U.S. Department of Housing and Urban Development
451 Seventh Street, SW
Washington, DC 20410
www.hud.gov
espanol.hud.gov

Environmental Assessment Determinations and Compliance Findings for HUD-assisted Projects 24 CFR Part 58

Project Information

Project Name: Dunn-Family-Senior

HEROS Number: 900000010361123

Responsible Entity (RE): DETROIT, PLANNING AND DEVELOPMENT DEPARTMENT DETROIT MI, 48226

RE Preparer: Kim Siegel

State / Local Identifier: Detroit, Michigan

Certifying Officer: Julie Schneider, Director

Grant Recipient (if different than Responsible Entity): Detroit Housing Commission

Point of Contact: Felicia Burris

Consultant (if applicable):

Point of Contact:

Project Location: 8400 Engleman, Center Line, MI 48015

Additional Location Information:
This property is located in a primarily single-family residential neighborhood. The boundaries of the neighborhood are Interstate 696 to the north, Schoenherr on the east, 10 Mile Road on the south side, and Van Dyke Avenue on the West side. The

neighborhood boundaries are main commercial arteries in the area, which have been developed with myriad of uses (commercial, retail, office, light industrial, multi-family, etc.). The adjacent use to the west is a Catholic cemetery. To the west of that is former catholic elementary school now owned by the Center Line School district and the St. Clements church along Van Dyke. The use to the east of the property is the Father Murray Center. It is reported to be a post-acute and long-term care facility. To the east of that appears to be a municipal park. The areas to the north and south of the property are primarily, single-family residences, which appear to be adequately maintained. Overall, the neighborhood area appears to be stable.

Direct Comments to: Penny Dwoinen, the City of Detroit Environmental Review Officer
Telephone: 313.224.2933
Email: dwoinenp@detroitmi.gov

Description of the Proposed Project [24 CFR 50.12 & 58.32; 40 CFR 1508.25]:
Dunn Family Senior Co-op Apartments is an existing 108-unit, affordable senior apartment building that was originally constructed in 1971. The project includes the substantial rehab of the exterior, existing units and common spaces including upgrading landscaping, new dumpster enclosure, replacing existing fencing and vehicle gate, new concrete walks, repairing/replacing existing concrete walks, new site lighting, exterior caulking, new siding, replacing existing siding, new brick, tuckpointing and repair of existing brick, new windows, new main entries with automatic operator and key fob operation, new exit door hardware, full roof replacement, replacing all balcony doors and finishes, installing new exterior facade, new accessible community restrooms, new accessible community kitchen, new library, new exercise facility, wood base and handrails in corridors, painting all common areas, renovating and reconfiguring first floor common areas and office layouts, improving the fire rating of existing ceilings, installing new acoustic ceiling tiles in all common areas, installing new upgrading existing elevators, installing one additional elevator, new cabinets, new appliances, new stove tops, new sinks, new garbage disposals, new kitchen and bath flooring, replacing wall A/C and baseboard heaters with single combined, addressing aluminum wiring in all apartments, replacing all unit carpeting, replacing doors and hardware as necessary, painting bathrooms and kitchens, new common area HVAC, replacing all riser valves, replacing domestic boilers, upgrading/replacing intercom system, new generator, installing an e-call system for all units, upgrades to fire alarm, and upgrading elevator equipment and controls. As well as the construction of a new addition to connect the north and south wings, which will enclose a courtyard. Construction will result in the demolition of eight units and the addition of 57 units for a new total of 157 units. 25 off-street parking spaces will also be constructed to the north of the building. The building will continue to be 100% affordable to low-income seniors aged 62+. This review is for 6-Project Based Vouchers from the Detroit Housing Commission. The project is also receiving HUD 202 Capital Advance funding and has a separate Part 50 HEROS review (HEROS Number 900000010181990). This review is valid for up to five years.

Statement of Purpose and Need for the Proposal [40 CFR 1508.9(b)]:

The proposed project is to provide needed renovations to the existing low-income senior housing provided at Dunn Family Senior Apartments. This will provide needed updates and repairs to the units and common areas, as well as the construction of a new addition to connect the north and south wings, which will enclose a courtyard. This project will update the elevators, the mechanical systems, fire safety systems, and provide 49 new units for low-income senior residents of the area.

Existing Conditions and Trends [24 CFR 58.40(a)]:

The property currently operates with a 91.7 percent occupancy rate, and it has historically operated with an occupancy rate of 92 percent or higher over the past three years, with two years greater than 95 percent. Additionally, the Subject Property currently has a waiting list of 27 households. According to a market study conducted for the project by NOVOGRADAC Consulting dated December 30, 2020, between 2010 and 2020, the primary market area (PMA) and market study area (MSA) experienced total and senior population growth, as well as total and senior household growth. Through 2025, the number of senior households in the PMA and MSA will increase strongly, but at a rate slightly below that of the nation. As of 2020, approximately 71.3 percent of the senior renter households in the PMA earn less than $40,000 annually. The current rental housing market conditions are indicative of adequate demand for affordable housing supply such as the subject property. Interviews with real estate professionals and local property managers demonstrate an ongoing need for affordable housing over the foreseeable future.

Maps, photographs, and other documentation of project location and description:

0 - Dunn Family Site Plans.pdf
Site Map.pdf

Determination:

✓	Finding of No Significant Impact [24 CFR 58.40(g)(1); 40 CFR 1508.13] The project will not result in a significant impact on the quality of human environment
	Finding of Significant Impact

Approval Documents:

Signature Page - Dunn Family Senior.pdf

7015.15 certified by Certifying Officer on:

7015.16 certified by Authorizing Officer on:

Funding Information

Grant / Project Identification Number	HUD Program	Program Name
MI0001	Public Housing	Project-Based Voucher Program

Estimated Total HUD Funded, Assisted or Insured Amount: $74,160.00

Estimated Total Project Cost [24 CFR 58.2 (a)(5)]: $31,737,998.00

Compliance with 24 CFR §50.4, §58.5 and §58.6 Laws and Authorities

Compliance Factors: Statutes, Executive Orders, and Regulations listed at 24 CFR §50.4, §58.5, and §58.6	Are formal compliance steps or mitigation required?	Compliance determination (See Appendix A for source determinations)
STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR §50.4 & § 58.6		
Airport Hazards Clear Zones and Accident Potential Zones; 24 CFR Part 51 Subpart D	☐ Yes ☑ No	The project site is not within 15,000 feet of a military airport or 2,500 feet of a civilian airport. The nearest airport, Coleman A Young International Airport, is approximately 4.15 miles to the south. The project is in compliance with Airport Hazards requirements (Attachment A).
Coastal Barrier Resources Act Coastal Barrier Resources Act, as amended by the Coastal Barrier Improvement Act of 1990 [16 USC 3501]	☐ Yes ☑ No	This project is not located in a CBRS Unit. Therefore, this project has no potential to impact a CBRS Unit and is in compliance with the Coastal Barrier Resources Act (Attachment B).
Flood Insurance Flood Disaster Protection Act of 1973 and National Flood Insurance Reform Act of 1994 [42 USC 4001-4128 and 42 USC 5154a]	☐ Yes ☑ No	The structure or insurable property is not located in a FEMA-designated Special Flood Hazard Area. The property is located in FEMA Flood Map Panel 26099C0382G for the city of Center Line. The property is located in zone X, which represents minimal risk outside

		the 1-percent and 2-percent-annual-chance floodplains. While flood insurance may not be mandatory in this instance, HUD recommends that all insurable structures maintain flood insurance under the National Flood Insurance Program (NFIP). The project is in compliance with flood insurance requirements (Attachment C).
STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR §50.4 & § 58.5		
Air Quality Clean Air Act, as amended, particularly section 176(c) & (d); 40 CFR Parts 6, 51, 93	☐ Yes ☑ No	The project's county or air quality management district is in an attainment/maintenance status for Ozone. This project does not exceed de minimis emissions levels or the screening level established by the state or air quality management district for the pollutant(s) identified above. The project is in compliance with the Clean Air Act (Attachment D).
Coastal Zone Management Act Coastal Zone Management Act, sections 307(c) & (d)	☐ Yes ☑ No	This project is not located in or does not affect a Coastal Zone as defined in the state Coastal Management Plan. The project is in compliance with the Coastal Zone Management Act (Attachment E).
Contamination and Toxic Substances 24 CFR 50.3(i) & 58.5(i)(2)]	☑ Yes ☐ No	ASTI completed a Phase I Environmental Site Assessment (ESA) of the subject property on January 29, 2021. The Phase I ESA identified that fill soil had been placed on the NE portion of the Subject Property. To evaluate the REC, ASTI conducted a subsurface investigation on March 3, 2021. A subsurface investigation completed at the subject property identified compounds above the GRCC and VIAP in the fill soil on the northeastern portion Results of the subsurface investigations identified the presence of arsenic, several polynuclear aromatic hydrocarbons (PNAs) and several volatile organic compounds (VOCs) in soil at the subject property above the applicable Michigan Department of Environment, Great Lakes, and Energy

		(EGLE) Part 201 Generic Residential Cleanup Criteria (GRCC). The detections of compounds are associated with the placement of fill soil. A limited Phase II was completed in 2022 to further delineate the contamination. Based on the intended use of the subject property for residential purposes, the proposed response activity is to complete the excavation, transportation, and disposal of the contaminated soil above the GRCC and VIAP. Verification of soil remediation samples will be collected from the floor and sidewalls of the excavation either prior to the work or during the excavation. The excavation will be completed to floor and sidewall sample locations below the GRCC and VIAP. Upon completion of the response activities proposed in section 6.0, the submitter intends to submit a No Further Action report for unrestricted residential land use for EGLE review and approval. EGLE has reviewed the Response Activity Plan (ResAP) for the proposed project and has approved of the ResAP as of May 5, 2023. Radon testing was conducted with regard to pre-renovation requirements at the Property. Testing by ASTI was conducted in accordance with The National Radon Safety Board (NRSB), Protocol for Conducting Measurements of Radon and Radon Decay Products in Homes. Radon laboratory analytical results were below the EPA Action Level of 4.0 pCi/L within the 20 units, two offices, and two common areas tested. No further testing is required. A lead-Based Paint Inspection/Risk Assessment inspection and sampling were performed using the procedures outlined in Chapter 7 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint in House (2012 Revision). There is a total of 108

		units in the building and the 73 studio units were not considered ''child occupied'' and were not considered in the inspection/risk assessment. Lead-based paint was identified on the casement windows located in the community room on the first floor. The paint was noted as being intact and the window was painted shut. The current condition was not determined to represent a hazard. Lead dust was identified in window trough in multiple areas. ATC recommended cleaning all the window troughs using a State of Michigan certified lead abatement company and obtained clearance sampling by a State of Michigan certified lead risk assessor. Asbestos containing materials (friable and non-friable) were found at the subject property. The property has an operations and maintenance plan for the existing ACMs which states that property maintenance/custodial staff does not perform any maintenance or repair work that may involve disturbance of or exposure to ACM or PACM. These activities are to be performed by qualified Asbestos Abatement Contractors. ACM will be abated in accordance with federal, state and local guidelines and a closeout report will be completed (Attachment F).
Endangered Species Act Endangered Species Act of 1973, particularly section 7; 50 CFR Part 402	☐ Yes ☑ No	The project is located in the highly urbanized and currently developed area. There is no critical habitat located in the project area. Additionally, the project is not located near any wetlands, floodplains or waterways. Therefore, the project will have no effect on listed species (Attachment G).
Explosive and Flammable Hazards Above-Ground Tanks)[24 CFR Part 51 Subpart C	☑ Yes ☐ No	There is an existing 250-gallon AST on the adjacent property to the east for that building's back-up generator. A consultant completed worksheet

		indicated an ASD of 155 feet for thermal radiation for people. The closet area where people would congregate on a regular basis is the area just outside the exit on the northeast side of the Dunn Family Residence. The physical inspection of the property concluded that people normally congregate in this area, based on the observation of 4 chairs and a barbecue grill. After the completion of the addition, an area of the sidewalk leading to the new parking area on the north side of the building for the addition would still be less than the ASD of 155 feet. Sara Jensen, HUD Program Environmental Clearance Officer in DC, confirmed that either a blast wall would need to be built on that portion of the property or constructed on an offsite on the adjacent property to properly protects residents at Dunn Family from Thermal Radiation in the event of possible explosion. CSI consulted with the general contractor and indicated that the cost of $15,000 would be able to be absorbed within their existing budget. A thermal blast wall will be constructed on the adjacent site. HUD has added a special condition to the FIRM Commitment that a letter between the current owner and the adjacent owner must be provided to HUD indicating permission to complete a blast wall around the generator on the adjacent property along with documentation of permission from the city of Center Line, MI. Post-closing, documentation must be provided that the blast wall was constructed as proposed. Furthermore, the documentation has also been retained in HUD files from the specs that the proposed back-up generator on the Dunn Family Site, which is part of the renovation and addition will be powered by natural gas. This

		documentation was found on pages 1,030-1,036 of the specification document. These documents as well as the site plan and drawings showing the location of the proposed generator and off-site blast wall and current distance between the AST for the generator and gathering area on the NE corner of the existing building have been uploaded for review (Attachment H).
Farmlands Protection Farmland Protection Policy Act of 1981, particularly sections 1504(b) and 1541; 7 CFR Part 658	☐ Yes ☑ No	The project is located in the highly urbanized area in Center Line, Michigan. There is no unique farmland in the area. Therefore, the project is in compliance with the Farmland Protection law & authority (Attachment I).
Floodplain Management Executive Order 11988, particularly section 2(a); 24 CFR Part 55	☐ Yes ☑ No	This project does not occur in a floodplain. The property is located in FEMA Flood Map Panel 26099C0382G for the city of Center Line. The property is located in zone X, which represents minimal risk outside the 1-percent and 2-percent-annual-chance floodplains. The project is in compliance with Executive Order 11988 (Attachment C).
Historic Preservation National Historic Preservation Act of 1966, particularly sections 106 and 110; 36 CFR Part 800	☑ Yes ☐ No	A Section 106 application and archeological report was submitted to the Michigan State Historic Preservation Officer (SHPO) on XXX. Based on the review, the Michigan opined that no historic properties will be affected within the area of potential effects of the undertaking. However, the northwest portion of the proposed area is immediately adjacent to St. Clements Cemetery. Due to the proximity of the project to the cemetery, the archaeological consultant advises that care is taken during the construction of the north parking lot and west entrance. In the unlikely event that human remains are encountered during construction in the project area, work must be halted and the Michigan SHPO along with other appropriate authorities must be contacted immediately.

		Additionally, if the scope of work changes in any way, or if artifacts or bones are discovered, please notify the Michigan SHPO immediately (Attachment J).
Noise Abatement and Control Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978; 24 CFR Part 51 Subpart B	☐ Yes ☑ No	A Noise Assessment was conducted. The noise level was acceptable: 59.0 db. See noise analysis. The project is in compliance with HUD's Noise regulation (Attachment K).
Sole Source Aquifers Safe Drinking Water Act of 1974, as amended, particularly section 1424(e); 40 CFR Part 149	☐ Yes ☑ No	There are no sole source aquifers located in Macomb County. The project is not located on a sole source aquifer area. The project is in compliance with Sole Source Aquifer requirements (Attachment L).
Wetlands Protection Executive Order 11990, particularly sections 2 and 5	☐ Yes ☑ No	The project is not located in a wetland area. The project is in compliance with Executive Order 11990 (Attachment M).
Wild and Scenic Rivers Act Wild and Scenic Rivers Act of 1968, particularly section 7(b) and (c)	☐ Yes ☑ No	This project is not within proximity of a NWSRS river. The project is in compliance with the Wild and Scenic Rivers Act (Attachment N).
HUD HOUSING ENVIRONMENTAL STANDARDS		
ENVIRONMENTAL JUSTICE		
Environmental Justice Executive Order 12898	☐ Yes ☑ No	No adverse environmental impacts were identified in the project's total environmental review. The project is in compliance with Executive Order 12898 (Attachment O).

Environmental Assessment Factors [24 CFR 58.40; Ref. 40 CFR 1508.8 &1508.27]

Impact Codes: An impact code from the following list has been used to make the determination of impact for each factor.
(1) Minor beneficial impact
(2) No impact anticipated
(3) Minor Adverse Impact – May require mitigation
(4) Significant or potentially significant impact requiring avoidance or modification which may require an Environmental Impact Statement.

Environmental Assessment Factor	Impact Code	Impact Evaluation	Mitigation
LAND DEVELOPMENT			
Conformance with Plans / Compatible Land Use and Zoning / Scale and Urban Design	2	The proposed addition will be similar in scale and design to the current structure and there will be no change of land use so it will be compatible with the current land use and zoning.	
Soil Suitability / Slope/ Erosion / Drainage and Storm Water Runoff	2	According to the USDA Web Soil Survey, the soil in the construction area is described as Lenawee silty clay loam 0-1% slope. This type of soil should be suitable for the construction of the addition. The property is relatively flat and no drainage or slope issues are anticipated. There was no visual evidence of slides or slumps on the property. The project is not located near an erosion sensitive area and will not create slopes. The proposed grading work at the site will allow for very little erosion. The property is already connected to the municipal storm sewer service and no significant increase in drainage or storm water is anticipated.	
Hazards and Nuisances including Site Safety and Site-Generated Noise	2	The project is not adversely affected by on-site or off-site hazards or nuisances. There will be adequate on-site parking for residents, and lighting. The proposed project site is located in an established residential area and is not expected to generate significant noise. Increased noise from construction will be temporary.	
SOCIOECONOMIC			
Employment and Income Patterns	2	There will be a temporary increase in jobs related to the construction of the project. Other than construction related changes, the project will not result in a change to employment and income patterns in the area. The project could be beneficial to local businesses because there will be an increase in households requiring goods and services.	
Demographic Character Changes / Displacement	1	The project will not change the demographics of the general area. It will provide much needed affordable housing to residents of the area. The project aims to	

Environmental Assessment Factor	Impact Code	Impact Evaluation	Mitigation
		assist low-income senior citizens by providing affordable one-bedroom and studio units.	
Environmental Justice EA Factor	2	According to the developer, there is no anticipated permanent displacement from the building during renovations/new construction, although some tenants may have to move to other units. Further, depending on the status of COVID, tenants may be put up in hotels in order to avoid contact with workers.	
COMMUNITY FACILITIES AND SERVICES			
Educational and Cultural Facilities (Access and Capacity)	2	As this is a senior facility no impact on educational facilities is anticipated.	
Commercial Facilities (Access and Proximity)	1	Commercial corridors are present on Van Dyke to the west and 10 Mile to the east. Two pharmacies, multiple bus stops, a bank, restaurants, a post office and a Family Dollar are all located within a half mile of the property. A Kroger and a Meijer are also located approximately 1.5 miles away.	
Health Care / Social Services (Access and Capacity)	1	Multiple health care services are available within 3 miles of the property, including dentists and a denture center, St. John Macomb-Oakland Hospital, Henry Ford General Surgery, and Connor Creek Health Center. No social services will be negatively impacted by the project activities. There is not likely to be an increase in the demand for social services as a result of the project activities. Affordable housing options could potentially reduce the number of people requiring social services.	
Solid Waste Disposal and Recycling (Feasibility and Capacity)	2	Solid waste removal for the building is already handled by Republic Services. There will be adequate capacity to accommodate the additional residents from the addition.	
Waste Water and Sanitary Sewers (Feasibility and Capacity)	2	The current building is already connected to the municipal sanitary sewer service and the new wing will be connected as well. The city has adequate capacity to handle the limited increase in volume from the new units.	

Environmental Assessment Factor	Impact Code	Impact Evaluation	Mitigation
Water Supply (Feasibility and Capacity)	2	The current structure is already connected to the municipal water service and the new wing will be connected as well. The city has adequate capacity to handle the limited potential increase in demand from the new units.	
Public Safety - Police, Fire and Emergency Medical	2	The Center Line Public Safety Department handles the Police, Fire and Emergency Medical services for the property. The office is located at 7070 E. 10 Mile Road, approximately a half mile to the southeast of the property. The Public Safety Department will have adequate capacity to serve the limited increase in residents. No public safety services will be negatively impacted by the proposed project.	
Parks, Open Space and Recreation (Access and Capacity)	2	The project is located within a mile of four different parks/open spaces. The first is St. Clement Field, just to the east of the east adjoining property. Centerline Parks and Recreation, Miller Park and Jaycee Park are all located within a mile of the property. Bonanza Lanes is also located within a mile of the property. No parks, open spaces or recreation areas will be negatively affected by the proposed project.	
Transportation and Accessibility (Access and Capacity)	2	The nearest bus stop is just to the south of the property on Ten Mile and Burt Street. There are also multiple other stops along 10 Mile and Van Dyke. The project is located approximately a mile from the entrance to 696, which connects to I-94 to the east and I-75 to the west.	
NATURAL FEATURES			
Unique Natural Features /Water Resources	2	The project location does not contain any unique natural features or agricultural lands. The City of Center Line is an urban city with few unique natural features or agricultural lands. Groundwater will not be affected by the proposed construction project. The city provides municipal water service to the project area. There are no sole source aquifers in the State of	

Environmental Assessment Factor	Impact Code	Impact Evaluation	Mitigation
		Michigan. No water resources will be impacted by the proposed project.	
Vegetation / Wildlife (Introduction, Modification, Removal, Disruption, etc.)	2	The project is rehabilitation and expansion of an existing structure. No vegetation or wildlife is expected to be impacted by the proposed project.	
Other Factors 1			
Other Factors 2			
CLIMATE AND ENERGY			
Climate Change	1	: Given the scope and location of the Project, the Project is not likely to have an adverse effect regarding climate impact on resident's safety, wellbeing and Property. The Project is not within a floodplain or coastal area where hurricanes, rising sea levels, extreme heat or drought, wildfires, or landslides are a significant factor. The Project area does occasionally have periods of extreme cold, but these a short-term and sufficient heating will be provided utilizing energy efficient systems to reduce the carbon footprint.	
Energy Efficiency	1	The proposed renovation will be updating numerous mechanical and plumbing systems throughout the building as well as new electrical and modern interior and exterior building materials, which result in improved efficiency of electrical systems/lower consumption of electrical, lower consumption water resources, and overall lower operating cost due to resulting efficiences. As whole, considering the operating efficiencies realized, will be offset with the additional operating cost from the new addition of 57 units.Energy efficiency will be improved with the addition of new appliances in existing units and mechanicals systems. There will be increased energy efficiency.	

Supporting documentation

Q - Dunn Family Mitigation Plan.pdf

Additional Studies Performed:

Field Inspection [Optional]: Date and completed by:

List of Sources, Agencies and Persons Consulted [40 CFR 1508.9(b)]:

1. Michigan State Historic Preservation Office, 300 North Washington Square, Lansing MI 48913, 517-335-9914. 2. Federal Emergency Management Agency-Map Service for Flood Rate Insurance Maps https://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1 3. U.S. Fish & Wildlife Service, National Wetlands Inventory, Wetlands Mapper; http://www.fws.gov/wetlands/data/mapper.html 4. U.S. Fish & Wildlife Service, Endangered Species, Michigan County Distribution of Federally-Listed Threatened, Endangered, Proposed, and Candidate Species, http://www.fws.gov/midwest/endangered/lists/michigan-cty.html 5. Michigan Department of Environmental Quality, Michigan Coastal Zone Boundary Maps, http://www.michigan.gov/deq/0,4561,7-135-3313_3677_3696-90802--,00.html 6. Michigan Department of Environmental Quality, Air Quality Division, http://www.michigan.gov/deq/0,1607,7-135-3310_30151_31129---,00.html 7. US EPA Map of Radon Zones, Kent County, Michigan, http://www.epa.gov/radon/states/michigan.html 8. Diane Smith, CSI Support and Development Services, 8425 E. 12 Mile Road, Suite 100, Warren, Michigan 48093, 586-753-9029

List of Permits Obtained:

Public Outreach [24 CFR 58.43]:

All historical, local and federal contacts on the attached 2023 Interest Parties List were sent a copy of the Notice of Intent to Request for Release of Funds to use HUD funding for the project and were asked to comment on the project. Additionally, the project was published in the Detroit News and Detroit Free Press for public comments.

Cumulative Impact Analysis [24 CFR 58.32]:

The proposed project will not negatively impact the environment or human health of the area. The project involves creating additional affordable senior housing in the area.

Alternatives [24 CFR 58.40(e); 40 CFR 1508.9]

As the proposed project only involves the rehab of the current existing structure and the addition of a new wing, no other alternative sites or plans were considered.

No Action Alternative [24 CFR 58.40(e)]

The no action alternative is to not rehab the existing structure and build the new wing. This option is not preferred because it fails to provide the needed updates to the current structure and does not provide the needed extra affordable senior housing.

Summary of Findings and Conclusions:

The proposed low-income housing rehab and addition will not adversely impact the of City Center Line or neighborhoods surrounding the site. The activity is compatible with the surrounding neighborhood and zoning and will have minimal impact on existing resources or services in the area.

Mitigation Measures and Conditions [CFR 1505.2(c)]:

Summarized below are all mitigation measures adopted by the Responsible Entity to reduce, avoid or eliminate adverse environmental impacts and to avoid non-compliance or non-conformance with the above-listed authorities and factors. These measures/conditions must be incorporated into project contracts, development agreements and other relevant documents. The staff responsible for implementing and monitoring mitigation measures should be clearly identified in the mitigation plan.

Law, Authority, or Factor	Mitigation Measure or Condition	Comments on Completed Measures	Mitigation Plan	Complete
Contamination and Toxic Substances	The soil with concentrations of compounds above the GRCC and VIAP will be excavated and transported off the subject property for proper landfill disposal. Approximately 13,375 square feet, a total of 13 floor samples are recommended for verification of soil remediation (VSR). The total area of the excavation sidewalls, extending from surface to 3 to 4 feet bgs, is approximately 2,180 square	N/A	ACM Close-out Report	

	feet. A total of 8 sidewall samples are recommended for VSR. A total of 4 samples from soil borings locations GP-5, GP-6, GP-11, and GP-13 will be used as sidewall samples. The soil excavation will be expanded until concentrations in the sidewall samples are below the GRCC and VIAC. If the excavation boundaries have to expand based on the results, additional sidewall samples will be collected in accordance with the S3TM. Note that the excavation sidewalls will be completed to the eastern boundary and near the footers of the building where samples may not be collected. All verification of soil remediation samples will be analyzed for VOCs, PNAs, and RCRA 8 metals. Samples will also include at least two duplicate samples and a methanol blank for QA/QC. See mitigation plan for additional details.			
Explosive and Flammable Hazards	There is a current or planned stationary aboveground storage container of concern within 1 mile of the project site. The Separation Distance from the project was not initially acceptable. With mitigation, identified in the mitigation section of this review, the project will be in compliance with explosive and flammable hazard requirements. A thermal blast wall will be constructed on the adjacent site. HUD has added a special condition to the FIRM Commitment that a letter between the current owner	N/A		

	and the adjacent owner must be provided to HUD indicating permission to complete a blast wall around the generator on the adjacent property along with documentation of permission from the city of Center Line, MI. Post-closing, documentation must be provided that the blast wall was constructed as proposed.			
Contamination and Toxic Substances	Removal of all Lead-Based Paint (LBP) dust hazards. LBP close-out report.	N/A	LBP Close-out Report	
Contamination and Toxic Substances	Remove all Asbestos-Containing Materials (ACMs) from the building prior to construction in areas that are to be disturbed by construction activities. Completion of an ACM close-out inspection and report.	N/A	ACM Close-out Report	
Historical Preservation	If there is a change in the scope of work, those changes will be required to undergo additional Section 106 Review prior to the execution of any work.	N/A	Contact the City of Detroit if applicable.	
Historical Preservation-Unanticipated Discoveries Plan	Once construction has started, the SHPO approved Unanticipated Discoveries Plan shall be followed for the duration of the project.	N/A	Unanticipated Discoveries Plan with SHPO approval	

Project Mitigation Plan

The mitigation measures and conditions will be carried out as stated in the Dunn Family Senior Mitigation Plan.

Dunn Family Senior Mitigation Plan.pdf

Supporting documentation on completed measures

APPENDIX A: Related Federal Laws and Authorities

Airport Hazards

General policy	Legislation	Regulation
It is HUD's policy to apply standards to prevent incompatible development around civil airports and military airfields.		24 CFR Part 51 Subpart D

1. To ensure compatible land use development, you must determine your site's proximity to civil and military airports. Is your project within 15,000 feet of a military airport or 2,500 feet of a civilian airport?

✓ **No**

Based on the response, the review is in compliance with this section. Document and upload the map showing that the site is not within the applicable distances to a military or civilian airport below

Yes

Screen Summary

Compliance Determination

The project site is not within 15,000 feet of a military airport or 2,500 feet of a civilian airport. The nearest airport, Coleman A Young International Airport, is approximately 4.15 miles to the south. The project is in compliance with Airport Hazards requirements (Attachment A).

Supporting documentation

A - Airport Map.pdf

Are formal compliance steps or mitigation required?

Yes

✓ No

Coastal Barrier Resources

General requirements	Legislation	Regulation
HUD financial assistance may not be used for most activities in units of the Coastal Barrier Resources System (CBRS). See 16 USC 3504 for limitations on federal expenditures affecting the CBRS.	Coastal Barrier Resources Act (CBRA) of 1982, as amended by the Coastal Barrier Improvement Act of 1990 (16 USC 3501)	

1. Is the project located in a CBRS Unit?

✓ No

Document and upload map and documentation below.

Yes

Compliance Determination

This project is not located in a CBRS Unit. Therefore, this project has no potential to impact a CBRS Unit and is in compliance with the Coastal Barrier Resources Act (Attachment B).

Supporting documentation

B - Coastal Barrier Resource Map.pdf

Are formal compliance steps or mitigation required?

Yes

✓ No

Flood Insurance

General requirements	Legislation	Regulation
Certain types of federal financial assistance may not be used in floodplains unless the community participates in National Flood Insurance Program and flood insurance is both obtained and maintained.	Flood Disaster Protection Act of 1973 as amended (42 USC 4001-4128)	24 CFR 50.4(b)(1) and 24 CFR 58.6(a) and (b); 24 CFR 55.1(b).

1. Does this project involve financial assistance for construction, rehabilitation, or acquisition of a mobile home, building, or insurable personal property?

No. This project does not require flood insurance or is excepted from flood insurance.

✓ Yes

2. Upload a FEMA/FIRM map showing the site here:

C - FEMA Firmette.pdf

The Federal Emergency Management Agency (FEMA) designates floodplains. The FEMA Map Service Center provides this information in the form of FEMA Flood Insurance Rate Maps (FIRMs). For projects in areas not mapped by FEMA, use the best available information to determine floodplain information. Include documentation, including a discussion of why this is the best available information for the site. Provide FEMA/FIRM floodplain zone designation, panel number, and date within your documentation.

Is the structure, part of the structure, or insurable property located in a FEMA-designated Special Flood Hazard Area?

✓ No

Based on the response, the review is in compliance with this section.

Yes

4. While flood insurance is not mandatory for this project, HUD strongly recommends that all insurable structures maintain flood insurance under the National Flood Insurance Program (NFIP). Will flood insurance be required as a mitigation measure or condition?

Yes

✓ No

Screen Summary

Compliance Determination

The structure or insurable property is not located in a FEMA-designated Special Flood Hazard Area. The property is located in FEMA Flood Map Panel 26099C0382G for the city of Center Line. The property is located in zone X, which represents minimal risk outside the 1-percent and 2-percent-annual-chance floodplains. While flood insurance may not be mandatory in this instance, HUD recommends that all insurable structures maintain flood insurance under the National Flood Insurance Program (NFIP). The project is in compliance with flood insurance requirements (Attachment C).

Supporting documentation

Are formal compliance steps or mitigation required?

Yes

✓ No

Air Quality

General requirements	Legislation	Regulation
The Clean Air Act is administered by the U.S. Environmental Protection Agency (EPA), which sets national standards on ambient pollutants. In addition, the Clean Air Act is administered by States, which must develop State Implementation Plans (SIPs) to regulate their state air quality. Projects funded by HUD must demonstrate that they conform to the appropriate SIP.	Clean Air Act (42 USC 7401 et seq.) as amended particularly Section 176(c) and (d) (42 USC 7506(c) and (d))	40 CFR Parts 6, 51 and 93

1. Does your project include new construction or conversion of land use facilitating the development of public, commercial, or industrial facilities OR five or more dwelling units?

✓ Yes

No

Air Quality Attainment Status of Project's County or Air Quality Management District

2. Is your project's air quality management district or county in non-attainment or maintenance status for any criteria pollutants?

No, project's county or air quality management district is in attainment status for all criteria pollutants.

✓ Yes, project's management district or county is in non-attainment or maintenance status for the following criteria pollutants (check all that apply):

Carbon Monoxide

Lead

Nitrogen dioxide

Sulfur dioxide

✓ Ozone

Particulate Matter, <2.5 microns

Particulate Matter, <10 microns

3. What are the *de minimis* emissions levels (40 CFR 93.153) or screening levels for the non-attainment or maintenance level pollutants indicated above

Ozone 0.07 ppb (parts per million)

Provide your source used to determine levels here:
ASTI contacted Breanna Bukowski in the Air Quality Division of EGLE and she responded on March 23, 2021 with the following information. Ms. Bukowski indicated that the de minimis ground level o-zone standard is 0.070 ppm averaged over an 8-hour period.

4. **Determine the estimated emissions levels of your project. Will your project exceed any of the de minimis or threshold emissions levels of non-attainment and maintenance level pollutants or exceed the screening levels established by the state or air quality management district?**

✓ No, the project will not exceed *de minimis* or threshold emissions levels or screening levels.

Enter the estimate emission levels:

Ozone 0.00 ppb (parts per million)

Based on the response, the review is in compliance with this section.

Yes, the project exceeds *de minimis* emissions levels or screening levels.

Screen Summary
Compliance Determination
The project's county or air quality management district is in an attainment/maintenance status for Ozone. This project does not exceed de minimis emissions levels or the screening level established by the state or air quality management district for the pollutant(s) identified above. The project is in compliance with the Clean Air Act (Attachment D).

Supporting documentation
D - naaqs-ambient-status-map.pdf

Are formal compliance steps or mitigation required?

Yes

✓ No

Coastal Zone Management Act

General requirements	Legislation	Regulation
Federal assistance to applicant agencies for activities affecting any coastal use or resource is granted only when such activities are consistent with federally approved State Coastal Zone Management Act Plans.	Coastal Zone Management Act (16 USC 1451-1464), particularly section 307(c) and (d) (16 USC 1456(c) and (d))	15 CFR Part 930

1. Is the project located in, or does it affect, a Coastal Zone as defined in your state Coastal Management Plan?

Yes

✓ No

Based on the response, the review is in compliance with this section. Document and upload all documents used to make your determination below.

Screen Summary

Compliance Determination

This project is not located in or does not affect a Coastal Zone as defined in the state Coastal Management Plan. The project is in compliance with the Coastal Zone Management Act (Attachment E).

Supporting documentation

E - EGLE - Coastal Zone Boundary Maps.pdf

Are formal compliance steps or mitigation required?

Yes

✓ No

Contamination and Toxic Substances

General requirements	Legislation	Regulations
It is HUD policy that all properties that are being proposed for use in HUD programs be free of hazardous materials, contamination, toxic chemicals and gases, and radioactive substances, where a hazard could affect the health and safety of the occupants or conflict with the intended utilization of the property.		24 CFR 58.5(i)(2) 24 CFR 50.3(i)

1. How was site contamination evaluated? Select all that apply. Document and upload documentation and reports and evaluation explanation of site contamination below.

- ✓ American Society for Testing and Materials (ASTM) Phase I Environmental Site Assessment (ESA)
- ✓ ASTM Phase II ESA
- ✓ Remediation or clean-up plan

ASTM Vapor Encroachment Screening

None of the Above

2. Were any on-site or nearby toxic, hazardous, or radioactive substances found that could affect the health and safety of project occupants or conflict with the intended use of the property? (Were any recognized environmental conditions or RECs identified in a Phase I ESA and confirmed in a Phase II ESA?)

No

✓ Yes

3. Mitigation

Document and upload the mitigation needed according to the requirements of the appropriate federal, state, tribal, or local oversight agency. If the adverse environmental effects cannot be mitigated, then HUD assistance may not be used for the project at this site.

Can adverse environmental impacts be mitigated?

Adverse environmental impacts cannot feasibly be mitigated.

✓ Yes, adverse environmental impacts can be eliminated through mitigation. Document and upload all mitigation requirements below.

4. Describe how compliance was achieved in the text box below. Include any of the following that apply: State Voluntary Clean-up Program, a No Further Action letter, use of engineering controls, or use of institutional controls.

The soil with concentrations of compounds above the GRCC and VIAP will be excavated and transported off the subject property for proper landfill disposal. Approximately 13,375 square feet, a total of 13 floor samples are recommended for verification of soil remediation (VSR). The total area of the excavation sidewalls, extending from surface to 3 to 4 feet bgs, is approximately 2,180 square feet. A total of 8 sidewall samples are recommended for VSR. A total of 4 samples from soil borings locations GP-5, GP-6, GP-11, and GP-13 will be used as sidewall samples. The soil excavation will be expanded until concentrations in the sidewall samples are below the GRCC and VIAC. If the excavation boundaries have to expand based on the results, additional sidewall samples will be collected in accordance with the S3TM. Note that the excavation sidewalls will be completed to the eastern boundary and near the footers of the building where samples may not be collected. All verification of soil remediation samples will be analyzed for VOCs, PNAs, and RCRA 8 metals. Samples will also include at least two duplicate samples and a methanol blank for QA/QC. See mitigation plan for additional details.

If a remediation plan or clean-up program was necessary, which standard does it follow?

✓ Complete removal

Risk-based corrective action (RBCA)

Screen Summary

Compliance Determination

ASTI completed a Phase I Environmental Site Assessment (ESA) of the subject property on January 29, 2021. The Phase I ESA identified that fill soil had been placed on the NE portion of the Subject Property. To evaluate the REC, ASTI conducted a subsurface investigation on March 3, 2021. A subsurface investigation completed at the subject property identified compounds above the GRCC and VIAP in the fill soil on the northeastern portion Results of the subsurface investigations identified the presence of arsenic, several polynuclear aromatic hydrocarbons (PNAs) and several volatile

organic compounds (VOCs) in soil at the subject property above the applicable Michigan Department of Environment, Great Lakes, and Energy (EGLE) Part 201 Generic Residential Cleanup Criteria (GRCC). The detections of compounds are associated with the placement of fill soil. A limited Phase II was completed in 2022 to further delineate the contamination. Based on the intended use of the subject property for residential purposes, the proposed response activity is to complete the excavation, transportation, and disposal of the contaminated soil above the GRCC and VIAP. Verification of soil remediation samples will be collected from the floor and sidewalls of the excavation either prior to the work or during the excavation. The excavation will be completed to floor and sidewall sample locations below the GRCC and VIAP. Upon completion of the response activities proposed in section 6.0, the submitter intends to submit a No Further Action report for unrestricted residential land use for EGLE review and approval. EGLE has reviewed the Response Activity Plan (ResAP) for the proposed project and has approved of the ResAP as of May 5, 2023. Radon testing was conducted with regard to pre-renovation requirements at the Property. Testing by ASTI was conducted in accordance with The National Radon Safety Board (NRSB), Protocol for Conducting Measurements of Radon and Radon Decay Products in Homes. Radon laboratory analytical results were below the EPA Action Level of 4.0 pCi/L within the 20 units, two offices, and two common areas tested. No further testing is required. A lead-Based Paint Inspection/Risk Assessment inspection and sampling were performed using the procedures outlined in Chapter 7 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint in House (2012 Revision). There is a total of 108 units in the building and the 73 studio units were not considered ''child occupied'' and were not considered in the inspection/risk assessment. Lead-based paint was identified on the casement windows located in the community room on the first floor. The paint was noted as being intact and the window was painted shut. The current condition was not determined to represent a hazard. Lead dust was identified in window trough in multiple areas. ATC recommended cleaning all the window troughs using a State of Michigan certified lead abatement company and obtained clearance sampling by a State of Michigan certified lead risk assessor. Asbestos containing materials (friable and non-friable) were found at the subject property. The property has an operations and maintenance plan for the existing ACMs which states that property maintenance/custodial staff does not perform any maintenance or repair work that may involve disturbance of or exposure to ACM or PACM. These activities are to be performed by qualified Asbestos Abatement Contractors. ACM will be abated in accordance with federal, state and local guidelines and a closeout report will be completed (Attachment F).

Supporting documentation

F - ResAP Rem Act Plan Approval Ltr 05-05-2023.pdf
F - Radon Letter Report.pdf
F - Limited Phase II ESA Report Final.pdf

F - Lead Risk Assesment.pdf
F - BEA - FINAL REPORT JE.pdf
F - Asbestos Survey 12-27-18.pdf
F - Asbestos O and M Plan.pdf
F - Air Quality Letter.pdf
F-10221 Dunn ResAP Rem Act Plan - FINAL REPORT.pdf
F -10221 Soil Remediation Report Final.pdf
F - Phase I.pdf
F - Michigan Radon Map.pdf
F-DUNN~1.PDF
F - ASTI 1-10221 Dunn Family Phase II Report Final 5-4-21.pdf

Are formal compliance steps or mitigation required?

- ✓ Yes
- No

Endangered Species

General requirements	ESA Legislation	Regulations
Section 7 of the Endangered Species Act (ESA) mandates that federal agencies ensure that actions that they authorize, fund, or carry out shall not jeopardize the continued existence of federally listed plants and animals or result in the adverse modification or destruction of designated critical habitat. Where their actions may affect resources protected by the ESA, agencies must consult with the Fish and Wildlife Service and/or the National Marine Fisheries Service ("FWS" and "NMFS" or "the Services").	The Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq*.); particularly section 7 (16 USC 1536).	50 CFR Part 402

1. Does the project involve any activities that have the potential to affect specifies or habitats?

No, the project will have No Effect due to the nature of the activities involved in the project.

No, the project will have No Effect based on a letter of understanding, memorandum of agreement, programmatic agreement, or checklist provided by local HUD office

✓ Yes, the activities involved in the project have the potential to affect species and/or habitats.

2. Are federally listed species or designated critical habitats present in the action area?

No, the project will have No Effect due to the absence of federally listed species and designated critical habitat

✓ Yes, there are federally listed species or designated critical habitats present in the action area.

3. What effects, if any, will your project have on federally listed species or designated critical habitat?

✓ No Effect: Based on the specifics of both the project and any federally listed species in the action area, you have determined that the project will have absolutely no effect on listed species or critical habitat. in the action area.

Document and upload all documents used to make your determination below. Documentation should include a species list and explanation of your conclusion, and may require maps, photographs, and surveys as appropriate

May Affect, Not Likely to Adversely Affect: Any effects that the project may have on federally listed species or critical habitats would be beneficial, discountable, or insignificant.

Likely to Adversely Affect: The project may have negative effects on one or more listed species or critical habitat.

6. For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the exact measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation. This information will be automatically included in the Mitigation summary for the environmental review. If negative effects cannot be mitigated, cancel the project using the button at the bottom of this screen.

Mitigation as follows will be implemented:

✓ No mitigation is necessary.

Explain why mitigation will not be made here:

The site is located in the highly urbanized developed area and not near any wetlands, floodplains or waterways.

Screen Summary
Compliance Determination

The project is located in the highly urbanized and currently developed area. There is no critical habitat located in the project area. Additionally, the project is not located near any wetlands, floodplains or waterways. Therefore, the project will have no effect on listed species (Attachment G).

Supporting documentation

G - Michigan_Endangered_Species_.pdf

Are formal compliance steps or mitigation required?

Yes

✓ No

Explosive and Flammable Hazards

General requirements	Legislation	Regulation
HUD-assisted projects must meet Acceptable Separation Distance (ASD) requirements to protect them from explosive and flammable hazards.	N/A	24 CFR Part 51 Subpart C

1. Is the proposed HUD-assisted project itself the development of a hazardous facility (a facility that mainly stores, handles or processes flammable or combustible chemicals such as bulk fuel storage facilities and refineries)?

✓ No

Yes

2. Does this project include any of the following activities: development, construction, rehabilitation that will increase residential densities, or conversion?

No

✓ Yes

3. Within 1 mile of the project site, are there any current or planned stationary aboveground storage containers that are covered by 24 CFR 51C? Containers that are NOT covered under the regulation include:

- **Containers 100 gallons or less in capacity, containing common liquid industrial fuels OR**
- **Containers of liquified petroleum gas (LPG) or propane with a water volume capacity of 1,000 gallons or less that meet the requirements of the 2017 or later version of National Fire Protection Association (NFPA) Code 58.**

If all containers within the search area fit the above criteria, answer "No." For any other type of aboveground storage container within the search area that holds one of the flammable or explosive materials listed in Appendix I of 24 CFR part 51 subpart C, answer "Yes."

No

✓ Yes

4. Based on the analysis, is the proposed HUD-assisted project located at or beyond the required separation distance from all covered tanks?

Yes

✓ No

6. For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Mitigation measures may include both natural and manmade barriers, modification of the project design, burial or removal of the hazard, or other engineered solutions. Describe selected mitigation measures, including the timeline for implementation, and attach an implementation plan.

Note that only licensed professional engineers should design and implement blast barriers. If a barrier will be used or the project will be modified to compensate for an unacceptable separation distance, upload approval from a licensed professional engineer in the Screen Summary at the conclusion of this screen.

There is a current or planned stationary aboveground storage container of concern within 1 mile of the project site. The Separation Distance from the project was not initially acceptable. With mitigation, identified in the mitigation section of this review, the project will be in compliance with explosive and flammable hazard requirements. A thermal blast wall will be constructed on the adjacent site. HUD has added a special condition to the FIRM Commitment that a letter between the current owner and the adjacent owner must be provided to HUD indicating permission to complete a blast wall around the generator on the adjacent property along with documentation of permission from the city of Center Line, MI. Post-closing, documentation must be provided that the blast wall was constructed as proposed.

Based on the response, the review is in compliance with this section.

Screen Summary

Compliance Determination

There is an existing 250-gallon AST on the adjacent property to the east for that building's back-up generator. A consultant completed worksheet indicated an ASD of 155 feet for thermal radiation for people. The closet area where people would congregate on a regular basis is the area just outside the exit on the northeast side of the Dunn Family Residence. The physical inspection of the property concluded that people normally congregate in this area, based on the observation of 4 chairs and a barbecue grill. After the completion of the addition, an area of the sidewalk leading to

the new parking area on the north side of the building for the addition would still be less than the ASD of 155 feet. Sara Jensen, HUD Program Environmental Clearance Officer in DC, confirmed that either a blast wall would need to be built on that portion of the property or constructed on an offsite on the adjacent property to properly protects residents at Dunn Family from Thermal Radiation in the event of possible explosion. CSI consulted with the general contractor and indicated that the cost of $15,000 would be able to be absorbed within their existing budget. A thermal blast wall will be constructed on the adjacent site. HUD has added a special condition to the FIRM Commitment that a letter between the current owner and the adjacent owner must be provided to HUD indicating permission to complete a blast wall around the generator on the adjacent property along with documentation of permission from the city of Center Line, MI. Post-closing, documentation must be provided that the blast wall was constructed as proposed. Furthermore, the documentation has also been retained in HUD files from the specs that the proposed back-up generator on the Dunn Family Site, which is part of the renovation and addition will be powered by natural gas. This documentation was found on pages 1,030-1,036 of the specification document. These documents as well as the site plan and drawings showing the location of the proposed generator and off-site blast wall and current distance between the AST for the generator and gathering area on the NE corner of the existing building have been uploaded for review (Attachment H).

Supporting documentation

H - Generator Specs Dunn Family.pdf
H - Generator Blast Wall Dunn Family Father Murray Plan.pdf
H - Dunn Offsite Generator.pdf
H - Dunn Family View of distance to AST.pdf
H - ASD.pdf
H - ARCHITECTURAL SITE DETAILS Off-site generator wall detail.pdf
H - 8400 Engleman St - ASD Map.pdf
H - 16b Specifications.pdf

Are formal compliance steps or mitigation required?

✓ Yes

No

Farmlands Protection

General requirements	Legislation	Regulation
The Farmland Protection Policy Act (FPPA) discourages federal activities that would convert farmland to nonagricultural purposes.	Farmland Protection Policy Act of 1981 (7 U.S.C. 4201 et seq.)	7 CFR Part 658

1. Does your project include any activities, including new construction, acquisition of undeveloped land or conversion, that could convert agricultural land to a non-agricultural use?

✓ Yes

No

2. Does your project meet one of the following exemptions?

- Construction limited to on-farm structures needed for farm operations.
- Construction limited to new minor secondary (accessory) structures such as a garage or storage shed
- Project on land already in or committed to urban development or used for water storage. (7 CFR 658.2(a))

✓ Yes

Based on the response, the review is in compliance with this section. Document and upload all documents used to make your determination below.

No

Screen Summary

Compliance Determination

The project is located in the highly urbanized area in Center Line, Michigan. There is no unique farmland in the area. Therefore, the project is in compliance with the Farmland Protection law & authority (Attachment I).

Supporting documentation

I - USDA_Soil_Report.pdf

Are formal compliance steps or mitigation required?

Yes

✓ No

Floodplain Management

General Requirements	Legislation	Regulation
Executive Order 11988, Floodplain Management, requires federal activities to avoid impacts to floodplains and to avoid direct and indirect support of floodplain development to the extent practicable.	Executive Order 11988	24 CFR 55

1. Do any of the following exemptions apply? Select the applicable citation? [only one selection possible]

55.12(c)(3)
55.12(c)(4)
55.12(c)(5)
55.12(c)(6)
55.12(c)(7)
55.12(c)(8)
55.12(c)(9)
55.12(c)(10)
55.12(c)(11)
✓ None of the above

2. Upload a FEMA/FIRM map showing the site here:

C - FEMA Firmette.pdf

The Federal Emergency Management Agency (FEMA) designates floodplains. The FEMA Map Service Center provides this information in the form of FEMA Flood Insurance Rate Maps (FIRMs). For projects in areas not mapped by FEMA, use **the best available information** to determine floodplain information. Include documentation, including a discussion of why this is the best available information for the site.

Does your project occur in a floodplain?

✓ No

Based on the response, the review is in compliance with this section.

Yes

Screen Summary

Compliance Determination

This project does not occur in a floodplain. The property is located in FEMA Flood Map Panel 26099C0382G for the city of Center Line. The property is located in zone X, which represents minimal risk outside the 1-percent and 2-percent-annual-chance floodplains. The project is in compliance with Executive Order 11988 (Attachment C).

Supporting documentation

Are formal compliance steps or mitigation required?

Yes

✓ No

Historic Preservation

General requirements	Legislation	Regulation
Regulations under Section 106 of the National Historic Preservation Act (NHPA) require a consultative process to identify historic properties, assess project impacts on them, and avoid, minimize, or mitigate adverse effects	Section 106 of the National Historic Preservation Act (16 U.S.C. 470f)	36 CFR 800 "Protection of Historic Properties" https://www.govinfo.gov/content/pkg/CFR-2012-title36-vol3/pdf/CFR-2012-title36-vol3-part800.pdf

Threshold

Is Section 106 review required for your project?

No, because the project consists solely of activities listed as exempt in a Programmatic Agreement (PA). (See the PA Database to find applicable PAs.)
No, because the project consists solely of activities included in a No Potential to Cause Effects memo or other determination [36 CFR 800.3(a)(1)].
✓ Yes, because the project includes activities with potential to cause effects (direct or indirect).

Step 1 – Initiate Consultation

Select all consulting parties below (check all that apply):

✓ State Historic Preservation Offer (SHPO) Completed

✓ Indian Tribes, including Tribal Historic Preservation Officers (THPOs) or Native Hawaiian Organizations (NHOs)

✓ Forest County Potawatomi Community, Wisconsin Completed

✓ Hannahville Indian Community, Michigan	Completed
✓ Lac Vieux Desert Band	Completed
✓ Little Traverse Bay Bands of Odawa Indians	Completed
✓ Menominee Indian Tribe of Wisconsin	Completed
✓ Miami Tribe of Oklahoma	Completed
✓ Saginaw Chippewa Indian Tribe of Michigan	Completed
✓ Sault Ste. Marie Tribe of Chippewa Indians	Completed
✓ Seneca-Cayuga Nation	Completed

Other Consulting Parties

Describe the process of selecting consulting parties and initiating consultation here:

The site is outside of the City of Detroit; therefore, the City of Detroit's Programmatic Agreement with the State Historic Preservation Society is not valid and the MI SHPO was directly consulted. An application package was submitted to MI SHPO and a letter of potential adverse effect was sent back. Letters were also sent out to all the tribes listed in TDAT for this location and only 1 tribe (Miami Tribe of Oklahoma) acknowledged the letter and sent a response asking to be notified if something was discovered to be of cultural significance as part of the construction process for the new building to be built.

Document and upload all correspondence, notices and notes (including comments and objections received below).

Was the Section 106 Lender Delegation Memo used for Section 106 consultation?

Yes
No

Step 2 – Identify and Evaluate Historic Properties

1. **Define the Area of Potential Effect (APE), either by entering the address(es) or uploading a map depicting the APE below:**
   See attached application submitted to MI SHPO.

   In the chart below, list historic properties identified and evaluated in the APE. Every

historic property that may be affected by the project should be included in the chart.

Upload the documentation (survey forms, Register nominations, concurrence(s) and/or objection(s), notes, and photos) that justify your National Register Status determination below.

Address / Location / District	National Register Status	SHPO Concurrence	Sensitive Information

Additional Notes:

2. Was a survey of historic buildings and/or archeological sites done as part of the project?

✓ Yes

Document and upload surveys and report(s) below.
For Archeological surveys, refer to HP Fact Sheet #6, Guidance on Archeological Investigations in HUD Projects.

Additional Notes:

No

Step 3 –Assess Effects of the Project on Historic Properties

Only properties that are listed on or eligible for the National Register of Historic Places receive further consideration under Section 106. Assess the effect(s) of the project by applying the Criteria of Adverse Effect. (36 CFR 800.5)] Consider direct and indirect effects as applicable as per guidance on direct and indirect effects.

Choose one of the findings below - No Historic Properties Affected, No Adverse Effect, or Adverse Effect; and seek concurrence from consulting parties.

✓ No Historic Properties Affected

Based on the response, the review is in compliance with this section. Document and upload

concurrence(s) or objection(s) below.

Document reason for finding:

✓ No historic properties present.

Historic properties present, but project will have no effect upon them.

No Adverse Effect

Adverse Effect

Screen Summary

Compliance Determination

A Section 106 application and archeological report was submitted to the Michigan State Historic Preservation Officer (SHPO) on XXX. Based on the review, the Michigan opined that no historic properties will be affected within the area of potential effects of the undertaking. However, the northwest portion of the proposed area is immediately adjacent to St. Clements Cemetery. Due to the proximity of the project to the cemetery, the archaeological consultant advises that care is taken during the construction of the north parking lot and west entrance. In the unlikely event that human remains are encountered during construction in the project area, work must be halted and the Michigan SHPO along with other appropriate authorities must be contacted immediately. Additionally, if the scope of work changes in any way, or if artifacts or bones are discovered, please notify the Michigan SHPO immediately (Attachment J).

Supporting documentation

J - mishpo-section-106-application-12-18-2020-final (1) - Final.pdf
J - SHPO Response Letter.pdf

Are formal compliance steps or mitigation required?

✓ Yes

No

Noise Abatement and Control

General requirements	Legislation	Regulation
HUD's noise regulations protect residential properties from excessive noise exposure. HUD encourages mitigation as appropriate.	Noise Control Act of 1972 General Services Administration Federal Management Circular 75-2: "Compatible Land Uses at Federal Airfields"	Title 24 CFR 51 Subpart B

1. What activities does your project involve? Check all that apply:

✓ New construction for residential use

NOTE: HUD assistance to new construction projects is generally prohibited if they are located in an Unacceptable zone, and HUD discourages assistance for new construction projects in Normally Unacceptable zones. See 24 CFR 51.101(a)(3) for further details.

✓ Rehabilitation of an existing residential property

NOTE: For major or substantial rehabilitation in Normally Unacceptable zones, HUD encourages mitigation to reduce levels to acceptable compliance standards. For major rehabilitation in Unacceptable zones, HUD strongly encourages mitigation to reduce levels to acceptable compliance standards. See 24 CFR 51 Subpart B for further details.

A research demonstration project which does not result in new construction or reconstruction

An interstate land sales registration

Any timely emergency assistance under disaster assistance provision or appropriations which are provided to save lives, protect property, protect public health and safety, remove debris and wreckage, or assistance that has the effect of restoring facilities substantially as they existed prior to the disaster
None of the above

4**. Complete the Preliminary Screening to identify potential noise generators in the vicinity (1000' from a major road, 3000' from a railroad, or 15 miles from an airport).**

Indicate the findings of the Preliminary Screening below:

There are no noise generators found within the threshold distances above.

✓ Noise generators were found within the threshold distances.

5. **Complete the Preliminary Screening to identify potential noise generators in the**

✓ Acceptable: (65 decibels or less; the ceiling may be shifted to 70 decibels in circumstances described in §24 CFR 51.105(a))

Indicate noise level here: 59

Based on the response, the review is in compliance with this section. Document and upload noise analysis, including noise level and data used to complete the analysis below.

Normally Unacceptable: (Above 65 decibels but not exceeding 75 decibels; the floor may be shifted to 70 decibels in circumstances described in §24 CFR 51.105(a))

Unacceptable: (Above 75 decibels)

HUD strongly encourages conversion of noise-exposed sites to land uses compatible with high noise levels.

Check here to affirm that you have considered converting this property to a non-residential use compatible with high noise levels.

Indicate noise level here: 59

Document and upload noise analysis, including noise level and data used to complete the analysis below.

Screen Summary
Compliance Determination

A Noise Assessment was conducted. The noise level was acceptable: 59.0 db. See noise analysis. The project is in compliance with HUD's Noise regulation (Attachment K).

Supporting documentation

K - Noise Assessment.pdf

Are formal compliance steps or mitigation required?

Yes

✓ No

Sole Source Aquifers

General requirements	Legislation	Regulation
The Safe Drinking Water Act of 1974 protects drinking water systems which are the sole or principal drinking water source for an area and which, if contaminated, would create a significant hazard to public health.	Safe Drinking Water Act of 1974 (42 U.S.C. 201, 300f et seq., and 21 U.S.C. 349)	40 CFR Part 149

1. Does the project consist solely of acquisition, leasing, or rehabilitation of an existing building(s)?

Yes

✓ No

2. Is the project located on a sole source aquifer (SSA)?

A sole source aquifer is defined as an aquifer that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer. This includes streamflow source areas, which are upstream areas of losing streams that flow into the recharge area.

✓ No

Based on the response, the review is in compliance with this section. Document and upload documentation used to make your determination, such as a map of your project (or jurisdiction, if appropriate) in relation to the nearest SSA and its source area, below.

Yes

Screen Summary

Compliance Determination

There are no sole source aquifers located in Macomb County. The project is not located on a sole source aquifer area. The project is in compliance with Sole Source Aquifer requirements (Attachment L).

Supporting documentation

L - Sole Source Aquifers Map.pdf

Are formal compliance steps or mitigation required?

Yes

✓ No

Wetlands Protection

General requirements	Legislation	Regulation
Executive Order 11990 discourages direct or indirect support of new construction impacting wetlands wherever there is a practicable alternative. The Fish and Wildlife Service's National Wetlands Inventory can be used as a primary screening tool, but observed or known wetlands not indicated on NWI maps must also be processed Off-site impacts that result in draining, impounding, or destroying wetlands must also be processed.	Executive Order 11990	24 CFR 55.20 can be used for general guidance regarding the 8 Step Process.

1. Does this project involve new construction as defined in Executive Order 11990, expansion of a building's footprint, or ground disturbance? The term "new construction" shall include draining, dredging, channelizing, filling, diking, impounding, and related activities and any structures or facilities begun or authorized after the effective date of the Order

No

✓ Yes

2. Will the new construction or other ground disturbance impact an on- or off-site wetland? The term "wetlands" means those areas that are inundated by surface or ground water with a frequency sufficient to support, and under normal circumstances does or would support, a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds.

"Wetlands under E.O. 11990 include isolated and non-jurisdictional wetlands."

✓ No, a wetland will not be impacted in terms of E.O. 11990's definition of new construction.

Based on the response, the review is in compliance with this section. Document and upload a map or any other relevant documentation below which explains your determination

Yes, there is a wetland that be impacted in terms of E.O. 11990's definition of new construction.

Screen Summary
Compliance Determination

The project is not located in a wetland area. The project is in compliance with Executive Order 11990 (Attachment M).

Supporting documentation

M - NWI Map.pdf

Are formal compliance steps or mitigation required?

Yes

✓ No

Wild and Scenic Rivers Act

General requirements	Legislation	Regulation
The Wild and Scenic Rivers Act provides federal protection for certain free-flowing, wild, scenic and recreational rivers designated as components or potential components of the National Wild and Scenic Rivers System (NWSRS) from the effects of construction or development.	The Wild and Scenic Rivers Act (16 U.S.C. 1271-1287), particularly section 7(b) and (c) (16 U.S.C. 1278(b) and (c))	36 CFR Part 297

1. Is your project within proximity of a NWSRS river?

✓ No

Yes, the project is in proximity of a Designated Wild and Scenic River or Study Wild and Scenic River.
Yes, the project is in proximity of a Nationwide Rivers Inventory (NRI) River.

Screen Summary

Compliance Determination

This project is not within proximity of a NWSRS river. The project is in compliance with the Wild and Scenic Rivers Act (Attachment N).

Supporting documentation

N - Michigan Wild and Scenic Rivers.pdf

Are formal compliance steps or mitigation required?

Yes

✓ No

Environmental Justice

General requirements	Legislation	Regulation
Determine if the project creates adverse environmental impacts upon a low-income or minority community. If it does, engage the community in meaningful participation about mitigating the impacts or move the project.	Executive Order 12898	

HUD strongly encourages starting the Environmental Justice analysis only after all other laws and authorities, including Environmental Assessment factors if necessary, have been completed.

1. Were any adverse environmental impacts identified in any other compliance review portion of this project's total environmental review?

Yes

✓ No

Based on the response, the review is in compliance with this section.

Screen Summary

Compliance Determination

No adverse environmental impacts were identified in the project's total environmental review. The project is in compliance with Executive Order 12898 (Attachment O).

Supporting documentation

O - ejsceen_report.pdf

Are formal compliance steps or mitigation required?

Yes

✓ No

U.S. Department of Housing and Urban Development
451 Seventh Street, SW
Washington, DC 20410
www.hud.gov
espanol.hud.gov

Environmental Assessment Determinations and Compliance Findings for HUD-assisted Projects 24 CFR Part 58

Project Information

Project Name: Dunn-Family-Senior

HEROS Number: 900000010361123

Project Location: 8400 Engleman, Center Line, MI 48015

Additional Location Information:
This property is located in a primarily single-family residential neighborhood. The boundaries of the neighborhood are Interstate 696 to the north, Schoenherr on the east, 10 Mile Road on the south side, and Van Dyke Avenue on the West side. The neighborhood boundaries are main commercial arteries in the area, which have been developed with myriad of uses (commercial, retail, office, light industrial, multi-family, etc.). The adjacent use to the west is a Catholic cemetery. To the west of that is former catholic elementary school now owned by the Center Line School district and the St. Clements church along Van Dyke. The use to the east of the property is the Father Murray Center. It is reported to be a post-acute and long-term care facility. To the east of that appears to be a municipal park. The areas to the north and south of the property are primarily, single-family residences, which appear to be adequately maintained. Overall, the neighborhood area appears to be stable.

Description of the Proposed Project [24 CFR 50.12 & 58.32; 40 CFR 1508.25]:
Dunn Family Senior Co-op Apartments is an existing 108-unit, affordable senior apartment building that was originally constructed in 1971. The project includes the substantial rehab of the exterior, existing units and common spaces including upgrading landscaping, new dumpster enclosure, replacing existing fencing and vehicle gate, new concrete walks, repairing/replacing existing concrete walks, new site lighting, exterior caulking, new siding, replacing existing siding, new brick, tuckpointing and repair of existing brick, new windows, new main entries with automatic operator and key fob operation, new exit door hardware, full roof replacement, replacing all balcony doors and finishes, installing new exterior facade, new accessible community restrooms, new accessible community kitchen, new library, new exercise facility, wood base and handrails in corridors, painting all common areas, renovating and reconfiguring first floor common areas and office layouts, improving the fire rating of existing ceilings, installing new acoustic ceiling tiles in all common areas, installing new upgrading existing elevators, installing one additional elevator, new cabinets, new appliances, new stove tops, new sinks, new garbage disposals, new kitchen and bath flooring, replacing wall A/C and baseboard heaters with single combined, addressing aluminum wiring in all apartments, replacing all unit carpeting, replacing doors and hardware as necessary, painting bathrooms and kitchens, new common area HVAC, replacing all riser valves, replacing domestic boilers, upgrading/replacing intercom system, new generator, installing an e-call system for all units, upgrades to fire alarm, and upgrading elevator equipment

and controls. As well as the construction of a new addition to connect the north and south wings, which will enclose a courtyard. Construction will result in the demolition of eight units and the addition of 57 units for a new total of 157 units. 25 off-street parking spaces will also be constructed to the north of the building. The building will continue to be 100% affordable to low-income seniors aged 62+. This review is for 6-Project Based Vouchers from the Detroit Housing Commission. The project is also receiving HUD 202 Capital Advance funding and has a separate Part 50 HEROS review (HEROS Number 900000010181990). This review is valid for up to five years.

Funding Information

Grant Number	HUD Program	Program Name
MI0001	Public Housing	Project-Based Voucher Program

Estimated Total HUD Funded Amount: $74,160.00

Estimated Total Project Cost [24 CFR 58.2 (a) (5)]: $31,737,998.00

Mitigation Measures and Conditions [CFR 1505.2(c)]:

Summarized below are all mitigation measures adopted by the Responsible Entity to reduce, avoid or eliminate adverse environmental impacts and to avoid non-compliance or non-conformance with the above-listed authorities and factors. These measures/conditions must be incorporated into project contracts, development agreements and other relevant documents. The staff responsible for implementing and monitoring mitigation measures should be clearly identified in the mitigation plan.

Law, Authority, or Factor	Mitigation Measure or Condition
Contamination and Toxic Substances	The soil with concentrations of compounds above the GRCC and VIAP will be excavated and transported off the subject property for proper landfill disposal. Approximately 13,375 square feet, a total of 13 floor samples are recommended for verification of soil remediation (VSR). The total area of the excavation sidewalls, extending from surface to 3 to 4 feet bgs, is approximately 2,180 square feet. A total of 8 sidewall samples are recommended for VSR. A total of 4 samples from soil borings locations GP-5, GP-6, GP-11, and GP-13 will be used as sidewall samples. The soil excavation will be expanded until concentrations in the sidewall samples are below the GRCC and VIAC. If the excavation boundaries have to expand based on the results, additional sidewall samples will be collected in accordance with the S3TM. Note that the excavation sidewalls will be completed to the eastern boundary and near the footers of the building where samples may not be collected. All verification of soil remediation samples will be analyzed for VOCs, PNAs, and RCRA 8 metals.

	Samples will also include at least two duplicate samples and a methanol blank for QA/QC. See mitigation plan for additional details.
Explosive and Flammable Hazards	There is a current or planned stationary aboveground storage container of concern within 1 mile of the project site. The Separation Distance from the project was not initially acceptable. With mitigation, identified in the mitigation section of this review, the project will be in compliance with explosive and flammable hazard requirements. A thermal blast wall will be constructed on the adjacent site. HUD has added a special condition to the FIRM Commitment that a letter between the current owner and the adjacent owner must be provided to HUD indicating permission to complete a blast wall around the generator on the adjacent property along with documentation of permission from the city of Center Line, MI. Post-closing, documentation must be provided that the blast wall was constructed as proposed.
Contamination and Toxic Substances	Removal of all Lead-Based Paint (LBP) dust hazards. LBP close-out report.
Contamination and Toxic Substances	Remove all Asbestos-Containing Materials (ACMs) from the building prior to construction in areas that are to be disturbed by construction activities. Completion of an ACM close-out inspection and report.
Historical Preservation	If there is a change in the scope of work, those changes will be required to undergo additional Section 106 Review prior to the execution of any work.
Historical Preservation- Unanticipated Discoveries Plan	Once construction has started, the SHPO approved Unanticipated Discoveries Plan shall be followed for the duration of the project.

Project Mitigation Plan

The mitigation measures and conditions will be carried out as stated in the Dunn Family Senior Mitigation Plan.

Dunn Family Senior Mitigation Plan.pdf

Determination:

☒	Finding of No Significant Impact [24 CFR 58.40(g)(1); 40 CFR 1508.13] The project will not result in a significant impact on the quality of human environment
☐	Finding of Significant Impact

Preparer Signature: DocuSigned by: Kim Siegel 9390B097C5434FC... **Date:** 10/30/2023

Name / Title/ Organization: Kim Siegel / / DETROIT

Certifying Officer Signature: DocuSigned by: E17650515DAF4C9... **Date:** 10/30/2023

Name/ Title: Julie Schneider, Director, Housing and Revitalization Department

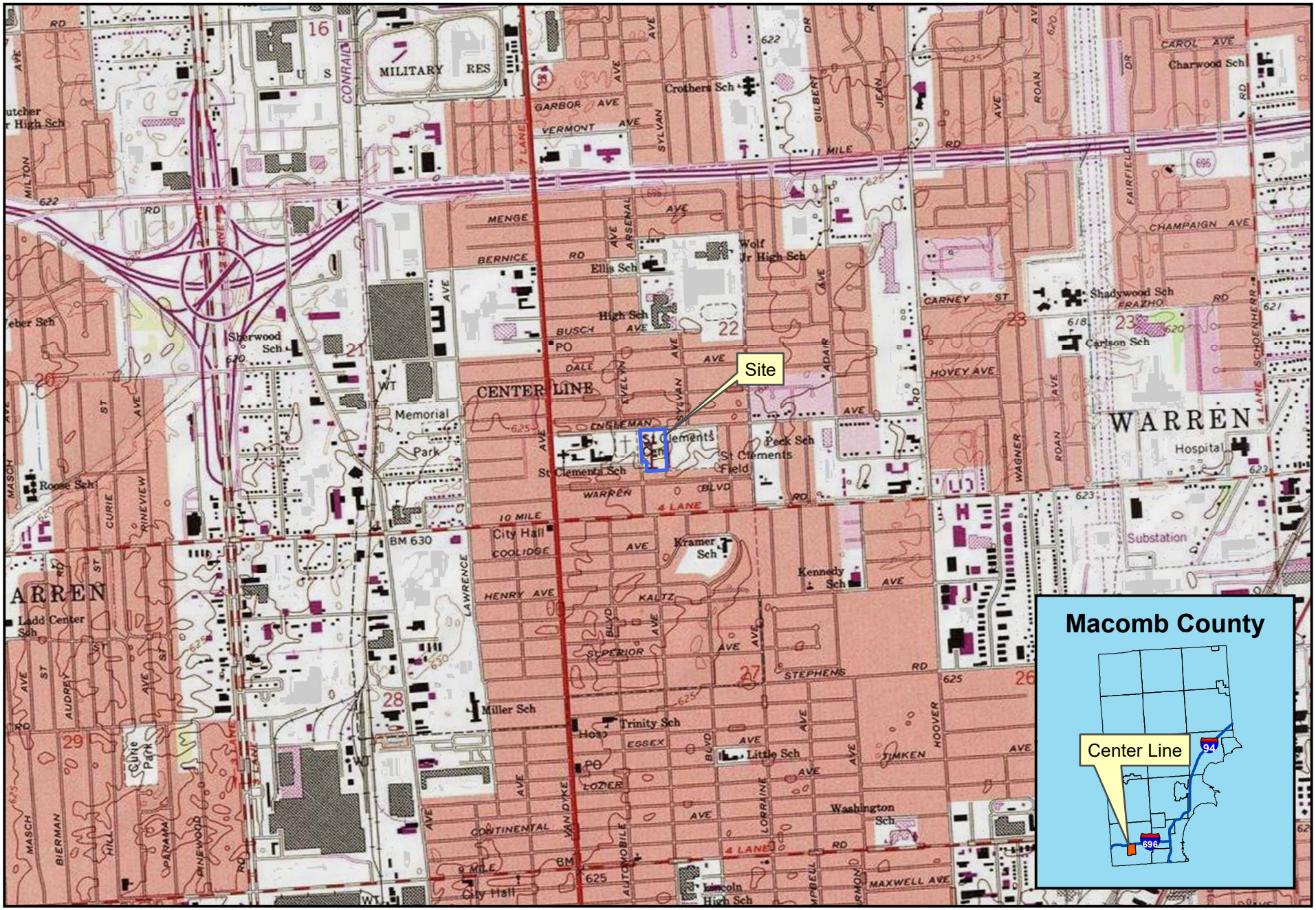
This original, signed document and related supporting material must be retained on file by the Responsible Entity in an Environment Review Record (ERR) for the activity / project (ref: 24 CFR Part 58.38) and in accordance with recordkeeping requirements for the HUD program(s).

Dunn Family Senior
ASTI Environmental
October 25, 2023

Response Activity or Continuing Obligation	Required Activities	Party Responsible for Completing Activity	Timing of Activity	Required Follow-up or Reporting
ACMs	1. Remove all Asbestos-Containing Materials (ACMs) from the building prior to construction in areas that are to be disturbed by construction activities. 2. Completion of an ACM close-out inspection and report.	1. ACM Abatement Contractor 2. Environmental Consultant	Prior to Construction	ACM Close-out Report
Explosive and Flammable Hazards	1. Construct a thermal blast wall on the adjoining property. 2. Obtain a letter from the adjoining property owner to the Subject Property owner, granting permission to construct the thermal blast wall. 3. Documentation of permission from the City of Center Line to construct the thermal blast wall around the generator on the adjoining property.	General Contractor	During Construction	1. Architectural Drawings and Photographs of the Completed Barrier 2. Permission Letter Between the Two Owners 3. City of Center Line Construction Approval Documentation
LBP Hazards	1. Removal of all Lead-Based Paint (LBP) dust hazards. 2. LBP close-out report.	1. LBP Abatement Contractor 2. Environmental Consultant	Prior to Construction	LBP Close-out Report
ResAP – Clean Fill	The fill material brought to the site will be documented as clean by analytical results from samples collected from the site of origin documenting that the material does not contain metals at concentrations above the applicable generic direct contact criteria.	Contractor	During Construction	Analytical Results

Dunn Family Senior
ASTI Environmental
October 25, 2023

ResAP	Complete a No Further Action (NFA) report and submit to EGLE. Obtain a NFA letter from EGLE.	Developer	At any time	NFA report and letter
Section 106 – No Historical Properties Affect Requirements	If there is a change in the scope of work, those changes will be required to undergo additional Section 106 Review prior to the execution of any work.	General Contractor	At any time	Project Plans
Section 106 – Unanticipated Discoveries Plan	Once construction has started, the SHPO approved Unanticipated Discoveries Plan shall be followed for the duration of the project.	Construction Crew, Foremen, Developer	During Construction	Unanticipated Discoveries Plan with SHPO Approval



8400 Englemann St.

Center Line, MI

Created for: CSI Support & Development Services
Created by: RMH, December 21, 2020, ASTI Project 3-10221

ASTI Environmental

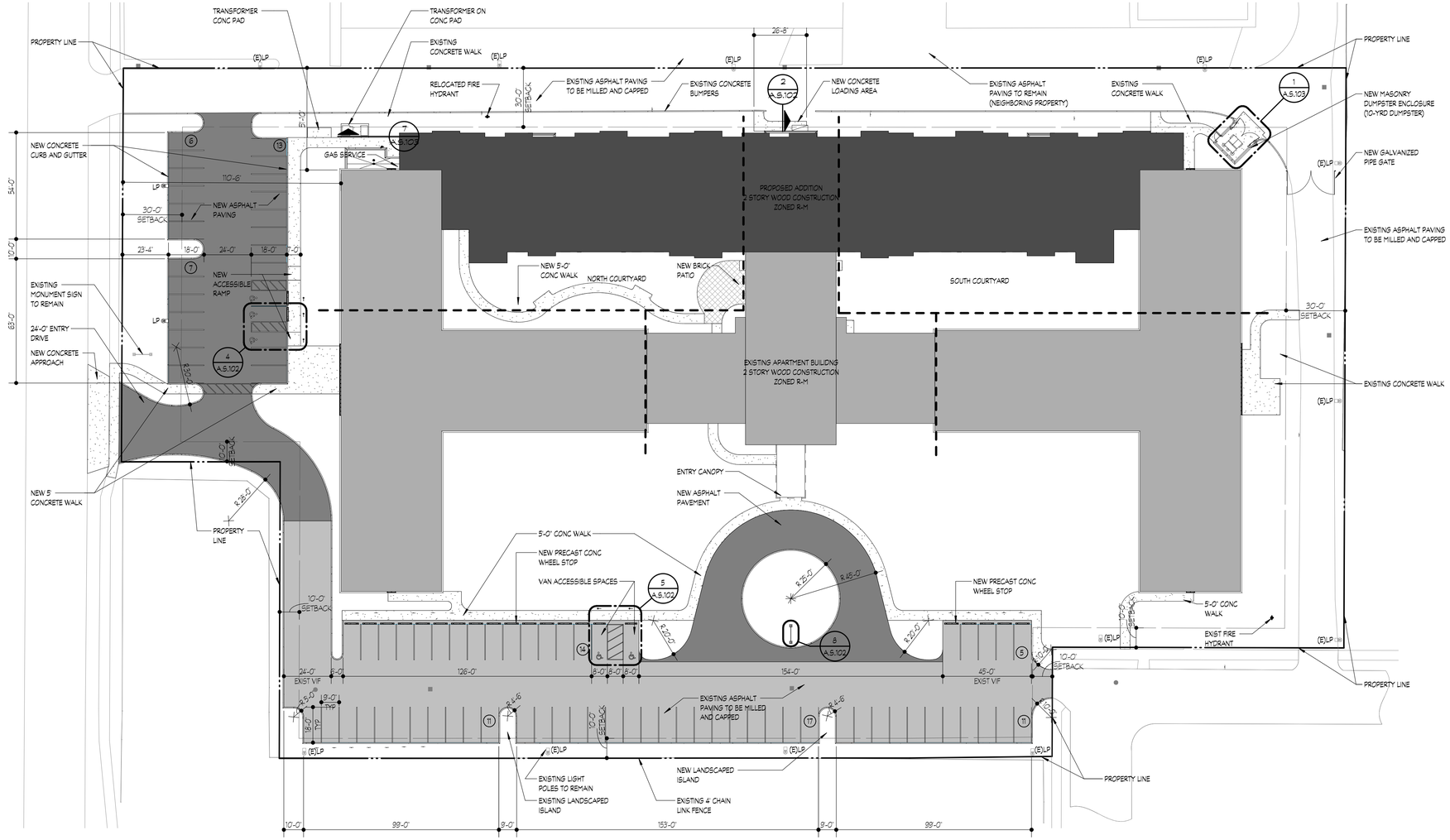
Site Location Map

GENERAL LAYOUT NOTES

1. ALL DIMENSIONS TO BACK OF CURB UNLESS OTHERWISE NOTED.
2. INSTALL 1/2" EXPANSION JOINT WHERE CONCRETE WALKS MEET BUILDING PORCHES, SUPPORTED SLABS, ETC. - TYPICAL.
3. INSTALL 1/2" EXPANSION JOINT WHERE CONCRETE WALKS MEET CURBS, TYPICAL.
4. EXPANSION JOINTS IN CONCRETE SIDEWALKS:
   6' WD. SIDEWALK - 15' O.C. TYP.
   5' WD. SIDEWALK - 20' O.C. TYP.
   4' WD. SIDEWALK - 20' O.C. TYP.
   3' WD. SIDEWALK - 15' O.C. TYP.
5. CONTROL JOINTS IN CONCRETE SIDEWALKS:
   6' WD. SIDEWALK - 6' X 6' PANEL
   5' WD. SIDEWALK - 5' X 5' PANEL
   4' WD. SIDEWALK - 4' X 4' PANEL
   3' WD. SIDEWALK - 3' X 3' PANEL
6. ALL RADII ON CONCRETE AND ASPHALT SIDEWALKS TO BE 5' R. UNLESS OTHERWISE NOTED.
7. ALL ANGLES ASSUMED TO BE 90 DEGREES UNLESS OTHERWISE NOTED.
8. CONCRETE AND ASPHALT WALKS TO MEET PORCHES FLUSH (NO STEP) UNLESS OTHERWISE NOTED.
9. SEE CIVIL ENGINEERING DRAWINGS FOR LAYOUT OF ALL ROADS, CURBS, BUILDINGS, UTILITIES, ETC.
10. TOP AND BOTTOM OF RETAINING WALLS - SEE GRADING PLANS.
11. ALL DIMENSIONS FOR RETAINING WALLS TO BOTTOM COURSE OF WALL.

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	EXISTING ASPHALT OR CONCRETE PAVING TO REMAIN
	NEW CONCRETE PAVING - 2,535.2
	EXISTING ASPHALT PAVING TO BE MILLED AND CAPPED - 48,573.6
	NEW ASPHALT PAVING - 7,937.5 SF
	EXISTING BUILDING
	PROPOSED BUILDING



1 A.S.101 — ARCHITECTURAL SITE PLAN
SCALE: 1" = 30'-0"

PRELIMINARY
NOT FOR CONSTRUCTION

FSP FUSCO, SHAFFER & PAPPAS, INC.
ARCHITECTS AND PLANNERS
550 E. NINE MILE ROAD
FERNDALE, MICHIGAN, 48220
PHONE 248.543.4100 FAX 248.543.4141

SEAL

ADDITIONS AND MODIFICATIONS TO DUNN FAMILY APARTMENTS CO-OP SENIOR APARTMENTS

CENTER LINE MICHIGAN

DATE	ISSUE
03.19.21	PERMITS

KEY PLAN

FSP PROJECT NO.
CSI19.021

DRAWING TITLE

ARCHITECTURAL SITE PLAN

DRAWING NUMBER

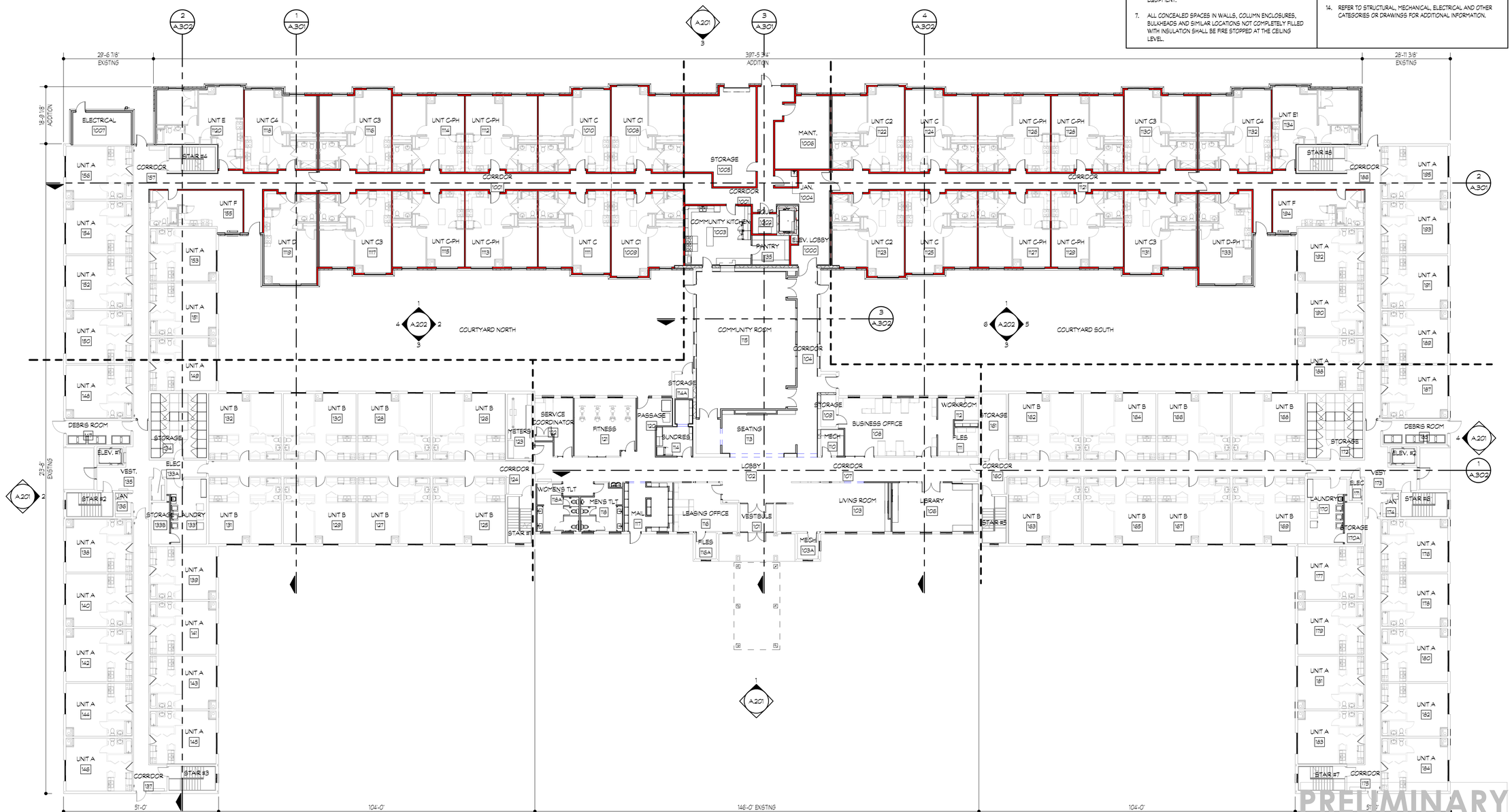
A.S.101

UNIT DESIGNATION

A	STUDIO
B	1-BED
C	1-BED
C1	1-BED
C2	1-BED
C3	1-BED
C4	1-BED
C5	1-BED
C-PH	1-BED
D	STUDIO
D-PH	STUDIO
E	1-BED
E1	1-BED
F	STUDIO
G	1-BED
G1	1-BED
H	1-BED
J	1-BED

GENERAL PLAN NOTES

1. UNLESS OTHERWISE INDICATED, PLAN DIMENSIONS ARE TO COLUMN GRID ON CENTERLINES, NOMINAL SURFACE OF MASONRY, FACE OF STUDS, FACE OF SHEATHING FOR EXTERIOR WALLS, CENTERLINE OF OPENINGS FOR DOORS AND WINDOWS, FINISHED FACE FOR EXISTING WALLS AND FACE OF CONCRETE WALLS.
2. WHERE A DOOR IS LOCATED NEAR CORNER OF ROOM AND IS NOT LOCATED BY DIMENSION ON PLAN OR DETAILS, DIMENSION SHALL BE 3" FROM FACE OF STUD (WALL) TO FACE OF ROUGH OPENING, DIMENSION SHALL BE 8" FROM FACE OF WALL TO EDGE OF ROUGH OPENING AT MASONRY WALLS.
3. REPETITIVE FEATURES ARE NOT DRAWN IN THEIR ENTIRETY AND SHALL BE COMPLETELY PROVIDED AS IF DRAWN IN FULL.
4. WALL TYPES WITH UL DESIGN NUMBERS SHALL BE CONSTRUCTED TO UL STANDARDS. PRODUCTS USED SHALL BEAR UL CLASSIFICATION WHERE REQUIRED BY THE UL DESIGN.
5. VERIFY ALL ROUGH-IN DIMENSIONS FOR EQUIPMENT PROVIDED IN THIS CONTRACT, OR BY OTHERS.
6. VERIFY SIZE/LOCATION/FINISH/FIRE-RATING, ETC. AND PROVIDE COMPLETE ALL REQUIRED OPENINGS THROUGH FLOORS AND WALLS, ACCESS DOORS, FURRING, CURBS, ANCHORS AND INSERTS. PROVIDE ALL BASES AND BLOCKING REQUIRED FOR ACCESSORIES, MECHANICAL, ELECTRICAL AND OTHER EQUIPMENT.
7. ALL CONCEALED SPACES IN WALLS, COLUMN ENCLOSURES, BULKHEADS AND SIMILAR LOCATIONS NOT COMPLETELY FILLED WITH INSULATION SHALL BE FIRE STOPPED AT THE CEILING LEVEL.
8. AT ALL DEVICES INSTALLED IN FIRE RATED CONSTRUCTION, CONSTRUCT AS REQUIRED TO MAINTAIN INTEGRITY OF THE FIRE RATING.
9. WHERE FLOOR DRAINS ARE INDICATED, FLOORS SHALL SLOPE TO DRAINS AT 1/8" PER FOOT MINIMUM (1%) WHILE KEEPING FLOOR LEVEL AT WALL BASE CONDITION.
10. SEE ENLARGED PLANS FOR ADDITIONAL NOTES AND DIMENSIONS.
11. ALL PENETRATIONS AND OPENINGS SHALL MEET WALL ASSEMBLY FIRE RATINGS.
12. PROVIDE AND INSTALL A FULLY AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA 13, STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS, WITH APPROVED COMPONENTS, DEVICES AND EQUIPMENT TO PROVIDE COMPLETE COVERAGE OF WORK AREA 'A' (LEVEL 2 RENOVATION) AS DESIGNATED ON THE LEVEL 1 LIFE SAFETY PLAN, SHEET A.C.003. THE FIRE SUPPRESSION HEADS MUST BE QUICK RESPONSE SPRINKLER HEADS THROUGHOUT THE BUILDING.
13. COORDINATE WITH STRUCTURAL DRAWINGS FOR MINIMUM STUD DEPTH, THICKNESS AND SPACING. FRAME CORRIDOR, PLUMBING AND CHASE WALLS WITH 6" METAL STUDS (VERIFY WITH PLANS AND WALL TYPE SHEET).
14. REFER TO STRUCTURAL, MECHANICAL, ELECTRICAL AND OTHER CATEGORIES OR DRAWINGS FOR ADDITIONAL INFORMATION.



FIRST FLOOR PLAN

SCALE: 1/16" = 1'-0"

FUSCO, SHAFFER & PAPPAS, INC.
ARCHITECTS AND PLANNERS

550 E. NINE MILE ROAD
FERNDALE, MICHIGAN, 48220
PHONE 248.543.4100 FAX 248.543.4141

SEAL

ADDITIONS AND MODIFICATIONS TO
DUNN FAMILY APARTMENTS
CO-OP SENIOR APARTMENTS
MICHIGAN

CENTER LINE

DATE	ISSUE

KEY PLAN

FSP PROJECT NO.
CSI19.021

DRAWING TITLE

FIRST FLOOR PLAN

DRAWING NUMBER

A.101

UNIT DESIGNATION

A	STUDIO
B	1-BED
C	1-BED
C1	1-BED
C2	1-BED
C3	1-BED
C4	1-BED
C5	1-BED
C-PH	1-BED
D	STUDIO
D-PH	STUDIO
E	1-BED
E1	1-BED
F	STUDIO
G	1-BED
G1	1-BED
H	1-BED
J	1-BED

GENERAL PLAN NOTES

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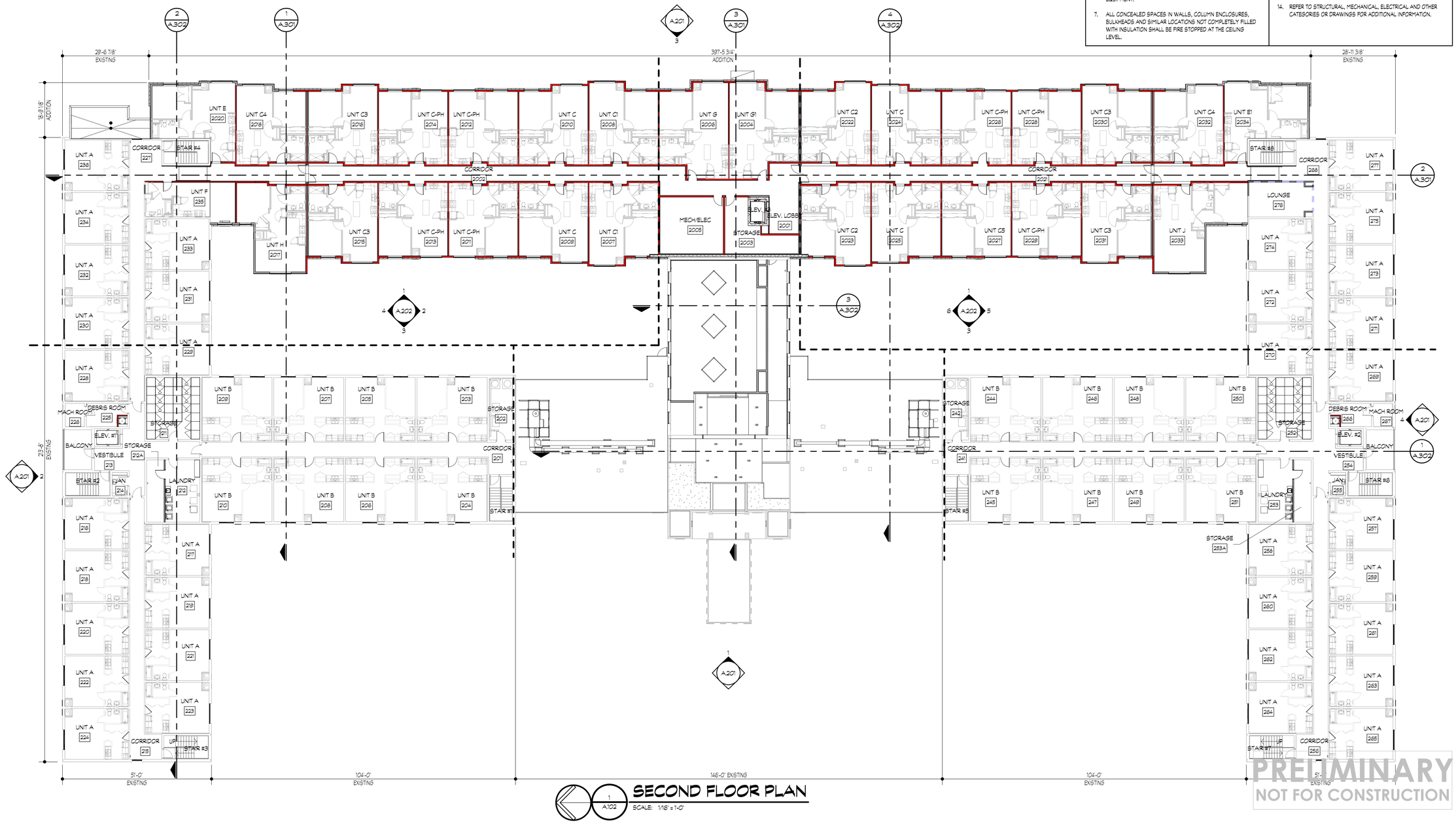

SECOND FLOOR PLAN

SCALE: 1/16" = 1'-0"

PRELIMINARY
NOT FOR CONSTRUCTION

FSP FUSCO, SHAFFER & PAPPAS, INC.
ARCHITECTS AND PLANNERS

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SEAL

ADDITIONS AND MODIFICATIONS TO DUNN FAMILY APARTMENTS CO-OP SENIOR APARTMENTS

CENTER LINE MICHIGAN

DATE	ISSUE

KEY PLAN

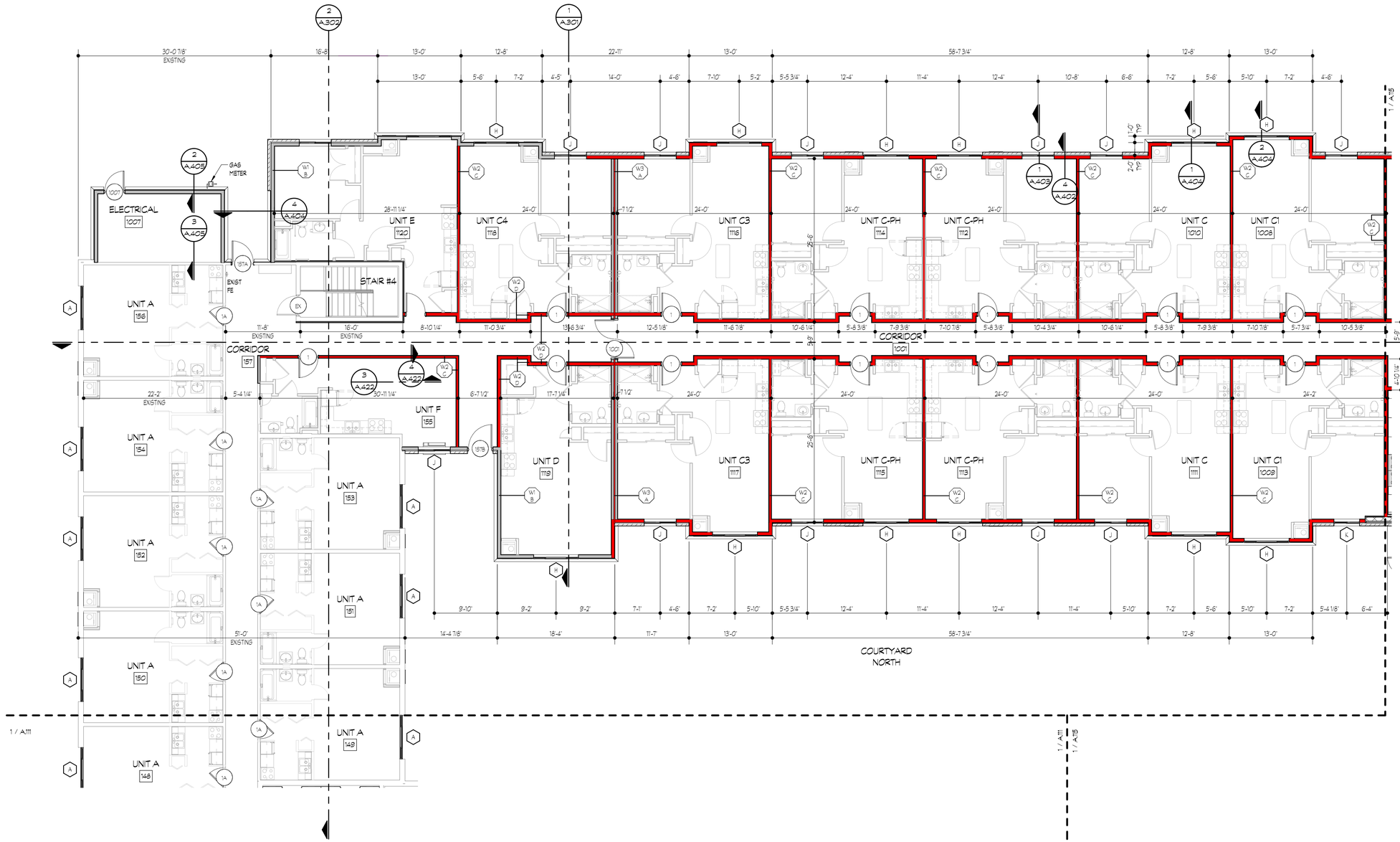
FSP PROJECT NO.
CS19.021

DRAWING TITLE

SECOND FLOOR PLAN

DRAWING NUMBER

A.102



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10. SEE ENLARGED PLANS FOR ADDITIONAL NOTES AND DIMENSIONS.
11. ALL PENETRATIONS AND OPENINGS SHALL MEET WALL ASSEMBLY FIRE RATINGS.
12. PROVIDE AND INSTALL A FULLY AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA 13, STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS, WITH APPROVED COMPONENTS, DEVICES AND EQUIPMENT TO PROVIDE COMPLETE COVERAGE OF WORK AREA 'A' (LEVEL 2 RENOVATION) AS DESIGNATED ON THE LEVEL 1 LIFE SAFETY PLAN, SHEET A.C.003. THE FIRE SUPPRESSION HEADS MUST BE QUICK RESPONSE SPRINKLER HEADS THROUGHOUT THE BUILDING.
13. COORDINATE WITH STRUCTURAL DRAWINGS FOR MINIMUM STUD DEPTH, THICKNESS AND SPACING. FRAME CORRIDOR, PLUMBING AND CHASE WALLS WITH 6" METAL STUDS (VERIFY WITH PLANS AND WALL TYPE SHEET).
14. REFER TO STRUCTURAL, MECHANICAL, ELECTRICAL AND OTHER CATEGORIES OR DRAWINGS FOR ADDITIONAL INFORMATION.

UNIT DESIGNATION

A	STUDIO
B	1-BED
C	1-BED
C1	1-BED
C2	1-BED
C3	1-BED
C4	1-BED
C5	1-BED
C-PH	1-BED
D	STUDIO
D-PH	STUDIO
E	1-BED
E1	1-BED
F	STUDIO
G	1-BED
G1	1-BED
H	1-BED
J	1-BED

FSP FUSCO, SHAFFER & PAPPAS, INC.
ARCHITECTS AND PLANNERS
550 E. NINE MILE ROAD
FERNDALE, MICHIGAN, 48220
PHONE 248.543.4100 FAX 248.543.4141

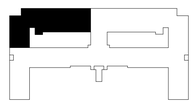
SEAL

ADDITIONS AND MODIFICATIONS TO DUNN FAMILY APARTMENTS CO-OP SENIOR APARTMENTS

CENTER LINE MICHIGAN

DATE	ISSUE

KEY PLAN



FSP PROJECT NO.
CSI19.021

DRAWING TITLE

PARTIAL FIRST FLOOR PLAN - NORTH ADDITION / EXISTING

DRAWING NUMBER

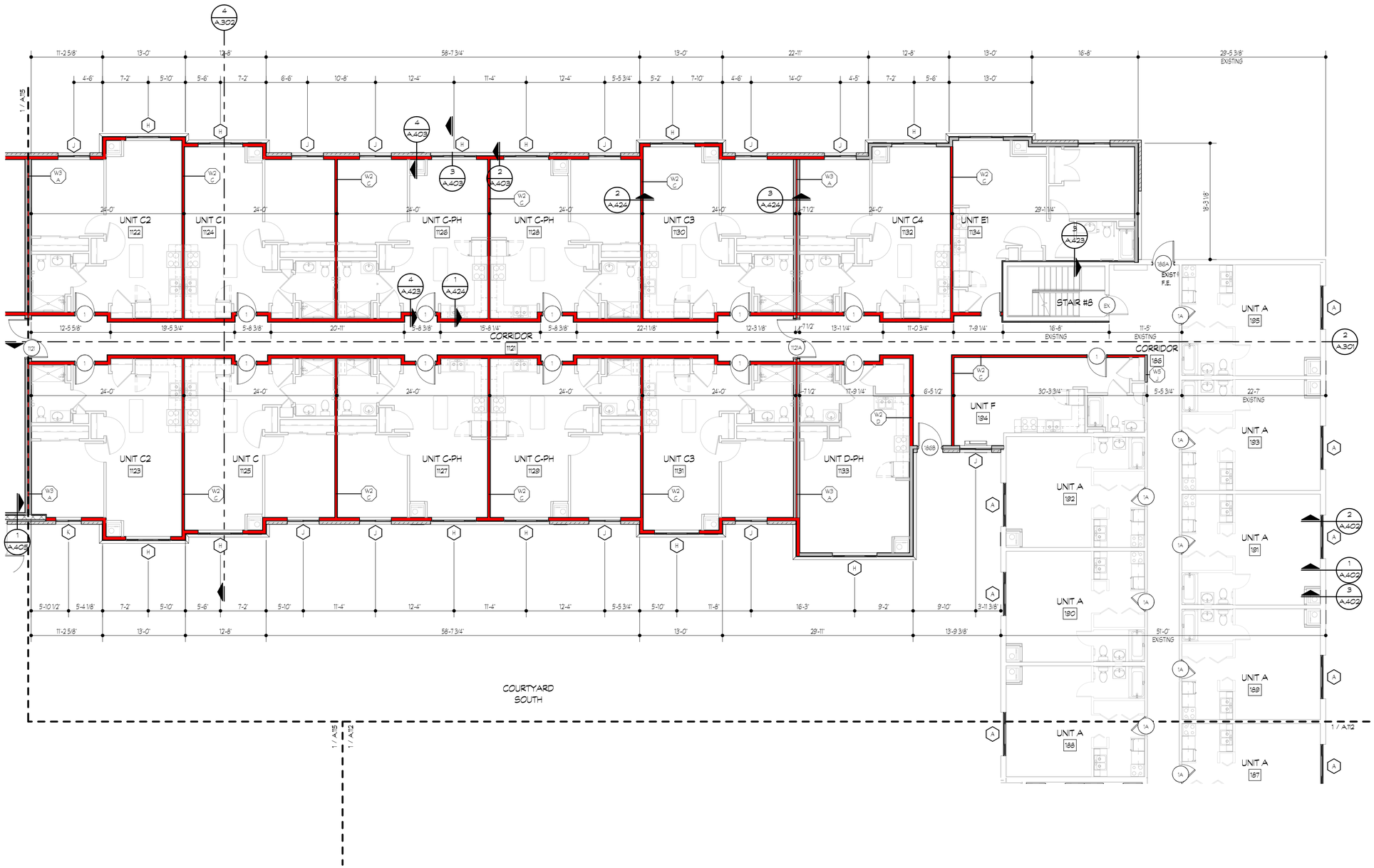
A.113

PRELIMINARY
NOT FOR CONSTRUCTION

PARTIAL FIRST FLOOR PLAN - NORTH ADDITION / EXISTING

1 / A.113 NORTH

SCALE: 1/8" = 1'-0"



GENERAL PLAN NOTES

1. UNLESS OTHERWISE INDICATED, PLAN DIMENSIONS ARE TO COLUMN GRID ON CENTERLINES, NOMINAL SURFACE OF MASONRY, FACE OF STUDS, FACE OF SHEATHING FOR EXTERIOR WALLS, CENTERLINE OF OPENINGS FOR DOORS AND WINDOWS, FINISHED FACE FOR EXISTING WALLS AND FACE OF CONCRETE WALLS.
2. WHERE A DOOR IS LOCATED NEAR CORNER OF ROOM AND IS NOT LOCATED BY DIMENSION ON PLAN OR DETAILS, DIMENSION SHALL BE 3" FROM FACE OF STUD (WALL) TO FACE OF ROUGH OPENING. DIMENSION SHALL BE 8" FROM FACE OF WALL TO EDGE OF ROUGH OPENING AT MASONRY WALLS.
3. REPETITIVE FEATURES ARE NOT DRAWN IN THEIR ENTIRETY AND SHALL BE COMPLETELY PROVIDED AS IF DRAWN IN FULL.
4. WALL TYPES WITH UL DESIGN NUMBERS SHALL BE CONSTRUCTED TO UL STANDARDS. PRODUCTS USED SHALL BEAR UL CLASSIFICATION WHERE REQUIRED BY THE UL DESIGN.
5. VERIFY ALL ROUGH-IN DIMENSIONS FOR EQUIPMENT PROVIDED IN THIS CONTRACT, OR BY OTHERS.
6. VERIFY SIZE/LOCATION/FINISH/FIRE-RATING, ETC. AND PROVIDE COMPLETE ALL REQUIRED OPENINGS THROUGH FLOORS AND WALLS, ACCESS DOORS, FURRING, CURBS, ANCHORS AND INSERTS. PROVIDE ALL BASES AND BLOCKING REQUIRED FOR ACCESSORIES, MECHANICAL, ELECTRICAL AND OTHER EQUIPMENT.
7. ALL CONCEALED SPACES IN WALLS, COLUMN ENCLOSURES, BULKHEADS AND SIMILAR LOCATIONS NOT COMPLETELY FILLED WITH INSULATION SHALL BE FIRE STOPPED AT THE CEILING LEVEL.
8. AT ALL DEVICES INSTALLED IN FIRE RATED CONSTRUCTION, CONSTRUCT AS REQUIRED TO MAINTAIN INTEGRITY OF THE FIRE RATING.
9. WHERE FLOOR DRAINS ARE INDICATED, FLOORS SHALL SLOPE TO DRAINS AT 1/8" PER FOOT MINIMUM (1%) WHILE KEEPING FLOOR LEVEL AT WALL BASE CONDITION.
10. SEE ENLARGED PLANS FOR ADDITIONAL NOTES AND DIMENSIONS.
11. ALL PENETRATIONS AND OPENINGS SHALL MEET WALL ASSEMBLY FIRE RATINGS.
12. PROVIDE AND INSTALL A FULLY AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA 13, STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS, WITH APPROVED COMPONENTS, DEVICES AND EQUIPMENT TO PROVIDE COMPLETE COVERAGE OF WORK AREA 'A' (LEVEL 2 RENOVATION) AS DESIGNATED ON THE LEVEL 1 LIFE SAFETY PLAN, SHEET A.C.003. THE FIRE SUPPRESSION HEADS MUST BE QUICK RESPONSE SPRINKLER HEADS THROUGHOUT THE BUILDING.
13. COORDINATE WITH STRUCTURAL DRAWINGS FOR MINIMUM STUD DEPTH, THICKNESS AND SPACING. FRAME CORRIDOR, PLUMBING AND CHASE WALLS WITH 6" METAL STUDS (VERIFY WITH PLANS AND WALL TYPE SHEET).
14. REFER TO STRUCTURAL, MECHANICAL, ELECTRICAL AND OTHER CATEGORIES OR DRAWINGS FOR ADDITIONAL INFORMATION.

UNIT DESIGNATION

A	STUDIO
B	1-BED
C	1-BED
C1	1-BED
C2	1-BED
C3	1-BED
C4	1-BED
C5	1-BED
C-PH	1-BED
D	STUDIO
D-PH	STUDIO
E	1-BED
E1	1-BED
F	STUDIO
G	1-BED
G1	1-BED
H	1-BED
J	1-BED

PARTIAL FIRST FLOOR PLAN - SOUTH ADDITION / EXISTING

1 / A.114 — SCALE: 1/8" = 1'-0"

NORTH

PRELIMINARY
NOT FOR CONSTRUCTION

FSP

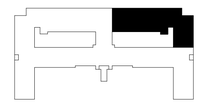
SEAL

ADDITIONS AND MODIFICATIONS TO
DUNN FAMILY APARTMENTS
CO-OP SENIOR APARTMENTS

MICHIGAN

DATE	ISSUE

KEY PLAN



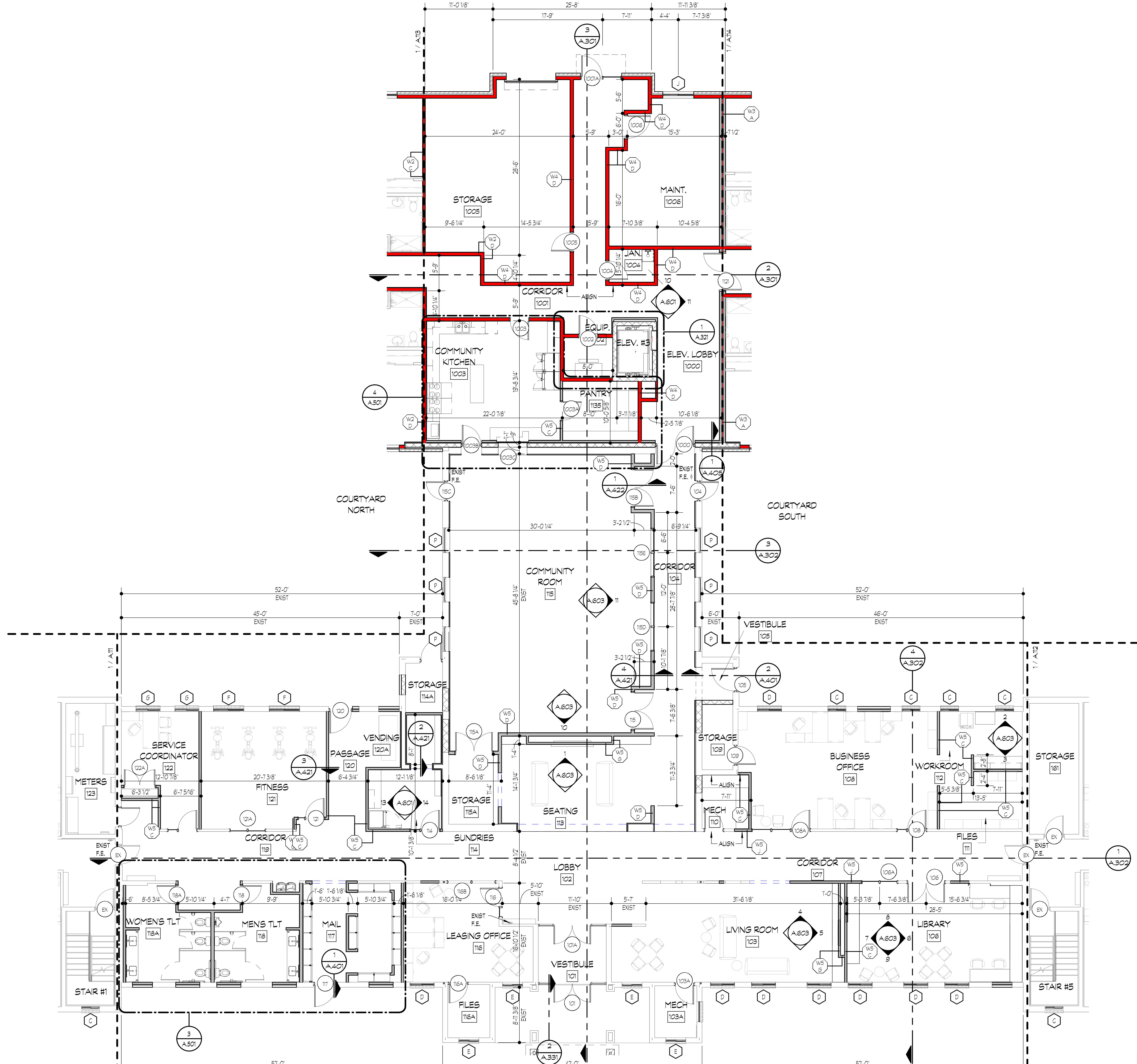
FSP PROJECT NO.

DRAWING TITLE

PARTIAL FIRST FLOOR PLAN - SOUTH ADDITION / EXISTING

DRAWING NUMBER

A.114



PARTIAL FIRST FLOOR PLAN - CORE

1
A.115

SCALE: 1/8" = 1'-0"

GENERAL PLAN NOTES

1. UNLESS OTHERWISE INDICATED, PLAN DIMENSIONS ARE TO COLUMN GRID ON CENTERLINES, NOMINAL SURFACE OF MASONRY, FACE OF STUDS, FACE OF SHEATHING FOR EXTERIOR WALLS, CENTERLINE OF OPENINGS FOR DOORS AND WINDOWS, FINISHED FACE FOR EXISTING WALLS AND FACE OF CONCRETE WALLS.
2. WHERE A DOOR IS LOCATED NEAR CORNER OF ROOM AND IS NOT LOCATED BY DIMENSION ON PLAN OR DETAILS, DIMENSION SHALL BE 3" FROM FACE OF STUD (WALL) TO FACE OF ROUGH OPENING, DIMENSION SHALL BE 8" FROM FACE OF WALL TO EDGE OF ROUGH OPENING AT MASONRY WALLS.
3. REPETITIVE FEATURES ARE NOT DRAWN IN THEIR ENTIRETY AND SHALL BE COMPLETELY PROVIDED AS IF DRAWN IN FULL.
4. WALL TYPES WITH UL DESIGN NUMBERS SHALL BE CONSTRUCTED TO UL STANDARDS. PRODUCTS USED SHALL BEAR UL CLASSIFICATION WHERE REQUIRED BY THE UL DESIGN.
5. VERIFY ALL ROUGH-IN DIMENSIONS FOR EQUIPMENT PROVIDED IN THIS CONTRACT, OR BY OTHERS.
6. VERIFY SIZE/LOCATION/FINISH/FIRE-RATING, ETC. AND PROVIDE COMPLETE ALL REQUIRED OPENINGS THROUGH FLOORS AND WALLS, ACCESS DOORS, FURRING, CURBS, ANCHORS AND INSERTS. PROVIDE ALL BASES AND BLOCKING REQUIRED FOR ACCESSORIES, MECHANICAL, ELECTRICAL AND OTHER EQUIPMENT.
7. ALL CONCEALED SPACES IN WALLS, COLUMN ENCLOSURES, BULKHEADS AND SIMILAR LOCATIONS NOT COMPLETELY FILLED WITH INSULATION SHALL BE FIRE STOPPED AT THE CEILING LEVEL.
8. AT ALL DEVICES INSTALLED IN FIRE RATED CONSTRUCTION, CONSTRUCT AS REQUIRED TO MAINTAIN INTEGRITY OF THE FIRE RATING.
9. WHERE FLOOR DRAINS ARE INDICATED, FLOORS SHALL SLOPE TO DRAINS AT 1/8" PER FOOT MINIMUM (1%) WHILE KEEPING FLOOR LEVEL AT WALL BASE CONDITION.
10. SEE ENLARGED PLANS FOR ADDITIONAL NOTES AND DIMENSIONS.
11. ALL PENETRATIONS AND OPENINGS SHALL MEET WALL ASSEMBLY FIRE RATINGS.
12. PROVIDE AND INSTALL A FULLY AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA 13, STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS, WITH APPROVED COMPONENTS, DEVICES AND EQUIPMENT TO PROVIDE COMPLETE COVERAGE OF WORK AREA "A" (LEVEL 2 RENOVATION) AS DESIGNATED ON THE LEVEL 1 LIFE SAFETY PLAN, SHEET A.C.003. THE FIRE SUPPRESSION HEADS MUST BE QUICK RESPONSE SPRINKLER HEADS THROUGHOUT THE BUILDING.
13. COORDINATE WITH STRUCTURAL DRAWINGS FOR MINIMUM STUD DEPTH, THICKNESS AND SPACING. FRAME CORRIDOR, PLUMBING AND CHASE WALLS WITH 6" METAL STUDS (VERIFY WITH PLANS AND WALL TYPE SHEET).
14. REFER TO STRUCTURAL, MECHANICAL, ELECTRICAL AND OTHER CATEGORIES OR DRAWINGS FOR ADDITIONAL INFORMATION.

UNIT DESIGNATION

A	STUDIO
B	1-BED
C	1-BED
C1	1-BED
C2	1-BED
C3	1-BED
C4	1-BED
C5	1-BED
C-PH	1-BED
D	STUDIO
D-PH	STUDIO
E	1-BED
E1	1-BED
F	STUDIO
G	1-BED
G1	1-BED
H	1-BED
J	1-BED

FSP FUSCO, SHAFFER & PAPPAS, INC.
ARCHITECTS AND PLANNERS
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SEAL

ADDITIONS AND MODIFICATIONS TO
DUNN FAMILY APARTMENTS
CO-OP SENIOR APARTMENTS

MICHIGAN

CENTER LINE

DATE	ISSUE

KEY PLAN

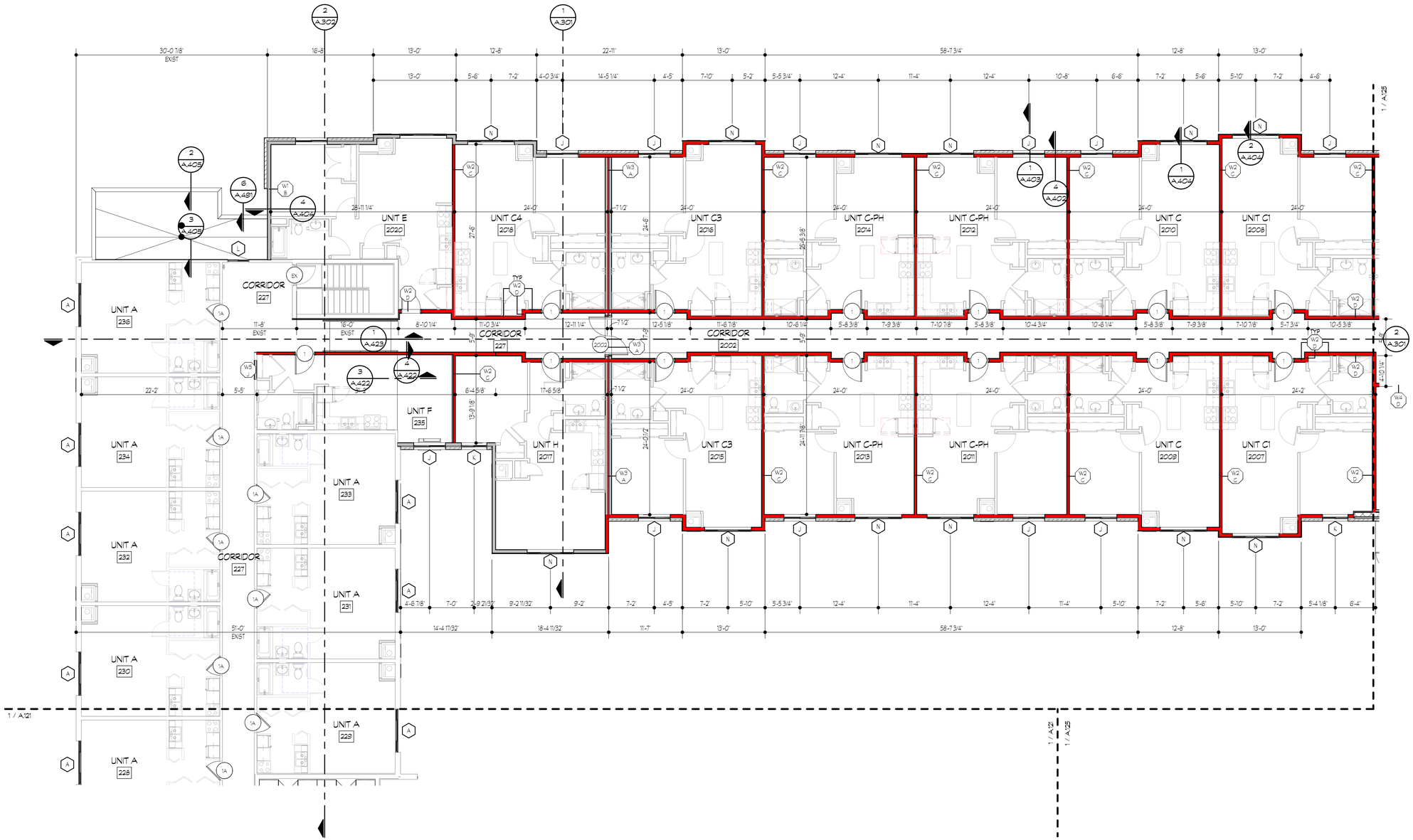
FSP PROJECT NO.
CSI1 .021

DRAWING TITLE

PARTIAL FIRST FLOOR PLAN - CORE

DRAWING NUMBER

A.115



GENERAL PLAN NOTES

1. UNLESS OTHERWISE INDICATED, PLAN DIMENSIONS ARE TO COLUMN GRID ON CENTERLINES, NOMINAL SURFACE OF MASONRY, FACE OF STUDS, FACE OF SHEATHING FOR EXTERIOR WALLS, CENTERLINE OF OPENINGS FOR DOORS AND WINDOWS, FINISHED FACE FOR EXISTING WALLS AND FACE OF CONCRETE WALLS.
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UNIT DESIGNATION

A	STUDIO
B	1-BED
C	1-BED
C1	1-BED
C2	1-BED
C3	1-BED
C4	1-BED
C5	1-BED
C-PH	1-BED
D	STUDIO
D-PH	STUDIO
E	1-BED
E1	1-BED
F	STUDIO
G	1-BED
G1	1-BED
H	1-BED
J	1-BED

PARTIAL SECOND FLOOR PLAN - NORTH ADDITION / EXISTING

SCALE: 1/8" = 1'-0"

NORTH

PRELIMINARY
NOT FOR CONSTRUCTION

FUSCO, SHAFFER & PAPPAS, INC.
ARCHITECTS AND PLANNERS

550 E. NINE MILE ROAD
FERNDALE, MICHIGAN, 48220
PHONE 248.543.4100 FAX 248.543.4141

SEAL

ADDITIONS AND MODIFICATIONS TO
DUNN FAMILY APARTMENTS
CO-OP SENIOR APARTMENTS
MICHIGAN

DATE ISSUE

KEY PLAN

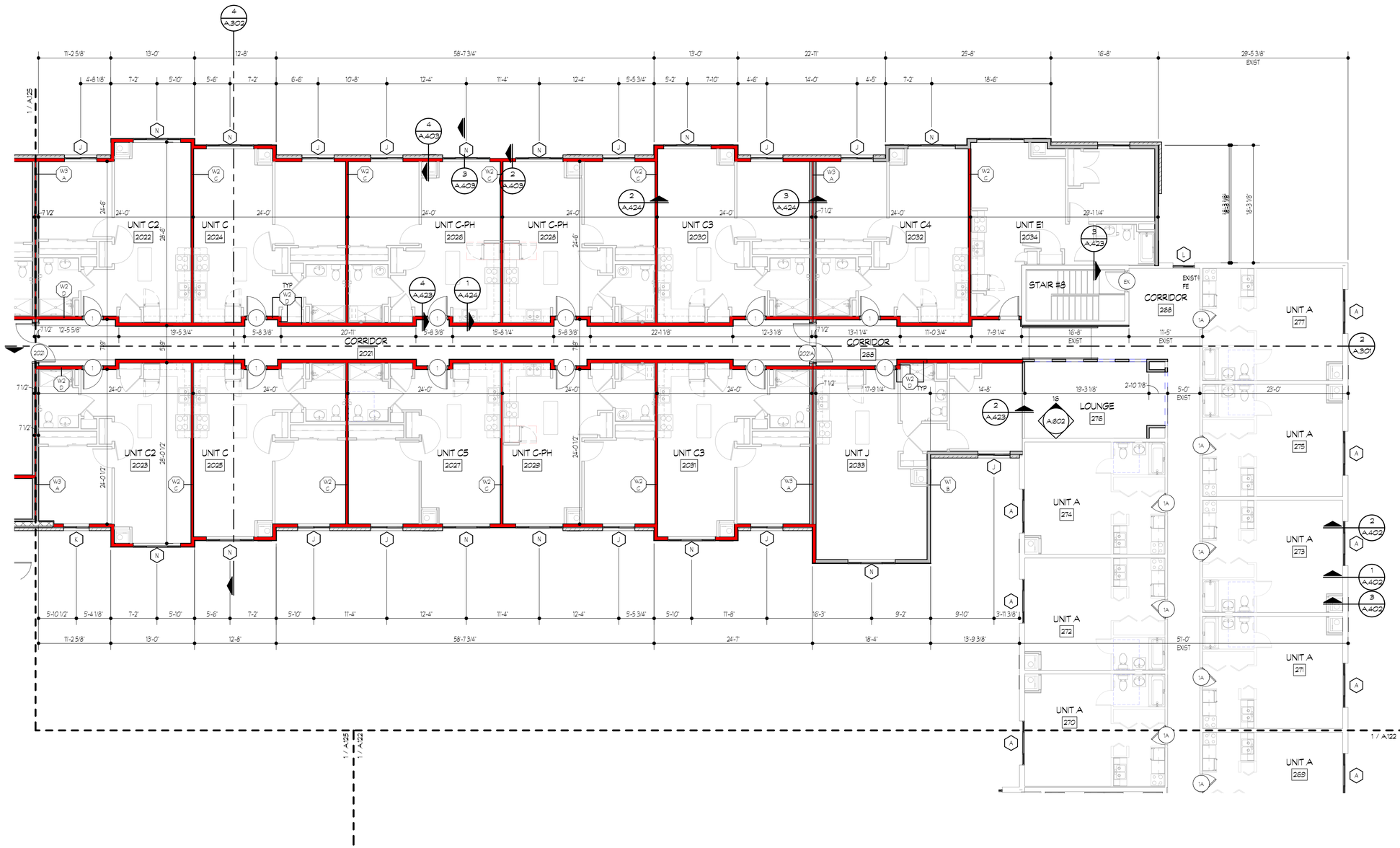
FSP PROJECT NO.
CSI19.021

DRAWING TITLE

PARTIAL SECOND FLOOR PLAN - NORTH ADDITION / EXISTING

DRAWING NUMBER

A.123



GENERAL PLAN NOTES

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UNIT DESIGNATION

A	STUDIO
B	1-BED
C	1-BED
C1	1-BED
C2	1-BED
C3	1-BED
C4	1-BED
C5	1-BED
C-PH	1-BED
D	STUDIO
D-PH	STUDIO
E	1-BED
E1	1-BED
F	STUDIO
G	1-BED
G1	1-BED
H	1-BED
J	1-BED

PARTIAL SECOND FLOOR PLAN - SOUTH ADDITION / EXISTING

SCALE: 1/8" = 1'-0"

NORTH

PRELIMINARY
NOT FOR CONSTRUCTION

FUSCO, SHAFFER & PAPPAS, INC.
ARCHITECTS AND PLANNERS
550 E. NINE MILE ROAD
FERNDALE, MICHIGAN, 48220
PHONE 248.543.4100 FAX 248.543.4141

SEAL

ADDITIONS AND MODIFICATIONS TO
DUNN FAMILY APARTMENTS
CO-OP SENIOR APARTMENTS
CENTER LINE MICHIGAN

DATE	ISSUE

KEY PLAN

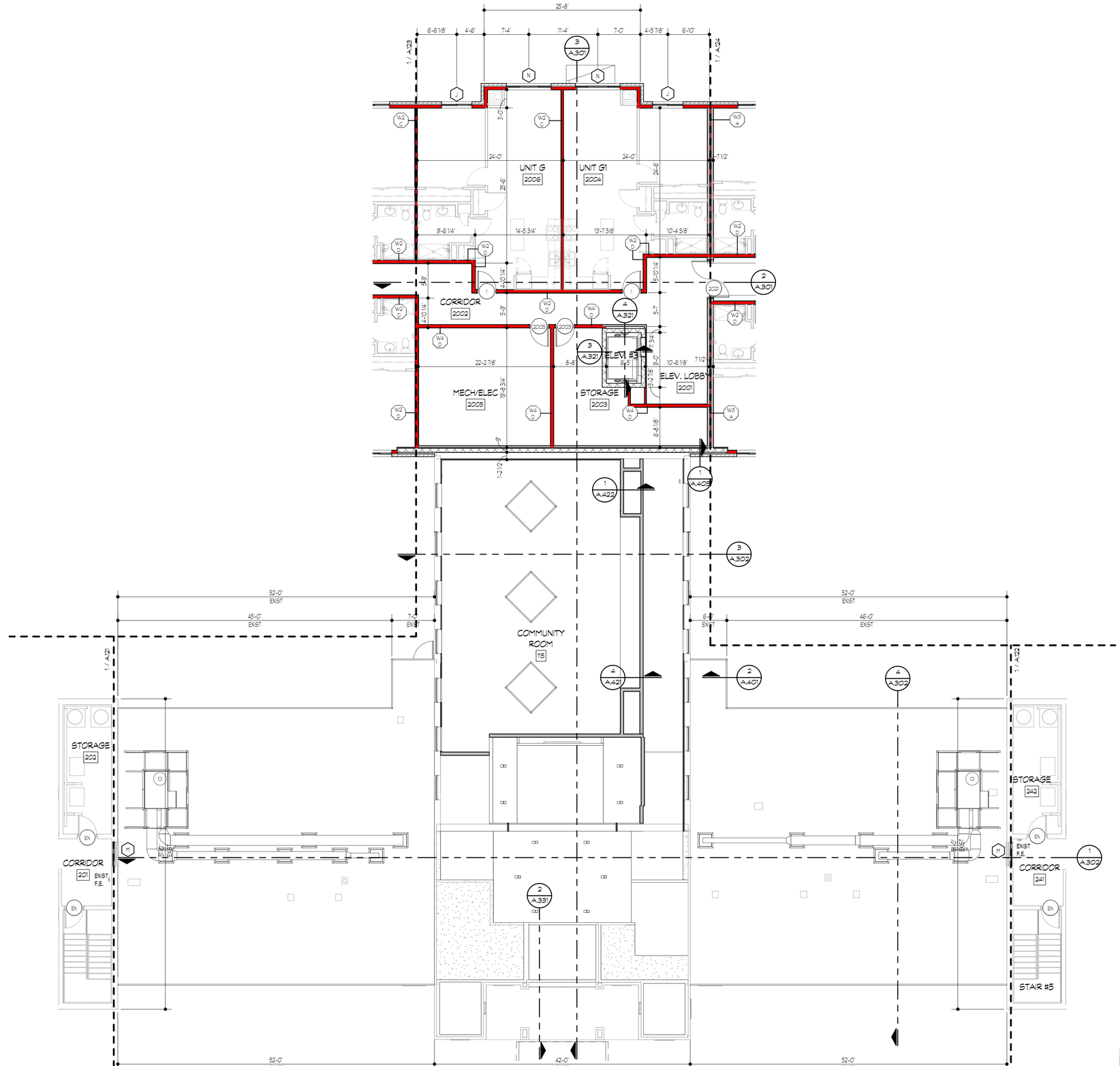
FSP PROJECT NO.
CS19.021

DRAWING TITLE

PARTIAL SECOND FLOOR PLAN - SOUTH ADDITION / EXISTING

DRAWING NUMBER

A.124



PARTIAL SECOND FLOOR PLAN - CORE

1 / A.125 SCALE: 1/8" = 1'-0"

GENERAL PLAN NOTES

1. UNLESS OTHERWISE INDICATED, PLAN DIMENSIONS ARE TO COLUMN GRID ON CENTERLINES, NOMINAL SURFACE OF MASONRY, FACE OF STUDS, FACE OF SHEATHING FOR EXTERIOR WALLS, CENTERLINE OF OPENINGS FOR DOORS AND WINDOWS, FINISHED FACE FOR EXISTING WALLS AND FACE OF CONCRETE WALLS.
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UNIT DESIGNATION

A	STUDIO
B	1-BED
C	1-BED
C1	1-BED
C2	1-BED
C3	1-BED
C4	1-BED
C5	1-BED
C-PH	1-BED
D	STUDIO
D-PH	STUDIO
E	1-BED
E1	1-BED
F	STUDIO
G	1-BED
G1	1-BED
H	1-BED
J	1-BED

FSP FUSCO, SHAFFER & PAPPAS, INC.
ARCHITECTS AND PLANNERS

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PHONE 248.543.4100 FAX 248.543.4141

SEAL

ADDITIONS AND MODIFICATIONS TO DUNN FAMILY APARTMENTS CO-OP SENIOR APARTMENTS

CENTER LINE MICHIGAN

DATE	ISSUE

KEY PLAN

FSP PROJECT NO.
CS119.021

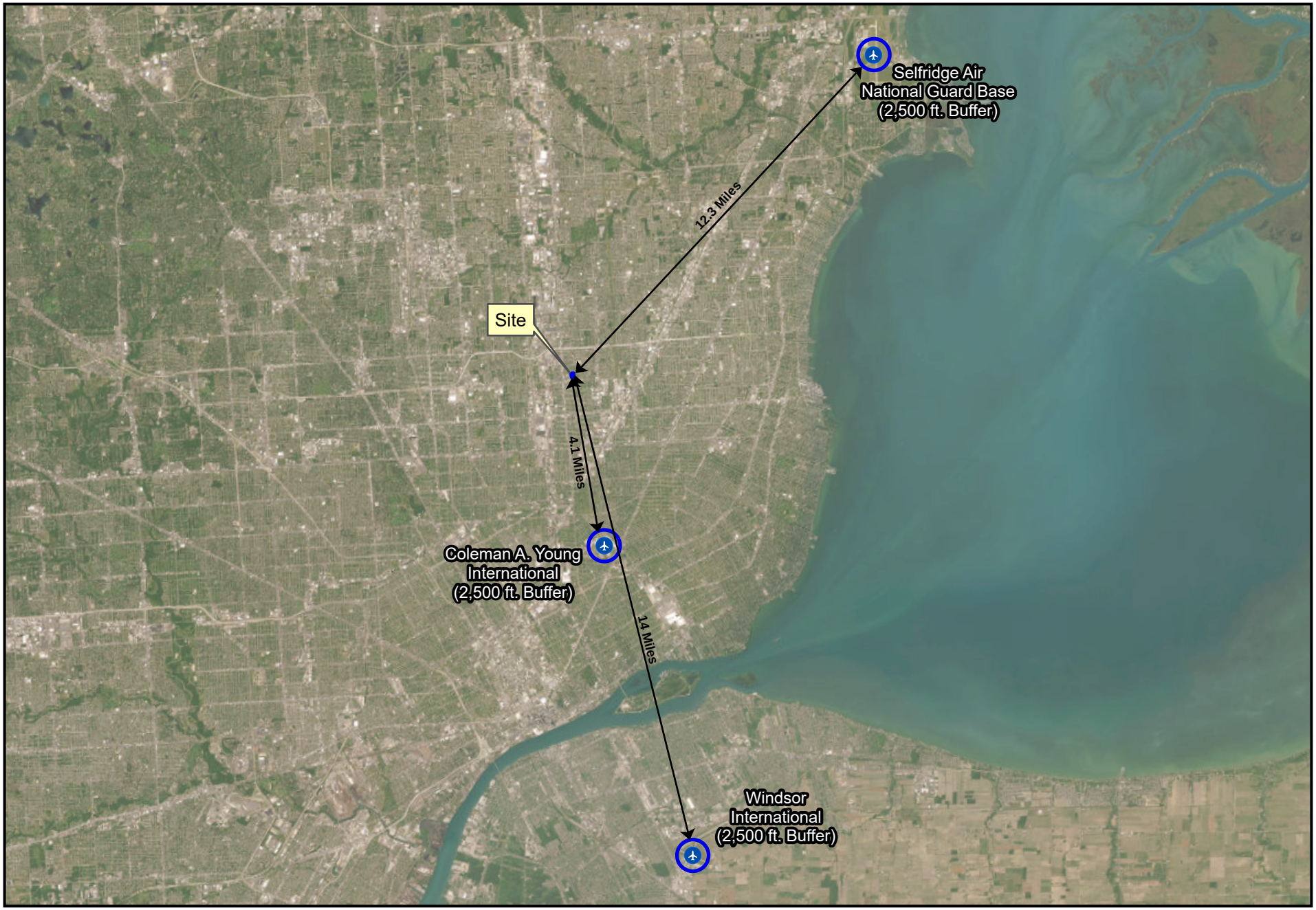
DRAWING TITLE

PARTIAL SECOND FLOOR PLAN - CORE

DRAWING NUMBER

A.125

PRELIMINARY
NOT FOR CONSTRUCTION



Dunn Family Senior Apartments

8400 Englemann St.,
Center Line, MI

5 2.5 0 5
Miles

N
W E
S

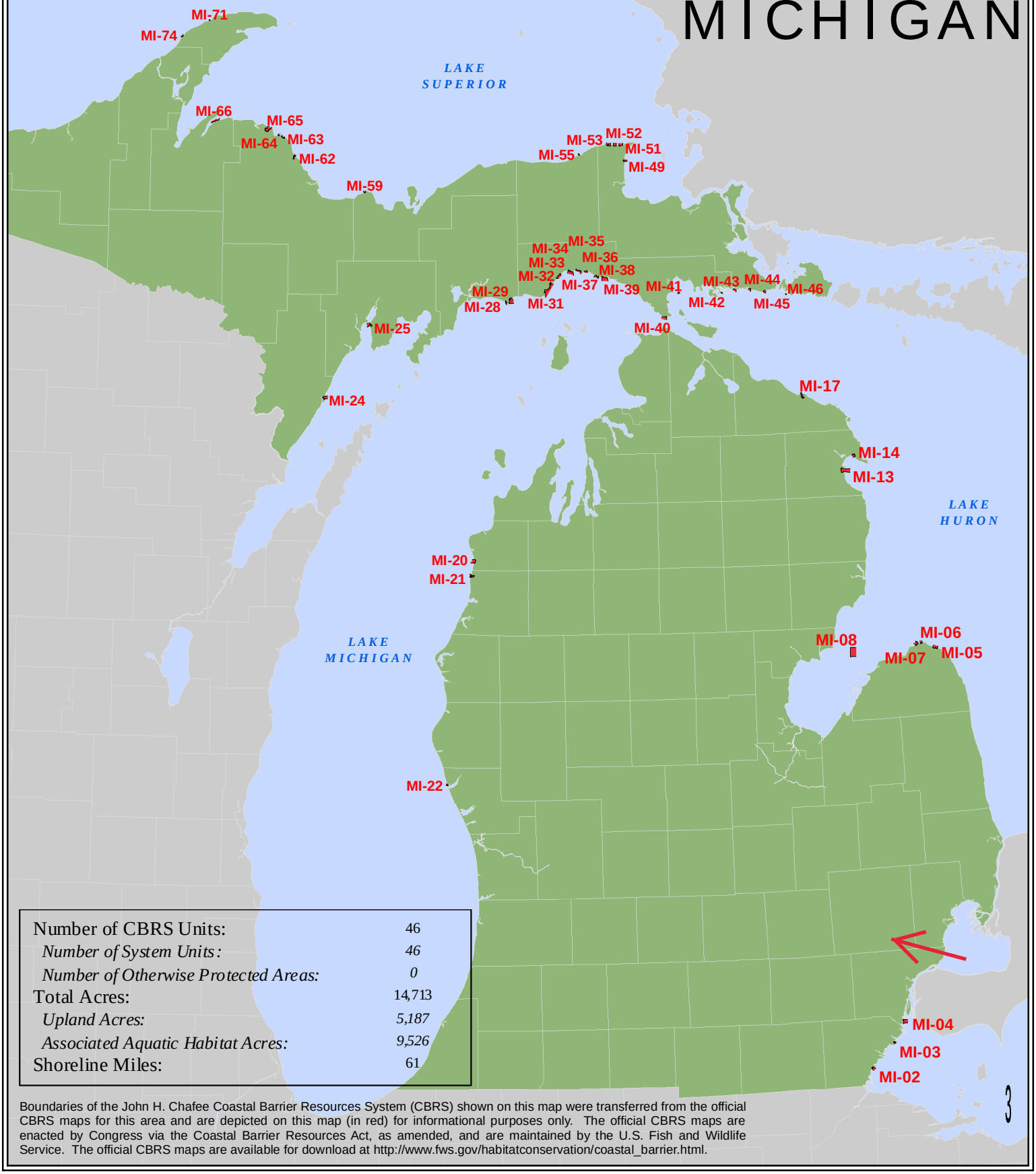
ASTI Environmental

Created for: CSI Support & Development Services
Created by: RMH, October 25, 2023, ASTI Project 3-10221

Airport Location Map

JOHN H. CHAFEE COASTAL BARRIER RESOURCES SYSTEM

MICHIGAN



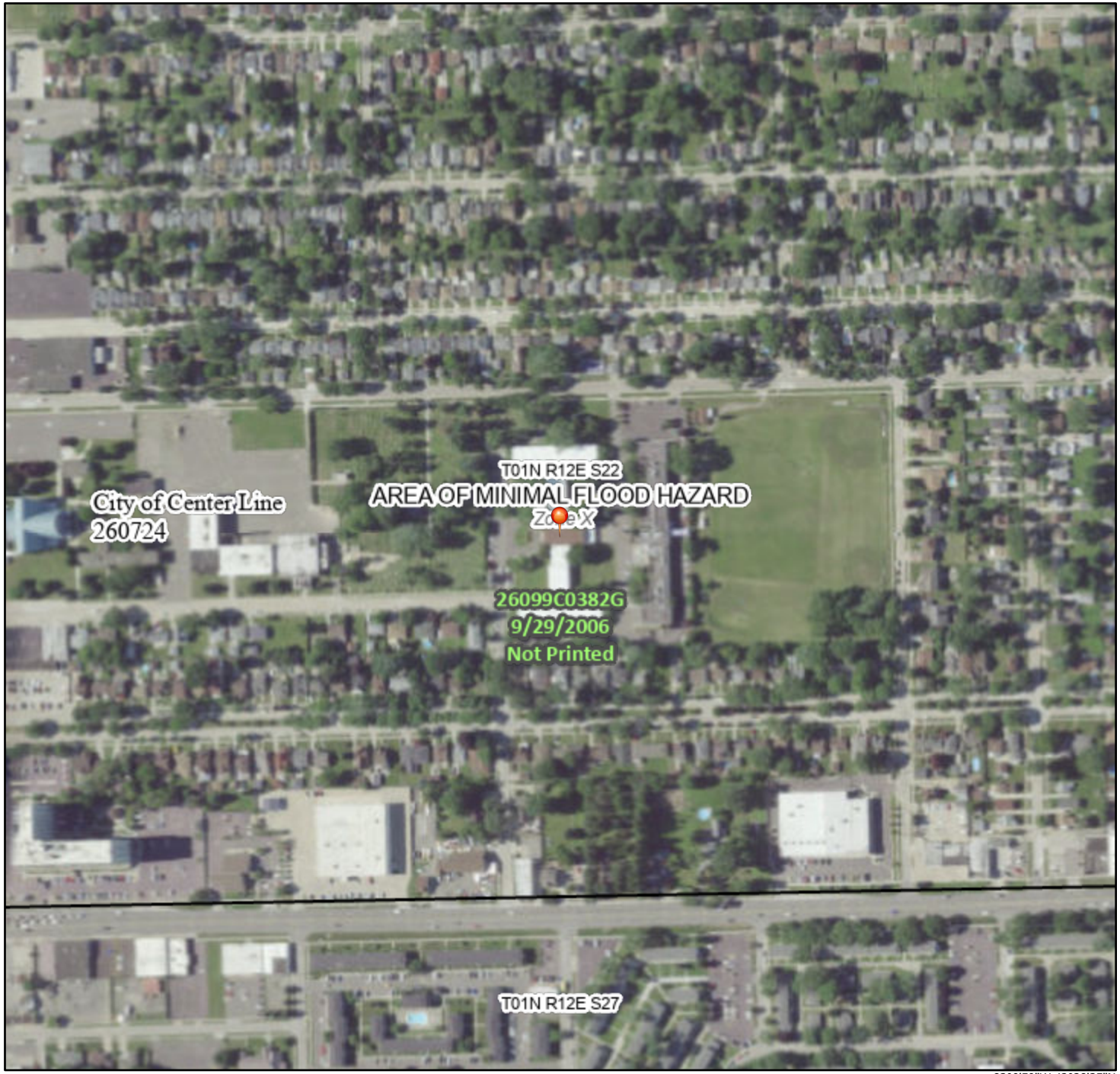
Number of CBRS Units:	46
Number of System Units:	*46*
Number of Otherwise Protected Areas:	*0*
Total Acres:	14,713
Upland Acres:	*5,187*
Associated Aquatic Habitat Acres:	*9,526*
Shoreline Miles:	61

Boundaries of the John H. Chafee Coastal Barrier Resources System (CBRS) shown on this map were transferred from the official CBRS maps for this area and are depicted on this map (in red) for informational purposes only. The official CBRS maps are enacted by Congress via the Coastal Barrier Resources Act, as amended, and are maintained by the U.S. Fish and Wildlife Service. The official CBRS maps are available for download at http://www.fws.gov/habitatconservation/coastal_barrier.html.

National Flood Hazard Layer FIRMette

FEMA

83°1'37"W 42°29'2"N



83°0'59"W 42°28'35"N

Feet 1:6,000

0 250 500 1,000 1,500 2,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/27/2021 at 8:50 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Attainment Status for the National Ambient Air Quality Standards

EGLE
MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

The National Ambient Air Quality Standards (NAAQS) are health-based pollution standards set by EPA.

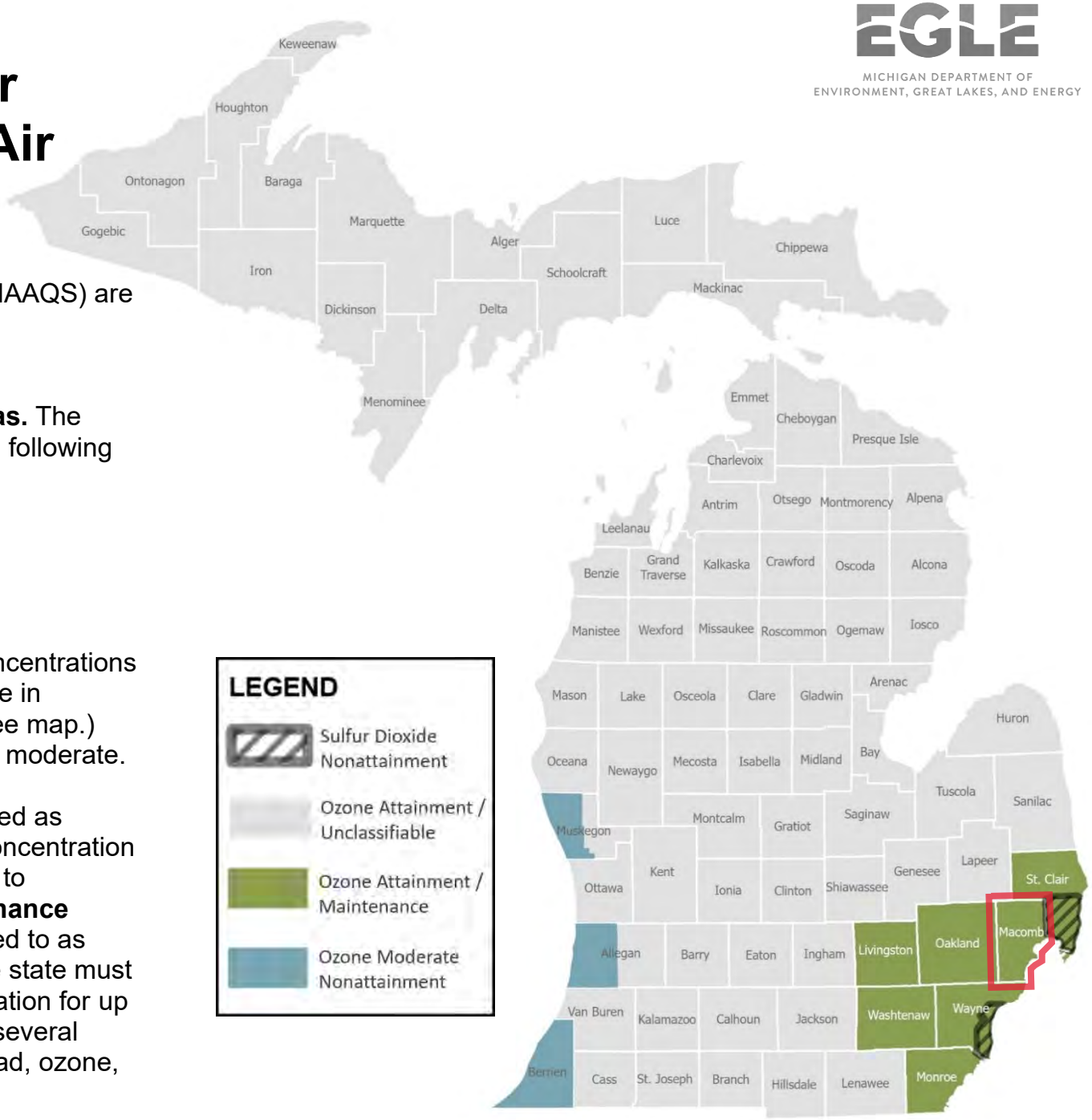
Areas of the state that are below the NAAQS concentration level are called **attainment areas.** The entire state of Michigan is in attainment for the following pollutants:

- Carbon Monoxide (CO)
- Lead (Pb)
- Nitrogen Dioxide (NO2)
- Particulate Matter (PM10 & PM2.5)

Nonattainment areas are those that have concentrations over the NAAQS level. Portions of the state are in nonattainment for sulfur dioxide and ozone (see map.) The ozone nonattainment area is classified as moderate.

Areas of the state that were previously classified as nonattainment but have since reduced their concentration levels below the NAAQS can be redesignated to attainment and are called **attainment/maintenance areas**. These areas are also commonly referred to as “attainment” after reclassification, however the state must continue monitoring and submitting documentation for up to 20 years after the redesignated. There are several maintenance areas throughout the state for lead, ozone, and particulate matter.

**For readability purposes the map only includes the most recently reclassified ozone maintenance area in southeast Michigan. For more information, please consult the Michigan.gov/AIR webpage or contact the division directly.*



**See Page 2 for close-up maps of partial county nonattainment areas.*

Updated July 2023

Close-Up Maps of Partial County Nonattainment Areas

Sulfur Dioxide Nonattainment Areas

St. Clair County

Wayne County

Ozone Moderate Nonattainment Areas

Allegan County

Muskegon County

EGLE

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

Updated July 2023

Coastal Zone Boundary Maps

The links listed below show Michigan's coastal zone boundaries by county.
If you require assistance to read the maps, please contact Ginny Berry (517-284-5052).

Alcona

- Harrisville and Greenbush Townships
- Alcona and Haynes Township

Alger

- Burt Township
- Grand Island and Munising Townships, City of Munising
- Onota and Au Train Townships

Allegan

- Ganges and Casco Townships
- Laketown, Saugatuck and Manlius Townships and South Haven

Alpena

- Alpena and Sanborn Townships
- Alpena Township and City of Alpena

Antrim

- Banks and Torch Lake Townships
- Milton and Elk Rapids Townships

Arenac

- Standish, Arenac and Au Gres Townships
- Whitney, Sims and Au Gres Townships

Baraga

- Arvon Township
- Baraga and L' Anse Townships

Bay

- Bangor, Hampton, Merritt, Portsmouth and Frankenlust Townships and Bay City and Essexville
- Bangor, Kawkawlin and Fraser Townships
- Pinconning Township

Benzie

- Lake Township
- Crystal Lake, Gilmore and Blaine Townships and City of Frankfort

Berrien

- Hagar, Benton and St. Joseph Townships and Benton Harbor and St. Joseph
- Lincoln and Lake Townships and the city of Bridgman

- New Buffalo and Chikaming Townships and New Buffalo

Charlevoix

- Bay, Charlevoix and Hayes Townships
- Charlevoix County, Beaver Island Group
- Eveline, South Arm, East Jordan, Evangeline and Wilson Townships and Boyne City
- Norwood Township

Cheboygan

- Benton Township and City of Cheboygan
- Mackinaw, Hebron and Beaugrand Townships

Chippewa

- Bay Mills, Superior and Soo Townships and Sault Ste. Marie
- Bay Mills Township
- Bruce and Soo (Nebbish Island) Townships
- Detour and Raber Townships
- Drummond Township
- Pickford and Raber Townships
- Sugar Island Township
- Whitefish Township

Delta

- Ford River Township
- Brampton, Escanaba and Wells Townships and the cities of Gladstone and Escanaba
- Ensign, Bay De Noc and Masonville Townships
- Fairbanks Township
- Garden and Nahma Townships

Emmet

- Readmond and Friendship Townships
- Wawatam, Bliss and Cross Village Townships
- West Traverse, Little Traverse, Bear Creek and Resort Townships and the cities of Petoskey and Harbor Springs

Gogebic

- Ironwood (East) and Wakefield Townships
- Ironwood (West) Township

Grand Traverse

- Acme, East Bay and Garfield Townships and Traverse City
- Peninsula Township

Houghton

- Hancock and Calumet Townships
- Portage, Chassell and South part of Torch Lake Townships
- Schoolcraft, Osceola, Franklin, Portage and North part of Torch Lake Townships
- Stanton Township

Huron

- Fair Haven and Sebewaing Townships
- Harbor Beach, Sand Beach and Sherman Townships
- Huron, Gore and Rubicon Townships
- Lake, Caseville and McKinley Townships
- Pte. Aux Barques, Port Austin and Hume Townships

Iosco

- Baldwin, Tawas, Alabaster Townships and East Tawas and Tawas City
- Oscoda and Au Sable Townships

Keweenaw

- Sherman Township
- Allouez and Houghton Townships (Mainland)
- Eagle Harbor Township (Mainland)
- Grant Township
- Isle Royal and Eagle Harbor Townships
- Isle Royal and Houghton Townships

Leelanau

- Bingham and Elmwood Townships
- Leland, Leelanau and Suttons Bay Townships
- Cleveland, Glen Arbor and Empire Townships

Luce

- McMillan Township (western part)
- McMillan Township (eastern part)

Mackinac

- Bois Blanc Township
- Clark Township
- Garfield Township
- Hendricks and Hudson Townships
- Marquette and St. Ignace Townships
- Moran Township
- Newton Township

Macomb

- Chesterfield, Harrison, Clinton, and Lake Townships and the cities of Mt. Clemens and St. Clair Shores

Manistee

- Arcadia and Onekama Townships
- Filer, Manistee and Stronach Townships and the city of Manistee

Marquette

- Marquette, Sands and Chocolay Townships
- Powell Township

Mason

- Grant, Hamlin and Victory Townships
- Pere Marquette, Amber, Riverton and Summit Townships and Ludington

Menominee

- Menominee Township and the city of Menominee
- Cedarville Township
- Ingallston Township

Monroe

- Berlin, Frenchtown and Monroe Townships
- Erie, LaSalle and Monroe Townships

Muskegon

- Muskegon, Laketon and Fruitport Townships, the "Muskegons" and Norton Shores
- White River, Montague, Whitehall and Fruitland Townships and cities of Montague and Whitehall

Oceana

- Benona and Clay Banks Townships
- Pentwater and Golden Townships

Ontonagon

- Carp Lake Township
- Bohemia and Ontonagon (east part) Townships
- Ontonagon (west part) Township

Ottawa

- Port Sheldon, Holland and Park Townships and the cities of Zeeland and Holland
- Spring Lake and Grand Haven Townships and cities of Ferrysburg and Grand Haven

Presque Isle

- Bearinger and Ocqueoc Townships
- Presque Isle, Krakow and Pulawski Townships
- Rogers and Belknap Townships

Saginaw

- Kochville, Zilwaukee, Carrollton and Buena Vista Townships

Sanilac

- Delaware, Forest and Sanilac Townships
- Sanilac, Lexington and Worth Townships

Schoolcraft

- Manistique and Thompson Townships
- Mueller and Doyle Townships

St. Clair

- Burtchville and Fort Gratiot Townships and the city of Port Huron

- East China, Cottrellville, Clay and Ira Townships and the cities of Algonac and Marine-City
- St. Clair and East China Townships and the cities of Port Huron, Marysville and St. Clair

Tuscola

- Akron and Wisner Townships

Van Buren

- South Haven and Covert Townships and the city of South Haven

Wayne

- Brownstown Township and the cities of Ecorse, Lincoln Park, Wyandotte, Riverview, Trenton, Rockwood and Gibraltar
- The "Grosse Points", Detroit and River Rouge

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
WARREN DISTRICT OFFICE

GRETCHEN WHITMER
GOVERNOR

AARON B. KEATLEY
ACTING DIRECTOR

May 5, 2023

Dunn Family Senior LDHA LP
c/o James Downing
8425 East 12 Mile Road
Warren, Michigan 48093

Dear James Downing:

SUBJECT: Notice of Approval of the Response Activity Plan – Remedial Action Plan for:
Dunn Family Co-op
8400 Engleman Street, Center Line, Macomb County, Michigan
Tax Identification Number: 01-13-22-376-029
EGLE Site ID No. 50500518

The Michigan Department of Environment, Great Lakes, and Energy (EGLE), Remediation and Redevelopment Division, has reviewed the Response Activity Plan – Remedial Action Plan for response activities to be undertaken at the property identified as 8400 Engleman Street, Center Line, Macomb County, Michigan. The ResAP was submitted by ASTI Environmental on behalf of Dunn Family Senior LDHA LP on May 4, 2023, pursuant to Section 20114b(3) of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). Based upon representations and information contained in the submittal, the Response Activity Plan is approved.

This Response Activity Plan approval is based upon the representations and information contained in the submittal, therefore EGLE expresses no opinion as to whether other conditions that may exist will be adequately addressed by the response activities that are proposed. Notwithstanding this approval, if environmental contamination is found to exist that is not addressed by the Response Activity Plan and you are otherwise liable for the contamination, additional response activities may be necessary.

If you should have further questions or concerns, please contact Ms. Jeanne Schlaufman, EGLE, RRD, Warren District Office, at email SchlaufmanJ1@Michigan.gov.

Sincerely,

Cheryl L Wilson

Cheryl Wilson, District Supervisor
Warren District Office
Remediation and Redevelopment Division
586-753-3820
Wilsonc3@michigan.gov

cc: Jeremy Efros, ASTI Environmental
Jeanne Schlaufman, EGLE

ASTI ENVIRONMENTAL *Compliance*

10448 Citation Drive, Suite 100

Brighton, MI 48116

Assessment • Remediation • Restoration • Incentives

800 395-ASTI
Fax: 810.225.3800

www.asti-env.com

Sent Via Email Only

August 30, 2022

Diane Smith
Dunn Family Senior LDHA LP
8425 East 12 Mile Road, Suite 100
Warren, Michigan 48093/

RE: Asbestos Air Monitoring, Dunn Family Senior Living, 8400 Engleman Street, Centerline, Michigan 48015: ASTI Project No. 2-11386

Dear Diane Smith:

ASTI Environmental (ASTI) is pleased to provide results of air monitoring conducted on site August 25, 2022, during and following the disturbance of asbestos-containing material (ACM) drywall joint compound at 8400 Engleman Street, Centerline, Michigan. The purpose of the testing was to evaluate airborne fiber concentrations during ACM removal and building renovations to verify that airborne fiber concentrations within the affected areas did not exceed the permissible exposure limit or clearance levels during or after abatement activities.

August 25, 2022 Drywall Renovation Activities

On August 25, 2022, Environmental Maintenance Engineers, Inc. (EME) performed removal of asbestos containing drywall joint compound to facilitate HVAC renovations from multiple areas in apartments 132, 133, 134, 135, 232, 233, 234, and 235. EME workers utilized a dremel tool with point of contact HEPA vacuum within a 6-Mil enclosure donning, air-purifying respirators and disposable coveralls to cut three wall penetrations for packaged terminal air conditioner (PTAC). EME conducted cleanup activities utilizing HEPA-filtered vacuums. ASTI performed air clearance sampling during and after renovation activities.

ASTI State of Michigan accredited asbestos inspector Jelaine Tinsley (Asbestos Inspector No. A16395) collected air samples in each work area outside of containment and after containment was removed. A copy of Ms. Tinsley's resume and certification are included in Attachment A.

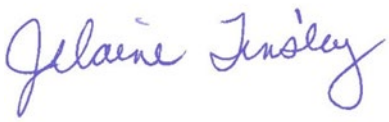
Samples were transmitted under chain-of-custody protocol to Apex Research Laboratory, Inc. in Whitmore Lake, Michigan for asbestos analysis using phase contrast microscopy (PCM). Review of the laboratory data revealed that all airborne fiber concentrations were below the OSHA Permissible Exposure Limit (PEL) of 0.1 fibers per cubic centimeter (f/cc) while all clearance air samples were below the MIOSHA clearance levels of 0.05 f/cc and

at or below the EPA recommended clearance level of 0.01 f/cc. Results of the sample analysis are attached. Copies of PCM results are included in Attachment B.

The above levels were maintained throughout the process of the removal of the asbestos-containing drywall joint compound. These results should be anticipated so long as EME continues to employ the current abatement techniques in regard to the drywall mud joint compound. Should the work practices change or a different contractor be employed for the abatement, a new assessment will be necessary.

Should you have any questions, please contact me.

ASTI ENVIRONMENTAL (ASTI)



Jelaine Tinsley
Asbestos Inspector A16395

Attachments
Attachment A - Resumes & Certification
Attachment B - PCM Results

ASTi ENVIRONMENTAL

Attachment A

Resumes & Certification

ASTI ENVIRONMENTAL

JELAINE D. TINSLEY
Environmental Professional

PROFILE

Certifications/Licenses
NIOSH 582-Equivalent Course Sampling and Analysis of Airborne Asbestos Fibers
OSHA 29 CFR 1910.120 HAZWOPER 40-Hour and 8-Hour Refresher (2022)
Asbestos Inspector-Michigan (License No. A16395)
Asbestos Inspector-Illinois (License No. 100-19756)
Asbestos Inspector-Indiana (License No. 19A007625)
Asbestos Hazard Evaluation Specialist-Ohio (License No.ES36108)
Asbestos Inspector / Management Planner-Kentucky (License No. 66369)
Asbestos Project Designer-Michigan (License No. A16395)
Certified Confined Space Entrant and Attendant
American Red Cross First Aide and Adult CPR Certified
ASTM Certification in RBCA Applied at Petroleum Release Sites
Bituminous Testing Technician
Michigan Provisional Teaching Certificate

Education
Western Michigan University, B.S., Earth Science and Education

Experience History
Environmental Professional, ASTI ENVIRONMENTAL
Project Manager, Yeoman Group
Project Manager, A&F Environmental
Environmental Consultant, DLZ Corporation
Environmental Consultant, AKT Peerless
Geologist, ATC Associates
Geologist, NUS Corporation
Teacher, Detroit Public Schools
Staff Scientist, CTI and Associates, Inc.

Professional Memberships and Service
Michigan Association of Environmental Professionals (MAEP)
Commercial Real Estate Women Detroit (CREW)

Professional Background
Ms. Tinsley has more than 32 years experience in the environmental industry in a variety of areas including Phase I environmental site assessments (ESAs), Phase II ESAs, baseline environmental assessments (BEAs), subsurface investigations (soil and groundwater testing), soil and groundwater evaluations, asbestos and mold inspections, abatement oversight, and specification development. Ms. Tinsley has also coordinated numerous hazardous material and pre-demolition surveys which included evaluations of asbestos, mold, radon and universal wastes for municipal, commercial, and industrial facilities.

Years Experience:

7 --- ASTI ENVIRONMENTAL
25 --- other firms

ENVIRONMENTAL DUE DILIGENCE AND SITE INVESTIGATION PROJECTS

Environmental Site Assessments
Completed numerous site assessments for a variety of projects (vacant land, agricultural, residential, commercial, and industrial) to determine the environmental condition of sites for real estate transactions. Projects involved both surface and subsurface evaluations of sites for a variety of hazardous substances. Responsibilities included the preparation and/or review of ASTM Phase I and Phase II ESAs, Baseline Environmental Assessments (BEAs), and Due Care Plans. Ms. Tinsley has experience working in Michigan, Illinois, Indiana, Ohio, Kentucky, Tennessee, Georgia, Alabama, Mississippi, and Florida. Ms. Tinsley also has performed listing site evaluations for a dedicated contactor to the US EPA. Ms. Tinsley is also knowledgeable with All Appropriate Inquiries (AAI) per 40 CFR Part 312 and meets the requirements of an Environmental Professional per AAI.

Customer Training
Provided training for financial institutions on the types of properties that should have environmental evaluations.

Vapor Intrusion Evaluation, Jackson, Michigan
Conducted vapor intrusion studies at commercial properties to assess potential vapor migration. Scope of work included coordination of vapor intrusion points, vapor sample collection, and coordination of chemical testing.

CONSTRUCTION TESTING

Conducted construction material analysis which included soil proctors, soil sieve analysis, asphalt extractions, and concrete stress testing.

ASBESTOS INSPECTIONS AND ABATEMENT COORDINATION/OVERSIGHT

Responsible for asbestos program management including coordination and technical lead for hazardous material surveys and asbestos and mold related testing activities.

Asbestos Inspections, City of Detroit Neighborhood Redevelopment Project
Inspector of asbestos hazards at over 300 residential and commercial properties. Collected samples of suspect ACM for laboratory analysis. Provided report to the City of Detroit with findings and compliance requirements.

Asbestos Inspections, City of Inkster Neighborhood Redevelopment Project
Conducted asbestos inspections at over 100 residential and commercial properties. Collected samples of suspect ACM for laboratory analysis. Provided report to the City of Inkster with findings and compliance requirements.

Large Hotel Detroit, Michigan
Inspected the hotel property as part of a team. Collected samples, reviewed laboratory analysis, and provided client a report of methods and findings. Performed oversight of ACM abatement.

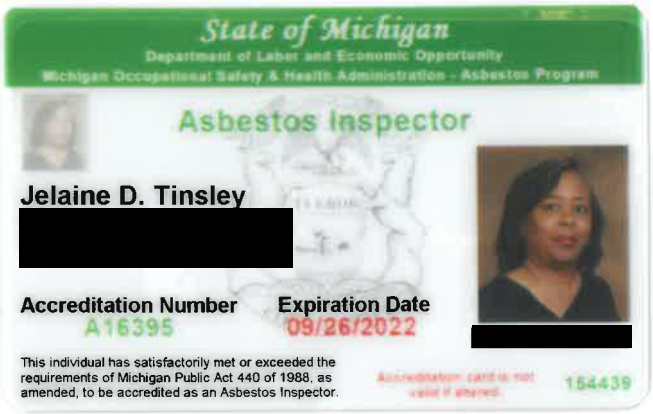
Medical Complex Kalamazoo, Michigan
Responsible for coordination of field activities for the ACM abatement of the complex. Conducted schedule and strategy meetings.

Hotel, Detroit, Michigan
Inspected the hotel property. Collected samples, reviewed laboratory analysis, and provided client a report of methods and findings.

Former Coal Power Plant
Conducted a thorough asbestos inspection of an inactive multi-building coal power plant in Detroit, Michigan. Collected samples, and performed thorough photo documentation and quantification of all ACMs in the power plant and supporting buildings.

UNDERGROUND STORAGE TANKS AND PETROLEUM REMEDIATION PROJECT

Commercial Development Royal Oak, Michigan
Coordinated the remediation of a former gasoline service station, during site development for a commercial company. Work included Phase I ESA and Phase II site investigation to evaluate USTs and hoists onsite, as well as coordinating a GPR survey for additional USTs on site, a BEA, and a Due Care Plan. Assisted with the development bid specifications for site remediation activities including UST and hoist removal, soil remediation, and asbestos abatement. Coordinated the removal of five (5) USTs, one in-ground hoist, and 300,000 cubic yards of petroleum-impacted soils.


State of Michigan
Department of Labor and Economic Opportunity
Michigan Occupational Safety & Health Administration - Asbestos Program
Asbestos Inspector
Jelaine D. Tinsley
[redacted]
Accreditation Number
A16395
Expiration Date
09/26/2022
[redacted]
This individual has satisfactorily met or exceeded the requirements of Michigan Public Act 440 of 1988, as amended, to be accredited as an Asbestos Inspector.
Accreditation card is not valid if altered.
154439

ASTi ENVIRONMENTAL

Attachment B

PCM Results

Certificate of Laboratory Analysis

Test Method, Phase Contrast Microscopy (PCM)

Project: Dunn Family Seniors
Project #: 5-10221

Report to:
Mr. David Amir
ASTI Environmental
10448 Citation Dr., Suite 100
Brighton, MI 48116

ARL Report # 22-101058
Date Collected: 08/25/22
Date Received: 08/26/22
Date Analyzed: 08/26/22
Date Reported: 08/26/22

Sample Information	Volume (*Liters*)	Fibers/Field	Fibers/mm^2	Fibers/cc
Lab ID # 101058-01 Client # 1 Location: #134 OWA Date: 08/25/22	240	27/100	34.4	0.055
Lab ID # 101058-02 Client # 2 Location: #132 OWA Date: 08/25/22	480	21/100	26.8	0.021
Lab ID # 101058-03 Client # 3 Location: #133 OWA Date: 08/25/22	408	26/100	33.1	0.031
Lab ID # 101058-04 Client # 4 Location: #135 OWA Date: 08/25/22	1200	17/100	21.7	0.007
Lab ID # 101058-05 Client # 5 Location: #132 CL Date: 08/25/22	1200	10/100	12.7	0.004
Lab ID # 101058-06 Client # 6 Location: #133 CL Date: 08/25/22	1200	14/100	17.8	0.006

Robert T. Letarte Jr., Laboratory Director

Certificate of Laboratory Analysis

Test Method, Phase Contrast Microscopy (PCM)

Project: Dunn Family Seniors
Project #: 5-10221

Report to:
Mr. David Amir
ASTI Environmental
10448 Citation Dr., Suite 100
Brighton, MI 48116

ARL Report # 22-101058
Date Collected: 08/25/22
Date Received: 08/26/22
Date Analyzed: 08/26/22
Date Reported: 08/26/22

Sample Information	Volume (*Liters*)	Fibers/Field	Fibers/mm^2	Fibers/cc
Lab ID # 101058-07 Client # 7 Location: #135 CL Date: 08/25/22	1200	14/100	17.8	0.006
Lab ID # 101058-08 Client # 8 Location: #232 CL Date: 08/25/22	1200	18/100	22.9	0.007
Lab ID # 101058-09 Client # 9 Location: #232 OWA Date: 08/25/22	324	11/100	14.0	0.017
Lab ID # 101058-10 Client # 10 Location: #233 OWA Date: 08/25/22	312	12/100	15.3	0.019
Lab ID # 101058-11 Client # 11 Location: #134 CL Date: 08/25/22	1200	24/100	30.6	0.010
Lab ID # 101058-12 Client # 12 Location: #233 CL Date: 08/25/22	1200	16/100	20.4	0.007

Robert T. Letarte Jr., Laboratory Director

Certificate of Laboratory Analysis

Test Method, Phase Contrast Microscopy (PCM)

Project: Dunn Family Seniors
Project #: 5-10221

Report to:
Mr. David Amir
ASTI Environmental
10448 Citation Dr., Suite 100
Brighton, MI 48116

ARL Report # 22-101058
Date Collected: 08/25/22
Date Received: 08/26/22
Date Analyzed: 08/26/22
Date Reported: 08/26/22

Sample Information	Volume (*Liters*)	Fibers/Field	Fibers/mm^2	Fibers/cc
Lab ID # 101058-13 Client # 13 Location: #234 OWA Date: 08/25/22	312	15/100	19.1	0.024
Lab ID # 101058-14 Client # 14 Location: #235 OWA Date: 08/25/22	240	10/100	12.7	0.020
Lab ID # 101058-15 Client # 15 Location: #234 CL Date: 08/25/22	1200	19/100	24.2	0.008
Lab ID # 101058-16 Client # 16 Location: #235 CL Date: 08/25/22	1200	15/100	19.1	0.006
Lab ID # 101058-17 Client # 17 Location: #411 FB Date: 08/25/22	1200	0/100	<5.1	<0.002
Lab ID # 101058-18 Client # 18 Location: #412 FB Date: 08/25/22	1200	0/100	<5.1	<0.002

Robert T. Letarte Jr., Laboratory Director

Apex # **101058**

APEX Research, Inc.

..054 Hi Tech Drive, Whitmore Lake, MI 48189. Phone: (734) 449 - 9990, Fax (734) 449 - 9991 www.ApexMI.com

Customer Name: **A.S.T.I. Environmental**
Address: **10448 Citation Dr. Ste 100**
City, St., Zip: **Brighton, MI 48116**
Phone: **(810) 599-6701** Fax: **(810) 225-3800**

Date of Survey: ~~July~~ , 2022 August 25
Project: Dunn Family Senior
Project # ~~[redacted]~~ 5-10221
Contact Person: **Lathan Saperstein / Dave Amir**
LSaperstein@asti-env.com/DAmir@asti-env.com

Lab Use Only
Log-In:
Report:
Fax:
Verbal:
Email:

Turn Around Time: (*circle one*) ***Terms and conditions on the other side.

Circle analyses required, indicate type and quantity

Rush 24 hour
48 hour ~~72 hour~~
Other: TTP yes no
Samples received after 3pm logged in next morning
(Test Till Positive)

Asbestos: Bulk X Wipe ____ Point Count ____ PCM 8
Lead / Cad / Chrome: Wipe **ASTM E1792?** circle YES or NO ____ Air ____ Paint ____ Bulk ____
Mold: Bulk ____ Air/Zefon/AlergencoD ____ BioSIS ____ Tape ____
TEM: Bulk/NOB ____ NIOSH 7402 ____ EPA Level II ____ Other ____

Lab ID	Customer ID #	Material/Location	Volume	Area	Results
	1	#134 OWA	240		
	2	#132 OWA	480		
	3	#~~105~~ 133 OWA	408		
	4	#135 OWA	240		
	5	#132 CL	1200		
	6	#133 CL	1200		
	7	#135 CL	1200		
	8	#232 CL	1200		
	9	#232 OWA	324		
	10	#233 OWA	312		
	11	#134 CL	1200		
	12	#233 CL	1200		

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Revision R5 Date: Nov/2017

Apex # **101058** Page **2**

APEX Research, Inc.

11054 Hi Tech Drive, Whitmore Lake, MI 48189. Phone: (734) 449 - 9990, Fax (734) 449 - 9991 www.ApexMI.com

Customer Name: **A.S.T.I. Environmental**
Address: **10448 Citation Dr. Ste 100**
City, St., Zip: **Brighton, MI 48116**
Phone: **(810) 599-6701** Fax: **(810) 225-3800**
Turn Around Time: (*circle one*) ***Terms and conditions on the other side.

Date of Survey: [redacted], 2022 Aug 25
Project: 5-10221
Project # [redacted] Dunn Family Septa
Contact Person: **Lathan Saperstein / Dave Amir**
LSaperstein@asti-env.com/DAmir@asti-env.com
Circle analyses required, indicate type and quantity

Lab Use Only
Log-In:
Report:
Fax:
Verbal:
Email:

Rush 24 hour
48 hour 72 hour
Other: TTP yes / no
Samples received after 3pm logged in next morning
(Test Till Positive)

Asbestos: Bulk X Wipe ____ Point Count ____ PCM 18
Lead / Cad / Chrome: Wipe **ASTM E1792?** circle YES or NO ____ Air ____ Paint ____ Bulk ____
Mold: Bulk ____ Air/Zefon/AlergencoD ____ BioSIS ____ Tape ____
TEM: Bulk/NOB ____ NIOSH 7402 ____ EPA Level II ____ Other ____

Lab ID	Customer ID #	Material/Location	Volume	Area	Results
	~~65~~ 13	#234 OWA	312		
	~~66~~ 14	#235 OWA	240		
	15	#234 CL	1200		
	16	#235 CL	1200		
	17	#411 FB	1200		
	18	#412 FB	1200		

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Revision R5 Date: Nov/2017

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- **ENVIRONMENTAL ASSESSMENTS AND IMPACT STATEMENTS**
- **ENVIRONMENTAL OPPORTUNITIES ASSESSMENT**
- **GIS MAPPING**
- **HAZARD MITIGATION PLANNING**
- **MINING AND RECLAMATION ASSISTANCE**
- **REMEDIATION IMPLEMENTATION, OPERATION AND MAINTENANCE**
- **PHASE I ESA AND ENVIRONMENTAL DUE DILIGENCE ASSESSMENTS**
- **REGULATORY COMPLIANCE AND PERMITTING**
- **SOIL AND GROUNDWATER ASSESSMENTS**
- **SOIL AND GROUNDWATER REMEDIATION**
- **STORAGE TANK COMPLIANCE AND CLOSURE**
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Fax: 810.225.3800

www.asti-env.com

Sent Via Email Only

August 30, 2022

Diane Smith
Dunn Family Senior LDHA LP
8425 East 12 Mile Road, Suite 100
Warren, Michigan 48093/

RE: Asbestos Air Monitoring, Dunn Family Senior Living, 8400 Engleman Street, Centerline, Michigan 48015: ASTI Project No. 2-11386

Dear Diane Smith:

ASTI Environmental (ASTI) is pleased to provide results of air monitoring conducted on site August 25, 2022, during and following the disturbance of asbestos-containing material (ACM) drywall joint compound at 8400 Engleman Street, Centerline, Michigan. The purpose of the testing was to evaluate airborne fiber concentrations during ACM removal and building renovations to verify that airborne fiber concentrations within the affected areas did not exceed the permissible exposure limit or clearance levels during or after abatement activities.

August 25, 2022 Drywall Renovation Activities

On August 25, 2022, Environmental Maintenance Engineers, Inc. (EME) performed removal of asbestos containing drywall joint compound to facilitate HVAC renovations from multiple areas in apartments 132, 133, 134, 135, 232, 233, 234, and 235. EME workers utilized a dremel tool with point of contact HEPA vacuum within a 6-Mil enclosure donning, air-purifying respirators and disposable coveralls to cut three wall penetrations for packaged terminal air conditioner (PTAC). EME conducted cleanup activities utilizing HEPA-filtered vacuums. ASTI performed air clearance sampling during and after renovation activities.

ASTI State of Michigan accredited asbestos inspector Jelaine Tinsley (Asbestos Inspector No. A16395) collected air samples in each work area outside of containment and after containment was removed. A copy of Ms. Tinsley's resume and certification are included in Attachment A.

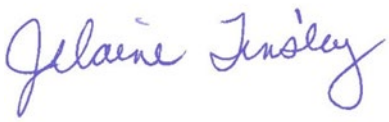
Samples were transmitted under chain-of-custody protocol to Apex Research Laboratory, Inc. in Whitmore Lake, Michigan for asbestos analysis using phase contrast microscopy (PCM). Review of the laboratory data revealed that all airborne fiber concentrations were below the OSHA Permissible Exposure Limit (PEL) of 0.1 fibers per cubic centimeter (f/cc) while all clearance air samples were below the MIOSHA clearance levels of 0.05 f/cc and

at or below the EPA recommended clearance level of 0.01 f/cc. Results of the sample analysis are attached. Copies of PCM results are included in Attachment B.

The above levels were maintained throughout the process of the removal of the asbestos-containing drywall joint compound. These results should be anticipated so long as EME continues to employ the current abatement techniques in regard to the drywall mud joint compound. Should the work practices change or a different contractor be employed for the abatement, a new assessment will be necessary.

Should you have any questions, please contact me.

ASTI ENVIRONMENTAL (ASTI)



Jelaine Tinsley
Asbestos Inspector A16395

Attachments
Attachment A - Resumes & Certification
Attachment B - PCM Results

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Attachment A

Resumes & Certification

ASTI ENVIRONMENTAL

JELAINE D. TINSLEY
Environmental Professional

PROFILE

Certifications/Licenses
NIOSH 582-Equivalent Course Sampling and Analysis of Airborne Asbestos Fibers
OSHA 29 CFR 1910.120 HAZWOPER 40-Hour and 8-Hour Refresher (2022)
Asbestos Inspector-Michigan (License No. A16395)
Asbestos Inspector-Illinois (License No. 100-19756)
Asbestos Inspector-Indiana (License No. 19A007625)
Asbestos Hazard Evaluation Specialist-Ohio (License No.ES36108)
Asbestos Inspector / Management Planner-Kentucky (License No. 66369)
Asbestos Project Designer-Michigan (License No. A16395)
Certified Confined Space Entrant and Attendant
American Red Cross First Aide and Adult CPR Certified
ASTM Certification in RBCA Applied at Petroleum Release Sites
Bituminous Testing Technician
Michigan Provisional Teaching Certificate

Education
Western Michigan University, B.S., Earth Science and Education

Experience History
Environmental Professional, ASTI ENVIRONMENTAL
Project Manager, Yeoman Group
Project Manager, A&F Environmental
Environmental Consultant, DLZ Corporation
Environmental Consultant, AKT Peerless
Geologist, ATC Associates
Geologist, NUS Corporation
Teacher, Detroit Public Schools
Staff Scientist, CTI and Associates, Inc.

Professional Memberships and Service
Michigan Association of Environmental Professionals (MAEP)
Commercial Real Estate Women Detroit (CREW)

Professional Background
Ms. Tinsley has more than 32 years experience in the environmental industry in a variety of areas including Phase I environmental site assessments (ESAs), Phase II ESAs, baseline environmental assessments (BEAs), subsurface investigations (soil and groundwater testing), soil and groundwater evaluations, asbestos and mold inspections, abatement oversight, and specification development. Ms. Tinsley has also coordinated numerous hazardous material and pre-demolition surveys which included evaluations of asbestos, mold, radon and universal wastes for municipal, commercial, and industrial facilities.

Years Experience:

7 --- ASTI ENVIRONMENTAL
25 --- other firms

ENVIRONMENTAL DUE DILIGENCE AND SITE INVESTIGATION PROJECTS

Environmental Site Assessments
Completed numerous site assessments for a variety of projects (vacant land, agricultural, residential, commercial, and industrial) to determine the environmental condition of sites for real estate transactions. Projects involved both surface and subsurface evaluations of sites for a variety of hazardous substances. Responsibilities included the preparation and/or review of ASTM Phase I and Phase II ESAs, Baseline Environmental Assessments (BEAs), and Due Care Plans. Ms. Tinsley has experience working in Michigan, Illinois, Indiana, Ohio, Kentucky, Tennessee, Georgia, Alabama, Mississippi, and Florida. Ms. Tinsley also has performed listing site evaluations for a dedicated contactor to the US EPA. Ms. Tinsley is also knowledgeable with All Appropriate Inquiries (AAI) per 40 CFR Part 312 and meets the requirements of an Environmental Professional per AAI.

Customer Training
Provided training for financial institutions on the types of properties that should have environmental evaluations.

Vapor Intrusion Evaluation, Jackson, Michigan
Conducted vapor intrusion studies at commercial properties to assess potential vapor migration. Scope of work included coordination of vapor intrusion points, vapor sample collection, and coordination of chemical testing.

CONSTRUCTION TESTING

Conducted construction material analysis which included soil proctors, soil sieve analysis, asphalt extractions, and concrete stress testing.

ASBESTOS INSPECTIONS AND ABATEMENT COORDINATION/OVERSIGHT

Responsible for asbestos program management including coordination and technical lead for hazardous material surveys and asbestos and mold related testing activities.

Asbestos Inspections, City of Detroit Neighborhood Redevelopment Project
Inspector of asbestos hazards at over 300 residential and commercial properties. Collected samples of suspect ACM for laboratory analysis. Provided report to the City of Detroit with findings and compliance requirements.

Asbestos Inspections, City of Inkster Neighborhood Redevelopment Project
Conducted asbestos inspections at over 100 residential and commercial properties. Collected samples of suspect ACM for laboratory analysis. Provided report to the City of Inkster with findings and compliance requirements.

Large Hotel Detroit, Michigan
Inspected the hotel property as part of a team. Collected samples, reviewed laboratory analysis, and provided client a report of methods and findings. Performed oversight of ACM abatement.

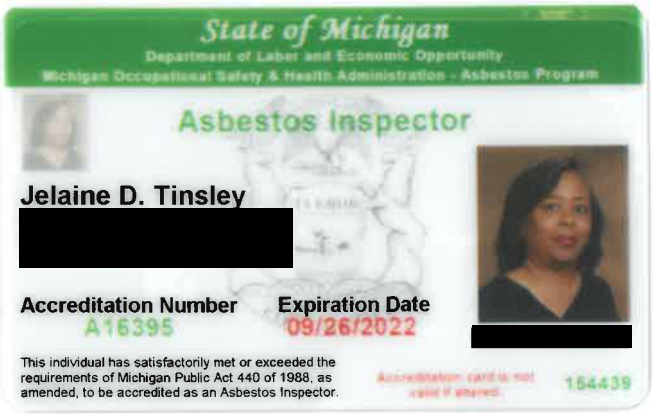
Medical Complex Kalamazoo, Michigan
Responsible for coordination of field activities for the ACM abatement of the complex. Conducted schedule and strategy meetings.

Hotel, Detroit, Michigan
Inspected the hotel property. Collected samples, reviewed laboratory analysis, and provided client a report of methods and findings.

Former Coal Power Plant
Conducted a thorough asbestos inspection of an inactive multi-building coal power plant in Detroit, Michigan. Collected samples, and performed thorough photo documentation and quantification of all ACMs in the power plant and supporting buildings.

UNDERGROUND STORAGE TANKS AND PETROLEUM REMEDIATION PROJECT

Commercial Development Royal Oak, Michigan
Coordinated the remediation of a former gasoline service station, during site development for a commercial company. Work included Phase I ESA and Phase II site investigation to evaluate USTs and hoists onsite, as well as coordinating a GPR survey for additional USTs on site, a BEA, and a Due Care Plan. Assisted with the development bid specifications for site remediation activities including UST and hoist removal, soil remediation, and asbestos abatement. Coordinated the removal of five (5) USTs, one in-ground hoist, and 300,000 cubic yards of petroleum-impacted soils.


State of Michigan
Department of Labor and Economic Opportunity
Michigan Occupational Safety & Health Administration - Asbestos Program
Asbestos Inspector
Jelaine D. Tinsley
[redacted]
Accreditation Number
A16395
Expiration Date
09/26/2022
[redacted]
This individual has satisfactorily met or exceeded the requirements of Michigan Public Act 440 of 1988, as amended, to be accredited as an Asbestos Inspector.
Accreditation card is not valid if altered.
154439

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Attachment B

PCM Results

Certificate of Laboratory Analysis

Test Method, Phase Contrast Microscopy (PCM)

Project: Dunn Family Seniors
Project #: 5-10221

Report to:
Mr. David Amir
ASTI Environmental
10448 Citation Dr., Suite 100
Brighton, MI 48116

ARL Report # 22-101058
Date Collected: 08/25/22
Date Received: 08/26/22
Date Analyzed: 08/26/22
Date Reported: 08/26/22

Sample Information	Volume (*Liters*)	Fibers/Field	Fibers/mm^2	Fibers/cc
Lab ID # 101058-01 Client # 1 Location: #134 OWA Date: 08/25/22	240	27/100	34.4	0.055
Lab ID # 101058-02 Client # 2 Location: #132 OWA Date: 08/25/22	480	21/100	26.8	0.021
Lab ID # 101058-03 Client # 3 Location: #133 OWA Date: 08/25/22	408	26/100	33.1	0.031
Lab ID # 101058-04 Client # 4 Location: #135 OWA Date: 08/25/22	1200	17/100	21.7	0.007
Lab ID # 101058-05 Client # 5 Location: #132 CL Date: 08/25/22	1200	10/100	12.7	0.004
Lab ID # 101058-06 Client # 6 Location: #133 CL Date: 08/25/22	1200	14/100	17.8	0.006

Robert T. Letarte Jr., Laboratory Director

Certificate of Laboratory Analysis

Test Method, Phase Contrast Microscopy (PCM)

Project: Dunn Family Seniors
Project #: 5-10221

Report to:
Mr. David Amir
ASTI Environmental
10448 Citation Dr., Suite 100
Brighton, MI 48116

ARL Report # 22-101058
Date Collected: 08/25/22
Date Received: 08/26/22
Date Analyzed: 08/26/22
Date Reported: 08/26/22

Sample Information	Volume (*Liters*)	Fibers/Field	Fibers/mm^2	Fibers/cc
Lab ID # 101058-07 Client # 7 Location: #135 CL Date: 08/25/22	1200	14/100	17.8	0.006
Lab ID # 101058-08 Client # 8 Location: #232 CL Date: 08/25/22	1200	18/100	22.9	0.007
Lab ID # 101058-09 Client # 9 Location: #232 OWA Date: 08/25/22	324	11/100	14.0	0.017
Lab ID # 101058-10 Client # 10 Location: #233 OWA Date: 08/25/22	312	12/100	15.3	0.019
Lab ID # 101058-11 Client # 11 Location: #134 CL Date: 08/25/22	1200	24/100	30.6	0.010
Lab ID # 101058-12 Client # 12 Location: #233 CL Date: 08/25/22	1200	16/100	20.4	0.007

Robert T. Letarte Jr., Laboratory Director

Certificate of Laboratory Analysis

Test Method, Phase Contrast Microscopy (PCM)

Project: Dunn Family Seniors
Project #: 5-10221

Report to:
Mr. David Amir
ASTI Environmental
10448 Citation Dr., Suite 100
Brighton, MI 48116

ARL Report # 22-101058
Date Collected: 08/25/22
Date Received: 08/26/22
Date Analyzed: 08/26/22
Date Reported: 08/26/22

Sample Information	Volume (*Liters*)	Fibers/Field	Fibers/mm^2	Fibers/cc
Lab ID # 101058-13 Client # 13 Location: #234 OWA Date: 08/25/22	312	15/100	19.1	0.024
Lab ID # 101058-14 Client # 14 Location: #235 OWA Date: 08/25/22	240	10/100	12.7	0.020
Lab ID # 101058-15 Client # 15 Location: #234 CL Date: 08/25/22	1200	19/100	24.2	0.008
Lab ID # 101058-16 Client # 16 Location: #235 CL Date: 08/25/22	1200	15/100	19.1	0.006
Lab ID # 101058-17 Client # 17 Location: #411 FB Date: 08/25/22	1200	0/100	<5.1	<0.002
Lab ID # 101058-18 Client # 18 Location: #412 FB Date: 08/25/22	1200	0/100	<5.1	<0.002

Robert T. Letarte Jr., Laboratory Director

Apex # **101058**

APEX Research, Inc.

..054 Hi Tech Drive, Whitmore Lake, MI 48189. Phone: (734) 449 - 9990, Fax (734) 449 - 9991 www.ApexMI.com

Customer Name: **A.S.T.I. Environmental**
Address: **10448 Citation Dr. Ste 100**
City, St., Zip: **Brighton, MI 48116**
Phone: **(810) 599-6701** Fax: **(810) 225-3800**

Date of Survey: ~~July~~ , 2022 August 25
Project: Dunn Family Senior
Project # ~~[redacted]~~ 5-10221
Contact Person: **Lathan Saperstein / Dave Amir**
LSaperstein@asti-env.com/DAmir@asti-env.com

Lab Use Only
Log-In:
Report:
Fax:
Verbal:
Email:

Turn Around Time: (*circle one*) ***Terms and conditions on the other side.

Circle analyses required, indicate type and quantity

Rush 24 hour
48 hour ~~72 hour~~
Other: TTP yes no
Samples received after 3pm logged in next morning
(Test Till Positive)

Asbestos: Bulk X Wipe ____ Point Count ____ PCM 8
Lead / Cad / Chrome: Wipe **ASTM E1792?** circle YES or NO ____ Air ____ Paint ____ Bulk ____
Mold: Bulk ____ Air/Zefon/AlergencoD ____ BioSIS ____ Tape ____
TEM: Bulk/NOB ____ NIOSH 7402 ____ EPA Level II ____ Other ____

Lab ID	Customer ID #	Material/Location	Volume	Area	Results
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	3	#~~105~~ 133 OWA	408		
	4	#135 OWA	240		
	5	#132 CL	1200		
	6	#133 CL	1200		
	7	#135 CL	1200		
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Revision R5 Date: Nov/2017

Apex # **101058** Page **2**

APEX Research, Inc.

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Customer Name: **A.S.T.I. Environmental**
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Turn Around Time: (*circle one*) ***Terms and conditions on the other side.

Date of Survey: [redacted], 2022 Aug 25
Project: 5-10221
Project # [redacted] Dunn Family Septa
Contact Person: **Lathan Saperstein / Dave Amir**
LSaperstein@asti-env.com/DAmir@asti-env.com
Circle analyses required, indicate type and quantity

Lab Use Only
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Report:
Fax:
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Rush 24 hour
48 hour 72 hour
Other: TTP yes / no
Samples received after 3pm logged in next morning
(Test Till Positive)

Asbestos: Bulk X Wipe ____ Point Count ____ PCM 18
Lead / Cad / Chrome: Wipe **ASTM E1792?** circle YES or NO ____ Air ____ Paint ____ Bulk ____
Mold: Bulk ____ Air/Zefon/AlergencoD ____ BioSIS ____ Tape ____
TEM: Bulk/NOB ____ NIOSH 7402 ____ EPA Level II ____ Other ____

Lab ID	Customer ID #	Material/Location	Volume	Area	Results
	~~65~~ 13	#234 OWA	312		
	~~66~~ 14	#235 OWA	240		
	15	#234 CL	1200		
	16	#235 CL	1200		
	17	#411 FB	1200		
	18	#412 FB	1200		

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Revision R5 Date: Nov/2017

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ASTI ENVIRONMENTAL
Detroit/Grand Rapids/Brighton

Phone: 1-800-395-2784
www.asti-env.com
Email: environmental@asti-env.com

ASTI ENVIRONMENTAL

Michigan
Federally-listed Endangered and Threatened Species

Updated October 2018

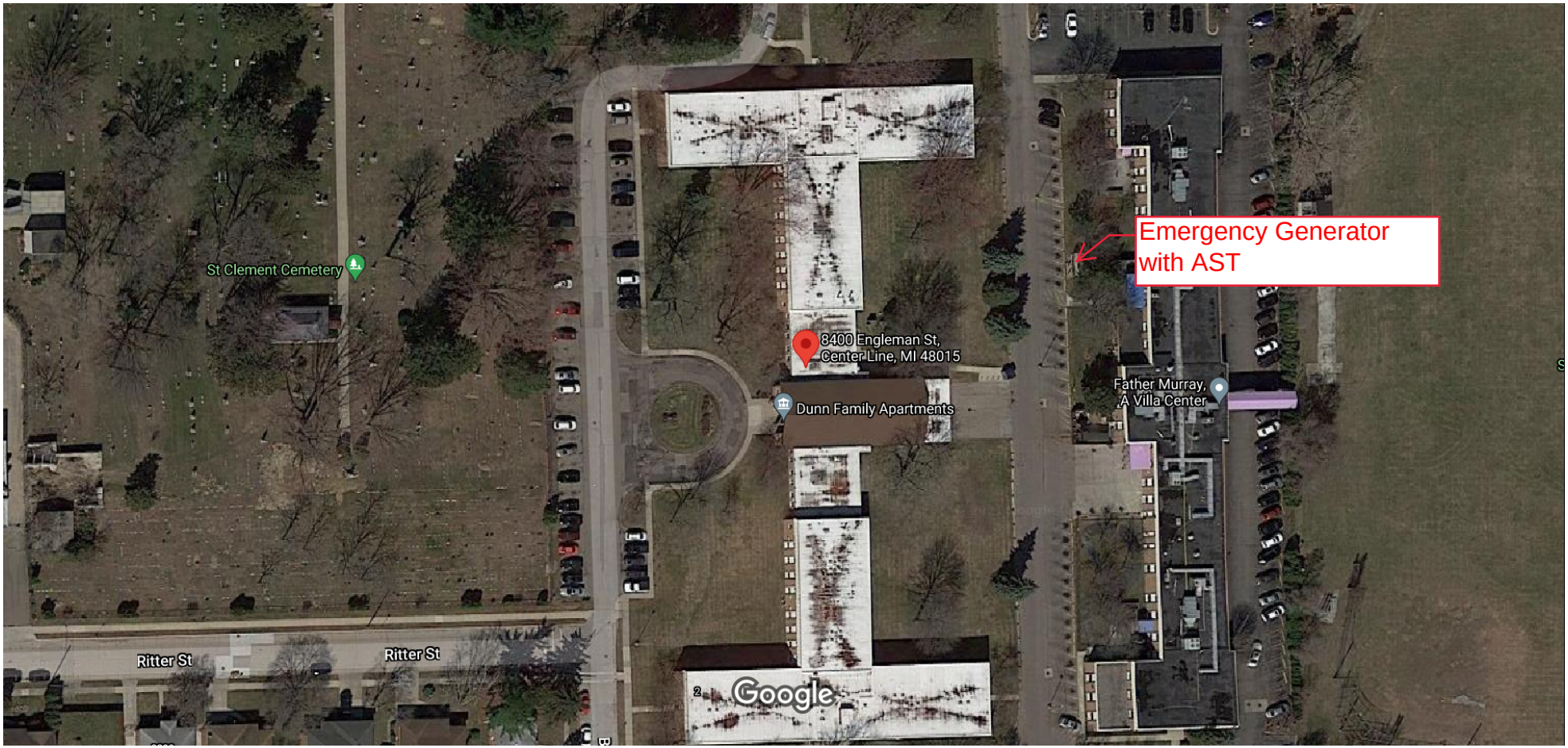
SPECIES	STATUS	COUNTIES	HABITAT
MAMMALS			
Canada lynx *(Lynx canadensis)*	Threatened	**Current distribution:** A Canada lynx was recently documented in the Upper Peninsula. The counties listed here have the highest potential for Lynx presence: Alger, Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Luce, Mackinac, Marquette, Menominee, Ontonagon, Schoolcraft.	Northern forests
Gray wolf *Canis lupus*	Endangered	Alger, Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Luce, Mackinac, Marquette, Menominee, Ontonagon, Schoolcraft	Northern forested areas
Indiana bat *(Myotis sodalis)*	Endangered	Allegan, Barry, Bay, Benzie, Berrien, Branch, Calhoun, Cass, Clinton, Eaton, Genesee, Gratiot, Hillsdale, Ingham, Ionia, Jackson, Kalamazoo, Kent, Lapeer, Leelanau, Lenawee, Livingston, Macomb, Manistee, Mason, Monroe, Montcalm, Muskegon, Oakland, Oceana, Ottawa, Saginaw, St. Joseph, Sanilac, Shiawassee, St. Clair, Tuscola, Van Buren, Washtenaw, and Wayne	Summer habitat includes small to medium river and stream corridors with well developed riparian woods; woodlots within 1 to 3 miles of small to medium rivers and streams; and upland forests. Caves and mines as hibernacula.
Northern long-eared bat *Myotis septentrionalis*	Threatened	Statewide	Hibernates in caves and mines - swarming in surrounding wooded areas in autumn. Roosts and forages in upland forests during spring and summer.
BIRDS			
Kirtland's warbler *Setophaga kirtlandii*	Endangered	Alcona, Alger, Antrim, Baraga, Chippewa, Clare, Crawford, Delta, Grand Traverse, Iosco, Kalkaska, Luce, Marquette, Montmorency, Ogemaw, Oscoda, Otsego, Presque Isle, Roscommon, Schoolcraft	Breeding in young jack pine
Piping plover *(Chradrius melodus)*	Endangered	Alger, Alpena, Benzie, Berrien, Charlevoix, Cheboygan, Chippewa, Delta, Emmet, Leelanau, Luce, Mackinac, Manistee, Mason, Muskegon, Presque Isle, Schoolcraft	Beaches along shorelines of the Great Lakes
Piping plover *(Chradrius melodus)*	Critical Habitat	Alger, Benzie, Charlevoix, Cheboygan, Chippewa, Emmet, Iosco, Leelanau, Luce, Mackinac, Mason, Muskegon, Presque Isle, Schoolcraft	Beaches along shorelines of the Great Lakes

SPECIES	STATUS	COUNTIES	HABITAT
Rufa Red knot *(Calidris canutus rufa)*	Threatened	**Only actions that occur along coastal areas during the Red Knot migratory window of MAY 1 - SEPTEMBER 30 for the following counties:** Alcona, Alger, Allegan, Alpena, Antrim, Arenac, Baraga, Bay, Benzie, Berrien, Charlevoix, Cheboygan, Chippewa, Delta, Emmet, Gogebic, Grand Traverse, Houghton, Huron, Iosco, Keweenaw, Leelanau, Luce, Mackinac, Macomb, Manistee, Marquette, Mason, Menominee, Monroe, Muskegon, Oceana, Ontonagon, Ottawa, Presque Isle, Sanilac, Schoolcraft, St. Clair, Tuscola, Van Buren, Wayne **Only actions that occur in large wetland complexes during the Red knot migratory window of MAY 1 - SEPTEMBER 30 for the following counties:** Midland, Saginaw, Shiawassee	Coastal areas and large wetland complexes
Whooping crane ** (*Grus americanus*)	Non-essential experimental population	Allegan, Barry, Berrien, Jackson, Kent, Lenawee, Macomb, Oceana, Ottawa	Open wetlands and lakeshores
REPTILES			
Copperbelly water snake *(Nerodia erythrogaster neglecta)*	Threatened	Branch, Calhoun, Cass, Eaton, Hillsdale, St. Joseph	Wooded and permanently wet areas such as oxbows, sloughs, brushy ditches and floodplain woods
Eastern massasauga (*Sistrurus catenatus*)	Threatened	Alcona, Allegan, Alpena, Antrim, Arenac, Barry, Berrien, Branch, Calhoun, Cass, Cheboygan, Clare, Clinton, Crawford, Eaton, Emmett, Genesee, Grand Traverse, Hillsdale, Huron, Ingham, Ionia, Iosco, Jackson, Kalamazoo, Kalkaska, Kent, Lake, Lapeer, Lenawee, Livingston, Mackinac, Macomb, Manistee, Mason, Missaukee, Montcalm, Montmorency, Muskegon, Newaygo, Oakland, Oscoda, Presque Isle, Saginaw, St. Joseph, Shiawassee, Van Buren, Washtenaw, Wayne	Graminoid dominated plant communities (fens, sedge meadows, peatlands, wet prairies) open woodlands and shrublands
INSECTS			
Hine's emerald dragonfly *(Somatochlora hineana)*	Endangered	Alcona, Alpena, Mackinac, Menominee, Presque Isle	Spring fed wetlands, wet meadows and marshes; calcareous streams & associated wetlands overlying dolomite bedrock
Hungerford's crawling water beetle *(Brychius hungerfordi)*	Endangered	Charlevoix, Cheboygan, Crawford, Emmet, Montmorency, Oscoda, Otsego, Presque Isle	Cool riffles of clean, slightly alkaline streams; known to occur in five streams in northern Michigan.
Karner blue butterfly *(Lycaeides melissa samuelis)*	Endangered	Allegan, Ionia, Kent, Lake, Mason, Mecosta, Monroe, Montcalm, Muskegon, Newaygo, Oceana	Pine barrens and oak savannas on sandy soils and containing wild lupines *(Lupinus perennis)*, the only known food plant of larvae.
Mitchell's satyr *(Neonympha mitchellii mitchellii)*	Endangered	Barry, Berrien, Branch, Cass, Jackson, Kalamazoo, St. Joseph, Van Buren, Washtenaw	Fens; wetlands characterized by calcareous soils which are fed by carbonate-rich water from seeps and springs

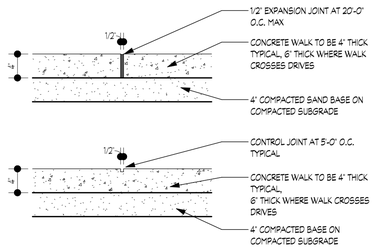
SPECIES	STATUS	COUNTIES	HABITAT
Poweshiek skipperling (*Oarisma poweshiek*)	Endangered Critical Habitat	Hillsdale, Jackson, Lenawee, Livingston, Oakland, and Washtenaw Maps of proposed critical habitat in Michigan at www.fws.gov/midwest/endangered/insects/posk/fCHmaps/poskchMI.pdf	Wet prairie and fens
MUSSELS			
Clubshell *(Pleurobema clava)*	Endangered	Hillsdale	Found in coarse sand and gravel areas of runs and riffles within streams and small rivers
Northern riffleshell *(Epioblasma torulosa rangiana)*	Endangered	Monroe, Sanilac, Wayne	Large streams and small rivers in firm sand of riffle areas; also occurs in Lake Erie
Rayed Bean (*Villosa fabalis*)	Endangered	Oakland, St. Clair	Belle, Black, Clinton and Pine Rivers
Snuffbox (*Epioblasma triquetra*)	Endangered	Gratiot, Ionia, Kent, Livingston, Oakland, St. Clair, Washtenaw	Small to medium-sized creeks in areas with a swift current and some larger rivers
PLANTS			
American hart's tongue fern *(Asplenium scolopendrium* var. *americanun = Phyllitis japonica* ssp. *a.)*	Threatened	Chippewa, Mackinac	Cool limestone sinkholes in mature hardwood forest
Dwarf lake iris *(Iris lacustris)*	Threatened	Alpena, Charlevoix, Cheboygan, Chippewa, Delta, Emmet, Mackinac, Menominee, Presque Isle, Schoolcraft	Partially shaded sandy-gravelly soils on lakeshores
Eastern prairie fringed orchid *(Plantathera leucophaea)*	Threatened	Bay, Cheboygan, Clinton, Eaton, Genesee, Gratiot, Huron, Livingston, Monroe, Saginaw, St. Clair, St. Joseph, Tuscola, Washtenaw, Wayne	Mesic to wet prairies and meadows
Houghton's goldenrod *(Solidago houghtonii)*	Threatened	Charlevoix, Cheboygan, Chippewa, Crawford, Emmet, Kalkaska, Mackinac, Presque Isle, Schoolcraft	Sandy flats along Great Lakes shores
Lakeside daisy *(Hymenoxy acaulis var. glabra)*	Threatened	Mackinac	Dry, rocky prairie grassland underlain by limestone
Michigan monkey-flower *(Mimulus michiganesis)*	Endangered	Benzie, Charlevoix, Cheboygan, Emmet, Leelanau, Mackinac	Soils saturated with cold flowing spring water; found along seepages, streams and lakeshores
Pitcher's thistle *(Cirsium pitcheri)*	Threatened	Alcona, Alger, Allegan, Alpena, Antrim, Arenac, Benzie, Berrien, Charlevoix, Cheboygan, Chippewa, Delta, Emmet, Grand Traverse, Huron, Iosco, Leelanau, Mackinac, Manistee, Mason, Muskegon, Oceana, Ottawa, Presque Isle, Schoolcraft, Van Buren	Stabilized dunes and blowout areas

SPECIES	STATUS	COUNTIES	HABITAT
Small whorled pogonia *(Isotria medeoloides*)	Threatened	Berrien	Dry woodland; upland sites in mixed forests (second or third growth stage)

Google Maps 8400 Engleman St

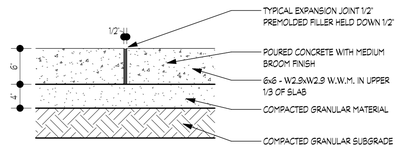


Imagery ©2021 Maxar Technologies, Sanborn, U.S. Geological Survey, Map data ©2021 50 ft



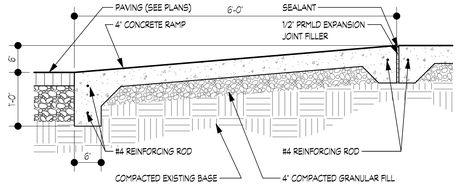
10 A.S.102 — CONCRETE JOINTS

SCALE: 1" = 1'-0"



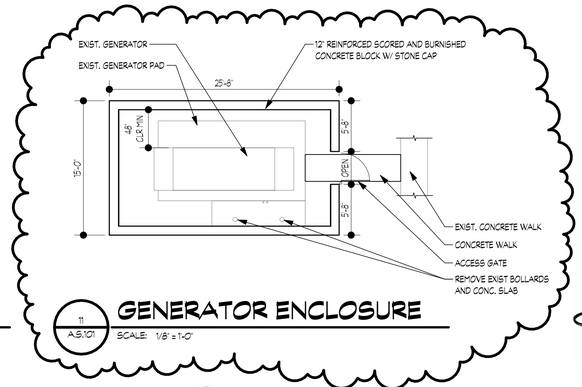
9 A.S.102 — CONCRETE PAVING AT RECEIVING AREA

SCALE: 1" = 1'-0"



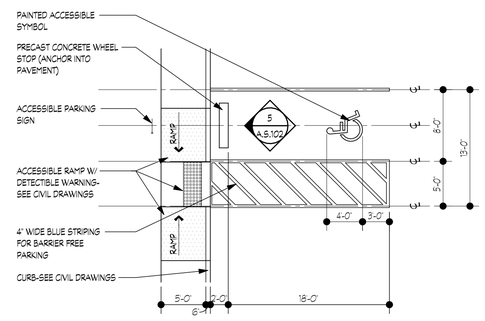
8 A.S.102 — ACCESSIBLE RAMP

SCALE: 3/4" = 1'-0"



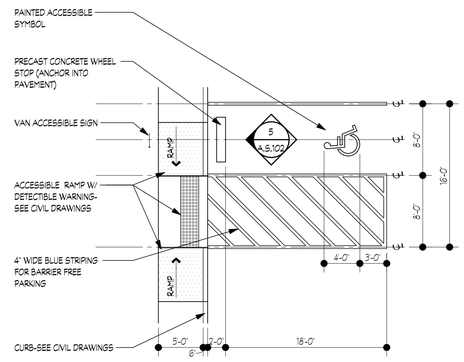
11 A.S.101 — GENERATOR ENCLOSURE

SCALE: 1/8" = 1'-0"



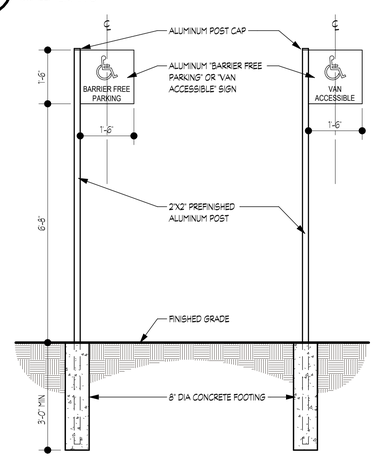
7 A.S.102 — TYPICAL ACCESSIBLE PARKING SPACE LAYOUT

SCALE: 1/8" = 1'-0"



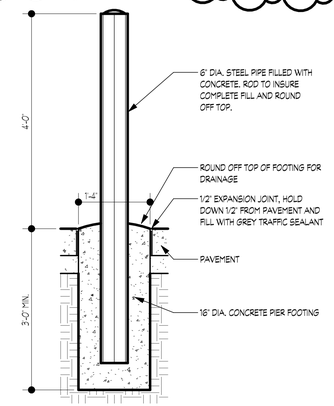
6 A.S.102 — TYPICAL ACCESSIBLE VAN PARKING SPACE LAYOUT

SCALE: 1/8" = 1'-0"



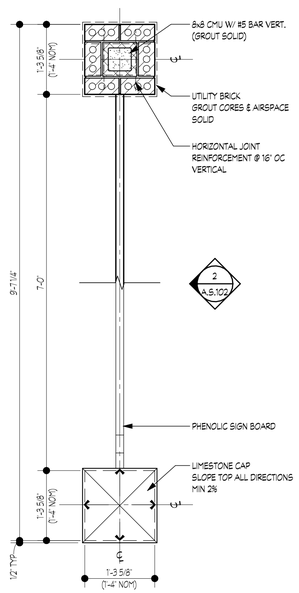
5 A.S.102 — ACCESSIBLE PARKING SIGNAGE

SCALE: 1/2" = 1'-0"



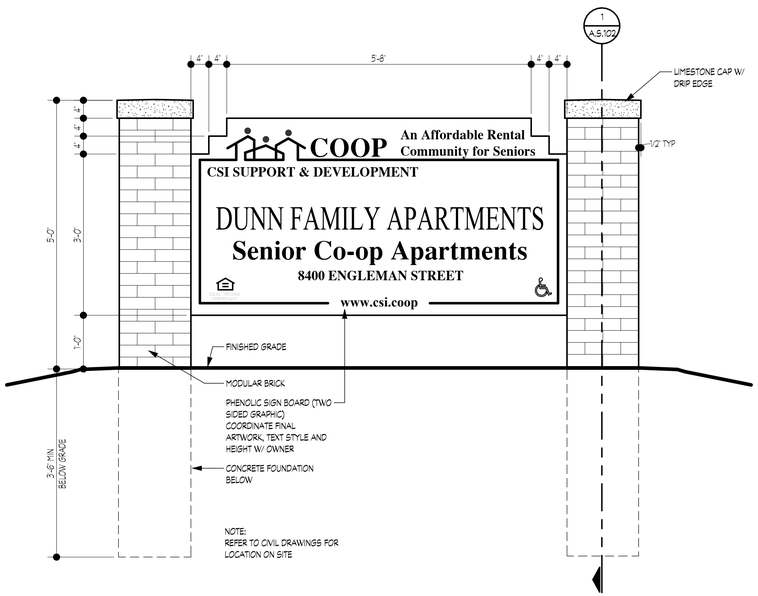
4 A.S.102 — PIPE BOLLARD

SCALE: 3/4" = 1'-0"



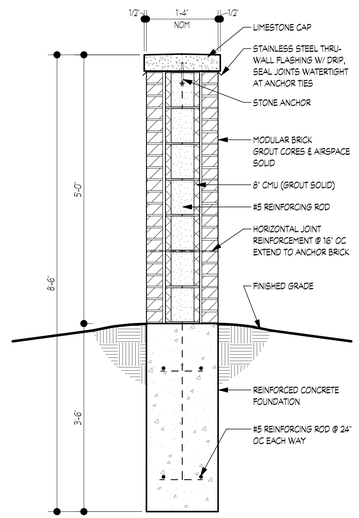
3 A.S.102 — SITE SIGN PLAN

SCALE: 3/4" = 1'-0"



2 A.S.102 — SITE SIGN ELEVATION

SCALE: 3/4" = 1'-0"



1 A.S.102 — SITE SIGN SECTION

SCALE: 3/4" = 1'-0"

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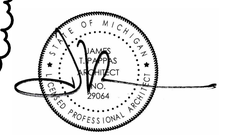
ARCHITECTS AND PLANNERS
550 E. NINE MILE ROAD
FERNDALE, MICHIGAN, 48220
PHONE 248.543.4100 FAX 248.543.4141

SEAL



ADDITIONS AND MODIFICATIONS TO

DUNN FAMILY APARTMENTS

CO-OP SENIOR APARTMENTS

CENTER LINE MICHIGAN

DATE	ISSUE
08.18.23	ADDENDUM #2
08.02.23	PERMIT SET

KEY PLAN

FSP PROJECT NO.
CSI19.021

DRAWING TITLE

ARCHITECTURAL SITE DETAILS

DRAWING NUMBER

A.S.102

Acceptable Separation Distance (ASD) Electronic Assessment Tool

The Environmental Planning Division (EPD) has developed an electronic-based assessment tool that calculates the Acceptable Separation Distance (ASD) from stationary hazards. The ASD is the distance from above ground stationary containerized hazards of an explosive or fire prone nature, to where a HUD assisted project can be located. The ASD is consistent with the Department's standards of blast overpressure (0.5 psi-buildings) and thermal radiation (450 BTU/ft^2 - hr - people and 10,000 BTU/ft^2 - hr - buildings). Calculation of the ASD is the first step to assess site suitability for proposed HUD-assisted projects near stationary hazards. Additional guidance on ASDs is available in the Department's guidebook "Siting of HUD- Assisted Projects Near Hazardous Facilities" and the regulation 24 CFR Part 51, Subpart C, Sitting of HUD-Assisted Projects Near Hazardous Operations Handling Conventional Fuels or Chemicals of an Explosive or Flammable Nature.

Note: Tool tips, containing field specific information, have been added in this tool and may be accessed by hovering over the ASD result fields with the mouse.

Acceptable Separation Distance Assessment Tool

Is the container above ground?	**Yes:** ☑ **No:** ☐
Is the container under pressure?	**Yes:** ☐ **No:** ☑
Does the container hold a cryogenic liquified gas?	**Yes:** ☐ **No:** ☐
Is the container diked?	**Yes:** ☐ **No:** ☑
What is the volume (gal) of the container?	250
What is the Diked Area Length (ft)?	
What is the Diked Area Width (ft)?	
Calculate Acceptable Separation Distance	
Diked Area (sqft)	

ASD for Blast Over Pressure (ASDBOP)	
ASD for Thermal Radiation for People (ASDPPU)	155.23
ASD for Thermal Radiation for Buildings (ASDBPU)	26.49
ASD for Thermal Radiation for People (ASDPNPD)	
ASD for Thermal Radiation for Buildings (ASDBNPD)	

For mitigation options, please click on the following link: Mitigation Options **(/resource/3846/acceptable-separation-distance-asd-hazard-mitigation-options/)**

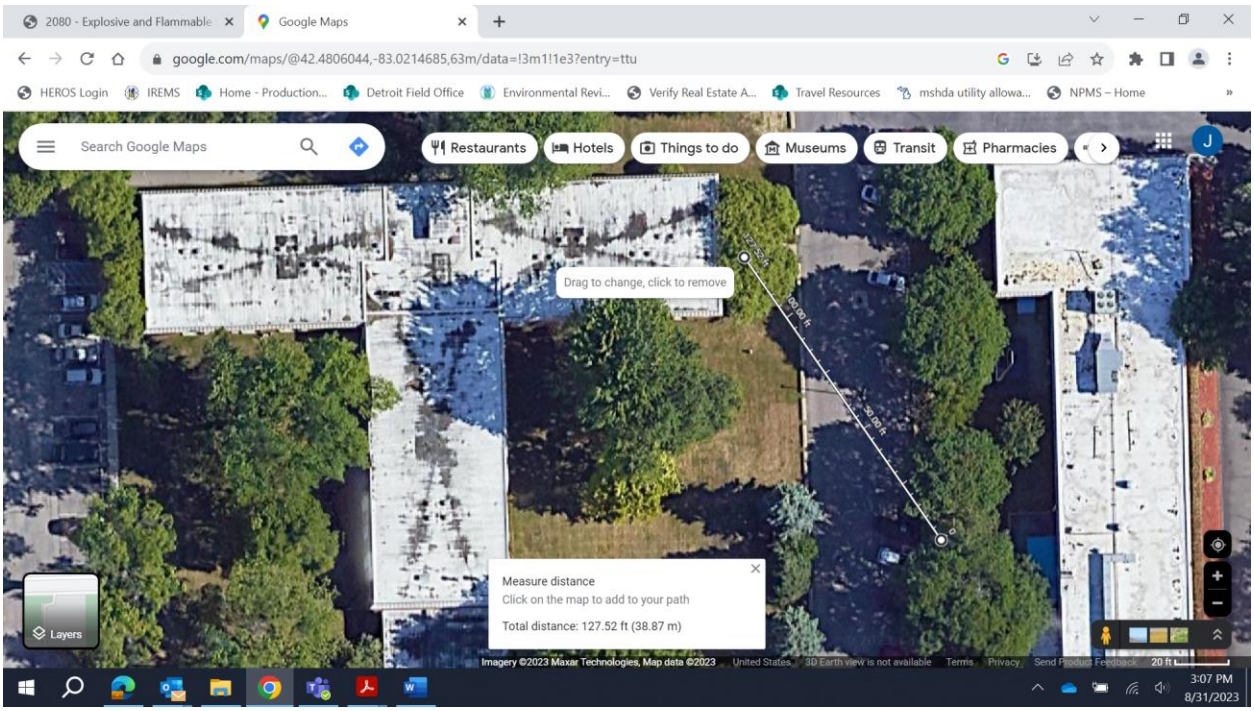
Providing Feedback & Corrections

After using the ASD Assessment Tool following the directions in this User Guide, users are encouraged to provide feedback on how the ASD Assessment Tool may be improved. Users are also encouraged to send comments or corrections for the improvement of the tool.

Please send comments or other input using the **Contact Us (https://www.hudexchange.info/contact-us/)** form.

Related Information

- **ASD User Guide (/resource/3839/acceptable-separation-distance-asd-assessment-tool-user-guide/)**
- **ASD Flow Chart (/resource/3840/acceptable-separation-distance-asd-flowchart/)**


2080 - Explosive and Flammable
Google Maps
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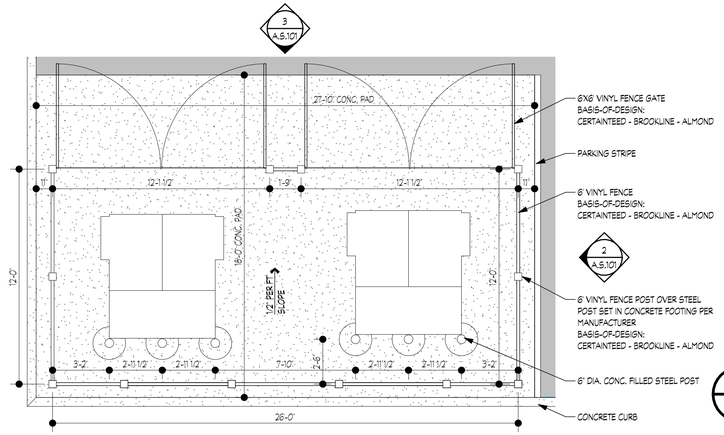
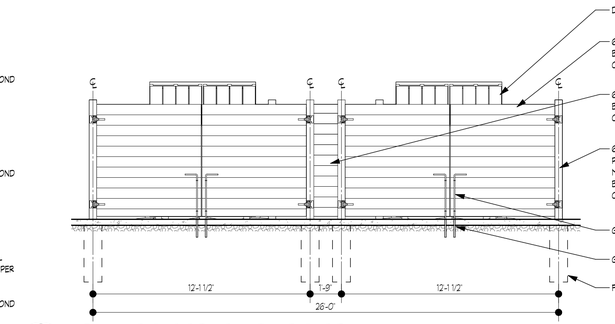
HEROS Login
IREMS
Home - Production...
Detroit Field Office
Environmental Revi...
Verify Real Estate A...
Travel Resources
mshda utility allowa...
NPMS – Home
Search Google Maps
Restaurants
Hotels
Things to do
Museums
Transit
Pharmacies
Drag to change, click to remove
Measure distance
Click on the map to add to your path
Total distance: 127.52 ft (38.87 m)
Layers
Imagery ©2023 Maxar Technologies, Map data ©2023
United States
3D Earth view is not available
Terms
Privacy
Send Product Feedback
20 ft
3:07 PM
8/31/2023



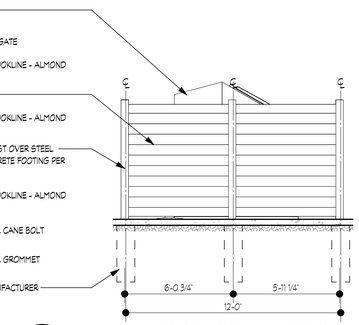
DUMPSTER ENCLOSER PLAN - VINYL

4 A.S.101 SCALE: 1/4" = 1'-0"



DUMPSTER ENCLOSER - VINYL

3 A.S.101 SCALE: 1/4" = 1'-0"



DUMPSTER ENCLOSER - VINYL

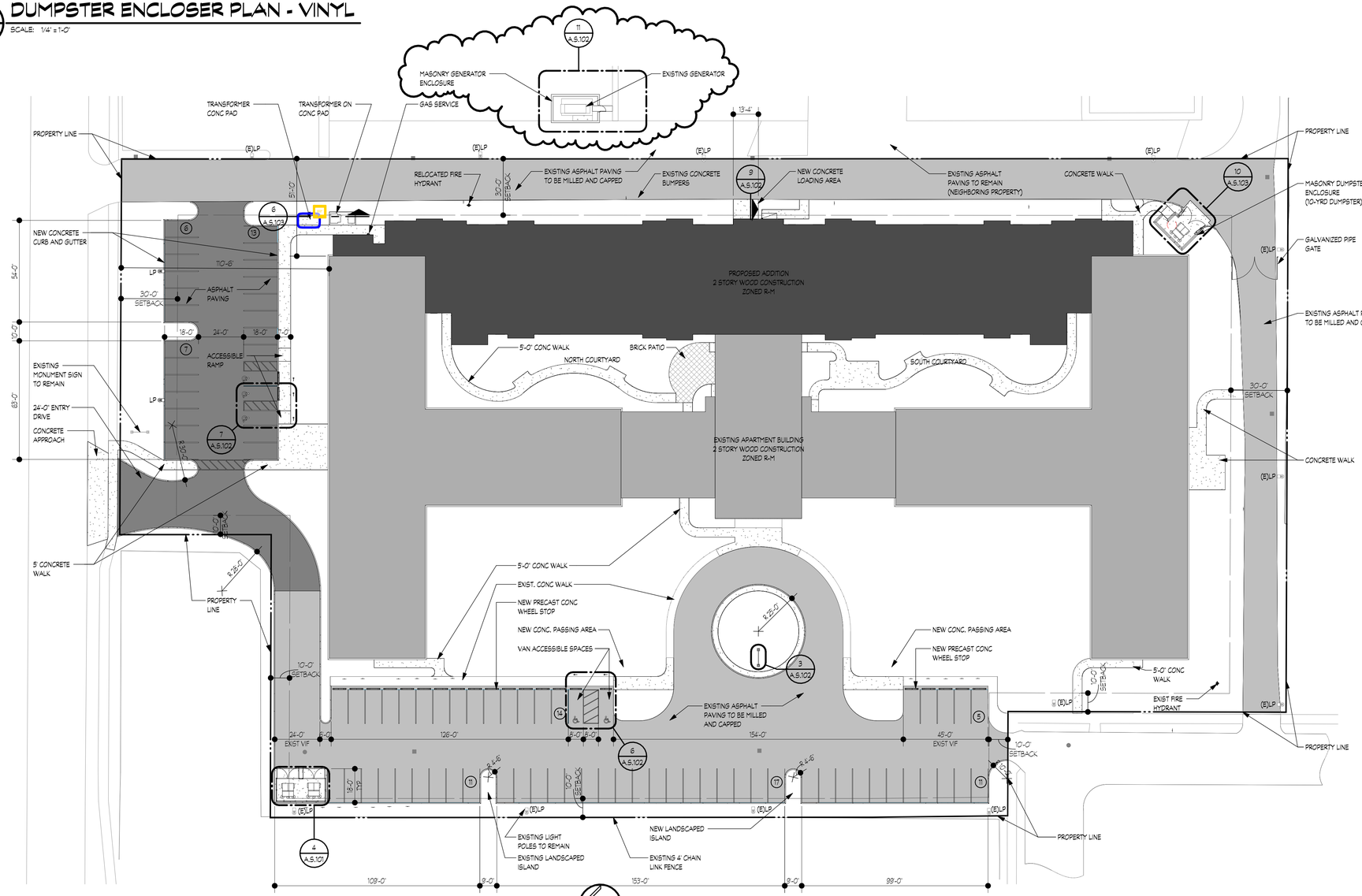
2 A.S.101 SCALE: 1/4" = 1'-0"

GENERAL LAYOUT NOTES

1. ALL DIMENSIONS TO BACK OF CURB UNLESS OTHERWISE NOTED.
2. INSTALL 1/2" EXPANSION JOINT WHERE CONCRETE WALKS MEET BUILDING PORCHES, SUPPORTED SLABS, ETC. - TYPICAL.
3. INSTALL 1/2" EXPANSION JOINT WHERE CONCRETE WALKS MEET CURBS, TYPICAL.
4. EXPANSION JOINTS IN CONCRETE SIDEWALKS:
   6' WD. SIDEWALK - 18' O.C. TYP.
   5' WD. SIDEWALK - 20' O.C. TYP.
   4' WD. SIDEWALK - 20' O.C. TYP.
   3' WD. SIDEWALK - 18' O.C. TYP.
5. CONTROL JOINTS IN CONCRETE SIDEWALKS:
   6' WD. SIDEWALK - 6' X 6' PANEL
   5' WD. SIDEWALK - 5' X 5' PANEL
   4' WD. SIDEWALK - 4' X 4' PANEL
   3' WD. SIDEWALK - 3' X 3' PANEL
6. ALL RADII ON CONCRETE AND ASPHALT SIDEWALKS TO BE 5' R. UNLESS OTHERWISE NOTED.
7. ALL ANGLES ASSUMED TO BE 90 DEGREES UNLESS OTHERWISE NOTED.
8. CONCRETE AND ASPHALT WALKS TO MEET PORCHES FLUSH (NO STEP) UNLESS OTHERWISE NOTED.
9. SEE CIVIL ENGINEERING DRAWINGS FOR LAYOUT OF ALL ROADS, CURBS, BUILDINGS, UTILITIES, ETC.
10. TOP AND BOTTOM OF RETAINING WALLS - SEE GRADING PLANS.
11. ALL DIMENSIONS FOR RETAINING WALLS TO BOTTOM COURSE OF WALL.

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	EXISTING ASPHALT OR CONCRETE PAVING TO REMAIN
	NEW CONCRETE PAVING - 2,535.2
	EXISTING ASPHALT PAVING TO BE MILLED AND CAPPED - 48,573.6
	NEW ASPHALT PAVING - 7,937.5 SF
	EXISTING BUILDING
	PROPOSED BUILDING



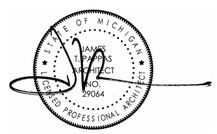
ARCHITECTURAL SITE PLAN

1 A.S.101 SCALE: 1" = 30'-0"

FSP FUSCO, SHAFFER & PAPPAS, INC.
ARCHITECTS AND PLANNERS

550 E. NINE MILE ROAD
FERNDALE, MICHIGAN, 48220
PHONE 248.543.4100 FAX 248.543.4141

SEAL



ADDITIONS AND MODIFICATIONS TO DUNN FAMILY APARTMENTS CO-OP SENIOR APARTMENTS

CENTER LINE MICHIGAN

DATE	ISSUE
08.18.23	ADDENDUM #2
08.02.23	PERMIT SET

KEY PLAN

FSP PROJECT NO.
CSH19.021

DRAWING TITLE

ARCHITECTURAL SITE PLAN

DRAWING NUMBER

A.S.101

Golicz, Eric J

From: Allen, Kelly K
Sent: Tuesday, September 5, 2023 2:26 PM
To: Storen, John W; Cramner, Cody A
Cc: Golicz, Eric J
Subject: FW: <External Message> Fwd: Generator Blast wall Dunn Family / Father Murray

Good Afternoon Tech Team,
Please see the email below regarding the generator blast wall on the adjacent property. Please let me know if there is anything else needed to mitigate this matter.

Thanks,

Kelly K. Allen
Senior Underwriter
Multifamily Production Branch
U.S. Department of Housing and Urban Development
477 Michigan Ave., 16th Floor
Detroit, MI 48226
313-234-7492

From: Zach Kilgore <zach.Kilgore@csi.coop>
Sent: Friday, September 1, 2023 3:00 PM
To: Allen, Kelly K <kelly.k.allen@hud.gov>
Subject: <External Message> Fwd: Generator Blast wall Dunn Family / Father Murray

Kelly, please see below for correspondence with the neighboring property regarding the generator enclosure. They are okay with us building the wall - they just have a couple of requirements (as provided below) that we will address in a license agreement. Please confirm this is acceptable to HUD and we can move forward with the firm commitment. Thank you!

Best,
Zach

From: Kevin Baune <kbaune@omniahcg.com>
Sent: Friday, September 1, 2023 2:46:30 PM
To: Melvin Hudson <melvin.hudson@csi.coop>; Zach Kilgore <zach.Kilgore@csi.coop>
Cc: John Downing <John.Downing@csi.coop>; Leonard Bingham <lbingham@villahc.com>; Zakary Bortz <zBortz@villahc.com>; Cristina Todos <ctodos@villahc.com>; Kimberly Harrell <kharrell@villahc.com>
Subject: RE: Generator Blast wall Dunn Family / Father Murray

[EXTERNAL SENDER Use caution]
Good afternoon, guys,

We are good to move forward with this generator surround. Please send us another update with the requested items below added to the plans for review. Zach, per our conversation this am, we will have the final say on the overall details that you will be submitting to the state for permitting, and we will have a punch list check off with signature as a final. Please respond that you have received and agree to our request.

Thank you and hope you all have a great Labor Day weekend!

Kevin Baune | **VP of Plant Operations**

Omnia Healthcare Group | 3701 W. Lunt | Lincolnwood, IL 60712
507-208-3039

From: Kevin Baune
Sent: Thursday, August 31, 2023 4:58 PM
To: Melvin Hudson <melvin.hudson@csi.coop>
Cc: John Downing <John.Downing@csi.coop>; Zach Kilgore <zach.Kilgore@csi.coop>
Subject: RE: Generator Blast wall Dunn Family / Father Murray

Hello Mel,
I am working on getting this approved. I would like to add a few details. We need the following added:
1-vent stack for diesel tank must be above the wall
2-We would like 4ft doors on both ends north and south side for servicing the generator
3-We will need lighting for servicing the gen.

Kevin Baune | **VP of Plant Operations**

Omnia Healthcare Group | 3701 W. Lunt | Lincolnwood, IL 60712
507-208-3039

From: Melvin Hudson <melvin.hudson@csi.coop>
Sent: Thursday, August 31, 2023 12:56 PM

To: Kevin Baune <kbaune@omniahcg.com>
Cc: John Downing <John.Downing@csi.coop>; Zach Kilgore <zach.Kilgore@csi.coop>
Subject: RE: Generator Blast wall Dunn Family / Father Murray

Kevin,

Per our conversation we will make sure that all requirements are met. Specifically related to manufacturer's dimensional requirements for operation and maintenance as well as any additional requirements from your servicing contractor and local staff related to use, operation, tank filling, emergency connections. We will make sure that all dimensions and product finishes are reviewed and agreed to by you and your team prior to constructing. Additionally, we will coordinate with the city of centerline to comply with all codes and inspections.

You will have final say on clearance dimensions and color/finishes prior to construction, provided that HUD's requirements are met. So that we can proceed with our closing, please confirm that we can build the enclosure around your generator. Work would be completed within the next 12 months.

Attached for reference is the previously supplied sketch.

Thank you,
Mel

Melvin Hudson, National Construction Manager
CSI Support & Development
8425 E. Twelve Mile Road
Warren, MI 48093
www.csi.coop
T:(586)753-9009 F:(586)753-9022

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PART 2 - PRODUCTS

2.1 NATURAL GAS ENGINE-GENERATOR SET

A. 4-cycle, 1800 rpm, natural gas engine generator set. Generator set ratings: kVA and kW rating as indicated on the drawings, at 0.8 PF based on site conditions noted below. System voltage of: 120/208 Volts AC, Three phase, Four-wire, 60 hertz. Site Conditions: Altitude 700 ft., ambient temperatures up to 122 degrees F.

B. Prototype Tests and Evaluation: Prototype tests shall have been performed on a complete and functional unit, component level type tests will not substitute for this requirement. Prototype testing shall comply with the requirements of NFPA 110 for level 1 systems.

C. Performance:

1. Voltage regulation shall be plus or minus 0.5 percent for any constant load between no load and rated load. Random voltage variation with any steady load from no load to full load shall not exceed plus or minus 0.5 percent.
2. Frequency regulation shall be isochronous from steady state no load to steady state rated load. Random frequency variation with any steady load from no load to full load shall not exceed plus or minus 0.25%.
3. The natural gas engine-generator set shall be capable of single step load pick up of 100% nameplate kW and power factor, less applicable derating factors, with the engine-generator set at operating temperature.
4. Motor starting kVA capability shall be a minimum of 3.5 times rated kVA. Gross engine power output to be equal to 1.5 times rated kW. The generator set shall be capable of sustaining a minimum of 90% of rated no load voltage with the specified kVA load at near zero power factor applied to the generator set.

D. Engine

1. The engine shall be natural gas, 4 cycle, radiator and fan cooled. The horsepower rating of the engine at its minimum tolerance level shall be sufficient to drive the alternator and all connected accessories. Two cycle engines are not acceptable. Engine accessories and features shall include:

a. Skid-mounted radiator and cooling system rated for full load operation in 122 degrees F (50 degrees C) ambient as measured at the generator air inlet. Radiator shall be provided with a duct adapter flange. The cooling system shall be filled with 50/50 ethylene glycol/water mixture by the equipment supplier. Rotating parts shall be guarded against accidental contact per OSHA requirements.
b. An electric starter(s) capable of three complete cranking cycles without overheating.
c. Positive displacement, mechanical, full pressure, lubrication oil pump.
d. Full flow lubrication oil filters with replaceable spin-on canister elements and dipstick oil level indicator.

e. An engine driven, mechanical, positive displacement fuel pump. Fuel filter with replaceable spin-on canister element.
f. Replaceable dry element air cleaner with restriction indicator.
g. Flexible supply and return fuel lines.
h. Engine mounted battery charging alternator, 45 ampere minimum, and solid-state voltage regulator.

E. AC Generator

1. The AC generator shall be; synchronous, four pole, 2/3 pitch, revolving field, drip-proof construction, single pre-lubricated sealed bearing, air cooled by a direct drive centrifugal blower fan, and directly connected to the engine with flexible drive disc. All insulation system components shall meet NEMA MG1 temperature limits for Class H insulation system. Actual temperature rise measured by resistance method at full load shall not exceed 105 degrees Centigrade.
2. The generator shall be capable of delivering rated output (kVA) at rated frequency and power factor, at any voltage not more than 5 percent above or below rated voltage.
3. A permanent magnet generator (PMG) shall be included to provide a reliable source of excitation power for optimum motor starting and short circuit performance. The PMG and controls shall be capable of sustaining and regulating current supplied to a single phase or three phase fault at approximately 300% of rated current for not more than 10 seconds

F. Engine-Generator Set Control

1. The generator set shall be provided with a microprocessor-based control system which is designed to provide automatic starting, monitoring, and control functions for the generator set. The control system shall also be designed to allow local monitoring and control of the generator set, and remote monitoring and control as described in this specification.
2. The control shall be mounted on the generator set. The control shall be vibration isolated and prototype tested to verify the durability of all components in the system under the vibration conditions encountered.
3. The control shall be UL508 listed, CSA282-M1989 certified, and meet IEC8528 part 4. All switches, lamps and meters shall be oil-tight and dust-tight, and the enclosure door shall be gasketed. There shall be no exposed points in the control (with the door open) that operate in excess of 50 volts. The controls shall meet or exceed the requirements of Mil-Std 461C part 9, and IEC Std 801.2, 801.3., and 801.5 for susceptibility, conducted, and radiated electromagnetic emissions. The entire control shall be tested and meet the requirements of IEEE587 for voltage surge resistance.
4. The generator set mounted control shall include the following features and functions:
   a. Three position control switch labeled RUN/OFF/AUTO. In the RUN position the generator set shall automatically start, and accelerate to rated speed and voltage. In the OFF position the generator set shall immediately stop, bypassing all time delays. In the AUTO position the generator set shall be ready to accept a signal from a remote device to start and accelerate to rated

speed and voltage.

b. Red "mushroom-head" push-button EMERGENCY STOP switch. Depressing the emergency stop switch shall cause the generator set to immediately shut down, and be locked out from automatic restarting.

c. Push-button RESET switch. The RESET switch shall be used to clear a fault and allow restarting the generator set after it has shut down for any fault condition.

d. Push-button PANEL LAMP switch. Depressing the panel lamp switch shall cause the entire panel to be lighted with DC control power. The panel lamps shall automatically be switched off 10 minutes after the switch is depressed, or after the switch is depressed a second time.

e. Generator Set AC Output Metering: The generator set shall be provided with a metering set including the following features and functions:

f. 2.5-inch, 90 degree scale analog voltmeter, ammeter, frequency meter, and kilowatt (KW) meter. These meters shall be provided with a phase select switch and an indicating lamp for upper and lower scale on the meters.

g. Digital metering set, 0.5% accuracy, to indicate generator RMS voltage and current, frequency, output current, output KW, KW-hours, and power factor. Generator output voltage shall be available in line-to-line and line-to-neutral voltages, and shall display all three phase voltages (line to neutral or line to line) simultaneously.

h. Generator Set Alarm and Status Message Display: The generator set shall be provided with alarm and status indicating lamps to indicate non-automatic generator status, and existing alarm and shutdown conditions. The lamps shall be high-intensity LED type. The lamp condition shall be clearly apparent under bright room lighting conditions. The generator set control shall indicate the existence of the following alarm and shutdown conditions on a digital display panel:

1) low oil pressure (alarm)
2) low oil pressure (shutdown)
3) oil pressure sender failure (alarm)
4) low coolant temperature (alarm)
5) high coolant temperature (alarm)
6) high coolant temperature (shutdown)
7) engine temperature sender failure (alarm)
8) low coolant level (alarm or shutdown--selectable)
9) fail to crank (shutdown)
10) overcrank (shutdown)
11) overspeed (shutdown)
12) low DC voltage (alarm)
13) high DC voltage (alarm)
14) weak battery (alarm)
15) high AC voltage (shutdown)
16) low AC voltage (shutdown)
17) under frequency (shutdown)
18) over current (warning)
19) over current (shutdown)
20) short circuit (shutdown)

21) ground fault (alarm)
22) over load (alarm)
23) emergency stop (shutdown)

i. In addition, provisions shall be made for indication of two customer-specified alarm or shutdown conditions. Labeling of the customer-specified alarm or shutdown conditions shall be of the same type and quality as the above specified conditions. The non-automatic indicating lamp shall be red and shall flash to indicate that the generator set is not able to automatically respond to a command to start from a remote location.

j. Engine Status Monitoring: The following information shall be available from a digital status panel on the generator set control:
1) engine oil pressure (psi or kPA)
2) engine coolant temperature (degrees F or C)
3) engine oil temperature (degrees F or C)
4) engine speed (rpm)
5) number of hours of operation (hours)
6) number of start attempts
7) battery voltage (DC volts)

k. The control system shall also incorporate a data logging and display provision to allow logging of the last 10 warning or shutdown indications on the generator set, as well as total time of operation at various loads, as a percent of the standby rating of the generator set.

l. Control Functions: The control system provided shall include a cycle cranking system, which allows for user selected crank time, rest time, and # of cycles. Initial settings shall be for 3 cranking periods of 15 seconds each, with 15 second rest period between cranking periods.

m. The control system shall include an engine governor control, which functions to provide steady state frequency regulation as noted elsewhere in this specification. The governor control shall include adjustments for gain, damping, and a ramping function to control engine speed and limit exhaust smoke while the unit is starting. The governor control shall be suitable for use in paralleling applications without component changes.

n. The control system shall include sender failure monitoring logic for speed sensing, oil pressure, and engine temperature which is capable of discriminating between failed sender or wiring components, and an actual failure conditions.

o. The control system shall include all interfaces necessary for proper operation with the paralleling equipment provided under this contract. The generator set supplier shall be responsible for complete compliance to all specification requirements for both the generator set and the paralleling equipment.

p. Alternator Control Functions: The generator set shall include an automatic voltage regulation system which is matched and prototype tested with the governing system provided. It shall be immune from misoperation due to load-induced voltage waveform distortion and provide a pulse width modulated output to the alternator exciter. The voltage regulation system shall be equipped with three-phase RMS sensing and shall control buildup of AC generator voltage to provide a linear rise and limit overshoot. The system shall include a torque-matching characteristic, which shall reduce output

voltage in proportion to frequency below a threshold of [58-59] HZ. The voltage regulator shall include adjustments for gain, damping, and frequency roll-off. Adjustments shall be broad range, and made via digital raise-lower switches, with an alpha-numeric LED readout to indicate setting level. The voltage regulation system shall include provisions for reactive load sharing and electronic voltage matching for paralleling applications. Motorized voltage adjust pot is not acceptable for voltage matching.

q. Controls shall be provided to monitor the output current of the generator set and initiate an alarm when load current exceeds 110% of the rated current of the generator set on any phase for more than 60 seconds. The controls shall shut down and lock out the generator set when output current level approaches the thermal damage point of the alternator.

r. Controls shall be provided to monitor the KW load on the generator set, and initiate an alarm condition when total load on the generator set exceeds the generator set rating for in excess of 5 seconds.

s. An AC over/under voltage monitoring system which responds only to true RMS voltage conditions shall be provided. The system shall initiate shutdown of the generator set when alternator output voltage exceeds 110% of the operator-set voltage level for more than 10 seconds, or with no intentional delay when voltage exceeds 130%. Under voltage shutdown shall occur when the output voltage of the alternator is less than 85% for more than 10 seconds.

t. A battery monitoring system shall be provided which initiates alarms when the DC control and starting voltage is less than 25VDC or more than 32 VDC. During engine starting, the low voltage limit shall be disabled, and if DC voltage drops to less than 14.4 volts for more than two seconds a "weak battery" alarm shall be initiated.

u. The Control System shall include a ground fault monitoring relay. The relay shall be adjustable from 100-1200 amps, and include adjustable time delay of 0-1.0 seconds. The relay shall be for indication only, and not trip or shut down the generator set. Note bonding and grounding requirements for the generator set and provide relay which will function correctly in system as installed.

v. Control Interfaces for Remote Monitoring: All control and interconnection points from the generator set to remote components shall be brought to a separate connection box. No field connections shall be made in the control enclosure or in the AC power output enclosure. Provide the following features in the control system:

   1) Form "C" dry common alarm contact set rated 2A @ 30VDC to indicate existence of any alarm or shutdown condition on the generator set.
   2) One set of contacts rated 2A @ 30VDC to indicate generator set is ready to load. The contacts shall operate when voltage and frequency are greater than 90% of rated condition.
   3) A fused 10 amp switched 24VDC power supply circuit shall be provided for customer use. DC power shall be available from this circuit whenever the generator set is running.
   4) A fused 20 amp 24VDC power supply circuit shall be provided for customer use. DC power shall be available from this circuit at all times

from the engine starting/control batteries.

5) The control shall be provided with a direct serial communication link for the LonWorks communication network interface as described elsewhere in this specification and shown on the drawings.

G. Base

1. The engine-generator set shall be mounted on a heavy-duty steel base to maintain alignment between components. The base shall incorporate a battery tray with hold-down clamps within the rails.

H. Generator Set Auxiliary Equipment and Accessories:

1. Coolant heater:
   a. Engine mounted, thermostatically controlled, coolant heater for the engine. Heater voltage shall be 208 volts, single phase.
   b. The coolant heater shall be installed on the engine with silicone hose connections. The coolant heater installation shall be specifically designed to provide proper venting of the system. The coolant heaters shall be installed using quick disconnect couplers to isolate the heater for replacement of the heater element. The quick disconnect/automatic sealing couplers shall allow the heater element to be replaced without draining the engine cooling system or significant coolant loss.
   c The coolant heater shall be provided with a 24VDC thermostat, installed at the engine thermostat housing. An AC power connection box shall be provided for a single AC power connection to the coolant heater system.
   d. The coolant heater(s) shall be sized as recommended by the engine manufacturer to warm the engine to a minimum of 100F (40C) in a 40F ambient, in compliance with NFPA110 requirements.
2. Vibration Isolators, spring type, quantity as recommended by the generator set manufacturer.
3. Starting and Control Batteries: Starting battery bank, calcium/lead antimony type, 24 Volt DC, sized as recommended by the generator set manufacturer, shall be supplied for each generator set with battery cables and connectors.
4. Exhaust Silencer(s): Exhaust muffler(s), with exhaust pipe, shall be provided for the engine, size and type as recommended by the generator set manufacturer. The muffler(s) shall be critical grade and be a dual inlet style single outlet style for the configured engine. Stainless Steel exhaust flex for mounting between the engine and silencer shall be provided by the generator set manufacturer.
5. Remote Annunciator: Provide and install a 20-light LED remote alarm annunciator with horn, located as shown on the drawings or in a location which can be conveniently monitored by facility personnel. The remote annunciator shall provide all the audible and visual alarms called for by NFPA Standard 110 for level 1 systems; and in addition shall provide indications for high battery voltage, low battery voltage, loss of normal power to the charger. Spare lamps shall be provided to allow future addition of other alarm and status functions to the annunciator. Provisions for labeling of the annunciator in a fashion consistent with the specified functions shall be

provided. Alarm silence and lamp test switch(es) shall be provided. LED lamps shall be replaceable, and indicating lamp color shall be capable of changes needed for specific application requirements. Alarm horn shall be switchable for all annunciation points. Alarm horn (when switched on) shall sound for first fault, and all subsequent faults, regardless of whether first fault has been cleared, in compliance with NFPA 110 3-5.6.2.

6. Battery Charger: A UL listed 10 amp voltage regulated battery charger shall be provided for each engine-generator set. The charger shall be wall mounted. Input AC voltage and DC output voltage shall be as required. Chargers shall be equipped with float, taper and equalize charge settings. Operational monitors shall provide visual output along with individual form C contacts rated at 4 amps, 120 VAC, 30VDC for remote indication of:
   a. Loss of AC power - red light
   b. Low battery voltage - red light
   c. High battery voltage - red light
   d. Power ON - green light (no relay contact)
   e. Analog DC voltmeter and ammeter, 12 hour equalize charge timer, AC and DC fuses shall also be provided on the charger.
7. Main Line Circuit Breaker
   a. A unit mounted main line circuit breaker shall be supplied mounted on the side of the generator set.
   b. The breaker shall be rated at 480 volts and be a 3 pole design with an ampere rating as recommended by the manufacturer
8. Weatherproof Sound Attenuated Level 2 Enclosure
   a. The sound attenuated housing shall enclose the complete generator set and allow ample cooling air flow in ambient temperatures as high as 122 deg. F. The sound attenuated housing shall provide a sound level of 73 dBa at 23 feet.
   b. The enclosure shall be drop over type to mounted on the generator sub-base by the contractor. The enclosure shall be 14 gage formed construction, modular design, gasketed roof bolts, plus rain ledge on four sides. All bolts shall be 3/8-inch (10 mm) cadmium plated with lock washers. Hinges shall be continuous type with 1/4-inch (6 mm) brass pins.
   c. The roof shall be flanged lap rain tight construction, complete with roof stiffeners. The doors shall be full length piano hinged with fixed open air intake louvers, and equipped with adjustable plated pad-type latches and matched keys and rubber door stops. There shall be doors on each side and one rear door for easy access. Hinged radiator fill access door and radiator core guard shall be provided. Drip flange and gasketed exhaust exit shall be provided.
   d. Enclosure shall include a radiator discharge duct which shall direct the discharge air from the radiator upward.
   e. Complete enclosure shall be primed with two coats of zinc-chromate and finished painted with two coats of enamel.

2.2 INSTALLATION OF ENGINE-GENERATOR SYSTEM

A. Install engine-generator unit as indicated, in accordance with the equipment manufacturer's written instructions, and with recognized industry practices, to ensure that

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Macomb County, Michigan

Dunn Family Senior

October 23, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

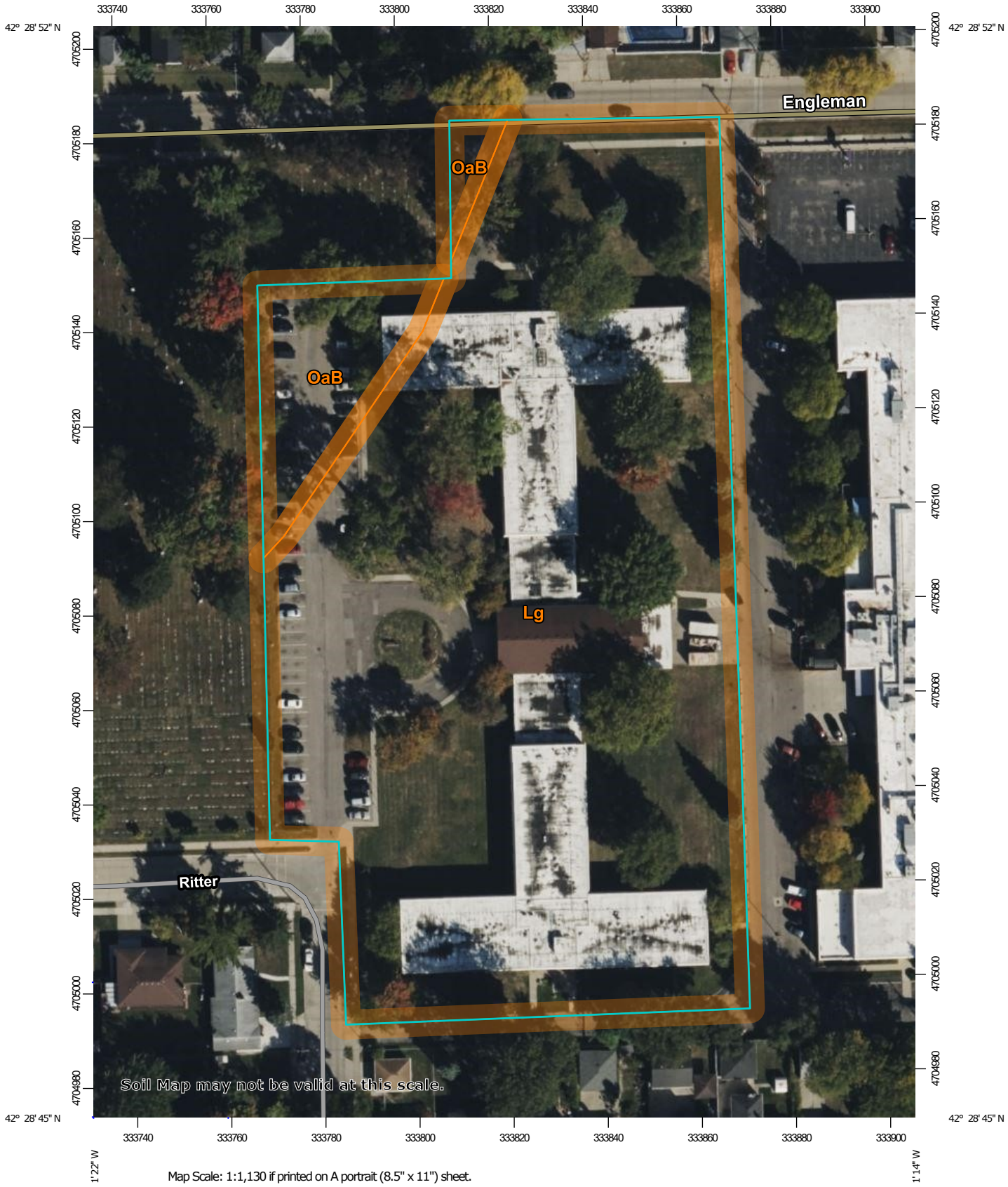
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,130 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Macomb County, Michigan
Survey Area Data: Version 20, Aug 25, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 9, 2022—Oct 21, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Lg	Lenawee silty clay loam, 0 to 1 percent slopes	3.9	91.6%
OaB	Oakville fine sand, 0 to 6 percent slopes	0.4	8.4%
Totals for Area of Interest		**4.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Macomb County, Michigan

Lg—Lenawee silty clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2wcf7
Elevation: 560 to 980 feet
Mean annual precipitation: 28 to 38 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 135 to 230 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Lenawee and similar soils: 93 percent
Minor components: 7 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lenawee

Setting

Landform: Lakebeds (relict)
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey glaciolacustrine deposits

Typical profile

Ap - 0 to 9 inches: silty clay loam
Bg - 9 to 39 inches: silty clay loam
Cg - 39 to 80 inches: silty clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 21 percent
Maximum salinity: Nonsaline (0.0 to 0.6 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Minor Components

Del rey

Percent of map unit: 7 percent
Landform: Lakebeds (relict)

Microfeatures of landform position: Rises
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

OaB—Oakville fine sand, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 6990
Elevation: 570 to 750 feet
Mean annual precipitation: 32 to 33 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 153 to 192 days
Farmland classification: Not prime farmland

Map Unit Composition

Oakville and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oakville

Setting

Landform: Lake plains, outwash plains, beaches on strand plains
Landform position (two-dimensional): Summit, shoulder, backslope, footslope, toeslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Eolian deposits and/or glaciolacustrine deposits

Typical profile

Ap - 0 to 7 inches: fine sand
Bw1 - 7 to 13 inches: fine sand
Bw2 - 13 to 22 inches: fine sand
BC - 22 to 34 inches: fine sand
C - 34 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: F099XY004MI - Warm Dry Sandy Ridge
Hydric soil rating: No

Minor Components

Spinks

Percent of map unit: 4 percent
Landform: Outwash terraces on till plains
Landform position (two-dimensional): Summit, shoulder, backslope, footslope, toeslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY004MI - Warm Dry Sandy Ridge
Hydric soil rating: No

Pipestone

Percent of map unit: 3 percent
Landform: Knolls on strand plains, glacial drainage channels
Landform position (two-dimensional): Summit, shoulder, backslope, footslope, toeslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY003MI - Warm Moist Sandy Depression
Hydric soil rating: No

Granby

Percent of map unit: 3 percent
Landform: Depressions on outwash plains, depressions on lake plains, flats on strand plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY011MI - Warm Wet Sandy Depression
Hydric soil rating: Yes

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STATE OF MICHIGAN
MICHIGAN STRATEGIC FUND
STATE HISTORIC PRESERVATION OFFICE

GRETCHEN WHITMER
GOVERNOR

QUENTIN L. MESSER, JR.
PRESIDENT

March 31, 2022

STEVE OTT
US DEPT OF HOUSING AND URBAN DEVELOPMENT
77 W JACKSON BOULEVARD ROOM 2301
CHICAGO IL 60604-3507

RE: ER22-575 Dunn Family Senior Rehabilitation, 8400 Engleman Street, Sec. 22, T1N, R12E, Center Line, Macomb County (HUD)

Dear Mr. Ott:

Under the authority of Section 106 of the National Historic Preservation Act of 1966, as amended, we have reviewed the above-cited undertaking at the location noted above, including the background research report titled *Archaeological Records Review and Recommendation for the Section 106 Review Application for Dunn Family Senior Center Housing Rehabilitation Project, 8400 Englemann Street, Center Line, Macomb County, Michigan* by Misty Jackson (2021; Arbre Croche Cultural Resources, LLC).

Based on the information provided for our review, it is the opinion of the State Historic Preservation Officer (SHPO) that **no historic properties are affected** within the area of potential effects of this undertaking.

Please note that the northwest portion of the proposed project area is immediately adjacent to St. Clements Cemetery. Due to the proximity of the project to the cemetery, the archaeological consultant advises that care is taken during the construction of the north parking lot and west entrance. In the unlikely event that human remains are encountered during construction in the project area, work must be halted and the Michigan SHPO along with other appropriate authorities must be contacted immediately.

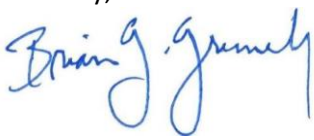
This letter evidences HUD's compliance with 36 CFR § 800.4 "Identification of historic properties," and the fulfillment of HUD's responsibility to notify the SHPO, as a consulting party in the Section 106 process, under 36 CFR § 800.4(d)(1) "No historic properties affected." **If the scope of work changes in any way, or if artifacts or bones are discovered, please notify this office immediately.**

We remind you that federal agency officials or their delegated authorities are required to involve the public in a manner that reflects the nature and complexity of the undertaking and its effects on historic properties per 36 CFR § 800.2(d). The National Historic Preservation Act also requires that federal agencies consult with any Indian tribe and/or Tribal Historic Preservation Officer (THPO) that attach religious and cultural significance to historic properties that may be affected by the agency's undertakings per 36 CFR § 800.2(c)(2)(ii).

The State Historic Preservation Office is not the office of record for this undertaking. You are therefore asked to maintain a copy of this letter with your environmental review record for this undertaking.

If you have any questions, please contact Brian Grennell, Cultural Resource Management Coordinator, at 517-335-2721 or by email at GrennellB@michigan.gov. For questions regarding archaeological concerns, please contact Amy Krull, Federal Projects Archaeologist (krulla@michigan.gov; 517-285-4211). **Please reference our project number in all communication with this office regarding this undertaking.** Thank you for this opportunity to review and comment, and for your cooperation.

Sincerely,



Brian G. Grennell
Cultural Resource Management Coordinator

AK:BGG

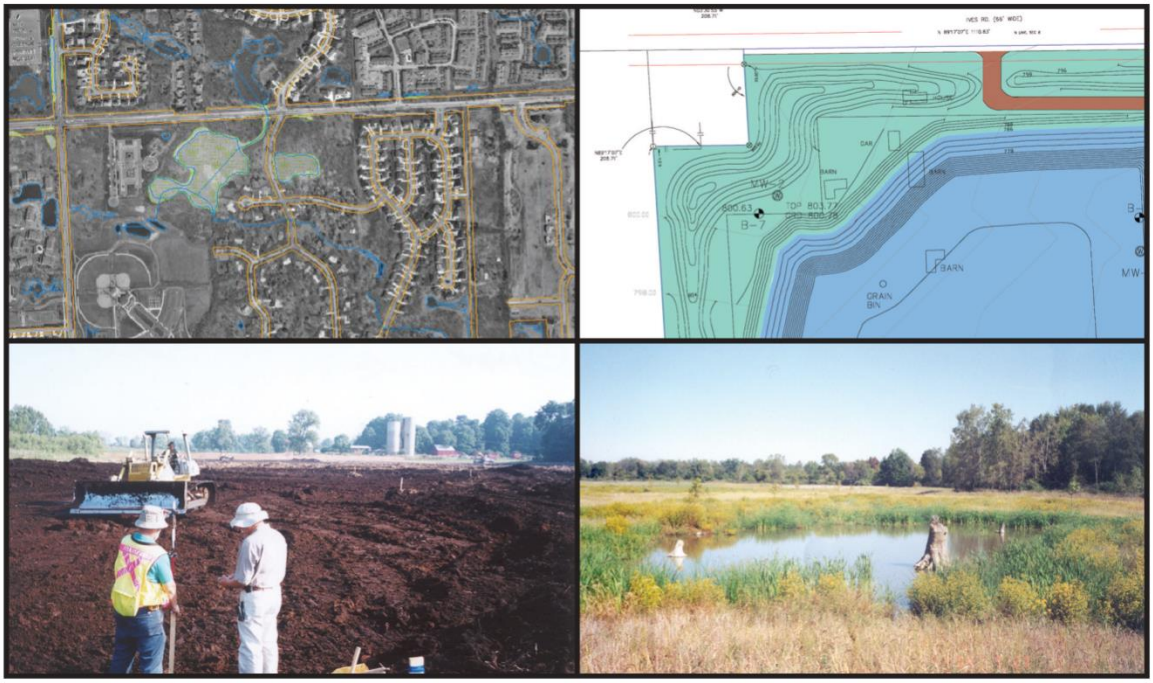
Copy: Kara Williams-Kief, HUD
Ashleigh Czapek, ASTI Environmental
Christopher Yelonek, ASTI Environmental

Noise Assessment
Dunn Family Apartments
8400 Engleman Road
Center Line, Michigan

CSI Support and Development Services

December 21, 2020

ASTI ENVIRONMENTAL



ASTI ENVIRONMENTAL

Noise Assessment
Dunn Family Apartments
8400 Engleman Road
Center Line, Michigan

December 21, 2020

Report Prepared For:

CSI Support & Development Services
8425 E. 12 Mile Road, Suite 100
Warren, Michigan 48093

Report Prepared By:

ASTI Environmental
10448 Citation Drive, Suite 100
Brighton, Michigan 48116
800-395-ASTI

ASTI Project No. 2-10221

Report Prepared by:

Ashleigh Czapek
Associate I

Report Reviewed by:

Pamela Chapman, PE, EP
Phase I Group Leader

ENVIRONMENTAL

TABLE OF CONTENTS

1.0 INTRODUCTION

CSI Support & Development Services proposes the rehabilitation utilizing funding provided from the Michigan State Housing Development Authority (MSHDA) of the Dunn Family Apartments at 8400 Engleman Road, Center Line, Michigan, referred to herein as "Subject Property".

This assessment was conducted to provide the noise level and associated noise category at each designated Noise Assessment Location (NAL) at the Subject Property. This assessment does not include an evaluation of noise attenuation but general guidance is provided at the end of this assessment.

This evaluation was conducted per guidelines set forth in 24 CFR 51B. This noise analysis evaluates the Subject Property's exposure to three major sources of noise: aircraft, roadways, and railways. If identified, additional non-transportation noise sources such as loud impulse sounds from nearby industry are also evaluated.

The following three sources of transportation noise and their applicable search distances are outlined below when evaluating noise at a site.

1. Aircraft - All military and FAA-regulated civil airfields within 15 miles of the Subject Property.
2. Roadways - Major roadways and limited access highways/freeways within 1,000 feet of the Subject Property utilizing a 10-year projection. Roadways considered are generally based on number of lanes, speed limit, presence of stop signs or lights, overall traffic counts, and/or number of medium or heavy trucks.
3. Railroad - All active railroads within 3,000 feet of the Subject Property.

The noise level calculated at a NAL is known as the day-night average sound level or DNL. A calculated DNL can fall within three categories as follow.

1. Acceptable - DNL not exceeding 65 decibels (dB)
2. Normally Unacceptable - DNL above the 65 dB threshold but not exceeding 75 dB
3. Unacceptable - DNL above 75 dB

One NAL (NAL #1) was selected on the Subject Property for this analysis based on proximity to noise sources. A map with the Subject Property boundaries and NAL location is included as Attachment A.

The following is a summary of the applicable noise sources identified at the NAL.

NAL #1

Noise Source with Applicable Distance	**Name**	**Distance to NAL**
Airport(s)	Coleman A Young International Airport	4.1 miles
	Selfridge Air National Air Base	12.3 miles
	Windsor International Airport	14 miles
Busy Road(s)	10 Mile Road	752 feet
Railroad(s)	None	NA
Non-Transportation	None	NA

2.0 EVALUATION OF NOISE SOURCES

2.1 Airports

Coleman A. Young International Airport is approximately 3.6 miles distant. Based on the Noise Contour Map for the airport (Attachment B), the site is not within a distance of concern.

Selfridge Air National Guard Base is approximately 12.3 miles distant. Based on the Noise Contour Map for the airport (Attachment B), the site is not within a distance of concern.

Windsor International Airport is approximately 14 miles distant. Based on the Noise Contour Map for the airport (Attachment B), the site is not within a distance of concern.

Other small airfields were identified within 15 miles, but these airfields have no commercial traffic and are not likely FAA-regulated. They are not considered to represent a noise concern.

2.2 Busy Roadways

The major roadway is:

- 10 Mile Road

10 Mile Road is a 4-lane road with a center turn lane. The roadway is an approximate effective distance of 752 feet from the southwestern corner of the building (NAL #1). Traffic counts for 10 Mile Road were obtained through MDOT. Projections were done through 2030. A growth rate of 1% per year compounded was judged appropriate as traffic levels are expected to remain relatively stable or increase slightly. Traffic projections are included in Attachment C.

2.3 Railroads

Not applicable.

2.4 Non-Transportation Sources

Not applicable.

3.0 CALCULATIONS

A Noise DNL calculator worksheet for the NAL is provided in Attachment D.

Using the HUD DNL calculator, the noise level at NAL #1, as predicted in 2030, is calculated to be 59 dB and within the Acceptable range.

4.0 CONCLUSIONS

The following is a summary of the findings of this assessment.

NAL #	Combined Source DNL (dB)	Category
1	59	Acceptable

5.0 REFERENCES

- 24 CFR Part 51 Subpart B
- The Noise Guidebook, U.S. Department of Housing and Urban Development,
- U.S. DOT
- https://mdot.ms2soft.com/
- https://www.hudexchange.info/programs/environmental-review/dnl-calculator/

HUD ATTENUATION GUIDANCE

https://www.hudexchange.info/programs/environmental-review/noise-abatement-and-control/

All sites whose environmental or community noise exposure exceeds the day night average sound level (DNL) of 65 decibels (dB) are considered noise-impacted areas. For new construction that is proposed in high noise areas, grantees shall incorporate noise attenuation features to the extent required by HUD environmental criteria and standards contained in Subpart B (Noise Abatement and Control) of 24 CFR Part 51. The interior standard is 45 dB.

The "Normally Unacceptable" noise zone includes community noise levels from above 65 dB to 75 dB. Approvals in this noise zone require a minimum of 5 dB additional sound attenuation for buildings having noise-sensitive uses if the day-night average sound level is greater than 65 dB but does not exceed 70 dB, or a minimum of 10 dB of additional sound attenuation if the day-night average sound level is greater than 70 dB but does not exceed 75 dB.

Locations with day-night average noise levels above 75 dB have “Unacceptable” noise exposure. For new construction, noise attenuation measures in these locations require the approval of the Assistant Secretary for Community Planning and Development (for projects reviewed under Part 50) or the Responsible Entity’s Certifying Officer (for projects reviewed under Part 58). The acceptance of such locations normally requires an environmental impact statement.

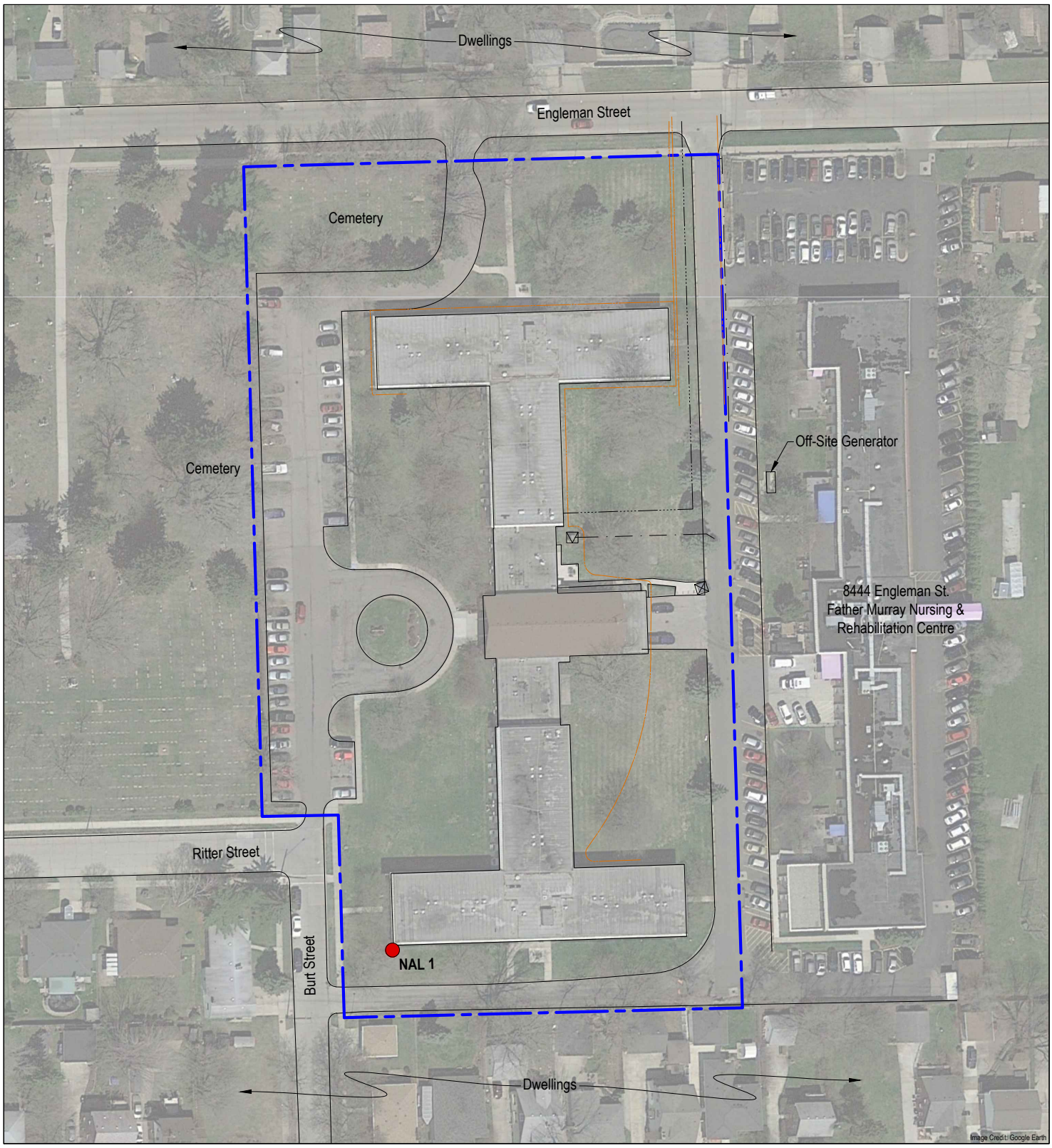
The environmental review record should contain **one** of the following:

- Documentation the proposed action is not within 1000 feet of a major roadway, 3,000 feet of a railroad, or 15 miles of a military or FAA-regulated civil airfield.
- If within those distances, documentation showing the noise level is *Acceptable* (at or below 65 DNL).
- If within those distances, documentation showing that there’s an effective noise barrier (i.e., that provides sufficient protection).

- Documentation showing the noise generated by the noise source(s) is *Normally Unacceptable (66 – 75 DNL)* and identifying noise attenuation requirements that will bring the interior noise level to 45 DNL and/or exterior noise level to 65 DNL.

ATTACHMENT A

NAL Location Map



Y:\Project Files\Current and Closed\10000-10999\10200-10299\10221 8400 Engleman, Center Line\2-10221 2021 Phase I\CAD\2-10221.dwg, 12/18/2020 5:54 PM;

GRAPHIC SCALE

0 50 100 200

1 inch = 100 ft.
Paper Size = (8.5x11)

LEGEND

- Property Line
- Gas
- Cable
- Electric
- Pad-Mounted Transformer
- Dumpster
- Noise Assessment Location

N

8400 Engleman St.

Center Line, MI

ASTI Environmental

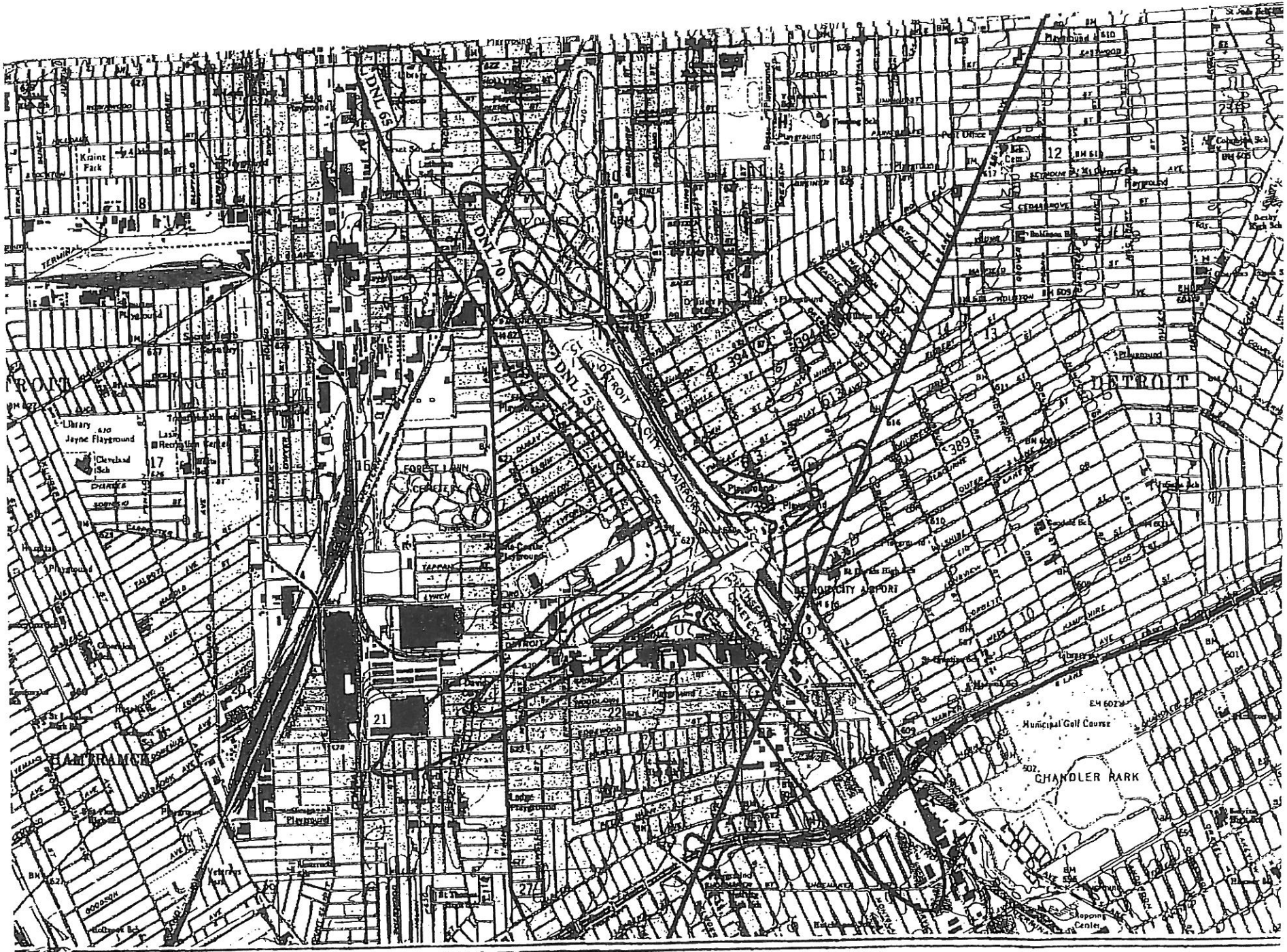
Client: CSI Support & Development Services

Noise Assessment Location Map

ASTI Project 2-10221, JRN, December 18, 2020

ATTACHMENT B

Airport Noise Contour Maps



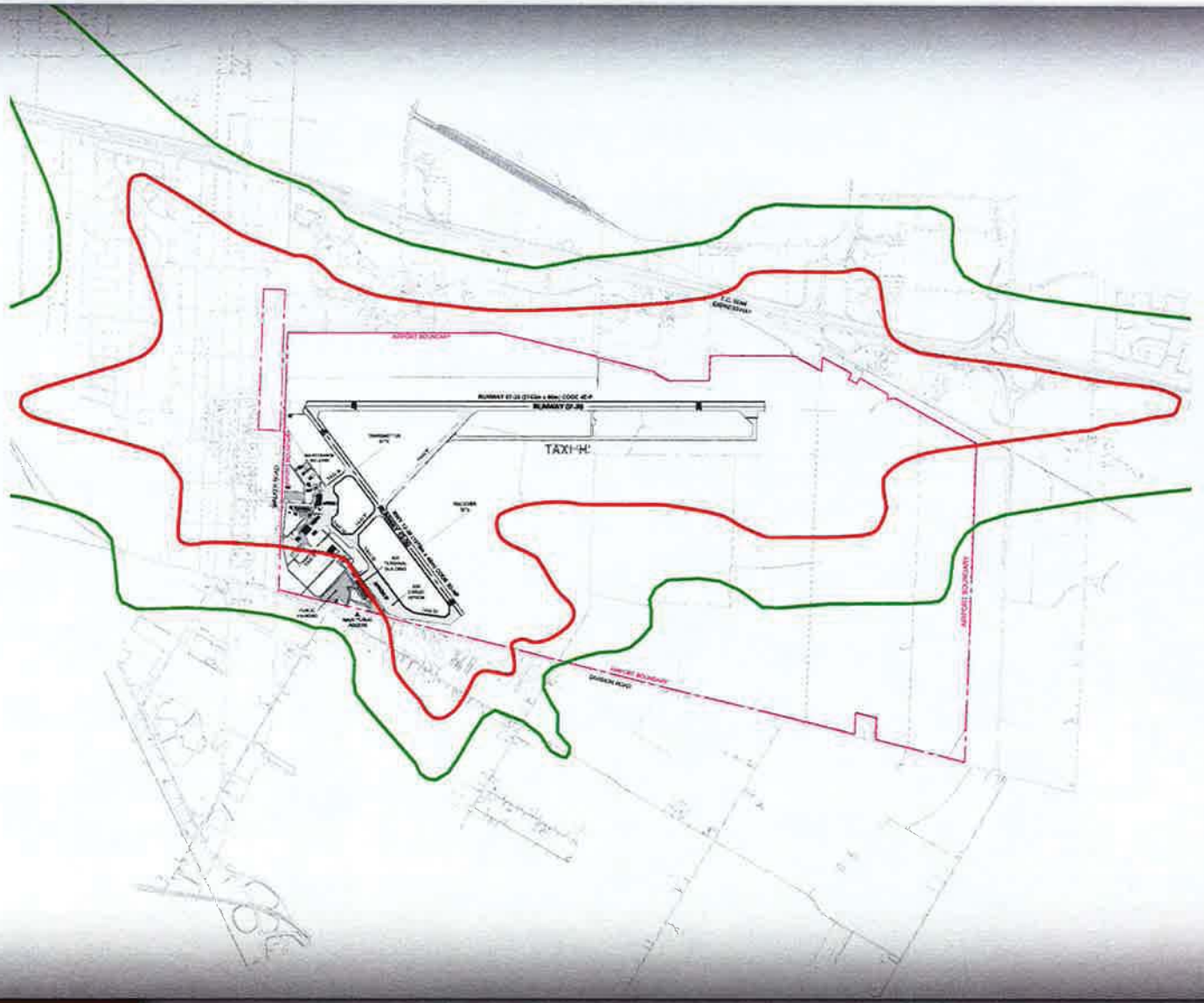
CITY OF DETROIT
AIRPORT DEPARTMENT

1996 BASE
NOISE EXPOSURE CONTOURS

ENHANCED USE LEASE ZONE LEGEND

— 65 — AICUZ – NOISE CONTOURS

SELFRIDGE ANGB
ENHANCED USE LEASING (EUL)
AICUZ - NOISE CONTOURS



WINDSOR AIRPORT
MASTER PLAN

FIGURE 3-4 - AIRPORT NOISE EXPOSURE FORECAST CONTOURS

30 NEF (NOISE EXPOSURE FORECAST)

25 NEF

Notes

1. Conceptual Layout
2. All dimensions approximate
3. Noise Exposure Forecast provided by Windsor Airport Management

YQG YOUR QUICK GATEWAY
WINDSOR INTERNATIONAL AIRPORT

DILLON CONSULTING

Base data provided by City of Windsor Official Plan
Map created by EDH
Map checked by EGL

File Location: \\20dillon.dillon.ca\toronto data\PROJECTS\DRAFT\09\092665 Windsor Airport Master Plan

Map Projection: n/aTAXI 'H'

Project #: 09-2665
Status: n/a
Date: December 2010

N E W S

ATTACHMENT C

AADT Information

Auto and Heavy Truck 10-year ADT Projections

10 Mile Rd

	Cars	% Change	Trucks	% Change
2016	17923		1558.56	
2017	18659	4.1	1622.48	4.1
2018	18659	0.0	1622.48	0.0
2019	23038	23.5	2003.28	23.5
	Avg % change:	9.2	Avg % change:	9.19
	% Change/Year Assumption	1	**%/Year Change Assumption**	1

2030 Projections

	Cars	Trucks
2019	23038	2003
2020	23268	2023
2021	23501	2044
2022	23736	2064
2023	23973	2085
2024	24213	2105
2025	24455	2127
2026	24700	2148
2027	24947	2169
2028	25196	2191
2029	25448	2213
2030	25702	2235

Predicted 2030 Auto ADT	Predicted 2030 Truck ADT
25702	2235

ATTACHMENT D

Day-Night Level Electronic Assessments

DNL Calculator

The Day/Night Noise Level Calculator is an electronic assessment tool that calculates the Day/Night Noise Level (DNL) from roadway and railway traffic. For more information on using the DNL calculator, view the **Day/Night Noise Level Calculator Electronic Assessment Tool Overview (/programs/environmental-review/daynight-noise-level-electronic-assessment-tool/)**.

Guidelines

- To display the Road and/or Rail DNL calculator(s), click on the "Add Road Source" and/or "Add Rail Source" button(s) below.
- All Road and Rail input values must be positive non-decimal numbers.
- All Road and/or Rail DNL value(s) must be calculated separately before calculating the Site DNL.
- All checkboxes that apply must be checked for vehicles and trains in the tables' headers.
- **Note #1:** Tooltips, containing field specific information, have been added in this tool and may be accessed by hovering over all the respective data fields (site identification, roadway and railway assessment, DNL calculation results, roadway and railway input variables) with the mouse.
- **Note #2:** DNL Calculator assumes roadway data is always entered.

DNL Calculator

Site ID	2-10221
Record Date	12/21/2020
User's Name	ASTI Environmental NAL1

Road # 1 Name:	**10 Mile Rd.**

Road #1

Vehicle Type	Cars ☑	Medium Trucks ☑	Heavy Trucks ☑
Effective Distance	752	752	752
Distance to Stop Sign			
Average Speed	45	45	45
Average Daily Trips (ADT)	25702	1118	1117
Night Fraction of ADT	15	15	15
Road Gradient (%)			2
Vehicle DNL	52	49	57
Calculate Road #1 DNL	59	Reset	

Add Road Source | Add Rail Source

Airport Noise Level	
Loud Impulse Sounds?	○Yes ◉No
Combined DNL for all Road and Rail sources	**59**
Combined DNL including Airport	**N/A**
Site DNL with Loud Impulse Sound	

Calculate | Reset

Mitigation Options

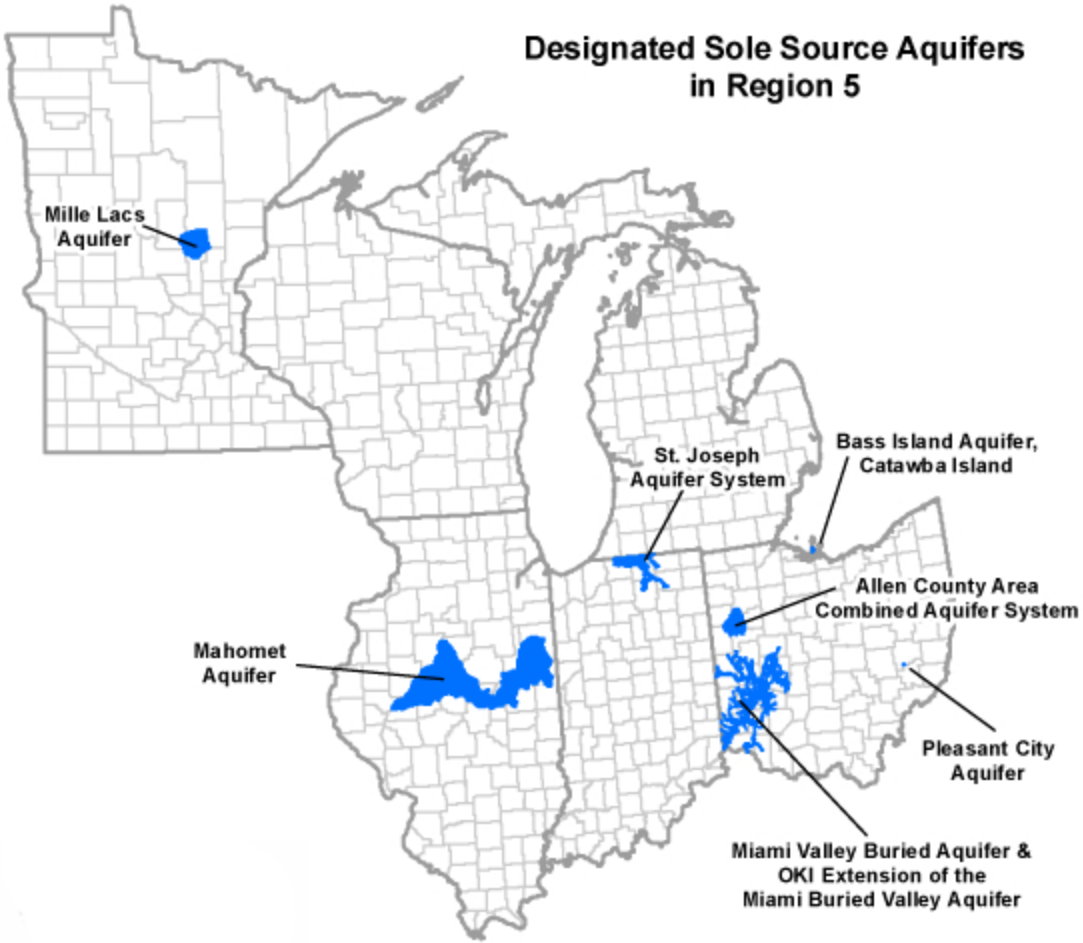
If your site DNL is in Excess of 65 decibels, your options are:

- **No Action Alternative**: Cancel the project at this location
- **Other Reasonable Alternatives**: Choose an alternate site
- **Mitigation**
    - **Contact your Field or Regional Environmental Officer (/programs/environmental-review/hud-environmental-staff-contacts/)**
    - Increase mitigation in the building walls (only effective if no outdoor, noise sensitive areas)
    - Reconfigure the site plan to increase the distance between the noise source and noise-sensitive uses
    - Incorporate natural or man-made barriers. See ***The Noise Guidebook (/resource/313/hud-noise-guidebook/)***
    - Construct noise barrier. See the **Barrier Performance Module (/programs/environmental-review/bpm-calculator/)**

Tools and Guidance

Day/Night Noise Level Assessment Tool User Guide (/resource/3822/day-night-noise-level-assessment-tool-user-guide/)

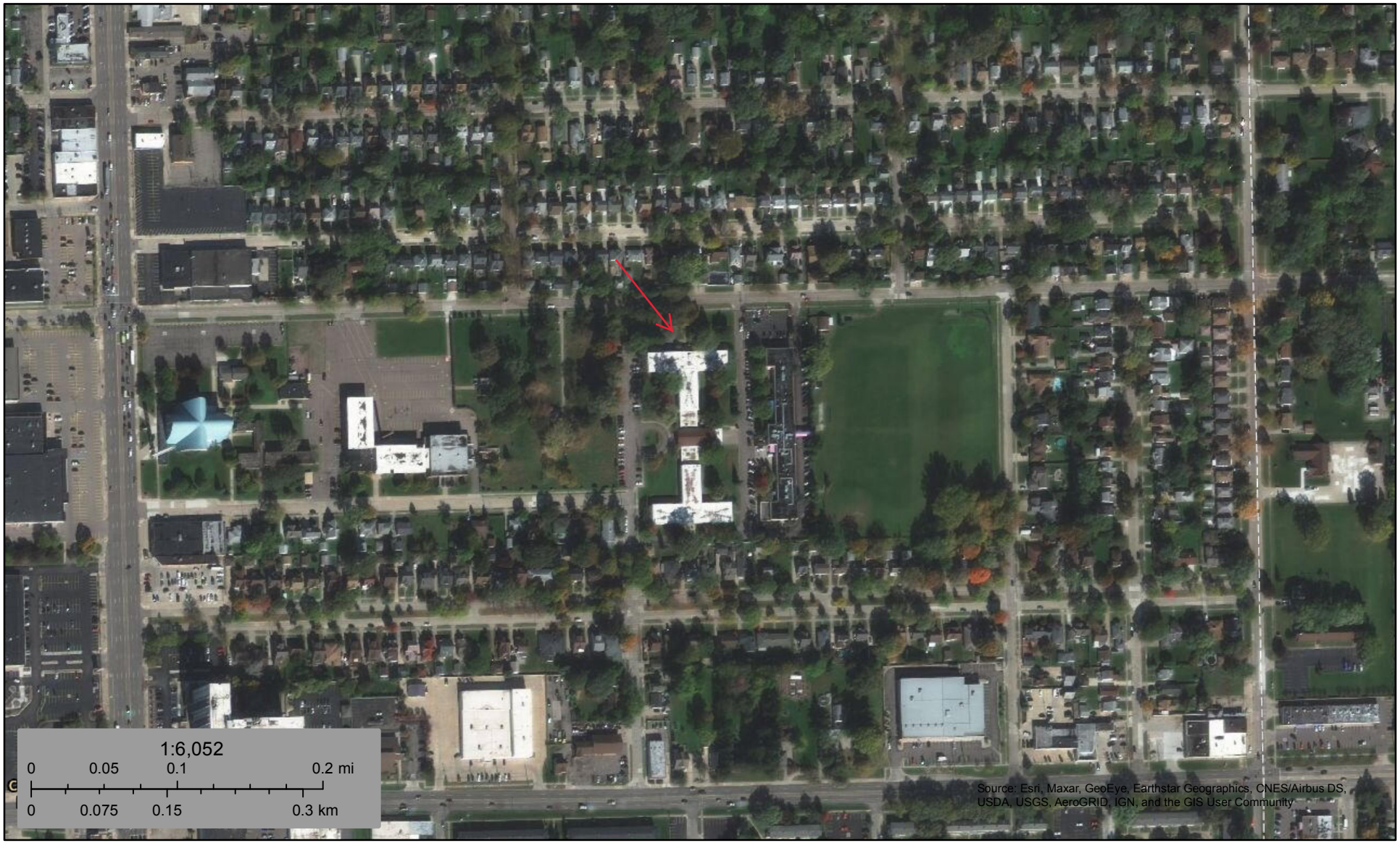
Day/Night Noise Level Assessment Tool Flowcharts (/resource/3823/day-night-noise-level-assessment-tool-flowcharts/)


Designated Sole Source Aquifers
in Region 5
Mille Lacs
Aquifer
St. Joseph
Aquifer System
Bass Island Aquifer,
Catawba Island
Allen County Area
Combined Aquifer System
Mahomet
Aquifer
Pleasant City
Aquifer
Miami Valley Buried Aquifer &
OKI Extension of the
Miami Buried Valley Aquifer

U.S. Fish and Wildlife Service

National Wetlands Inventory

8400 Engleman, Center Line



January 27, 2021

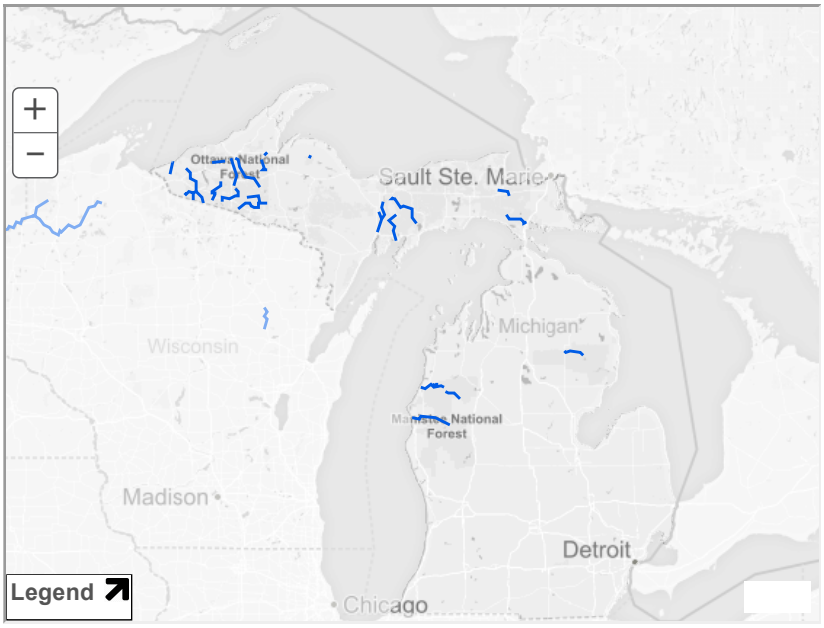
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

MICHIGAN

Michigan has approximately 51,438 miles of river, of which 656.4 miles are designated as wild & scenic—just a bit more than 1% of the state's river miles.



+ View larger map

Choose A State Go

Choose A River Go

Nourished by the fertile soils of the region, rivers of the Midwest explode with life, from great avian migrations to ancient fishes.

- AuSable River
- Bear Creek
- Black River
- Carp River
- Indian River
- Manistee River
- Ontonagon River
- Paint River
- Pere Marquette River
- Pine River
- Presque Isle River
- Sturgeon River (Hiawatha National Forest)
- Sturgeon River (Ottawa National Forest)
- Tahquamenon River (East Branch)
- Whitefish River
- Yellow Dog River

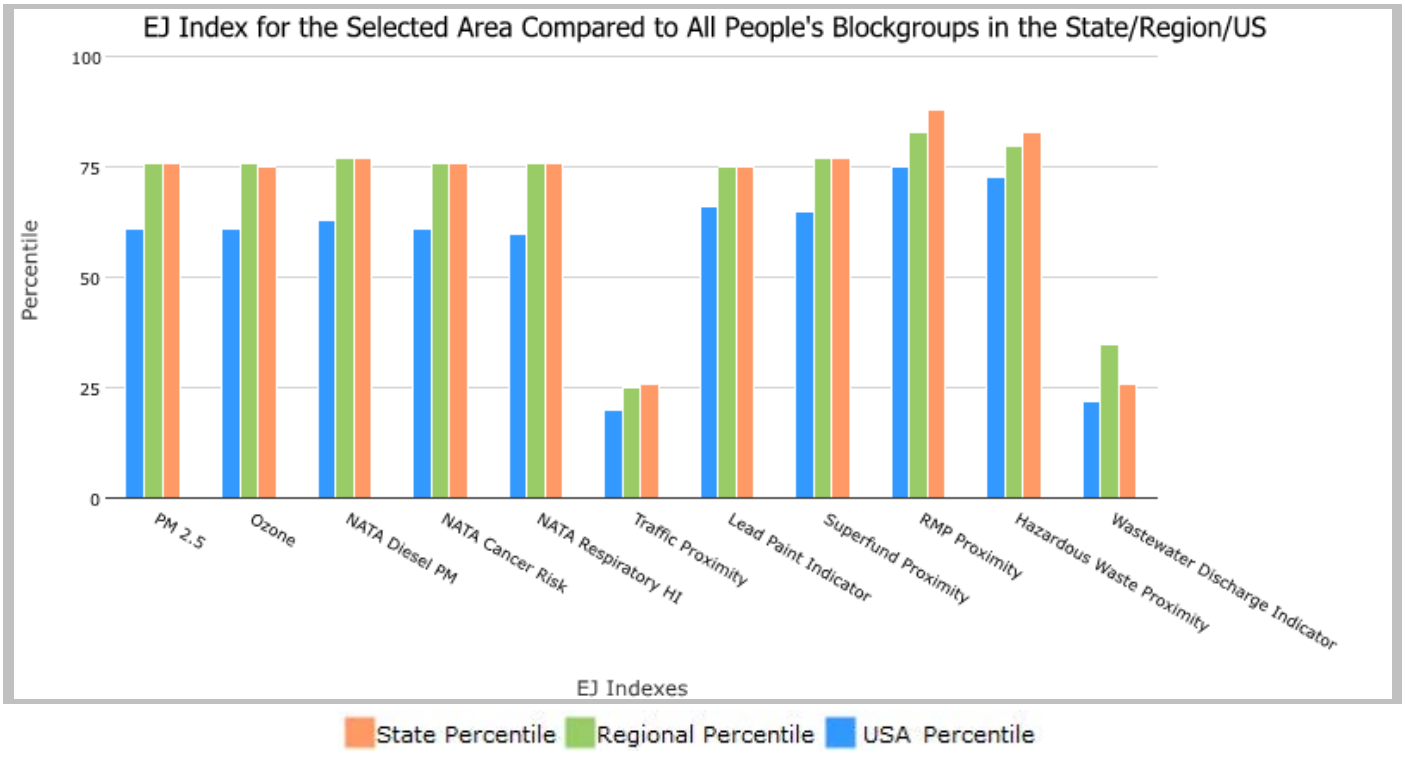
EJSCREEN Report (Version 2020)

1 mile Ring around the Corridor, MICHIGAN, EPA Region 5

Approximate Population: 16,469

Input Area (sq. miles): 3.49

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	76	76	61
EJ Index for Ozone	75	76	61
EJ Index for NATA* Diesel PM	77	77	63
EJ Index for NATA* Air Toxics Cancer Risk	76	76	61
EJ Index for NATA* Respiratory Hazard Index	76	76	60
EJ Index for Traffic Proximity and Volume	26	25	20
EJ Index for Lead Paint Indicator	75	75	66
EJ Index for Superfund Proximity	77	77	65
EJ Index for RMP Proximity	88	83	75
EJ Index for Hazardous Waste Proximity	83	80	73
EJ Index for Wastewater Discharge Indicator	26	35	22



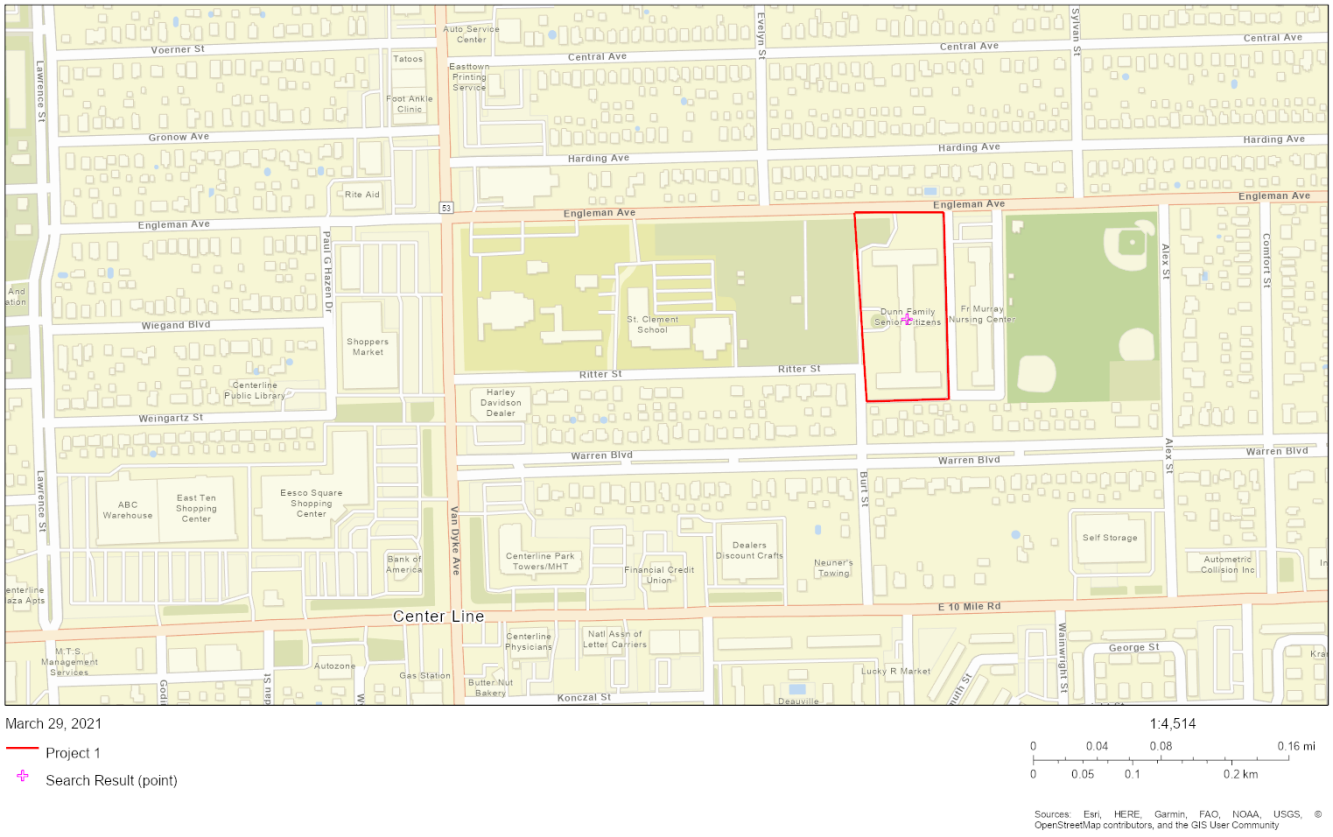
This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

EJSCREEN Report (Version 2020)

1 mile Ring around the Corridor, MICHIGAN, EPA Region 5

Approximate Population: 16,469

Input Area (sq. miles): 3.49



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

EJSCREEN Report (Version 2020)

1 mile Ring around the Corridor, MICHIGAN, EPA Region 5

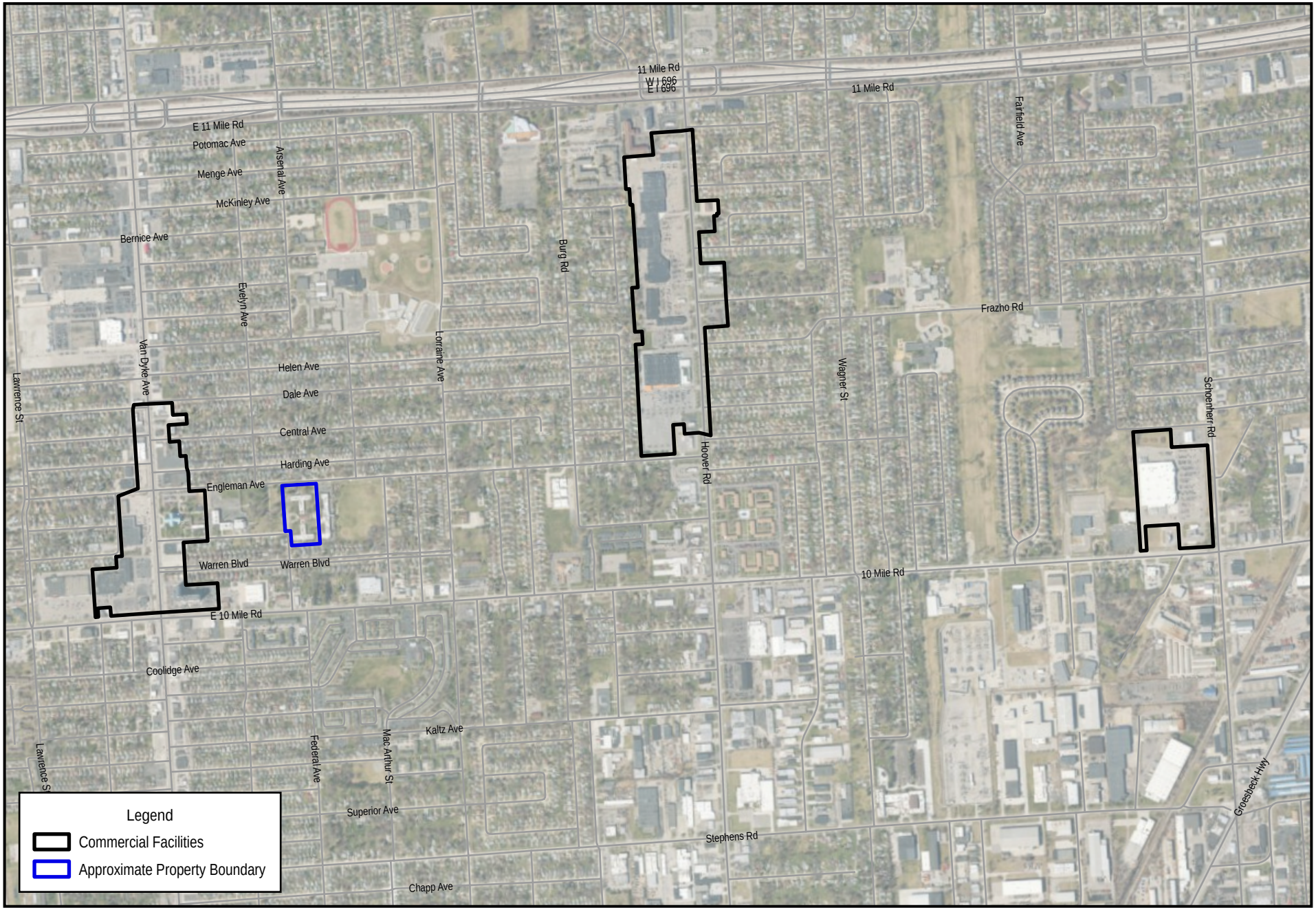
Approximate Population: 16,469

Input Area (sq. miles): 3.49

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	9.42	8.11	91	8.4	87	8.55	78
Ozone (ppb)	44.4	43.1	75	43.8	53	42.9	66
NATA* Diesel PM (µg/m^3)	0.623	0.338	90	0.446	70-80th	0.478	70-80th
NATA* Cancer Risk (lifetime risk per million)	32	24	97	26	80-90th	32	50-60th
NATA* Respiratory Hazard Index	0.37	0.29	95	0.34	70-80th	0.44	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	1800	650	90	530	93	750	89
Lead Paint Indicator (% Pre-1960 Housing)	0.6	0.38	75	0.38	75	0.28	82
Superfund Proximity (site count/km distance)	0.1	0.15	67	0.13	70	0.13	66
RMP Proximity (facility count/km distance)	1.9	0.53	93	0.83	87	0.74	89
Hazardous Waste Proximity (facility count/km distance)	3.7	1.2	93	2.4	80	5	79
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.0018	1.7	71	2.4	59	9.4	69
Demographic Indicators							
Demographic Index	39%	29%	76	28%	77	36%	62
People of Color Population	34%	25%	75	25%	73	39%	53
Low Income Population	44%	33%	73	30%	76	33%	73
Linguistically Isolated Population	3%	2%	80	2%	76	4%	61
Population With Less Than High School Education	16%	9%	82	10%	80	13%	70
Population Under 5 years of age	6%	6%	55	6%	51	6%	50
Population over 64 years of age	16%	16%	51	16%	55	15%	58

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice



Dunn Family Senior Apartments

8400 Englemann St.,
Center Line, MI

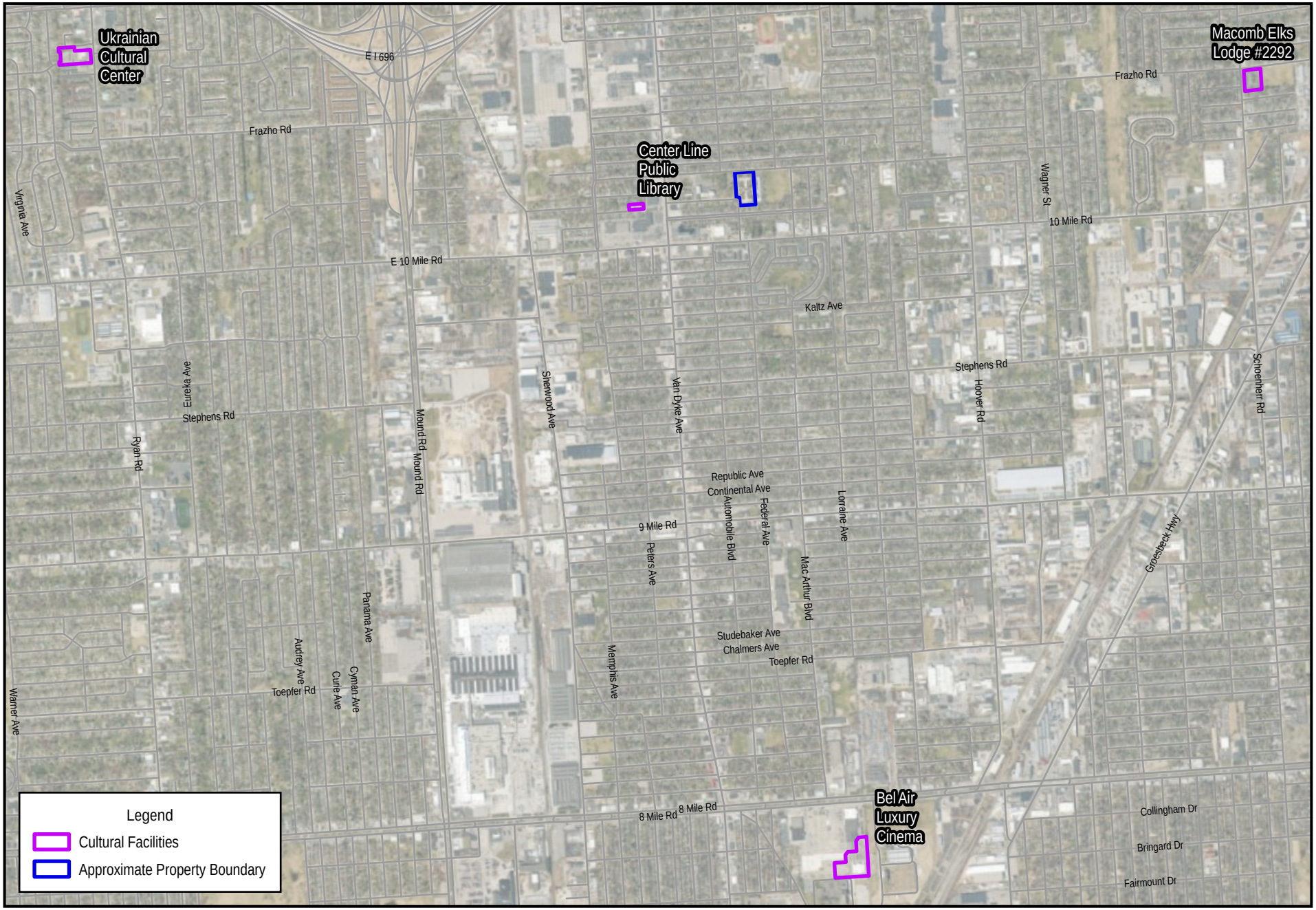
0.3 0.15 0 0.3 Miles

N W E S

ASTI Environmental

Created for: CSI Support & Development Services
Created by: RMH, October 25, 2023, ASTI Project 3-10221

EA Factors - Commercial Facilities



Dunn Family Senior Apartments

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Center Line, MI

ASTI Environmental

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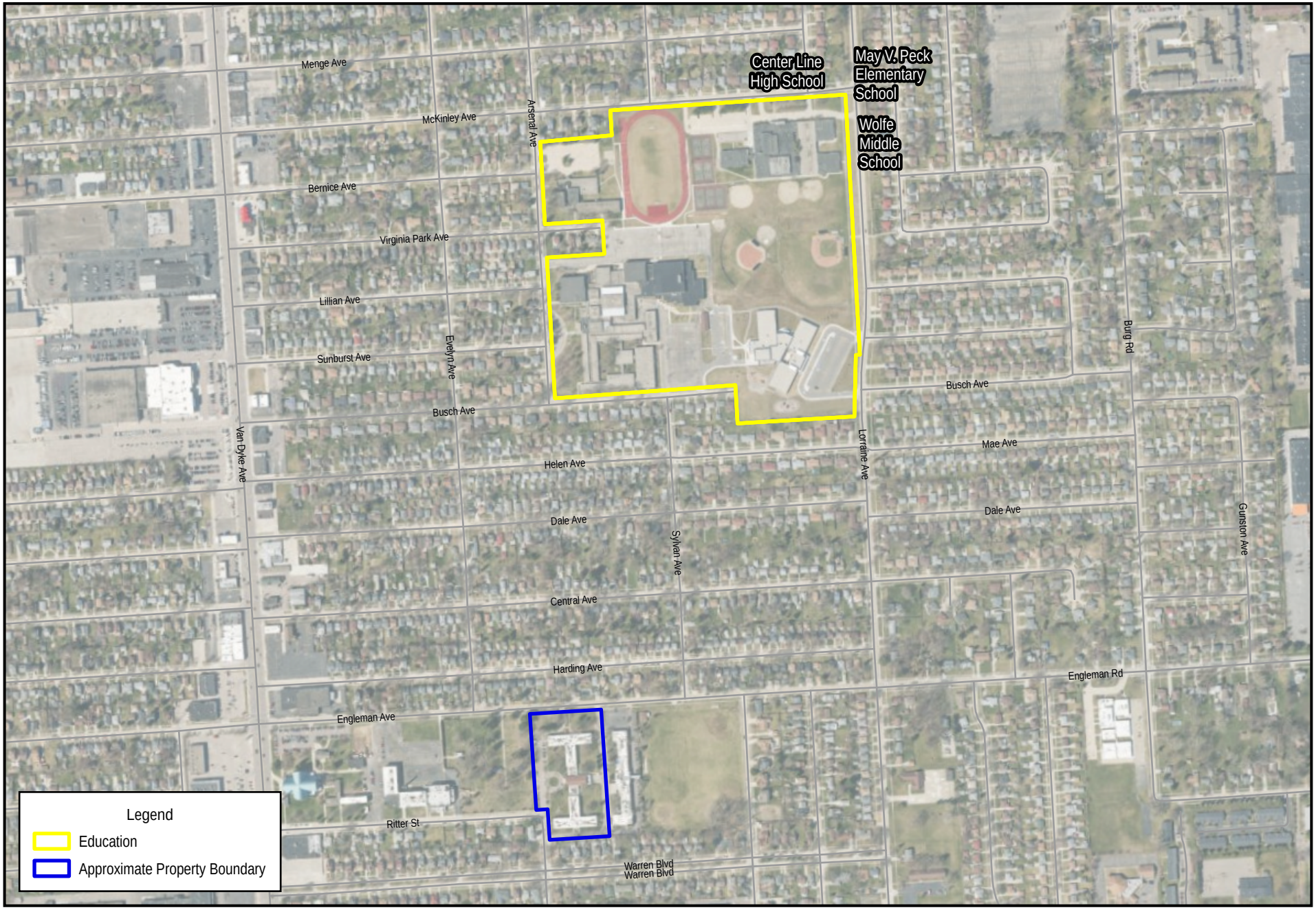
Created by: RMH, October 25, 2023, ASTI Project 3-10221

EA Factors - Cultural Facilities



Dunn Family Senior Apartments

8400 Englemann St.,
Center Line, MI

0.15 0.075 0 0.15 Miles

N W E S

ASTI Environmental

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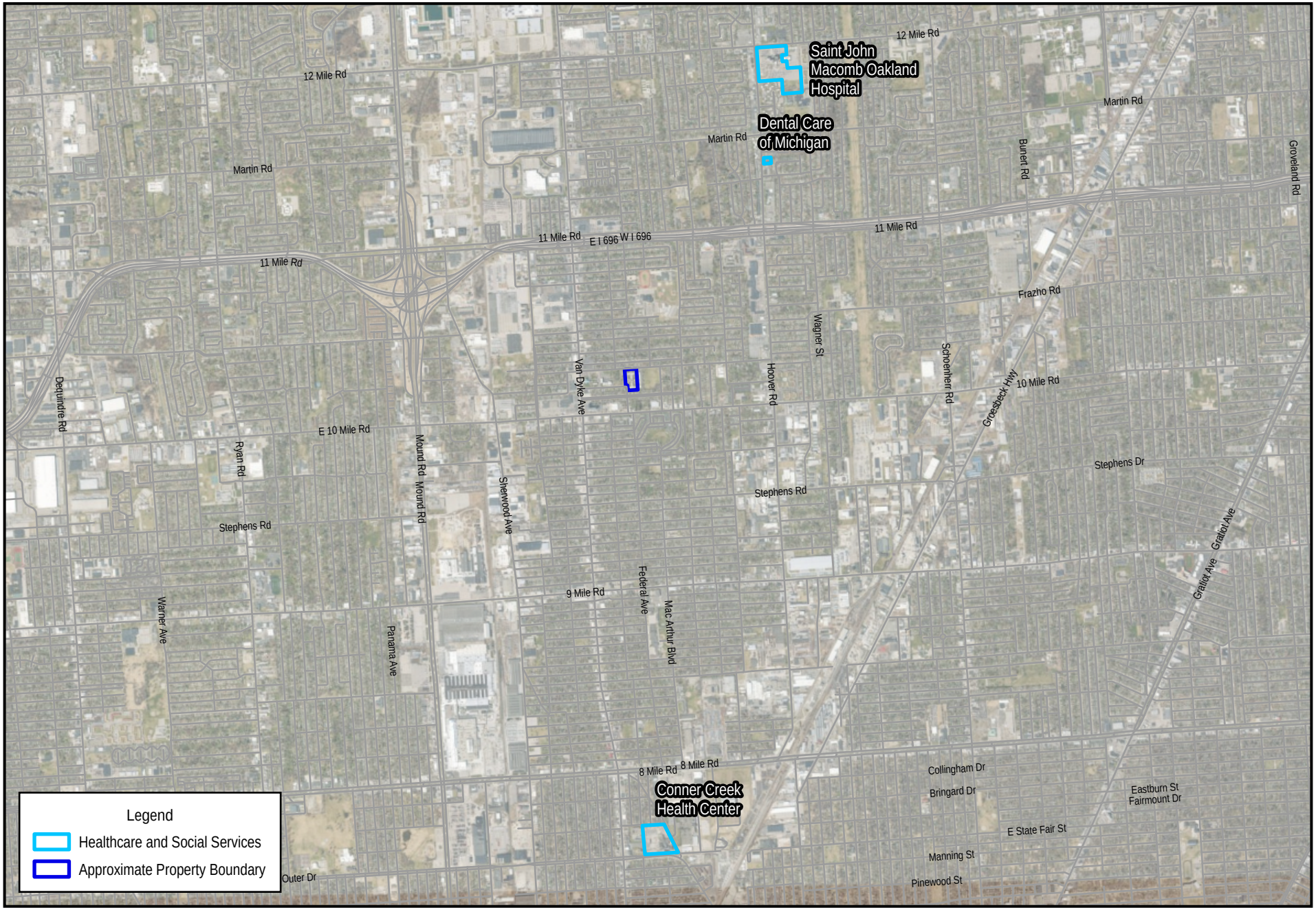
Created by: RMH, October 25, 2023, ASTI Project 3-10221

EA Factors - Education



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Center Line, MI

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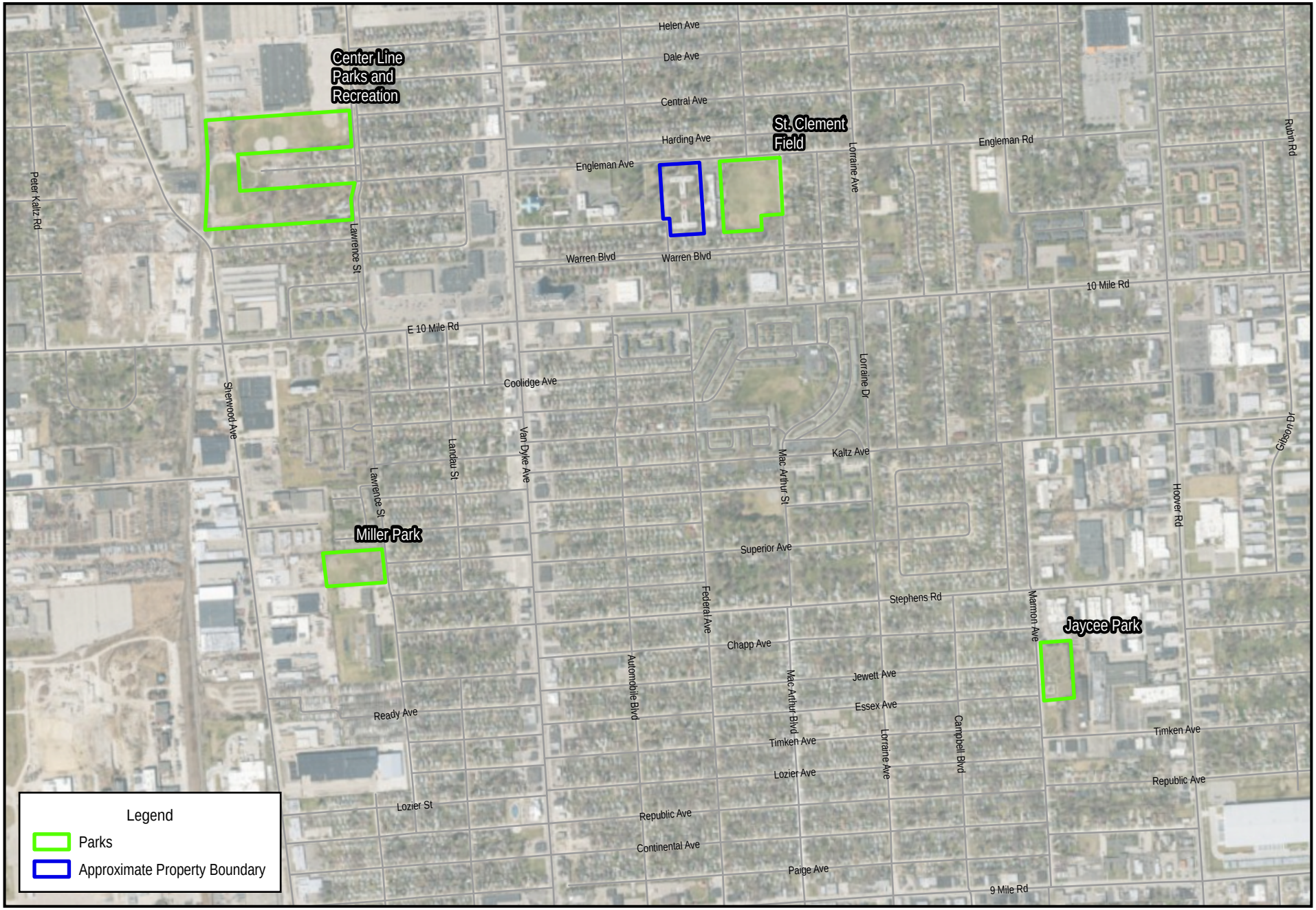
EA Factors - Healthcare and Social Services



Dunn Family Senior Apartments

8400 Englemann St.,
Center Line, MI

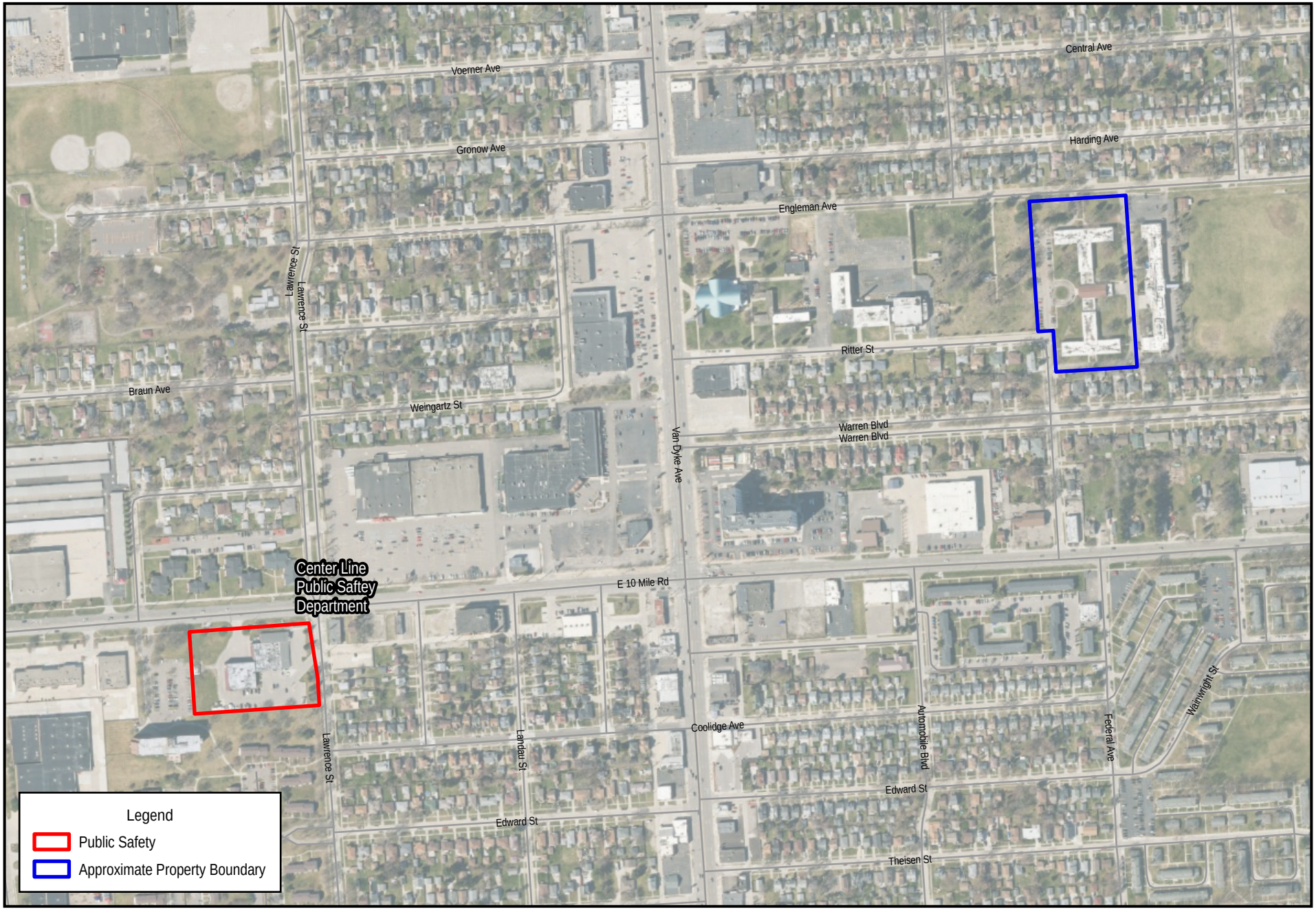
0.3 0.15 0 0.3 Miles

N W E S

ASTI Environmental

Created for: CSI Support & Development Services
Created by: RMH, October 25, 2023, ASTI Project 3-10221

EA Factors - Parks



Dunn Family Senior Apartments

8400 Englemann St.,
Center Line, MI

0.1 0.05 0 0.1 Miles

N W E S

ASTI Environmental

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Created by: RMH, October 25, 2023, ASTI Project 3-10221

EA Factors - Public Safety