



FOREST PRESERVE DISTRICT OF DUPAGE COUNTY  
**GROUNDS AND NATURAL RESOURCES  
MANAGEMENT MAINTENANCE CAMPUS**

DESIGN DEVELOPMENT  
07.02.2024

**Woodhouse Tinucci Architects**  
230 W Superior 6th Flr Chicago IL 60654  
Tel 312 943 3120 [www.woodtinarch.com](http://www.woodtinarch.com)

## PROJECT TEAM

### ARCHITECTURE

Woodhouse Tinucci Architects  
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312.943.3120

### CIVIL ENGINEERING

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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

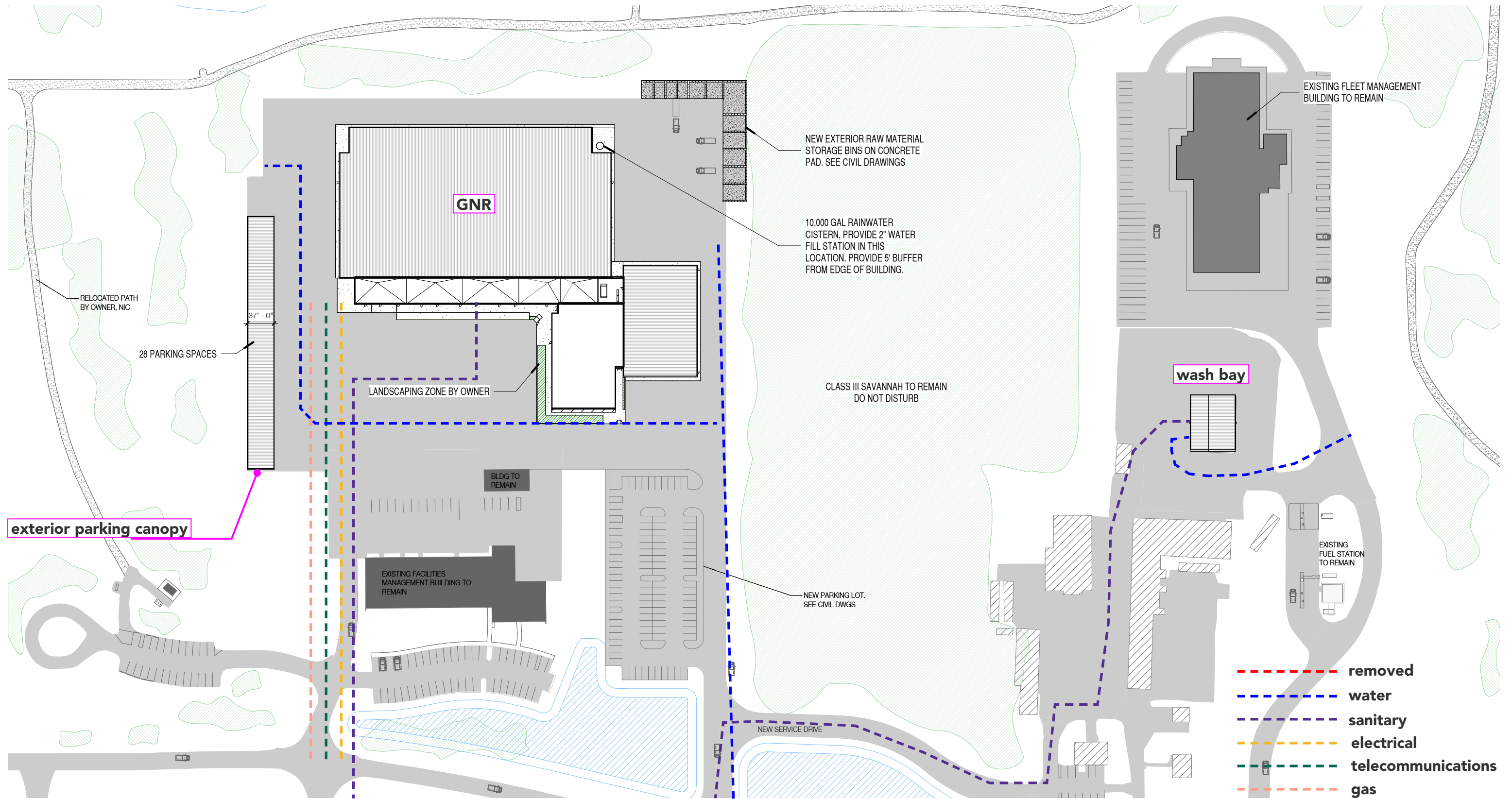
### MEP/FP ENGINEERING

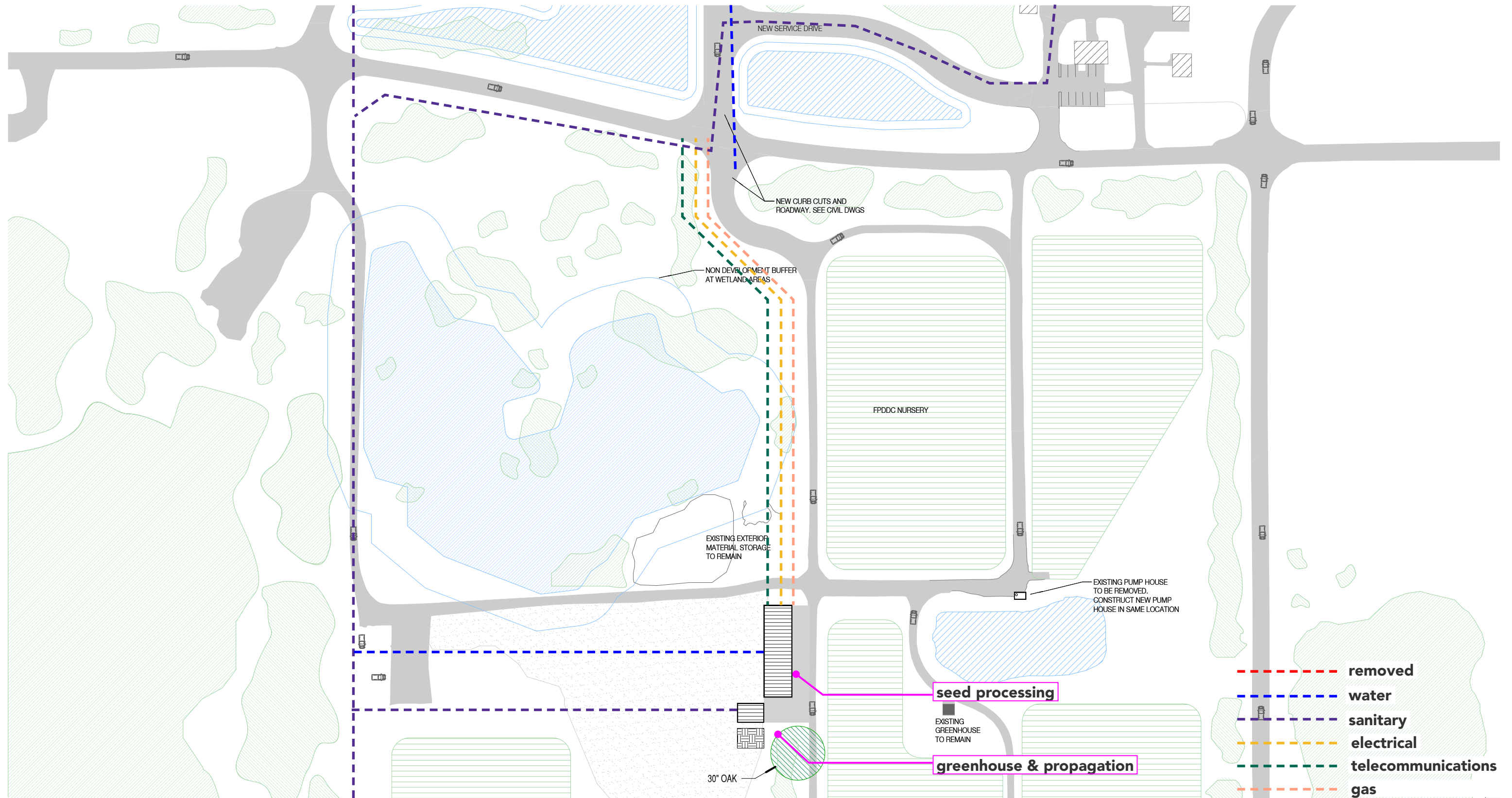
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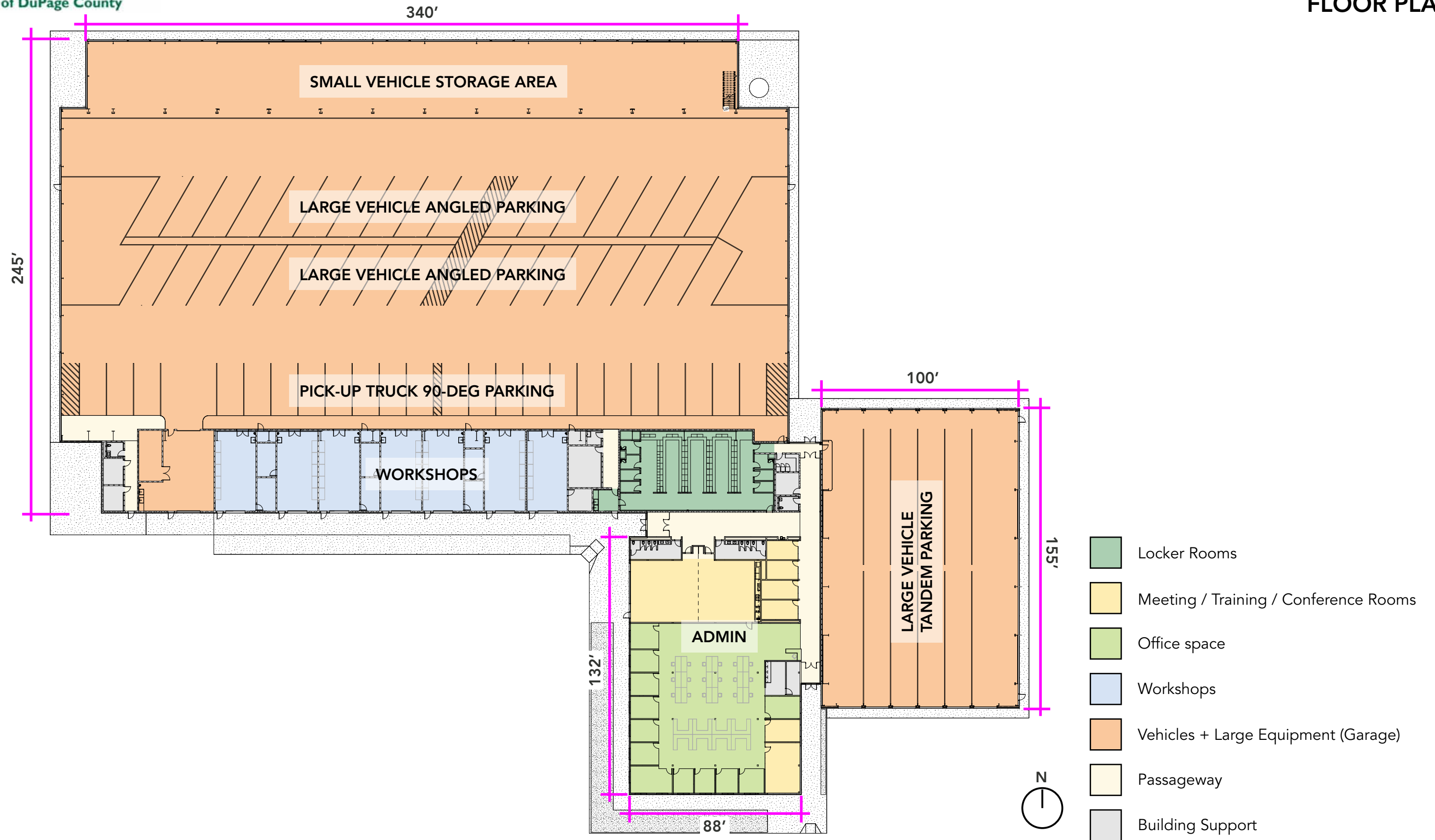
## CONTENTS

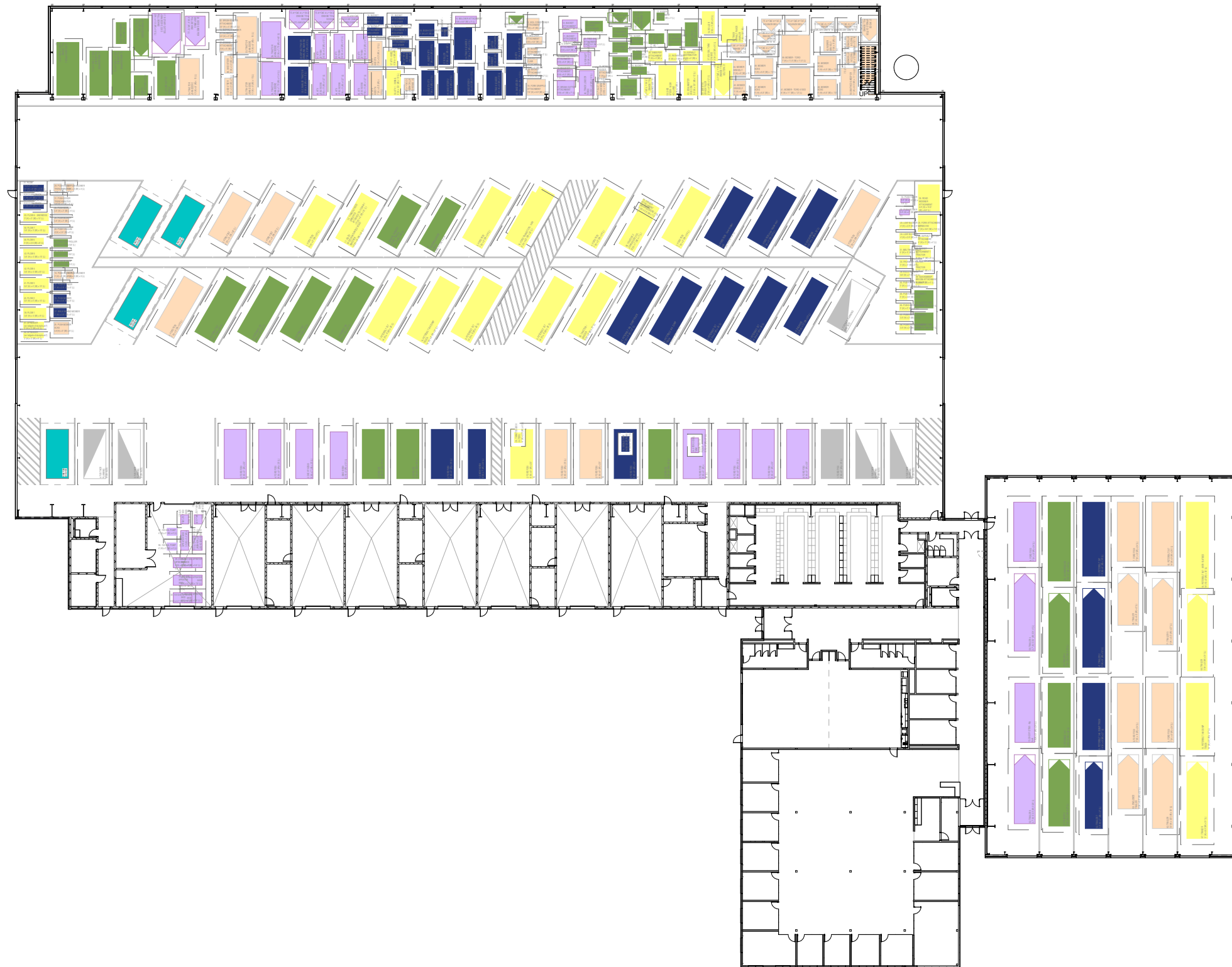
- 01** PROJECT OVERVIEW
- 02** SITE DESIGN
- 03** GROUNDS & NATURAL RESOURCES
- 04** AUXILIARY BUILDINGS
- 05** PROGRAMMING & RESEARCH
- 06** SITE AND SYSTEMS
- 07** SUSTAINABILITY
- 08** PROJECT COST
- 09** SCOPE RECONCILIATION

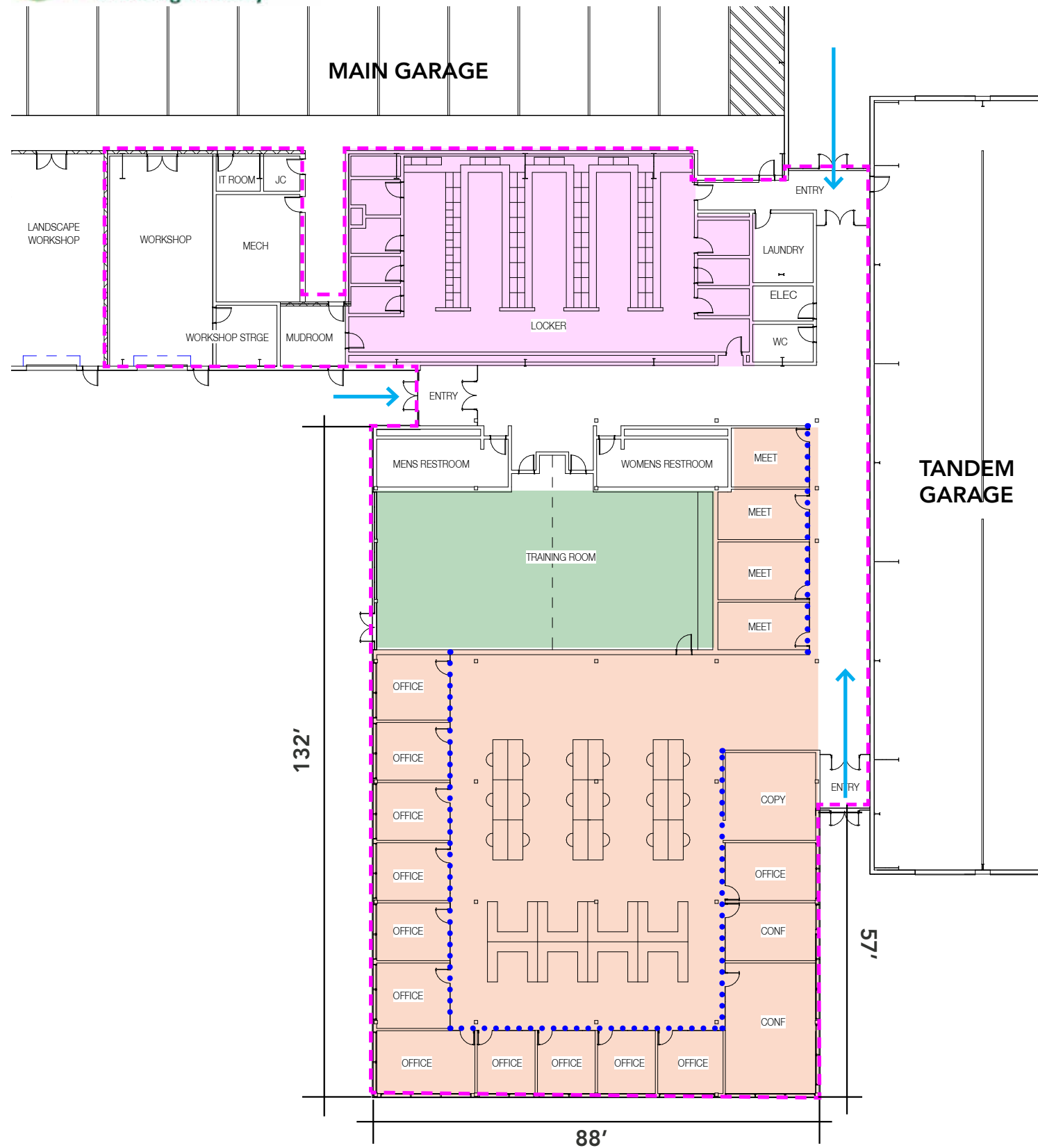










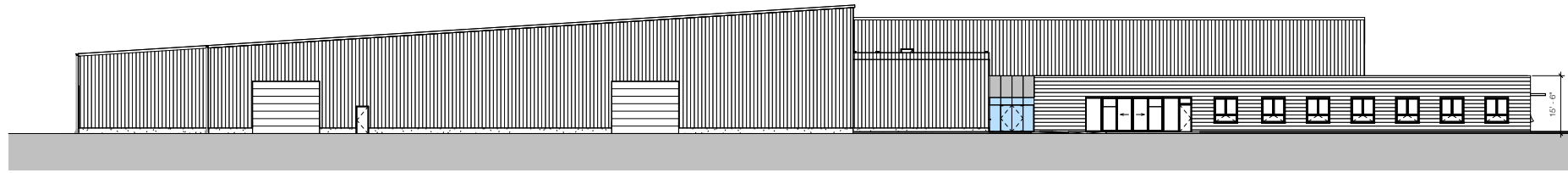


- Conditioned Zone, 20,000sf, 16% of total building
- Training/Lunch Room 2,200sf
- Administration 8,550sf
- Glass Walls

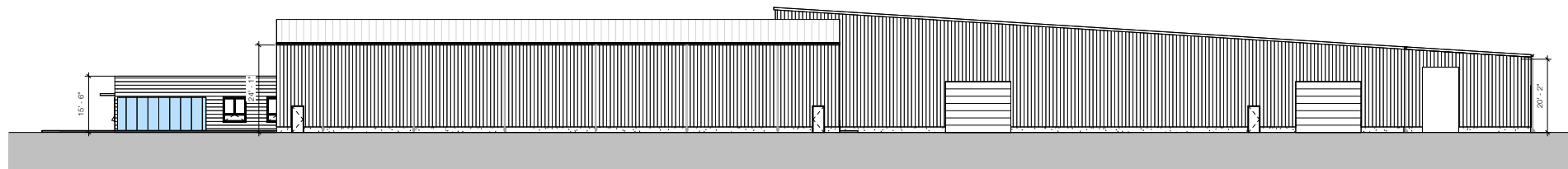
- 12 offices
- 2 conference
- 4 meeting
- 26 workstations: 8 large format + 18 desks

- Locker Room 3,150sf
- 71 full sized lockers
- 28 half sized lockers
- 4 change rooms
- 3 showers

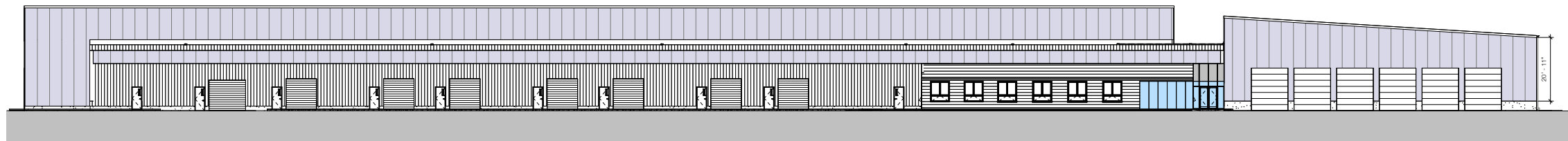




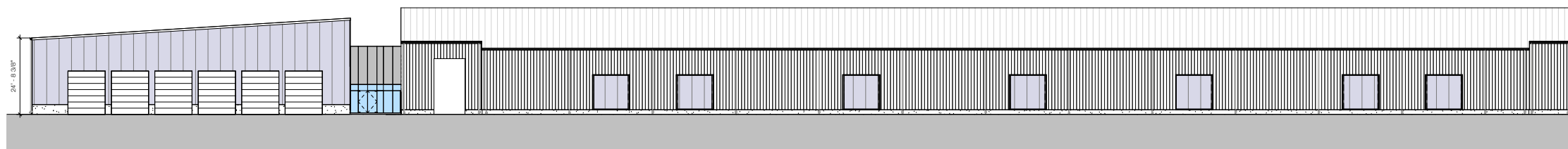
West elevation



East elevation



South elevation



North elevation



Overall



Front Approach



Front View towards Workshops



Looking East towards Workshops and Admin



Approach View



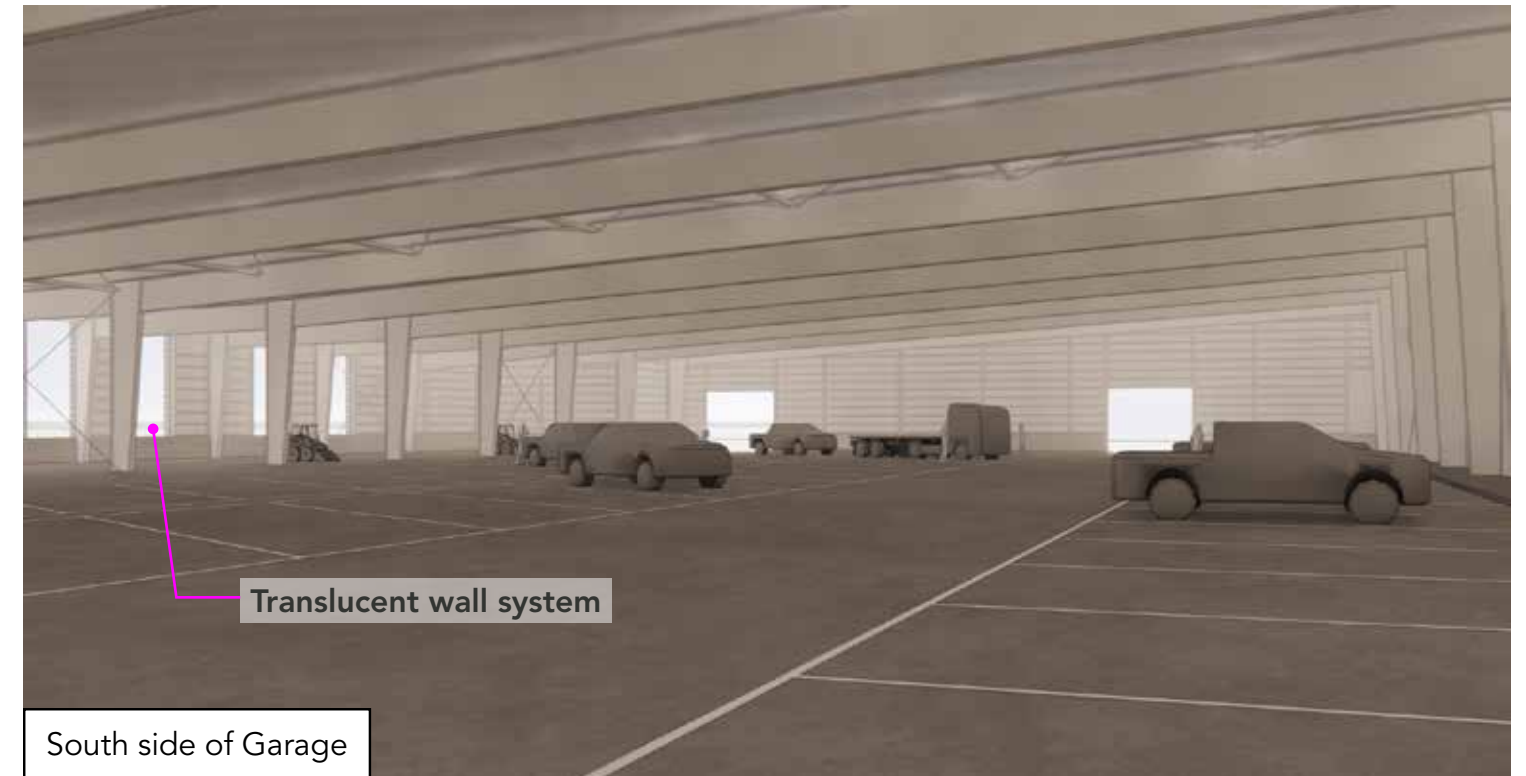
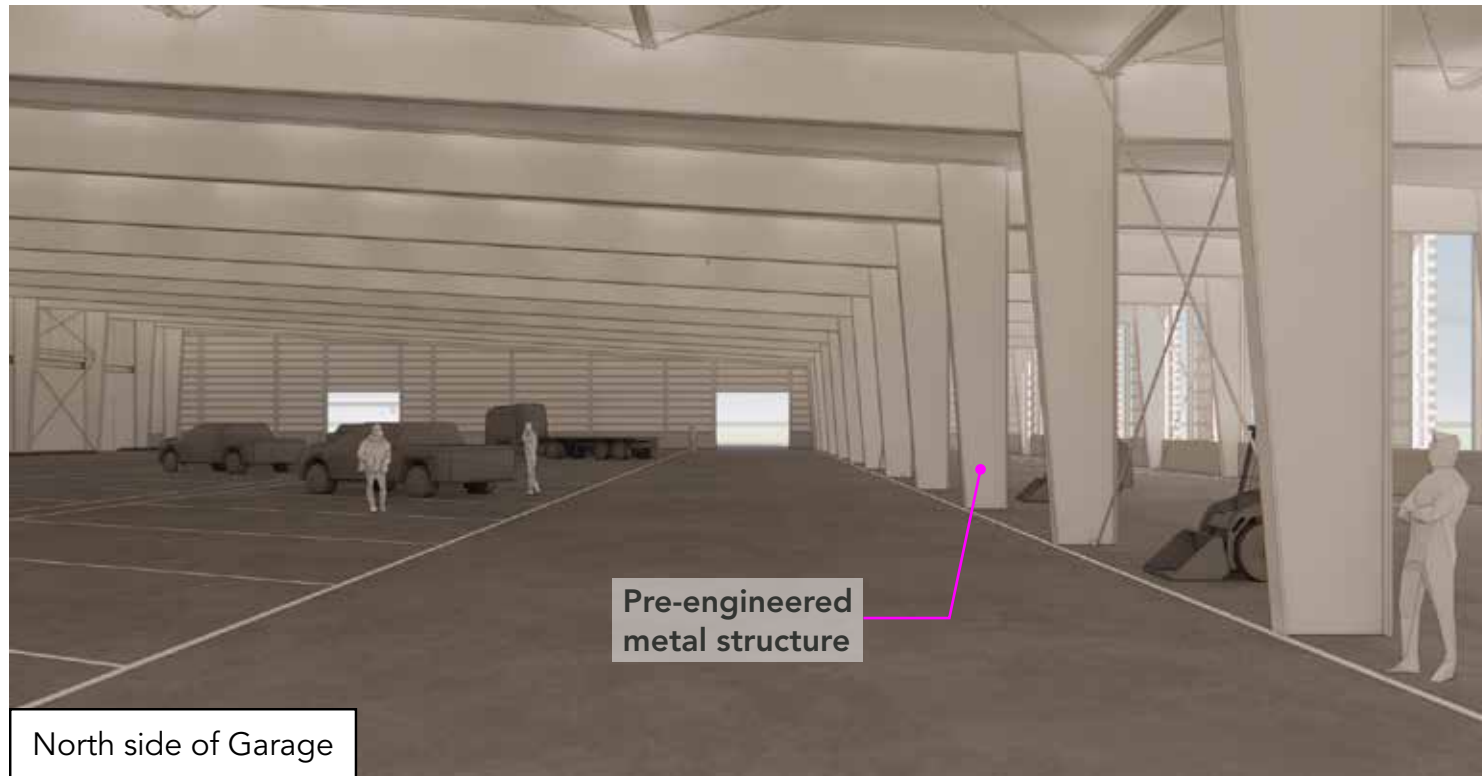
Admin Building and Tandem Garage

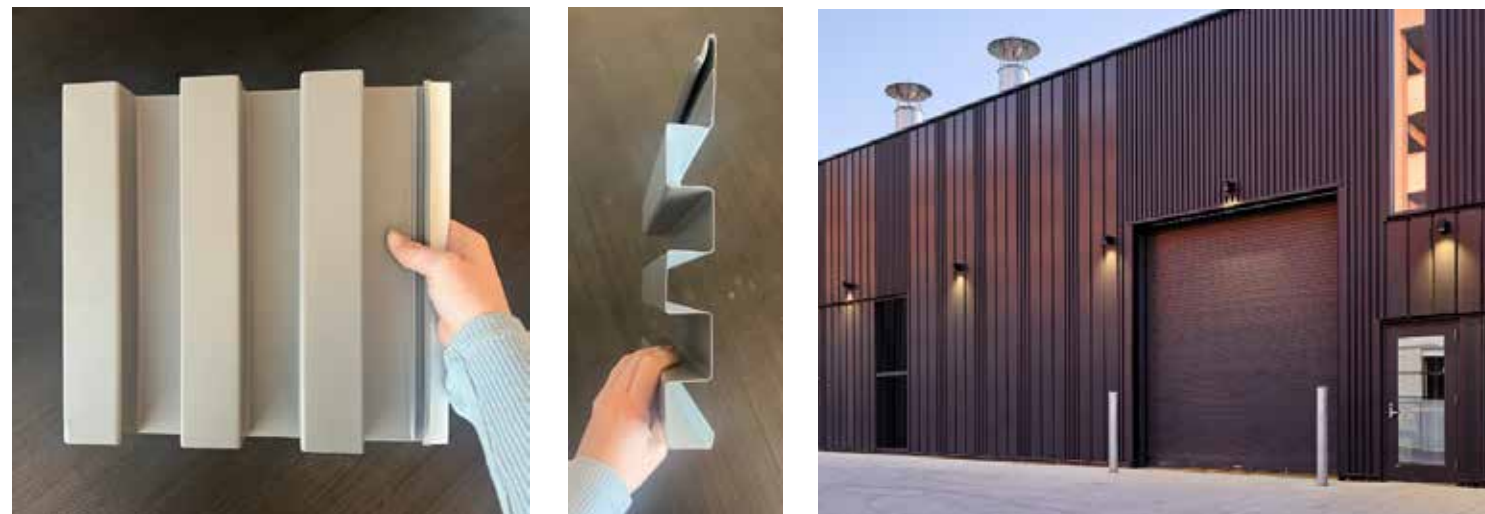


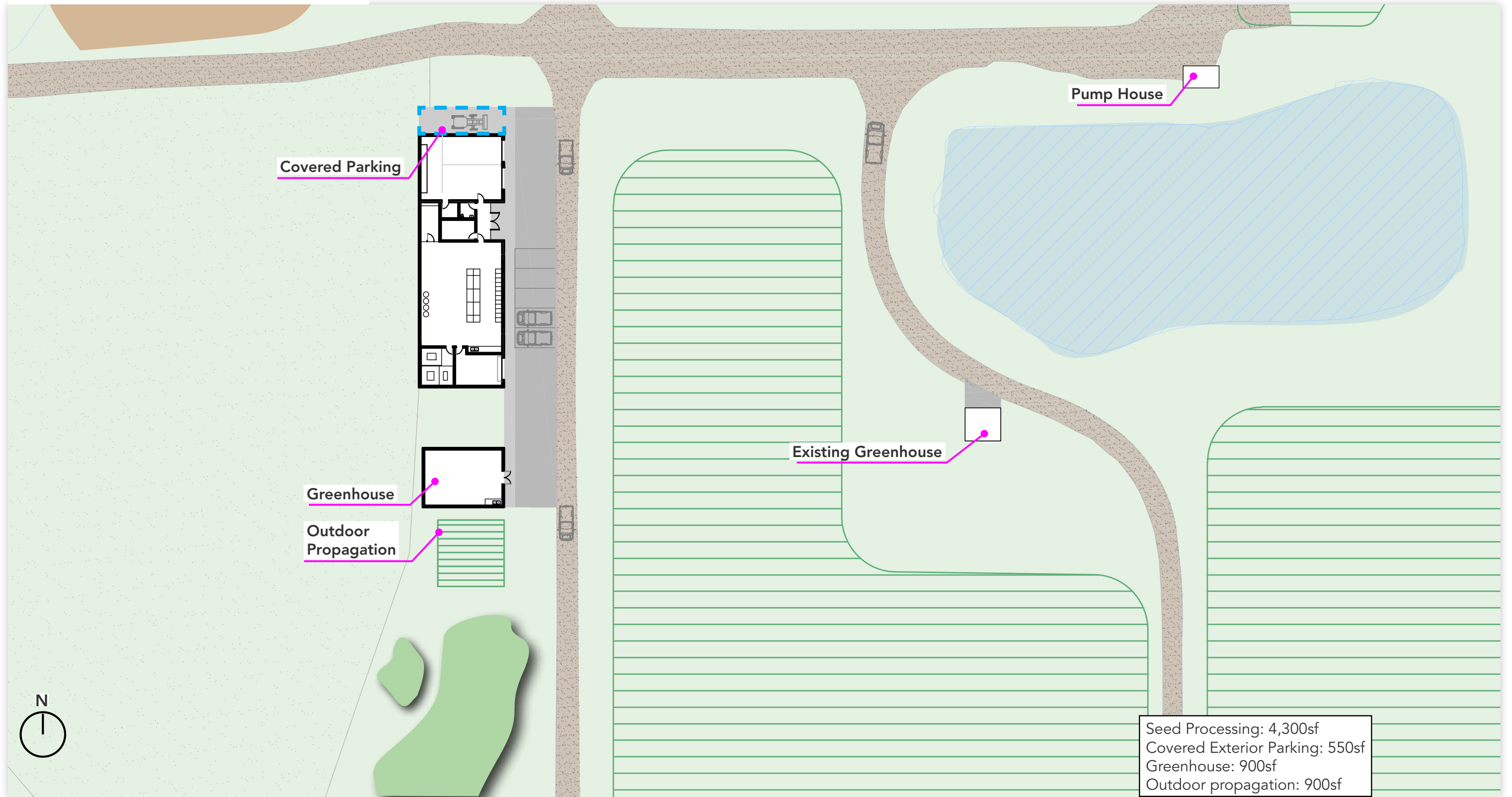
Workshops Facade

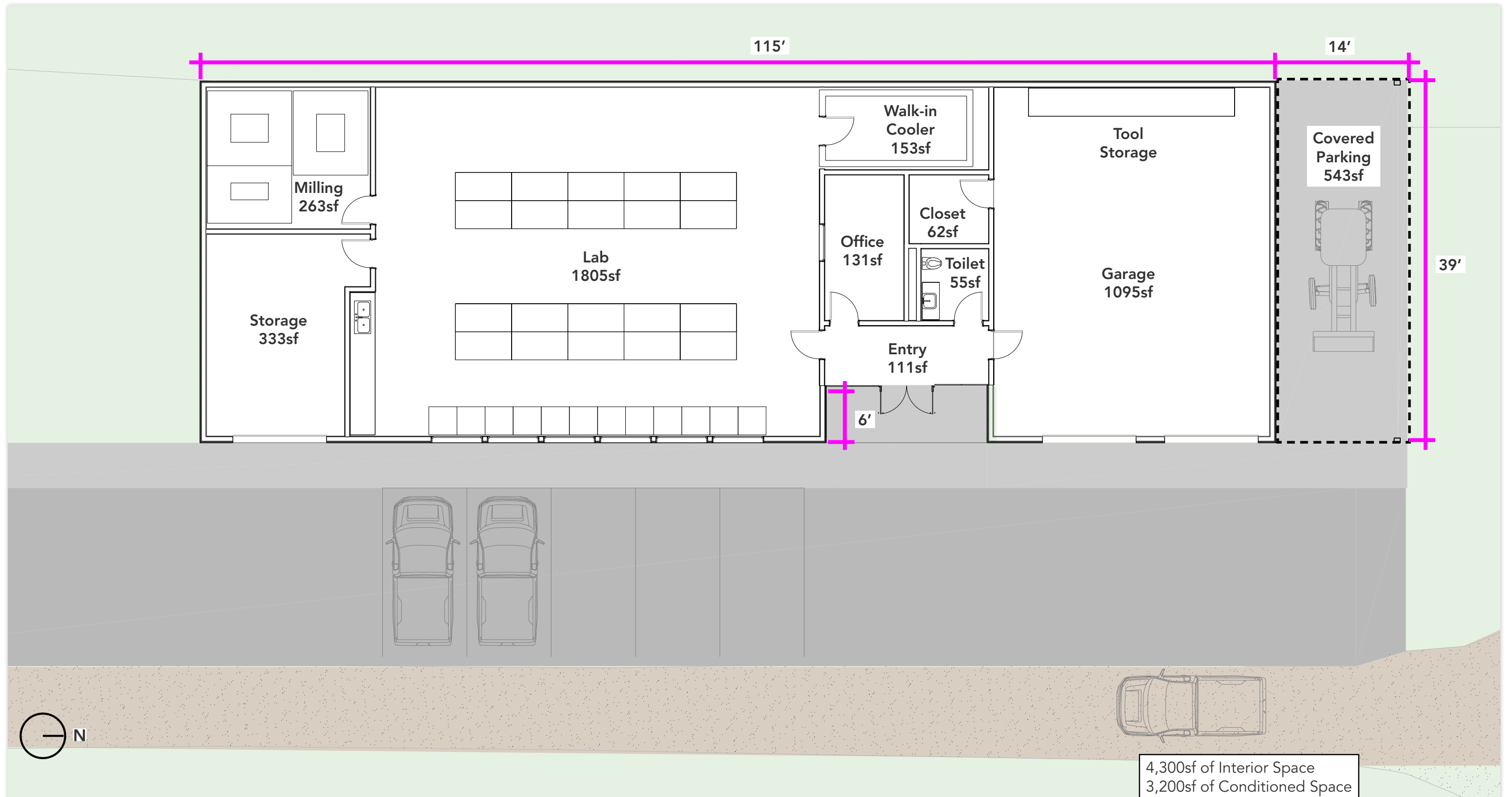


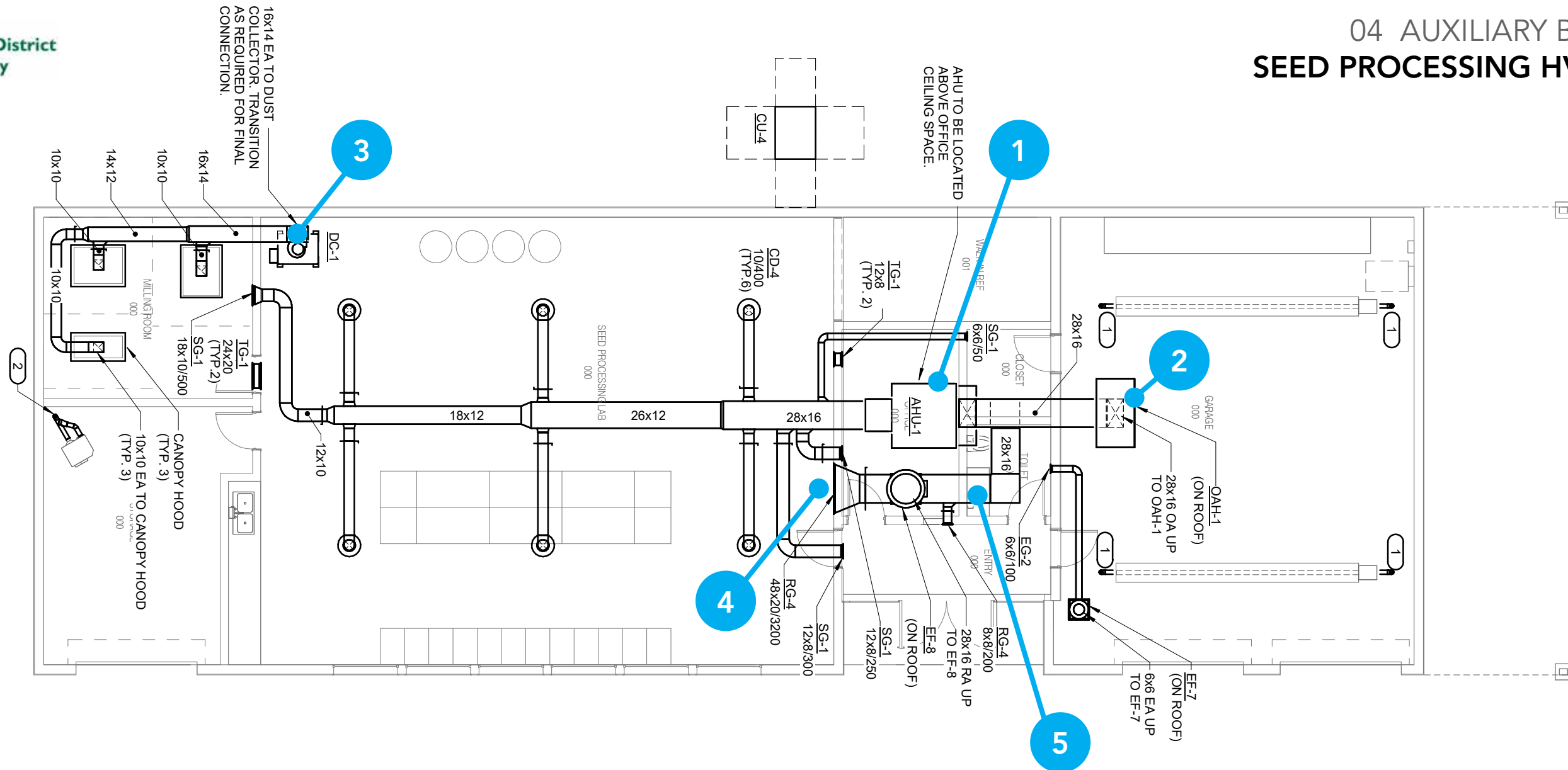
Admin Building Facade







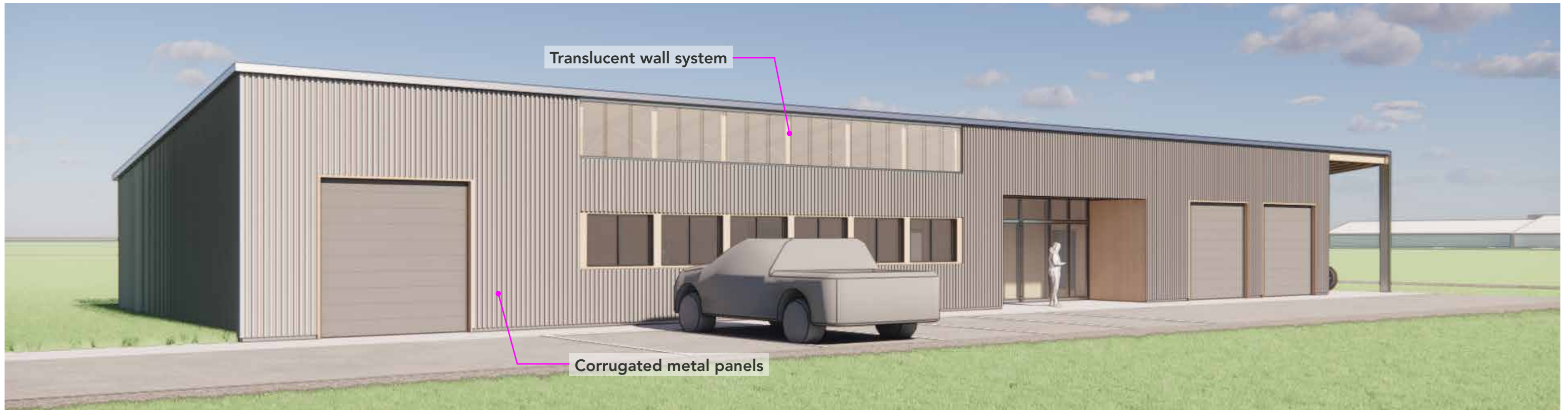




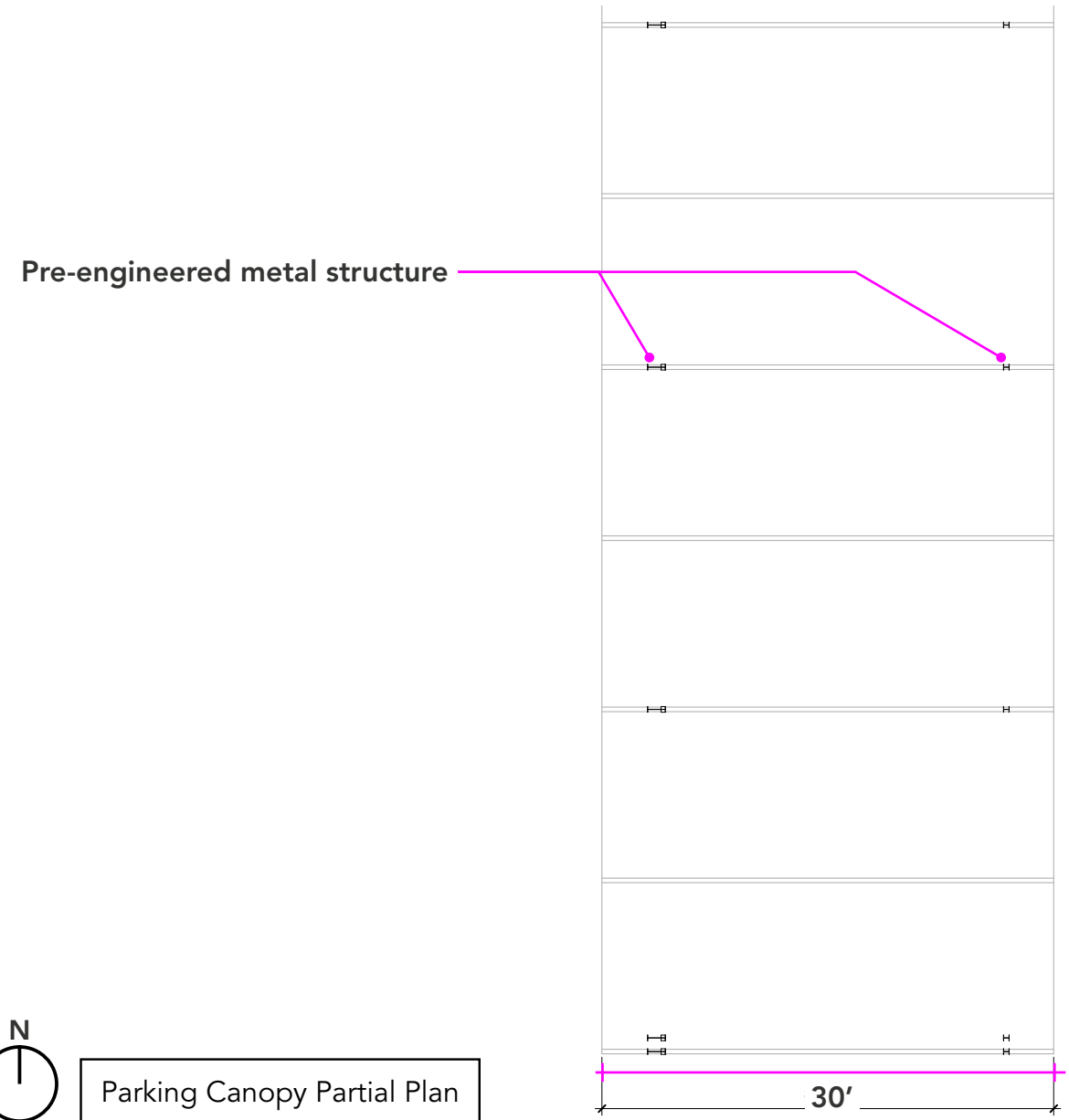
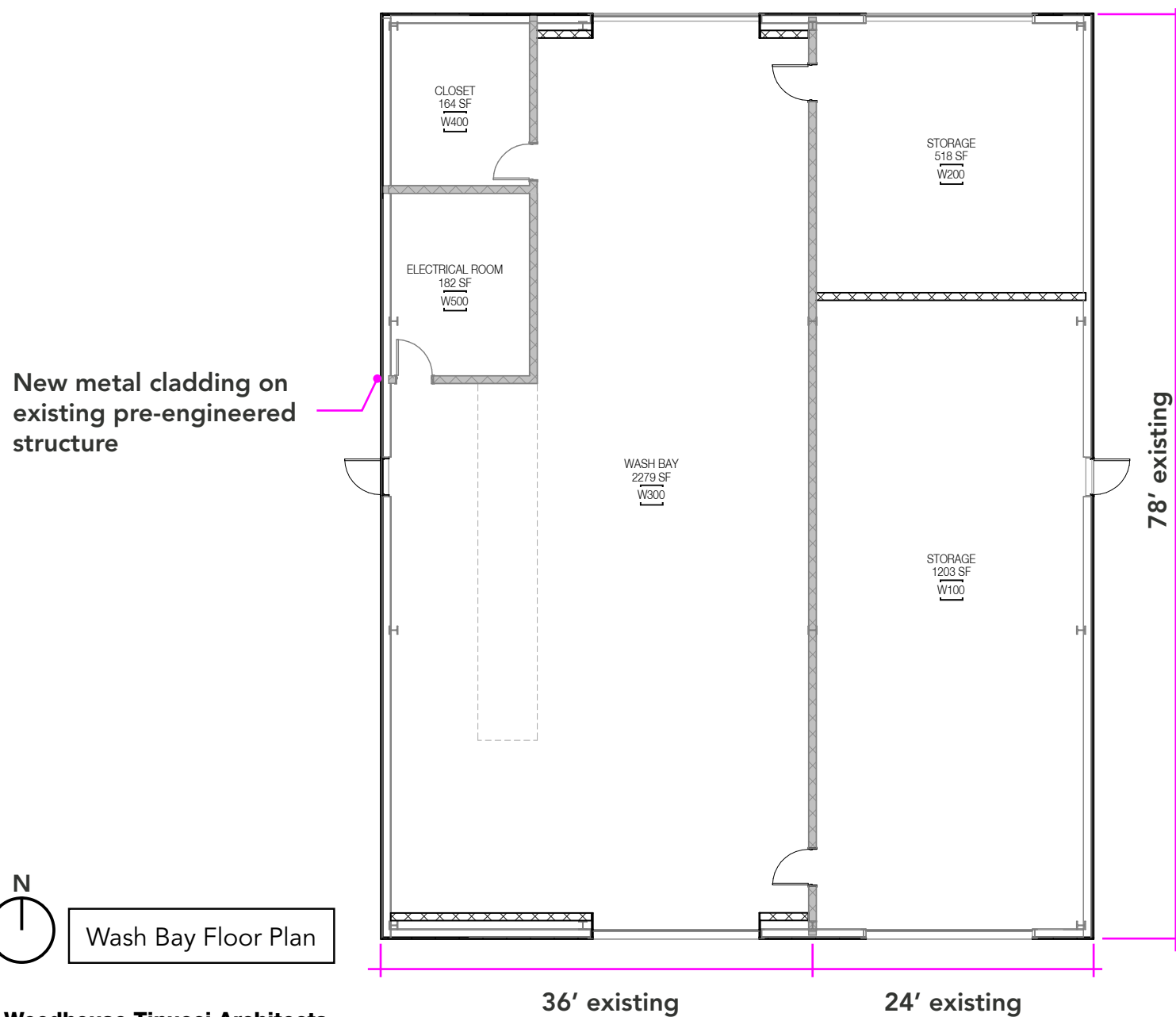
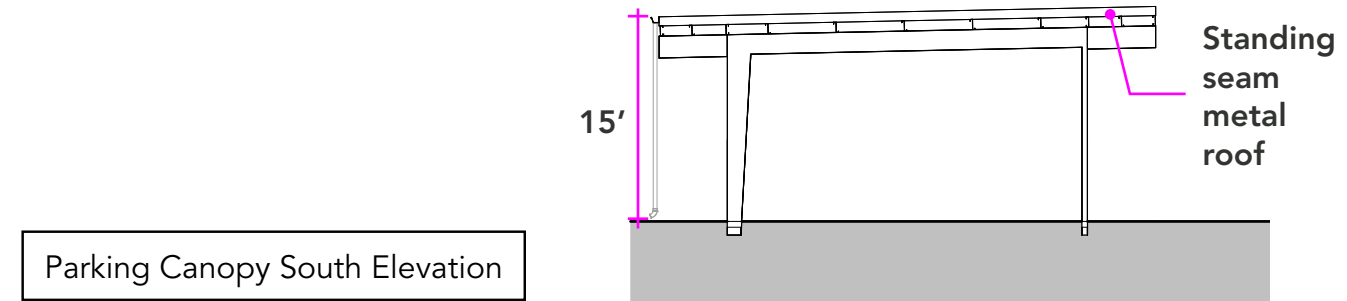
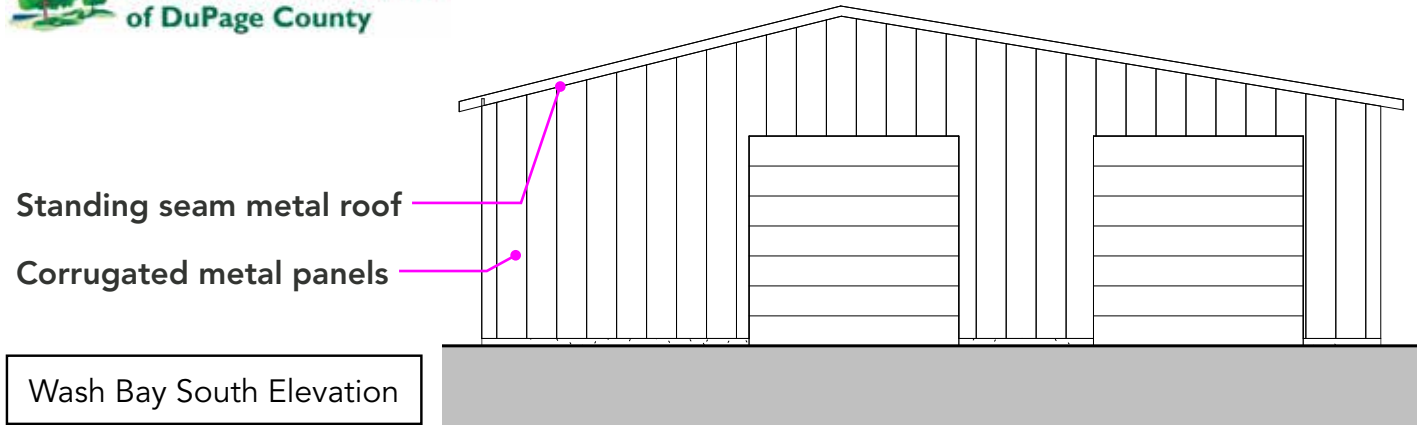
1. 8-ton AHU inside building
2. Fresh Air Makeup Fan on Roof
3. Ducted Dust Collector in Milling Room (only)
4. Air Return in Seed Processing Room
5. Return Air Recycled to AHU











	Primary Program	Qty	Area	Design Development	Schematic Design	Program Compare	Program w/ gross up	Notes
1	<b>Office Space</b>							
	Private Office	12	194	2,330	2,204	1,440		
	Workstation	26	158	4,100	5,852	1,893		
	Printer/Copier	1	200	200	628	250		
	Storage	1	0		0	300		included in printer/ & workstation space
	<b>SUBTOTAL</b>			<b>6,630</b>	<b>8,684</b>	<b>3,883</b>	4,660	
2	<b>Crew Space</b>							
	Workshop	8	825	6,600	7,364	5,600		
	Secured Storage	8	188	1,500	1,492	1,725		
	Full-Time Lockers	82	33	2,700	2,711	1,020		
	Seasonal Staff Lockers	20	0	0	0	86		included in Full-Time Locker Rooms
	<b>SUBTOTAL</b>			<b>10,800</b>	<b>11,567</b>	<b>8,431</b>	10,117	
3	<b>Garage</b>							
	Mid-Sized Trucks	40	470	18,800	18,847	14,151		90,260 total garage space
	Large Truck/Equipment	26	1,685	43,800	54,311	11,811		
	Attachments + Midsized Elements	137	117	16,000	10,888	9,066		
	Carts, ATVs, Tractors	54	216	11,660	10,888	7,047		
	Trailers	45	256	11,500	13,789	14,790		trailers in separate lean-to structure
	<b>SUBTOTAL</b>			<b>101,760</b>	<b>108,723</b>	<b>56,865</b>	79,611	area includes drive aisles
4	<b>Storage</b>							
	Bulk Storage	1	3,800	3,800	3,106	3,484		removed from area total. Mezzanine
	Flammable Storage	0	0		0	614		not yet itemized. put in Crew Secured Storage
	Cold Storage	2	850	1,700	1,950	896		
	<b>SUBTOTAL</b>			<b>1,700</b>	<b>1,950</b>	<b>4,994</b>	5,493	
5	<b>Misc</b>							
	Washbay	1	2,900	2,900	2,575	2,500		cold storage included above
	Chemical Mixing	1	1,670	1,670	1,460	1,800		
	Seed Processing	1	4,300	4,300	4,668	4,064		
	Greenhouse	1	950	950	2,100	2,100		
	Pump House	1	0	0	180	220		
	<b>SUBTOTAL</b>			<b>9,820</b>	<b>10,983</b>	<b>10,684</b>	12,821	
6	<b>Building Support</b>							
	Lunch/Training Room	1	2,260	2,260	2,985	2,000		
	Kitchen	1	0	0	0	300		included in lunch room total
	Conference Room	2	365	730	853	800		
	Crew Meeting Room	4	183	730	930	825		
	Mechanical	4	256	1,025	1,358	1,100		
	Restrooms	10	92	920	1,036	1,620		
	Shower/Change/Mothers	7	80	560	640	450		
	Mud Room	1	160	160	258	200		
	Laundry	1	130	130	253	200		
	Entry	1	120	120	164	400		
	<b>SUBTOTAL</b>	<b>32</b>		<b>6,635</b>	<b>8,477</b>	<b>7,895</b>	9,474	
	<b>Building Subtotal</b>			<b>137,345</b>	<b>150,384</b>	<b>92,752</b>	122,176	
	Circulation / Gross Up			3,055	3,878	29,424	0	
	<b>TOTAL</b>			<b>140,400</b>	<b>154,262</b>	<b>122,176</b>	126.3%	

ITEM	ISSUE	CHAPTER/ARTICLE	Ordinance	Actual
<b>ZONING REQUIREMENTS - DuPage County Unincorporated Zoning</b>				
Township			Winfield 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	
<b>BUILDING REQUIREMENTS - 2021 International Building Code</b>				
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) S1: Moderate Hazard Storage (workshop) S2: Low Hazard Storage (Vehicle Garage)	B: 12,000 sf A3: 2,250 sf S1: 9,000 sf S2: 92,000 sf <b>115,250 sf total</b>
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		<b>Type VB, Sprinklered, 1-story</b> B: 36,000sf (most restrictive) S1: 36,000sf S2: 54,000sf	<b>Allowed per 507.4</b>
Unlimited Area Buildings	507.4		<b>Sprinklered, 1-Story Buildings</b> 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	<b>Complies. Building is allowed to have unlimited area, regardless of Construction Type</b>
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	<b>1hr needed between garage and other occupancies</b>
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	Ratings listed here are based on a Sprinkler System provided throughout.
Construction Classification	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 or of any material permitted by this code	

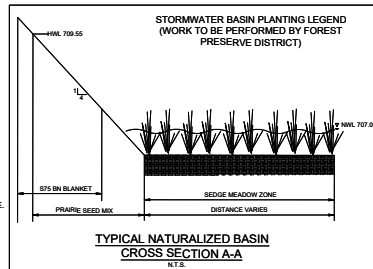
<b>CONSTRUCTION TYPE</b>				
Construction Type	601		TYPE VB	confirmed acceptable by DuPage Building Dept
Primary Structure Frame	601 (table)		0 HR	
Exterior Bearing Walls	601 (table)		0 HR	
Interior Bearing Walls	601 (table)		0 HR	
Nonbearing Interior Walls	601 (table)		0 HR	
Floor Construction	601 (table)		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, Sprinklered 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	

<b>EXIT REQUIREMENTS</b>				
Min Ceiling Ht	1003.2		7'-6"	
Occupant Load	1004.5		Storage = 1/300sf Assembly, Unconcentrated = 1/150sf Business/Office = 1/150sf Classroom = 1/20sf Locker Rooms = 1/50sf B, F, M, S, U = 1/100sf	see plans
Stairway Exit Width	1005.3.1		0.2 inches per occupant	sprinklered
Door Exit Width	1005.3.2		0.15 inches per occupant	sprinklered
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	

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

**NOTES:**

1. ALL PAVEMENT SPOT GRADE ELEVATIONS AND RIM ELEVATIONS WITHIN OR ALONG CURBS AND GUTTER REFER TO EDGE OF PAVEMENT ELEVATIONS UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS SHOWN DEPICT FINISHED GRADE UNLESS OTHERWISE NOTED. SUBTRACT TOPSOIL THICKNESS OR PAVEMENT SECTION TO ESTABLISH SUBGRADE ELEVATIONS.
3. PROVIDE 1.50% CROSS SLOPE AND 4.00% MAXIMUM LONGITUDINAL SLOPE ON ALL SIDEWALKS AND PEDESTRIAN PATHS UNLESS OTHERWISE INDICATED. PLEASE NOTE THAT THE ILLINOIS ACCESSIBILITY CODE REQUIRES A MAXIMUM CONSTRUCTED CROSS SLOPE OF 2.00% AND LONGITUDINAL SLOPE OF 5.00%.
4. DETENTION BASINS TO BE PLANTED WITH NATIVE PLANTS TO PROVIDE WATER QUALITY BENEFITS.



IN PROGRESS  
NOT FOR  
CONSTRUCTION

Issued for pricing 04.05.2024

general notes

project team

owner:  
Forest Preserve of DuPage County  
35500 Naperville Road  
Naperville, Illinois 60563  
630.953.7200

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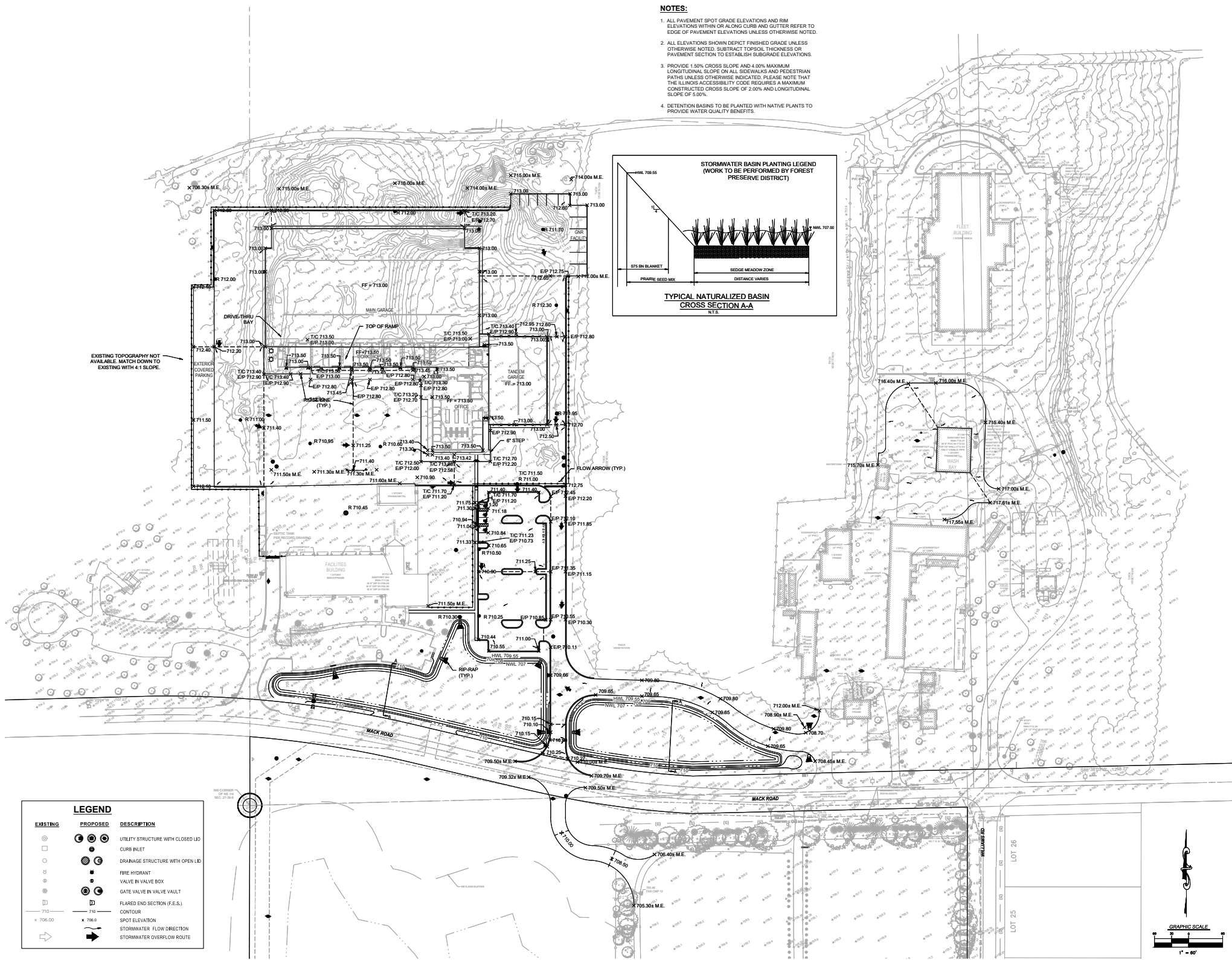
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Grounds and Natural  
Resources Management  
Maintenance Campus  
Forest Preserve District of DuPage County  
Blackwell Forest Preserve  
296225 Mack Road  
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GRADING PLAN - NORTH

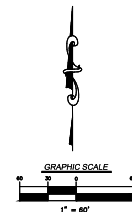
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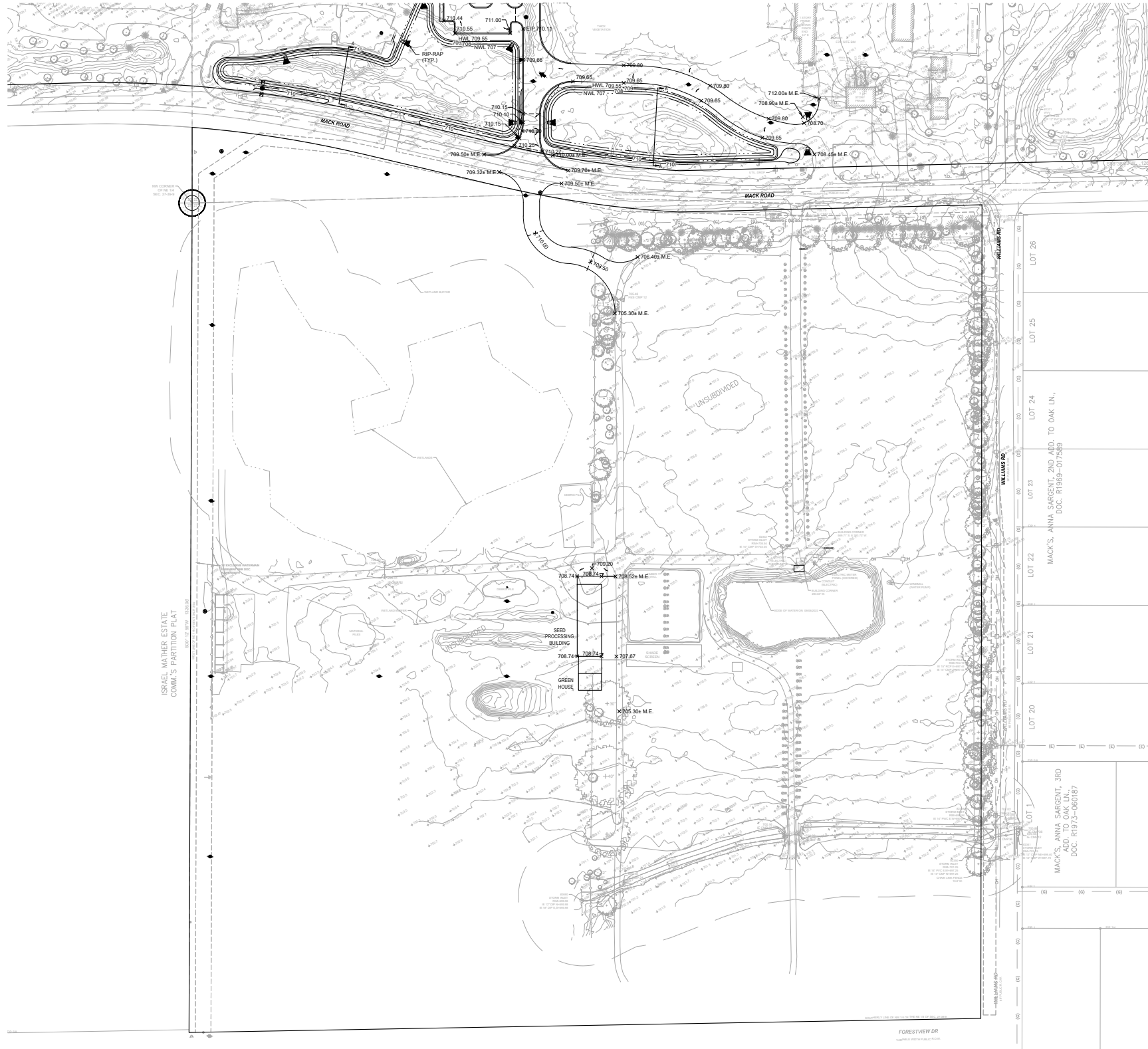


EXISTING	PROPOSED	DESCRIPTION
⊙	⊙	UTILITY STRUCTURE WITH CLOSED LID
□	□	CURB INLET
○	○	DRAINAGE STRUCTURE WITH OPEN LID
⊙	⊙	FIRE HYDRANT
⊙	⊙	VALVE IN VALVE BOX
⊙	⊙	GATE VALVE IN VALVE VAULT
⊙	⊙	FLARED END SECTION (F.E.S.)
710	710	CONTOUR
708.00	708.00	SPOT ELEVATION
→	→	STORMWATER FLOW DIRECTION
→	→	STORMWATER OVERFLOW ROUTE

FOR CONTINUATION SEE C4.2



FOR CONTINUATION SEE C4.1



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—	—	CONTOUR
•	•	SPOT ELEVATION
→	→	STORMWATER FLOW DIRECTION
→	→	STORMWATER OVERFLOW ROUTE

project team

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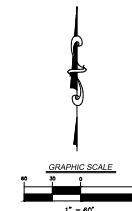
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Grounds and Natural  
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296220 Mack Road  
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GRADING PLAN - SOUTH

C4.2



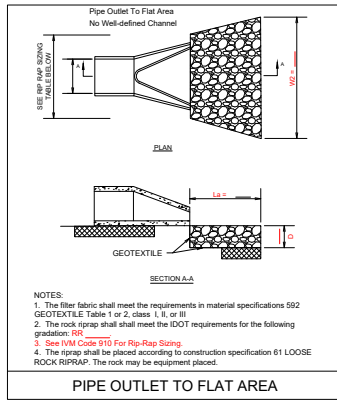
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**STORMWATER DETENTION SUMMARY**

EXISTING VOLUME TO BE RELOCATED:	4.08 AC-FT
PROPOSED DETENTION VOLUME:	4.08 AC-FT
PCBMP REQUIREMENT:	36798 CF

**SANITARY LINE SUMMARY**

LENGTH FROM EXISTING TO BUILDING:	2612 FT
SLOPE (866.44 TO 709.50):	0.54%
LENGTH FROM INTERSECTION TO ANCILLARY BUILDING:	1122 FT
SLOPE (706.44 TO 712.00):	0.50%



**RIP RAP SIZING TABLE**

STRUCTURE	ROCK GRADATION	W1	W2	L1	L2
FES 1-1	NO. 4	1.5	1.5	2.0	2.0
FES 2-1	NO. 3	1.5	1.5	1.5	1.5
FES 3-1	NO. 3	1.5	1.5	1.5	1.5
FES 4-1	NO. 3	1.5	1.5	1.5	1.5
FES 5-1	NO. 3	1.5	1.5	1.5	1.5
FES 6-1	NO. 3	1.5	1.5	1.5	1.5
FES 7-1	NO. 3	1.5	1.5	1.5	1.5
FES 8-1	NO. 3	1.5	1.5	1.5	1.5
FES 9-1	NO. 3	1.5	1.5	1.5	1.5
FES 10-1	NO. 3	1.5	1.5	1.5	1.5

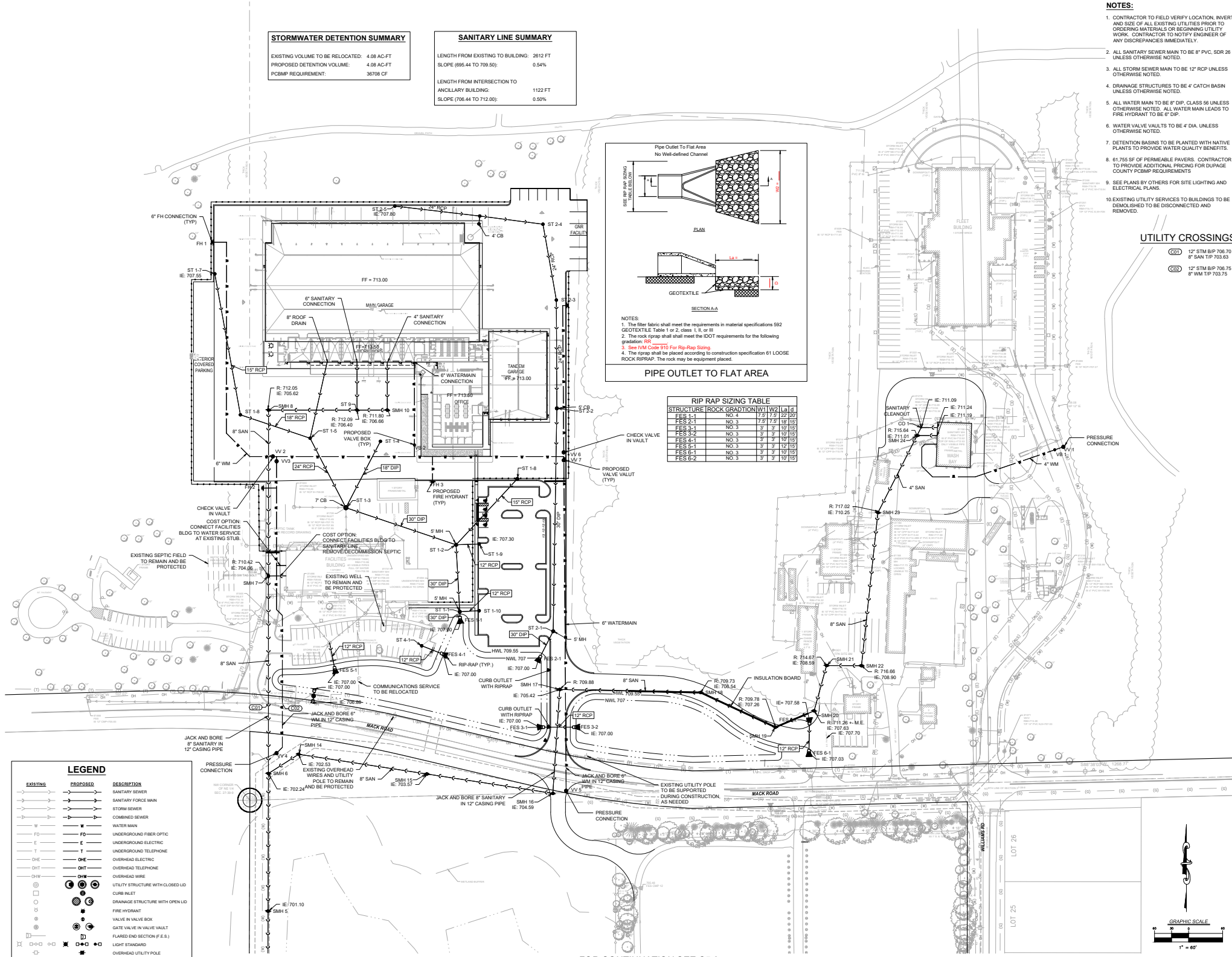
- NOTES:**
- CONTRACTOR TO FIELD VERIFY LOCATION, INVERT, AND SIZE OF ALL EXISTING UTILITIES PRIOR TO ORDERING MATERIALS OR BEGINNING UTILITY WORK. CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES IMMEDIATELY.
  - ALL SANITARY SEWER MAIN TO BE 8" PVC, SDR 26 UNLESS OTHERWISE NOTED.
  - ALL STORM SEWER MAIN TO BE 12" RCP UNLESS OTHERWISE NOTED.
  - DRAINAGE STRUCTURES TO BE 4' CATCH BASIN UNLESS OTHERWISE NOTED.
  - ALL WATER MAIN TO BE 8" DIP, CLASS 56 UNLESS OTHERWISE NOTED. ALL WATER MAIN LEADS TO FIRE HYDRANT TO BE 8" DIP.
  - WATER VALVE VAULTS TO BE 4' DIA. UNLESS OTHERWISE NOTED.
  - DETENTION BASINS TO BE PLANTED WITH NATIVE PLANTS TO PROVIDE WATER QUALITY BENEFITS.
  - 61,758 SF OF PERMEABLE PAVERS. CONTRACTOR TO PROVIDE ADDITIONAL PRICING FOR DUPage COUNTY PCBMP REQUIREMENTS.
  - SEE PLANS BY OTHERS FOR SITE LIGHTING AND ELECTRICAL PLANS.
  - EXISTING UTILITY SERVICES TO BUILDINGS TO BE DEMOLISHED TO BE DISCONNECTED AND REMOVED.

IN PROGRESS  
NOT FOR  
CONSTRUCTION

Issued for pricing 04.05.2024

**UTILITY CROSSINGS**

- 12" STM B/P 706.70  
8" SAN T/P 703.63
- 12" STM B/P 706.75  
8" WM T/P 703.75



**LEGEND**

EXISTING	PROPOSED	DESCRIPTION
—	—	SANITARY SEWER
—	—	SANITARY FORCE MAIN
—	—	STORM SEWER
—	—	COMBINED SEWER
—	—	WATER MAIN
—	—	UNDERGROUND FIBER OPTIC
—	—	UNDERGROUND ELECTRIC
—	—	UNDERGROUND TELEPHONE
—	—	OVERHEAD ELECTRIC
—	—	OVERHEAD TELEPHONE
—	—	OVERHEAD WIRE
—	—	UTILITY STRUCTURE WITH CLOSED LD
—	—	CURB INLET
—	—	DRAINAGE STRUCTURE WITH OPEN LD
—	—	FIRE HYDRANT
—	—	VALVE IN VALVE BOX
—	—	GATE VALVE IN VALVE VAULT
—	—	FLARED END SECTION (F.E.S.)
—	—	LIGHT STANDARD
—	—	OVERHEAD UTILITY POLE

**project team**

owner:  
Forest Preserve of DuPage County  
25500 Naperville Road  
Wheaton, Illinois 60189  
630.933.7200

arch:  
V2 Companies  
444 N Wells Street, Suite 602  
Chicago, Illinois 60654  
630.774.9200

standard:  
M&E Corp  
263 Sherman Blvd, Suite 550  
Naperville, Illinois 60563  
630.527.2320

mechanical electrical plumbing:  
M&E Corp  
263 Sherman Blvd, Suite 550  
Naperville, Illinois 60563  
630.527.2320

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

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**Grounds and Natural Resources Management**  
Maintenance Campus

Forest Preserve District of DuPage County  
Blackwell Forest Preserve  
296220 Mack Road  
West Chicago, IL 60185

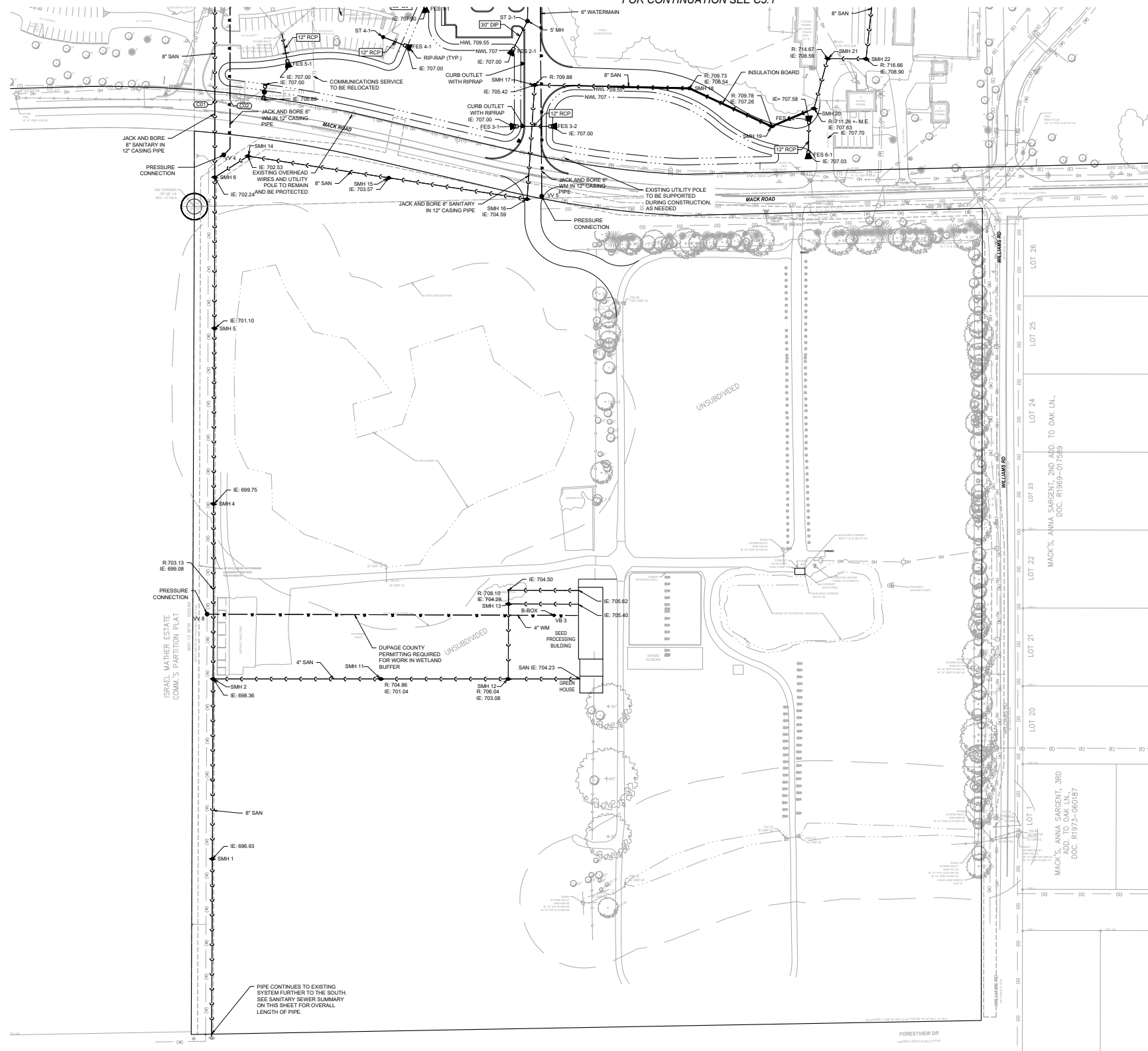
UTILITY PLAN - NORTH

**C5.1**

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FOR CONTINUATION SEE C5.1



**NOTES:**

1. CONTRACTOR TO FIELD VERIFY LOCATION, INVERT, AND SIZE OF ALL EXISTING UTILITIES PRIOR TO ORDERING MATERIALS OR BEGINNING UTILITY WORK. CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES IMMEDIATELY.
2. ALL SANITARY SEWER MAIN TO BE 8" PVC, SDR 26 UNLESS OTHERWISE NOTED.
3. ALL STORM SEWER MAIN TO BE 12" RCP UNLESS OTHERWISE NOTED.
4. DRAINAGE STRUCTURES TO BE 4' CATCH BASIN UNLESS OTHERWISE NOTED.
5. ALL WATER MAIN TO BE 8" DIP, CLASS 56 UNLESS OTHERWISE NOTED. ALL WATER MAIN LEADS TO FIRE HYDRANT TO BE 6" DIP.
6. WATER VALVE VAULTS TO BE 4' DIA. UNLESS OTHERWISE NOTED.
7. OPTION 1: DETENTION BASINS TO BE PLANTED WITH NATIVE PLANTS TO PROVIDE WATER QUALITY BENEFITS. OPTION 2: 6175 SF OF PERMEABLE PAVERS.
8. SEE PLANS BY OTHERS FOR SITE LIGHTING AND ELECTRICAL PLANS.
9. EXISTING UTILITY SERVICES TO BUILDINGS TO BE DEMOLISHED TO BE DISCONNECTED AND REMOVED.

**IN PROGRESS  
NOT FOR  
CONSTRUCTION**

Issued for pricing 04.05.2024  
general notes

**LEGEND**

EXISTING	PROPOSED	DESCRIPTION
→	→	SANITARY SEWER
→	→	SANITARY FORCE MAIN
→	→	STORM SEWER
→	→	COMBINED SEWER
—	—	WATER MAIN
—	—	UNDERGROUND FIBER OPTIC
—	—	UNDERGROUND ELECTRIC
—	—	UNDERGROUND TELEPHONE
—	—	OVERHEAD ELECTRIC
—	—	OVERHEAD TELEPHONE
—	—	OVERHEAD WIRE
⊙	⊙	UTILITY STRUCTURE WITH CLOSED LID
⊙	⊙	CURB INLET
⊙	⊙	DRAINAGE STRUCTURE WITH OPEN LID
⊙	⊙	FIRE HYDRANT
⊙	⊙	VALVE IN VALVE BOX
⊙	⊙	GATE VALVE IN VALVE VAULT
⊙	⊙	PLANTED END SECTION (P.E.S.)
⊙	⊙	LIGHT STRUCTURE
⊙	⊙	OVERHEAD UTILITY POLE

**STORMWATER DETENTION SUMMARY**

EXISTING VOLUME TO BE RELOCATED:	4.08 AC-FT
PROPOSED DETENTION VOLUME:	4.39 AC-FT
PCBMP REQUIREMENT:	35198 CF

**SANITARY LINE SUMMARY**

LENGTH FROM EXISTING MANHOLE AT BUILDING:	2612 FT (ESTIMATE)
SLOPE (855.44 TO 709.5):	0.54%
LENGTH FROM INTERSECTION TO ANGLIARY BUILDING:	1122 FT
SLOPE (706.44 TO 711.1):	0.42%

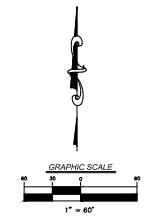
project team  
owner:  
Forest Preserve of DuPage County  
25500 Naperville Road  
Wheaton, Illinois 60189  
630.333.7200  
civil:  
V3 Companies  
444 N Wells Street, Suite 602  
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630.774.9200  
structural:  
IMEG Corp  
263 Shuman Blvd, Suite 550  
Naperville, Illinois 60563  
630.527.2320  
mechanical/electrical/plumbing:  
IMEG Corp  
263 Shuman Blvd, Suite 550  
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230 W Superior 6th Flr Chicago IL 60654  
Tel 312 943 3120 www.woodtinarch.com

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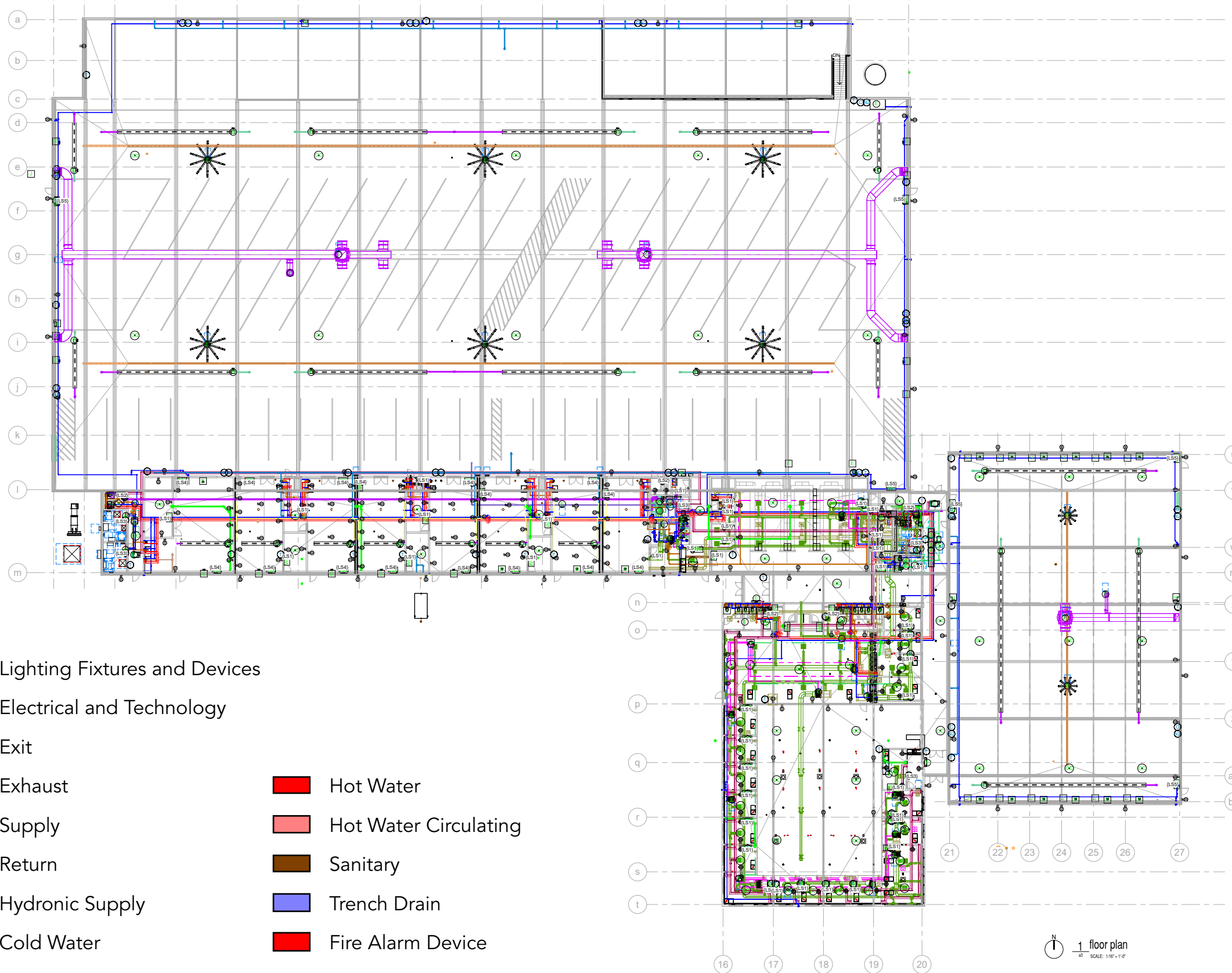
**Grounds and Natural  
Resources Management  
Maintenance Campus**  
Forest Preserve District of DuPage County  
Blackwell Forest Preserve  
296222 Mack Road  
West Chicago, IL 60185

UTILITY PLAN - SOUTH

**C5.2**



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Mechanical Systems:

Garages:

1. Overhead Radiant Tube Heaters (gas)
2. Overhead Fans
3. Ventilation/Purge Fume Exhaust System

Workshops:

1. Overhead Radiant Tube Heaters (gas)
2. Ventilation/Exhaust

Offices/Admin:

1. Variable Refrigerant Flow System with Dedicated Outdoor Air System (on roof)
2. Supplemental Baseboard radiant heating (gas)

Seed:

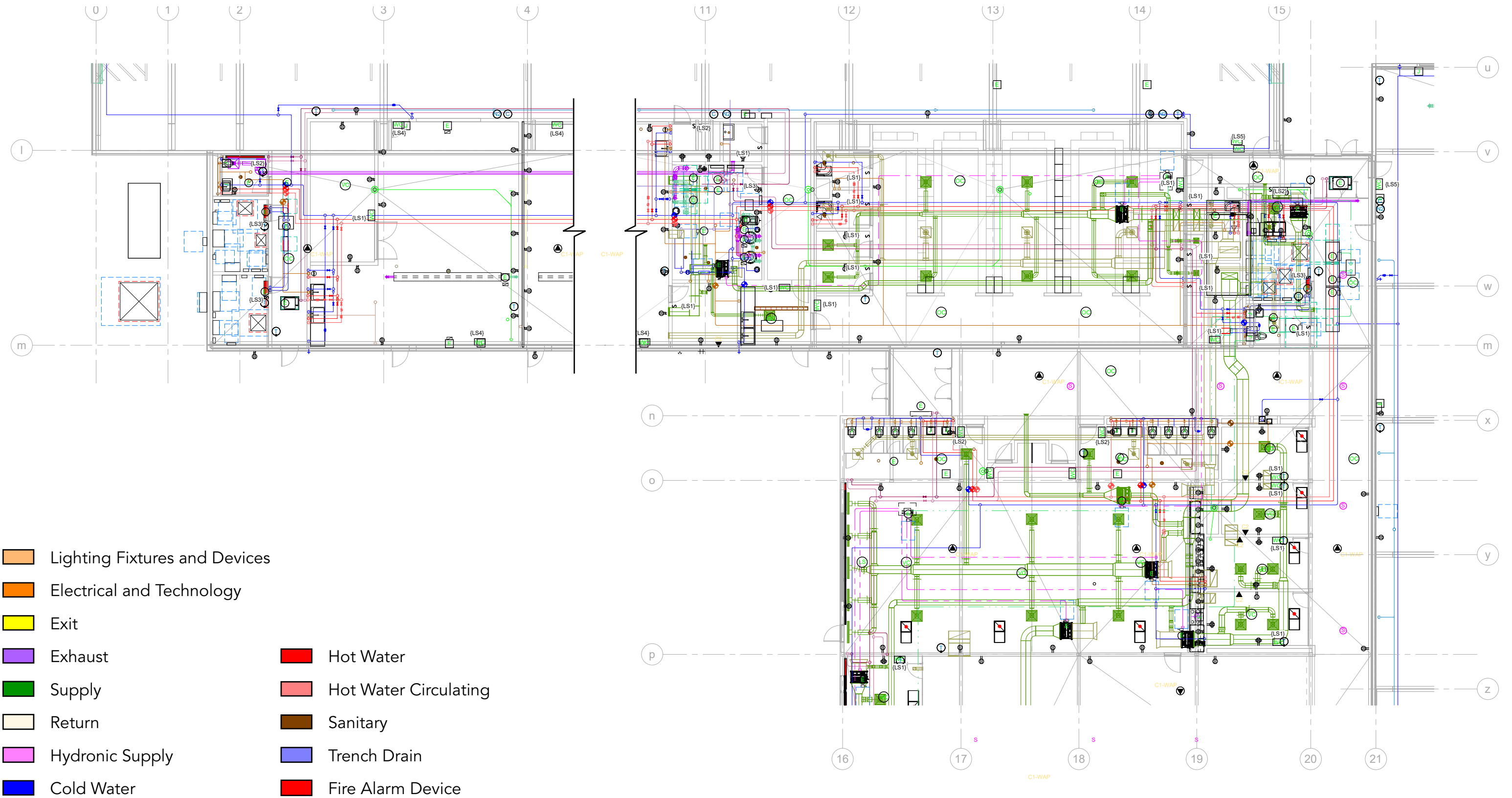
1. 8-ton Indoor Air Handling Unit for heating and cooling
2. Dust Collector Exhaust System

Fire Protection:

1. Garages: Ordinary Group 1
2. Workshops: Ordinary Group 1
3. Office/Admin: Light Hazard
4. Seed: Ordinary Group 1

Electrical:

1. Electrical Service: 1200Amp, 480/277v, 4W/3Ph
2. Emergency Generator: 250kW/312.5 kVA
3. Solar PV: 600kW



- Lighting Fixtures and Devices
- Electrical and Technology
- Exit
- Exhaust
- Supply
- Return
- Hydronic Supply
- Cold Water
- Hot Water
- Hot Water Circulating
- Sanitary
- Trench Drain
- Fire Alarm Device

### FEATURES TO BE INCLUDED

- Native and drought tolerant plantings
- BMPS for stormwater pollution prevention and rainwater control
- High performance building envelope  
EUI: 30
- High Efficiency mechanical systems
- Low-flow plumbing fixtures
- Daylight sensing for reduced lighting power density
- Rainwater capture and reuse  
10,000 gallon rainwater cistern
- Photo voltaic rooftop solar panels  
600kW (100% electrical use offset)
- Capacity for electric vehicle fleet expansion
- Low embodied carbon materials  
Wood CLT structure within Administration building
- Recycled materials
- Dark Sky exterior lighting design

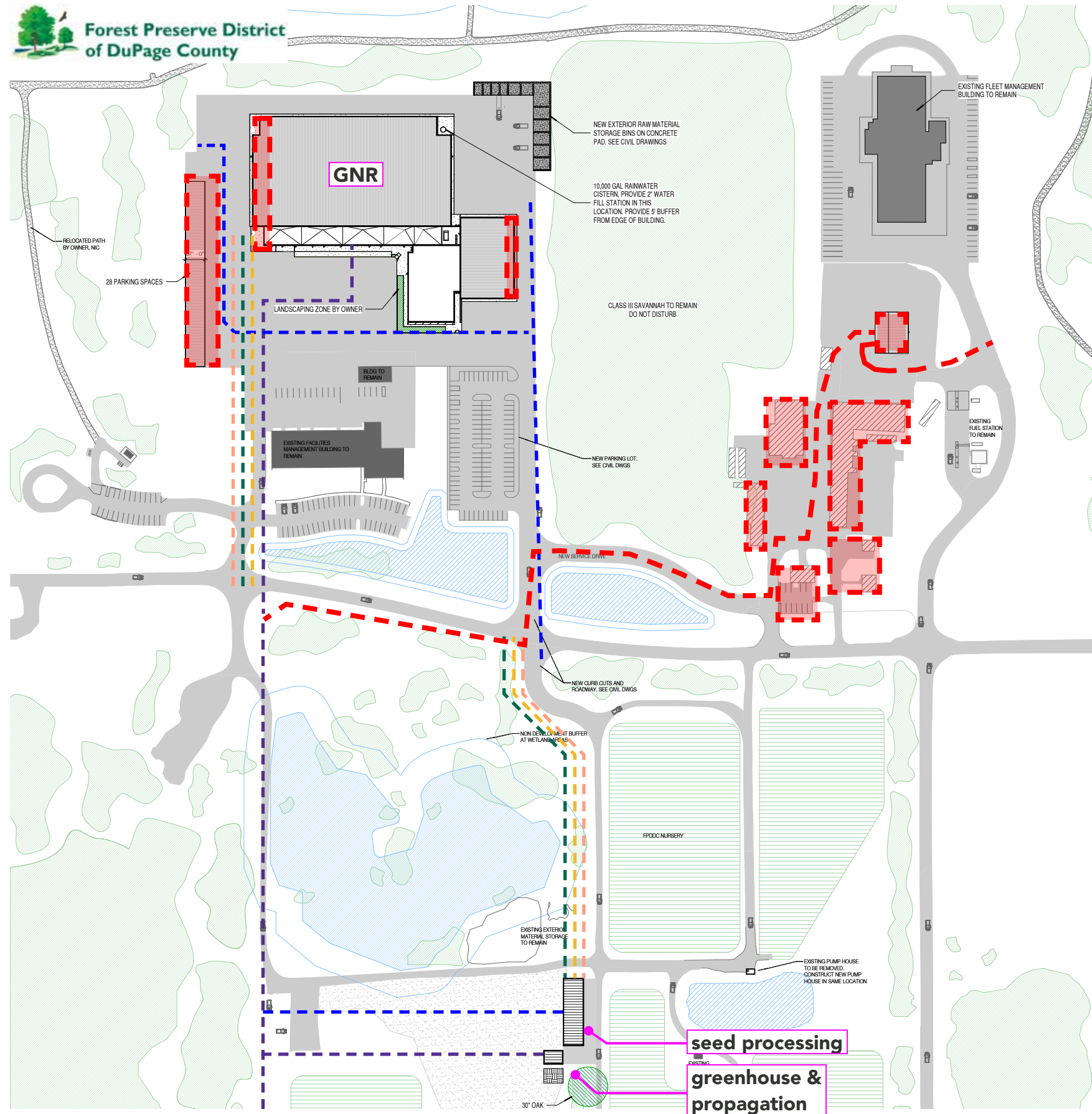


75% DD COSTING MODEL				
Total Gross Area:		141,600 SF		
COST SUMMARY	September 2023 Estimate			
	Construction Duration 18 Months - March '25 to August '26			
	TOTAL COST	RATE/SF	% of Total	
<b>1. Sitework/Utility North of Mack Road</b>	<b>\$8,033,959</b>		<b>20.0%</b>	
Site Preparations	\$736,313			
Paved Surfaces	\$3,003,538			
Site Improvements	\$652,804			
Site Civil/Mechanical Utilities	\$2,879,928			
Site Electrical Utilities	\$574,365			
Telecommunications Distribution	\$70,043			
New Perimeter Fence	\$116,968			
<b>2. Sitework/Utility South of Mack Road</b>	<b>\$952,284</b>		<b>2.4%</b>	
Site Preparations	\$54,114			
Site Civil/Mechanical Utilities	\$731,752			
Paved Surfaces	\$165,388			
Site Electrical Utilities	\$1,030			
<b>3A. PEMB Garages</b>	<b>\$16,878,763</b>	<b>\$186.51</b>	<b>42.1%</b>	
Substructure	\$3,500,538	\$38.68		
Superstructure	\$8,605,701	\$95.09		
Shell	\$1,391,576	\$15.38		
Fire Protection Systems	\$782,517	\$8.65		
Plumbing	\$197,485	\$2.18		
HVAC	\$631,012	\$6.97		
Electrical	\$1,658,298	\$18.32		
Communications	\$111,636	\$1.23		
<b>3B. PEMB Parking Canopy</b>	<b>\$850,129</b>	<b>\$73.60</b>	<b>2.1%</b>	
Substructure	\$36,466	\$3.16		
Superstructure	\$813,663	\$70.45		
<b>3C. Workshops and Admin Space</b>	<b>\$11,028,309</b>	<b>\$371.32</b>	<b>27.5%</b>	
Substructure	\$1,232,095	\$41.48		
Superstructure	\$2,069,015	\$69.66		
Shell	\$1,990,008	\$67.00		
Interior Construction	\$1,039,151	\$34.99		
Interior Finishes	\$869,019	\$29.26		
Fire Protection Systems	\$256,804	\$8.65		
Plumbing	\$691,650	\$23.29		
HVAC	\$1,221,302	\$41.12		
Electrical	\$1,311,986	\$44.17		
Communications	\$347,279	\$11.69		
<b>4. Seed Processing Facility</b>	<b>\$1,239,626</b>	<b>\$288.29</b>	<b>3.1%</b>	
Substructure	\$147,224	\$34.24		
Superstructure	\$27,567	\$6.41		
Shell	\$460,209	\$107.03		
Interior Construction	\$83,693	\$19.46		
Interior Specialties	\$7,281	\$1.69		
Interior Finishes	\$67,468	\$15.69		

Fire Protection Systems		\$37,180	\$8.65	
Plumbing		\$12,879	\$3.00	
HVAC		\$188,521	\$43.84	
Electrical		\$207,604	\$48.28	
<b>5. Greenhouse</b>		<b>\$190,415</b>	<b>\$200.44</b>	<b>0.5%</b>
Greenhouse at Seed Propagation and Processing Facility		\$190,415	\$200.44	
<b>6. Wash Bay Building</b>		<b>\$910,964</b>	<b>\$198.04</b>	<b>2.3%</b>
Demolition of Existing Structure		\$47,191	\$10.26	
Substructure		\$80,579	\$17.52	
Superstructure		\$124,085	\$26.98	
Shell		\$337,694	\$73.41	
Interior Finishes		\$31,440	\$6.83	
Plumbing		\$31,442	\$6.84	
HVAC		\$48,504	\$10.54	
Electrical		\$210,029	\$45.66	
<b>Alternate: PV Panel Installation</b>		<b>\$1,275,139</b>		<b>3.2%</b>
<b>Alternate: Connect Existing Facilities Building to New Sanitary (ADD)</b>		<b>\$122,412</b>		<b>0.3%</b>
Water Distribution		\$9,845		
Sanitary Sewer Piping		\$69,488		
Decommission Septic System		\$43,079		
<b>Alternate - Pump House Reconstruction</b>		<b>\$57,750</b>		<b>0.1%</b>
<b>FPDDC Scope of Work</b>		<b>\$227,014</b>		<b>0.6%</b>
Remove Parking Lot and Drainage systems		\$94,595		
Site Preparations		\$75,632		
Detention Basin		\$56,787		
<b>TOTAL CONTRACT CONSTRUCTION COST</b>		<b>\$40,084,449</b>	<b>\$ 283</b>	
<b>CONTINGENCIES</b>		<b>\$7,699,020</b>	<b>\$54.37</b>	<b>16%</b>
Escalation (to midpoint of construction)*	8.37%	\$3,355,068	\$23.69	
Contingency	10.00%	\$4,343,952	\$30.68	
<b>TOTAL PROJECT CONSTRUCTION COST</b>		<b>\$47,783,469</b>	<b>\$ 337</b>	
<b>ADD/DEDUCT ALTERNATES</b>		<b>\$1,682,315</b>		
Alternate: PV Panel Installation		\$1,275,139		
Alternate: Connect Existing Facilities Building to New Sanitary (ADD)		\$122,412		
Alternate - Pump House Reconstruction		\$57,750		
FPDDC Scope of Work		\$227,014		
<b>ALTERNATE CONTINGENCIES</b>		<b>\$323,122</b>		
Escalation (to midpoint of construction)*	8.37%	\$140,810		
Contingency	10.00%	\$182,312		
<b>TOTAL PROJECT COST INCLUDING OPTIONS</b>		<b>\$49,788,906</b>		

\* 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.

	LIFE CYCLE COSTING SQUARE FOOT (120,200-SF)				LIFE CYCLE COSTING PERCENTAGE OF REPLACEMENT VALUE				MEDIAN COST PER YEAR
	ESCALATION VALUE	COST PER SQAURE FOOT	OPERATIONS AND MANAGEMENT COST		BUILDING REPLACEMENT ESCALATION VALUE	BUILDING REPLACEMENT COST	OPERATIONS AND MANAGEMENT COST		
<b>Years 1 - 5 - 2.00% per Year</b>									
Year 1	3.50%	\$ 1.40	120,200	\$168,280	3.00%	\$47,783,469	0.50%	\$238,917	\$203,599
Year 2	3.50%	\$ 1.45	120,200	\$174,171	3.00%	\$49,216,973	0.50%	\$246,085	\$210,128
Year 3	3.50%	\$ 1.50	120,200	\$180,267	3.00%	\$50,693,482	0.50%	\$253,467	\$216,867
Year 4	3.50%	\$ 1.55	120,200	\$186,577	3.00%	\$52,214,287	0.50%	\$261,071	\$223,824
Year 5	3.50%	\$ 1.61	120,200	\$193,107	3.00%	\$53,780,715	0.50%	\$268,904	\$231,005
<b>Years 6 - 10 - 3% per Year</b>									
Year 6	3.50%	\$ 1.80	120,200	\$216,362	3.00%	\$55,394,137	0.60%	\$332,365	\$274,363
Year 7	3.50%	\$ 1.86	120,200	\$223,934	3.00%	\$57,055,961	0.60%	\$342,336	\$283,135
Year 8	3.50%	\$ 1.93	120,200	\$231,772	3.00%	\$58,767,640	0.60%	\$352,606	\$292,189
Year 9	3.50%	\$ 2.00	120,200	\$239,884	3.00%	\$60,530,669	0.60%	\$363,184	\$301,534
Year 10	3.50%	\$ 2.07	120,200	\$248,280	3.00%	\$62,346,589	0.60%	\$374,080	\$311,180
<b>Years 11 - 15 - 4.00% per Year</b>									
Year 11	3.50%	\$ 2.35	120,200	\$282,472	3.50%	\$64,528,720	0.75%	\$483,965	\$383,219
Year 12	3.50%	\$ 2.43	120,200	\$292,359	3.50%	\$66,787,225	0.75%	\$500,904	\$396,632
Year 13	3.50%	\$ 2.52	120,200	\$302,591	3.50%	\$69,124,778	0.75%	\$518,436	\$410,514
Year 14	3.50%	\$ 2.61	120,200	\$313,182	3.50%	\$71,544,145	0.75%	\$536,581	\$424,882
Year 15	3.50%	\$ 2.70	120,200	\$324,144	3.50%	\$74,048,190	0.75%	\$555,361	\$439,752
<b>Years 16 - 20 - 5% per Year</b>									
Year 16	3.50%	\$ 3.00	120,200	\$360,603	4.00%	\$77,010,118	0.85%	\$654,586	\$507,595
Year 17	3.50%	\$ 3.11	120,200	\$373,224	4.00%	\$80,090,522	0.85%	\$680,769	\$526,997
Year 18	3.50%	\$ 3.21	120,200	\$386,287	4.00%	\$83,294,143	0.85%	\$708,000	\$547,144
Year 19	3.50%	\$ 3.33	120,200	\$399,807	4.00%	\$86,625,909	0.85%	\$736,320	\$568,064
Year 20	3.50%	\$ 3.44	120,200	\$413,800	4.00%	\$90,090,945	0.85%	\$765,773	\$589,787
<b>Years 21 - 25 - 6% per Year</b>									
Year 21	3.50%	\$ 4.00	120,200	\$480,804	4.50%	\$94,145,038	1.00%	\$941,450	\$711,127
Year 22	3.50%	\$ 4.14	120,200	\$497,632	4.50%	\$98,381,565	1.00%	\$983,816	\$740,724
Year 23	3.50%	\$ 4.28	120,200	\$515,049	4.50%	\$102,808,735	1.00%	\$1,028,087	\$771,568
Year 24	3.50%	\$ 4.43	120,200	\$533,076	4.50%	\$107,435,128	1.00%	\$1,074,351	\$803,714
Year 25	3.50%	\$ 4.59	120,200	\$551,734	4.50%	\$112,269,709	1.00%	\$1,122,697	\$837,215
<b>Years 26 - 30 - 6% per Year</b>									
Year 26	3.50%	\$ 4.80	120,200	\$576,965	5.00%	\$117,883,194	1.00%	\$1,178,832	\$877,898
Year 27	3.50%	\$ 4.97	120,200	\$597,159	5.00%	\$123,777,354	1.00%	\$1,237,774	\$917,466
Year 28	3.50%	\$ 5.14	120,200	\$618,059	5.00%	\$129,966,222	1.00%	\$1,299,662	\$958,861
Year 29	3.50%	\$ 5.32	120,200	\$639,691	5.00%	\$136,464,533	1.00%	\$1,364,645	\$1,002,168
Year 30	3.50%	\$ 5.51	120,200	\$662,080	5.00%	\$143,287,760	1.00%	\$1,432,878	\$1,047,479



Revised DD Scope  
\$36,900,000

Scope:

- GNR facility
- Seed Processing Facility and Greenhouse
- Municipal utility connections to new buildings.

Removed:

- Trailer parking canopy
- All scope within the northeast site
- Municipal utility extensions to the northeast site
- Ecology Department from within GNR building

Implications:

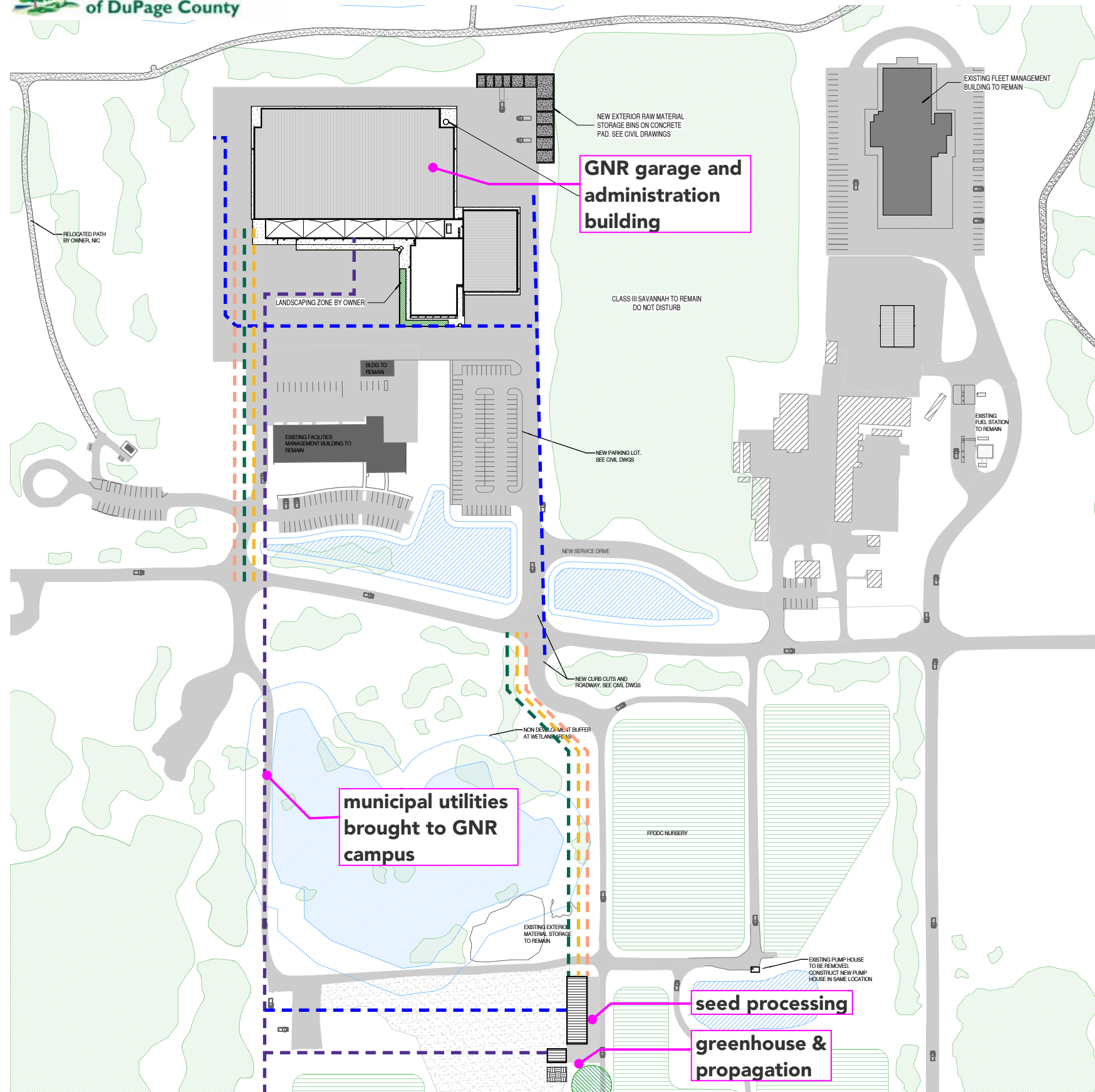
- Trailers will be parked outside, uncovered
- GNR to self-perform rough grading and site clearing

- - - - - removed
- - - - - water
- - - - - sanitary
- - - - - electrical
- - - - - telecommunications
- - - - - gas

# Design Development - Proposed Project

		CONCEPT DESIGN	SD DESIGN		DD DESIGN		PROPOSED PROJECT	
		Sept - 2023	Nov - 2023		May - 2024			
	Project GSF	122,750	129,000	5%	120,200	-7%	115,000	-4%
No.	Bid Item							
1	Site/Utility	\$3,500,000	\$11,800,000		\$9,000,000		\$7,500,000	
2	GNR Building	\$23,900,000	\$31,880,000		\$29,200,000		\$27,960,000	
3B	GNR Trailer Parking Canopy	\$0	\$730,000		\$850,000		\$0	
4	Seed Processing Facility	\$125,000	\$420,000		\$1,250,000		\$1,250,000	
5	Greenhouse	\$75,000	\$248,000		\$190,000		\$190,000	
6	Wash Bay Building	\$300,000	\$822,000		\$910,000		\$0	
	<b>SUBTOTAL</b>	<b>\$27,900,000</b>	<b>\$45,900,000</b>	<b>65%</b>	<b>\$41,400,000</b>	<b>-10%</b>	<b>\$36,900,000</b>	<b>-11%</b>
	contingency + escalation	\$9,900,000	\$12,300,000		\$7,800,000		\$7,000,000	
	(contingency amount)	20%	15%		10%		10%	
	<b>PROJECT TOTAL</b>	<b>\$37,800,000</b>	<b>\$58,200,000</b>	<b>54%</b>	<b>\$47,800,000</b>	<b>-15%</b>	<b>\$43,900,000</b>	<b>-9%</b>





Reduced Energy Usage/Cost

- EUI: 30

\*Average EUI for this building type: 48

Solar PV Electrical Cost savings

- 100% electrical use offset
- \$1,700,000 utility cost savings over 30 years
- \$930,000 grant/rebates potentially available for solar

Reduced Water Usage

- 10,000 gallon rainwater cistern provides 75% of annual water needs

Improved Vehicular Movement Efficiency

- 130 miles per year per vehicle
- Over 10,000 miles of less wear/tear and fuel per year

Extended Vehicle Life-Span

- 150% vehicle life extension
- \$6,800,000 savings over 30 yrs

Seed Building stats

- 3-4x additional seed processing capacity and storage
- \$500,000 annual seed cost savings

Crew Cost Savings through mobilization and start/end of day efficiencies

- 45min saved per day, per staff member
- \$20,700,000 gained staff value over 30yrs

Cost Savings/Financial Benefits over 30 years

**\$45,000,000**