Cedar CORPORATION

TOWN OF BARNES SHOP FACILITY CONDITION ASSESSMENT

APRIL 15, 2025

Objective

- Structural and Envelope Evaluation
- General Building Overview
- Preliminary Space Planning
- Options and Cost Analysis
- Facility Condition Assessment
- Review of modern facilities and design trends
- Overview of space needs
- Develop alternatives and solutions to address space and operational needs
- Develop budgets and implementation plans to address immediate needs

Overview of Site

- Existing Site
  - Adjacent to the Barnes Town Hall, Clerk's Office, and Park
  - Site Entrance from County Hwy N
- Site Deficiencies
  - Lack of Fire Suppression System
  - Septic system
  - No designated separate wash bay
  - Lack of adequate storage
  - Site Access points connected with Town Hall
  - Lack of potential for expansion

Site Area = 5.71 Acres

Overview of Facility

- Original Existing Shop – 9,500 SF Overall
  - Pre-Engineered Storage Building
  - Area A –
    - 7,000 SF
    - Built in 1971
  - Area B –
    - 3,500 SF Addition
    - Built in 1986
- Functions
  - Break Room / Office
  - Sign Shop
  - Tools/ Work Area
  - Parts Storage
  - Hose Room

Overview of Facility

- Maintains 148 Lane Miles
- Maintains 2 Parks, 5 Boat Landings, Hockey Rink, Pickleball Courts
- Staff
  - 3 Full- time
  - 2 Part- time
- Equipment
  - 2 Tri-Axle Dump Trucks
  - 3 Pickups
  - 2 Graders
  - 2 Loaders
  - Misc. Equipment
    - Mowing Tractor, Excavator, Skid steer, 2 Trailers, Apparatuses, etc.
  - Future Equipment
    - CAT Dozer

Existing Facility Analysis

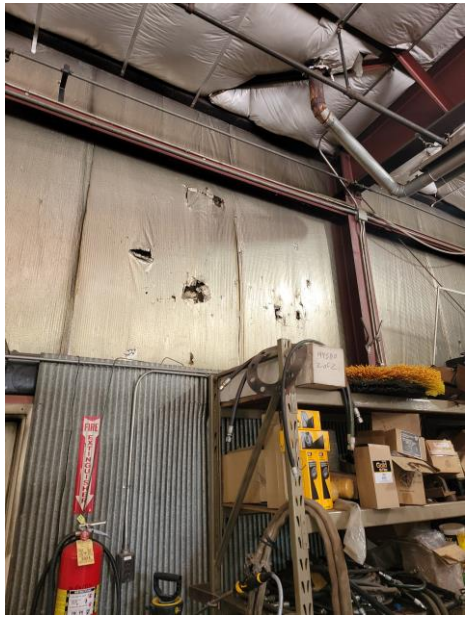
- Building
  - Review of building envelope, walls, roof, windows, etc.
  - Review the current facilities for immediate improvements and deficiencies
  - Review mechanical, electrical, and plumbing systems for suitability for renovation
  - Review of equipment maintenance and storage
  - Review the potential suitability of any existing facilities for renovation
- Site
  - Review parking site access and traffic patterns of the current site
  - Review security, access points, reception, and safety of facility
  - Review impact or solutions to allow operations during construction

Space Needs

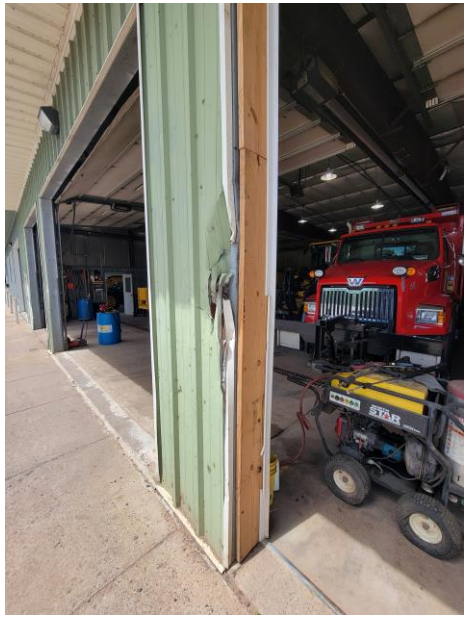
Building Area	Current Square Footage	Suggested Square Footage
Overall Shop	10,500	27,500
-Vehicle Storage	10,000	20,000
-Office, Etc.	250	2,500
-Work Area	250	5,000
-Wash Bay	-	3,700
Town Hall	4,000	4,000
Subtotal	**13,500**	**35,500**

Deficiencies

- Lack of storage for equipment and vehicles
- Access / Turning movements clearances
- Limited parking efficiency
- HVAC, Mechanical, and Electrical deficiencies
- Accessibility
- Sizing for Modern Equipment
- Congested Truck Space
- Lack of Separation and Exhaust
- Limited Site Lighting
- Exterior Improvement
- General Building Maintenance
- Energy Efficiency
- Floor Drainage



Shop, Wall Penetrations



Shop, Undersized Doors

Break Room / Office, Lacks Storage

Sign Shop, General Building Maintenance

Overall Shop, Limited Height

Shop, Mechanical Deficiencies

Shop, Lacks Clearance

Bathroom, Accessibility

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Interior Conditions

SW View, Fuel Island

SE View, Garage Door Limitations

SW View, Limited Structural Height

NE View, Lack of Proper Storage

NW View, Aging Mechanical Systems

East View, Site Drainage

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Exterior Conditions

Findings and Recommendations

- Current Facility
  - Inefficient use of space
  - Safety and Code Concerns
  - Energy Inefficient
  - Renovations are not Cost Effective
  - General Building Issues

Solution Options

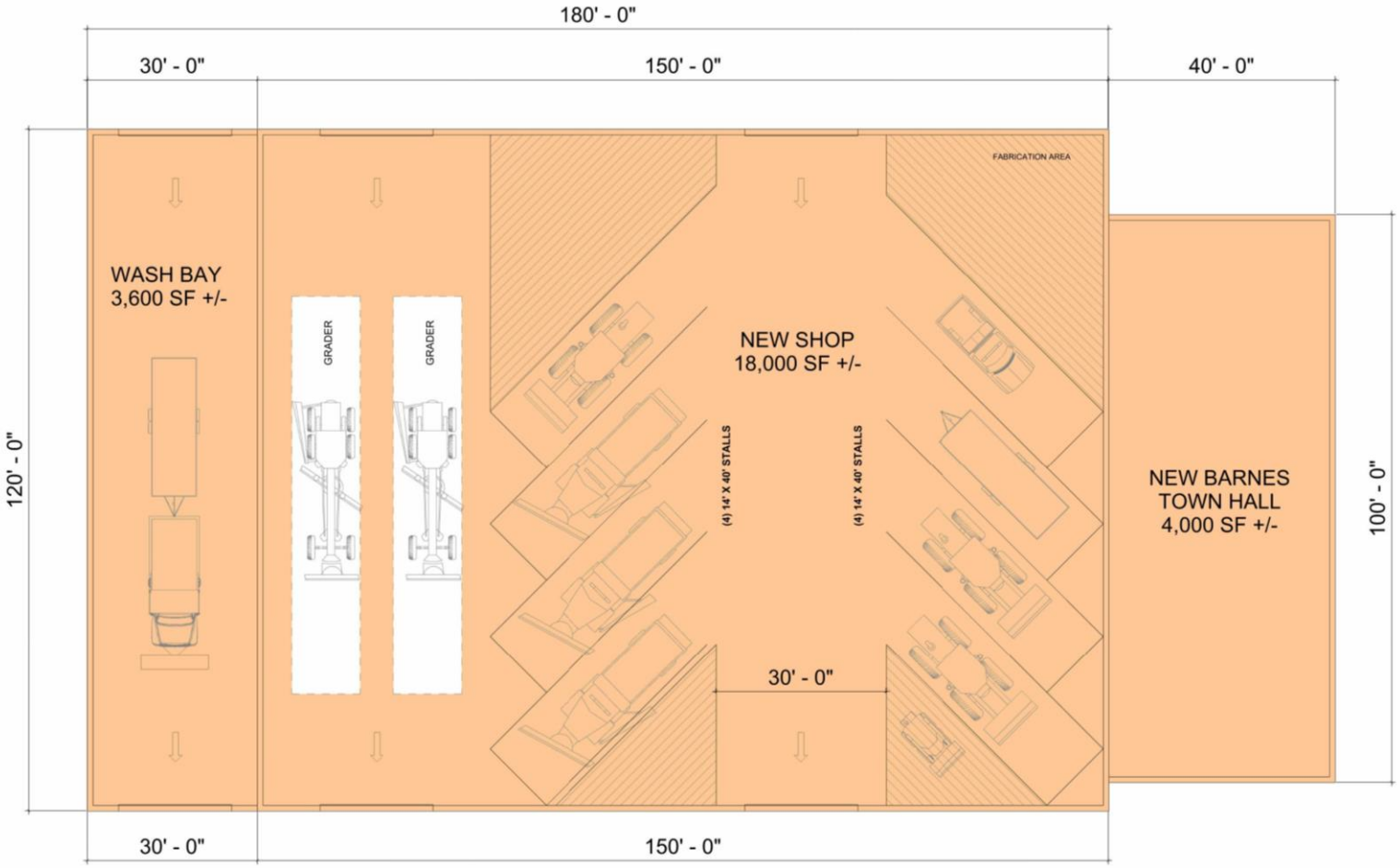
Option A - 25,600 SF
- 21,600 SF New Shop
- 4,000 SF New Office/ Town Hall

Option B – 35,200 SF
- 31,200 SF New Shop
- 4,000 SF New Office / Town Hall

Option C – 27,700 SF
- 10,500 SF Shop Renovation
- 4,000 SF Town Hall Renovation
- 13,200 SF New Shop Expansion

Option D – 14,500 SF
- Do Nothing

Site Plan – Option A



Floor Plan – Option A

N

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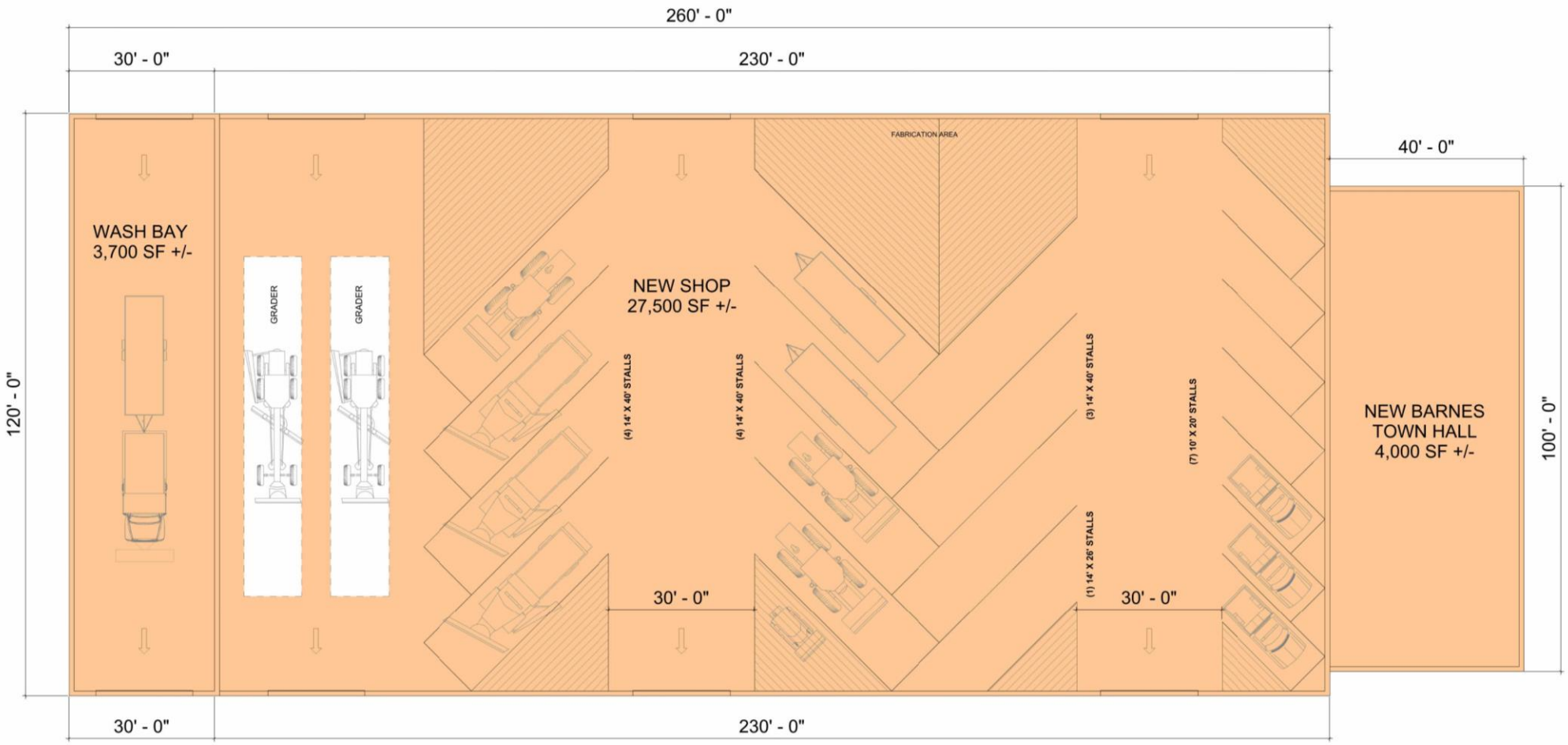
Site Plan – Option B

N



Floor Plan – Option B

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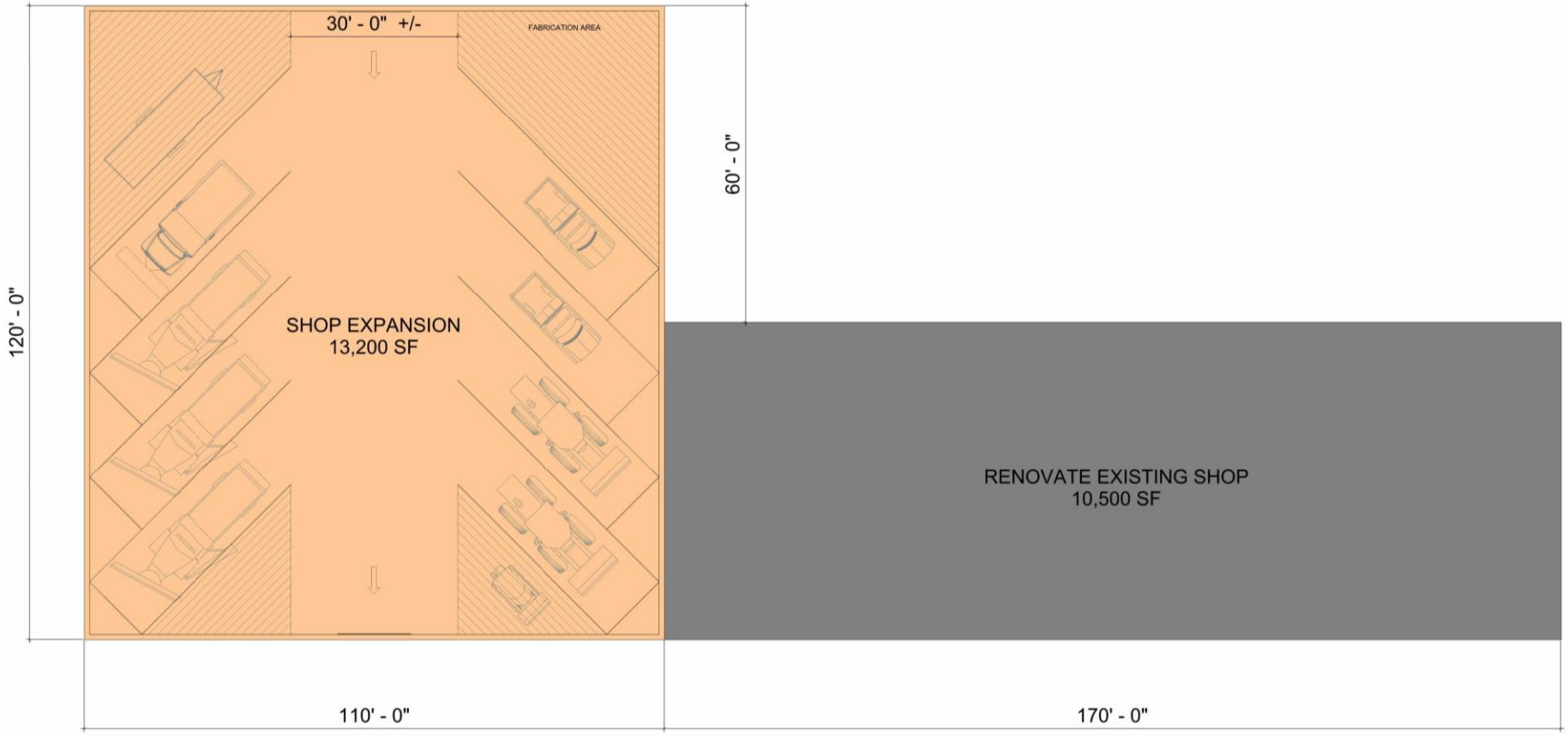
Site Plan – Option C



Floor Plan – Option C

N

Precast vs Pre-Engineered

Precast Concrete Panel Buildings

- Higher initial cost
- Longer service life over 50 years
- Less maintenance
- Durable interior and exterior
- High thermal efficiency
- Added heat capacity in wall systems
- Typical roof system with continuous insulation
- Added Energy Efficiency with less reliance on systems

Pre-Engineered Metal Building

- Lower initial cost
- 50-year service life, panel durability varies
- Separate structure that can be reclad with new metal
- Panels can be damaged by equipment or hail
- Insulated panels offer greater thermal performance at a higher cost
- Options for clear span vs wide frame haunches
- Sloped metal roof can lead to sliding snow

Cost Estimate

Option	Construction Cost	Total 50 Year Projected Cost	Expected Cost per Year
A1 - Precast	$7,681,505	$8,449,505	$168,990
A2- Pre-Engineered	$7,135,025	$8,927,025	$178,540
B1- Precast	$10,416,435	$12,176,435	$243,528
B2- Pre-Engineered	$9,538,019	$12,002,019	$240,040
C1– Precast	$7,898,453	$8,867,953	$177,359
C2– Pre-Engineered	$7,397,513	$9,059,513	$181,190

Life Expectancy

- Life Expectancy
  - New Precast – 60-80 Years
  - New Pre-Engineered – 40-50 Years
  - Renovation – 30-50 Years
- New vs. Renovation
  - Many unknowns with the Renovation process
  - Hard to find contractors to take on the renovation of the existing building

SITE

Storm Water – Quality / Quantity Evaluation / Rain Garden Alternative

Vehicle Circulation

Utility Analysis & Design

Alternative Pavement Analysis

Geotechnical Coordination

DNR / DSPS Permitting

Traffic Analysis

Construction Sequencing / Phasing

BUILDING

Functional layout

Modular design

Durable – low maintenance

Energy efficient materials / systems

Passive & active security

Integrated technology

Functional conveniences

Construction sequencing & phasing

Natural daylighting

Proven systems

Modern Facilities

- Sufficient Storage, access, and turning movements
- Access to site features (fuel island, stockpiles, scales, etc.)
- Accommodating space for larger trucks for turning movements, staging, and storage
- Security
- Safety
- Efficiency
- Flexibility
- Additional space and functions to support town departments

Trends

- Modern Fuel Island
- Separation from contaminates
- Efficient and secure parts storage layout
- Centralized and secure location for tools and equipment
- Wash bay facilities
- Advanced communications equipment
- Site lighting
- Active and passive security systems
- Water reclamation systems
- Support systems for maintenance

Precedent Vehicle Storage

Next Steps

- Prioritize Department Needs
- Prioritize Facility Improvements
- Programming and Analysis
- Develop a Site and Building Design
- Update Budget / Schedule
- Finalized Documentation and Design
- Bidding
- Contract Administration
- Project Completion

Schedule

Kick-Off
Establish Goals
Develop Schedule
Kick-Off Meeting

Space Evaluation
Space Planning
Programming Analysis
Design Alternatives

Funding
Opinions of Cost
Funding Alternatives

7 Construction Completion
Occupancy
Start of Warranty

20
25

Facility Review
Analysis of Existing Facility
Evaluate Facility for Needs
Preliminary Facility Condition Assessment

20
26

Conceptual
Design Meetings
Building
Diagrams
Site Design
Render

20
27

Final Design & Construction
Commencement of Construction

20
28

20
30

8 End of Warranty
End of Warranty

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THANK YOU

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