

CHUGACH ELECTRIC ASSOCIATION, INC.
DISTRIBUTION FACILITIES UNDERGROUNDING PLAN
2020 – 2024



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I. INTRODUCTION

On March 1, 2005, the Anchorage Assembly adopted certain revisions to Section 21.07.050, Utility Distribution Facilities, of the Anchorage Municipal Code. These revisions require an electric utility to “include as part of its annual capital improvement plan, a five-year undergrounding program” (21.07.050F1). In each of the years of this program the electric utility shall plan on expending “at least two percent of a three-year average of its annual gross retail revenues derived from utility service connections within the municipality” (21.07.050G1a). This requirement means that Chugach Electric Association (Chugach) is required to spend approximately \$3.8 million annually to underground existing overhead facilities. Over-expenditures or under expenditures may be carried over as an adjustment to the following year’s obligation.

In the development of the five-year undergrounding program, the electric utility is allowed to choose which existing lines to underground. Specifically, priorities for the program “shall be based on undergrounding in conjunction with the electric utility’s essential system improvements and then by target area” (21.07.050F1).

The following document contains Chugach’s five-year undergrounding program. Overall, the plan calls for \$34,210,000 to be expended on undergrounding existing overhead lines from 2020 to 2024, for an average of \$6,842,000 annually. This amount is higher than the three-year average as several large projects were delayed over the last several years.

The projects were chosen to accommodate Chugach's overall system needs as well as consideration of the designated target areas. The inclusion of a project within this plan does not guarantee that the project will be constructed in the designated year.

II. PROJECT IDENTIFICATION

In order to reduce the overall financial impact of the ordinance on the utility ratepayers, in the revisions adopted by the Anchorage Assembly, provisions were made for utilities to choose projects that have benefits that are not just aesthetic. Therefore, following the direction of the ordinance, Chugach has determined projects essential to the continued reliable operation of the electrical system by reviewing its system outage data, results from an ongoing inspection program, load growth analysis and target areas.

III. PROJECT SELECTION

Chugach’s undergrounding projects are intended to implement one or a combination of five main objectives. These objectives are listed in order of priority; however, the priority of a project can change depending on the specific project and how it relates to maintaining the integrity of the Chugach system.

1. **Safety:** These projects will improve the safety of our system by retiring overhead facilities as they are identified where clearances or strength requirements are less than mandated by the National Electric Safety Code (NESC). Lines over residential

houses or buildings, although not necessarily a code violation, pose a potential safety concern and will attempt to be relocated underground as part of this plan.

2. **Non-reimbursable Portions of Relocation Projects:** State and Municipal road projects often include the relocation of existing utility facilities at the expense of the road project. Under this category, Chugach will fund any betterment undertaken by the utility embedded within the relocation work or add small system improvements that may lie just outside of the scope of the road project but that are ideal to construct at the same time.
3. **Load Growth Improvements:** Existing overhead facilities are sometimes insufficient to handle the additional load of a large commercial or residential development. Instead of reconductoring an existing pole line with larger conductor, these projects will install larger underground conductor and retire the overhead facilities.
4. **Reliability:** Chugach realizes the need for reliable electrical service and on an ongoing basis analyzes the system to ensure this reliability remains at an acceptable standard. These projects include loop closures to provide an alternate feed for radial underground circuits. Some areas have higher numbers of wind related or tree related outages. These areas may benefit by retiring overhead systems and replacing them with underground facilities.
5. **Target Areas:** Existing overhead facilities located in target areas as defined in “Designation of target areas” (21.07.050F) emphasize locations that would benefit significant numbers of people. Some of the areas specifically listed include central business areas, major traffic corridors, parks and recreational areas, and school and university areas.

IV. LIST OF PROJECTS

The following spreadsheet lists the undergrounding projects to be performed in the years from 2020 to 2024. Project summary sheets have been created and are included in Appendix A.

**2020 - 2024 Overhead to Underground Projects
Chugach Electric Association, Inc.**

Project Description	Page Number	Grid	Work Order	Cost Estimate	2020	2021	2022	2023	2024
Patterson and Tudor - 4/0 ACSR	A-1	1740	E1813854	\$ 500,000	\$ 500,000	\$ -	\$ -	\$ -	\$ -
Muldoon Road - Creekside to Northern Lights	A-2	1440, 1540, 1640	E1613660	\$ 2,000,000	\$ 2,000,000	\$ -	\$ -	\$ -	\$ -
O'Malley Road - Livingston to Hillside	A-3	2538, 2539	E1813812	\$ 2,100,000	\$ 100,000	\$ 2,000,000	\$ -	\$ -	\$ -
Rockridge Drive	A-4	2638	E2013958	\$ 400,000	\$ 400,000	\$ -	\$ -	\$ -	\$ -
Alyeska Subdivision	A-5	4816	E1913914	\$ 250,000	\$ 250,000	\$ -	\$ -	\$ -	\$ -
Girdwood Entry Sub	A-6	5012	E1913879	\$ 80,000	\$ 80,000	\$ -	\$ -	\$ -	\$ -
Shaun Landing Circle	A-7	2327	E1913886	\$ 40,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
Kieffer Sub	A-8	1933	E1913887	\$ 90,000	\$ 90,000	\$ -	\$ -	\$ -	\$ -
Westpark Subdivision	A-9	2031, 2032	TBD	\$ 500,000	\$ 500,000	\$ -	\$ -	\$ -	\$ -
Jewel Lake Road - Strawberry to 84th	A-10	2125, 2225	E2013957	\$ 1,700,000	\$ 1,700,000	\$ -	\$ -	\$ -	\$ -
Raspberry Industrial Subdivision	A-11	2030	E2013961	\$ 400,000	\$ 400,000	\$ -	\$ -	\$ -	\$ -
Arctic Blvd Raspberry to Dimond - 4/0 ACSR	A-12	2129, 2130, 2230	E2013962	\$ 1,700,000	\$ 700,000	\$ 1,000,000	\$ -	\$ -	\$ -
Old Seward Hwy - O'Malley Rd to Huffman Rd	A-13	2632, 2732	E1813853 E2020058	\$ 4,000,000	\$ 2,000,000	\$ 2,000,000	\$ -	\$ -	\$ -
Huffman Road - Lake Otis to Old Seward Hwy	A-14	2832, 2833	E1813852	\$ 3,800,000	\$ 200,000	\$ 3,600,000	\$ -	\$ -	\$ -
Turnagain Park Subdivision	A-15	1526, 1527	TBD	\$ 2,200,000	\$ 100,000	\$ 600,000	\$ 750,000	\$ 750,000	\$ -
Old Seward Hwy - Dimond Blvd to O'Malley Rd	A-16	2332, 2432, 2532	TBD	\$ 2,500,000	\$ -	\$ 1,000,000	\$ 1,500,000	\$ -	\$ -
Roosevelt Park	A-17	1728	TBD	\$ 1,800,000	\$ -	\$ 100,000	\$ 500,000	\$ 1,200,000	\$ -
Baxter Road	A-18	1739	TBD	\$ 850,000	\$ -	\$ -	\$ 850,000	\$ -	\$ -
Dimond Blvd. - Jewel Lake to Roy	A-19	2425-2427	TBD	\$ 2,500,000	\$ -	\$ -	\$ 2,500,000	\$ -	\$ -
Elmore and Tudor - 4/0 ACSR	A-20	1835, 1836	TBD	\$ 500,000	\$ -	\$ -	\$ 500,000	\$ -	\$ -
Wickersham Park	A-21	1833, 1834	TBD	\$ 750,000	\$ -	\$ -	\$ 750,000	\$ -	\$ -
Lake Otis Parkway	A-22	1834, 1934	TBD	\$ 2,000,000	\$ -	\$ -	\$ -	\$ 2,000,000	\$ -
Green Valley	A-23	1726, 1727	TBD	\$ 250,000	\$ -	\$ -	\$ -	\$ 50,000	\$ 200,000
Aero Acres	A-24	1726	TBD	\$ 800,000	\$ -	\$ -	\$ -	\$ -	\$ 800,000
Wisconsin Street	A-25	1626-1726	TBD	\$ 2,500,000	\$ -	\$ -	\$ -	\$ -	\$ 2,500,000
				\$ 34,210,000	\$ 9,060,000	\$ 10,300,000	\$ 7,350,000	\$ 4,000,000	\$ 3,500,000

Appendix A

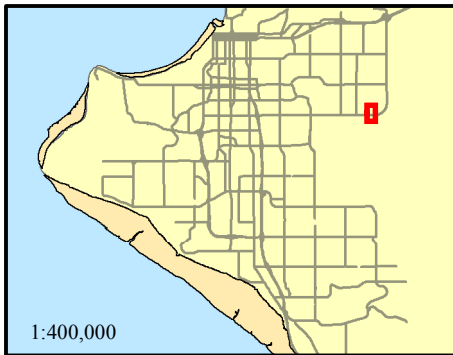
2020 - 2024 Underground Project Summary Sheets

2020 UNDERGROUNDING PROJECT PATTERSON & TUDOR

PROJECT NUMBER: E1813854

PROJECT COST: \$500,000

CHUGACH
POWERING ALASKA'S FUTURE



VICINITY MAP

PROJECT DESCRIPTION:

The project will underground approx. 1/4 mile of 4/0 ACSR 3-phase overhead, and replace the 750 kcmil direct-bury crossing under Tudor Road on feeder BF 512. This project is required as the last phase of the BF 512 feeder improvement for capacity out of the substation, and for contingency support of DL 512.

NOTES:

This is for reference and review purposes only of proposed Undergrounding Projects and is for official Chugach Electric Association use only.

For additional information concerning this project, please contact Shelly Schmitt at 762-4628.

LEGEND

- Primary Overhead Conductor
- Primary Underground Conductor
- Project Area

Coordinate System: Alaska State Plane Zone 4, NAD83



Document Path: J:\GIS\Custom Maps\Distribution\Undergrounding Projects\Five Year Plan\2020-2024\2020 Patterson & Tudor.mxd

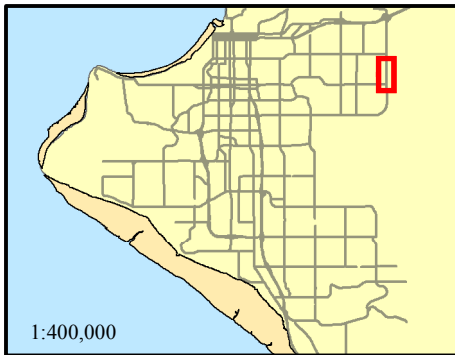
2020 UNDERGROUNDING PROJECT MULDOON ROAD

Creekside to Northern Lights

CHUGACH
POWERING ALASKA'S FUTURE

PROJECT NUMBER: E1613660

PROJECT COST: \$2,000,000



VICINITY MAP

PROJECT DESCRIPTION:

This project is the last phase of the replacement of 4/0 ACSR three-phase with 750 kcmil cable in duct between Baxter and DeBarr Substations. The overhead line is non-compliant with regard to the NESC strength requirements and in a known high wind corridor. The capacity increase is required to feed DeBarr Feeder 142 and 152 from the Baxter Substation, particularly in the event of the loss of the DeBarr Substation (transformers, bus or 35 kV feed). The circuit is located along a high visibility arterial and in an area of local load growth.

NOTES:

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For additional information concerning this project, please contact Shelly Schmitt at 762-4628.

LEGEND

- Primary Overhead Conductor
- +— Primary Underground Conductor
- Project Area

Coordinate System: Alaska State Plane Zone 4, NAD83



Document Path: J:\GIS\Custom Maps\Distribution\Undergrounding Projects\Five Year Plan\2020-2024\2020 Muldoon Road Creekside to Northern Lights.mxd

2020 UNDERGROUNDING PROJECT O'MALLEY ROAD - LIVINGSTON TO HILLSIDE

PROJECT NUMBER: E1813812

PROJECT COST: \$2,100,000

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PROJECT DESCRIPTION:

This project will underground approx. one mile of 336 ACSR 3-phase overhead line supporting OMSS 212 & OMSS 312 feeders. The feeders will be replaced with parallel runs of underground 750 kcmil cable. The project will be constructed in conjunction with the upper O'Malley road improvements to remedy pole location and easement conflicts.

NOTES:

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For additional information concerning this project, please contact Brad Jackson at 762-4458.

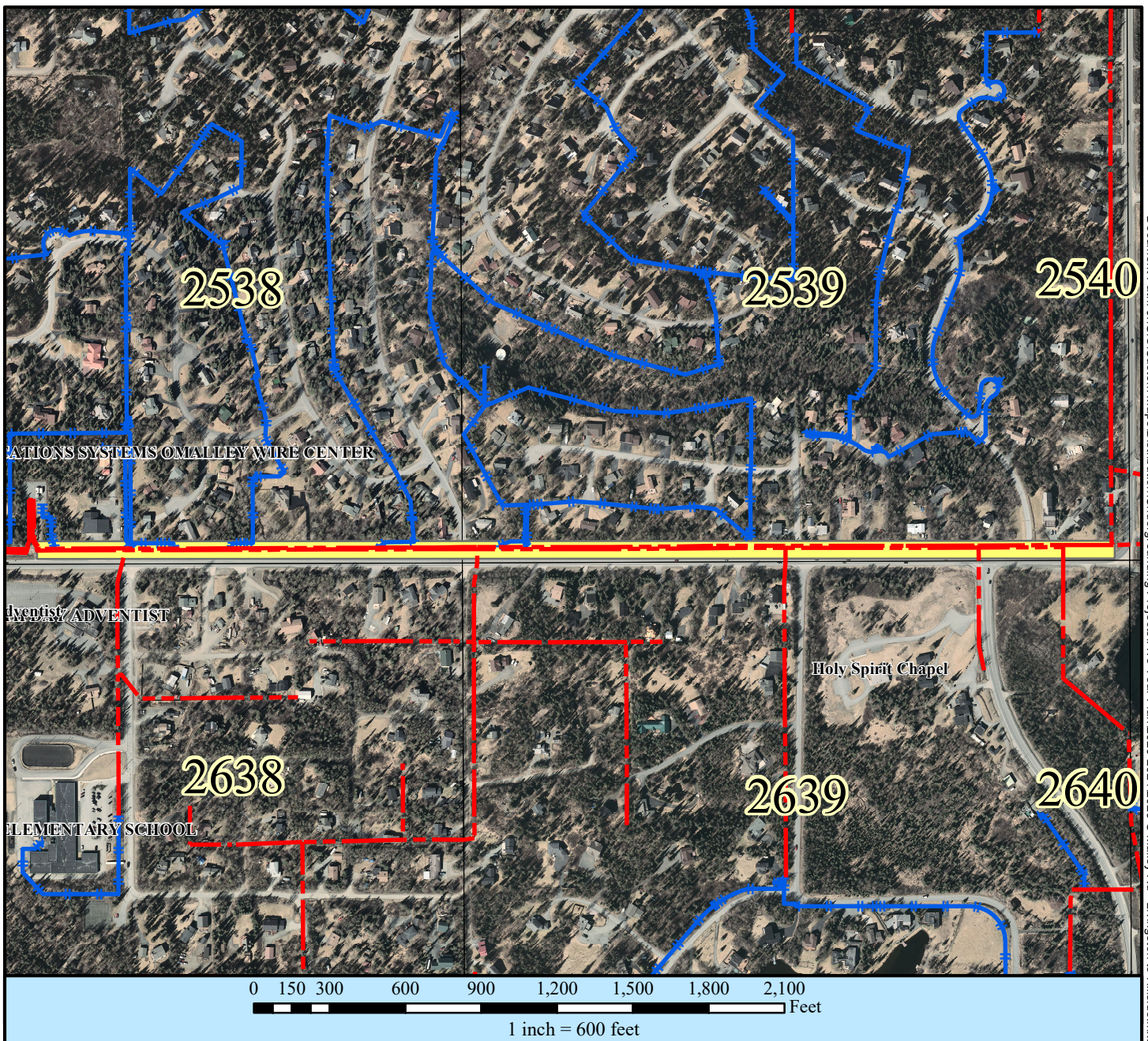
LEGEND

- Primary Overhead Conductor
- Primary Underground Conductor
- Project Area



1:400,000

VICINITY MAP



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2020 UNDERGROUNDING PROJECT ROCKRIDGE DRIVE

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PROJECT NUMBER: E2013958

PROJECT COST: \$400,000

PROJECT DESCRIPTION:

This project will underground approx. 1/4 mile of #2 ACSR 3-phase overhead on OMSS 212. There will be loop closures required as part of this project due to the undergrounding of feeders along O'Malley Road.

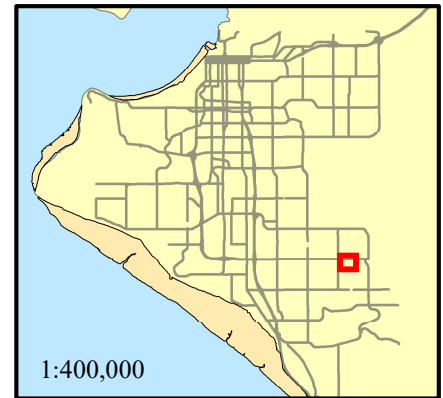
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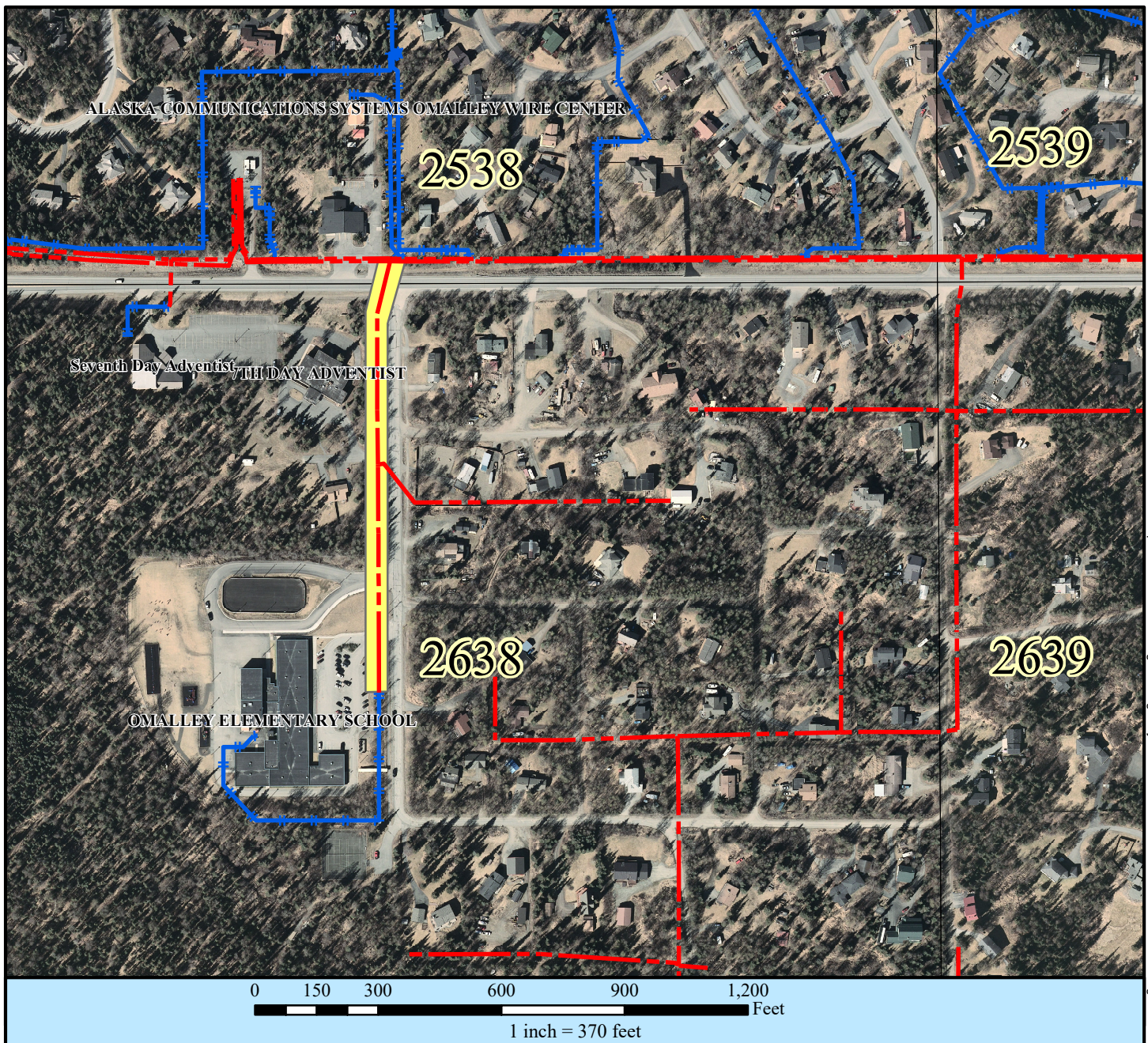
For additional information concerning this project, please contact Brad Jackson at 762-4458.

LEGEND

- Primary Overhead Conductor
- Primary Underground Conductor
- Project Area



VICINITY MAP



2020 UNDERGROUNDING PROJECT ALYESKA SUBDIVISION

Alyeska at Arlberg

PROJECT NUMBER: E1913914

PROJECT COST: \$250,000

CHUGACH
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PROJECT DESCRIPTION:

This project will retire older overhead lines in the Alyeska Subdivision in Girdwood.
This project will provide increased system capacity and reliability for residents in the area.

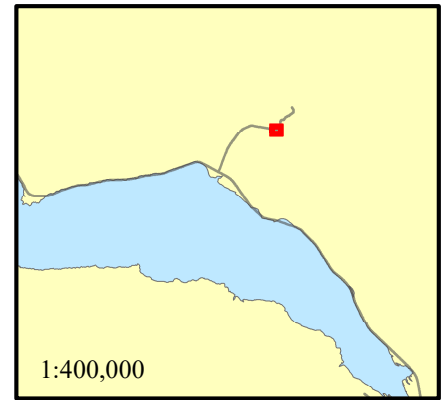
NOTES:

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For additional information concerning this project, please contact Brad Jackson at 762-4458.

LEGEND

- Primary Overhead Conductor
- Primary Underground Conductor
- Project Area



VICINITY MAP



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2020 UNDERGROUNDING PROJECT GIRDWOOD ENTRY SUBDIVISION

PROJECT NUMBER: E1913879

PROJECT COST: \$80,000

CHUGACH
POWERING ALASKA'S FUTURE

PROJECT DESCRIPTION:

This project will underground approximately 1400 feet of OH three-phase conductor to mitigate aging pole foundations across wetlands in the Girdwood Entry Subdivision. This project will provide increased system capacity and reliability for residents in the area.

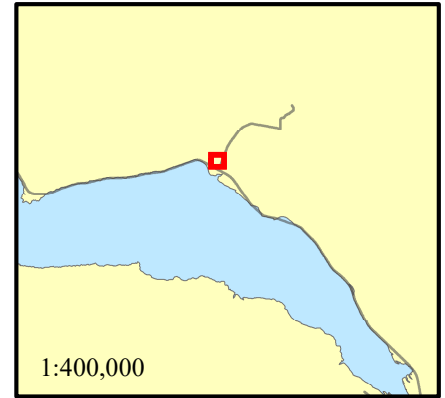
NOTES:

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For additional information concerning this project, please contact Brad Jackson at 762-4458.

LEGEND

- Primary Overhead Conductor
- Primary Underground Conductor
- Project Area



VICINITY MAP



Coordinate System: Alaska State Plane Zone 4, NAD83

2020 UNDERGROUNDING PROJECT SHAUN LANDING CIRCLE

PROJECT NUMBER: E1913886

PROJECT COST: \$40,000

CHUGACH
POWERING ALASKA'S FUTURE

PROJECT DESCRIPTION:

This project will underground approximately 1000 feet of OH single-phase conductor and install junction boxes to mitigate aging pole foundations and improve reliability for the residences around Shaun Landing Circle.

This project will provide increased system capacity and reliability for residents in the area.

NOTES:

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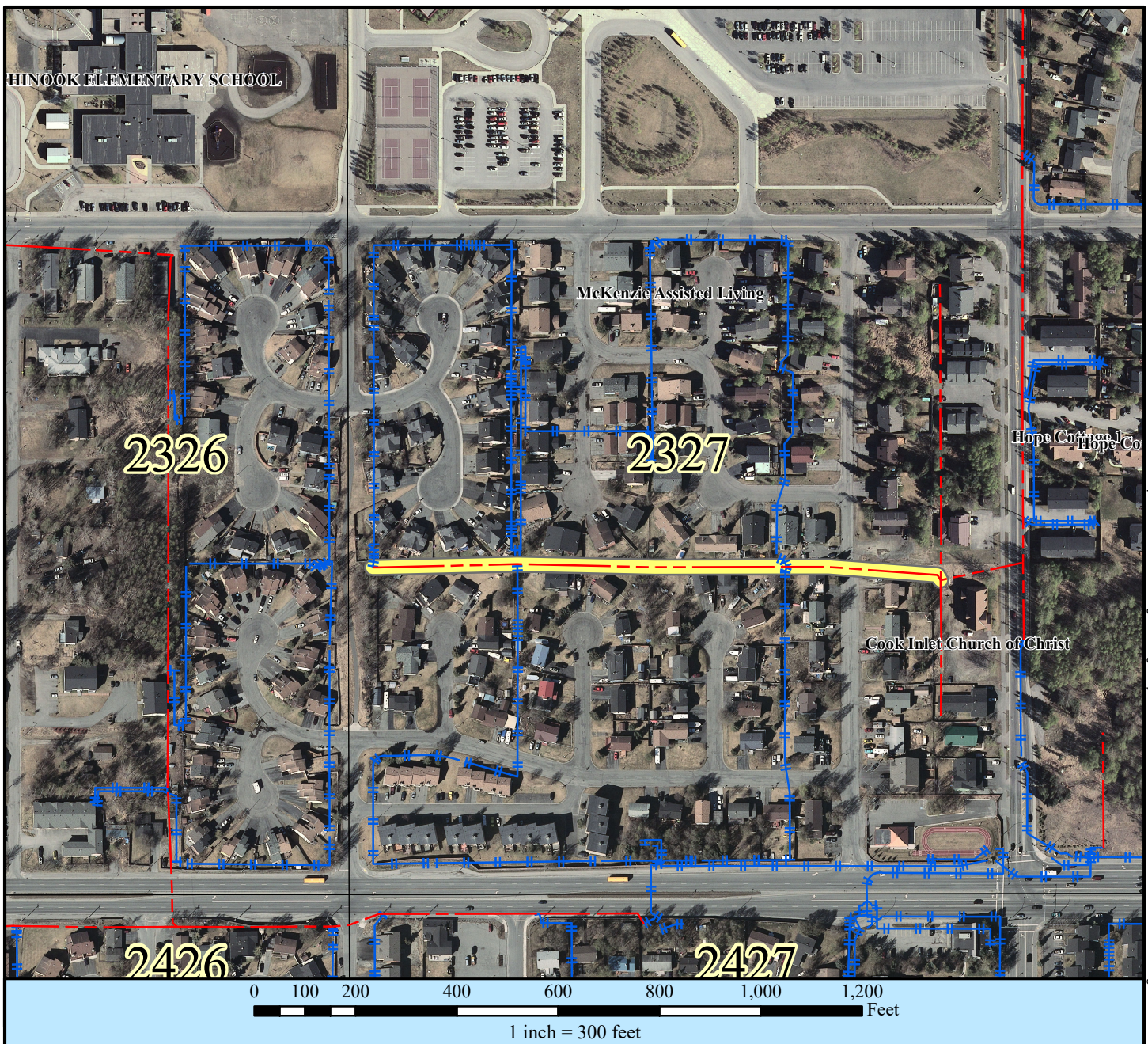
For additional information concerning this project, please contact Brad Jackson at 762-4458.

LEGEND

- Primary Overhead Conductor
- Primary Underground Conductor
- Project Area



VICINITY MAP



2020 UNDERGROUNDING PROJECT KIEFFER SUBDIVISION

PROJECT NUMBER: E1913887

PROJECT COST: \$90,000

CHUGACH
POWERING ALASKA'S FUTURE

PROJECT DESCRIPTION:

This project will underground approximately 600 feet of OH single-phase conductor to simplify troubleshooting and system configuration along Lupin Place and 53rd.

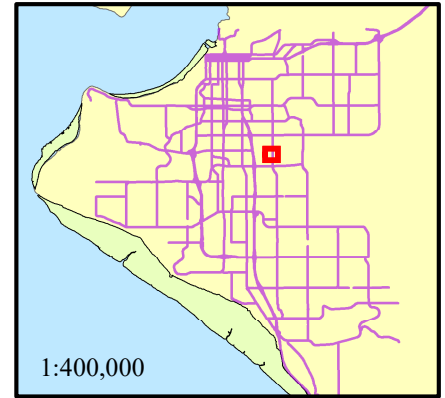
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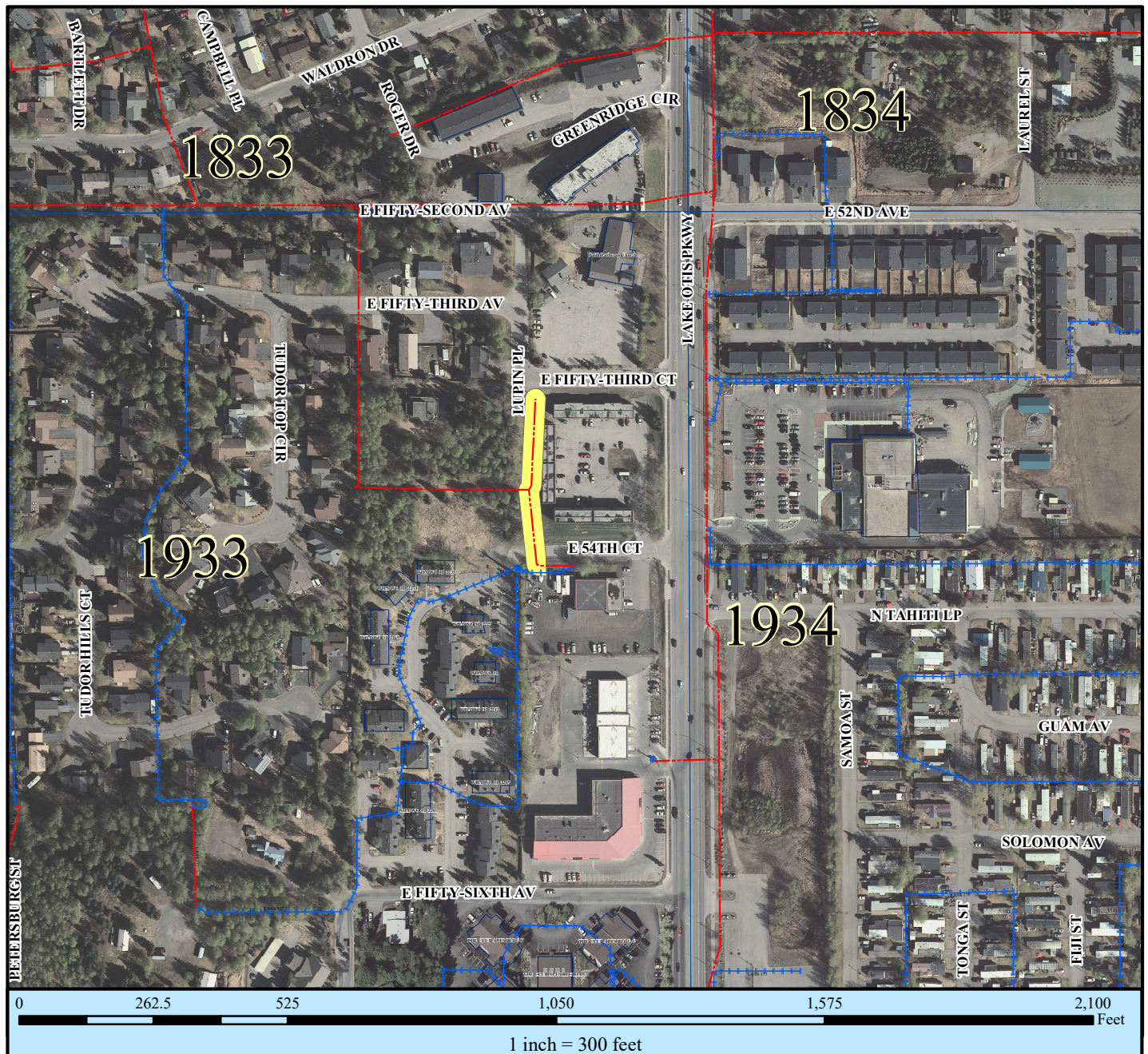
For additional information concerning this project, please contact Brad Jackson at 762-4458.

LEGEND

- Primary Overhead Conductor
- Primary Underground Conductor
- Project Area



VICINITY MAP

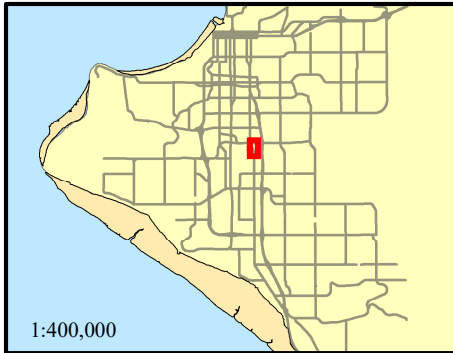


Coordinate System: NAD83, State Plane, Alaska Zone 4, FIPS 5004 Feet

2020 UNDERGROUNDING PROJECT WESTPARK SUBDIVISION

SOUTH OF DOWLING ROAD
PROJECT NUMBER: TBD PROJECT COST: \$500,000

CHUGACH
POWERING ALASKA'S FUTURE



VICINITY MAP

PROJECT DESCRIPTION:

This project will underground approx. 0.35 miles of 4/0 ACSR 3-phase overhead to support feeder load growth on LA 122 and contingency support of SL 712.

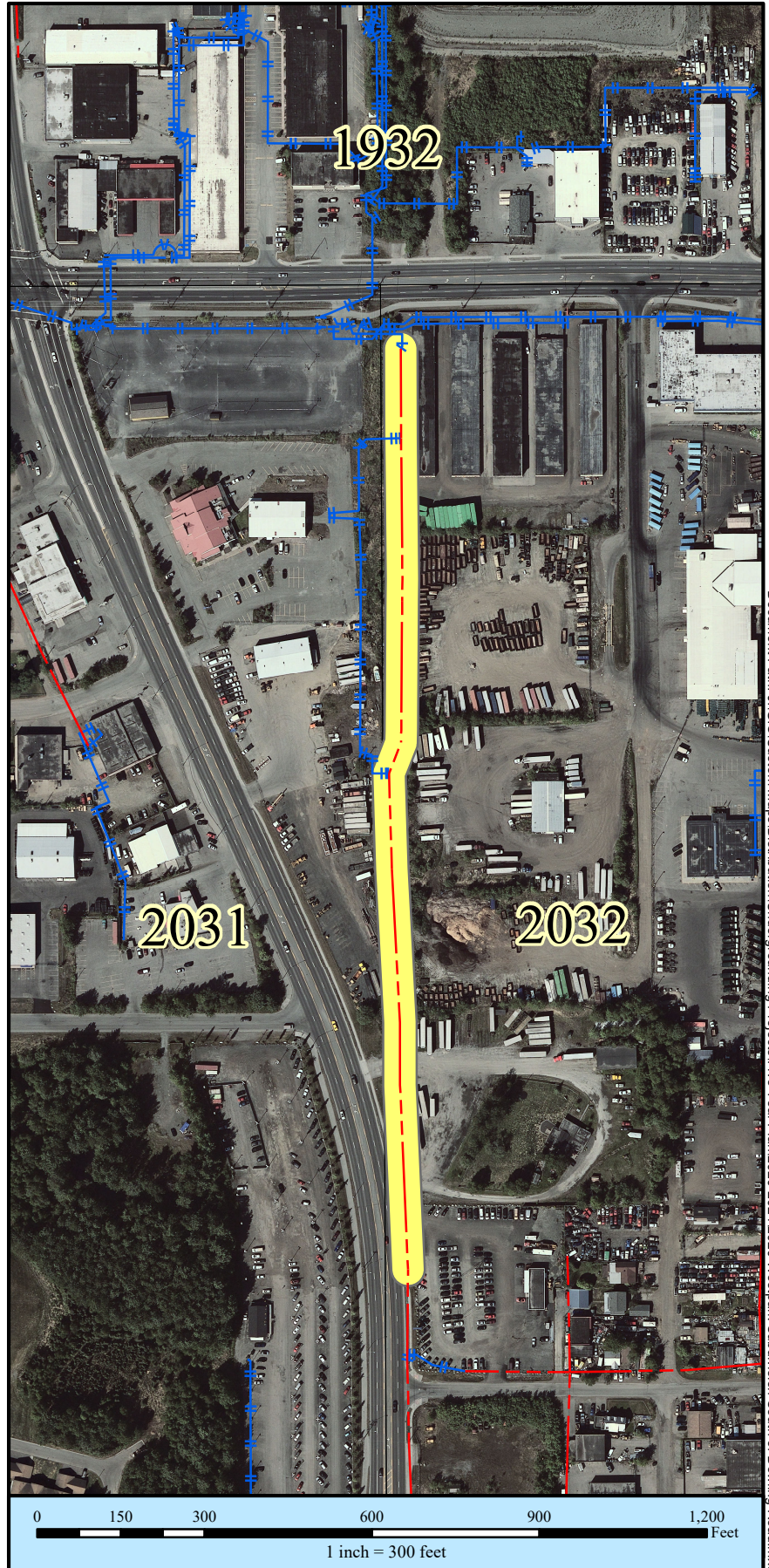
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For additional information concerning this project, please contact Brad Jackson at 762-4458.

LEGEND

- Primary Overhead Conductor
- Primary Underground Conductor
- Project Area



Document Path: J:\GIS\Custom Maps\Distribution\Undergrounding Projects\Five Year Plan\2020-2024\2020 Westpark Subdivision South of Dowling Road.mxd

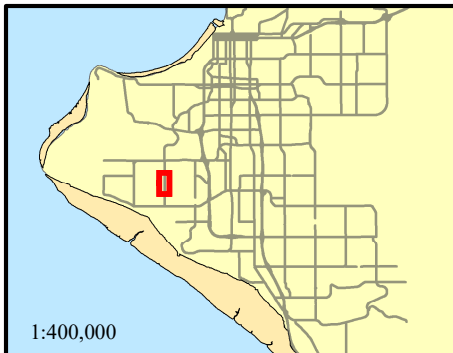
2020 UNDERGROUNDING PROJECT JEWEL LAKE ROAD

Strawberry to 84th Avenue

PROJECT NUMBER: TBD

PROJECT COST: \$1,700,000

CHUGACH
POWERING ALASKA'S FUTURE



VICINITY MAP

PROJECT DESCRIPTION:

Under this project, the existing 1/0 ACSR three-phase line between Riser Pole 9866 (Grid 2125) and Riser Pole 9708 (Grid 225) will be replaced with Chugach's standard 750 kcmil underground cable specified for main feeder circuits. Approximately 2200 feet of overhead Raspberry 212 main feeder circuit and 2800 feet of Jewel Lake 132 main feeder circuit along Jewel Lake Road, south of the Raspberry Road intersection, would be retired within the scope of this project.

The first phase of this project from Raspberry to Strawberry was completed in 2012. The second phase is scheduled for 2020.

Replacement of this 1/0 ACSR circuit with 750 kcmil cable would increase the feeder transfer capacity from 6 MVA to 13 MVA. This area has also been documented as an area with tree trimming difficulties. By relocating the facilities underground, the reliability associated with tree related outages should improve.

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For additional information concerning this project, please contact Brad Jackson at 762-4458.

LEGEND

- Primary Overhead Conductor
- +— Primary Underground Conductor
- Project Area



Document Path: J:\GIS\Custom Maps\Distribution\Undergrounding Projects\Five Year Plan\2020-2024\2020 Jewel Lake Road.mxd

2020 UNDERGROUNDING PROJECT

RASPBERRY INDUSTRIAL SUBDIVISION

PROJECT NUMBER: E2013961

PROJECT COST: \$400,000

PROJECT DESCRIPTION:



In conjunction with the Arctic Road OH-to-UG project (E2013962), this project will underground two spans between poles 0802 and 3703 along Raspberry Road. Looping provisions were installed under WO E1813824 when the Raspberry Roots service was installed (PM1806). This project will also loop in the Fish and Wildlife Headquarters transformer (PM1) and clean up circuit routing around SC704 to improve reliability to the Wells Fargo/GCI data center in advance of the E2013962 project.

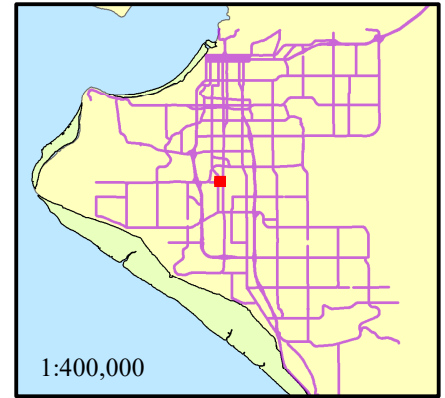
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For additional information concerning this project, please contact Brad Jackson at 762-4458.

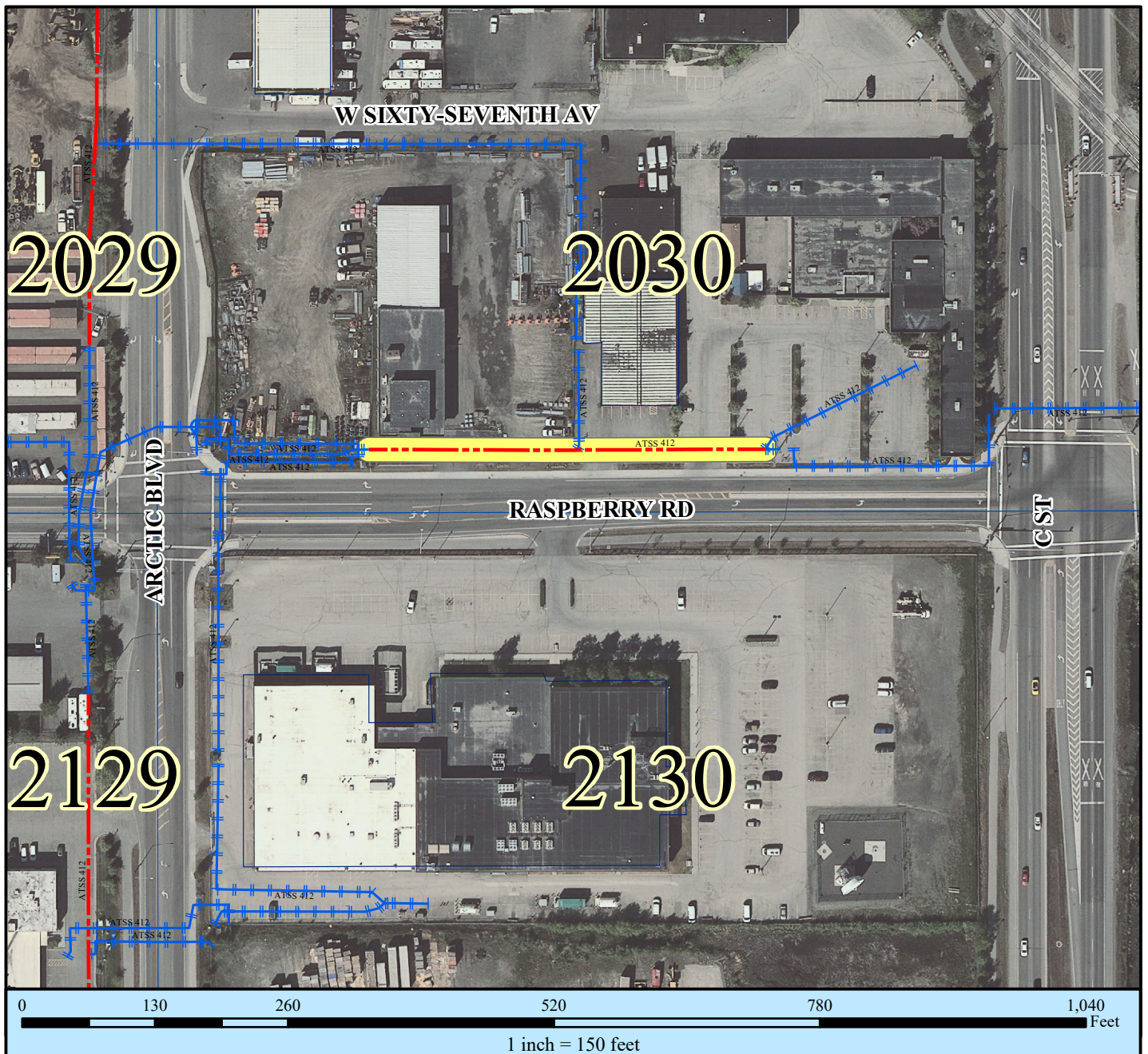
LEGEND

- Primary Overhead Conductor
 Primary Underground Conductor
 Project Area



1:400,000

VICINITY MAP



Coordinate System: NAD83, State Plane, Alaska Zone 4, FIPS 5004 Feet

A-11

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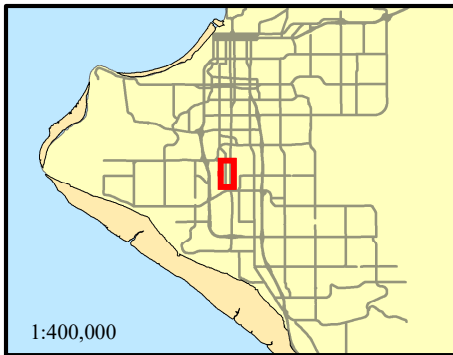
Document Path: J:\GIS\Custom Maps\Distribution\Undergrounding Projects\Five Year Plan\2020-2024\2020 Raspberry Industrial Subdivision.mxd

2020 UNDERGROUNDING PROJECT ARCTIC BLVD - RASPBERRY TO DIMOND

CHUGACH
POWERING ALASKA'S FUTURE

PROJECT NUMBER: E2013962

PROJECT COST: \$1,700,000



VICINITY MAP

PROJECT DESCRIPTION:

This project will underground approx. 0.75 miles of 4/0 ACSR 3-phase overhead to support feeder load growth on AT 412 and contingency support of SL 812.

NOTES:

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For additional information concerning this project, please contact Shelly Schmitt at 762-4628.

LEGEND

- Primary Overhead Conductor
- Primary Underground Conductor
- Project Area



Document Path: J:\GIS\Custom Maps\Distribution\Undergrounding Projects\Five Year Plan\2020-2024\2020 Arctic Blvd Raspberry to Dimond.mxd

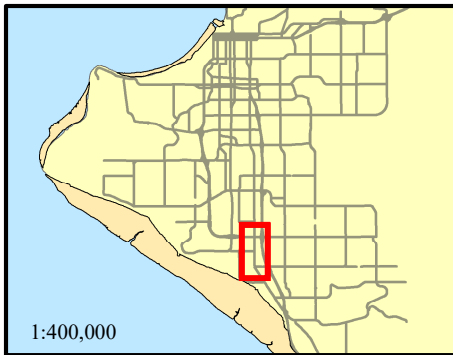
2020-2021 UNDERGROUNDING PROJECT OLD SEWARD HWY O'MALLEY TO HUFFMAN

OH to UG Conversion KLSS 412 and KLSS 812

CHUGACH
POWERING ALASKA'S FUTURE

PROJECT NUMBER: E1813853

PROJECT COST: \$4,000,000



VICINITY MAP

PROJECT DESCRIPTION:

This safety improvement and capacity project will replace 0.9 miles of 336 ACSR three-phase overhead underbuild with a 750 kcmil underground circuit in duct. This is the second phase of the project to remove the distribution underbuild from the 34.5kV overhead to increase the structure strength capacity required to maintain compliance with the NESC. When these projects are completed the available ampacity of this circuit (RRSS 1132) can be updated based on the additional sag clearance. This project is within the MOA Target Area.

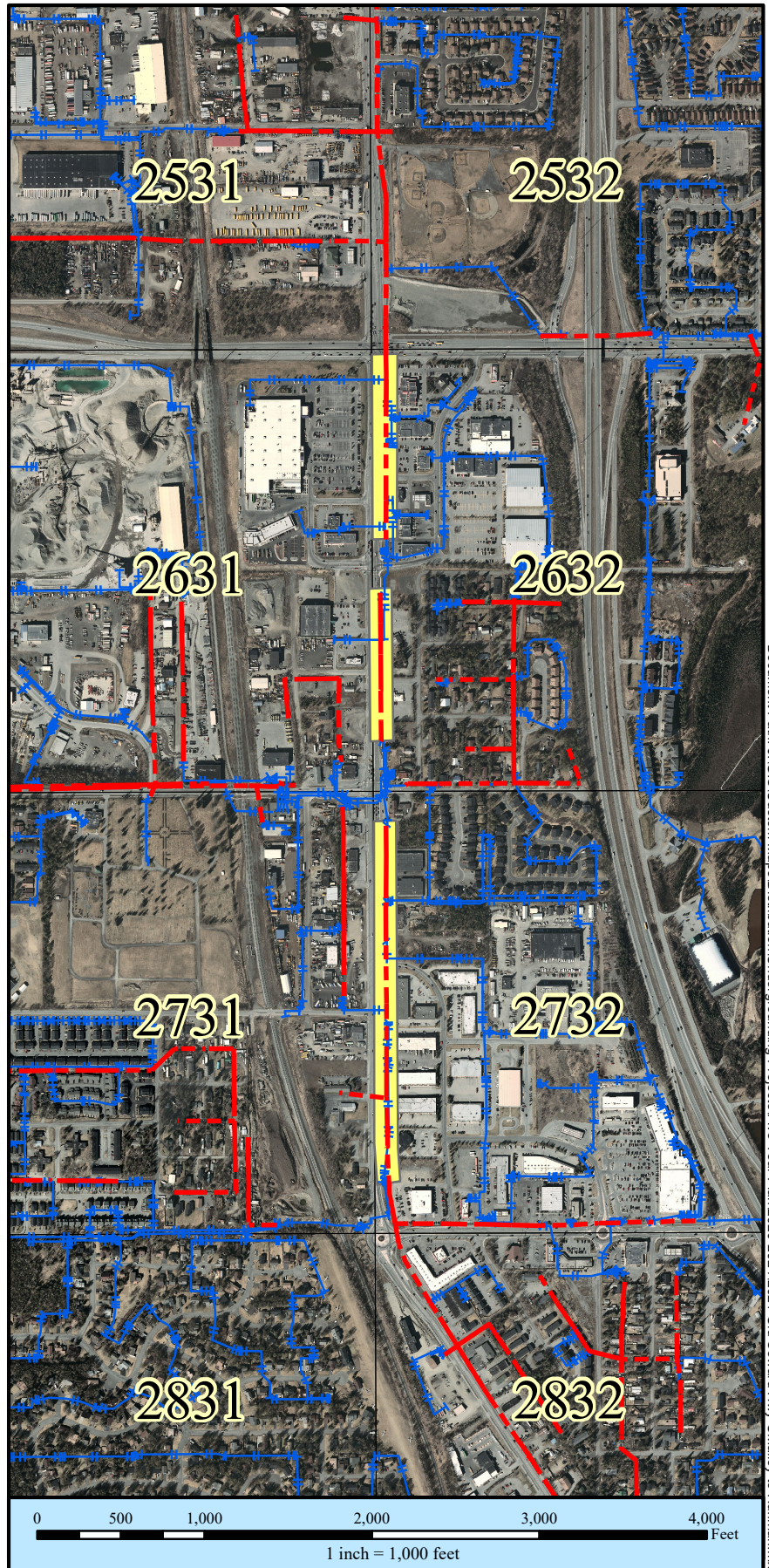
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For additional information concerning this project, please contact Brad Jackson at 762-4458.

LEGEND

- Primary Overhead Conductor
- +— Primary Underground Conductor
- Project Area



Document Path: J:\GIS\Custom Maps\Distribution\Undergrounding Projects\Five Year Plan 2020-2024\2021 Old Seward Hwy O'Malley to Huffman.mxd

2021 UNDERGROUNDING PROJECT HUFFMAN ROAD

Huffman Road - Lake Otis to Old Seward (HN 312 TO KL 812)

PROJECT NUMBER: E1813852

PROJECT COST: \$3,800,000

CHUGACH
POWERING ALASKA'S FUTURE

PROJECT DESCRIPTION:

This project will replace 0.8 miles of 4/0 ACSR 3-phase overhead with 750 kcmil underground on the Hane 312 to Klatt 812 tie (Grids 2732 and 2834). This upgrade will improve the system capacity for existing and new load growth in addition to improving reliability. The summer peak loading is near the capacity limit of the 4/0 ACSR circuit under n-1 contingency conditions.

NOTES:

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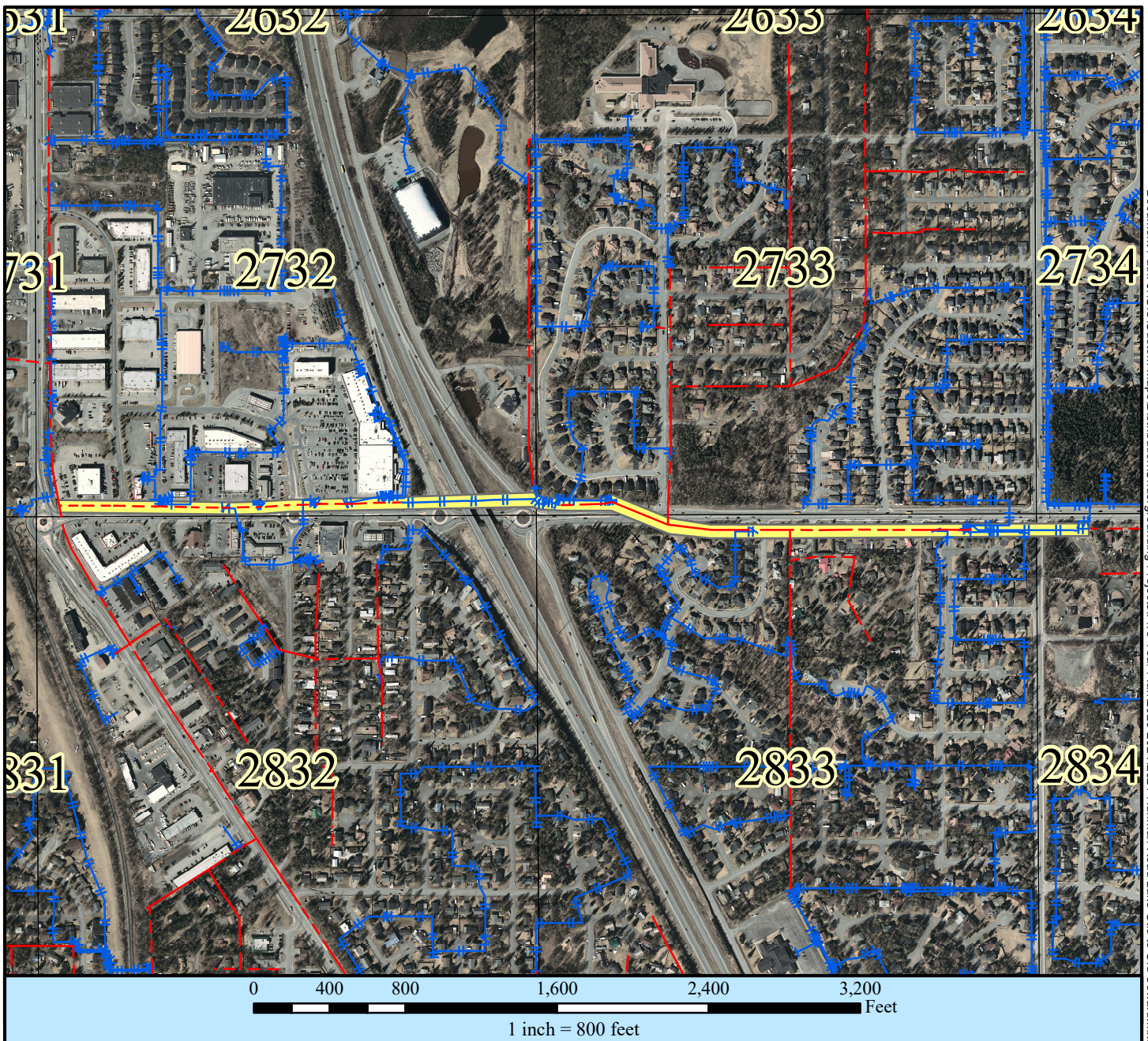
For additional information concerning this project, please contact Brad Jackson at 762-4458.

LEGEND

- Primary Overhead Conductor
- Primary Underground Conductor
- Project Area



VICINITY MAP



Document Path: J:\GIS\Custom Maps\Distribution\Undergrounding Projects\Five Year Plan\2020-2024\2021 Huffman Road Lake Otis to Old Seward.mxd

2021 UNDERGROUNDING PROJECT TURNAGAIN PARK SUBDIVISION

PROJECT NUMBER: TBD

PROJECT COST: \$2,050,000

CHUGACH
POWERING ALASKA'S FUTURE

PROJECT DESCRIPTION:

This project will underground approx. 1/2 mile of #4 ACSR 3-phase and #2 ACSR 1-phase overhead TNSS 142. This project will be a multi-year phased undergrounding effort building a backbone UG circuit in the first year, with smaller undergrounding and loop closure projects in subsequent years.

NOTES:

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For additional information concerning this project, please contact Shelly Schmitt at 762-4628.

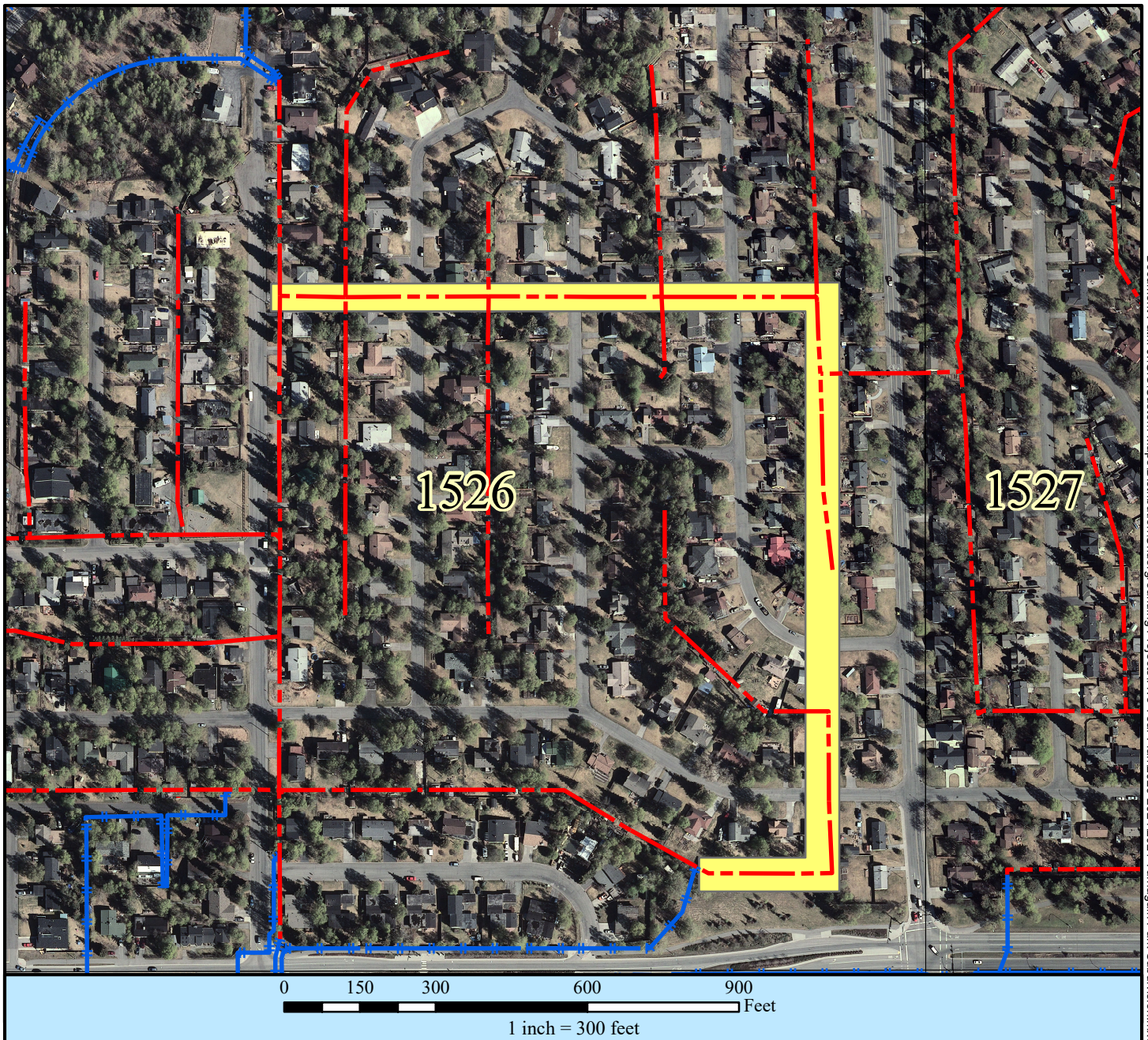
LEGEND

- Primary Overhead Conductor
- Primary Underground Conductor
- Project Area



1:400,000

VICINITY MAP



Document Path: J:\GIS\Custom Maps\Distribution\Undergrounding Projects\Five Year Plan\2020-2024\2021 Turnagain Park Subdivision.mxd

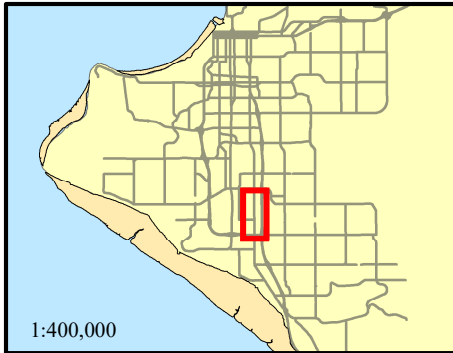
2021 UNDERGROUNDING PROJECT OLD SEWARD HWY DIMOND TO O'MALLEY

OH to UG Conversion SLSS 312

CHUGACH
POWERING ALASKA'S FUTURE

PROJECT NUMBER: TBD

PROJECT COST: \$2,500,000



VICINITY MAP

PROJECT DESCRIPTION:

This safety improvement project will replace 1.3 miles of the 336 ACSR three-phase overhead underbuild circuit with a 750 kcmil underground circuit in duct. This is the third phase of the project to remove the distribution underbuild from the 34.5kV overhead to increase the structure strength capacity required to maintain compliance with the NESC. When these projects are completed the available ampacity of this circuit (INSS 732) can be uprated based on the additional sag clearance. This project is within the MOA Target Area.

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For additional information concerning this project, please contact Shelly Schmitt at 762-4628.

LEGEND

- Primary Overhead Conductor
- +— Primary Underground Conductor
- Project Area



Document Path: J:\GIS\Custom Maps\Distribution\Undergrounding Projects\Five Year Plan\2020-2024\2021 Old Seward Hwy Dimond to O'Malley.mxd

2022 UNDERGROUNDING PROJECT ROOSEVELT PARK

PROJECT NUMBER: TBD

PROJECT COST: \$1,800,000

CHUGACH
POWERING ALASKA'S FUTURE

PROJECT DESCRIPTION:

This project will underground approx. 0.6 miles of OH single-phase and approx. 0.25 miles of OH three-phase residential conductor due to age-related strength issues identified on a large number of poles within the subdivision. This project will be a multi-year phased undergrounding effort building a backbone underground circuit in the first year, with smaller undergrounding and loop closure projects in subsequent years.

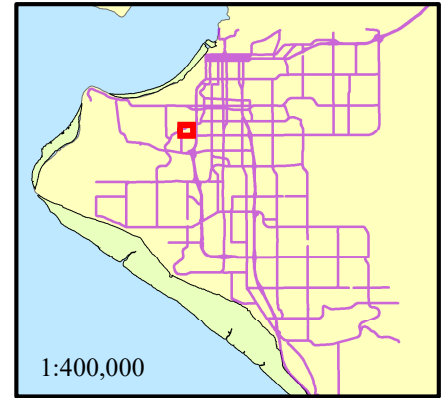
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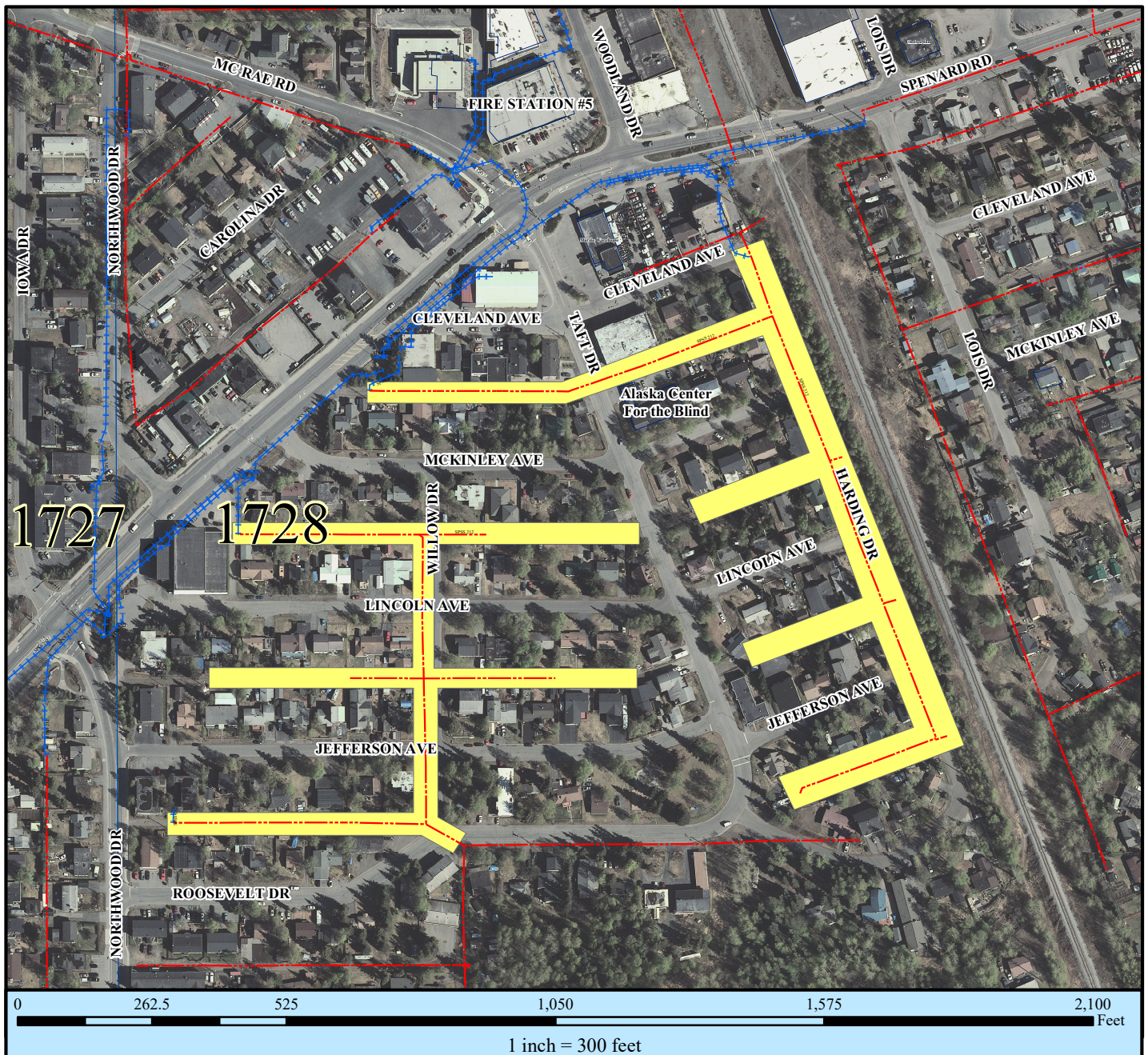
For additional information concerning this project, please contact Shelly Schmitt at 762-4628.

LEGEND

- Primary Overhead Conductor
- Primary Underground Conductor
- Project Area



VICINITY MAP



Coordinate System: NAD83, State Plane, Alaska Zone 4, FIPS 5004 Feet

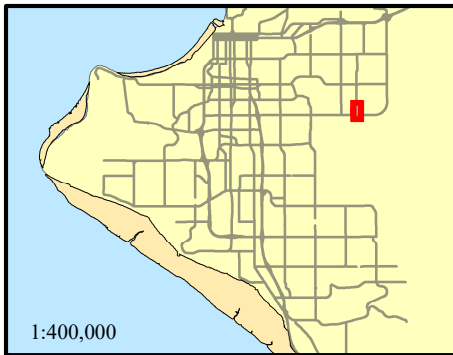
2022 UNDERGROUNDING PROJECT BAXTER ROAD

Baxter at Tudor

PROJECT NUMBER: TBD

PROJECT COST: \$850,000

CHUGACH
POWERING ALASKA'S FUTURE



VICINITY MAP

PROJECT DESCRIPTION:

The source for this feeder on the south side of Tudor failed resulting in a pole fire. Switching was able to restore power to all but 200 customers for the duration of the repair. Undergrounding a section from pole 0203 in Grid 1739 to pole 0263 in Grid 1739 will tie together two 3-phase radials (BFSS 412 & BXSS 282) to provide increased reliability for the area.

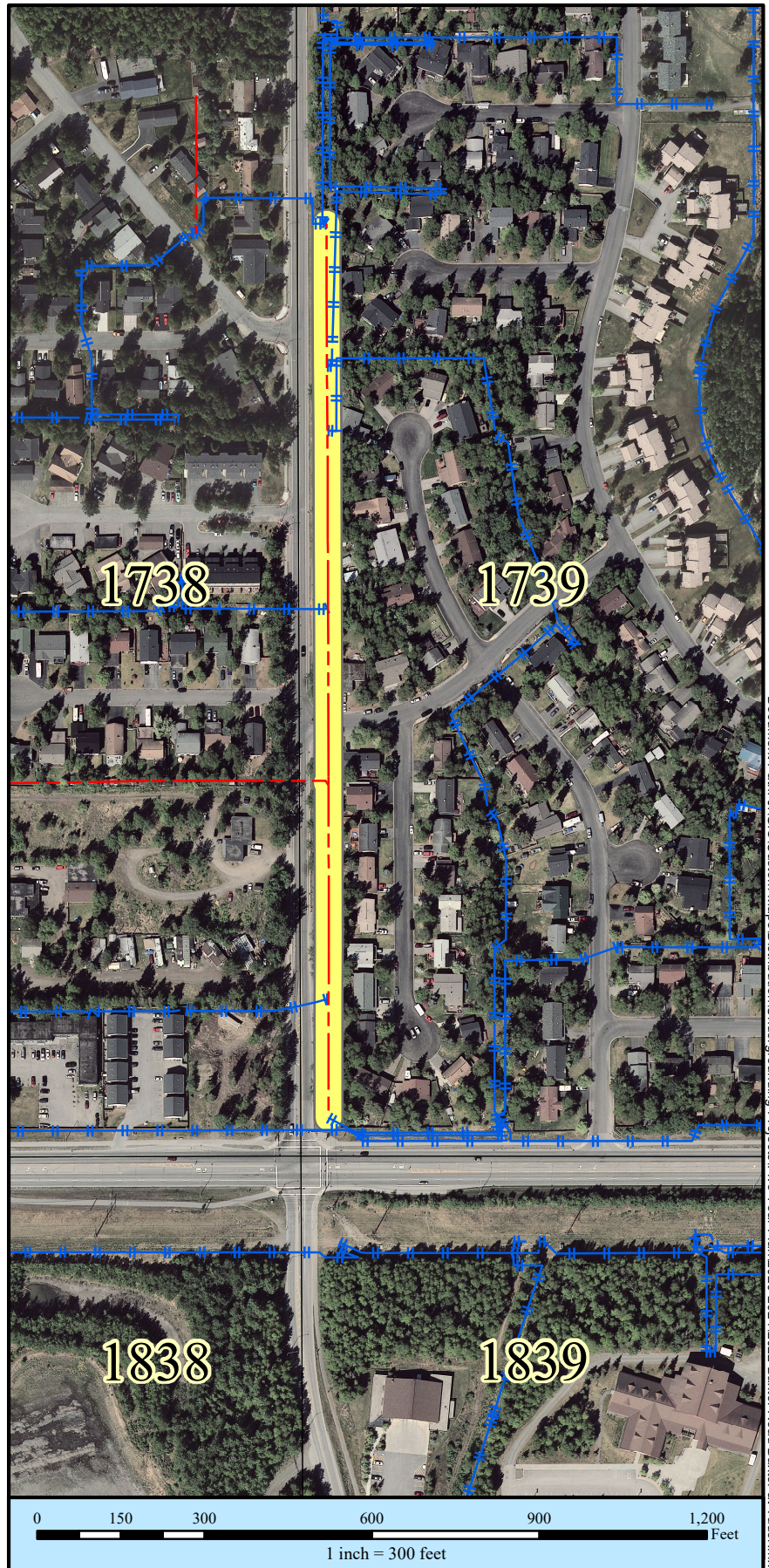
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For additional information concerning this project, please contact Shelly Schmitt at 762-4628.

LEGEND

- Primary Overhead Conductor
- Primary Underground Conductor
- Project Area



Document Path: J:\GIS\Custom Maps\Distribution\Undergrounding Projects\Five Year Plan\2020-2024\2022 Baxter Road Baxter at Tudor.mxd

2022 UNDERGROUNDING PROJECT

Dimond Blvd. - Jewel Lake to Roy

CHUGACH
POWERING ALASKA'S FUTURE

PROJECT NUMBER: TBD

PROJECT COST: \$2,500,000

PROJECT DESCRIPTION:

This project will underground approx. 3/4 mile of 4/0 ACSR 3-phase overhead feeder on CLSS 212. This project will provide improved feeder capacity along W. Dimond Blvd. and contingency support to RBSS 712 & JLSS 142 feeders.

NOTES:

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For additional information concerning this project, please contact Shelly Schmitt at 762-4628.

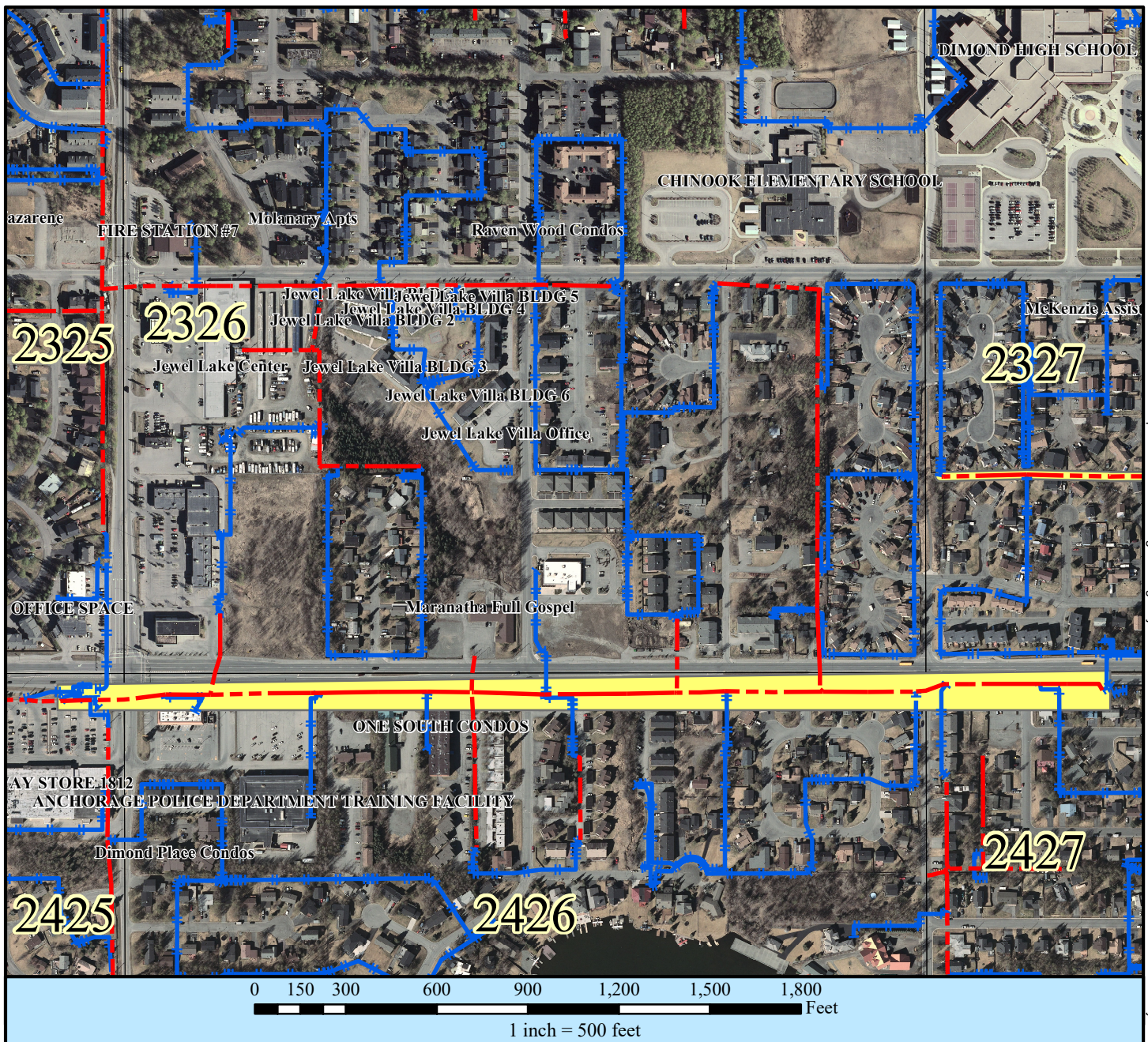
LEGEND

- Primary Overhead Conductor
- Primary Underground Conductor
- Project Area



1:400,000

VICINITY MAP



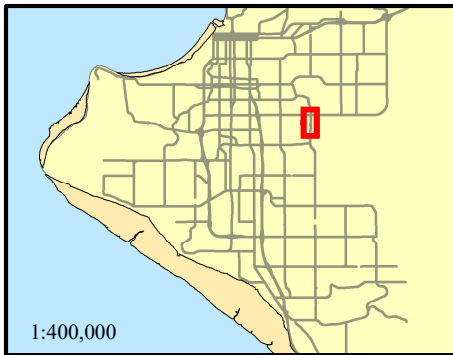
Document Path: J:\GIS\Custom Maps\Distribution\Undergrounding Projects\Five Year Plan\2020-2024\2022 Dimond Blvd - Jewel Lake to Roy.mxd

2022 UNDERGROUNDING PROJECT ELMORE & TUDOR

PROJECT NUMBER: TBD

PROJECT COST: \$500,000

CHUGACH
POWERING ALASKA'S FUTURE



VICINITY MAP

PROJECT DESCRIPTION:

This project will underground approx. 0.75 miles of 4/0 ACSR 3-phase overhead to support feeder load growth on DL 512 and contingency support of BF 512.

NOTES:

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For additional information concerning this project, please contact Shelly Schmitt at 762-4628.

LEGEND

- Primary Overhead Conductor
- +— Primary Underground Conductor
- Project Area



2022 UNDERGROUNDING PROJECT WICKERSHAM PARK

PROJECT NUMBER: TBD

PROJECT COST: \$750,000

CHUGACH
POWERING ALASKA'S FUTURE

PROJECT DESCRIPTION:

This project will underground approx. 0.5 miles of three-phase #4 & #4/0 ACSR to improve backbone feeder capacity between LASS 177 & DLSS 412.

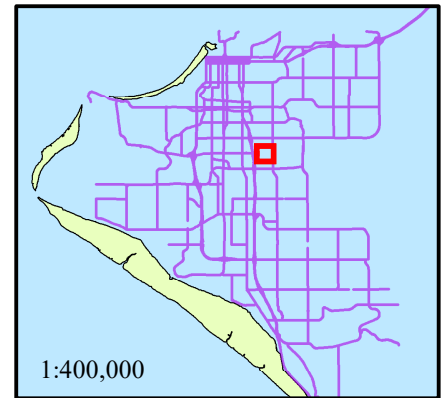
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For additional information concerning this project, please contact Shelly Schmitt at 762-4628.

LEGEND

- Primary Overhead Conductor
- Primary Underground Conductor
- Project Area



VICINITY MAP



Coordinate System: NAD83, State Plane, Alaska Zone 4, FIPS 5004 Feet

2023 UNDERGROUNDING PROJECT LAKE OTIS PARKWAY

PROJECT NUMBER: TBD

PROJECT COST: \$2,000,000

CHUGACH
POWERING ALASKA'S FUTURE

PROJECT DESCRIPTION:

This project will underground approx. 0.75 miles of three-phase #4 & #4/0 ACSR to improve backbone feeder capacity between LASS 177 & DLSS 412.

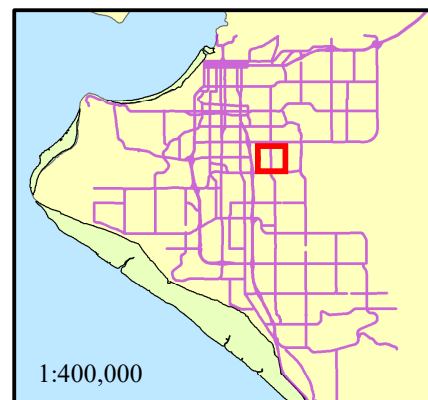
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For additional information concerning this project, please contact Shelly Schmitt at 762-4628.

LEGEND

- Primary Overhead Conductor
- Primary Underground Conductor
- Project Area



1:400,000

VICINITY MAP



Coordinate System: NAD83, State Plane, Alaska Zone 4, FIPS 5004 Feet

2023 UNDERGROUNDING PROJECT GREEN VALLEY ADD. 3

PROJECT NUMBER: TBD

PROJECT COST: \$250,000

CHUGACH
POWERING ALASKA'S FUTURE

PROJECT DESCRIPTION:

This project will underground approx. 0.25 miles of OH three-phase conductor due to age-related strength issues identified on a large number of poles within the subdivision.

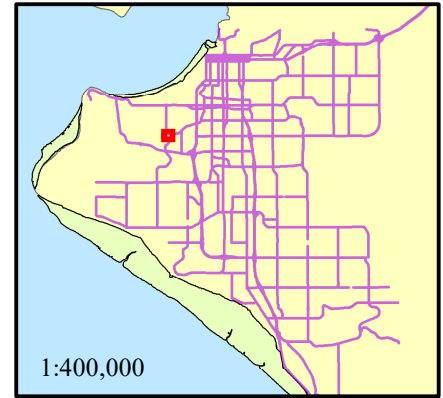
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For additional information concerning this project, please contact Shelly Schmitt at 762-4628.

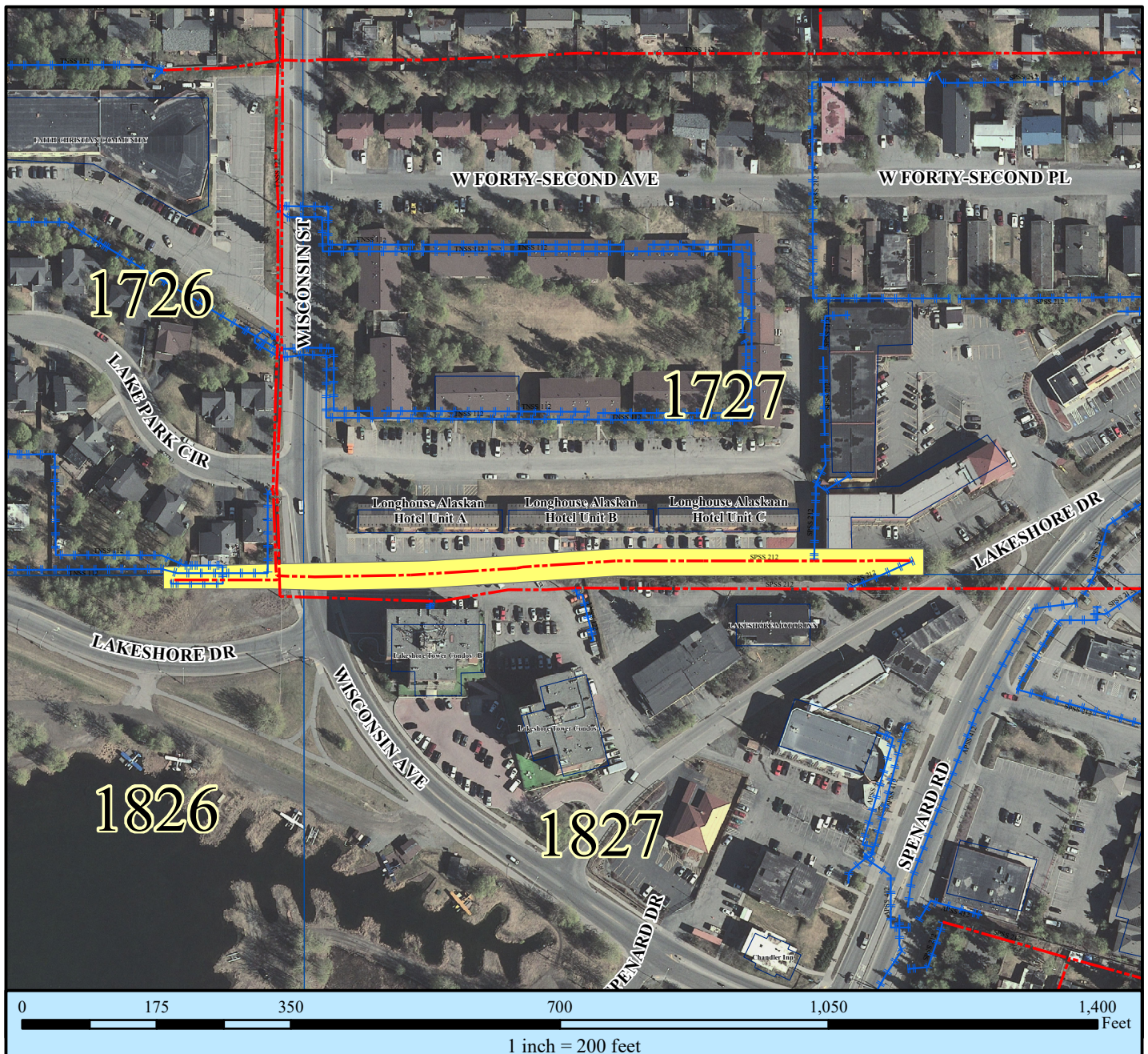
LEGEND

- Primary Overhead Conductor
- Primary Underground Conductor
- Project Area



1:400,000

VICINITY MAP



Coordinate System: NAD83, State Plane, Alaska Zone 4, FIPS 5004 Feet

2024 UNDERGROUNDING PROJECT AERO ACRES SUBDIVISION

PROJECT NUMBER: TBD

PROJECT COST: \$800,000

CHUGACH
POWERING ALASKA'S FUTURE

PROJECT DESCRIPTION:

This project will underground approx. 0.5 miles of OH single-phase residential conductor due to age-related strength issues identified on a large number of poles within the subdivision.

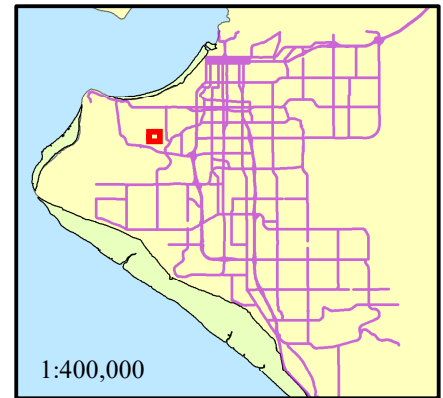
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For additional information concerning this project, please contact Shelly Schmitt at 762-4628.

LEGEND

- Primary Overhead Conductor
- + Primary Underground Conductor
- Project Area



VICINITY MAP



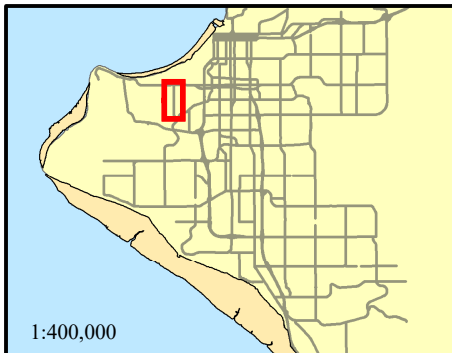
Coordinate System: NAD83, State Plane, Alaska Zone 4, FIPS 5004 Feet

2024 UNDERGROUNDING PROJECT WISCONSIN STREET Northern Lights to 44th Avenue

PROJECT NUMBER: TBD

PROJECT COST: \$2,500,000

CHUGACH
POWERING ALASKA'S FUTURE



VICINITY MAP

PROJECT DESCRIPTION:

This project will retire 36 spans of overhead double-circuit primary conductor along the west side of Wisconsin Drive from Northern Lights Boulevard to W 44th Avenue. The northernmost 26 spans will be retired in addition to the poles, guy spans, and guy wires. The southernmost 10 spans are underbuilt on 138 kV structures and will only have the conductor and any additional distribution facilities removed. These overhead facilities are located on Grids 1626 and 1726 and have a total distance of 5200 feet.

Turnagain Substation is located on the east side of Wisconsin Drive on Grid 1627 and has four distribution feeders: Turnagain 112, 122, 132, and 142. All four feeders leave the substation as underground circuits and rise up to the pole structures on Wisconsin. Turnagain 112 and 122 go south as a double-circuit, and Turnagain 132 and 142 go north as a double-circuit. Double-circuit horizontal construction using one crossarm, as found on Wisconsin Street, creates working clearance problems and requires extra equipment and crew time whenever maintenance is needed.

The majority of the poles supporting the 4/0 ACSR double-circuit overhead line do not meet the NESC grade C minimum strength requirements. Also, under an n-1 contingency, the Turnagain 132 circuit is undersized and not capable of picking up Woodland Park 242 under summer or winter peak loads without complex switching of the load. The total load provided by the Turnagain 122 tie with Spenard 212 is also approaching winter and summer capacity limits. Replacing the circuits with 750 kcmil would resolve both the NESC strength problem and contingency loading capacities.

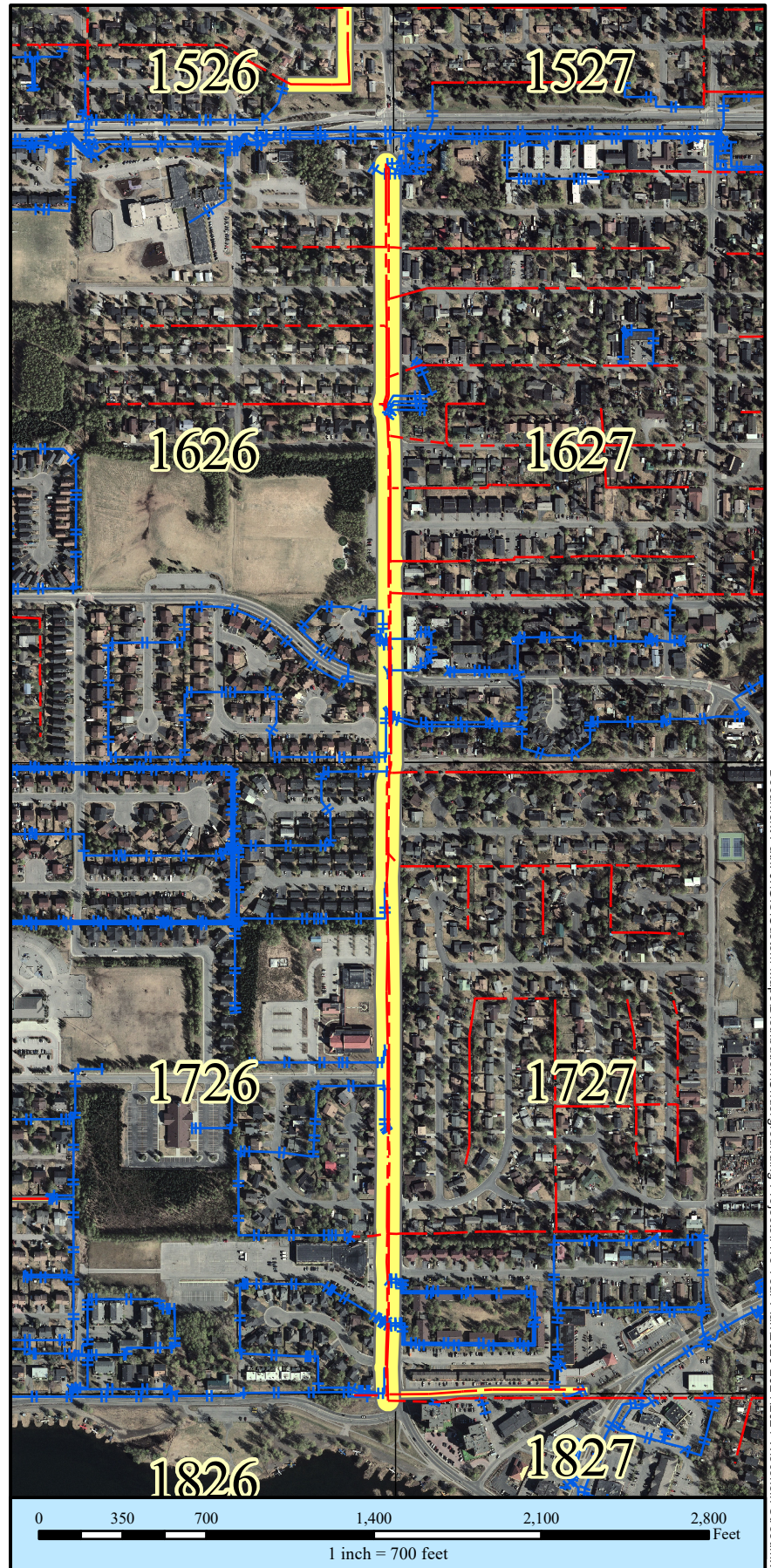
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For additional information concerning this project, please contact Shelly Schmitt at 762-4628.

LEGEND

- Primary Overhead Conductor
- +— Primary Underground Conductor
- Project Area



Document Path: J:\GIS\Custom Maps\Distribution\Undergrounding Projects\Five Year Plan\2020-2024\2024 Wisconsin Street.mxd