



the milligan studio

EXECUTIVE SUMMARY: PLOUGH/SKY

A CELEBRATION OF THE WORKERS OF WEST MADISON



Shown here with shatter-resistant architectural art glass, blue patinated bronze and stainless steel. Five birds ranging in height from 24ft to 16ft.



PLOUGH/SKY AT NIGHT
DEPTH BLUE BRONZE WITH ART GLASS AND INTERNAL LIGHTING



DESIGN INFLUENCE IS THE GESTURE OF BIRDS SKIMMING THE WATER AND HOW THE BEAUTY OF THEIR MOVEMENT IS LIKE THE PLOUGHS CUTTING THROUGH THE BANKS OF SNOW.



BACKGROUND

In Spring 2025, The Milligan Studio surveyed the West Madison community who prioritized an art fence, sculpture, and benches for Public Art. Due to budget limits which impacted building redesigns, available space for art was reconfigured. By January 2026, a public area next to the building—with walking paths and bike lanes—was designated for Public Art.

PLOUGH/SKY

Responding to the evolved design, and **the need for lighting for public safety**, The Milligan Studio created “Plough/Sky,” an installation that spans the entire site. This series of sculptures celebrates community, honoring the snowplow fleet maintained in the Far West Operations building. Each winter before sunrise, their plows clear the roads, helping the community move forward with their day, together.

Plough/Sky is a unique public art installation featuring numerous bird/plough illuminated sculptures intended for visitors to walk amidst day or night. The arrangement represents the concept of community; the scale and quantity of the figures serve to energize the site and recognize the collective efforts of individuals striving for a better future.

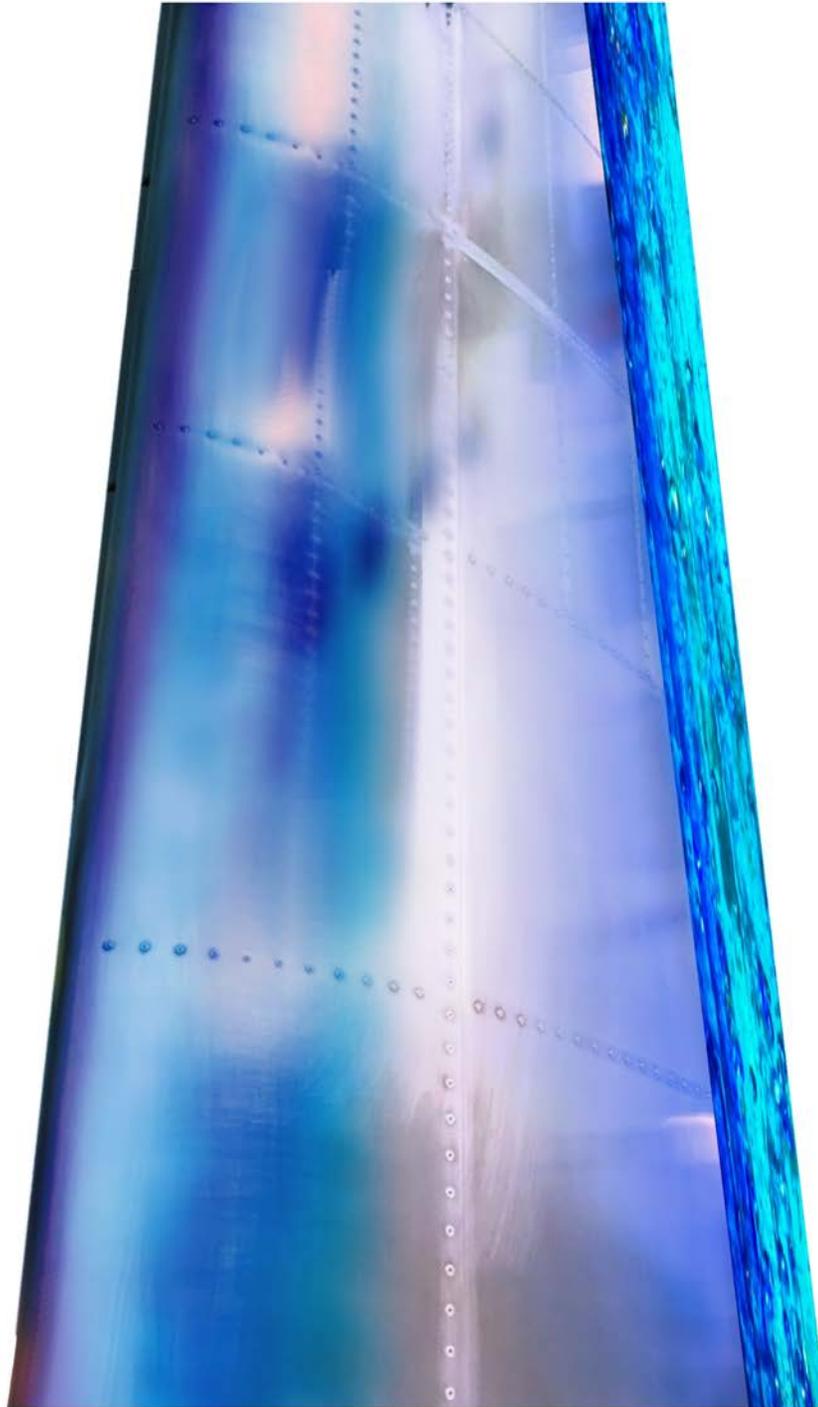
The composition’s scale matches the building, guiding the gaze upward and across to highlight the harmony between landscape and architecture.

Drawing inspiration from Wisconsin's Driftless region, the Milligan Studio envisions the installation as a series of stylized ancient bird forms crafted from art glass set into blue patinated bronze surfaces.

The integration of industrial elements, such as rivets, references the aesthetic of plows, while the use of shatter-resistant glass alludes to the presence of water. The iridescent glass components are designed to be self-illuminating in natural daylight and, when backlit inside, emit a soothing light during nighttime hours, which keeps the community safe.



SAMPLE OF ACTUAL GLASS



*DETAIL OF CONSTRUCTION
RIVETS ON BRONZE WITH GLASS INSTALLED INTO THE REAR EDGE.*



PLOUGH/SKY
WITH SOURCE LIGHTS HIGHLIGHTED

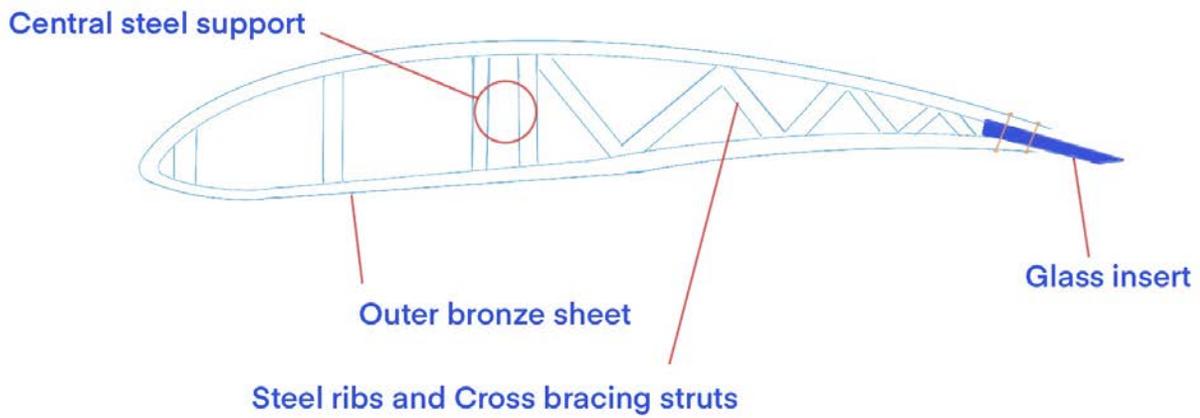
The Milligan Studio prefers interior lights with art glass inserts in water shades, outlined on the form. (As seen below)

Timed lighting transforms the sculptures into safety feature

by gently illuminating the park each evening.



Cross section of wing. Sky plough



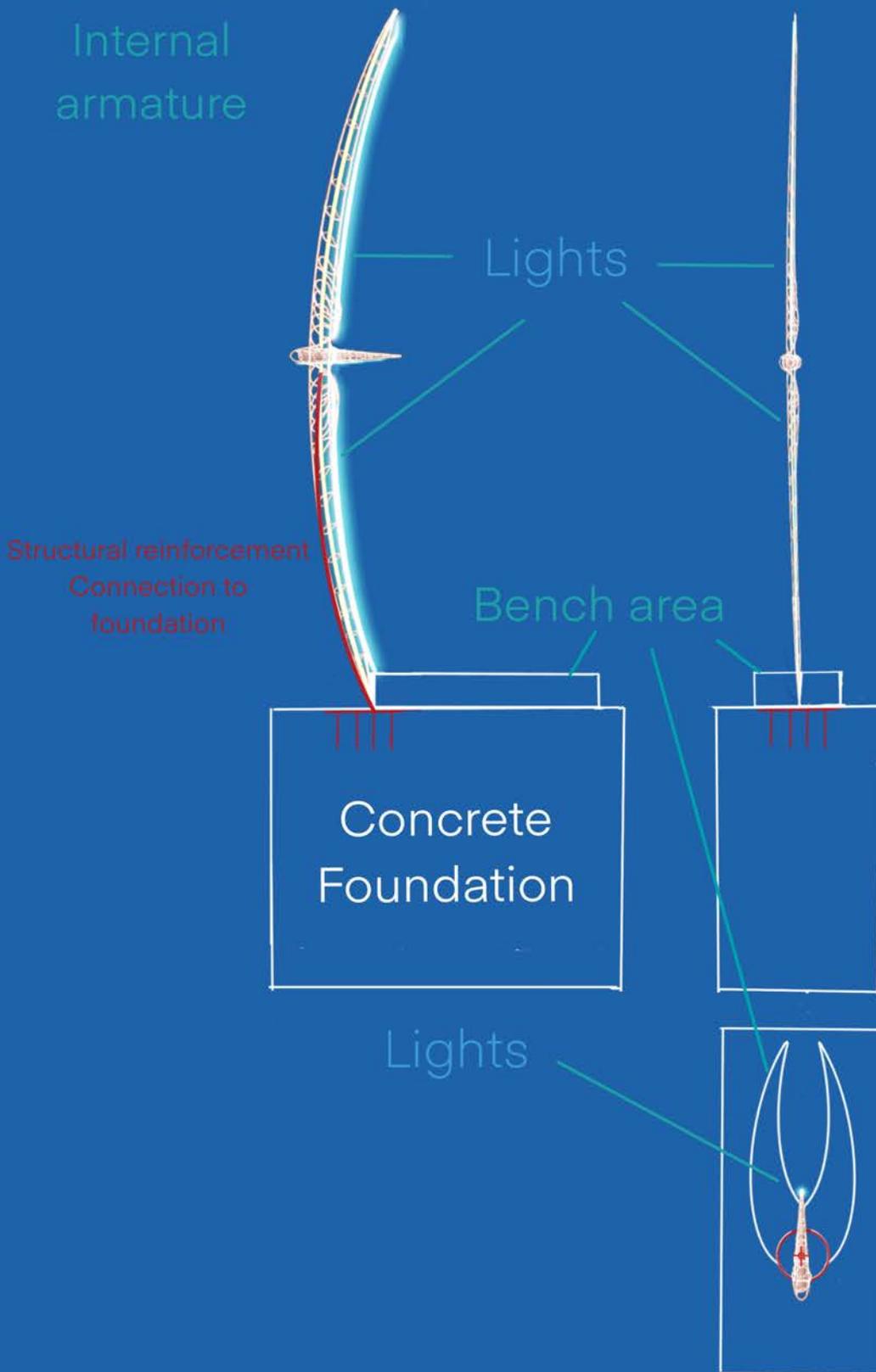
EXAMPLE OF DEPTH BLUE PATINATED BRONZE
(SAMPLE FROM MILLIGAN STUDIO'S GRAND RAPIDS' TRIPTYCH
"THE MEMORY OF WATER")

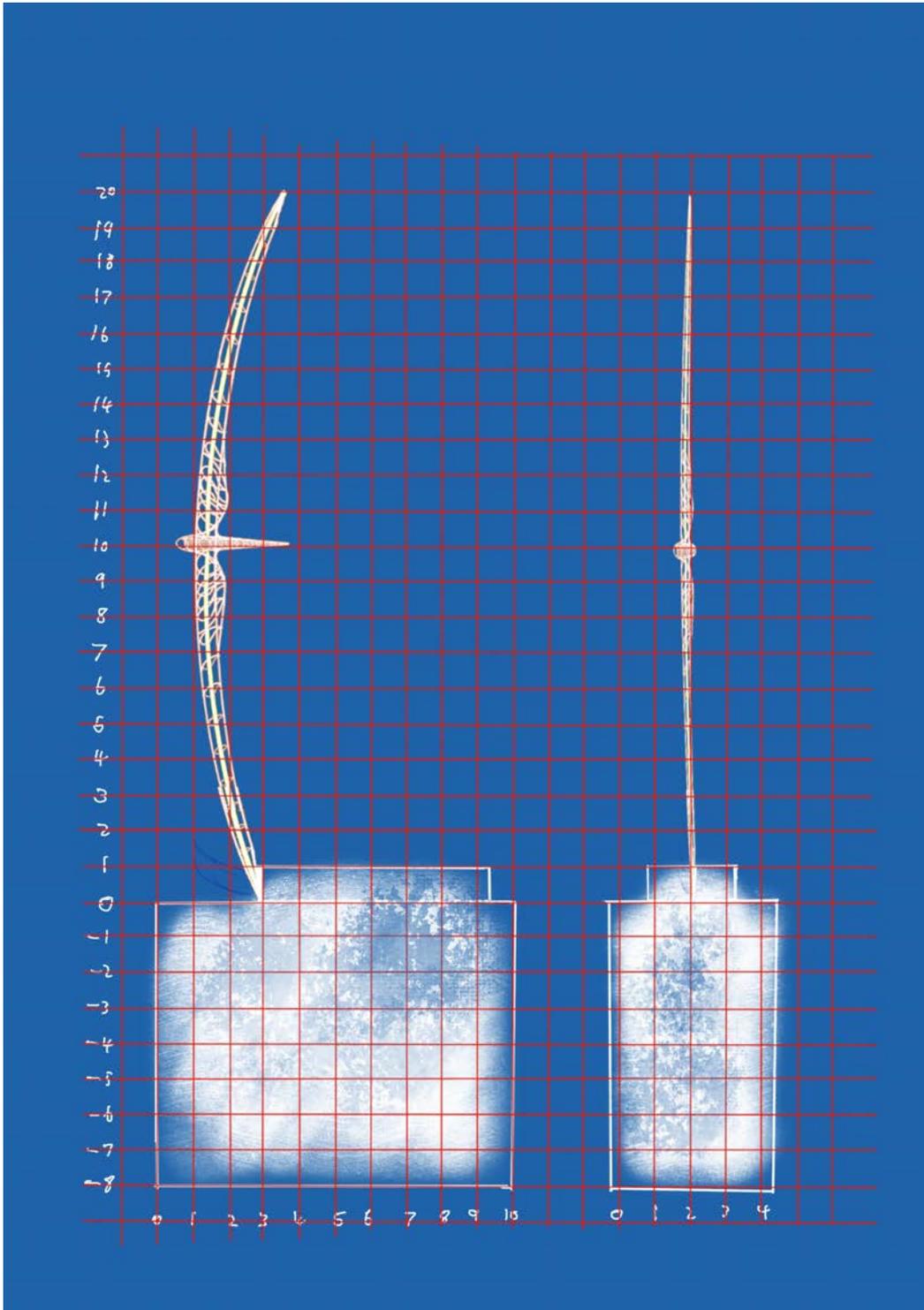


RENDERING OF *Plough/Sky* IN DEPTH BLUE PATINATED BRONZE (DETAIL R) WHICH WOULD BE FABRICATED WITH BACKLIT ART GLASS INSERTS

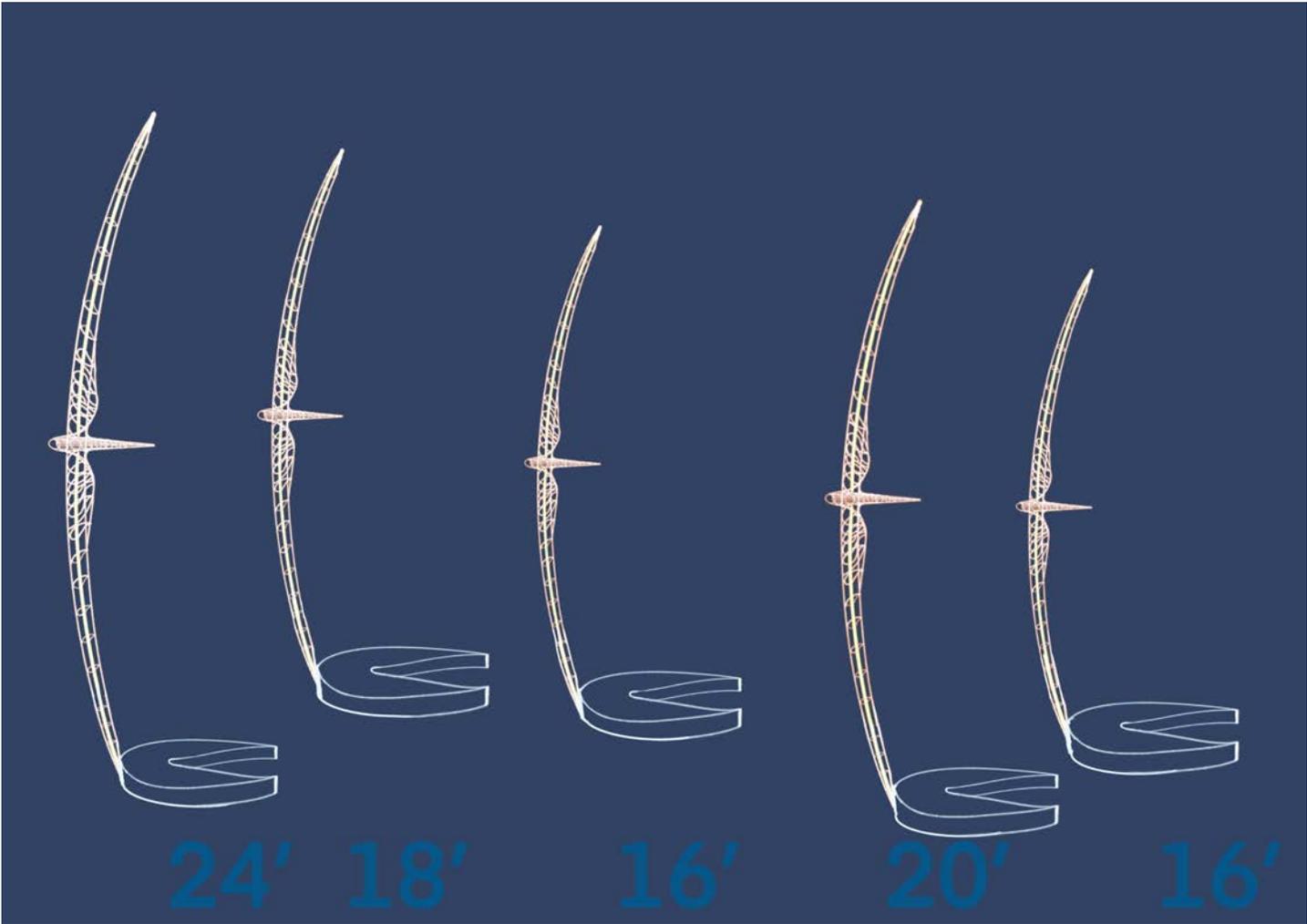


Plough 20' with 8' foundation





INTERIOR ARMATURE AND FOUNDATION SCHEMATIC



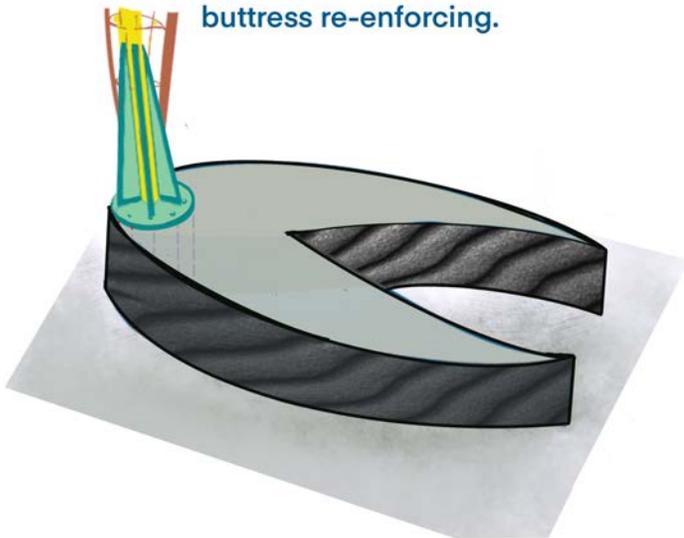
PLOUGH SIZES AS ARRANGED IN THE INSTALLATION.



WATER DETAIL OF CONCRETE FOR SIDE OF SEATING BENCH.



Detail of bolted base plate with
buttress re-enforcing.



Ripple form bench and foundation

FABRICATION AND INSTALLATION PROCESS

Each phase of the project, from conception to installation, is meticulously documented online, enabling the community to track progress in real time and gain insights into contributors, thereby fostering a sense of ownership and engagement. Further information is available at www.themilliganstudio.com.

The fabrication process is scheduled to span approximately one year.

METHODOLOGY

We will start both structure construction and kiln-formed glass fabrication at the same time.

When complete, each glass segment will be affixed to the frame with a rounded rivet encased in acrylic washers that won't yellow and can endure temperatures from 115°F to -50°F.

Our method has proven effective with shatter-resistant glass sculptures in locations with extreme temperatures, including Minnesota, Washington (State), and North Dakota.

BESPOKE GLASS

Collaborating with artisans at Paul Wissmach Glass Company, an American art glass company since 1904, we will create a series of water panels to be sealed and riveted in place.

The glass will be laminated with an organic shatter protection coating that is UV resistant and produced without heavy metals.



Bronze bolt in acrylic shock absorber (center) set into metallic capped glass.

This type of glass has been utilized in other major projects located in extreme climates. It offers durability, safety, and maintains its color over time.

Recent studies indicate that glass has an atomic decay rate equivalent to two universes.

INSTALLATION

We will deliver the work in segments in flatbed trucks. Using a crane, we will install each wing and then add the glass. We estimate the installation process to take a week to 10 days, weather permitting.

MAINTENANCE PLAN

Plough/Sky is a public artwork that requires minimal maintenance.

Do not power wash or use abrasive cleaners.

Keep salt away and avoid piling snow at the sculpture's base, as salt can cause rusting.

Wash the sculpture with cool water once a year in Spring to remove debris.

The Dark Sky lighting system should be placed on a sunset/sunrise timer to extend the life of its bulbs.

As this will be a municipal lighting system, bulbs should last about 5 years.



ITEMIZED BUDGET ESTIMATE

Note: The budget covers installation of five sculptures in patinated blue bronze with custom shatter-resistant glass panels and interior lighting. Prices are valid for 45 days due to current tariff volatility.

MATERIALS

GLASS

Paul Wissmach Glass Co (including discount and shipping)	
Smooth 3mm 240case 224.00 ft ² @ 3 @ 14 per foot	\$9,408
50 lb bags 96-01 crystal clear coarse frit 4@ \$475	\$1,900
Custom findings in stainless steel and acrylic:	\$575

METAL

Bronze sheet 30 sheets 2 x 10 @ \$18.00 per pound	\$36,000
Stainless Steel Plate 1/2 inch 3x3	5@\$725 \$3,625
40 flat bar (stainless) 3/16inch 1 1/2 w x 12 ft	40@ \$70.26 each \$2,810
50 flat bar @ 3/16 x 1 12ft	50@40.75 \$3,513
Round tube 2 inch 11-gauge 20ft L x	5@\$350 \$1,750
Square tube Stainless Steel 20ft	5@650 \$3,250
Square tube 1/2 x 1/2 20ft (L)	60@\$60 \$3,600
Round bar 1/2 x 12ft	25@ \$52.26 \$1,306.
10,000 Stainless Steel Rivets	8 @ \$250 per package \$2,000.
Channel Bar 20F Stainless Steel	Package of 10 (with shipping) \$1,500
Steel ReBar for Foundation	\$4,000
Rubber modelling materials for concrete wave patterns	\$1,000
Concrete cost for shuttered benches & plinth & foundation (to be poured by contractor when sidewalks and bike trails are laid)	\$10,000

LIGHTING SYSTEM

Milligan Studio will install the interior lighting system during fabrication, while the project electrician is responsible for connecting it to the site's electrical supply.

\$20,000

Materials Sub Total: \$106,237

CONSUMABLES:

Kiln Shelf paper 2@ \$350 per roll	\$700
Cutting blades hand & disk (diamond for glass)	\$250
Welding rods 7@100	\$700
Spools 2 @ 100	\$200
Drill bits	\$150
Cutting disks	\$400
Saw blades	\$200
Tri-mix gas \$300 @ 5 bottles	\$1,500
Patination chemicals 5 gal. Blue Patinas Cupric Nitrate / 5 gal. & Green patinas & Clear Guard 10 gallons (Plus Delivery)	\$2,500
Metal & Glass (2) Studios & the Portable Studio for installation and community engagement (Artstream/Airstream) chargeback for dedicated studio space, misc elements related to practice such as disposal buckets & brushes and paint thinner, electricity, water, insurance, storage)	
14 months @ \$3800 per month	\$53,200

Transportation of work to Installation site (290 miles one way x 2) 580 miles total @.75 per mile x three Studio members	\$1,305
Installation per diem for one week for 3 Studio members @ \$65.00	\$1,365
Hotel (Two rooms)	\$1,600
Rental of Trucks for installation	\$1,500
Crane @300 8 hours	\$2,400
Consumables sub total:	\$67,970

LABOUR

Fabrication (including Fabrication/mould design & shuttering for benches and plinth) \$75 lead metal/concrete artist x \$30 assistant @1260 hours x \$105	\$132,300
\$75 lead glass artist x 500 hours x \$30 assistant @250 hours	\$45,000

DESIGN FEES

This scope of services for the project contract between The Milligan Studio and Sketchworks, specifically covers the Design Fee portion of the overall project. Included in this contract: The Studio will make itself available for all meetings, including weekly design team meetings and community meetings at the site. Throughout the design process, The Milligan Studio provided structural drawings & renderings.

INSTALLATION

\$50 x 3 artist/assistants x 40 hours (including travel time)	\$6,000
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COMMUNITY ENGAGEMENT

Project Management and Documentation

Standard process management, including the regular publication of step-by-step progress photographs on a dedicated webpage to promote community engagement and foster a sense of ownership.

Includes one hour community engagement event/celebration during the installation process.

Community Engagement Event includes glass-making engagement with Artstream/Airstream during installation. A demonstration of how to make a water fall suncatcher. Includes approximately 35-50 waterfall suncatchers for distribution to the community. These "suncatchers" will be made from recycled glass leftover from the project.

25 per hour x 8 hours x 30 days	\$6,000
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Structural Engineer/Safety Review	\$6,000
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Labour Costs: \$195,300

Art Installation Conservation Set-Aside

The patinated bronze finish requires minimal care. Over five years, maintenance includes annual cleaning with water by two staff for 8 hours, plus servicing lighting fixtures and the timer system.

\$10,000

Budget contingency \$10,493

Project total \$390,000*

ABOUT THE MILLIGAN STUDIO

“Do continue the great impactful work.”
Jai Winston, Director, Knight Foundation

“Your aesthetic is sophisticated and accessible, and your fabrication plan and budget are sound. You put beauty in the world. We are proud to be your partners.”
—Dakota County Public Art (Minnesota), 2020

“Altitude is a beacon of hope and a symbol of the resiliency of St. Paul as we move forward through some pretty difficult times in our history.” —YWCA



“WE DEFY GRAVITY WITH JOY”

The award-winning Milligan Studio has created Public Art in collaboration with communities in the United States, United Kingdom, and EU, specifically Ireland and Paris, for more than a decade.

Samples of their work in glass can be found in The Corning Museum of Glass.

The two have received grants from the National Endowment for the Arts, Bush Foundation, PEN America, Jerome Foundation, and both the Florida and Minnesota State Arts Board.