City of Carroll

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MEMO TO: Gerald L. Clausen, City Manager

FROM: Randall M. Krauel, Director of Public Works RMK

DATE: June 22, 2016

SUBJECT: Street Maintenance Facility
Space Needs and Preliminary Design/Budget Development Report

FEH Design has completed the Street Maintenance Facility Space Needs and Preliminary Design/Budget Development Report. A copy of the Report is attached. A digital copy of the Report will be distributed with the Council Meeting Agenda. Paper copies of the Report are available, if desired, by the Mayor and Council members. A paper copy is also available for review at City Hall.

John Karrmann with FEH Design will present the Report during the June 27 Council Meeting.

In summary, the Final Space Programming study generated a need for a minimum gross area of the new facility of 14,500 square feet. The opinion of probable cost is summarized as follows:

Maintenance Building	$3,529,962
Fees, FF & E, Misc.	$394,995
Subtotal Maintenance Building	$3,924,957
Unheated Storage Building	$216,000
Aggregate Bins	$145,000
Total Project	$4,285,957

Funding for the project is currently included in the Capital Improvement Program as follows:

General Fund, F.Y.13 – 14	$75,000
General Fund, F.Y. 15 – 16	$250,000
General Fund, F.Y. 16 – 17	$100,000
LOST, F.Y. 15 – 16	$250,000
LOST, F.Y. 16 – 17	$1,350,000
LOST, F.Y. 17 – 18	$350,000
G.O. Bond (Council Vote), F.Y. 17 – 18	$700,000
Total	$3,075,000

RECOMMENDATION: Mayor and City Council consideration, receipt of the Report and continued consideration of the Project during the August Planning Session and Capital Improvement Program development.

RMK:ds

FEH DESIGN

FEHDESIGN.COM

STREET MAINTENANCE FACILITY SPACE NEEDS AND PRELIMINARY DESIGN/BUDGET DEVELOPMENT

LOCATION / CARROLL, IOWA

06-21-2016

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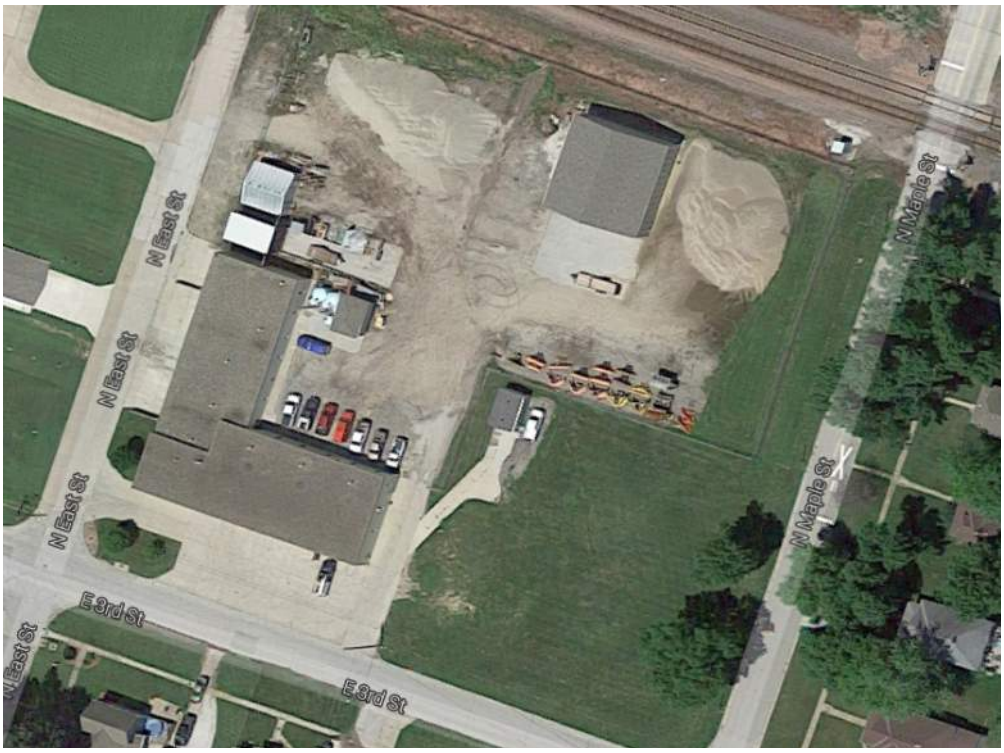
INTRODUCTION 01

01 / INTRODUCTION

The City of Carroll retained FEH DESIGN to perform a Facility Space Needs and Preliminary Design / Budget development analysis for a Street Maintenance Facility for the Public Works Department Street Maintenance Division. The current facility is short on space, the layout does not function well for the Division and significant updating is needed.

It is our understanding the City desires to analyze the current Street Maintenance facility and develop a space needs assessment outlining the required spaces and sizes for an updated facility. The purpose of the study is to generally determine the size of facility the City of Carroll will require to provide adequate space for street maintenance staff including office, training room, locker/restroom facilities, vehicle and equipment storage (both heated and unheated), shop space, materials storage, aggregate storage (including sand/salt) and mixing and storage space. This document also includes development of conceptual site layouts, preliminary building design and development of a preliminary project budget for the design concept.



EXECUTIVE SUMMARY 02

02 / EXECUTIVE SUMMARY

After meeting with the City of Carroll Street Maintenance staff and City Administration, FEH DESIGN developed the following space needs and preliminary design / budget development document. The staff and administration outlined their goals for success and reviewed with FEH the challenges facing their current facility. The Administration discussed their current and future staffing and equipment storage needs and provided FEH with information regarding space requirements for a successful facility that will meet their needs into the future.

FEH reviewed the existing site and facilities with staff and administration. There appears to be adequate space on-site to develop new facilities without significant disruption to the ongoing operations of the Streets Division. However, the site does have some significant topographic issues that will need to be dealt with to develop a successful project. The existing facilities are dated and present challenges to the day-to-day operations of the Division. Lack of adequate space throughout the facilities require additional staff time to maneuver equipment which decreases overall staff productivity. The age of the buildings and the electrical and mechanical systems in the facilities are not energy efficient and require more dollars spent for energy costs and building maintenance (on a per square foot basis) than a modern facility would require. Also, lack of available enclosed storage requires some equipment and materials be stored outdoors which also has long range cost impacts due to degradation of equipment from long-term UV and weather exposure.

The Final Space Programming study generated a need for a minimum gross area of the new facility of about 14,000 square feet and a maximum gross area of 15,500 square feet. The existing facility consists of approximately 11,875 square feet. Refer to the Space Programming portion of this document for specific information.

FEH explored various site development concepts which are presented in this study. Concepts A, B and C were developed based on initial maintenance building programming areas which generated a range of 19,000-20,800 square feet for the new facility. Preliminary budget exercises for Concepts A thru C led to development of a reduced Concept D. The design concepts graphically illustrate the identified building program needs and how the buildings could be effectively arranged on the site while addressing the topographic challenges with the preferred Concept D plan identified as being the most viable option.

City staff and administration indicated the existing maintenance garage building will be repurposed to store equipment and materials such as: Snow Plows, Barricades, Traffic Signs, Cold Asphalt mix, Sealants, Sand Bags, Sand Blaster, Air Compressor, Aerial Lift Truck, Skid Loader, Concrete Trailer, Traffic Paint Trailer, Brine Trailer, Patch Trailers, Sander, Snow Blowers, Motor Grader, and Wheel Loader.

A budget opinion of probable costs was developed based on Site Concept D and is included in this document. The budget does not include costs for the repurposing of the existing maintenance building. The City Administration has indicated that any work required for the repurposing of the existing building will be done later and by in-house personnel.

ASSESSMENT OF EXISTING SITE & FACILITIES

03

03 / EXISTING SITE & FACILITIES

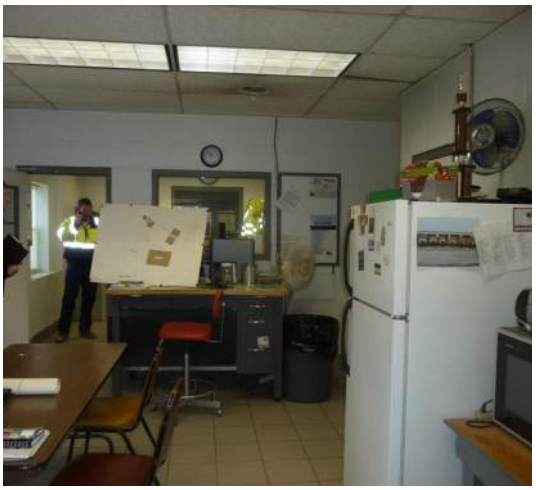
ASSESSMENT OF EXISTING SITE AND FACILITIES

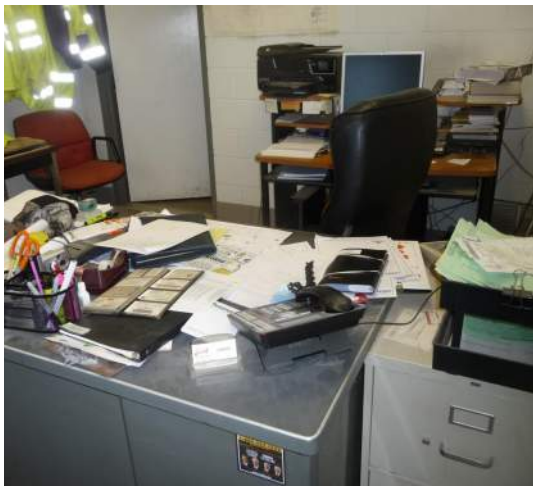
The existing location for the City of Carroll Street Maintenance facility is a one-square block site at what might be considered the SE corner of the central business district bounded by N Maple Street on the east, E 3rd Street on the south, N East Street on the west and the Union Pacific railroad tracks on the north. The site area is approximately 2.5 acres with various structures occupying the west half of the site. The east half of the site is fairly open with only a salt storage building near the north property line (just east of the center of the site) and a stand-alone small garage building near the center of the site.

FEH reviewed the existing site and facilities with staff and administration. The existing site consists of the Main Street Maintenance Garage, Brine/ Calcium storage tanks, a small metal storage building, Aggregate Bins, and two Salt Storage buildings. One of the Salt Storage is a large relatively new building. Most of the site is enclosed by a 6 foot tall chain link fence. Miscellaneous equipment and materials are stored outside exposed to the weather within the fenced area due to lack of adequate enclosed storage space on--site. In the past, outdoor storage of some equipment was less of an issue than it is with today's modern equipment. Today's equipment includes various hoses, fittings and electronics which prematurely degrade with prolonged UV / weather exposure, and are no longer just a piece of metal that gets bolted to a vehicle. There is a small single stall garage located outside the fenced area.

Given the configuration of the existing structures on the site, the logical location for a new maintenance facility will be in the South East quadrant of the site. This location will be least disruptive to the existing structures, will minimize disruptions to operations during construction and is adjacent to E 3rd Street and N Maple Street for street access. However, the site topography will be challenging and will likely require retaining walls or the new building may need to be designed to act as a retaining wall to negotiate the existing slopes. The City provided preliminary site topographic information which indicates approximately 9 feet of fall from the SE corner of the property west to the existing driveway entrance at the east side of the existing maintenance garage (approximately mid-block). Similarly, there appears to be roughly 8 feet of fall from the SE corner north to the existing fence corner at approximately the mid-block of N Maple Street.

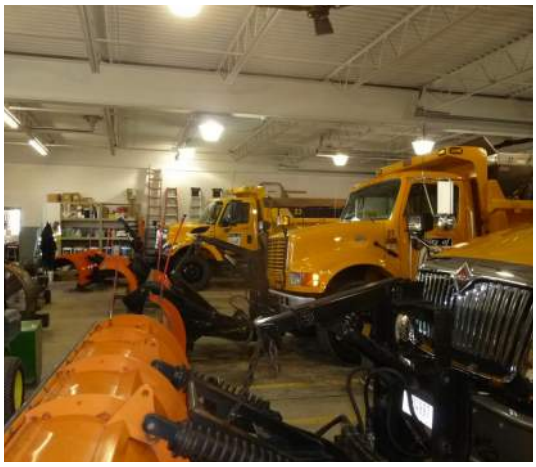
Location of Site Utilities will need to be considered as building concepts are developed. Information provided by the City indicates there is a 6 inch water main running along north side of E 3rd Street. A 10 inch Sanitary Sewer running along the center of E 3rd Street. A 2 inch natural gas line running along the south side of E 3rd Street. A 15 inch storm sewer manhole located in the northwest corner of the site. Existing electric service is provided overhead.

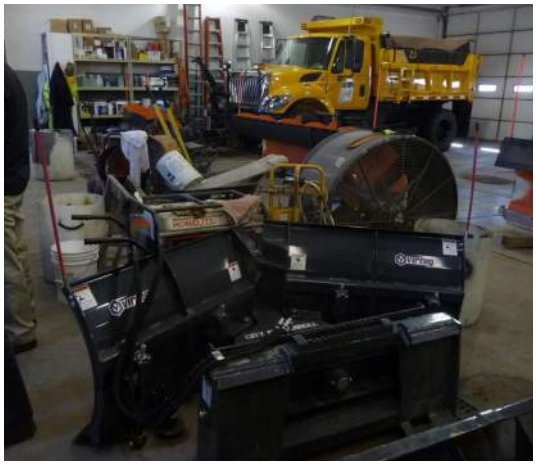




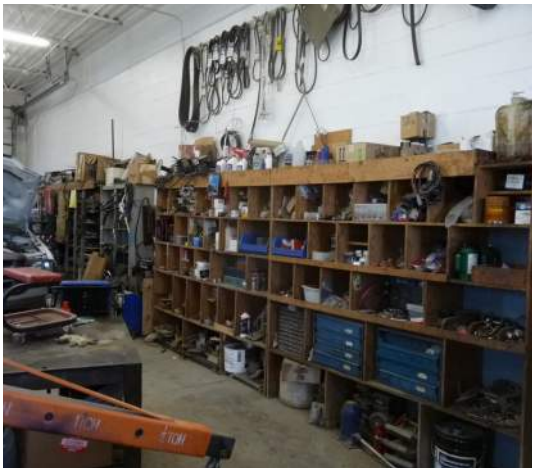
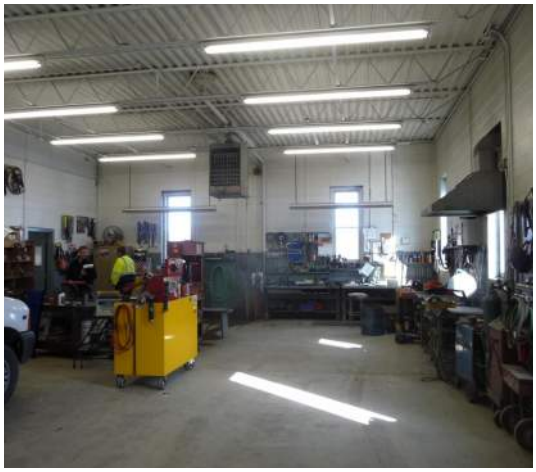
The existing facility has numerous challenges facing it. The existing building has been added onto at least once and consists of multiple levels. The Staff training room is a space of approximately 240 square feet and is utilized as a meeting room, training room, lunch room and work room. The room is not large enough to have the entire street department staff meet for briefings nor does it provide adequate accommodations for staff training. The current superintendent's office is also undersized, lacks privacy for confidential interactions with staff and is not commensurate with a professional work office by today's standards. The locker room and restroom are antiquated and inadequate (there are no locker or restroom facilities for women), lockers are not adequately sized for staff use, and the facilities do not meet the requirements of the ADA. During significant snow events staff often spend the night and, due to lack of adequate facilities, sleep in the cabs of the plow trucks since no space is available for cots in the building. The existing building envelope, mechanical and electrical systems energy efficiencies are deficient and do not meet current standards.

As the need to maintain more roadways with minimal staff has increased, road maintenance equipment has increased in size and power to maximize efficiency. This increase in size impacts the requirements for vehicle bays in modern facilities. The current facility has 12 foot wide overhead doors which is much narrower than modern facilities which more typically have 16 foot wide overhead doors to accommodate current large equipment. Staff safety is always a concern in a facility of this type with large pieces of equipment needing to maneuver in very tight quarters. The existing maintenance garage doors, in addition to being narrow, have very little space between doors along N East Street, approximately 8 inches between doors, which creates very tight quarters between vehicles which is a safety concern. The existing overhead doors on E. 3rd Street have 3 feet between doors which, although better than 8 inches, is still tight by today's standard of typically 4-5 feet between doors. This increased bay space provides the necessary maneuvering space required for working on large vehicles which have large parts that need maintained such as side "wing" plows.





Changes in the departments day to day operations is another challenge the existing facility is facing. City Administration would like to service other City department vehicles at this site including Police and Fire vehicles, Parks and Recreation and Waste Water vehicles. The current maintenance/mechanics bays are not set-up for these vehicles/equipment.

In today's work environment, potential personnel changes in this department is another challenge for this facility. Although historically women have not been part of the staff makeup of these types of facilities, more and more women are adding to the diversity of these "non-traditional" roles and consideration of future female employees must be considered.

FACILITY PROGRAMMING 04

04 / FACILITY PROGRAMMING

On February 19, 2016 FEH personnel met with City staff and administration on site to discuss the programming needs of a new Maintenance Facility and site. At this meeting, City administration shared some initial documentation outlining current thoughts about the development of the existing site for a new maintenance facility. Documents presented included an outline of the general size of spaces required for a new facility, a building diagram of how space is currently allocated in the existing maintenance garage, a diagram showing how space in the existing building could be reallocated after a new maintenance facility is constructed, a block diagram showing principal program spaces for a new 18,700 square foot maintenance facility, and a proposed site master plan showing how the existing 2.5 acre site could be developed to include the identified improvements.

FEH reviewed and discussed the documents with City staff to gain more insight into the specific requirements for the individual spaces to generate a more detailed building space program for a new maintenance building to validate the proposed 18,700 square foot building area. As a result of this review/validation process, a preliminary building program indicating a slightly larger building area (19,000-20,800 square feet) was needed to include the desired functions of the spaces as described in our discussions with staff. Initial Design Concept and Budget Development indicated a facility of this initial size would not be financially viable. Review of the preliminary budget and space needs led to development of a reduced Facility Program ranging from 14,000-15,500 square feet. This final reduced facility program is included in this document.

In addition to the Maintenance Facility program numbers, a separate, 7200 square foot free-standing unheated storage building has been identified. This enclosed storage space will allow equipment and materials to be stored out of the weather which will help to prolong the life of the equipment.

The final identified "structures" to be added to the site are dedicated aggregate storage bins to provide confined storage for soil, gravel, rock, sand, etc. It is desired to have approximately 3800-4000 square feet of dedicated aggregate storage with approximately 2000 square feet of this covered for sand storage.

Following is a more detailed breakdown of the various spaces required to form the new Street Maintenance Facility. These identified spaces, and areas allocated to them, represent the basic building blocks that will be used to develop a detailed design for the new Facility.

SPACE SUMMARY 05

City of Carroll Street Maintenance Facility Study

Space Programming

	Name/ Function of Space	Design Areas	
		Min.	Max.
1	Vestibule	40	50
2	Entrance	60	75
3	Meeting/Training/Lunch	525	575
4	Superintendent	175	200
5	Training Storage	75	100
6	Men's Locker	350	400
7	Women's Locker	200	250
8	Janitor	80	100
9	Elect	80	100
10	Equipment Bay	6,400	6,700
11	Mechanics Bays and Shop	3,000	3,200
12	Tool Room	200	250
13	Parts	300	350
14	General Shop	600	800
15	Sign Shop	400	500
16	Mechanical	300	400
Individual Space Needs	**(Net Square Feet)**	12,785	14,050
	Net to gross conversion @ 10.0%	1,279	1,405
Total Building Area Space Needs	**(Gross Square Feet)**	14,064	15,455

SPACE PROGRAMMING DATA SHEETS

06

Entrance Vestibule

Space name / Room ID #:	Vestibule	ID#:	1
Total SF (min/ room):	40		
Total SF (max/ room):	50		
Functional Description:	Main building entrance		
Adjacencies:	Programmatic Adjacencies: Admin area		
Furniture:	N/A		
Accessories: Marker, Tack Brds, Smart Brds.	N/A		
Finishes	Durable, Welcoming, low maintenance finishes		
Flooring types, wall finish types: paint wall covering carpet, ceramic tile, etc.			
General Comments:	Little public traffic.		

FEH DESIGN

Entrance

Space name / Room ID #:	Entrance	ID#:	2
Total SF (min/ room):	60		
Total SF (max/ room):	75		
Functional Description:	Entrance circulation space for staff/training visitors and admin area		
Adjacencies:	Vestibule, Training Room, Administration area		
Finishes	Durable finishes		
Flooring types, wall finish types: paint wall covering carpet, ceramic tile, etc.			
Engineering:			
General Comments:			

Meeting/Training/Lunch Room

Space name / Room ID #:	Meeting/Training/Lunch	ID#:	3
Total SF (min/ room):	525		
Total SF (max/ room):	575		
Functional Description:	Room for staff meetings and provide space for training for up to 25 people. Room will also be used for sleeping space (cots) during winter storm emergencies Include kitchenette area with refrigerator/microwave Include workstation area with computer for staff use. Coat rack area within room		
Adjacencies:	Front Entry, Locker Rooms, Admin area		
Equipment: Printers, copiers, plotters, scanners, TV's	A.V. equipment & large screen		
Furniture:	Moveable training tables/stacking chairs Kitchenette cabinets/equipment		
Accessories: Marker, Tack Brds, Smart Brds.	White board		
Finishes	Durable, Sustainable, Welcoming		
Flooring types, wall finish types: paint wall covering carpet, ceramic tile, etc.	Blinds to darken room for video display		
Engineering:	Data and outlet connections Sink in Room		
General Comments:			

FEH DESIGN

Superintendent Office

Space name / Room ID #:	Superintendent	ID#:	4
Total SF (min/ room):	175		
Total SF (max/ room):	200		
Functional Description:	Pirvate office with room for guest seating for private meetings Conference room for interviews and meetings with staff and developers / contractors		
Adjacencies:	Front entry		
Equipment: Printers, copiers, plotters, scanners, TV's	A.V. equipment and screen		
Furniture:	Office desk w/ task chair. Guest chair. (2) 4 drawer file cabinets, (1) lateral file cabinet		
Accessories: Marker, Tack Brds, Smart Brds.			
Finishes Flooring types, wall finish types: paint wall covering carpet, ceramic tile, etc.	Typical office finishes		
Engineering:	Data and outlet connections		
General Comments:			

Training Room Storage

Space name / Room ID #:	Training Storage	ID#:	5
Total SF (min/ room):	75		
Total SF (max/ room):	100		
Functional Description:	space for table/chair storage / cot storage / miscellaneous training supplies storage		
Adjacencies:	Training Room		
Finishes	Durable finishes		
General Comments:			

FEH DESIGN

Men's Locker Room

Space name / Room ID #:	Men's Locker	ID#:	6
Total SF (min/ room):	350		
Total SF (max/ room):	400		
Functional Description:	Lockers and restroom for facility		
	Min. 12 large lockers		
	2 shower stalls with changing area		
	Toilets / sinks as required to meet plumbing code for fixture counts		
Adjacencies:	Near training room with good access from rest of building		
Furniture:	Lockers / bench area		
Finishes	Very durable surfaces		
Engineering:	Adequate ventilation		
	Occupancy Sensors		
General Comments:			

Women's Locker Room

Space name / Room ID #:	Women's Locker	ID#:	7
Total SF (min/ room):	200		
Total SF (max/ room):	250		
Functional Description:	Lockers and restroom facility for building		
	4-5 large lockers		
	single shower with dressing area		
	Toilet / sinks as required to meet plumbing code fixture counts		
Adjacencies:	Training area with good access from rest of building		
Furniture:	Lockers / bench		
Finishes			
	very durable finishes		
Engineering:	Adequate ventilation		
	Occupancy Sensors		
General Comments:			

Janitor / Supplies Closet

Space name / Room ID #:	Janitor	ID#:	8
Total SF (min/ room):	80		
Total SF (max/ room):	100		
Functional Description:	Janitors closet with space for washer/dryer and janitor supplies storage		
Adjacencies:	Locker rooms		
Equipment: Printers, copiers, plotters, scanners, TV's	Washer / Dryer Shelving		
Finishes	Very durable		
Engineering:	Mop Sink Washer / Dryer connections		
General Comments:			

Electrical / Telecom

Space name / Room ID #:	Elect	ID#:	9
Total SF (min/ room):	80		
Total SF (max/ room):	100		
Functional Description:	Main electrical room and data closet for building Telecom equipment		
Adjacencies:			
Equipment: Printers, copiers, plotters, scanners, TV's			
Finishes Flooring types, wall finish types: paint wall covering carpet, ceramic tile, etc.	Durable		
Engineering:	Occupancy Sensors		
General Comments:			

Equipment Bays

Space name / Room ID #:	Equipment Bay	ID#:	10
Total SF (min/ room):	6400		
Total SF (max/ room):	7,000		
Functional Description:	Equipment bays for housing trucks / equipment: Min (6) snow plows, backhoe and loader to be stored in equipment bays 16' w x 14' h bay doors (bays not required to be drive-thru) Wash bay w/ catwalk system for spraying tops/boxes of equipment desired (Acrylic door for wash bay) in Mechanics Bay area		
Adjacencies:	Work room, tool room, parts room, maintenance bays		
Equipment: Printers, copiers, plotters, scanners, TV's	Bridge crane overall full extent of bays desired.		
Accessories: Marker, Tack Brds, Smart Brds.	Need space to store waste oil in bays		
Finishes Flooring types, wall finish types: paint wall covering carpet, ceramic tile, etc.	Sealed Concrete floors, open structure.		
Engineering:	Overhead radiant heat preferred Daylighting strategy desired to supplement electrical lighting Trench drains for keeping bays clean from snow melt Heated and ventilated (no A/C) Vehicle Exhaust system		
General Comments:			

Mechanics Bays and Shop

Space name / Room ID #:	Mechanics Bays and Shop	ID#:	11
Total SF (min/ room):	4000		
Total SF (max/ room):	4500		
Functional Description:	(2) mechanics bays (Approx 54' deep)- Drive thru preferred (1) bay with portable truck hoists (no pits) Floor anchors cast into floor slab for frame straightening Welding area required in Mechanics bay		
Adjacencies:	tools room, parts room, equipment bays		
Equipment: Printers, copiers, plotters, scanners, TV's	Portable hoists preferred for flexibility Cabinets at perimeter for tools/parts		
Accessories: Marker, Tack Brds, Smart Brds.			
Finishes Flooring types, wall finish types: paint wall covering carpet, ceramic tile, etc.	Sealed Concrete floors, open structure.		
Engineering:	utilities for hoists, welding, power tools, compressor Heated and ventilated (no A/C) Vehicle Exhaust system		

General Comments:

FEH DESIGN

Tool Room

Space name / Room ID #:	Tool Room	ID#:	12
Total SF (min/ room):	200		
Total SF (max/ room):	250		
Functional Description:	Space for storing hand tools		
Adjacencies:	Mechanics Bay, Equipment bays, General shop		
Equipment:	Shelving		
Finishes	Sealed Concrete floors		
Flooring types, wall finish types: paint wall covering carpet, ceramic tile, etc.	Painted concrete block walls		
Engineering:	Heated and ventilated (no A/C)		
General Comments:			

Parts Room

Space name / Room ID #:	Parts	ID#:	13
Total SF (min/ room):	300		
Total SF (max/ room):	350		
Functional Description:	Space for storing an inventory of parts required for routine maintenance		
Adjacencies:	Mechanics Bay, Equipment bays, General shop		
Equipment:	Shelving		
Finishes	Sealed Concrete floors		
Flooring types, wall finish types: paint wall covering carpet, ceramic tile, etc.	Painted concrete block walls		
Engineering:	Heated and ventilated (no A/C)		

General Comments:

General Purpose Shop

Space name / Room ID #:	General Shop	ID#:	14
Total SF (min/ room):	600		
Total SF (max/ room):	800		
Functional Description:	General Shop area for small equipment maintenance		
Adjacencies:	Equipment Bays, Mechanics bays, parts room, tool room, sign shop		
Equipment:	Shelving and workbench areas		
Finishes	Sealed Concrete floors		
Flooring types, wall finish types: paint wall covering carpet, ceramic tile, etc.	Painted concrete block walls		
Engineering:	Heated and ventilated (no A/C)		

General Comments:

Sign Shop

Space name / Room ID #:	Sign Shop	ID#:	15
Total SF (min/ room):	400		
Total SF (max/ room):	500		
Functional Description:	Shop for maintaining street / road signs		
Adjacencies:	Equipment bays, parts room, tool room, general work shop		
Equipment:	Computer workstation		
Finishes	Sealed Concrete floors		
Flooring types, wall finish types: paint wall covering carpet, ceramic tile, etc.	Painted concrete block walls		
Engineering:	Heated and ventilated (no A/C)		

General Comments:

Mechanical

Space name / Room ID #:	Mechanical	ID#:	16
Total SF (min/ room):	300		
Total SF (max/ room):	400		
Functional Description:	HVAC equipment space Water Service entrance		
Adjacencies:	Exterior wall		
Finishes	Unfinished space		
Engineering:	HVAC system equipment Water Service equipment		
General Comments:			

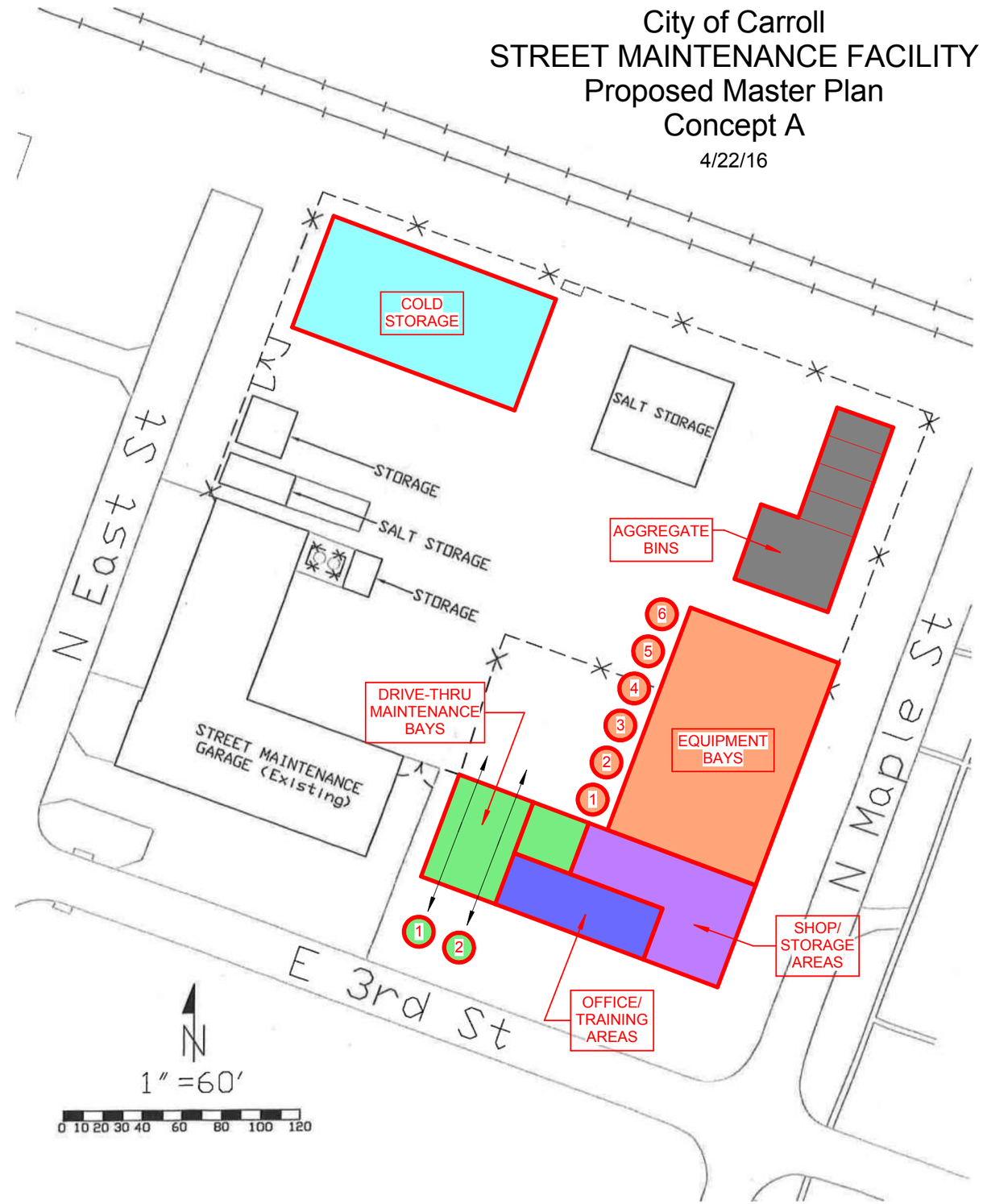
CONCEPTUAL SITE DESIGN OPTIONS

07

A / SITE CONCEPT

SITE CONCEPT "A" DESCRIPTION

Site Concept A utilizes an "L-shaped" Street Maintenance Facility building placed at the SE corner of the site. This placement allows the building to serve as a retaining wall to negotiate the significant grade change that is present on the SE quadrant of the city block that the Street Division currently occupies. Based on topographic information provided by the City, there is approximately 8 feet of fall from the SE corner of the property to the midpoint of the block in both the north and west directions. Site Concept A is based on a new one-story Maintenance Facility with the floor line slightly above the existing floor elevation at the east end of the current Street Maintenance Garage. Drive-thru mechanics bays are located at the west end of the new building to enable at-grade access drive from E 3rd Street through the building and into the center of the site. The south face of the new building would align with the existing maintenance garage. The Office/Training portion of the new building is located along the south side of the building providing a building entrance on E 3rd Street. As the building continues to the east, it would be "cut" into the existing grade, meaning the floor line will be below the finish grade along portions of the south wall and the entirety of the east wall. Maintenance shops and storage rooms will be located in the south wing of the building with equipment bays occupying the north wing of the building. Due to site topography, the equipment bays will only have doors on the west wall with no direct access to N Maple Street. This site concept creates a large maneuvering area within the center of the site that will provide good access to all of the various buildings while also providing a large flexible open area on the site. The new maintenance building will be approximately 19,000-20,800 square feet per the building program. Aggregate bins are shown located at the NE corner of the property between the existing salt storage building and the east property line. The largest portion of the aggregate bins would be for sand storage and would be covered. The smaller aggregate bins would likely be uncovered for storage of gravel, rock, topsoil, etc. The existing salt storage building remains. Site Concept A places a 120 foot x 60 foot (7200 square foot) unheated storage building at the NW corner of the property. The existing miscellaneous storage buildings along the west edge of the property and brine storage areas will remain. The existing street maintenance garage at the SW corner of the property will remain but will be converted from its current use as office/maintenance/storage to primarily storage use.

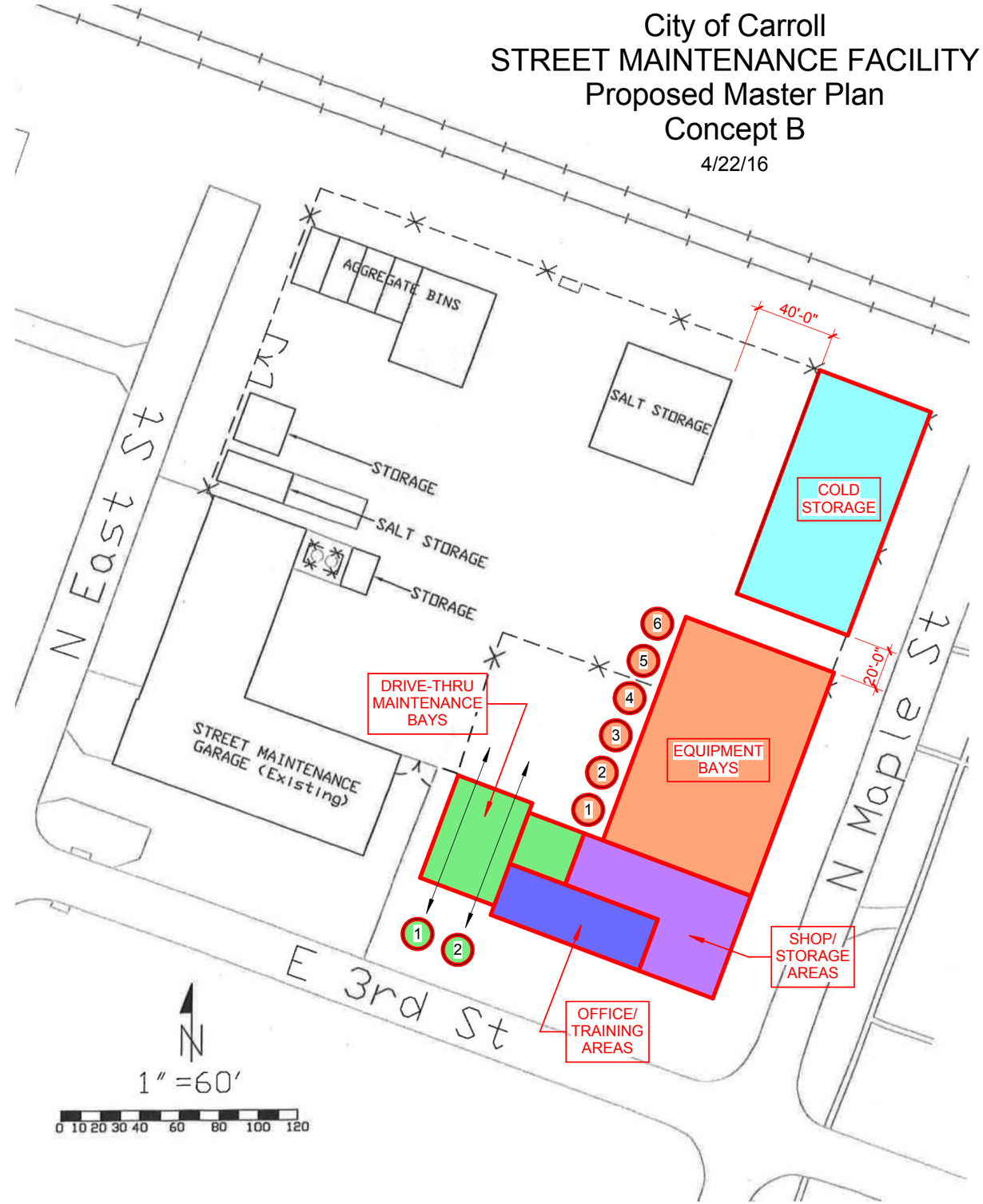


B / SITE CONCEPT

SITE CONCEPT "B" DESCRIPTION

Site Concept B is similar to Concept A in that it also utilizes an "L-shaped" Street Maintenance Facility building placed at the SE corner of the site. Concept B also utilizes a 19,000-20,800 square foot, one-story solution for the new maintenance facility with the same approach of "cutting" the new building into the sloping grades of the SE quadrant of the site described in Concept A. However, in concept B the east portion of the new Maintenance Facility is pushed to the south property line to provide more area at the NE corner of the site. This revision allows the 7200 square foot unheated storage building to be located at the NE corner of the property. This placement would provide better screening of the maintenance site from the residential properties on the east side of N Maple Street. Placing the unheated storage building with the north and east walls at the property line should provide approximately 40 feet between the storage building and the existing salt storage building and approximately 20 feet between the new maintenance facility and this storage building. Aggregate bins are shown located at the NW corner of the property between the existing salt storage building and the west property line.

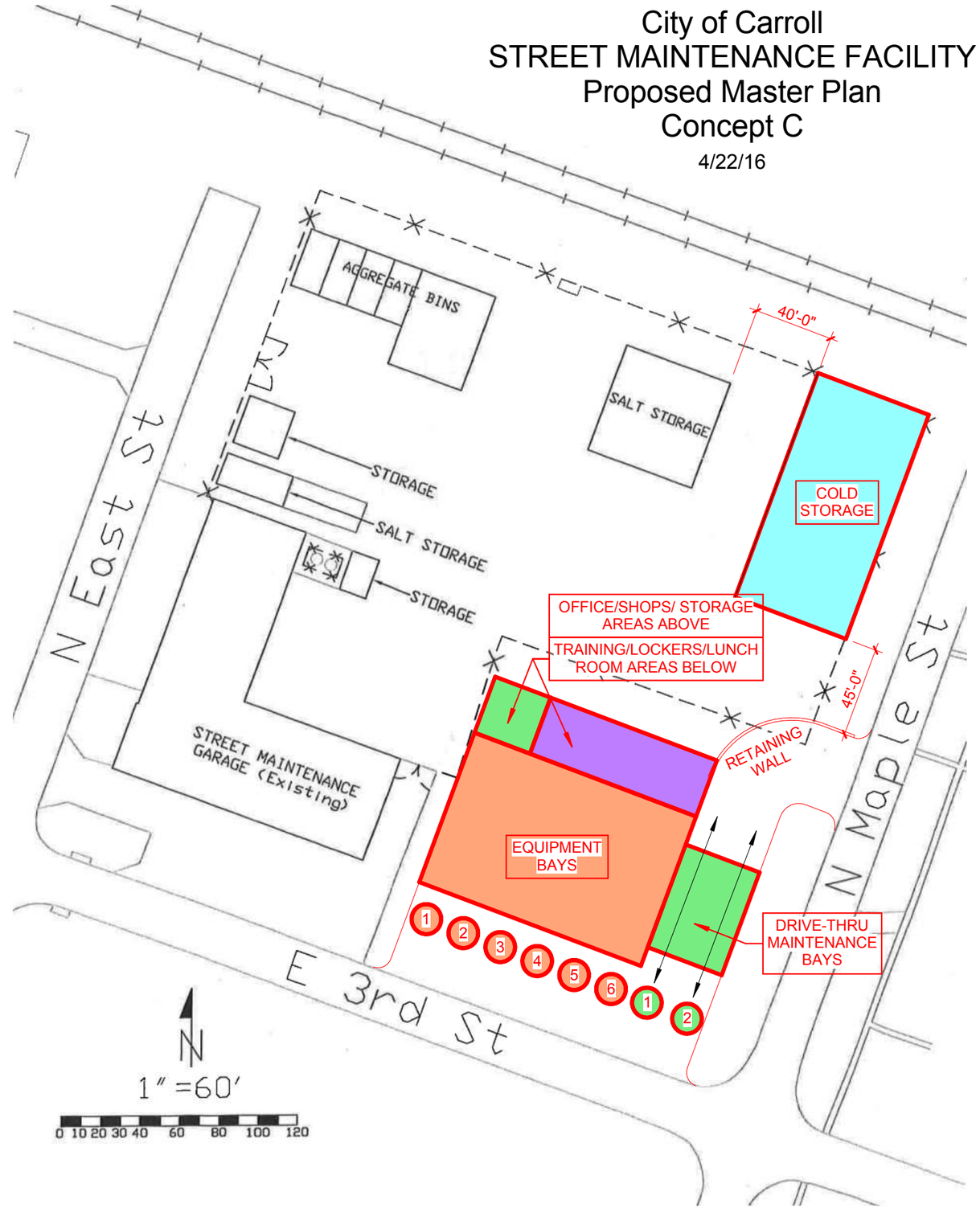
The largest portion of the aggregate bins would be for sand storage and would be covered. The smaller aggregate bins would likely be uncovered for storage of gravel, rock, topsoil, etc. The existing salt storage building remains. The existing miscellaneous storage buildings along the west edge of the property and brine storage areas will remain. The existing street maintenance garage at the SW corner of the property will remain but will be converted from its current use as office/maintenance/storage space to primarily storage use.



C / SITE CONCEPT

SITE CONCEPT "C" DESCRIPTION

Site Concept C is a "rectangular-shaped" Street Maintenance Facility placed at the SE corner of the site. It also utilizes 19,000-20,800 square feet, However, it is a two-story solution for the new maintenance facility with the same approach of "cutting" the new building into the sloping grades of the SE quadrant of the site described in Concept A. The two story portion consists of Office/ Shop/ Storage on second floor (same floor elevation as the equipment and maintenance bays) and Training/ Locker Rooms/ Lunchroom on first floor. Taking advantage of the existing sloping grades, the first floor will walk-out at grade. Similar to concept B the west portion of the new Maintenance Facility is pushed to the south property line to provide more area at the NE corner of the site. This revision allows the 7200 square foot unheated storage building to be located at the NE corner of the property. Like Concept B this placement would provide better screening of the maintenance site from the residential properties on the east side of N Maple Street. Placing the unheated storage building with the north and east walls at the property line should provide approximately 40 feet between the storage building and the existing salt storage building and approximately 45 feet between a new retaining wall and this storage building. Like Concept B, aggregate bins are shown located at the NW corner of the property between the existing salt storage building and the west property line. The largest portion of the aggregate bins would be for sand storage and would be covered. The smaller aggregate bins would likely be uncovered for storage of gravel, rock, topsoil, etc. The existing salt storage building remains. The existing miscellaneous storage buildings along the west edge of the property and brine storage areas will remain. The existing street maintenance garage at the SW corner of the property will remain but will be converted from its current use as office/ maintenance/storage space to primarily storage use.



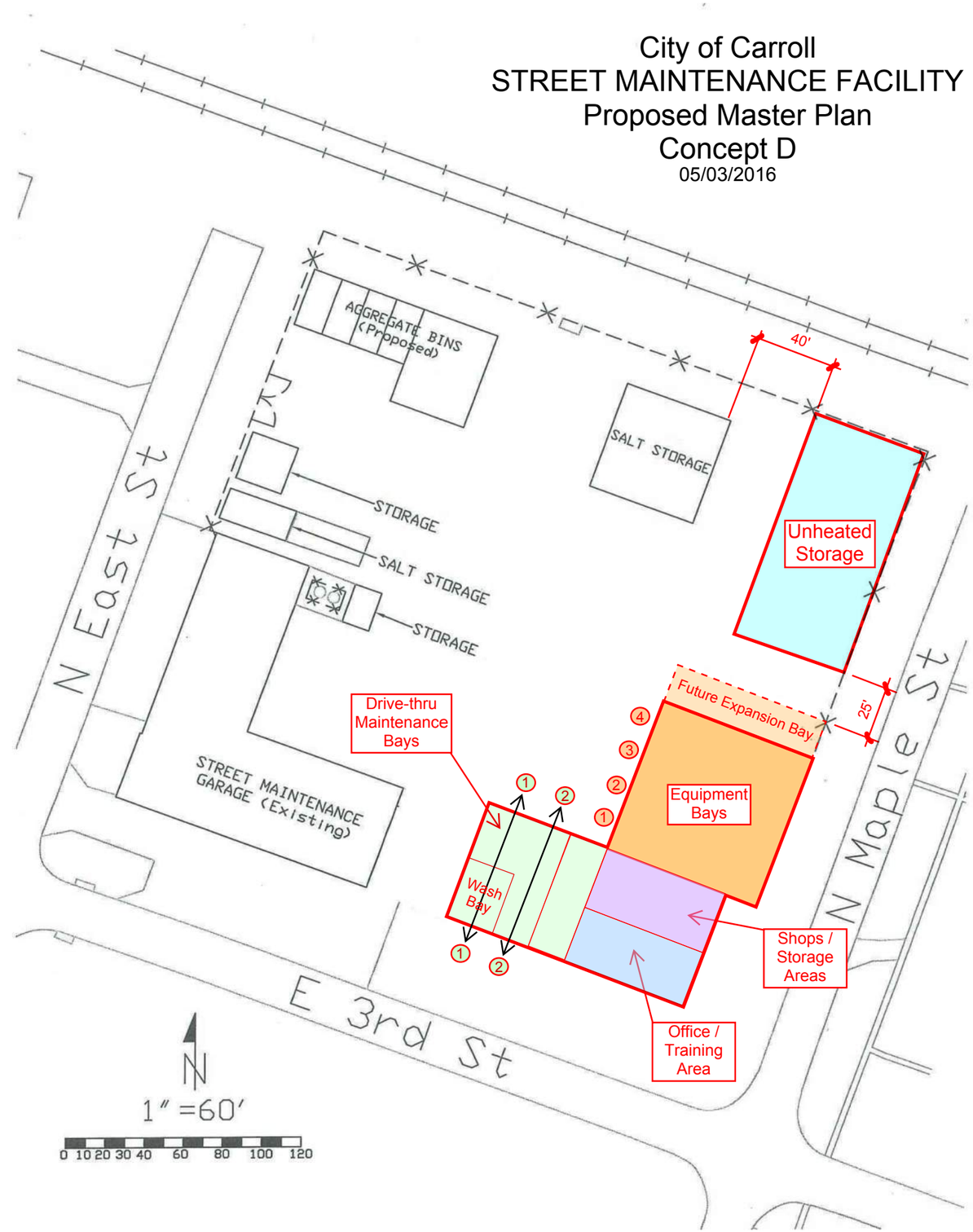
D / SITE CONCEPT

SITE CONCEPT "D" DESCRIPTION

Concept D reflects the final, reduced building program size and depicts a facility of approximately 14,500 square feet. Similar to Concepts A and B, Concept D also utilizes an "L-shaped" Street Maintenance Facility building placed at the SE corner of the site. This placement allows the building to serve as a retaining wall to negotiate the significant grade change that is present on the SE quadrant of the city block that the Street Division currently occupies. While Concept D does represent a smaller initial building footprint, the concept does provide future expansion of the equipment bays to the north. The 80-feet deep equipment bays will allow ample space for tandem parking of vehicles.

Site Concept D is based on a new one-story Maintenance Facility with the floor line slightly above the existing floor elevation at the east end of the Street Maintenance Facility. Drive-thru mechanics bays are located at the west end of the new building to enable at-grade access drive from E 3rd Street through the building and into the center of the site. The south face of the new garage aligns with the existing maintenance garage. The Office/Training portion of the new building would be located along the south side of the building providing a building entrance on E 3rd Street. As the building continues to the east, it would be "cut" into the existing grade, meaning the floor line will be below the finish grade along portions of the south wall and the entirety of the east wall. Maintenance shops and storage rooms will be located in the south wing of the building with equipment bays occupying the north wing of the building. Due to site topography, the equipment bays will only have doors on the west wall with no direct access to N Maple Street. This site concept creates a large maneuvering area within the center of the site the will provide good access to all of the various buildings while also providing a large flexible open area on the site.

A 7200 square feet unheated storage building is located at the NE corner of the property. This placement provides improved screening of the maintenance site from the residential properties on the east side of N Maple Street. Placing the unheated storage building with the north and east walls at the property line should provide approximately 40' between the storage building and the existing salt storage building and approximately 45' between the new maintenance facility and this storage building. Aggregate bins are shown located at the NW corner of the property between the existing salt storage building and the west property line. The largest portion of the aggregate bins would be for sand storage and would be covered. The smaller aggregate bins would likely be uncovered for storage of gravel, rock, topsoil, etc. The existing salt storage building remains. The existing miscellaneous storage buildings along the west edge of the property and brine storage areas will remain. The existing street maintenance garage at the SW corner of the property will remain but will be converted from its current use as office/maintenance/storage space to primarily storage use.



OPINION OF PROBABLE COSTS

08

08 / OPINION OF COSTS

OPINION OF PROBABLE COSTS

Following is an opinion of probable costs to determine budget parameters to implement the development of the Concept D Site Master Plan. These budget numbers are based upon construction costs current to the date of this report. As this site master plan will be developed over a period of time, the budgeted values should be adjusted to reflect anticipated construction costs at the time any particular portion of the master plan may be constructed.

Type of construction (structural systems, HVAC systems, materials/finishes) have a tremendous impact on the costs of any project. The following opinion of cost is based upon the following assumptions:

Maintenance Garage Facility: Pre-engineered steel frame structure with pre-cast insulated concrete sandwich wall panels, sloped metal roof, poured concrete foundations and concrete slab-on-grade for the main building structure. Interior walls in the shop and garage areas are anticipated to be concrete masonry walls to a minimum of 8 foot height with metal framed/gypsum board walls (painted) above to fully enclose spaces. Floors are anticipated to be sealed concrete. The administration and meeting rooms are envisioned to be metal stud frame/gypsum board walls (painted), lay-in type acoustical ceilings and carpet tile in the office area and durable tile flooring in the main circulation areas and meeting room space. Locker and restroom areas are anticipated to be metal stud frame/gypsum board walls with tile finish, tiled floors and a combination of moisture resistant acoustical tile and gypsum board ceilings. The equipment bays are planned to utilize overhead radiant heat and will be provided with ventilation air but are not planned to be air conditioned. The administrative/meeting areas/locker/restrooms of the maintenance building are planned to have forced air heating, ventilation and air conditioning.

Unheated Storage Building: The unheated storage building is anticipated to be a pre-engineered wood-framed structure with metal siding and metal roof panels, poured concrete foundation and concrete slab-on-grade structure. Mechanical ventilation as required to address evacuating vehicle exhaust is anticipated.

Aggregate Storage Bins: The aggregate storage bins are anticipated to be constructed utilizing large-scale, pre-cast concrete blocks to form bunkers. The sand storage bunker (approximately 2000 sf) is anticipated to have a metal hoop-type roof structure with fiberglass cover to protect the sand from getting saturated with rain.

Existing Maintenance Garage Building: Per direction from the City, no costs are included for any work to update/reconfigure/repurpose the existing maintenance garage.

Existing (2) Salt Storage buildings, (2) storage sheds on west side of property and brine storage: No costs included for any changes to these structures.

Paving: For the purpose of the cost opinion, concrete paving is only included for a driveway connecting the south facing doors of the drive-thru mechanics bays to E 3rd Street and a 25' apron area outside each of the bay doors facing into the center of the site – two on the north side of the mechanics bays and four on the west side of the equipment bays.

Concept D Cost Opinion			Total
Construction Costs			
New Maintenance Shop Building - Concept "D"			$ 2,454,500
Existing Site Demo			$ 13,400
Site Development			$ 232,120
Site Utilities			$ 16,380
Design Contingency @ 15%			$ 407,460
Subtotal			**$ 3,123,860**
Bid Contingency @ 3%			$ 93,716
Construction Contingency @ 10%			$ 312,386
Subtotal - New Maintenance Shop Building - Concept "D"			**$ 3,529,962**
Cold Storage Building			$ 216,000
Aggregate Bins			$ 145,000
Subtotal - Including Cold Storage, Aggregate Bins, & Site Lighting			**$ 3,890,962**
Soft Costs			
Fees			
Architects,Structural, Mechanical and Electrical Eng			$ 277,240
Civil Engineering			$ 55,000
IBC Special Testing and Inspections			$ 23,755
Legal			
Geotechnical Soils Investigation			$ 4,000
FF&E			
Furnishings			$ 25,000
Misc			
Printing and Distribution of Documents			$ 10,000
Subtotal			**$ 394,995**
Total Project Costs			**$ 4,285,957**

APPENDIX A 09

CITY OF CAR. LL
Department of Public Works
112 E. 5th Street
CARROLL, IOWA 51401
(712) 792-1000

JOB _____
SHEET NO. _____ OF _____
CALCULATED BY _____ DATE _____
CHECKED BY _____ DATE _____
SCALE _____

Street Maintenance Garage
Facility Components

	Approx. Existing (S.F.)	DMG 2001 (S.F.)	DMG-2001 Renovate (S.F.)	DMG-2001 New (S.F.)	Proposal (S.F.)
Admin/Amenities					
office	165	225			
Lunch/Training	255	390			
Locker/Restroom	150	520			
Admin/Amenities Sub	570	1,135	1,135		1225
Warm Storage					
Upper Garage	4,137	5,387			
Lower Garage	4,170	5,340			
Warm Storage Sub.	8,307	10,727	10,727		10,450
Shops					
General Purpose Shop	925	250			
Sign Shop	165	500			
Supply Room		200			
Shops Subtotal	1,090	1,450		1,450	1,575
Maintenance Shop	1,660	5,000		5,000	5,450
General Storage	215				
Subtotal	11,872		11,872	6,450	18,700

PRODUCT 204-1 (Single Sheets) 205-1 (Padded) MEEDS® Inc., Groton, Mass. 01471. To Order PHONE TOLL FREE 1-800-225-6330

CITY OF CAR. .LL
Department of Public Works
112 E. 5th Street
CARROLL, IOWA 51401
(712) 792-1000

JOB _____

SHEET NO. _____ OF _____

CALCULATED BY _____ DATE _____

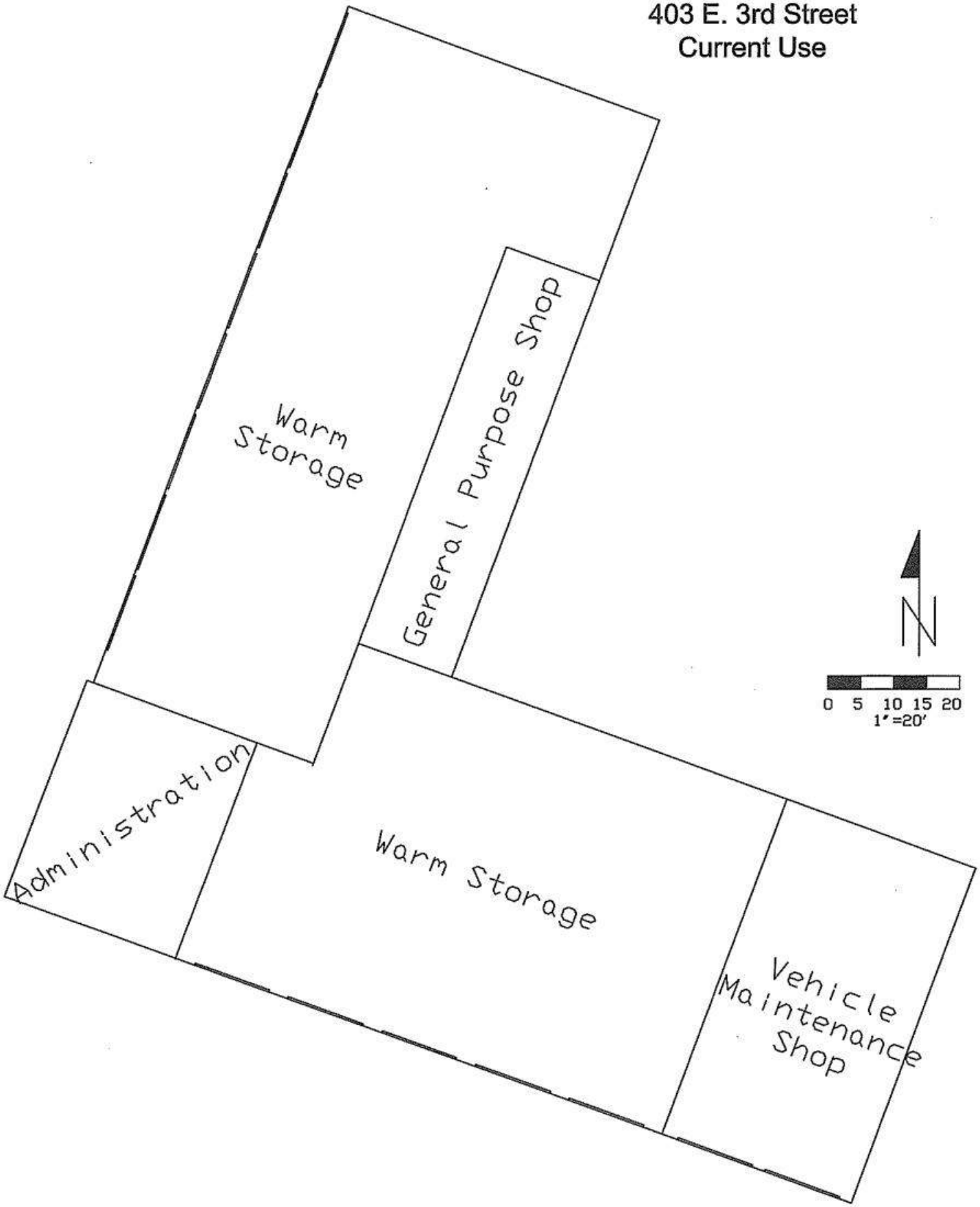
CHECKED BY _____ DATE _____

SCALE _____

Unheated Storage	560	2,500		2,500	
Salt/Brine	550	1,750		1,750	3,575
Total	12,982	22,572	11,872	10,700	

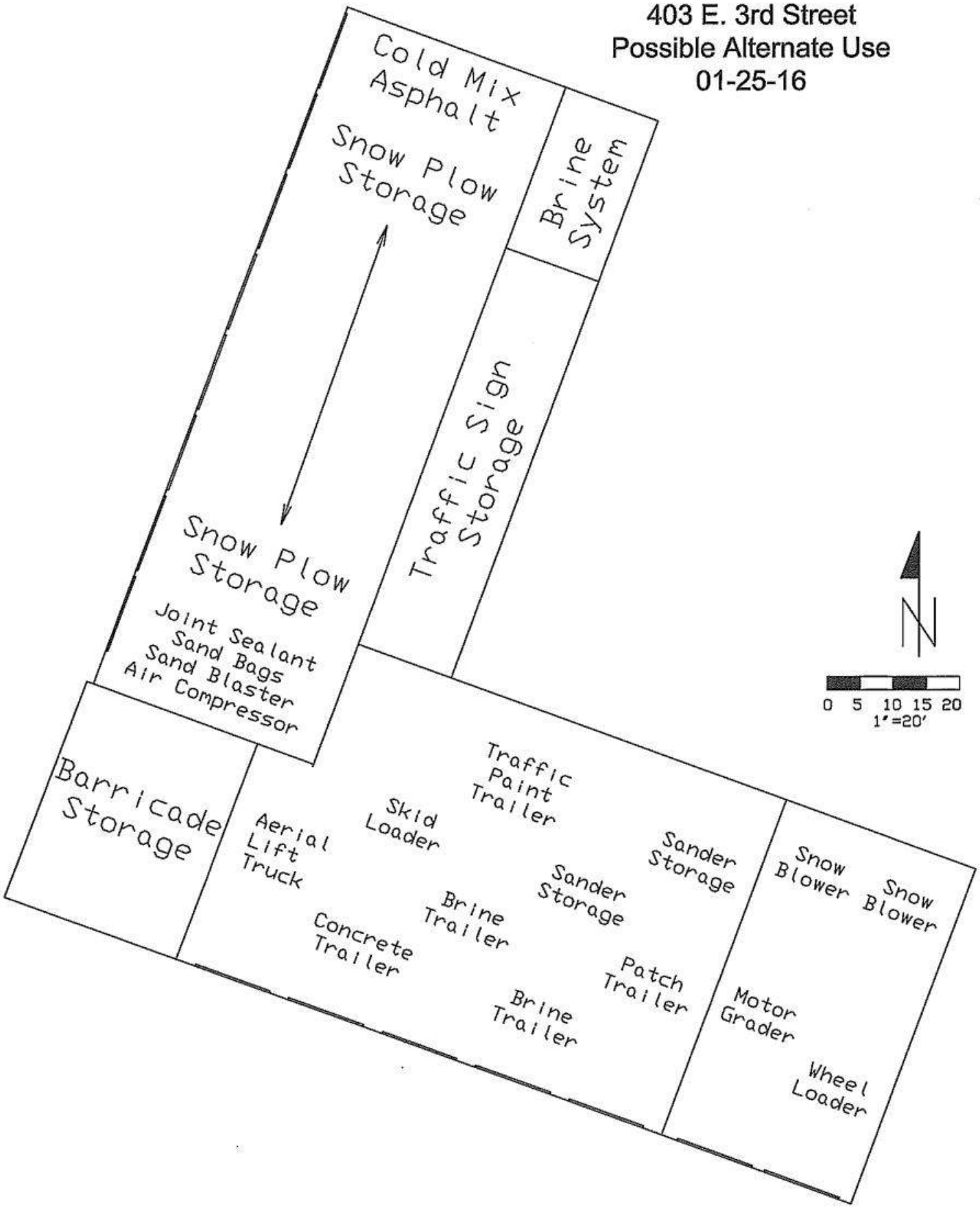
PRODUCT 204-1 (Single Sheets) 205-1 (Padded) NEBS Inc., Groton, Mass. 01471. To Order PHONE TOLL FREE 1-800-225-6380

STREET MAINTENANCE GARAGE
403 E. 3rd Street
Current Use



Approx Area=11,872 S.F.

STREET MAINTENANCE GARAGE
403 E. 3rd Street
Possible Alternate Use
01-25-16



Approx Area=11,872 S.F.

CITY OF CARROLL
Department of Public Works
112 E. 5th Street
CARROLL, IOWA 51401
(712) 792-1000

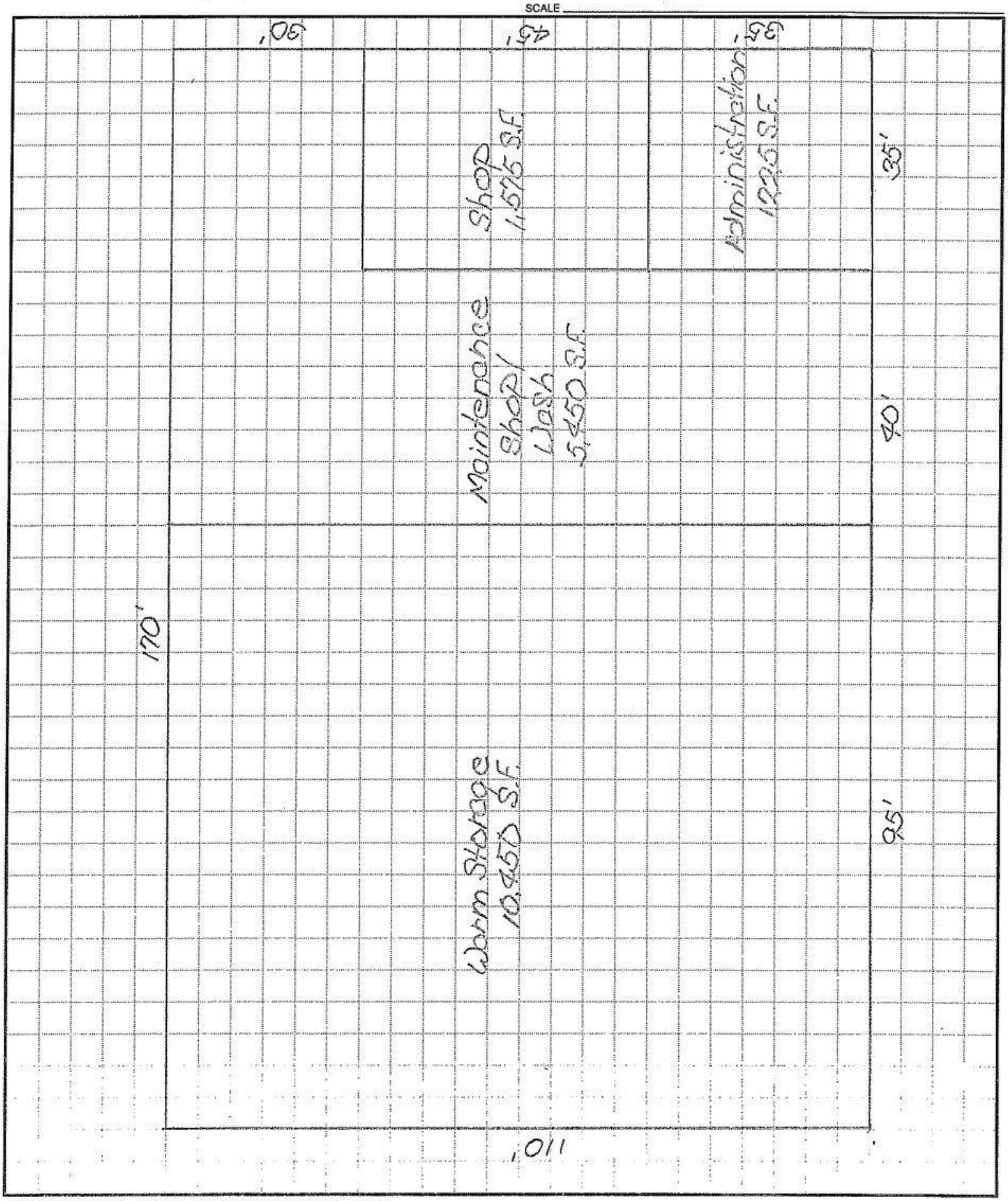
JOB Street Maintenance Facility

SHEET NO. _____ OF _____

CALCULATED BY _____ DATE _____

CHECKED BY _____ DATE _____

SCALE _____



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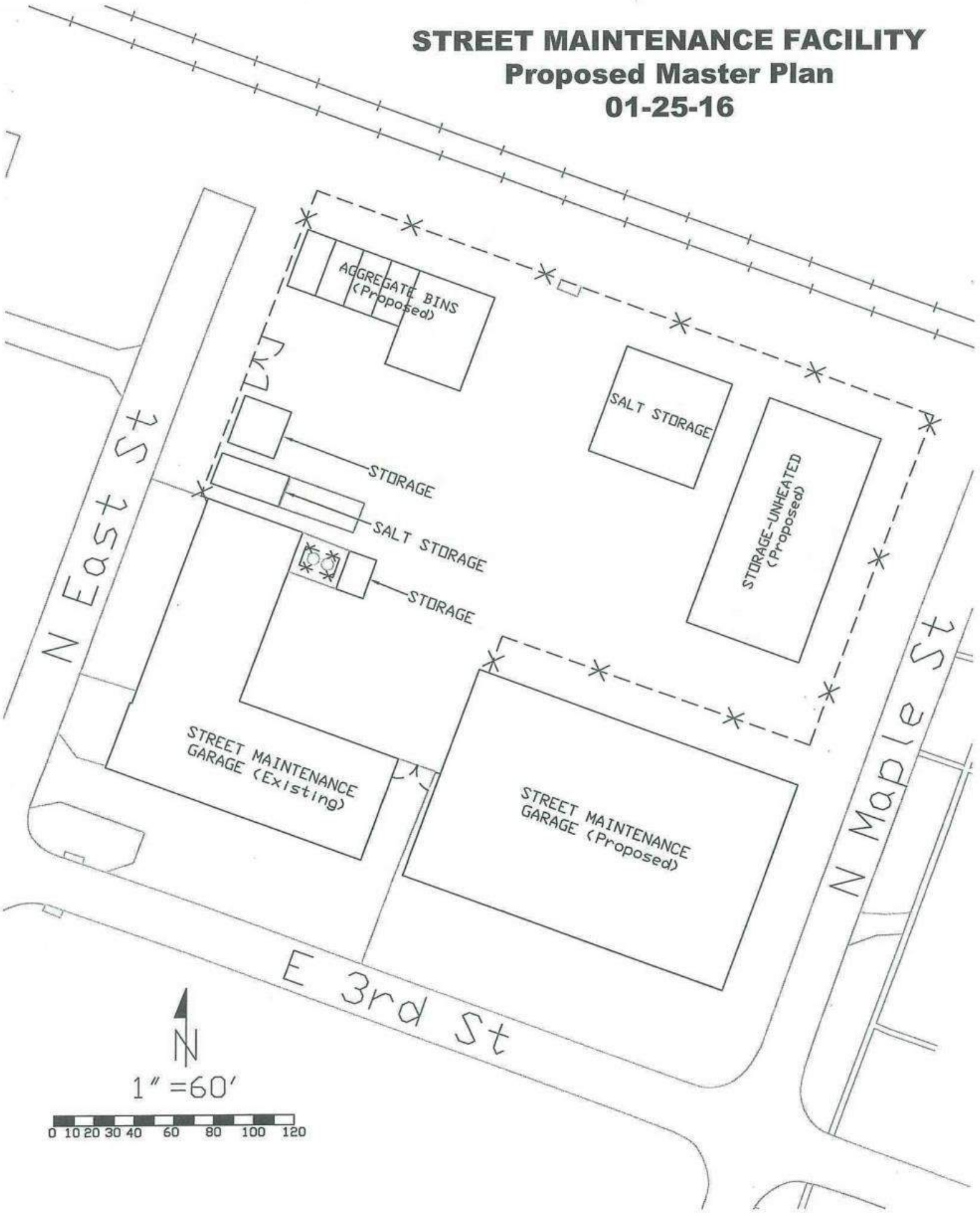
STREET MAINTENANCE FACILITY
Proposed Master Plan
01-25-16