

MUSKEGON AREA ISD

ARCHITECT'S PROJECT # 1074-21

05.06.2022

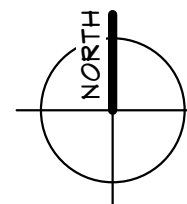
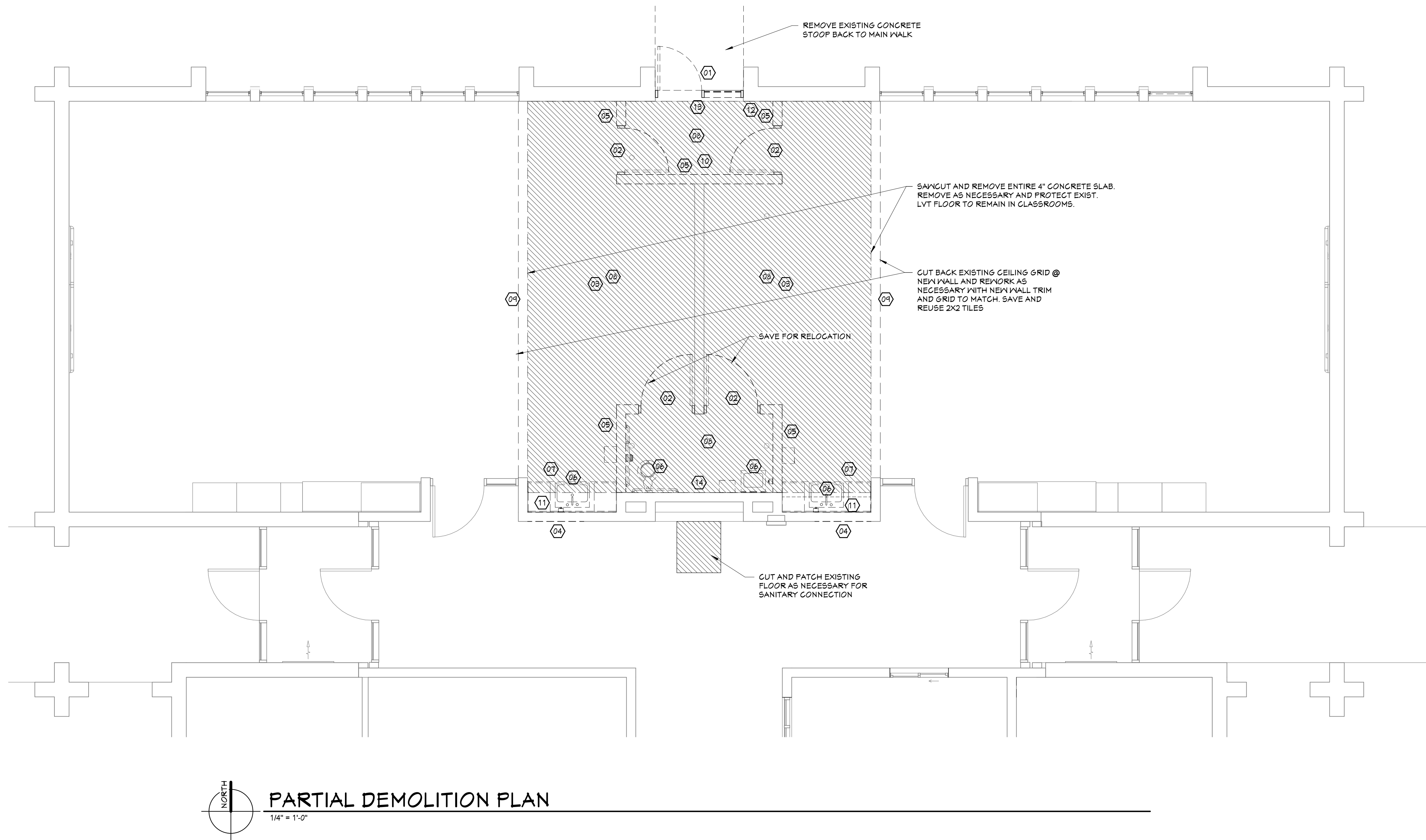
ABOVE FINISH FLOOR	AFF	GALVANIZED	GALV	QUARRY TILE	QT
ACOUSTICAL TILE	ACT	GAUGE	GAU		
ADJACENT	ADJ	GLASS	GL	RADIUS	R
AIR ADMITTANCE VALVE	AAV	GRADE	GR	REFRIGERATOR	REFRIG
ALUMINUM	AL	GYPSUM BOARD	GYF BD	REINFORCEMENT	REINF
AMERICAN DISABILITIES ACT	ADA	GLAZED MASONRY UNIT	GMU	REQUIRED	REQD
ANODIZED	ANOD.			ROOF DRAIN	RD
APPROXIMATELY	APPROX	HAND DRYER	HD	ROOF VENT	RV
AREA DRAIN	AD	HANDICAP	HDGP	ROOM	RM
AT	@	HARDWOOD	HDWD	ROUGH OPENING	RO
		HEATING	HTG	RUBBER FLOOR TILE	RFT
BASEMENT	BSMT	HEATING VENTILATING AND			
BEARING	BRG	AIR CONDITION	HVAC	SANITARY	SAN
BENCH MARK	BM	HEIGHT	HT	SECTION	SECT
BETWEEN	BTW	HIGH POINT	HP	SHEET	SHT
BARRIER FREE	B.F.	HIGHWAY	HWN	SHEET METAL	SHT MTL
BLOCK	BLK	HOLLOW METAL	HM	SIMILAR	SIM
BOARD	BD	HORIZONTAL	HORIZ	SIMILAR TOO	SIM TO
BOTTOM OF	BO			SMART BOARD	SB
BOTTOM OF STEEL	BOS	INCLUDE	INCL	SPECIFICATION	SPEC
BUILDING	BLDG	INFORMATION	INFO	SQUARE	SQ
		INSIDE DIMENSION	ID	STAINLESS STEEL	SS
CABINET	CAB	INSULATION	INSUL	STANDARD	STD
CARPET	CPT			START POINT	SP
CATCH BASIN	CB	JANITOR	JAN	STEEL	STL
CEILING	CLG	JANITOR CLOSET	JC	STORAGE	STOR
CENTER LINE	CL	JOINT	JT	STRUCTURAL	STRUCT
CLEAN OUT	CO	JOIST	JST	SUSPENDED	SUSP
COLUMN	COL				
CONCRETE	CNCG	LAMINATE	LAM	TACK BOARD	TB
CONCRETE MASONRY UNIT	CMU	LINEAR	LIN	TEMPERED	TEMP
CONTINUOUS	CONT	LONG LEG VERTICAL	LLV	TONGUE & GROOVE	T & G
CONTROL JOINT	CJ	LOW POINT	LP	TOP OF FOOTING	T O FTG
CUBIC	CU	LOWER LEVEL	LL	TOP OF FOUNDATION	T O FTD
				TOP OF STRUCTURAL	T O S
DEMOLITION	DEMO	MAN HOLE	MH	TOP OF WALL	T O W
DETAIL	DET	MANUFACTURER	MFR	THICK	THK
DIAMETER	DIA	MARKER BOARD	MB	THROUGH	THRU
DIMENSION	DIM	MASONRY OPENING	MO	TYPICAL	TYP.
DOWN	DN	MAXIMUM	MAX		
DOWNSPOUT	DS	MECHANICAL	MECH		
DRAINING	DNG	METAL	MTL	UNDERWRITER'S LABORATORY	UL
		MINIMUM	MIN	UNLESS NOTED OTHERWISE	UNO
		MISCELLANEOUS	MISC		
EACH	EA	MOUNTED	MTD	VENT THROUGH ROOF	VTR
ELECTRIC	ELEG			VENTILATION	VENT
ELECTRIC WATER COOLER	EWG			VERIFY IN FIELD	V I F
ELEVATION	EL	NORMAL	NOM	VERTICAL	VERT
ELEVATOR	ELEV	NOT IN CONTRACT	NIC	VINYL COMPOSITE TILE	VCT
EQUAL	EQ	NUMBER	NUM	VINYL WALL COVERING	VWC
EQUIPMENT	EQUIP			VOLUME	VOL
EXISTING	EXIST	ON CENTER	OC		
EXPANSION	EXP	OPENING	OPNG	WALL CLEAN OUT	W C O
EXPANSION JOINT	EJ	OPPOSITE	OPF	WELDED WIRE FABRIC	WWF
		OPPOSITE HAND	OH	WELDED WIRE MESH	WWM
		OUTSIDE DIAMETER	OD	WITH	W
FEET	FT			WITHOUT	W/O
FINISHED	FIN	FAIR	FR	WOOD	WOD
FINISHED FLOOR	FF	PLASTER CEMENT	FLSC	WORKED	WOLM
FIRE EXTINGUISHER	FE	PLASTER GYPSUM	PLSG	WORK POINT	W/P
FIRE EXTINGUISHER	FEG	PLATE	PLT		
CABINET	FL	PLYWOOD	PLND		
FLOOR	FD	PORCELAIN CERAMIC TILE	PCT	YARD CLEAN OUT	Y C O
FLOOR DRAIN	FTG	PRESSURE TREATED	PT		
FLOORING	FND				
FOUNDATION	FFF				
FROM FINISHED FLOOR					

The map shows the location of the Project Site at 1310 Park Street in Nelson, BC. The site is marked with a red pin and labeled. The map includes major roads like Highway 11, W. Grand Ave, W. Forest Ave, W. Dake Ave, W. Larch Ave, W. Laketon Ave, and various streets like Park St, Campbell Ave, and Jeffery St. Landmarks such as Hackley Manual Training School, Muskegon High School, and Mercy Health Hackley Campus are marked. A red pin indicates the Project Site at 1310 Park Street.

SITE LOCATION MAP

E1.01 ELECTRICAL POWER FLOOR PLAN
E2.01 ELECTRICAL LIGHTING PLAN
E3.01 ELECTRICAL SPECIFICATIONS, SYMBOL
LEGEND, PANEL SCHEDULE AND ONE-LINE
DIAGRAM

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PARTIAL DEMOLITION PLAN

1/4" = 1'-0"

DEMOLITION NOTES

- | | |
|---|---|
| 01 REMOVE EXISTING ALUMINUM EXIT DOOR AND FRAME COMPLETE. PREP OPENING FOR NEW INFILL. | 07 REMOVE EXISTING BUILT-IN-PLACE CABINETRY AND COUNTERS AND SAVE FOR RELOCATION. |
| 02 REMOVE EXISTING HOLLOW METAL ENTRY DOORS AND FRAMES. PREP BRICK / BLOCK FOR NEW ENTRIES. | 08 REMOVE EXISTING LAY-IN CEILING SYSTEM, INCLUDING ALL LIGHTING. PATCH ADJACENT WALLS AS REQUIRED. SAVE CEILING TILE AND LIGHTS FOR RE-INSTALLATION. |
| 03 SAWCUT & REMOVE PORTION OF EXISTING CONCRETE SLAB FOR NEW PLUMBING OR ELECTRICAL. REFER TO PLUMBING AND ELECTRICAL PLANS FOR ADDITIONAL INFORMATION / LOCATIONS. | 09 REMOVE EXISTING LVT FLOORING AS NECESSARY TO INSTALL NEW WORK. FULL BACK AND SAVE FOR REINSTALLATION. ENTIRE CONCRETE FLOOR TO BE REMOVED IN THE AREA OF NEW WORK. |
| 04 REMOVE PORTION OF EXISTING MASONRY WALL FOR NEW DOOR & FRAME. PATCH & REPAIR ADJACENT WALLS & FLOOR AS REQUIRED FOR NEW CONSTRUCTION. | 10 REMOVE EXISTING ELECTRIC WALL CABINET HEATER AND ASSOCIATED POWER. |
| 05 REMOVE EXISTING MASONRY WALL, FULL HEIGHT. PATCH & REPAIR ADJACENT WALLS & FLOOR AS REQUIRED. | 11 REMOVE EXISTING WALL OUTLETS. |
| 06 REMOVE EXISTING PLUMBING FIXTURES & ACCESSORIES INCLUDING ALL ASSOCIATED PLUMBING BELOW FLOOR. REFER TO PLUMBING DRAWINGS FOR CONNECTIONS TO NEW WORK. | 12 REMOVE EXISTING FIRE ALARM PULL STATION. |
| | 13 REMOVE EXISTING EXIT SIGN AND EXTERIOR EMERGENCY LIGHT. |
| | 14 REMOVE EXISTING VISUAL ALARM DEVICE AND SAVE FOR RELOCATION. |

NOTE: ALL EXISTING FIRE ALARM DEVICES, STROBES AND PULL STATIONS, TO REMAIN. SOME WILL NEED TO BE REINSTALLED.

CRAIG CAMPUS - CHANGING ROOM RENOVATIONS

MUSKEGON AREA ISD

1580 PARK STREET
MUSKEGON, MICHIGAN 49441

PROJECT # 1074-21

ISSUANCES

BIDDING AND PERMITS 05.06.2022

REVISIONS

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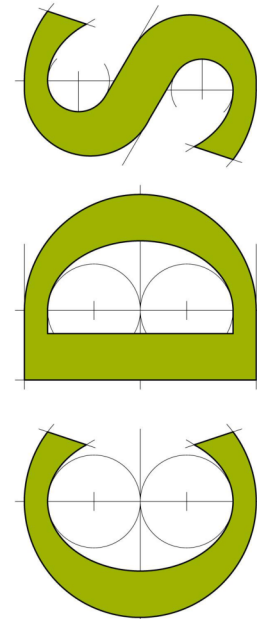
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PARTIAL
DEMOLITION
PLAN

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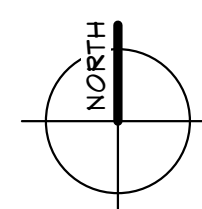
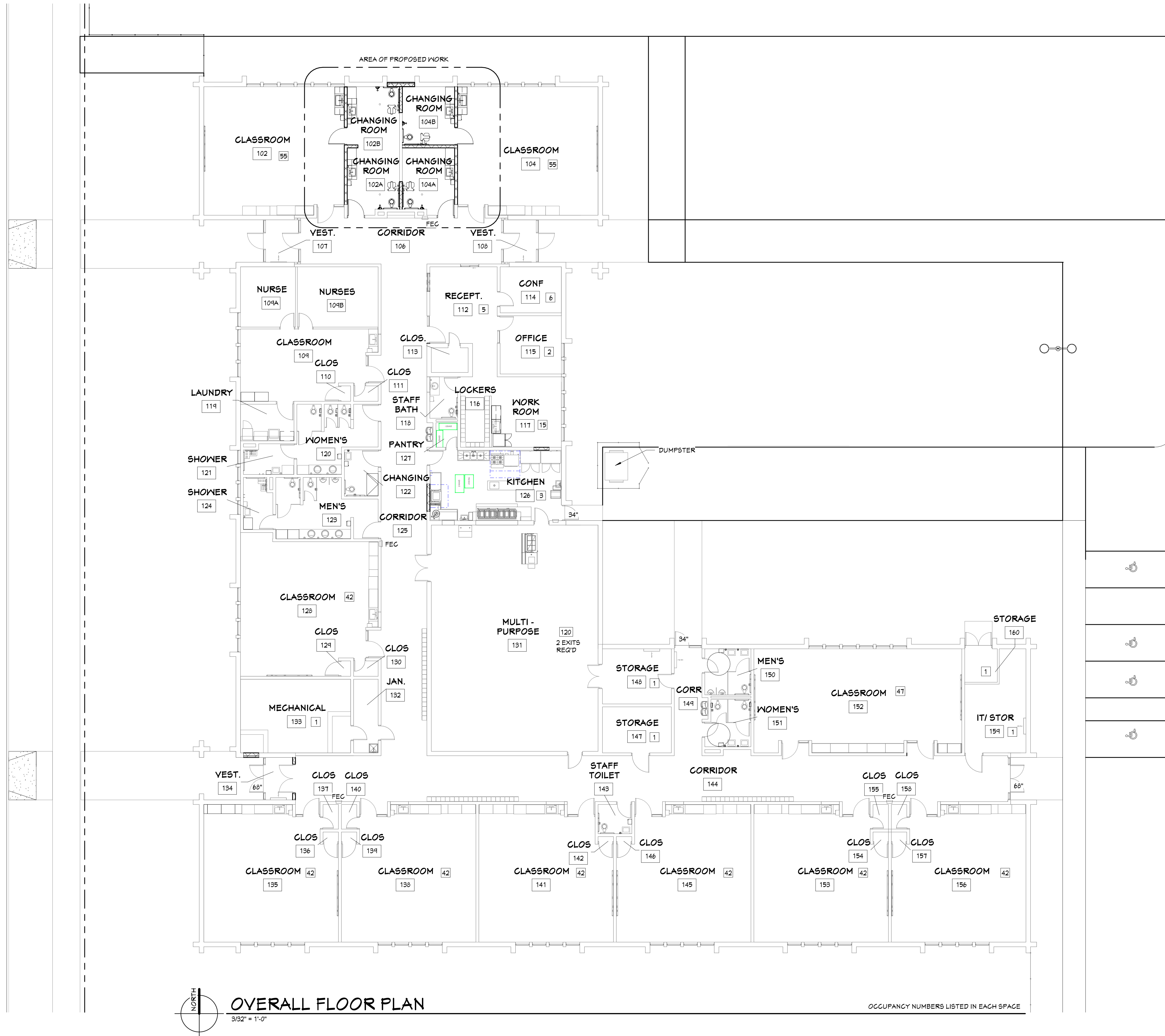
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CONCEPT DESIGN STUDIO, INC.

CONCEPT DESIGN STUDIO, INC.
800 E. ELLIS ROAD, SUITE 508
NORTON SHORES, MI 49441
PH. (231) 799-4936
FAX (231) 799-4937

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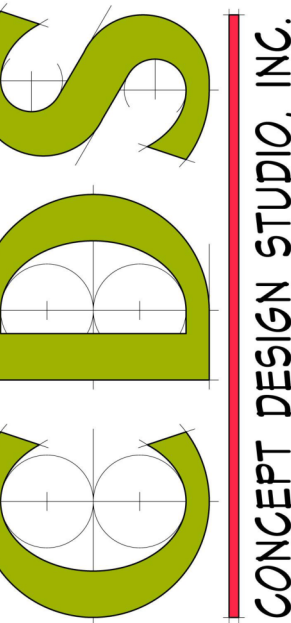


OVERALL FLOOR PLAN

3/32" = 1'-0"

OCCUPANCY NUMBERS LISTED IN EACH SPACE

CONCEPT DESIGN STUDIO, INC.
800 E. ELLIS ROAD, SUITE 505
NORTON SHORES, MI 49441
PH. (231) 799-4836
FAX (231) 799-4837



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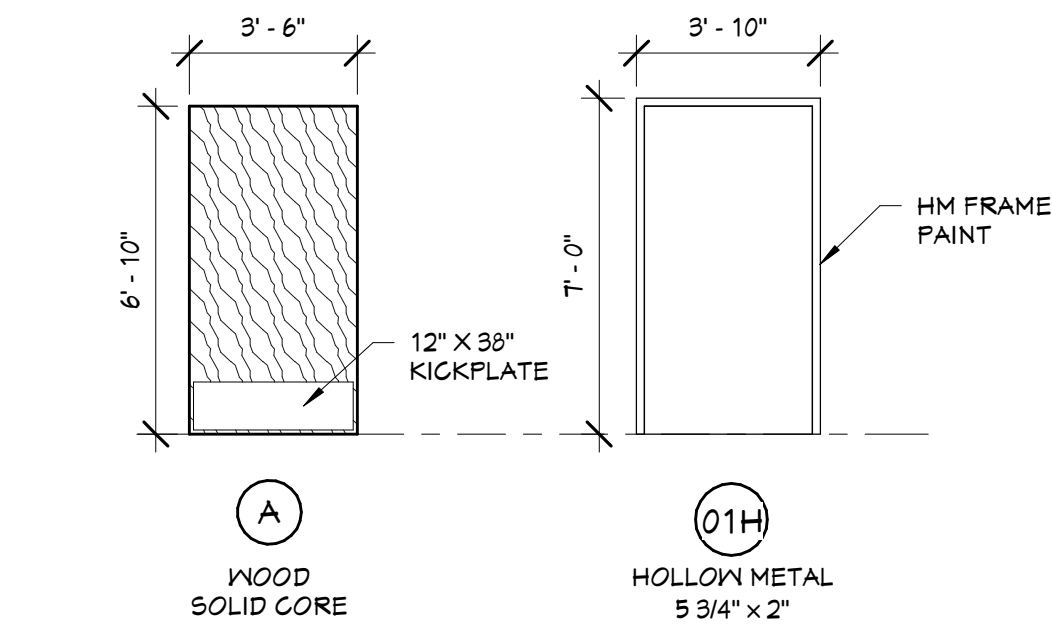
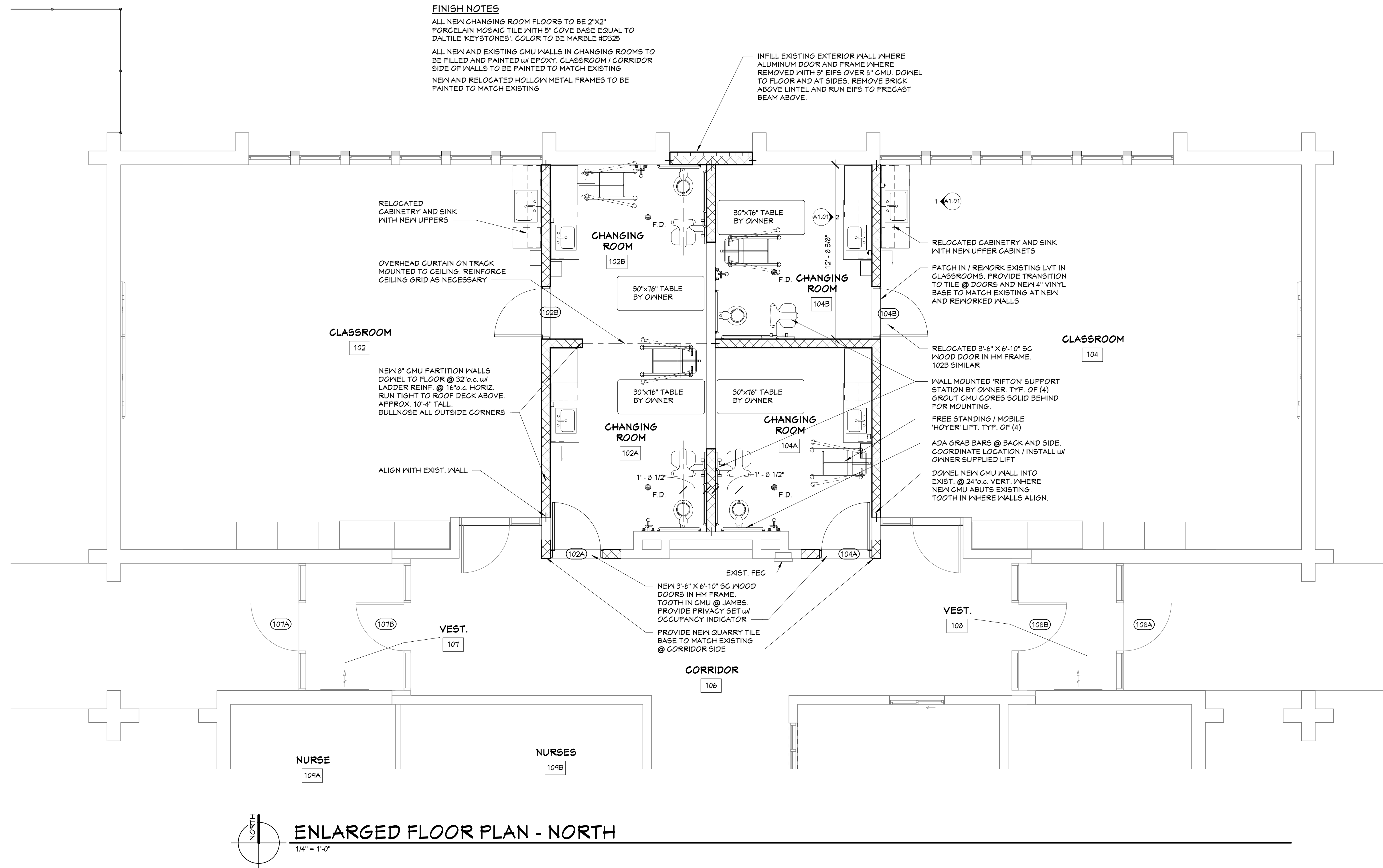
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OVERALL FLOOR PLAN

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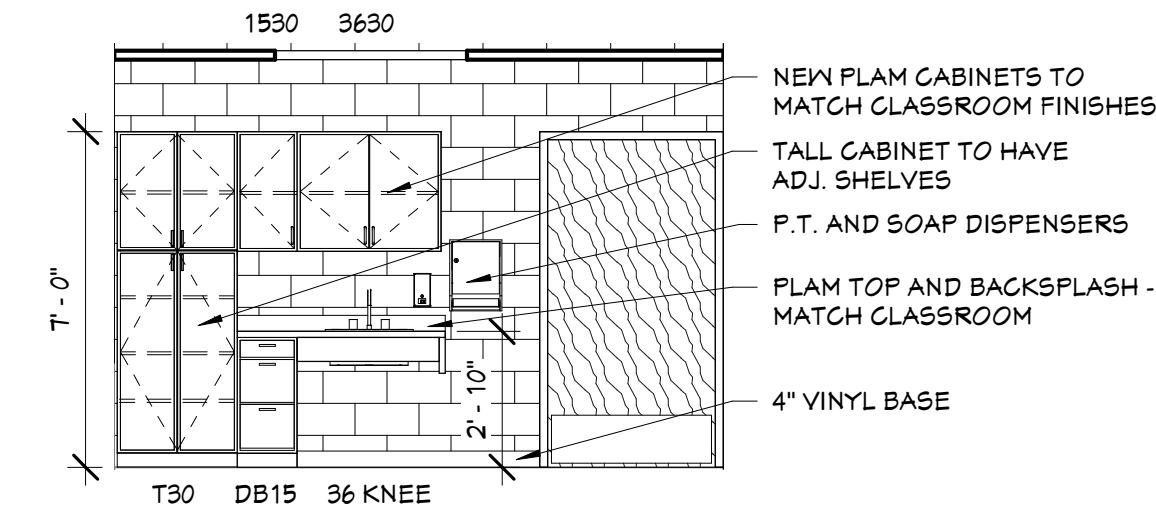
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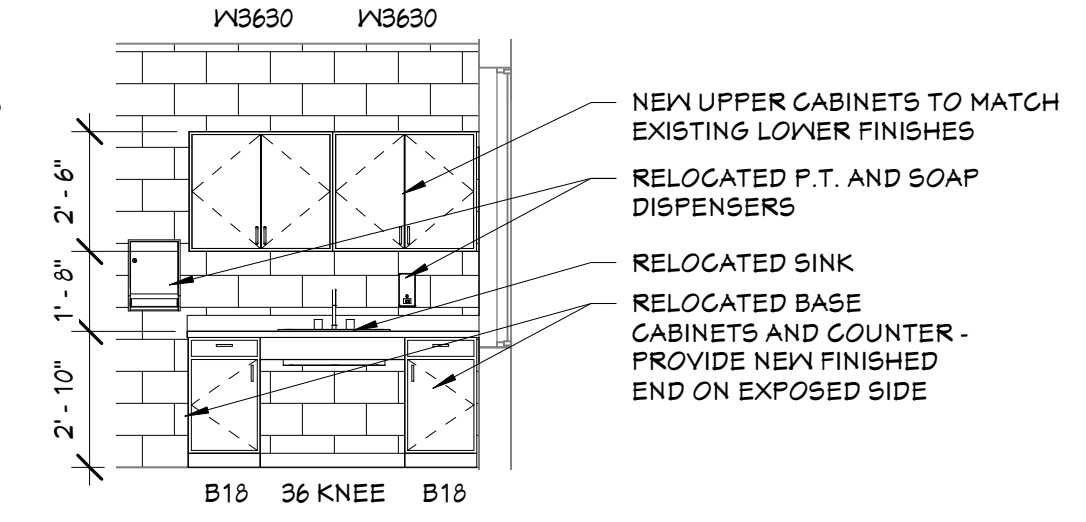
DOOR AND FRAME TYPES

1/4" = 1'-0"



TYP. CHANGING ROOM

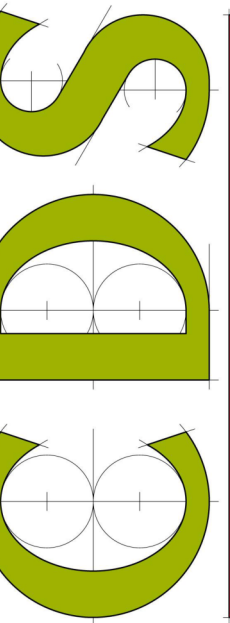
1/4" = 1'-0" OPPOSITE @ 102A & 102B



RELOCATED SINK CABINETS

1/4" = 1'-0"

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800 E. ELLIS ROAD, SUITE 508
NORTON SHORES, MI 49441
PH. (231) 799-4936
FAX (231) 799-4937



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MUSKEGON AREA ISD

1580 PARK STREET
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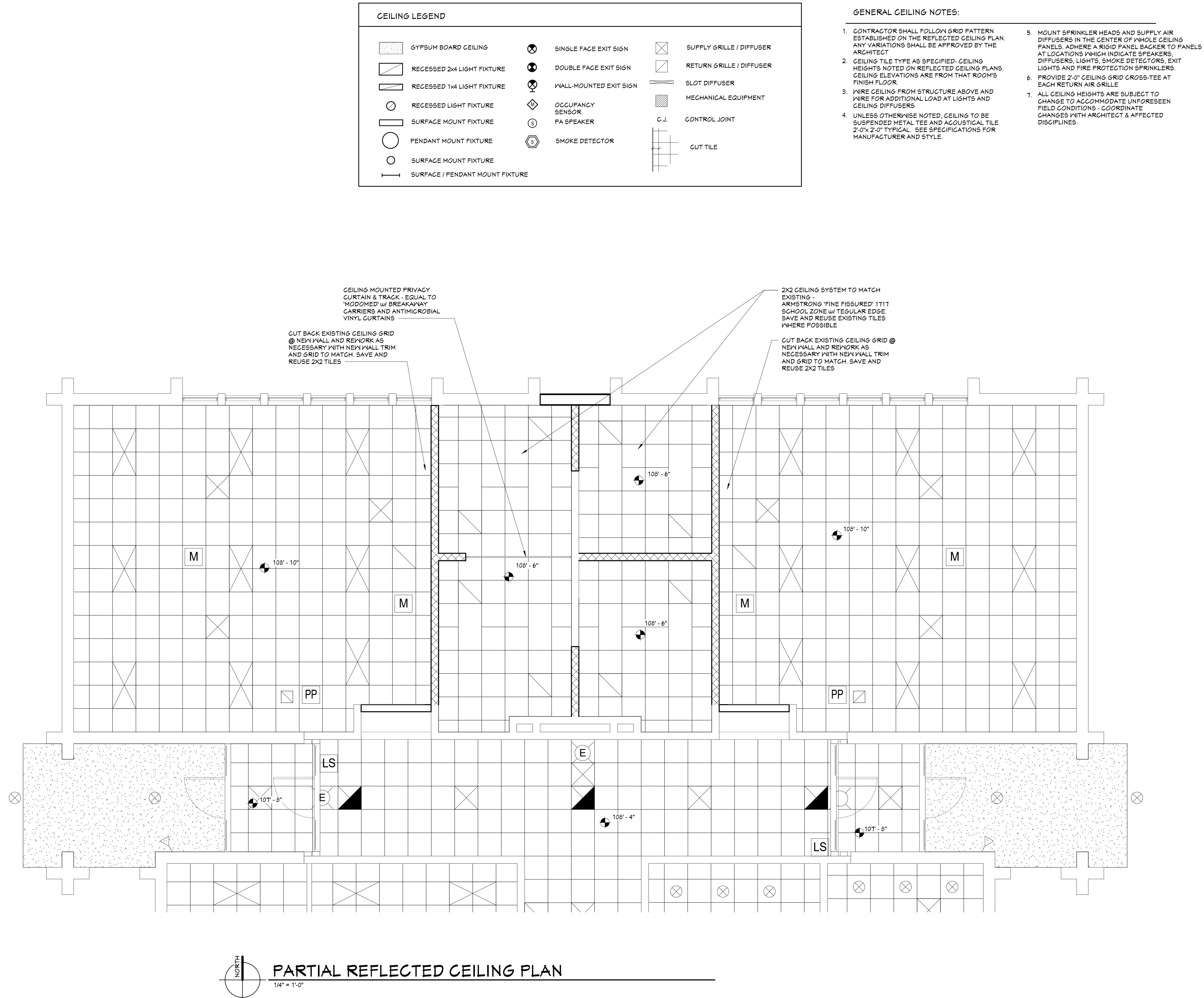
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ENLARGED FLOOR PLAN

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BLDG. DEPT. NOTES

- ALL VENT EXTENSIONS THROUGH A ROOF SHALL BE A MIN. 3 INCHES IN DIAMETER.
- EACH VENT SHALL RISE VERTICALLY TO A POINT NOT LESS THAN SIX (6) INCHES ABOVE THE FLOOD LEVEL RIM OF THE HIGHEST TRAP OR TRAPPED FIXTURE BEING VENTED.
- WATER HEATER BE PROVIDED WITH A PRESSURE & TEMPERATURE RELIEF VALVE PER 2015 MPC SECTION 504.4
- PROVIDE EXPANSION TANK ON HOT WATER HEATERS PER 2015 M.P.C. SECTION 607.3
- CROSS CONNECTION PROTECTION SHALL BE PROVIDED AT ALL POTABLE WATER SUPPLIED APPLIANCES AND EQUIPMENT
- BACKFLOW PREVENTION ASSEMBLIES SHALL BE TESTED BY A CERTIFIED BACKFLOW ASSEMBLY TESTER PRIOR TO USE OR OCCUPANCY PER 2015 MPC SECTION 512.10
- WHERE NON-METALLIC PIPING PENETRATES AREA SEPARATION, 1-HOUR, OR 2-HOUR WALLS, THE PIPE SECTION PASSING THROUGH THE WALLS AND EXTENDING A DISTANCE OF 5 FEET ON EITHER SIDE THERE-OF SHALL BE OF METAL ONLY
- BUILDING DRAIN AND VENT PIPING MATERIALS SHALL COMPLY WITH CHAPTER 7 OF THE 2015 MFC
- CONCEALED DRAINAGE PIPING SHALL BE DRY RATED AND TESTED PRIOR TO COVER
- EMERGENCY FLOOR DRAINS AND TRAPS SUBJECT TO EVAPORATION SHALL BE PROVIDED WITH AN APPROVED AUTOMATIC MEANS OF MAINTAINING THEIR WATER SEALS PER MPC SECTION 1002.4.1
- LEAD CONTENT: ALL PIPING AND FIXTURES SHALL BE IN COMPLIANCE WITH MPC SECTION 605.2 & NSF 312
- A WATER HEATER THERMOSTAT SHALL NOT SERVE AS A TEMPERATURE LIMITING DEVICE. TEMPERED WATER SHALL BE DELIVERED THRU A TEMPERATURE LIMITING DEVICE THAT CONFORMS TO ASSE 1010 AND SHALL LIMIT THE TEMPERATURE TO 100 DEG. F.
- PIPING INSULATION SHALL COMPLY WITH MPC SECTION 607.5
- PERMANENT VACUUM BREAKERS SHALL BE INCLUDED WITH ALL HOSE BIBBS

TABLE 604.4 FLOW RATES

FIXTURE TYPE	MAXIMUM FLOW RATE OR QUANTITY
LAVATORY, PRIVATE	2.2 gpm @ 60 psi
LAVATORY, PUBLIC (METERING)	0.25 GALLON PER CYCLE
LAVATORY, PUBLIC (NON-METERING)	0.5 gpm @ 60 psi
SHOWERHEAD (INCLUDING HANDHELD)	2.5 gpm @ 60 psi
SINK FAUCET	2.2 gpm @ 60 psi
URINAL	1.0 GALLON PER FLUSH
WATER CLOSET	1.6 GALLON PER FLUSH

WATER FIXTURE UNIT SUMMARY

FIXTURE	FIXTURE QUANTITIES		FIXTURE UNITS		TOTAL FU
	PRIVATE	PUBLIC	PRIVATE	PUBLIC	
WC-1 (FV - 1.6 GPF)		4		5.0	20.0
L-1		4		1.0	4.0
SH-1		4		2.0	8.0
S-1		2		2.0	4.0

WATER DATA

THE WATER METER AND PIPING MAINS ARE EXISTING IN THIS BUILDING. NEW WATER PIPING SHALL BE SIZED PER THE PLAN OR THESE SCHEDULES IF NOT SPECIFICALLY NOTED. IN NO CASE SHALL THE VELOCITY EXCEED 7 F.P.S. FOR COLD WATER AND 5 F.P.S. THRU HW PIPING					
SIZING:					
PIPE CAPACITY SCHEDULE - C.W.			PIPE CAPACITY SCHEDULE - H.W.		
SIZE	GPM	F.T. FU.	SIZE	GPM	F.T. FU.
1/2"	5	2	1/2"	5	4
3/4"	11	7	3/4"	7	4
1"	14	14	1"	13	18
1 1/2"	28	44	1 1/4"	19	28
1 1/2"	38	80	1 1/2"	26	42
2"	65	200			
2 1/2"	100	380	2 1/2"	42	

FIELD VERIFICATION NOTES

- THESE DESIGN DRAWINGS ARE SCHEMATIC. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO PROVIDING BID TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR MODIFICATIONS OF EXISTING DESIGN DUE TO EXISTING CONDITIONS.
- THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER, OR OWNER PRIOR TO PROVIDING BID FOR CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT.
- BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COST FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER, OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

PLUMBING LEGEND

SYMBOL	ABBREVI.	DESCRIPTION
	S	SOIL OR WASTE PIPING ABOVE GRADE OR FLOOR
	S	SOIL OR WASTE PIPING BELOW GRADE OR FLOOR
	GM	GREASE WASTE PIPING BELOW GRADE
	V	VENT PIPING
	RD	ROOF DRAIN PIPING
	OD	OVERFLOW DRAIN PIPING
	CW	COLD WATER PIPING
	HW	HOT WATER PIPING
	HWR	HOT WATER RETURN PIPING
	G	NATURAL GAS PIPING - LOW PRESSURE
	C/D	CONDENSATE DRAIN PIPING
	SOV	SHUT OFF VALVE
	SOV	GAS COCK AND UNION
	PRV	PRESSURE REDUCING VALVE
	POC	POINT OF CONNECTION
		GAS PIPING OUTLET
		WATER OR GAS PIPING UP OR DOWN
	FCO	FLOOR CLEAN OUT
	WCO	WALL CLEAN OUT
	COTG	CLEAN OUT TO GRADE
	HB	HOSE BIBB
	B/G	BELOW GRADE
	B/F	BELOW FLOOR
	VTR	VENT THRU ROOF
	FF	FINISHED FLOOR
	IE	INVERT ELEVATION
	WHA	WATER HAMMER ARRESTOR

FIXTURE & EQUIPMENT SCHEDULE

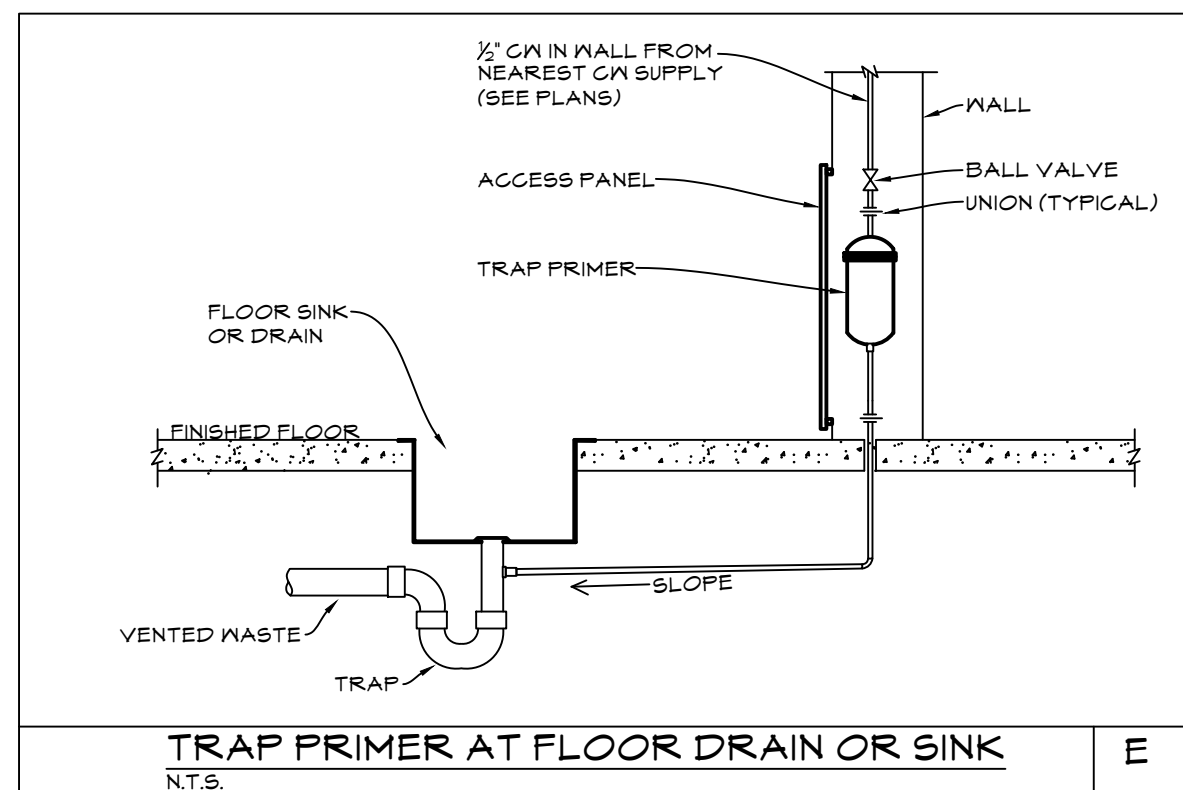
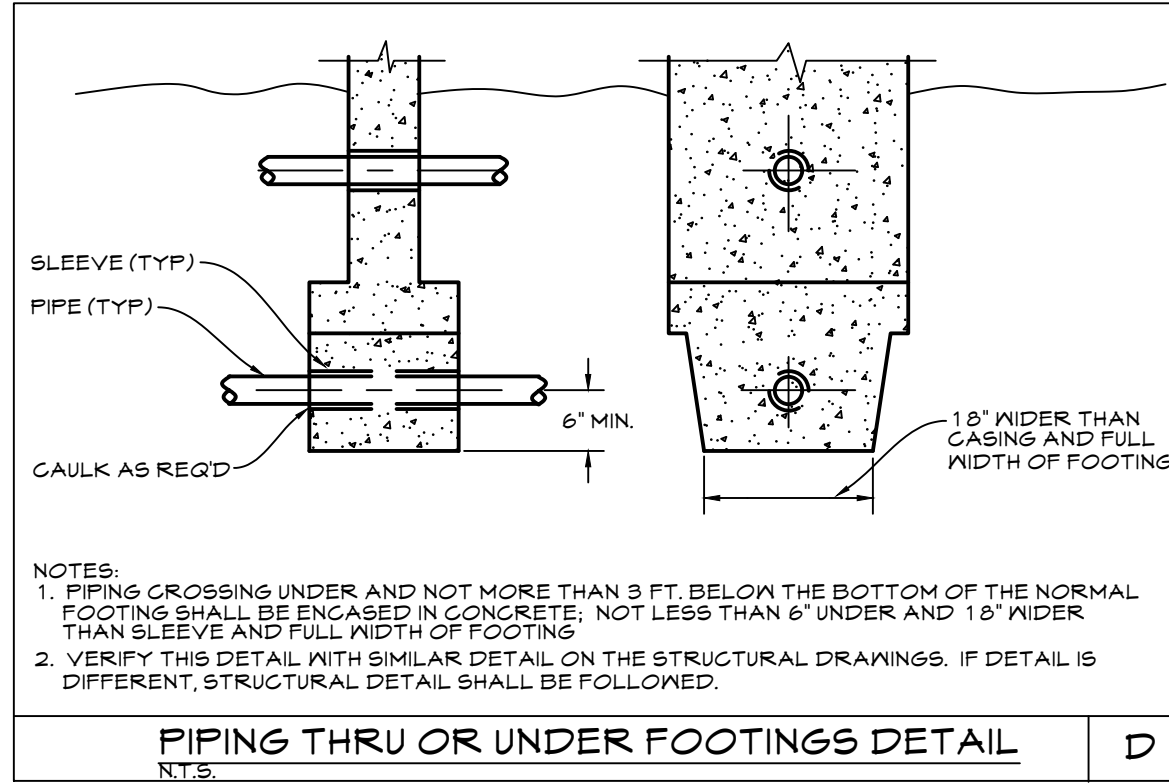
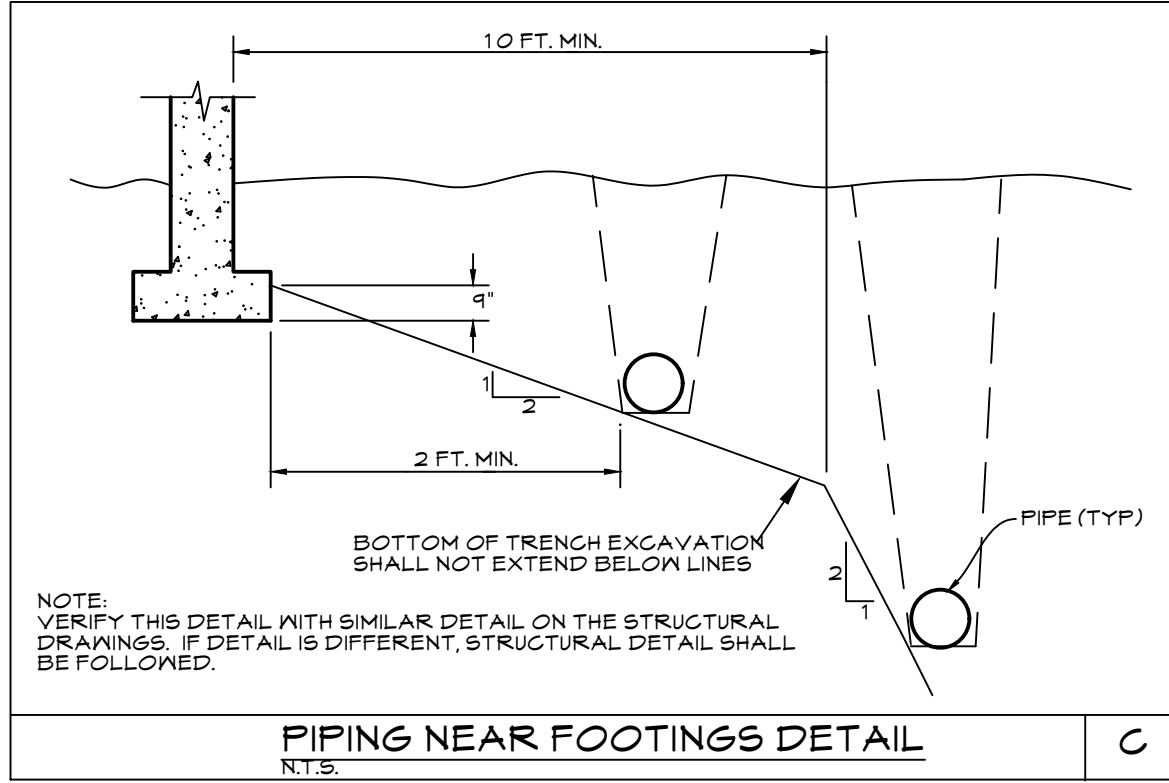
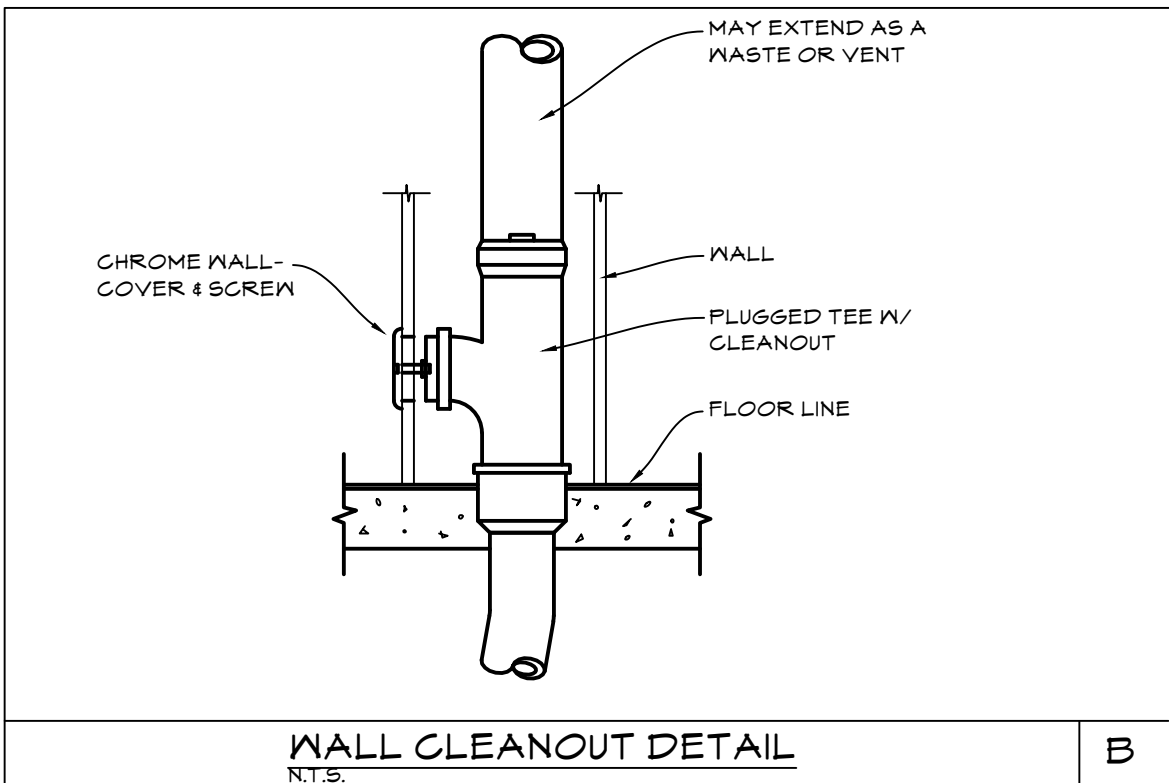
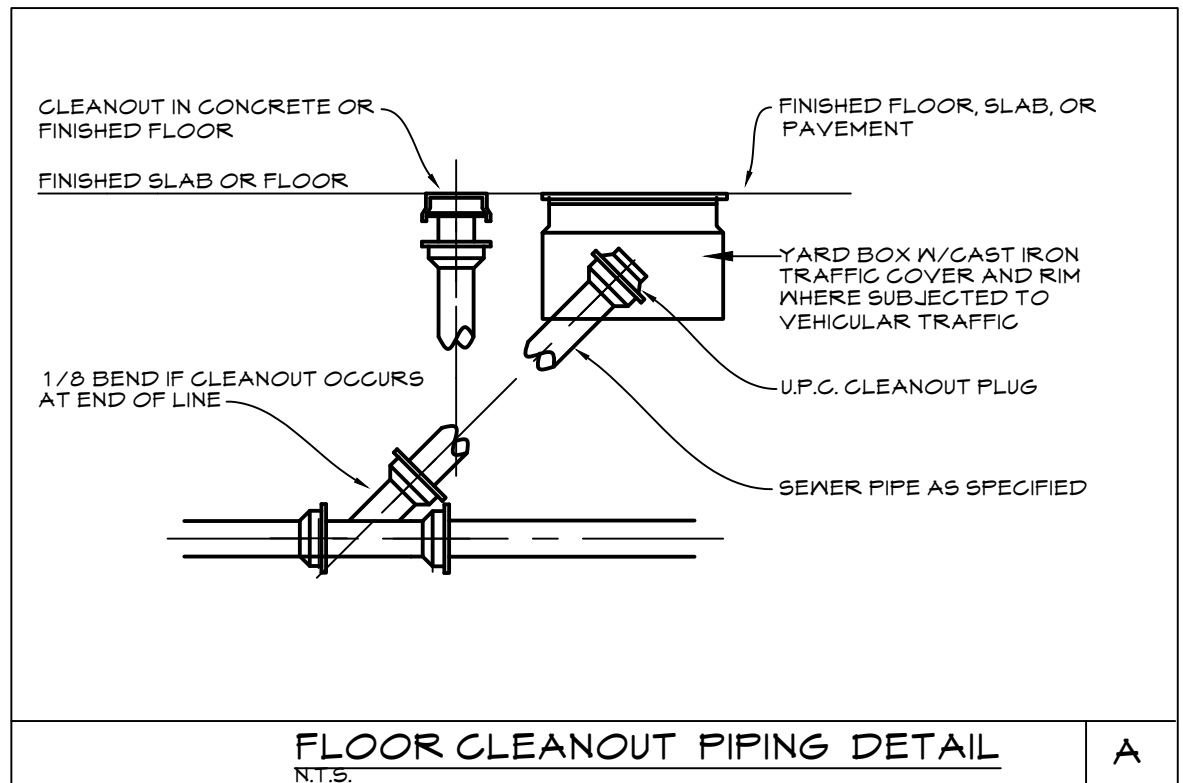
MARK	MANUFACTURER & MODEL (OR APP'D EQUAL)	TRAP	IN	V	CW	HW	G
	WATER CLOSET - FLUSH VALVE - FLOOR MTD. - HIGH EFFICIENCY ZURN Z5655-BNL, 1.28 GPF, ELONGATED, WITH Z6000PL-HET FLUSH VALVE AND OLSONITE #95 SEAT	3"	4"	2"	1 1/4"	--	--
	LAVATORY - COUNTERTOP - (A.D.A. APP'D) KOHLER MODEL K-2337-8 VITREOUS CHINA, WITH ZURN Z831R4-XL LEAD FREE STANDARD FAUCET WITH WRIST BLADE HANDLES, 0.5 GPM AERATOR, AND GRID DRAIN	1 1/2"	2"	2"	1/2"	1/2"	--
	SHOWER (A.D.A. APP'D) ZURN TEMP-GUARD II SHOWER UNIT, SINGLE HANDLE PRESSURE BALANCING MIXING VALVE WITH HAND SHOWER HEAD, INTEGRAL SERVICE STOPS & VACUUM BREAKER	2"	2"	2"	1/2"	1/2"	--
	SINK - COUNTERTOP - (A.D.A. APP'D) KOHLER MODEL K-2337-8 VITREOUS CHINA, WITH ZURN Z831B4-XL LEAD FREE GOOSENECK FAUCET WITH WRIST BLADE HANDLES, 0.5 GPM AERATOR, AND GRID DRAIN	1 1/2"	2"	2"	1/2"	1/2"	--
	FLOOR DRAIN ZURN F2N-415B-P, WITH 5" DIA. TYPE 'B' NICKEL BRONZE TOP WITH AUTOMATIC TRAP PRIMER PFP INC. MODEL PR-500 PROVIDE MODEL ZN415-BL ON F.P.S. WITH WOOD SUBFLOORS-GONG FLOORS OK WITH STD DRAIN	2"	2"	2"	1/2"	--	--

VERIFY ALL EQUIPMENT & FIXTURES WITH ARCHITECT & OWNER PRIOR TO ORDERING

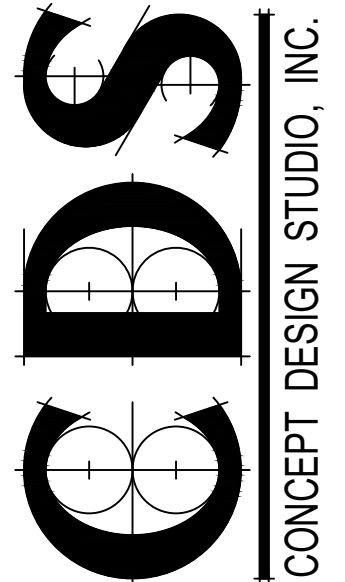
NOTE: PROVIDE PIPE SIZES AS SHOWN IN SCHEDULE UNLESS NOTED OTHERWISE ON FLOOR PLANS AND/OR ISOMETRICS

NOTE: ALL FIXTURES HANDLING WATER FOR HUMAN CONSUMPTION OR CONTACT SHALL BE LEAD FREE. CONTRACTOR SHALL VERIFY ALL MODEL NUMBERS WITH THE MANUFACTURERS AND REPORT ANY DISCREPANCIES IMMEDIATELY AND BEFORE ORDERING OR INSTALLATION TO THE ARCHITECT AND ENGINEER.

NOTE: ALL INFORMATION ON FIXTURES AND EQUIPMENT MUST BE VERIFIED WITH MANUFACTURER



CONCEPT DESIGN STUDIO, INC.
800 E. ELLIS ROAD, SUITE 508
NORTON SHORES, MI 49441
PH: (231) 799-4838
FAX: (231) 799-4837



CRAIG SCHOOL CHANGING ROOMS RENOVATIONS
MUSKEGON AREA ISD
1580 PARK STREET
MUSKEGON, MI 49441

PROJECT #
ISSUANCES 5-4-22
BIDDING & PERMITS

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SHEET TITLE

PLUMBING
SCHEDULES

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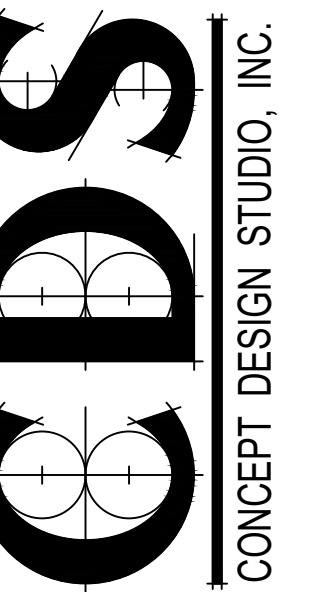
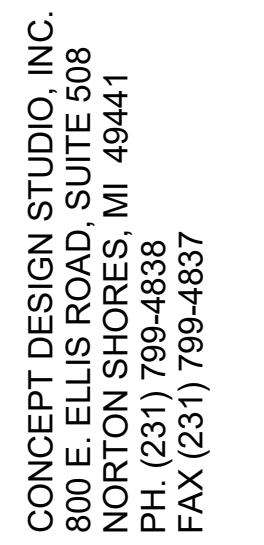
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1. ALL VENT PIPING IS TO BE 2" UNLESS NOTED OTHERWISE
2. INDIVIDUAL FIXTURE BRANCH SIZES & TRAP ARMS ARE TO BE SIZED PER PLUMBING FIXTURE & EQUIPMENT SCHEDULE & CPC TABLE 702.1 & 703.2
3. ALL WASTE PIPING IS TO BE SLOPED A MIN. 1/4" PER FOOT. (2%)
4. PROVIDE CLEANOUTS AS SHOWN AND PER 2019 CPC SECTIONS 707.4 & 719.0



CRAIG SCHOOL CHANGING ROOMS RENOVATIONS

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1580 PARK STREET

1380 PARK STREET
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PLUMBING FLOOR PLANS

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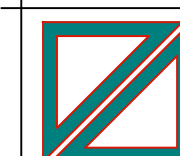
SCALE: 1/4"=1'-0"

MUSKEGON AREA ISD
1580 PARK STREET

1380 PARK STREET
MUSKEGON, MI 49441

SHEET NO.

P2.2



H.V.A.C. DESIGN • PLUMBING DESIGN

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TEL: (858) 435-4803

MECHANICAL SPECIFICATIONS

PART 1 - GENERAL
1.1 SCOPE:
H.V.A.C. WORK CONSISTS OF ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY FOR AND INCIDENTAL TO THE EXECUTION AND COMPLETION OF THE SYSTEMS AS INDICATED ON THESE DRAWINGS AS REQUIRED FOR A COMPLETE H.V.A.C. SYSTEM.
1.2 H.V.A.C. SYSTEMS SHALL INCLUDE:
A. MECHANICAL EQUIPMENT
B. DUCTWORK, DAMPERS, DIFFUSERS, REGISTERS, AND GRILLES
C. HANGERS, BRACKETS, CURBS, AND SUPPORTS OF DUCTWORK AND EQUIPMENT
D. LOW VOLTAGE CONTROL WIRING AND DEVICES
E. START-UP TEST, AND BALANCE OF ALL H.V.A.C. SYSTEMS
F. ALL OTHER H.V.A.C. ITEMS AND CONTROL DEVICES AS INDICATED ON THE DRAWINGS OR IN THESE SPECIFICATIONS PLUS ALL OTHER H.V.A.C. ITEMS AND CONTROL DEVICES NEEDED FOR A COMPLETE AND PROPER INSTALLATION
1.3 RELATED WORK FURNISHED BY OTHERS:
A. LINE VOLTAGE WIRING, DEVICES, AND CONNECTIONS THERETO AND ALL LINE AND LOW VOLTAGE CONDUIT
B. ROOF PENETRATIONS, ROOF OPENINGS, CUTTING, PATCHING, FURRING, STRUCTURAL SUPPORTS, LEVELING OF PRE-FAB CURBS.
C. FINAL PAINTING
1.4 DRAWINGS / COORDINATION / RESPONSIBILITY:
A. THESE DESIGN DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY COVER ALL ITEMS. THEY WERE CREATED FOR THE PURPOSE OF OBTAINING A BUILDING PERMIT IN THE PLAN REVIEW PROCESS AND TO GIVE THE MECHANICAL CONTRACTOR GENERAL GUIDE LINES. IT SHALL BE THE CONTRACTOR'S COMPLETE RESPONSIBILITY TO PROVIDE DETAILED INSTALLATION DRAWINGS IN ADDITION TO THESE DESIGN DRAWINGS TO INSURE A COMPLETE AND SATISFACTORY OPERATING SYSTEM. THE CONTRACTOR MUST AVOID OBSTRUCTIONS, PRESERVE REQUIRED CLEARANCES, DETERMINE EXACT DUCT / PIPING / EQUIPMENT REQUIRED BY ACTUAL JOB CONDITIONS, CONFLICTS THAT NECESSITATE DEPARTURES FROM THE PROPOSED DESIGN SCHEME MUST BE BROUGHT TO THE ARCHITECT'S ATTENTION AND RESOLVED PRIOR TO PROCEEDING WITH THE INSTALLATION. FOLLOW MANUFACTURERS DIRECTION WHERE THEY COVER POINTS NOT SPECIFICALLY INDICATED. HOWEVER, IF THEY ARE IN CONFLICT WITH THESE DRAWINGS AND SPECIFICATIONS, OBTAIN CLARIFICATION FROM THE ARCHITECT BEFORE PROCEEDING.
B. THE TERM "PRIOR TO START OF WORK" SHALL INCLUDE PRIOR TO ORDERING OR FABRICATING ANY DUCTWORK, EQUIPMENT, OR CONTROLS.
C. BEFORE SUBMITTING BID THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THESE MECHANICAL PLANS, THE ARCHITECTURAL PLANS, JOBSITE CONDITIONS, AND DIFFICULTIES THAT WILL BE ENCOUNTERED IN THE INSTALLATION OF MECHANICAL SYSTEMS DUE TO TIGHT CLEARANCES AND CONDITIONS.

1.5 SUBSTITUTIONS:
WHEN SUBSTITUTIONS OF MECHANICAL EQUIPMENT OR DEVICES ARE MADE THE CONTRACTOR SHALL FULLY COORDINATE THESE CHANGES WITH OTHER TRADES.
1.6 CODES / STANDARDS / PERMITS:
A. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE LATEST EDITIONS OF THE MICHIGAN MECHANICAL CODE AND THE MICHIGAN ENERGY CODE, THE RULES AND REGULATIONS OF THE STATE FIRE MARSHALL, AND OTHER APPLICABLE LOCAL, STATE AND FEDERAL CODES HAVING JURISDICTION. NOTHING IN THE PLANS OR SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND INSPECTIONS AND PAY RELATED FEES.
B. BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COST FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH THESE GOVERNING CODES. THE CONTRACTOR SHALL ALERT ARCHITECT OR ENGINEER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

1.7 GUARANTEE:
IN ADDITION TO THE GUARANTEES REQUIRED ELSEWHERE ALL WORK, MATERIALS, AND EQUIPMENT PROVIDED UNDER THE MECHANICAL DRAWINGS AND SPECIFICATIONS SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE WORK BY THE OWNER OR GENERAL CONTRACTOR. CONTRACTOR SHALL FURNISH ALL NECESSARY LABOR AND MATERIALS TO REPAIR OR REPLACE DEFECTIVE ITEMS AT NO COST TO THE OWNER.

1.8 SUBMITTALS:
A. THE CONTRACTOR SHALL SUBMIT WITHIN 15 DAYS OF AWARD OF CONTRACT A COMPLETE SUBMITTAL OF MATERIALS AND EQUIPMENT TO BE USED FOR APPROVAL BY THE ARCHITECT AND MECHANICAL DESIGNER.
B. ALL ITEMS SHALL BE PROPERLY IDENTIFIED AND ALL MECHANICAL EQUIPMENT SHALL BE IDENTIFIED WITH EQUIPMENT NUMBERS AS SHOWN ON THE PLANS.
C. SUBMITTAL EQUIPMENT THAT DEVIATES FROM SPECIFIED EQUIPMENT:
1. ANY DEVIATION FROM THE ITEMS SPECIFIED SHALL BE CLEARLY IDENTIFIED AS SUCH.
2. THE CONTRACTOR IS RESPONSIBLE FOR DEMONSTRATING MATERIAL AND EQUIPMENT EQUIVALENCY INCLUDING PERFORMANCE, ENERGY EFFICIENCIES, ELECTRICAL REQUIREMENTS, EXPANSION CHARACTERISTICS, SOUND LEVELS, OPERATING HEIGHTS AND DIMENSIONS, AND CLEARANCE REQUIREMENTS. SUBMITTALS NOT INCORPORATING THIS DATA ITEMIZED AND COMPARED TO THE SPECIFIED AND SCHEDULED MATERIAL AND EQUIPMENT WILL NOT BE ACCEPTED.
D. UNLESS OTHERWISE AGREED TO BEFOREHAND, SUBMITTALS MUST BE PROVIDED AS ONE COMPLETE PACKAGE OF ALL MATERIALS AND EQUIPMENT - PARTIAL SUBMITTALS WILL NOT BE ACCEPTED.
E. APPROVAL OF SUBMITTALS DOES NOT RELEASE THE CONTRACTOR FROM OBLIGATIONS TO FULLY COMPLY WITH ALL REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS OR APPLICABLE CODE REGULATIONS.

1.9 OPERATING AND MAINTENANCE INSTRUCTIONS:
SUBMIT THREE BOUND SETS OF THE OPERATING AND MAINTENANCE MANUAL FOR ALL EQUIPMENT AND DEVICES WHICH REQUIRE MAINTENANCE OR ADJUSTMENT.
1.10 AS-BUILT DRAWINGS:
PROVIDE A CLEAN SET OF BLUELINE PRINTS INDICATING ALL CHANGES WITH CLOUDS AND PROVIDE CAD AND PDF FILES ON A DISK WHICH SHOW SYSTEMS AS INSTALLED AND SUBMIT TO THE ARCHITECT AT COMPLETION OF THE PROJECT.

1.11 SUBSTITUTION:
SUBSTITUTION OF MECHANICAL EQUIPMENT WITH EFFICIENCIES LOWER THAN THOSE INDICATED ON THE PLANS MAY REQUIRE RE-CALCULATION OF TITLE 24 DOCUMENTS. IF THE CONTRACTOR CHOOSES TO UTILIZE SUCH EQUIPMENT, HE ASSUMES FULL RESPONSIBILITY FOR THE RE-CALCULATION AND RESUBMITTAL OF THE DOCUMENTS.

PART 2 - PRODUCTS
2.1 DUCTWORK:
A. ALL RECTANGULAR AND ROUND DUCTWORK UNLESS NOTED OTHERWISE SHALL BE GALVANIZED IRON WITH GAUGE AS SPECIFIED IN THE S.M.A.C.N.A. DUCT STANDARDS. EXPOSED ROUND DUCT SHALL BE SPIRAL CONSTRUCTION. FLEX DUCTWORK SHALL BE CASCO SILENT FLEX I OR EQUAL ACoustical WIRE MOLD FLEX DUCT WITH SPINBONDED NON-NOVEN NYLON INNER LINER. FLEX DUCT SHALL BE FULLY INSULATED WITH R-4.2, R-6, OR R-8 PER C.E.G. TITLE 24 STDs OR THE TITLE 24 REPORT WHICHEVER IS MORE STRINGENT. SEE PART 9 - EXECUTION OF THESE SPECS FOR LIMITATIONS OF FLEX DUCT.
B. ALUMAFLEX DUCT IS NOT ALLOWED

2.2 FLEXIBLE CONNECTIONS:
PROVIDE VENTFAB FLEXIBLE DUCT CONNECTORS AT FANS, BLOWERS, AND AIR HANDLING MECHANICAL UNITS. PROVIDE VENTGLAS IF EXPOSED TO WEATHER.

2.3 MECHANICAL EQUIPMENT, DIFFUSERS, REGISTERS, AND GRILLES:
PROVIDE PER SCHEDULES ON THE DRAWINGS. THE CONTRACTOR SHALL VERIFY ELECTRICAL CHARACTERISTICS WITH THE ELECTRICAL CONTRACTOR PRIOR TO ORDERING AND INSTALLING MECHANICAL EQUIPMENT.

PART 3 - EXECUTION
3.1 GENERAL:
UNLESS OTHERWISE SPECIFIED HEREIN, ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED RECOMMENDATIONS. BEFORE SUBMITTING HIS BID, THE CONTRACTOR SHALL CAREFULLY STUDY ALL DRAWINGS, AND SHALL MAKE A CAREFUL EXAMINATION OF THE PREMISES. HE SHALL DEFINITELY DETERMINE IN ADVANCE, THE METHODS OF INSTALLING AND CONNECTING THE APPARATUS. HE MEANS TO BE PROVIDED FOR GETTING THE EQUIPMENT INTO PLACE AND SHALL MAKE HIMSELF THOROUGHLY FAMILIAR WITH ALL THE REQUIREMENTS OF THE CONTRACT. AFTER AWARD OF THE CONTRACT, NO SUBSEQUENT ALLOWANCES WILL BE MADE TO THE CONTRACTOR DUE TO HIS FAILURE TO COMPLY WITH THE ABOVE REQUIREMENTS AND ANY OTHER CONDITIONS AFFECTING THE INSTALLATION AND COMPLETION OF ALL WORK.

3.2 EQUIPMENT INSTALLATION AND CLEARANCES:
A. ALL MECHANICAL EQUIPMENT AND DEVICES SHALL BE INSTALLED PER MANUFACTURERS INSTRUCTIONS, OPERATING AND SERVICE CLEARANCES REQUIRED BY CODE AND THE MANUFACTURER SHALL BE PROVIDED. CONTRACTOR SHALL FIELD VERIFY AVAILABLE CEILING AND ATTIC SPACE FOR ROUTING OF DUCTWORK AND INSTALLATION OF EQUIPMENT PRIOR TO START OF WORK. ALL DISCREPANCIES BETWEEN MANUFACTURERS, INSTRUCTIONS AND THE DRAWINGS OR CONFLICTS DUE TO LACK OF AVAILABLE INSTALLATION SPACE SHALL BE BROUGHT TO THE ARCHITECTS AND ENGINEERS ATTENTION PRIOR TO START OF WORK.
B. LOCATION ALL ROOFTOP MECHANICAL EQUIPMENT SHALL BE COORDINATED WITH OTHER TRADES AND DISCIPLINES INCLUDING BUT NOT LIMITED TO THE STRUCTURAL ENGINEER, ARCHITECT, FIRE SPRINKLER CONTRACTOR, ELECTRICAL CONTRACTOR, PLUMBING CONTRACTOR, AND GENERAL CONTRACTOR PRIOR TO START OF WORK.
C. CONTRACTOR SHALL VERIFY HEIGHTS OF ALL MECHANICAL EQUIPMENT WITH THEIR MANUFACTURER PRIOR TO START OF WORK. IF DIFFERENT THAN THE HEIGHTS INDICATED ON THE DRAWINGS, CONTRACTOR SHALL INFORM THE ARCHITECT AND GENERAL CONTRACTOR PRIOR TO START OF WORK.
D. CONTRACTOR SHALL VERIFY EXACT ROOF OPENING SIZES FOR MECHANICAL EQUIPMENT WITH THE UNIT MANUFACTURER PRIOR TO START OF WORK AND COORDINATE THESE OPENINGS WITH THE ARCHITECT, GENERAL CONTRACTOR, AND OTHER RELATED TRADES PRIOR TO START OF WORK.
E. COORDINATE FINAL LOCATIONS OF THERMOSTATS AND SENSORS WITH ARCHITECT. IN ADDITION, CONTRACTOR SHALL SCHEDULE A WALK THRU WITH THE TENANT AND/OR OWNER PRIOR TO INSTALLATION TO INSURE THAT THERMOSTAT AND/OR SENSOR LOCATIONS DO NOT CONFLICT WITH TENANTS OR OWNERS FURNITURE, FIXTURES, OR EQUIPMENT.
F. ALL NEW HVAC EQUIPMENT SHALL BE LABELED TO CORRESPOND TO THE EQUIPMENT LABELS ON THE MECHANICAL PLANS.

3.3 DUCTWORK:
A. CONSTRUCT AND INSTALL ALL DUCTWORK IN ACCORDANCE WITH THE LATEST SMACNA AND ASHRAE RECOMMENDATIONS.
B. DUCT AND EQUIPMENT HANGERS AND SUPPORTS SHALL BE PROVIDED AT INTERVALS AND LOCATIONS PER THE UNIFORM MECHANICAL CODE AND THE UNIFORM BUILDING CODE.
C. FLEX DUCT SHALL NOT BE MORE THAN 1 FEET IN LENGTH. FLEX DUCT IS NOT ALLOWED AT EXPOSED AREAS. FLEX DUCT SHALL BE PROTECTED WITH AFFID FOL WRAP IN ATTIC AREAS WHERE DUCTWORK IS EXPOSED TO SUNLIGHT THRU SKYLIGHTS OR WINDOW.
D. PROVIDE MANUAL VOLUME DAMPERS WITH QUADRANT LOCKS ON ALL EXHAUST AIR BRANCH DUCTS AND WHERE INDICATED ON PLANS. MANUAL VOLUME DAMPERS SHALL BE INSTALLED IN BRANCH DUCTS AS CLOSE AS POSSIBLE TO THE MAIN DUCT AND SHALL BE IDENTIFIED WITH A BRIGHT RIBBON ATTACHED TO THE DAMPER HANDLE.
3.4 AIR DISTRIBUTION DEVICES:
A. COORDINATE FINAL LOCATIONS OF AIR DISTRIBUTION DEVICES WITH THE ARCHITECTURAL REFLECTED CEILING PLANS INCLUDING LIGHTS, SPEAKERS, TILES, AND SPRINKLER HEADS.

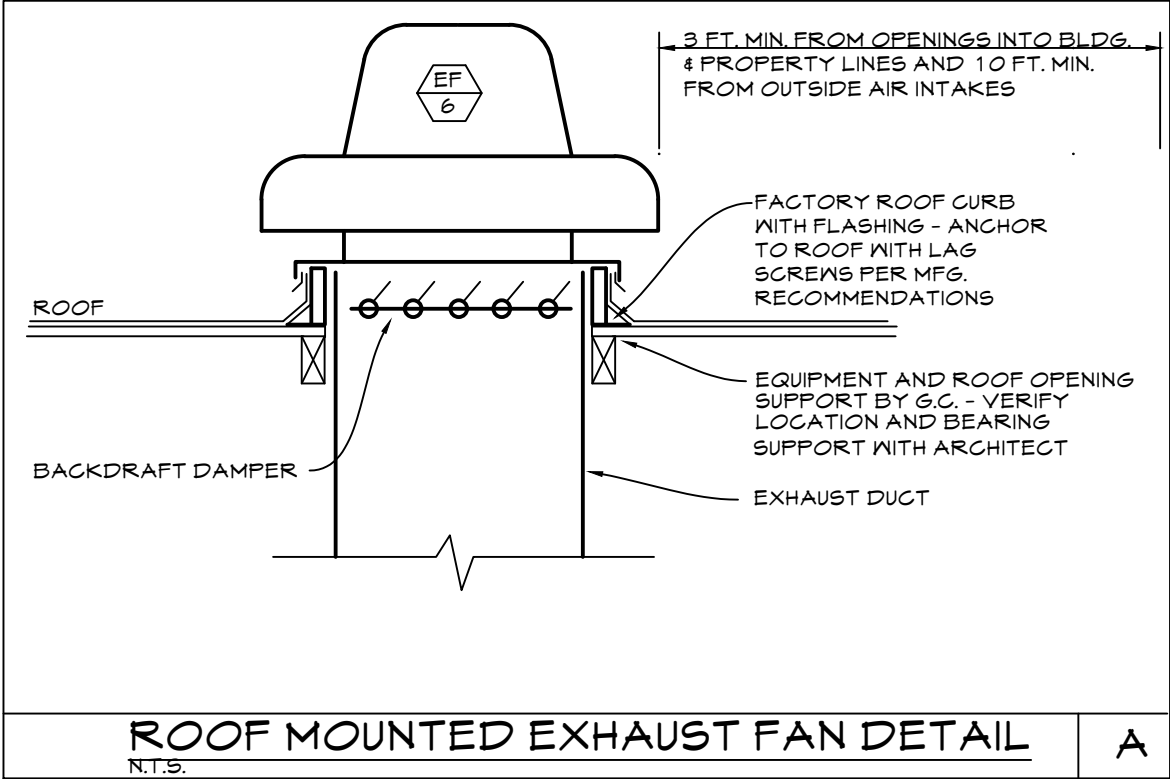
3.5 ELECTRICAL:
A. ALL LINE VOLTAGE DEVICES, WIRING AND CONNECTIONS THERETO AND ALL LINE AND LOW VOLTAGE CONDUIT SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. LOW VOLTAGE WIRING AND CONNECTIONS THERETO SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
B. CONTRACTOR OR MECHANICAL EQUIPMENT ELECTRICAL LOADS WITH THEIR MANUFACTURER AND COORDINATE WITH THE ELECTRICAL CONTRACTOR PRIOR TO START OF WORK. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO START OF WORK.

3.6 EXHAUST AIR:
PROVIDE MIN. 3 FT. CLEARANCE FROM THE DISCHARGE POINT FROM ANY EXHAUST AIR TO ANY BLDG. OPENINGS THAT ALLOW AIR INTO OCCUPIED PORTIONS OF THE BLDG. PROVIDE MIN. 10 FT. CLEARANCE TO ANY MECHANICAL SYSTEM OUTSIDE AIR INTAKE. OTHER CODE SECTIONS MAY REQUIRE LARGER CLEARANCES.

3.7 TEST AND BALANCE:
A. AFTER THE INSTALLATION IS COMPLETE, TEST AND BALANCE ALL COMPONENTS OF THE H.V.A.C. SYSTEMS TO CONFORM TO THE AIR VOLUMES SHOWN ON THE DRAWINGS. ADJUST ALL AIR HANDLING EQUIPMENT TO PROVIDE REQUIRED AIR VOLUMES TO WITHIN 10% OF SPECIFIED AIR VOLUME VARY TOTAL SYSTEM AIR QUANTITIES BY ADJUSTING FAN SPEEDS AND PROVIDE THE FAN DRIVE CHANGES REQUIRED FOR EACH COMPONENT OF THE SYSTEM. MAKE THE FOLLOWING TESTS AND SUBMIT ONE COPY OF ALL REPORTS TO THE ARCHITECT AND MECHANICAL DESIGNER:
(1) AIR VOLUMES AT EACH EXHAUST OUTLET
(2) TOTAL CFM STATIC PRESSURE AND FAN SPEED OF ALL FANS
(3) MOTOR SPEED AND INPUT AMPERE READINGS OF ALL FAN MOTORS
B. TEST AND BALANCE SHALL INCLUDE AN EXTENDED WARRANTY OF NINETY (90) DAYS AFTER COMPLETION OF TEST AND BALANCING WORK. DURING WHICH TIME THE OWNER, AT HIS DISCRETION, MAY REQUEST A RECHECK OR RESETTING OF ANY OUTLET, HVAC UNIT OR PRESSURE RELATIONSHIP.
C. CONTRACTOR SHALL REPORT TO ARCHITECT AND ENGINEER AND SPECIFICALLY POINT OUT ANY AIR VOLUMES THAT ARE NOT ABLE TO BE ADJUSTED TO WITHIN 10% OF SPECIFIED AIR VOLUME.

3.8 FINAL OPERATION AND INSTRUCTION:
UPON COMPLETION OF THE INSTALLATION AND AFTER FINAL ACCEPTANCE, AT A TIME APPROVED BY THE OWNER, THE CONTRACTOR SHALL PLACE A QUALIFIED PERSON, OR PERSONS AT THE BUILDING WHO SHALL OPERATE THE HVAC SYSTEMS AND INSTRUCT THE OWNER'S REPRESENTATIVE IN ALL DETAILS OF THE HVAC SYSTEMS OPERATION AND MAINTENANCE INCLUDING CONTROLS.

MECHANICAL LEGEND		
SYMBOL	ABBREV.	DESCRIPTION
	SA	SUPPLY AIR
	RA	RETURN AIR
	EA	EXHAUST AIR
	OA	OUTSIDE AIR
	CD	CEILING DIFFUSER
	RG/RR	RETURN GRILLE/RETURN REGISTER
	EG/ER	EXHAUST REGISTER/EXHAUST GRILLE
	SR	SIDEWALL REGISTER
	MVD	MANUAL VOLUME DAMPER
	FD	FIRE DAMPER
	FSD	FIRE/SMOKE DAMPER
	DSD	DUCT MOUNTED SMOKE DETECTOR
	(L)	DUCT WITH SOUND INSULATION - INTERNALLY LINED (INSIDE DIMENSIONS SHOWN)
	C/D	CONDENSATE DRAIN PIPING
	T	THERMOSTAT
	CFM	CUBIC FEET PER MINUTE
	(E)	EXISTING
	(E/R)	EXISTING AND RELOCATED
	(N)	NEW
		EXIST. AIR DISTRIBUTION
		EXIST. DUCTWORK
		NEW DUCTWORK
		MECH. EQUIPMENT TYPE
		SIZE IN TONS
		ZONE NUMBER



NOTE: MECHANICAL CONTRACTOR SHALL VERIFY VOLTAGE AND PHASE AVAILABLE WITH THE ELECTRICAL CONTRACTOR PRIOR TO ORDERING OR INSTALLING ANY EQUIPMENT.

EXHAUST FAN SCHEDULE									
UNIT NO.	MANUFACTURER & MODEL NO. OR EQUAL	QTY	LOCATION	SERVICE	CFM	EXT. S.P. (IN. W.G.)	H.P.	ELECTRICAL VOLTS/PH/AMPS	OPER. HEIGHT (LBS.)
EF 6	'GREENHECK' GB-101-4	1	ROOF	TOILET ROOMS	720	3/8	1/4	120/1/-	80
① PROVIDE WITH PRE-FAB CURB, BACKDRAFT DAMPER, AND BIRDSGREEN (DISC. SH. BY ELECT. CONTR.)									①

CONTROL SCHEDULE	
#	REMARKS
1.	EF-6 SHALL BE CONTROLLED BY A TIME CLOCK BY THE ELECTRICAL CONTRACTOR.

FIELD VERIFICATION NOTES	
1.	THESE DESIGN DRAWINGS ARE SCHEMATIC. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO PROVIDING BID TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR MODIFICATIONS OF EXISTING DESIGN DUE TO EXISTING CONDITIONS.
2.	THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER, OR OWNER PRIOR TO PROVIDING BID FOR CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT.

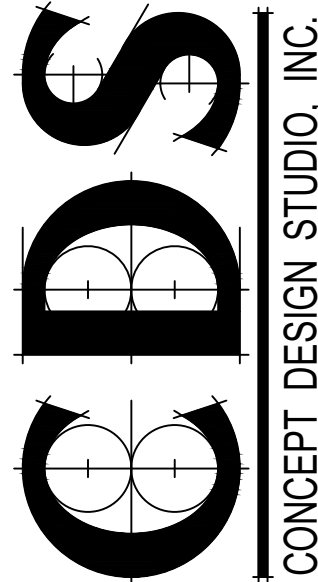
AIR DISTRIBUTION SCHEDULE		
MARK	TYPE	DESCRIPTION
EG1	EXH. GRILLE	PRICE MODEL B30/TB, T-BAR/LAY-IN, BAR FACE 20'X20' NECK
TG1	TRANSFER GRILLE	PRICE MODEL B30/TB, T-BAR/LAY-IN, BAR FACE 20'X20' NECK

CRAIG SCHOOL CHANGING ROOMS RENOVATIONS

MUSKEGON AREA ISD

1580 PARK STREET
MUSKEGON, MI 49441

CONCEPT DESIGN STUDIO, INC.
800 E. ELLIS ROAD, SUITE 508
NORTON SHORES, MI 49441
PH. (231) 799-4838
FAX (231) 799-4837



CONCEPT DESIGN STUDIO, INC.

PROJECT #

ISSUANCES 5-4-22

BIDDING & PERMITS

REVISIONS

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SHEET TITLE

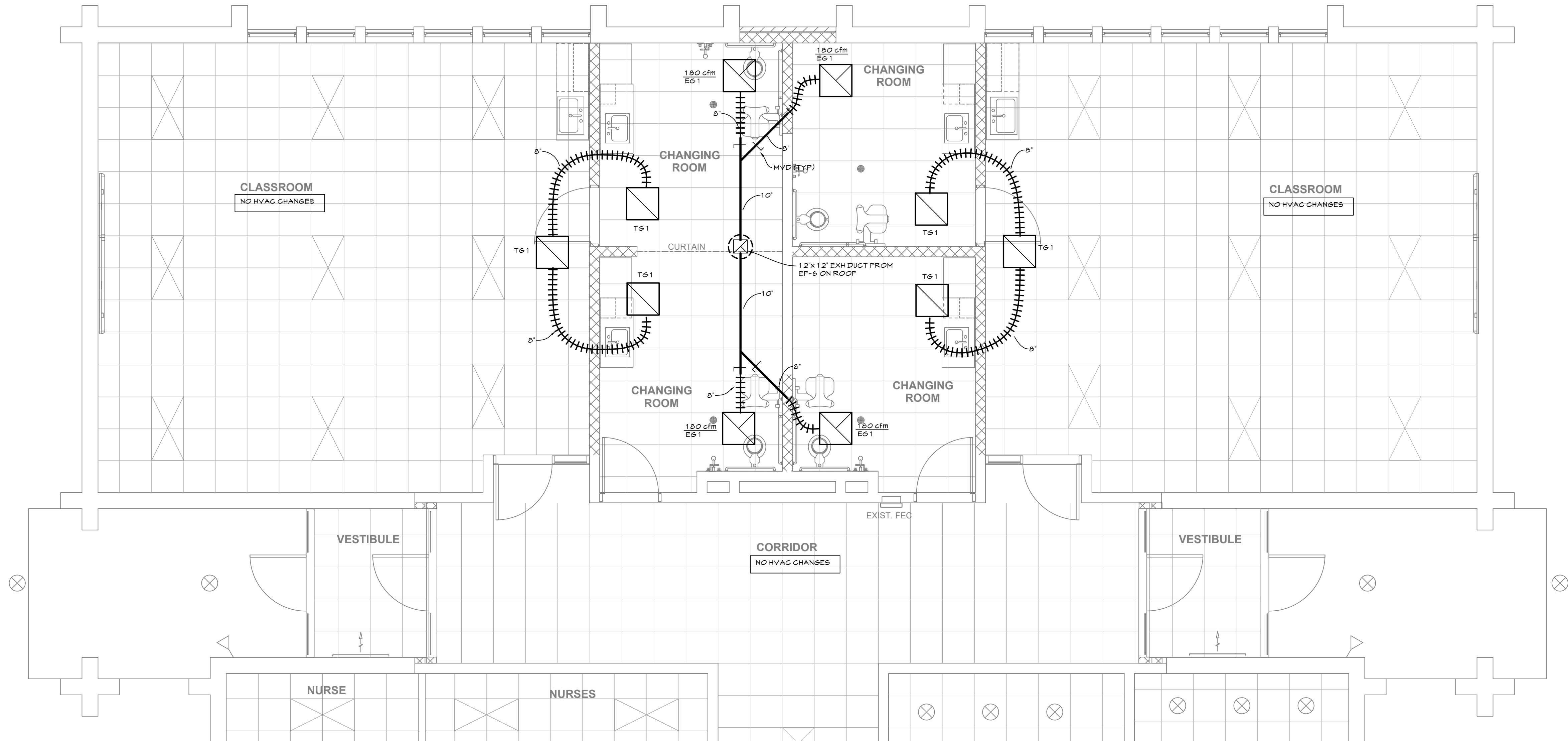
MECHANICAL
SCHEDULES

SHEET NO.

M1.1



www.harinntonmechanical.com
TEL: (255) 435-4803



FLOOR PLAN - MECHANICAL

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

DRAWING NOTES

1. PROVIDE MANUAL VOLUME DAMPER WITH COMMERCIAL GRADE QUADRANT. LOOK AT ALL EXHAUST BRANCH DUCTS.
2. FOR MECHANICAL EQUIPMENT DETAILS SEE M1.1
3. VERIFY HVAC UNIT LOCATIONS WITH ARCHITECT AND STRUCTURAL ENGINEER
4. FACTORY MADE FLEXIBLE AIR DUCTS AND CONNECTORS SHALL BE NOT MORE THAN 1 FT. IN LENGTH
5. MECH. CONTR. SHALL VERIFY PROPER DUCT CLEARANCE BEFORE INSTALLATION. IF ROUND DUCT DOES NOT FIT, PROVIDE 6" RECTANGULAR WITH THE SAME CROSS SECTIONAL AREA



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CRAIG SCHOOL CHANGING ROOMS RENOVATIONS

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PROJECT #
ISSUANCES 5-4-22
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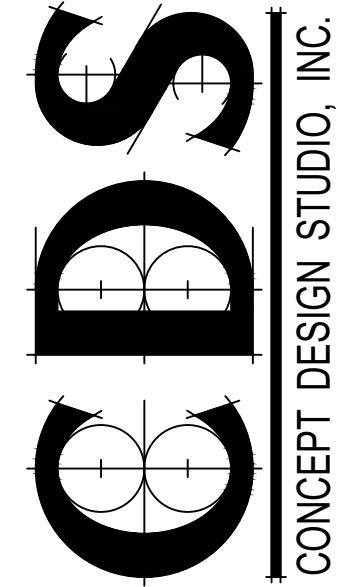
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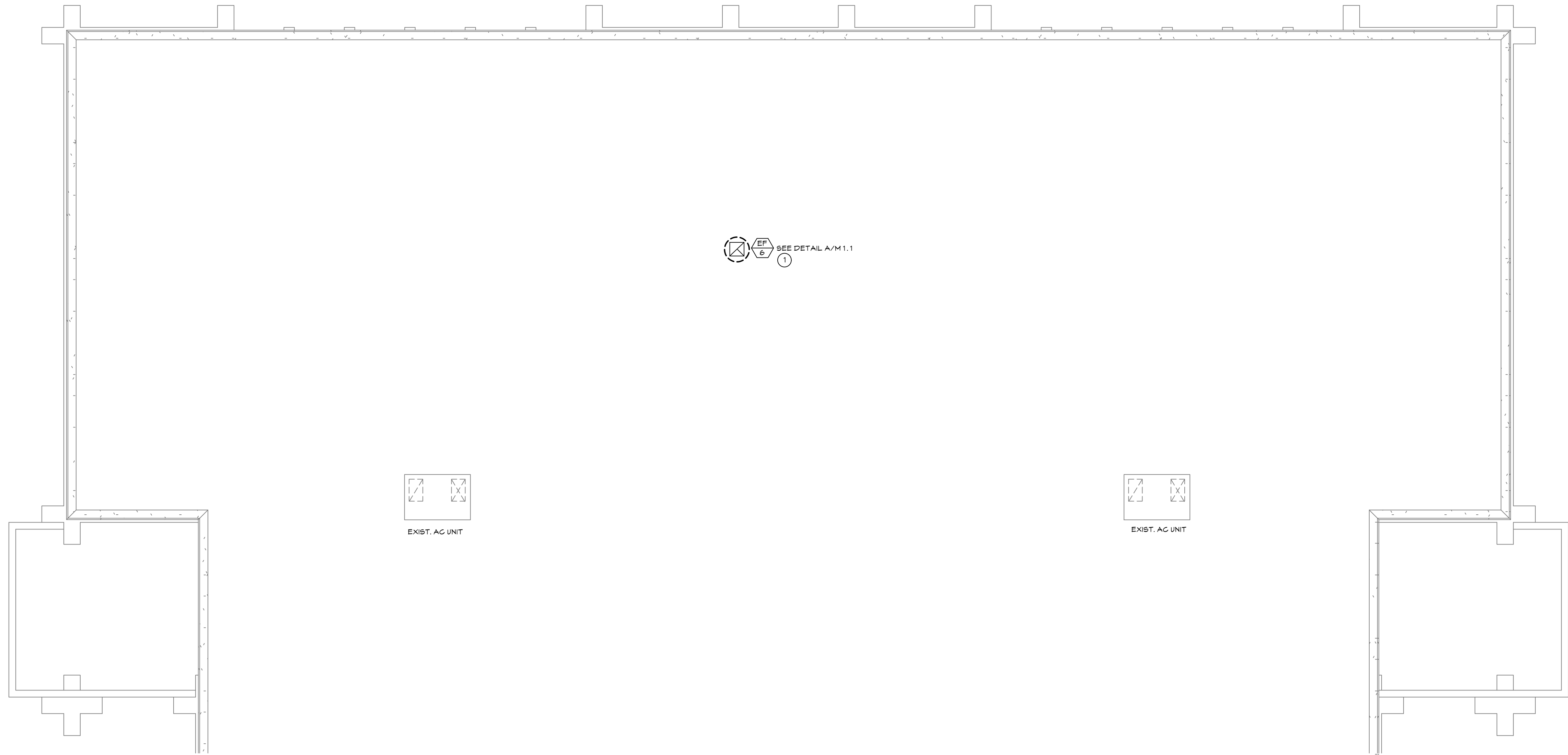
MECHANICAL
FLOOR PLAN

SHEET NO.

M2.1



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PH: (231) 799-4838
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ROOF PLAN - MECHANICAL

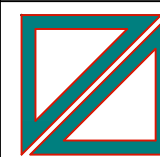
SCALE: 1/4" = 1'-0"

DRAWING NOTES

1. FOR MECHANICAL EQUIPMENT DETAILS SEE M1.1
2. VERIFY HVAC UNIT LOCATIONS WITH ARCHITECT AND STRUCTURAL ENGINEER

KEY NOTES

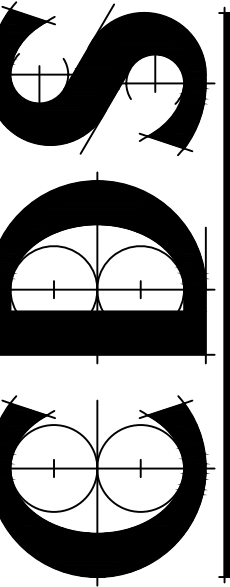
- ① MIN. CLEARANCES FOR TOILET RM AND GENERAL EXH. FAN OUTLETS IN ALL DIRECTIONS: 9 FT. FROM PROPERTY LINES AND OPENINGS INTO BLDG. 10 FT. FROM OUTSIDE AIR INTAKES FOR MECHANICAL EQUIPMENT



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CRAIG SCHOOL CHANGING ROOMS RENOVATIONS

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PROJECT #	
ISSUANCES	5-4-22
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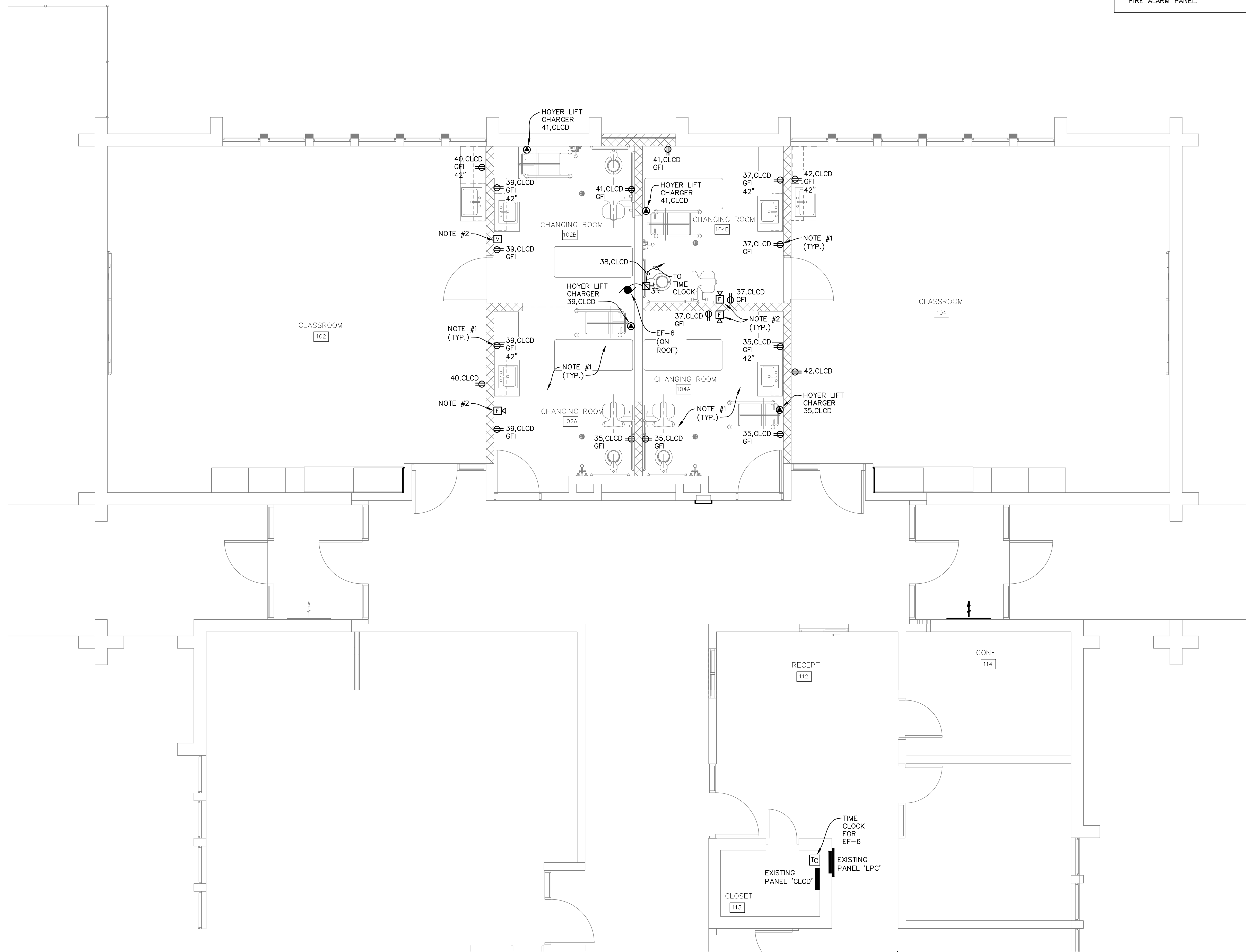
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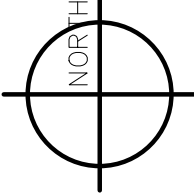
**MECHANICAL
ROOF PLAN**

SHEET NO.

M2.2



- ELECTRICAL POWER NOTES:**
1. ADD NEW 120V OUTLET CIRCUITS FROM EXISTING PANEL 'CLCD'.
 2. WIRE NEW FIRE ALARM DEVICES INTO THE EXISTING FIRE ALARM SYSTEM. PROVIDE ANY NEW HARDWARE REQUIRED TO ADD THE DEVICES TO THE EXISTING FIRE ALARM PANEL.



ELECTRICAL POWER FLOOR PLAN

SCALE: 1/4" = 1'-0"
0 4' 8'

CRAIG SCHOOL CHANGING ROOMS
MUSKEGON AREA ISD
1580 PARK STREET
MUSKEGON, MICHIGAN 49441

DATE	DESCRIPTION	DATE	DESCRIPTION
4/25/2022	OWNER REVIEW		
5/6/2022	BIDDING AND PERMITS		

DATE: 4/9/2022
FILE NO: 22010
DRAWN BY: JLS
CHECKED BY: DBB

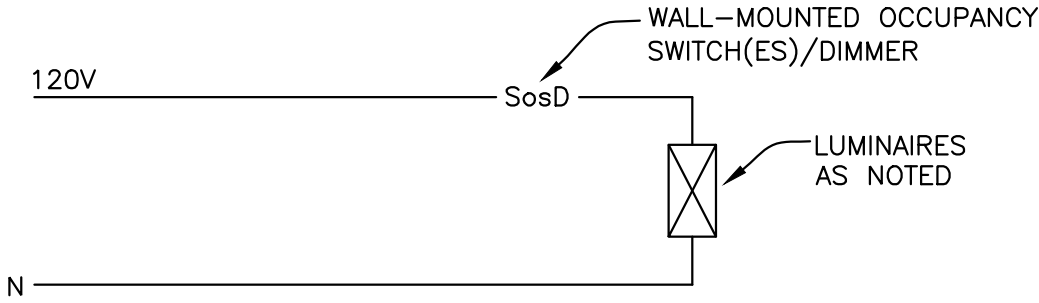


DRAWING NUMBER:
E1.01
1 OF 3

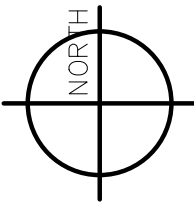
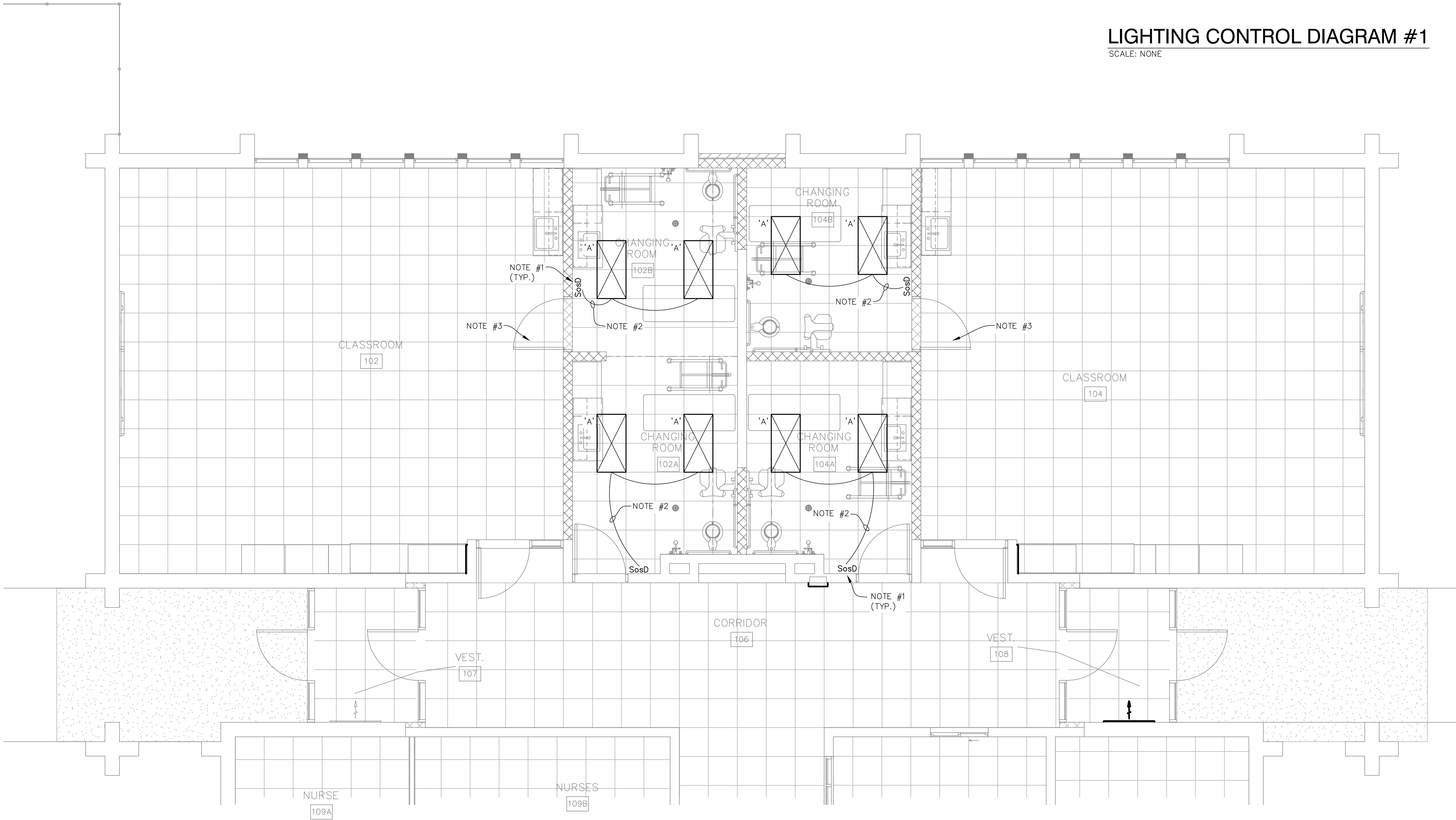
LUMINAIRE LEGEND					
QTY.	TYPE	DESCRIPTION	MANUFACTURER & CAT. NO.	LAMPS	NOTES
②					
8	A	2'x4' LED TROFFER	LITHONIA #2BLT-4-48L-EZ1-UP835	38W LED	①

- ① EQUAL MANUFACTURERS: EATON, HUBBELL
② VERIFY EXACT QUANTITY WITH PLANS.

- ELECTRICAL LIGHTING NOTES:**
- SEE LIGHTING CONTROL DIAGRAM #1.
 - USE EXISTING 120 VOLT AVAILABLE LIGHTING CIRCUIT IN THIS AREA.
 - RELOCATE EXISTING LIGHTING IN THESE CLASSROOMS FOR NEW ROOMS AND REWIRE TO EXISTING CIRCUITS.



LIGHTING CONTROL DIAGRAM #1
SCALE: NONE



ELECTRICAL LIGHTING PLAN

SCALE: 1/4" = 1'-0"
0 4' 8'

EDM

ELECTRICAL
DESIGN AND
MANAGEMENT

8246 BELMONT AVENUE N.E.
BELMONT, MICHIGAN 49306
TELEPHONE: (616) 866-6909

ELECTRICAL LIGHTING PLAN

CRAIG SCHOOL CHANGING ROOMS

MUSKEGON AREA ISD

1580 PARK STREET
MUSKEGON, MICHIGAN 49441

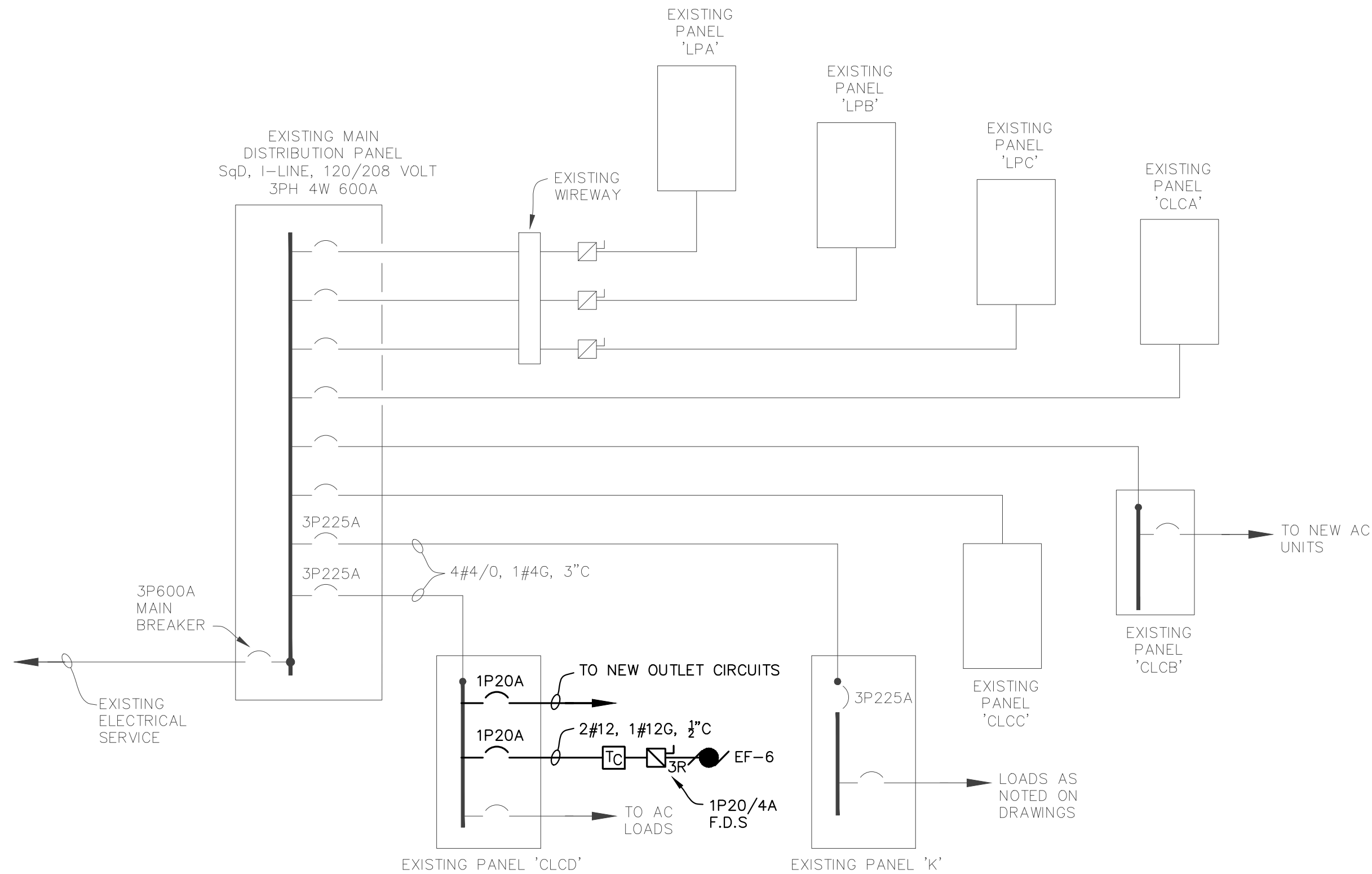
DATE	DESCRIPTION	DATE	DESCRIPTION
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FILE NO: 22010
DRAWN BY: JLS
CHECKED BY: DBB



DRAWING NUMBER:
E2.01
2 OF 3

PROJECT NAME: CRAIG SCHOOL - CHANGING ROOMS												PROJECT #: 22010				PANEL ID: EXIST. CLCD			
PANELBOARD SCHEDULE																			
BRKR		LOAD - VOLT AMPERES				DESCRIPTION		CKT	PH	CKT	DESCRIPTION		LOAD - VOLT AMPERES				BRKR		
P	T	LTG	MTR	RCPT	OTHER			#		#			LTG	MTR	RCPT	OTHER	P T		
3	30		2450			AC-1		1	A	2	AC-2		2450				3 30		
X	X		2450			"		3	B	4	"		2450				X X		
X	X		2450			"		5	C	6	"		2450				X X		
2	30		2300			AC-14A		7	A	8	AC-3		3100				3 40		
X	X		2300			"		9	B	10	"		3100				X X		
1	20			500		WP OUTLET ON ROOF		11	C	12	"		3100				X X		
3	30		2450			AC-13		13	A	14	AC-4A		3100				3 40		
X	X		2450			"		15	B	16	"		3100				X X		
X	X		2450			"		17	C	18	"		3100				X X		
3	30		2450			AC-12		19	A	20	AC-4A		3100				3 40		
X	X		2450			"		21	B	22	"		3100				X X		
X	X		2450			"		23	C	24	"		3100				X X		
2	15				2200	WH-1(3)		25	A	26	SPARE						3 30		
X	X				2200	"		27	B	28	"						X X		
3	15					SPARE		29	C	30	"						X X		
X	X					"		31	A	32	SPARE						3 20		
X	X					"		33	B	34	"						X X		
1	20			800		CHANGING ROOM 102A, 104A		35	C	36	"						X X		
1	20			800		CHANGING ROOM 104A, 104B		37	A	38	EF-6 & TIME CLOCK		200	400			1 20		
1	20			800		CHANGING ROOM 102A, 102B		39	B	40	CLASSROOM #102					360	1 20		
1	20			400		CHANGING ROOM 102B, 102B		41	C	42	CLASSROOM #104					360	1 20		
		LTG	LMTR	MTR	RCPT	OTHER	TOTAL	NOTES:				VOLTAGE:				208			
AB		0	3100	18500	1200	2200	25000					MIN. AMPACITY:				199			
BB		0	3100	18300	1160	2200	24760					MAIN LUG:				225A			
CB		0	3100	16000	2060	0	21160					MAIN CKT BRKR:							
TOTAL		0	9300	52800	4420	4400	70920					NO. OF CKTS:				42			
DEMAND	1	1.25	1		**	1						P.NL TYPE:				NO			
DIVERS. VA	0		3875	59000	4420	4400	71695					MOUNTING:				SURFACE			
												FED FROM:				MDP			



EXISTING ELECTRICAL ONE-LINE DIAGRAM
SCALE: NONE 120/208V 3PH 4W

ELECTRICAL SYMBOL LEGEND				
SYMBOL	DESCRIPTION	CAT NO.	MTG. HT. TO CENTERLINE	REMARKS
S	SINGLE POLE SWITCH – SPEC. GRADE	LEVITON #CSB1–20–I	48" A.F.F.	
S ₃	THREE WAY SWITCH – SPEC. GRADE	LEVITON # CSB3–20–I	48" A.F.F.	
S ₄	FOUR WAY SWITCH – SPEC. GRADE	LEVITON # CSB4–20–I	48" A.F.F.	
S _D	DIMMER SWITCH FOR LED	LEVITON	48" A.F.F.	
S _K	KEYED SWITCH	LEVITON #1221–2L	48" A.F.F. U.N.O.	
S _P	? SWITCH			
⌞	DUPLEX OUTLET – SPEC. GRADE – NEMA 5 – 15R	LEVITON # 5262–I	48"A.F.F.	
⌞	QUADRADUPLEX OUTLET	LEVITON #(2)5362–I	48"A.F.F.	
⌞WP	GROUND FAULT CKT. INTERRUPTER (WP) – DENOTES WEATHERPF. CVR.	LEVITON #6598 W/ 6196–DCL W.P. COVERPLATE	48" A.F.G., U.N.O.	
⌞C	CLOCK OUTLET WITH HANGER	LEVITON #688–I	30" A.F.F., U.N.O.	
⌞GFI	GROUND FAULT CKT INTERRUPTER OUTLET ABOVE COUNTERTOP	LEVITON #6598	44" A.F.F., U.N.O.	
▽	TELE. AND DATA OUTLET–4" SQ. BOX W/2 GANG RAISED COVER, 3/4"C. UP WALL TO ABOVE CLG.	---	18" A.F.F., U.N.O.	
⌞	FLOOR BOX			
⌞	SPECIAL CONNECTION – CHARACTERISTICS AS NOTED ON PLANS	---	AS NOTED	
⌞TV	TV/MONITOR OUTLET			
⌞J	JUNCTION BOX		AS NOTED	
⌞	FUSED DISCONNECT SWITCH– FDS – HEAVY DUTY	SQ D	48" A.F.F.	
S _F	SW AND PLUGFUSE HOLDER– BUSSMANN "SSU" & FUSESTAT FUSE	BUSSMANN / EATON	AT EQUIPT.	
⌞	COMBINATION MAG. STARTER/FUSED DISC. SWITCH – CS/FDS	SQ D	48" A.F.F.	
⌞	SINGLE PHASE ELECTRIC MOTOR	SUPPLIED WITH EQUIPMENT	---	
⌞	THREE PHASE ELECTRIC MOTOR	SUPPLIED WITH EQUIPMENT	---	
⌞	CIRCUIT BREAKER	SQ D	---	
⌞	THERMOSTAT/TEMPERATURE SENSOR	BY MECH. CONTR	60" A.F.F.,U.N.O.	
⌞	TRANSFORMER	SQ D	AS REQ'D	
⌞	PANELBOARD (120/208V)	SQ D	---	
⌞	SURFACE MOUNTED LUMINAIRE	SEE LUMINAIRE LEGEND	NOTED ON DRAWINGS	
⌞	RECESSED DOWNLIGHT	SEE LUMINAIRE LEGEND	---	
⌞	RECESSED WALL ACCENT	SEE LUMINAIRE LEGEND	---	
⌞	WALL MOUNTED LUMINAIRE	SEE LUMINAIRE LEGEND	NOTED ON DRAWINGS	
⌞	LINEAR SURFACE MOUNTED LUMINAIRE	SEE LUMINAIRE LEGEND	---	
⌞	RECESSED FLUORESCENT LUMINAIRE	SEE LUMINAIRE LEGEND	---	
⌞	INDUS. OR STRIP LUMINAIRE	SEE LUMINAIRE LEGEND		
⌞	CEILING MOUNTED EXIT SIGN	SEE LUMINAIRE LEGEND	---	
⌞	WALL MOUNTED EXIT SIGN	SEE LUMINAIRE LEGEND	---	
⌞	EXIT SIGN WITH EMERGENCY HEADS	SEE LUMINAIRE LEGEND	---	
⌞	PHOTOCONTROL	TORK #2102	---	UNIT TO FACE THE NORTH
⌞	TIME CLOCK	TORK #B007L	---	
⌞	CLOCK	MATCH EXISTING	MT. AT 8'-0"A.F.F.	
Sos	WALL MOUNTED OCCUPANCY SENSOR – 120V	SENSORSWITCH #WSX–WH	48" A.F.F.	DUAL SWITCH #00SDD–ID
SosD	WALL MOUNTED OCCUPANCY SENSOR WITH DIMMER– 120V	SENSORSWITCH #WSX–D–WH	48" A.F.F.	
⌞	CEILING MOUNTED MOTION DETECTOR W/ POWER PACK – 120V	PP		
⌞	EMERGENCY BALLAST TRANSFER	NINE24 #ELCR–R–120		
⌞	F.A. VISUAL UNIT		80" A.F.F. / CLG	
⌞	F.A. HORN/STROBE	SIMPLEX	80" A.F.F./CEILING	
⌞	F.A. HORN	SIMPLEX	80" A.F.F./CEILING	
⌞	F.A. CHIME STROBE	SIMPLEX		
⌞	F.A. PULL STATION	SIMPLEX	48" A.F.F.	
⌞	F.A. SMOKE DETECTOR	SIMPLEX	CEILING	
⌞	F.A. DUCT DETECTOR	SIMPLEX	CEILING	
⌞	F.A. PRESSURE SWITCH	SIMPLEX	---	
⌞	F.A. FLOW SWITCH	SIMPLEX	---	
⌞	SMOKE DAMPER	SIMPLEX	---	
⌞	F.A. HEAT DETECTOR	SIMPLEX	---	
⌞	CARD READER			
⌞	ELECTRIC STRIKE			
⌞	DOOR CONTACT			
⌞	SPEAKER			

- SYMBOL LEGEND NOTES:
- A.F.F. = ABOVE FINISHED FLOOR TO CENTER OF BOX
 - A.F.G. = ABOVE FINISHED GRADE TO CENTER OF BOX
 - U.N.O. = UNLESS NOTED OTHERWISE
 - NOT ALL SYMBOLS WILL BE USED. (SEE PLANS)
 - W.G. = WIRE GUARD

ELECTRICAL SPECIFICATIONS

- All materials shall be new and conform with the standards of Underwriters laboratories or an approved independent testing laboratory.
- The installation shall comply with all the laws in effect, applying to the electrical installation and with the latest N.E.C., OSHA and all local codes.
- The electrical contractor shall obtain all permits and pay all necessary fees.
- All work shall be done by licensed electrician/apprentice.
- Electrical contractor shall visit site to examine the existing working conditions. He shall provide the necessary equipment required for the new electrical work.
- The electrical service and equipment is existing. Coordinate the new electrical work with the Owner. Any temporary power and lighting will be the responsibility of the E.C.
- All the new electrical equipment to be by Sq D. Provide all the electrical equipment as noted.
- IMC/RGC conduit to be used where subject to mechanical damage, exterior or over 3" size. EMT conduit to be used for all inside circuit wiring. Steel type fittings to be used with the EMT.
- All wiring shall be copper #12 AWG minimum, type THHN/THWN stranded. For runs over 100 feet, use #10 AWG in lieu of #12. Color coding for the electrical wiring shall be as follows:
For 120/208V System
Phase A – Black
Phase B – Red
Phase C – Blue
Neutral – White
Ground – Green
- The circuiting for the outlets to be a maximum of five(5) duplex receptacles on a 120 volt, 20 amp circuit. Lighting on 120 volt, 20 amp circuit (U.N.O.) shall not exceed 1800 watts. Circuiting shall be as noted on plans.
- All conduits, electrical equipment and motor frames to be grounded per N.E.C. Article 250.
- Provide new typewritten directories for all changed panels. All new electrical equipment shall be labeled with 1/4 " high black letters on white lamacoid plastic. Also label electrical equipment for arc-flash protection as per NEC 110.16.
- All equipment connections to be as recommended by the equipment manufacturer.
- The Luminaires to be specification grade with electronic drivers. The luminaires shall be per the Luminaire Legend. All LEDs shall be provided by the Luminaire manufacturer.
- E.C. to install wiring devices where shown on plan. Color of devices to be white (u.n.o.) white nylon plates.
- Lighting control equipment shall be furnished and installed by E.C..
- All new fire alarm devices and installation of the fire alarm system to be by Simplex as a Subcontractor to the Electrical Contractor. Provide new device as required and reuse existing devices as allowed by code.
- Six (6) sets of shop drawings or Electronic copy shall be submitted for approval. Shop drawings required for all luminaires, wiring devices, electrical equipment, etc.
- E.C. to provide as-built drawings at the completion of the project.
- The electrical contractor shall leave the entire electrical system in proper working order. He shall also extend to the owner any guarantee extended by the manufacturer of equipment and devices installed and furnished by him. The electrical contractor shall guarantee his work for minimum of one (1) year. The guarantee period shall be extended as of the date of substantial completion of his work.

8246 BELMONT AVENUE N.E.
BELMONT, MICHIGAN 49306
TELEPHONE: (616) 866-6909

ELECTRICAL
DESIGN AND
MANAGEMENT

CRAIG SCHOOL CHANGING ROOMS
MUSKEGON AREA ISD
1580 PARK STREET
MUSKEGON, MICHIGAN 49441

DATE	DESCRIPTION	DATE	DESCRIPTION
4/25/2022	OWNER REVIEW		
5/6/2022	BIDDING AND PERMITS		

DATE: 4/9/2022

FILE NO: 22010

DRAWN BY: JLS

CHECKED BY: DBB

ELECTRICAL
DESIGN AND
MANAGEMENT

DRAWING NUMBER:

E3.01
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