FOREST PRESERVE DISTRICT OF DUPAGE COUNTY

GROUNDS AND NATURAL RESOURCES MANAGEMENT MAINTENANCE CAMPUS

SCHEMATIC DESIGN
01.12.2024

Woodhouse Tinucci Architects
230 W Superior 6th Flr Chicago IL 60654
Tel 312 943 3120 www.woodtinarch.com

Forest Preserve District of DuPage County

PROJECT TEAM

ARCHITECTURE

Woodhouse Tinucci Architects
230 W Superior St 6th Floor
Chicago, IL 60654
312.943.3120

CIVIL ENGINEERING

V3 Companies
444 N Wells Street, Suite 602
Chicago, Illinois 60654
630.724.9200

STRUCTURAL ENGINEERING

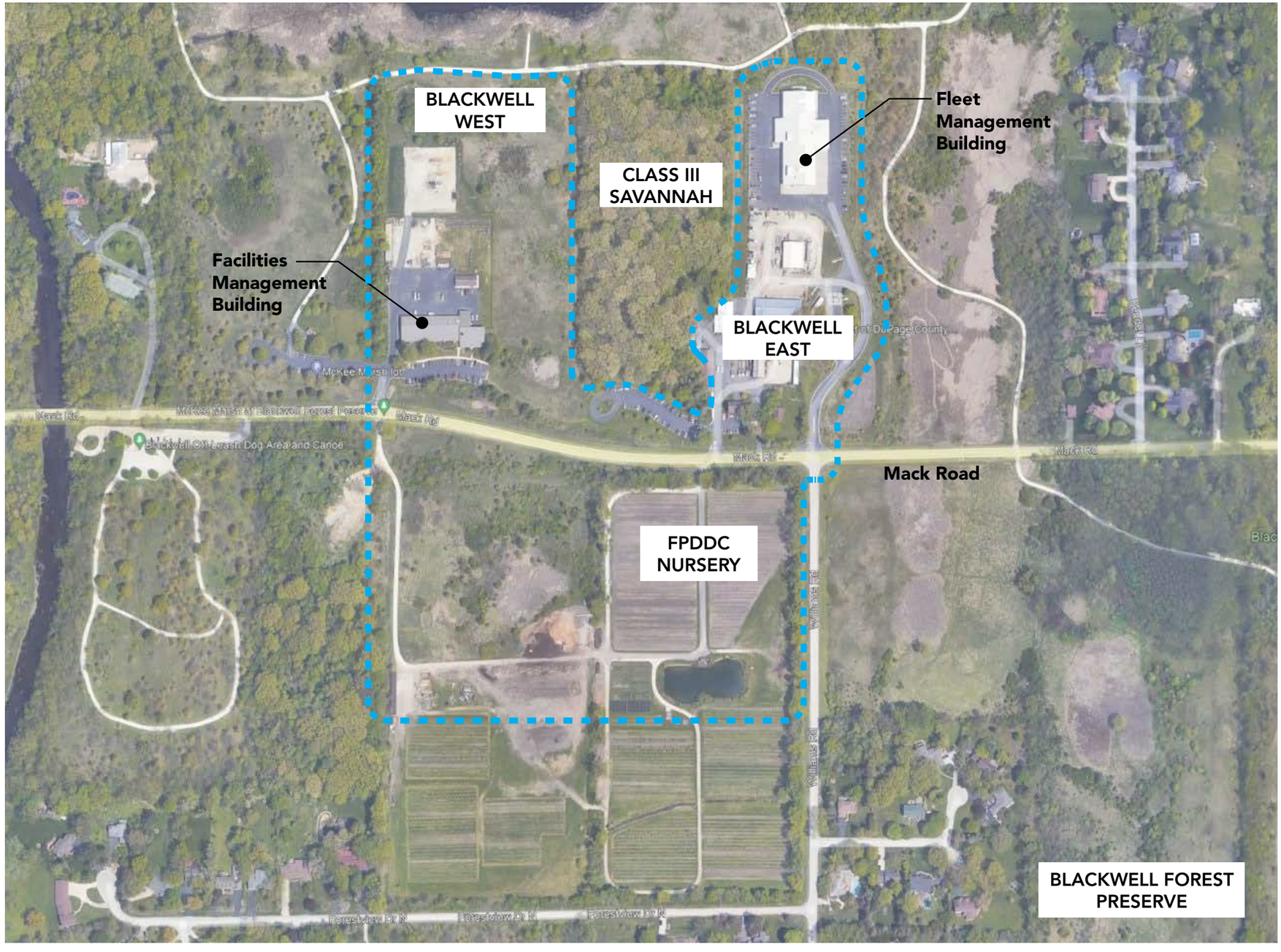
IMEG Corp
263 Shuman Blvd, Suite 550
Naperville, Illinois 60563
630.527.2320

MEP/FP ENGINEERING

IMEG Corp
263 Shuman Blvd, Suite 550
Naperville, Illinois 60563
630.527.2320

CONTENTS

EXISTING SITE



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SCOPE OF WORK

SCHEMATIC DESIGN SCOPE OF WORK

AREA A - BLACKWELL WEST

1. New Grounds and Natural Resources (GNR) Facility
2. New parking lot
3. New roadway to Mack Rd
4. New exterior material storage
5. New perimeter fence

AREA B – BLACKWELL EAST

1. Removal of existing GNR facilities.
2. New Wash Bay building
3. Extension of water main from existing Fleet Building to Mack Rd
4. Extend sanitary line to Wash Bay Building.

AREA C – SOUTH OF MACK ROAD

1. New Seed Processing Building
2. New Green House
3. Replacement Pump House facility

AREA D – FACILITIES BUILDING

1. Removal/Relocation/Replacement of existing site elements at Facilities Building
2. Connection of water and sanitary service to existing Facilities Building (alternate)

AREA E – UTILITIES AND INFRASTRUCTURE

1. New sanitary line from south neighborhood and along Mack Rd.
2. Removal and new curb cuts along Mack Rd
3. Removal of existing parking lot and new service drive (south of Savannah)

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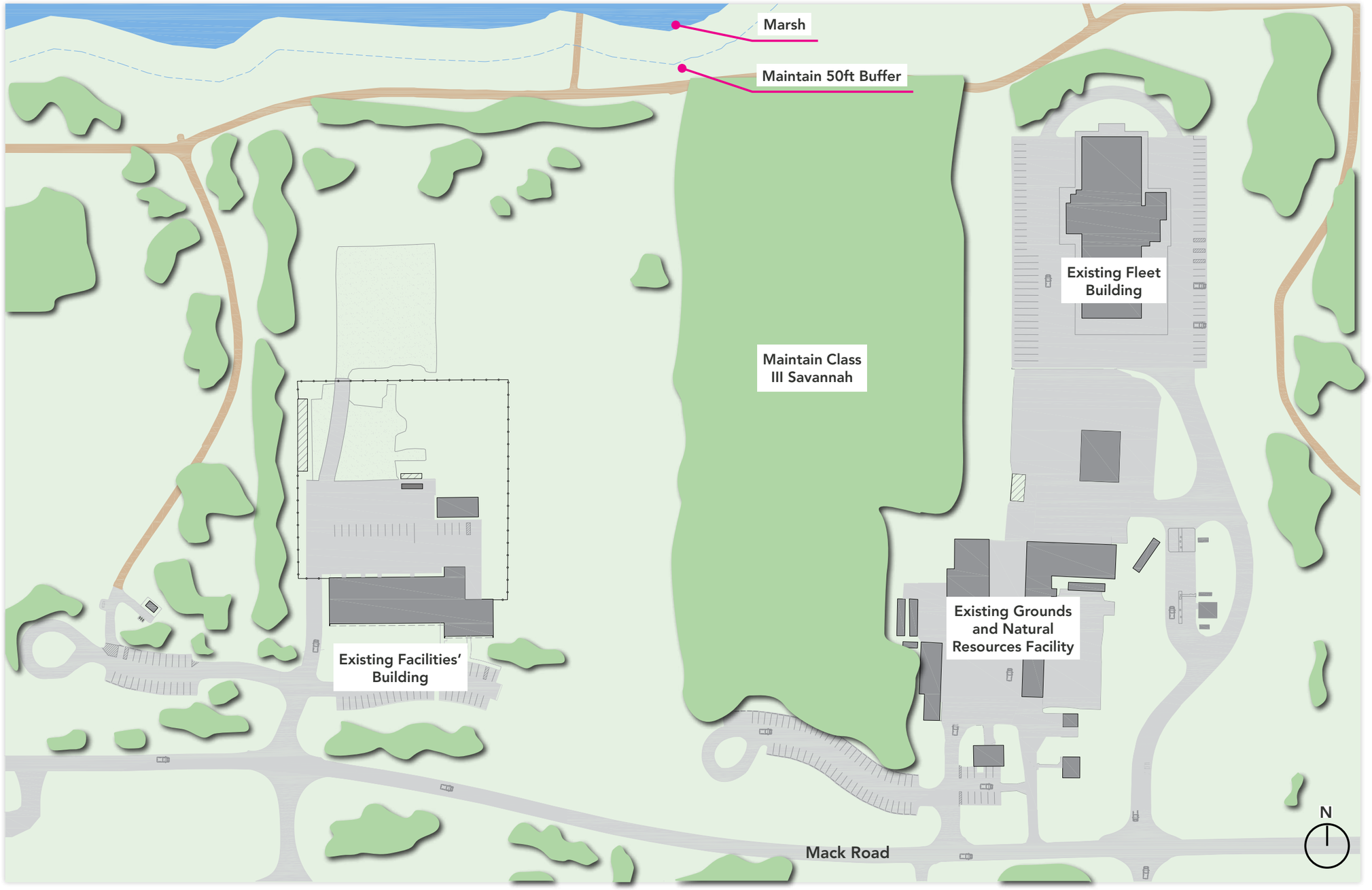
EXISTING NORTH



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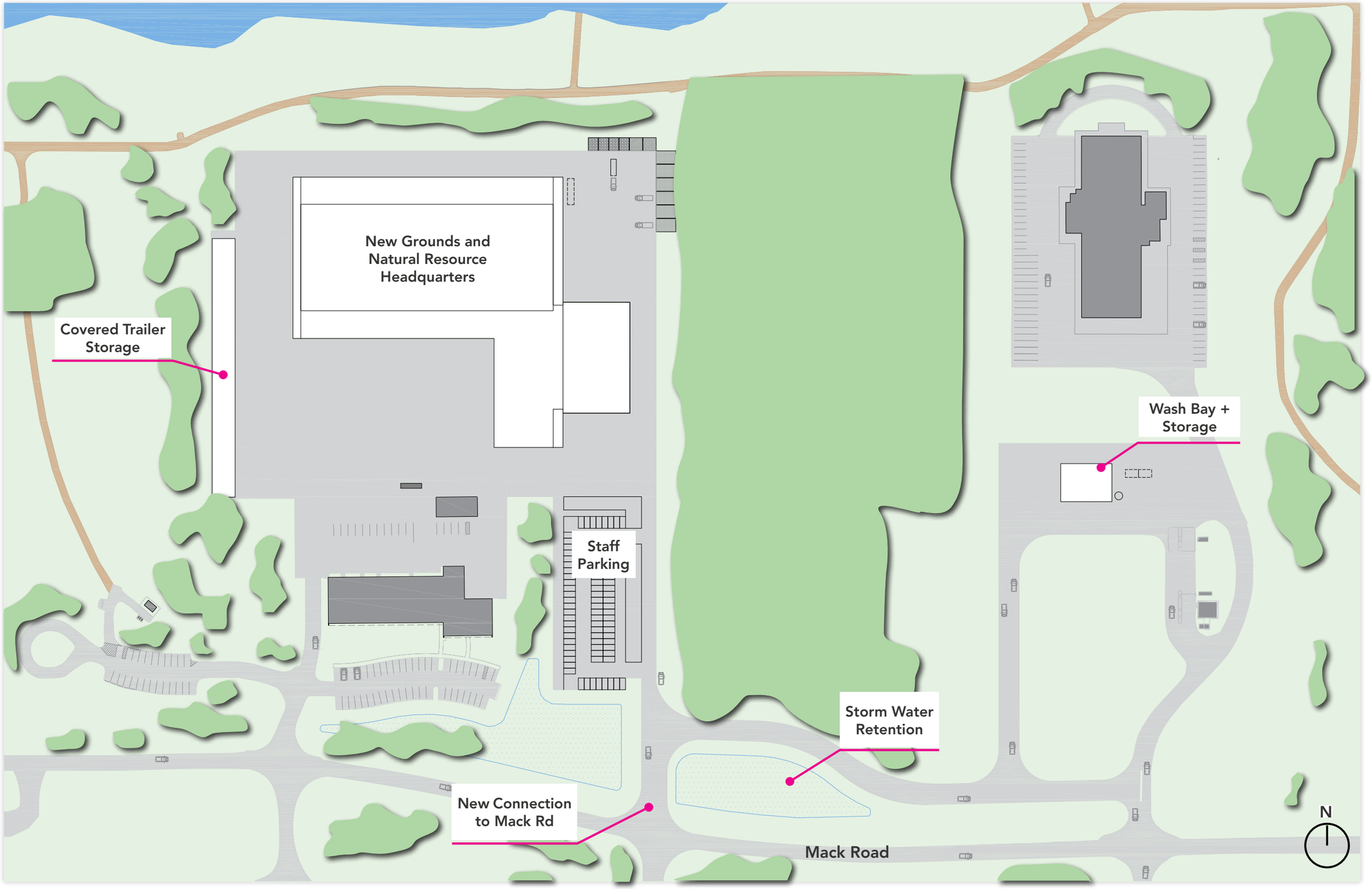
PROPOSED NORTH



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PROPOSED SOUTH

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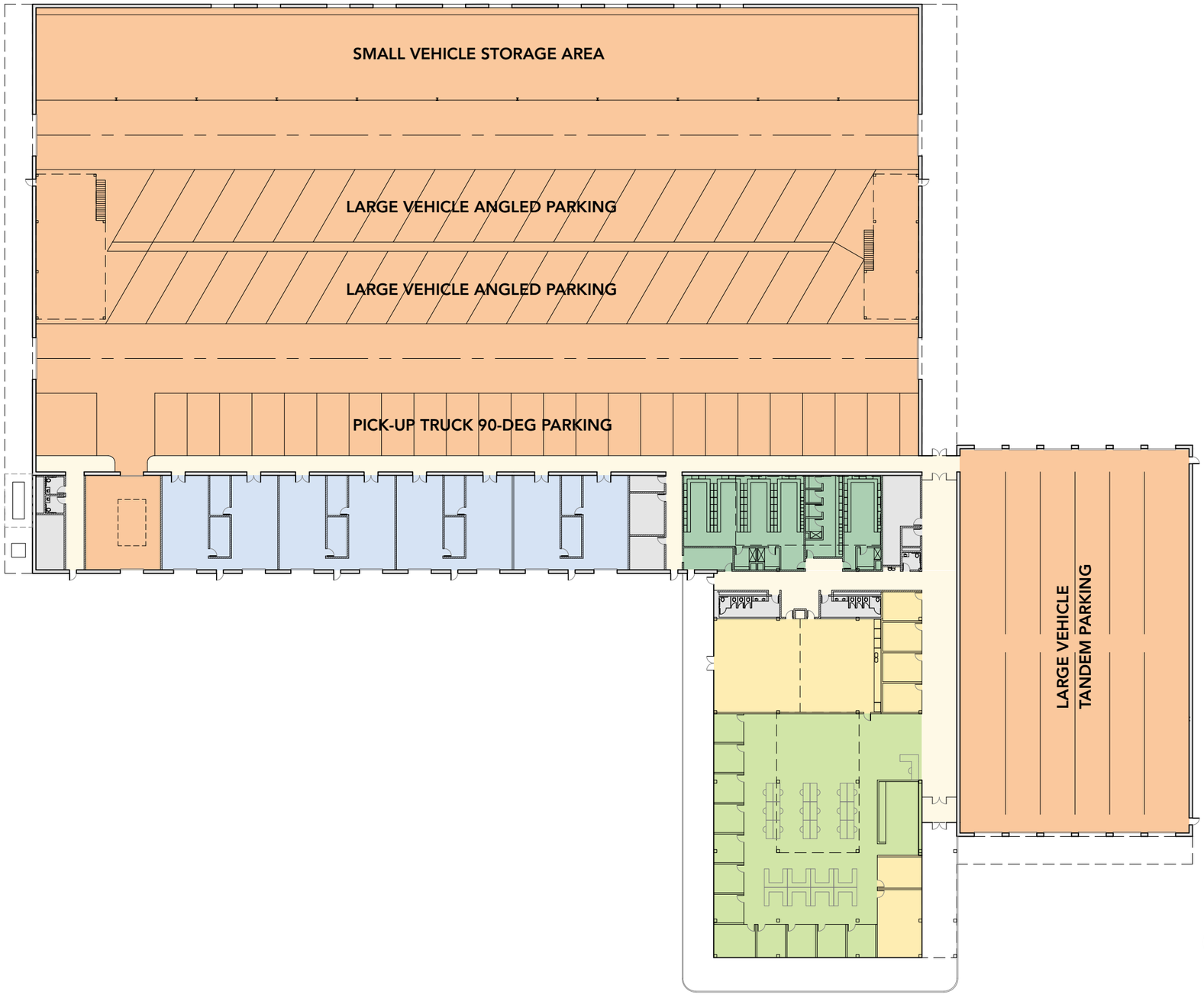
FLOOR PLAN



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Overall

Front Approach

Front View towards Workshops

Looking East towards Workshops and Admin

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MAIN GARAGE INTERIOR VIEWS

Central Angled Parking Zone

North Drive Aisle

Admin - Open Workspace

Northeast Corner (attachments zone)

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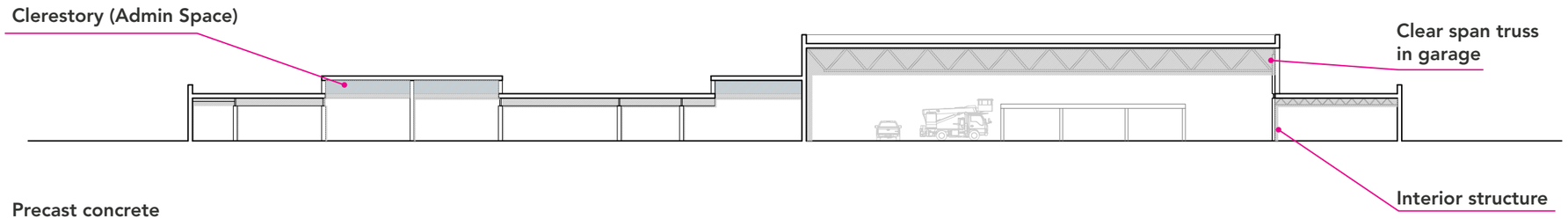
EXTERIOR ELEVATIONS

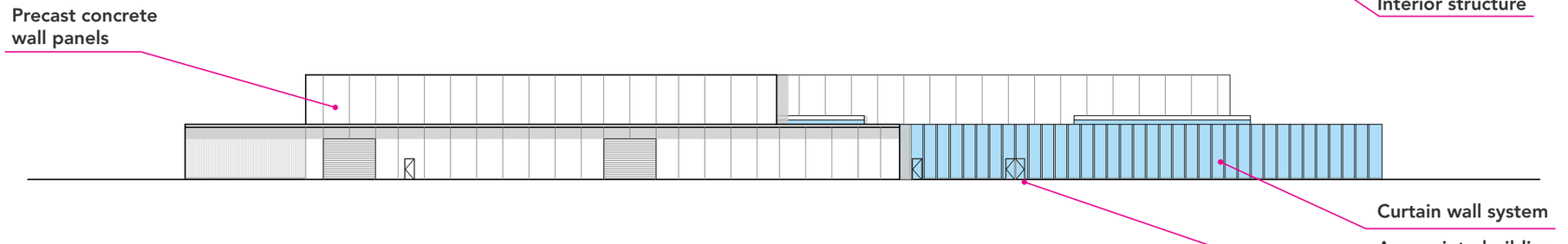
PRECAST PROS:
- Durable material
- Clear span in main garage
- Simple modularity
- Maintenance/Cleaning
- Flat/Accessible Roof

PRECAST CONS:
- More costly
- Material is difficult to replace if damaged

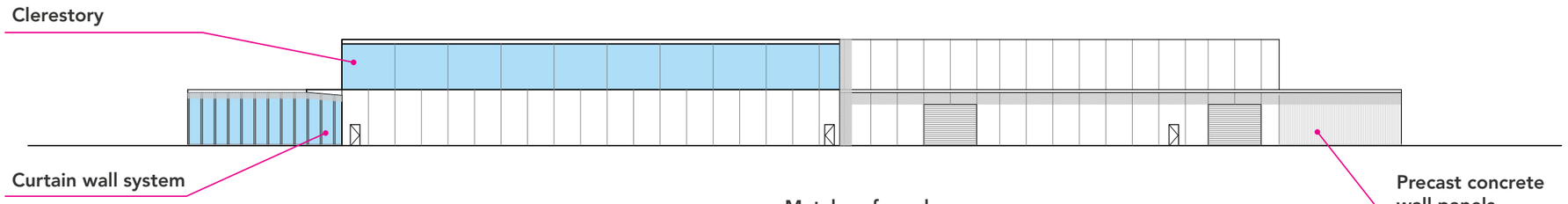
NS Section



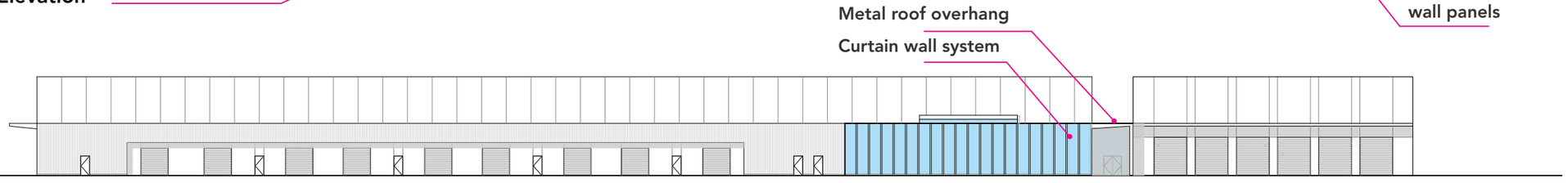
West Elevation



East Elevation



South Elevation



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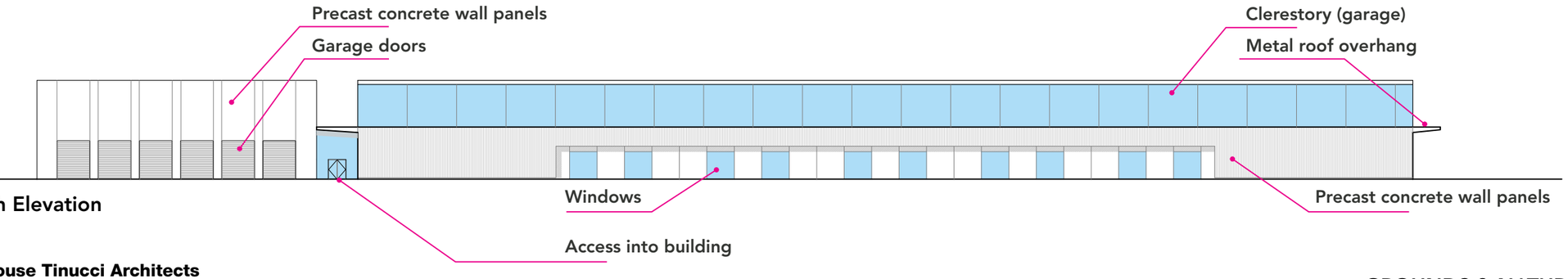

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EXTERIOR VIEWS - PEMB ALTERNATE

Overall

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Northeast Corner (attachments zone)

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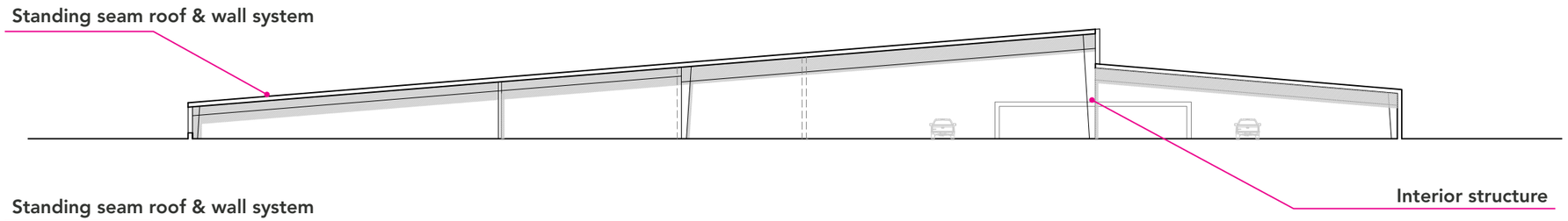
EXTERIOR ELEVATIONS - PEMB ALTERNATE

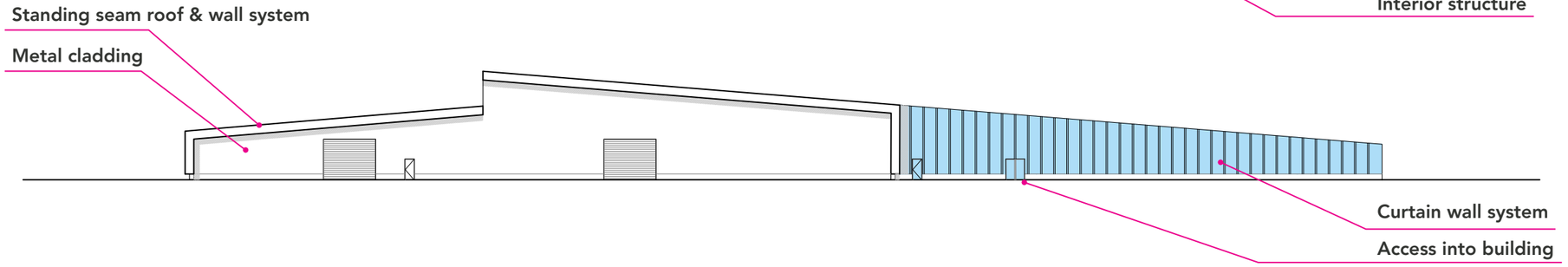
PRE-ENGINEERED METAL BUILDING PROS:
- Less costly
- Cladding can be replaced/ repaired more easily
- Simple modularity

PRE-ENGINEERED METAL BUILDING CONS:
- Center columns and lateral bracing in main garage
- Exposed interior framing and insulation.
- Sloped roof

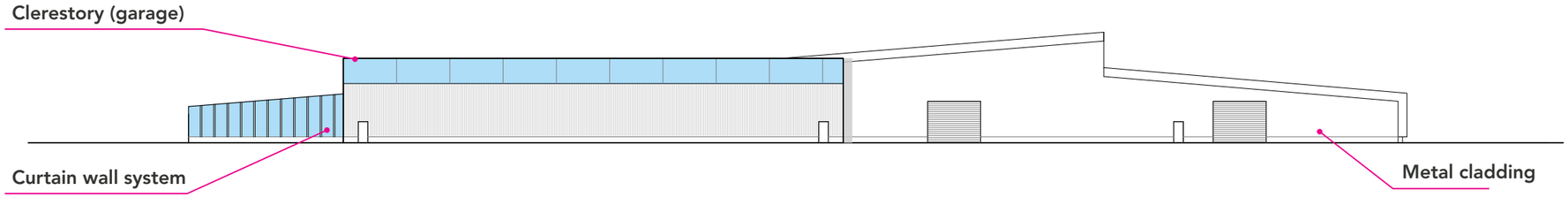
NS Section



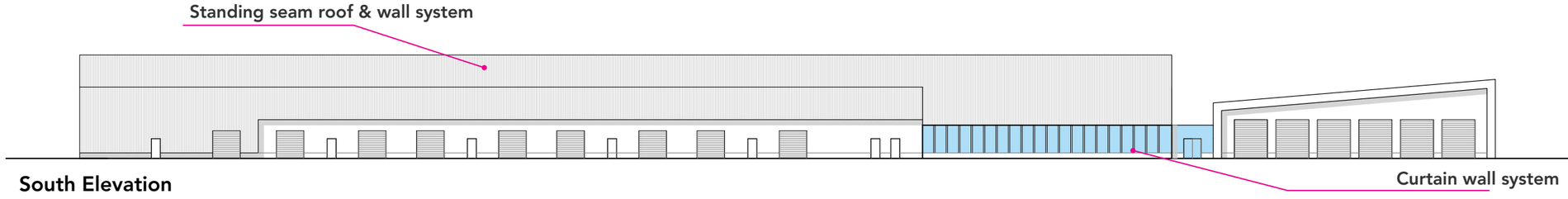
West Elevation



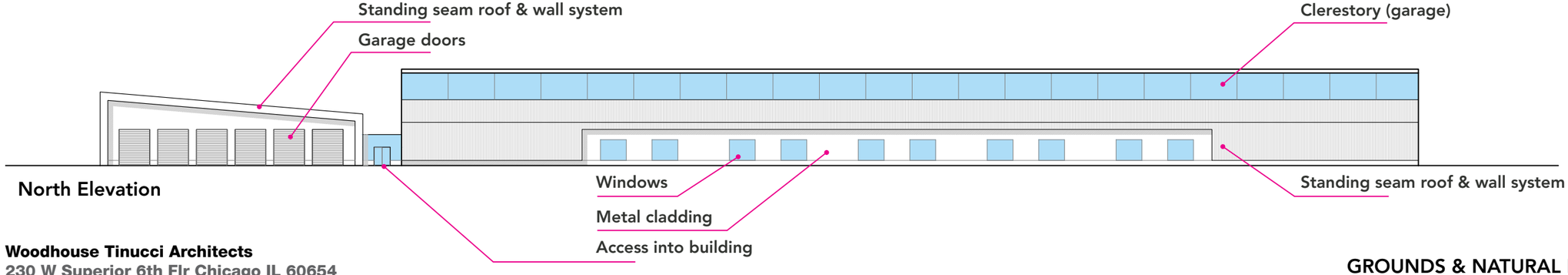
East Elevation



South Elevation



North Elevation



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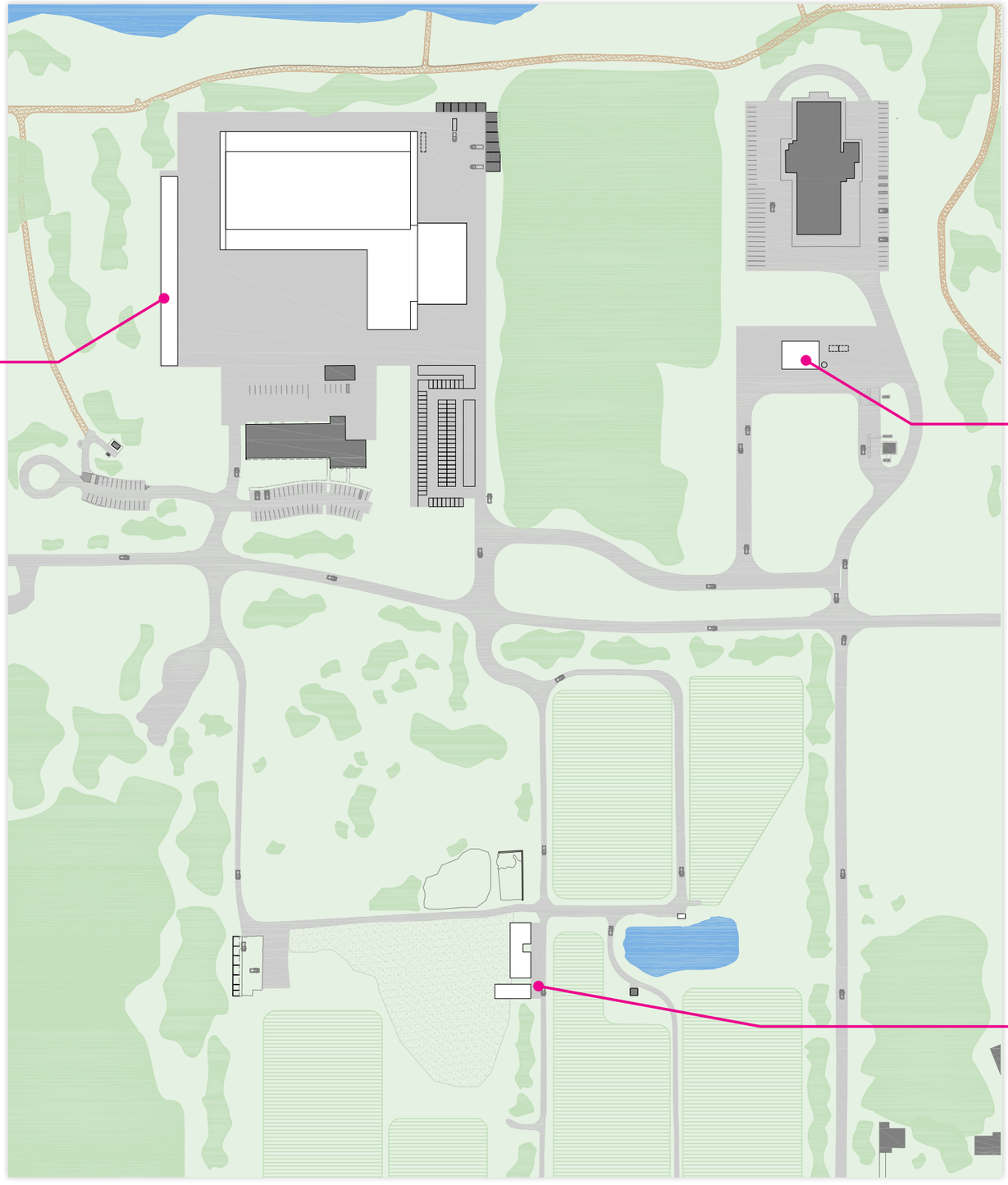
SITE PLAN



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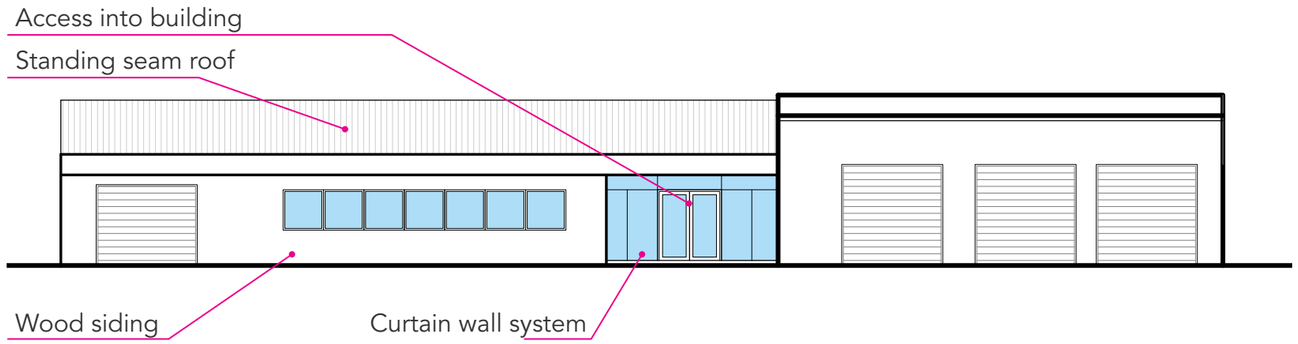
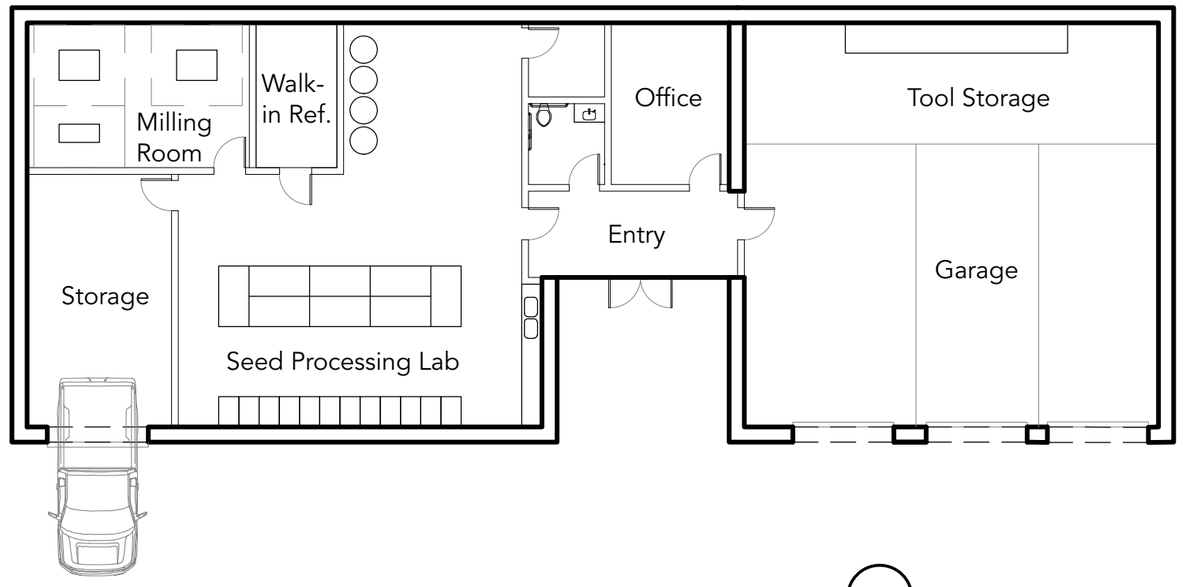
SEED PROCESSING & GREENHOUSE

Precedent Images



Seed Procesing East Elevation



Seed Processing Plan

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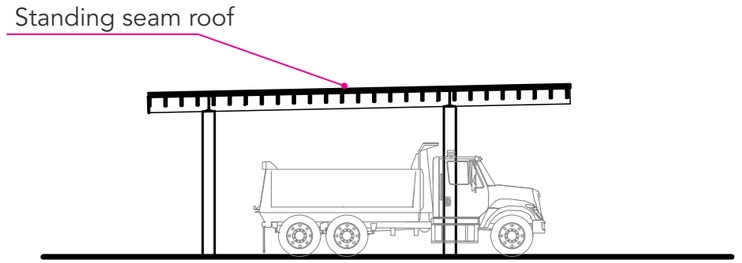
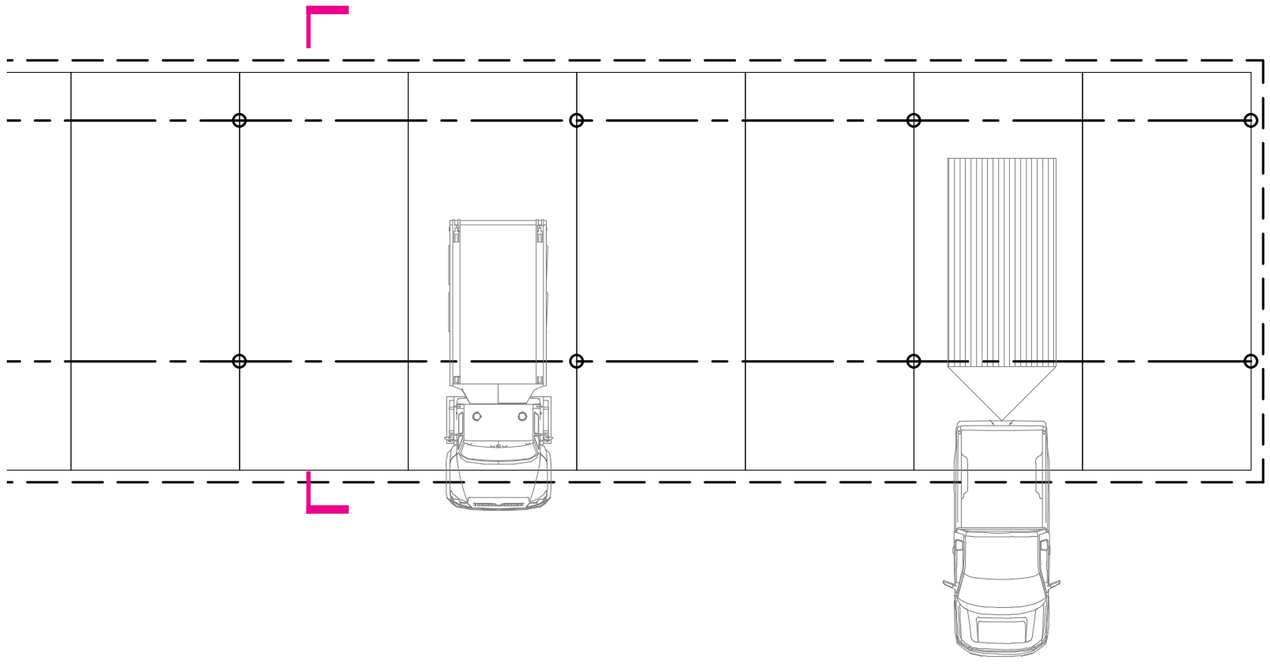
PARKING CANOPY

Precedent Image



Parking Canopy EW Section



Parking Canopy Partial Plan

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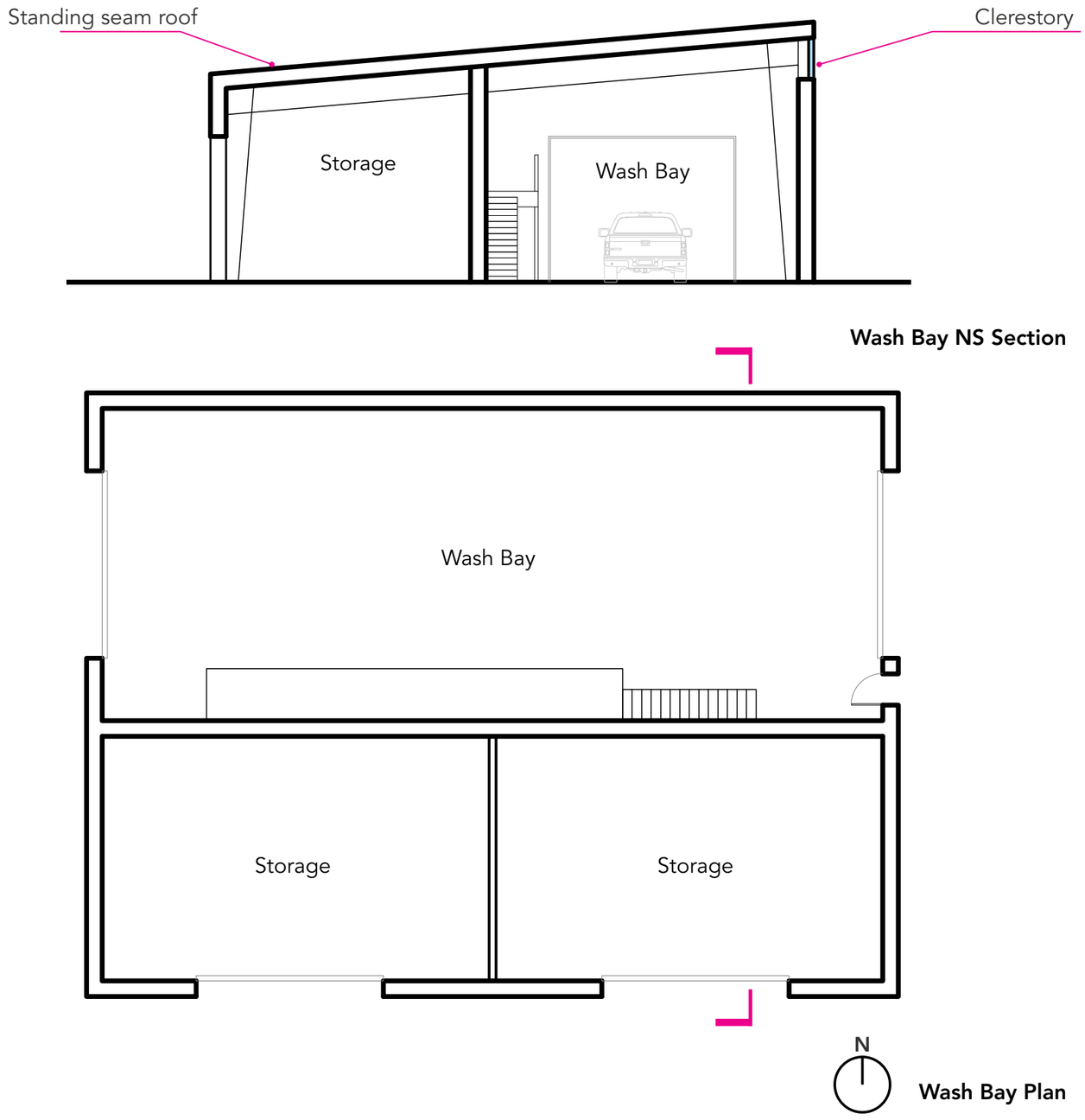
WASH BAY

Precedent Image



Wash Bay Plan

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		Primary Program	Qty	Area	Total	Program Compare	Program w/ gross up	Notes
1	Office Space							
		Private Office	12	184	2,204	1,440		
		Workstation	26	225	5,852	1,893		
		Printer/Copier	1	628	628	250		
		Storage	1	0	0	300		included in printer/copier
		SUBTOTAL			**8,684**	**3,883**	4,660	
2	Crew Space							
		Workshop	8	921	7,364	5,600		
		Secured Storage	8	187	1,492	1,725		
		Full-Time Lockers	82	33	2,711	1,020		
		Seasonal Staff Lockers	20	0	0	86		included in Full-Time Locker Rooms
		SUBTOTAL			**11,567**	**8,431**	10,117	
3	Garage							
		Mid-Sized Trucks	40	471	18,847	14,151		
		Large Truck/Equipment	26	2,089	54,311	11,811		
		Attachments + Midsized Elements	137	79	10,888	9,066		
		Carts, ATVs, Tractors	54	202	10,888	7,047		
		Trailers	45	306	13,789	14,790		trailers in separate lean-to structure
		SUBTOTAL			**108,723**	**56,865**	79,611	area includes drive aisles
4	Storage							
		Bulk Storage	1	3,106	3,106	3,484		removed from area total. Mezzanine
		Flamable Storage	0	0	0	614		not yet itemized. put in Crew Secured Storage
		Cold Storage	2	975	1,950	896		
		SUBTOTAL			**1,950**	**4,994**	5,493	
5	Misc							
		Washbay	1	2,575	2,575	2,500		
		Chemical Mixing	1	1,460	1,460	1,800		
		Seed Processing	1	4,668	4,668	4,064		
		Greenhouse	1	2,100	2,100	2,100		
		Pump House	1	180	180	220		
		SUBTOTAL			**10,983**	**10,684**	12,821	
6	Building Support							
		Lunch/Training Room	1	2,985	2,985	2,000		
		Kitchen	1	0	0	300		included in lunch room total
		Conference Room	2	427	853	800		
		Crew Meeting Room	4	233	930	825		
		Mechanical	1	1,358	1,358	1,100		
		Restrooms	11	94	1,036	1,620		
		Shower/Change/Mothers	8	80	640	450		
		Mud Room	1	258	258	200		
		Laundry	1	253	253	200		
		Entry	1	164	164	400		
		SUBTOTAL	**31**		**8,477**	**7,895**	9,474	
		Building Subtotal			**150,384**	**92,752**	122,176	
		Circulation / Gross Up			**3,878**	**29,424**	0	
		TOTAL			**154,262**	**122,176**	126.3%	
		GNR Building			129,000			
		Trailer Lean-To			13,789			
		Seed Processing			6,768			
		Wash Bay/Cold Storage			4,525			
		Pump House			180			
					154,262			

				Primary Program	Total	Gross-up	Total w/ gross
1	Natural Resource - Management						
	1	a		Office Space	390	20%	468
	1	b		Crew Space	1,195	20%	1,434
	1	c		Vehicles + Large Equipment (Garage)	8,523	40%	11,932
	1	d		Storage	950	10%	1,045
				Total	**11,058**		**14,879**
2	Natural Resource - Stewardship						
	2	a		Office Space	362	20%	434
	2	b		Crew Space	1,049	20%	1,259
	2	c		Vehicles + Large Equipment (Garage)	405	40%	567
	2	d		Storage	144	10%	158
				Total	**1,960**		**2,418**
3	Grounds - Forestry						
	3	a		Office Space	282	20%	338
	3	b		Crew Space	1,131	20%	1,358
	3	c		Vehicles + Large Equipment (Garage)	9,353	40%	13,094
	3	d		Storage	2,010	10%	2,211
				Total	**12,776**		**17,001**
4	Grounds - Landscape						
	4	a		Office Space	362	20%	434
	4	b		Crew Space	1,218	20%	1,461
	4	c		Vehicles + Large Equipment (Garage)	11,114	40%	15,560
	4	d		Storage	144	10%	158
				Total	**12,838**		**17,613**
5	Grounds - Roads						
	5	a		Office Space	298	20%	358
	5	b		Crew Space	1,143	20%	1,371
	5	c		Vehicles + Large Equipment (Garage)	13,404	40%	18,766
	5	d		Storage	896	10%	986
				Total	**15,741**		**21,480**
6	Grounds - Trails and Streams						
	6	a		Office Space	346	20%	415
	6	b		Crew Space	1,513	20%	1,815
	6	c		Vehicles + Large Equipment (Garage)	11,666	40%	16,332
	6	d		Storage	450	10%	495
				Total	**13,975**		**19,058**
7	Administration + Future Planning						
	7	a		Office Space	1,843	20%	2,212
	7	b		Crew Space	1,184	20%	1,421
	7	c		Vehicles + Large Equipment (Garage)	2,400	40%	3,360
	7	d		Storage	400	10%	440
				Total	**5,827**		**7,432**
8	Support						
	8	g		Misc **1.**	10,684	20%	12,821
	8	h		Building Support **2.**	7,895	20%	9,474
				Total	**18,579**		**22,295**
				Total	**92,752**	**32%**	**122,176**
					NSF	GSF / NSF	GSF
				Exterior Material Storage			**17,275**

1. Misc
Wash bay,
Common Workshop + Storage,
Forestry Workspace & Garage,
Greenhouse,
Chemical Storage, Mixing Area,
Seed Propagation & Processing,
Pump House

2. Building Support
Mudroom, Laundry, Mother's Room,
Meeting/Training Rooms,
Kitchen,
Loading/Receiving,
Restrooms, Shower, Changing Room,
Mechanical, IT

From 2022 Assessment & Logistics Plan by Knight Architects
Building Program Total, Scheme A.1 - 135, 929 SF
Building Program Total, Scheme A.2 - 115,036 SF
Building Program Total, Scheme A.3 - 131,171 SF

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Workshops

	Natural Resource Management	Natural Resource Stewardship	Forestry	Landscape	Roads	Trails & Streams	Future Planning	Misc
Workshop	800	800	800	800	800	800	800	800
Workbenches (included in workshop)	0	0	0	0	0	0	0	0
Secured Storage	200	200	200	200	200	200	200	200
Workshop Office	0	0	0	0	0	0	0	0
Total (sf)	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**
								8,000

Vehicles & Large Equipment

	Natural Resource Management	Natural Resource Stewardship	Forestry	Landscape	Roads	Trails & Streams	Admin + Future Planning
Mid-Sized Trucks	2,744	350	1,456	3,416	1,918	1,812	2,400
Large Trucks/Equipment	464	0	2,940	476	4,631	3,300	
Attachments + Midsized	1,739	54.75	2,263	1,508	2,213	1,343	
Carts, ATVs, Tractors, Mowers	1,156	0	935	2,442	1,077	1,437	
Trailers	2,420	0	1,759	3,272	3,420	3,646	
Boats					145	128	
Total (sf)	**8,523**	**405**	**9,353**	**11,114**	**13,404**	**11,666**	**2,400**
							56,865
Total with 40% Gross Up (sf)	**11,933**	**567**	**13,095**	**15,560**	**18,766**	**16,333**	**3,360**
							79,614
Total Conditioned (sf)							33,715
Total Tempered (sf)							7,845
Total Unconditioned (sf)							15,305

Future Planning

	Office Space	Crew Space	Garage	Storage	Misc	Building Support
4 x Private Office (sf)	480					
6 x Workstations (sf)	384					
1 x Meeting Space (sf)	275					
1 x Workshop (sf)		800				
1 x Secured Storage (sf)		200				
10 x Lockers (sf)		150				
6 x Vehicles (sf)			2,100			
1 x Storage (sf)				200		
Total (sf)						4,589

Types of Space

	Office Space	Crew Space	Garage	Storage	Misc	Building Support	Total
Total (sf)	3,883	8,431	56,865	4,994	10,684	7,895	**92,752**
Gross-up (%)	20%	20%	40%	10%	20%	20%	
w/ gross-up (sf)	4,660	10,118	79,611	5,493	12,821	9,474	**122,176**

ITEM	ISSUE	CHAPTER/ARTICLE	Ordinance	Actual
ZONING REQUIREMENTS - DuPage County Unincorporated Zoning				
	Township		Winfiled Township	
	Zoning District	Map	R-2 Single Family	Governmental Use
	Conditional Use	37-702.2	Public/Service Use- Governmental	
	Minimum Lot Size	37-702.3	40,000 sf	N/A
	Minimum Lot Width (Interior)	37-702.3	125 ft	N/A
	Minimum Lot Depth	37-702.3	100 ft	N/A
	Minimum Front Yard	37-702.4	30 ft	N/A
	Minimum Interior Side Yard	37-702.4	20 ft	N/A
	Minimum Rear Yard	37-702.4	25 ft	N/A
	Max Height	37-702.4	36 ft	N/A
	Max FAR	37-702.4	0.25	N/A
	Max Lot Coverage	37-702.4	50%	N/A
	Off-Street Parking & Loading	37-702.7		
	Off-Street Parking & Loading	37-1203 (7-5)	Public Utility. Determined by Director	
	Off-Street Parking & Loading	37-1204	Off-Street Parking Lot Design Chart	
	Off-Street Parking & Loading	37-1205.3	Loading Dock: (1) - 12ft x 30ft	
BUILDING REQUIREMENTS - 2021 International Building Code				
	Occupancy Classification	311.2	Office / Admin / Workshops / Garage	S2: Low Hazard Storage
	Use Groups	304 306 311.2 311.3	B: Business (office/admin/meeting) A3: Lunch Room (100 occ) F1: Moderate Hazard Industial (workshop?) S1: Moderate Hazard Storage (workshop?) S2: Low Harzard Storage (Vehicle Garage)	B: 20,000 sf A3: 2,000 sf S1: 11,300 sf S2: 92,250 sf **125,550 sf total**
	Height Limits	504.3	Type VB, Sprinklered: 60ft	< 60ft
	Number of Stories Above Grade	504.4	Type VB, Sprinklered: 2 Stories	Max 2 stories
	Mezzanine Area Limit	505.2.1	No more than 1/3 the floor area	will be less than 1/3
	Building Area	506.2	**Type VB, Sprinklered, 1-story** B: 36,000sf (most restrictive) S1: 36,000sf S2: 54,000sf	**Allowed per 507.4**
	Unlimited Area Buildings	507.4	**Sprinklered, 1-Story Buildings** Area of B, F, M, or S building no more than 1-story of **any** construction type shall not be limited when provided with sprinkler system **and** surrounded and adjoined by public ways or yards not less than **60ft** in width	**Complies.** **Building is allowed to have unlimited area, regardless of Construction Type**
	Mixed Use & Occupancy	508.1	Exception: occupancies separated in accordance to Section 510	
	Accessory Use	508.2.3	max 10% of floor area.	
	Accessory Use	508.2.4	No separation is required between occupancies and the main occupancy	
	Non-Separated Occupancies	508.3.2	Max Area limited to most restrictive of the various occupancies	
	Separation of Occupancies	508.4	No Separation Required = B, F1, S1 1HR = S2: B, F1, S1	1HR between garage and rest of building
	Separation of Occupancies	508.4.b	S2: Separation from areas used only for private and pleasure vehicles shall be not less than 1 hour	**1hr needed between garage and other occupancies**
	Incidental Uses Protection Required	509	0HR: Furnace Room over 400,000btu 0HR: Boiler Room over 15psi/10hp 1HR: Paint Shop 0HR: Laundry Room +100sf 1HR: Stationary Battery Storage XHR: Electrical Room	
	Construction Calssification	602.5	Type VB construction is that of type of construction in which the structural elements, exterior walls, and interior walls listed in Table 601 ar of any material permitted by this code	

CONSTRUCTION TYPE				
	Construction Type	601	TYPE VB	
	Primary Structure Frame	601 (table)	0 HR	
	Exterior Bearing Walls	601 (table)	0 HR	
	Interior Bearing Walls	601 (table)	0 HR	
	Nonbearing Interior Walls	601 (table)	0 HR	
	Floor Construction	601 (table)	0 HR	
	Roof Construction	601 (table)	0 HR	
	Exterior Wall Fire Rating Separation	602 (table)	Separation Distance >= 30ft All Const Types Allowed = 0HR	Complies.
	Max Area of Opening based on Fire Separation Distance	705.8	Unprotected, Spinklered Building = +20ft separation distance required	Complies
	Shaft Enclosures	713.4	1 HR	
	Interior Wall and Ceiling Finishes	803.13	B - Interior Exit Stairs/Passageways C - Corridors C - Rooms/exposed spaces	
	Furred Construction	803.15	Direct applied to non-combustible construction or 1-3/4" max furring	
	Sprinkler System Req'd	903.2	Automatic Sprinkler System will be provided in new buildings in locations noted	provided
	Sprinkler System Req'd	903.2 (local amendment)	Automatic Sprinkler System is required in all B, F, S, U uses over 2000sf	provided
	Sprinkler System Req'd	903.2.4 903.2.9 903.2.10	F1: Required if area exceeds 12,000sf S1: Required if area exceeds 12,000sf S2: Required if area exceeds 12,000sf	provided
	Fire Extinguishers	906.1.2	Required in Group B uses. And within 30ft of commercial cooking	provided
	Size and Distribution of Fire Extinguishers	906.3	Class A, 75ft max distance	see plans
	Fire Alarm System	907.2 (local amendment)	Required in all B, F, S, U uses over 1000 sf	
EXIT REQUIREMENTS				
	Min Ceiling Ht	1003.2	7'-6"	
	Occupant Load	1004.5	Storage = 1/300sf Assembly, Unconcentrated = 1/15sf Business/Office = 1/150sf Classroom = 1/20sf Locker Rooms = 1/50sf Parking Garage = 1/200sf	see plans
	Stairway Exit Width	1005.3.1	0.2 inches per occupant	
	Door Exit Width	1005.3.2	0.15 inches per occupant	
	Door Encroachment	1005.7.1	7" max	
	Number of Exits from Space	1006.2.1	1 exit = 49 occ max 100ft max common path of travel dist	see plans
	Min number of Exits per Story	1006.3.2	2 exits = 1-500 occ per story	see plans
	Area of Rescue Assistance	1009.3.3	Not required if sprinklers provided	
	Door Size	1010.1.1	32" min clearance	36"
	Panic Hardware Req'd	1010.1.10	Doors serving rooms with occ load 50+	
	Stair Width	1011.2	44" min 36" min if occ <50	
	Stair Headroom	1009.5	80" min	
	Guards Req'd	1013.2	On all surfaces w/ 30" open drop	
	Guards	1013.3	42" MIN	
	Guard Opening Limits	1013.4	4" SPHERE	
	Travel Distance	1017.2	Business = 300ft S1 = 250 S2 = 400	see plans
	Corridor Fire Rating	1020.1	B, F1, S1, S2 = 0 hr	
	Minimum Corridor Width	1020.2	44" MIN	
	Dead End Corridor	1020.4.2	50 ft	

PLUMBING REQUIREMENTS - Illinois Plumbing Code				
	Occupancy			
	Office Building	890.810	200 sf / occupant	120
	Requried Fixtures	890.TABLE B		
		MEN - 60		WOMEN - 60
	Water Closets	4		4
	Lavatories	3		3
	Drinking Fountains	2		
	Service Sink	1		

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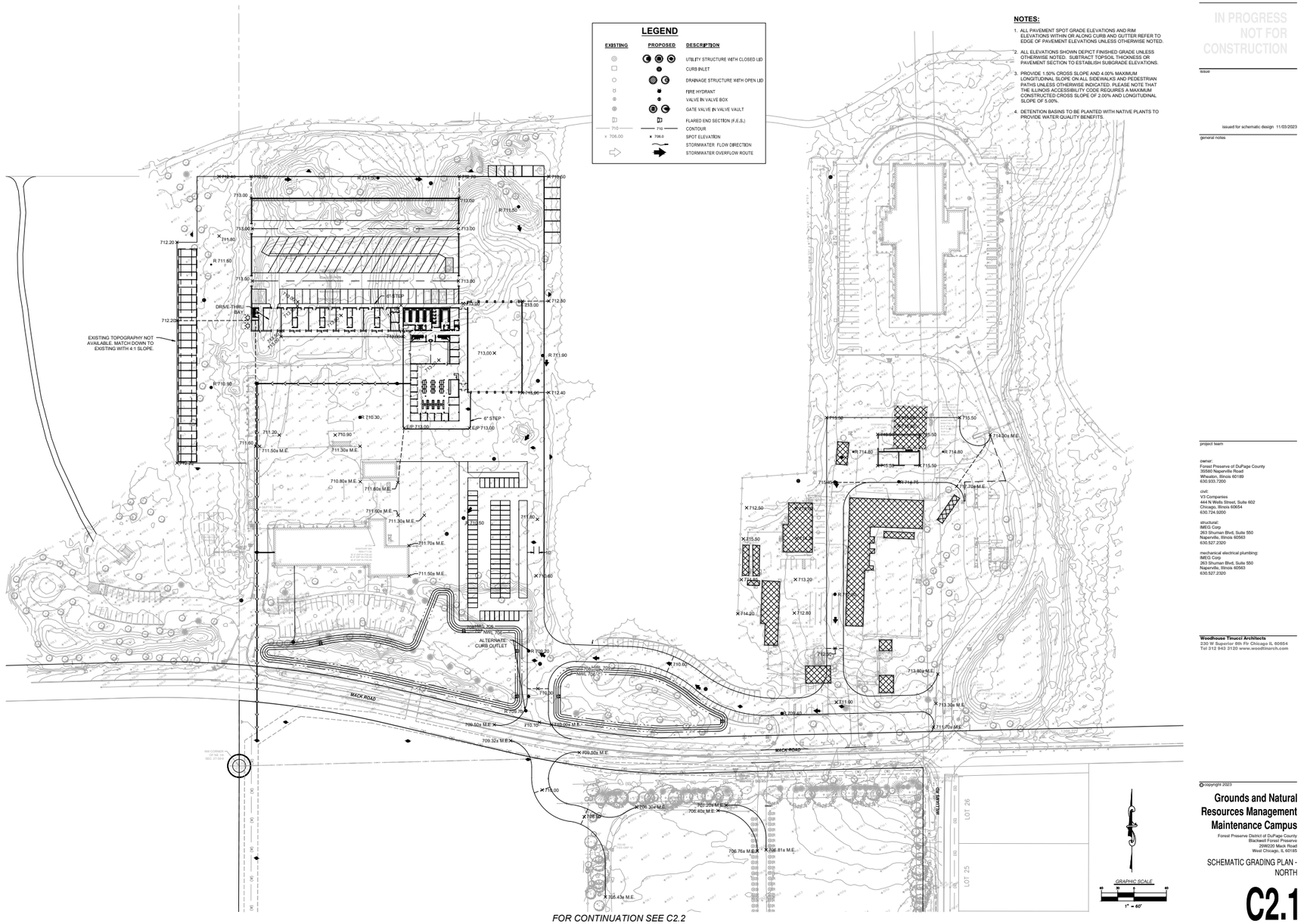

FOR CONTINUATION SEE C2.2

IN PROGRESS
NOT FOR
CONSTRUCTION

issue

issued for schematic design 11/03/2023

general notes

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Grounds and Natural Resources Management Maintenance Campus

Forest Preserve District of DuPage County
Blackwell Forest Preserve
29W220 Mack Road
West Chicago, IL 60185

SCHEMATIC GRADING PLAN - NORTH

C2.1

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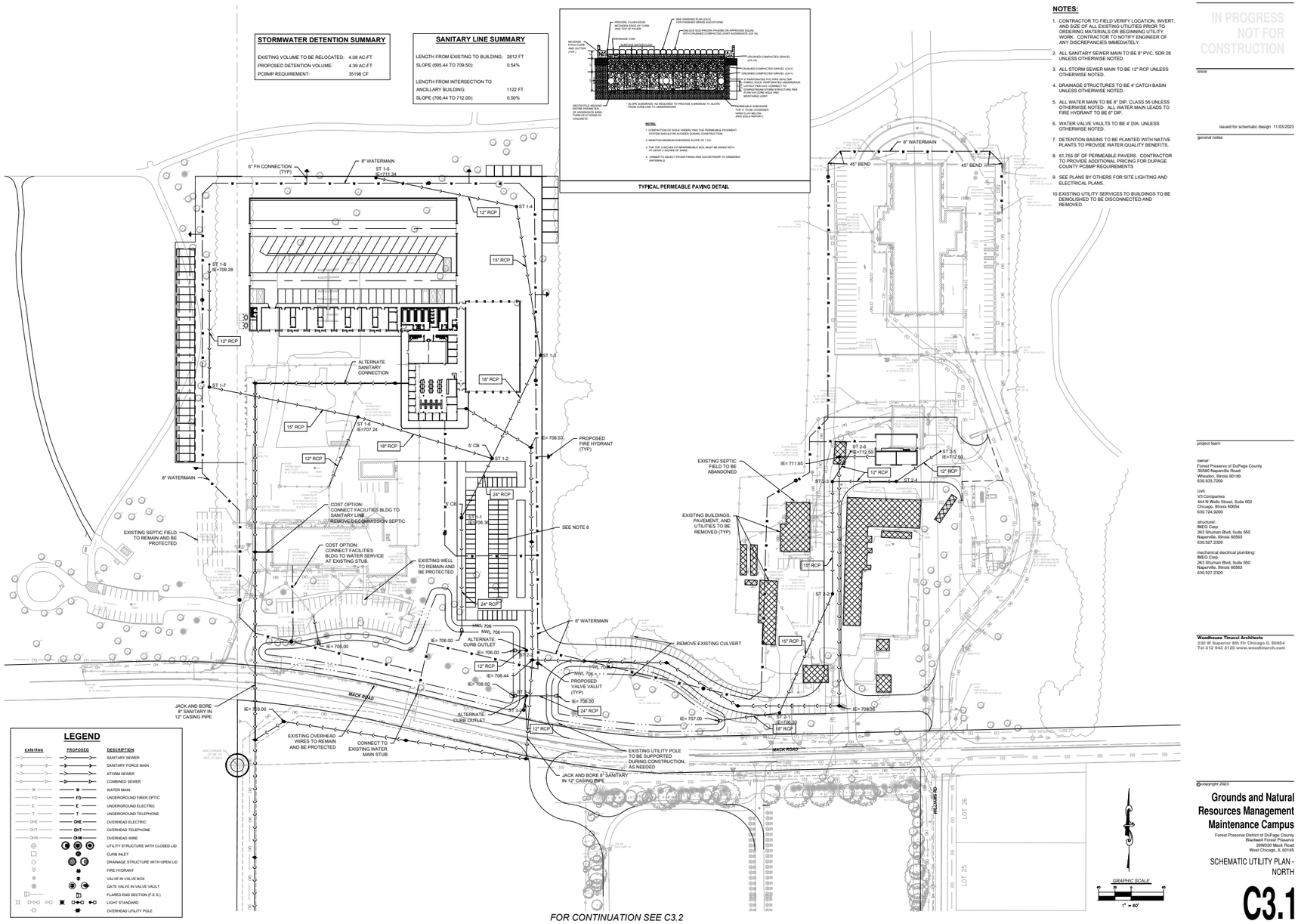

FOR CONTINUATION SEE C3.2

IN PROGRESS
NOT FOR
CONSTRUCTION

issue

issued for schematic design 11/03/2023

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Grounds and Natural Resources Management Maintenance Campus

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West Chicago, IL 60185

SCHEMATIC UTILITY PLAN - NORTH

C3.1

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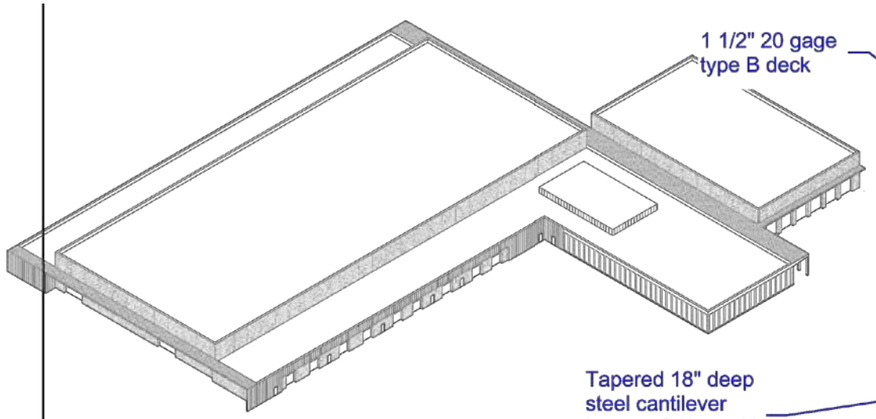
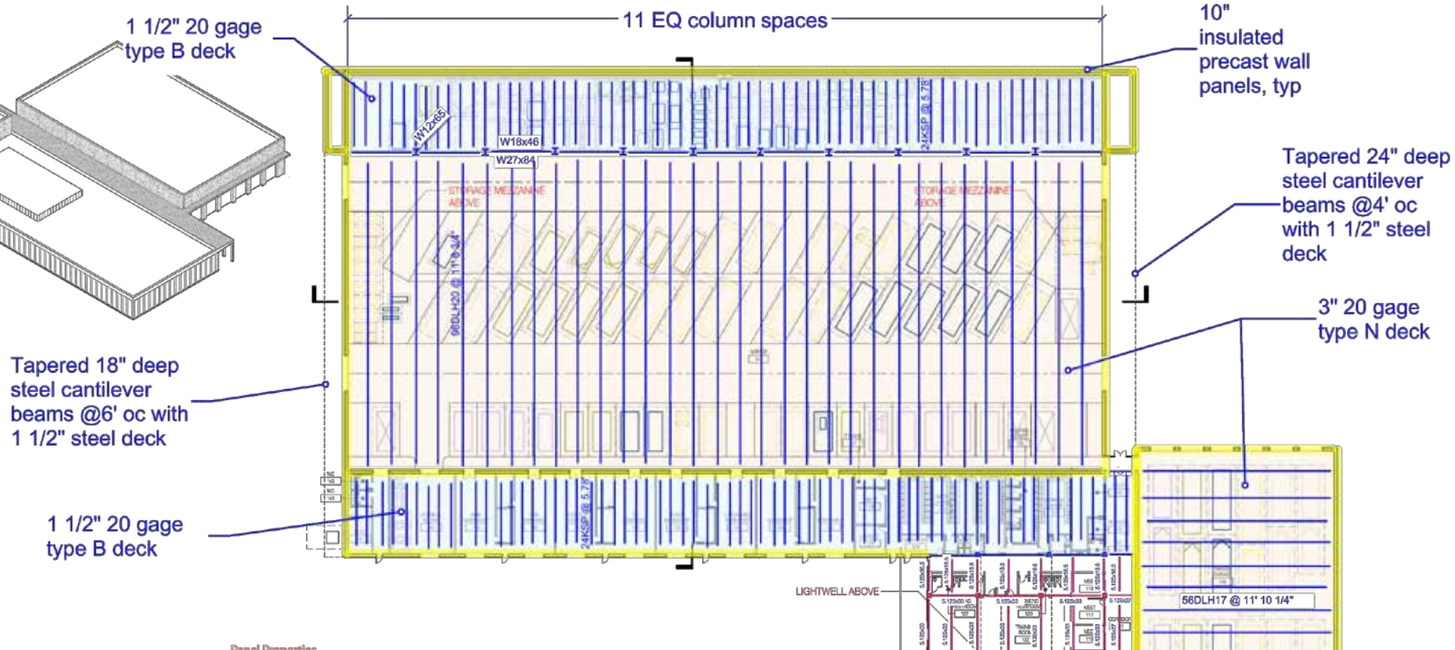
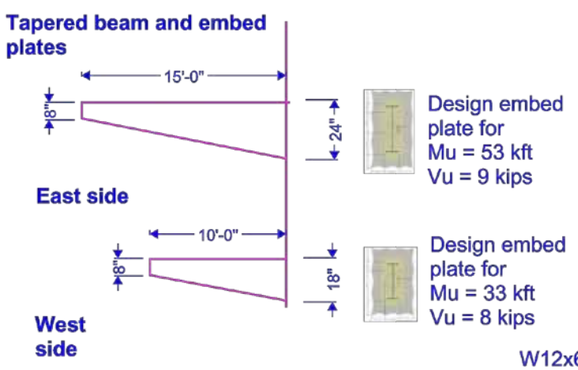
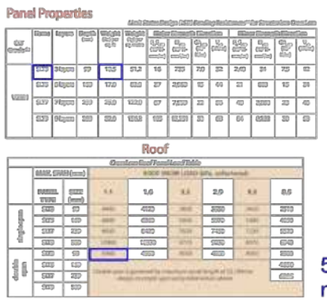


Main Building Option 1
- Precast with Steel Joist
- Glulam with CLT







SLT3 CLT roof deck - double span

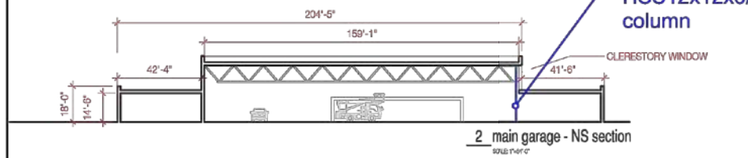
8x8 wood post, typ

5400mm = 17' 8 5/8" max span for 23 psf snow load

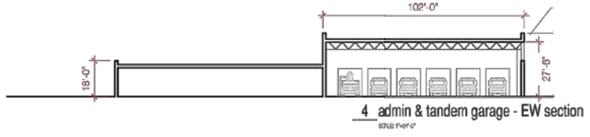
Wood shear wall with window openings

1 floor plan

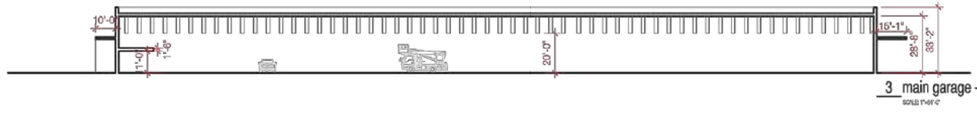
W12x65 or HSS12x12x3/8 column



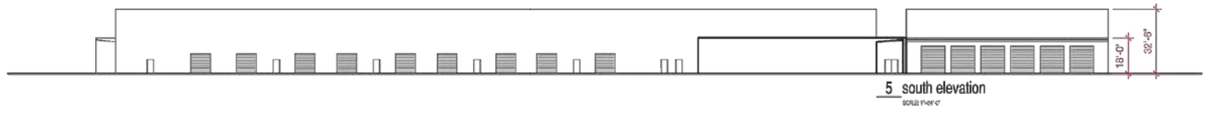
2 main garage - NS section



4 admin & tandem garage - EW section



3 main garage - EW section



5 south elevation

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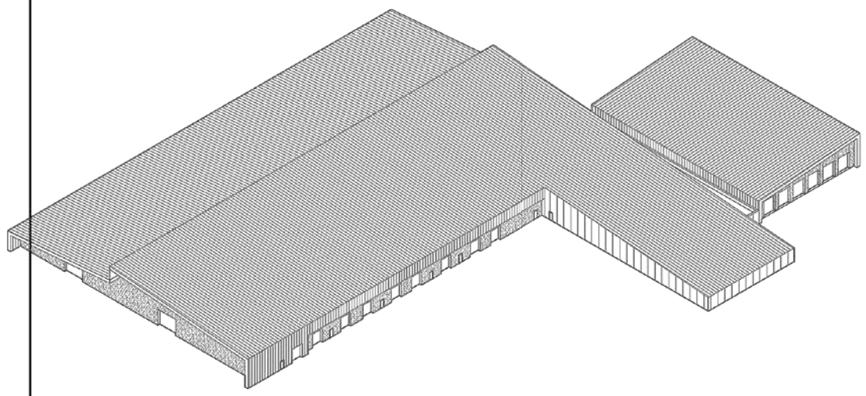
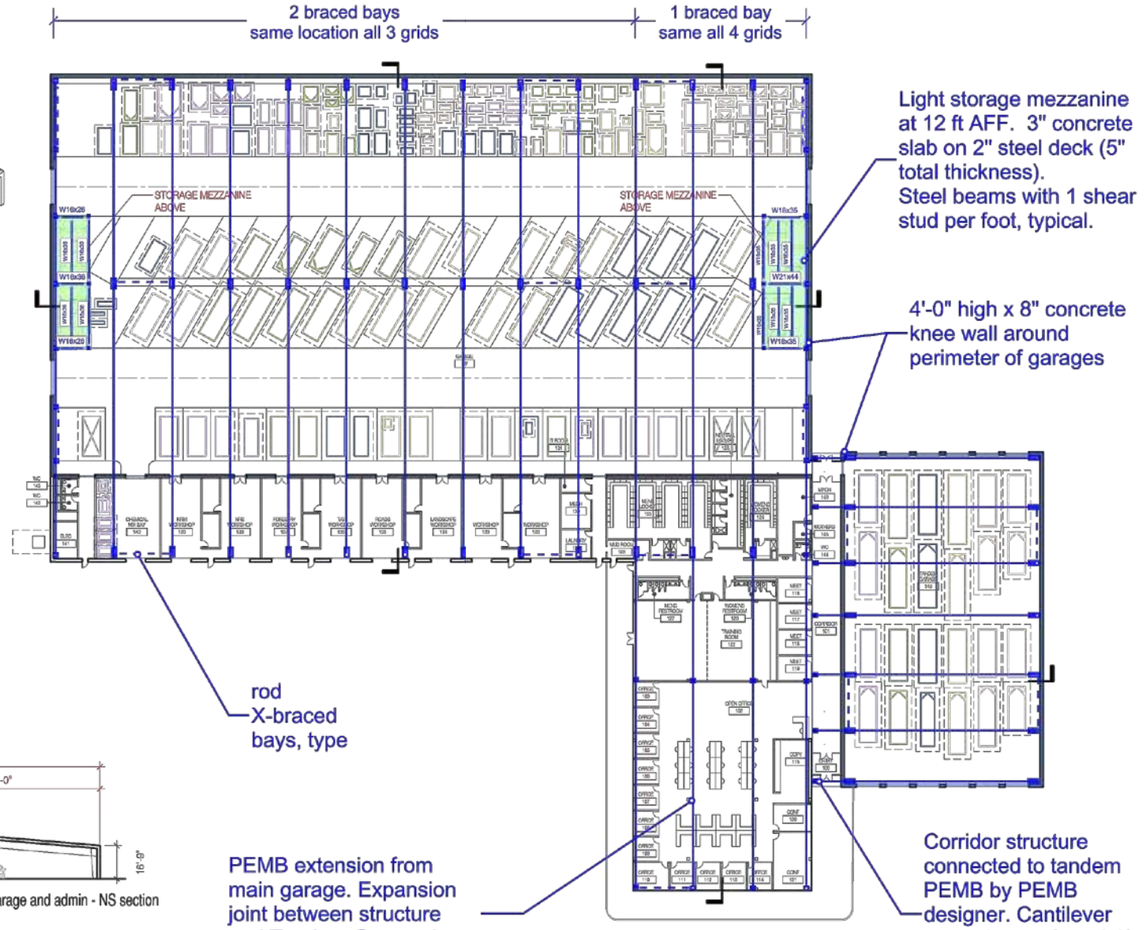
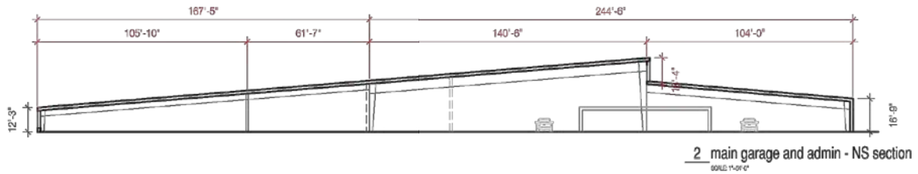
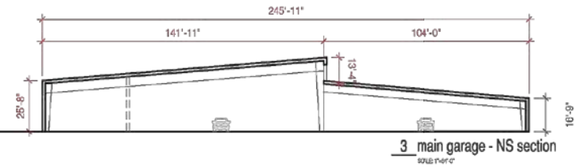


Main Building Option 2 - PEMB

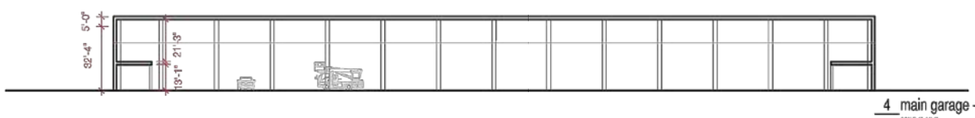




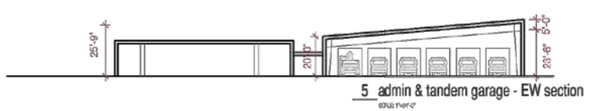
2 main garage and admin - NS section



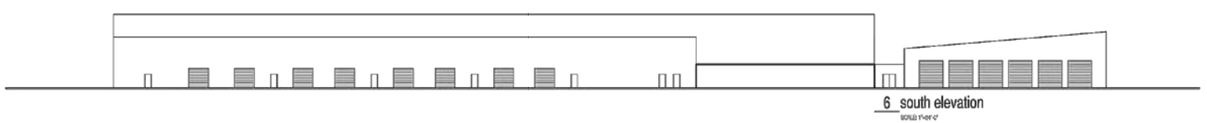
3 main garage - NS section



4 main garage - EW section



5 admin & tandem garage - EW section


6 south elevation

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A. Introduction

1. Purpose

   a. The primary purpose of this report is to describe and provide a permanent record of the building systems for the Forest Preserve District of DuPage County. In addition to describing the systems, the fundamental assumptions used for the design are outlined. These include external and internal temperature, fire resistance, and lighting levels.

2. Project Description

   a. The Project will consist of five different areas as broken down below.
      1) Area A - Main Building & Site: New 125,000 square foot building consisting of garage (75,000), Workshop (11,000) Office Space (22,000) and Vehicle Storage (17,000).
      2) Area B - East Site: New 5,000 square foot washbay and cold storage building.
      3) Area C - South Site: New 4,500 square foot building consisting of Office (2,500), and garage space (2,000). New 2,500 prefabricated greenhouse.
      4) Area D - Site Work to improve site buildings and utility work.
      5) Area E - Infrastructure work and site utility work.

3. Sustainability and Energy Goals

   a. The Project will not pursue LEED but will use energy efficient and green initiatives such as VRF, PV Arrays, EV Chargers and Rainwater Harvesting.

B. General Building Design Criteria and Assumptions

1. Codes
   a. Building Code - 2021 International Building Code
   b. National Electrical Code 2020
   c. Mechanical Code - 2021 International Mechanical Code
   d. Plumbing Code - 2014 Illinois Plumbing Code
   e. Energy Conservation Code -IECC 2021
   f. Fire Protection Code - 2021 International Fire Code
   g. Fuel Gas Code - 2021 International Fuel Gas Code
2. Summer Space Environmental Requirements: 72°F ± 2°F,
3. Cooling Design Outdoor Air Conditions: 95°Fdb/78°Fwb.
4. Winter Space Environmental Requirements: 70°F ± 2°F, no humidity control.
5. Heating Design Outdoor Air Conditions: -10°F

C. Structural Design Requirements

1. Building Code and Occupancy Category

   a. The project design will follow ASCE7-16.

2. Performance Requirements

   a. Live Load
      1) Building live loads are designed as follows:
         a) Roof live loads: 20 psf (reducible)
         b) Storage mezzanines: 125 psf (non-reducible)
         c) Live load reduction: Not used

   b. Snow, Wind and Seismic Loads
      1) Snow load is based on ASCE7 Chapter 7 as follows:
         a) Ground snow load: 25 psf
         b) Exposure factor, Ce: 1 0
         c) Thermal factor, Ct: 1.0
         d) Importance factor: 1.0
         e) Flat roof snow load: 17.5 psf
         f) Rain-on-snow surcharge: 0 psf
         g) Design load: 20 psf
         h) Drifting load: Refer to plan
      2) Wind load is based on ASCE7 Chapter 28 as follows:
         a) Design wind speed: 107 mph
         b) Importance factor: 1.0
         c) Exposure class: C
         d) Wind pressure, MWFRS: 29 psf
         e) Wind pressure, 25 psf
         Components:
         f) Wind pressure, roof: 20 psf uplift (gross)
      3) Seismic load is based on ASCE 7 Chapter 11 as follows:
         a) Importance Category 1.0
         b) Risk Category II
         c) Site Class (Assumed) TBD (with Geotech)
         d) Sd1 0.141
         e) Sd1 0.104
         f) Seismic Design Category TBD (with Geotech)

3. Sub-Structure System

a. Foundation System

1) A geotechnical report has not been provided to date. Soil conditions are currently being investigated for recommended foundation design, Site Class, allowable bearing values, and bottom of footing elevations. It is anticipated that this will be provided during the Design Development phase. It is anticipated to be shallow foundations bearing at frost depth, but this will need to be confirmed after the geotechnical report is provided.

a) Column foundations are anticipated to be spread footings bearing at frost depth.

b) Foundation frost walls for masonry walls and curtain walls are anticipated to be cast-in-place concrete walls supported on continuous footings bearing at frost depth.

c) Foundation frost walls for precast concrete footings will also bear at frost depth and one of the following options will be used for supporting the precast walls

(1) Extend precast walls down approximately 3 feet below grade to bear on the footings or

(2) Extend precast walls down 1 foot below grade to be supported on frost walls extending to the footings.

d) 3,000 psi concrete will be used for footings. 4,000 psi concrete will be used for piers and foundation walls.

e) Polystyrene insulation will be provided at the building perimeter per the architectural narrative.

2) Special Foundations Requirements

a) Geotechnical testing and inspection will be required during construction to verify the actual on-site soil conditions prior to concrete placement.

b. Slab-on-grade Construction

a) The typical slab-on-grade will be 4,000 psi concrete reinforced with welded wire fabric at all locations. In the garage areas with vehicular occupancy a 6" slab is anticipated. In the office areas and non-vehicle areas the slab thickness is anticipated to be 5". These values will be confirmed when the geotechnical report is made available. Thickened reinforced concrete slabs will be provided below CMU interior partitions, and at locations with depressed slab locations. Refer to page 1 of the Structural Framing Options pdf for anticipated slab thickness at each location.

b) Slab depressions will be provided, as required, for flooring, equipment, etc.

c) A 15 mil polyethylene vapor retarder will be provided below the slab except in the garage area.

4. Superstructure System

a. Floor Construction

1) Area A Mezzanine Floor Construction - Precast, Pre-stressed Hollowcore Planks

a) 3" normal weight concrete slab on 2" composite steel deck supported on composite steel beams for both options.

b) Refer to page 2 and page 4 of the Structural Framing Options pdf for the preliminary member sizes for each option.

b. Roof Construction & Lateral System

1) Area A Main Building Option 1 – Precast Garage and Wood Office

a) 10" insulated precast concrete panels support the steel joist roof framing for the two vehicle garages.

b) Steel beams and column line between the high garage roof and low garage roof on the north side.

c) Tapered steel cantilevers attach to the east and west side of the vehicle garage to create a canopy with embed plates and precast panels designed to take the bending moment by the precaster.

d) Wood office building with glulam columns, girders, and beams supporting 3-ply CLT roof deck.

e) Lateral loads are resisted by precast concrete shear walls around the perimeter of the vehicle garages. The low garage roofs lean on the taller garage section for north-south lateral resistance. The wood office building has a wood shear wall along the south edge of the building and leans against the precast garages for lateral resistance on the other 3 sides.

f) Refer to page 2 of the Structural Framing Options pdf for additional information.

2) Area A Main Building Option 2 – Pre-Engineered Steel Building

a) Steel frames spaced between 29 and 30 feet on center with cold-formed steel purlins spanning between frames to support the exterior enclosure. There are two separate pre-engineered buildings separated by an expansion joint.

b) The lateral system for the building is created by tapered pre-engineered steel moment frames in one direction of each building and using steel rod X-bracing around the perimeter.

c) Refer to page 3 of the Structural Framing Options pdf for additional information.

3) Area A Covered Parking Structure
   a) Steel columns at 20′ x 28′ grid
   b) Steel girders at 28′ on center spanning between columns with cantilever to each side
      (1) Framing Option 1 - steel beams spanning 28′ at 5′-0″ on center spanning between girders with 1 1/2″ steel deck
      (2) Framing Option 2 - 2x12 framing spanning 28′ at 12″ on center spanning between girders with 1/2″ plywood
   c) Refer to page 5 of the Structural Framing Options pdf for additional information
4) Area B Wash Bay Structure
   a) 8″ CMU or 8″ insulated precast walls
   b) K-series steel bar joists at 6′ on center spanning between central and exterior bearing walls supporting 1 1/2″ steel B deck.
   c) Refer to page 5 of the Structural Framing Options pdf for additional information
5) Area C Seed Processing Structure
   a) Sawn lumber 2x bearing / shall walls
   b) Framing Option 1 - Metal plate connected wood trusses at 2′ on center supporting plywood deck.
   c) Framing Option 2 - Glulam beams spaced 6′-0″ on center supporting 1 1/2″ tongue and groove decking.
   d) Refer to page 5 of the Structural Framing Options pdf for additional information.

D. Mechanical Design Requirements

1. Area A - Main Building and Site:
   a. Garage Option 1: A Radiant Flooring system will be provided for the garage areas. The radiant floor system will consist of natural gas condensing boiler(s) (Two boilers sized at 1,500 MBH each), two inline pumps, expansion tank, and piping manifold. The system will be sized for 30 Btuh/square foot.
   b. Option 1A: Provide the same radiant floor system with electric boilers.
   The table below compares using natural gas vs electrical for energy cost and EUI.

System/Plant	Energy Cost ($/yr)	EUI (kBtu/sqft/yr)	CO2 (metric tons)
Gas/Elec Option: In Floor Radiant (Gas Boiler) and VRF for Office Space	$35,900	26.7	291
Electric Option: In Floor Radiant (Electric Boiler) and VRF for Office Space	$44,300	25.3	351

Gas - $0.05871/Therm
Electric - $0.05987/kWh

Option 2: Provide 25 gas fired radiant tube heaters throughout the main garage area. Another eight heaters will be provided for Vehicle storage on the east side of the building. Each tube heater will be 40′ long with intake and flue connections and reflection shield.

Gas fired air curtains will be provided at high traffic doors. Exhaust fans on switches will be interlocked with motor operated dampers and louvers to cycle air through the spaces as needed. A purge exhaust system will also be provided for the garage space that can be manually operated as well as connected to gas monitoring system that will purge the space. Large diameter High Volume Low Speed (HVLS) fans will be provided to provide air movement and even temperature distribution. Garage and workshop spaces will not have cooling.

Workshops areas will be provided with radiant tube heaters and exhaust requirements will be coordinated with the Owner. HVLS fans will be provided to provide air movement and temperature distribution.

Radiant tube heaters will be used in workshop spaces south of the main garage. Design team to coordinate exhaust requirements for each space.

A new gas service to the building will be provided. Natural gas will be routed inside the building to serve the gas boiler and water heater. Gas regulators will be provided to drop gas pressure as required. An air compressor with tank, air dryers, and controls will serve outlets within the garage.

c. Office Spaces: A 40-ton heat recovery VRF system with roof mounted condensing units and concealed cassettes will serve the office spaces. Conference rooms and large spaces will have a dedicated cassette and thermostat. Two to three offices will be zoned together with offices of similar load profile and share a thermostat.
   1) A 25-ton constant volume Direct Outside Air System (DOAS) will be located on the roof to provide ventilation for the office space. The DOAS will be connected to the VRF Condensing Unit Farm located on the Roof.
   2) DOAS will consist of
      a) Supply fan with VFD
      b) Return fan with VFD
      c) DX heating/cooling coil connected to Condensing Unit
      d) Energy recovery wheel
      e) MERV 8 pre-filter
      f) MERV 13 final filter

d. A new Building Automation System will be provided. The BAS will be a Tridium front end system and be connected to the "campus" front end. Design team to work with the Owner to determine what equipment is connected to the front-end system. Typical for all buildings as part of the project.

2. Area B - East Site:

   a. Wash Bay Storage: Radiant heaters (gas or electric) will be provided for building heating. Cooling will not be provided.

3. Area C - South of Mack Road:

   a. Seed Propagation: A 7.5-ton packaged gas/dx RTU will provide heating, cooling, and ventilation air for the office half of the building. Gas fired radiant tube heaters will be provided for the garage half of the building.

   b. Greenhouse: Greenhouse manufacturer to provide all HVAC (heaters, fans, louvers) requirements as required.

4. Area D:

   a. No mechanical scope

5. Area E:

   a. No mechanical scope

E. Plumbing Design Requirements

1. Area A - Main Building and Site:

   a. A 6" combination fire protection and domestic water service entrance will be provided from the city water main. A reduced pressure zone backflow preventer and water meter will be provided on the 3" cold water service for the building. Cold water, hot water, hot water circulation, sanitary and vent piping will be routed to plumbing fixtures throughout the building.

   b. Plumbing fixtures (lavatories, water closets, urinals) will be porcelain. Sensor-operated flush valves and manual faucets will be provided for restrooms. Stainless steel sinks with manual trim will be provided in breakrooms. Showers will be prefabricated fiberglass or acrylic.

      Two natural gas water heaters each sized for 100% of the load will be installed to provide hot water to lavatories, sinks and showers.

   c. A 6" Sanitary main will connect to the site sanitary. Location to be coordinated with Civil. Trench drains in the garage will be connected to a 140-gallon oil separator prior to connecting to the building sanitary.

   d. A Primary and secondary storm system will be provided. Primary storm piping will connect to the site storm. Storm pipe size will be limited to 10"to avoid manholes within the building.

   e. A 10,000-gallon cistern will be used to capture rainwater on site. The rainwater harvesting system will consist of pre-filter, sanitation, and controls. The design team is working with Than Hansen of Wahaso - Water Harvesting Solutions. (Than@wahaso.com)

2. Area B - East Site:

   a. A 2" domestic water main will be provided from the city water main. A reduced pressure zone backflow preventer and water meter will be provided. Cold water and hot water will be routed to hose bibbs as required to wash vehicles.

      A water heater (natural gas or electric) will be installed to provide hot water for washing vehicles.

   b. A 4" Sanitary main will connect to the site sanitary. Location to be coordinated with Civil. Trench drains in the wash bay will be connected to a 20 gallon oil separator prior to connecting to the building sanitary.

   c. A Primary storm system will be provided. Primary storm piping will connect to the site storm. Secondary storm will be provided with scuppers.

3. Area C - South of Mack Road:

   a. Seed Propagation: A 4" combination fire protection and domestic water service entrance will be provided from the city water main. A reduced pressure zone backflow preventer and water meter will be provided on the 2" cold water service for the building. Cold water, hot water, hot water circulation, sanitary and vent piping will be routed to plumbing fixtures throughout the building.

      Plumbing fixtures (lavatories, water closets, urinals) will be porcelain. Sensor-operated flush valves and manual faucets will be provided for restrooms. Stainless steel sinks with manual trim will be provided in breakrooms.

      A natural gas water heater will be installed to provide hot water at lavatories and sinks.

      A 4" Sanitary main will connect to the site sanitary. Location to be coordinated with Civil. Trench drains in the garage will be connected to a 30-gallon oil separator prior to connecting to the building sanitary.

      A Primary and secondary storm system will be provided. Primary storm piping will connect to the site storm. Storm pipe size will be limited to 10" to avoid manholes within the building.

   b. Greenhouse: A 1" cold water will be routed to the greenhouse from the seed propagation building to serve hose bibbs.

      A 4" Sanitary main will connect to the site sanitary. Location to be coordinated with Civil.

4. Area D:

   a. Incoming water service will be fed from city main. Size and location of new main to match existing. Reduced pressure zone backflow preventer and water meter will be provided.

   b. Existing sanitary main will connected to new site sanitary.

5. Area E:

   a. No plumbing scope.

F. Fire Protection Description

1. Area A - Main Building and Site:

   a. A 6" combination fire protection and domestic water service entrance will be provided from the city water main. A reduced pressure zone backflow preventer and water meter will be provided on the 6" fire protection main.

   b. Concealed white sprinklers will be provided with areas with ceilings. All exposed ceilings will have upright sprinklers.

2. Area B - East Site:

   a. No fire protection scope.

3. Area C - South of Mack Road:

   a. Seed Propagation: A 4" combination fire protection and domestic water service entrance will be provided from the city water main. A reduced pressure zone backflow preventer and water meter will be provided on the 4" fire protection main.

   b. Concealed white sprinklers will be provided with areas with ceilings. All exposed ceilings will have upright sprinklers.

   c. Greenhouse: No fire protection scope.

2. Area D:

   a. No fire protection scope.

4. Area E:

   a. No fire protection scope.

G. Electrical Design Requirements

1. Lighting Systems

a. System Narrative
   1) Lighting design for this project will meet current Illuminating Engineering Society recommended illuminance targets.
   2) Additional mandatory controls for lighting that include manual switching, automatic controls to reduce lighting levels, and day lighting controls will be installed.
   3) All luminaires will have a Correlated Color Temperature (CCT) of 3500°K and a minimum Color Rendering Index (CRI) of 80.
   4) All exterior lights to be Dark Sky compliant.

b. Average Illumination Levels: The average maintained illuminance levels are indicated in the table below.

c. Lighting System Components
   1) Interior Luminaires
      a) LED luminaires will be used for general lighting.
      b) LED luminaires will be provided with dimmable drivers and will have a minimum rated life of 50,000 hours (LED board and driver).
      c) All conductors serving luminaries will be in conduit.
   2) Exterior Luminaires
      a) LED luminaires with low temperature drivers will be located in exterior applications at exit doors, parking lots, and along walkways and drives.
      b) Egress doors will be provided with light luminaires with two LED boards and drivers to provide code-required egress lighting.
      c) Exterior lighting will use full cutoff type luminaires to minimize light trespass.
   3) Lighting Controls
      a) Lighting controls will comply with the applicable energy code.
      b) Automatic shutoff will be achieved using a combination of BAS/timeclock controlled lighting contactors, vacancy sensors, and occupancy sensors. Lighting controls will be installed in areas listed in the table below.
      c) Required manual override switches will be installed in each individual room. Momentary contact switches will be provided to interface with the vacancy sensors in most rooms. Refer to the table below for areas requiring dimming.
      d) Dimming daylight harvesting will be used in areas required per the applicable energy code.

Area Description	Luminaires	Controls	Illuminance Levels
Typical Room Spaces			
Multi-Stall Toilet Rooms	Down lights and recessed perimeter cove light on wet wall	Key switch with ceiling-mounted vacancy sensor	15 to 25 foot-candles
Single Stall Bathrooms	Down lights and vanity luminaire	Wall switch type vacancy sensor	15 to 25 foot-candles
Conference Rooms	2'x4' dimmable volumetric type luminaires	Manual dimmers with ceiling-mounted vacancy sensors	30 to 50 foot-candles
Storage Rooms	Recessed acrylic lens luminaires in rooms with ceilings, suspended industrial luminaires in rooms without ceilings	Wall switch type vacancy sensor	10 foot-candles
Janitors Closets	Recessed acrylic lens luminaires in rooms with ceilings, suspended industrial luminaires in rooms without ceilings	Wall switch type vacancy sensor	15 foot-candles
Vehicle Storage	Pendant low/high bay luminaires	Ceiling mounted occupancy sensors	20 to 30 foot-candles
Mechanical/Electrical Rooms	4' suspended industrial luminaires	Wall switch for safety	25 to 30 foot-candles
IT Rooms (MDF, IDF)	4' suspended industrial luminaires	Wall switch type vacancy sensor	50 foot-candles
Office	2'x4' or 2'x2' dimmable volumetric type luminaries	Manual dimmers with ceiling-mounted vacancy sensors	30 to 50 foot-candles
Shops	Enclosed surfaces mounted luminaries	Wall switch for safety	50 to 75 foot-candles
Hazardous Location	Explosion rated luminaries	Wall switch for safety	40 to 50 foot-candles
Staff Break Rooms, Locker Rooms	2'x4' volumetric type luminaires	Manual controls with ceiling-mounted vacancy sensor	30 foot-candles
Exterior Lighting			
Parking Lot	Pole-mounted LED area luminaires (dark sky compliant)	Timeclock/BAS via lighting contactor	0.5 to 1 foot-candles
Exterior Exits	Wall pack luminaires (dark sky compliant)	Timeclock/BAS via lighting contactor	2 to 3 foot-candles

2. Power System Requirements

a. Area A - New GNR Facility

   1) Utility Service and Power Distribution:

a) Two 4" Schedule 40 PVC conduits will be provided for utility primary feeders. Conduit routing requirements will be based on direction from the utility company.
b) Secondary service feeders will extend from the new pad-mounted transformer to the new service-rated distribution panel located in the main electrical room.
c) Metering will be installed on the exterior of the building outside the main electrical room in accordance with the utility company requirements.
d) The service entrance distribution panel will be rated at 480/277 volt, 1200 amp, 3-phase, 4-wire with a main circuit breaker. If all electric heat is selected, electrical service will be upsized to 2500A, 480/277V switchboard. The distribution panel will use fixed-mounted power circuit breakers with a microprocessor-based breaker tripping system and electric metering capability. Spare spaces will be provided to accommodate future loads. The distribution panel will be provided with ground fault protection.
e) The 480/277V panels, step-down transformers and 208/120V branch panels will be provided.
f) A digital power meter will be provided on the load side of the main overcurrent protection device.
g) Surge protection devices will be provided on main service and downstream of the transformers.
h) (4) EV chargers will be provided for the GNR electrical fleet vehicles. Service equipment will be sized to allow for up to 14 future EV charging stations. Chargers will be level 2, 10KVA.
i) (4) EV charging stations will be provided at the staff/public parking lot.
j) Service equipment will have provisions to allow addition of photovoltaic (PV) system. Refer to table below for PV options.

Solar Collector Area (sqft)	Array Size (kW)	% Net Zero
18,000	250	25%
29,000	400	50%
51,000	700	100%

Simple payback: using 0.16 $/KWH (average cost for KWH in Illinois) system will payback in 20 to 22 years. The industry standard for the lifespan of the solar panel is 25-30 years.

2) Emergency Generator:
   a) A 500kW, standby rated, diesel emergency generator rated at 480/277 volt, 3-phase, 4-wire will be provided. Generator size will be refined during the design phase.
   b) The generator will be located in a weatherproof, sound-attenuated enclosure located on grade next to the utility transformer.
   c) Generator will be provided with "belly' tank with capacity for 24 hours of operation at half load.
   d) The generator will be provided with one fully rated output breaker.
   e) The generator will supply a wireway located in the separate ATS Room. The wireway will serve two fused disconnect switches for each branch of the emergency power system: life safety and optional emergency.
   f) The life safety branch will serve following loads:
      (1) Emergency lights.
      (2) Exit signs.
      (3) Fire alarm system.
   g) The optional emergency branch will serve following loads:
      (1) Security and door access systems.
      (2) Building Automation System.
      (3) Storm/ejector pumps.
      (4) Communication/data/phone systems and associated cooling.
      (5) Selected unit heaters, boilers and associated hot water pumps.
      (6) Hardwired toilet or sink sensor fixtures.
      (7) Gas detection systems.
      (8) Exhaust system for vehicle, chemical and flammable storage areas.
      (9) Selected receptacles throughout the facility.
      (10) Overhead door operators.
      (11) Selected EV chargers
      (12) Selected A/C units.
   h) Remote generator annunciator will be provided in the main entrance.

b. Area B – Wash Bay Storage
   1) Existing electrical systems and service will be removed.
   2) New Utility Service and Power Distribution:
      a) Two 4" Schedule 40 PVC conduits will be provided for utility primary feeders. Conduit routing requirements will be based on direction from the utility company.
      b) Secondary service feeders will extend from the new pad-mounted transformer to the new service-rated branch panel.
      c) Metering will be installed on the exterior of the building.
      d) The service entrance panel will be rated at 208/120V, 200 amp, 3-phase, 4-wire with a main circuit breaker. Spare spaces will be provided to accommodate future loads.
      e) Surge protection device will be provided on the main panel.
   3) Emergency lighting and exit signs will be provided with battery backup.

c. Area C – Seed Processing Facility
   1) Utility Service and Power Distribution:
      a) Two 4" Schedule 40 PVC conduits will be provided for utility primary feeders. Conduit routing requirements will be based on direction from the utility company.
      b) Secondary service feeders will extend from the new pad-mounted transformer to the new service-rated branch panel.
      c) Metering will be installed on the exterior of the building.
      d) The service entrance panel will be rated at 208/120V, 400 amp, 3-phase, 4-wire with a main circuit breaker. Spare spaces will be provided to accommodate future loads.
      e) Surge protection device will be provided on the main panel.
   2) Emergency lighting and exit signs will be provided with battery backup.

3. General Main Distribution

   a. Distribution equipment will be provided with dead front construction, and copper bussing, and sized with a minimum of 15% spare circuits.

   b. Transformers will meet the 2016 Department of Energy efficiency standards. Transformers will have aluminum windings, and will be rated for 150°C temperature rise over ambient. Transformers will be installed on concrete housekeeping pads.

   c. Transfer switches will be automatically operated with microprocessor-based controls to start the generator, transfer loads, and excise generator. Transfer switches will be four pole.

   d. All wire will be copper.

   e. An electrical load study, including short circuit analysis, voltage drop, arc flash and selective coordination, will be required to be carried out on the entire power system for New GNR Facility. This study will be performed by the selected manufacturer of the distribution equipment.

   f. Feeder sizes will be increased as required to limit voltage drop from the service entrance to the branch circuit panel to not more than 2%.

4. General Branch Distribution

   a. Branch circuit panels serving lighting and receptacle loads will use molded case, thermal magnetic type circuit breakers.

   b. Branch circuit panelboards will be sized with a minimum of 15% spare circuits. Where panelboards are flush mounted or installed in closets less than 2' deep, five empty 1" conduits will be stubbed into an accessible location above the ceiling for future use.

   c. Branch circuit panelboards will be provided with door-in-door construction with copper bussing.

   d. Branch circuit design will be based on a maximum of 1,900 volt amperes per 20 ampere, 120 volt circuit, and 4,400 volt amperes per 20 ampere, 277 volt circuit.

   e. 277 volts will be used for all lighting at New GNR Facility.

   f. 120 volts will be used for all lighting at Wash Bay Storage and Seed Processing Facility.

   g. All receptacles will be specification grade with stainless steel coverplates.

   h. GFCI receptacles will be provided in exterior locations, locations within 6'-0" of all sinks, and at water coolers, kitchen equipment, and vending.

   i. GFCI receptacles with weatherproof, heavy duty in-use covers will be provided on the exterior of the building and near all roof-mounted mechanical equipment.

   j. Fifty percent (50%) of receptacles in open and private offices will be connected to vacancy sensors serving the lighting.

   k. Devices will be red in color for emergency circuits.

   l. Minimum wire size will be #12 for power circuits and #18 for controls circuits.

   m. A dedicated neutral conductor will be provided in all branch circuits.

   n. Feeder sizes will be increased as required to limit voltage drop from the branch circuit panel to the terminal device to not more than 3%.

   o. Not more than three computer workstations will be served by a common circuit.

   p. Dedicated circuits will be provided to serve the following equipment:
      1) Refrigerators
      2) Freezers
      3) Copiers
      4) Microwave
      5) Coffee brewers
      6) Shop Equipment
      7) Equipment with a load greater than 10 amps

   q. Motor Connection and Control
      1) Motors 3/4 horsepower and larger will be served at 480 or 208 volt, 3-phase, 3-wire. Motors less than 3/4 horsepower will be served at 120 volt service, 1-phase, 2-wire as applicable. Heating, ventilation, air conditioning, and other mechanical loads will generally be served at 480 volt, 3-phase, 3-wire.
      2) Fans and large pumps will be controlled by VFDs. Smaller motors will be controlled by full voltage starters or manual starters as required.

5. Grounding System Requirements

   a. Ground system will be provided at each new service entrance.

   b. A grounding system and equipment grounding will be provided per National Electrical Code Article 250 for transformers, motor starters, panelboards, switchboards, transfer switches, wiring systems, etc.

   c. A green insulated equipment ground copper conductor, sized per National Electrical Code 250.122, will be run with all feeders and branch circuit homeruns.

6. Fire Alarm and Communication System Requirements

   a. Fire Alarm System will be installed at New GNR Facility and Seed Processing Facility.

   b. A complete NFPA 72 compliant addressable fire alarm system will be installed.

   c. Notification appliance circuit panels will be sized for 60 hours of standby operation and 15 minutes of alarm.

   d. System notification will consist of ADA- and NFPA-compliant audio (tone), visual, and combination audio/visual devices.

   e. System initiation will consist of individually addressable analog smoke and heat detectors, addressable fire pull stations, and sprinkler system flow switches.

   f. Smoke detectors will be located in mechanical room, electrical rooms, storage rooms, equipment rooms, and areas open to the corridor.

   g. Duct-type smoke detectors to close smoke dampers and shut down air distribution systems will be provided.

   h. Heat detectors will be provided in janitors' closets, kitchens, and some mechanical rooms.

   i. Pull stations will be located within a travel distance of 200 feet and at all exterior exits.

   j. Door unlocking and hold-open devices will be provided for corridor doors per the life safety plans and applicable codes.

   k. Sprinkler water flow detection and valve position annunciation will be provided.

   l. All fire alarm system wiring will be installed in red-colored conduit.

7. Firestopping: All penetrations to fire rated wall will be fire stopped and labeled.

H. Technology Design Requirements

1. Firestopping

   a. Firestopping in accordance with the 2018 International Building Code shall be provided for all technology systems described below.

   b. Firestopping shall include, but is not limited to cabling, conduit, and sleeves supporting all technology systems.

2. Area A - Main Building and Site:

   a. Structured Cabling System: The structured cabling scope of services indicated below shall adhere to current EIA/TIA standards. All analog and digital systems utilizing 4-pair (Cat. 6 cabling) shall adhere to this industry recognized standard. The cabling infrastructure shall be a recognized partnered cabling solution capable of providing an extended warranty.

      1) Horizontal Cabling System Description:
      2) A complete horizontal sub-system shall be provided throughout the building to support voice and data services. Cabling shall be Category 6 grade and shall terminate on modular patch panels within the area serving telecommunication rooms. All cabling will terminate at each end using RJ-45 type jacks and match the performance grade of the cable installed.
      3) All cabling shall be plenum rated (CMP) suitable for installation within a plenum environment.

      4) Typical outlet configurations shall consist of the following:
         a) C1 - 1-port.
         b) C2 - 2-port.

      5) Outlet types will be provided as follows for the following spaces in the common areas:
         a) Wall Phones: C1 type information outlets supporting one voice or data connection shall be provided at each wall phone location.
         b) Workstations: C2 type information outlets supporting two connections (voice or data) shall be provided at each individual workstation location.
         c) Wireless: C1 type information outlet will be provided to support all Owner-provided wireless access point equipment. To support adjustment of the wireless access points, 20' feet of slack shall be provided at each location to allow relocation of the originally installed location.
      6) Category 6 rated patch cords shall be provided for 100% of all ports installed. A mix of 5' and 7' patch cords shall be provided at 60% and 40% respectively. Additionally, each port installed shall include a 10' workstation cord for connection to workstation/unit equipment (i.e., phone, computer, printer, etc.).
      7) Basis of design: Hubbell C6 series.

b. Backbone Cabling System Description: Fiber optic backbones will be provided to connect all new telecommunication room to the Main Distribution Room within the building.

1) Backbone systems shall be as follows:
   a) Fiber Optic:
      (1) A 12-strand multi-mode fiber optic cable will be provided to each telecommunication room.
      (2) All fiber optic cable will be terminated in rack-mounted fiber distribution frames located in each of the room. Each strand will be terminated with LC type connectors.
      (3) Fiber patch cords (one meter) will be provided for all fiber optic ports installed.
      (4) All fiber optic cable will be properly rated for the environment installed. Innerduct shall be installed except where armored fiber is provided.

c. Telecommunication Rooms:

1) Telecommunication Room (TR): The purpose of the TR is to support network electronics, and installation of ancillary low voltage system equipment and cabling including AV, security, etc. The TR will be positioned to maintain a maximum horizontal cable length of 295' for the area served per TIA network standards. The size of the TR will be per ANSI/TIA 569C with a minimum size 9' x 7'.
   a) The TRs will be equipped with (1) 2-post rack and will provide support for cable terminations and Owner-provided network equipment.
   b) Overhead ladder rack (18" in width) will be provided as required to support transition of horizontal and backbone cables to the equipment cabinets.
   c) One (1) Telecommunication Rooms is anticipated from the facility.

2) Main Distribution Frame (MDF): The purpose of the MDF room is to support incoming cabling and equipment for the telecommunication service providers. It will also be used to support horizontal cabling for telecom, data, and security equipment, a location for distribution of backbone cabling to the telecommunication rooms, and to house the telecom and security head-end equipment for the facility. The size of the MDF will be per ANSI/TIA 569C with a minimum size 9' x 12'.
   a) The MDF will be equipped with (2) 2-post racks and will provide support for cable terminations and Owner-provided network equipment.

d. Telecommunication Grounding System:

1) A single telecommunications bonding system will be provided for all Communication Rooms.

2) Each Communication Room will include a telecommunications ground bar (TGB) for grounding all telecommunication devices and/or cable shields within the room. The TGB will be bonded to the telecommunications bonding backbone (TGB) by way of a telecommunication bonding conductor (TBC).
   a) The TBB will serve as the main bonding conductor connecting all TRs to the main telecommunication ground bar (MTGB).
   b) The MTGB will connect to the main electrical service ground by way of a TBC.
   c) All cable to cable connections will use H-Tap connections.
   d) All cable to ground bar connections will use two-hole lugs. Cable will be sized per NEC and BICSI requirements.

e. Pathways and Spaces:

1) A pathway system consisting of conduit, and open cable supports supporting the low voltage cabling system will be provided.

2) Open cable supports (i.e., J-hooks) shall be provided above accessible ceiling. Cable supports shall span no more than 5' between supports. Bridal rings are not an acceptable cable support.

3) Conduit rough-ins for structured cabling system will include the following: Typical information outlet rough-ins will consist of a 4" square backbox with a 1" conduit extending to the nearest corridor. The backbox will include a single-gang mud ring.

f. Labeling and Administration:

1) A full labeling system shall be provided for all cabling, faceplate, terminations, junction boxes, and conduits.

2) All labels will machine printed labels with protective covering to prevent fading.

g. Performance Warranty: Performance warranties shall be provided as follows: Structured Cabling System - 25-year Structured Connectivity Extended Product Warranty.

3. Security Systems

a. Access Control System
1) Provide a new Mercury board-based access control system.
2) A standalone, PC-based access control system workstation will be provided for building management use to monitor and configure the access control system.
3) New card readers (smart card), door contacts, electrified hardware, request to exit devices, and control panels will be installed and connected to the new access control system server.
a) Location for doors requiring credential reader will be identified at a later date in the design. Provide a quantity of 4 doors.
4) It is anticipated that doors that will require card access shall be the following:
a) Lobby
b) Front and Rear Entry to the building
5) All doors shall have In/Out readers
6) Basis of Design: Genetec

b. Video Surveillance System:
1) A video surveillance system shall be provided for the facility. Surveillance coverage will be identified at a later date in the design. It is anticipated that areas requiring coverage shall be the following:
a) Entry point to building, and secured spaces
b) Building Perimeter
c) Vehicle Storage
d) Tandem garage
2) The video surveillance system will be an IP based system utilizing mega-pixel type cameras. The system shall be configured and include storage in order to provide a minimum of (30) days of video retention at 15fps at full motion.
3) All cameras shall provide a minimum of 5MP resolution. All cameras shall support H.264 compression scheme to minimize bandwidth utilization.
4) Software licensing will be provided for monitoring of the video surveillance system.
a) Assume 8 multi-lens camera locations.
5) Basis of Design: Axis or Hanwah for cameras using Genetec VMS

c. Intercom System:
1) A Video intercom is not anticipated for the facility.
a) Conference Room:
(1) Video
(i) A 65" commercial grade wall-mounted flat panel shall be provided. The model shall be a current technology television screen.
(ii) A table-mounted input plate for laptop or other auxiliary source(s) shall be installed passing through a table top AV enclosure.
(iii) Wall mounted camera for video conferencing.
(2) Audio
(i) Ceiling mounted performance speakers and ceiling mic with audio tracking will be provided for sound reinforcement.
(3) Control
(i) A touch panel controller will be provided at the desk. The controller will provide TV on/off, source selection, and volume control.
b) Training Room:
(1) Video
(i) A 65" commercial grade wall-mounted flat panel shall be provided. The model shall be a current technology television screen.
(ii) A Wall-mounted input plate for laptop or other auxiliary source(s) shall be installed.
(iii) Wall mounted camera for video conferencing.
(2) Audio
(i) A soundbar will be provided capable of broadcasting program audio from the flat panel.
(3) Control
(i) A touch panel controller will be provided at the desk. The controller will provide TV on/off, source selection, and volume control.
c) Multi-Purpose room/Lunchroom
(1) Video
(i) A wall monitor sized for good viewing for all participants shall be provided.
(ii) Point-to-point HDMI connectivity will be provided at an AV credenza or counter for connectivity to a source player.
(2) Audio
(i) Audio shall be via speakers built-in the monitor.
(3) Control
(i) Controls shall be via OE remote.

4. Area B/C/D/E:

a. No Technology, Security or AV scope.

Y	?	N			
	1		Credit	Integrative Process	1

3	1	12	**Location and Transportation**		16
			Credit	LEED for Neighborhood Development Location	16
1			Credit	Sensitive Land Protection	1
		2	Credit	High Priority Site and Equitable Development	2
		5	Credit	Surrounding Density and Diverse Uses	5
		5	Credit	Access to Quality Transit	5
1			Credit	Bicycle Facilities	1
	1		Credit	Reduced Parking Footprint	1
1			Credit	Electric Vehicles	1

7	3	0	**Sustainable Sites**		10
Y			Prereq	Construction Activity Pollution Prevention	Required
1			Credit	Site Assessment	1
2			Credit	Protect or Restore Habitat	2
1			Credit	Open Space	1
2	1		Credit	Rainwater Management	3
	2		Credit	Heat Island Reduction	2
1			Credit	Light Pollution Reduction	1

6	3	2	**Water Efficiency**		11
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
2			Credit	Outdoor Water Use Reduction	2
3	3		Credit	Indoor Water Use Reduction	6
		2	Credit	Optimize Process Water Use	2
1			Credit	Water Metering	1

8	17	8	**Energy and Atmosphere**		33
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
	3	3	Credit	Enhanced Commissioning	6
8	7	3	Credit	Optimize Energy Performance (28% 15pts, 42-50% 16-1	18
	1		Credit	Advanced Energy Metering	1
		2	Credit	Grid Harmonization	2
	5		Credit	Renewable Energy	5
	1		Credit	Enhanced Refrigerant Management	1

7	1	5	**Materials and Resources**		13
Y			Prereq	Storage and Collection of Recyclables	Required
		5	Credit	Building Life-Cycle Impact Reduction	5
2			Credit	Environmental Product Declarations	2
1	1		Credit	Sourcing of Raw Materials	2
2			Credit	Material Ingredients	2
2			Credit	Construction and Demolition Waste Management	2

6	4	6	**Indoor Environmental Quality**		16
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
2			Credit	Enhanced Indoor Air Quality Strategies	2
2	1		Credit	Low-Emitting Materials	3
1			Credit	Construction Indoor Air Quality Management Plan	1
	1	1	Credit	Indoor Air Quality Assessment	2
	1		Credit	Thermal Comfort	1
1	1		Credit	Interior Lighting	2
		3	Credit	Daylight	3
		1	Credit	Quality Views	1
		1	Credit	Acoustic Performance	1

1	5	0	**Innovation**		6
	5		Credit	Innovation	5
1			Credit	LEED Accredited Professional	1

2	2	0	**Regional Priority**		4
1			Credit	Regional Priority: Protect/Restore Habitat (need 2pts)	1
1			Credit	Regional Priority: Enhanced IAQ (need 2pts)	1
	1		Credit	Regional Priority: Rainwater Management (need 3pts)	1
	1		Credit	Advanced Energy Metering / Bird Safety / Life-Cycle	1

40	37	33	**TOTALS**	Possible Points:	110

Certified: 40 to 49 points, **Silver:** 50 to 59 points
Gold: 60 to 79 points, **Platinum:** 80 to 110

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SUSTAINABLE FEATURES

FEATURES TO BE INCLUDED

– Native and drought tolerant plantings
– BMPS for stormwater pollution prevention and rainwater control
– High performance building envelope
– High Efficiency mechanical systems
– Low-flow plumbing fixtures
– Daylight sensing for reduced lighting power density
– Rainwater capture and reuse
– Solar-ready structure and electrical infrastructure
– Capacity for electric vehicle fleet expansion
– Low embodied carbon materials
– Recycled materials
– Dark Sky exterior lighting design

POTENTIAL FEATURES FOR FUTURE INCLUSION

– Photo voltaic rooftop solar panels
– Net Zero energy use
– Mass Timber
– Heat Island reduction
– Bird friendly glazing
– Permeable paver parking lot

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SCHEMATIC COSTING MODEL								
Gross Area:		105,570 SF				129,060 SF		
COST SUMMARY		September 2023 Estimate Construction Duration 18 Months - March '25 to August '26				November 2023 Estimate Construction Duration 18 Months - March '25 to August '26		
		TOTAL COST	RATE/SF	% of Total		TOTAL COST	RATE/SF	% of Total
01 - FOUNDATIONS		**$1,275,154**	**$12.08**	4%		**$2,660,780**	**$20.62**	7%
011 - Standard Foundations		$1,275,154	$12.08			$2,660,780	$20.62	
012 - Special Foundations		$0	$0.00			$0	$0.00	
02 - SUBSTRUCTURE		**$1,335,917**	**$12.65**	4%		**$1,909,021**	**$14.79**	5%
021 - Slab on Grade		$1,335,917	$12.65			$1,909,021	$14.79	
022 - Basement Excavation		$0	$0.00			$0	$0.00	
023 - Basement Walls		$0	$0.00			$0	$0.00	
03 - SUPERSTRUCTURE		**$4,869,157**	**$46.12**	13%		**$11,531,069**	**$89.35**	32%
031 - Pre-Cast Concrete Building		$4,869,157	$46.12			$10,293,033	$79.75	
032 - Wood Frame Structure		$0	$0.00			$1,238,036	$9.59	
04 - SHELL		**$4,793,166**	**$45.40**	13%		**$6,098,173**	**$47.25**	17%
041 - Exterior Closure		$3,815,379	$36.14			$3,351,084	$25.97	
042 - Roofing		$977,787	$9.26			$2,747,089	$21.29	
06 - INTERIOR CONSTRUCTION		**$3,732,483**	**$8.41**	10%		**$1,989,538**	**$15.42**	5%
061 - Partitions		$353,971	$3.35			$1,119,478	$8.67	
062 - Interior Personnel Doors		$107,717	$1.02			$222,301	$1.72	
063 - Interior Specialties		$51,832				$166,373	$1.29	
064 - Wall Finishes		$160,258				$265,210	$2.05	
065 - Flooring and Floor Finishes		$2,633,034				$132,396	$1.03	
066 - Ceiling and Ceiling Finishes		$425,671	$4.03			$83,780	$0.65	
07 - CONVEYING SYSTEMS		**$0**	**$0.00**	0%		**$0**	**$0.00**	0%
08 - MECHANICAL		**$4,008,956**	**$37.97**	11%		**$4,508,036**	**$34.93**	12%
081 - Plumbing		$861,628	$8.16			$895,632	$6.94	
082 - HVAC		$1,758,716	$16.66			$2,800,818	$21.70	
083 - Fire Protection		$1,388,612	$13.15			$811,586	$6.29	
084 - Special Systems		$0	$0.00			$0	$0.00	
09 - ELECTRICAL		**$2,639,250**	**$25.00**	7%		**$3,226,500**	**$25.00**	9%
NET BUILDING CONSTRUCTION COST		**$22,654,083**	**214.59**			**$31,923,117**	**247.35**	

SCHEMATIC COSTING MODEL								
Gross Area:		105,570 SF				129,060 SF		
COST SUMMARY		September 2023 Estimate Construction Duration 18 Months - March '25 to August '26				November 2023 Estimate Construction Duration 18 Months - March '25 to August '26		
		TOTAL COST	RATE/SF	% of Total		TOTAL COST	RATE/SF	% of Total
10 - SITEWORK		**$3,317,804**	**$31.43**	9%		**$6,780,685**	**$52.54**	19%
101 - Site Preparation		$180,172	$1.71			$1,579,498	$12.24	
102 - Site Improvements		$2,332,912	$22.10			$1,474,883	$11.43	
103 - Site Civil/Mechanical Utilities		$453,165	$4.29			$3,069,980	$23.79	
103 - Site Electrical Utilities		$337,751	$3.20			$576,092	$4.46	
104 - Site Communications		$13,804	$0.13			$80,232	$0.62	
11 - SUPPORT FACILITIES		**$435,000**	**$4.12**	1%		**$7,196,926**	**$21.36**	20%
111 - Wash Bay		$25,000	$0.24			$818,339	$6.34	
112 - Greenhouse, Seed Propogation, and Processing		$100,000	$0.95			$658,888	$5.11	
113 - Pump House		$35,000	$0.33			$45,000	$0.35	
114 - Chemical Storage and Mixing Area		$25,000	$0.24			$0	$0.00	
115 - Extension of Water Main from Fleet Bldg. to Mack Rd.		$125000	$1.18			$639,405	$4.95	
116 - Extension of Sanitary South Neighborhood along Mack Rd.		$125000	$1.18			$594,851	$4.61	
117 - New Parking Lot / Exterior Materials Storage		$0				$3,337,763	$25.86	
118 - New Roadway to Mack Road		$0				$259,761	$2.01	
119 - Exterior Parking Canopy		$0				$726,999	$5.63	
120 - New Perimeter Fence		$0				$115,920	$0.90	
NET PROJECT CONSTRUCTION COST		**$26,406,887**	**250.14**			**$45,900,728**	**355.65**	
13 - CONTINGENCIES		**$9,867,879**	**$93.47**	27%		**$12,279,822**	**$95.15**	34%
131 - Sustainability and Energy Measures		$1,500,000	$14.21			$0	$0.00	
132 - Contingency	20%	$5,281,377	$50.03		15%	$6,885,109	$53.35	
133 - Escalation (to midpoint of construction)*	11.06%	$3,086,502	$29.24		10.22%	$5,394,713	$41.80	
NET PROJECT CONSTRUCTION COST		**$36,274,766**	**$343.61**			**$58,180,550**	**$450.80**	
ADD/DEDUCT ALTERNATES								
Pre Engineered Metal Building (DEDUCT)						-$5,191,402		
Electric In-Floor Radiant Heating (DEDUCT)						-$535,537		
Gas-Fired Overhead Radiant Heating (DEDUCT)						-$2,412,245		
Structure Seed Processing Facility (DEDUCT)						-$153,371		
Permeable Pavers (ADD)		$1,900,000				$6,028,217		
50,000-SF Solar Panels (ADD)						$1,774,542		
Framing Option Parking Canopy - Wood (ADD)						$365,740		
Connect Existing Facilities Building to New Sanitary (ADD)						$100,105		

* Escalation rates are based on guidance provided by the NAVFAC Building Cost Index (BCI) 2022 Quarter 2 (Released August 2023). Actual market escalation is documented through the fourth quarter of 2022. Rates are based on Consumer Price, Department of Defense project data, and UFC-3-701-01 published data.

SCOPE REDUCTIONS

		Schematic Design Base Scope	Approved Reduced Scope
Area A			
	Buildings	$32,650,117	$25,301,326
	Site	$8,377,068	$6,564,148
	Subtotal	$41,027,185	$31,865,148
Area B			
	Buildings	$818,341	$418,341
	Site	$2,037,548	$901,947
	Subtotal	$2,855,889	$1,320,288
Area C			
	Buildings	$703,887	$325,877
	Site	$145,742	$140,269
	Subtotal	$849,629	$466,156
Area D			
	Buildings	$0	$0
	Site	$21,042	$21,042
	Subtotal	$21,042	$21,042
Area E			
	Buildings	$0	$0
	Site	$1,165,880	$822,765
	Subtotal	$1,165,880	$822,765
PROJECT TOTAL			
Total Buildings		$34,172,345	$26,045,554
Total Site		$11,747,280	$8,450,171
Subtotal		**$45,919,625**	**$34,495,725**
Escalation/Contingency		26.7%	20%
Total		**$58,180,549**	**$41,394,870**

*Cost estimate adjustments shown here are based on our understanding of current market prices as well as the unit costs provided within the SD cost estimate in order to develop an approximate understanding of expected cost savings for each line item. They have not been independently verified by a cost estimating professional.

SUMMARY OF APPROVED SCOPE REDUCTIONS

AREA A - BLACKWELL WEST

Buildings:

- Accepted PEMB structural alternate $4,095,684
- Accepted overhead radiant in lieu of in-floor $1,903,107
- Reduced GNR footprint by 6,000sf $1,350,000

Site:

- Reduced asphalt paving $/sy based on current pricing $1,393,420
- Reduced curb/gutter by 50% $95,000
- FPDDC to self-perform clearing/grubbing/thinning $74,500
- FPDDC to self-perform detention basin earthwork $250,000

AREA B – BLACKWELL EAST

Buildings:

- Renovate existing Wash Bay in lieu of replace with new $400,000
- Remove from scope demolition of existing buildings $109,000

Site:

- No new asphalt since buildings remain $250,000
- Eliminate water main extension from Fleet Building $450,000

AREA C – SOUTH OF MACK ROAD

Buildings:

- Accepted alternate seed processing building structure $121,000
- Removed pump house from scope $45,000
- Reduced seed processing building footprint by 500sf $75,000
- Reduced greenhouse footprint by 60% $137,000

Site:

- Reduced asphalt paving $/sy based on current pricing $5,473

AREA D – FACILITIES BUILDING

no scope adjustments

AREA E – UTILITIES AND INFRASTRUCTURE

Site:

- Reduced asphalt paving $/sy based on current pricing $158,115
- FPDDC to self-perform demo of existing parking lot $150,000
- Reduced curb/gutter by 50% $35,000

GENERAL

- Reduce escalation/contingency to 20% total $2,609,744

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Alternate Structural Design (Alternate #2)
DEDUCT -$5,191,402

BASE SCOPE: Pre-Cast structural system with flat, membrane roof is assumed for base scope
ALTERNATE: Provide pre-engineered metal building (PEMB) with sloped standing seem metal roof.
ACCEPTED: Project to proceed with PEMB as the primary structural frame.

Overhead Radiant Heating (Alternate #4)
DEDUCT -$1,774,542

BASE SCOPE: Radiant flooring system with natural gas boiler in garage and office space. Electric VRF cooling within office space.
ALTERNATE: Overhead gas fired radiant tube heaters in garage. Electric VRF for heating and cooling within office space.
ACCEPTED: Project to proceed with overhead radiant heating and not in-floor heating.

Alternate structure at Seed Processing Building (Alternate #7)
DEDUCT -$153,371

BASE SCOPE: Glulam roof joists and T&G decking, shed roof shape.
ALTERNATE: Wood trusses with plywood decking, gable roof shape.
ACCEPTED: Project to proceed with standard wood truss structural system.

All Electric Mechanical System (Alternate #3)
DEDUCT -$535,537

BASE SCOPE: Radiant flooring system with natural gas boiler in garage and office space. Electric VRF cooling within office space.
ALTERNATE: Radiant flooring system with electric boiler in garage and office space. Electric VRF cooling within office space.
NOT APPROVED because Overhead Gas Heating was accepted (this alternate was either/or).

Permeable Pavers at Parking Lot (Alternate #1)
ADD $6,028,217

BASE SCOPE: No permeable pavers in project. Provide asphalt parking lot.
ALTERNATE: Provide 62,000 square feet of permeable pavers within the parking lot.
Not anticipated to be in scope, final DuPage County review of PCMBP requirements pending.

Alternate Paving Material to reduce Heat Island Effect (Alternate #9)
ADD $1,900,000 (cost from Programming Cost Estimate)

BASE SCOPE: Asphalt vehicle yard.
ALTERNATE: Provide high albedo concrete in lieu of asphalt to reduce heat island effect.
NOT APPROVED. Project will provide asphalt paving around the building.

Alternate Exterior Parking Canopy Structure (Alternate #6)
ADD $365,740

BASE SCOPE: Steel structural frame with wood joists and decking.
ALTERNATE: All steel structural frame and joists w/ corrugated steel decking
Project to proceed with the least expensive cost option. PEMB.

Rooftop Solar PV / Net Zero (Alternate #5)
ADD $1,774,542

BASE SCOPE: Roof structure and electrical service is designed to be PV ready.
ALTERNATE: Provide completed rooftop solar PV system. Approximate size of PV area: 50,000sf
Project will maintain Solar PV alternate in Design Development phase. Final size of PV area TBD.

Municipal Utility Connection at Existing Facilities Building (Alternate #8)
ADD $100,105

BASE SCOPE: No scope.
ALTERNATE: Replace existing well and septic system with new municipal water service and sanitary connection. Decommission/remove well and septic field
Project will maintain this alternate in the Design Development phase.
Note: May be required by Warrenville to connect to municipal services. Review pending.

Extend water service from Fleet Building to create loop (new, Alternate #10)
ADD $450,000

Provide as alternate in Design Development phase.
Note: This work removed from scope of work as part of Schematic Design budget reconciliation.

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Program Inventory - Natural Resource Management

	Primary Program	Quantity	SF per	Total	Adjacencies	Systems (Performance)	Notes/Activities
	Private Office	1	120	120	Connected to garage area		Supervisor 1 computer
	Shared Workstations (10 Full-Time Crew)	10	22	220	Private Office		Senior Techs, (1 workstation per 3) 1 computer
	Seasonal (Part-Time)	8	0	0	Within meeting space		8 months
	Paper filing storage	1	50	50			
	Workshop	1	800	800	Rolling + standard door open to exterior	Plumbing: Sink, eye wash	4 workbenches (6'L x 5'D per) Small Equipment (powered) - Asset List Chainsaws, Brush Cutters, Compost Mixer, Lift (for ATVs) - ability to work on a vehicle Wader storage: 20+ on hooks Hand Tools: Rakes, shovels, flappers, ratchet straps, wrenches, hammers, screwdrivers, indian pumps, waders, tool chest, chains, binders, compost mixer Small chemical storage (see Storage)
	Secured Storage	1	200	200	Workshop	Secured	
	Full-Time Staff Lockers	11	15	165		Ventilated lockers	36"W x 18"D x 72"H 5' provided total for buffer in front of locker Drawer with bench Angled top No stretched metal Lock provided per locker
	Seasonal Staff Lockers	8	3.75	30		Ventilated lockers	18"W x 18"D x 36"H 5' provided total for buffer in front of locker Drawer with bench Angled top No stretched metal Lock provided per locker
	Mid-Sized Trucks	8	-	2744		Natural light	From Asset List
	Large Trucks/Equipment	1	-	464		Natural light	
	Attachments + Midsized	25	-	1739		Natural light	
	Carts, ATVs, Tractors	9	-	1156	Natural Resources Stewardship	Natural light	Natural Resources Stewardship borrows as needed
	Trailers	9	-	2420	Natural Resources Stewardship	Natural light	Natural Resources Stewardship borrows as needed
	Flammable	1	250	250	Isolated in separate building near workshop	Flammable	Existing flammable storage for prescribed burn fuel on site, outside of building For diesel, mixes, burns. Smaller chemicals associated with workshop Fuel cabinet, gas cans, mixing area
	Bulk Storage	1	700	700		Temperature/humidity - controlled	Backpack storage, power tool and volunteer hand tool storage (300 sf), storage for seed nursery equipment (shade cloth) (200 sf), seed storage (200sf), teasel barrels, seed garage cans Can be at upper level

Note: Seed processing facility in Misc. on later page

- Office space
- Crew space
- Vehicles + Large Equipment (Garage)
- Storage
- Misc.
- Building Support

Program Inventory - Natural Resource Stewardship

	Primary Program	Quantity	SF per	Total	Adjacencies	Systems (Performance)	Notes/Activities
	Private Office	1	120	120	Connected to garage area		Volunteer Supervisor 2 computers
	Workstation	1	64	64	Private office		Stewardship Tech 1 computer
	Seasonal (1-2 Part-Time)	2	32	64			April - September 1 shared workspace for seasonal and intermittent positions
	Volunteer Station	1	64	64			For paperwork, safety training, etc. Shared 1 computer
	Paper filing storage	1	50	50			
	Workshop	1	800	800	Rolling + standard door open to exterior	Plumbing: Sink, eye wash Security: Dedicated area for after-hours access Flammable	2 workbenches (6'L x 5'D per) - within Workshop, 1 workbench available after-hours. Small Equipment (powered) - Asset List (plan for 2 additional clearing saws for a total of 7) Hand Tools: clearing saws, drip torches, blowers, backpack sprayers, small mowers, weed whips, loppers, bow saws, clippers, buckets, bags Dedicated wall space for hanging tools Ability to work on a vehicle Flammable storage (cabinets) for herbicide storage Workstation (32-64sf) with computer NRS Workshop can be shared with NRM workshop. A separate space might be needed for volunteers for after hours.
	Secured Storage	1	200	200	Workshop	Secured	
	Full-Time Staff Lockers	3	15	45		Ventilated lockers	36"W x 18"D x 72"H 5' provided total for buffer in front of locker Drawer with bench Angled top No stretched metal Lock provided per locker
	Seasonal Staff Lockers	1	3.75	3.75		Ventilated lockers	18"W x 18"D x 36"H 5' provided total for buffer in front of locker Drawer with bench Angled top No stretched metal Lock provided per locker
	Mid-Sized Trucks	1	-	350		Natural light	From Asset List
	Mid-sized	2	-	54.75		Natural light	
	Flammable + Pesticide/herbicide Storage	2	40	80	Workshop	Security: Dedicated area for after-hours access	Herbicide temp storage, area for pick-up Space within workshop + space outside of workshop
	Bulk Storage	2	32	64		Security: Dedicated area for after-hours access	Storage bins (1 potting mix-propagation, 1 step/bed augmentation materials) Can be at upper level

Note: Seed processing facility in Misc. on later page

- Office space
- Crew space
- Vehicles + Large Equipment (Garage)
- Storage
- Misc.
- Building Support

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Program Inventory - Forestry

	Primary Program	Quantity	SF per	Total	Adjacencies	Systems (Performance)	Notes/Activities
	Private Office	1	120	120	Garage area		1 computer
	Shared Workstations (7 Full-Time Crew)	7	16	112	Close to Private Office and Meeting space, Lunchroom		1 seat for each crew member to do paperwork (1 workstation per 4) 1 computer
	Seasonal (Part-Time)	3	0	0			Jun.-Aug.
	Paper filing storage	1	50	50			
	Workshop	1	800	800	Rolling + standard door open to exterior	Plumbing: Sink, eye wash Compressed air	4 workbenches (6'L x 5'D per) with vises and drawers for hand tools Small Equipment (powered) - Asset List - Push mower, irrigation hose, repair valves, brush chipper, mower, tiller, chainsaw, clearing saw Hand Tools: 10 leaf rakes, 10 landscape rakes, 10 shovels, 6 15ft chains, 4 wheelbarrows, 2 seed spreaders, 8 irrigation hoses, 2 hand trucks, 4 waders, 6 rope, 2 ladders, drill press, bench grinder, chop saw, supply area of nuts-bolts-screws 24' x 8' of wall storage 7 Tree Climbing Gear lockers (secured) Ability to work on a vehicle
	Secured Storage	1	200	200	Workshop	Secured	
	Full-Time Staff Lockers	8	15	120		Ventilated lockers	36"W x 18"D x 72"H 5' provided total for buffer in front of locker Nomex, rain gear, winter clothes, personal street clothes, chainsaw protection clothing Drawer with bench Angled top No stretched metal Lock provided per locker
	Seasonal Staff Lockers	3	3.75	11.25		Ventilated lockers	18"W x 18"D x 36"H 5' provided total for buffer in front of locker Drawer with bench Angled top No stretched metal Lock provided per locker
	Mid-Sized Trucks	4	-	1456		Natural light	From Asset List
	Large Trucks/Equipment	6	-	2940		Natural light	
	Attachments + Mid-sized	26	-	2263		Natural light	
	Carts, ATVs, Tractors	6	-	935		Natural light	
	Trailers	4	-	1759		Natural light	
	Flammable Storage	5	2	10	Garage		5 fuel cans - (3) 5 gallon, (2) 2.5 gallon
	Bulk Storage	1	2000	2000	Separate building, isolated from spaces for District personnel	Rodent control (no access)	Nursery bulk storage bins (300 cu. Yds), nursery seed storage, 2 sulfur pallets, 3 hydromulch pallets, 2 grass seed pallets, 6 nursery supply pallets, burlap, twine, erosion matting, cover crops, lumber Can be at upper level, just above pick-up trucks (a low mezzanine to accommodate weight)

Note: Desk area and garage for loader in Misc. on later page

- Office space
- Crew space
- Vehicles + Large Equipment (Garage)
- Storage
- Misc.
- Building Support

Program Inventory - Landscape

	Primary Program	Quantity	SF per	Total	Adjacencies	Systems (Performance)	Notes/Activities
	Private Office	1	120	120	Connected to garage area		Foreman 1 computer
	Shared Workstations (12 Full-Time Crew)	12	16	192	Private Office		(1 workstation per 4) 3 computers
	Seasonal & Pre-Professional (Part-Time)	6	0	0			April-October
	Paper filing storage	1	50	50			
	Workshop	1	800	800	Rolling + standard door open to exterior	Heated to 60 degrees 10 outlets Central vacuum system Plumbing: Sink, eye wash Compressed air	1 workbench (12'L x 3'D) - chainsaw maintenance 2 workbenches (12'L x 3'D per) Small Equipment (powered) - Asset List Small Equipment (not powered) - Nuts, bolts, washers, zipties, storage bins Hand Tools: Rakes, shovels, pitchforks, wheel barrows, drills, sledge hammer, picks, safety signs Other: To store and work on equipment, shelf space at 2'x25'; grinding mower blades; mower maintenance, sharpening chainsaws & clearing saws, ability to work on a vehicle 6 grinders, 1-2 small lifts for mower and tractor, compressor with 6-8 hose adapters, 1 3'x3' chemical recovery pad at gas storage/oil bins
	Secured Storage	1	200	200	Workshop	Secured	10'x20' space, (2) 3'x12' shelves
	Full-Time Staff Lockers	13	15	195		Ventilated lockers	36"W x 18"D x 72"H 5' provided total for buffer in front of locker Drawer with bench Angled top No stretched metal Lock provided per locker
	Seasonal Staff Lockers	6	3.75	22.5		Ventilated lockers	18"W x 18"D x 36"H 5' provided total for buffer in front of locker Drawer with bench Angled top No stretched metal Lock provided per locker
	Mid-Sized Trucks	9	-	3416		Natural light	From Asset List
	Large Trucks/Equipment	1	-	476		Natural light	
	Attachments + Mid-sized	30	-	1508		Natural light	
	Tractors/ATVs	21	-	2442		Natural light	
	Trailers	11	-	3272		Natural light	
	Flammable Storage Safety Cabinets	2	12	24	Near Garage, Workshop Within building	Flammable	1 or 2 Gas cans for chainsaws, gas blowers, jug of coolant for the mowers. 4'x3'x6'H
	Bulk Storage	1	120	120			Gloves, traps, rain jackets, safety kits, seed, fertilizer, soil amendments Can be at upper level

Note: Common workshop in Misc. on later page

- Office space
- Crew space
- Vehicles + Large Equipment (Garage)
- Storage
- Misc.
- Building Support

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Program Inventory - Roads

	Primary Program	Quantity	SF per	Total	Adjacencies	Systems (Performance)	Notes/Activities
	Private Office	1	120	120	Connected to garage area		Foreman 1 computer
	Shared Workstations (8 Full-Time Crew)	8	16	128	Private Office		4 workstations in shared office, (1 workstation per 4) 1 computer
	Seasonal (Part-Time)	2	0	0			2 months
	Paper filing storage	1	50	50			
	Workshop	1	800	800	Rolling + standard door open to exterior	Plumbing: Sink, eye wash Compressed air	2 workbenches (6'L x 5'D per) - outlets, 4 vises 2 workbenches (6'L x 5'D per) - blade sharpening Small Equipment (powered) - Asset List - Wet saw, crack router, 3 trash pumps, generator, 2 paint strippers, 5 snow blowers, 3 line trimmers, 2 walk behind blowers, 2 wheel barrows, compactor, backpack sprayers, pressure washer, 2-55 gallon tack coat, tack coat pump, walk behind milling machine, 2 backpack blowers, 1 hand-blower, 4 chainsaws Hand Tools: Tow bar for boot, spreader bar, crane mats, hoses for pumps, seal coat, air compressor, rakes, shovels, picks, hammers, 3 salt spreaders, post pounders, pitchforks, hand tamper, post hole digger, 3' & 4' seal coat squeegee Other: Includes wall space, shelf space, and floor space. Sharpening/maintenance of chainsaws and clearing saws, ability to work on a vehicle
	Secured Storage	1	200	200	Workshop	Secured	No chainlink fence
	Full-Time Staff Lockers	9	15	135		Ventilated lockers	36"W x 18"D x 72"H 5' provided total for buffer in front of locker Drawer with bench Angled top No stretched metal Lock provided per locker
	Seasonal Staff Lockers	2	3.75	7.5		Ventilated lockers	18"W x 18"D x 36"H 5' provided total for buffer in front of locker Drawer with bench Angled top No stretched metal Lock provided per locker
	Mid-Sized Trucks	5	-	1918		Natural light	From Asset List
	Large Trucks/Equipment	10	-	4631		Natural light	
	Boats	1	-	145		Natural light	
	Attachments + Mid-sized	36	-	2213		Natural light	
	Tractors / ATVs	7	-	1077		Natural light	
	Trailers	10	-	3420		Natural light	
	Flammable Storage ..parking lot paint/asphalt materials	1	200	200	Connected to building, Garage	Flammable Heated (above freezing)	To store: 50-5 gallon pails, paint tumbler, 2-100lbs propane tanks, 8-20lbs propane tanks, 1-55 gallon asphalt release agent, paints, etc. that cannot freeze.
	Bulk Storage	1	600	600		Heated, tempered	Summer access: 20 black beauty pallets (3000 lbs each), Out at summer: 3 gator pave pallets (2000 lbs each), stored during other months (cannot freeze) Summer access/Moved as needed: 8 crack filler pallets (3000 lbs each) - several pallets each week Winter access: 6 deicer pallets (3000 lbs each), Daily use: Cones and barricades. These might need to be in the workshop or garage space. Upper level possible considering weight constraints.
	Cold storage	6	16	96		Unheated	250-gallon totes Seal coat, water

Note: Common workshop in Misc. on later page

- Office space
- Crew space
- Vehicles + Large Equipment (Garage)
- Storage
- Misc.
- Building Support

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Program Inventory - Trails and Streams

	Primary Program	Quantity	SF per	Total	Adjacencies	Systems (Performance)	Notes/Activities
	Private Office	1	120	120	Connected to garage area		Semi-private 1 computer
	Shared Workstations (11 Full-Time Crew)	11	16	176	Near Private Office		1 workstation per 4 1 computer
	Seasonal (Part-Time)	2	0	0			Summer months
	Paper Filing Storage	1	50	50			
	Workshop	1	800	800	Rolling + standard door open to exterior	Plumbing: Sink, eye wash Compressed air	5 workbenches (6'L x 5'D per) - outlets, vises Small Equipment (powered) - Asset List - Jib crane/gantry, bandsaw mill, floor jack, metal chop saw, bench grinder, chain sharpener, mechanics tool set, chill press Hand Tools: Wheelbarrows, face guards, rainsuits, hard hats, flappers, ratchet straps, wrenches, hammers, screw drivers, indian pumps, waders, tool chest, chains, rope, life vests, binders, saws, drills, plywood, cement, 2x4s, vehicle cleaning supplies Other: Chainsaw maintenance and repair, sign repair, and metal fabrication Wall space: 80 linear feet for shovels, rakes Floor space: 80 sf Rack space: 20 linear feet Ability to work on a vehicle 2 General Use Tool Cabinets (3'x6' for drills, saws, general tools)
	Workshop: Log Bench Repair Room	1	0	0	Loud - keep separated from others, Rolling door + standard door open to exterior Near Storage	Indoors, protected from Sun Sound isolation Flatwork area Compressed air	30'x20' space, included within Workshop 4 logbenches at a time (about 72"x28") Year-round activity (mainly in winter), then kept in storage Currently has 8 benches completed.
	Secured Storage	1	200	200	Workshop	Secured	
	Wader Room	1	325	325	Next to Storage or Workshop	Heated Air circulation	50' of wall hanging space for 14-15 pairs of waders, wet apparel, cover boots, ropes, and hardware. 20' of rack space for life vests, rubber gloves
	Full-Time Staff Lockers	12	15	180	changing area, workshop	Ventilated lockers	36"W x 18"D x 72"H 5' provided total for buffer in front of locker Drawer with bench Angled top No stretched metal Lock provided per locker
	Seasonal Staff Lockers	2	3.75	7.5	changing area, workshop	Ventilated lockers	18"W x 18"D x 36"H 5' provided total for buffer in front of locker Drawer with bench Angled top No stretched metal Lock provided per locker
	Mid-Sized Trucks	5	-	1812		Natural light	From Asset List
	Large Trucks/Equipment	8	-	3300		Natural light	
	Boats	1	-	128		Natural light	
	Attachments + Mid-sized	20	-	1343	Skid steer attachments near skid steers	Natural light	
	Tractors / ATVs	11	-	1437	Skid steer attachments near skid steers	Natural light	
	Trailers	9	-	3646		Natural light	
	Flammable Storage	1	50	50	Garage Workshop Connected to building	Flammable	5'x10' cabinet
	Bulk Strorage	0	0	0	Workshop		Accounted for in Workshop Storage Can be at upper level
	Traffic Sign Storage	1	400	400	Garage (skid steer implements) Access to near vehicles	Indoor, conditioned storage Secured	For storage of warning/traffic signs and cones Safety component for T&S (big component) 20x20 area

Note: Common workshop in Misc. on later page

- Office space
- Crew space
- Vehicles + Large Equipment (Garage)
- Storage
- Misc.
- Building Support

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Program Inventory - Miscellaneous

	Primary Program	Quantity	SF per	Total	Adjacencies	Systems (Performance)	Notes/Activities
	Wash bay	1	1800	1800			Based on existing floor plan Pull-through Undercarriage rinse (important for snow plows)
	G-L: Common Workshop	1	800	800	In proximity to other crews, Rolling + standard door open to exterior	Plumbing: Sink, eye wash	Landscape-requested Workbenches, secured storage, floor space, wall space Could be used by several crews; for chainsaw sharpening and cleaning Ability to work on a vehicle, small lift for mowers Similar to existing Saw Room
	Common Secured Storage	1	200	200	Common Workshop		
	G-F: Desk and work area in Nursery	1	64	64	at Nursery		Forestry Loader, small equipment/hand tool storage Intent for a remote workstation at Nursery. Workstation to include space for laptop, clipboard, paperwork etc.
	G-F: Garage to store loader in Nursery	1	0	0	at Nursery, west side near mulch SF accounted for in Asset List		Forestry Could be located here permanently Includes (1) 2-gallon fuel can
	NR: Greenhouse	1	2100	2100	at Nursery Near Outdoor plant propagation area.	Climate and water-control features	Natural Resource Management & Stewardship Part of seed processing/propagation facility Either 20'x100' or 30'x70'
	NR: Chemical storage, mixing area	1	2500	2500	Pesticide mixing bay	Plumbing: multiple sinks, multiple hoses Flammable	Natural Resource Management Part of seed processing/propagation facility Noted at least 900sf for chemical storage bay, backpack storage and plumbing One-ton vehicle bay is needed. Table bays, shelves, backpacks, supply storage, etc. 30'x45' pesticide mixing bay Pallet rack: 4'D x 10'H x 50'L (with 5ft in front for circulation.) To store all pumps during winter months
	NR, G-F: Seed processing and propagation facility (seed processing/drying)	1	3000	3000	at Nursery Seed storage Nursery office Loader garage Greenhouse Outdoor propagation	Proper ventilation specific for seed processing, Climate control Security: Dedicated area for after-hours access (to be discussed further)	Natural Resource Management & Stewardship, Forestry Hammer milling room, cold/dry storage, drying racks, tables, table space, Fan drying Walk-in Refrigerator and Freezer Separate room for a small office with computer. Forestry would store a small amount of seed and processing of seed.
	Pump House	1	220	220	at Nursery		Two pumps, larger water pumps.

Note: Outdoor plant propagation in Exterior Material Storage

- Office space
- Crew space
- Vehicles + Large Equipment (Garage)
- Storage
- Misc.
- Building Support

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Program Inventory - Administration & Future Planning

	Primary Program	Quantity	SF per	Total	Adjacencies	Systems (Performance)	Notes/Activities
	Private Office	1	120	120	Connected to garage area		Ability to have small meetings (2-3 people) 1 computer
	Private Office: Admin Assistant	1	120	120	Connected to Lobby / building entrance Connected to garage area		Adjacent to entrance to address visitors 1 computer
	Workstation: Seasonal	1	64	64	Private Offices Connected to garage area		May-August 1 computer
	Visitor lobby	1	150	150	Connected to Admin Assistant Office		Secured area connected to Admin Assistant office for visitors
	Paper Storage	1	150	150			
	Copier Area	1	100	100			With storage for paper/files, etc.
	Future Planning: Private Office	4	120	480	1 for Admin Connected to garage area		1 office for Admin could be small conference room initially
	Future Planning: Dedicated Workstations	6	64	384			
	Future Planning: Meeting Space	1	275	275			Reallocated in shared workstations in the future
	Full-Time Staff Lockers	2	15	30		Ventilated lockers	18"W x 18"D x 72"H 5' provided total for buffer in front of locker Drawer with bench Angled top No stretched metal Lock provided per locker
	Seasonal Staff Lockers	1	3.75	3.75		Ventilated lockers	18"W x 18"D x 36"H 5' provided total for buffer in front of locker Drawer with bench Angled top No stretched metal Lock provided per locker
	Future Planning: Workshop	1	800	800	Rolling + standard door open to exterior	Plumbing: Sink, eye wash Compressed air	Workbenches, secured storage, floor space, wall space Ability to work on a vehicle
	Future Planning: Secured Storage	1	200	200	Future Planning: Workshop		
	Future Planning: Lockers	10	15	150		Ventilated lockers	Full-Time Staff Lockers 36"W x 18"D x 72"H 5' provided total for buffer in front of locker Drawer with bench Angled top No stretched metal Lock provided per locker
	Mid-Sized Trucks	0	-	300		Natural light	From Asset List
	Future Planning: Vehicles	6	350	2,100		Natural light	Space to accommodate for F250s
	Storage Area	1	200	200			For general needs: extra uniforms, rainsuits, PPE, office supplies, water softener salt, air filters, cleaning supplies, toilet paper, etc. Can be at upper level
	Future Planning: Storage Area	1	200	200			

DEPARTMENT: 070 - Administration Assets				
DESCRIPTION	COUNT	NOTES	CONDITION	SEASON(S) IN USE
MID-SIZED TRUCKS				
2019 FORD F150	1	Truck	C	All
Future Planning: FORD F250	6	Future Truck	C	All
Future Planning: FORD F250		Future Truck	C	All
Future Planning: FORD F250		Future Truck	C	All
Future Planning: FORD F250		Future Truck	C	All
Future Planning: FORD F250		Future Truck	C	All
Future Planning: FORD F250		Future Truck	C	All
Totals	7			

Condition	
U	Unconditioned
T	Tempered
C	Conditioned

Season(s) in Use	
All	All Year
F	Fall Months
W	Winter Months
SP	Spring Months
SM	Summer Months

- Office space
- Crew space
- Vehicles + Large Equipment (Garage)
- Storage
- Misc.
- Building Support

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Program Inventory - Building Support

	Primary Program	Quantity	SF per	Total	Adjacencies	Systems (Performance)	Notes/Activities
	Mud/Wet Room	1	200	200	Open to exterior	Plumbing: Slop sink Compressed air	Hoses inside and outside Outdoor cleaning station/Indoor Dirty Changing, wash off boots and debri outside Brushes for boots Roads: For boots and waders. 1 drying area for each employee - boot, glove, wader drying as one system Use Morton Arboretum as precedent. Grated floor Area to hang outer layer clothes
	Laundry	1	200	200	Changing rooms	Washing machine Dryer	Commerical-grade: for work clothes, chainsaw chaps, towels
	Mother's Room	1	50	50			
	Crew Meeting Space	3	275	825		AV	1 computer per room
	Conference Room	2	400	800		AV 1 of higher quality finishes	1 room to hold up to 20 people TV monitor
	Lunch Room/Large Meeting/Training	1	2000	2000		AV Acoustical divider(s) Plumbing: RO water and ice machine	Shared by all crews, assignments given in this room Soundproof / folding walls: ability to accommodate smaller crew meetings Multiple TV monitors (1 per crew)
	Kitchen	1	300	300		Plumbing Range	
	Loading/receiving	1	400	400	Herbicide storage	Loading dock (at ground) Floor lift for trucks	Herbicide comes in bulk delivery (frequent delivery)
	Restrooms	2	750	1500			
	Single User Restrooms	2	60	120			
	Shower	4	50	200			
	Changing room	4	50	200			Full length mirror
	Mechanical	2	400	800			
	IT Room	2	150	300			

Program Inventory - Exterior Material Storage

	Exterior Material						
	Large flag stone	1	1200	1,200	At Nursery	Not Covered	All year
	Pallets of flagstone, bricks, slate, etc.	1	1800	1,800	At Nursery	Not Covered	All year
	Parking bumper storage	1	800	800	At Nursery	Not Covered	All year
	Boulder storage, various sizes	3	300	900	At Nursery	Not Covered, Material Bay	All year, 15'W x 20'D x 4'H
	CMP, CPP, pans, etc.	1	1200	1,200	At Nursery	Not Covered	All year
	Bins for granite, rip rap, broken concrete,	4	300	1,200	Near building	Not Covered, Material Bay	All year, 15'W x 20'D x 4'H
	Bins for various aggregate, grindings, etc.	6	600	3,600	Near building	Not Covered, Material Bay	All year, 30'W x 20'D x 8'H
	Nursery lean to: mix, topsoil, etc.	6	450	2,700	At Nursery (currently here)	Covered, Material Bay	All year, 30' x 15'
	Nursery lean to: amendments, soil, etc.	2	225	450	At Nursery (currently here)	Covered, Material Bay	All year, 15' x 15'
	Lean-to in complex - Sand and signs	2	400	800	In complex (currently here)	Covered, Material Bay	All year, 20' x 20'
	River pans storage	1	1500	1,500	At Nursery	Not Covered	Seasonal
	Deicer tank - 6000 gallons	1	225	225	Near building	Not Covered	All year, 15' x 15' basin (concrete)
	NR: Outdoor plant propagation area	1	900	900	Located at Nursery Near Greenhouse Near Seed processing/seed storage	Partially shaded	Natural Resource Management & Stewardship Part of seed processing/propagation facility Possibility to use existing pump house

- Office space
- Crew space
- Vehicles + Large Equipment (Garage)
- Storage
- Misc.
- Building Support

DEPARTMENT: 072 - Nat Resource Assets				
DESCRIPTION	COUNT	NOTES	CONDITION	SEASON(S) IN USE
MID-SIZED TRUCKS	8			
2006 GMC K3500			C	All
2013 CHEVY K2500			C	All
2016 FORD F250			C	All
2016 FORD F250	1		C	All
2011 FORD F350			C	All
2011 FORD F350			C	All
2014 FORD F350			C	All
2014 FORD F350			C	All
2020 FORD F550			C	All
LARGE TRUCKS/EQUT	1			
2009 CHEVY C7500		Large truck	C	All
ATTACHMENTS + MID SIZED	25			
2005 VIRNIG 72INCH		construction bucket	T	All
2005 VIRNIG 72INCH		construction bucket	T	All
2021 VIRNIG V60 ITG-72		grapple bucket for tractor	T	W
2021 VIRNIG V60 ITG-72		grapple bucket for skid steer	T	W
2021 VIRNIG V60 ITG-72		grapple bucket for skid steer	T	W
2018 ULINE H5440		forklift, 137" lift	T	All
2013 FECON BH099PTO2-SP1-00-PPB		Forestry mulcher	T	S, F, W
2014 JOHN DEERE CX15		rotary cutter	T	All
2014 FECON BH074SS		mulcher	T	S, F, W
2018 WOODS BB8400X		rotary cutter	T	All
2019 WOODS BB7200X		rotary cutter	T	All
2012 DULTMEIER 100GAL		100 gallon hose reel + tank	C	SP, SM, F
2012 DULTMEIER 100GAL		100 gallon hose reel + tank	C	SP, SM, F
2016 FECON FBS1500SS		tree shear	T	W
2016 KINGS SPRAYER 300 GALLON		300 gallon sprayer	C	SP, SM, F
2019 KINGS SPRAYER KS50P70		200 Gallon Skid estimate	C	SP, SM, F
2019 KINGS SPRAYER KS50P70		200 Gallon Skid estimate	C	SP, SM, F
2020 KINGS SPRAYER KS50P7027E		200 Gallon Skid	C	SP, SM, F
2021 KINGS SPRAYER KS200P9203CR39EHG		200 Gallon Skid w/ Centrifugal Pump & Electric Reel	C	SP, SM, F
2021 GRAYWIND 24-60S		Seed sweeper	T	F
2020 KINGS SPRAYER KS100P7038E		100 gallon 2-wheel sprayer	C	SP, SM, F
2010 CUBCADET 100G		Fire spray tank	C	SP, SM, F
2022 KINGS SPRAYER KS100P7038E		100 gallon fire pump/tank sprayer	C	SP, SM, F
2021 HONDA HRS216PKA (Natural Resource Stewardship)	1	lawn mower, push	C	All
2021 HONDA FG110KIAT (Natural Resource Stewardship)	1	tiller, hand push	C	All
1996 PRARIE 400		Seed sweeper	T	F
2000 XFER DIESEL		diesel transfer tank, permanently mounted to one of the pick-up trucks	C	All
2021 AMMBUSHER AM720-12		brush cutter	T	All
CARTS ATVS TRACTORS	9			
2013 JOHN DEERE 5085M		tractor	C	All
2013 JOHN DEERE 5115M		tractor	C	All
2014 TEREX PT110		forestry track loader	C	All
2011 JOHN DEERE TH6X4		atv with bed	C	All
2021 JOHN DEERE TH6X4		atv with bed	C	All
2022 JOHN DEERE TH6X4		atv with bed	C	All
2021 JOHN DEERE XUV 835M		atv	C	All
2021 JOHN DEERE XUV 835M		atv	C	All
2018 JOHN DEERE XUV 825M		UTV	C	All
TRAILERS	9			
2005 FELLING FT-16DE		trailer	U	All
2008 KORY 6072		Corn bin (possibility to relocate)	U	W
2008 KORY 6872		Corn bin (possibility to relocate)	U	W
2010 EAGER 12HA		trailer	U	All
2016 IMPERIAL LB-10-16		trailer	U	All
2020 REDI-HAUL P25212PFE-102		trailer	U	All
2019 IMPERIAL LB-10-16		trailer	U	All
2019 IMPERIAL LB-10-16		trailer	U	All
2021 UNITED UXT-714TA35-8.5		enclosed trailer	U	All

Condition	
U	Unconditioned
T	Tempered
C	Conditioned

Season(s) in Use	
All	All Year
F	Fall Months
W	Winter Months
SP	Spring Months
SM	Summer Months

Key
Stewardship Asset
Management Asset

DEPARTMENT: 071 - Grounds-Forestry Assets				
DESCRIPTION	COUNT	NOTES	CONDITION	SEASON(S) IN USE
MID-SIZED TRUCKS	4			
2021 RENTAL DIESKEY		Rental bucket truck, indoors	C	All
2015 FORD F250			C	All
2017 FORD F250			C	All
2020 FORD F550			C	All
LARGE TRUCKS/EQUT	6			
2007 CHEVY C7500 and Cherry Picker		Truck with cherrypicker attachment	C	All
2006 DUECO HIRANGER-XT58-6		cherrypicker	C	All
2016 PETERBILT 337		Medium	C	All
2015 PETERBILT 337		Medium	C	All
2016 PETERBILT 337		Medium	C	All
2020 PETERBILT 337		Medium	C	All
2021 PETERBILT 337		Medium	C	All
ATTACHMENTS + MID SIZED	26			
2008 MORBARK MODEL15		woodchipper	T	All
2007 ALLU SML2-17		skid steer implement	C	All
2013 MORBARK M15R		woodchipper	T	All
2013 MORBARK M18R		woodchipper	T	All
2018 MELECIO MCO9143072		Grapple bucket attachment	T	All
2017 BOREPIG QA19H2		drill for the ground	T	SP, F
2017 DANUSER 9050F8		drill to dig holes	T	SP, F
2015 CONSTRUCTI 1PFHL48		pallet forks	T	All
2009 FINN T60T		Straw/seed blower	T	SP, SM, F
2001 DPM NURSERY JAWS		attachment for moving trees	T	SP, F
2003 DPM NURSERY JAWS		attachment for moving trees	T	SP, F
1999 ROTADAIRON RD180		tractor attachment stone burier	T	SP, F
2000 GILL SU200		tiller	T	All
2004 WOODS LR700/7		tiller/rake (estimate from photo)	T	All
2009 HOWARD R500B180M-71		rotavator tiller (estimate)	T	All
2022 VERMEER SC802		stump cutter	C	All
2020 TITAN TCC10 CHIPPER CAP		Chipper cap	T	All
2006 CARLTON SP4012		stump grinder	C	All
2018 TIMBERWOLF TW6		log splitter (estimate)	T	SP, F
2003 OPTIMAL 1100		tree spade	T	SP, SM, F
2016 NORWESCO 1035GAL		plastic tank	C	SP, SM, F
2021 NORWESCO 1035GAL		plastic tank	C	SP, SM, F
2019 HONDA HRS216K7VKA		lawn mower	C	SP, SM, F
2018 HONDA FRC800K1A		small tiller	C	SP, SM, F
2007 BROUWER BTR30		turf roller	C	SP, SM, F
2003 OPTIMAL 650		tree spade	T	SP, F
CARTS ATVS TRACTORS	6			
2017 KUBOTA RTV-X900W		cart/atv	C	All
2017 JOHN DEERE 210L		loader/backhoe	C	All
2017 KUBOTA M62TLBLB		tractor	C	All
2017 GRAVELY 992280		small tractor/riding lawn mower	T	SP, SM, F
2018 CASE FARMALL 75C UTILITY TRACTOR		Tractor	T	All
2022 KUBOTA SVL75-2HFWC		track skid steers (estimate)	C	All
TRAILERS	4			
2006 FELLING FT3A00097		small utility trailer	U	All
2011 FELLING FT30-2		Trailer	U	All
2020 HOLDEN TD024		Trailer	U	All
2014 REDI-HAUL P26212PFHDE-102		Trailer	U	All
Totals	**46**			

Condition	
U	Unconditioned
T	Tempered
C	Conditioned

Season(s) in Use	
All	All Year
F	Fall Months
W	Winter Months
SP	Spring Months
SM	Summer Months

DEPARTMENT: 075 - Grounds-Landscape Assets				
DESCRIPTION	COUNT	NOTES	CONDITION	SEASON(S) IN USE
MID-SIZED TRUCKS	9			
2017 FORD F250			C	All
2015 FORD F250			C	All
2017 FORD F350			C	All
2017 FORD F350			C	All
2012 FORD F450			C	All
2015 FORD F550			C	All
2017 FORD F550			C	All
2016 FORD F550			C	All
2017 FORD F550			C	All
LARGE TRUCKS/EQUT	1			
2020 PETERBILT 337			C	All
ATTACHMENTS + MID SIZED	30			
2005 RYAN 544317		Tow Aerator	U	SP, F
2014 RYAN RENOVAIRE		Tow Aerator	U	SP, F
2020 QUICKATTACH MINI QUICK CLAW		attachment rake/claw	C	W
2016 BUFFALO BTCPTO		debris blower	C	SP, SM, F
2018 VIRNIG V60 ITG-72		Rotary Cutter	C	W
2022 BILLY GOAT F902H		walk behind blower	C	All
2021 BILLY GOAT F902H		walk behind blower	C	All
2022 BILLY GOAT F902H		walk behind blower	C	All
2018 BERLON STRONG 48" BUCKET		mini skid steers - buckets	U	All
2021 BERLON STRONG 48" BUCKET		mini skid steers - buckets	U	All
2018 TITAN TCC10 CHIPPER CAP		Chipper cap	T	All
2019 MCMILLEN X1500		auger drive (estimated with largest dimensions)	U	F, SM
2020 QUICKATTACH MINI PALLET FORK		pallet forks	U	All
2014 FECON BH074SS		mulcher	T	W, SP, F
2017 SCAG SW48V14FS		walk behind mower	C	SP, SM, F
2014 ALAMO SHD88		attachment	T	SP, SM, F
2017 WOODS BB6000X		rotary cutter	U	All
2018 ALAMO SHD88		attachment	T	SP, SM, F
2018 BROWN PRODUCTS F-991H		push bededger	T	SP, SM, F
2020 ALAMO SHD88		attachment	T	SP, SM, F
2020 TRENCHMASTER F791H		for trench digging	T	SP, SM, F
2020 ALAMO SHD88		attachment	T	SP, SM, F
2019 QUICK POWER SCAPE 900529 MINI SOIL CONDITIONER		soil attachment	T	SP, F
2009 TURFCO 60		soil tiller attachment	C	SP, F
2017 LELY 1250L		spreader attachment	U	SP, F
2020 LELY 1250L		spreader attachment	U	SP, F
2018 ERSKINE / VERMEER 48" ANGLE BROOM		broom attachment	T	W, SP
2021 HONDA HRS216PKA		push mower	C	SP, SM, F
2019 HONDA HRS216K7PKA		push mower	C	SP, SM, F
2021 BILLY GOAT KV650H		vacuum	C	SP, SM, F
TRACTORS/ATVS	21			
2020 TORO 4100D		riding mower	C	SP, SM, F
2018 GRAVELY 992275		riding mower (estimate)	C	SP, SM, F
2018 GRAVELY 992275		riding mower (estimate)	C	SP, SM, F
2018 GRAVELY 992275		riding mower (estimate)	C	SP, SM, F
2017 SCAG STT61V-25KBD-SS		riding mower (estimate)	C	SP, SM, F
2017 SCAG STT61V-25KBD-SS		riding mower (estimate)	C	SP, SM, F
2020 SCAG STTII-61V-25KBD		riding mower (estimate)	C	SP, SM, F
2020 SCAG STTII-61V-25KBD		riding mower (estimate)	C	SP, SM, F
2020 SCAG STTII-61V-25KBD		riding mower (estimate)	C	SP, SM, F
2020 SCAG STTII-61V-25KBD		riding mower (estimate)	C	SP, SM, F
2018 BRUSH BUSTER 900329		rotary mower	C	All
2021 BRUSH BUSTER 900329		rotary mower	C	All
2009 JOHN DEERE 5065M		tractor	C	SP, SM, F
2009 JOHN DEERE 5065M		tractor	C	SP, SM, F
2009 JOHN DEERE 5065M		tractor	C	SP, SM, F
2011 KUBOTA RTV900W		atv	C	All
2018 KUBOTA RTV-X900WL-H		atv	C	All
2010 SMITHCO 77-100CF		height with hopper up	C	SP, F
2013 TORO 4100D30449D		lawn mower	C	SP, SM, F
2018 VERMEER S925TX		skid steer	C	All
2021 VERMEER S925TX		skid steer	C	All
TRAILERS	11			
2013 FELLING FT-16IT-I		trailer	U	All
2018 FELLING FT-16-2T		trailer	U	All
2017 HAULMARK KD7X18WT2		enclosed trailer, mowers stay in trailer (can leave loaded if possible)	U	All
2018 ATLAS AC718TA3		enclosed trailer, mowers stay in trailer (can leave loaded if possible)	U	All
2019 IMPERIAL LB-10-16		trailer	U	All
2019 IMPERIAL LB-10-16		trailer	U	All
2021 IMPERIAL LB-10-16		trailer	U	All
2019 USCARGO TSPP718TA3		enclosed trailer, mowers stay in trailer, (can leave loaded if possible)	U	All
2019 JLG 1012		trailer	U	All
2020 HOLDEN TD024		trailer	U	All
2023 H&H H8418TT-100		trailer	U	All
Totals	**72**			

Condition	
U	Unconditioned
T	Tempered
C	Conditioned

Season(s) in Use	
All	All Year
F	Fall Months
W	Winter Months
SP	Spring Months
SM	Summer Months

DEPARTMENT: 073 - Grounds-Roads Assets				
DESCRIPTION	COUNT	NOTES	CONDITION	SEASON(S) IN USE
MID-SIZED TRUCKS	5			
2019 FORD F250		Small Contains Asset DT568 in bed	C	All
2022 FORD F250		Small	C	All
2014 FORD F550		Medium	C	All
2014 FORD F550		Medium	C	All
2016 FORD F550		Medium	C	All
LARGE TRUCKS/EQUT	10			
2002 CHEVY G3500		cargo van	C	All
2016 PETERBILT 337		large truck	C	All
2016 PETERBILT 337		large truck	C	All
2018 PETERBILT 337		large truck	C	All
2017 PETERBILT 567		flatbed truck, 26' bed	C	All
2018 ISUZU NQR		flatbed truck 15' deck with mounted roads sweeper	C	All
2018 TYMCO 435 DST-4		Truck road sweeper	C	All
2021 PETERBILT 348		dump truck, 18ft bed	C	All
2022 PETERBILT 348		dump truck, 18ft bed	C	All
2023 FORD TRANSIT250		van	C	All
2019 MID STATE 8660		3200 gal tank	C	SP, SM, F
BOATS	1			
2005 ALUMACRAFT 1442		boat	T	SP
ATTACHMENTS + MID SIZED	36			
2020 DOOSAN P185WDO		portable air compressor	C	SP, SM, F
2010 REID DR		asphalt track distributer	C	All
2017 LAB S70C		Crack filler	C	SP, SM, F
2005 ARIES PATHFINDER		tractor	C	All
2005 NEWHOLLAND 72		tractor bucket (digger attachment)	C	All
2017 BILLY GOAT F902H		walk behind leaf blower	C	SP, SM, F
2017 BILLY GOAT F902H		walk behind leaf blower	C	SP, SM, F
2018 NEWHOLLAND LOWPROFILE		tractor bucket (digger attachment)	T	All
2018 VIRNIG V60 ITG-72		Rotary cutter	T	W
2015 CIMLINE MAGMA150		melter	T	SP, SM, F
2018 CONEQTEC AP600		asphalt cutter estimate	T	SP, SM, F
2019 RDS MANUFACTURING 95GAL L FUEL/TOO B		95 gal transfer tank/toolbox In bed of Asset 568 (F250)	T	All
2019 GANNON HD 244 88HSD		attachment- digger attached to John Deere 210L	T	All
2007 MB COMPANY APOLLO3		pavement marking melter- estimate	T	SP, SM, F
2017 LEEBOY 1000G		track asphalt pavers	T	SP, SM, F
2017 CRAFCO MODEL30		pavement router- estimate	T	SP, SM, F
2008 EDCO SCARFIR		crete planar (smooths, levels, grooves asphalt)	T	SP, SM, F
2019 ROAD WIDENER LLC ROAD WIDENER FH		attachment- material placement	T	SP, SM, F
2017 QUICKSWEEP 840XL		skid steer broom attachment	T	SP, SM, F
2018 SEAL-RITE PA850 SKID		850 gal steel tank	T	SP, SM, F
2006 FFC LAF-3619-0022		skid steer sweeper attachments	T	W
2014 BOSS POWERVDXT		snow plow attachment	T	W
2016 BOSS SUPERDUTY		snow plow attachment (largest of possible options)	T	W
2016 BOSS SUPERDUTY		snow plow attachment (largest of possible options)	T	W
2016 BOSS SUPERDUTY		snow plow attachment (largest of possible options)	T	W
2018 BOSS RT3 STRAIGHT-BLADE		snow plow attachment (largest of possible options)	T	W
2011 TORO 825OXE		snowblower	T	W
2021 TORO 38753		Gas Push Snow Blower	C	W
2021 TORO 721R		Gas Push Snow Blower	C	W
2021 TORO 721R		Gas Push Snow Blower	C	W
2021 TORO 721R		Gas Push Snow Blower	C	W
2019 WESTERN 8' PRO PLOW SERIES 2		snow plow attachment	T	W
2020 WESTERN PRO PLUS HD		snow plow attachment	T	W
2001 MONROE MS966RFDD		spreader	T	W
2001 MONROE MS966RFDD		spreader	T	W
2021 BUYER'S SNOWDOGG XP810		snow plow attachment	T	W
TRACTORS/ATVS	7			
2012 DYNAPAK CC1300		roller machine	C	SP, SM, F
1976 JOHN DEERE 570A		tractor	C	SP, SM, F
2016 VIKING G32B		atv	C	SP, SM, F
2018 KUBOTA RTV-X1100CWL-H		atv	C	All
2019 JOHN DEERE 210L		tractor Attached with Asset GB002	C	All
2021 NEW HOLLAND L334		tractor	C	All
2016 SEALMASTER SP300		squeegee machine (ridden)	C	SP, SM, F
TRAILERS	10			
2006 SHORLANDER GB10TL		Boat trailer	U	All
2019 B&B WDT24-ST31		Trailer with tanker	C	SP, SM, F
2004 R&S BODY SHOP03070116		trailer	U	All
2021 WELLS CARGO WDH718T3		covered trailer	U	All
2021 UNITED UXT-714TA35-8.5		covered trailer	U	All
2016 BEHNKE FB8X31PT		trailer 31'	U	All
2016 FELLING FT-24-2-LP		trailer	U	All
2020 HOLDEN TD024		trailer	U	All
2021 RC TRAILERS ART8.55X16TA2OULLX		trailer- used largest possible size with tall back panel	U	All
2022 IMPERIAL LB-16-18		trailer	U	All
Totals	69			

Condition	
U	Unconditioned
T	Tempered
C	Conditioned

Season(s) in Use	
All	All Year
F	Fall Months
W	Winter Months
SP	Spring Months
SM	Summer Months

DEPARTMENT: 074 - Trails and Streams Assets				
DESCRIPTION	COUNT	NOTES	CONDITION	SEASON(S) IN USE
MID-SIZED TRUCKS	5			
2012 CHEVY K2500HD		truck	C	All
2022 FORD F250		truck	C	All
2016 FORD F250		truck	C	All
2017 FORD F550		truck (near chipper cap)	C	All
2017 FORD F550		truck (near chipper cap)	C	All
LARGE TRUCKS/EQUT	8			
2016 PETERBILT 337		truck	C	All
2016 PETERBILT 337		truck	C	All
2017 PETERBILT 348		dump truck, 18ft bed class 8	C	All
2017 PETERBILT 348		dump truck, 18ft bed class 8	C	All
2018 PETERBILT 348		dump truck, 18ft bed class 8	C	All
2020 PETERBILT 567		estimate	C	All
2020 NEW HOLLAND B110C		backhoe loader, near F550, near chipper cap	C	All
2020 HYUNDAI HX145 LCRD		excavator, near F550, near chipper cap	C	All
BOATS	1			
2010 TRACKER 1436		boat	U	All
ATTACHMENTS + MID SIZED	20			
2005 WISCONSIN 7200S		skid steer bucket attachment	U	All
2012 XFER 484000		deisle tank in back of pickup truck	C	All
2007 CAL CAL48		skid steer forks	U	All
2011 JOHN DEERE AT319180		bucket attachment	U	All
2011 JOHN DEERE AT319180		bucket attachment	U	All
2018 BILLY GOAT F902H		walk behind blower	C	All
2019 MELECIO MCO9153076		bucket attachment	T	All
2019 CNH AMERICA 78" LPE BUCKET		bucket attachment	T	All
2022 TITAN TCC10 CHIPPER CAP		Chipper cap, mounted on F550 dump truck as needed, near backhoe, near excavator	U	All
2019 AMMBUSHER AM720		brush cutter	T	All
2019 BROWN PRODUCTS BRUSH OX		push brush mower	T	All
2019 CID SWING BOOM CUTTER		cutting attachment (estimate)	T	All
2020 BRADLEY 36BB-BS25E		walk behind mower	T	All
2021 LEEBOY 1000G		asphalt pavers	T	SP, SM, F
2003 BOBCAT SG60		stump grinder	T	All
2023 BOBCAT SG60		stump grinder	T	All
2012 WESTERN UTPY80		Snow plow for pickup	C	W
2004 MONROE MS966-RF-DD/304		tailgate spreader	T	W
2004 MONROE MS966-RF-DD/304		tailgate spreader	T	W
2007 DIERZEN DOMINATOR		end of dump truck	T	All
TRACTORS/ATVS	11			
1982 JOHN DEERE 350C		crawler tractor	T	All
1996 JOHN DEERE 555G		crawler tractor	T	All
2017 CAT CB24B		roller machine	T	SP, SM, F
2009 KUBOTA RTV900W9H		utv	T	All
2014 TEREX PT110		forestry track loader	T	All
2014 NEWHOLLAND L230-T4A		skid steer loader	T	All
2018 KUBOTA RTV-X900WL-H		atv	T	All
2019 NEWHOLLAND L234		skid steer loader	T	All
2023 KUBOTA RTV-X1100CWL-H		RTV	T	All
2020 KUBOTA SVL95-2S		Track loader	T	All
2021 NEW HOLLAND L334		skid steer	T	All
TRAILERS	9			
1994 DYNA WELD 70XHD		trailer	U	All
2011 BEHNKE FB8X31PT		trailer	U	All
2014 FELLING FT402LP		trailer	U	All
2018 FELLING FT-16IT-I		trailer	U	All
2021 LOAD TRAIL XT8318032		trailer	U	All
2022 IMPERIAL SW-18L-22		trailer	U	All
2023 IMPERIAL SW-18L-20		trailer	U	All
2022 IN-HOUSE BUILD IN-HOUSE BUILD		Truck-mounted water tank (pump is taken off and stored in conditioned storage)	U/T	SP, SM, F
2004 R&S BODY SHOP03070117		Dump trailer/semi	U	All
Totals	54			

Condition	
U	Unconditioned
T	Tempered
C	Conditioned

Season(s) in Use	
All	All Year
F	Fall Months
W	Winter Months
SP	Spring Months
SM	Summer Months

EXISTING SPACE USAGE

1. truck parking
2. chemical mixing & storage
3. crew meeting trailer
4. truck and trailer parking
5. native seed trailer
6. office
7. outdoor plant prop
8. flammable storage burn equip.
9. small engine equip. storage
10. storage in barn (NRM in basement with seed harvestors), G-F material storage
11. nursery shop
12. volunteers
13. pump house
14. crew lockers
15. trucks and equipment
16. meeting, lockers, truck storage (?)
17. outdoor implement storage
18. vehicle parking
19. equipment storage
20. yard space
21. shop
22. trailer
23. de-icer/dust control
24. material + equipment storage
25. crew trailer and computer
26. vehicle, equip, & material storage
27. material + equipment storage
28. bay + work area
29. cold storage
30. outside storage
31. crew trailer
32. material storage
33. admin office
34. salt storage for water at fleet

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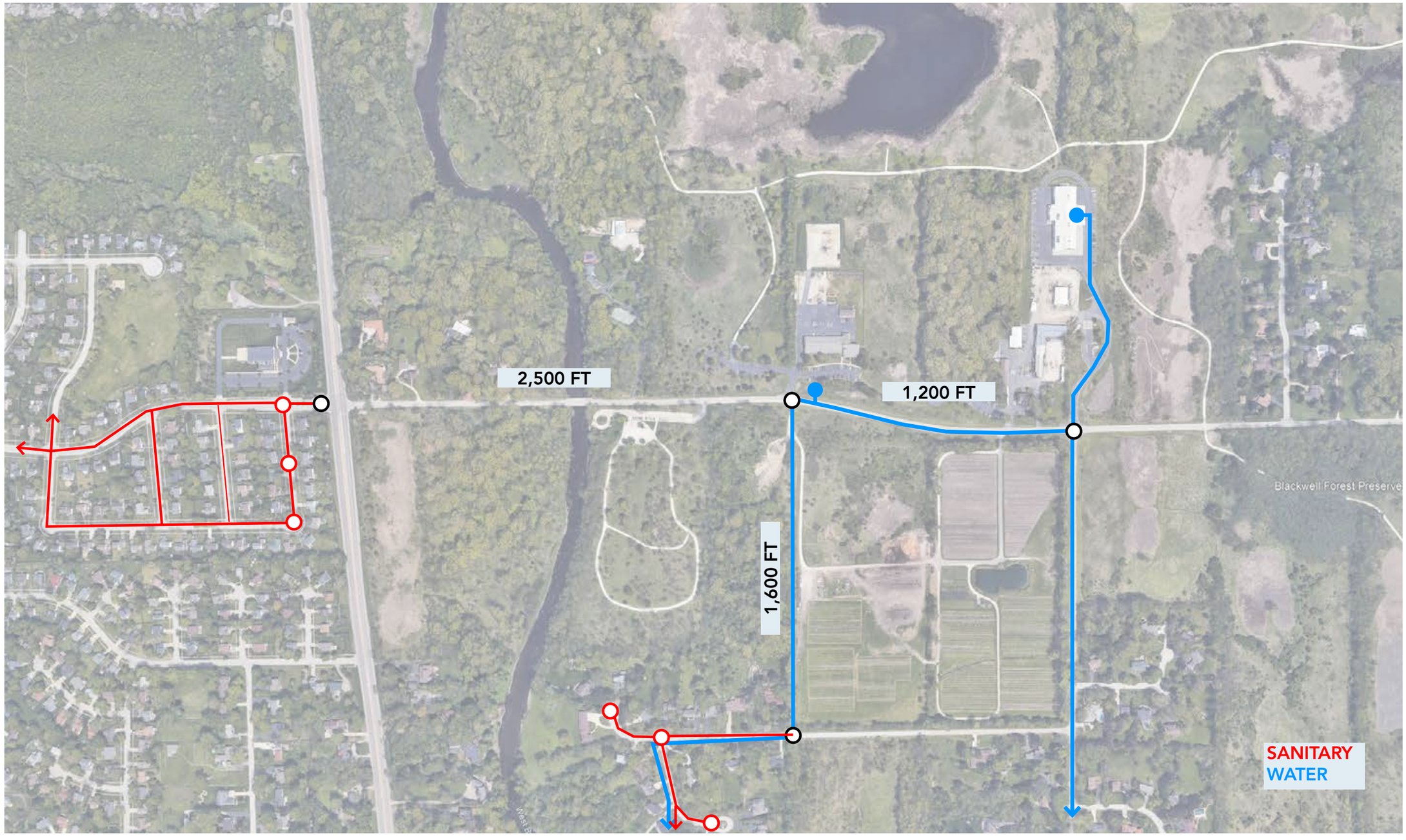
2,500 FT
1,200 FT
1,600 FT
Blackwell Forest Preserve
SANITARY
WATER