Bay Arenac ISD Dining Room Addition
and Interior Renovations
Bay City, Michigan

TSSF Architects, Inc.
122 N. Washington Ave.
Saginaw, MI 48607

ADDENDUM NO. 3
Date: June 3, 2026
TSSF Project # 2538

This addendum authorizes the following revisions to the plans and specifications for the above-named project and will be considered fully a part of said documents.

ARCHITECTURAL:

Item A1: **See revised sheet A0.1 (re-issued):** See revisions shown clouded.
A. Added additional codes to the list of applicable codes.
B. Added an Areas of Work Legend to define the different levels of renovation and addition
C. Added exiting capacity of existing and new exits.
D. Added Life Safety Area Legend, Occupant Load Calculations Table with Egress Widths, and Energy Code Table
E. Adjusted code sections as required.

Item A2: **See revised sheet A1.0 (re-issued):** Added Landscaping and Fence Details and noted relocation of existing gate.

Item A3: **See new sheet A1.1:** This sheet includes parking calculations and table for the entire site.

Item A4: **See revised sheet A2.0 (re-issued):** See revisions to the wall types and callouts.

CIVIL:

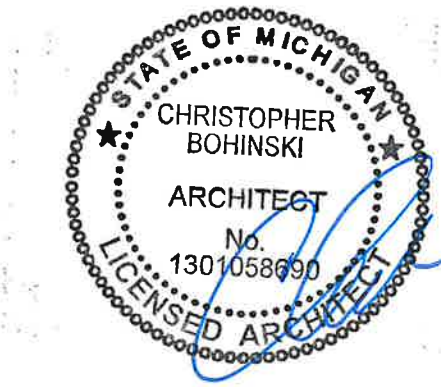
Item C1: **See revised sheet C2.0 (re-issued):** Added note for the addition's proximity to the parcel lines.

STRUCTURAL:

Item S1: **See revised sheet S0.1 (re-issued):** Added statement of special inspections to sheet. Load and Risk Category information has been updated per review.

Item S2: **See attached Soils Report.**

Item S3: **See revised sheet S2.0: (re-issued):** Added note to require metal stud walls to be designed by manufacturer and shop drawings to be provided and reviewed prior to erection.



6/30/26

MECHANICAL:

Item M1: **See revised sheet M1.0 (re-issued):** New equipment shown.

Item M2: **See revised sheet M2.0 (re-issued):**

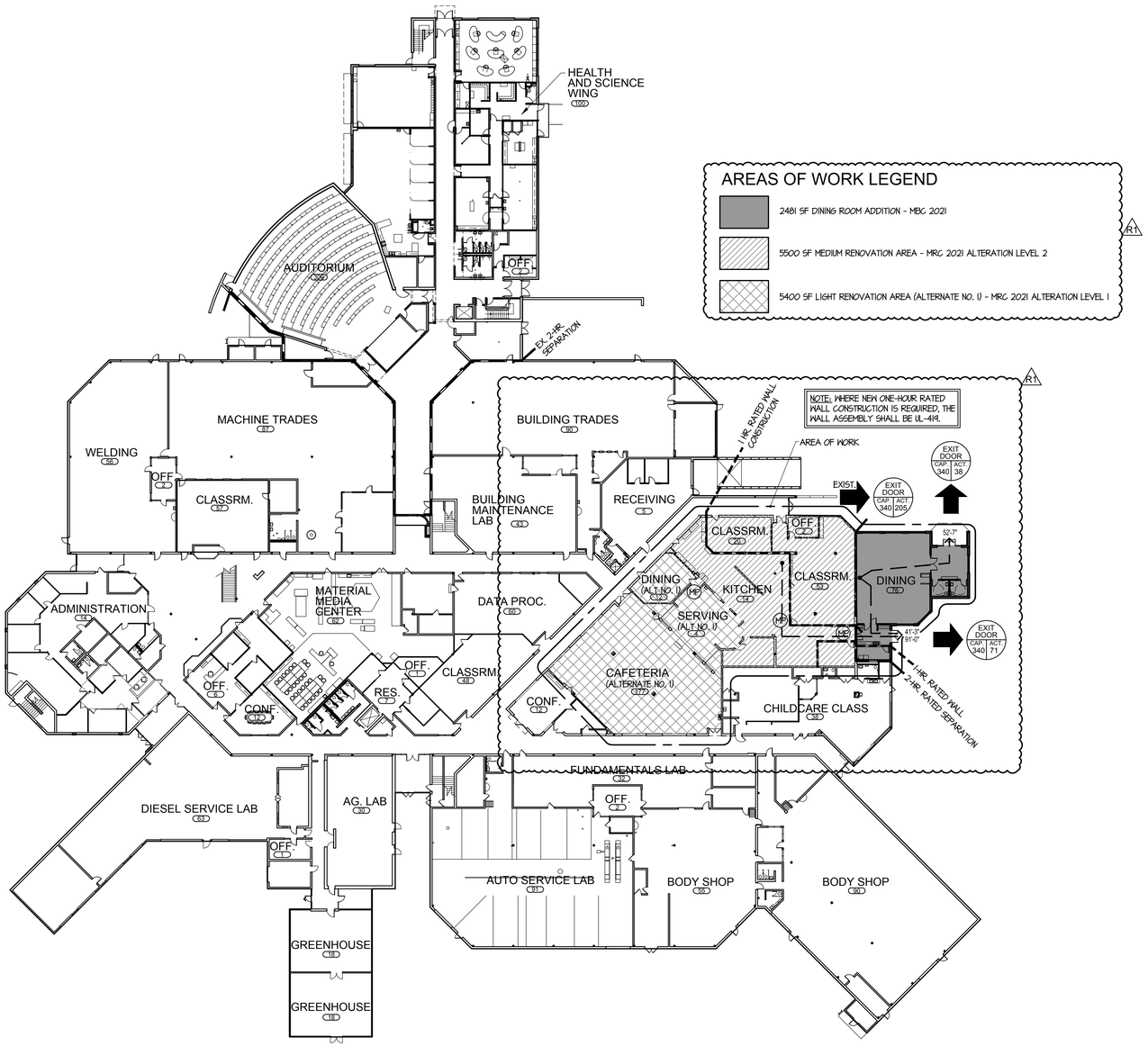
A. Updated numbers in ventilation table to reflect Table 403.3.1.1. – Sheet M2.0
B. Added GPS Air SmartIAQ air cleaning unit to Dining Room (103) and ASHRAE calculations – Sheet M1.0 & M2.0

ELECTRICAL:

Item E1: **See revised sheet E1.0 (re-issued):** Added equipment power for new mechanical equipment.

Item E2: **See revised sheet E4.0 (re-issued):** Revised panel schedule for new equipment.

ATTACHMENTS: Sheets A0.1, A1.0, A1.1, A2.0, C2.0, S0.1, S2.0, M2.0, E1.0, E4.0, Soils Report



AREAS OF WORK LEGEND

- 2481 SF DINING ROOM ADDITION - MBC 2021
- 5500 SF MEDIUM RENOVATION AREA - MRC 2021 ALTERATION LEVEL 2
- 5400 SF LIGHT RENOVATION AREA (ALTERNATE NO. 1) - MRC 2021 ALTERATION LEVEL 1

R1

MASTER FIRST FLOOR PLAN

SCALE: 1/32" = 1'-0"

R1

APPLICABLE CODES	2021 MICHIGAN BUILDING CODE
2021 MICHIGAN BUILDING CODE 2021 MICHIGAN REHABILITATION CODE 2021 MICHIGAN ENERGY CODE 2023 MICHIGAN ELECTRICAL CODE 2021 MICHIGAN MECHANICAL CODE 2021 MICHIGAN PLUMBING CODE 2012 LIFE SAFETY CODE 2016 SCHOOL FIRE SAFETY RULES FIRE ALARM NFPA 72 2022 ASHRAE STANDARD 90.1–2019 ZONE 5 ICC A117.1 – 2017 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES	
BUILDING USE GROUP	E (Educational)
TYPE OF CONSTRUCTION	2B
FIRE SUPPRESSION PROVIDED	FULLY SPRINKLERED
ACTUAL BUILDING HEIGHT	2 Story, 28'–0"
Existing First Floor	128,550 Sq. Ft.
Addition	2,481 Sq. Ft.
Area of Renovations	8,227 Sq. Ft.
Existing Second Floor	47,518 Sq. Ft.
Total Area	178,549 Sq. Ft.
OCCUPANT LOAD (PER TABLE 1004.5)(ADDITION ONLY) R1	76 R1
MAXIMUM LENGTH OF EXIT TRAVEL (PER TABLE 1017.2)	250'–0" MAX.
MAXIMUM LENGTH OF DEAD END CORRIDOR (PER SECT. 1020.5) R1	50'–0"
MINIMUM WIDTH OF EGRESS COMPONENTS:	
EXIT ACCESS CORRIDORS (PER SECT. 1020.3) R1	MIN 44"
COMMON PATH OF TRAVEL WITH ONE EXIT ACCESS	.0L > 30 = 75
DOORS (PER SECT. 1010.1.1)	32" MIN. CLR.
FIRE RESISTANCE RATINGS OF EGRESS COMPONENTS:	
EXIT ACCESS CORRIDORS (PER TABLE 1020.1)	1 HR
STAIR SHAFTS	NOT APPLICABLE
HORIZONTAL EXITS (PER 1024.3)	1 HR
AREAS OF REFUGE	NOT APPLICABLE
FIRE RESISTANCE RATINGS OF FIRE SEPARATIONS:	
SHAFTS –OTHER THAN STAIRS	NOT APPLICABLE
STORAGE ROOMS GREATER THAN 100 SQ. FT. (PER TABLE 509)	1 HR.
FIRE RESISTANCE RATINGS OF FIRE SEPARATIONS:	
STRUCTURAL ELEMENT (PER TABLE 601)	
PRIMARY STRUCTURAL FRAME	0 HR.
NON–BEARING WALLS – EXTERIOR	0 HR.
NON–BEARING WALLS – INTERIOR	0 HR.
ROOF CONSTRUCTION	0 HR.
BEARING WALLS – EXTERIOR	0 HR.
BEARING WALLS – INTERIOR	0 HR.

LIFE SAFETY AREA LEGEND

- EXIT 34" EGRESS MINUMUM CLEARANCE
- TRAVEL DISTANCE
- EXIT (w/ NUMBER OF OCCUPANTS) — EXIT DOOR CAP 0 ACT 0
- 78 — ACTUAL OCCUPANT EGRESS COUNT
- 1-HOUR RATED FIRE BARRIER
- 2-HOUR RATED FIRE BARRIER
- MP — FIRE EXTINGUISHER - MULTI-PURPOSE DRY CHEMICAL

OCCUPANT CALCULATIONS

MICHIGAN BUILDING CODE

FUNCTION OF SPACE	FACTOR	OCCUPANTS
EDUCATION	1:20 NET	73
ASSEMBLY A-2	1:15 NET	91
KITCHEN	1:200 GROSS	14
OFFICE	1:150 GROSS	2
TOTAL PROJECT OCCUPANT LOAD		180

REQUIRED EGRESS WIDTH

TOTAL EGRESS WIDTH REQUIRED:
·180 MAX INTERIOR OCCUPANT x .2" = 36"

TOTAL EGRESS WIDTH PROVIDED:
·THREE 68" CLEAR DOOR EXIT LEAFS = 204"

NUMBER OF EXITS REQUIRED : 2

R1

OPAQUE SURFACES

DESCRIPTION/ NAME	ROOF: INSULATION ABOVE DECK	ROOF: METAL BUILDING	ROOF: ATTIC AND OTHER	WALL: MASS	WALL: METAL BUILDING	WALL: STEEL–FRAMED	WALL: WOOD FRAMED/ OTHER	WALL: BELOW GRADE WALL	FLOOR: MASS	FLOOR: STEEL JOIST	FLOOR: WOOD FRAMED/ OTHER	SLAB: UNHEATED	SLAB: HEATED	DOOR: SWINGING	DOOR: NON–SWINGING	ONE: R–VALUE OPTION	ONE: U–VALUE OPTION	HIGH–REFLECTANCE/ EMMITANCE ROOF	PROPOSED INSULATION	CRITERIA INFORMATION
MEMBRANE ROOF	X																		R–32ci	R–30ci
MASONRY WALL w/ MTL. STUD BACKUP						X													R–15 + R–10ci	R–13 + R–10ci
METAL PANELS w/ MTL. STUD BACKUP						X													R–15 + R–10ci	R–13 + R–10ci
SLAB ON GRADE													X						R–15 (24" BELOW)	R–15 (24" BELOW)
INSULATED H.M. DOOR														X					U–0.37	U–0.37

R1

TSSF ARCHITECTS, INC.
ARCHITECTS INTERIORS PLANNERS
122 N. WASHINGTON AVENUE SAGINAW, MICHIGAN

DINING ROOM ADDITION AND RENOVATIONS FOR:

BAY ARENAC ISD

BAY CITY, MICHIGAN

NO.	DATE	REMARKS
1	05/08/26	CODE REVIEW RESPONSE

DRAWN BY C.M.B.

DATE 03/18/26

APPROVED

SHEET NO. A0.1

PROJECT NO. 2538

NOTE
TREE SHALL BE IN SAME RELATION TO FINISH GRADE AS IT BORE TO PREVIOUSLY EXIST. GRADE.

STAKE TREES UNDER 3" CAL., GUY TREES 3" CAL. & OVER.

RUBBER HOSE CONNECTOR- 2/3 UP TREE

SUPPORT WIRE

STAKE 10' L., 7' EXPOSED, 2 PER TREE.

GUY WIRE W/ TURNBUCKLE, 3 PER TREE.

REMOVE BURLAP FROM TOP OF BALL

SAUCER AROUND TREE

PLANTING MIXTURE

TREE ANCHOR

SCARIFY TO 4" DEPTH.

2" BARK MULCH

EXISTING GRADE

12" MIN.

2" x 4" x 30" STAKE DRIVEN BELOW FIN. GRADE.

1 / A1.0 TYP. PLANTING DETAIL
NOT TO SCALE

NOTE
TREE SHALL BE IN SAME RELATION TO FINISH GRADE AS IT BORE TO PREVIOUSLY EXIST. GRADE.

STAKE TREES UNDER 3" CAL., GUY TREES 3" CAL. & OVER.

RUBBER HOSE CONNECTOR- 2/3 UP TREE OR TO 1ST. BRANCH TYP.

SUPPORT WIRE

STAKE 10' L., 7' EXPOSED, 2 PER TREE.

GUY WIRE W/ TURNBUCKLE, 3 PER TREE.

REMOVE BURLAP FROM TOP OF BALL

SAUCER AROUND TREE

PLANTING MIXTURE

TREE ANCHOR

SCARIFY TO 4" DEPTH.

TREE WRAP

2" BARK MULCH

EXISTING GRADE

12" MIN.

2" x 4" x 30" STAKE DRIVEN BELOW FIN. GRADE.

2 / A1.0 TYP. PLANTING DETAIL
NOT TO SCALE

NOTE:
SHRUBS SHALL BEAR SAME RELATION TO FINISH GRADE AS IT DID TO PREVIOUS EXISTING GRADE.

REMOVE COLLAR FROM FIBER CONTAINER AND PUNCTURE TO ALLOW GROWTH - ALL METAL CONTAINERS REMOVED.

REMOVE BURLAP FROM TOP 1/3 FO BURLAP BALL PRIOR TO PLANTING.

4" SPECIFIED MULCH

SHRUBS, SEE PLAN FOR SPACING

3 / A1.0 TYP. PLANTING DETAIL
NOT TO SCALE

10'-0" MAX. 10'-0" MAX.

CORNER POST CAP (TYP.)

RAIL END ASSEMBLY

LINE POST CAP (TYP.)

1-3/4" DIA. TOP RAIL (GALVANIZED STEEL PIPE)

2-1/2" DIA. INTERMEDIATE POST (GALVANIZED STEEL PIPE)

TENSION BANDS

4'-0" - 9 GA. 2" MESH GALV. CHAIN LINK FENCE

TENSION BAR

3-1/2" DIA. TERMINAL POST (GALVANIZED STEEL PIPE)

4'-0"

2" MAX.

EXISTING GRADE

6 GA. TENSION WIRE

8" DIA. 5000 P.S.I. (28 DAYS) CONCRETE PIERS @ CORNER POSTS (TYP.)

NOTE:
FENCING TO BE TIED TO TOP RAILS AND LINE POSTS WITH # 9 GA. WIRE SPACED AT 12".

BRACE ALL CORNERS & TERMINAL POSTS WITH 1-3/4" DIAMETER GALVANIZED STEEL PIPE & APPROPRIATE FASTENERS.

6" DIA. 5000 P.S.I. (28 DAYS) CONCRETE PIER @ EACH POST (TYP.)

GRANULAR MATERIAL

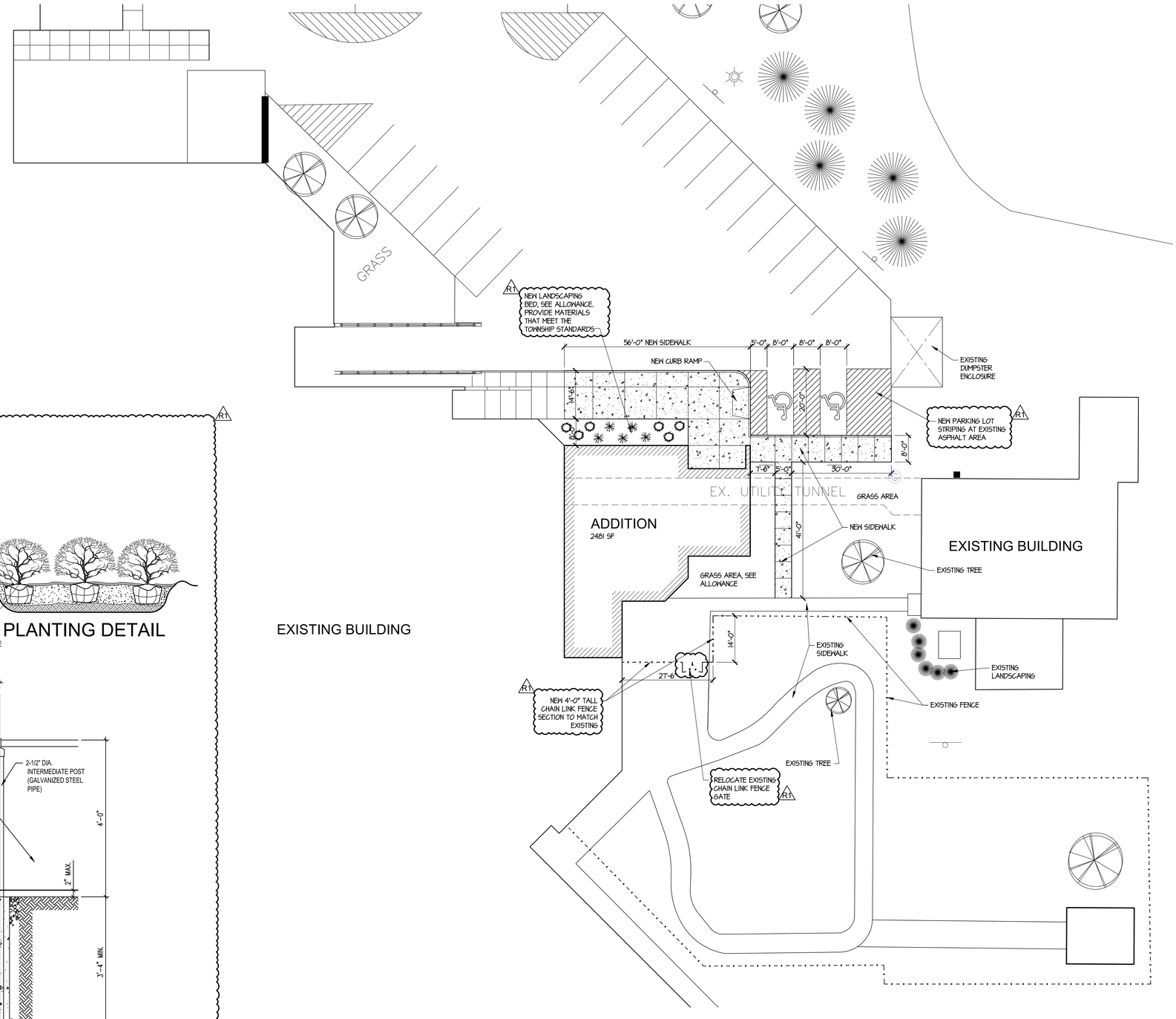
3'-4" MIN.

6"

12"

4 / A1.0 CHAIN LINK FENCE DETAIL
SCALE: 3/4" = 1'-0"

EXISTING BUILDING



PARTIAL SITE PLAN
SCALE: 1/16" = 1'-0"

TSSF ARCHITECTS, INC.
ARCHITECTS INTERIORS PLANNERS
122 N. WASHINGTON AVENUE SAGINAW, MICHIGAN

DINING ROOM ADDITION AND RENOVATIONS FOR:

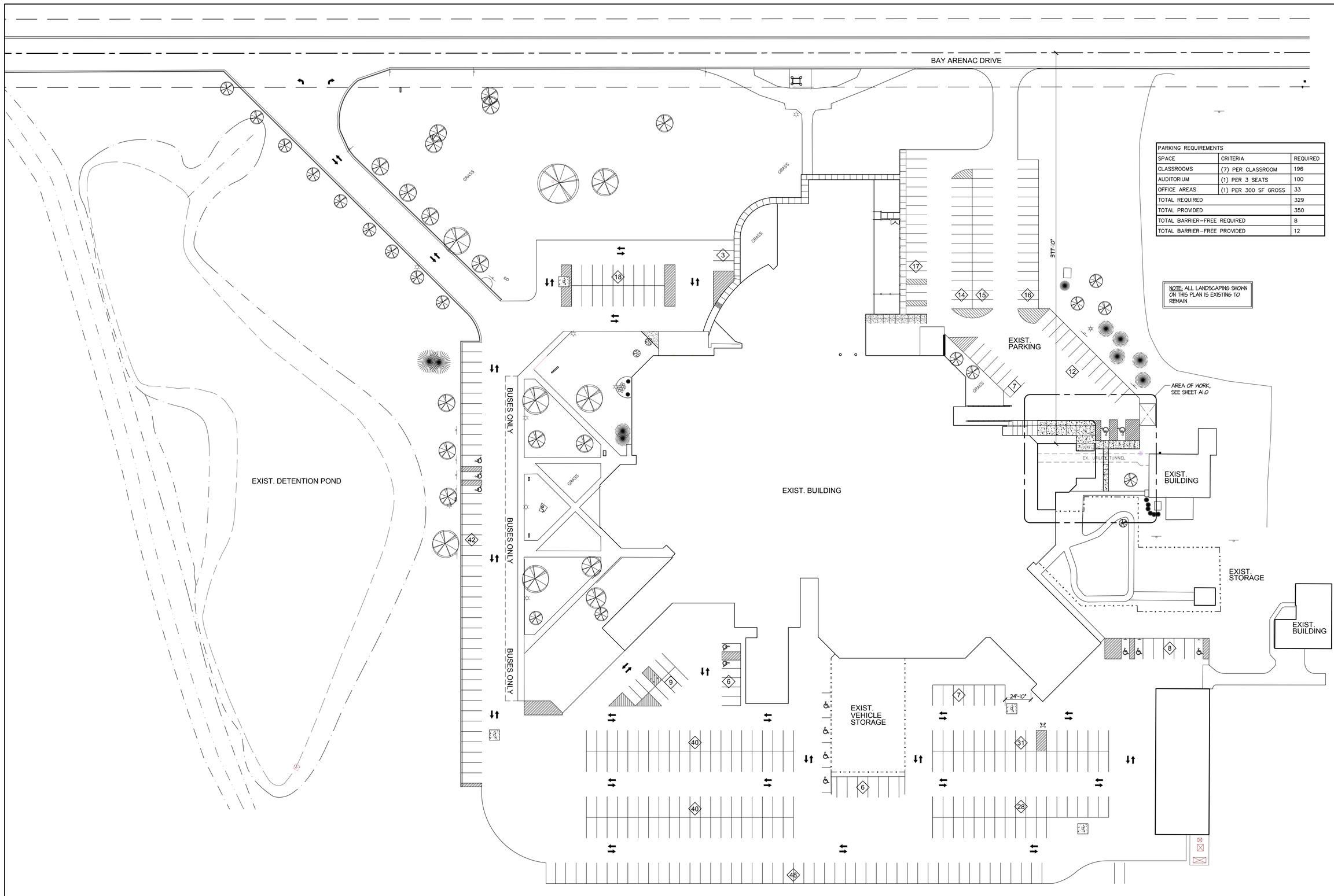
BAY ARENAC ISD
BAY CITY, MICHIGAN

NO.	REMARKS	DATE
A1	CODE REVIEW RESPONSE	05/08/26

DRAWN BY C.M.B.
DATE 03/18/26
APPROVED

SHEET NO.
A1.0

PROJECT NO.
2538



PARKING REQUIREMENTS		
SPACE	CRITERIA	REQUIRED
CLASSROOMS	(7) PER CLASSROOM	196
AUDITORIUM	(1) PER 3 SEATS	100
OFFICE AREAS	(1) PER 300 SF GROSS	33
TOTAL REQUIRED		329
TOTAL PROVIDED		350
TOTAL BARRIER-FREE REQUIRED		8
TOTAL BARRIER-FREE PROVIDED		12

NOTE: ALL LANDSCAPING SHOWN ON THIS PLAN IS EXISTING TO REMAIN

OVERALL SITE PLAN

SCALE: 1" = 40'-0"

TSSF ARCHITECTS, INC.
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BAY ARENAC ISD

BAY CITY, MICHIGAN

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		CODE REVIEW RESPONSE
1	05/08/26	

DRAWN BY J.A.M.
DATE 03/18/26
APPROVED

SHEET NO.
A1.1

PROJECT NO.
2538

EX. OFFICE
EX. OFFICE
EX. OFFICE
EX. OFFICE
EX. PASSAGE
EX. SHIP/ REC.
EX. CLASSROOM/ LAB
EX. TLT.
EX. TLT.
EX. CORRIDOR
EX. CLASSROOM
EX. CORRIDOR
EX. CONF.
EX. STOR.
ALTERNATE NO. 1
EX. CORRIDOR
DINING ROOM
115
SERVING
116
CAFETERIA
117
PREP AREA
114
KITCHEN
113
CLASSROOM
112
EX. CORRIDOR
32'-0"
REINSTALL EXISTING LOCKERS, TYP.
FURNITURE B.O., TYP.
14'-3 1/2"
5"
INFILL OPENING TO MATCH ADJACENT CONST.
OFFICE
110
15'-1"
10'-0"
5"
6'-6"
6'-0"
3'-0"
LOCKERS
111
CLASSROOM
109
DROP-DOWN PROJECTOR SCREEN B.O.
FURNITURE B.O., TYP.
DISH WASHING
108
EX. COOLER
EX. FREEZER
STORAGE
107
PASSAGE
106
STORAGE
105
WAIT STATION
104
KITCHEN EQUIP. B.O.
EX. STOR.
EX. TLT.
EX. STOR.
EX. TLT.
EX. ST.
EX. OFF.
EX. CONF.
EX. DAYCARE
EX. PASSAGE
DROP-DOWN PROJECTOR SCREEN B.O.
BOOTH, SEE DETAIL 18/A8.0
DINING ROOM
103
VEST.
100
MENS
102
WOMENS
101
2'-8"
8'-8"
2'-8"
8'-8"
2'-8"
8'-8"
3'-4"
17'-4"
1'-4"
T'-0"
4'-0"
1'-0"
8'-8"
33'-4"
12'-0"
5'-3"
12'-8"
18'-8"
4'-2"
6'-7"
1'-0"
2'-3"
8'-8"
24"
12'-11"
11'-0"
8'-6"
7'-4"
1'-3 1/2"
1'-3"
9'-10 3/4"
3
A6.0
2
A6.0
1
A2.0
2
A6.0
3
A6.0
3
4
4.5
4.8
5
6
6.6
6.9
7
7.3
8
8.2
Y
Z
AA
BB
CC
DD
EE
FF
GG
HH
II
JJ
KK
LL
MM
NN
OO
PP
QQ
RR
SS
TT
UU
VV

PARTIAL FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"

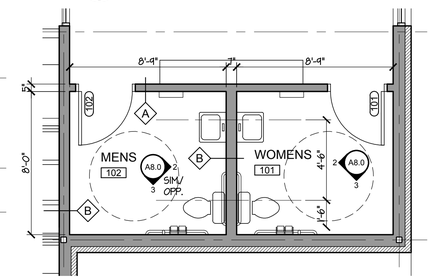
WALL TYPES
SCALE: 3/4" = 1'-0"

A PARTITION WALL
NON-RATED
NON-BEARING WALL
4 1/8"
ACOUST. INSUL.
3 5/8" MTL. STUDS @ 16" O.C.- SEE PLAN
5/8" GYP. BD.

B PARTITION WALL
2 HR-RATED (UL U419)
NON-BEARING WALL
9 1/8"
(3) LAYERS OF 5/8" GYP. BD.
ACOUST. INSUL.
6" MTL. STUDS @ 16" O.C.- SEE PLAN
(2) LAYERS OF 5/8" GYP. BD.

C PARTITION WALL
1 HR-RATED (UL U419)
NON-BEARING WALL
ACOUST. INSUL.
3 5/8" MTL. STUDS @ 16" O.C.
5/8" GYP. BD.
R1

2/A2.0 ENLARGED FLOOR PLAN
SCALE: 1/4" = 1'-0"



1/A2.0 ENLARGED FLOOR PLAN
SCALE: 1/4" = 1'-0"

TSSF ARCHITECTS, INC.
ARCHITECTS INTERIORS PLANNERS
122 N. WASHINGTON AVENUE SAGINAW, MICHIGAN

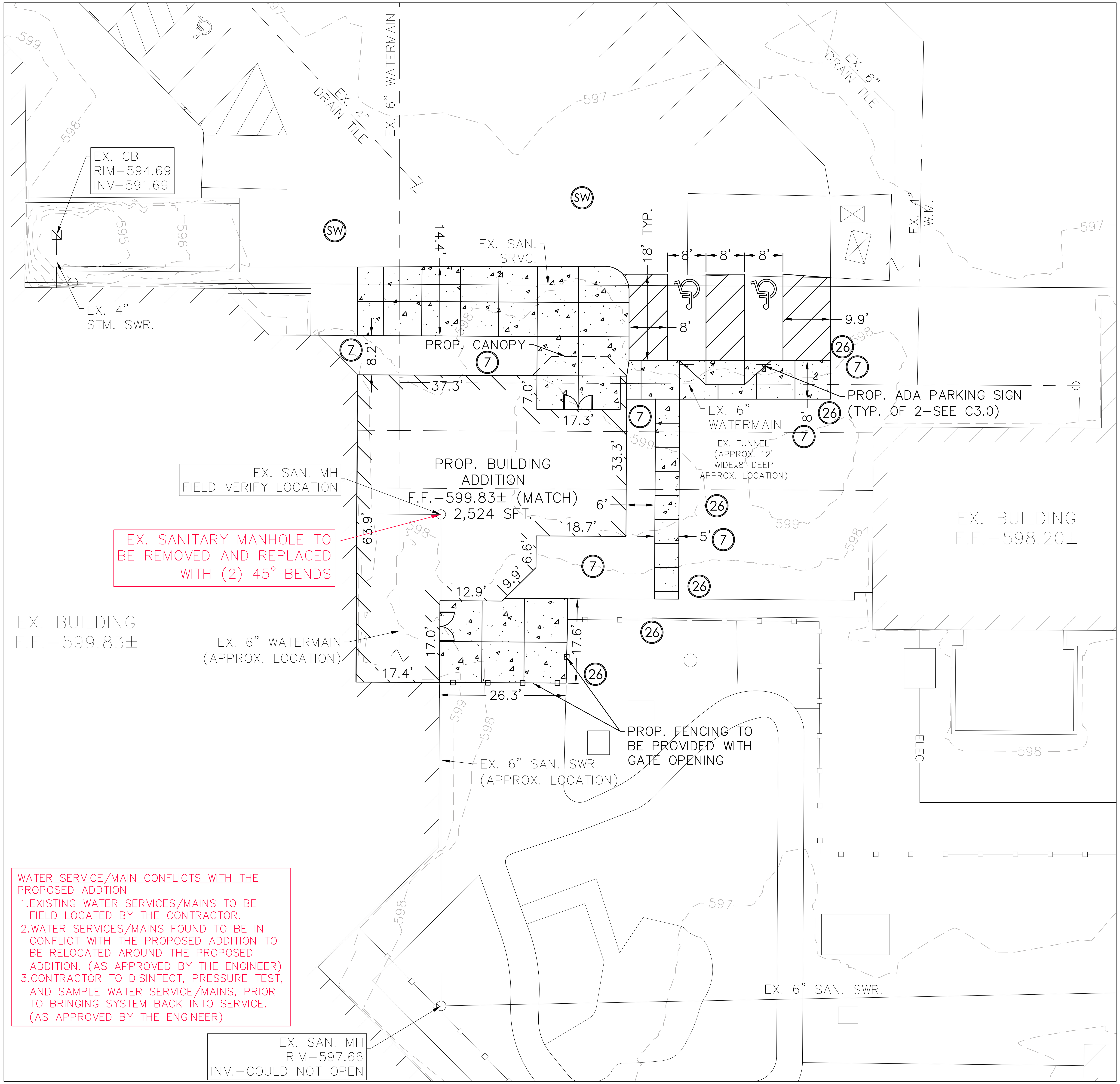
DINING ROOM ADDITION AND RENOVATIONS FOR:
BAY ARENAC ISD
BAY CITY, MICHIGAN

NO.	DATE	
1	05/08/26	CODE REVIEW RESPONSE

DRAWN BY C.M.B.
DATE 03/18/26
APPROVED

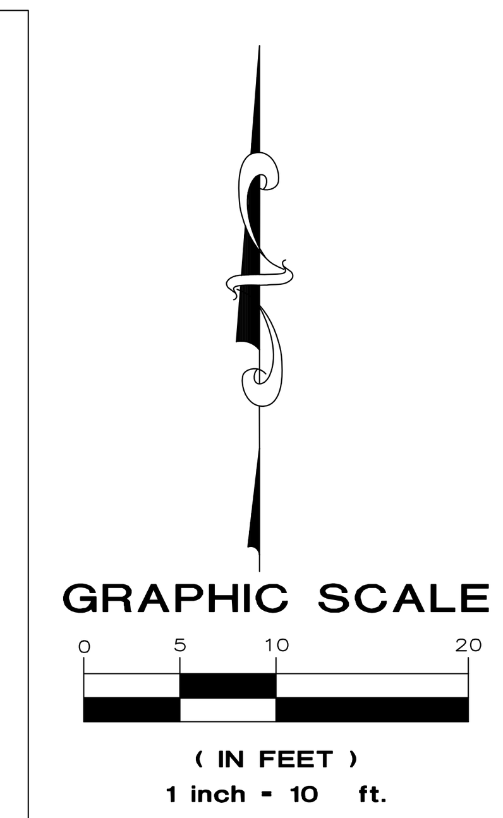
SHEET NO.
A2.0

PROJECT NO.
2538

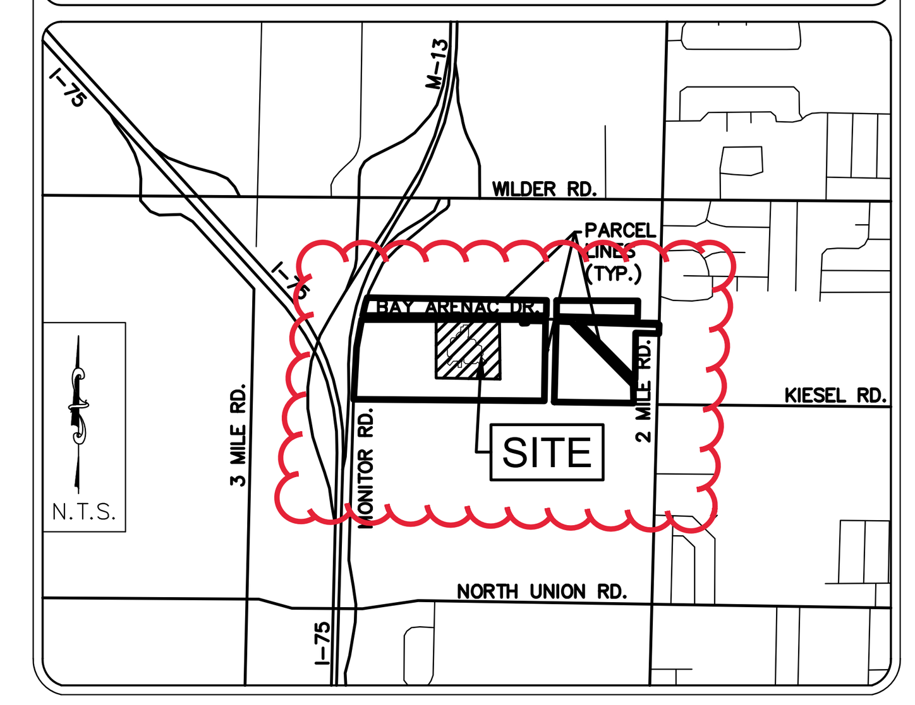


WATER SERVICE/MAIN CONFLICTS WITH THE PROPOSED ADDTION

1. EXISTING WATER SERVICES/MAINS TO BE FIELD LOCATED BY THE CONTRACTOR.
2. WATER SERVICES/MAINS FOUND TO BE IN CONFLICT WITH THE PROPOSED ADDITION TO BE RELOCATED AROUND THE PROPOSED ADDITION. (AS APPROVED BY THE ENGINEER)
3. CONTRACTOR TO DISINFECT, PRESSURE TEST, AND SAMPLE WATER SERVICE/MAINS, PRIOR TO BRINGING SYSTEM BACK INTO SERVICE. (AS APPROVED BY THE ENGINEER)



LOCATION MAP



LEGEND

	MONUMENT / SECTION CORNER
	FOUND PROPERTY IRON
	SET PROPERTY IRON
	EXISTING CATCHBASIN
	PROPOSED CATCHBASIN
	EXISTING MANHOLE/CATCHBASIN
	PROPOSED MANHOLE/CATCHBASIN
	EXISTING MANHOLE
	PROPOSED MANHOLE
	EXISTING HYDRANT
	PROPOSED HYDRANT
	EXISTING VALVE
	PROPOSED VALVE
	EXISTING SANITARY SEWER
	PROPOSED SANITARY SEWER
	EXISTING STORM SEWER
	PROPOSED STORM SEWER
	EXISTING WATERMAIN
	PROPOSED WATERMAIN
	EXISTING FENCE LINE
— G — G —	UNDERGROUND GAS LINE
	OVERHEAD ELECTRICAL WIRES
	EXISTING SIGN
	EXISTING TREELINE
	EXISTING UTILITY POWER POLE
	EXISTING ELECTRICAL VAULT
	EXISTING GAS MARKER
	EXISTING LIGHT POLE
— E — E —	UNDERGROND ELECTRICAL
— TV — TV —	UNDERGROND CABLE T.V. LINE

DEVELOPMENT NOTES

BAY ARENAC ISD CAREER CENTER – BUILDING ADDITION
TOTAL SITE ACREAGE: 95.75± TOTAL ACRES
ZONING: R–2 MEDIUM DENSITY SINGLE FAMILY RESIDENTIAL
SETBACKS:
FRONT: 30' SIDE: 10' REAR: 30'
PROP. LAND USE: PROPOSED BUILDING ADDITION, NO CHANGE IS USE
TRANSPORTATION: EXISTING ASPHALT PARKING LOT WITH ACCESS TO BAY ARENAC DRIVE
SANITARY SEWER AND WATER SERVICE: UTILIZE EXISTING SERVICES
DRAINAGE: PROP. ROOF DRAINS TO CONNECT INTO EXISTING SYSTEM. MATCH EXISTING DRAINAGE FLOW PATTERNS. NO STORMWATER DETENTION REQUIRED.
FIRE: UTILIZE EXISTING HYDRANTS ON SITE
SIDEWALKS: PROP. SIDEWALK PROVIDED TO CONNECT INTO EX. SITE
GAS AND ELECTRIC: UTILIZE EXISTING SERVICES AND COORDINATE WITH CONSUMERS ENERGY.
LIGHTING: NO ADDITIONAL LIGHT POLES, SEE ARCHITECTUAL PLANS FOR BUILDING MOUNTED LIGHTING DETAILS.
WETLAND AND FLOODPLAIN: N/A
REFUSE: UTILIZE EXISTING ENCLOSED CONCRETE DUMPSTER AREA
SIGNAGE: PROP. ADA PARKING SIGNS PROVIDED (2), SEE ARCHITECTURAL PLANS FOR ADDITIONAL SIGNAGE DETAILS.
PARKING REQUIREMENTS: UTILIZE EXISTING PARKING LOT

BENCHMARKS

B.M. #1 - EXISTING RIM ELEVATION OF A WATER VALVE, LOCATED IN AN EXISTING PARKING LOT ISLAND, APPROXIMATELY 150' NORTHWEST OF THE PROPOSED BUILDING ADDITION.

ELEV.–597.70 (NADV83)

NOTES:

1. CONTRACTOR TO CONTACT MISS DIG TO FIELD LOCATE ALL EXISTING UTILITIES, PRIOR TO START OF ANY CONSTRUCTION.
2. SHALL ANY EXISTING UTILITY LOCATIONS CONFLICT WITH THE PROPOSED ADDITION, RE–ROUTING OF SAID UTILITIES WILL BE ISSUED IN AN ADDENDUM.
3. SOIL EROSION & SEDIMENTATION CONTROL MEASURES LEGEND PROVIDED ON DETAIL SHEET C3.0
4. PROPOSED SITE IS LOCATED APPROXIMATELY 300' FROM NORTH PARCEL LINE, 850' FROM EAST PROPERTY LINE, 750' FROM SOUTH PROPERTY LINE, AND 1,600' FROM WEST PROPERTY LINE (PROPERTY LINES NOT SHOWN IN PLAN VIEW DUE TO SCALE, SEE LOCATION MAP FOR REFERENCE).

3 WORKING DAYS BEFORE YOU DIG CALL MISS DIG® 1-800-482-7171 (TOLL FREE)

ADDENDUM:

1. CIVIL ADDENDUM (03/30/26).

PROJECT LOG

PRELIMINARY SITE PLAN	03/10/26
CIVIL DRAWING SET	03/17/26
CIVIL ADDENDUM SET	03/30/26
UPDATED	06/02/26

PREPARED UNDER THE SUPERVISION OF:

STATE OF MICHIGAN BENJAMIN RYBICKI License No. 6201313783 LICENSED PROFESSIONAL ENGINEER

FILE:	266–79.DWG
PROJECT MGR:	MJR
DESIGNED BY:	BAR
DRAWN BY:	BAR
CHECKED BY:	
SCALE:	1"=10'
SHEET:	4 OF 6

TSSF ARCHITECTS, INC.
122 N. WASHINGTON AVE.
SAGINAW, MICHIGAN 48607
TEL: 989-752-7311
FAX: 989-752-7313

BAY ARENAC ISD ADDITION

SECTION 13, T14N, R04E
MONITOR CHARTER TOWNSHIP
BAY COUNTY, MICHIGAN

SITE PLAN

MLR Engineering
CIVIL ENGINEERING & CONSULTING SERVICES
134 S. Main Street, Suite 1, Freeland, Michigan 48623
Phone: (989) 692-5034
www.mlrengineering.com

C2.0

MLR 266-79

STATEMENT OF SPECIAL INSPECTIONS

1. SPECIAL INSPECTIONS AND STRUCTURAL TESTING SHALL BE PROVIDED BY AN INDEPENDENT AGENCY EMPLOYED BY THE OWNER FOR THE ITEMS IDENTIFIED IN THIS SECTION AND IN OTHER AREAS OF THE APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS, UNLESS WAIVED BY THE BUILDING OFFICIAL (SEE MBC CHAPTER 17).

2. THE NAMES AND CREDENTIALS OF THE SPECIAL INSPECTORS TO BE USED SHALL BE SUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL.

3. DUTIES OF THE SPECIAL INSPECTOR:
   A. THE SPECIAL INSPECTOR SHALL REVIEW ALL WORK LISTED BELOW FOR CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS AND THE 2021 MBC.
   B. THE SPECIAL INSPECTOR SHALL FURNISH SPECIAL INSPECTION REPORTS TO THE EOR, CONTRACTOR, OWNER AND BUILDING OFFICIAL ON A WEEKLY BASIS, OR MORE FREQUENTLY AS REQUIRED BY THE BUILDING OFFICIAL. ALL ITEMS NOT IN COMPLIANCE SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, AND IF UNCORRECTED, TO THE EOR AND THE BUILDING OFFICIAL.
   C. ONCE CORRECTIONS HAVE BEEN MADE BY THE CONTRACTOR, THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT TO THE BUILDING OFFICIAL STATING THAT THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE SPECIAL INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS AS WELL AS THE APPLICABLE WORKMANSHIP PROVISIONS OF THE 2021 MBC.

4. DUTIES AND RESPONSIBILITIES OF THE CONTRACTOR:
   A. THE CONTRACTOR SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE OWNER AND THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF WORK. IN ACCORDANCE WITH MBC 1704.4, THE STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGEMENT OF THE SPECIAL INSPECTION REQUIREMENTS CONTAINED WITHIN THIS "STATEMENT OF SPECIAL INSPECTIONS".
   B. THE CONTRACTOR SHALL NOTIFY THE RESPONSIBLE SPECIAL INSPECTOR THAT WORK IS READY FOR INSPECTION AT LEAST ONE WORKING DAY (24 HOURS MINIMUM) BEFORE SUCH INSPECTION IS REQUIRED.
   C. ALL WORK REQUIRING SPECIAL INSPECTION SHALL REMAIN ACCESSIBLE AND EXPOSED UNTIL IT HAS BEEN OBSERVED BY THE SPECIAL INSPECTOR.

5. PLEASE SEE THE "SPECIAL INSPECTION SCHEDULE" FOR THE TYPES, EXTENTS AND FREQUENCY OF SPECIFIC ITEMS REQUIRING SPECIAL INSPECTIONS AND STRUCTURAL TESTS AS PART OF THIS PROJECT.

SPECIAL INSPECTIONS, CONTRACTOR RESPONSIBILITY AND STRUCTURAL OBSERVATION - (SECTION 1704)

SPECIAL INSPECTIONS (SECTION 1704.2)

WHERE APPLICATION IS MADE TO THE BUILDING OFFICIAL FOR CONSTRUCTION AS SPECIFIED IN SECTION 105 OF THE 2021 MICHIGAN BUILDING CODE, THE OWNER OR THE OWNER'S AGENT, OTHER THAN THE CONTRACTOR, SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS AND TESTS DURING CONSTRUCTION ON THE TYPES OF WORK SPECIFIED IN SECTION 1705 OF THE 2021 MICHIGAN BUILDING CODE AND AS IDENTIFIED ON THIS SHEET, AND IDENTIFY THE APPROVED AGENCIES TO THE BUILDING OFFICIAL. THESE SPECIAL INSPECTIONS AND TESTS ARE IN ADDITION TO THE INSPECTIONS BY THE BUILDING OFFICIAL THAT ARE IDENTIFIED IN SECTION 110 OF THE 2021 MICHIGAN BUILDING CODE.

STATEMENT OF SPECIAL INSPECTIONS (SECTION 1704.3)

WHERE SPECIAL INSPECTIONS OR TESTING ARE REQUIRED BY THE 2021 MICHIGAN BUILDING CODE, THE REGISTERED TESTING AND INSPECTIONS DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE SHALL PREPARE A STATEMENT OF SPECIAL INSPECTIONS IN ACCORDANCE WITH SECTION 1704.3.1 OF THE 2021 MICHIGAN BUILDING CODE FOR SUBMITTAL BY THE APPLICANT IN ACCORDANCE WITH SECTION 1704.2.3 OF THE 2021 MICHIGAN BUILDING CODE.

THE STATEMENT OF SPECIAL INSPECTIONS SHALL IDENTIFY THE FOLLOWING (1704.3.1):

1. THE MATERIALS, SYSTEMS, COMPONENTS AND WORK REQUIRED TO HAVE SPECIAL INSPECTION OR TESTS BY THE BUILDING OFFICIAL OR BY THE REGISTERED DESIGN PROFESSIONAL RESPONSIBLE FOR EACH PORTION OF THE WORK.
2. THE TYPE AND EXTENT OF EACH SPECIAL INSPECTION.
3. THE TYPE AND EXTENT OF EACH TEST.
4. ADDITIONAL REQUIREMENTS FOR SPECIAL INSPECTION OR TESTING FOR SEISMIC OR WIND RESISTANCE WHERE REQUIRED BY THE 2021 MICHIGAN BUILDING CODE.
5. FOR EACH TYPE OF SPECIAL INSPECTION, IDENTIFICATION AS TO WHETHER IT WILL BE CONTINUOUS SPECIAL INSPECTION OR PERFORMED IN ACCORDANCE WITH THE NOTATION USED IN THE REFERENCED STANDARD WHERE THE INSPECTIONS ARE DEFINED.

CONTRACTOR RESPONSIBILITY (SECTION 1704.4)

EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A MAIN WIND FORCE RESISTING SYSTEM OR A SEISMIC FOR RESISTING SYSTEM, DESIGNATED SEISMIC SYSTEM OR A WIND RESISTING COMPONENT OR SEISMIC RESISTING COMPONENT LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICAL AND THE OWNER OR THE OWNER'S AUTHORIZED AGENT PRIOR TO THE COMMENCEMENT OF WORK ON THE SYSTEM OR COMPONENT. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS.

SPECIAL INSPECTION REQUIREMENTS - SOILS (SECTION 1705.6)

TASK	INSPECTION FREQUENCY	
	CONTINUOUS	PERIODIC
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	—	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	—	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	—	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	—
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	—	X

SPECIAL INSPECTION REQUIREMENTS - CONCRETE CONSTRUCTION (SECTION 1705.3)

TASK	INSPECTION FREQUENCY		REFERENCED STANDARD	IBC REFERENCE
	CONTINUOUS	PERIODIC		
1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	—	X	ACI 318: CH. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
2. REINFORCING BAR WELDING: A. VERIFY WELDABILITY OF REINFORING BARS OTHER THAN ASTM A706; B. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16" ; AND C. INSPECT ALL OTHER WELDS.	— — X	X X	AWS D1.4 ACI 318: 26.6.4	—
3. INSPECT ANCHORS CAST IN CONCRETE.	—	X	ACI 318: 26.13.3.3	—
4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS. A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS. B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.A.	X	 X	ACI 318: 26.13.3.2 ACI 318: 26.13.3	—
5. VERIFY USE OF REQUIRED DESIGN MIX.	—	X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	—	ASTM C172, ASTM C31, ACI 318: 26.5, 26.12	1908.10
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	—	ACI 318: 26.5	-
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	—	X	ACI 318: 26.5.3-26.5.5	-
9. INSPECT PRESTRESSED CONCRETE FOR: A. APPLICATION OF PRESTRESSING FORCES; AND B. GROUTING OF BONDED PRESTRESSING TENDONS.	X X	— —	ACI 318: 26.10	—
10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	—	X	ACI 318: CH. 26.9	—
11. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	—	X	ACI 318: 26.11.2	—
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	—	X	ACI 318: 26.11.1.2 (b)	—

SPECIAL INSPECTION REQUIREMENTS - COLD-FORMED STEEL DECK (SECTION 1705.2.2) PER SDI QA/QC

TASK	INSPECTION	
	QUALITY CONTROL	QUALITY ASSURANCE
TABLE 1.1. INSPECTION OR EXECUTION TASKS PRIOR TO DECK PLACEMENT		
A. VERIFY COMPLIANCE OF MATERIALS (DECK AND ALL DECK ACCESSORIES) WITH CONSTRUCTION DOCUMENTS. INCLUDING PROFILES, MATERIAL PROPERTIES, AND BASE METAL THICKNESS.	PERFORM	PERFORM
B. DOCUMENT ACCEPTANCE OR REJECTION OF DECK AND DECK ACCESSORIES.	PERFORM	PERFORM
TABLE 1.2. INSPECTION OR EXECUTION TASKS AFTER DECK PLACEMENT		
A. VERIFY COMPLIANCE OF DECK AND ALL DECK ACCESSORIES INSTALLATION WITH CONSTRUCTION DOCUMENTS.	PERFORM	PERFORM
B. VERIFY DECK MATERIALS ARE REPRESENTED BY THE MILL CERTIFICATIONS THAT COMPLY WITH THE CONSTRUCTION DOCUMENTS.	N/A	PERFORM
C. DOCUMENT ACCEPTANCE OR REJECTION OF INSTALLATION OF DECK AND DECK ACCESSORIES	PERFORM	PERFORM
TABLE 1.3. INSPECTION OR EXECUTION TASKS PRIOR TO WELDING		
A. WELDING PROCEDURE SPECIFICATIONS (WPS) AVAILABLE	OBSERVE	OBSERVE
B. MANUFACTURER CERTIFICATIONS OR WELDING CONSUMABLES AVAILABLE	OBSERVE	OBSERVE
C. MATERIAL IDENTIFICATION (TYPE/GRADE)	OBSERVE	OBSERVE
D. CHECK WELDING EQUIPMENT	OBSERVE	OBSERVE
TABLE 1.4. INSPECTION OR EXECUTION TASKS DURING WELDING		
A. USE OF QUALIFIED WELDERS	OBSERVE	OBSERVE
B. CONTROL AND HANDLING OF WELDING CONSUMABLES	OBSERVE	OBSERVE
C. ENVIRONMENTAL CONDITIONS (WIND SPEED, MOISTURE, TEMPERATURE)	OBSERVE	OBSERVE
D. WPS FOLLOWED	OBSERVE	OBSERVE
TABLE 1.5. INSPECTION OR EXECUTION TASKS AFTER WELDING		
A. VERIFY SIZE AND LOCATION OF WELDS, INCLUDING SUPPORT, SIDELAP, AND PERIMETER WELDS.	PERFORM	PERFORM
B. WELDS MEET VISUAL ACCEPTANCE CRITERIA	PERFORM	PERFORM
C. VERIFY REPAIR ACTIVITIES	PERFORM	PERFORM
D. DOCUMENT ACCEPTANCE OR REJECTION OF WELDS	PERFORM	PERFORM
TABLE 1.6. INSPECTION OR EXECUTION TASKS PRIOR TO MECHANICAL FASTENING		
A. MANUFACTURER INSTALLATION INSTRUCTIONS AVAILABLE FOR MECHANICAL FASTENERS	OBSERVE	OBSERVE
B. PROPER TOOLS AVAILABLE FOR FASTENER INSTALLATION	OBSERVE	OBSERVE
C. PROPER STORAGE FOR MECHANICAL FASTENERS	OBSERVE	OBSERVE
TABLE 1.7. INSPECTION OR EXECUTION TASKS DURING MECHANICAL FASTENING		
A. FASTENERS ARE POSITIONED AS REQUIRED	OBSERVE	OBSERVE
B. FASTENERS ARE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS	OBSERVE	OBSERVE
TABLE 1.8. INSPECTION OR EXECUTION TASKS AFTER MECHANICAL FASTENING		
A. CHECK SPACING, TYPE, AND INSTALLATION OF SUPPORT FASTENERS	PERFORM	PERFORM
B. CHECK SPACING, TYPE, AND INSTALLATION OF SIDELAP FASTENERS	PERFORM	PERFORM
C. CHECK SPACING, TYPE, AND INSTALLATION OF PERIMETER FASTENERS	PERFORM	PERFORM
D. VERIFY REPAIR ACTIVITIES	PERFORM	PERFORM
E. DOCUMENT ACCEPTANCE OR REJECTION OF MECHANICAL FASTENERS	PERFORM	PERFORM

SPECIAL INSPECTION REQUIREMENTS - MASONRY CONSTRUCTION (SECTION 1705.4)

VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) AS DELIVERED TO THE PROJECT SITE IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.5.B.1.b.3 FOR SELF-CONSOLIDATION GROUT

VERIFICATION OF f'_m AND r_{AAC} IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.4B PRIOR TO CONSTRUCTION, EXCEPT WHERE SPECIFICALLY EXEMPTED BY THIS CODE

TASK	INSPECTION FREQUENCY		REFERENCE FOR CRITERIA	
	CONTINUOUS	PERIODIC	TMS 402/ ACI 530/ ASCE 5	TMS 602/ ACI 530.1/ ASCE 6
1. VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS.	—	X	—	ART. 1.5
2. AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
A. PROPORTIONS OD SITE-PREPARED MORTAR	—	X	—	ART. 2.1, 2.6 A
B. CONSTRUCTION OF MORTAR JOINTS.	—	X	—	ART. 3.3 B
C. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES	—	X	—	ART. 2.4 B, 2.4 H
D. LOCATION OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES	—	X	—	ART. 3.4, 3.6 A
E. PRESTRESSING TECHNIQUE	—	X	—	ART. 3.6 B
F. PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY	X[b]	X[c]	—	ART. 2.1 C
3. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
A. GROUT SPACE	—	X		ART. 3.2 D, 3.2 F
B. GRADE, TYPE, AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ANCHORAGES	—	X	SEC. 6.1	ART. 2.4, 3.4
C. PLACEMENT OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES	—	X	SEC. 5.1, 6.2.1, 6.2.6, 6.2.7	ART. 3.2E, 3.4, 3.6 A
D. PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS	—	X	—	ART. 2.6 B, 2.4 G.1.b
E. CONSTRUCTION OF MORTAR JOINTS	—	X	—	ART. 3.3 B
4. VERIFY DURING CONSTRUCTION:				
A. SIZE AND LOCATION OF STRUCTURAL ELEMENTS	—	X	—	ART. 3.3 F
B. TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION	—	X	SEC. 1.2.1(e), 6.1.4.3, 6.2.1	—
C. WELDING OF REINFORCEMENT	X	—	SEC. 8.1.6.7.2, 9.3.3.4 (c), 11.3.4 (b)	—
D. PREPARATION , CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F (4.4°C)) OR HOT WEATHER (TEMPERATURE ABOVE 90°F (32.2°C))	—	X	—	ART. 1.8 C, 1.8 D
E. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE	X	—	—	ART. 3.6 B
F. PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE	X	—	—	ART. 3.5, 3.6 C
G. PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS.	X[b]	X[c]	—	ART. 3.3 B.9, 3.3 F.1.b
5. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS	—	X	—	ART. 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3, 1.4 B.4

(a) FREQUENCY REFERS TO THE FREQUENCY OF SPECIAL INSPECTION, WHICH MAY BE CONTINUOUS DURING THE TASK LISTED OR PERIODIC DURING THE LISTED TASK, AS DEFINED IN THE TABLE
(b) REQUIRED FOR THE FIRST 5,000 SQUARE FEET (465 SQUARE METERS) OF AAC MASONRY
(c) REQUIRED FOR THE FIRST 5,000 SQUARE FEET (465 SQUARE METERS) OF AAC MASONRY

SPECIAL INSPECTION REQUIREMENTS - OPEN WEB STEEL JOISTS AND JOIST GIRDERS (SECTION 1705.2.3)

TASK	INSPECTION FREQUENCY		REFERENCED STANDARD [A]
	CONTINUOUS	PERIODIC	
1. INSTALLATION OF OPEN-WEB STEEL JOISTS AND JOISTS GIRDERS.			
A. END CONNECTIONS - WELDING OR BOLTED.	—	X	SJI SPECIFICATIONS LISTED IN SECTION 2207.1
B. BRIDGING - HORIZONTAL OR DIAGONAL.	—		
1. STANDARD BRIDGING.	—	X	SJI SPECIFICATIONS LISTED IN SECTION 2207.1
2. BRIDGING THAT DIFFERS FROM THE SJI SPECIFICATIONS LISTED IN SECTION 2207.1		X	

(A) WHERE APPLICABLE, SEE ALSO SECTION 1705.12, SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE.

SPECIAL INSPECTION REQUIREMENTS - STEEL CONSTRUCTION (SECTION 1705.2.1) PER AISC 360

SPECIAL INSPECTIONS AND NONDESTRUCTIVE TESTING OF STRUCTURAL STEEL ELEMENTS IN BUILDINGS, STRUCTURES, AND PORTIONS THEREOF SHALL BE IN ACCORDANCE WITH THE QUALITY ASSURANCE INSPECTION REQUIREMENTS OF AISC 360.

TASK	INSPECTION FREQUENCY		REFERENCED STANDARD	IBC REFERENCE
	CONTINUOUS	PERIODIC		
1. VERIFICATION OF STRUCTURAL STEEL				
A. FOR STRUCTURAL STEEL IDENTIFICATION MARKINGS TO CONFORM TO AISC 360.	—	X	AISC 360	—
B. FOR OTHER STEEL, IDENTIFICATION MARKINGS TO CONFIRM TO ASTM STANDARDS PER CONSTRUCTION DOCUMENTS.	—	X	APPLICABLE ASTM STD.	—
C. MANUFACTURERS' CERTIFIED MILL TEST REPORTS.	—	X	—	—

TASK	INSPECTION	
	QUALITY CONTROL	QUALITY ASSURANCE
TABLE N5.4-1 INSPECTION TASKS PRIOR TO WELDING		
A. WELDING PROCEDURE SPECIFICATIONS (WPSs) AVAILABLE.	PERFORM	PERFORM
B. MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE	PERFORM	PERFORM
C. MATERIAL IDENTIFICATION (TYPE/GRADE)	OBSERVE	OBSERVE
D. WELDER IDENTIFICATION SYSTEM [1]	OBSERVE	OBSERVE
E. FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY)	OBSERVE	OBSERVE
- JOINT PREPARATION		
- DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)		
- CLEANLINESS (CONDITION OF STEEL SURFACES)		
- TACKING (TACK WELD QUALITY AND LOCATION)		
- BACKING TYPE AND FIT (IF APPLICABLE)		
F. CONFIGURATION AND FINISH OF ACCESS HOLES	OBSERVE	OBSERVE
G. FIT-UP OF FILLET WELDS	OBSERVE	OBSERVE
- DIMENSIONS (ALIGNMENT, GAPS AT ROOT)		
- CLEANLINESS (CONDITION OF STEEL SURFACES)		
- TACKING (TACK WELD QUALITY AND LOCATION)		
H. CHECK WELDING EQUIPMENT	OBSERVE	N/A
TABLE N5.4-2 INSPECTION TASKS DURING WELDING		
A. USE OF QUALIFIED WELDERS	OBSERVE	OBSERVE
B. CONTROL AND HANDLING OF WELDING CONSUMABLES	OBSERVE	OBSERVE
- PACKAGING		
- EXPOSURE CONTROL		
C. NO WELDING OVER CRACKED TACK WELDS	OBSERVE	OBSERVE
D. ENVIRONMENTAL CONDITIONS	OBSERVE	OBSERVE
- WIND SPEED WITHIN LIMITS		
- PRECIPITATION AND TEMPERATURE		
E. WPS FOLLOWED	OBSERVE	OBSERVE
- SETTINGS ON WELDING EQUIPMENT		
- TRAVEL SPEED		
- SELECTED WELDING MATERIALS		
- SHIELDING GAS TYPE/FLOW RATE		
- PREHEAT APPLIED		
- INTERPASS TEMPERATURE MAINTAINED (MIN./MAX.)		
- PROPER POSITION (F, V, H, OH)		
F. WELDING TECHNIQUES	OBSERVE	OBSERVE
- INTERPASS AND FINAL CLEANING		
- EACH PASS WITHIN PROFILE LIMITATIONS		
- EACH PASS MEETS QUALITY REQUIREMENTS		
TABLE N5.4-3 INSPECTION TASKS AFTER WELDING		
A. WELDS CLEANED	OBSERVE	OBSERVE
B. SIZE, LENGTH AND LOCATION OF WELDS	PERFORM	PERFORM
C. WELDS MEET VISUAL ACCEPTANCE CRITERIA	PERFORM	PERFORM
- CRACK PROHIBITION		
- WELD/BASE-METAL FUSION		
- CRATER CROSS SECTION		
- WELD PROFILES		
- WELD SIZE		
- UNDERCUT		
- POROSITY		
D. ARC STRIKES	PERFORM	PERFORM
E. k-AREA [2]	PERFORM	PERFORM
F. BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	PERFORM	PERFORM
G. REPAIR ACTIVITIES	PERFORM	PERFORM
H. DOCUMENTS ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	PERFORM	PERFORM
TABLE N5.6-1 INSPECTION TASKS PRIOR TO BOLTING		
A. MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	OBSERVE	PERFORM
B. FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	OBSERVE	OBSERVE
C. PROPER FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS RE TO BE EXCLUDED FROM SHEAR PLANE)	OBSERVE	OBSERVE
D. PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	OBSERVE	OBSERVE
E. CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	OBSERVE	OBSERVE
F. PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED	PERFORM	OBSERVE
G. PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS	OBSERVE	OBSERVE
TABLE N5.6-2 INSPECTION TASKS DURING BOLTING		
A. FASTENER ASSEMBLIES, SUITABLE CONDITION, PLACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE POSITIONED AS REQUIRED	OBSERVE	OBSERVE
B. JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION	OBSERVE	OBSERVE
C. FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	OBSERVE	OBSERVE
D. FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES	OBSERVE	OBSERVE
TABLE N5.6-3 INSPECTION TASKS AFTER BOLTING		
A. DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	PERFORM	PERFORM

(1) THE FABRICATOR OR ERECTOR, AS APPLICABLE, SHALL MAINTAIN A SYSTEM BY WHICH A WELDER WHO HAS WELDED A JOINT OR MEMBER CAN BE IDENTIFIED. STAMPS, IF USED, SHALL BE THE LOW-STRESS TYPE.
(2) WHEN WELDING OF DOUBLER PLATES, CONTNUITY PLATES OR STIFFENERS HAS BEEN PERFORMED IN THE k-AREA, VISUALLY INSPECT THE WEB k-AREA FOR CRACKS WITHIN 3 in. (75 mm) OF THE WELD

OBSERVE - OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.
PERFORM - PERFORM THESE TASK FOR EACH WELDED JOINT OR MEMBER OR EACH BOLTED CONNECTION.
QUALITY CONTROL - PROVIDED BY FABRICATOR/ ERECTOR
QUALITY ASSURANCE - PROVIDED BY OWNER

TSSF ARCHITECTS, INC.
ARCHITECTS INTERIORS PLANNERS
122 N. WASHINGTON AVENUE SAGINAW, MICHIGAN

DINING ROOM ADDITION AND RENOVATIONS FOR:
BAY AREANAC ISD
BAY CITY, MICHIGAN

GENERAL NOTES & DETAILS

NO.
DATE

DRAWN BY SBRYANT
DATE 5–3–26
APPROVED MWEISS

SHEET NO.
S0.0

PROJECT NO.
2538

GENERAL

1. THIS BUILDING HAS BEEN DESIGNED AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MICHIGAN BUILDING CODE, 2021 EDITION

1.A. DESIGN LOADS

1.A.A. FLOOR LIVE LOADS:
- 1.A.A.A. CLASSROOMS = 40 PSF
- 1.A.A.B. CORRIDORS = 100 PSF
- 1.A.A.C. DINING ROOMS/RESTAURANTS = 100 PSF

1.A.B. ROOF: LIVE LOAD = 20 PSF, SOLAR READY DEAD LOAD = 5 PSF

1.A.C. SNOW LOADS
- 1.A.C.A. GROUND SNOW LOAD, Pg = 35 PSF
- 1.A.C.B. SNOW EXPOSURE FACTOR, Ce = 1.0
- 1.A.C.C. THERMAL FACTOR, Ct = 1.0
- 1.A.C.D. BUILDING CATEGORY III
- 1.A.C.E. IMPORTANCE FACTOR, Is = 1.1
- 1.A.C.F. FLAT ROOF SNOW LOAD, Pf = 27 PSF + DRIFTING
- 1.A.C.G. DRIFTING CALCULATED PER ASCE 7-16

1.A.D. WIND LOADS
- 1.A.D.A. BASIC WIND SPEED V = 114 MPH (3-SECOND GUST)
- 1.A.D.B. BUILDING CATEGORY III
- 1.A.D.C. EXPOSURE CATEGORY C
- 1.A.D.D. INTERNAL PRESSURE COEFFICIENT ±0.18
- 1.A.D.E. COMPONENTS AND CLADDING LOAD PRESSURE:
  - 1.A.D.E.A. ROOF (50ft²) -51.2 PSF (ZONE 1)
  - 1.A.D.E.B. ROOF (50ft²) -67.8 PSF (ZONE 2)
  - 1.A.D.E.C. ROOF (50ft²) -67.8 PSF (ZONE 3)
  - 1.A.D.E.D. WALLS (50ft²) -34.0 PSF (ZONE 4)
  - 1.A.D.E.E. WALLS (50ft²) -39.1 PSF (ZONE 5)

1.A.E. EARTHQUAKE LOADS
- 1.A.E.A. SEISMIC RISK CATEGORY III
- 1.A.E.B. SEISMIC IMPORTANCE FACTOR, Ie = 1.25
- 1.A.E.C. Ss = 0.066 (ASCE7-16 FIG. 22-1); S1 = 0.039
- 1.A.E.D. SITE CLASS = D
- 1.A.E.E. Fa = 1.6 (MBC TABLE 1613.3.3(1)); Fv = 2.4
- 1.A.E.F. Sms = Fa*Ss = 0.106; Sm1 = Fv$1 = 0.093
- 1.A.E.G. Sds = (2/3)*Sms = 0.071 (MBC 1613.3.4); Sd1 = (2/3)*Sm1 = 0.062
- 1.A.E.H. SEISMIC DESIGN CATEGORY = A
- 1.A.E.I. SEISMIC RESISTING SYSTEM: LIGHT FRAMED WALLS WITH SHEAR PANELS
- 1.A.E.J. DESIGN BASE SHEAR = 0.04W
- 1.A.E.K. SEISMIC RESPONSE COEFFICIENT, Cs = 0.04
- 1.A.E.L. RESPONSE MODIFICATION FACTOR, R = 2
- 1.A.E.M. EARTHQUAKE LOADS CALCULATED PER ASCE 7-16 SECTION 1.4.3 "MINIMUM LATERAL FORCE PROCEDURE"
- 1.A.E.N. DEFLECTION AMPLIFICATION FACTOR, Cd = 2

1.A.F. GUARD/HANDRAIL LOADS= 50 PLF LOAD APPLIED IN ANY DIRECTION AT THE TOP AND 200 POUND CONCENTRATED LOAD APPLIED IN ANY DIRECTION AT ANY POINT ALONG THE TOP. LOADS NOT ASSUMED TO ACT CONCURRENTLY.

2. THE ARCHITECTURAL DRAWINGS SHALL BE WORKED WITH THE STRUCTURAL DRAWINGS. SOME STRUCTURAL INFORMATION HAS BEEN INCORPORATED IN THE ARCHITECTURAL DRAWINGS.

3. THE STRUCTURE SHALL BE CONSIDERED TO BE IN AN UNSTABLE CONDITION UNTIL ALL WALL AND ROOF STRUCTURES ARE COMPLETED. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR STABILITY AND TO RESIST LATERAL LOADS DURING ERECTION.

4. ALL NON LOAD BEARING WALLS SHALL BE CONSTRUCTED TO ALLOW FOR THE VERTICAL DEFLECTION OF THE STRUCTURE ABOVE.

FOUNDATION

1. FOUNDATIONS ARE DESIGNED FOR A MAXIMUM ALLOWABLE BEARING CAPACITY OF 2,500 PSF. FOUNDATIONS SHALL BEAR ON NATURAL CLAY UNDISTURBED SOIL OR ENGINEERED FILL PROPERLY PLACED UPON THESE CLAY SOILS.

2. THE CONTRACTOR WILL RETAIN THE SERVICES OF A QUALIFIED GEOTECHNICAL ENGINEER TO MONITOR THE FOUNDATION WORK & DETERMINE THE QUALITY OF THE SOIL AT ALL FOOTING LOCATIONS. IF UNSUITABLE MATERIALS ARE ENCOUNTERED AT THE FOOTING LOCATIONS, THE UNSUITABLE MATERIALS SHALL BE REMOVED & REPLACED WITH COMPACTED ENGINEERED FILL OR THE FOOTING LOWERED AT THE DIRECTION OF THE ARCHITECT OR ENGINEER.

3. CONTRACTORS SHALL BE AWARE OF AND VERIFY LOCATION OF ALL UNDERGROUND UTILITIES, TANKS, ETC. DUE CARE SHALL BE EXERCISED DURING EXCAVATION SO THAT EXISTING UTILITIES ARE NOT DAMAGED

4. THE AREA OF PROPOSED CONSTRUCTION SHALL BE STRIPPED OF THE EXISTING TOP SOIL & PAVEMENT MATERIALS. ALL REMNANTS OF PREVIOUS STRUCTURES OCCUPYING THE SITE SHALL BE REMOVED AND BACKFILLED WITH ENGINEERED FILL, PROPERLY PLACED AND COMPACTED. FOLLOWING THE REMOVAL OF THE ABOVE ITEMS, IF COHESIVE MATERIALS ARE EXPOSED AT THE SUBGRADE ALL AREAS OF PROPOSED DEVELOPMENT SHALL BE THOROUGHLY PROOFROLLED UNDER THE OBSERVATION OF A QUALIFIED SOILS ENGINEER. THE PROOF ROLLING SHOULD BE PERFORMED WITH A FULLY LOADED DUMP TRUCK OR OTHER HEAVILY LOADED PNEUMATIC TIRED VEHICLE MAKING CONTINUOUS SIDE-BY-SIDE PASSES ACROSS THE ENTIRE AREA. SUBGRADE AREAS THAT DEFLECT EXCESSIVELY OR PUMP DURING PROOF ROLLING SHOULD BE EXCAVATED AND BACK FILLED WITH ACCEPTABLE ENGINEERED FILL. IF EXISTING GRANULAR FILL MATERIALS ARE EXPOSED UPON STRIPPING OPERATIONS AT THE SUBGRADE, THE AREA SHOULD BE THOROUGHLY DENSIFIED WITH A LARGE DRUM ROLLER SUCH THAT THE TOP 12 INCHES IS COMPACTED TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY VALUE DETERMINED BY ASTM STANDARD D-1557 (MODIFIED PROCTOR)

5. UPON COMPLETION OF THE SUB GRADE PREPARATION, THE SITE CAN BE RAISED TO THE PROPER ELEVATION WITH PROPERLY PLACED AND COMPACTED ENGINEERED FILL. ALL COMPACTED BACKFILL SHALL BE A CLEAN, UNIFORM GRADED, GRANULAR MATERIAL AND FREE OF FROZEN CHUNKS, ORGANICS, DEBRIS OR OTHER DELETERIOUS MATERIALS. ALL COMPACTED BACKFILL SHALL BE PLACED IN NO MORE THAN 10" LOOSE LIFTS AND COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MAXIMUM DRY DENSITY DETERMINED BY ASTM D-1557 (MODIFIED PROCTOR). THIS MAY BE DECREASED TO 90% IN THOSE AREAS TO BE LANDSCAPED & NOT SUPPORTING STRUCTURE OR PAVEMENT.

CONCRETE

1. THE FOLLOWING CODES GOVERN THE DESIGN, DETAILING, FABRICATION AND CONSTRUCTION OF ALL REINFORCED CONCRETE:
   1.A. BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318-21)

2. ALL CONCRETE 28 DAY COMPRESSIVE STRENGTH SHALL BE AS FOLLOWS:
   - 2.A. FOOTINGS & PIERS 3000 PSI
   - 2.B. SLAB ON GRADE 4000 PSI
   - 2.C. ALL EXTERIOR EXPOSED CONCRETE SHALL BE ENTRAINED.

3. BEFORE PLACING CONCRETE REFER TO ARCHITECTURAL, MECHANICAL & ELECTRICAL DRAWINGS FOR LOCATIONS OF PIPE SLEEVES, EMBEDDED ITEMS, OPENINGS, EQUIPMENT PADS, ELECTRICAL CONDUITS, RECESSES, DRAINS, ETC. ALL OPENINGS FOR PIPE, CONDUITS, ETC. SHALL BE SLEEVED. MINIMUM SLEEVE SPACING SHALL BE 3 SLEEVE DIAMETERS.

4. ALL DEFORMED BAR REINFORCEMENT SHALL BE ASTM A615, GRADE 60.

5. ALL DEFORMED BAR REINFORCING SHALL BE SPLICED A MINIMUM OF 32 BAR DIAMETERS.

6. ALL WELDED WIRE FABRIC SHALL BE ASTM A185-01 SHEETS SHALL BE LAPPED A MINIMUM OF WIRE SPACING + 2".

7. PROVIDE RIGHT CORNER BARS W/ STD LAP @ CORNER OF ALL CONC. WALLS. LAP W/ TYPICAL WALL REINFORCING. SIZE OF BAR TO MATCH TYPICAL HORIZONTAL REINFORCING.

8. CONTRACTOR TO PROVIDE VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION PER 2021 MBC CODE TABLE 1705.3

STRUCTURAL STEEL

1. THE FOLLOWING CODE SHALL GOVERN THE DETAILING, FABRICATION & ERECTION OF ALL STEEL:
   1.A. MANUAL OF STEEL CONSTRUCTION, 15TH EDITION (AMERICAN INSTITUTE OF STEEL CONSTRUCTION)

WIDE FLANGE SHAPES	--- ASTM A-992, Fy = 50 KSI
STEEL PLATE, CHANNELS & ANGLES	--- ASTM A-36
HSS SQ / RECT.	--- ASTM A-500 GRADE B, Fy = 46KSI
PIPES	--- ASTM A53 TYPE E OR S GRADE B
HSS ROUND	--- ASTM A-500 GRADE B, Fy = 42KSI

2. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (AWS) D1.1 / D1.1 M:2017 STRUCTURAL WELDING CODE. E70XX ELECTRODES SHALL BE USED FOR WELDED SHOP & FIELD CONNECTIONS.

3. ALL BOLTED CONNECTIONS SHALL BE MADE WITH 3/4"Ø ASTM F3125 GR. A325 BOLTS. ALL BOLTED CONNECTIONS SHALL BE CONSIDERED AS BEARING UNLESS NOTED OTHERWISE.

4. ALL BEAM CONNECTIONS ARE TO CONFORM TO AISC STANDARD TWO ANGLE WEB CONNECTIONS OR 3/8" THICK SHEAR TAB CONNECTIONS WITH BOLTS BASED ON TABLES BELOW. NO CONNECTION SHALL CONSIST OF LESS THAN TWO 3/4"Ø BOLTS OR A WELD DEVELOPING LESS THAN 10 KIPS.

MINIMUM BOLT CONNECTION	
W8 /W10 /W12	(2) 3/4" Ø BOLTS
W14 /W16	(3) 3/4" Ø BOLTS
W18 /W21	(4) 3/4" Ø BOLTS
W24	(5) 3/4" Ø BOLTS
W27	(6) 3/4" Ø BOLTS

THIS TABLE IS TO BE USED FOR STANDARD CONNECTIONS UNLESS NOTED OTHERWISE

5. ALL FIELD CONNECTIONS SHALL BE BOLTED UNLESS NOTED OTHERWISE. FIELD WELDING IS NOT ALLOWED EXCEPT WHERE SPECIFICALLY INDICATED OR APPROVED.

6. ALL GROUT PADS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI IN 7 DAYS.

7. ALL ANCHOR BOLTS SHALL BE ASTM F1554 GR. 36.

8. PROVIDE AND HAVE IN PLACE ADEQUATE LATERAL BRACING & VERTICAL SUPPORTS FOR THE SAFE ERECTION AND TRUE ALIGNMENT OF THE STRUCTURAL STEEL. THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR THE SAFE ERECTION & TEMPORARY BRACING OF STRUCTURAL STEEL.

9. VERIFY NUMBER AND SIZE OF OPENINGS IN ROOF, WALLS, AND FLOOR WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS. SEE STRUCTURAL DRAWINGS AND SPECIFICATIONS, FOR STRUCTURAL REQUIREMENTS. VERIFY ALL DETAILS & INFORMATION WITH THE APPROPRIATE CONTRACTOR.

10. ALL DIMENSIONS RELATED TO STRUCTURAL STEEL USED TO SUPPORT EQUIPMENT OR FRAME OPENINGS SHALL BE VERIFIED WITH CERTIFIED AND APPROVED SHOP DRAWINGS OF PURCHASED EQUIPMENT PRIOR TO DETAILING AND FABRICATION.

11. ALL EDGES OF METAL DECK SHALL BE SUPPORTED AT A CHANGE IN DECK SPAN WHETHER SHOWN ON DRAWINGS OR NOT. PROVIDE TUBE STEEL OR A DOUBLE ANGLE BETWEEN JOIST AND METAL DECK.

12. WELD ALL STEEL BEAMS TO BEARING PLATES W/ 5/16x 4" LONG FILLET WELD, EACH SIDE OF BEAM U.N.O.

13. CONTRACTOR TO PROVIDE VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION PER 2021 MBC CODE.

CONCRETE MASONRY

1. THE FOLLOWING CODES GOVERN THE DESIGN, DETAILING & CONSTRUCTION OF ALL MASONRY:
   1.A. BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530-13)
   1.B. SPECIFICATIONS FOR MASONRY STRUCTURES (ACI 530.1-13)

2. ALL MASONRY SHALL HAVE A COMPRESSIVE STRENGTH, f'm = 2,000 PSI.

3. ALL MORTAR FOR LOAD BEARING AND EXTERIOR CONCRETE MASONRY SHALL BE TYPE S, ABOVE GRADE AND TYPE M BELOW GRADE PROPORTIONED BY VOLUME ACCORDING TO ASTM C-270.

4. ALL GROUT SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI, AND SHALL BE PROPORTIONED BY VOLUME ACCORDING TO ASTM C-476.

5. ALL CONCRETE MASONRY UNITS SHALL BE ASTM C-90 GRADE N,TYPE I UNITS MEDIUM WEIGHT UNLESS NOTED OTHERWISE. REFER TO ARCHITECTURAL DRAWINGS FOR FURTHER DETAILS WITH REGARD TO FACE FINISH.

6. ALL MASONRY WALLS SHALL HAVE HORIZONTAL JOINT REINFORCEMENT (LADDER TYPE) AT 16" O.C. PROVIDE PREFABRICATED CORNER PIECES AT ALL CORNERS & INTERSECTIONS OF WALLS.

7. ALL DEFORMED BAR REINFORCING SHALL BE ASTM A-615 GRADE 60. LAP SPLICES IN WALLS SHALL BE A MINIMUM OF 48 BAR DIAMETERS, UNLESS NOTED OTHERWISE.

8. REINFORCE ALL MASONRY WALLS AS SHOWN ON SCHEDULE AND DETAILS. PLACE BAR ON CENTERLINE OF WALL IN FULLY GROUTED CELL FULL HEIGHT OF THE WALL. LAP REINFORCEMENT WITH TYPICAL FOOTING DOWEL, SEE WALL SECTION FOR DOWELS REQUIREMENTS.

9. SEE ARCHITECTURAL DRAWINGS FOR MASONRY JOINT LOCATIONS.

10. CONTRACTOR TO PROVIDE VERIFICATION AND INSPECTION OF MASONRY CONSTRUCTION PER 2015 MBC CODE SECTION 1705.4.

STEEL JOISTS

1. STEEL JOIST DESIGN, FABRICATION AND ERECTION SHALL CONFORM TO THE REQUIREMENTS AND STANDARD SPECIFICATIONS FOR THE STEEL JOIST INSTITUTE AND THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION. ONLY STEEL JOISTS FROM A STEEL JOIST INSTITUTE APPROVED FABRICATORS WILL BE ACCEPTABLE.

2. PROVIDE WELDED HORIZONTAL BRIDGING AND BOLTED DIAGONAL BRIDGING AS REQUIRED PER STEEL JOIST INSTITUTE REQUIREMENTS.

3. ALL CONCENTRATED LOADS DUE TO HANGERS, MECHANICAL EQUIPMENT, ETC. SHALL BE SUPPORTED ONLY AT JOIST PANEL POINTS. PROVIDE ADDITIONAL MEMBERS AS NECESSARY TO MEET THIS REQUIREMENT.

4. DESIGN ROOF JOISTS FOR A NET UPLIFT OF 10 PSF. UPLIFT BRIDGING SHALL BE PROVIDED AS REQUIRED.

5. WELD STEEL JOISTS TO ALL SUPPORTS W/ 3/16" x 3" LONG FILLET WELD EACH SIDE OF JOIST.

6. CONTRACTOR TO PROVIDE VERIFICATION AND INSPECTION OF OPEN-WEB STEEL JOIST AND JOIST GIRDERS PER 2021 MBC CODE TABLE 1705.2.3 .

COLD FORMED METAL FRAMING

1. THE COLD-FORMED METAL FRAMING PORTION OF THIS STRUCTURE ARE DESIGNED ACCORDING TO THE ALLOWABLE STRESS DESIGN PROVISIONS OF THE LATEST EDITION OF THE AISI SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS INCLUDING SECTION 2211 OF CHAPETER 22 IN THE CURRENT BUILDING CODE. CFMF METAL COMPONENTS HAVE BEEN DESIGNED ACCORDING TO THE PROVISIONS FOR SEISMIC DESIGN CATEGORY "A".

2. TRACK USED FOR STUD WALLS SHALL HAVE 1 1/4" DEEP LEG AND A DESIGN THICKNESS OF 18 GAGE UNO ON DRAWINGS. TRACK SHALL BE CONTINUOUS AT ALL DOOR AND WINDOW OPENINGS.

3. STUDS SHALL BE PLACED AT A MAXIMUM SPACING OF 16" O.C.. PROVIDE LATERAL BRIDGING AT A MIN. SPACING OF 48" O.C.

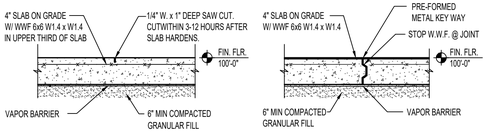
4. MATERIAL FOR LOAD BEARING WALLS SHALL BE GALVANIZED. MATERIAL SHALL MEET ASTM A-653.

5. ALL METAL STUDS SHALL BE CONTINUOUS FULL HEIGHT OF WALL. (NO SPLICES)

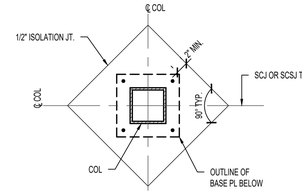
6. PROVIDE BRIDGING, BLOCKING, STRUCTURAL TRACK, STRIPING, HEADERS AND FASTENERS (IF NOT SPECIFIED) AS RECOMMENDED BY MANUFACTURER.

7. COLD-FORMED METAL FRAMING SUPPLIER IS RESPONSIBLE FOR DESIGNING AND PROVIDING FRAMING, HEADERS AT OPENINGS, AND CONNECTIONS. SUBMIT SHOP DRAWINGS AND CALCULATIONS SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MICHIGAN FOR APPROVAL.

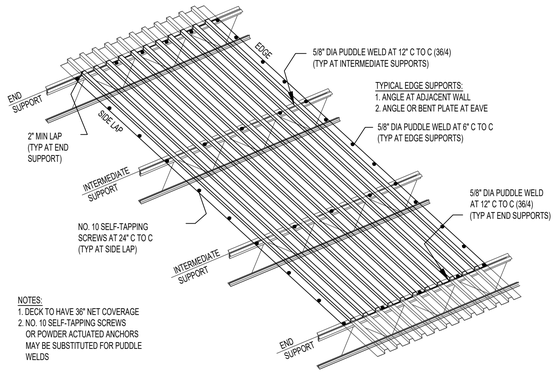
NOTE:
CONTRACTOR TO DETERMINE LOCATION OF CONSTRUCTION JOINTS (CSJ). CONSTRUCTION JOINTS TO BE PLACED IN LIEU OF CONTROL JOINTS AT CJ. LOCATIONS INDICATED ON PLANS ONLY.



1 S0.1 — SLAB ON GRADE DETAILS
SCALE: NOT TO SCALE

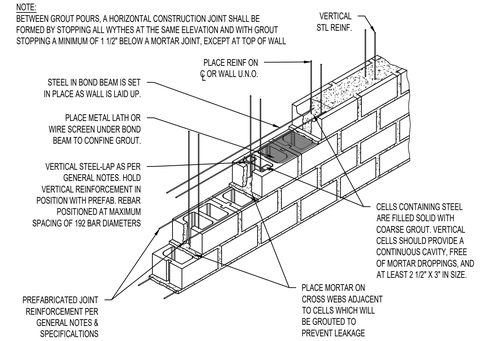


2 S0.1 — TYP. ISOLATION JOINT DETAIL
SCALE: NOT TO SCALE

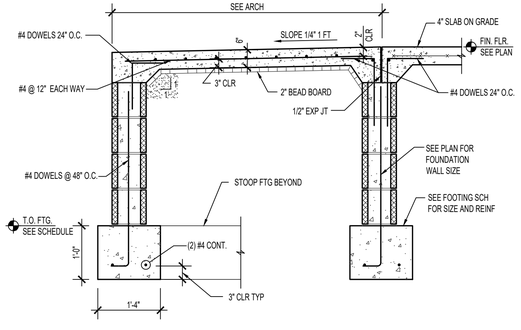


3 S0.1 — TYP ROOF DECK ATTACHMENT
SCALE: NOT TO SCALE

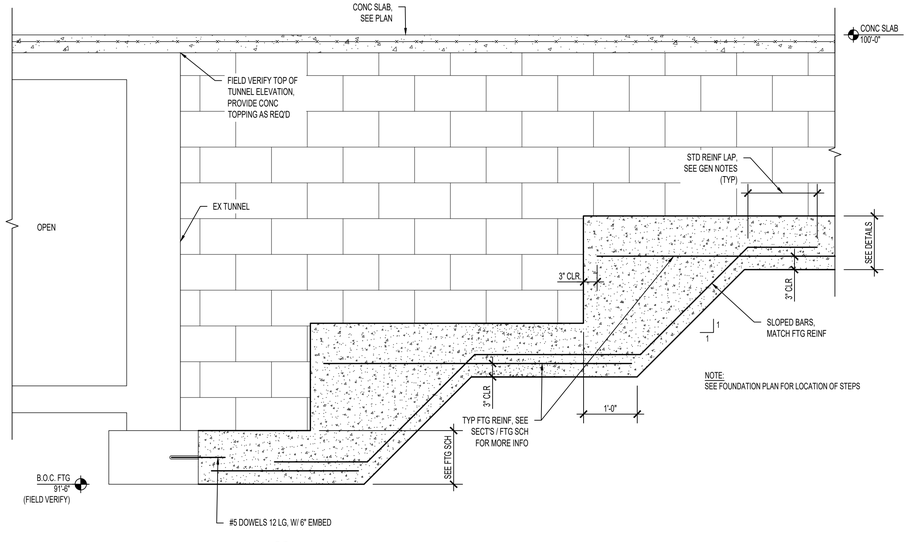
NOTE:
BETWEEN GROUT POURS, A HORIZONTAL CONSTRUCTION JOINT SHALL BE FORMED BY STOPPING ALL WYTHES AT THE SAME ELEVATION AND WITH GROUT STOPPING A MINIMUM OF 1 1/2" BELOW A MORTAR JOINT, EXCEPT AT TOP OF WALL



4 S0.1 — LOW LIFT-GROUTING TECHNIQUE GROUT IS PLACED IN LIFT UP TO 5'-0"
SCALE: NOT TO SCALE



5 S0.1 — TYP STOOP
SCALE: 3/4" = 1'-0"



6 S0.1 — TYP. STEP FTG DETAIL
NOT TO SCALE

TSSF ARCHITECTS, INC.
ARCHITECTS INTERIORS PLANNERS
122 N. WASHINGTON AVENUE SAGINAW, MICHIGAN

DINING ROOM ADDITION AND RENOVATIONS FOR:
BAY AREANAC ISD
BAY CITY, MICHIGAN

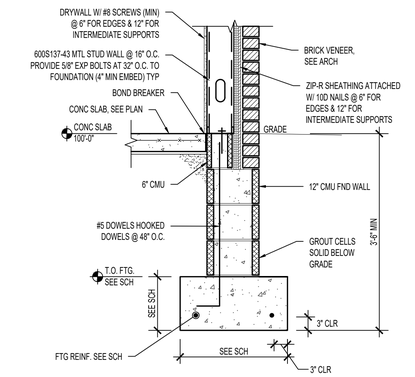
GENERAL NOTES & DETAILS

NO.	DATE

DRAWN BY SBRYANT
DATE 5-3-26
APPROVED MWEISS

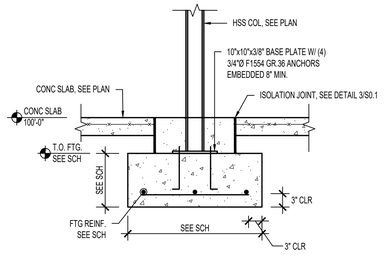
SHEET NO.
S0.1

PROJECT NO.
2538



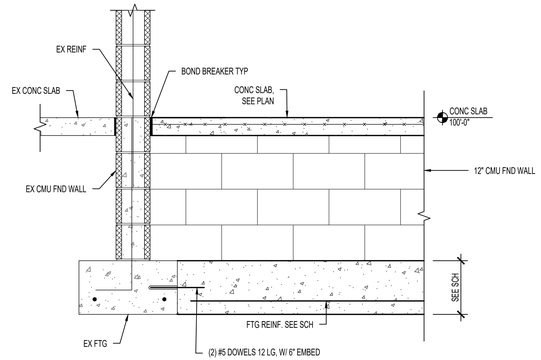
1 S2.0 SECTION

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



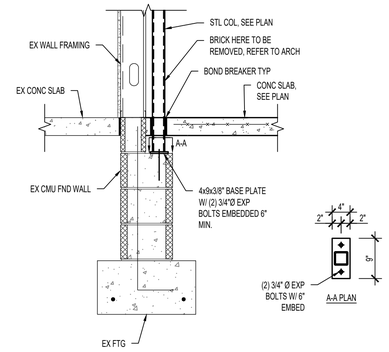
2 S2.0 SECTION

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



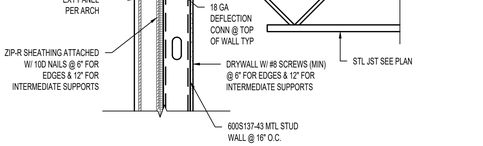
3 S2.0 SECTION

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



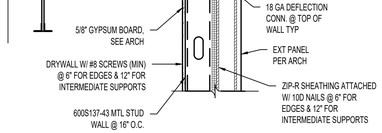
4 S2.0 SECTION

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



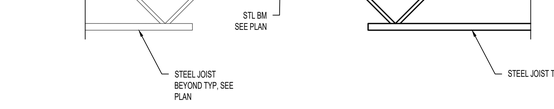
5 S2.0 SECTION

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



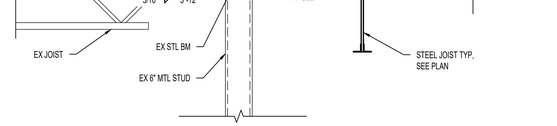
6 S2.0 SECTION

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



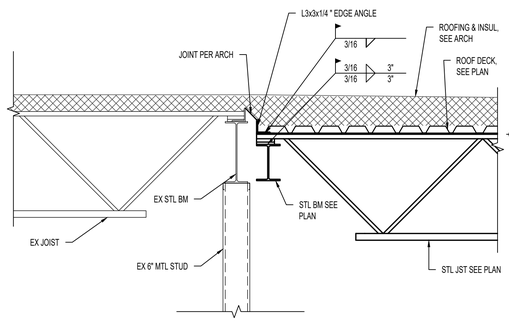
7 S2.0 SECTION

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



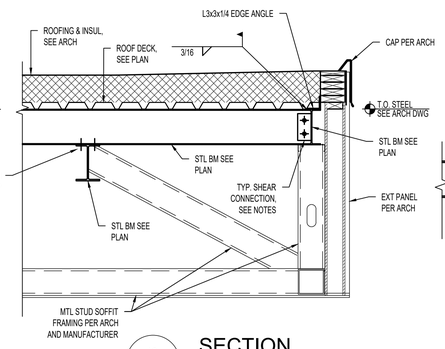
8 2.0 SECTION

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



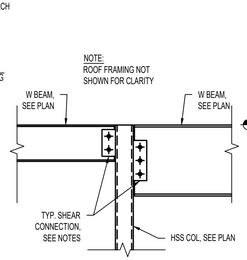
9 S2.0 SECTION

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



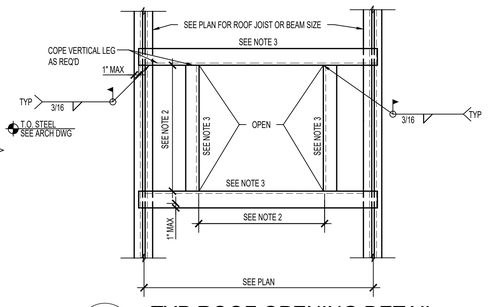
10 S2.0 SECTION

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



11 S2.0 SECTION

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

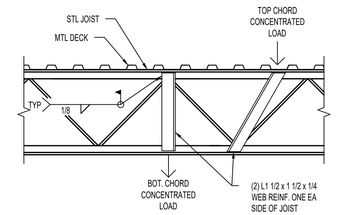


12 S2.0 TYP ROOF OPENING DETAIL

SCALE: NTS

NOTES:

1. PROVIDE FRAMES @ ALL ROOF OPENINGS LARGER THAN 5" WIDE.
2. SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATION OF REQUIRED OPENINGS. COORDINATE SIZE + LOCATION WITH APPROPRIATE CONTRACTOR
3. AT JOIST/BEAM SPACING LARGER THAN 8' OR AT RTU CURB SUPPORT, PROVIDE L5x4x3/8 LLV FRAMING. AT JOIST/BEAM SPACING LESS THAN 8', PROVIDE L4x4x1/4 FRAMING
4. INCLUDE SUMP PAN AT DRAIN OPENINGS



13 S2.0 TYP SECTION AT POINT LOAD

SCALE: NOT TO SCALE

TSSF ARCHITECTS, INC.
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DETAILS

NO.	DATE

DRAWN BY **SBRYANT**

DATE **5–3–26**

APPROVED **MWEISS**

SHEET NO.

S2.0

PROJECT NO.

2538

KTS ENGINEERING GROUP
CONSULTING ENGINEER
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KTS PROJECT NO.: 26-0299

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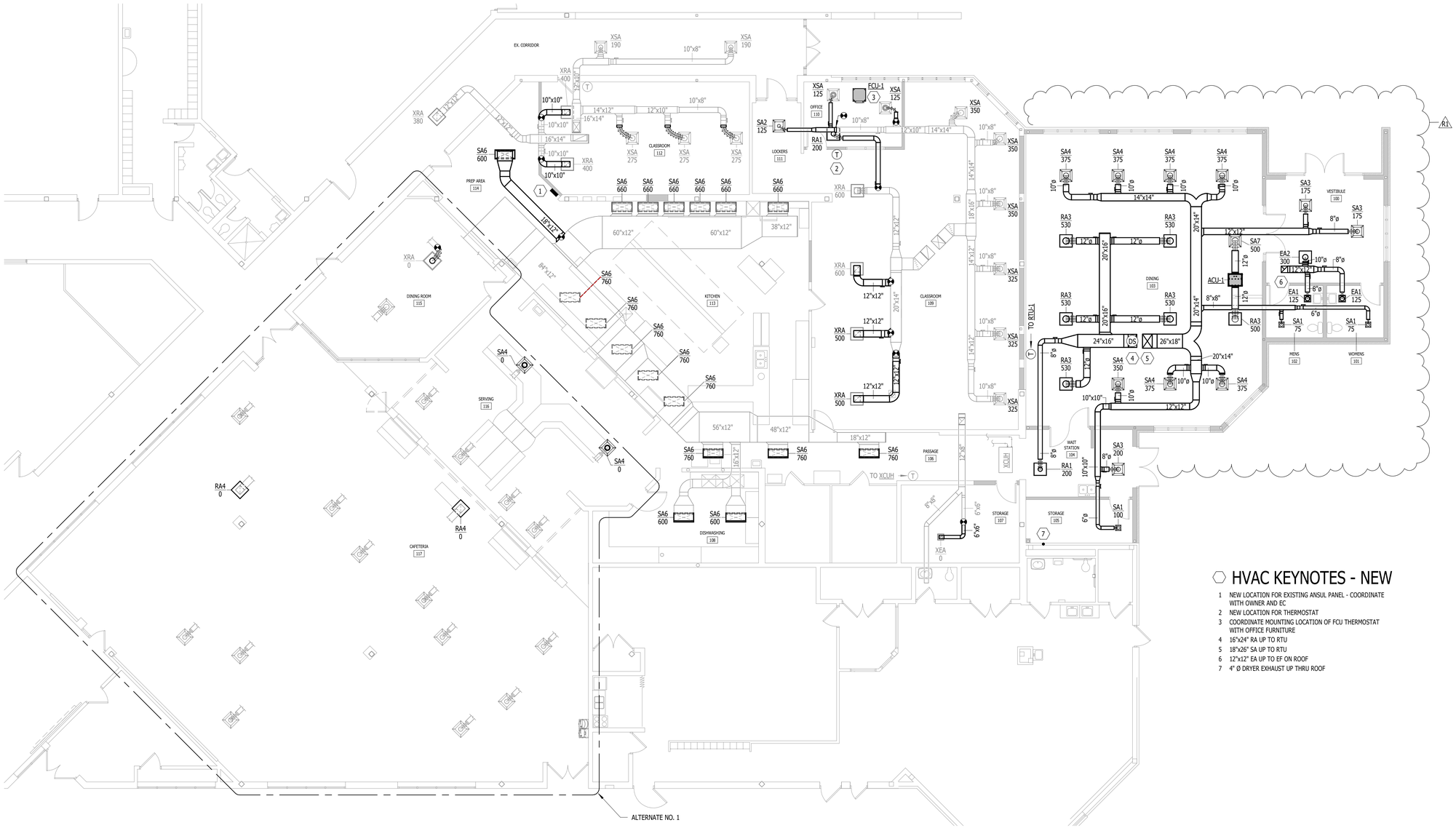

HVAC KEYNOTES - NEW

1. NEW LOCATION FOR EXISTING ANSUL PANEL - COORDINATE WITH OWNER AND EC
2. NEW LOCATION FOR THERMOSTAT
3. COORDINATE MOUNTING LOCATION OF FCU THERMOSTAT WITH OFFICE FURNITURE
4. 16"x24" RA UP TO RTU
5. 18"x26" SA UP TO RTU
6. 12"x12" EA UP TO EF ON ROOF
7. 4" Ø DRYER EXHAUST UP THRU ROOF

MECHANICAL FLOOR PLAN
1/8" = 1'-0"

TSSF ARCHITECTS, INC.
ARCHITECTS INTERIORS PLANNERS
122 N. WASHINGTON AVENUE SAGINAW, MICHIGAN

DINING ROOM ADDITION AND RENOVATIONS FOR:

BAY ARENAC ISD
BAY CITY, MICHIGAN

NO.	DATE	CODE REVIEW RESPONSE
R1	05/08/26	

DRAWN BY JEE
DATE 03/17/2026
APPROVED

SHEET NO.
M1.0

PROJECT NO.
2538

KTS ENGINEERING GROUP
CONSULTING ENGINEER
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DINING ROOM ADDITION AND RENOVATIONS FOR:
BAY ARENAC ISD
BAY CITY, MICHIGAN

SEQUENCE OF OPERATION

RTU-1:
- OWNER SHALL PROGRAM AN OCCUPIED/UNOCCUPIED SCHEDULE VIA THERMOSTAT. THERMOSTAT SHALL BE WIFI & PROGRAMMABLE, EQUAL TO "WHITE ROGERS" 1FU87U-42WF.
- OCCUPIED HEATING: RTU FAN RUNS CONTINUOUSLY AND BURNERS SHALL CYCLE/STAGE TO MAINTAIN THERMOSTAT SETPOINT. OUTSIDE AIR DAMPER SHALL OPEN TO ALLOW 22% OUTSIDE AIR INTO THE SYSTEM.
- UNOCCUPIED HEATING: RTU FAN AND BURNERS SHALL CYCLE AS NECESSARY TO MAINTAIN THERMOSTAT SETPOINT. OUTSIDE AIR DAMPER SHALL BE CLOSED.
- OCCUPIED COOLING: RTU FAN SHALL RUN CONTINUOUSLY AND OUTSIDE AIR DAMPER SHALL OPEN TO ALLOW 22% OUTSIDE AIR INTO THE SYSTEM. COMPRESSOR SHALL CYCLE/STAGE AS REQUIRED TO MAINTAIN THERMOSTAT SETPOINT. ECONOMIZER WITH ENTHALPY CONTROLLER SHALL BE ENABLED AND UTILIZED WHEN AMBIENT AIR CONDITIONS WARRANT.
- UNOCCUPIED COOLING: FAN AND COMPRESSOR SHALL CYCLE TO MAINTAIN THERMOSTAT SETPOINT. OUTSIDE AIR DAMPER SHALL REMAIN CLOSED EXCEPT UPON CALL FROM ECONOMIZER, WHICH REMAINS ENABLED.
- SAFETY FEATURES: UNIT SHALL HAVE A DUCT SMOKE DETECTOR INSTALLED IN THE RETURN AIR DUCT, DE-ENERGIZING THE UNIT WHEN SMOKE IS SENSED AND SENDS AN ALARM SIGNAL TO A REMOTE AUDIO/VISUAL ALARM.

EF-1:
- MC TO PROVIDE TIMER SWITCH TO CONTROL FAN. FAN SHALL RUN DURING OCCUPIED HOURS.

VENTILATION SCHEDULE (REHAB)

NO.	NAME	AREA	NO. OF PEOPLE	MICHIGAN REHAB, 2021	MIN. OA CFM REQ.	OA CFM PROVIDED	% OA PROVIDED	Actual Supply Airflow
XRTU-A								
106	PASSAGE	242 ft²	0	SECTION 807	0	152	25	760 CFM
108	DISHWASHING	308 ft²	6	SECTION 807	30	240	25	1200 CFM
113	KITCHEN	1440 ft²	29	SECTION 807	145	1856	25	9280 CFM
114	PREP AREA	296 ft²	6	SECTION 807	30	120	25	600 CFM
XRTU-B								
112	CLASSROOM	549 ft²	19	SECTION 807	95	205	25	825 CFM
XRTU-C								
109	CLASSROOM	1506 ft²	53	SECTION 807	265	505	25	3825 CFM
110	OFFICE	151 ft²	1	SECTION 807	4	63	25	250 CFM
111	LOCKERS	139 ft²	0	SECTION 807	0	31	25	125 CFM

VENTILATION SCHEDULE

R1

NUMBER	NAME	SPACE TYPE	AREA	OCCUPANT #/1000 SF	OA PER PERSON	OA PER AREA	NUMBER OF PEOPLE	OUTDOOR AIRFLOW	Ez (cool)	Ez (heat)	Ez (worst case)	Voz (cool)	Voz (heat)	Voz (worst case)
RTU-1														
100	VESTIBULE	CORRIDOR	295 ft²	0	0 CFM	0.06 CFM/SF	0.0	18 CFM	1.0	0.8	0.8	18 CFM	22 CFM	22 CFM
103	DINING	DINING	1623 ft²	70	7.5 CFM	0.18 CFM/SF	113.6	1144 CFM	1.0	0.8	0.8	1144 CFM	1430 CFM	1430 CFM
104	WAIT STATION	CORRIDOR	168 ft²	0	0 CFM	0.06 CFM/SF	0.0	10 CFM	1.0	0.8	0.8	10 CFM	13 CFM	13 CFM
														1465 CFM

AIR CLEANING UNIT SCHEDULE

R1

COMMENTS:
1. PROOF OF COMPLIANCE WITH UL 2998, "ENVIRONMENTAL CLAIM VALIDATION PROCEDURE FOR ZERO OZONE EMISSIONS FROM AIR CLEANERS.
2. COMPLY WITH INDOOR AIR QUALITY PERFORMANCE REQUIREMENTS IN ASHRAE 62.1-2022, BY WAY OF UTILIZING THE INDOOR AIR QUALITY PROCEDURE.
3. EVALUATION OF DEDICATED CLEAN AIR SYSTEM REMOVAL EFFICACIES OF DESIGN COMPOUNDS SHALL COMPLY WITH ASHRAE 145.2 – 2011.
4. PROOF OF COMPLIANCE TO ASHRAE 241- 2023 APPENDIX A (3RD PARTY SAFETY TESTING).
5. SYSTEM SHOULD EMPLOY INTERNAL SOLID-STATE SENSOR(S) TO CONTINUOUSLY MONITOR THE FOLLOWING: CARBON DIOXIDE (CO2), FORMALDEHYDE (HCHO), TVOC, PM1.0, PM2.5, PM4.0, PM10.0, TEMPERATURE, HUMIDITY.
6. SYSTEM WILL ONLY RUN WHEN A SPACE IS OCCUPIED, THEREBY EXTENDING FILTER LIFE.
7. ECM BLOWER/MOTOR ONLY.
8. NOMINAL OPERATING SOUND MUST BE LESS THAN NC27.
9. FILTERS SHALL BE STANDARD SIZE AND NON-PROPRIETARY TO THE DEVICE MANUFACTURER.

TAG	BASIS OF DESIGN		CFM	E.S.P. (in-wg)	CFM RANGE		DRIVE TYPE	SOUND LEVEL (NOM. CLEANING)	ELECTRICAL DATA		DISCONNECT BY		CONTROL	COMMENTS
	MANUFACTURER	MODEL			MIN	MAX			WATTS	VOLTAGE	MC	EC		
ACU-1	GPS AIR	SIAQ-500-1-DC	500	.80	120	500	DIRECT	NC-27	200	120/1		X	UNIT MONITORS OCCUPANCY & CONTAMINANTS, THEN VARIES FAN SPEED AS REQ'D	1 - 9

smartIAQ™
Intelligent Clean Air System ASHRAE 62.1 IAQP Calculator

smartIAQ™ from GPS Air: www.gpsair.com/smartIAQ Calculator v 7.56

Project & HVAC Equipment Inputs

Equip ID	BAISD Dining
Project Location:	Detroit, MI
Facility Type	Educational Facilities
Zone Floor Area (Az) (ft2)	1,623
Outdoor Airflow (Vot) (cfm)	750
Return Airflow (Vr) (cfm)	1,850
Zone Count	1
Zone Height (ft.)	10.0
Outdoor Air Filter	MERV8
Ventilation Effectiveness (Ez)	0.80
Outdoor Air Flow Type	Constant

IAQP Design Parameters

smartIAQ Cleaning Capacity (Vc) (cfm)	**500**
smartIAQ units (if serving 1 Zone)	**1**
Model:	**sIAQ1-DIST1L-DC-BK-volt-CUST500**

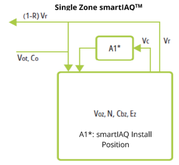
Cleaning Capacity Modifications

Vc is: 500 cfm based on zone (1) & volume (16230 ft3).	
Select a Custom Vc (max velocity):	Yes
Selectable Vc options (cfm):	500

Zone Table

Z#	Area (ft²)	Zone Use	Zone Supply Air (Vsz)	People	People Rate (cfm)	Area Rate (cfm)	Total VRP O.A. (cfm)	IAQP O.A. (cfm)	Vc Zone (cfm)	Name
1	1,623	Restaurant dining rooms	2,600	114	855	292	1434	750	500	103 Dining
2	-		-	-	0	0	0	0	0	
3	-		-	-	0	0	0	0	0	
4	-		-	-	0	0	0	0	0	
Total:	**1,623**		**2,600**	**114**	**855**	**292**	**1,434**	**750**	**500**	

Single Zone smartIAQ™



Single Pass Efficiency (Ef) ANSI/ASHRAE 52.2 and 145.2	
Acetaldehyde	53.1%
Acetone	77.4%
Benzene	100.0%
Dichloromethane	63.8%
Formaldehyde	63.6%
Naphthalene	100.0%
Phenol	45.1%
Tetrachloroethylene	99.9%
Toluene	100.0%
Xylene, total	100.0%
PM2.5	77.0%
Carbon Monoxide	1.4%
Ozone	100.0%
Ammonia	22.6%

IAQP Design Check	PASS
Max Contaminant Ratio	0.85

Mixtures Test	PASS
Upper Respiratory	0.48
Eye Irritant	0.62
Central Nervous System	0.01

Design Compounds	Design Limit (µg/m³)	O. A. Concen.* (µg/m³)	Gen. Rate (µg/h)	Cbz Max (µg/m³)	Cbz/DL Ratio	Exposure Pass/Fail	Cognizant Authority	Nearest City
Acetaldehyde	140	3.4	39,202	30.9	0.22	PASS	Cal EPA CREL	Detroit, MI
Acetone	1,200	10.0	8,624	12.2	0.01	PASS	AgBB LCI	Detroit, MI
Benzene	3	0.9	473	0.8	0.27	PASS	Cal EPA CREL	Detroit, MI
Dichloromethane	400	0.0	445	0.3	0.00	PASS	Cal EPA CREL	Detroit, MI
Formaldehyde	33	3.1	3,769	4.7	0.14	PASS	Cal EPA 8-hour CREL	Detroit, MI
Naphthalene	9	0.0	36	0.0	0.00	PASS	Cal EPA CREL	Detroit, MI
Phenol	70	0.0	651	0.5	0.01	PASS	AgBB LCI	Detroit, MI
Tetrachloroethylene	35	0.1	36	0.0	0.00	PASS	Cal EPA CREL	Detroit, MI
Toluene	300	0.0	1,538	0.9	0.00	PASS	Cal EPA CREL	Detroit, MI
Xylene, total	500	1.0	561	0.9	0.00	PASS	AgBB LCI	Detroit, MI
PM2.5	9	14.5	-	7.6	0.85	PASS	US EPA NAAQS (yr mean)	Detroit, MI
Carbon Monoxide	10,310	535.9	-	531.0	0.05	PASS	US EPA NAAQS	Detroit, MI
Ozone	137	94.2	-	33.7	0.25	PASS	US EPA NAAQS	Detroit, MI
Ammonia	200	0.0	-	0.0	0.00	PASS	Cal EPA CREL	Detroit, MI

A NOTE FOR CODE OFFICIALS
smartIAQ IAQP Calculator complies with ASHRAE 62.1-2022, -2019, and earlier with the Indoor Air Quality Procedure (IAQP). smartIAQ performance is based on Standard 145.2 and Standard 52.2 as determined by independent, third party laboratory testing. This is the gold standard. Generation rate information aligns with ASHRAE D-86925; this calculator and the society's will deliver matching results for design compound concentrations.

* O.A. Concentration Data by EPA NAAQS or Canada ECCC

DIFFUSERS, REGISTERS AND GRILLES SCHEDULE

GENERAL SCHEDULE NOTES:
A. ACCEPTABLE MANUFACTURERS WITH DIMENSIONS AND PERFORMANCE EQUAL TO SCHEDULED ITEM: PRICE, KRUEGER, SHOEMAKER, CARNES, T & B.

SPECIFIC TAG NOTES:
1. VOLUME DAMPER IN BRANCH DUCT, AS FAR AWAY FROM DIFFUSER AS POSSIBLE, AND IN AN ACCESSIBLE LOCATION
2. PROVIDE OPPOSED BLADE DAMPER FOR BALANCING

TAG	MANUFACTURER	MODEL	NECK SIZE	FACE SIZE	DESCRIPTION	BORDER TYPE	MATERIAL	COLOR	SYSTEM	NOTES
SA1	PRICE	SCD	6"ø	12"x12"	FOUR WAY, HORIZONTAL TO VERTICAL ADJUSTMENT	LAY-IN	STEEL	WHITE	SUPPLY	1
SA2	PRICE	SCD	6"ø	24"x24"	FOUR WAY, HORIZONTAL TO VERTICAL ADJUSTMENT	LAY-IN	STEEL	WHITE	SUPPLY	1
SA3	PRICE	SCD	8"ø	24"x24"	FOUR WAY, HORIZONTAL TO VERTICAL ADJUSTMENT	LAY-IN	STEEL	WHITE	SUPPLY	1
SA4	PRICE	SCD	10"ø	24"x24"	FOUR WAY, HORIZONTAL TO VERTICAL ADJUSTMENT	LAY-IN	STEEL	WHITE	SUPPLY	1
SA6	PRICE	510	36"x16"	36"x16"	SINGLE DEFLECTION, 3/4" BLADE SPACING	SURFACE	STEEL	WHITE	SUPPLY	2
SA7	PRICE	SCD	12"ø	24"x24"	FOUR WAY, HORIZONTAL TO VERTICAL ADJUSTMENT	LAY-IN	STEEL	WHITE	SUPPLY	-
RA1	PRICE	PDR	8"ø	24"x24"	PERFORATED RETURN DIFFUSER	LAY-IN	STEEL	WHITE	RETURN	1
RA3	PRICE	PDR	12"ø	24"x24"	PERFORATED RETURN DIFFUSER	LAY-IN	STEEL	WHITE	RETURN	1
RA4	PRICE	PDR	12"x12"	24"x24"	PERFORATED RETURN DIFFUSER	LAY-IN	STEEL	WHITE	RETURN	-
EA1	PRICE	PDR	8"ø	12"x12"	PERFORATED RETURN DIFFUSER	LAY-IN	STEEL	WHITE	EXHAUST	1
EA2	PRICE	PDR	10"ø	24"x24"	PERFORATED RETURN DIFFUSER	LAY-IN	STEEL	WHITE	EXHAUST	1

EXHAUST FAN SCHEDULE

COMMENTS:
1. PROVIDE WITH FACTORY MOUNTED DISCONNECT
2. PROVIDE ROOF CURB FOR FLAT ROOF
3. CONTINUOUS OPERATION RATED & THERMALLY PROTECTED MOTOR
4. VIBRATION ISOLATION
5. GALVANIZED STEEL HOUSING
6. BACKDRAFT DAMPER

TAG	BASIS OF DESIGN		CFM	E.S.P. (in-wg)	FAN SPEED (RPM)		DRIVE TYPE	SONES	ELECTRICAL DATA			DISCONNECT BY		CONTROL	COMMENTS
	MANUFACTURER	MODEL			DESIGN	MAX			HP	WATTS	VOLTAGE	MC	EC		
EF-1	GREENHECK	GB-100	550	.25	919	1800	BELT	3.7	1/4		460/3	X		SEE SEQUENCE OF OPERATION	1 - 6

DUCTLESS MINI-SPLIT SCHEDULE

COMMENTS:
1. INDOOR UNIT IS ELECTRICALL POWERED FROM OUTDOOR UNIT
2. PROVIDE SINGLE POINT ELECTRICAL CONNECTION
3. PROVIDE DISCONNECT SWITCH
4. PROVIDE FACTORY LINESET
5. PROVIDE 12" OUTDOOR UNIT STAND
6. OUTDOOR UNIT SHALL BE HYPER HEAT
7. PROVIDE WALL MOUNTED WIRED REMOTE CONTROLLER FOR
8. PROVIDE ANTI-ALLERGY ENZYME FILTER

INDOOR UNIT(S)						OUTDOOR UNIT								COMMENTS
TAG	BASIS OF DESIGN		TYPE	TOTAL COOLING CAP. 95°DB/75°WB	TOTAL HEATING CAP. 47°F	TOTAL HEATING CAP. 5°F	TAG	BASIS OF DESIGN		SEER2	EER2	NOMINAL TONS	UNIT ELECTRICAL			
	MANUFACTURER	MODEL						MANUFACTURER	MODEL				FAN FLA	MCA	MOCP	VOLTAGE	
FCU-1	MITSUBISHI	SLZ-KF09NA1	CASSETTE	9,000 Btu/h	13,200 Btu/h	11,000 Btu/h	CU-1	MISTUBISHI	SUZ-KA09NAHZ	20.5	15.0	3/4	0.7	14	25	208-230/1	1 - 8

ROOF TOP UNIT SCHEDULE

COMMENTS:
1. DOWNFLOW CONFIGURATION.
2. PROVIDE FIELD INSTALLED 14" ROOF CURB.
3. PROVIDE FACTORY INSTALLED UNPOWERED CONVENIENCE OUTLET.
4. PROVIDE FACTORY INSTALLED NON-FUSED DISCONNECT.
5. PROVIDE FACTORY INSTALLED DIGITAL CONTROLS W/ BACNET COMMUNICATIONS.
6. PROVIDE FACTORY INSTALLED HINGED ACCESS PANELS.
7. PROVIDE FACTORY INSTALLED LOW-LEAK ECONOMIZER W/ DIFF ENTHALPY SENSOR.
8. PROVIDE FACTORY INSTALLED RETURN AIR SMOKE DETECTOR.
9. PROVIDE FIELD INSTALLED FILTRATION - MERV8.

TAG	BASIS OF DESIGN		CFM SUPPLY	E.S.P.	CFM OA (MINIMUM)	COOLING DATA					HEATING DATA		ELECTRICAL DATA			DISCONNECT BY		UNIT WEIGHT	COMMENTS
	MANUFACTURER	MODEL				NOMINAL TONS	E.A.T. DB	E.A.T. WB	L.A.T. DB	TOTAL BTUH	INPUT MBH	OUTPUT MBH	MCA	MOP	VOLTAGE	MC	EC		
RTU-1	TRANE	YSK102A4S0H	3400 CFM	1.40 in-wg	750 CFM	8.5	80.0 °F	67.0 °F	95.0 °F	112,700	200	162	26	35	460/3	X		1250 lb	1 - 9

NO.	DATE
R1	05/08/26

CODE REVIEW RESPONSE

DRAWN BY JEE
DATE 03/17/2026
APPROVED

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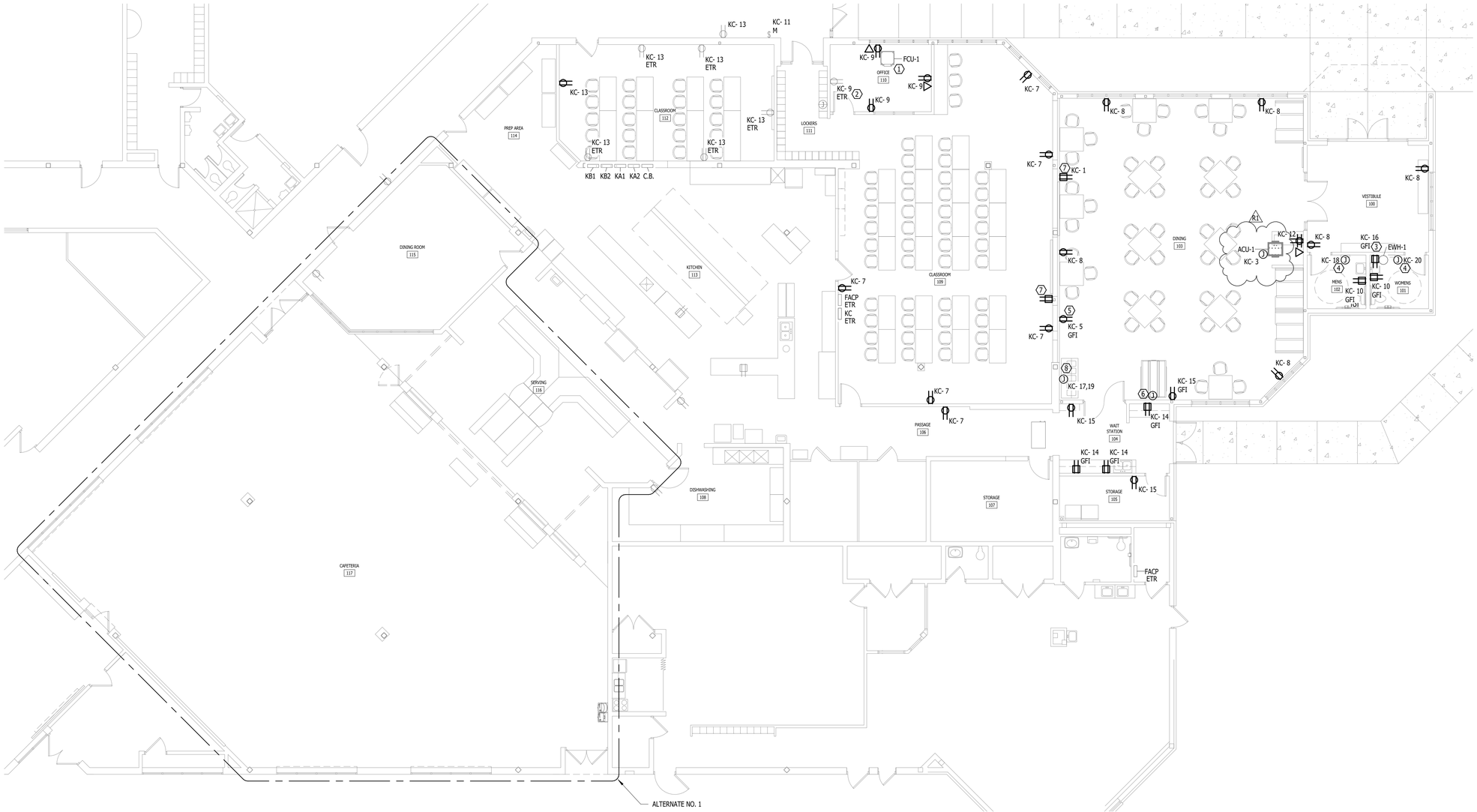

MAIN FLOOR PLAN - POWER
1/8" = 1'-0"

POWER KEYNOTES:

1. POWERED THROUGH OUTSIDE UNIT "CU-1".
2. E.C. TO USE EXISTING CIRCUIT FOR NEW RECEPTACLES.
3. RECEPTACLE FOR ELECTRIC WATER HEATER "EWH-1" LOCATED ABOVE CEILING. E.C. TO COORDINATE RECEPTACLE LOCATION WITH "EWH.1" INSTALLER.
4. ELECTRIC HAND DRYER SHALL BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR, EQUAL TO "WORLD DRYER" SANITIZE+DRY. FINISH TO BE DECIDED BY OWNER. 120/1/60. 950 WATTS. DEDICATED 15 AMP CIRCUIT. HEIGHT PER ARCHITECURAL DRAWINGS.
5. POWER FOR COFFEE STATION, VERIFY LOCATION WITH OWNER.
6. PORTABLE SALAD BAR, VERIFY LOCATION WITH OWNER.
7. E.C. VERIFY POWER FOR DROP DOWN SCREEN. E.C. TO VERIFY LOCATION WITH OWNER.
8. HOT SERVING LINE, E.C. TO VERIFY LOCATION WITH OWNER.

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122 N. WASHINGTON AVENUE SAGINAW, MICHIGAN

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BAY CITY, MICHIGAN

NO.	DATE	
R1	05/08/26	CODE REVIEW RESPONSE
A1	03/25/26	ADDENDUM 1

DRAWN BY JWA
DATE 03/17/2026
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EXISTING PANEL

Branch Panel: KC

Location: CLASSROOM 109
Supply From:
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 208Y/120 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type: MLO
Mains Rating: 100 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	DROP DOWN SCREEN DINING 103	20 A	1	180 VA	2200...					2	30 A	BUFFET WARMER	2
3	ACU-1	20 A	1			200 VA	2200...						4
5	COFFEE STATION DINING 103	20 A	1					600 VA	993 VA	1	20 A	LIGHTING	6
7	RCPT CLASSROOM 109	20 A	1	1080...	1080...					1	20 A	RCPT DINING 103	8
9	RCPT OFFICE 110	20 A	1			900 VA	360 VA			1	20 A	WOMENS, MENS 101,102	10
11	CH-1	20 A	1					700 VA	360 VA	1	20 A	RCPT DINING 103	12
13	PCPT CLASSROOM 112	20 A	1	1260...	540 VA					1	20 A	RCPT WAIT STATION 104	14
15	RCPT WAIT STATION 104, STORAGE 105	20 A	1			540 VA	1650...			1	20 A	EWH-1	16
17	Receptacle DINING 103	20 A	2					2200...	950 VA	1	20 A	HAND DRYER MENS 102	18
19				2200...	950 VA					1	20 A	HAND DRYER WOMENS 101	20
21	RCPT RTU	20 A	1			360 VA	0 VA			1	20 A	SPARE	22
23	SPARE	20 A	1					0 VA	500 VA	1	20 A	FRONT SIGNAGE	24
25	SPARE	20 A	1	0 VA	180 VA					1	20 A	EAST TUNNEL SUMP PUMP	26
27	SPARE	20 A	1			0 VA	1475...			2	20 A	CU-1/FCU-1	28
29	LIGHTING	20 A	1					999 VA	1475...				30
		Total Load:		9670 VA		7685 VA		8778 VA					
		Total Amps:		82 A		64 A		75 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Equipment	3650 VA	100.00%	3650 VA		
Other	32 VA	100.00%	32 VA	**Total Conn. Load:**	26133 VA
Receptacle	19990 VA	75.01%	14995 VA	**Total Est. Demand:**	21138 VA
Lighting	2461 VA	100.00%	2461 VA	**Total Conn.:**	73 A
				Total Est. Demand:	59 A

Notes:
ORIGINAL PANEL LOAD = 19.7KW

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122 N. WASHINGTON AVENUE SAGINAW, MICHIGAN

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BAY CITY, MICHIGAN

NO.	DATE
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DATE 03/17/2026
APPROVED KTS

SHEET NO.
E4.0

PROJECT NO.
2538

SOIL EVALUATION
FOR
PROPOSED DINING ROOM ADDITION
BAY-ARENAC ISD CAREER CENTER
MONITOR TOWNSHIP, BAY COUNTY, MICHIGAN

May 20, 2026

Prepared For:

TSSF Architects, Inc.
122 North Washington Avenue
Saginaw, Michigan 48607

Prepared By:

Snyder & Staley Engineering, PLC
824 Tittabawassee Road
Saginaw, Michigan 48604

Project Number 26-316-007

TABLE OF CONTENTS

APPENDIX

I. INTRODUCTION

We have completed the requested soil evaluation for the proposed dining room addition to the Bay Arenac Intermediate School District Career Center building in Monitor Township of Bay County, Michigan. This report presents the results of our evaluation, our interpretation of the soil and groundwater conditions at the soil boring locations, and our geotechnical recommendations for design and construction of the proposed development. Our evaluation was performed under the direction of a registered Professional Engineer in the State of Michigan.

A. Site and Project Description

The site of the existing Bay Arenac Intermediate School District Career Center building is located at 4155 Monitor Road in Bay City, Michigan. We understand that the proposed building addition will be constructed on the east side of the existing building. The proposed addition will be approximately 2700± square feet. The structure will consist steel roof joists/beams and metal deck framing supported by steel columns on conventional spread footings with a concrete slab on grade. We assume the propose building finish floor elevation will match that of the existing building on site. The site slopes upward up to 5 feet to the east of the existing building, based on our visual observation.

B. General

The recommendations submitted in this report have been based on the available soil boring information and the preliminary design details furnished for the proposed development. Any revisions in the noted location or design details for the proposed structures should be brought to our immediate attention so we may evaluate the extent to which our recommendations may be impacted by the changes. When final plans and specifications are available, we should be given the opportunity to review them to verify our understanding of the anticipated project and to verify our recommendations have been properly interpreted. The conclusions, recommendations and considerations presented herein have been based on the information obtained from the two (2) soil borings performed at this site. This report does not reflect changes in subsurface conditions that may occur between these soil boring locations. If significant variations from our reported subsurface conditions are noted during construction, we should be notified immediately to determine if modifications to our recommendations are needed. We have strived to conduct this soil evaluation in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the locality of this project. No other warranties, implied or expressed, are made. The recommendations presented herein are intended solely for the use of TSSF Architects, Inc and their design consultants in evaluating this site for the specific development being proposed.

II. DESCRIPTION OF INVESTIGATION PROCEDURES

A. Field Operations

We drilled two soil borings, labeled as Borings B1 and B2, to depths of approximately 15 feet below the existing ground surface within the proposed building addition footprint. The approximate soil boring locations are shown on the appended diagram. Snyder & Staley Engineering, PLC personnel staked the soil borings in the field using normal taping procedures and existing landmarks as reference points.

The soil borings were performed by AFT Drilling of Standish, Michigan with a trailer-mounted rotary drill rig in general accordance with the American Society of Testing and Materials (ASTM) Standard D-1586 (Penetration Test and Split-Barrel Sampling of Soils) using hollow-stem, continuous flight augers to advance the holes. The sampling intervals, standard penetration test results (N-values), groundwater observations and other pertinent field information are shown on the Soil Boring Logs included in the Appendix of this report. The symbols and notations used on the boring logs are defined on the General Notes, also appended to this report.

B. Laboratory Testing

The soil samples were sealed in labeled glass jars in the field and returned to the laboratory where they were visually classified in general accordance with the Unified Soil Classification System (USCS) (ASTM Standard D-2487). These descriptions appear on the appended Soil Boring Logs. A chart that describes the USCS group symbols, which appear in parenthesis after the soil descriptions, is also included in the Appendix of this report.

Additionally, selected representative portions of the cohesive soil samples were subjected to moisture content and calibrated hand penetrometer tests. The moisture content of a soil sample is the ratio of the weight of water in the sample to the oven-dried weight of the soil, as determined by ASTM Standard D-2216, expressed as a percentage. In the hand penetrometer test, the unconfined compressive strength of a soil sample is estimated by measuring the resistance of the soil to penetration of a calibrated spring-loaded cylinder. The capacity of the hand penetrometer is 4½ tons per square foot (tsf). Results of these laboratory tests are shown on the appended Soil Boring Logs.

III. DESCRIPTION OF SUBSURFACE CONDITIONS

The soil profile description and groundwater observations discussed herein are intended to provide a brief and general summary of the typical subsurface conditions encountered at this site. For a more detailed description of the soil and groundwater conditions encountered at the respective boring locations, please refer to the attached Soil Boring Logs and Soil Boring Location Diagram. The stratification lines of the boring logs are intended to indicate a general transition between soil types and the actual transition may vary between boring locations.

A. Soil Conditions

A relatively uniform soil profile was encountered in each of the soil borings performed for this evaluation. Each major component of the generalized soil profile observed at this site, beginning from the ground surface, is described below:

Soil Group 1 – Surficial Materials

At the surface of each of these soil borings, B1 and B2, the driller reported 1 to 2 feet of sandy topsoil with traces of root structures, silt and gravel.

Soil Group 2 – Fine Sand Fill (SP-FILL)

Beneath the surficial materials at each of the borings, deposits of fine sand fill deposits were encountered. At Borings B1 and B2, the fine sand fill deposits were encountered to depths of 2 feet and 6 feet, respectively. Standard penetration (N-values) results in the granular deposits ranged between 4 and 16 blows per linear foot, which indicates these materials are loose to medium dense in relative density.

Soil Group 3 – Silty Clay (CL)

Beneath these surficial and fill deposits at each boring location, layers of natural, silty clay were observed to explored depths of these soil borings. Hand penetrometer unconfined compressive strengths in these clays were approximately 2½ tsf to in excess of 4½ tsf. Corresponding natural moisture contents in these cohesive soils varied between 11 and 17 percent.

B. Groundwater Observations

No ground water seepage was observed in borings during the drilling and/or sampling operations. Upon completion of the drilling operations and removal of the augers from the ground, no groundwater was observed in the open boreholes. All of the boreholes were backfill with natural soils upon their completion; therefore no long-term groundwater observations are available.

In granular (sandy) soils, a relatively short amount of time is usually required for the water level in an open bore hole to stabilize with the prevailing hydrostatic groundwater level. Due to the inherent low permeability of cohesive (clayey) soils, however, a long time may be required for the water level in an open bore hole to stabilize with the long-term hydrostatic groundwater level. Where granular soil layers overlie cohesive soils, as was generally the case at this site, a complicated subsurface hydraulic condition, possibly involving perched groundwater accumulations, multiple aquifers, or artesian flow may arise. For this reason, the short-term groundwater level measurements recorded in our borings, as noted above, may not accurately depict the true position of the hydrostatic groundwater level at this site. To do so, in our opinion, would require installation and monitoring of several piezometers.

Perched groundwater accumulations may develop when surface runoff infiltrates the more pervious sandy soil layers and/or intrusions situated above or within a mass of less permeable clayey or silty soil. These groundwater accumulations may then become temporarily trapped or "perched" above the long-term hydrostatic groundwater level. For this reason, perched groundwater accumulations are generally more prevalent during the spring months after the snow melts or following periods of prolonged precipitation and they may essentially disappear during extended dry periods. Conditions appear to be favorable for perched groundwater accumulations to develop at varying depths at this site given the presence of the granular fill deposits above the cohesive deposits as encountered in our soil borings.

Since the soils generally encountered in our borings are of a cohesive nature, which have a relatively low permeability, a long time period is required for the water level in the bore hole to equalize with the long term hydrostatic groundwater level. Therefore the short time readings described above may not be reliable as an indicator of the long-term hydrostatic groundwater table. In our experience, the depth at which the clay soils change permanently from brown to gray may often indicate the position of the hydrostatic groundwater table. On this basis, we estimate the long-term hydrostatic groundwater table at the building site to be at approximately 13 feet below the existing ground surface.

Normal variations in the depth of the prevailing groundwater level should be expected due to its undulating surface. The long-term hydrostatic groundwater level at this site should be expected to fluctuate with variations in precipitation, evaporation and surface runoff. The groundwater levels indicated on the soil borings and discussed above represent the conditions at the time the measurements were taken.

IV. CONCLUSIONS AND RECOMMENDATIONS

The recommendations submitted herein have been based upon available soil boring and site plan information and the preliminary design details for the proposed development. If our understanding of the project, as previously described, is inaccurate or if any revisions in the plans are made, they should be brought to our attention so we may determine if changes to our recommendations are required. Likewise, if significant variations in the reported subsurface conditions are encountered during construction, we should be notified immediately.

A. Concrete Slab on Grade and Pavement Subgrade Preparation

We recommend all vegetation, topsoil, concrete slabs, pavement materials and fill deposits be completely stripped from areas of proposed foundations, floor slabs, pavements, walkways and other similar types of site improvements. Based on the results of our soil borings, we anticipate these materials can extend down to depths of about 2 to 6 feet below the existing ground surface. After surficial materials are removed, we anticipate the exposed subgrade soils will consist of the very stiff to hard, silty clays as encountered in our soil borings. We believe these soils will be suitable for support of engineered fill and/or the proposed slab-on-grade following proper subgrade preparation activities as described herein.

The resulting exposed subgrade materials that consist of clay materials shall be thoroughly proof rolled under the observation of a qualified soils engineer. The proof rolling should be performed with a fully loaded dump truck or other heavily loaded pneumatic tired vehicle making continuous side-by-side passes across the entire floor slab area. The purpose of this procedure is to uniformly compact the surface and locate any soft areas that may require stabilization. Subgrade areas that deflect excessively or 'pump' during proof rolling should be excavated and backfilled with acceptable engineered fill. After the exposed subgrade materials have been properly prepared, as described above, engineered fill can be placed to the planned final subgrade elevation. Refer to section below for material and placement requirements.

B. Engineered Fill Requirements

All engineered fill for this project, including foundation wall and utility trench backfill, should be an approved, granular material free of frozen chunks, organics, debris or other deleterious material. The fill should be spread in level layers not exceeding 12 inches in loose thickness, with each layer being compacted to at least 95 percent of the maximum dry density value determined by ASTM Standard D-1557 (Modified Proctor). A sufficient number of field density tests should be performed during placement to verify proper compaction is achieved. Fill material should never be placed on frozen or muddy ground.

To facilitate compaction, we recommend any granular fill materials be placed within +/- 4 percent of the optimum moisture content determined by ASTM Standard D-1557 (Modified Proctor). If necessary to achieve this condition, appropriate moisture reconditioning should be performed at the time of placement. If it is necessary to add moisture, we recommend it be done be disking and harrowing the soil, as the water is added by spraying, to provide a relatively uniform moisture content throughout the soil mass. Alternately, if the soil is too wet at the time of placement, we recommend it be disked and aerated to allow it to dry to the desired moisture content prior to compaction, weather conditions permitting. In open areas, granular fill materials should be compacted using heavy vibratory smooth drummed rollers, however in confined or limited access areas, vibratory plate compactors are recommended.

C. Foundations

We recommend the proposed structures at this site be supported on spread type foundations. Based on our visual observations, the existing fill materials encountered in our soil borings will be removed to establish the building addition finish floor elevation to match the existing building finish floor elevation. A maximum net allowable design soil pressure of 4,000 pounds per square foot (psf) shall be used to proportion the footings where they are placed on the natural, very stiff to hard, silty clays as encountered in our soil borings. Building foundation shall not bear on existing fill materials. Suitable bearing materials at this site for the recommended design bearing pressure is anticipated to be present below the existing topsoil and fill deposits and extending down to nominal frost depths.

Interior building foundations which are not subject to the effects of frost heave could be placed at any convenient depth below the floor slab where they bear on engineered fill which has been placed directly on suitable natural soils. These foundations bearing on engineered fill placed on the underlying natural soils can be designed using a maximum net allowable soil pressure of 4,000 psf. To verify adequate foundation bearing where engineered fill is used, we recommend close monitoring and testing of the earthwork contractor's work is performed during construction.

For bearing capacity and settlement considerations, we recommend all individual columns footings have a minimum lateral dimension (or a minimum diameter) of 30 inches and all continuous wall footings be at least 16 inches wide. To provide protection against the effects of frost heave during normal winters, we recommend all foundations be embedded a minimum of 42 inches below the final exterior site grade along the outside perimeter walls or in areas that will not be permanently heated. With regard to settlement, we estimate total post-construction settlement for building foundations designed and constructed in accordance with the recommendations presented in this report will be on the order of 1/2 inch or less for any of the design alternatives given. This estimate is based on the anticipated loading conditions and our experience with similar soils.

V. CONSTRUCTION CONSIDERATIONS

We do not anticipate any significant geotechnical problems associated with constructing shallow spread footing foundations for the proposed building as described herein. Considering the apparent position of the long-term hydrostatic groundwater level relative to the anticipated depth of excavation, we do not believe groundwater seepage into conventional spread footing type foundation excavations will be a serious concern during construction. During construction, foundation excavations must be maintained in a dry condition until they are completely backfilled. Some seepage from surface runoff or perched groundwater within granular fill deposits may occur, but should be manageable with standard sump pits and pumps. During the site grading operations, the subgrade should always be graded to provide positive surface drainage and to prevent water from ponding on the site.

The foundation excavation bottoms may also become disturbed due to groundwater accumulations and/or construction operations. All loose or disturbed materials must be completely removed from the excavations bottoms or re-compacted prior to placing any foundation concrete. This is especially important where a toothed backhoe bucket is used to excavate the footings. If disturbance of the bearing soils persists, we recommend a layer of clean, well-graded, crushed aggregate should be placed along the undisturbed foundation excavation bottoms to minimize further disturbance of the bearing soils. Lean concrete would also be suitable for this purpose. To further minimize the risk of disturbance, the footing concrete should be placed as soon as possible after the excavations have been dug and the design soil pressure has been verified.

All excavations must be properly braced or sloped to comply with MI-OSHA Regulations – Part 9 (Excavation, Trenching and Shoring) and to provide a safe work place for construction personnel. The practice of stockpiling excavated soils adjacent to the footing excavation is not recommended as this surcharge loading may cause sudden collapse of the excavation sidewalls. If material and/or equipment is to be stored or operated near an excavation, additional bracing or shoring must be provided to resist these heavier surcharge loadings.

VI. GENERAL COMMMENTS

Samples taken in the field will be retained in our laboratory for a period of sixty days from the date of this report and will then be disposed of, unless otherwise requested. Samples stored over an extended time period, even in sealed jars, are subject to moisture loss and are then no longer representative of the in-situ condition in which they were sampled.

During the course of the soil evaluation, procedures were followed which represent accepted practices in the field of geotechnical engineering. Therefore, discrepancies may exist between the driller's field logs and the final Soil Boring Logs submitted operations and describe field occurrences, sampling locations and other relevant information. The engineer preparing the report reviews the field logs as well as the laboratory soil classifications and laboratory test data. The final Soil Boring Logs are then promulgated based on all the information available from the field and laboratory operations.

The services of a qualified, independent construction testing firm should be engaged during construction to monitor the earthwork and foundation activities and to verify the use of proper materials, equipment and procedures. An appropriate number of field density tests should be preformed during the earthwork operations to verify proper compaction is achieved where engineered fill is used. Foundation bearing surfaces should also be tested and observed to verify conditions are similar to those anticipated at the time our recommendations were formulated.

APPENDIX

GENERAL NOTES
SOIL BORING LOCATION DIAGRAM
SOIL BORING LOGS (B1 & B2)
UNIFIED SOIL CLASSIFICATION SYSTEM

SNYDER & STALEY ENGINEERING, P.L.C.

GENERAL NOTES

Drilling and Sampling Symbols

SS	–	Split–spoon Sample – 1 1/2" I.D., 2" O.D. except where noted.
ST	–	Shelby Tube Sample – 3" O.D. except where noted.
AS	–	Auger Sample
BS	–	Bag Sample
WS	–	Wash Sample
RC	–	Rock Core with Diamond Bit–NX Size except where noted.
NR	–	No Recovery
PS	–	Probe Sample
DR	–	Drove Rock
DS	–	Disturbed Sample

Water Level Measurement Symbols

WL	–	Water Level
WD	–	While Drilling
AB	–	After Boring
WC	–	Wet Cave–In
DC	–	Dry Cave–In
WS	–	While Sampling

NOTE:
Water levels indicated on the boring logs are the levels measured in the boring at the times indicated. With impervious Soils, short term observations of water level may not be an accurate indication of the long term ground water level. These levels may also fluctuate throughout the year with variations in precipitation, evaporation, and runoff.

Soil Property Symbols

N	–	Standard Penetration Resistance (ASTM D–1586. Blows of a 140 lb hammer falling 30 inches req'd to drive a 2 inch O.D. split–spoon sampler (except where otherwise noted) 1 ft into the soil).
qp	–	Calibrated hand penetrometer unconfined compressive strength, tsf.
qu	–	Controlled strain unconfined compressive strength, tsf (ASTM D–2166)
cs	–	Calibrated Torvane shear strength, tsf.
w	–	Water content, % (ASTM D–2216)
γ	–	Natural unit weight, pcf.
LL	–	Liquid Limit, % (ASTM D–4318)
PL	–	Plastic Limit, % (ASTM D–4318)
PI	–	Plasticity Index, % (ASTM D–4318)

Sample Classification

All Samples are visually classified in general accordance with ASTM Standard D–2487 (Unified Soil Classification System), unless otherwise noted.

PARTICLE SIZE

Boulders:	Greater than 12" (305mm)
Cobbles:	3" to 12" (76mm to 305mm)
Coarse Gravel:	3/4" to 3" (19mm to 76mm)
Fine Gravel:	#4 to 3/4" (4.75mm to 19mm)
Coarse Sand:	#10 to #4 (2.00mm to 4.75mm)
Medium Sand:	#40 to #10 (0.425mm to 2.00mm)
Fine Sand:	#200 to #40 (0.074mm to 0.425mm)
Silt:	0.005mm to 0.074mm
Clay:	Less than 0.005mm

CONSTITUENT TERMS

Few/Trace:	Less than 10%
Occasional/Trace to Some:	10% to 20%
Frequent/Some:	20% to 35%
And:	35% for each type of soil identified.

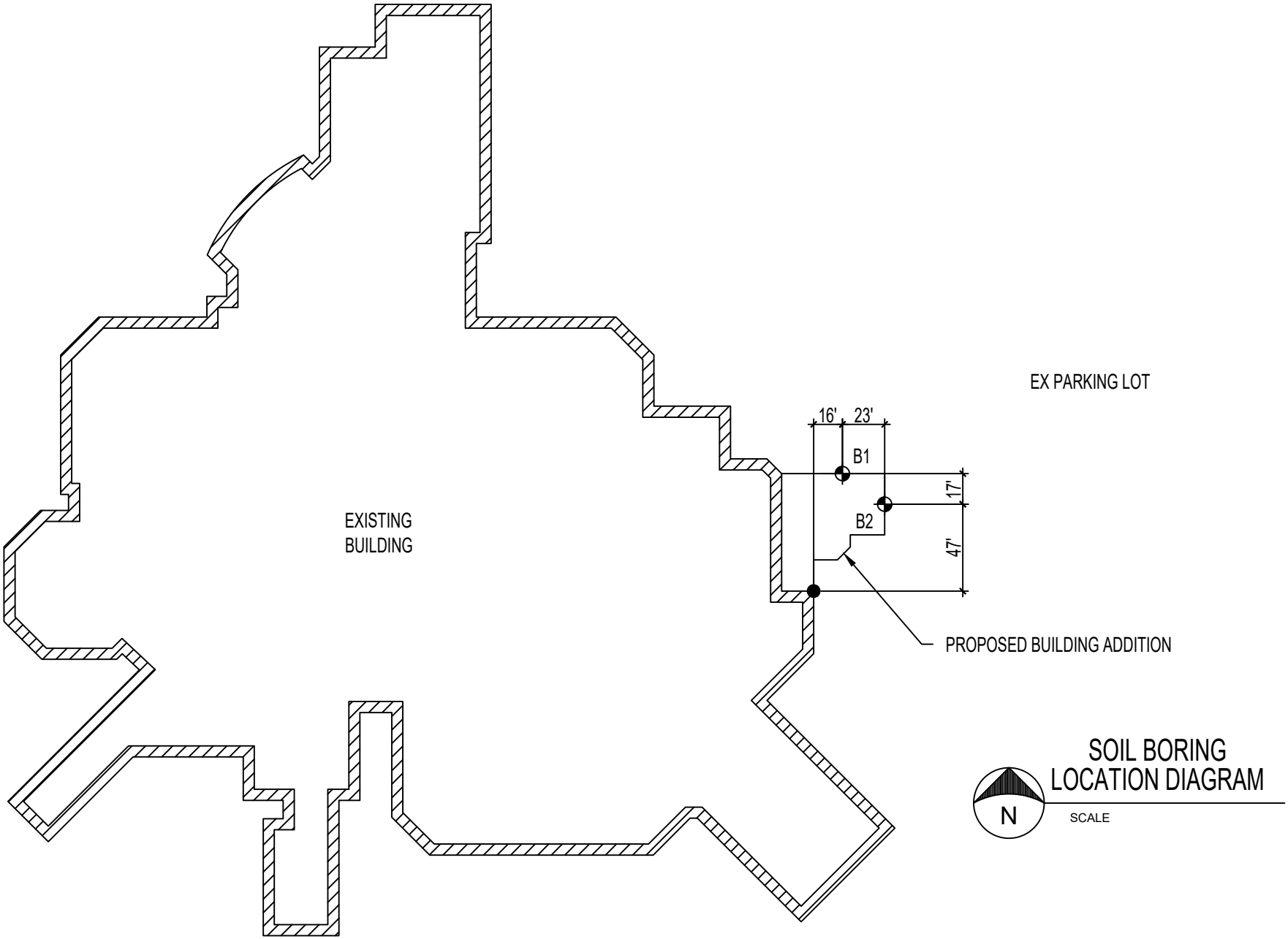
NOTE:
Soil constiutents area based on visually estimated quantities.

RELATIVE DENSITY OF GRANULAR SOILS

	STANDARD PENETRATION (N) VALUE, BLOWS / FOOT
Very Loose	Less than 4
Loose	4 – 9
Medium Dense	10 – 29
Dense	30 – 49
Very Dense	50 – 80
Extremely Dense	Greater than 80

CONSISTENCY OF COHESIVE SOILS

	UNCONFINED COMPRESSIVE STRENGTH (qu or qp), tsf
Very Soft	Less than 0.25
Soft	0.25 – 0.49
Firm	0.50 – 0.99
Stiff	1.00 – 1.99
Very Stiff	2.00 – 3.99
Hard	Greater than 4.00



SOIL BORING
LOCATION DIAGRAM

PROJECT NUMBER: 26-316-007	DATE: 05/08/2026	PROPOSED BUILDING ADDITION BAY ARENAC ISD	**SNYDER & STALEY ENGINEERING, P.L.C.** CONSULTING ENGINEERS 824 TITTAWBAWASSEE ROAD SAGINAW, MI 48604 PH: (989) 797-1710
SHEET NUMBER: SK1 SHT 1 OF 1	DRAWN BY: EJK	PROJECT TITLE: BAY CITY, MI	
	CHK'D BY: MDS	SHEET TITLE: SOIL BORING LOCATION DIAGRAM	

SNYDER & STALEY ENGINEERING, P.L.C.

SOIL BORING LOG

Boring No: B1

Project: Bay-Arenac ISD Career Center Dining Room Addition Project No: 26-316-007

Location: 4155 Monitor Rd Bay City, MI 48706 Client: TSSF Architects

Description of Material ELEVATION = 100'-0"	DEPTH (ft)	Sample Length	Sample I.D.	Sample Type	Standard Penetration 'N' Blows Per Ft.	Hand Penetrometer qp (tsf)	Unconfined compression qu (tsf)	Torvane Shear cs (tsf)	Moisture Content w (%)	Natural Unit Weight γ (pcf)
Driller reported 10" of Sandy TOPSOIL; trace root structures, silt and gravel – dark brown										
Fine sand FILL; trace silt and gravel – brown – damp to moist – medium dense (SP-FILL)			S1	SS	16	4 ½+			14	
Silty CLAY; trace sand and gravel – mottled; brown and gray, turning gray @9' – hard (CL)	5		S2	SS	10	4			11	
			S3	SS	24	4 ½+			12	
	10		S4	SS	26	4 ½+			15	
	15		S5	SS	29	4 ½+			15	
Boring Terminated at 15 feet										

NOTE: Changes in soil stratification indicated by lines are approximate. In situ, the transition between materials maybe gradual unless otherwise noted. The bored hole was backfilled with natural soil.

WATER LEVEL OBSERVATIONS

NONE While Sampling or Drilling
DC 12' Immediately After Completion
. @ . After Completion

BORING

Rig: AFT DRILLING Foreman: B. BELLOWS
Started: 05/09/2026 Drawn By: E. KLENOW
Completed: 05/09/2026 Approved: M. STALEY

SHEET

1 of 2

SNYDER & STALEY ENGINEERING, P.L.C.

SOIL BORING LOG

Boring No: B2

Project: Bay-Arenac ISD Career Center Dining Room Addition Project No: 26-316-007

Location: 4155 Monitor Rd Bay City, MI 48706 Client: TSSF Architects

Description of Material ELEVATION = 105'-0"±	DEPTH (ft)	Sample Length	Sample I.D.	Sample Type	Standard Penetration 'N' Blows Per Ft.	Hand Penetrometer qp (tsf)	Unconfined compression qu (tsf)	Torvane Shear cs (tsf)	Moisture Content w (%)	Natural Unit Weight γ (pcf)
Driller reported 2'-0" of Sandy TOPSOIL; trace root structures, silt and gravel - dark brown										
		■	S1	SS	6					
Fine sand FILL; trace silt and gravel - brown - damp to very moist - loose (SP-FILL)										
	5	■	S2	SS	4					
Silty CLAY; trace sand and gravel - mottled; brown and gray, turning gray @9' - very stiff to hard (CL)		■	S3	SS	3	2 ½			15	
	10	■	S4	SS	26	4 ½			14	
	15	■	S5	SS	29	4 ½			17	
Boring Terminated at 15 feet										

NOTE: Changes in soil stratification indicated by lines are approximate. In situ, the transition between materials maybe gradual unless otherwise noted. The bored hole was backfilled with natural soil.

WATER LEVEL OBSERVATIONS

8 1/2' While Sampling or Drilling
9' Immediately After Completion
. @ . After Completion

BORING

Rig: AFT DRILLING Foreman: B. BELLOWS
Started: 05/09/2026 Drawn By: E. KLENOW
Completed: 05/09/2026 Approved: M. STALEY

SHEET

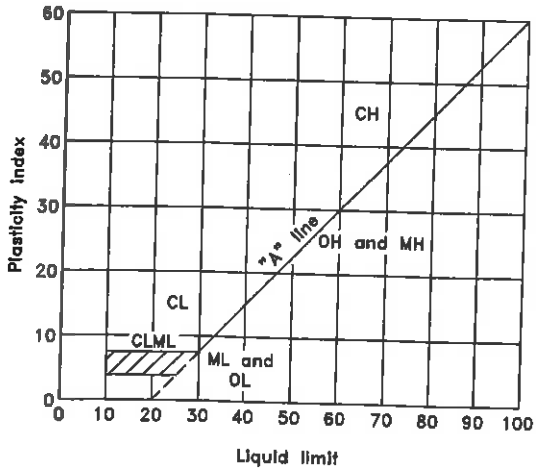
2 of 2

SNYDER & STALEY ENGINEERING, P.L.C.

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487)

Major Divisions			Group Symbols	Typical Names	Laboratory Classification Criteria		
Coarse-grained soils (More than half of material is larger than No. 200 sieve size)	Gravels (More than half of coarse fraction is larger than No. 4 sieve size)	Clean gravels (Little or no fines)	GW	Well graded gravels, gravel-sand mixtures, little or no fines.	Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse grained soils are classified as follows:	GW, GP, SW, SP GM, GC, SM, SC Borderline cases requiring dual symbols[b]	$C_u=\frac{D_{60}}{D_{10}}$ greater than 4; $C_c=\frac{(D_{30})^2}{D_{10}\times D_{60}}$ between 1 and 3
			GP	Poorly graded gravels, gravel-sand mixtures, little or no fines.			Not meeting all gradation requirements for GW.
		Gravels with fines (Appreciable amount of fines)	GM[a] d / u	Silty gravels, gravel-sand-silt mixtures.			Atterberg limits below "A" line or P.I. less than 4. / Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
			GC	Clayey gravels, gravel-sand-clay mixtures.			Atterberg limits below "A" line with P.I. greater than 7.
	Sands (More than half of coarse fraction is smaller than No. 4 sieve size)	Clean sands (Little or no fines)	SW	Well graded sands, gravelly sands, little or no fines.			$C_u=\frac{D_{60}}{D_{10}}$ greater than 6; $C_c=\frac{(D_{30})^2}{D_{10}\times D_{60}}$ between 1 and 3
			SP	Poorly graded sands, gravelly sands little or no fines.			Not meeting all gradation requirements for SW.
		Sands with fines (Appreciable amount of fines)	SM[a] d / u	Silty sands, sand-silt mixtures.		Less than 5 per cent More than 12 per cent 5 to 12 per cent	Atterberg limits above "A" line or P.I. less than 4. / Limits plotting in hatched zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
			SC	Clayey sands, sand-clay mixtures.			Atterberg limits above "A" line with P.I. greater than 7.
Fine grained soils (more than half material is smaller than No. 200 sieve)	Silts and clays (Liquid limit less than 50)		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.			
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.			
			OL	Organic silts and organic silty clays of low plasticity.			
	Silts and clays (Liquid limit greater than 50)		MH	Inorgainc silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.			
			CH	Inorganic clays of high plasticity, fat clays.			
			OH	Organic clays of medium to high plasticity, organic silts.			
	Highly organic soils		Pt	Peat and other highly organic soils.			

Plasticity Chart



[a] Division of GM and SM groups into subdivisions of d and u are for roads and airfields only. Subdivision is based on Atterberg limits; suffix d used when L.L. is 28 or less and the P.I. is 6 or less; the suffix u used when L.L. is greater than 28.

[b] Borderline classifications, used for soils possessing characteristics of two groups, are designated by combinations of group symbols. For example: GW-GC, well graded gravel sand mixture with clay binder.