1 3D Render

2 Profile View

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No.	Description	Date

CRSL Engineering

Robb Garden Building

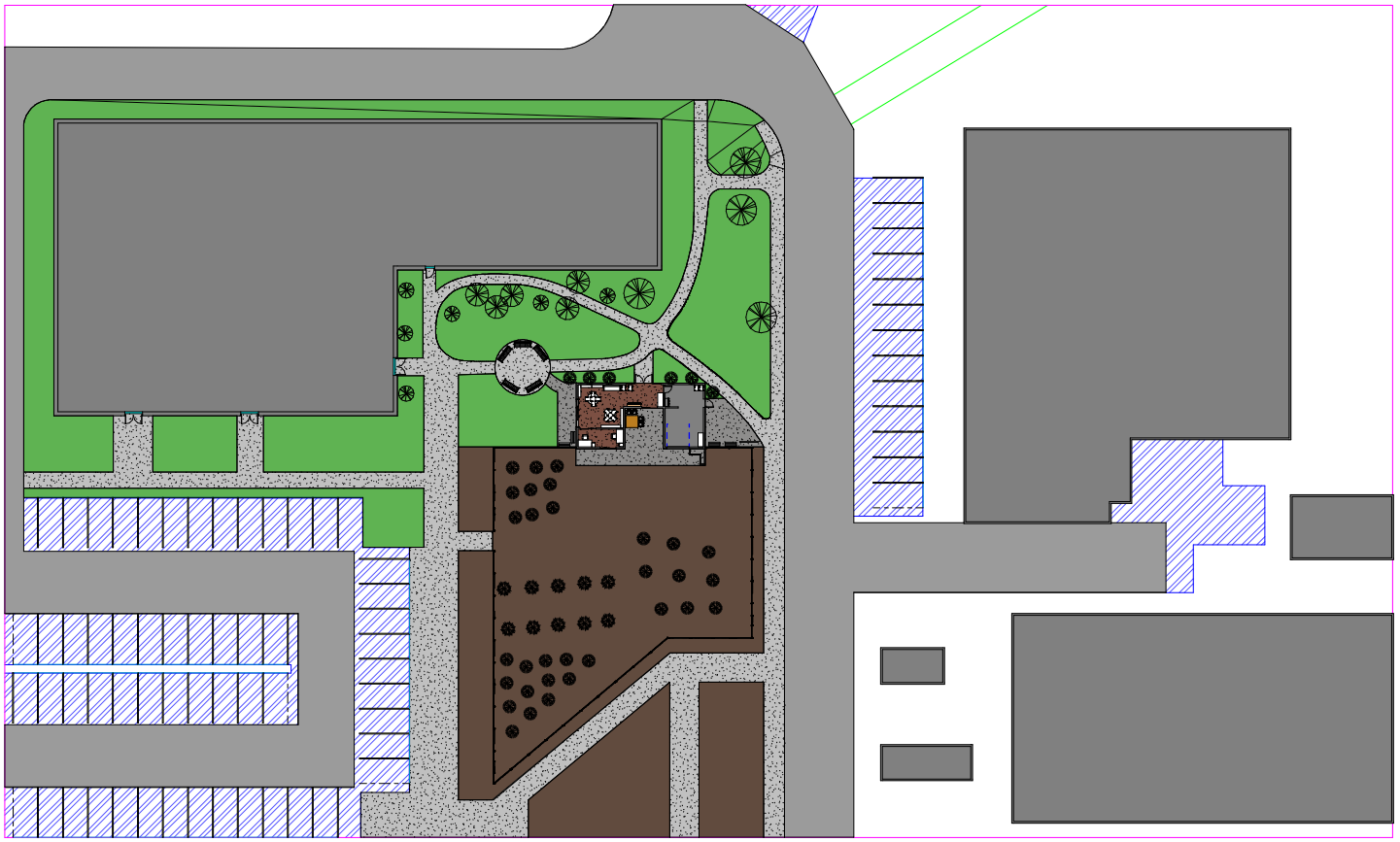
Title Sheet

Project Number	001
Date	11/16/2017
Drawn By	Author
Checked By	Checker

A101

Scale

12/7/2017 1:50:21 AM



1 Site
1/16" = 1'-0"

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No.	Description	Date

CRSL Engineering

Robb Garden Building

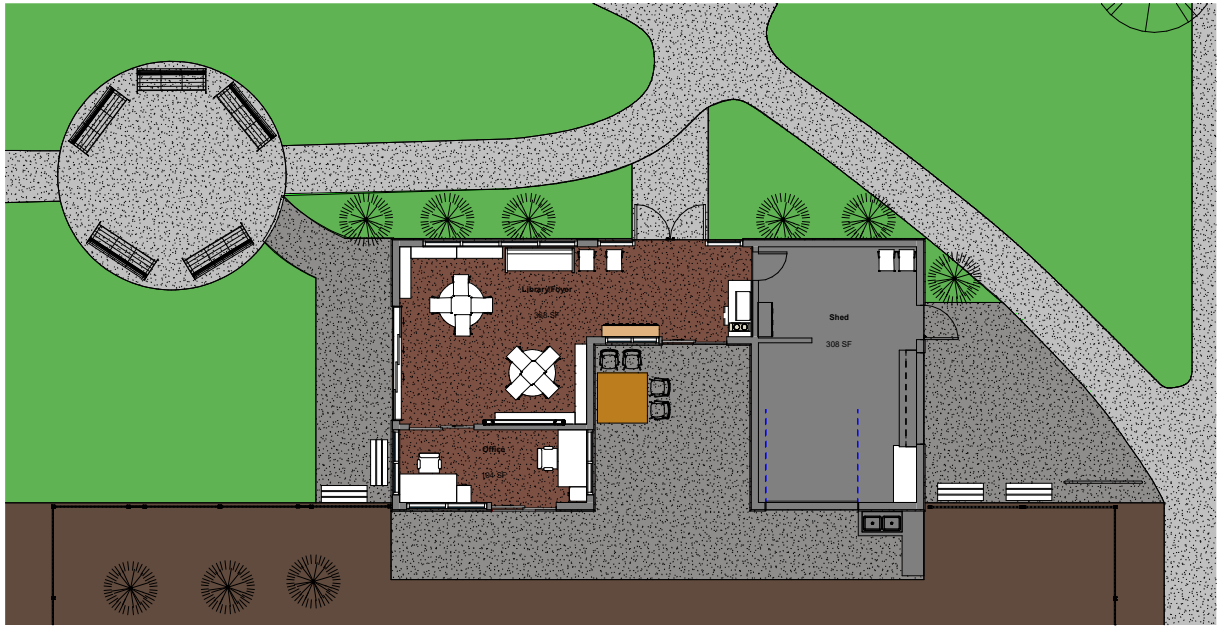
Site

Project Number	001
Date	11/16/2017
Drawn By	RAT
Checked By	Checker

A102

Scale 1/16" = 1'-0"

12/7/2017 1:50:22 AM



1 Floor Plan
1/4" = 1'-0"

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No.	Description	Date

CRSL Engineering

Robb Garden Building

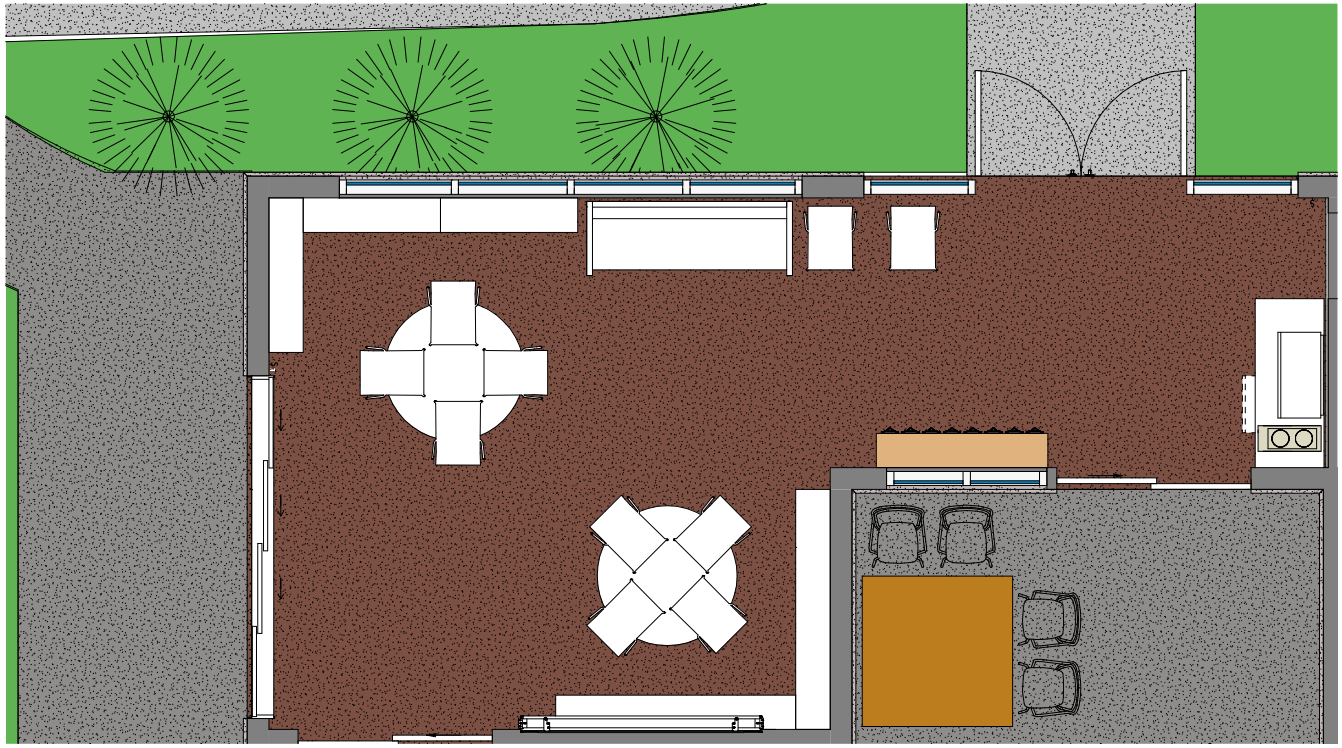
Floor Plan

Project Number	001
Date	11/16/2017
Drawn By	Author
Checked By	Checker

A103

Scale 1/4" = 1'-0"

12/7/2017 1:50:24 AM



1 Library & Foyer
3/4" = 1'-0"

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No.	Description	Date

CRSL Engineering

Robb Garden Building

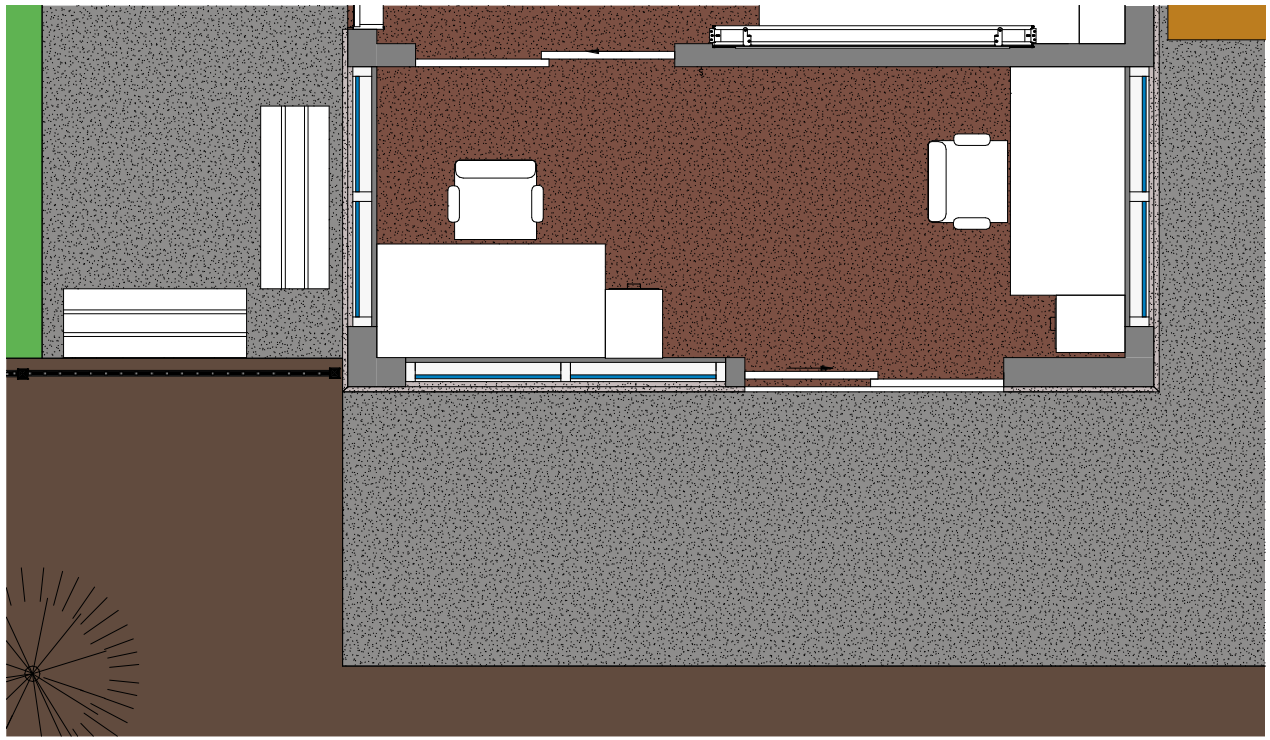
Library & Foyer

Project Number	001
Date	11/16/2017
Drawn By	Author
Checked By	Checker

A104

Scale 3/4" = 1'-0"

12/7/2017 1:50:28 AM



1 Office Room
1" = 1'-0"

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No.	Description	Date

CRSL Engineering

Robb Garden Building

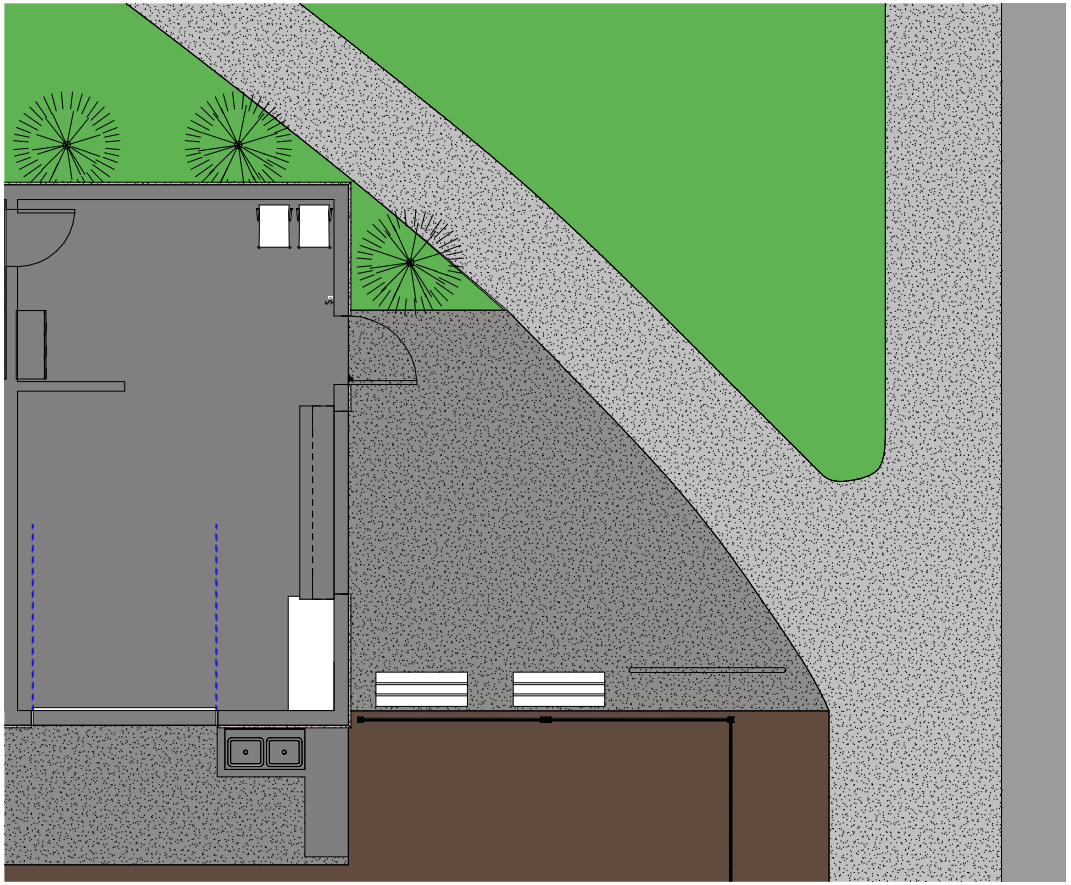
Office

Project Number	001
Date	11/16/2017
Drawn By	Author
Checked By	Checker

A105

Scale 1" = 1'-0"

12/7/2017 1:50:27 AM



1 Shed & Marketplace
1/2" = 1'-0"

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No.	Description	Date

CRSL Engineering

Robb Garden Building

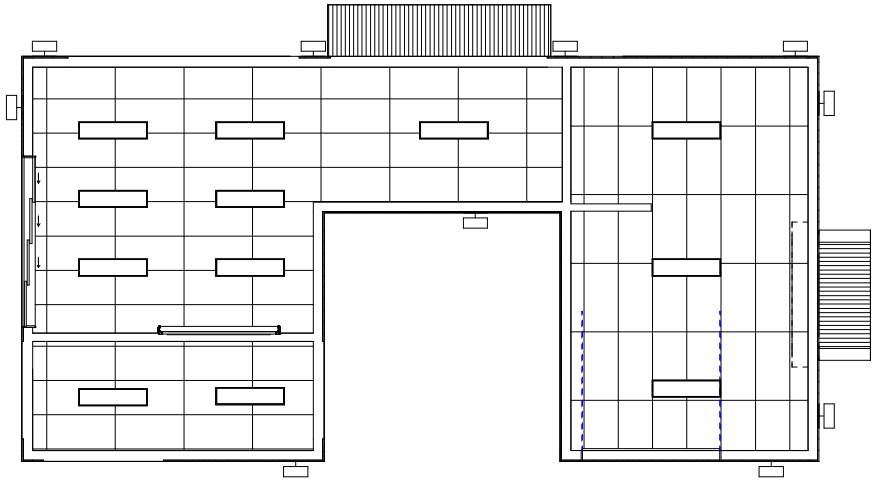
Shed & Market Place

Project Number	001
Date	11/16/2017
Drawn By	Author
Checked By	Checker

A106

Scale	1/2" = 1'-0"

12/7/2017 1:50:29 AM



1 Floor Plan
3/8" = 1'-0"

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No.	Description	Date

CRSL Engineering

Robb Garden Building

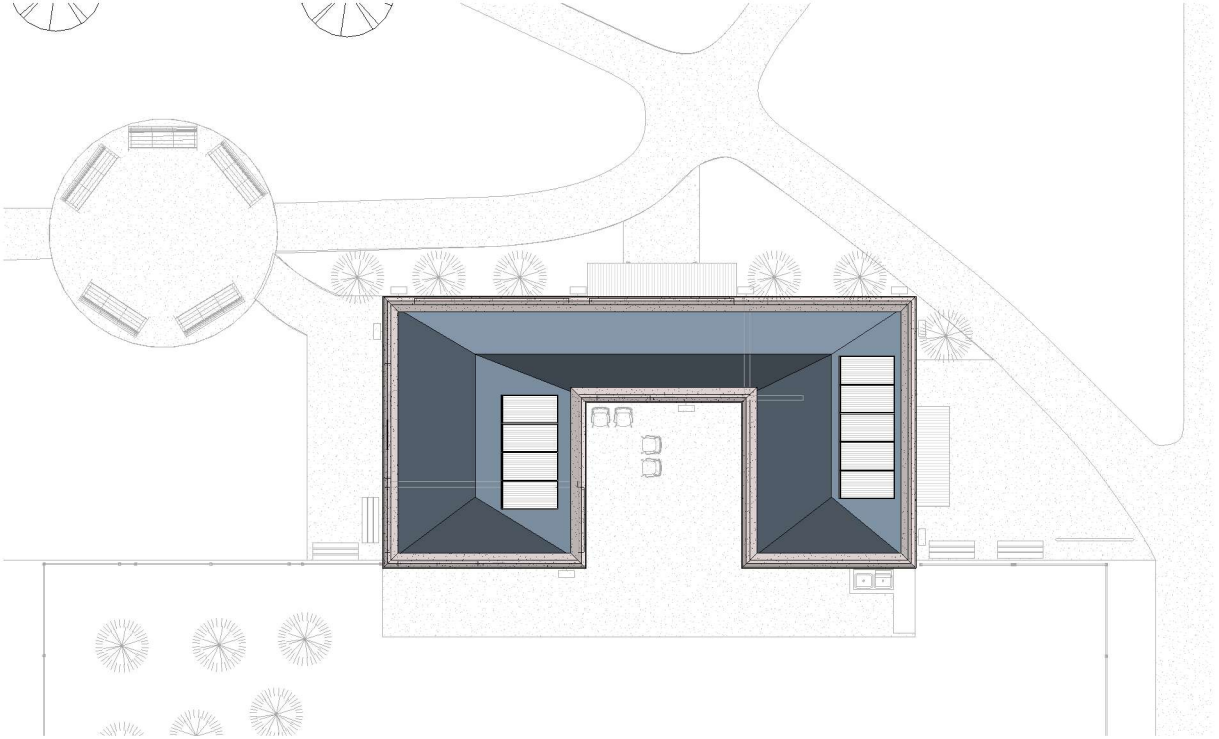
Ceiling Plan

Project Number	001
Date	11/16/2017
Drawn By	Author
Checked By	Checker

A107

Scale	3/8" = 1'-0"

12/7/2017 1:50:30 AM



1 Roof Plan
1/4" = 1'-0"

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No.	Description	Date

CRSL Engineering

Robb Garden Building

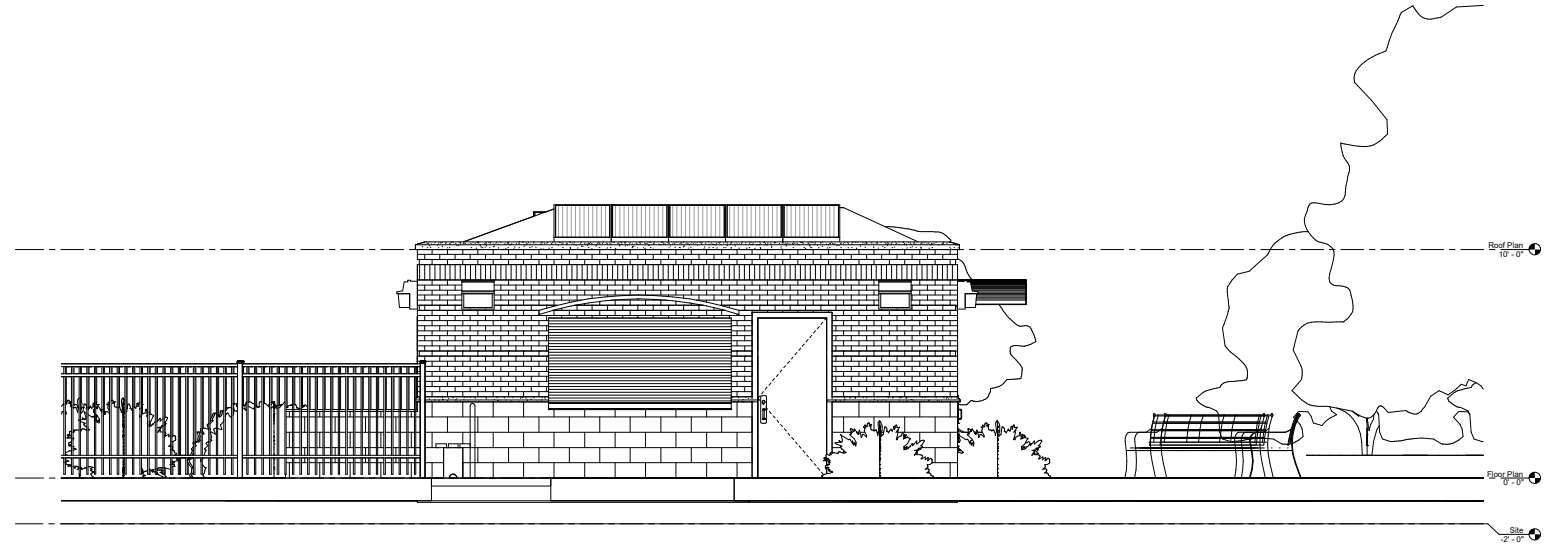
Roof Plan

Project Number	001
Date	11/16/2017
Drawn By	Author
Checked By	Checker

A108

Scale 1/4" = 1'-0"

12/7/2017 1:50:30 AM



1 East
1/2" = 1'-0"

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No.	Description	Date

CRSL Engineering

Robb Garden Building

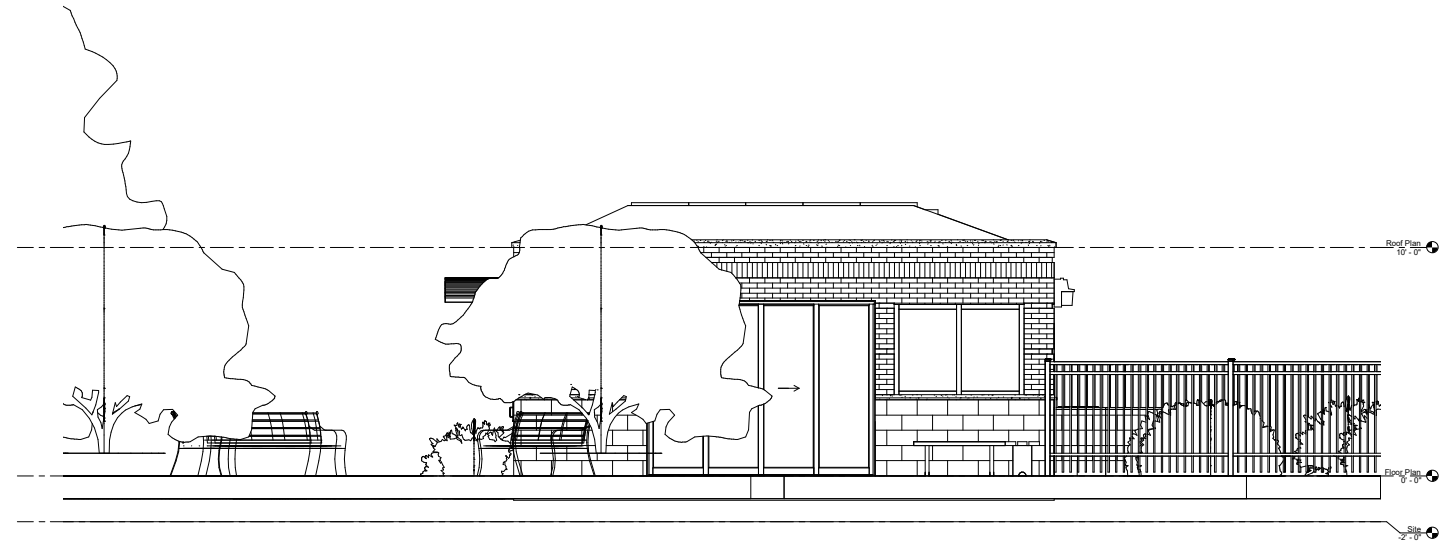
East Elevation

Project Number	001
Date	11/16/2017
Drawn By	Author
Checked By	Checker

A109

Scale 1/2" = 1'-0"

12/7/2017 1:50:31 AM



1 West
1/2" = 1'-0"

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No.	Description	Date

CRSL Engineering

Robb Garden Building

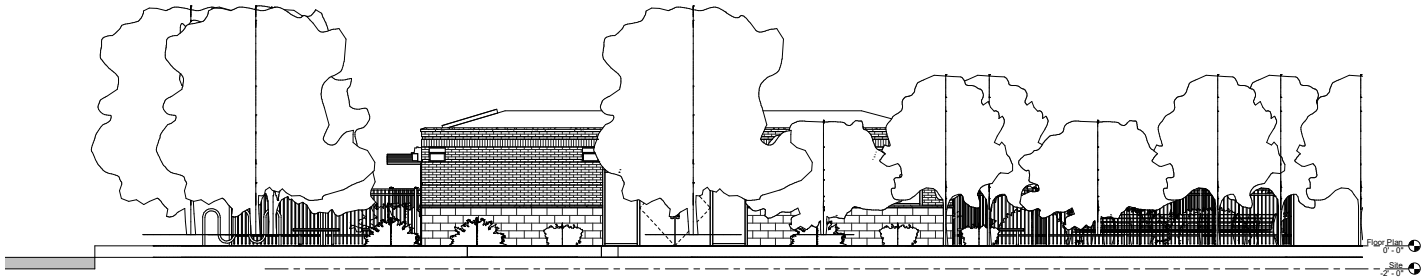
West Elevation

Project Number	001
Date	11/16/2017
Drawn By	Author
Checked By	Checker

A110

Scale 1/2" = 1'-0"

12/7/2017 1:50:32 AM



1 North
1/4" = 1'-0"

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No.	Description	Date

CRSL Engineering

Robb Garden Building

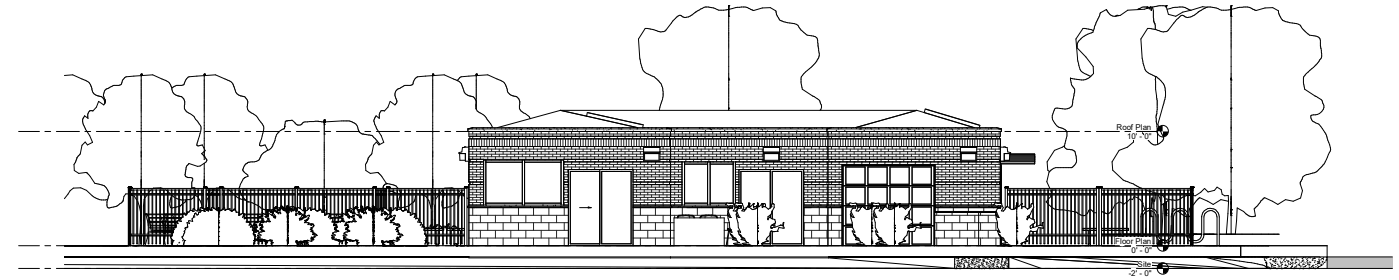
North Elevation

Project Number	001
Date	11/16/2017
Drawn By	Author
Checked By	Checker

A111

Scale 1/4" = 1'-0"

12/7/2017 1:50:33 AM



1 South
1/4" = 1'-0"

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No.	Description	Date

CRSL Engineering

Robb Garden Building

South Elevation

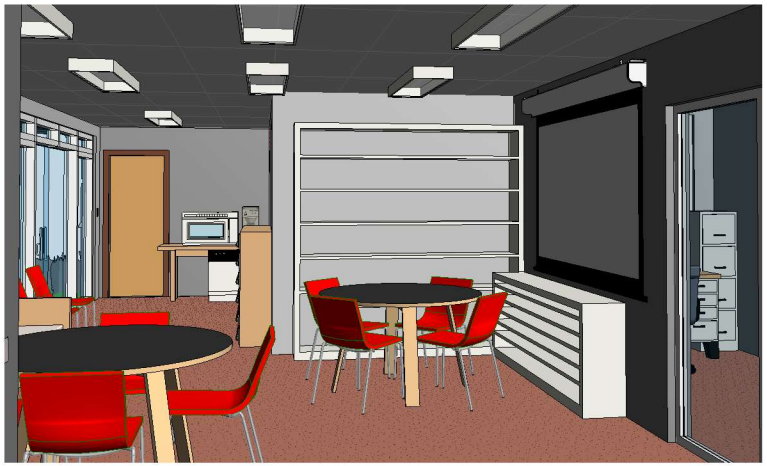
Project Number	001
Date	11/16/2017
Drawn By	Author
Checked By	Checker

A112

Scale 1/4" = 1'-0"

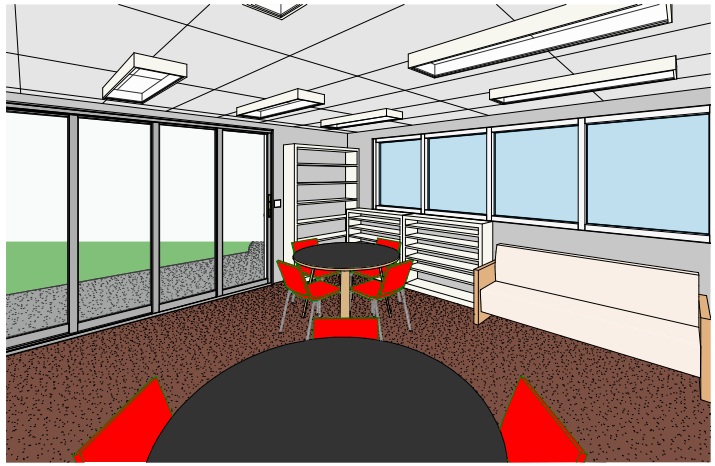
12/7/2017 1:50:34 AM

2 Foyer View



1 Library/ Seminar Room View 1

3 Library/ Seminar Room View 2



4 Library/ Seminar Room View 3

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No.	Description	Date

CRSL Engineering

Robb Garden Building

Interior Library

Project Number	001
Date	11/16/2017
Drawn By	Author
Checked By	Checker

A113

Scale

12/7/2017 1:50:39 AM

1 Office View 1

2 Office View 2

AUTODESK.

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No.	Description	Date

CRSL Engineering

Robb Garden Building

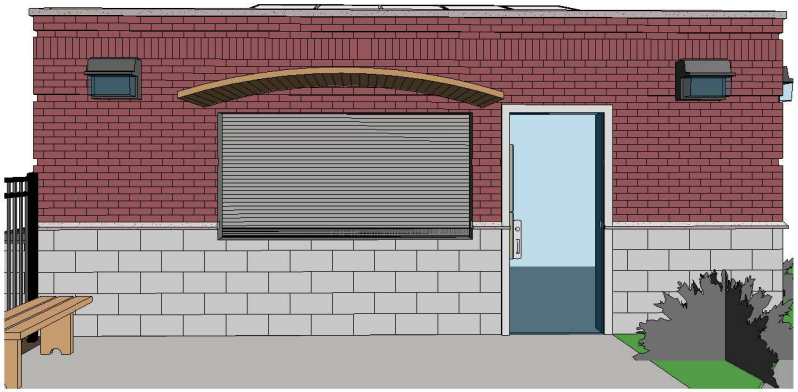
Interior Office

Project Number	001
Date	11/16/2017
Drawn By	Author
Checked By	Checker

A114

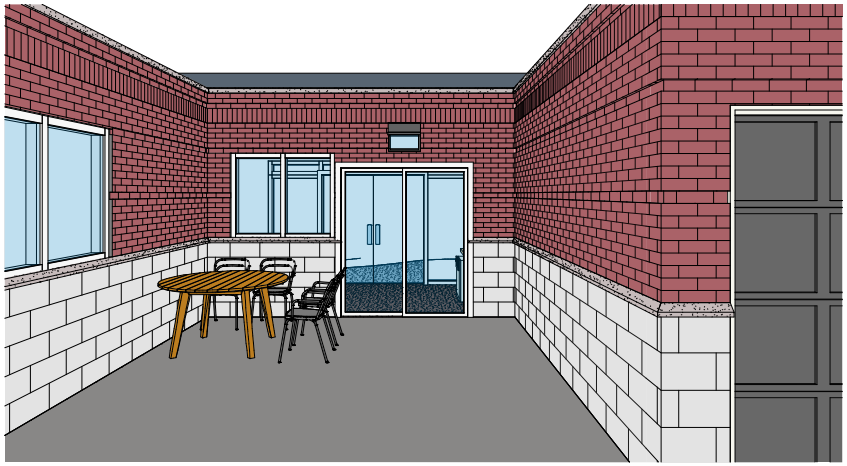
Scale

12/7/2017 1:50:43 AM



1 Market Place Street View

2 Shed View



3 Working Patio View

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No.	Description	Date

CRSL Engineering

Robb Garden Building

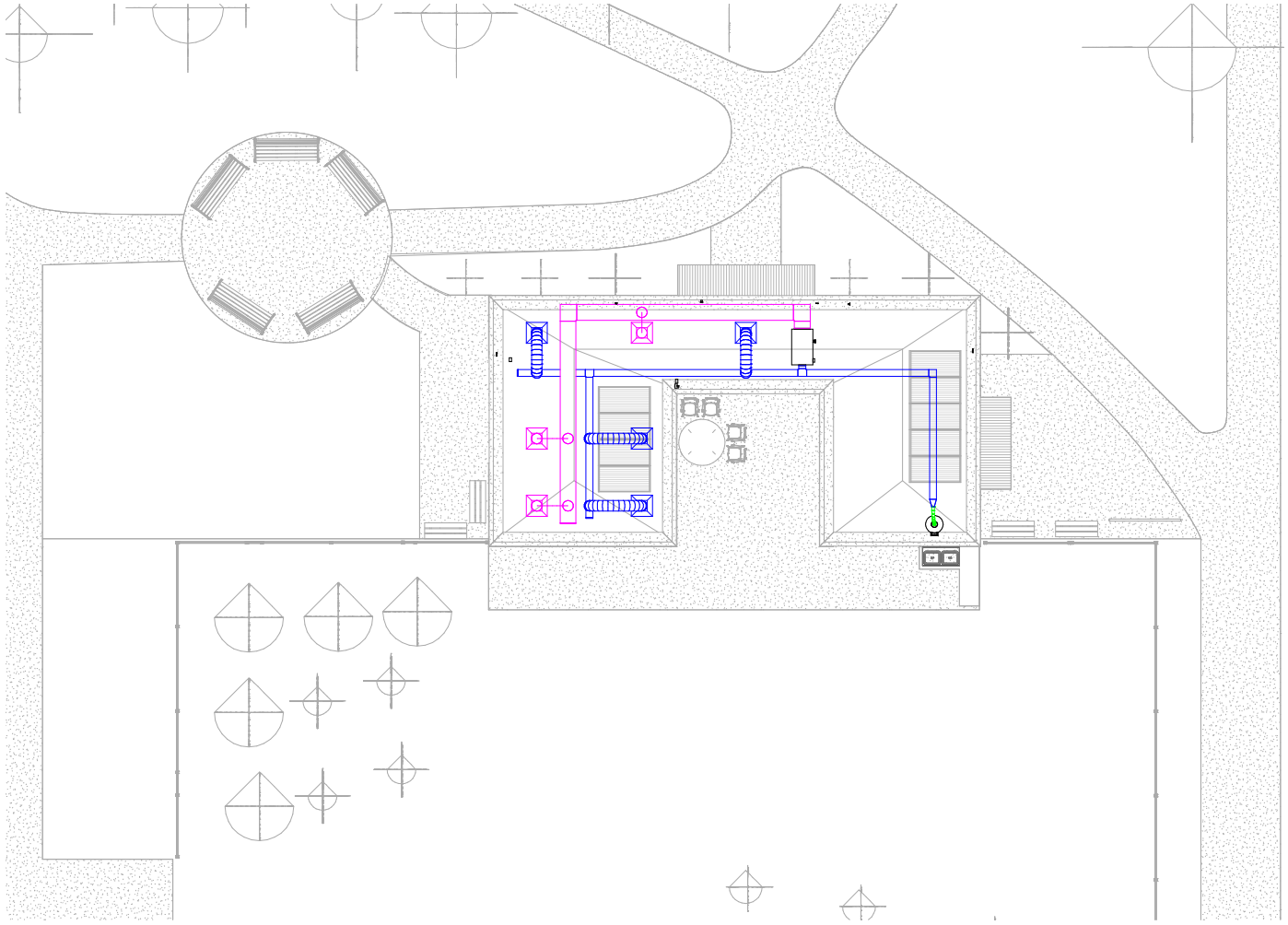
Marketplace Patio and Shed

Project Number	001
Date	11/16/2017
Drawn By	Author
Checked By	Checker

A115

Scale

12/7/2017 1:50:47 AM



1 MEP Overview

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No.	Description	Date

CRSL Engineering

Robb Garden Building

MEP Overview

Project Number	Project Number
Date	Issue Date
Drawn By	Author
Checked By	Checker

A101

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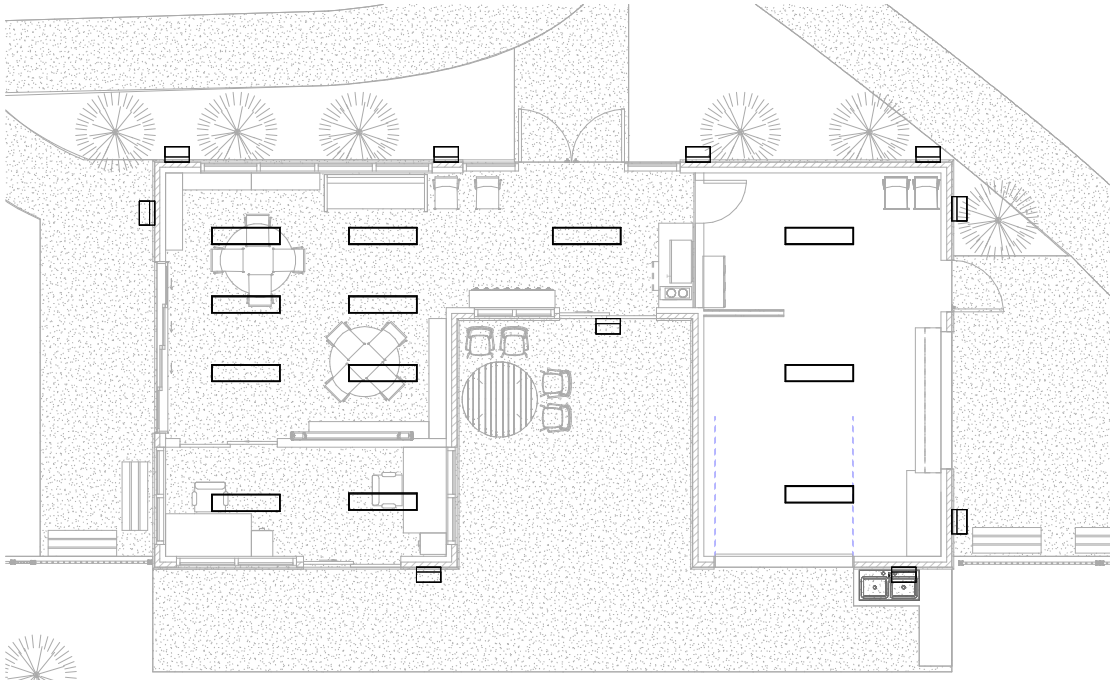

1 Lighting Plan
3/8" = 1'-0"

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No.	Description	Date

CRSL Engineering

Robb Garden Building

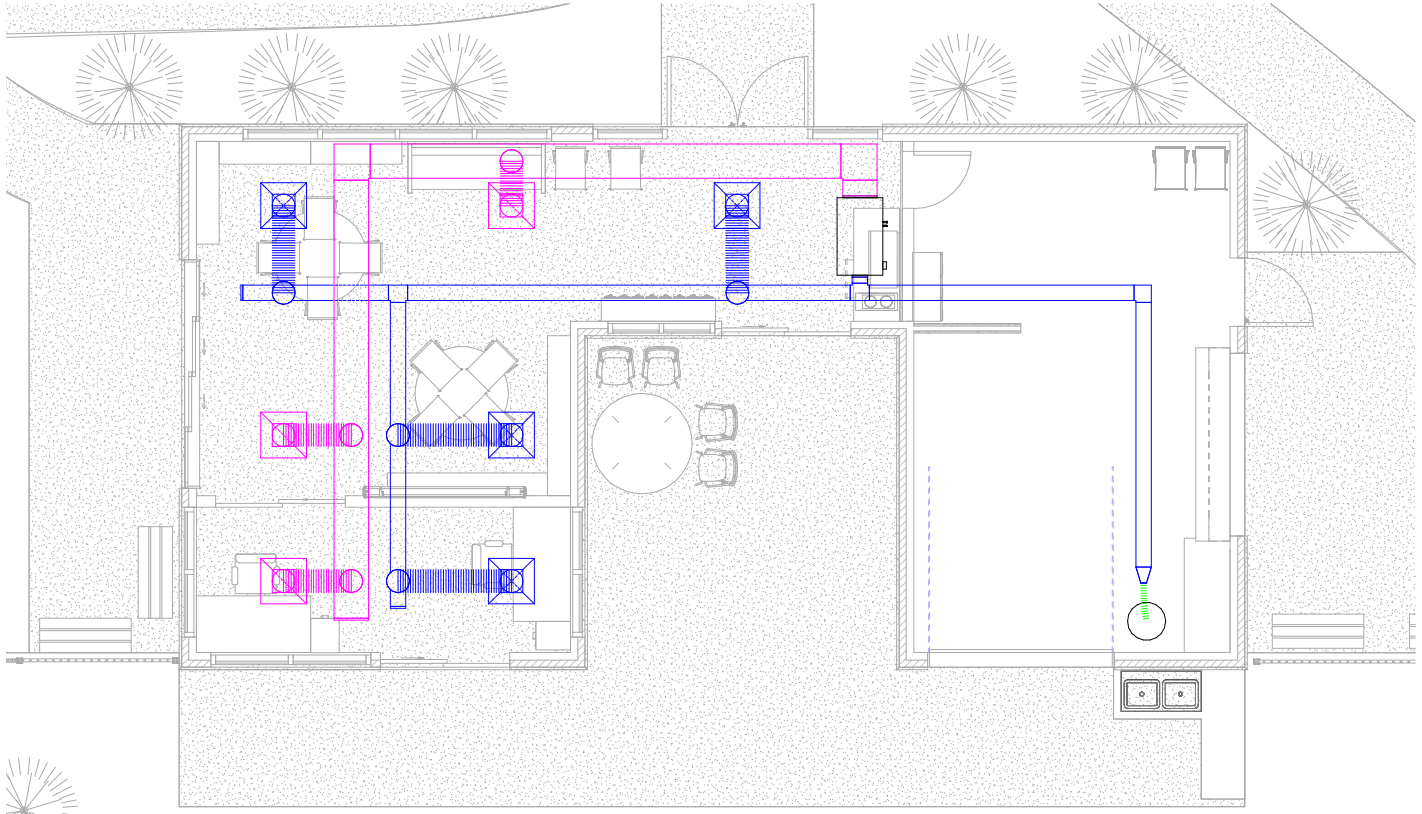
Lighting Plan

Project Number	Project Number
Date	Issue Date
Drawn By	Author
Checked By	Checker

A102

Scale 3/8" = 1'-0"

12/7/2017 1:55:17 AM



1 HVAC
1/2" = 1'-0"

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No.	Description	Date

CRSL Engineering

Robb Garden Building

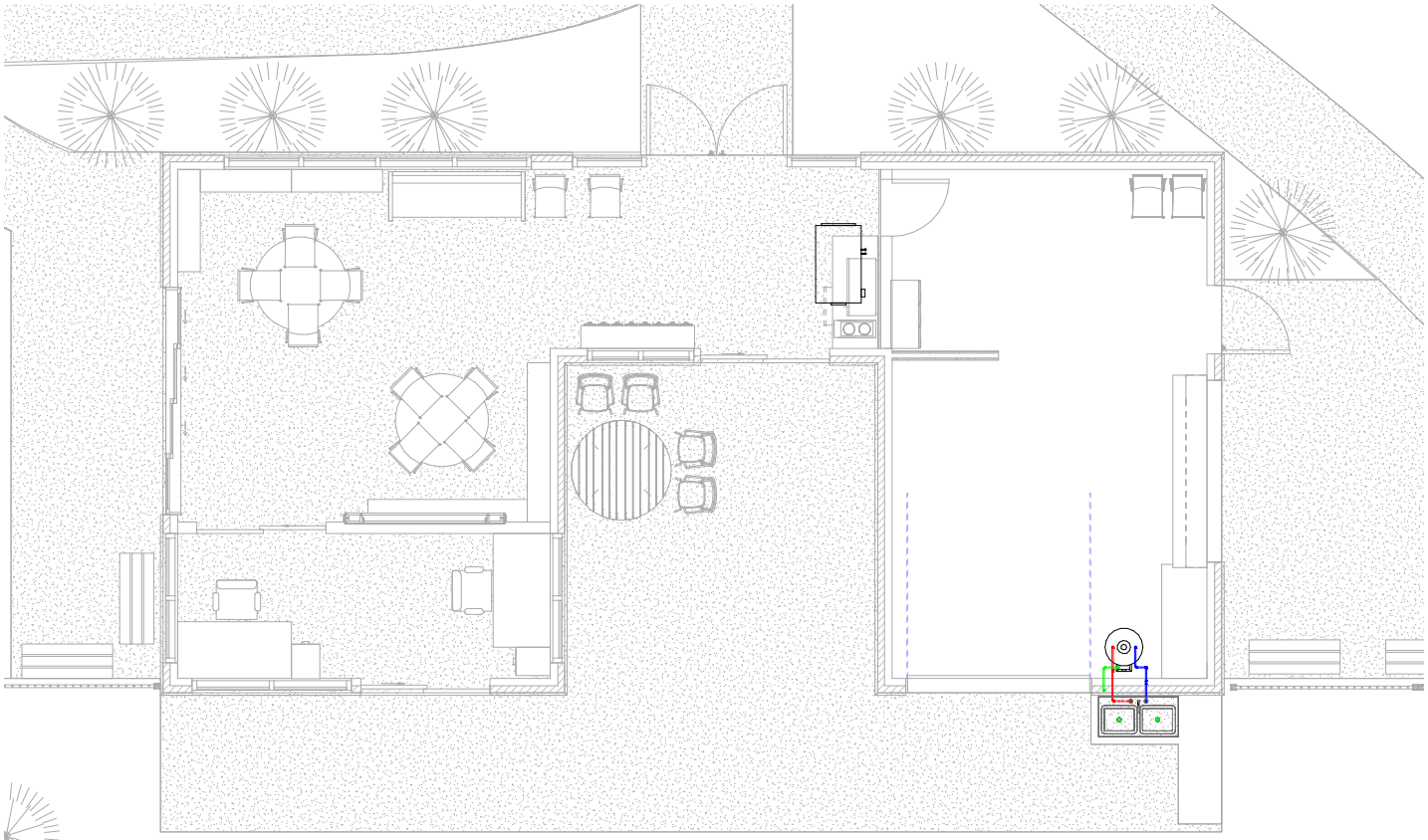
HVAC

Project Number	Project Number
Date	Issue Date
Drawn By	Author
Checked By	Checker

A103

Scale 1/2" = 1'-0"

12/7/2017 1:55:19 AM



1 Plumbing
1/2" = 1'-0"

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No.	Description	Date

CRSL Engineering

Robb Garden Building

Plumbing

Project Number	Project Number
Date	Issue Date
Drawn By	Author
Checked By	Checker

A104

Scale 1/2" = 1'-0"

12/7/2017 1:55:21 AM

My Projects > **Isolated Building File**

Run Name: Isolated Building File

Project Template Applied: Isolated Building File_default
Location: Stockton, CA

Building Type: Office
Floor Area: 345 ft²

Electric Cost: $0.12 / kWh
Fuel Cost: $0.80 / Therm

Utility Data Used: Project Default Utility Rates

1 Base Run

Energy, Carbon and Cost Summary

Annual Energy Cost	$1,648
Lifecycle Cost	$22,445
Annual CO_2 Emissions	
Electric	0.0 tons
Onsite Fuel	0.3 tons
Large SUV Equivalent	0.0 SUVs / Year
Annual Energy	
Energy Use Intensity (EUI)	151 kBtu / ft² / year
Electric	13,576 kWh
Fuel	59 Therms
Annual Peak Demand	4.9 kW
Lifecycle Energy	
Electric	407,283 kW
Fuel	1,768 Therms

Assumptions

2 Design Alternative

Create a Design Alternative to improve your building performance.

Carbon Footprint

Base Run Carbon Neutral Potential

Annual CO_2 Emissions	
1 Base Run	N/A
Onsite Renewable Potential	N/A
Natural Ventilation Potential	N/A
Onsite Biofuel Use	N/A
Net CO_2 Emissions	**N/A**

Net Large SUV Equivalent: N/A

Assumptions

Electric Power Plant Sources in Your Region

Fossil	N/A
Nuclear	N/A
Hydroelectric	N/A
Renewable	N/A
Other	N/A

Assumptions

LEED, Photovoltaic, Wind Energy, and Natural Ventilation Potential

Energy End Use Charts

Building Details and Assumptions

My Projects > **Isolated Building File**

Run Name: Isolated Building File

Payback Calculation Settings

Adjust the payback settings to improve your photovoltaic payback period.

Panel Type	Installed Panel Cost	Applied Electric Cost	Max Payback Period	
Single Crystalline - 13.8% efficient	$8.00 (per Watt) $102.62 (per ft²)	$0.12 (per kWh)	50 (per surface, in years)	Update

Installed Panel Summary

Note: No federal and state energy incentives, tax breaks, loan solutions or system derating factors are considered in this payback calculation.

Installed Panel Cost	Installed Panel Area (ft²)	Annual Energy Production (kWh)	Potential Cost Savings (per year)	System Payback (years)
$9,510.85	93	2,170	$255.85	**28**

Photovoltaic Surface Analysis

Note: The calculation assumes that BIPV panels used on windows will have a lower efficiency than standard wall and roof panels.

Surface Variables					Shading Variables		Summary			
ID	Type	Direction	Tilt (degrees)	Panel Area (ft²)	Solar Exposure	Obstruction Shading	Annual Energy (kWh)	Potential Cost Savings per year/ft²	Potential Cost Savings per year	Payback per Surface (years)
aim1524	Roof	E	13	21	66.9 %	1.4 %	495	$2.77	$58	**27.8**
aim1639	Roof	N	25	72	66.7 %	1.5 %	1,675	$2.76	$198	**27.8**
aim1562	Roof	S	20	2	70.6 %	5.3 %	0	$0.00	$0	100.0+
aim1597	Roof	W	15	6	64.8 %	0.0 %	0	$0.00	$0	100.0+
aim1677	Roof	S	30	12	73.0 %	0.4 %	0	$0.00	$0	100.0+
aim1713	Roof	E	17	1	38.9 %	49.2 %	0	$0.00	$0	100.0+
aim1750	Roof	E	17	4	67.0 %	1.3 %	0	$0.00	$0	100.0+
aim1787	Roof	E	17	4	67.1 %	0.6 %	0	$0.00	$0	100.0+
aim1822	Roof	S	20	1	69.0 %	10.4 %	0	$0.00	$0	100.0+
aim1856	Roof	W	16	12	64.7 %	0.0 %	0	$0.00	$0	100.0+

Run Name: Isolated Building File

LEED® Water Efficiency Help

Water Usage and Costs

Total:	**32,560 Gal / yr**	**$101 / yr**
Indoor:	6,460 Gal / yr	$33 / yr
Outdoor:	26,100 Gal / yr	$68 / yr
Net Utility:	**32,560 Gal / yr**	$101 / yr

Source: AWWA Research Foundation 2000 Residential / Commercial and Institutional End Uses of Water.

General Information

Project Title: Isolated Building File

Run Title: Isolated Building File

Building Type: Office

Floor Area: 345 ft²

Water Usage Estimator

Change inputs and click "Estimate" to update Water Usage and Costs.

Estimate | Save | Reset

Unit Water Prices

Water: 2.6 $ / kgal Sewer: 3.48 $ / kgal

Indoor Water Factors

Number of People: 1
(Typical people for this building type/size: 2)

Percent of Time Occupied (%): 26

Outdoor Water Factors

Irrigated Area* (ft²): 1000

*Irrigated area is a placeholder. Site data from Building Information Model is not incorporated.

Timed Sprinklers: Yes

Pool: No

Other Equipment/Fixtures: No Usage: 25 Gal / day

Building Summary

	Total	Male	Female	Employee Only	Efficiency	Percent of Indoor Usage (%)	Gallons per Year	Annual Cost Savings ($)
Toilets:	4	1	1	2	Standard	0	0	0
Urinals:	2	1		1	Standard	0	0	0
Sinks:	4	1	1	2	Standard	0	0	0
Showers:	0	0	0		Standard	0	0	0
Clothes Washers:	0				Standard	0	0	0
Dishwashers:	0				Standard	0	0	0
Cooling Towers:	1				Standard	0	0	0
					Total Efficiency Savings:	**0%**	**0**	**$0**

Include cooling tower blowdown in sewer costs

Source: 2000 Uniform Plumbing Code of the IAPMO, Tables 4-1 and 4-3.

Efficiency Savings

Net-Zero Measures

Net-Zero Savings

		Annual Rainfall (in)*	Catchment Area (ft²)	Surface Type	Gal / yr	Annual Cost Savings ($)
Rainwater Harvesting:	No	16.6	125	Gravel/Tar	0	0

Native Vegetation Landscaping:	No				0	0
Greywater Reclamation:	No				0	0
Site Potable Water Sources:	No	Yield:	50	Gal / day	0	0
*Source: National Climactic Data Center, #CLIM81.				**Total Net-Zero Savings:**	**0**	**$0**

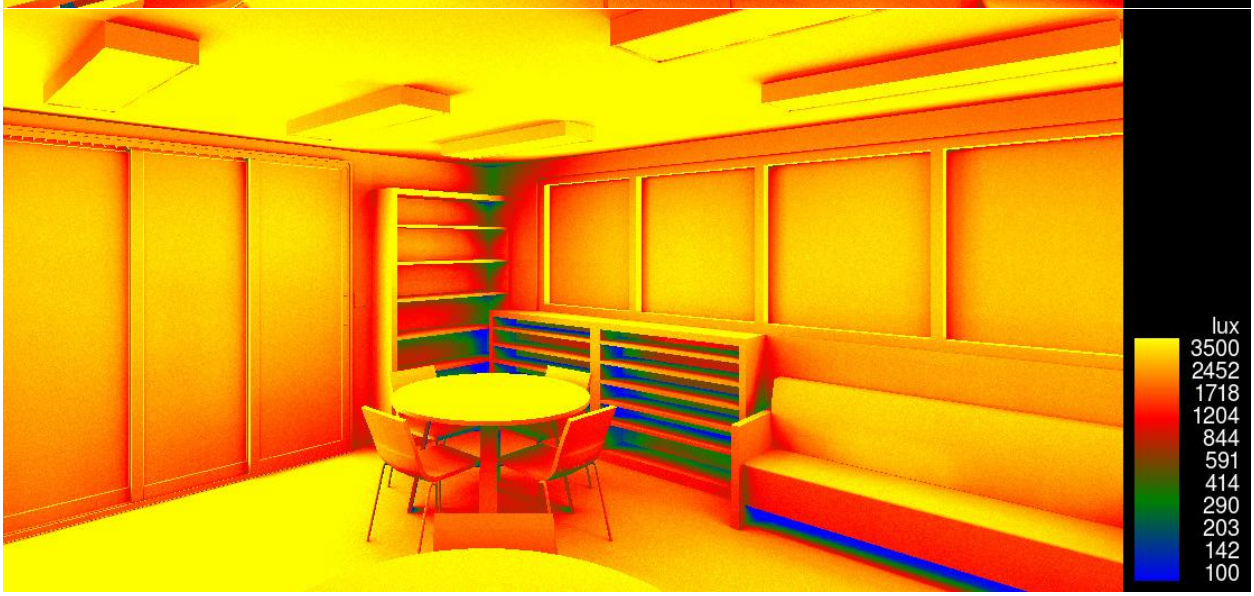
CRSL Engineering

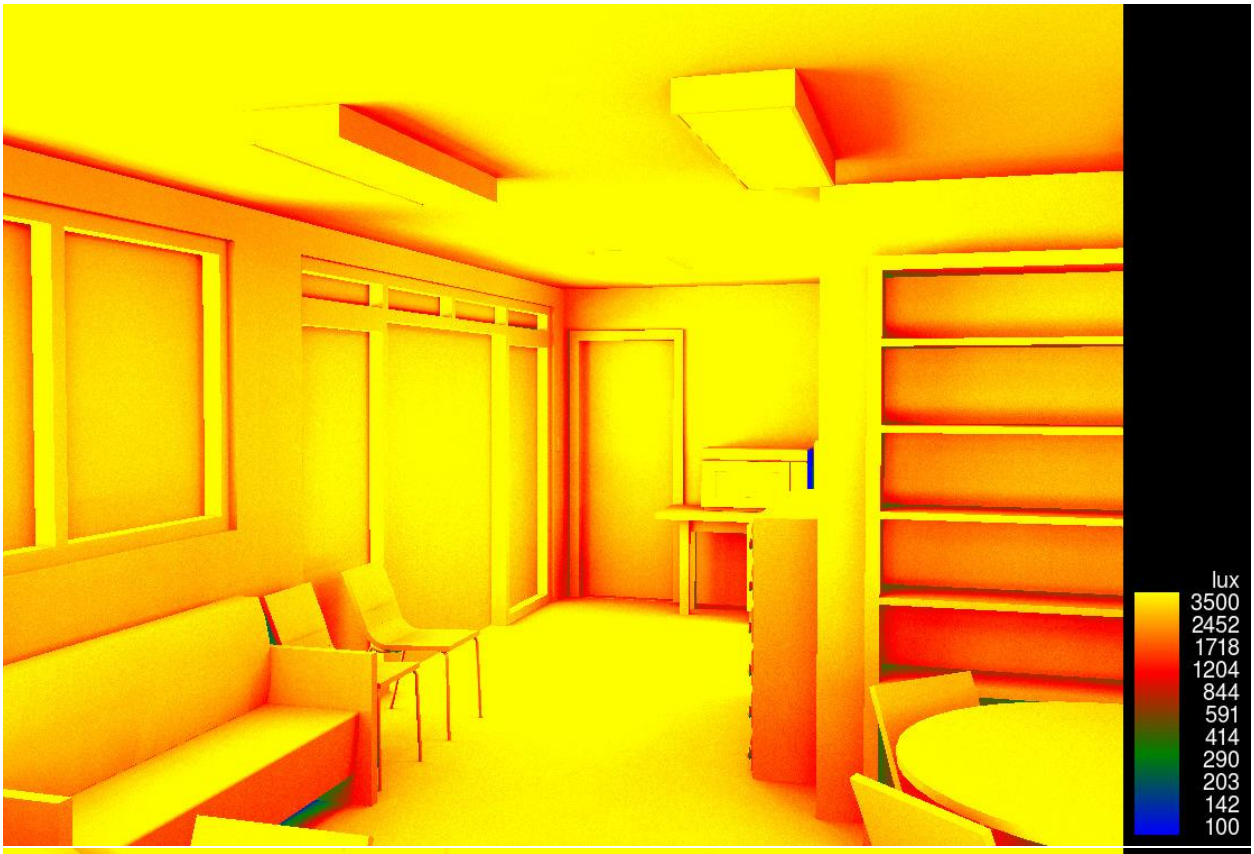
12/7/2017

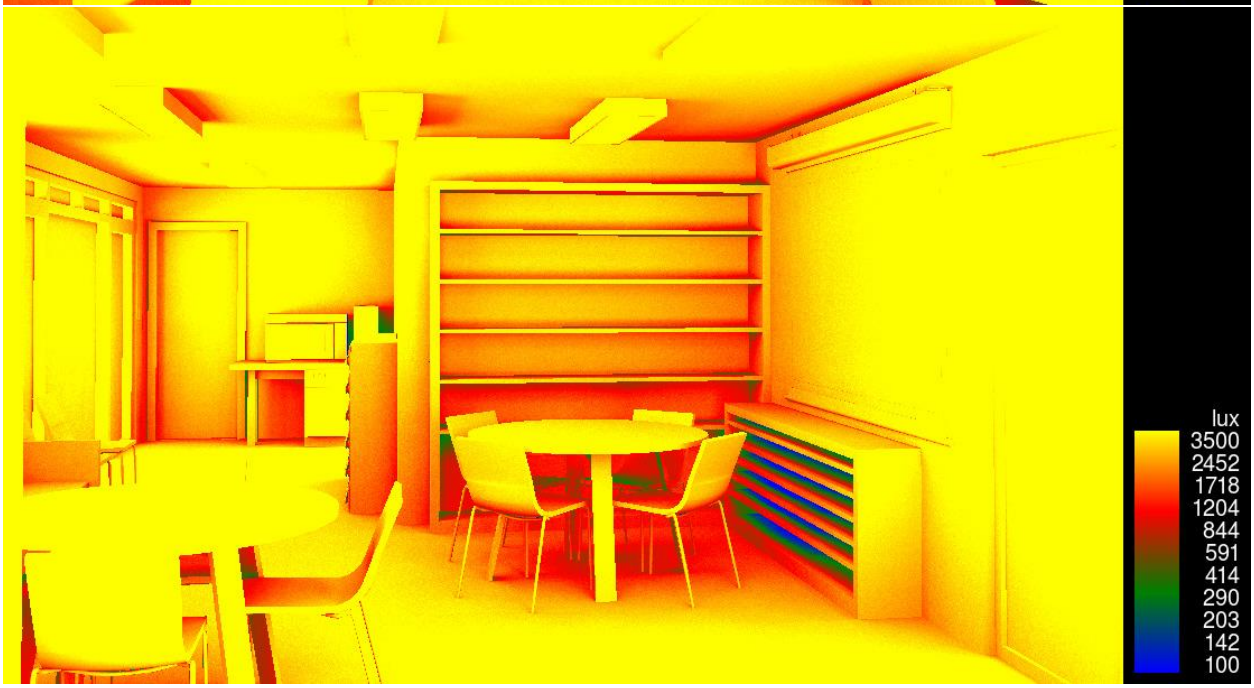
Lighting/Luminescence Analysis Report

Luminescence Images:

Library/ Seminar and Entrance Room




lux
3500
2452
1718
1204
844
591
414
290
203
142
100


lux
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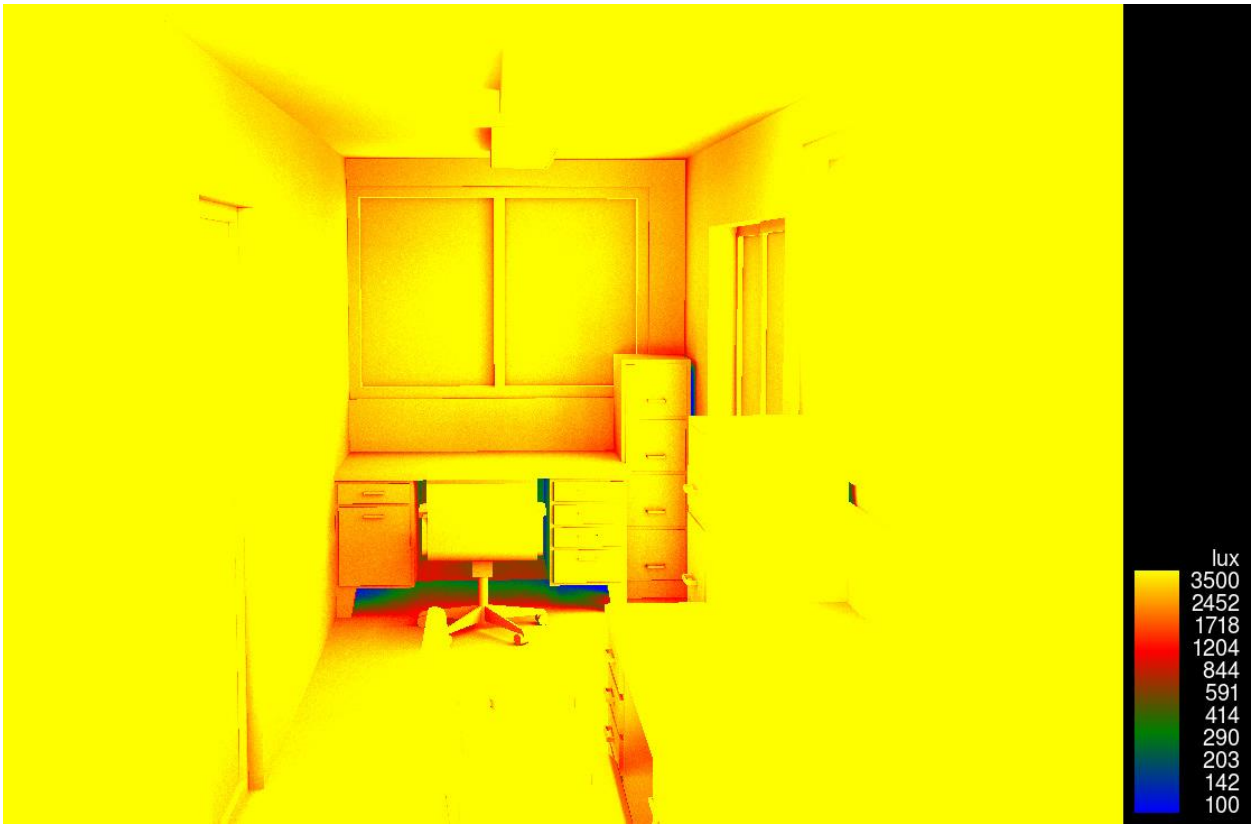
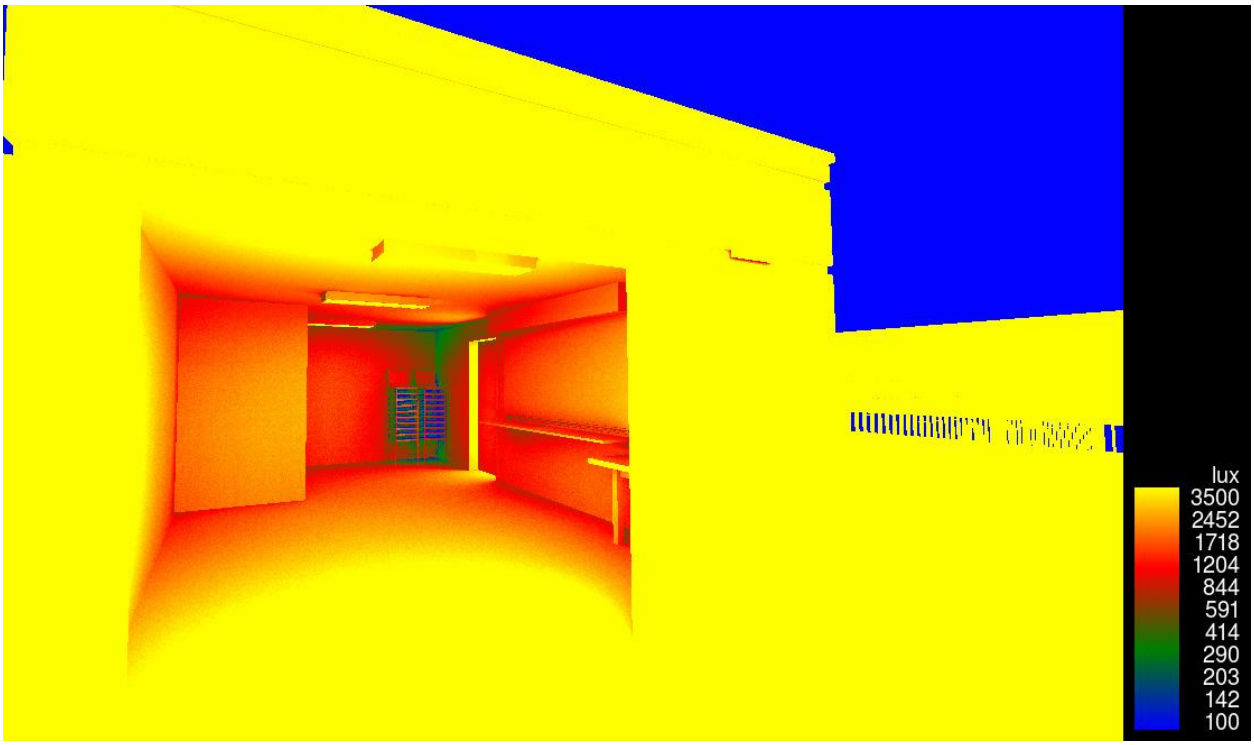
414
290
203
142
100

Director’s Office:

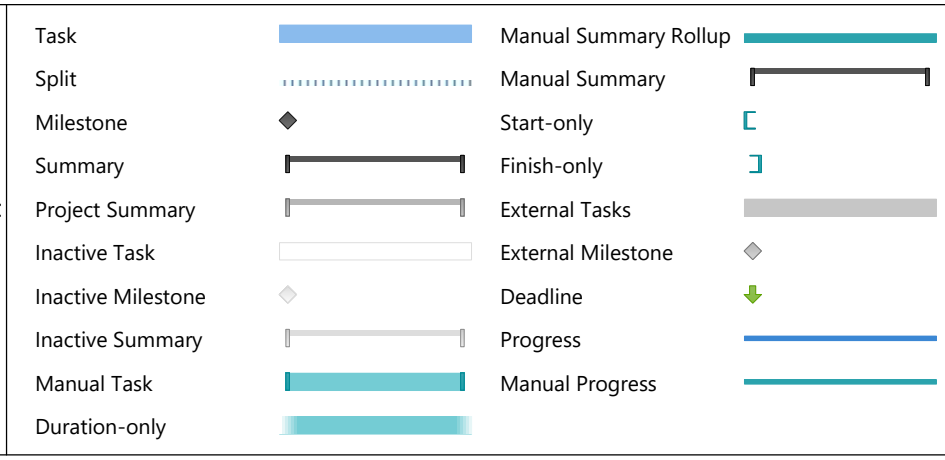


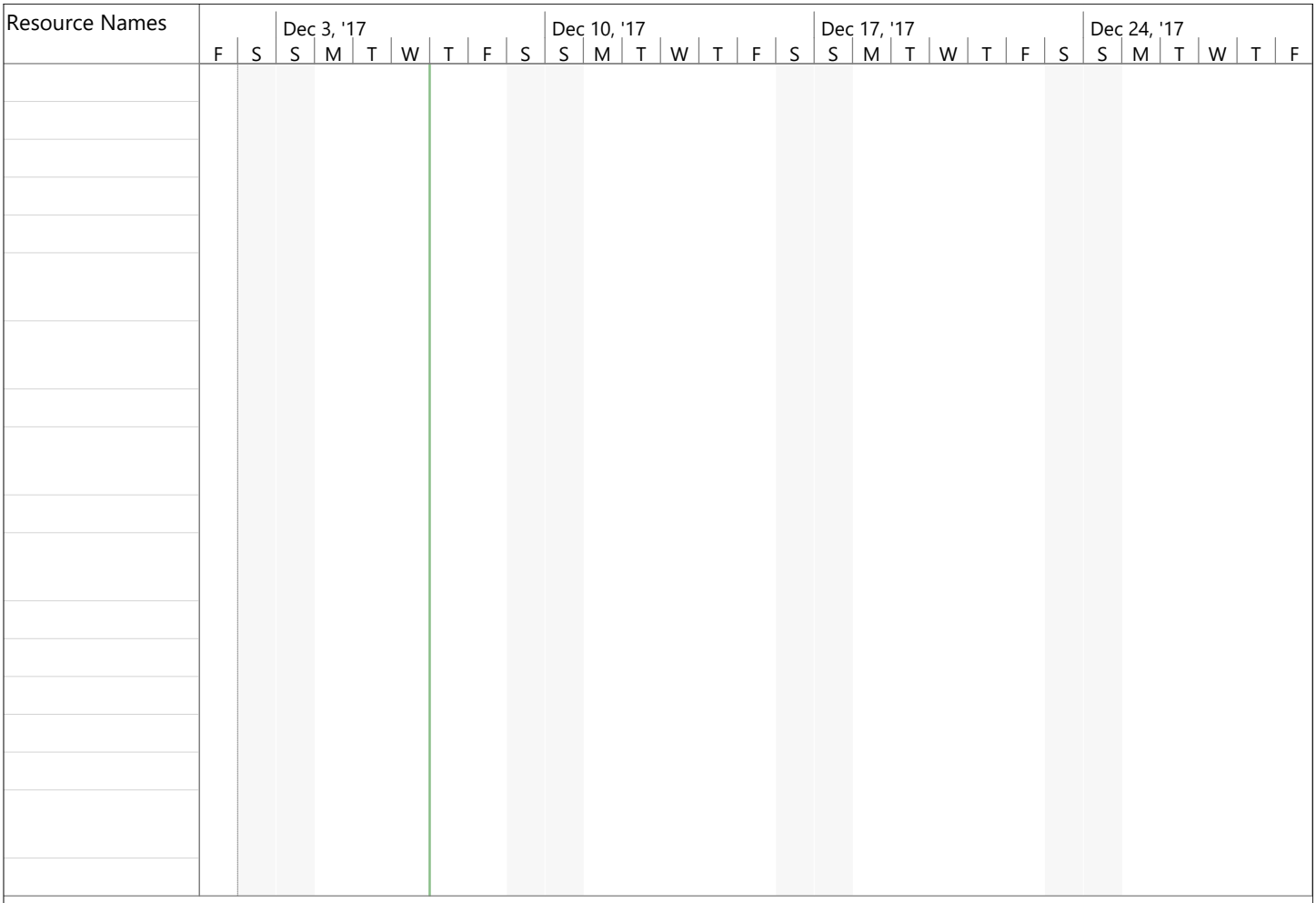
Shed and Outdoor Patio:



ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1		Excavation	3 days	Mon 1/1/18	Wed 1/3/18	
2		Foundation	14 days	Thu 1/4/18	Tue 1/23/18	1
3		Utilities	7 days	Thu 1/4/18	Fri 1/12/18	1
4		Framing	30 days	Wed 1/24/18	Tue 3/6/18	3
5		Roofing	30 days	Mon 2/12/18	Fri 3/23/18	3
6		Install Doors and Windows	4 days	Mon 3/26/18	Thu 3/29/18	5
7		Weather Resistant Barrier	3 days	Fri 3/30/18	Tue 4/3/18	6
8		Brick Facade	14 days	Wed 4/4/18	Mon 4/23/18	7
9		Rough Plumbing	7 days	Tue 4/24/18	Wed 5/2/18	8
10		Mechanical Systems	7 days	Thu 5/3/18	Fri 5/11/18	9
11		Rough Lighting and Electrical	7 days	Mon 5/14/18	Tue 5/22/18	10
12		Insulation	3 days	Wed 5/23/18	Fri 5/25/18	11
13		Drywall	3 days	Mon 5/28/18	Wed 5/30/18	12
14		Flooring	3 days	Thu 5/31/18	Mon 6/4/18	13
15		Painting	1 day	Tue 6/5/18	Tue 6/5/18	14
16		Finish Plumbing	2 days	Thu 6/7/18	Fri 6/8/18	15
17		Finish Electrical and Lighting	2 days	Mon 6/11/18	Tue 6/12/18	16
18		Furnishing	1 day	Wed 6/13/18	Wed 6/13/18	17

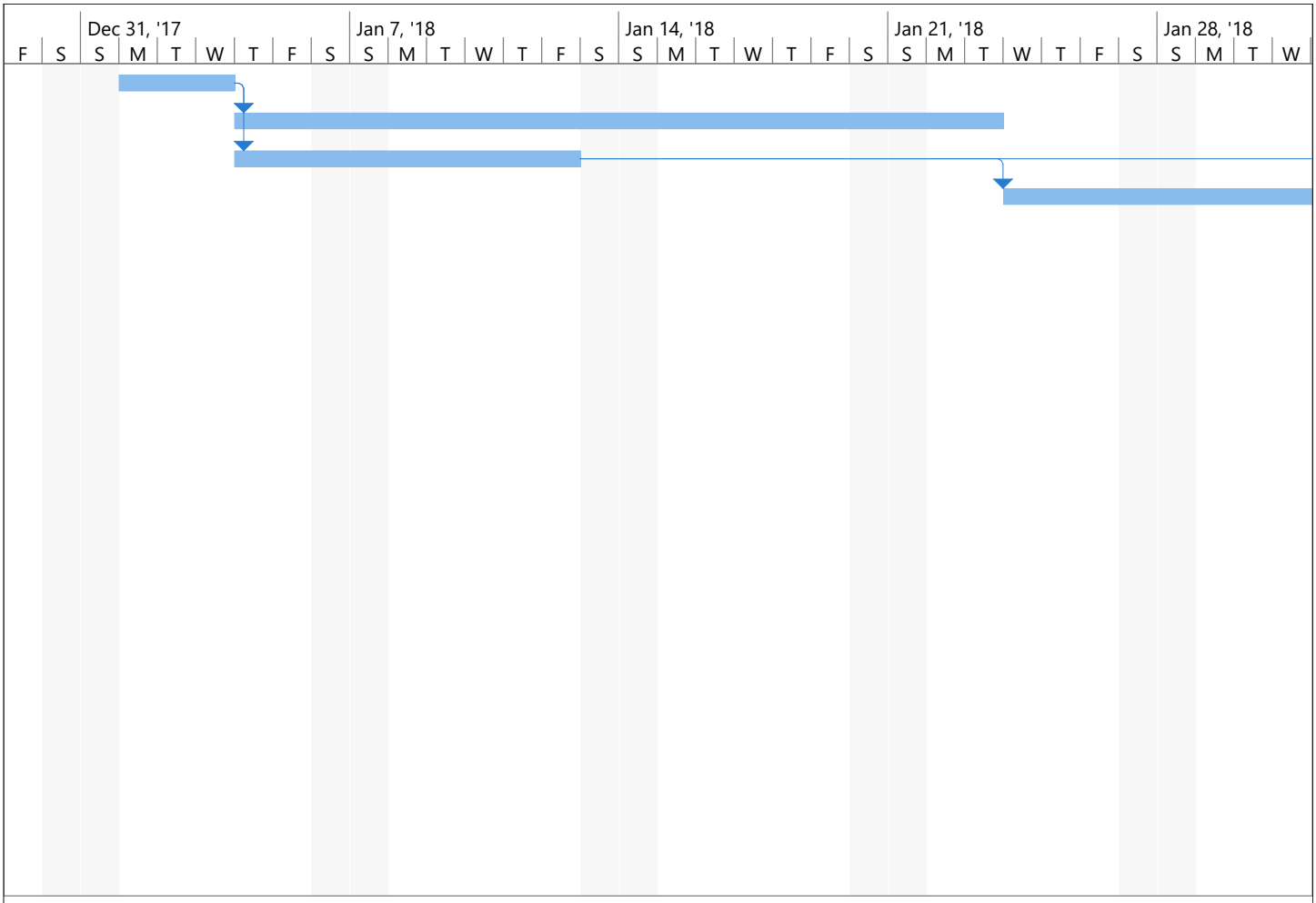
Project: Gantt Chart Final Projec
Date: Thu 12/7/17





Project: Gantt Chart Final Projec
Date: Thu 12/7/17

Task		Manual Summary Rollup	
Split		Manual Summary	
Milestone		Start-only	
Summary		Finish-only	
Project Summary		External Tasks	
Inactive Task		External Milestone	
Inactive Milestone		Deadline	
Inactive Summary		Progress	
Manual Task		Manual Progress	
Duration-only			



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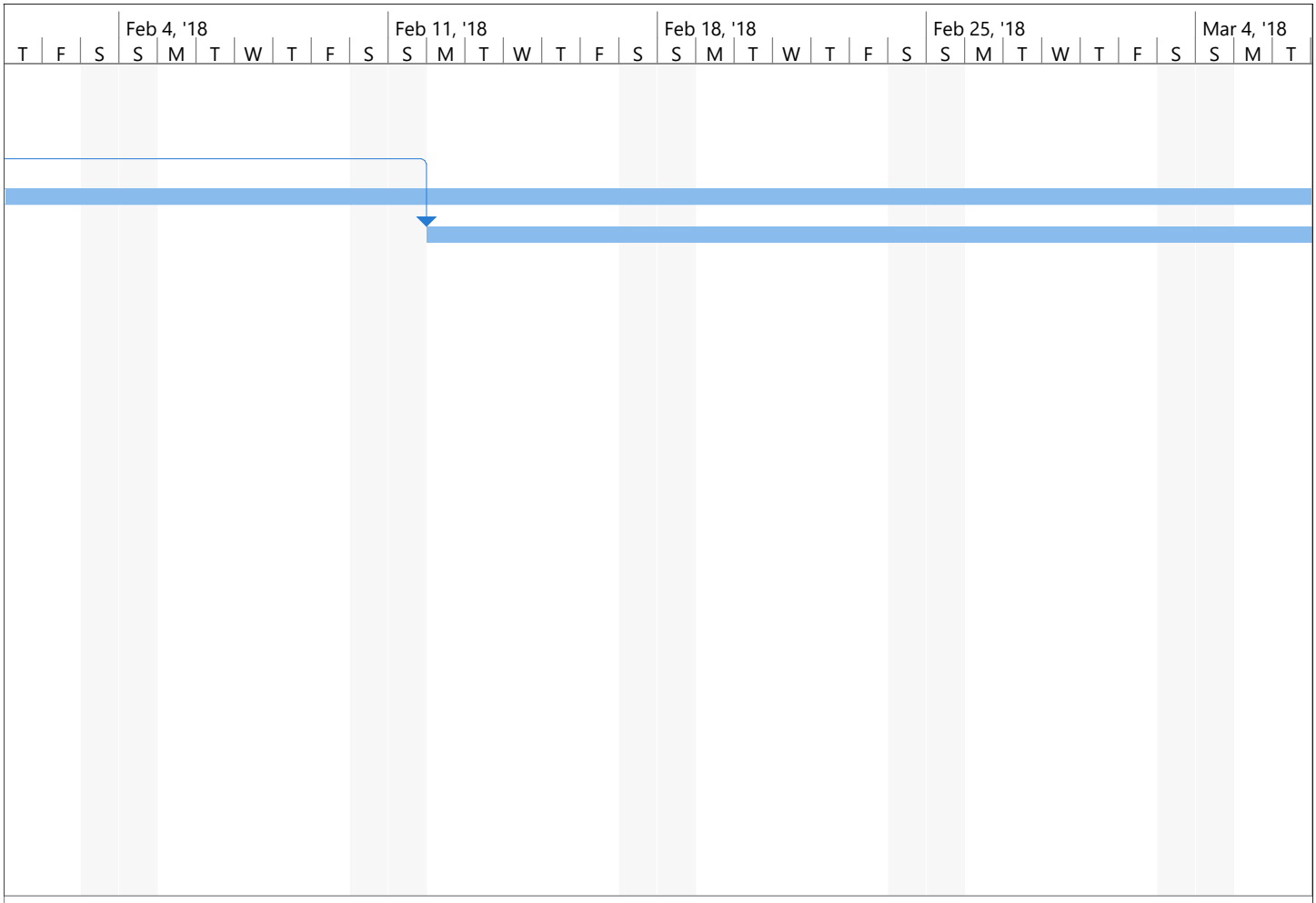

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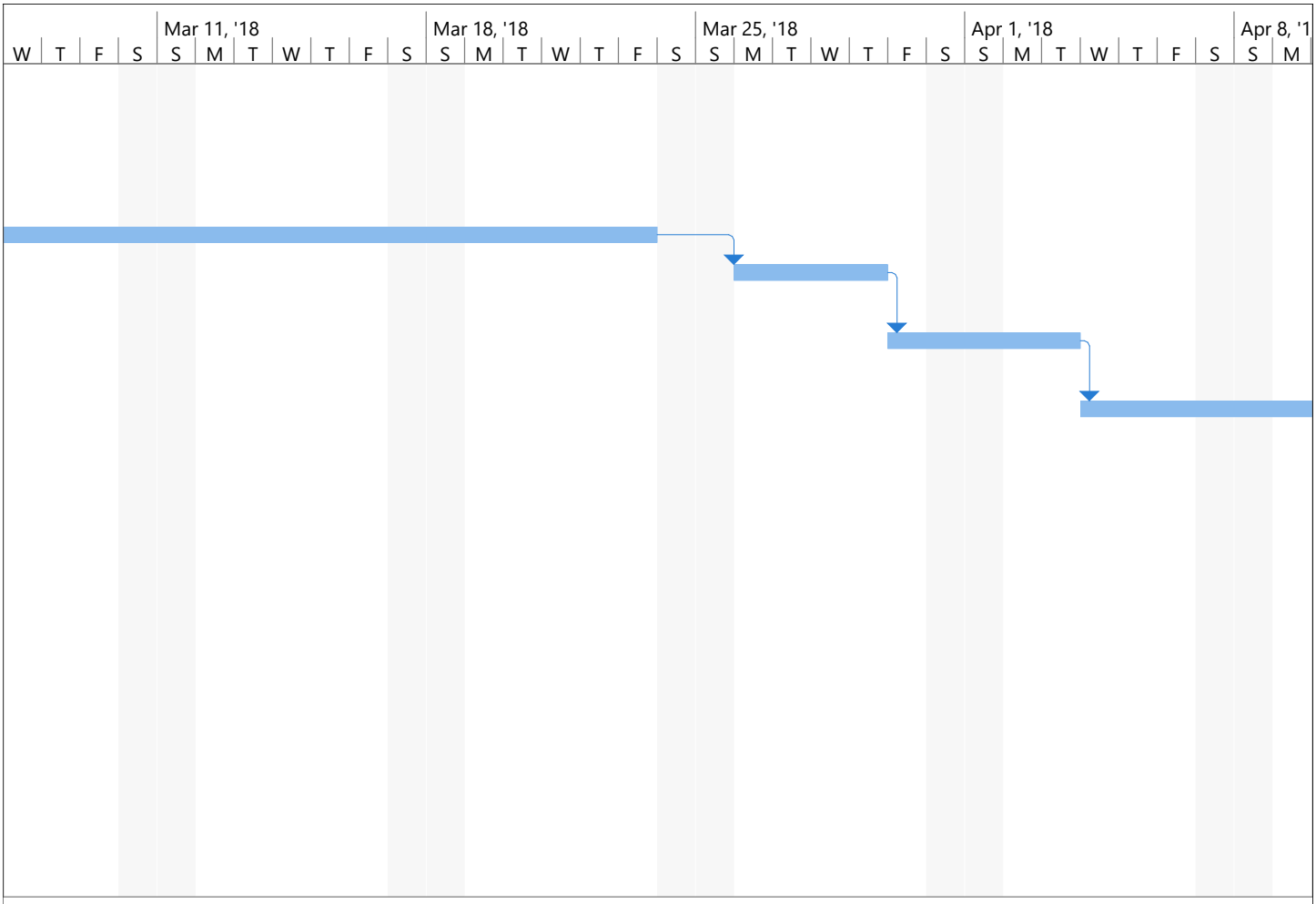

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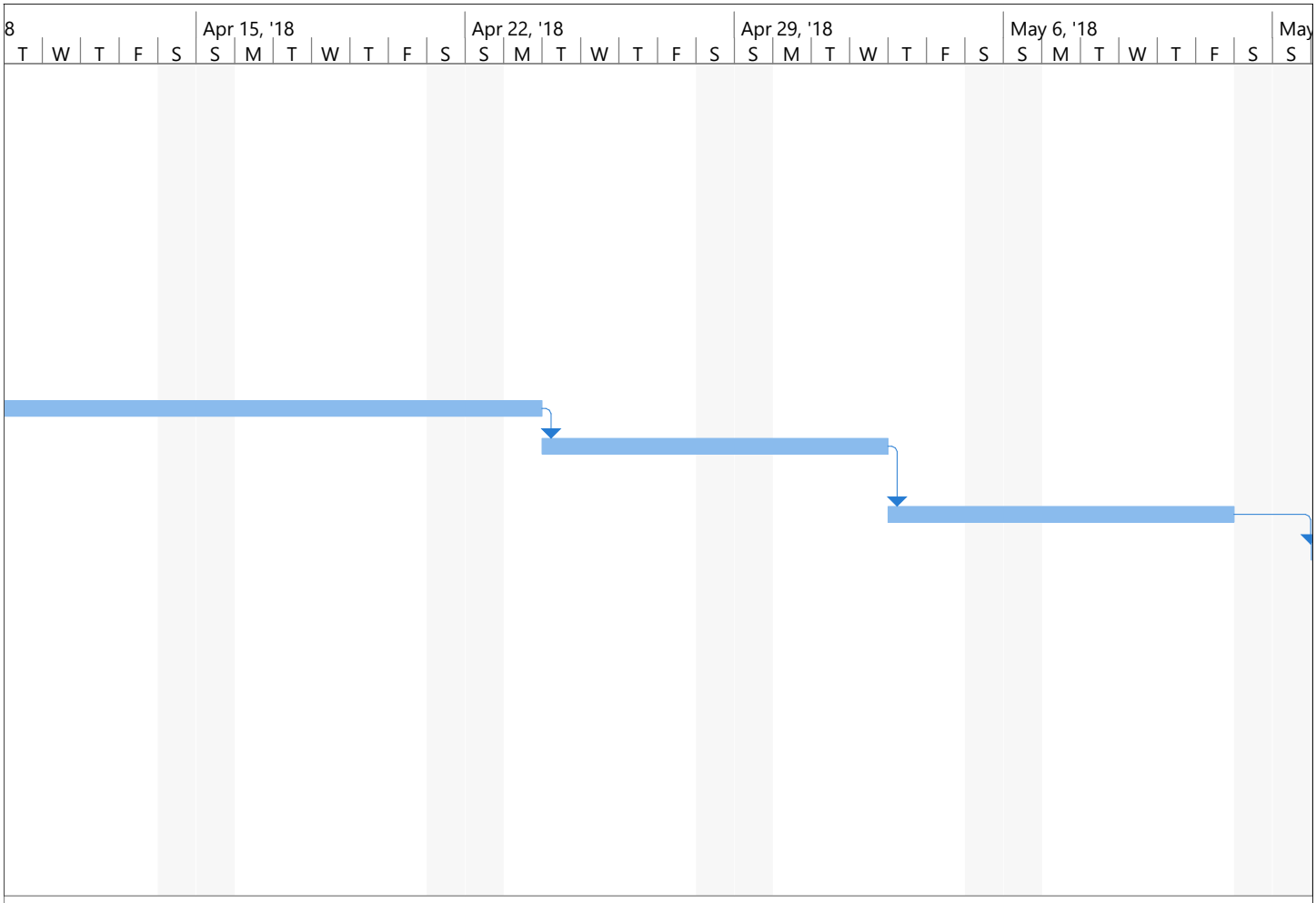

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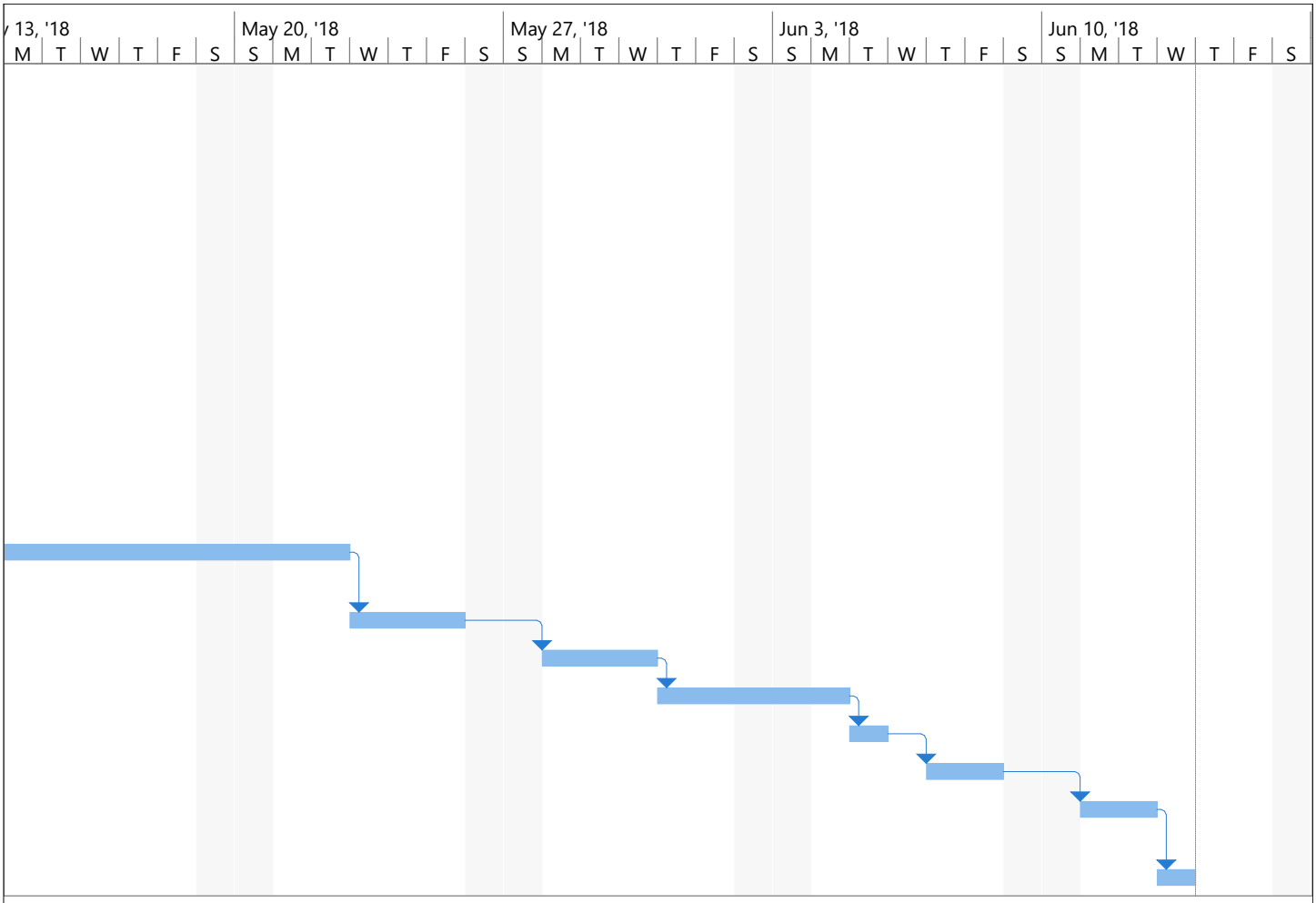

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