

2020-02-04

**Request for Tenders for
Polar Bear Exhibit and Holding Modifications**

RFT No.: TZC T 03-2020-01

ADDENDUM 1

This addendum shall be incorporated into, and form part of RFT No.: TZC T 03-2020-01 and take precedence over all requirements of the previously issued bid documents including plans. This addendum must be signed by the bidder (signing officer) in the appropriate space and must be attached to the form for submission by the bidder. This addendum consists of **TWO (2)** page(s) and the documents listed below.

1. CLARIFICATION OF CLOSING DATE:

Closing date: Friday, 2019-02-07 at 12:00 p.m. local time

2. DELETE PRICING FORM:

APPENDIX III

REPLACE WITH PRICING FORM:

Rev 1 – APPENDIX III

3. DELETE DRAWINGS:

A1.01 DEMO EXHIBIT SITE PLAN
A1.02 PROPOSED EXHIBIT SITE PLAN
A1.03 PROPOSED EXHIBIT SERVICE PLAN

REPLACE WITH DRAWINGS:

Rev 1 – A1.01 DEMO EXHIBIT SITE PLAN
Rev 1 – A1.02 PROPOSED EXHIBIT SITE PLAN
Rev 1 – A1.03 PROPOSED EXHIBIT SERVICE PLAN

4. ADD DRAWINGS:

A3.01 DETAILS
A3.02 DETAILS
CG-0 ANIMAL MANAGEMENT REQUIREMENTS
CG-2 POLAR BEAR HOLDING AND VIEWING BUILDING CAGING PLANS
CG-10 POLAR BEAR CAGING DETAILS: HYDRAULIC GUILLOTINE TRANSFER DOOR
CG-11 POLAR BEAR CAGING DETAILS: HYDRAULIC SLIDER TRANSFER DOOR
CG-15 STEEL MESH PANELS & KEEPER DOOR DETAILS
CG-20 CAGING SCHEDULES
E-201 POLAR BEAR HOLDING BUILDING – POWER AND SYSTEMS
Polar Bear – Hydraulic Systems
Polar Bear – Control Panel Double Actuator
Polar Bear – TDS – Biospec Lubs

Receipt of the addendum shall be acknowledged as part of your submission.

The Board of Management of the Toronto Zoo reserves the right to reject any or all quotations or to accept any quotation, should it deem such action to be in its interests.

If you have any queries regarding this matter, please contact Mr. Peter Vasilopoulos, Supervisor, Purchasing & Supply, at 416-392-5916.

Yours truly,

Peter Vasilopoulos
Supervisor, Purchasing & Supply

I/we hereby acknowledge receipt of this addendum and make allowance in my bid.

Signed (Must be Signing Officer of Firm)

Name of Firm

Date

**TZC T 03-2020-01 POLAR BEAR EXHIBIT & HOLDING MODIFICATIONS
PART 5- PRICING FORMS**

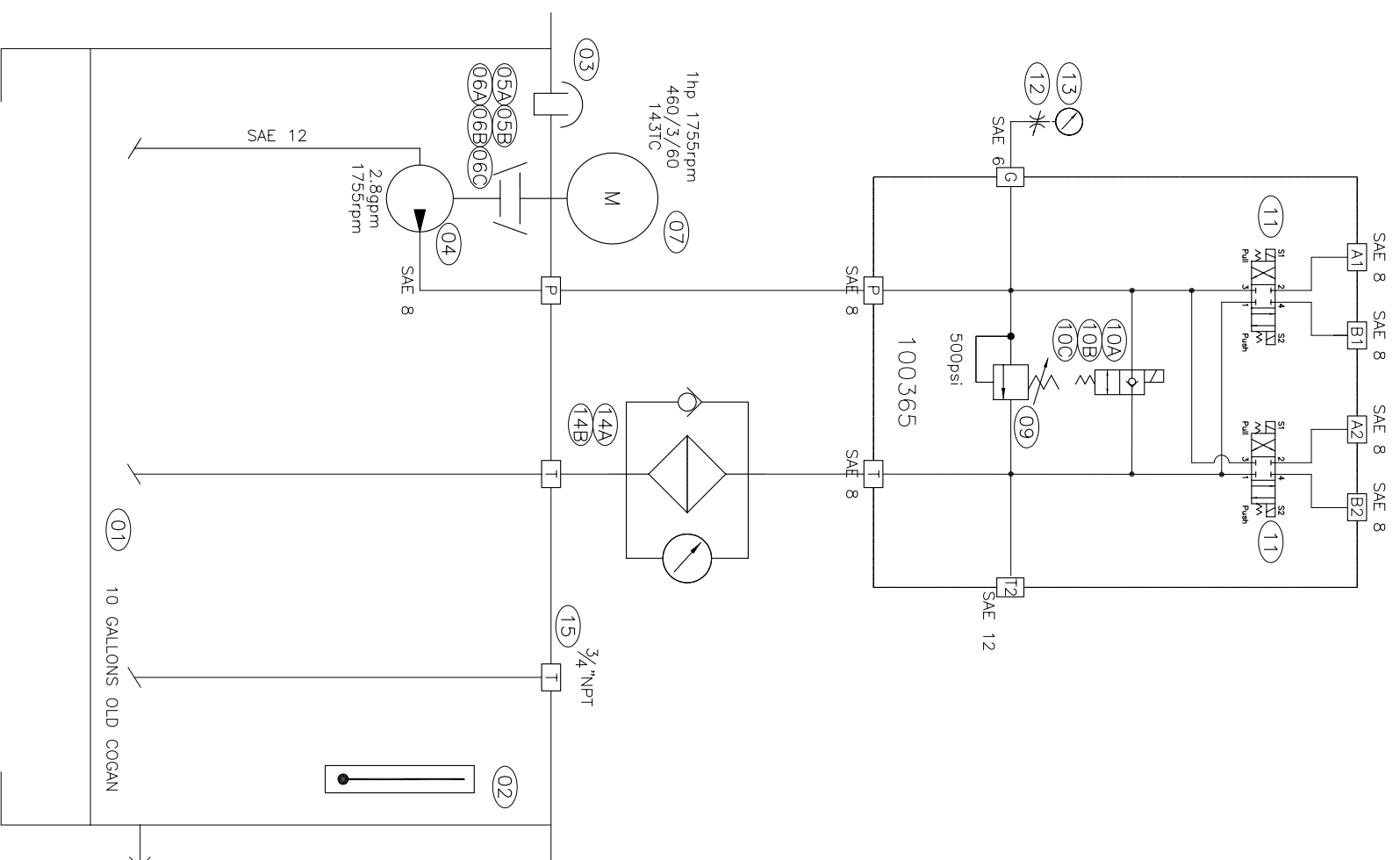
APPENDIX III - ADDITIONAL PRICES (Due 24 hours after stipulated closing date)

(**not included** in Total Tender Price)

All prices are to include the supply and installation of all labour, material, taxes (excluding Harmonized Sales Tax), charges, payroll, burden and profit.

ITEM	DESCRIPTION	PRICE
A1	Enlarge animal transfer door between pool & maternity exhibits.	\$ _____ Increase / Reduction
B1	Install shade sail in maternity exhibit	\$ _____ Increase / Reduction
B2	Install shade sail in pool exhibit – over pool	\$ _____ Increase / Reduction
B3	Install shade sail in pool exhibit – over land	\$ _____ Increase / Reduction

* For each item, insert amount in the appropriate column to indicate whether the price change will result in an increase in, or a reduction of, the Total Tender Price.



ITEM	QTY	MODEL #	DESCRIPTION & MANUFACTURE
15	1	---	3/4"npt SPARE DRAIN, PNEUTECH-ROUSSEAU
14B	1	936912	INDICATOR GAUGE 25psi, PARKER
14A	1	12A110CN25B8H	SPIN-ON FILTER 25psi, 3/4npt PARKER
13	1	0809	PRESSURE GAUGE 0-1000 PSI, WINTERS
12	1	PN4005	NEEDLE VALVE, PARKER
11	2	DSL105C1VD024LD	SPool, TYPE VALVE, 4W/3P, PARKER
10B	4	5100-1091000	DIN CONNECTOR, CANFIELD
10A	1	S10LD0024	UNICOIL 5/8 DIN 24vdc, PARKER
09	1	RA101S10	DUMPING VALVE, PARKER
08	1	100365-A	RELIEF VALVE, PARKER
07	1	ELITE2DC	MANIFOLD BLOCK, PNEUTECH-ROUSSEAU
06C	1	NOT5	1hp 1755rpm 460/3/60 143TC, E-LINE MOTORS
06B	1	LOT5 7/8 x 3/16	COUPLING INSERT, MP-FILTRI
06A	1	LOT5 1/2 x 1/8	MOTOR PUMP COUPLING, MP-FILTRI
05B	1	268599	MOTOR PUMP COUPLING, MP-FILTRI
05A	1	152299	GASKET, VESCOR
04	1	GHP1A-D-9	BELHOUSING SAE 2 BOLT, VESCOR
03	1	AB1380.10	GEAR PUMP 2.8 GPM, MARZOCCHI
02	1	L1A5000	AIR BREATHER/ FILLER, PARKER
01	1	PTD10	TEMP/LEVEL GAUGE, DMIC
			10gal. RESERVOIR, PNEUTECH-ROUSSEAU

PNEUTECH ROUSSEAU

Client / Customer
SPEC-DOR

Projet/Project
100365
POWER TUBE

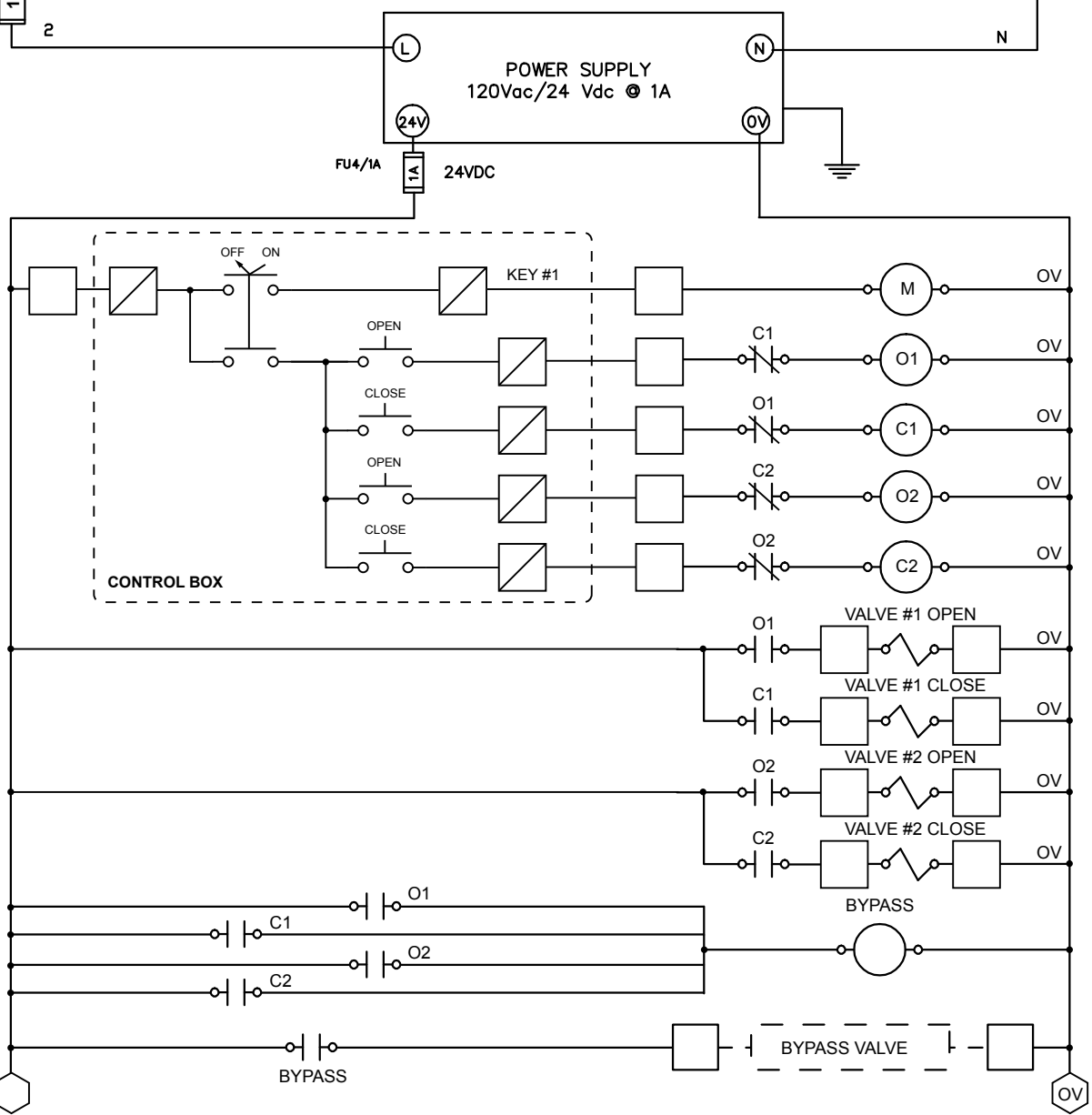
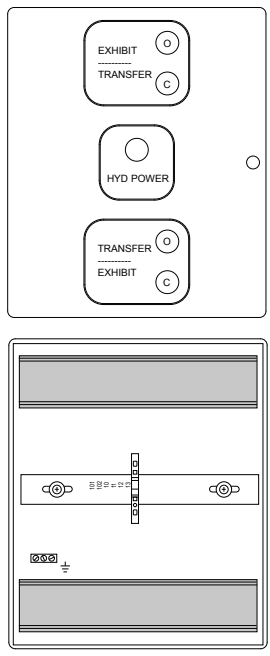
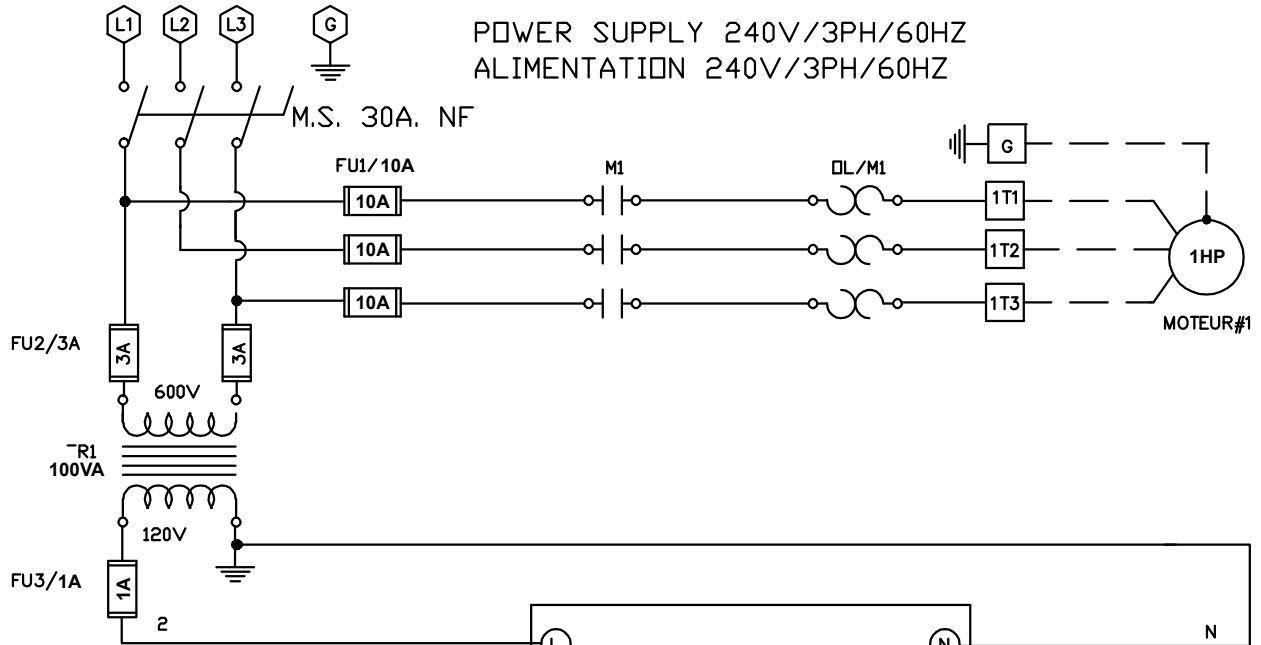
No. Bon de Commande du Client:
Customer Purchase order No:

Dessine par: Eric L. Date: March 05 2009
Drawn by: Alfredo T Date: March 05 2009
Approuve par: Alfredo T Date: March 05 2009
Approved by:

No. dessin Pneutech: 100365-01
Pneutech drawing No.:
Echelle: 1:1 Planche: 2 of 2 Rev. 00
Scale:

REV.	DATE	DESCRIPTION	BY
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TITLE:			
CONTROL PANEL DOUBLE ACTUATOR			
		Tel: (450) 444-7661 Fax: (450) 444-7662	
		19 Pl. de Boheme, Candiac, Qc. Canada J5R 3N2	
JOB: 7737	CLIENT: TORONTO ZOO		
REV: 1	DATE: March 2, 2009		



TECHNICAL DATA SHEET

BIOSPEC LUBS

BIOSPEC LUBS are biodegradable and non toxic lubricants. They are especially formulated to offer optimal performance for any lubricating application, i.e., hydraulic systems, industrial gears, ways, air, pneumatic and percussion tools. These lubricants are manufactured with biodegradable esters and additives approved for incidental contact with food. These lubricants do not affect yellow metals; moreover, they offer superb performance under the most adverse operating conditions. All **BIOSPEC** lubricants offer the following characteristics: 1) superior load carrying capacity and resistance to abrasion 2) superior protection against rust and corrosion 3) outstanding anti-wear properties and 4) higher resistance to oxidation than most conventional biodegradable lubricants. In addition, these lubricants form a tenacious film which increases metal surface protection.

BIOSPEC LUBS are recommended for all rotary drilling and percussion equipment used in mining and exploration of the underground surface. They are also used for the lubrication of the pneumatic tools in the construction and fabrication industries, in applications such as concrete breaking machinery, drilling pumps, riveters and mechanical excavators. **BIOSPEC LUBS** has been used with success in a wide range of pneumatic equipment manufactured by Chicago Pneumatic, Gardner-Denver and Ingersoll-Rand. Moreover, these lubricants can be utilized when anti-wear hydraulic fluid are required, as well as industrial gear lubricant and/or a way lubricant in machine-tools. **BIOSPEC LUBS** are true multipurpose lubricants. These lubricants do not contaminate the environment, even with long-term exposure.

CHARACTERISTICS

All **BIOSPEC** fluids possess the following characteristics:

- Virtually no toxicity.
- Biodegradability higher than 70% (OECD 301F).
- Exceptional anticorrosion, antirust, extreme-pressure and anti-wear properties.
- Excellent oxidation stability and high adherence to surfaces.
- Good low temperature properties.
- Excellent anti-foam properties.

ADVANTAGES

- Offers optimal performance in a wide variety of lubricating applications.
- Meets US Steel 224 specifications.
- Prevents rust and corrosion of metal components expose to air and moisture.
- Prevents wear and tear and under harsh operating conditions.

TYPICAL PROPERTIES OF BIOSPEC LUBS

PROPERTIES	TEST	32	46	68
Product code	-	7958	7943	7944
Viscosity grade ISO	-	32	46	68
Viscosity in cSt at 40°C	ASTM D445	33	49	66
Viscosity in cSt at 100°C	ASTM D445	5.5	6.9	9.2
Viscosity index	ASTM D2270	100	95	115
Density in kg/dm ³ at 15°C	ASTM D1298	0.91	0.92	0.92
Color (maximum)	ASTM D1500	1.0	1.0	1.0
Flash point, open cup test, in °C (minimum)	ASTM D92	210	230	230
Pour point in °C (minimum)	ASTM D97	-42	-42	-42
Copper strip corrosion test, 3 hours at 100°C	ASTM D130	1a	1a	1a
Rust test , synthetic sea water	ASTM D665B	Pass	Pass	Pass
Foaming sequence I, 5 minutes after air injection	ASTM D892	15/0	15/0	15/0
Vickers Pump Test 200°F, 3000 psi < 20 mg (maximum Limit = 90 mg)	35VQ25	Pass	Pass	Pass
Timken OK Load in Kg (minimum)	ASTM D2782	32	32	32
FZG stage Pass	DIN 51534	12	12	12
Service temperature in °C (hydraulic)	-	-30 to 115*	-24 to 150*	-23 to 140*
Service temperature in °C (gear)	-	-41 to 115*	-41 to 125*	-41 to 140*

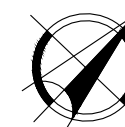
Remark: Although the preceding values are typical properties, they do not represent guaranteed characteristics.

¹ For hydraulic system the lowest service temperature is defined as the temperature at which the oil viscosity reaches 10000 cP, while for gear oil the viscosity is 150000 cP. The system must be in good conditions and not loaded.

² The upper temperature limits are the temperatures at which the oil viscosity reaches 4.2 cSt. These values are based on manufacturer recommendations. Values may vary from manufacturers. To select the proper lubricant & viscosity grade, please verify manufacturer specifications.

NO.	DESCRIPTION	DATE
0	FOR TENDER	2020.01.15.
1	FOR ADDENDUM 1	2020.02.04

NO.	REVISIONS	DATE
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WALRUS

 REVIEWED BY
 MANAGER:
 DATE:
 CURATOR:
 DATE:
 APPROVED BY
 COO:
 DATE:

 DEMO EXHIBIT
 SITE PLAN

 PROJECT #: 2004B
 DRAWN BY: DG
 CHECKED BY: LM
 DATE: 2020.01.15.
 SCALE: 1:175
 DRAWING #:

A1.01

 POLAR BEAR
 GRASS EXHIBIT

 POLAR BEAR HOLDING
 BUILDING (SEE A2.01
 FOR DETAILS)

 SECTION OF CHAINLINK FENCE &
 WOOD FENCE MAY BE REMOVED
 FOR SITE ACCESS. CONTRACTOR TO
 REMOVE & REINSTATE / MAKE GOOD.

SERVICE ROAD


 SHIFT DOOR MAY BE REMOVED TO
 ACCESS POOL EXHIBIT. CONTRACTOR TO
 REMOVE & REINSTATE / MAKE GOOD



 MOVE ROCKS TO BACK OF EXHIBIT
 (BEHIND HOT WIRE FENCING)

 EXCAVATE & PREP BASE
 FOR 8" CONCRETE PAD

 DEMO CONCRETE POOL, EXCAVATE
 AREA FOR LARGER CONCRETE POOL
 TO REPLACE EXISTING.

LINE OF ROCKWORK ABOVE

 MATERNITY
 EXHIBIT


 DEMO ROCKWORK AROUND DOOR
 AND ENLARGE DOOR OPENING TO
 5'x5'. MAKE GOOD OPENINGS.
 MAKE GOOD ROCKWORK.
 ADDITIONAL PRICE ITEM (A1)


 DEMO CHAIN LINK ON FENCE
 (TWO LOWER PANELS)

 CLEAR ROCKS FROM IDENTIFIED AREAS.
 MOVE TO INACCESSIBLE AREAS OF
 EXHIBIT (BEHIND HOT WIRE FENCING)

LINE OF ROCKWORK ABOVE

POOL EXHIBIT

 REMOVE VEGETATION FROM
 ROCKWORK PLANTER. REPLANT
 WITH NON LEAFY VEGETATION
 (PROVIDED BY TZ)

LINE OF ROCKWORK ABOVE

 VIEWING
 SHELTER

VIEWING GLASS BELOW

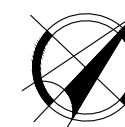
 UNDERWATER
 VIEWING BELOW

 PUBLIC
 PATHWAY

 FILTRATION ROOM
 BELOW

NO.	DESCRIPTION	DATE
0	FOR TENDER	2020.01.15.
1	FOR ADDENDUM 1	2020.02.04

NO.	REVISIONS	DATE
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WALRUS

 REVIEWED BY
 MANAGER:
 DATE:
 CURATOR:
 DATE:
 APPROVED BY
 COO:
 DATE:

**PROPOSED EXHIBIT
 SITE PLAN**

 PROJECT #: 2004B
 DRAWN BY: DG
 CHECKED BY: LM
 DATE: 2020.01.15.
 SCALE: AS SHOWN
 DRAWING #:

A1.02

 POLAR BEAR
 GRASS EXHIBIT

 POLAR BEAR HOLDING
 BUILDING (SEE A2.01
 FOR DETAILS)

 INSTALL NEW SHADE SAILS IN POOL & MATERNITY EXHIBITS
 (25m² EACH). NEW ANCHOR POINTS ON 6" SCHEDULE
 40 PIPE POSTS @12' HEIGHT. DESIGN OF POSTS &
 FOOTINGS BY ENGINEER. ADDITIONAL PRICE ITEMS (B1-3).

 INSTALL NEW HOT WIRE ALONG EXISTING
 FENCELINE AT 5' HEIGHT (15m)

 INSTALL NEW HOT WIRE
 WITH REMOVABLE POSTS
 (25m). SEE A3.01

 INSTALL NEW 8" CONCRETE
 PAD (50sm). SEE A3.01

 INSTALL NEW CONCRETE POOL WITH
 SMOOTH ROCKWORK FINISH. SEE A3.02

 INSTALL NEW HOT WIRE WITH
 REMOVABLE POSTS (20m).
 SEE A3.01.

 COVER EXISTING NATURAL ROCK
 WITH ROCKWORK TO SMOOTH
 TEXTURE. PROVIDE MOCKUP FOR
 REVIEW BY TZ

 INSTALL NEW GUILLOTINE
 DOOR USING EXISTING
 HYDRAULIC SYSTEM. REPLACE
 ACTUATOR. MATCH EXISTING
 DOOR CONSTRUCTION.

 REPAIR DETERIORATING AREAS OF CONCRETE SLAB.
 CLEAN AREA AND REMOVE UNSTABLE CONCRETE.
 APPLY BONDING AGENT.
 POUR CONCRETE & TROWEL SMOOTH FINISH.
 BLEND WITH EXISTING CONCRETE.

 INSTALL 3/8" GRADE 316 SS PLATES
 OVER CAULKING AROUND GLAZING
 ON EXHIBIT SIDE (SEE A3.01)

VIEWING GLASS BELOW

 UNDERWATER
 VIEWING BELOW

 WELD 3"x1/4" SS FLAT BAR FRAME RECEIVER
 TO EXISTING 3/4" SCHEDULE 40 PIPE FENCE
 POSTS.

 WELD 2"x2"x1/4" SS WOVEN WIRE MESH TO
 RECEIVER FRAME & SANDWICH W/ 3"x1/4" SS
 FLAT BAR FRAME.

 SECURE WITH 1/2"x3" SS BOLTS/ FLAT
 WASHERS/ LOCK WASHERS/ NUT.

 PUBLIC
 PATHWAY

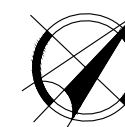
 FILTRATION ROOM
 BELOW

1
SITE PLAN

Scale: 1:175

NO.	DESCRIPTION	DATE
0	FOR TENDER	2020.01.15.
1	FOR ADDENDUM 1	2020.02.04

NO.	REVISIONS	DATE
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WALRUS

 REVIEWED BY
 MANAGER:
 DATE:
 CURATOR:
 DATE:
 APPROVED BY
 COO:
 DATE:

 PROPOSED EXHIBIT
 SERVICE PLAN

 PROJECT #: 2004B
 DRAWN BY: DG
 CHECKED BY: LM
 DATE: 2020.01.15.
 SCALE: 1:175
 DRAWING #:

A1.03
LEGEND

- · — · — SANITARY
- · — · — WATER
- · — · — STORM
- · — · — POOL RETURN
- - - - - HYDRO
- - - - - COMMUNICATIONS
- SKIMMER
- ▽ SUPPLY
- DRAIN
- POOL DRAIN

 POLAR BEAR
 HOLDING BUILDING
 (SEE A2.01 & A2.02
 FOR DETAILS)

 RAISE DRAIN BY 12", SLOPE
 CONCRETE PAD AROUND
 DRAIN (50% SLOPE)

TRIM BOLTS FLUSH WITH DRAIN

 RAISE DRAIN BY 12", SLOPE
 CONCRETE PAD AROUND
 DRAIN (50% SLOPE)

 FILTRATION ROOM
 BELOW

MH

NO.	DESCRIPTION	DATE
1	FOR ADDENDUM 1	2020.02.04

NO.	REVISIONS	DATE
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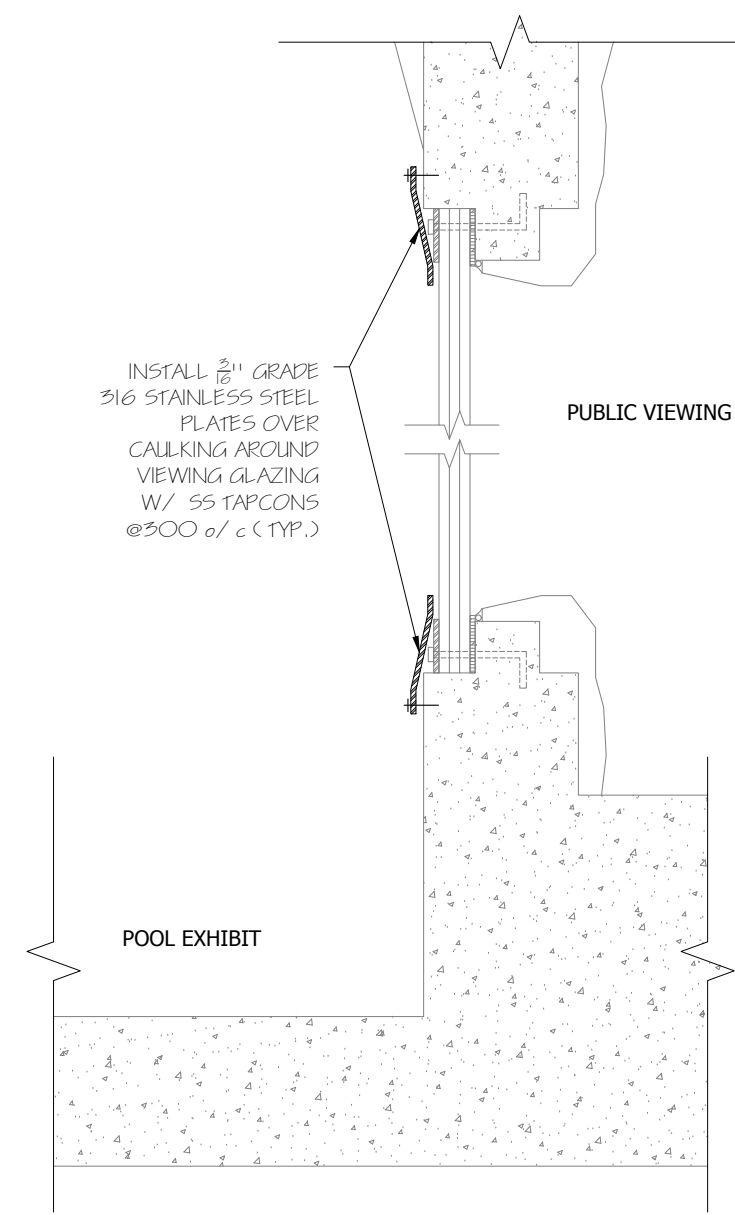
WALRUS		
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REVIEWED BY	MANAGER:
DATE:	CURATOR:
DATE:	APPROVED BY
COO:	DATE:

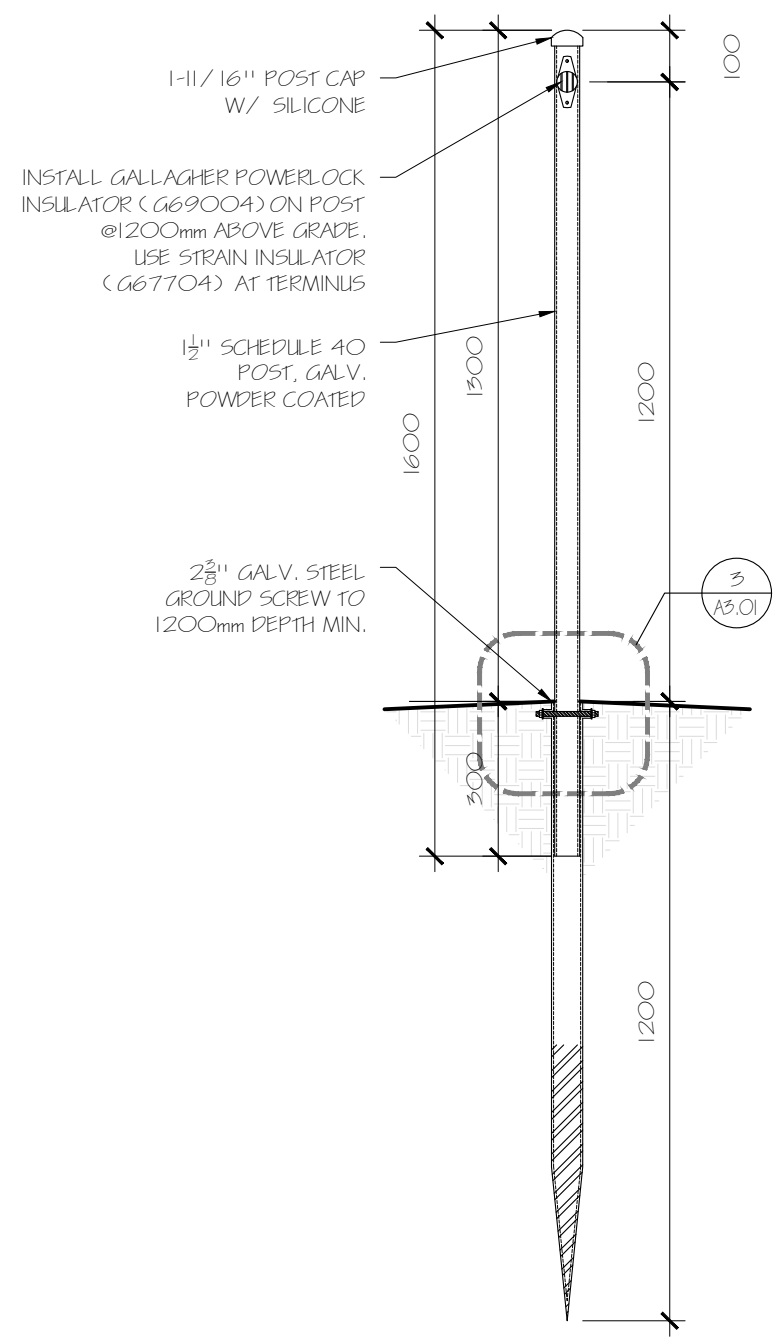
DETAILS	
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PROJECT #:	2004B
DRAWN BY:	DG
CHECKED BY:	LM
DATE:	2020.01.15.
SCALE:	1:20
DRAWING #:	

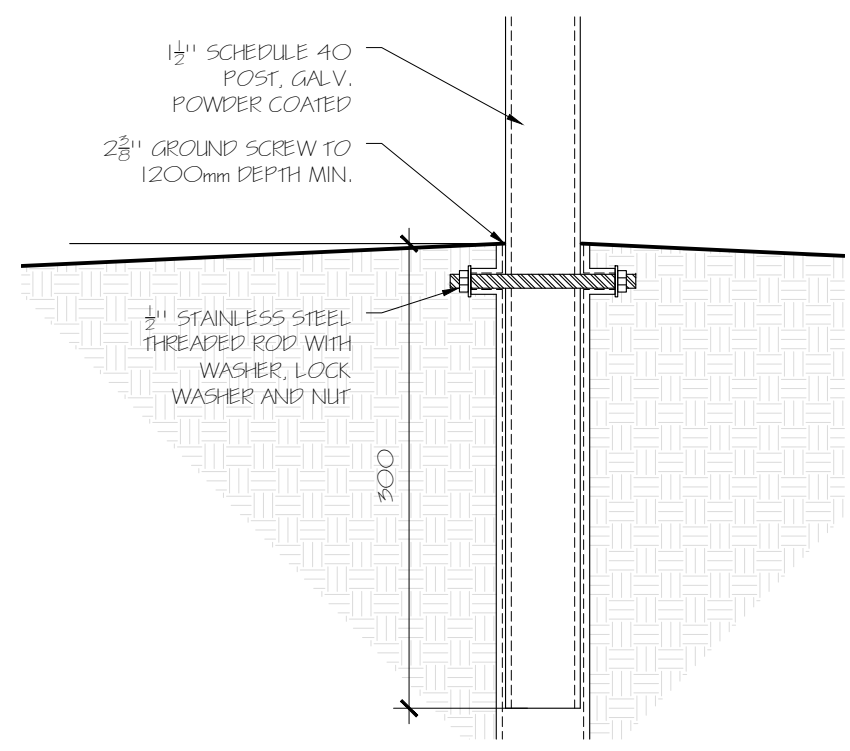
A3.01



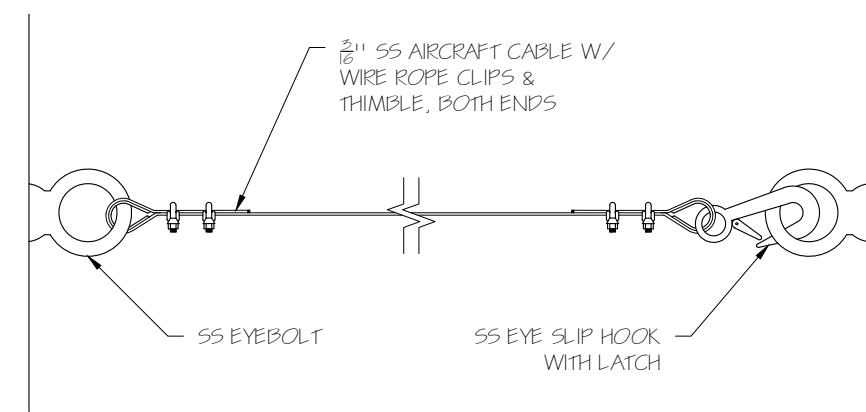
1 VIEWING WINDOW DETAIL
Scale: 1:15



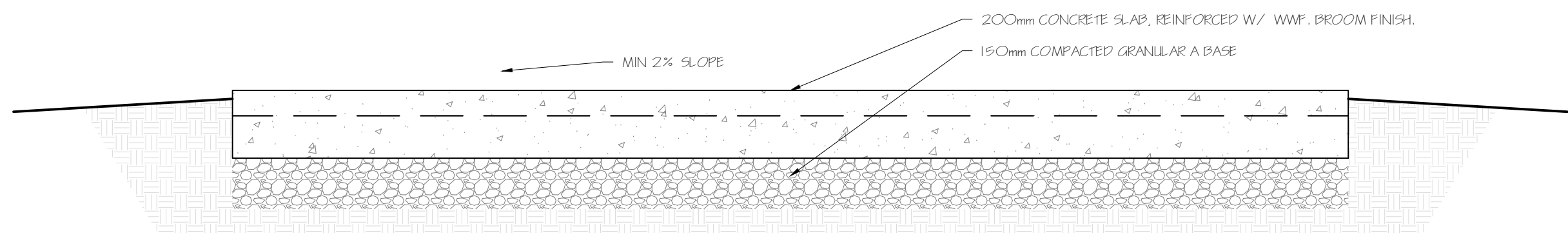
2 HOT WIRE FENCE POST
Scale: 1:15



3 POST DETAIL
Scale: 1:5

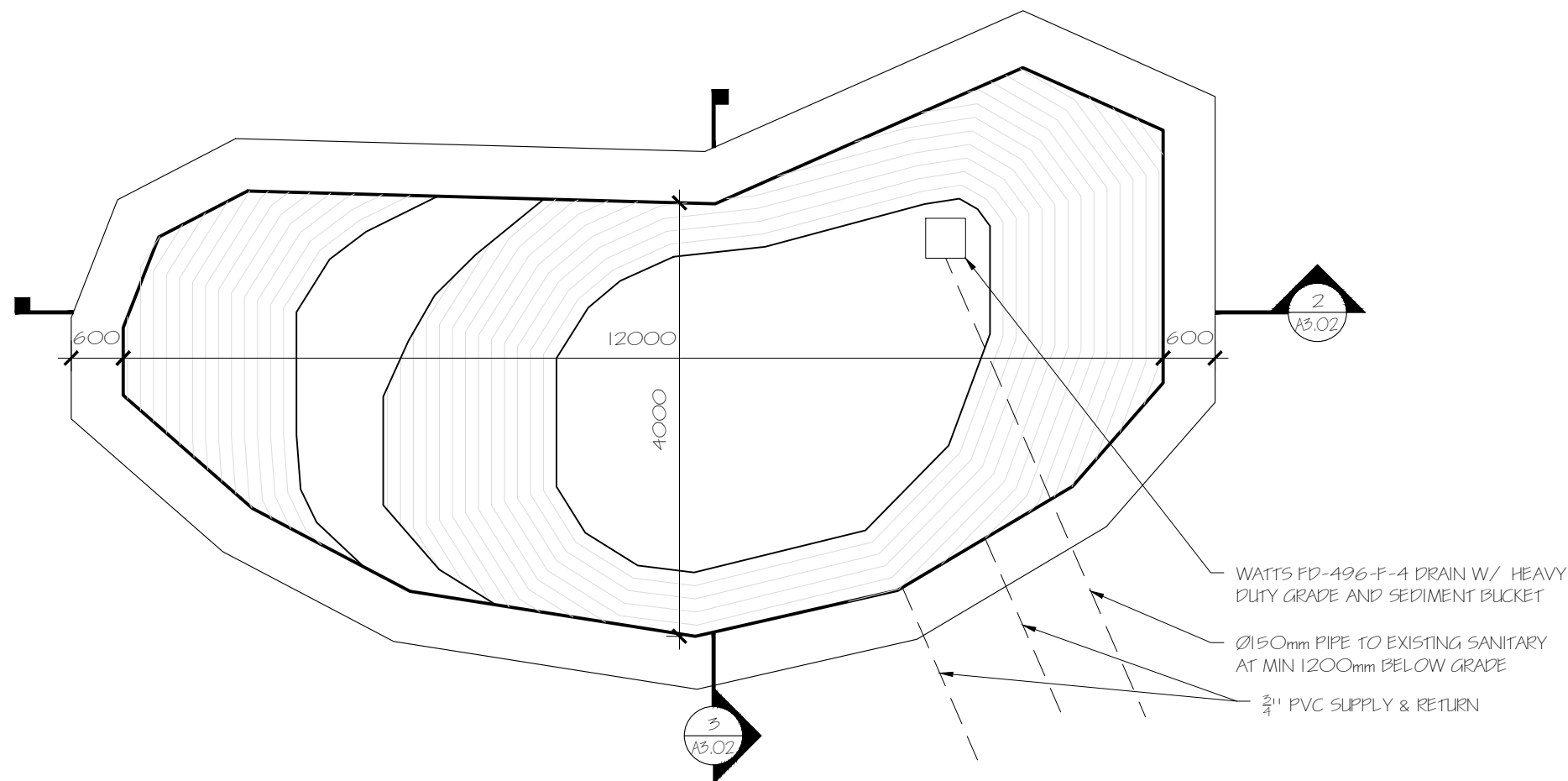
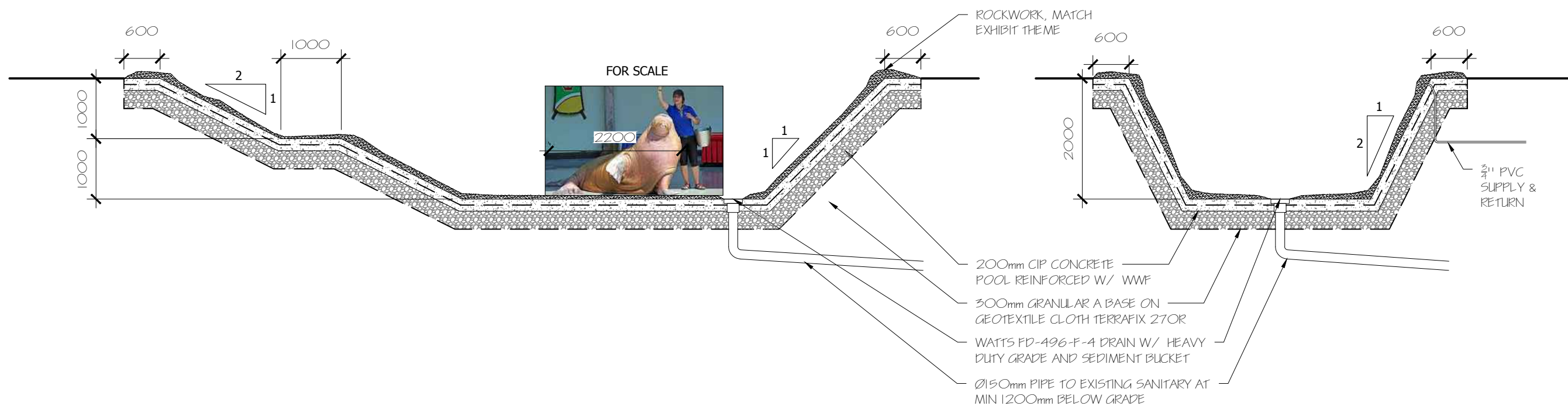


5 AIRCRAFT CABLE DETAIL
Scale: 1:5



4 SLAB ON GRADE
Scale: 1:15

NO.	DESCRIPTION	DATE
1	FOR ADDENDUM 1	2020.02.04


1 POOL PLAN
 Scale: 1:75

2 SECTION
 Scale: 1:75

3 SECTION
 Scale: 1:75

NO.	REVISIONS	DATE
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WALRUS

 REVIEWED BY
 MANAGER:
 DATE:
 CURATOR:
 DATE:
 APPROVED BY
 COO:
 DATE:

DETAILS

PROJECT #: 2004B

DRAWN BY: DG

CHECKED BY: LM

DATE: 2020.01.15.

SCALE: 1:75

DRAWING #:

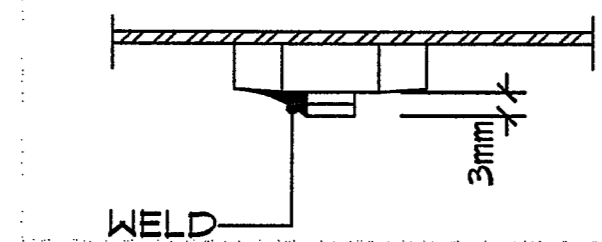
A3.02

Caging & Animal Management Requirements of Construction **

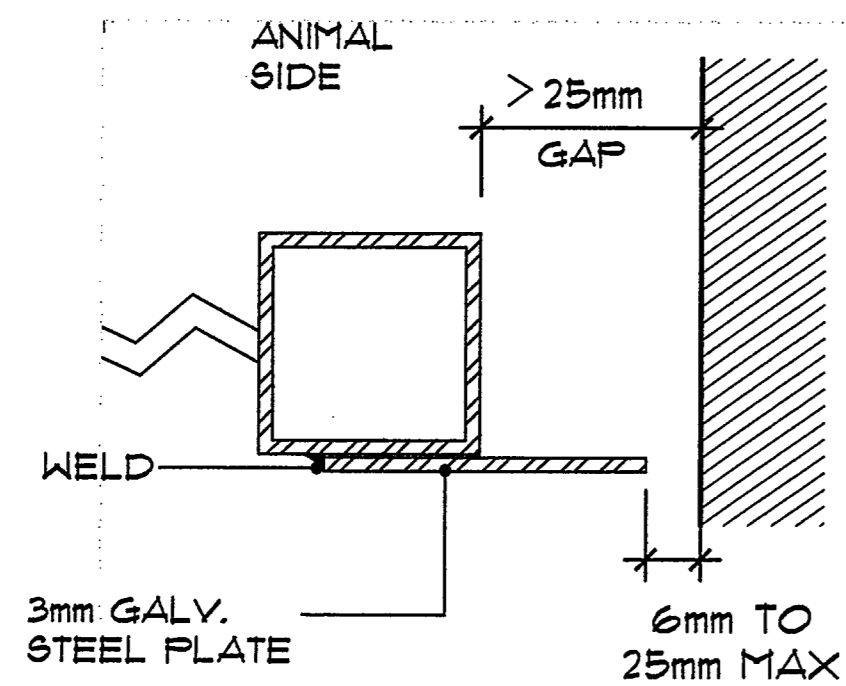
The following items shall be installed and/or performed as part of the Base Work whether or not specifically detailed or noted elsewhere.

1. BOLTS & FASTENERS

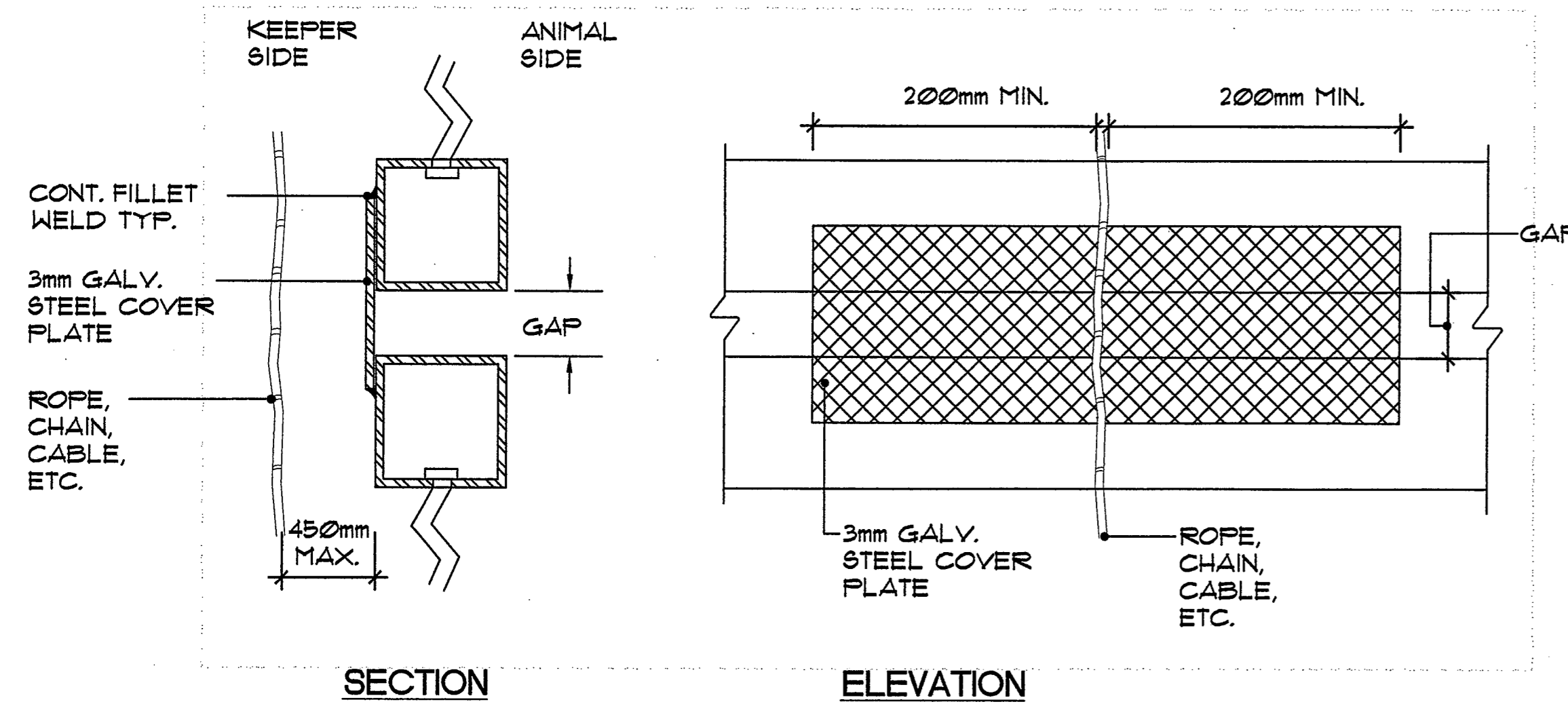
- A. Maximum allowable projection of bolts/studs within animal spaces shall be 3mm. Bolts/studs that are longer, shall be cut back to within the 3mm max. projection, and all sharp edges grounded smooth.
- B. Spot weld all exposed fasteners (bolt heads, nuts, etc.) within all animal areas or that are within reach of animals. Minimize welding to caging frames, transfer door frames, or other galvanized surfaces. All welds shall be wire brushed or ground smooth to remove all sharp edges.



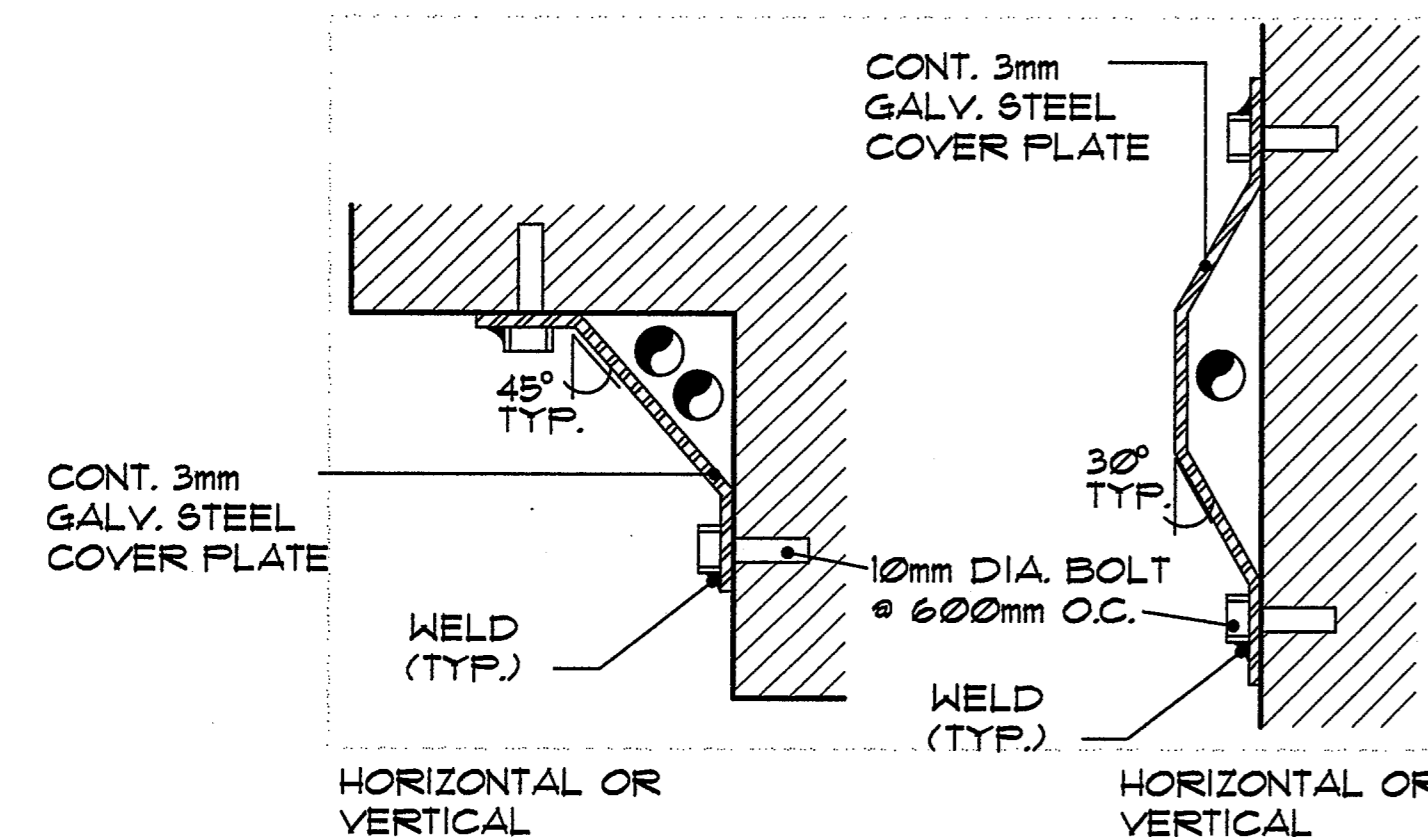
- 2. All gaps larger than 25mm clear between installed items, installed items and existing construction, shall have a continuous section of 3mm galvanized steel plate welded to the construction to reduce gaps to 25mm or less. This does not apply to any larger gaps specifically detailed (as indicated on the drawings) into the work.



- 3. Guard plates fabricated from 3mm galvanized steel shall be installed wherever exposed conduit, cables, ropes or chains (on the keeper side) occur within 450mm from the face of any gap in the caging construction. These guard plates shall be welded to the caging construction and extend a minimum of 200mm beyond the cables/chains in any direction.



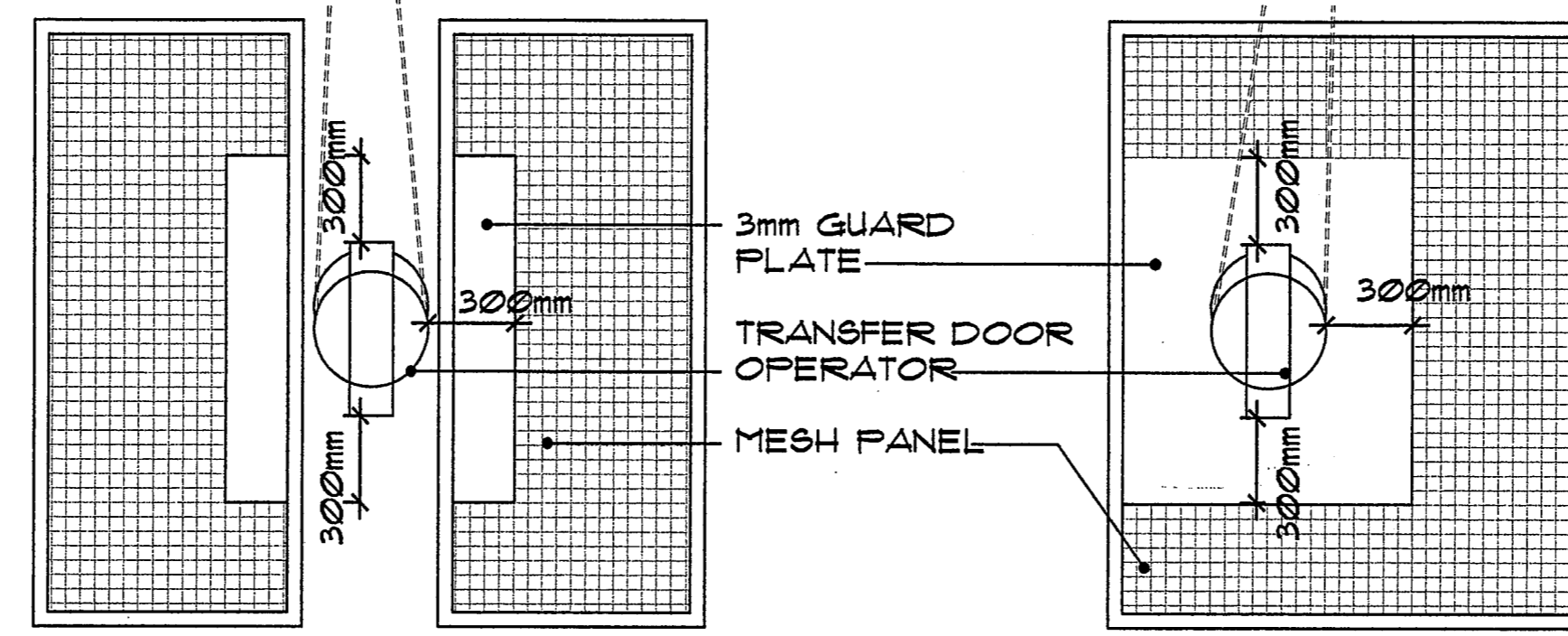
- 4. Cover plates fabricated from 3mm galvanized steel shall be installed wherever exposed cables, chains, plumbing lines, electric lines, etc. occur within animal rooms and/or bedrooms. Cover plates shall be field bolted with 10mm dia. specified bolt types at max. 600mm o.c.



- 5. In order to minimize vermin infestation, any and all gaps occurring in any adjoining construction shall be caulked and sealed tight with the specified epoxy sealant to the requirements of Section 071300 of the technical specifications.

6. TRANSFER DOOR OPERATORS

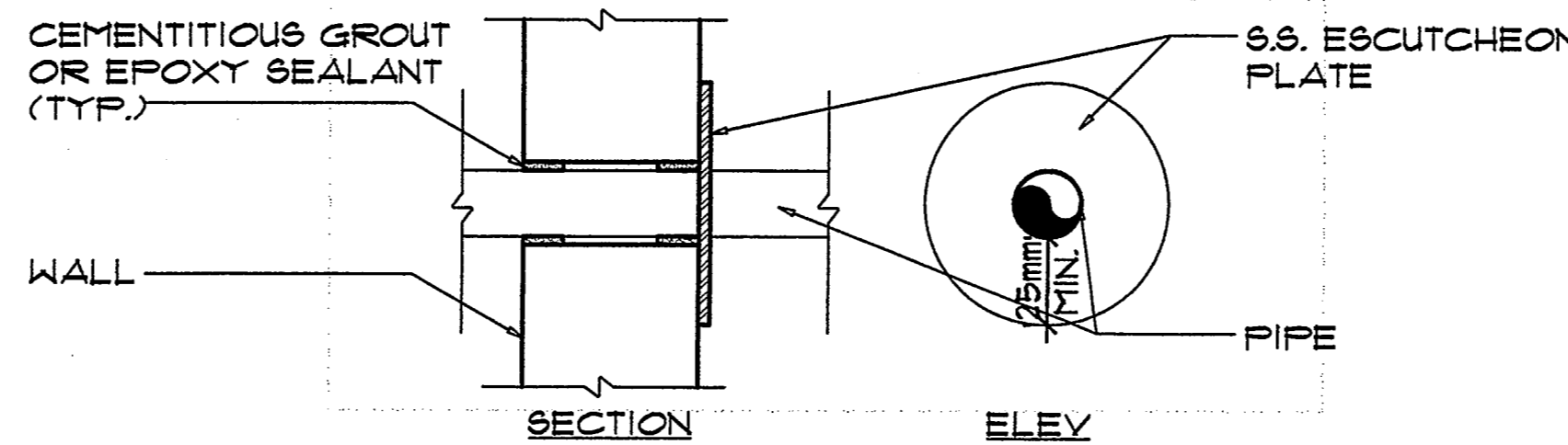
Whenever a transfer door operator is mounted to the face of a caging panel or adjacent to a caging panel, a 3mm galvanized steel plate shall be installed to prevent animal access to the mechanism.



- 7. All pipe, duct or other penetration shall be sealed completely with a non-shrink cementitious grout or epoxy sealant, with no voids, cracks, or holes.

A. PIPE PENETRATION

Provide stainless steel escutcheon plates at all pipe penetrations on keeper sides of all walls, for plumbing lines, drain leaders, sprinkler lines, etc.



- 8. All required penetrations of caging shall be coordinated and installed so that penetrations in caging are kept to an absolute minimum. Wherever possible, all penetrations shall be "gang installed" as a group, as one penetration into caging. No matter how many penetrations occur, all gaps at penetrations shall be no larger than 25mm maximum.

- ** ANIMAL AREAS & ANIMAL MANAGEMENT REQUIREMENTS OCCUR IN ALL:
 - HOLDING BUILDINGS & FACILITIES
 - EXHIBIT SPACES
 - INDOOR/OUTDOOR TRANSFER AREAS
 - ALL ANIMAL FOOD PREP AREAS

NOTE: ALL DIMENSIONS ARE MILLIMETERS (mm) UNLESS OTHERWISE NOTED

NOTE: See attached Building Code Matrix for Architect's qualification information.



CLRdesign inc.

Valdor Engineering, Inc.

Carruthers & Wallace

Stantec Engineering

Cannon Design

Landplan Collaborative, Ltd.

BaAM Productions

T.A. Maranda Consultants, Inc.

Revisions

Issued for Tender and Permit - March 2, 2007

Animal Management Requirements

Project Number	05646	Drawing No.	
Project Manager	JS		
Drawn	JM	Scale	AS SHOWN
Checked	JB	Date	March 2, 2007
General Notes:			

CG-0

Landscape Architects, Architects & Exhibit Designers
121 N Broad Street, 7th Floor
Philadelphia, PA 19107
(215) 564-0250

Civil Engineers
661 Christie Road, Suite 11
Woodbridge, Ontario L4L 8A3
(905) 264-0054

Structural Engineers
970 Lawrence Avenue W., Suite 600
Toronto, Ontario M6A 3B6
(416) 789-2600

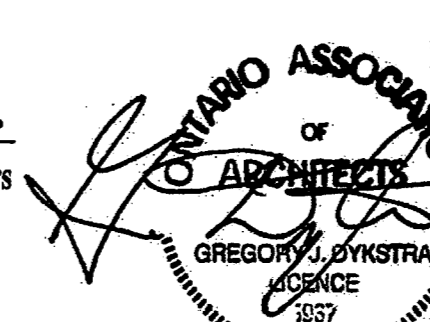
MEP Engineers
372 Bay Street, 18th Floor
Toronto, Ontario M5H 2W9
(416) 366-0220

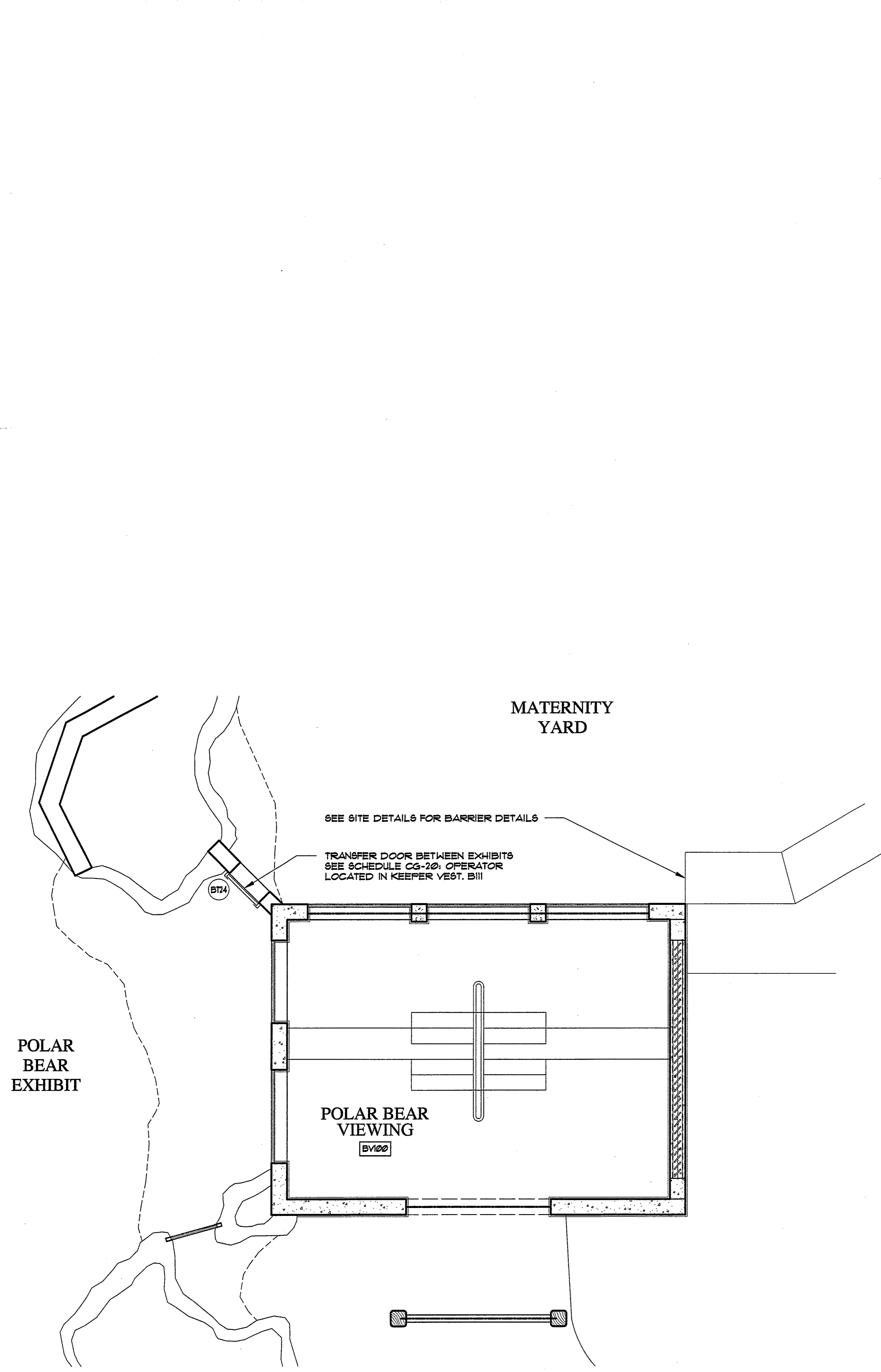
Associated Architect
124 Merton Street, Suite 203
Toronto, Ontario M4S 2Z2
(416) 915-0121

Associated Landscape Architect
319 Woolwich Street
Guelph, Ontario N1H 3W4
(519) 824-8664

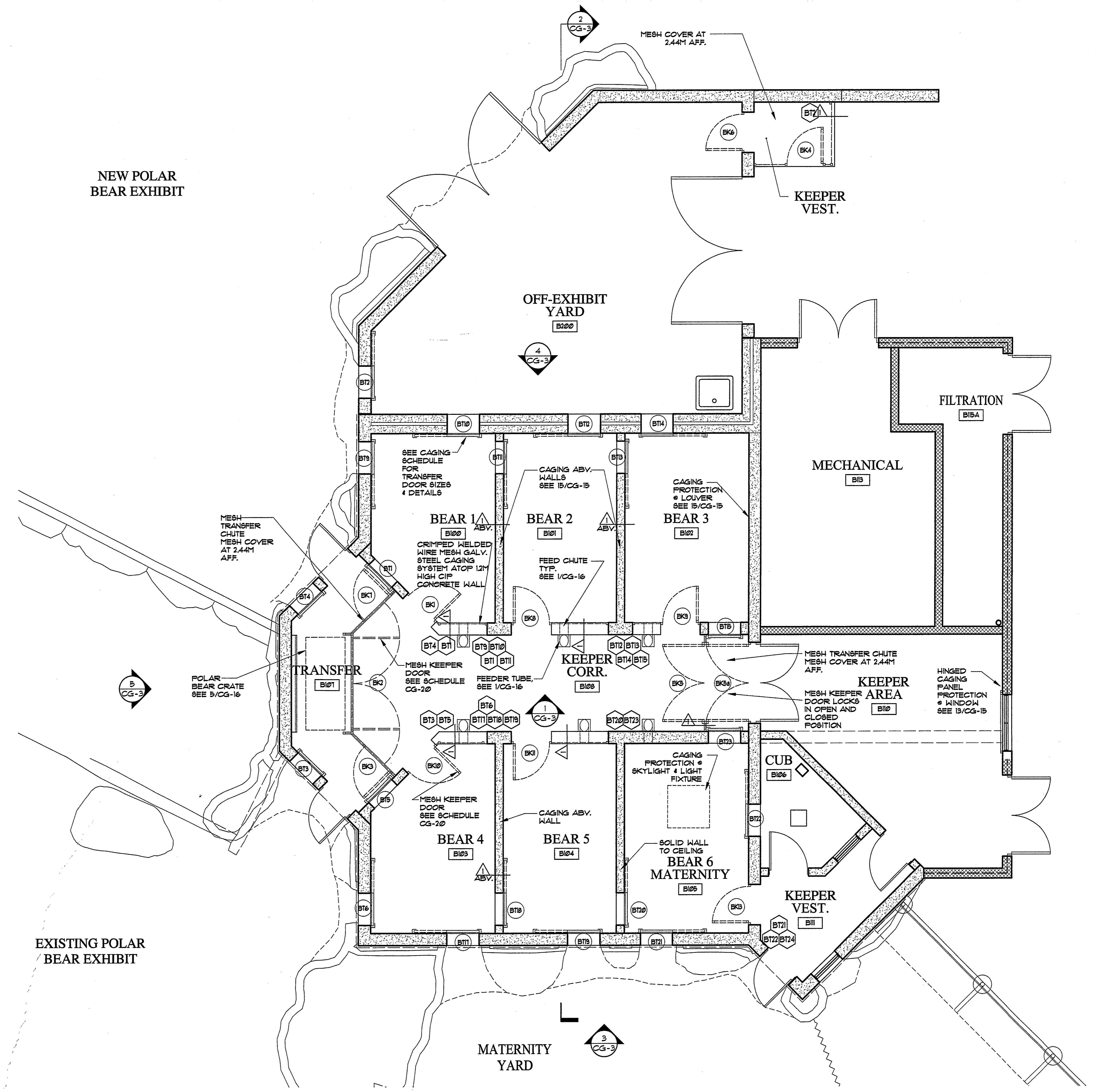
Interpretive Design
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Toronto, Ontario M5V 1M7
(800) 703-0740

Water Systems Engineers
8616 Blue Grouse Way
Blaine, WA 98230
(360) 371-3107





2 Polar Bear Viewing Building - Caging Plan
CG-2 SCALE: 1:50



1 Polar Bear Holding Building - Caging Plan
CG-2 SCALE: 1:50

CAGING LEGEND

- ▲ TYPE 1 SEE B/CG-15 FOR SIZES
- ▲ TYPE 2 SEE B/CG-15 FOR SIZES
- ▲ CHAINLINK FENCE
- .- TRANSFER DOOR SEE CAGING SCHEDULE CG-20
- .- TRANSFER DOOR OPERATOR SEE CAGING SCHEDULE CG-20
- ⊖ MESH KEEPER DOOR SEE CAGING SCHEDULE CG-20

SEE DOOR SCHEDULE A-1001 FOR ALL OTHER DOORS

NOTE: ALL DIMENSIONS ARE MILLIMETERS (mm) UNLESS OTHERWISE NOTED.
NOTE: See attached Building Code Matrix for Architect's qualification information.



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(215) 564-0250

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(905) 264-0054

Carruthers & Wallace
A Division of Trow Associates Inc.
Structural Engineers
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(416) 789-2500

Stantec Engineering
MEP Engineers
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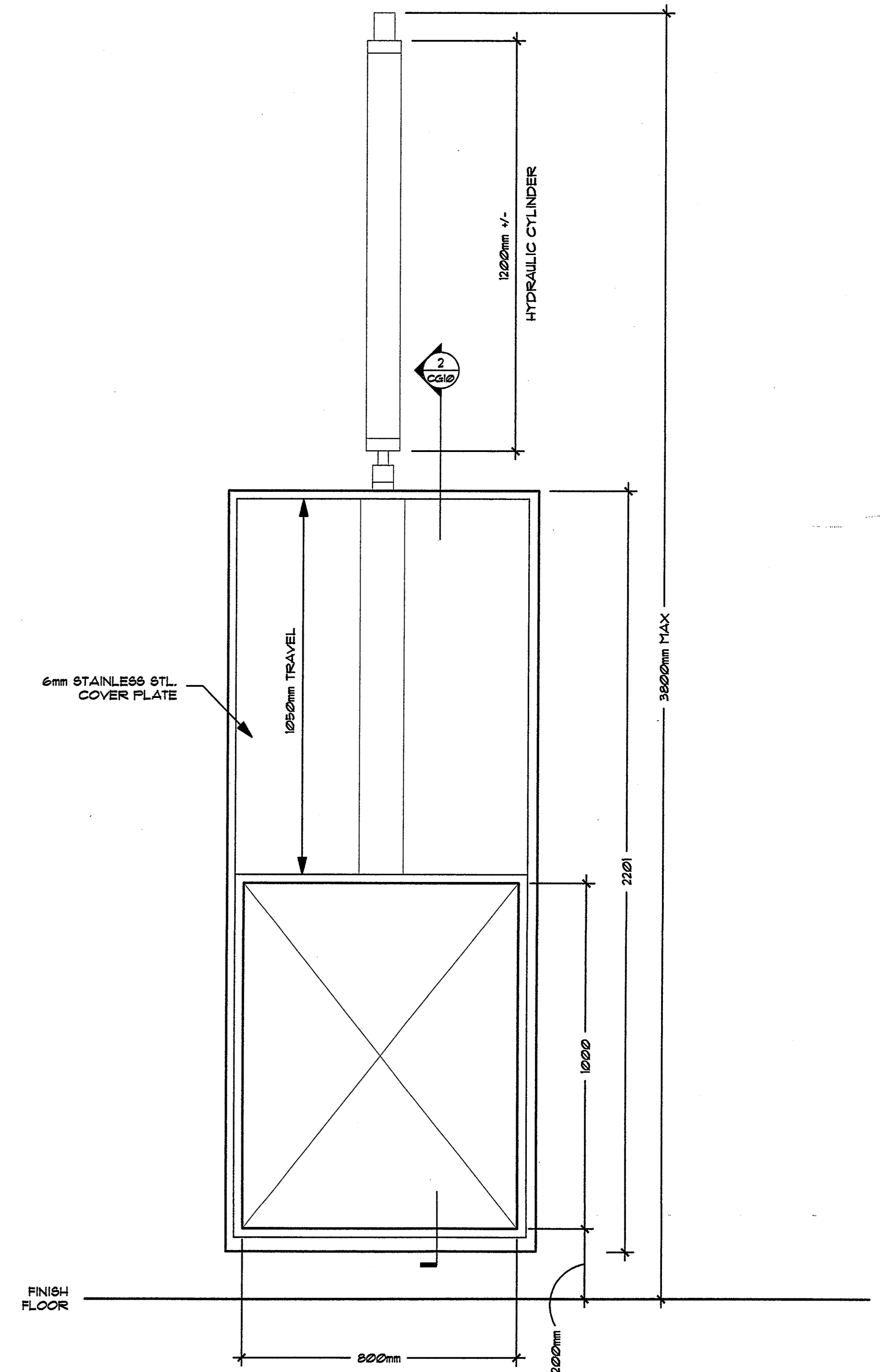
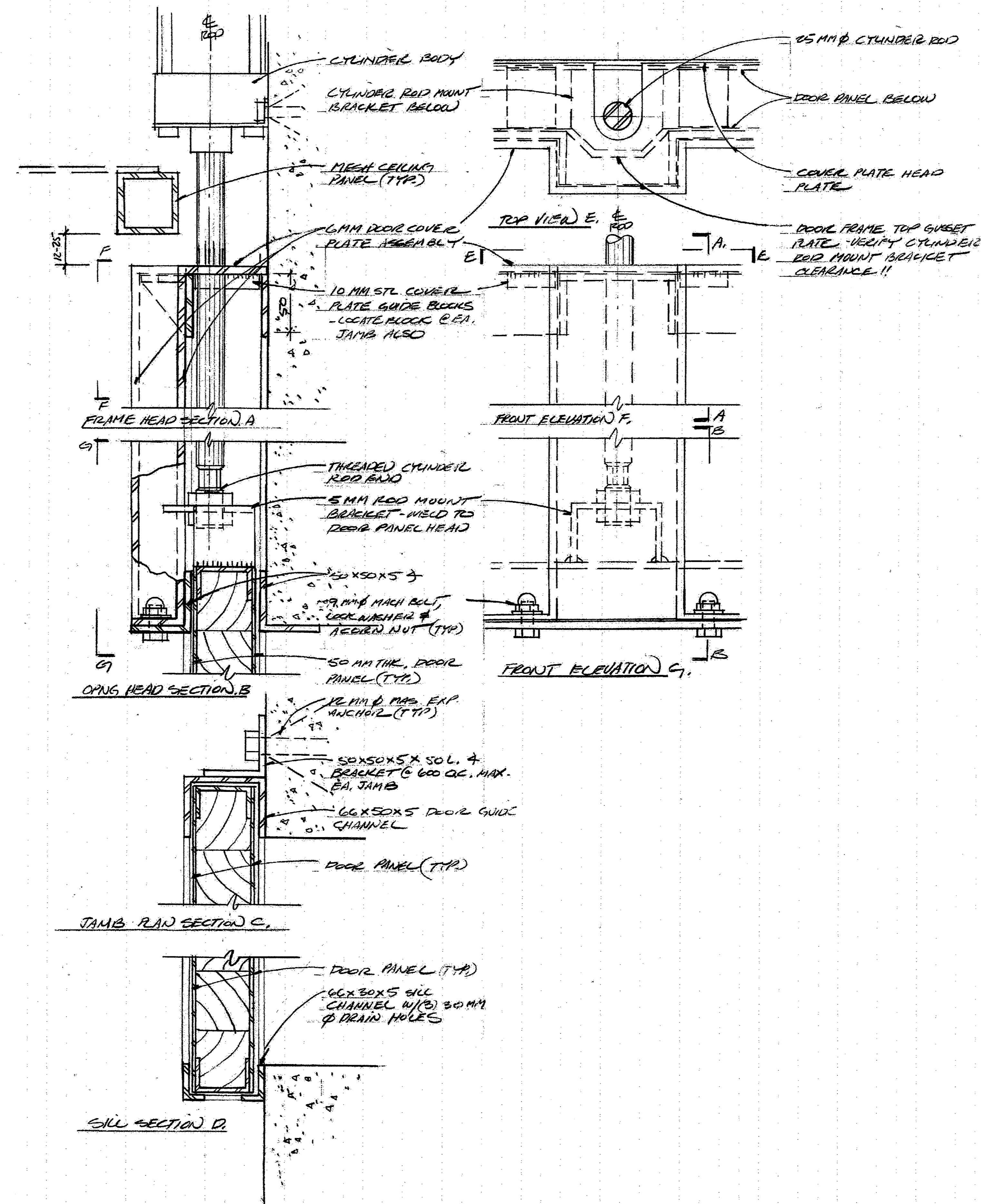
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Revisions

Issued for Tender and Permit - March 2, 2007

Polar Bear Holding & Viewing Building Caging Plans

Project Number	05646	Drawing No.	CG-2	
Project Manager	JS			
Drawn	JK	Scale		1:50
Checked	JB	Date		March 2, 2007
General Notes:				



1 Single Door - Hydraulic Guillotine Elevation
CG-10 SCALE: 1:10

2 Single Door - Hydraulic Guillotine Section
CG-10 SCALE: 1:2

NOTE: ALL DIMENSIONS ARE MILLIMETERS (mm) UNLESS OTHERWISE NOTED.

NOTE: See attached Building Code Matrix for Architect's qualification information.



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T.A. Maranda Consultants, Inc.

Architects
GREGORY A. MARANDA
ARCHITECTS
1937

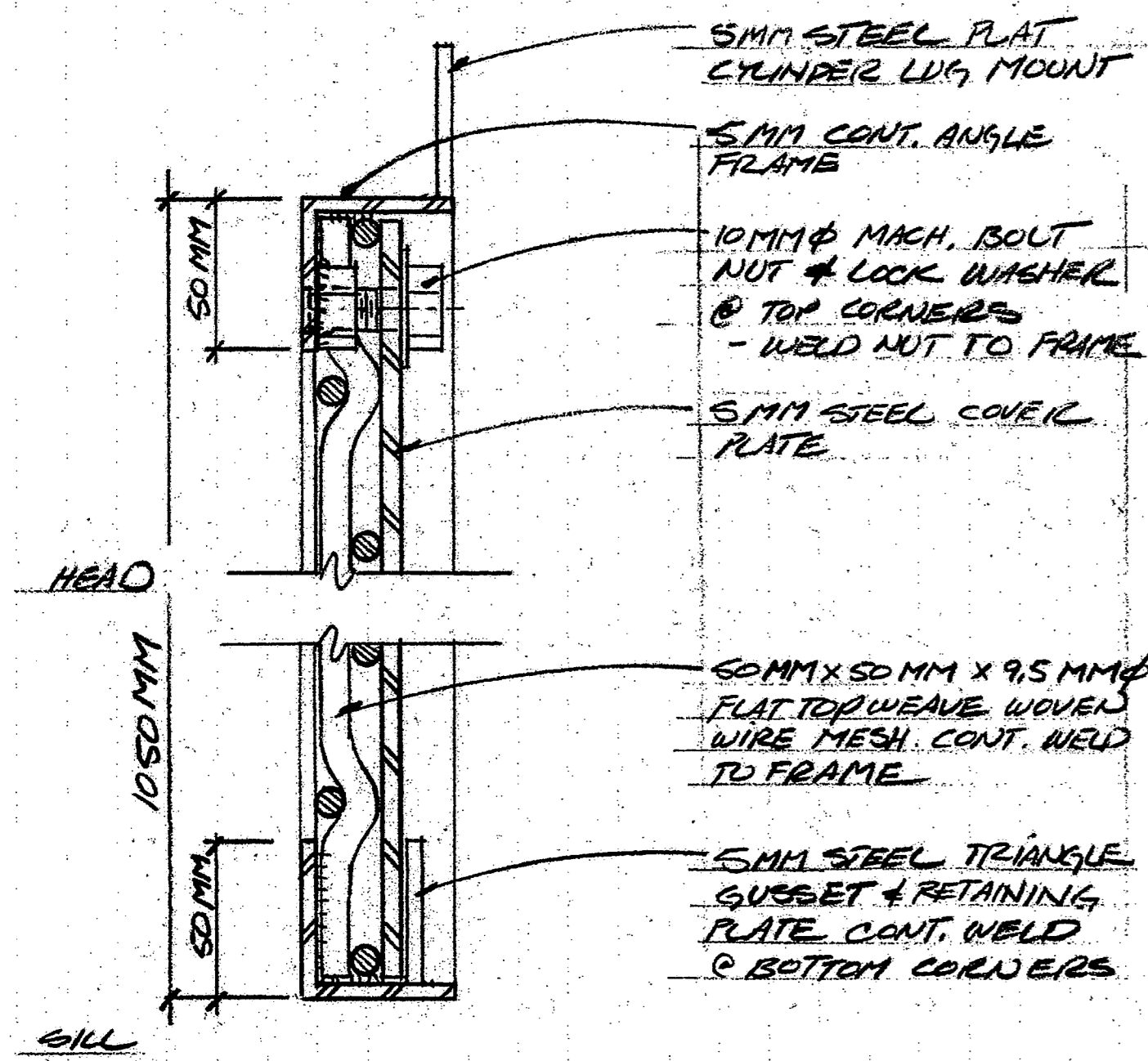
Revisions

Issued for Tender and Permit - March 2, 2007

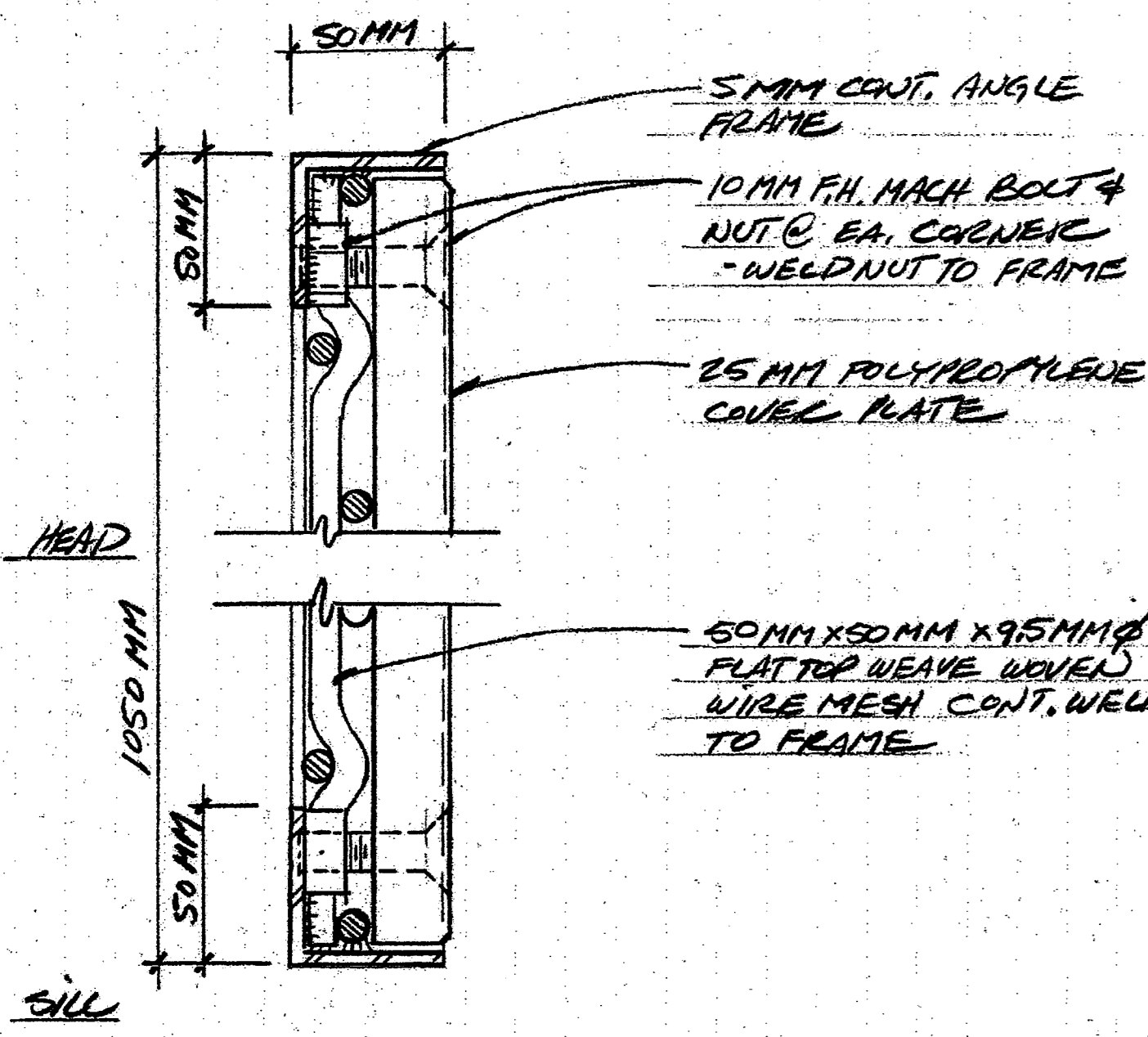
Polar Bear Caging Details:
Hydraulic Guillotine Transfer Door

Project Number 05646
Project Manager JS
Drawn JM Scale AS SHOWN
Checked Date March 2, 2007
General Notes:

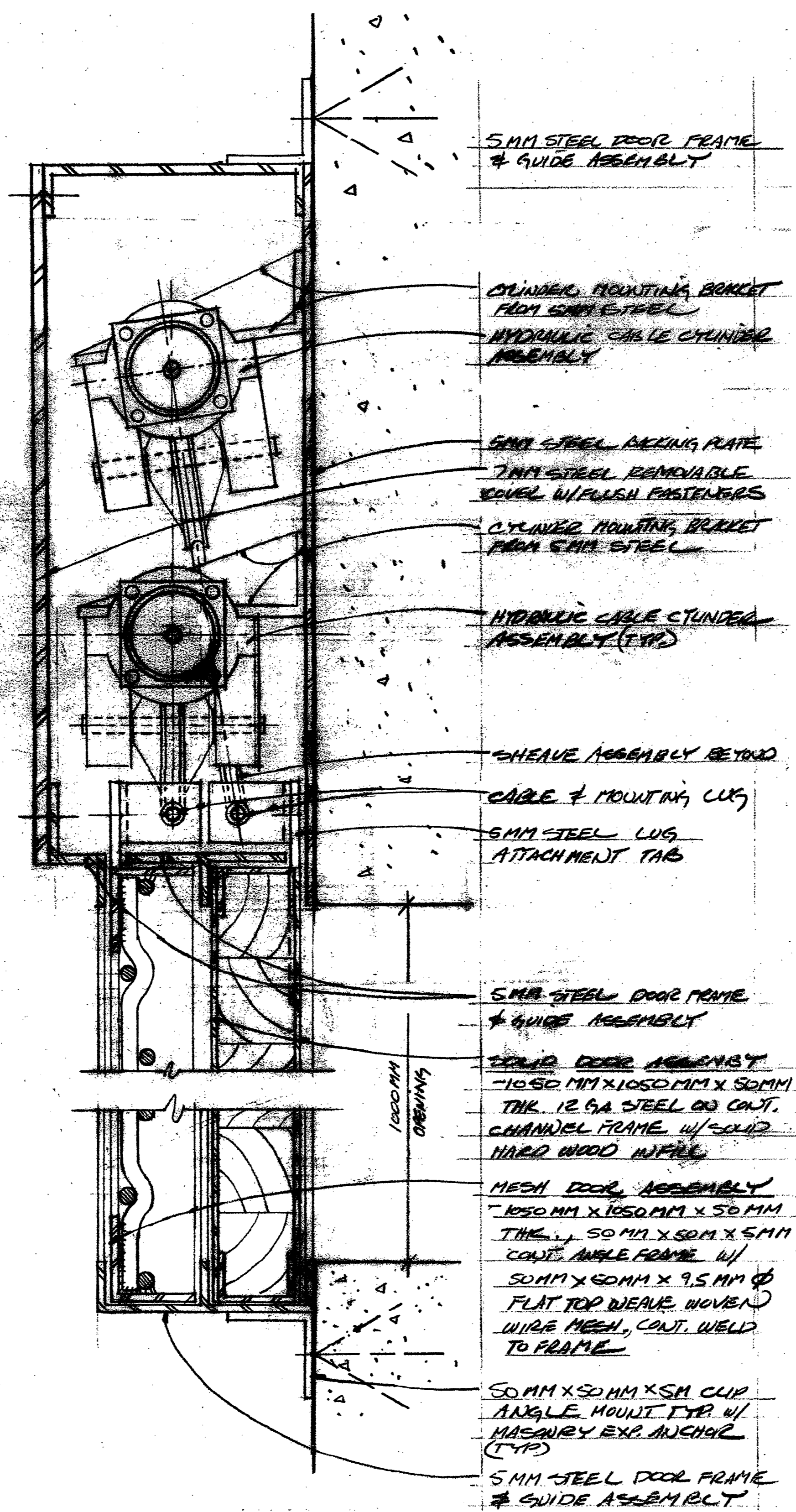
Drawing No.
CG-10



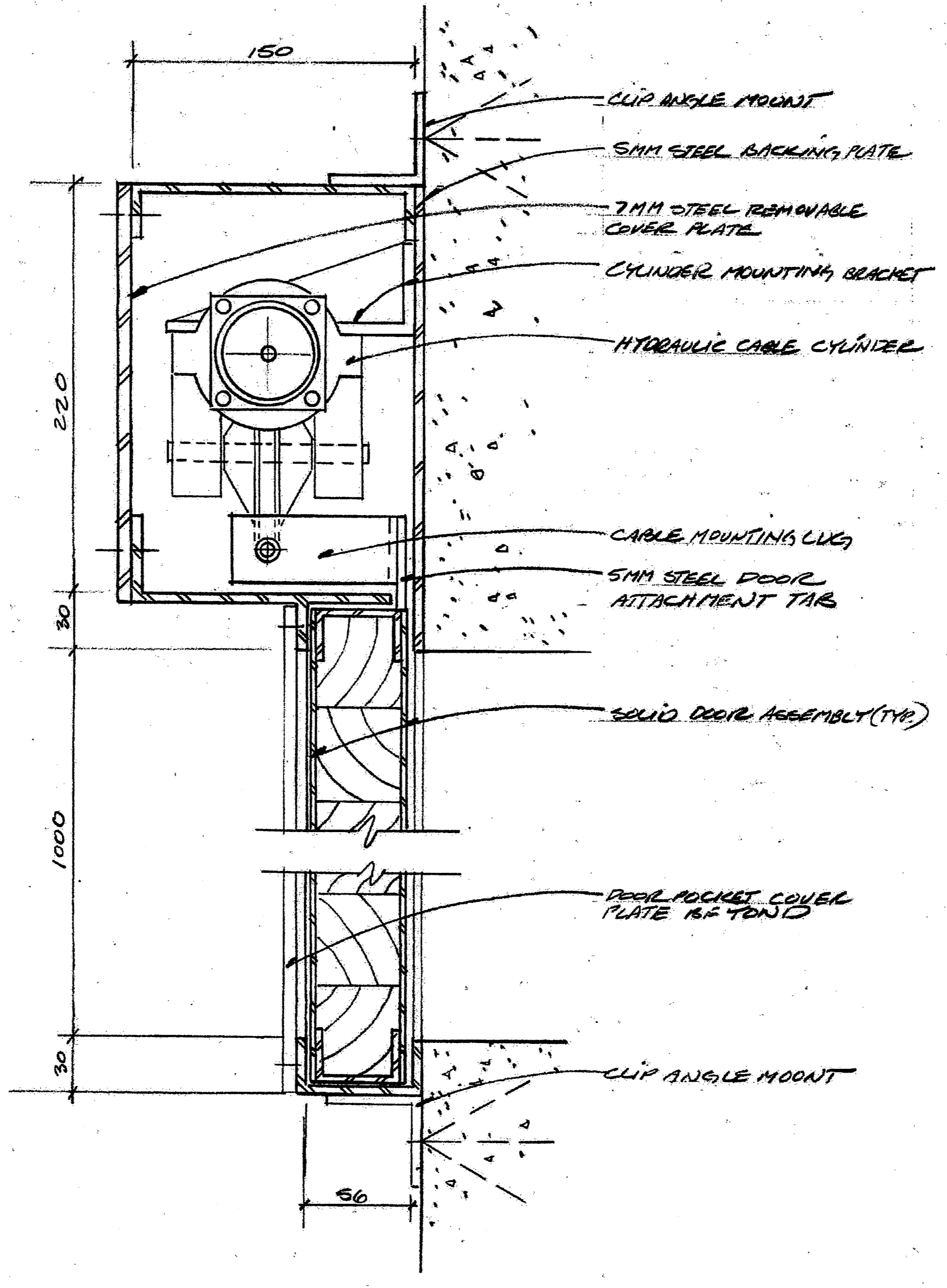
5 Alt. Assembly 'A': Single Door Panel Hyd. Slider
SCALE: 1:2



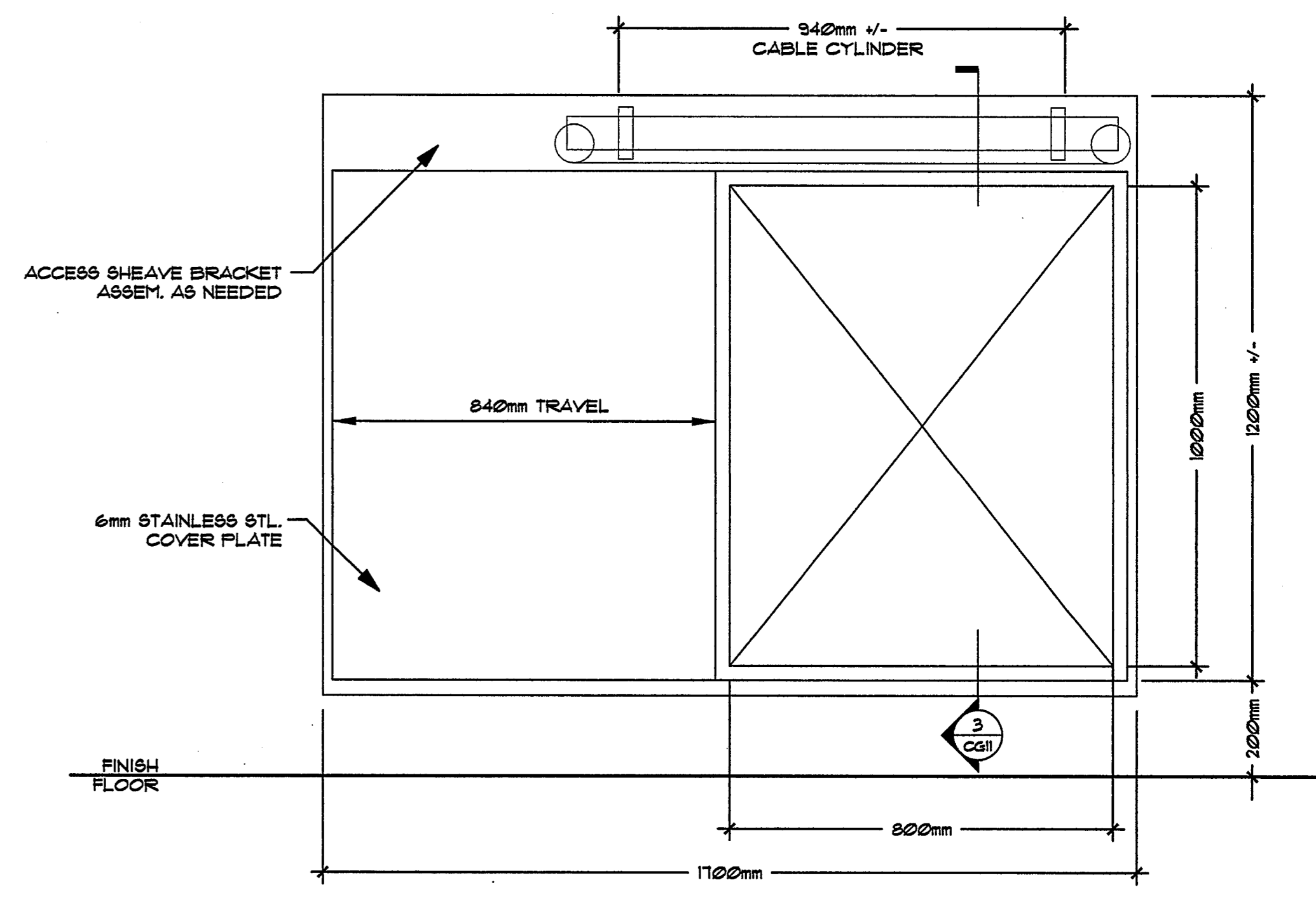
6 Alt. Assembly 'B': Single Door Panel Hyd. Slider
SCALE: 1:2



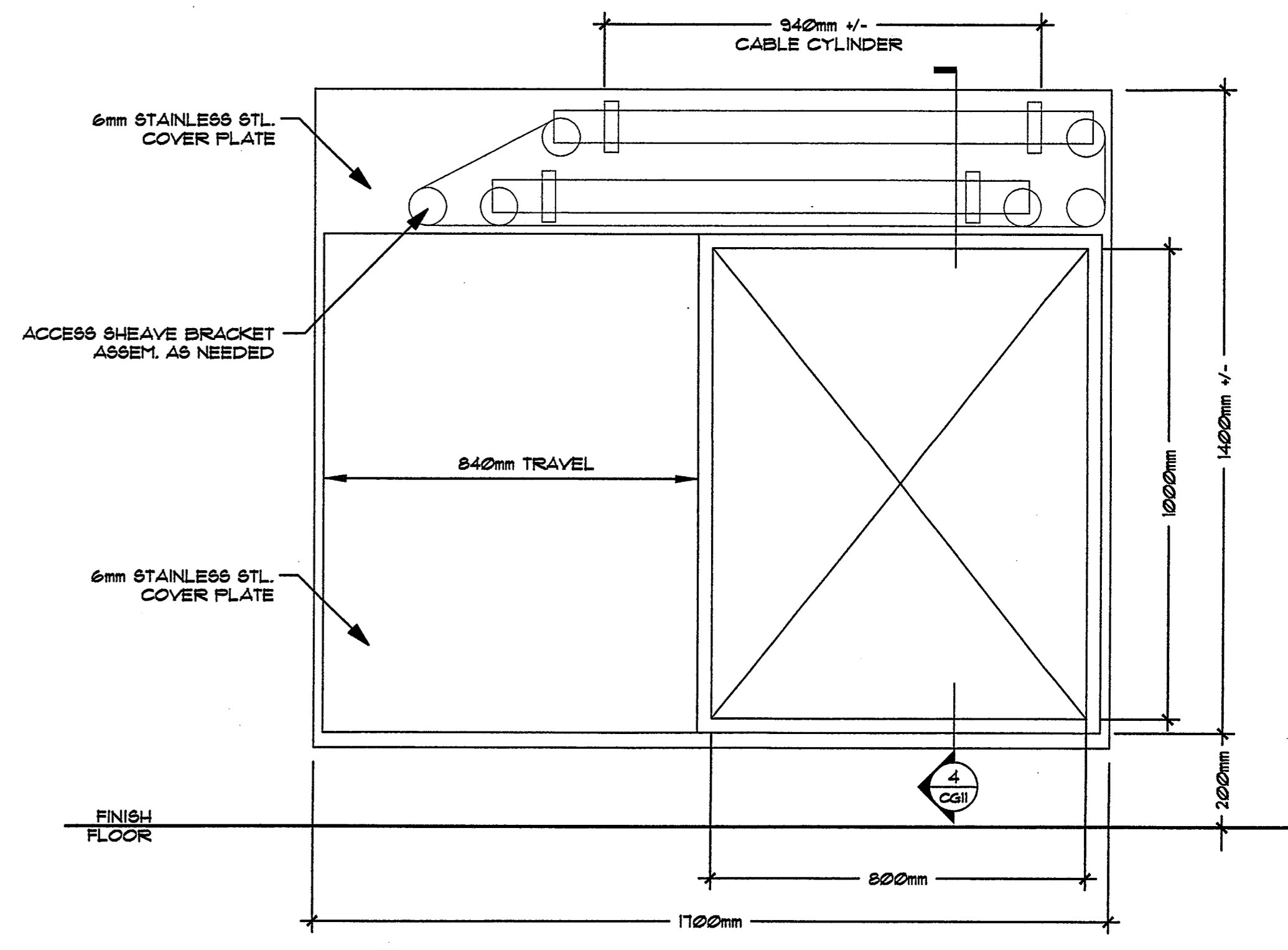
4 Double Door - Hydraulic Slider Section
SCALE: 1:2



3 Single Door - Hydraulic Slider Section
SCALE: 1:2



1 Single Door - Hydraulic Slider Elevation
SCALE: 1:10



2 Double Door - Hydraulic Slider Elevation
SCALE: 1:10

NOTE: ALL DIMENSIONS ARE MILLIMETERS (mm) UNLESS OTHERWISE NOTED.
NOTE: See attached Building Code Matrix for Architect's qualification information.



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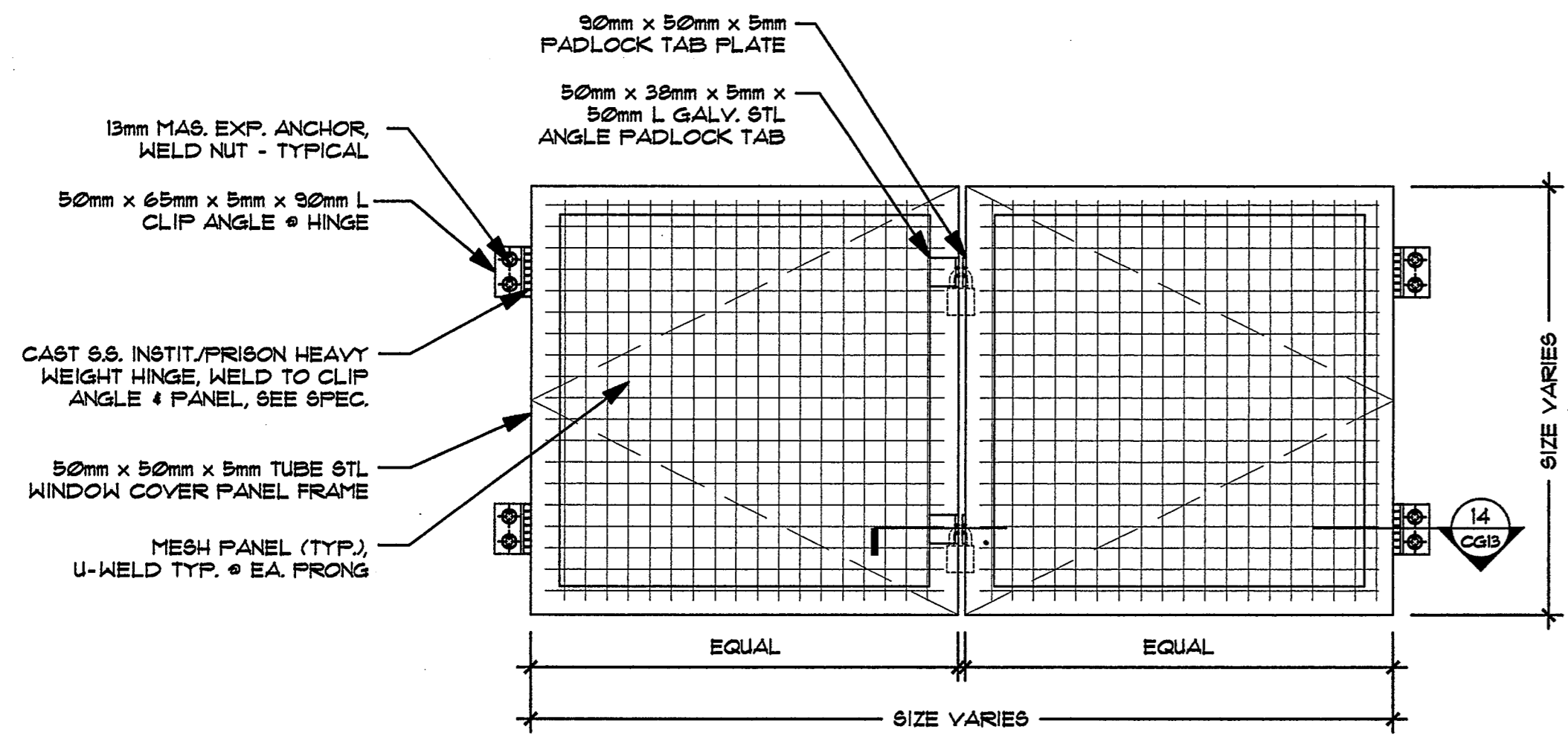


Revisions

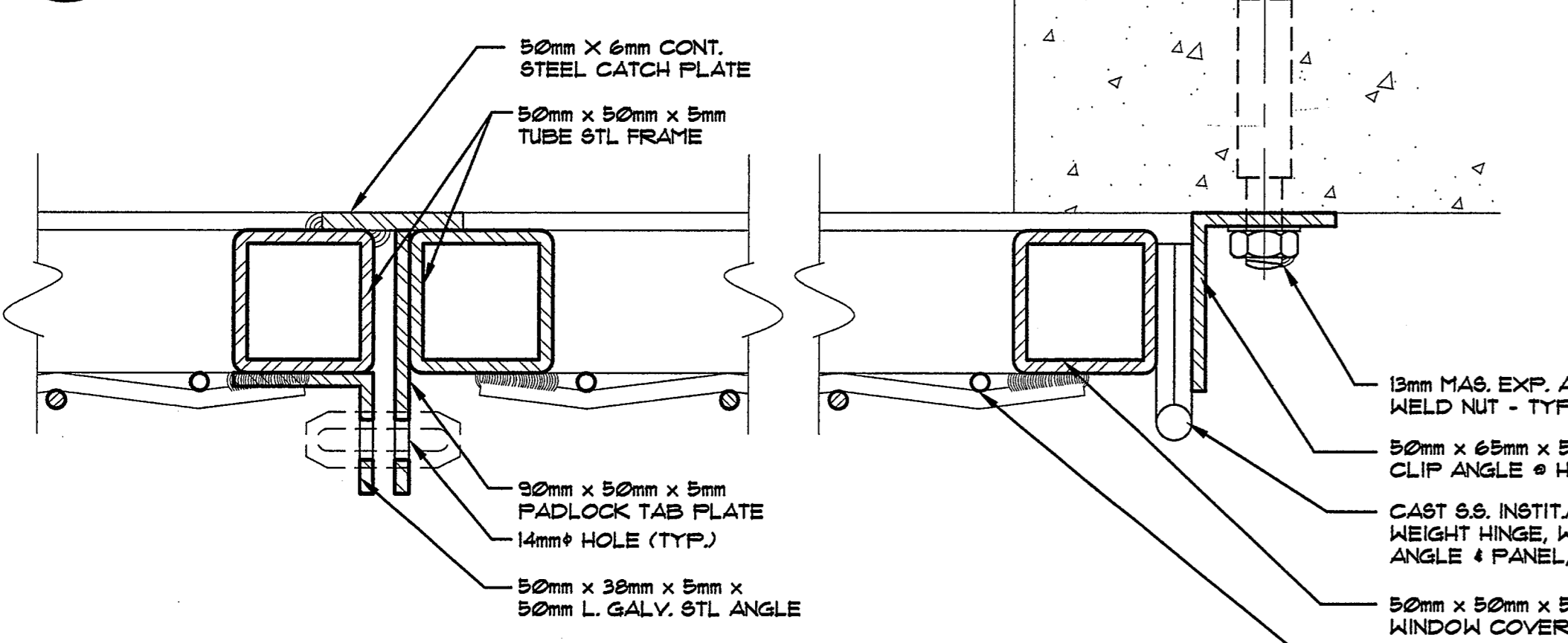
Issued for Tender and Permit - March 2, 2007

Polar Bear Caging Details:
Hydraulic Slider Transfer Doors

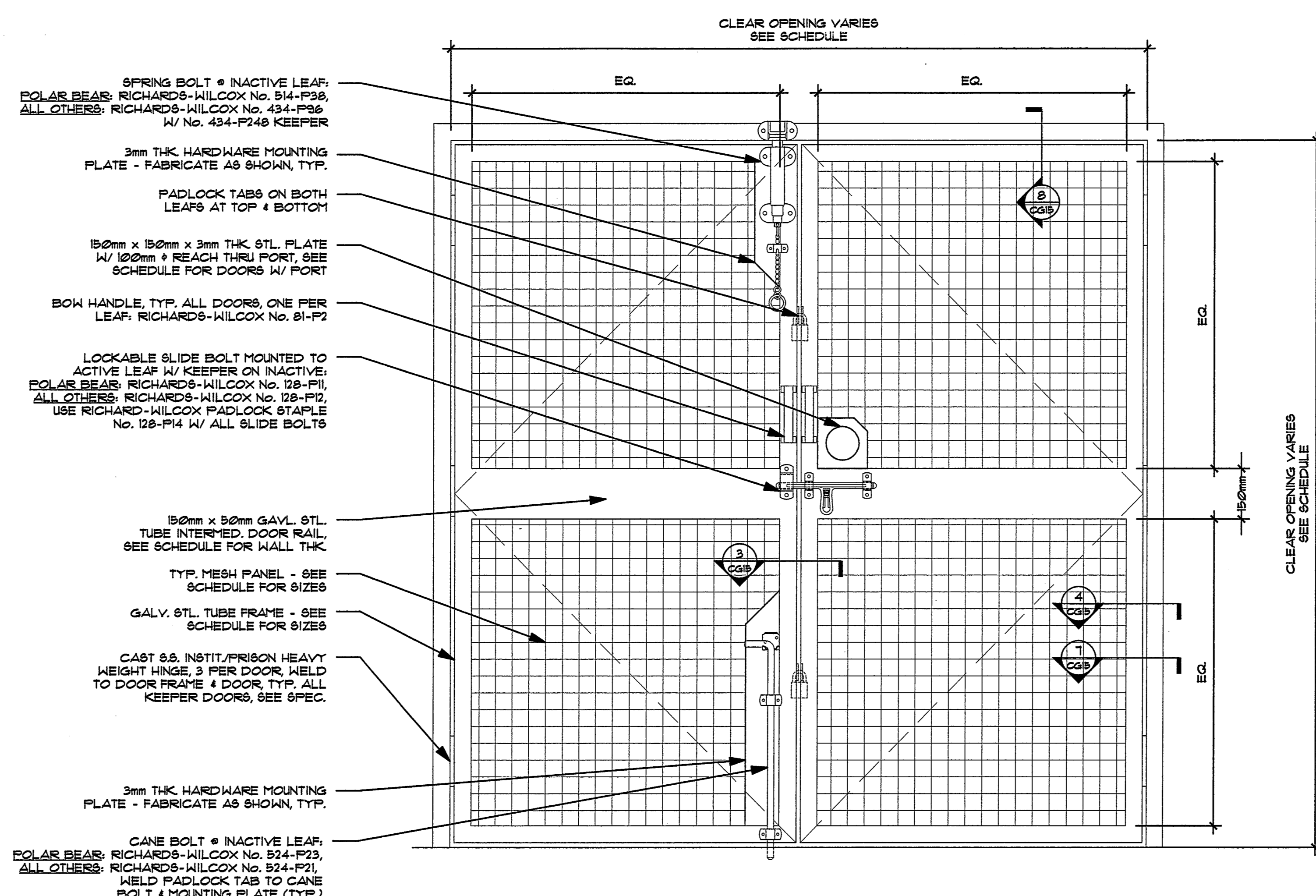
Project Number 05646	Drawing No. CG-11
Project Manager JS	
Drawn JM Scale AS SHOWN	
Checked Date March 2, 2007	
General Notes:	



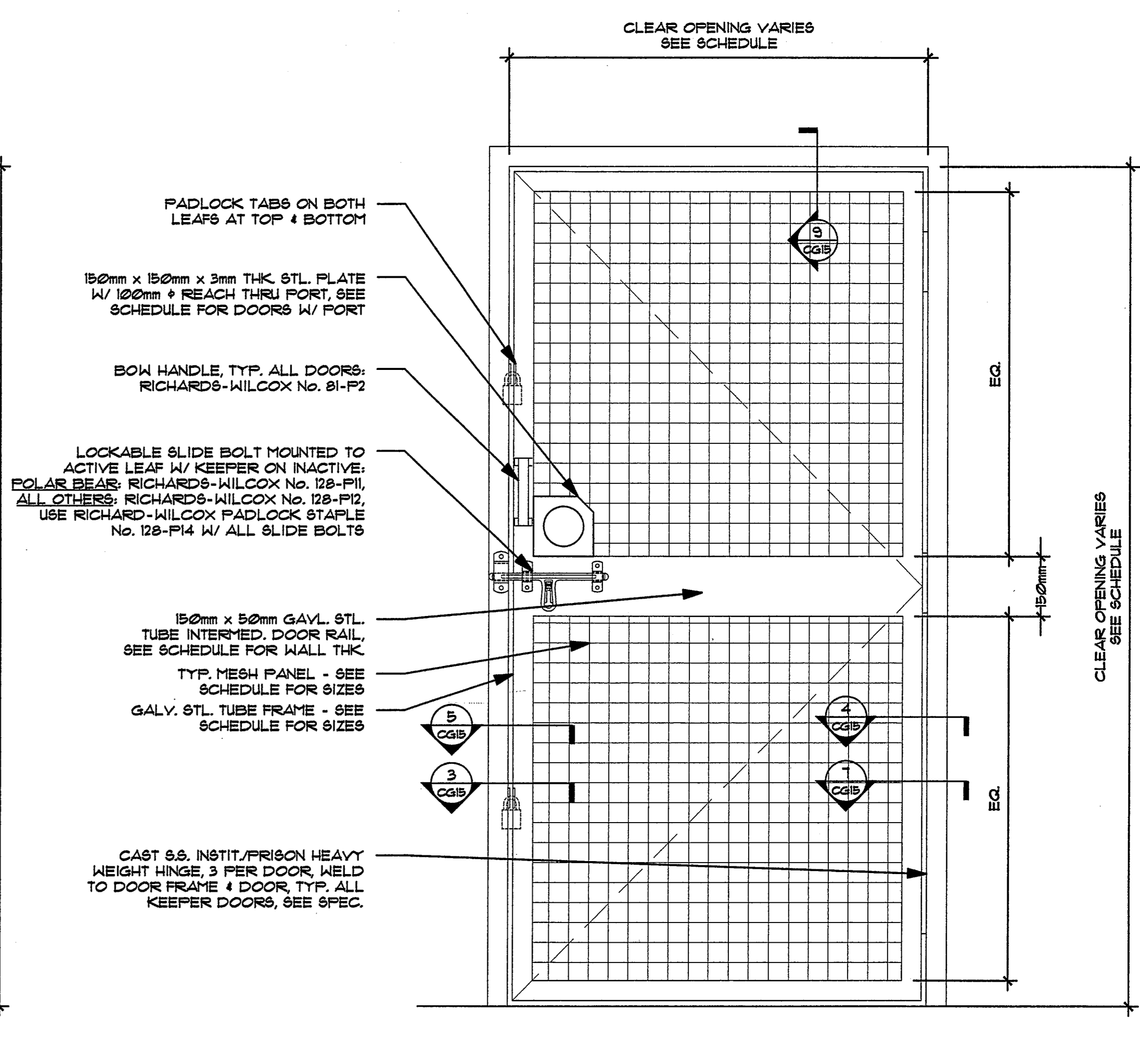
13 Hinged Mesh Window Panel: Elevation
CG-15 SCALE: 1:10



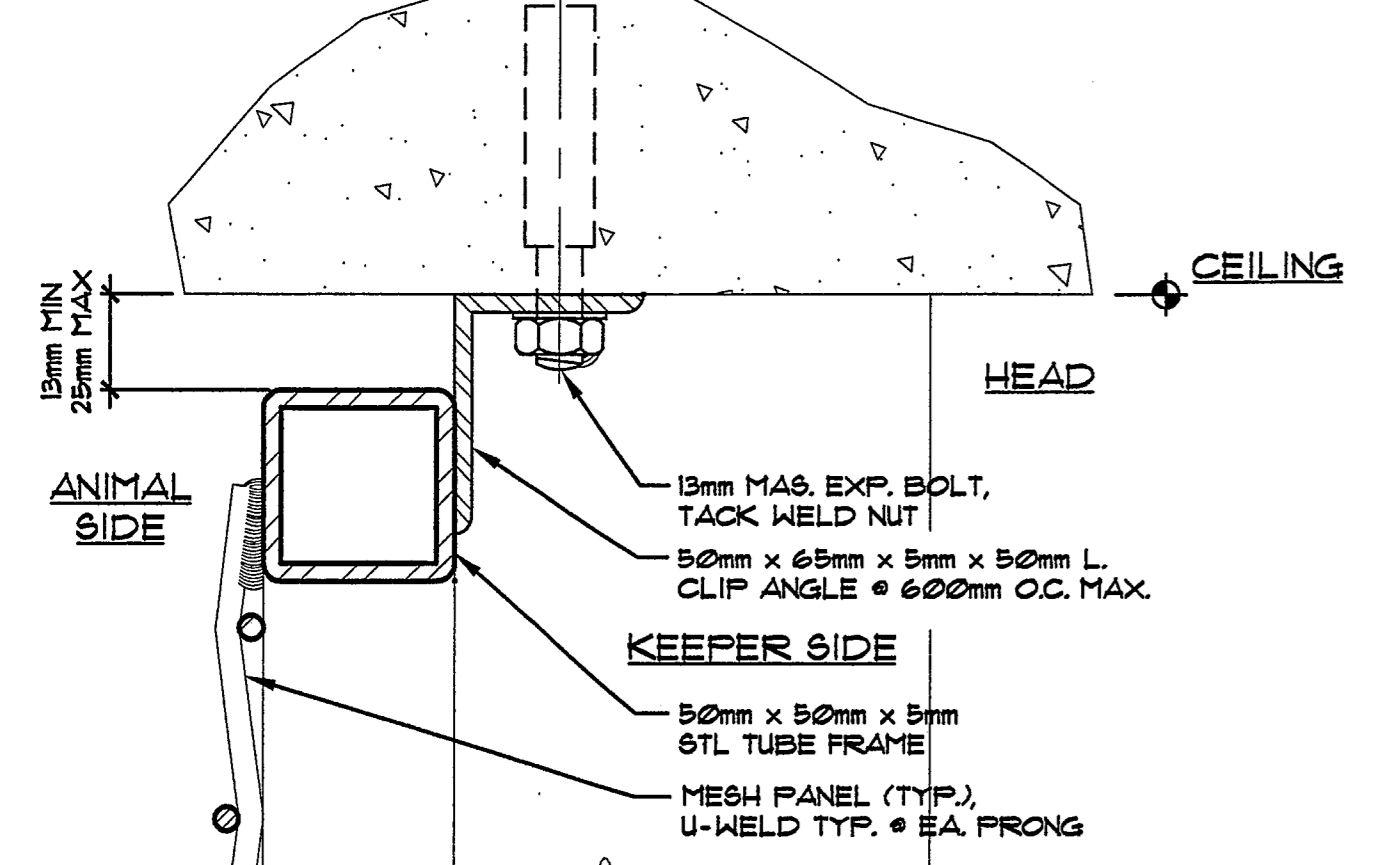
14 Hinged Mesh Window Panel: Section
CG-15 SCALE: 1:2



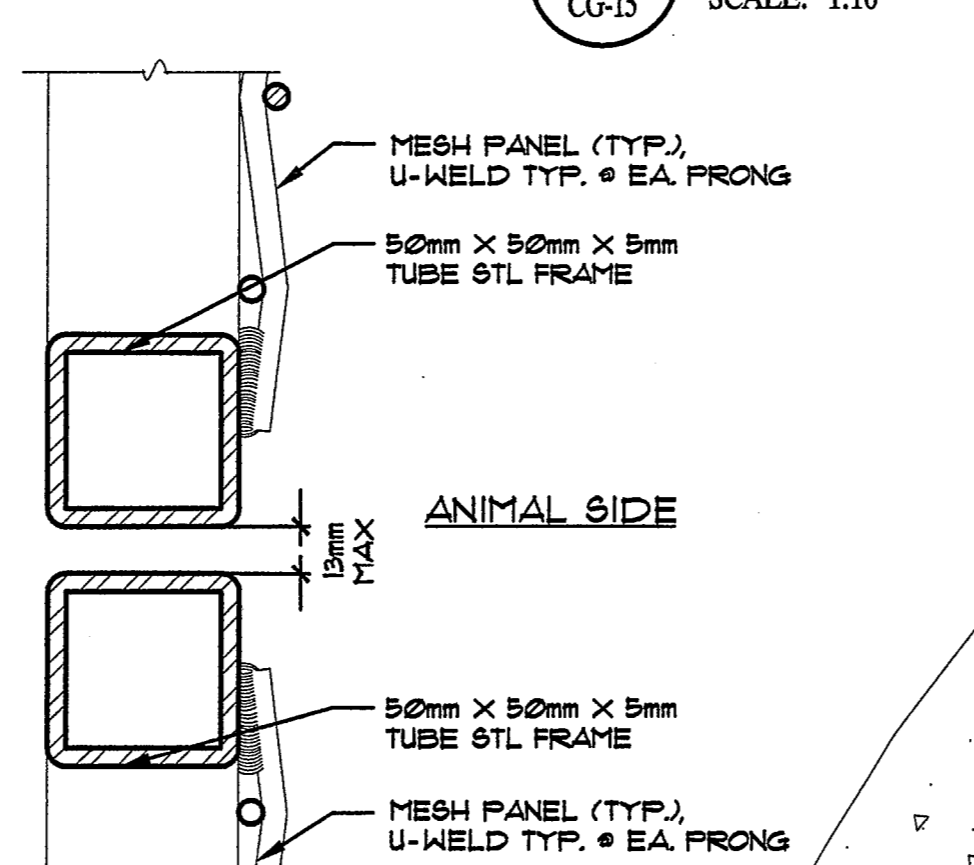
1 Steel Mesh Keeper Door Types
CG-15 SCALE: 1:10



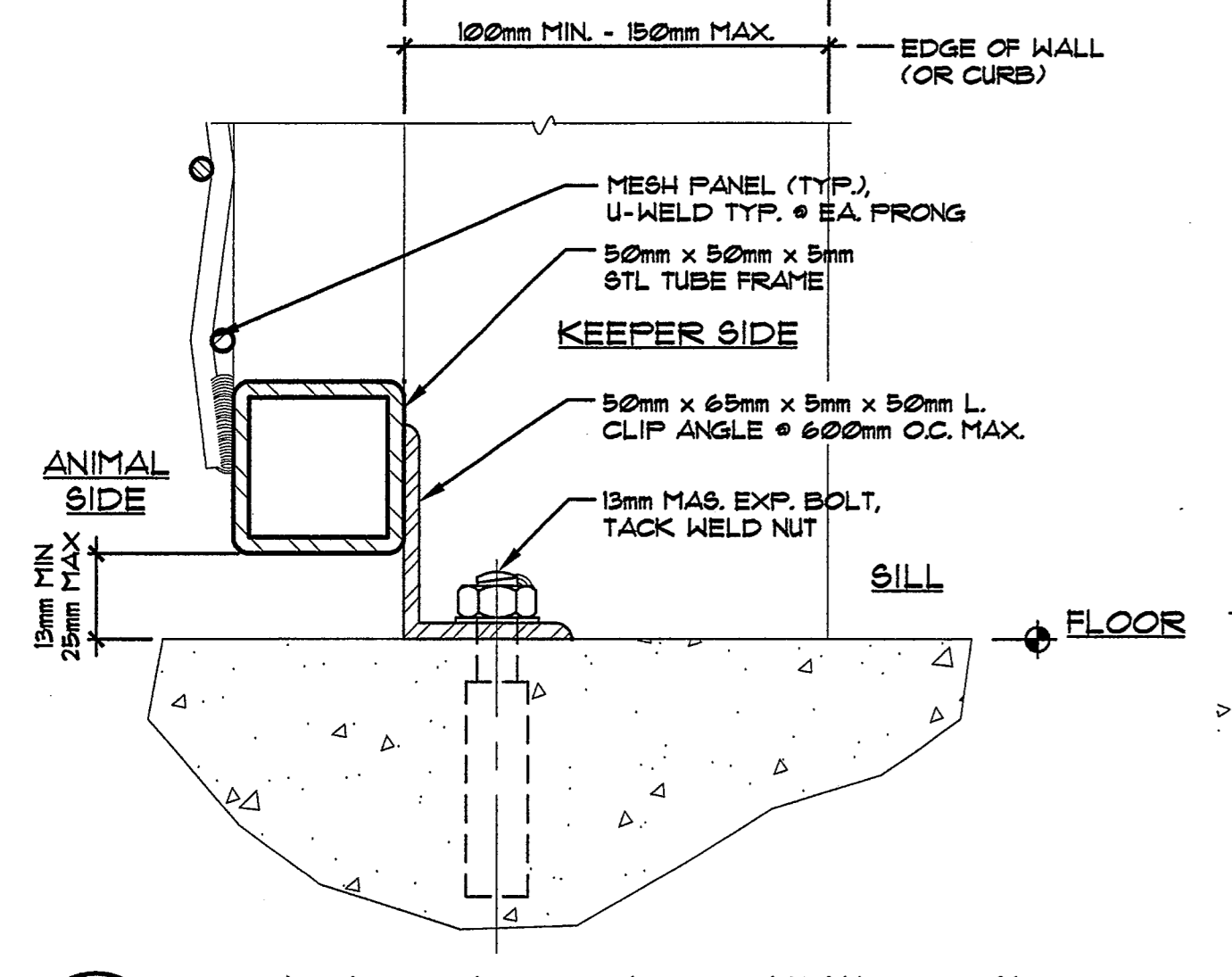
1 Steel Mesh Keeper Door Types
CG-15 SCALE: 1:10



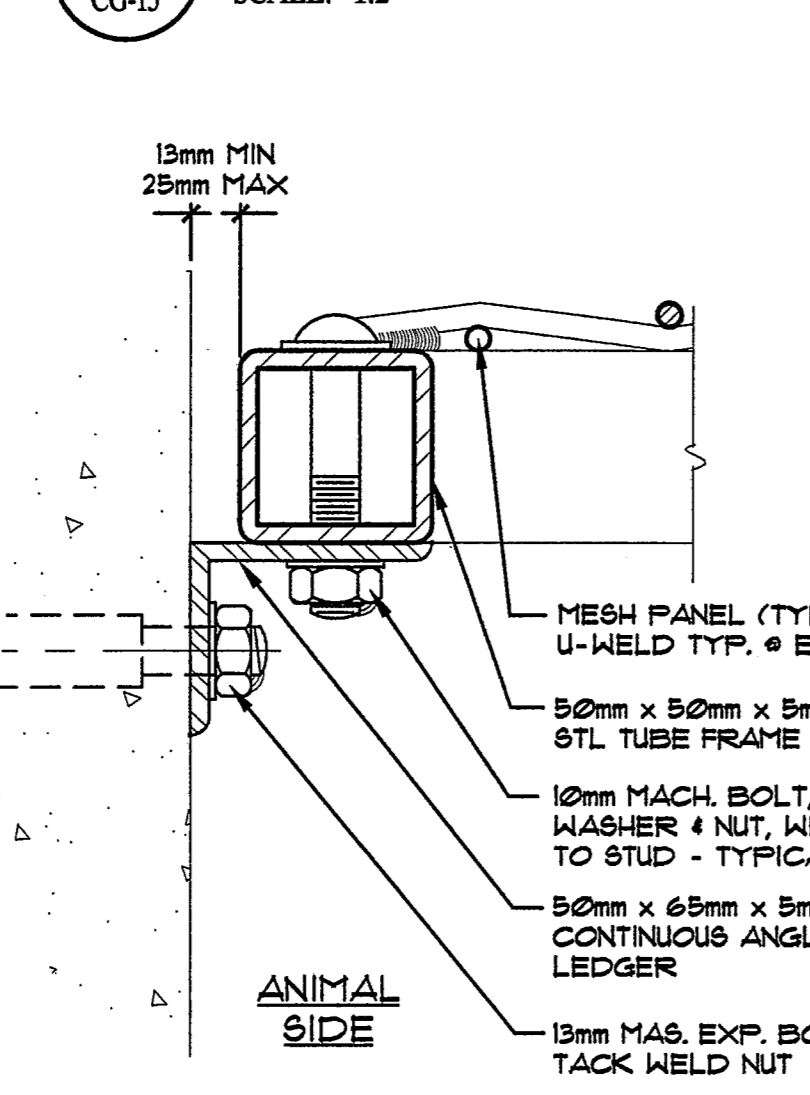
11 Mesh Door Sill Dtl.
CG-15 SCALE: 1:2



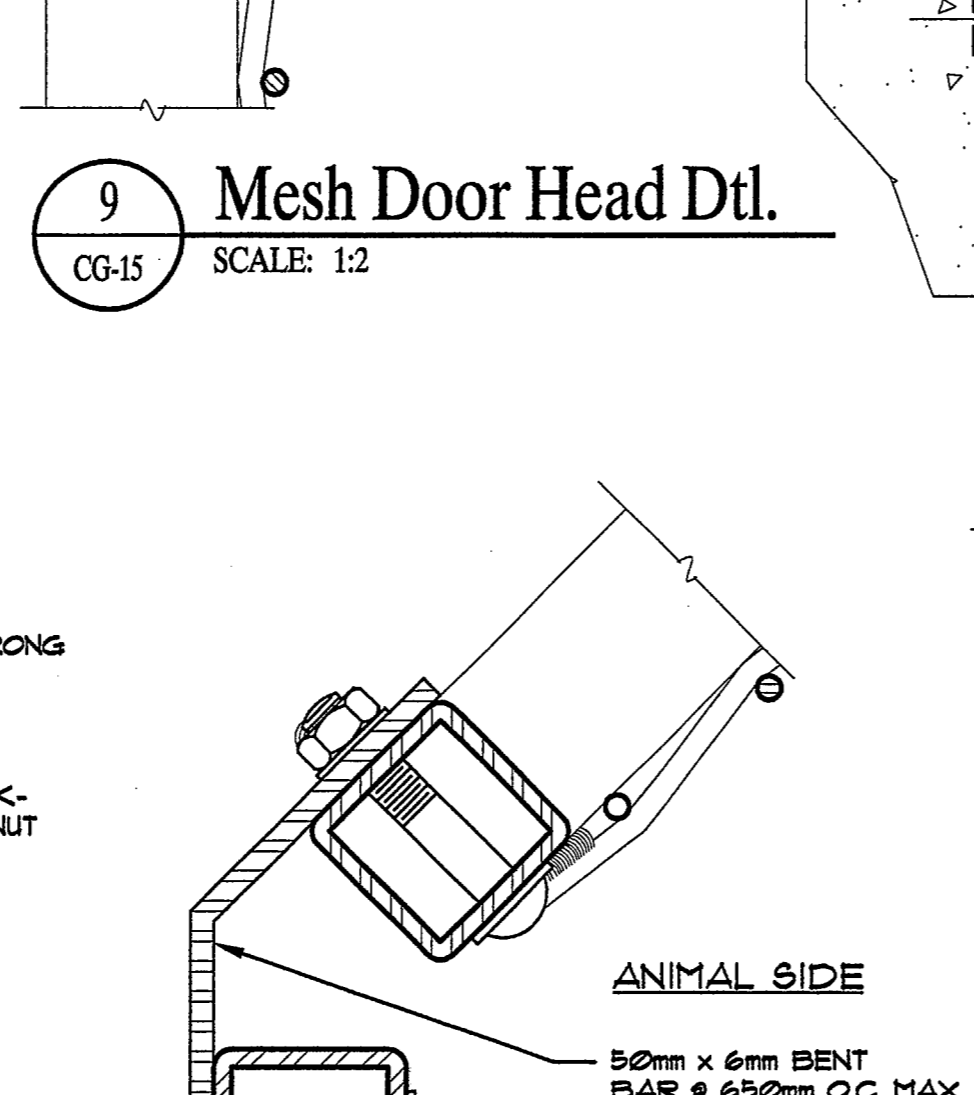
9 Mesh Door Head Dtl.
CG-15 SCALE: 1:2



15 Typical Mesh Panel Head/Sill Detail
CG-15 SCALE: 1:2



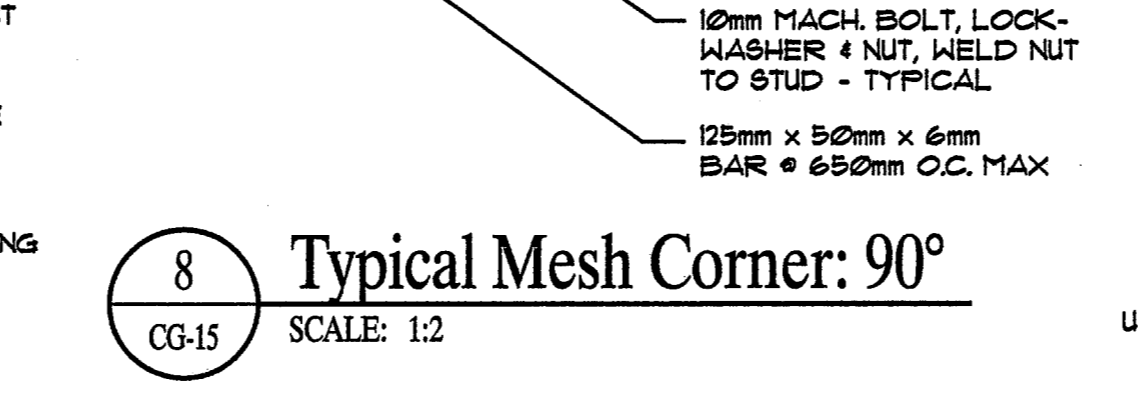
12 Typical Overhead Mesh Panel
CG-15 SCALE: 1:2



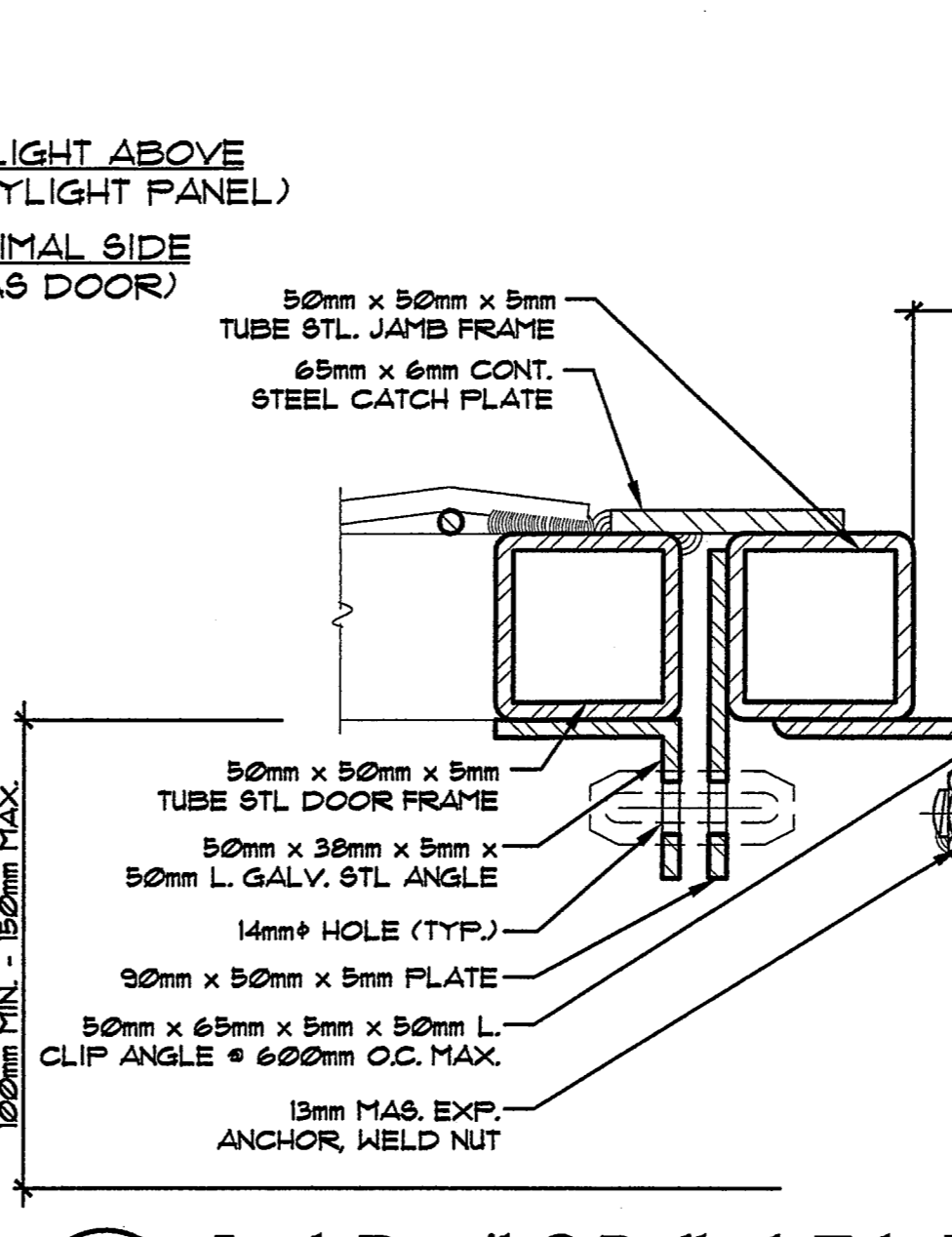
7 Jamb Detail @ Hinge: Masonry
CG-15 SCALE: 1:2

CAGING TUBE STEEL & MESH SIZE SCHEDULE	ANIMAL	POLAR BEAR	NOLF
TUBE STEEL SIZE	50mm x 50mm x 5mm H.S.B.	50mm x 50mm x 5mm H.S.B.	50mm x 50mm x 5mm H.S.B.
MESH SIZE	50mm x 50mm x 6mm FLAT TOP WEAVE W/M	50mm x 50mm x 6mm FLAT TOP WEAVE W/M	50mm x 50mm x 3mm FLAT TOP WEAVE W/M

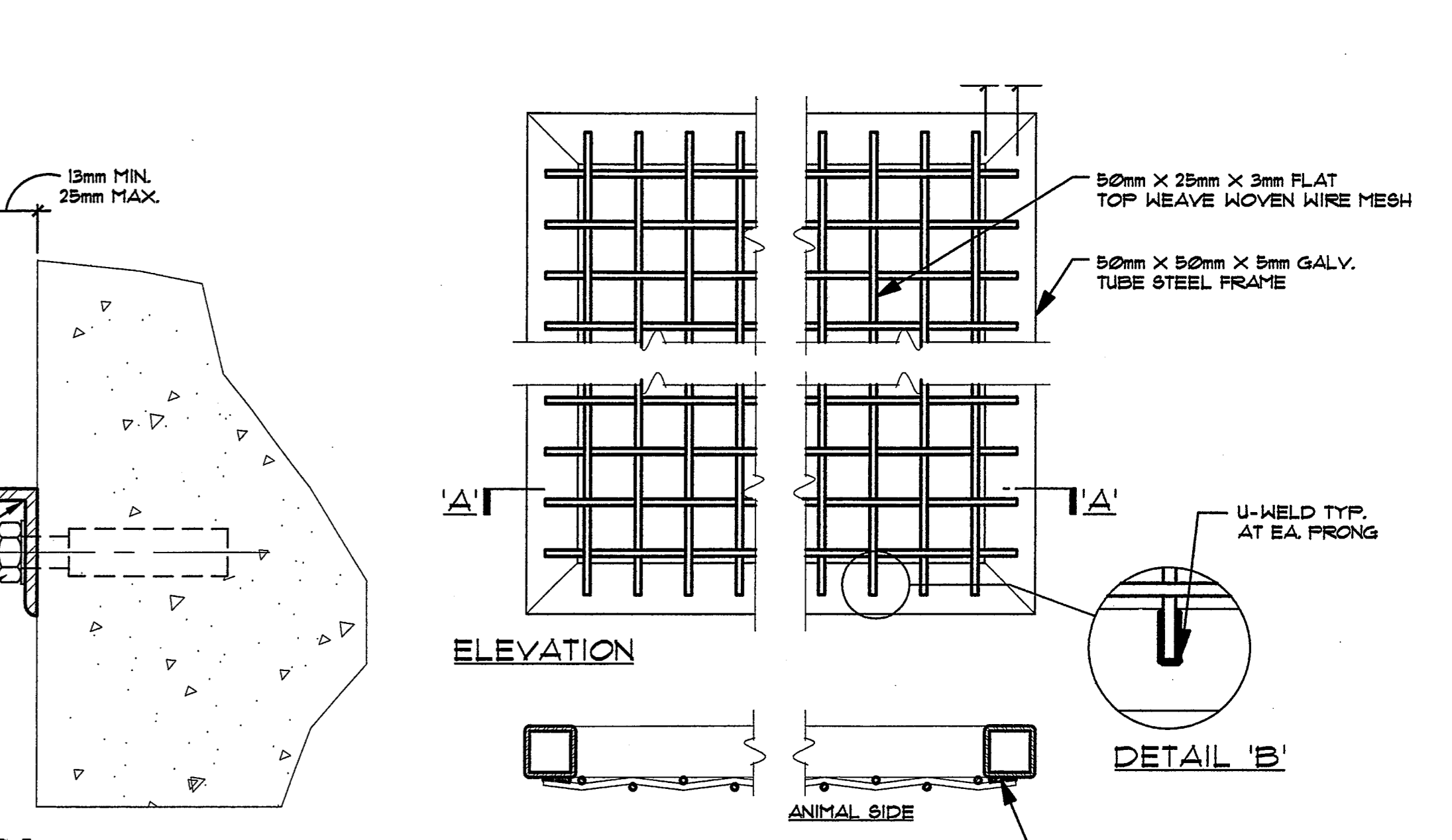
16 Caging Tube Steel & Mesh Schedule
CG-15 SCALE: None



8 Typical Mesh Corner: 90°
CG-15 SCALE: 1:2



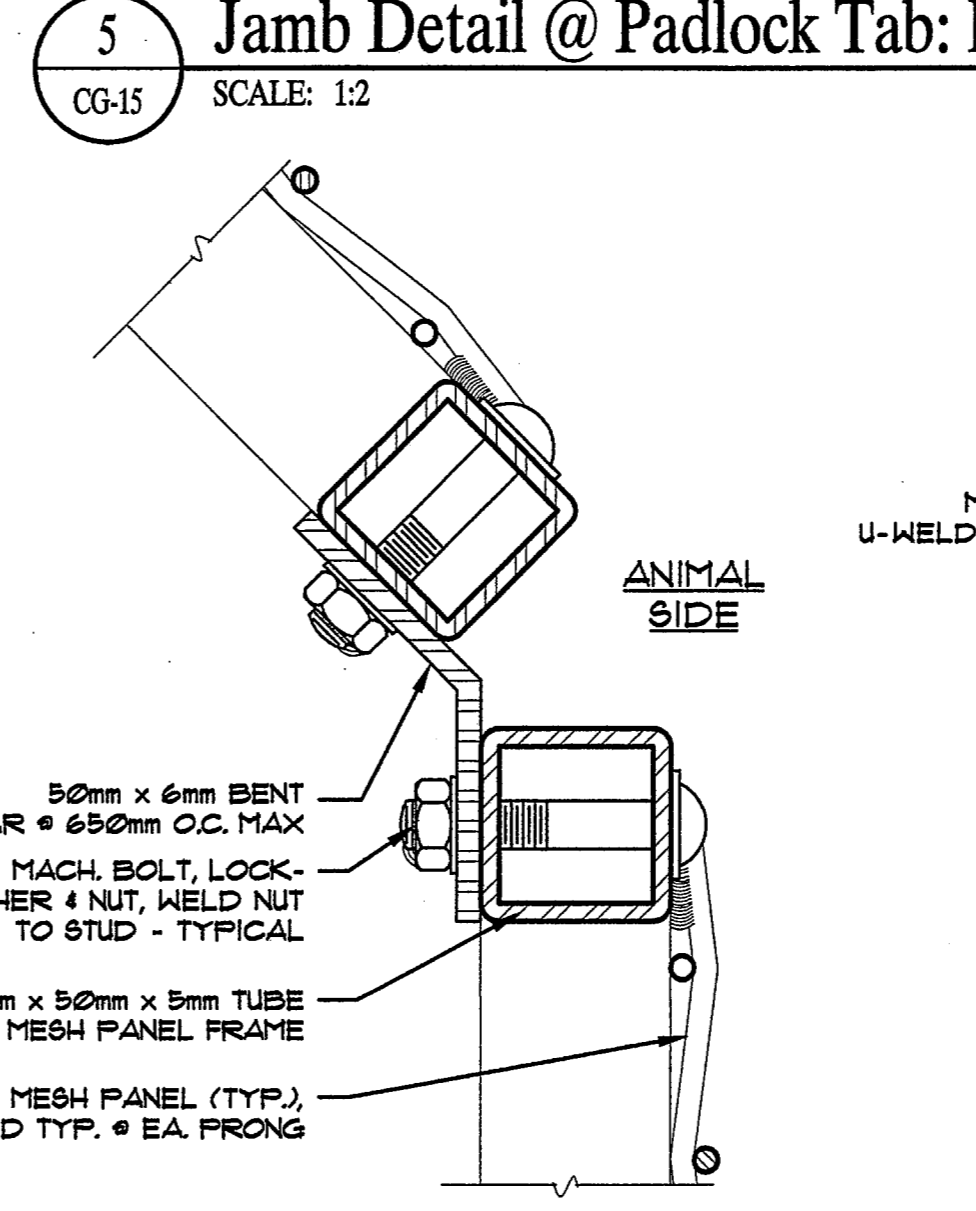
5 Jamb Detail @ Padlock Tab: Masonry
CG-15 SCALE: 1:2



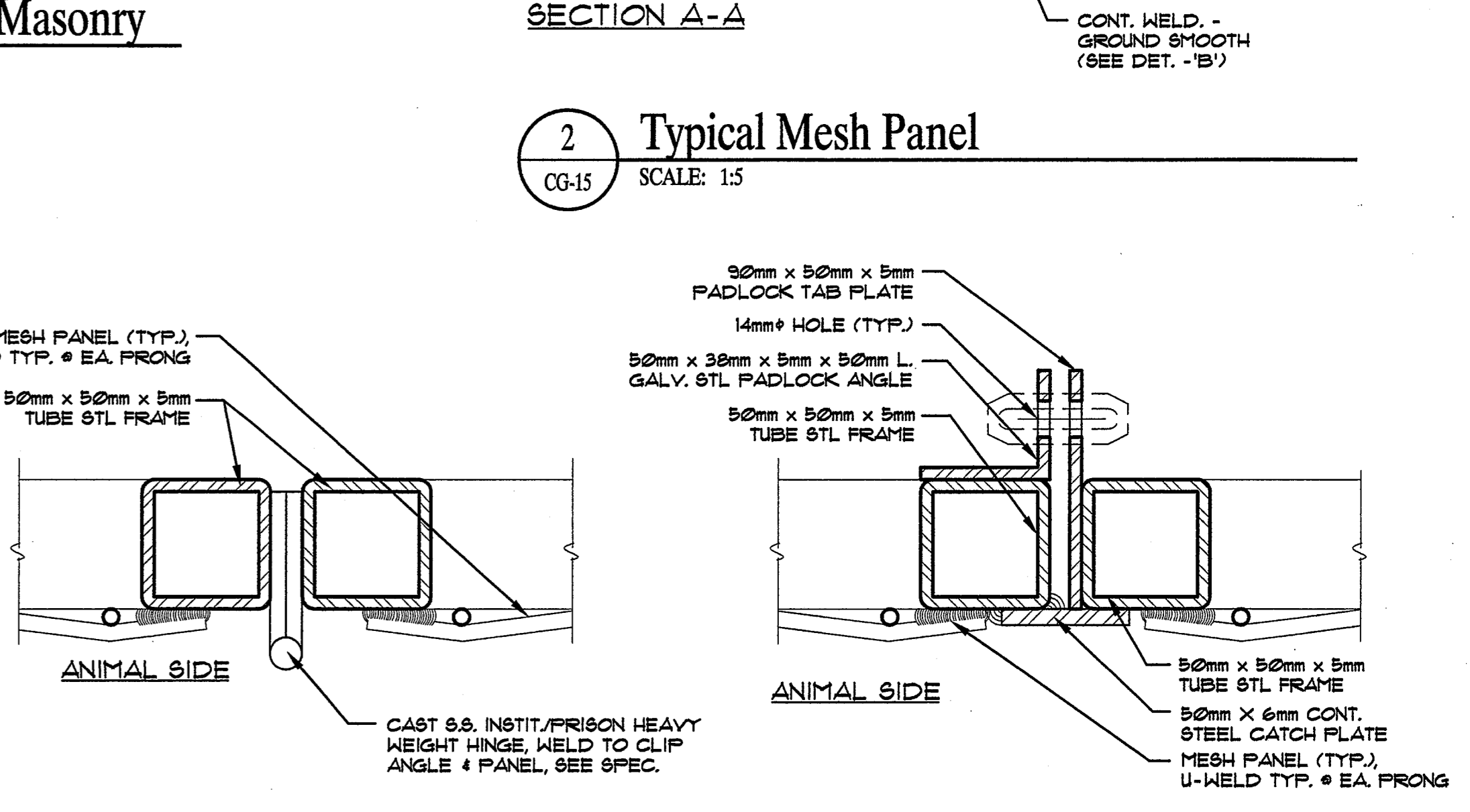
2 Typical Mesh Panel
CG-15 SCALE: 1:5



10 Typical Mesh Corner: 45° Inside
CG-15 SCALE: 1:2



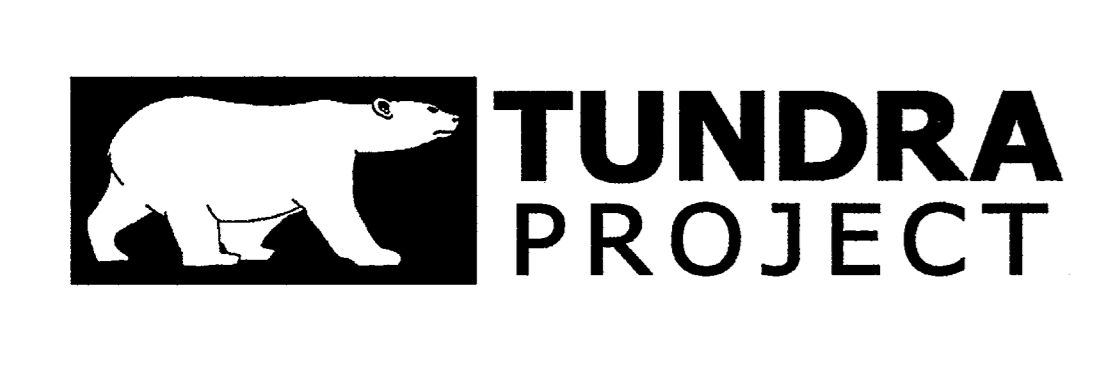
6 Typical Mesh Corner: 45° Outside
CG-15 SCALE: 1:2



3 Jamb Detail @ Padlock Tab
CG-15 SCALE: 1:2

Note: All details are drawn representing Polar Bear caging sizes. Adjust tube and mesh sizes per animal containment requirements. See 16/CG-15 for sizes.

NOTE: ALL DIMENSIONS ARE MILLIMETERS (mm) UNLESS OTHERWISE NOTED.
NOTE: See attached Building Code Matrix for Architect's qualification information.



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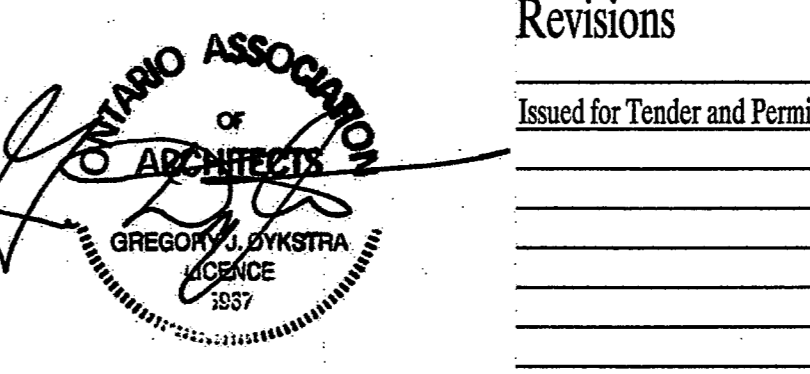
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Revisions

Issued for Tender and Permit - March 2, 2007
--

Steel Mesh Panels & Keeper Door Details

Project Number	05646	Drawing No.	CG-15
Project Manager	JS		
Drawn	JM	Scale	AS SHOWN
Checked	UR	Date	March 2, 2007
General Notes:			

CAGING SCHEDULE – TORONTO ZOO - TUNDRA

A-200 POLAR BEAR HOLDING

Animal	Mesh Type	Mesh Size	Mesh Gauge	Tube Size	Max. Gap
Polar Bear	Type 1	60mm x 50mm	6mm GA	50mm x 50mm x 5mm	25 mm

LOCATION		TYPE			MATERIAL			DOOR SIZE			ROUGH OPENING			MOUNTING		OPERATOR						
Number	From	To	Description	Ref. Detail	Operator	Steel	Mesh	Removable Panel	Width	Height	Width	Height	Sill Height	Conc./ Masonry	Caging	Ref. Detail	Padlock	Type	Ref. Detail	Notes	Number	
BT1	B100	B107	Guillotine	1/CG-10	Hydraulic	X			800	1000	200mm			X		2/CG-10	Hydraulic	Hydraulic	See Spec.		BT1	
BT2	YARD	EXHIBIT	Slider Single	1/CG-11	Hydraulic	X			800	1000	200mm			X		3/CG-11	Hydraulic	Hydraulic	See Spec.		BT2	
BT3	B107	EXHIBIT	Guillotine	1/CG-10	Hydraulic	X			800	1000	200mm			X		2/CG-10	Hydraulic	Hydraulic	See Spec.		BT3	
BT4	B107	EXHIBIT	Guillotine	1/CG-10	Hydraulic	X			800	1000	200mm			X		2/CG-10	Hydraulic	Hydraulic	See Spec.		BT4	
BT5	B103	B107	Guillotine	1/CG-10	Hydraulic	X			800	1000	200mm			X		2/CG-10	Hydraulic	Hydraulic	See Spec.		BT5	
BT6	B103	EXHIBIT	Slider Single	1/CG-11	Hydraulic	X			800	1000	200mm			X		3/CG-11	Hydraulic	Hydraulic	See Spec.		BT6	
BT7	NOT USED																					
BT8	NOT USED																					
BT9	B100	EXHIBIT	Slider Single	1/CG-11	Hydraulic	X			800	1000	200mm			X		3/CG-11	Hydraulic	Hydraulic	See Spec.		BT9	
BT10	B100	YARD	Double Slider	2/CG-11	Hydraulic	X	X		800	1000	200mm			X		4/CG-11	Hydraulic	Hydraulic	See Spec.		BT10	
BT11	B101	B100	Slider Single	1/CG-11	Hydraulic	X		X	800	1000	200mm			X		3/CG-11, 4/5/CG-11	Hydraulic	Hydraulic	See Spec.		BT11	
BT12	B101	YARD	Double Slider	2/CG-11	Hydraulic	X	X		800	1000	200mm			X		4/CG-11	Hydraulic	Hydraulic	See Spec.		BT12	
BT13	B102	B101	Slider Single	1/CG-11	Hydraulic	X	X	X	800	1000	200mm			X		3/CG-11, 4/5/CG-11	Hydraulic	Hydraulic	See Spec.		BT13	
BT14	B102	YARD	Double Slider	2/CG-11	Hydraulic	X	X		800	1000	200mm			X		4/CG-11	Hydraulic	Hydraulic	See Spec.		BT14	
BT15*	TRANSFER	B102	Guillotine	1/CG-10	Hydraulic	X			800	1000	200mm			X		2/CG-10	Hydraulic	Hydraulic	See Spec.		BT15*	
BT16	NOT USED																					
BT17	B103	MATERNITY	Double Slider	2/CG-11	Hydraulic	X	X		800	1000	200mm			X		4/CG-11	Hydraulic	Hydraulic	See Spec.		BT17	
BT18	B103	B104	Slider Single	1/CG-11	Hydraulic	X	X	X	800	1000	200mm			X		3/CG-11, 4/5/CG-11	Hydraulic	Hydraulic	See Spec.		BT18	
BT19	B104	MATERNITY	Double Slider	2/CG-11	Hydraulic	X	X		800	1000	200mm			X		4/CG-11	Hydraulic	Hydraulic	See Spec.		BT19	
BT20	B105	B104	Slider Single	1/CG-11	Hydraulic	X	X	X	800	1000	200mm			X		3/CG-11, 4/5/CG-11	Hydraulic	Hydraulic	See Spec.		BT20	
BT21	B105	MATERNITY	Double Slider	2/CG-11	Hydraulic	X	X		800	1000	200mm			X		4/CG-11	Hydraulic	Hydraulic	See Spec.		BT21	
BT22	B105	B106	Slider Single	1/CG-11	Hydraulic	X	X	X	800	1000	200mm			X		3/CG-11, 4/5/CG-11	Hydraulic	Hydraulic	See Spec.		BT22	
BT23*	TRANSFER	B105	Guillotine	1/CG-10	Hydraulic	X			800	1000	200mm			X		2/CG-10	Hydraulic	Hydraulic	See Spec.		BT23*	
BT24	EXHIBIT	MATERNITY	Guillotine	1/CG-10	Hydraulic	X			800	1000	200mm			X		2/CG-10	Hydraulic	Hydraulic	See Spec.		BT24	

* CONNECT TO DOOR ALARM. SEE E-201 (Doors BT15, BT23)

KEEPER DOORS & GATES

LOCATION		TYPE			MATERIAL			OPENING SIZE			MOUNTING		DETAIL		Notes		
Number	From	To	Swing	Solid	Mesh	Width	Height	Hinge	Catch	Elevation	Type	Hardware	Elev. Type	Type	Hardware	Notes	
BK1*	B108	B100	X			850mm	2150mm	4/CG-15	5/CG-15	1/CG-15	A	HWK1	1/CG-15	B	HWK3	BK1*	
BK2*	B108	B107	X	X		2300mm	2150mm	4/CG-15	3/CG-15	1/CG-15	B	HWK3	1/CG-15	B	HWK3	BK2*	
BK3*	B108	B107	X	X		900mm	2150mm	4/CG-15	3/CG-15	1/CG-15	A	HWK1	1/CG-15	A	HWK1	Lock operable both sides of door BK3*	
BK4	SERVICE	VESTIBULE	X	X		900mm	2150mm	4/CG-15	3/CG-15	1/CG-15	A	HWK1	1/CG-15	A	HWK1	Lock operable both sides of door BK4	
BK5	B108	TRANSFER	X	X		1910mm	2150mm	4/CG-15	3/CG-15	1/CG-15	B	HWK3	1/CG-15	B	HWK3	Lock operable both sides of door BK5	
BK5a	TRANSFER	TRANSFER	X	X		1910mm	2150mm	CG-7	3/CG-15	1/CG-15	B	HWK3	1/CG-15	B	HWK3	Lock operable both sides of door BK5a	
BK6	VESTIBULE	YARD	X	X		850mm	2150mm	7/CG-15	5/CG-15	1/CG-15	A	HWK1	1/CG-15	A	HWK1	Lock operable both sides of door BK6	
BK7*	B108	B107	X	X		900mm	2150mm	4/CG-15	3/CG-15	1/CG-15	A	HWK1	1/CG-15	A	HWK1	Lock operable both sides of door BK7*	
BK8*	B108	B101	X	X		850mm	2150mm	7/CG-15	3/CG-15	1/CG-15	A	HWK1	1/CG-15	A	HWK1	BK8*	
BK9*	B108	B102	X	X		850mm	2150mm	7/CG-15	3/CG-15	1/CG-15	A	HWK1	1/CG-15	A	HWK1	BK9*	
BK10*	B108	B103	X	X		850mm	2150mm	4/CG-15	5/CG-15	1/CG-15	A	HWK1	1/CG-15	A	HWK1	BK10*	
BK11*	B108	B104	X	X		850mm	2150mm	7/CG-15	3/CG-15	1/CG-15	A	HWK1	1/CG-15	A	HWK1	BK11*	
BK12*	NOT USED																
BK13*	B111	B105	X			850mm	2150mm	7/CG-15	5/CG-15	1/CG-15	A	HWK1	1/CG-15	A	HWK1	BK13*	

* CONNECT TO DOOR ALARM. SEE E-201 (Doors BK1, BK2, BK3, BK7, BK8, BK9, BK10, BK11, BK13)

ACCESSORIES

None

A-500 SNOWY OWL EXHIBIT - ALTERNATE #1

LOCATION		TYPE			MATERIAL			OPENING SIZE			MOUNTING		DETAIL		Notes	
Number	From	To	Swing	Slider	Hand	Solid	Mesh	Width	Height	Hinge	Catch	Elevation	Type	Hardware	Notes	
OK1	PUBLIC	EXHIBIT	X				X	1800	2150	5/CG-15	3/CG-15	1/CG-15	B	HWK3	S.S. Woven Wire Mesh OK1	

A-700 WOLF HOLDING

Animal	Mesh Type	Mesh Size	Mesh Gauge	Tube Size	Max. Gap
Wolf	Type 2	50mm x 50mm	3mm GA	50x50x5mm	25mm

LOCATION		TYPE			MATERIAL			ROUGH OPENING			MOUNTING		OPERATOR						
Number	From	To	Description	Ref. Detail	Operator	Poly	Mesh	Width	Height	Sill Height	Conc./ Masonry	Chain Link	Ref. Detail	Padlock	Type	Ref. Detail	Notes	Number	
WT1	W100	W001	Guillotine	2/CG-13	CW Cable	X	X	610mm	1000mm	200mm	X		9/CG-13	4/CG-13	B	1/CG-13		WT1	
WT2	W100	W101	Guillotine	2/CG-13	CW Cable	X		610mm	1000mm	200mm	X		7/CG-13	4/CG-13	A	1/CG-13		WT2	
WT3	W101	W002	Guillotine	2/CG-13	CW Cable	X	X	610mm	1000mm	200mm	X		9/CG-13	4/CG-13	B	1/CG-13		WT3	
WT4	W106	CHUTE	Guillotine	2/CG-13	CW Cable	X	X	610mm	600mm	200mm	X		9/CG-13	4/CG-13	B	1/CG-13		WT4	
WT5	W106	W107	Guillotine	2/CG-13	CW Cable	X		610mm	600mm	200mm	X		7/CG-13	4/CG-13	A	1/CG-13		WT5	
WT6	W107	CHUTE	Guillotine	2/CG-13	CW Cable	X	X	600mm	600mm	200mm	X	X	9/CG-13	4/CG-13	B	1/CG-13		WT6	
WT7	W108	W107	Guillotine	2/CG-13	CW Cable	X		600mm	600mm	200mm	X	X	7/CG-13	4/CG-13	A	1/CG-13		WT7	
WT8	W108	CHUTE	Guillotine	2/CG-13	CW Cable	X	X	600mm	600mm	200mm	X	X	9/CG-13	4/CG-13	B	1/CG-13		WT8	
WT9	NOT USED																		
WT10	NOT USED																		
WT11	NOT USED																		
WT12	NOT USED																		
WT13	NOT USED																		
WT14	NOT USED																		
WT15	NOT USED																		
WT16	NOT USED																		
WT17	NOT USED																		
WT18	Wolf Bridge		Guillotine	2/CG-12	CW Cable	X		600mm	1000mm	25mm		CL	12/CG-12	4/CG-12	A	1/CG-12		WT18	
WT19	Wolf Bridge		Guillotine	2/CG-13	CW Cable	X		600mm	1000mm	25mm		CL	12/CG-13	4/CG-13	A	1/CG-13		WT19	
WT20	Wolf Bridge		Guillotine	2/CG-13	CW Cable	X		600mm	1000mm	25mm		CL	12/CG-13	4/CG-13	A	1/CG-13		WT20	
WT21	Wolf Bridge		Guillotine	2/CG-13	CW Cable	X		600mm	1000mm	25mm		CL	12/CG-13	4/CG-13	A	1/CG-13		WT21	
WT22	Wolf Bridge		Guillotine	2/CG-13	CW Cable	X		600mm	1000mm	25mm		CL	12/CG-13	4/CG-13	A	1/CG-13		WT22	
WT23	Wolf Bridge		Guillotine	2/CG-13	CW Cable	X		600mm	1000mm	25mm		CL	12/CG-13	4/CG-13	A	1/CG-13		WT23	
WT24	Wolf Bridge		Guillotine	2/CG-13	CW Cable	X		600mm	1000mm	25mm		CL	12/CG-13	4/CG-13	A	1/CG-13		WT24	
WT25	Wolf Bridge		Guillotine	2/CG-13	CW Cable	X		600mm	1000mm	25mm		CL	12/CG-13	4/CG-13	A	1/CG-13		WT25	

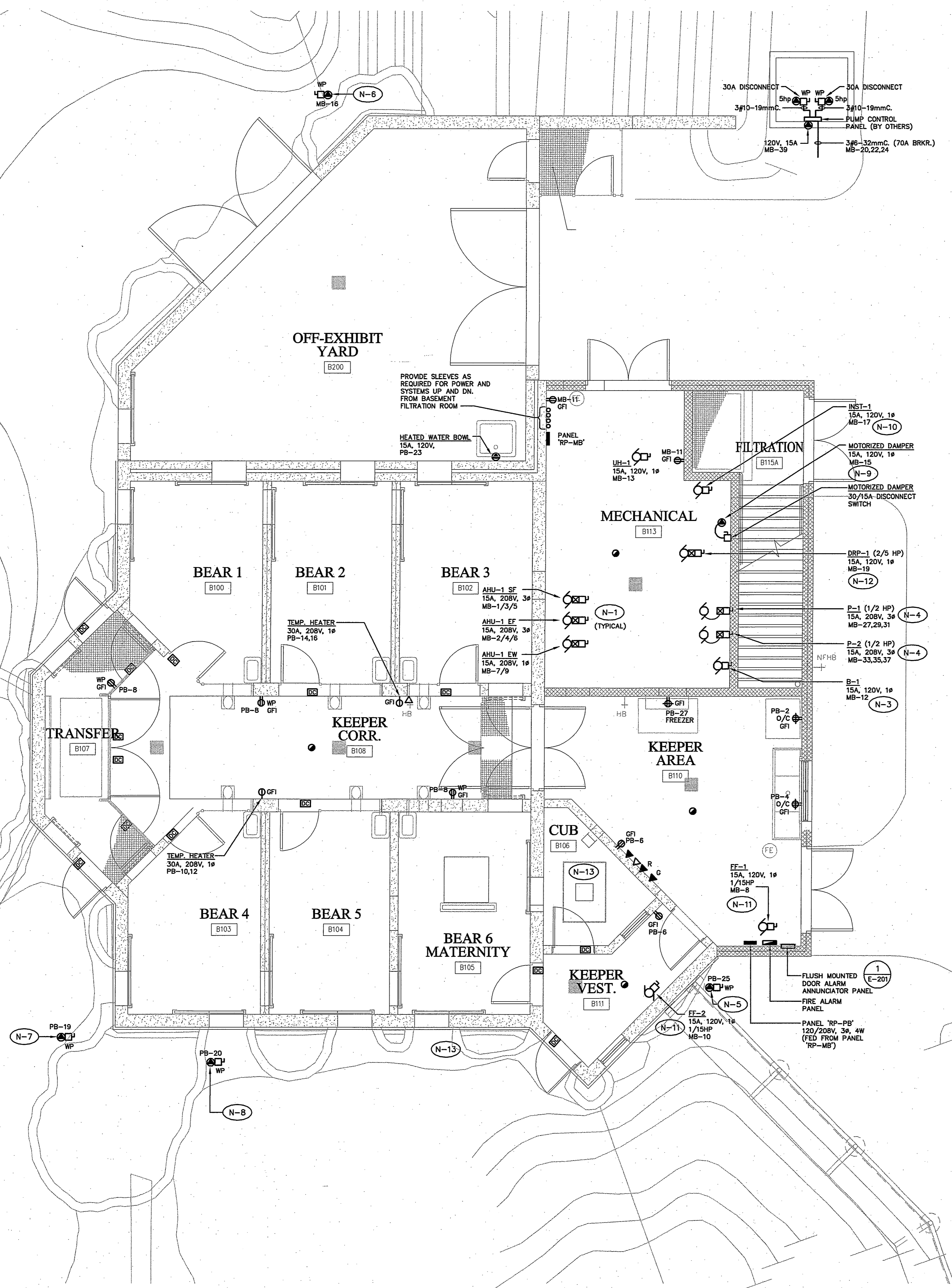
KEEPER DOORS & GATES

LOCATION		TYPE			MATERIAL			OPENING SIZE			MOUNTING		DETAIL		Notes	
Number	From	To	Swing	Slider	Hand	Solid	Mesh	Width	Height	Hinge	Catch	Elevation	Type	Hardware	Notes	
WK1	W001	W002	X			R		900mm	2150mm	5/CG-14	4/CG-14	1/CG-14	A	See 1/CG-14	WK1	
WK2	W002	EXT.	X			L		900mm	2150mm	5/CG-14	4/CG-14	1/CG-14	A	See 1/CG-14	Stockade fence one side WK2	
WK3	W102	W100	X			R	X	900mm	2150mm	7/CG-15	5/CG-15	1/CG-15	A	HWK2	WK3	
WK4	W102	W101	X			L	X	900mm	2150mm	7/CG-15	5/CG-15	1/CG-15	A	HWK2	WK4	
WK5	EXT.	W102	X			L	X	900mm	2150mm	7/CG-15	5/CG-15	1/CG-15	B	HWK4	WK5	
WK6	NOT USED															
WK7	NOT USED															
WK8	NOT USED															
WK9	NOT USED															
WK10	NOT USED															
WK11	NOT USED															
WK12	Wolf Bridge		X			R		860mm	2000mm	5/CG-14	4/CG-14	1/CG-14	A	See 1/CG-14	6mm poly sheet mounted to door WK12</	

NEW POLAR BEAR EXHIBIT

OFF-EXHIBIT YARD
B200

EXISTING POLAR BEAR EXHIBIT



CLOSED	OPEN	CLOSED	OPEN
R	G	R	G
POLAR BEAR 1 - DOOR	TRANSFER - DOOR		
CLOSED	OPEN	CLOSED	OPEN
R	G	R	G
POLAR BEAR 2 - DOOR	TRANSFER - DOOR		
CLOSED	OPEN	CLOSED	OPEN
R	G	R	G
POLAR BEAR 3 - DOOR	TRANSFER - DOOR		
CLOSED	OPEN	CLOSED	OPEN
R	G	R	G
POLAR BEAR 4 - DOOR	TRANSFER - DOOR		
CLOSED	OPEN	CLOSED	OPEN
R	G	R	G
POLAR BEAR 5 - DOOR	KEEPER - DOOR		
CLOSED	OPEN	CLOSED	OPEN
R	G	R	G
POLAR BEAR 6 - DOOR	TRANSFER B107		
CLOSED	OPEN	CLOSED	OPEN
R	G	R	G
BEAR CUB - DOOR	TRANSFER B107		

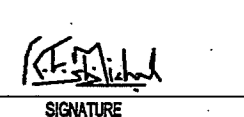
1 DOOR ALARM ANNUNCIATOR PANEL
E-201 N.T.S.

NOTES:

- (N-1) AHU-1 SUPPLIED AS A PACKAGE BY DIVISION 15. STARTERS AND PILOT DEVICES SUPPLIED, INSTALLED AND WIRED BY DIV.15. DISCONNECTING MEANS SUPPLIED AND INSTALLED BY DIV.15. WIRED BY DIV.16. REFER TO MECHANICAL MOTOR SCHEDULE.
- (N-2) STARTERS AND DISCONNECTS FOR UH-1 AND UH-2 SUPPLIED, INSTALLED BY DIV.16. PILOT DEVICES SUPPLIED AND INSTALLED BY DIV.15. WIRED BY DIV.16.
- (N-3) DISCONNECT SWITCH FOR B-1 SUPPLIED, INSTALLED AND WIRED BY DIV.16.
- (N-4) STARTERS, DISCONNECTS AND PILOT DEVICES FOR PUMPS P1 AND P2, SUPPLIED BY DIV.15, WIRED BY DIV.16.
- (N-5) PROVIDE DIRECT BURIED, PVC CONDUIT AND WIRING TO HOTWIRE FENCE FOR MATERNITY YARD. COORDINATE EXACT ROUTING ON SITE PRIOR TO ROUGH-IN.
- (N-6) PROVIDE DIRECT BURIED, PVC CONDUIT AND WIRING TO HOTWIRE FENCE FOR EXISTING POLAR BEAR EXHIBIT. COORDINATE EXACT ROUTING ON SITE PRIOR TO ROUGH-IN.
- (N-7) PROVIDE CONNECTION TO EXISTING POLAR BEAR YARD DRINKER. COORDINATE EXACT LOCATION ON SITE PRIOR TO ROUGH-IN.
- (N-8) PROVIDE CONNECTION TO POLAR BEAR MATERNITY DRINKER. COORDINATE EXACT LOCATION ON SITE PRIOR TO ROUGH-IN.
- (N-9) DIV.15 TO WIRE TO DIV.15 SUPPLIED DISCONNECT SWITCHES AT MOTORIZED DAMPERS. A TOTAL OF FOUR (4) DAMPER CONNECTIONS REQUIRED. COORDINATE LOCATIONS ON SITE WITH DIV.15.
- (N-10) DISCONNECT FOR INST-1 SUPPLIED, INSTALLED AND WIRED BY DIV.16. PILOT DEVICE SUPPLIED BY DIV.15, WIRED BY DIV.16.
- (N-11) STARTERS, DISCONNECTS AND PILOT DEVICES FOR FF-1 AND FF-2 SUPPLIED AND INSTALLED BY DIV.15, WIRED BY DIV.16.
- (N-12) STARTER AND DISCONNECT FOR DRP-1 SUPPLIED, INSTALLED AND WIRED BY DIV.16. PILOT DEVICE SUPPLIED AND INSTALLED BY DIV.15, WIRED BY DIV.16.
- (N-13) PROVIDE 19mm EMT CONDUITS COMPLETE WITH POWER AND DATA IN POLAR BEAR CUB PEN AND TO MATERNITY YARD FOR VIDEO FEEDS. TERMINATE CONDUITS TO KEEPER AREA. CO-ORDINATE REQUIREMENTS WITH ZOO REPRESENTATIVE AND VIDEO EQUIPMENT SUPPLIER (INCLUDING MOUNTING LOCATIONS AND HEIGHTS OF OUTLETS) TO ENSURE A COMPLETE SCOPE OF WORK.
- (N-14) DOOR ALARM ANNUNCIATOR PANEL SHALL BE SIMILAR TO HOFFMAN DOOR MONITORING SYSTEM.

The undersigned has reviewed and takes responsibility for this design, and has the qualifications and meets the requirements set out in the Ontario Building Code to be a designer.

QUALIFICATION INFORMATION
Required unless design is exempt under 2.17.1.1 of the building code

MICHAEL SHULPENG  2007
NAME SIGNATURE BCN

REGISTRATION INFORMATION
Required unless design is exempt under 2.17.1.1 of the building code

STATTEC CONSULTING LTD. 2015
FIRM NAME BCN

NOTE: ALL DIMENSIONS ARE MILLIMETERS (mm) UNLESS OTHERWISE NOTED.
NOTE: See attached Building Code Matrix for Architect's qualification information.



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Revisions

Issued for Tender and Permit - March 2, 2007

Polar Bear Holding Building - Power and Systems

Project Number 05646 Drawing No. E-201
Project Manager JS
Drawn GB Scale 1:50
Checked ZG Date March 2, 2007
General Notes: