SECOND COURSE: MILLVALE MOOSE

Mobile/Adaptable Cafe Feature Elements for Regional Non-Profit / Pittsburgh, PA / 2019

Urban Design Build Studio (UDBS)

The mission of Pittsburgh non-profit New Sun Rising (NSR) is to 1) Create economic opportunity, 2) Solve social challenges, and 3) Strengthen the vibrancy of place. NSR asked the Urban Design Build Studio (UDBS) and PROJECT RE_ to design and fabricate feature elements for its new café at the Millvale Moose Food + Energy Hub. The mission of New Sun Rising aligns directly with the mission of the UDBS—to develop appropriate, affordable, replicable, and regionally-specific design solutions in the public interest—and the mission of PROJECT RE_—to reuse materials, rebuild communities, and restore lives. SECOND COURSE: MILLVALE MOOSE is a manifestation of the allied missions of these partner entities, demonstrated through both process and product.

The scope of work included 1) a café service + transaction bar, 2) a movable, modular "green" partition wall, and 3) branding of the architect-designed interior awning. The client asked that the café modular/reconfigurable to accommodate various community programming, such as a cooking class, concert, or banquet. The café bar is the second iteration prototype of a modular, adaptable cart system built entirely from waste material—it is a site-specific iteration of a product intended for mass-production. Oak from deconstructed dormitory wardrobes, reused steel office cabinets, and reclaimed marble countertop are composed to create authentic, functional, place-specific furniture. Highly-specific, custom detailing was employed throughout the project to satisfy functional, usability, and ergonomic requirements while aspiring to invite visual and tactile delight for its users. The modular "greenwall", desired by the client for display of low-light plants, is composed of stacks of plastic storage crates wrapped in plywood, creating a flexible and attractive partition wall that can be repositioned or restacked as programmatic functions change. A CNC-milled supergraphic depicting a moose in a field of wheat under a rising sun is applied across the cafe elements to give an authentic, place-specific identity to the space and speak to the ethos, heritage, and aspirations of the new Food + Energy Hub. Designed to emulate natural foliage, the textures and forms of the cafe are intended to inspire curiosity and imagination in a child, with hopes of positively impacting future generations through the build environment. All steel and stone components of the project were fabricated by Entrepreneurs-in-Training (E.I.T.s) at PROJECT RE_ as part of job skills training aimed at elevating the individuals' prospects for earning a living wage. The project enabled the EIT to advance hard skills in tube welding, stone cutting, stone polishing, CNC plasma-cutting, and finely crafted detail metalwork, as well as soft skills in communication/coordination with designers and the reading of architectural shop drawings.

Years
Design 2018-2019
Completed 2019

Client
New Sun Rising; 412 Food Rescue; Sprezzatura

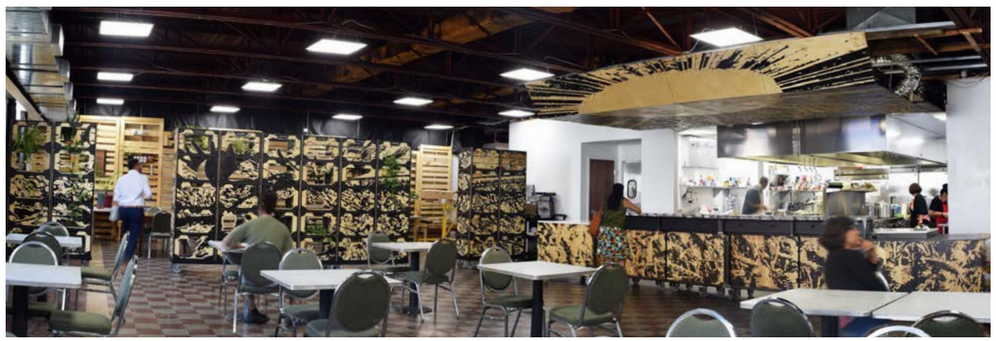
Design
John Folan, UDBS Director; Garrett Rauck, UDBS Fellow

Construction
PROJECT RE_

Partners
Trade Institute of Pittsburgh, Construction Junction, Laser Lab

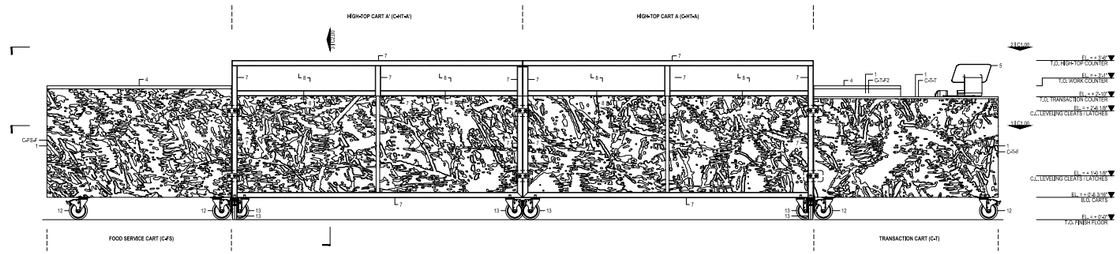
Recognition
-AIA Pennsylvania 2019 Honor Award, Impact Design
-AIA Pittsburgh 2019 Certificate of Merit, Architecture: Small

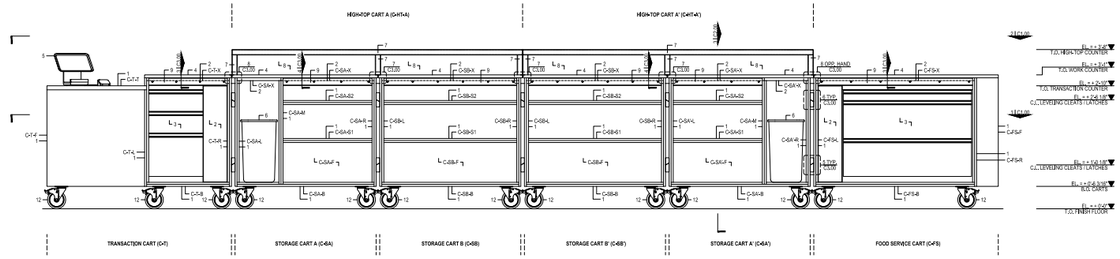
Exterior photograph of the Millvale Moose building.

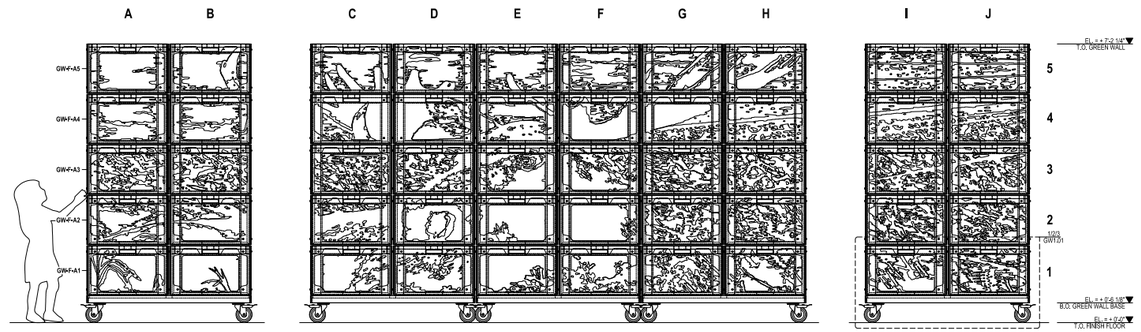


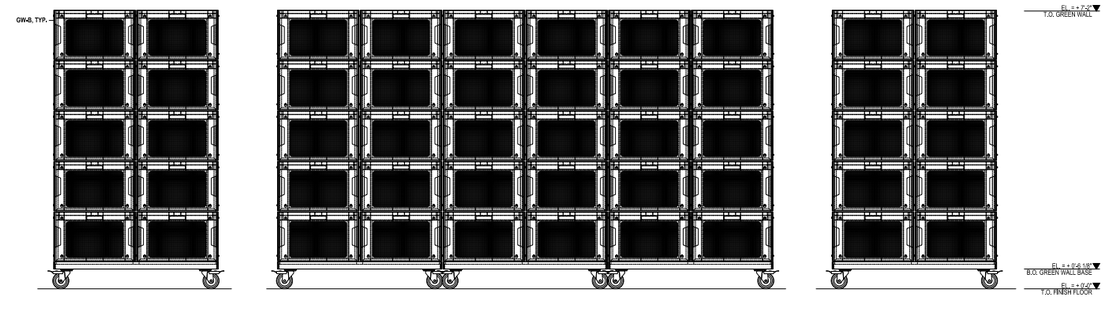
Panoramic photograph of Millvale Food + Energy Hub Cafe showing cafe carts (right), awning (upper right), and modular "greenwall" (left). (Opposite) The cafe bar provides various surfaces for transaction, food prep and bar seating.

Elevation photographs of finished Cafe Bar and Greenwall. Both are “two-faced” in concept and function. Identified by warmer materials, the front of the bar serves as the public front to the café and is designed to create visual intrigue while providing variable height surfaces for interface with patrons. Identified by cooler materials, the rear of the bar is an ordered system designed to support the functional requirements of use by café employees. Reclaimed steel office cabinets provide lockable secure storage while adjustable open shelves allow for flexibility and easy access for stored items. The front face of the Greenwall is the visual focus of the space, the eye of the moose at its center. The back panels of the Greenwall are removable to allow access to plants housed inside.







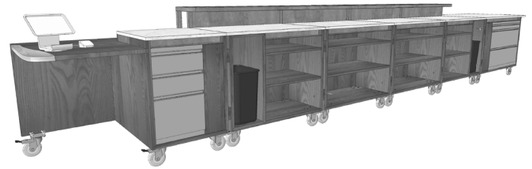


Front and rear elevation drawings of the Cafe Bar and Greenwall from Construction Document set, used during fabrication.

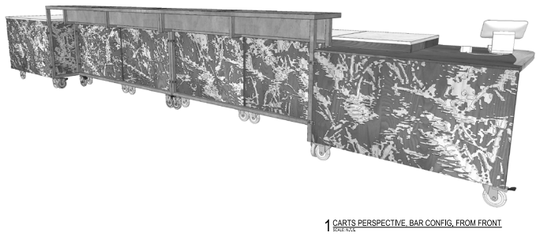
5 HIGH-TOP CARTS PERSPECTIVE
SCALE: NO SCALE

4 CARTS PERSPECTIVE, TABLE CONFIG, FROM LEFT
SCALE: NO SCALE

3 CARTS PERSPECTIVE, TABLE CONFIG, FROM RIGHT
SCALE: NO SCALE



2 CARTS PERSPECTIVE, BAR CONFIG, FROM BACK
SCALE: NO SCALE



1 CARTS PERSPECTIVE, BAR CONFIG, FROM FRONT
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50. 1/4" MDF
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IRWIN DESIGN BUILD STUDIO
112 E SHERMAN ST.
MILLVALE, PA 15209

MILLVALE MOOSE

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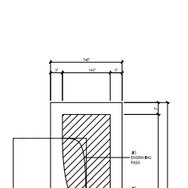
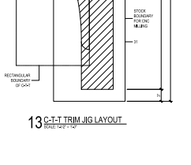
2019
JUNE 27
FABRICATION

AS2.00
CARTS DETAILS



11 C-T CASTER SECTION DETAIL
SCALE: 6" = 1'-0"



10 C-T CASTER PLAN DETAIL
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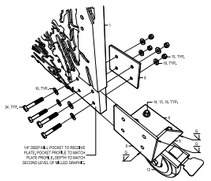
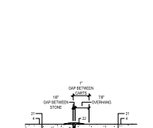


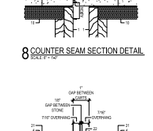
9 C-T CASTER EXPLODED PERSPECTIVE DETAIL
SCALE: NTS

13 C-T-T TRIM JIG LAYOUT
SCALE: 6" = 1'-0"

12 C-T-T TRIM PLAN DETAIL
SCALE: 6" = 1'-0"



8 COUNTER SEAM SECTION DETAIL
SCALE: 6" = 1'-0"



7 COUNTER SEAM DETAIL
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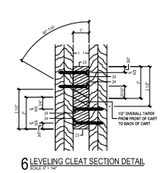
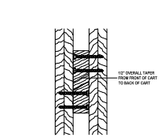


6 LEVELING CLEAT SECTION DETAIL
SCALE: 6" = 1'-0"



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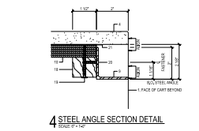

4 STEEL ANGLE SECTION DETAIL
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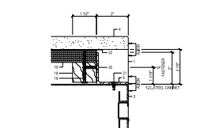

3 CABINET MOUNTING SECTION DETAIL
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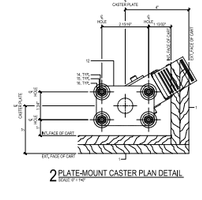

2 PLATE-MOUNT CASTER PLAN DETAIL
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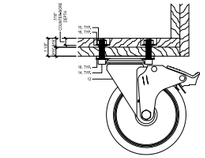

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38. 24" X 24" CEILING DIFFUSER BY GENERAL CONTRACTOR, PAINTED BLACK
39. FLEX DUCT BY GENERAL CONTRACTOR
40. 1/2" X 1" BRUSHED STEEL WALL THICKNESS ONE FACE THEN CRGAILED THEN CLEAR POLYURETHANE FINISH
41. 5/16-18 THREAD 18-8 STAINLESS STEEL SOCKET HEAD SCREW, 1/4" INCH LONG
42. 5/16-18 THREAD 18-8 STAINLESS STEEL WASHER FOR 1/4" SCREW SIZE
43. 1/2-13 GRADE 8 HEAVY HEXNUT 18-8 STAINLESS STEEL HEX NUT
44. 1/2" OD, 5/16" ID, 1/4" STAINLESS STEEL WASHER FOR 1/4" SCREW SIZE
45. 1/2" OD, 1/4" ID, 1/4" STAINLESS STEEL WASHER FOR 1/4" SCREW SIZE
46. 1/2" OD, 1/4" ID, 1/4" STAINLESS STEEL WASHER FOR 1/4" SCREW SIZE
47. 1/2" OD, 1/4" ID, 1/4" STAINLESS STEEL WASHER FOR 1/4" SCREW SIZE
48. 1/4" OD, 3/16" LONG NYLON UNTHREADED SPACER FOR 1/4" SCREW SIZE
49. 3/4" MULTI-WOOD PLYWOOD, EBONY STAIN ALL SURFACES, CLEAR POLYURETHANE FINISH
50. 1/4" MDF
51. ULINE FLEXIBLE MAGNETSHEET WALL CONTAINER, 24" X 18" X 18-MIL", GREY, THIN WEBBING REMOVED FROM ALL SIDES
52. PAPER BOTTOM ASHTRAY SCREEN, OR EQUAL
53. PLATE-MOUNT TWEED CASTER TO BE COLSON 2.2050.648 4IN STEM WITH BRAKE 5/8" X 3-1/2" PLATE, 3" DIA WHEEL, 6 3/4" LOAD HEIGHT

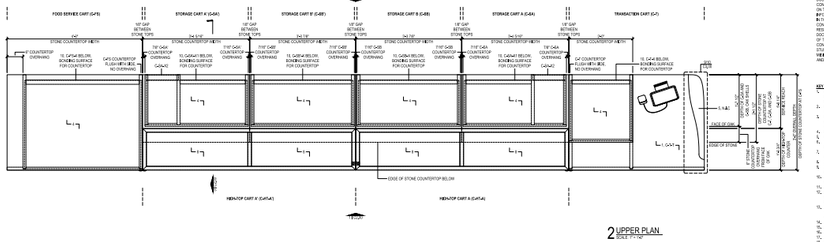
IRWIN DESIGN BUILD STUDIO
112 E SHERMAN ST.
MILLVALE, PA 15209

MILLVALE MOOSE

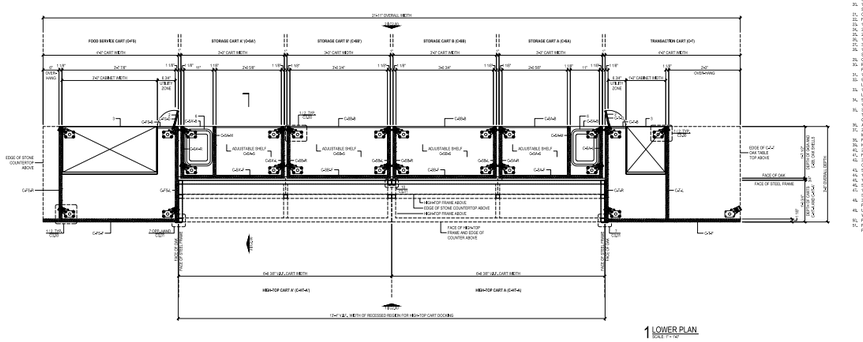
112 E SHERMAN ST.
MILLVALE, PA 15209

2019
JUNE 27
FABRICATION

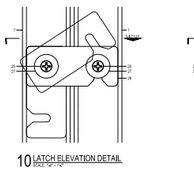
C1.00
CARTS DETAILS



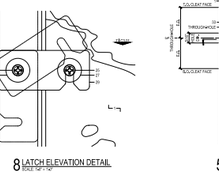
2 UPPER PLAN
SCALE: 1" = 1'-0"



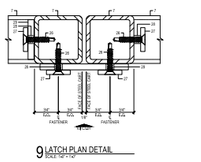
1 LOWER PLAN
SCALE: 1" = 1'-0"



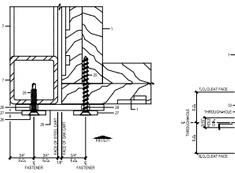
10 LATCH ELEVATION DETAIL
SCALE: 6" = 1'-0"



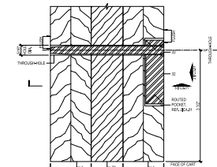
8 LATCH ELEVATION DETAIL
SCALE: 6" = 1'-0"



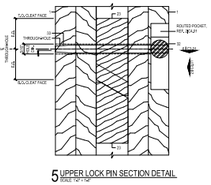
9 LATCH PLAN DETAIL
SCALE: 6" = 1'-0"



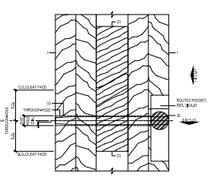
7 LATCH PLAN DETAIL
SCALE: 6" = 1'-0"



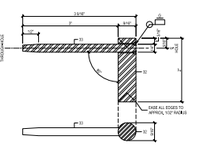
6 LOCK PIN PLAN DETAIL
SCALE: 6" = 1'-0"



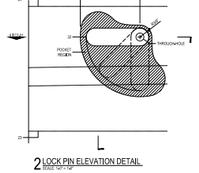
5 UPPER LOCK PIN SECTION DETAIL
SCALE: 6" = 1'-0"



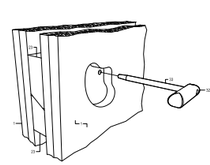
4 LOWER LOCK PIN SECTION DETAIL
SCALE: 6" = 1'-0"



3 LOCK PIN PART LAYOUT
SCALE: 1-1/2" = 1'-0"



2 LOCK PIN ELEVATION DETAIL
SCALE: 1-1/2" = 1'-0"



1 LOCK PIN PERSPECTIVE DETAIL
SCALE: NTS

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1. THESE DOCUMENTS ARE THE COPYRIGHTED PROPERTY AND INTELLECTUAL PROPERTY OF THE CURRENCE MILLON LIMITEDBY URBAN DESIGN BUILD STUDIO (UDBS), THE DOCUMENTS ARE NOT TO BE REPRODUCED OR UTILIZED FOR ANY PURPOSE OTHER THAN ORIGINALLY INTENDED AND AS STIPULATED ON THE COVER SHEET AND SELF DECLARATION OF THE OCCUPANTS FOR ANY PURPOSE, SPECIFICALLY STIPULATED OR NOT, SHALL BE GRANTED ONLY BY AN AUTHORIZED WRITING BY THE CURRENCE MILLON LIMITEDBY URBAN DESIGN BUILD STUDIO AND ITS DIRECTOR JOHN POLAN ML, LEED AP.
2. ALL NOTES IN THE DOCUMENTS INCLUDED IN THE DRAWING INDEX ARE INTENDED TO BE CONSISTENT IN RESOLUTION OF ONE ANOTHER, ALL PARTIES ENTERED TO BID THOSE DOCUMENTS FOR COST ESTIMATION, BIDDING, QUANTITY SURVEY, AND/OR CONSTRUCTION SHALL CONSULT THE GENERAL NOTES AND INFORMATION LOCATED ON THE SHEET AND ALL TO SERVE GENERAL INFORMATION AND DATA SHEETS FOR INFORMATION AND CONDITIONS GOVERNING WORK DESCRIBED IN DOCUMENTS BETID IN THE DRAWINGS BEFORE PROCEEDING WITH PROCUREMENT AND/OR CONSTRUCTION. GENERAL INFORMATION AND DATA SHEETS GO TO PROJECT RESEARCH AND GUIDELINES GOVERNING ALL BID AND/OR CONSTRUCTION DOCUMENTS, ALL BIDDERS, ESTIMATING, AND PRICING SHALL STUDY COMPLETE SETS OF THE BIDDING AND/OR CONSTRUCTION DOCUMENTS IN SUCH TIME AS TO NOT CONSTRUCTION DELAY AND NOTIFY THE OWNER AND ARCHITECT, SUBMITTING ONE OR MORE PROPOSALS RESULTING FROM THE USE OF INCOMPLETE SETS OF BIDDING AND/OR CONSTRUCTION DOCUMENTS.

KEY NOTES:

1. RECLAIMED OAK SALVAGED FROM WHISKEYBOXES, 2 LAYERS OF 5/8" THICK OAK LAMINATED TO 1 1/4" OVERALL THICKNESS, EBONY STAIN W/ CLEAR POLYURETHANE FINISH
2. RECLAIMED OAK SALVAGED FROM WHISKEYBOXES, 1 LAYER 5/8" THICK OAK, EBONY STAIN W/ CLEAR POLYURETHANE FINISH
3. RECLAIMED STEEL SPINET CABINET, FRONT FACE SANDED TO REMOVE DIRT, PAINT, SANDED TO 220, BUFFED WITH 0000 #0 STEEL WOOL, TINTED WITH CLEAR POLYURETHANE
4. RECLAIMED WHITE MARBLE STONE, EDGES SANDED TO 1/16"
5. CASH REGISTER / SQUARE 30 CLIENT, NOT IN CONTRACT
6. T-SAL-RUBBERMAID BLACK PLASTIC RECTANGULAR TRASH CAN 15 1/4" WIDE X 15" DEEP, OR EQUAL
7. 1/2" X 1" BRUSHED STEEL WALL THICKNESS SQUARE ASI LOW CARBON STEEL TUBE, 3 COATS EPOXY PAINT FOR EXTERIOR USE
8. 3/16" ASI LOW CARBON STEEL PLATE, 3 COATS WB EPOXY/POLYURETHANE FINISH
9. 2" X 2" X 1/8" THICK ASI LOW CARBON STEEL ANGLE, 3 COATS WB EPOXY/POLYURETHANE FINISH
10. 1/4" MDO EXTERIOR GRADE PLYWOOD, FROM LUMBER SCRAP AT PROJECT RE_, EBONY STAIN WB FLUID POLYURETHANE FINISH
11. 25LB WEIGHT-LIFTING STEEL SHELF REEL TRAY/CD, STEM
12. PLATE-MOUNT CASTER TO BE COLSON 2.2050.648 4IN STEM WITH BRAKE 5/8" X 3-1/2" MOUNT PLATE, 3" DIA WHEEL, 6 3/4" LOAD HEIGHT, 325LB CAPACITY, TOTAL LOCK BREAK
13. THREADED STEM-MOUNT CASTER TO BE COLSON 2.2050.648 4IN STEM WITH BRAKE 5/8" 1/2"-13 X 3/4" LONG THREADED STEM, 3" DIA WHEEL, 6 1/4" LOAD HEIGHT, 325LB CAPACITY, TOTAL LOCK BREAK
14. 5/16-18 THREAD 18-8 STAINLESS STEEL SOCKET HEAD SCREW, 3/4" INCH LONG
15. 5/16-18 THREAD 18-8 STAINLESS STEEL WASHER FOR 3/4" SCREW SIZE
16. 1/2-13 GRADE 8 HEAVY HEXNUT 18-8 STAINLESS STEEL HEX NUT
17. HARDWOOD, FROM SCRAP LUMBER AT PROJECT RE_, EBONY STAIN WITH CLEAR POLYURETHANE FINISH
18. 2" FLAT-HEAD WOOD SCREW, COUNTERSUNK TO FLUSH, EQUAL SPACING AS SHOWN IN ELEVATION DRAWING (LESS WITH 1" HOLDAPP FROM EACH END OF STEEL RAILS)
19. 1/2" FLAT-HEAD SELF-TAP SCREW, COUNTERSUNK TO FLUSH, FREQUENCY AND SPACING TO ALIGN WITH ADJACENT WOOD SCREWS, SEE KEYNOTE 16
20. FLEXCO SUPER EDGE 1/8"T VINYL SHANNONIN 74COLOR EMBER STRIP
21. 1" THICK MAHOGANY LEVELING CLEAT
22. 2" FLAT-HEAD WOOD SCREW
23. 2" FLAT-HEAD WOOD SCREW
24. 1" HEX FLANGED SELF-TAP SCREW, (BY-CAPTURED STEEL, HEAD PAINTED BLACK
25. 3/8" OD X 5/16" ID BLACKOXIDE STEEL COUNTERSUNK WASHER FOR HEX SCREW
26. 1/4" OD, 3/16" LONG 18-8 STAINLESS STEEL UNTHREADED SPACER, FOR NO.4 SCREW
27. CUSTOM FLASHMOUT STEEL LATCH
28. REDLUMBER OAK SALVAGED FROM WHISKEYBOXES, 1 1/4" THICK, CLEAR POLYURETHANE FINISH
29. 1/2" MDF
30. 5"ø SOLID ASI LOW CARBON STEEL ROUND STEEL BAR STOCK FOR CUSTOM STEEL LOGO PIN
31. 1/4" DIA ASI LOW CARBON STEEL ROUND STEEL BAR STOCK FOR CUSTOM STEEL LOGO PIN
32. 5/16-18 THREAD GRADE 5 MEDIUM STRENGTH (BIG-HATTED STEEL CAP SCREW, 3/4" INCH LONG
33. 3/4" MULTI-WOOD PLYWOOD ANIMBO PANEL, EBONY STAIN THEN CRGAILED THEN CLEAR POLYURETHANE FINISH, PROVIDED BY PROJECT RE_, INSTALLED BY GENERAL CONTRACTOR
34. AWARD PROVIDED BY GENERAL CONTRACTOR
35. 2 1/4" MS, FLAT-HEAD SQUAREDRIVE SCREW, BLACK PHOSPHATIC FINISH, REINSTATEMENT SYSTEM RE-OR EQUAL, INSTALLED BY GENERAL CONTRACTOR
36. PENDANT LIGHT FIXTURE BY GENERAL CONTRACTOR
37. HANGER ROD BY GENERAL CONTRACTOR PER DRAWINGS BY ARCHITECT
38. 24" X 24" CEILING DIFFUSER BY GENERAL CONTRACTOR, PAINTED BLACK
39. FLEX DUCT BY GENERAL CONTRACTOR
40. 1/2" X 1" BRUSHED STEEL WALL THICKNESS ONE FACE THEN CRGAILED THEN CLEAR POLYURETHANE FINISH
41. 5/16-18 THREAD 18-8 STAINLESS STEEL SOCKET HEAD SCREW, 1/4" INCH LONG
42. 5/16-18 THREAD 18-8 STAINLESS STEEL WASHER FOR 1/4" SCREW SIZE
43. 1/2-13 GRADE 8 HEAVY HEXNUT 18-8 STAINLESS STEEL HEX NUT
44. 1/2" OD, 5/16" ID, 1/4" STAINLESS STEEL WASHER FOR 1/4" SCREW SIZE
45. 1/2" OD, 1/4" ID, 1/4" STAINLESS STEEL WASHER FOR 1/4" SCREW SIZE
46. 1/2" OD, 1/4" ID, 1/4" STAINLESS STEEL WASHER FOR 1/4" SCREW SIZE
47. 1/2" OD, 1/4" ID, 1/4" STAINLESS STEEL WASHER FOR 1/4" SCREW SIZE
48. 1/4" OD, 3/16" LONG NYLON UNTHREADED SPACER FOR 1/4" SCREW SIZE
49. 3/4" MULTI-WOOD PLYWOOD, EBONY STAIN ALL SURFACES, CLEAR POLYURETHANE FINISH
50. 1/4" MDF
51. ULINE FLEXIBLE MAGNETSHEET WALL CONTAINER, 24" X 18" X 18-MIL", GREY, THIN WEBBING REMOVED FROM ALL SIDES
52. PAPER BOTTOM ASHTRAY SCREEN, OR EQUAL
53. PLATE-MOUNT TWEED CASTER TO BE COLSON 2.2050.648 4IN STEM WITH BRAKE 5/8" X 3-1/2" PLATE, 3" DIA WHEEL, 6 3/4" LOAD HEIGHT

IRWIN DESIGN BUILD STUDIO
112 E SHERMAN ST.
MILLVALE, PA 15209

MILLVALE MOOSE

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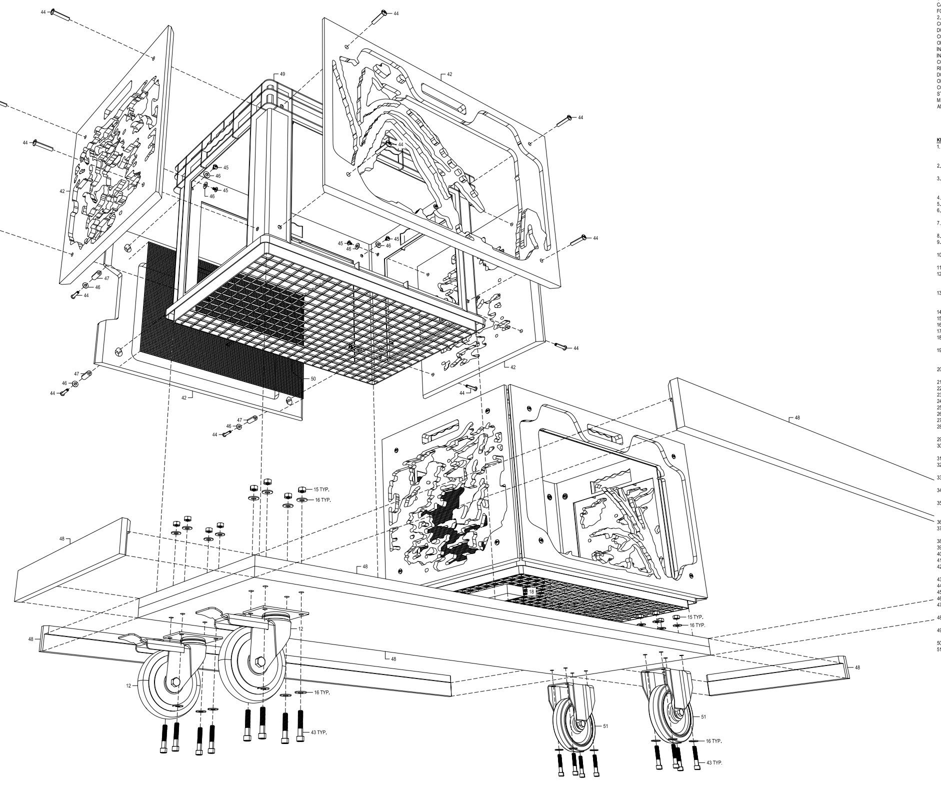
MILLVALE, PA 15209

2019
JUNE 27
FABRICATION

C3.01
CARTS DETAILS

Sample pages from construction documents.



1 TYP. GREENWALL MODULE EXPLODED ASSEMBLY
SCALE: N.T.S.

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KEY NOTES:

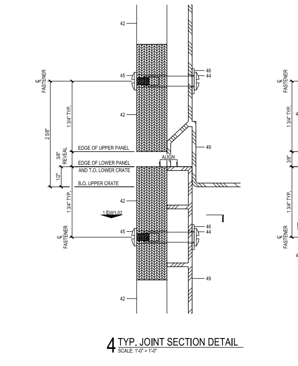
1. RECLAIMED OAK SALVAGED FROM WARDROBES, 2 LAYERS OF 5/8" THICK OAK LAMINATED TO 1 1/4" OVERALL THICKNESS, EBONY STAIN W/ CLEAR POLYURETHANE FINISH
2. RECLAIMED OAK SALVAGED FROM WARDROBES, 1 LAYER 5/8" THICK OAK, EBONY STAIN W/ CLEAR POLYURETHANE FINISH
3. RECLAIMED STEEL OFFICE CABINET, FRONT FACE SANDED TO REMOVE EXIST. PAINT, SANDED TO 220, BUFFED WITH FINE #00 STEEL WOOL, FINISHED WITH CLEAR POLYURETHANE
4. RECLAIMED WHITE MARBLE STONE, EDGES EASED TO 1/16"
5. CASH REGISTER / SQUARE BY CLIENT, NOT IN CONTRACT
6. 7 GAL. RUBBERMAID BLACK PLASTIC RECTANGULAR TRASH CAN 10 1/4" WIDE X 15" DEEP, OR EQUAL
7. 1 1/2" X 1 1/2" X 1/8" WALL THICKNESS SQUARE A36 LOW CARBON STEEL TUBE, 3 COATS WIPE-ON POLYURETHANE FINISH
8. 3/16" A36 LOW CARBON STEEL PLATE, 3 COATS WIPE-ON POLYURETHANE FINISH
9. 2" X 2" X 1/8" THICK A36 LOW CARBON STEEL ANGLE, 3 COATS WIPE-ON POLYURETHANE FINISH
10. 3/4" A-FACE OR B-FACE PLYWOOD, FROM LUMBER SCRAP AT PROJECT RE_, EBONY STAIN WITH CLEAR POLYURETHANE FINISH
11. 25LB NICKEL-PLATED STEEL SHELF PEG, 7MM O.D. STEM
12. PLATE-MOUNT SWIVEL CASTER TO BE COLSON 2.05256.445 BRK5 FSI, 3-5/8" X 2-1/2" MOUNT PLATE, 5" DIA. WHEEL, 6 3/16" LOAD HEIGHT, 325LB CAPACITY, TOTAL LOCK BREAK
13. THREADED STEM-MOUNT CASTER TO BE COLSON 2.05254.445 MTG10 BRK5 FSI, 1/2"-13 X 3/4" LONG THREADED STEM, 5" DIA. WHEEL, 6 1/16" LOAD HEIGHT, 325LB CAPACITY, TOTAL LOCK BREAK
14. 5/16"-18 THREAD 18-8 STAINLESS STEEL SOCKET HEAD SCREW, 1-3/8" INCH LONG
15. 5/16"-18 THREAD 18-8 STAINLESS STEEL HEX NUT
16. 3/4" OD, 0.344" ID 18-8 STAINLESS STEEL WASHER FOR 5/16" SCREW SIZE
17. 1/2"-13 GRADE 8 HIGH-STRENGTH STEEL HEX NUT
18. HARDWOOD, FROM SCRAP LUMBER AT PROJECT RE_, EBONY STAIN WITH CLEAR POLYURETHANE FINISH
19. 2" FLAT-HEAD WOOD SCREW, COUNTERSUNK TO FLUSH, EQUAL SPACING AS SHOWN IN ELEVATION DRAWING 2|C2.00 WITH 1" HOLD-OFF FROM EACH END OF STEEL ANGLE
20. 1/2" FLAT-HEAD SELF-TAP SCREW, COUNTERSUNK TO FLUSH, FREQUENCY AND SPACING TO ALIGN WITH ADJACENT WOOD SCREWS. SEE KEYNOTE 19.
21. CONSTRUCTION ADHESIVE
22. FLEXCO SUPER EDGE 1.875" VINYL SNAP-DOWN T-EDGE DIVIDER STRIP
23. 1" THICK MAHOGANY LEVELING CLEAT
24. 2" FLAT-HEAD WOOD SCREW
25. 2" FLAT-HEAD WOOD SCREW
26. 1" NO. 8 FLAT-HEAD SELF-TAP SCREW, ZINC-PLATED STEEL, HEAD PAINTED BLACK
27. 3/4" OD, 0.188" ID BLACK-OXIDE STEEL COUNTERSUNK WASHER FOR NO. 8 SCREW
28. 1/4" OD, 3/16" LONG 18-8 STAINLESS STEEL UNTHREADED SPACER, FOR NO. 8 SCREW
29. CUSTOM PLASMA-CUT STEEL LATCH
30. RECLAIMED OAK SALVAGED FROM WARDROBES, 1 1/4" THICK, CLEAR POLYURETHANE FINISH
31. 1/2" MDF
32. 9/16" DIA. A36 LOW CARBON STEEL ROUND STEEL BAR STOCK FOR CUSTOM STEEL LOCK PIN
33. 1/4" DIA. A36 LOW CARBON STEEL ROUND STEEL BAR STOCK FOR CUSTOM STEEL LOCK PIN
34. 5/16"-18 THREAD GRADE 5 MEDIUM STRENGTH ZINC-PLATED STEEL CAP SCREW, 1-3/4" LONG
35. 3/4" BALTIC BIRCH PLYWOOD AWNING PANEL, EBONY STAIN THEN CNC-MILLED THEN CLEAR POLYURETHANE FINISH, PROVIDED BY PROJECT RE_ INSTALLED BY GENERAL CONTRACTOR
36. AWNING FRAMING BY GENERAL CONTRACTOR
37. 2 1/4" NO. 6 FLAT-HEAD SQUARE-DRIVE SCREW, BLACK PHOSPHATE FINISH, MCMASTER-CARR 91520A160, OR EQUAL, INSTALLED BY GENERAL CONTRACTOR
38. PENDANT LIGHT FIXTURE BY GENERAL CONTRACTOR
39. HANGER ROD BY GENERAL CONTRACTOR PER DRAWINGS BY ARCHITECT
40. 2'-0" X 2'-0" CEILING DIFFUSER BY GENERAL CONTRACTOR, PAINTED BLACK
41. FLEX DUCT BY GENERAL CONTRACTOR
42. 3/4" BALTIC BIRCH PLYWOOD, EBONY STAIN ONE FACE THEN CNC-MILLED THEN CLEAR POLYURETHANE FINISH
43. 5/16"-18 THREAD 18-8 STAINLESS STEEL SOCKET HEAD SCREW, 1-5/8" INCH LONG
44. 10-24 THREAD STEEL BINDING BARREL, FOR 1-1/4" - 1-3/8" MATERIAL THICKNESS
45. 10-24 THREAD STEEL SCREW FOR BINDING BARREL
46. 5/8" OD, 0.281" ID, 18-8 STAINLESS STEEL WASHER FOR 1/4" SCREW SIZE
47. 1/2" OD, 1-5/16" LONG OFF-WHITE NYLON UNTHREADED SPACER FOR 1/4" SCREW SIZE
48. 3/4" BALTIC BIRCH PLYWOOD, EBONY STAIN ALL SURFACES, CLEAR POLYURETHANE FINISH
49. ULINE PLASTIC MESH STRAIGHT WALL CONTAINER, 24" X 16" X 16-1/2", GREY, THIN WEBBING REMOVED FROM ALL SIDES
50. PHIFER BETTERVUE INSECT SCREEN, OR EQUAL
51. PLATE-MOUNT FIXED CASTER TO BE COLSON 2.05208.445 FSI, 3-5/8" X 2-11/16" PLATE, 5" DIA. WHEEL, 6-3/16" LOAD HEIGHT

URBAN DESIGN BUILD STUDIO
CARNEGIE MELLON UNIVERSITY
5000 FORBES AVENUE
201 COLLEGE OF FINE ARTS
PITTSBURGH, PA 15213
2019 JUNE 27
FOR FABRICATION

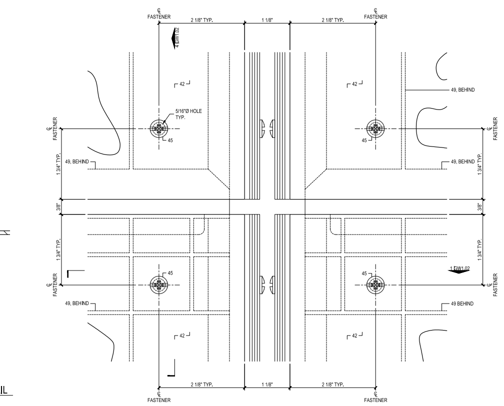
MILLVALE MOOSE 112 E SHERMAN ST. MILLVALE, PA 15209

AS3.00 TYP. GREENWALL MODULE EXPLODED ASSEMBLY

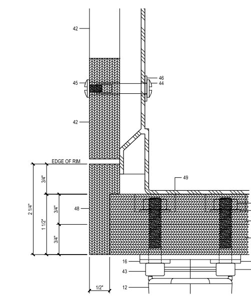
06 OF 18



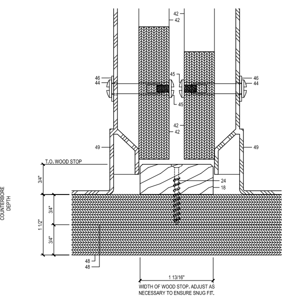
4 TYP. JOINT SECTION DETAIL
SCALE: 1'-0" = 1'-0"



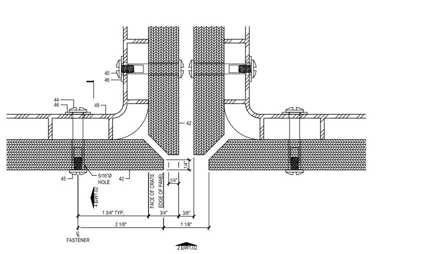
2 TYP. JOINT ELEVATION DETAIL
SCALE: 1'-0" = 1'-0"



5 SECTION DETAIL AT BASE
SCALE: 1'-0" = 1'-0"



3 SECTION DETAIL AT BASE
SCALE: 1'-0" = 1'-0"



1 TYP. JOINT PLAN DETAIL
SCALE: 1'-0" = 1'-0"

URBAN DESIGN BUILD STUDIO
CARNEGIE MELLON UNIVERSITY
5000 FORBES AVENUE
201 COLLEGE OF FINE ARTS
PITTSBURGH, PA 15213
2019 JUNE 27
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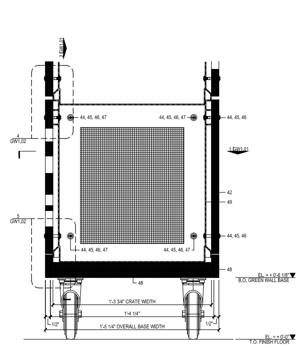
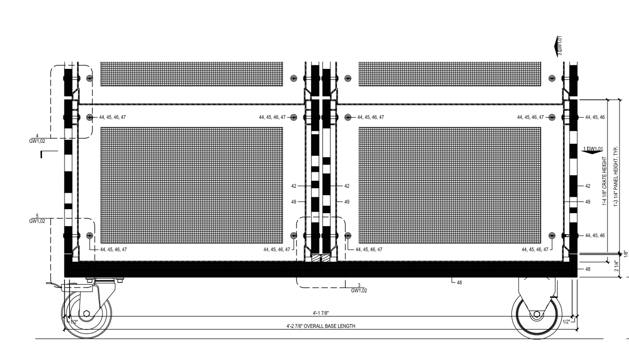
MILLVALE MOOSE 112 E SHERMAN ST. MILLVALE, PA 15209

GW1.02 GREENWALL DRAWINGS

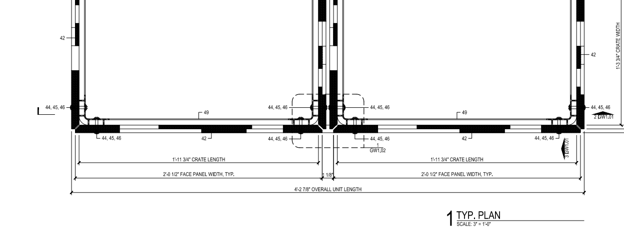
15 OF 18



3 TYP. TRANSVERSE SECTION
SCALE: 3" = 1'-0"



2 TYP. LONGITUDINAL SECTION
SCALE: 3" = 1'-0"



1 TYP. PLAN
SCALE: 3" = 1'-0"

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GW1.01 TYP. GREENWALL PLAN AND SECTIONS

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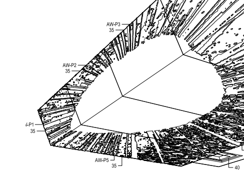
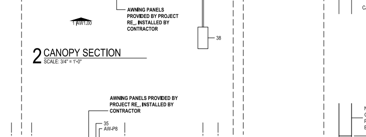
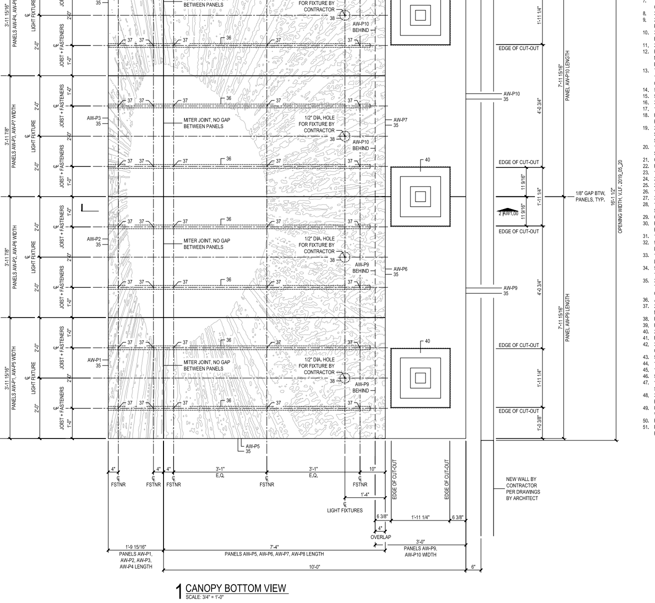


3 CANOPY PERSPECTIVE FROM BELOW
SCALE: N.T.S.



2 CANOPY SECTION
SCALE: 3/4" = 1'-0"



1 CANOPY BOTTOM VIEW
SCALE: 3/4" = 1'-0"

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AW1.00 CANOPY/AWNING DRAWINGS

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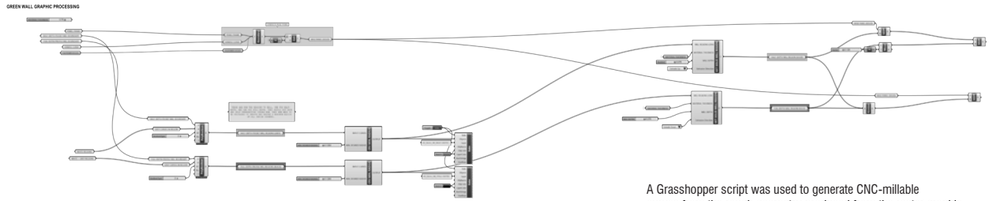
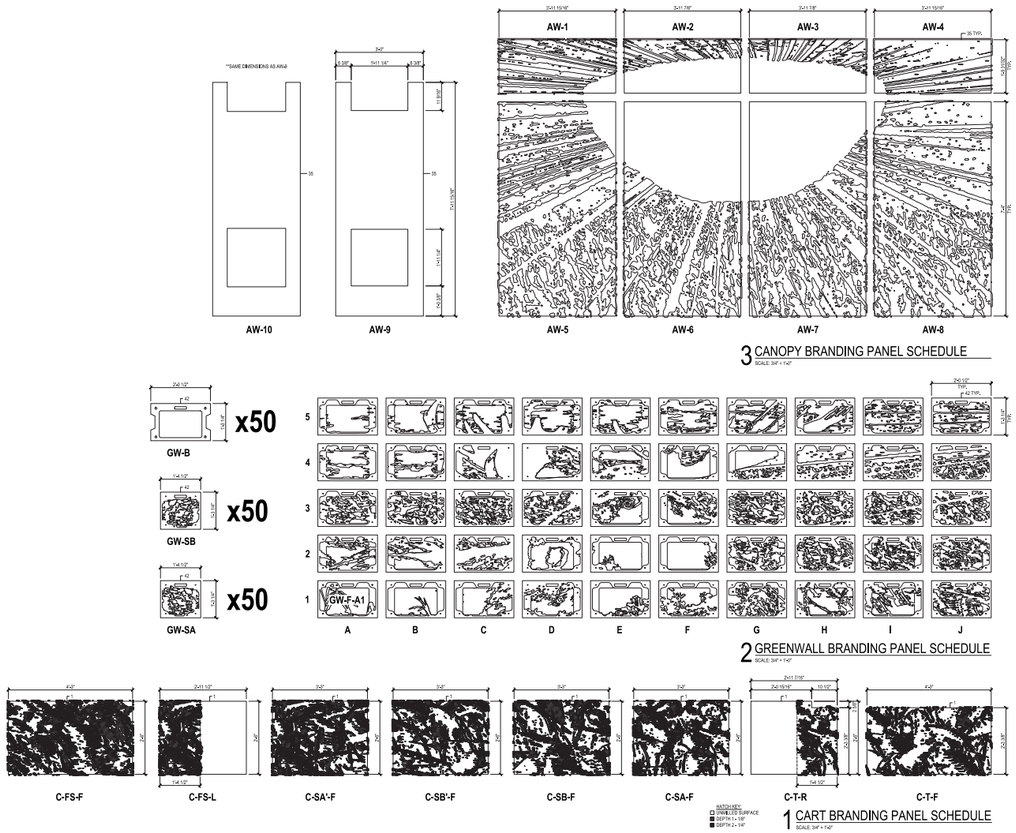
Sample pages from construction documents.

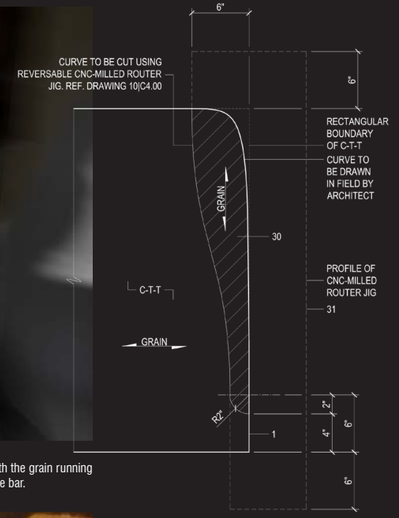
A raster image of a moose in a field of wheat under a rising sun was generated for supergraphic applied across the three cafe elements, intending to speak to the ethos, heritage, and aspirations of the new Food + Energy Hub.



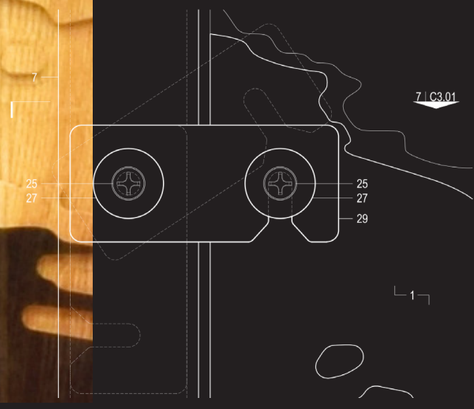
A Grasshopper script was used to generate CNC-millable curves from the rough geometry produced from the raster graphic.



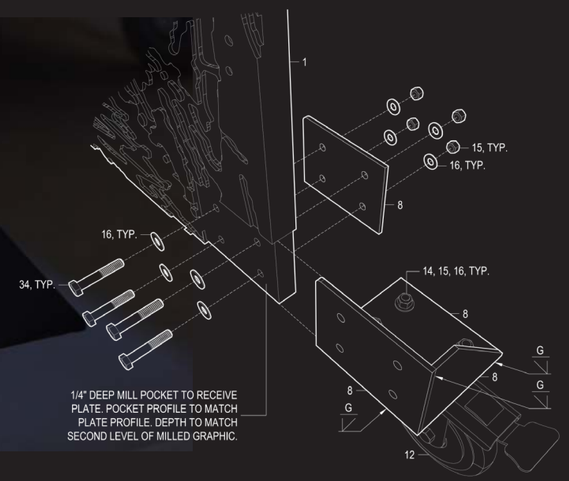
(Above) Construction Documents sheet with branding panel schedules for Cafe Bar, Greenwall, and Canopy, used to coordinate with fabricators. (Opposite) Detail of CNC-milled cafe cart shells. Solid oak planar stock was salvaged from Duquesne University dorm room wardrobes slated for landfill. The oak was laminated into panels, stained in ebony, and then milled to reveal the natural oak interior. Designed to emulate natural foliage, the textures and forms of the cafe aim to inspire curiosity and imagination in a child, with hopes of positively impacting future generations through the build environment.



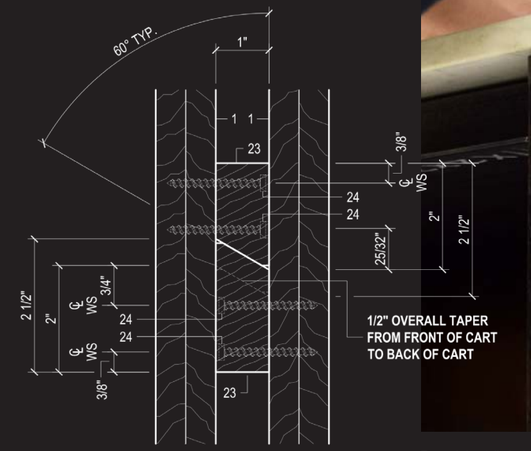
Left natural to invite user interaction, a curved piece of oak helps stiffen the cantilevering transaction countertop, with the grain running perpendicular to the primary surface. The corner is radiused to allow for comfortable circulation around the end of the bar.



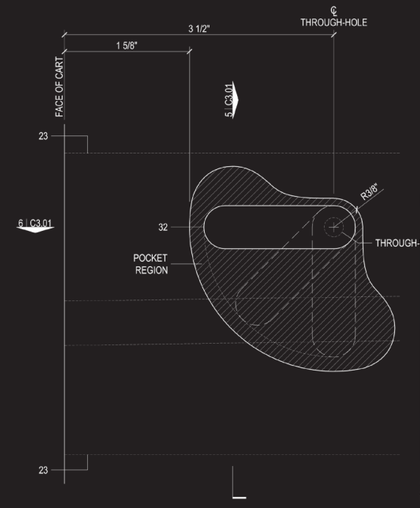
Custom steel plasma-cut latches lock the steel high-top cart into the oak bar. They are designed to be operated with the flip of a finger. The angled notch profile helps to guide the pin into a slot in the latch for locking.



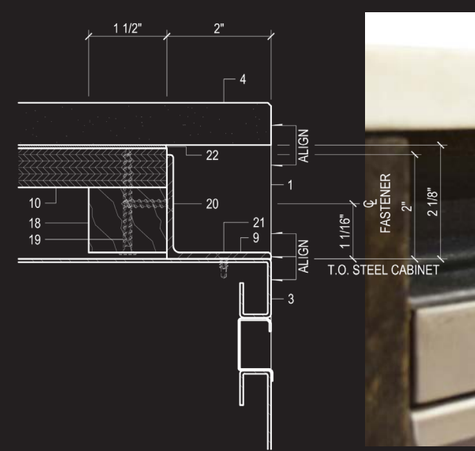
A custom caster-mount plate helps support the cantilevering front panel of the transaction cart.



Tapered dovetail cleats were developed to serve as an alignment mechanism between the carts and help to ensure a level countertop surface across the carts regardless of inconsistencies in the floor surface.



A custom steel lock pin was developed to hold the carts firmly together. A pocket - informed by the rotation of the pin - was routed into the oak shell and left natural to serve as a visual cue against the dark ebony shells.



A steel angle is used to fasten the steel office cabinet to the cart shell while simultaneously creating an under-counter grabbing surface for handling the carts.

Regionally-sourced waste material is **diverted from landfill** to create **authentic, place-specific furniture**.

The café bar is the **second iteration prototype** of a mobile cart system **built entirely from waste material**—it is a site-specific version of a product meant for **mass-production**. Oak from deconstructed dormitory wardrobes, reclaimed steel office cabinets, and waste marble countertop are artfully composed to create one-of-a-kind furniture that speaks to the material heritage of this region.

COUNTERTOP: Reclaimed marble slabs stored outside at building material reuse facility. The marble was cut to size and installed by apprentices as part of job skill training.

CABINETS: Reclaimed steel office cabinets provide a rigid, lockable core for the carts. The faces were sanded to remove the paint and refinished with clear polyurethane.

OAK SHELLS: Dormitory wardrobes were salvaged from Duquesne University. The wardrobes were deconstructed to harvest the oak panels from them, which were then laminated, cut to size, and stained to form the shells of the café carts.

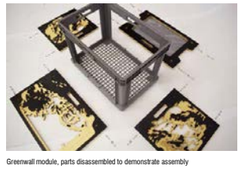
FIRST COURSE: FIRST COURSE Café, the first iteration of this cart system built from waste material, was completed in 2017.

Greenwall stacking sequence

The **modular "green" wall** provides a playful solution for indoor plants while serving as a flexible means of partitioning space.

The wall consists of fifty modules that can be stacked in any arrangement. A plastic storage crate is used as the core of each module due to its inherent durability, porosity, and stackability. The crates are clad in stained and CNC-milled plywood panels—one unique front panel, two normative side panels, and one standard rear panel. The rear panels are removable to facilitate loading of plants. The stackable, reconfigurable system empowers the users of the space to form their own environment as they see fit.

Greenwall rear elevation. The back panels of the Greenwall are removable to allow access to plants housed inside.

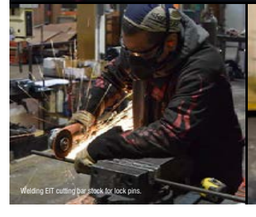


Greenwall module, parts disassembled to demonstrate assembly

EIT welding tube for steel café cart.

All **steel** and **stone components** of the project were fabricated by **Entrepreneurs-in-Training (E.I.T.s)** at the affiliated **non-profit prototyping facility** as part of **job skills training** aimed at elevating the individual's prospects for **earning a living wage**.

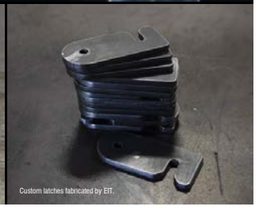
The project enabled the EITs to advance hard skills in tube welding, stone cutting, stone polishing, CNC plasma-cutting, and finely crafted detail metalwork, as well as soft skills in communication/coordination with designers and the reading of architectural shop drawings.



Welding EIT cutting bar stock for lock pins.

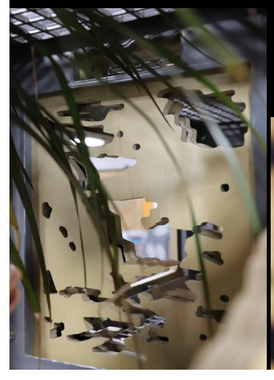
EIT learning to cut stone with wet saw.

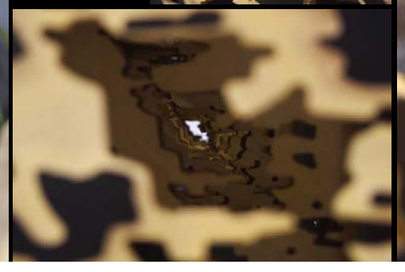
Custom lock pin fabricated by EIT.

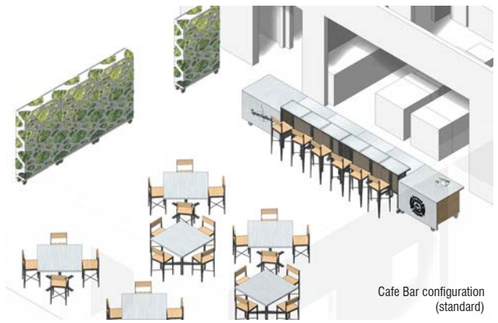


Custom latches fabricated by EIT.

Designed to **emulate natural foliage**, the textures and forms of the café are intended to **inspire curiosity and imagination in a child**, with hopes of positively impacting future generations through the built environment.







Cafe Bar configuration
(standard)

Communal Table configuration

Banquet configuration

Concert configuration

Design studies used to develop strategy for modularity/reconfigurability of the cafe elements.

A series of collaborative design charrettes with partner entities were used to quickly explore options and develop consensus.

Timelapse stills illustrating assembly and reconfiguration of the cafe bar into communal table.

The cafe carts can be reconfigured to form a communal table. Careful consideration was taken in sizing the carts to ensure alignment/unity in both configurations.