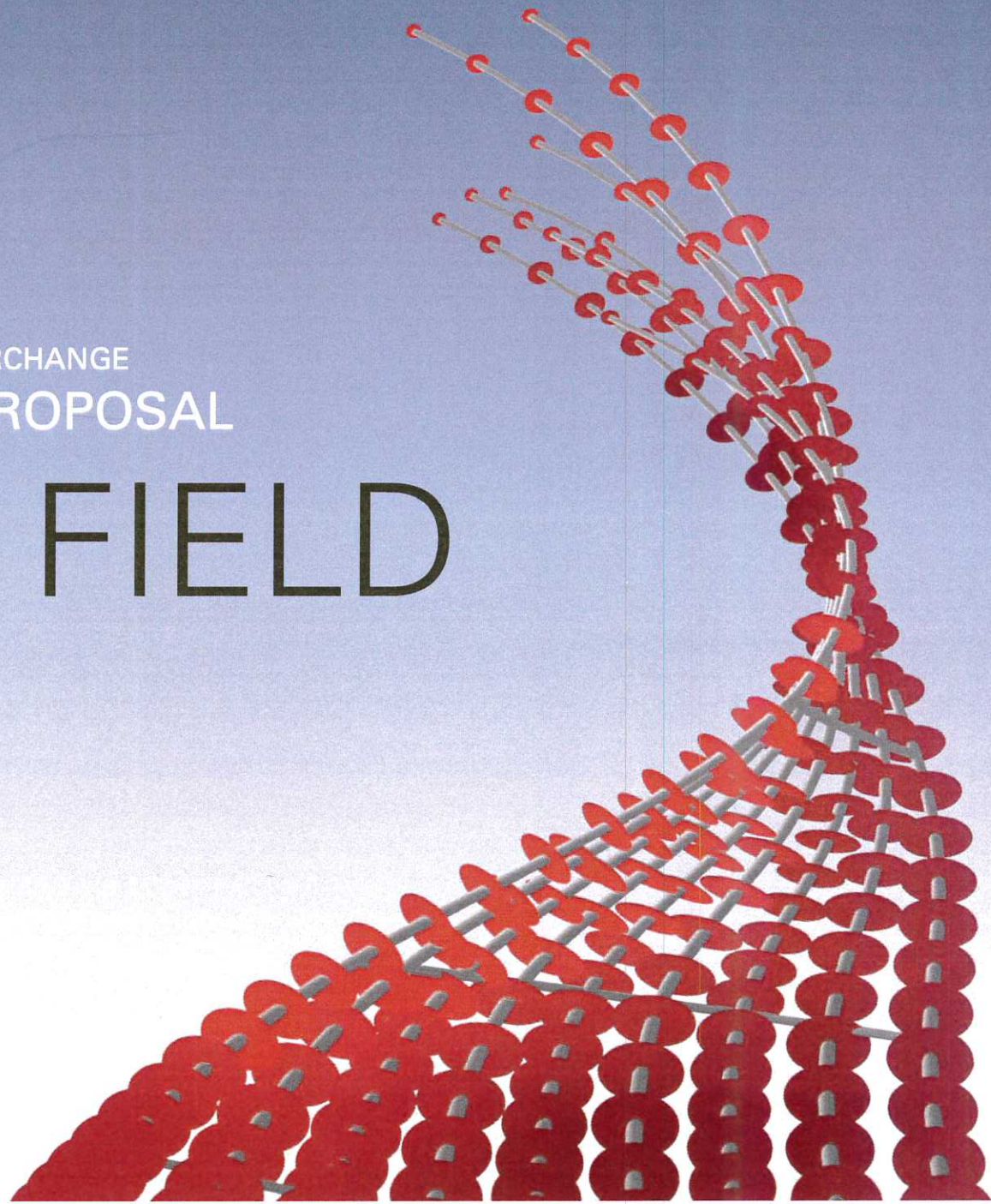
INTERSTATE 25/HIGHWAY 34 INTERCHANGE

PUBLIC ARTWORK PROPOSAL

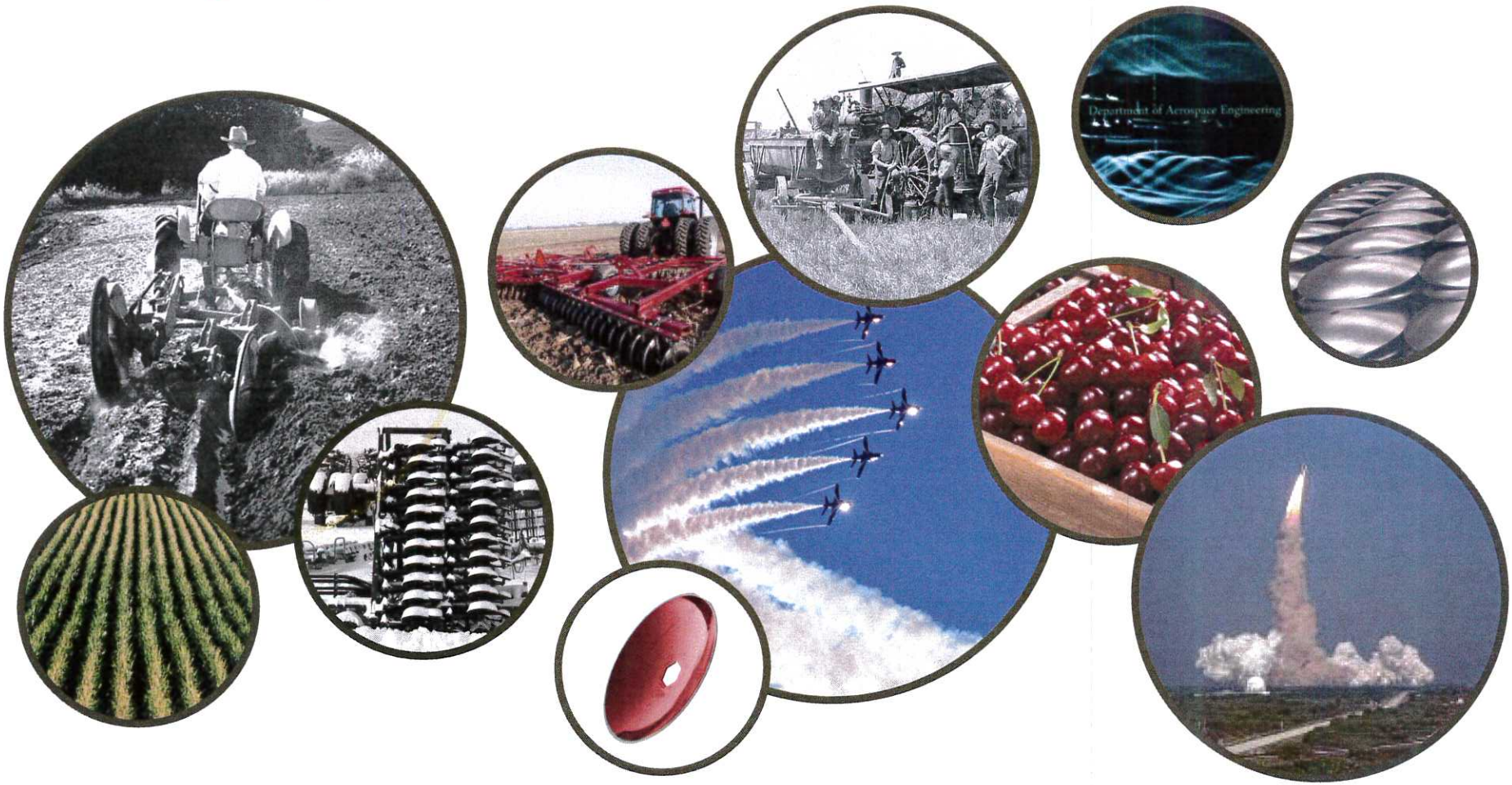
RISING FIELD

RE:site with Metalab



INSPIRATION

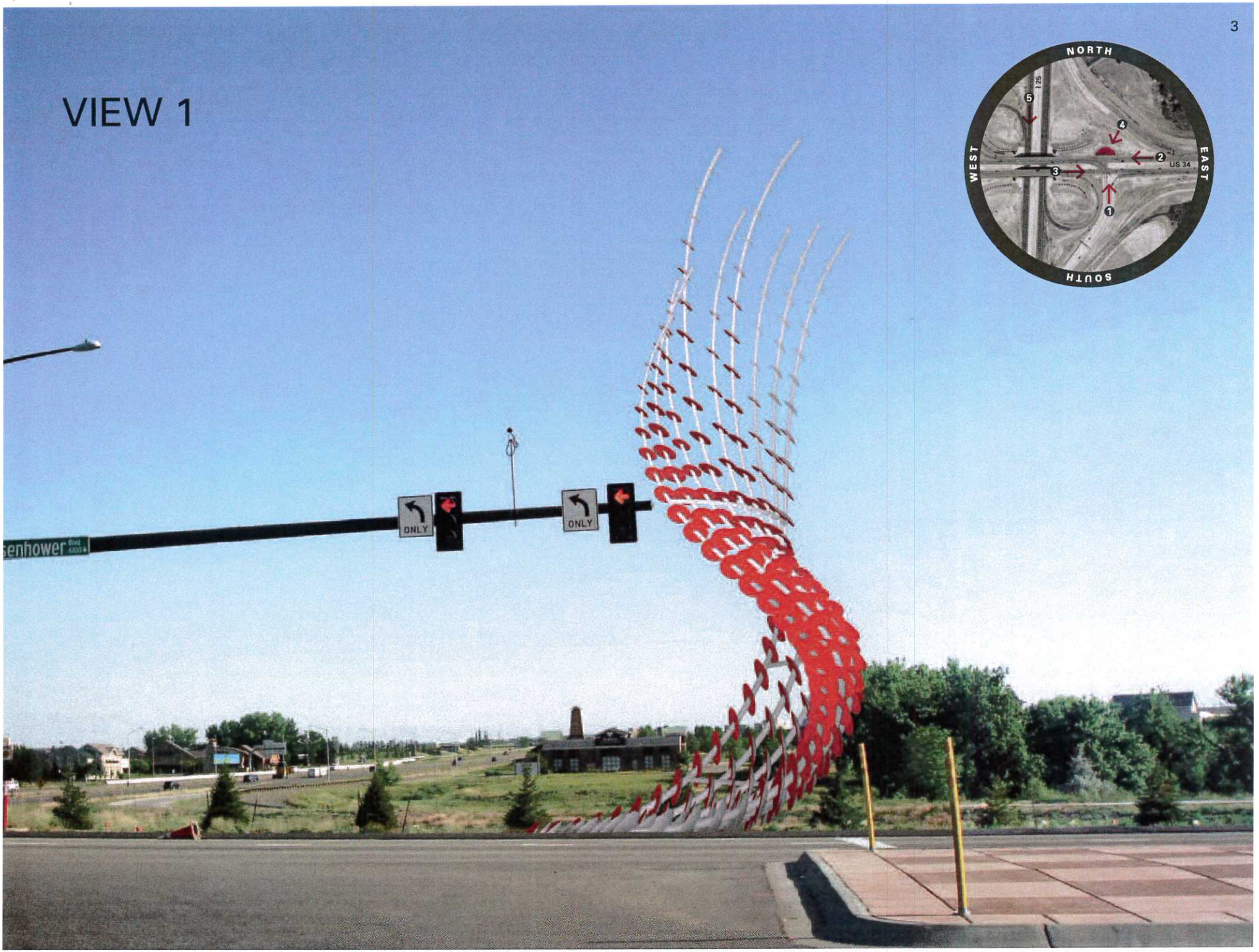
Rising Field reinterprets steel plow discs as part of an iconic sculpture that unifies Loveland's agricultural past with its technological present.



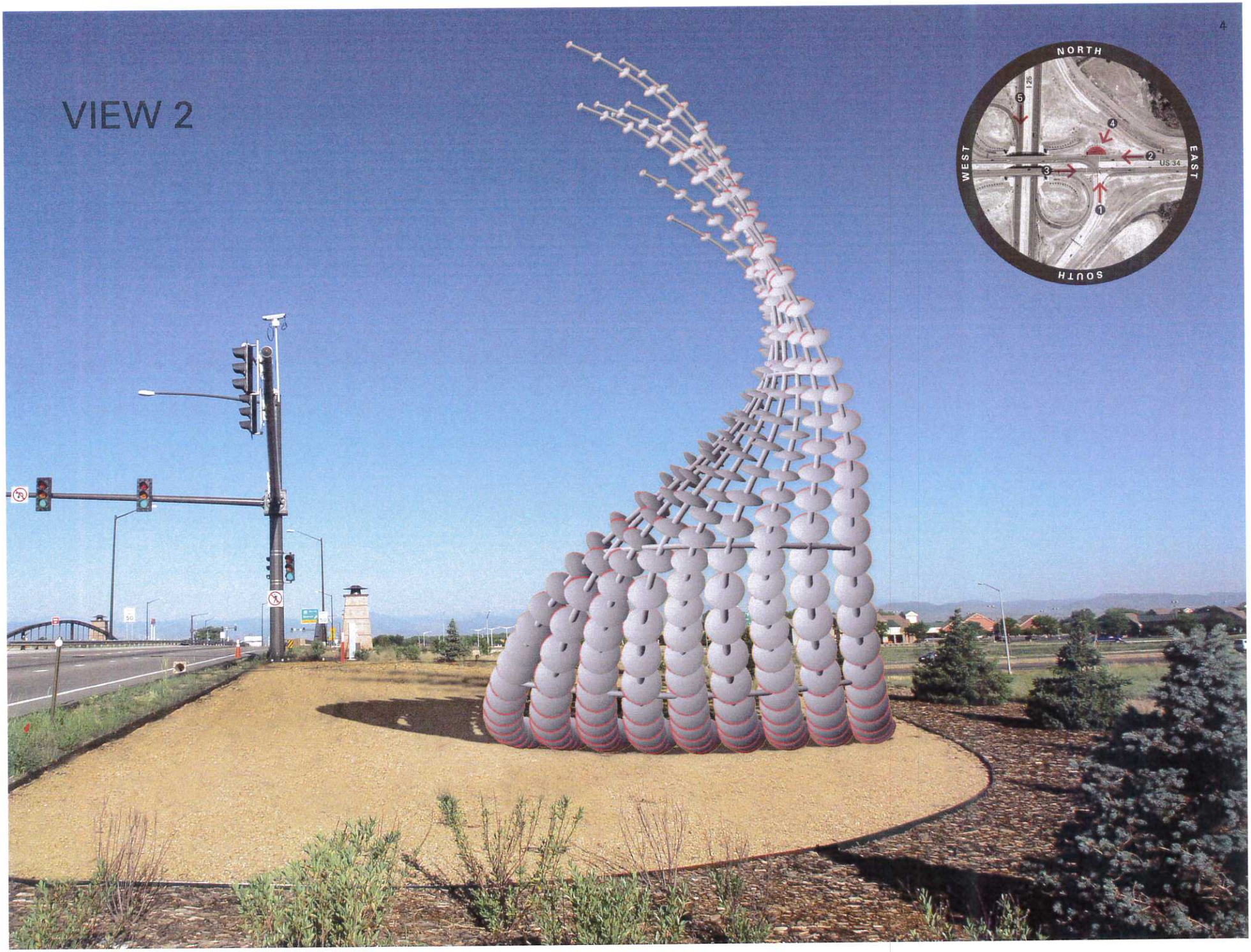
ARTIST CONCEPT

For the Interstate 25/Highway 34 Interchange Project, *Rising Field* reinterprets steel plow discs as part of an iconic sculpture that unifies Loveland's agricultural past with its technological present. The plow discs are of various diameters and arranged in arrays, connected by steel pipes, like in a set of harrows. The opposite sides of each plow disc are painted cherry red, celebrating one of Loveland's most famous agricultural products. This provides a continually changing gradient of color as viewers drive by. In winter, the plow discs can also accumulate snow, recalling the beauty of how snow collects on in the field. The dynamic twisting form, configured using algorithmic software, evokes the city's thriving technology industry. As the plow discs progress from large diameter to small diameter in a sweeping gesture, the sculpture begins to dramatically lift from the ground in a contrail-like form towards the sky and the city's future.

VIEW 1

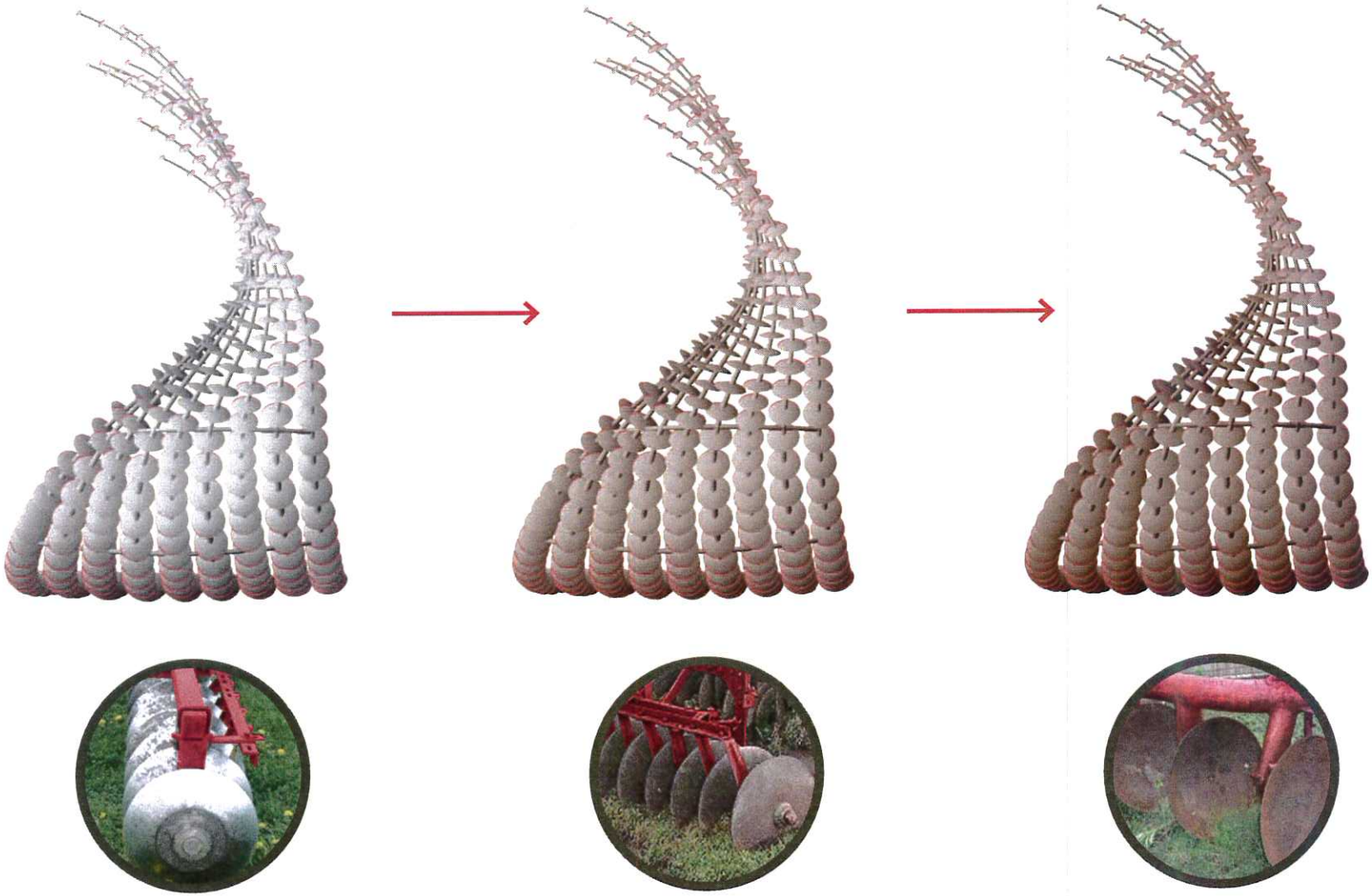


VIEW 2



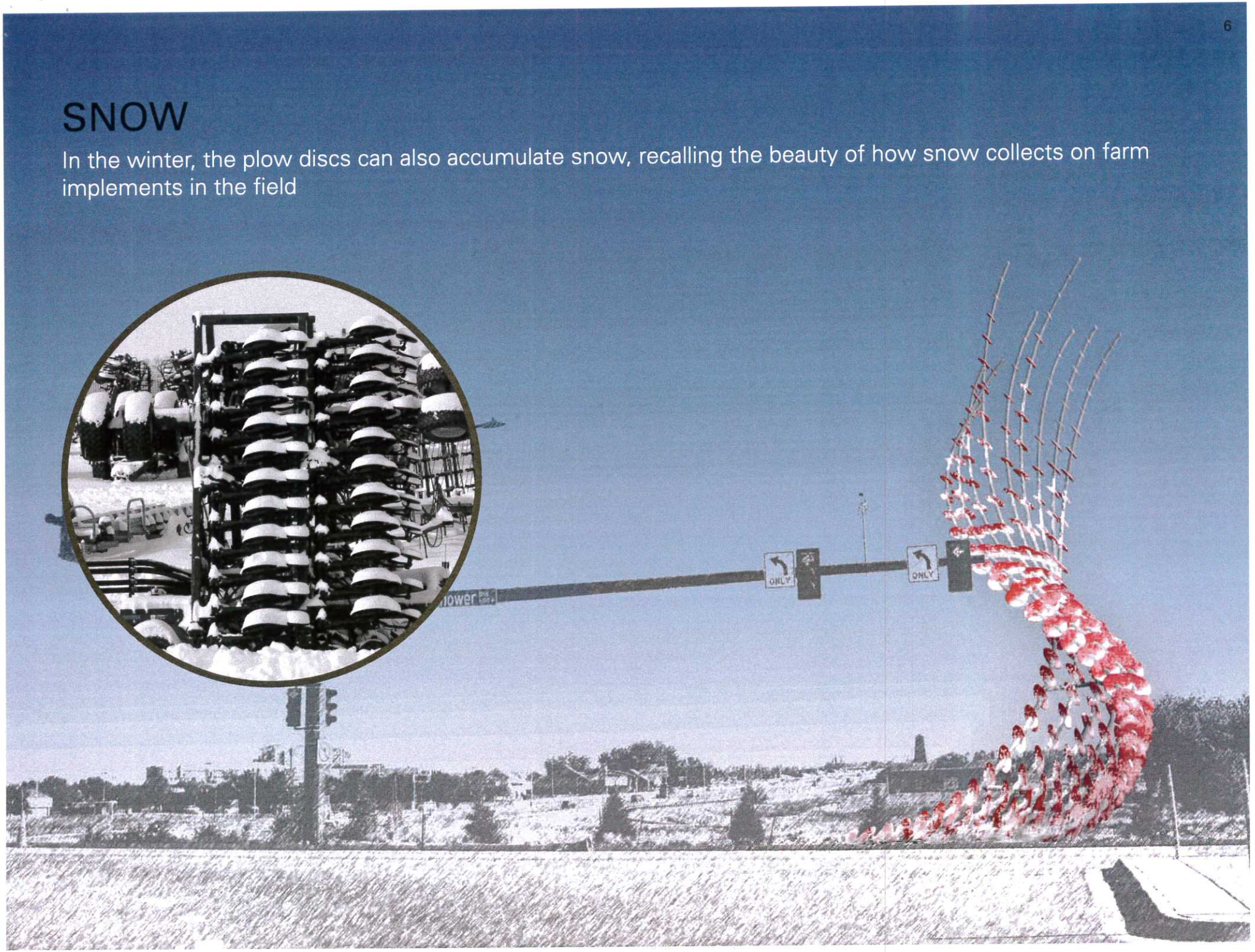
MATERIAL FINISH

Plow discs patina in their natural environment over time

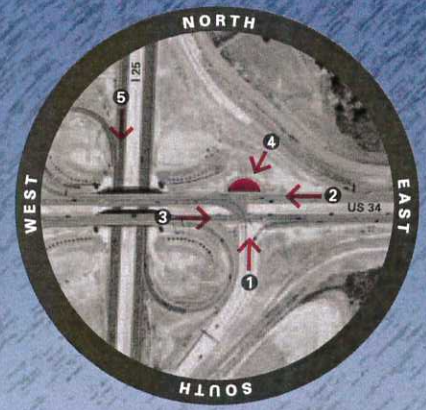


SNOW

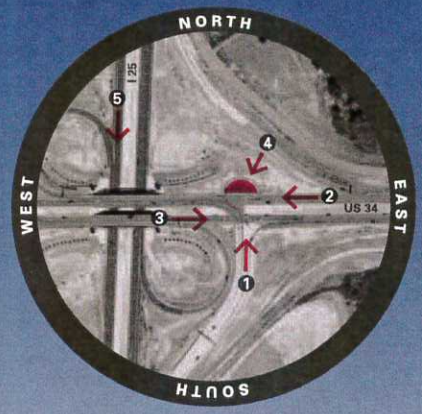
In the winter, the plow discs can also accumulate snow, recalling the beauty of how snow collects on farm implements in the field



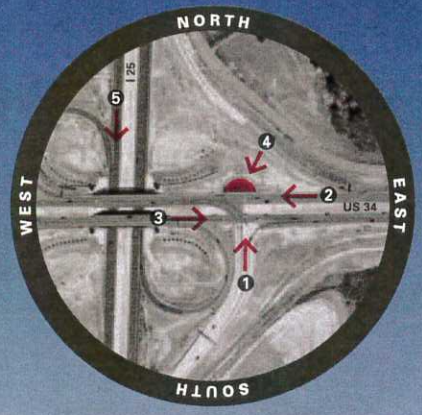
VIEW 3



VIEW 4

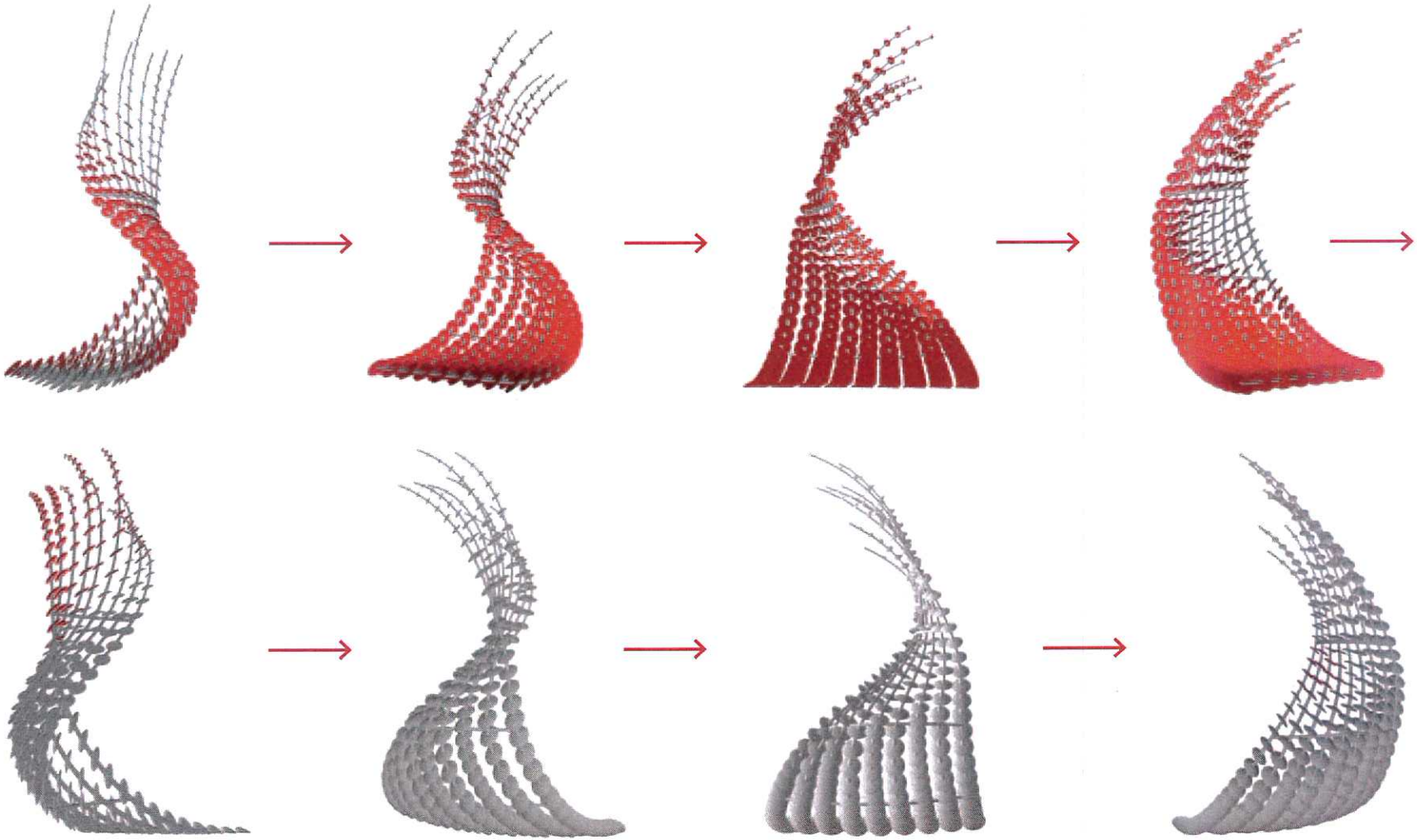


VIEW 5



CHANGING COLOR AND FORM

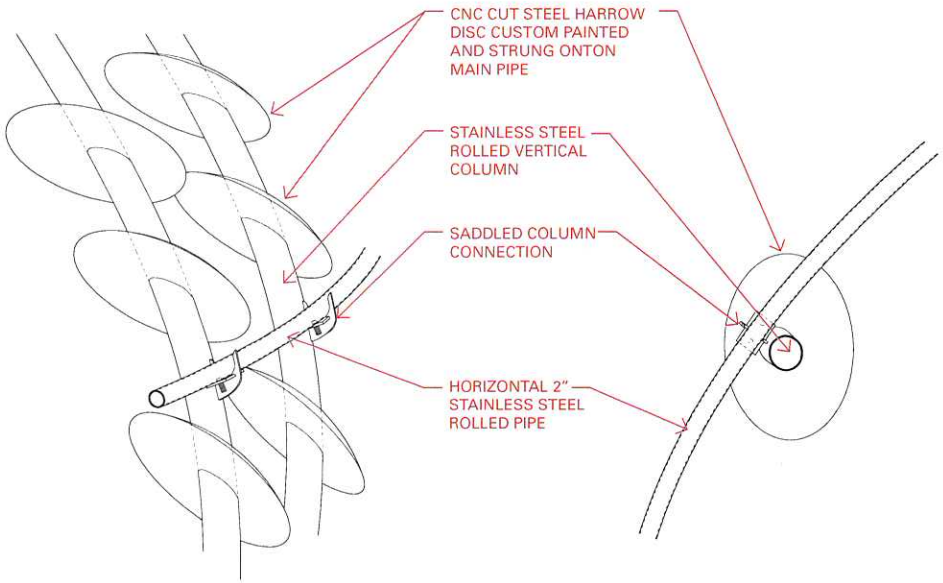
Counter clockwise rotation illustrates color transition and form variations



STRUCTURAL APPROACH / FABRICATION PROCESS

Rising Field is fabricated from three distinct structural systems. The primary structural system is a series of nine tubular assemblies that are made up of rolled and straight lengths of pipe fabricated into the sweeping form extending to the sky. These pipes will be stainless steel and taper by stepping down from 6" diameter to 4" and 2.5" at the top. They will be connected to a series of steel base plates below the finished grade level that fasten to an engineered concrete foundation that affords the sculpture to gradually emerge from the earth and set the top of the foundation at the proper level for frost depth criteria. Crushed stone will be added as a top layer on the selected fill and graded around the half-buried discs. A secondary structural system of horizontal rolled stainless steel pipes bind the vertical columns at key points up the sculpture and lock them into an arched cross section that enhances the structural stability of the assembly. These connect with specially designed "saddled" connection that allow the pipes to be freely aligned and fastened in the field (see detail). The third system is 288 plow discs of varying diameter from 28" at the bottom that are partially buried in the ground to 10" diameter at the tops of the columns. These components will be domestically sourced from an agricultural supply manufacturer and modified with custom water jet cut openings to allow the primary pipes to pass through and be welded in place at exact angles tilting from the curved centerline of the pipes. The discs will be sand blasted prior to welding and the underside of each surface will be painted cherry red after welding with an industrial enamel paint. The structure will be entirely shop fabricated and dry-fit tested before being deployed on site for installation. In general we will design the structure with a licensed engineer in Colorado for 100mph wind loads, 30 psf snow load and 30 inch frost depth criteria.

RISING FIELD CONNECTION DETAIL



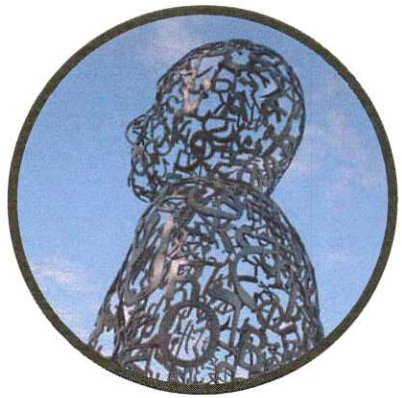
DETAIL SECTION

DETAIL PLAN

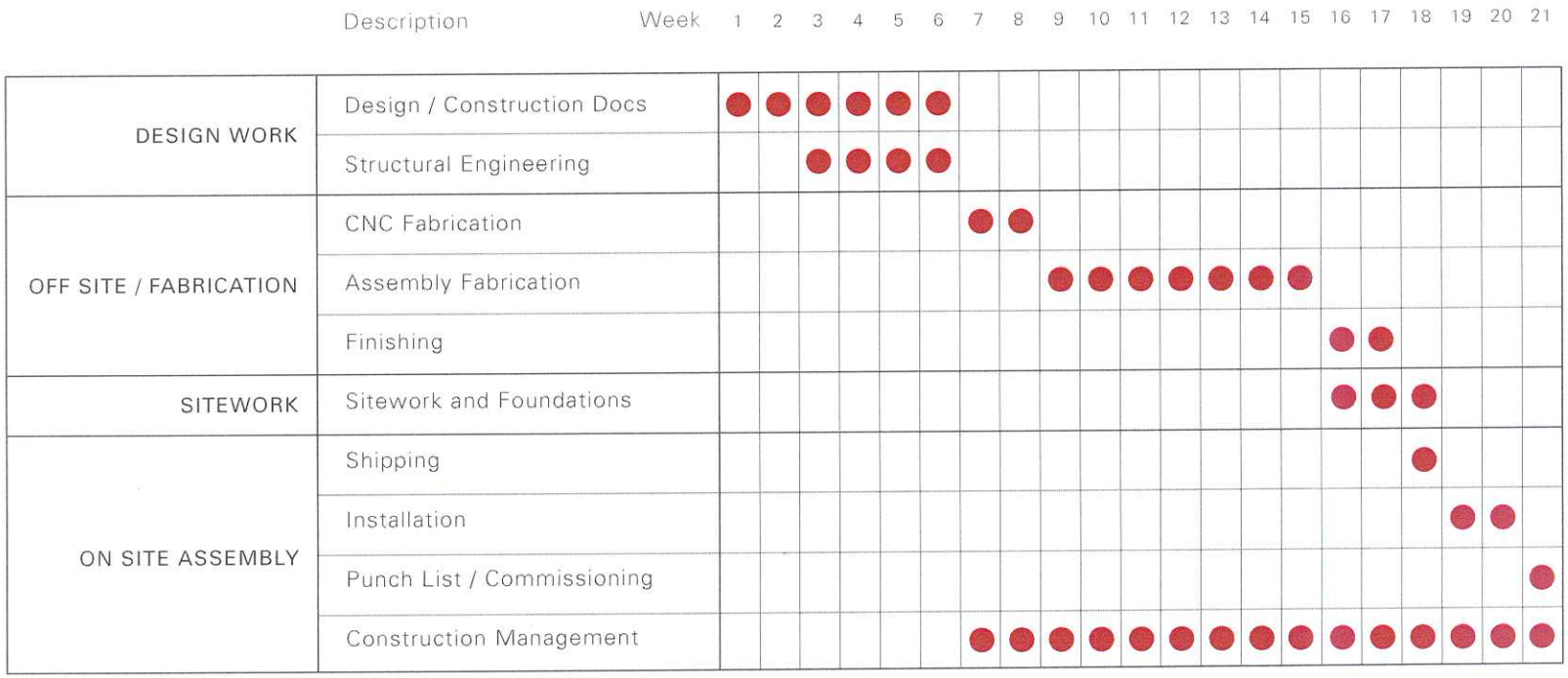
INSTALLATION / MAINTENANCE

The approach to fabrication is planned around making installation as expedient and durable as possible. The fabricated components will arrive as subassemblies and be placed on a foundation that has been poured and cured prior to the install day. A subcontractor with articulating lift and crane will erect the pipe and plow disc segments in staged increments vertically. Each stack of vertical elements will be tied together with a horizontal pipe arch by locking into the "saddled" connections and bolting in place with no field welding or cutting required. Our ability to accurately 3d model and extract components for digital fabrication processes allows us to predict the exact location of the parts of the sculpture in space and calibrate all connections to match the actual dimensions with the virtual model. A further check of that technique is performed in the actual pre-assembly of parts in a shop prior to installation.

The sculpture is designed for optimum durability and longevity of aesthetic intent understanding that this is a exterior installation in a roadside location. The use of stainless steel on the primary structure and structural welds ensures it to be a robust structure for perpetuity. The convex topside of the disc surfaces will naturally repel water and snow and oxidize over time. The concave underside of the plow discs to be painted with industrial enamel will need to be repainted every 5-10 years as they are essentially shielded from UV expose and other elements. It is understood that the project references agricultural equipment which is allowed to weather in the environment and the patina of age adds to its cultural value.



TIMELINE


Description
Week
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
DESIGN WORK
Design / Construction Docs
Structural Engineering
OFF SITE / FABRICATION
CNC Fabrication
Assembly Fabrication
Finishing
SITEWORK
Sitework and Foundations
ON SITE ASSEMBLY
Shipping
Installation
Punch List / Commissioning
Construction Management