.1.3 The condensation in a greenhouse can result from a climate control problem. However, when the surface tension of the polyethylene film is incorrect, it can create corrugated or wrinkled areas. These areas could prevent the condensation from scaling down by capillary action toward the condensation gutter or along the polyethylene. It is recommended to pull the polyethylene towards the extremity of the greenhouse. Please refer to your set of plans for the polyethylene's installation.

4.1.4 Polyethylene's physical properties along with its light transmission effectiveness decrease with time. Thus, polyethylene should be replaced within its warranty period.

4.2 POLYCARBONATE COVERING

4.2.1 The polycarbonate should be inspected at the same time as the structure and must be replaced when damage is found.

4.2.2 Polycarbonate is further subjected to vibrations and wears due to the winds. It is important to check the screws and moldings which retain the polycarbonate in place. Clean the condensation drain holes to prevent any mold. Refer to drawings in "Annex B" (page 10).

4.3 GLASS COVERING

4.3.1 Glass must be inspected with the same frequency as the structure and must be replaced if damaged.

4.3.2 The moldings which retain the glass must be inspected for any damage and ensure that the seals remain waterproof.

4.3.2 Glass is a fragile component and will not provide early warning signs of breakage. A deformation of the structure close to a glass panel must be treated with priority.

5. VENTILATION

5.1 INSPECTION AND VENTILATION SYSTEMS MAINTENANCE

5.1.1 Center roll-up

- Roll the polyethylene film in the correct direction. To roll it in the opposite direction would add friction to it and wear the film out faster.
- However, during winter, it would be preferable to keep the polyethylene film closed using the opposite direction to prevent water from reaching the rollup tubes.

5.1.2 Roll-up

- Roll the polyethylene film in the correct direction. To roll it in the opposite direction would add friction to it and wear the film out faster.
- However, during winter, it would be preferable to keep the polyethylene film closed using the opposite direction to prevent water from reaching the rollup tubes.

5.1.3 Motorized rollup system

- Please refer to the control's instruction manual.
- Inspect the motor according to the manufacturer's instructions.
- Adjust the limit switches, if necessary.
- Verify the tubing guide and the actuator.

5.1.4 Roof Ventilation (single panel, double panel, mid-roof panel)

- Activated by an electrical motor, the end limit of the panel's opening is set by integrated power switches and it is activated by a temperature monitor or a manual override.
- An abnormal grinding noise could result from a misalignment of the racks or from a lack of lubricant which could cause overvoltage and stop the motor.
- Investigate the causes, adjust the mechanical elements, if necessary, reset the electrical overload relay and test the opening.
- It is important to **not activate the opening** while there is snow on the roof or during high winds.
- Verify the seals.
- Verify the adjustment of the panel on the sill along with the racks, if necessary.
- Lubricate the racks and pinions while you conduct your semi-annual inspection (Food Grade Lubricant, class 6D025-1, as specified in our plan booklet).

6. WEATHER CONDITIONS MANAGEMENT

6.1 SNOW MANAGEMENT

In certain conditions, you may notice an unusual snow accumulation. This section explains which conditions might cause such an accumulation and which actions would provide the best solution according to the situation at hand.

6.1.1 Verify regularly the snow accumulation on the greenhouse and around its periphery.

6.1.2 Several factors influence snow accumulation on and around the structure:

- Wind direction and wind force
- Orientation of the structure
- The presence of windbreakers or buildings around the structure. Either one is always taken into consideration in structure design to ensure adequate snow load anticipated resistance.

6.1.3 Accumulations could be uniform throughout the surface or be disproportionate from one side to the other or on one end or the other extremity of the structure.

6.1.4 As concerns non heated greenhouses in particular, weather conditions such as freeze-thaw cycles, spells of warm weather followed by intense cold, alternating rain/ice storm/snow, all influence snow accumulation on the structure. The water contained in the snow (or liquid precipitations) will form an ice patch which will tend to stick to the covering.

6.1.5 Ensure that all sides of the tunnel type greenhouse be cleared in a way to allow the snow on the roof to slide down according to the structure design.

6.1.6 The snow load on the heated greenhouse structures is lighter and presents a lower structural resistance since the snow will melt. Should the snow accumulate faster than it melts, you may accelerate the melting process by increasing the greenhouse temperature, if possible, before the snow starts falling. **Do not place any heat source near the covering. Do not use any heat source generating toxic fumes.**

6.1.7 It is important to keep the heating system well maintained. Besides maintaining an adequate climate for the plants, it helps preserving the structure for the abovementioned reasons. Always keep the critical components within reach in case of system breakage. It is also a good idea to anticipate a backup heating system, especially if the greenhouse functions with only one (1) heating unit. It is recommended to have a service contract with a licensed heating contractor.

SNOW REMOVAL PROCEDURE FOR TUNNEL TYPE GREENHOUSES ONLY:

In order to safely remove the snow from your structure, the following procedure should be complied with:

1. Start by removing the snow on both sides (mechanically).
2. Proceed to snow removal from the exterior, starting at the bottom. When both sides of the covering are completely clear, it could force the snow remaining on the roof to slide down on its own. Be careful of potential snowfalls.
3. Remove the snow no more than 20-25 ft at a time on one side, then alternating with the other side for the same length, before moving further ahead for an equivalent distance. This will prevent any unbalanced load on the structure.
4. Do not come in contact with the covering with a blunt object.

5. Do not stand directly under the load.

6.2 WIND MANAGEMENT

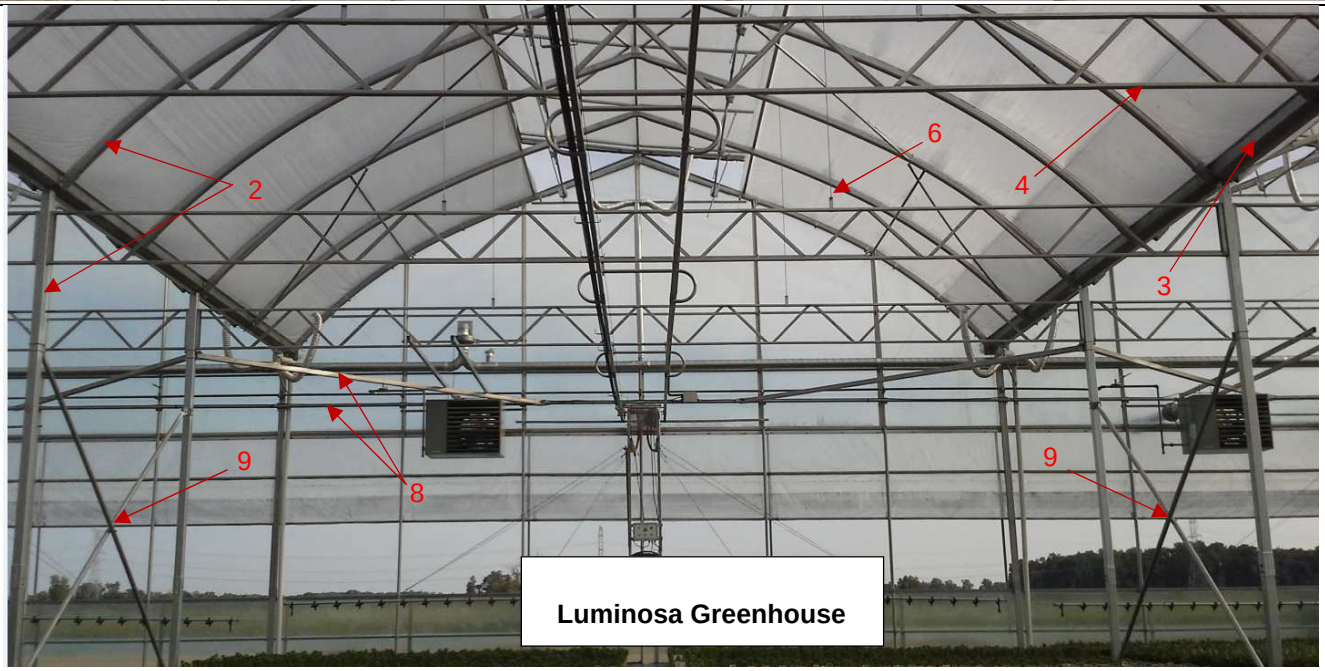
- Load carrying capacity and resistance of your greenhouse have been calculated for a structure with closed openings (when applicable). Just ensure to keep all doors closed as much as possible, especially during high winds. This will considerably reduce the stress bearing on the structure and the covering and will increase your components' life expectancy.

- In all cases when winds exceed 50 km/h, all doors and vents must remain closed when not used.

ANNEX A : Inspection Sheet

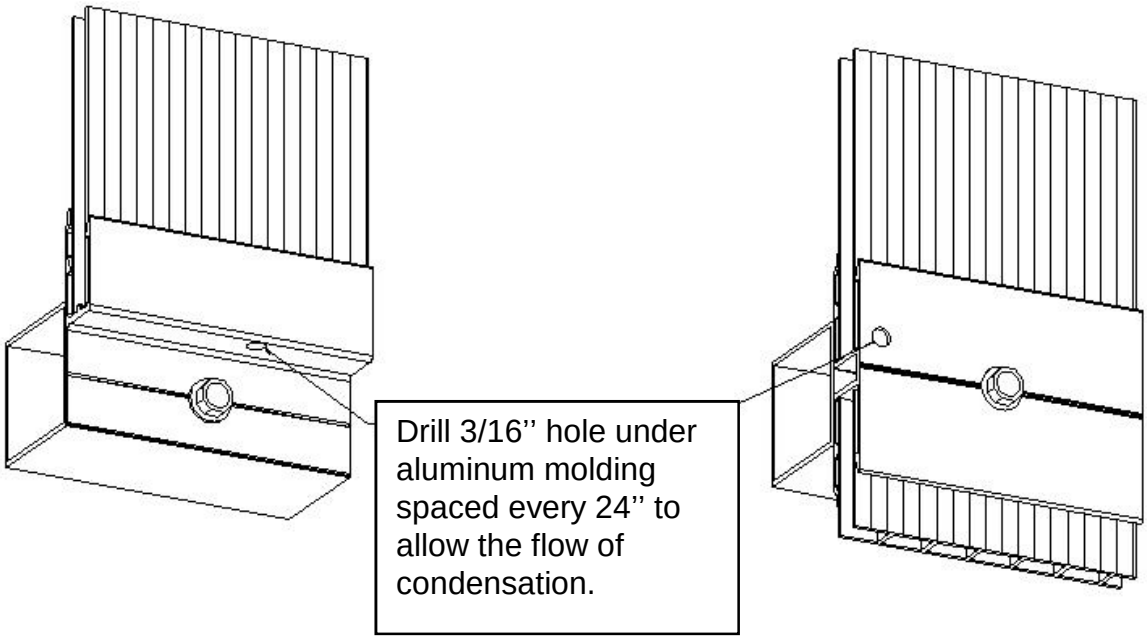
Items numbered below refer to items numbered in Memory Aid Chart (page 11)

Ovaltech Greenhouse



Luminosa Greenhouse

ANNEX B : Condensation Drain Holes



MEMORY AID CHART :

#	Items	Suggested Criteria	Notes
1	Foundation	Cracks, sinking, erosion, retaining wall	
2	Arches and Posts	Buckling, deformation	
3	Gutters	Buckling, seals, slope	
4	Trusses	Deformation, buckling, web	
5	Stiffeners	Deformation, buckling, U-bolt (sliding), plate, bolting	
6	Stiffener's support or trusses	Buckling, anchoring system	
7	Braces	Buckling, deformation, bolting	
8	Gable ends bracings	Buckling, deformation, diagonal, bolting	
9	« X » or « V » Bracings	Buckling, deformation, U-bolt, bolting.	
10	Racks	Buckling, alignment, grinding	
11	Panels	Alignment, functioning, grinding	
12	Other : _____		
13	Other : _____		
14	Other : _____		
15	Other : _____		
16	Other : _____		
17	Other : _____		
18	Other : _____		

TYPE OF SOIL*	BEARING SOIL CAPACITY FOR SERVICE LOAD (Pound/Ft²)**	ø PIER X 60" DEPTH (SEE DETAIL–1) PLAN STEP–A800	PIER ø16" X 60" WITH SQUARE BASE AND REBAR (SEE DETAIL–2) PLAN STEP–A800
SOFT CLAY	1000	–	28" x 28" x 10" & REBARS
CLAY AND FINE SAND	1500	26"	–
↓	2000	24"	–
CLAY AND COARSE SAND	2500	24"	–
↓	3000	24"	–
GRAVEL	4000	24"	–
USE CONCRETE CLASS F2: 3000 PSI AT 28 DAYS			

* THE SOIL TYPES LISTED ABOVE ARE BASED ON REFERENCE BOOKS. PROPER SOIL IDENTIFICATION REQUIRES A SPECIAL EXPERTISE. IT IS THE CUSTOMER'S RESPONSABILITY TO HAVE THE INSTALLATION SITE'S SOIL INVESTIGATED AND HAVE ITS LOAD CAPACITY CONFIRMED.

** A GEOTECHNICAL ANALYSIS OF THE CONSTRUCTION SITE EXECUTED BY A PROFESSIONAL ENGINEER IS REQUIRED TO DETERMINE THE BEARING SOIL CAPACITY FOR THE FOUNDATION DESIGN.

*** FOR GABLE END OVAL TUBE, A 12"ø X 60" PIER IS RECOMMANDED FOR ALL CONDITIONS

REVISIONS	DATE	PAR
5		
4		
3		
2		
1		

SERPACK:

REF: STEP–A705

DRAWN BY: PL BEAUDRY
APPROVED BY:
DATE: JUNE 21, 2021
SCALE: N.T.S.

GREENHOUSES HARNOIS
TEL.(450)756–1041
1–888–427–6647
FAX.(450)756–8389

STEP BY STEP

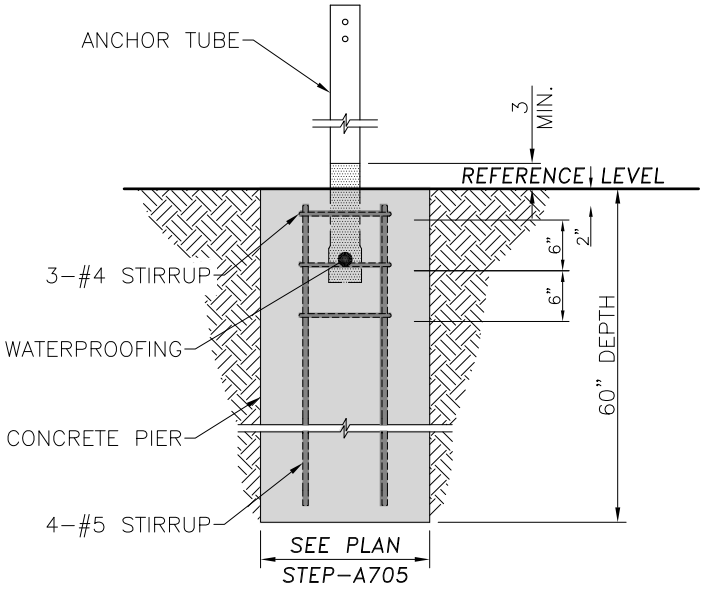
TITLE: DIMENSIONS OF THE FOUNDATIONS
(1) LUMINOSA 30' x 144'
12' UNDER GUTTER

PLAN: STEP–A705

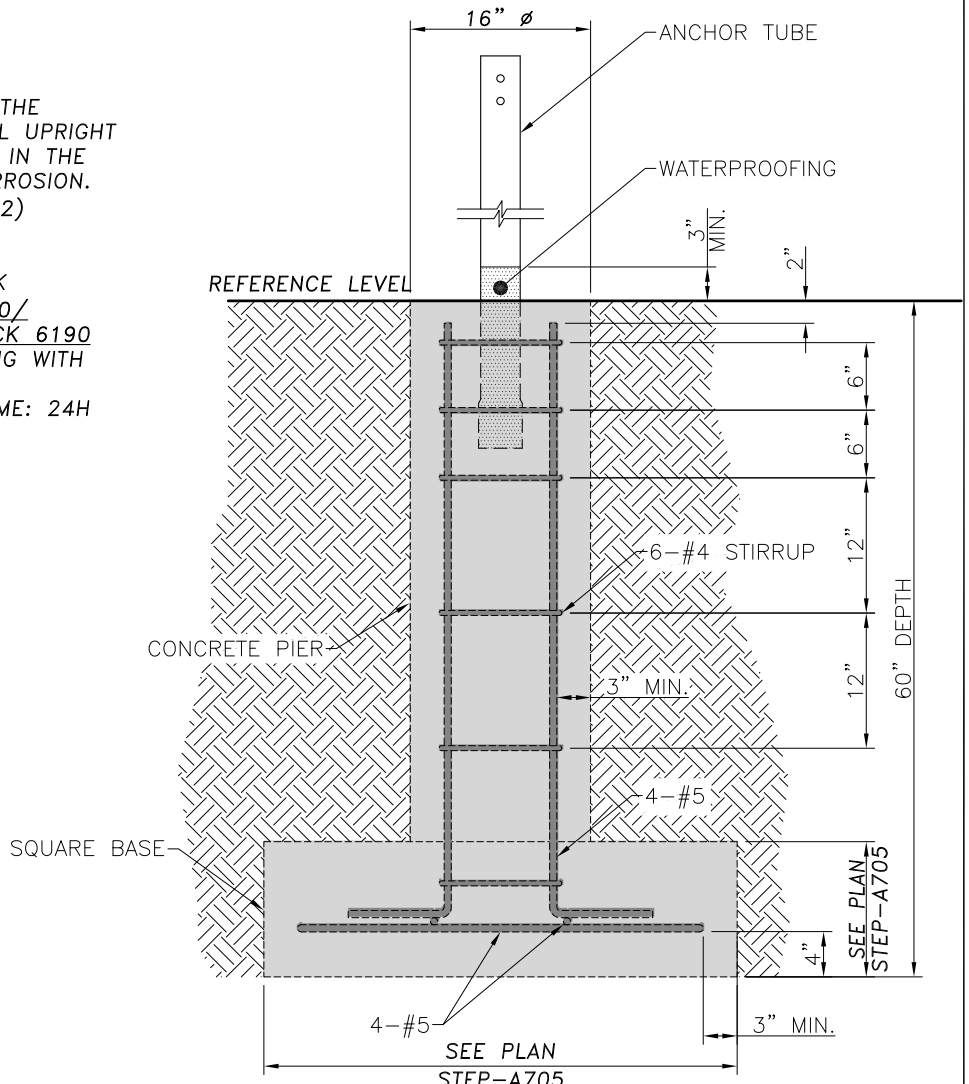
IT IS SUGGEDTED TO:

–COAT WITH WATERPROOFING THE PORTION OF THE POST, OVAL UPRIGHT OR ANCHOR WHICH WILL BE IN THE CONCRETE. TO PREVENT CORROSION. (SEE DETAIL–1 AND DETAIL–2)

–APPLY AN ASPHALT BASED WATERPROOFING TRADE MARK FESTER VAPORITE/PAQCO P60/ GARDNER GIBSON BLACK JACK 6190 OR SIMILAR PRODUCT MEETING WITH NORM ASTM D–4479
IMPORTANT: MINIMUM DRY TIME: 24H



DETAIL–1



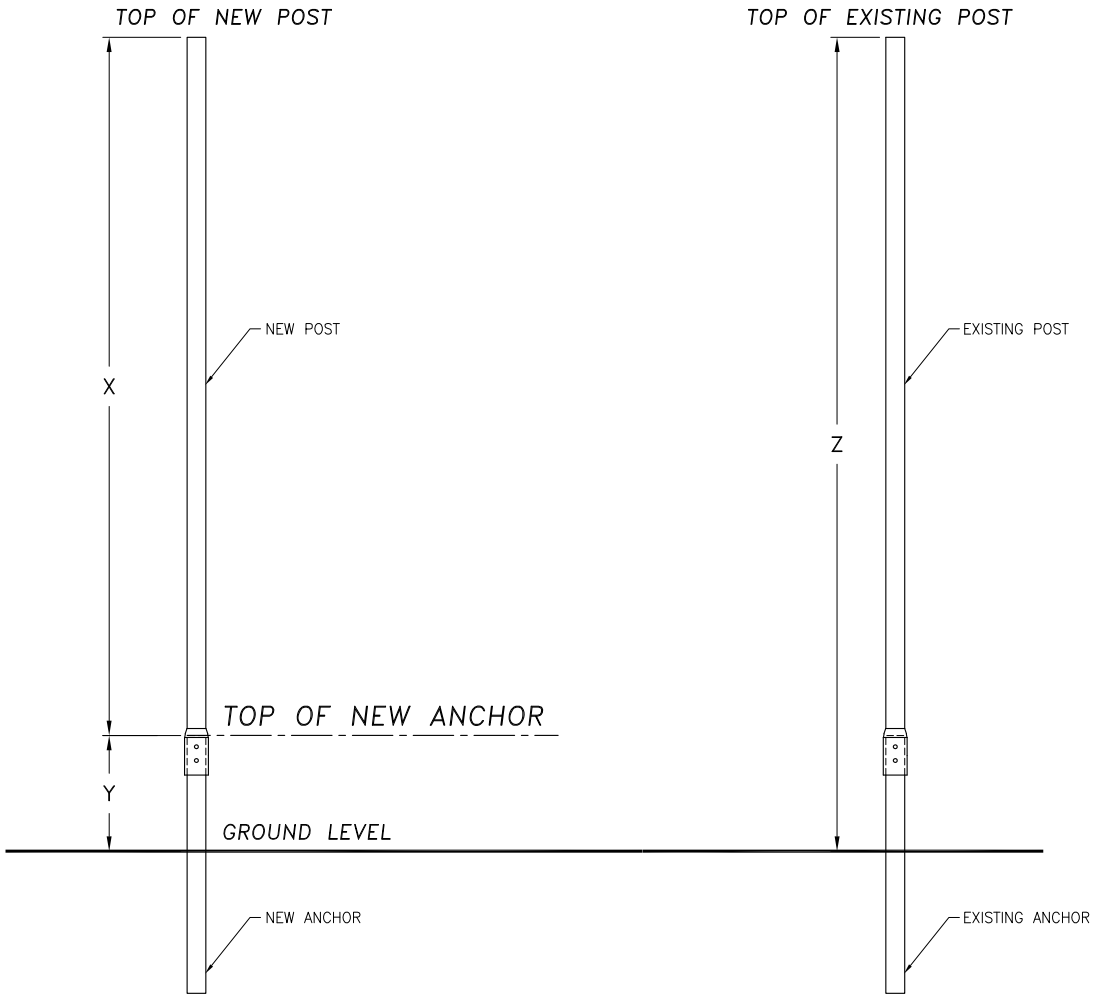
DETAIL–2

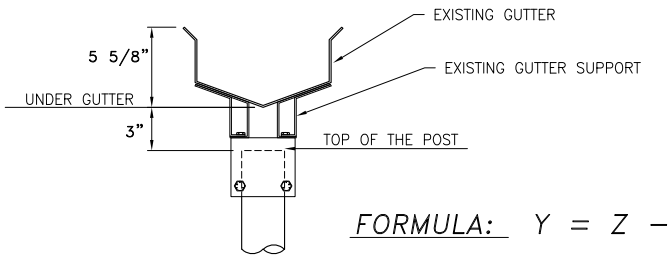
5				SERPACK:	DRAWN BY: PL BEAUDRY	GREENHOUSES HARNOIS	TEL.(450)756–1041 1–888–427–6647 FAX.(450)756–8389
4					APPROVED BY:		
3					DATE: JUNE 21, 2021		
2					SCALE: N.T.S.		
1				REF: STEP–A800			
	REVISIONS	DATE	PAR				

STEP BY STEP

PLAN: STEP–A800

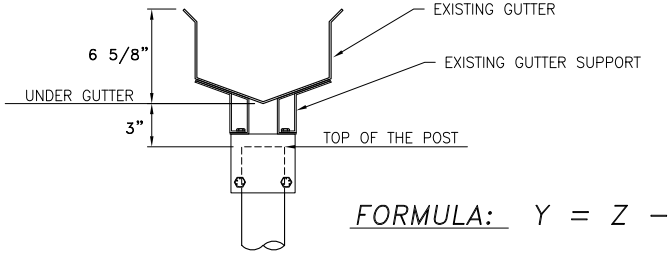
TITLE: DIMENSIONS OF THE FOUNDATIONS CONCRETE
(1) LUMINOSA 30' x 144'
12' UNDER GUTTER





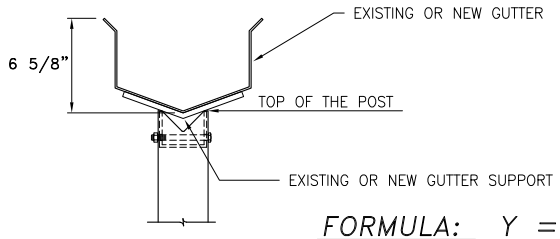
FORMULA: $Y = Z - X + 2"$

TYPE A



FORMULA: $Y = Z - X + 3"$

TYPE B



FORMULA: $Y = Z - X$

TYPE C

HEIGHT UNDER GUTTER	X VALUE
10'	84 1/8"
12'	108 1/8"
14'	138 1/8"
16'	162 1/8"
18'	174 1/8"
6M	194 1/8"

IMPORTANT

VERIFY THE DIMENSION AND THE TYPE OF THE EXISTING GUTTER AND THE GUTTER SUPPORT

* THE NEW GREENHOUSE SLOPE MUST FOLLOW THE EXISTING GREENHOUSE SLOPE.

** THE LENGHT OF THE NEW ANCHORS ARE DIFFERENT.
THE DIMENSIONS MUST BE VERIFIED ON SITE.

*** SUGGESTED SLOPE:
3/4" IN 144" OR 3/4'' IN 4M

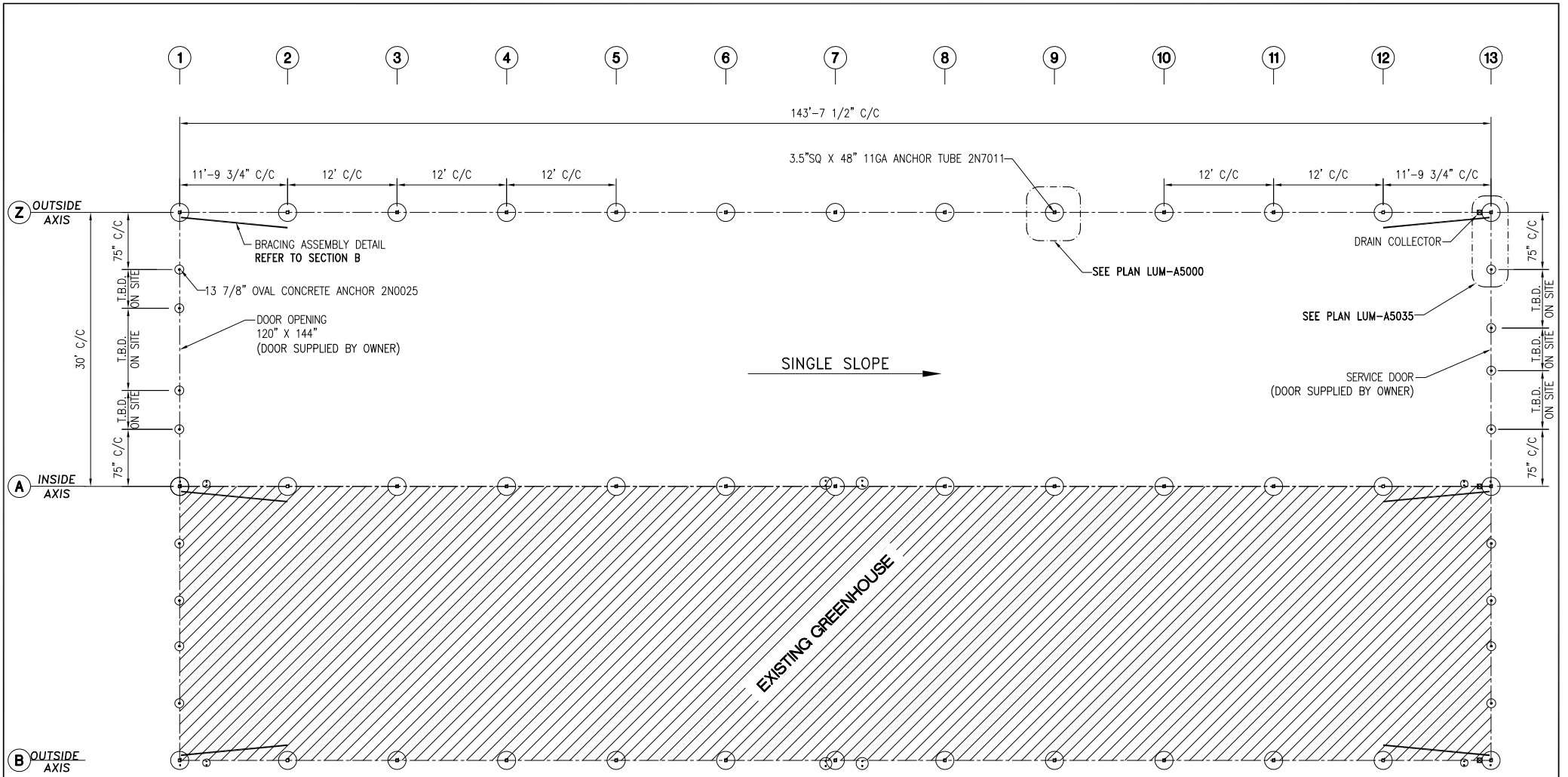
5				SERPACK:	DRAWN BY: C. BRANCONNIER
4					APPROVED BY:
3					DATE: FEB 12, 2015
2					SCALE: N.T.S
1				REF: LUM-A1000	
	REVISIONS	DATE	PAR		

GREENHOUSES HARNOIS
TEL.(450)756-1041
1-888-427-6647
FAX.(450)756-8389

LUMINOSA SERIE 8 - 9 - 11

PLAN: LUM-A1000

TITLE: ELEVATION ANCHOR REFERENCE FOR NEW GREENHOUSE VS EXISTING GREENHOUSE



CODE	DESCRIPTION	QTY
2N7011	3.5"SQ X 48" 11GA ANCHOR TUBE	13
2N0025	13 7/8" OVAL CONCRETE ANCHOR	8

TO OBTAIN APPROPRIATE DIMENSIONS OF THE FOUNDATIONS, SEE TABLE OF THEORICAL DEADWEIGHT CAPACITY OF SOIL SECTION "A" PLAN #STEP-A705 & STEP-A800

-THE SPACINGS BETWEEN THE OVAL GABLE FRAMING TUBES ARE BEING SUGGESTED, DEPENDING ON THE EQUIPMENT THAT YOU HAVE (FAN,DOOR, ECT...)

ISSUED FOR:
- INFORMATION ☐
- APPROVAL ☐
- PERMIT ☐
- CONSTRUCTION ☑
- AS BUILT ☐

REVISIONS	DATE	BY
5		
4		
3		
2		
1		

SERPACK:
REF: STEP-A2000

DRAWN BY: PL BEAUDRY
APPROVED BY:
DATE: JUNE 21, 2021
SCALE: N.T.S.

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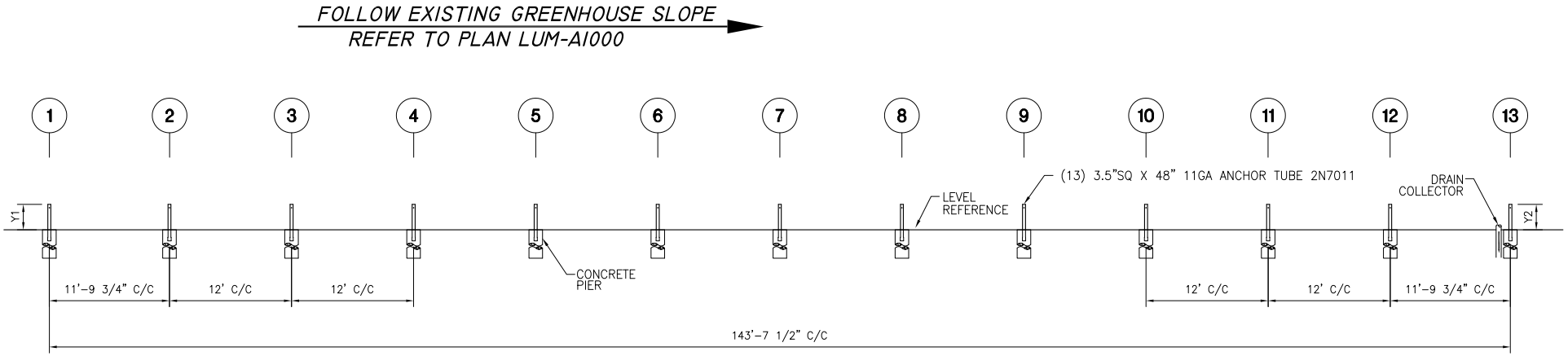
1-888-427-6647
FAX.(450)756-8389

STEP BY STEP

PLAN: STEP-A2000

TITLE: LAYOUT OF FOUNDATION PLAN
(1) LUMINOSA (S9) 30' X 144'



ISSUED FOR:
- INFORMATION ☐
- APPROVAL ☐
- PERMIT ☐
- CONSTRUCTION ☑
- AS BUILT ☐

REVISIONS	DATE	BY
5		
4		
3		
2		
1		

SERPACK:

REF: STEP-A2100

DRAWN BY: PL BEAUDRY
APPROVED BY:
DATE: JUNE 21, 2021
SCALE: N.T.S.

GREENHOUSES HARNOIS
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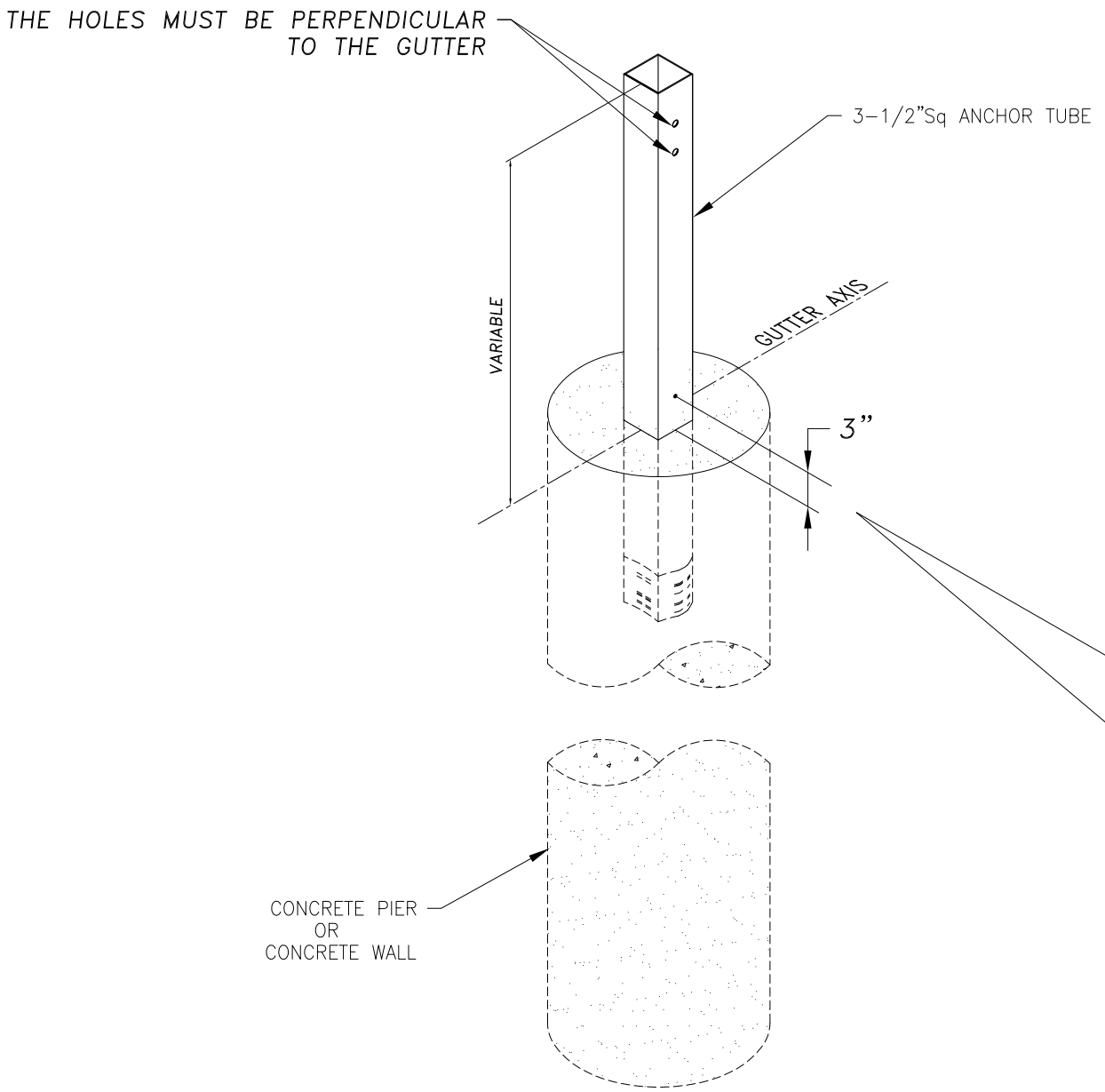
1-888-427-6647
FAX.(450)756-8389

STEP BY STEP

PLAN:STEP-A2100

TITLE: ELEVATION VIEW



IMPORTANT

TO PREVENT DAMAGE FROM FREEZING, A 3/16" HOLE MUST BE DRILLED IN EACH POST AT 3" ABOVE FINAL FLOOR LEVEL

DATE: FEB 12, 2015	DRAWN BY: C. BRANCONNIER	GREENHOUSES HARNOIS	LUMINOSA SERIE 8 – 9 – 11	PLAN # LUM-A5000 TYPE A
SCALE: N.T.S	APPROVED BY:		TITLE: 3-1/2"Sq ANCHOR TUBE INSTALLATION DETAIL	
REF: LUM-A5000A				

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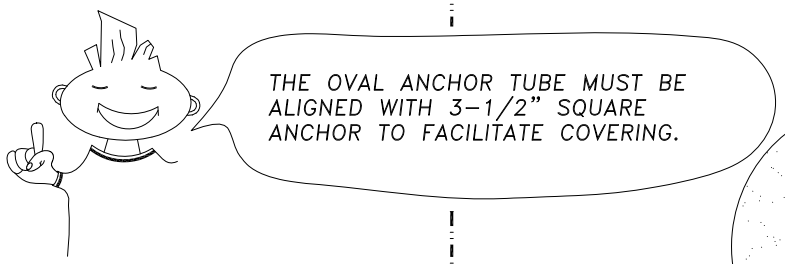

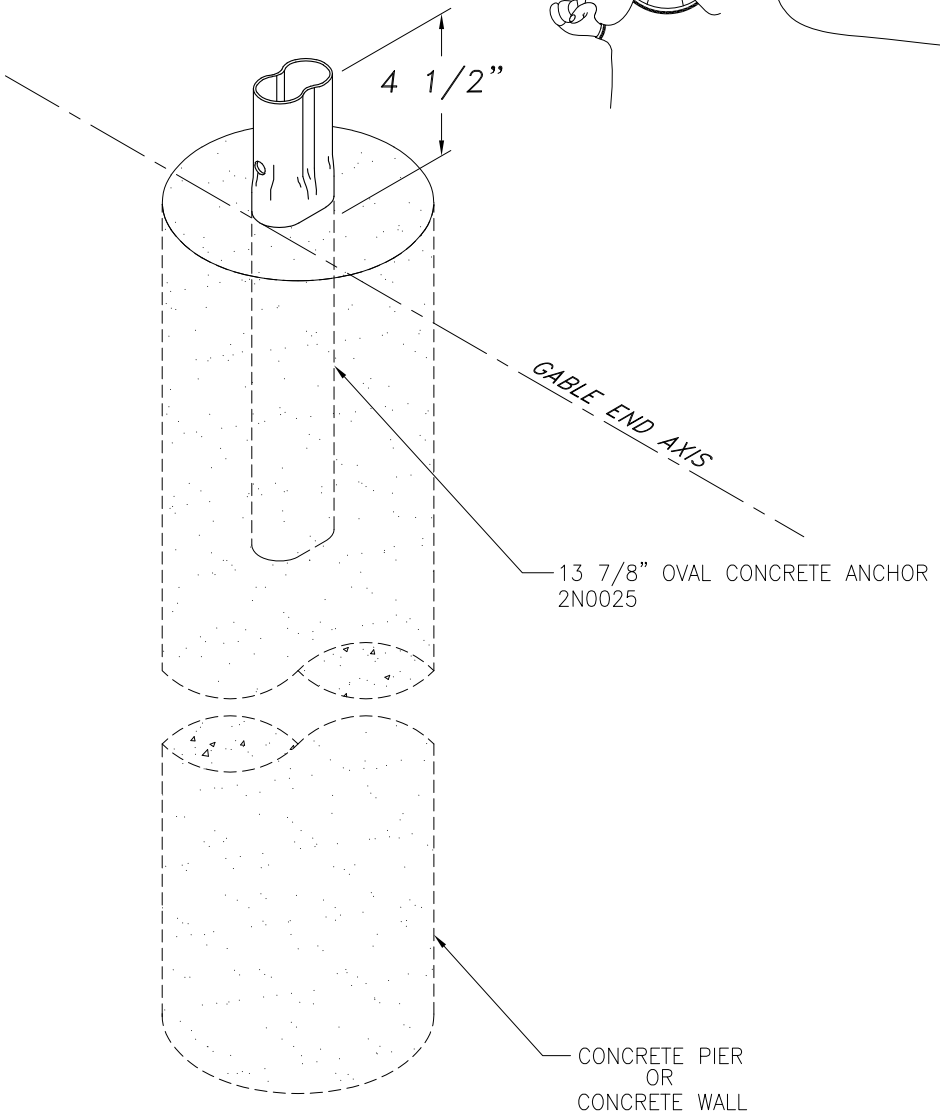

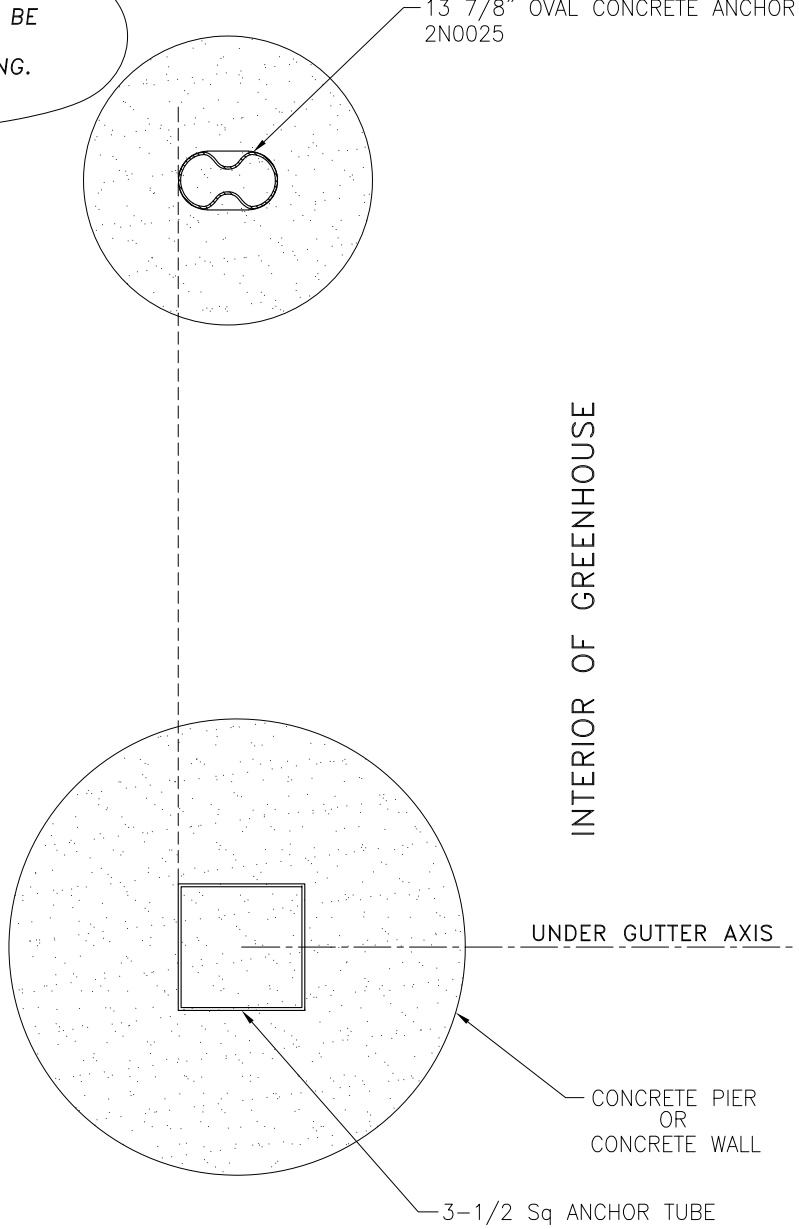

PLAN VIEW

DATE: FEB 13, 2015	DRAWN BY: C. BRANCONNIER	GREENHOUSES HARNOIS	LUMINOSA SERIE 8 – 9	PLAN # LUM–A5035
SCALE: N.T.S	APPROVED BY:		TITLE: OVAL ANCHOR TUBE INSTALLATION DETAIL	
REF: LUM–A5035		Tel.:(450) 756-1041 / 1-888-427-6647 / Fax.:(450) 756-8389		