

North Park Ice Arena Locker Rooms Addition #2 Elyria, Ohio

901 Duffey Street
Elyria, Ohio 44035

LOCATION MAP



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UTILITY INFORMATION

THE LOCATION OF UNDERGROUND UTILITIES IF SHOWN ON THE PLANS ARE OBTAINED FROM OWNERS OF THE UTILITIES AS REQUIRED BY SECTION 153.64 O.R.C. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT, BUT THE ENGINEER AND OWNER DO NOT GUARANTEE THEIR ACCURACY OR COMPLETENESS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL UTILITIES LOCATED PRIOR TO THE COMMENCEMENT OF WORK. THE FOLLOWING IS A LIST OF THE PUBLIC UTILITIES BELIEVED TO BE IN THE PROJECT AREA:

COLUMBIA GAS OF OHIO, INC.
3101 NORTH RIDGE ROAD E.
LORAIN, OHIO 44055
(440) 240-1820

CITY OF ELYRIA WASTEWATER PLANT
1194 GULF ROAD
ELYRIA, OHIO 44035
(440) 366-2211

WINDSTREAM COMMUNICATIONS
363 THIRD STREET
ELYRIA, OHIO 44035
(440) 329-4000

CITY OF ELYRIA WATER DISTRIBUTION
851 GARDEN STREET
ELYRIA, OHIO 44035

OHIO EDISON COMPANY
6326 LAKE AVENUE
ELYRIA, OHIO 44035
(440) 326-3230

TIME WARNER (CABLE) (SPECTRUM)
576 TERNES AVENUE
ELYRIA, OHIO 44035
(440) 365-1861

AT&T OHIO
1547 W RIVER ROAD N
ELYRIA, OHIO 44035
(440) 324-7200

OHIO UTILITIES PROTECTION SERVICE (O.U.P.S.) 1-800-362-2764

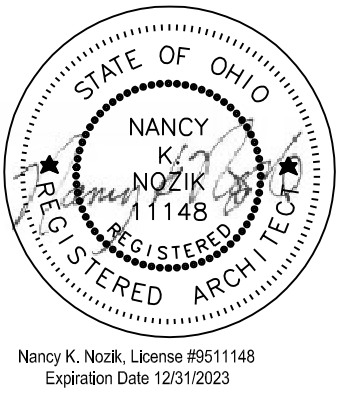
APPROVAL ON BEHALF OF THE CITY OF ELYRIA

MAYOR FRANK WHITFIELD _____ DATE

TIM WILLIAMS _____ DATE
INTERIM SAFETY SERVICE DIRECTOR

KATHRYN MCKILLIPS, P.E. _____ DATE
CITY ENGINEER

ENGINEER/ARCHITECT PREPARING PLANS:



NANCY K. NOZIK, AIA
REGISTERED PROFESSIONAL ARCHITECT NO. 11148

EXISTING UNDERGROUND UTILITIES NOTE

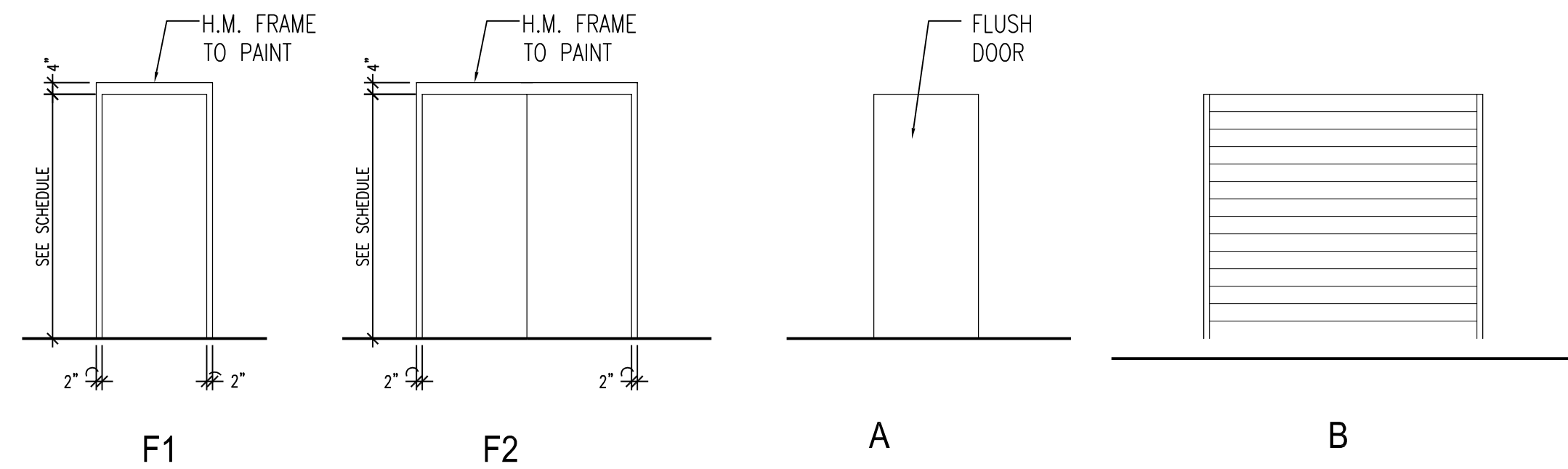
THE SIZE & LOCATION, BOTH HORIZONTAL AND VERTICAL, OF THE UNDERGROUND UTILITIES SHOWN HEREON, HAVE BEEN OBTAINED BY A SEARCH OF AVAILABLE RECORDS. VERIFICATION BY FIELD OBSERVATION HAS BEEN CONDUCTED WHERE PRACTICAL, HOWEVER, KS ASSOCIATES, INC. DOES NOT GUARANTEE THE COMPLETENESS NOR ACCURACY THEREOF.



ISSUED FOR BID 01.25.2023
BCI PROJECT NO. 22074

<p>OHIO UTILITIES PROTECTION SERVICE</p> <p>BEFORE YOU DIG CALL 1-800-362-2764 OR 811 TOLL FREE</p> <p>OHIO LAW REQUIRES 48 HOURS BUT NOT MORE THAN 10 WORKING DAYS NOTICE BEFORE COMMENCING EXCAVATION. THE EXCAVATOR SHALL NOTIFY A PROTECTION SERVICE OF THE LOCATION OF THE EXCAVATION SITE AND THE DATE ON WHICH EXCAVATION IS PLANNED TO COMMENCE.</p> <p>WWW.OUPS.ORG</p>	<p>OHIO Utilities Protection SERVICE</p> <p><i>Call Before You Dig</i> 800-362-2764</p>	<p>OHIO OIL & GAS PRODUCERS UNDERGROUND PROTECTION SERVICE</p> <p>TWO WORKING DAYS BEFORE YOU DIG CALL 1-800-925-0988 (TOLL FREE)</p> <p>WWW.OGPUPS.ORG</p>
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Door And Frame Schedule											
MARK	DOOR				DOOR FRAME			DETAILS	FIRE RATING	HARDWARE SET	REMARKS
	DOOR SIZE	FILL DOOR TYPE	DOOR MATERIAL	DOOR FINISH	FRAME TYPE	FRAME MATERIAL	FRAME FINISH				
01	8'-0" x 7'-0"	B	HM	PRE		HM	PRE	-	45 MIN	1	3
02	3'-0" x 7'-0"	A	HM	PT	F1	HM	PT	-	45 MIN	2	1,2
03	3'-0" x 7'-0"	A	HM	PT	F2	HM	PT	-	45 MIN	2	1,2
04	3'-0" x 7'-0"	A	HM	PT	F1	HM	PT	-	-	1	1,2
05	3'-0" x 7'-0"	A	HM	PT	F1	HM	PT	-	-	1	1
06	3'-0" x 7'-0"	A	HM	PT	F1	HM	PT	-	-	1	1
07	3'-0" x 7'-0"	A	HM	PT	F1	HM	PT	-	45 MIN	1	1
REMARKS											
1. 24" KICK PLATE											
2. UNDERCUT DOOR FOR AIR FLOW											
3. OVERHEAD COILING DOOR											



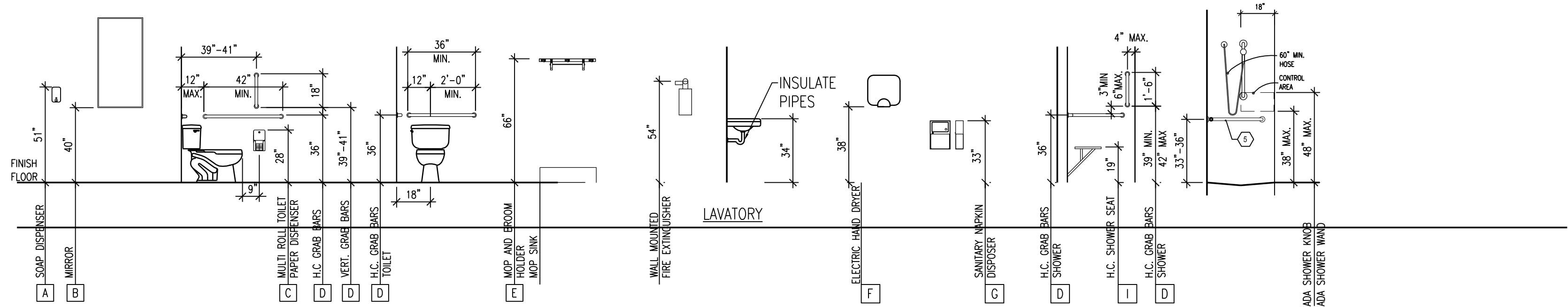
Door Frame Types

Door Types

Room Finish Schedule										
ROOM NAME	FLOOR		BASE	WALLS				CEILING		REMARKS
	MATERIAL	FINISH	MATERIAL	NORTH	EAST	SOUTH	WEST	MATERIAL	FINISH	
101 STORAGE	CONC	SEAL/RF	-	PT-1	PT-1	PT-1	PT-1	GYP	PT-1	2 LAYERS 5/8" TYPE X DRYWALL
102 OUTDOOR STORAGE	CONC	SEAL	-	PT-1	PT-1	PT-1	PT-1	GYP	PT-1	2 LAYERS 5/8" TYPE X DRYWALL
103 ADA UNISEX	CONC	SEAL/RF	-	PT-1	PT-1	PT-1	PT-1	GYP	PT-1	
104 MECHANICAL ROOM	CONC	SEAL	-	PT-1	PT-1	PT-1	PT-1	GYP	PT-1	
105 BATHROOM	CONC	SEAL/RF	-	PT-1	PT-1	PT-1	PT-1	GYP	PT-1	
106 LOCKER ROOM 8	CONC	SEAL/RF	-	PT-1	PT-1	PT-1	PT-1	GYP	PT-1	
107 STORAGE	CONC	SEAL/RF	-	PT-1	PT-1	PT-1	PT-1	GYP	PT-1	2 LAYERS 5/8" TYPE X DRYWALL

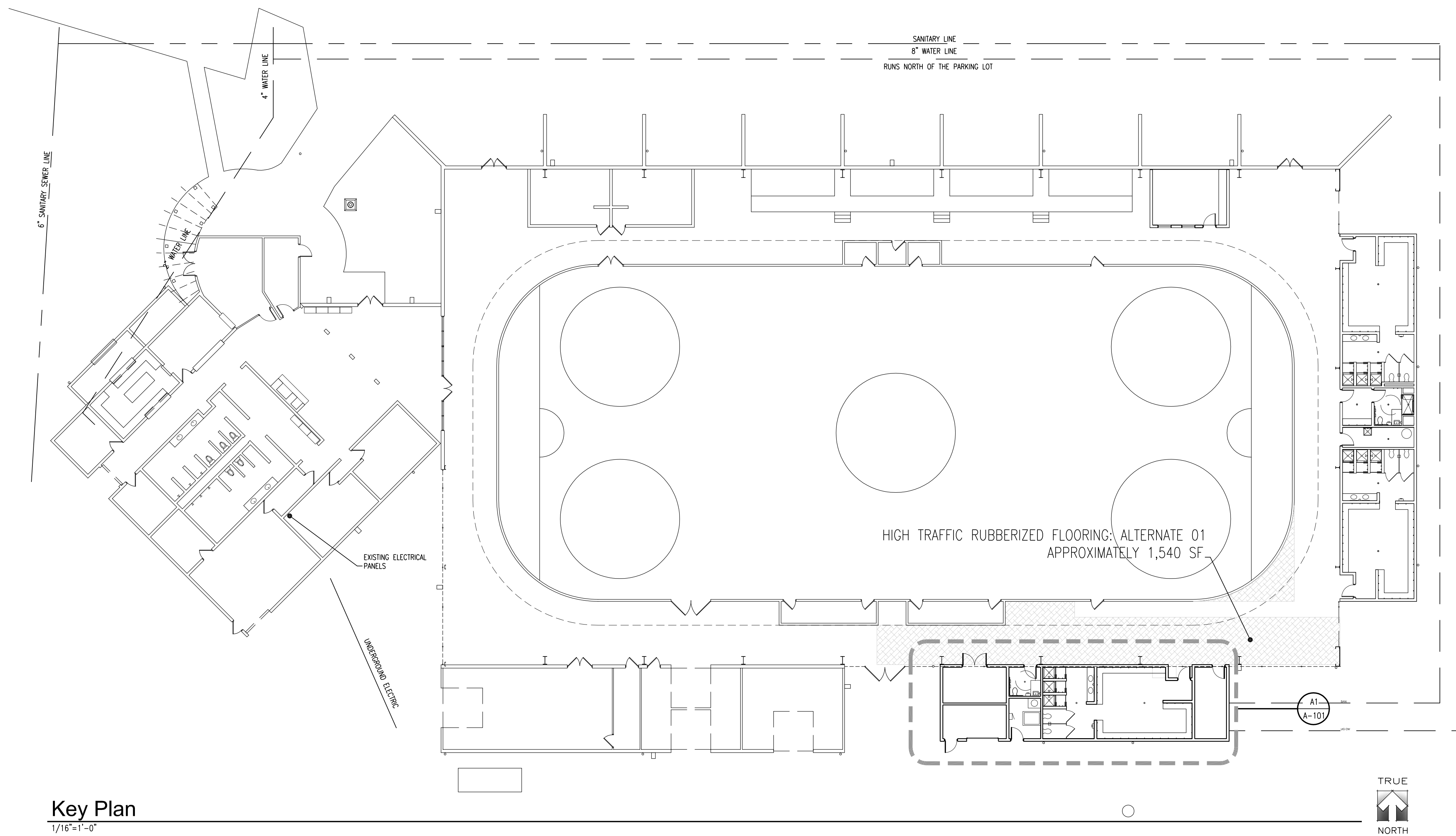
Legend

CONC CONCRETE
 GYP MOISTURE RESISTANT GYPSUM BOARD
 PT PAINT
 RF HIGH IMPACT RUBBER FLOORING
 SEAL CONCRETE SEALER



Bathroom Accessories Mounting Heights Standards

NOTE: COORDINATE MOUNTING HEIGHTS WITH MANUFACTURER'S RECOMMENDATIONS AND A.D.A. REQUIREMENTS

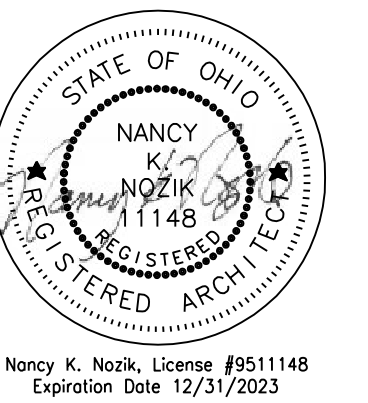


Key Plan

1/16"=1'-0"

Design Criteria & Code Data

2017 OHIO BUILDING CODE WITH AMENDMENTS			
Type of Work:	NEW CONSTRUCTION		
Use Group(s):	A4		
Construction Type:	1B		
AREA LIMITATIONS			
	Allowable	Existing	Addition
Area	unlimited	35,500 sf	1,408 sf
Height	11 stories	1 story	1 story
FIRE SUPPRESSION:			
Not Applicable			
FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS Table 601			
Primary Structural Frame:	2 HOURS		
Bearing Walls:	2 HOURS		
interior	2 HOURS		
exterior	2 HOURS		
Non-Bearing Walls Interior:	0 HOURS		
Floor construction and secondary members:	2 HOURS		
Roof Construction and secondary members:	1 HOURS		
BUILDING OCCUPANT LOAD			
MAIN LEVEL	Sq. Ft.	Calculated	Actual
Locker Room - 50 gross	671 sf	44	24
Storage Room 1 - 300 gross	155 sf	1	1
Storage Room 2 - 300 gross	144 sf	1	1
Unisex Bathroom - 50 gross	58 sf	1	1
Mechanical Room - 300 gross	80 sf	1	1*
Outdoor Storage - 300 gross	160 sf	1	1
TOTALS:	-	49	29*
* Utility/Mechanical area accessed only by staff service.			



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 Issue Date: 12.21.2022 For Permit

Locker Rooms Addition #2

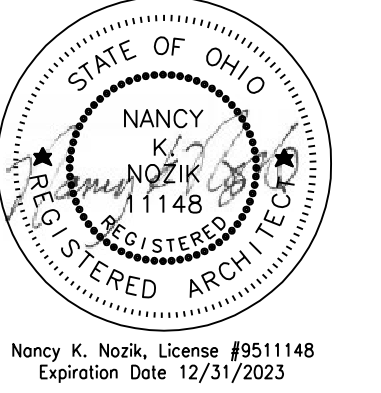
Elyria North Park Ice Arena
 901 Duffey Street
 Elyria, OH 44035

General Information & Key Plan

Project No.

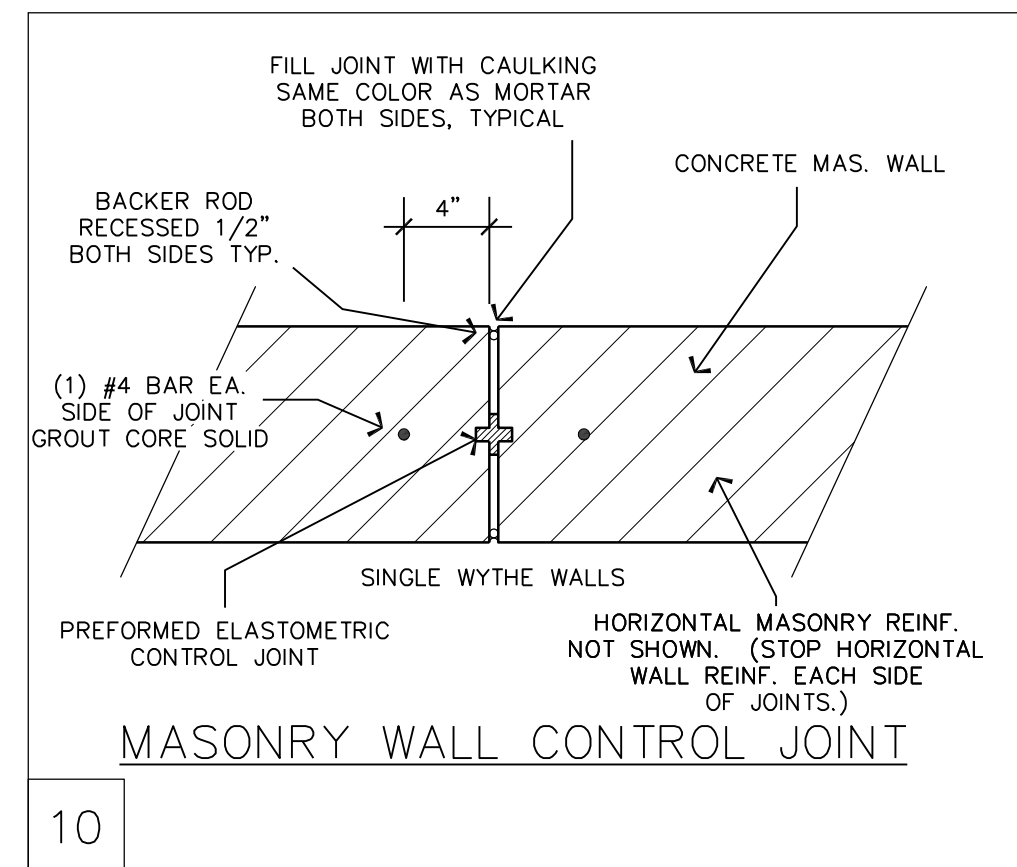
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G-101

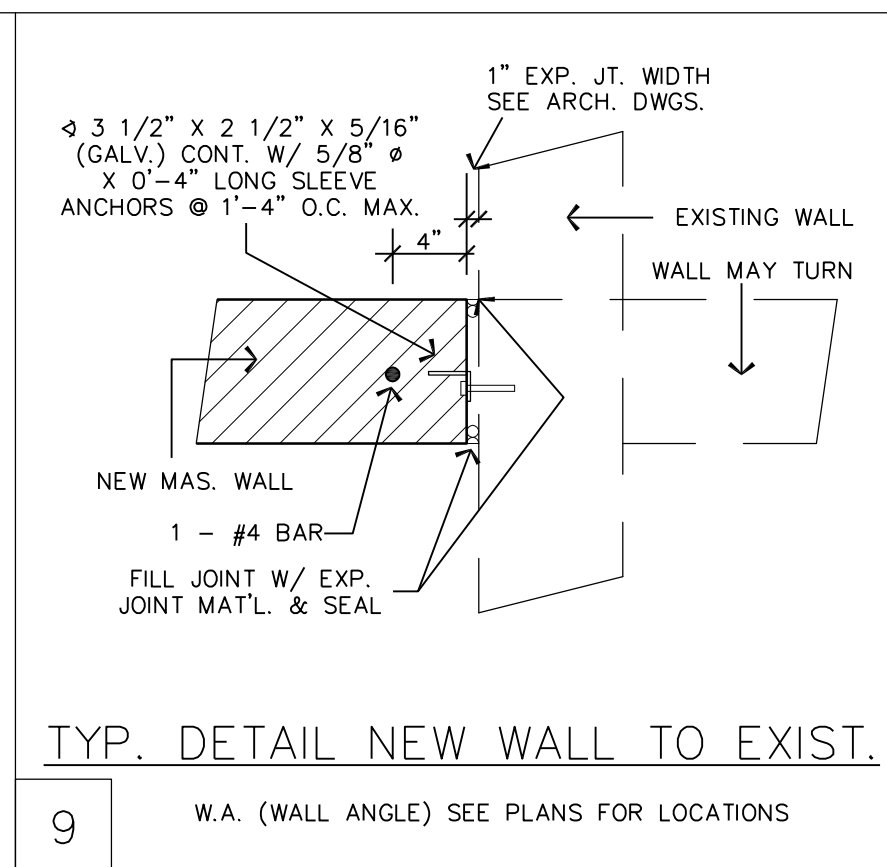


Concrete Foundation & Slab-On-Grade (S.O.G.) Plan Notes

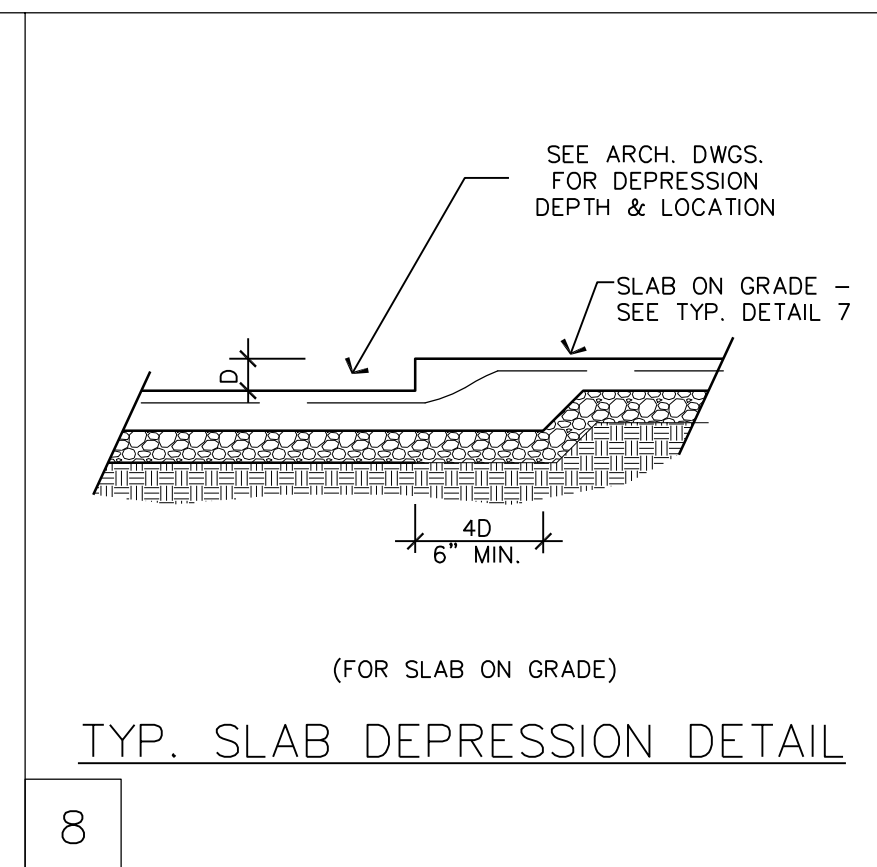
- DESIGN CRITERIA AND GENERAL NOTES ON DRAWING S-001.
- TYPICAL FOUNDATION DETAILS THIS SHEET.
- ALL DIMENSIONS SHOWN ON THIS DRAWING TO BE VERIFIED WITH ARCHITECTURAL DRAWINGS.
- FINISHED FIRST FLOOR REFERENCE ELEVATION = 0'-0"
- TOP OF SLAB AND BOTTOM OF FOOTING ELEVATIONS SHOWN THUS (-) ON PLAN ARE REFERENCED TO FINISHED SLAB-ON-GRADE ELEVATION = 0'-0".
- ALL FOOTINGS MUST BEAR UPON MATERIALS STATED IN "FOUNDATIONS" GENERAL NOTES ON SHEET S-001.
- ALL WALL FOOTINGS SIZES TO BE AS SHOWN ON PLAN WITH BOTTOM OF FOOTING AT -3'-10" BELOW FIN. FLOOR ELEV. SEE TYPICAL DETAIL 2 ON THIS SHEET AND SECTION A3 ON SHEET A-301.
- ALL BOTTOM OF FOOTINGS MUST BE A MINIMUM 3'-6" BELOW FINISH GRADE, LOWER BOTTOM OF FINISH FOOTING AS REQUIRED.
- ALL 8" EXTERIOR CMU MASONRY WALLS TO BE REINFORCED WITH #4 BARS @ 48" O.C. PROVIDE 1-#4 BAR EACH EXTERIOR SIDE OF MASONRY DOOR OPENING. PROVIDE MATCHING DOWELS INTO FOOTING. SEE DETAILS 2 & 3 ON THIS SHEET.
- FIRST FLOOR CONSTRUCTION:
4"-4000 PSI AIR ENTRAINED, CONCRETE SLAB-ON-GRADE REINFORCED WITH 6X6 - W1.4 X W1.4 WWF ON 4" COMPACTED DRAINAGE FILL COVERED WITH 4 MIL VAPOR BARRIER, SEE TYPICAL DETAIL 7 ON THIS SHEET.
- SLAB-ON-GRADE CONSTRUCTION AND JOINT SPACING CRITERIA PER DETAIL 7 ON THIS SHEET.
- I.J. = ISOLATION JOINT. I.J. TO BE 1/2" ISOLATION JOINT MATERIAL PER ASTM D-1751. SEE DETAIL 3 THIS SHEET.
- C.J. = SAWCUT CONTROL JOINT. SEE DETAIL 7 ON THIS SHEET.
- F.D. = FLOOR DRAIN. SLOPE SLABS TO FLOOR DRAINS. MAX SLOPE 1/8" = 1'-0".
- MASONRY WALL CONTROL JOINTS. SEE DETAIL 10, THIS SHEET, FOR CONSTRUCTION. SEE SHEET A-201 FOR LOCATIONS.



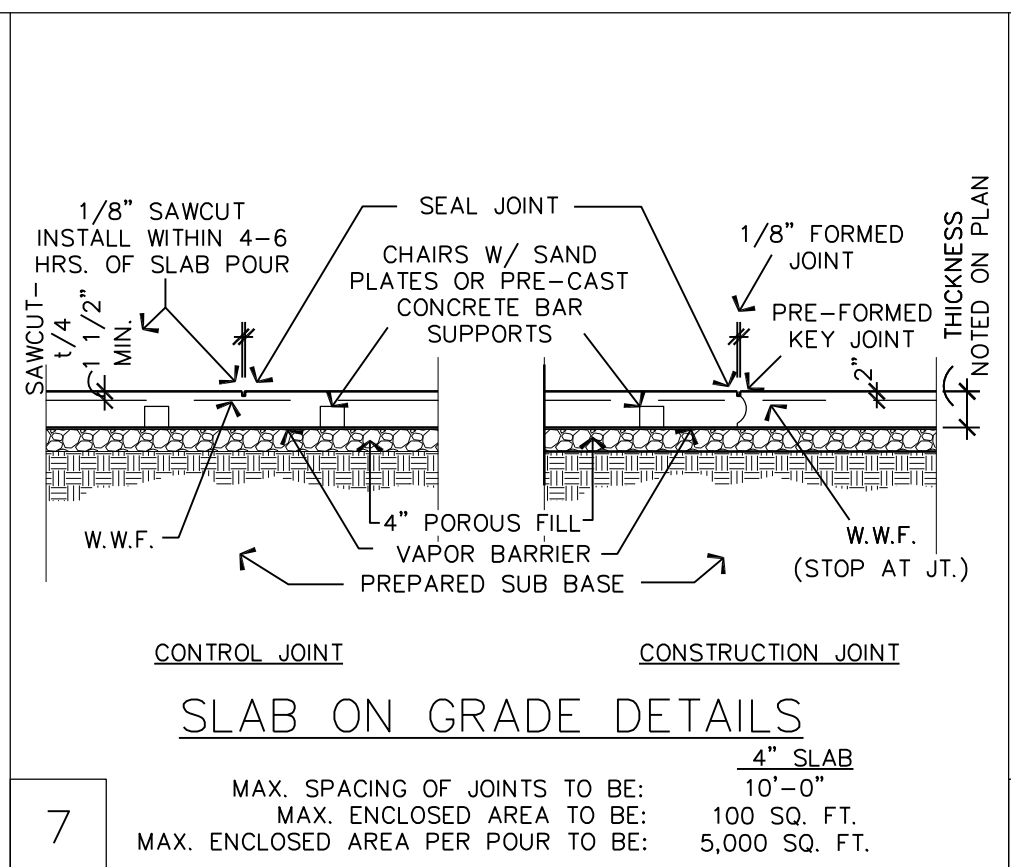
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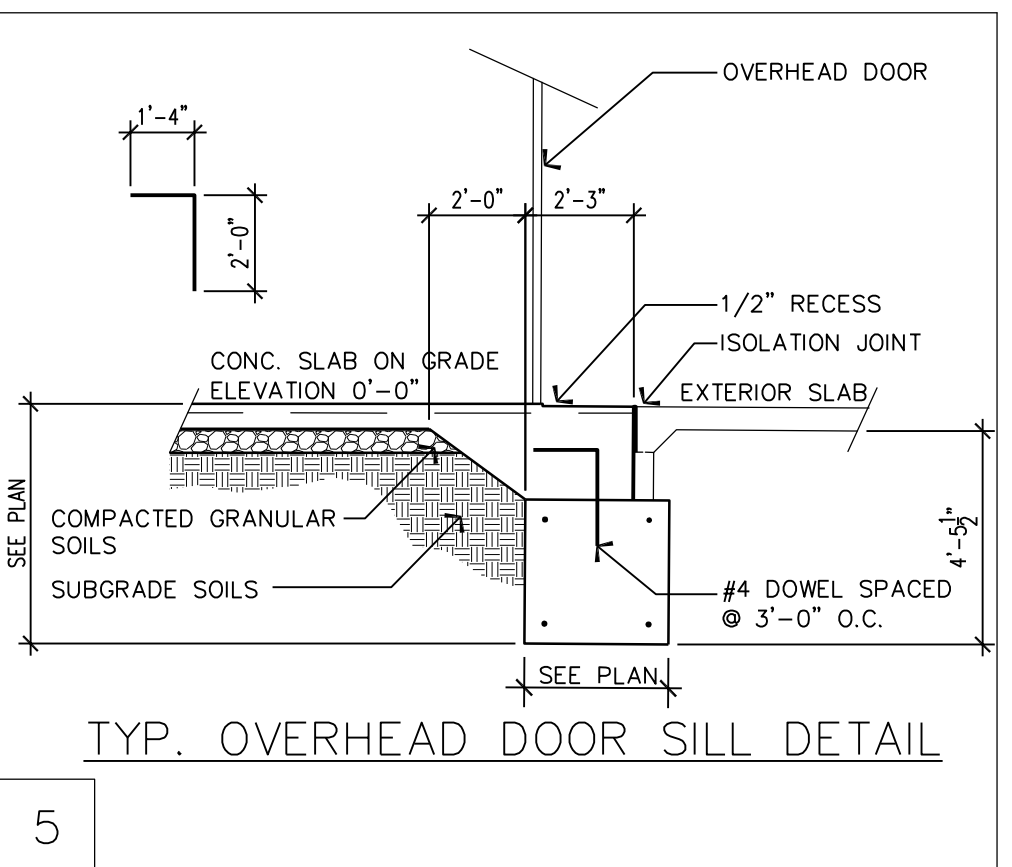
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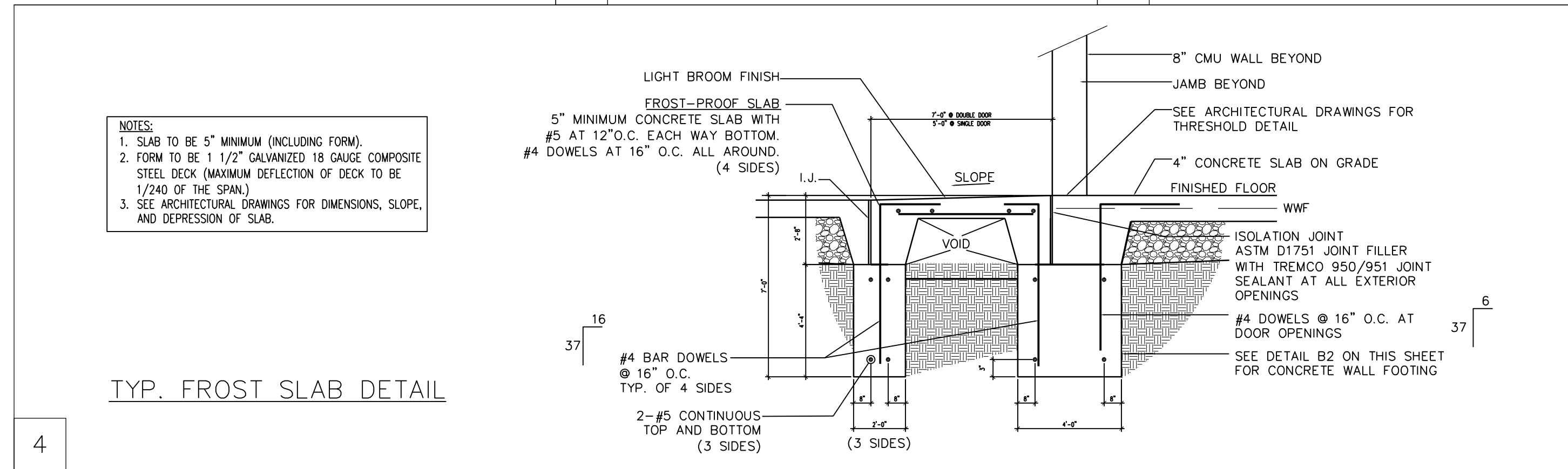
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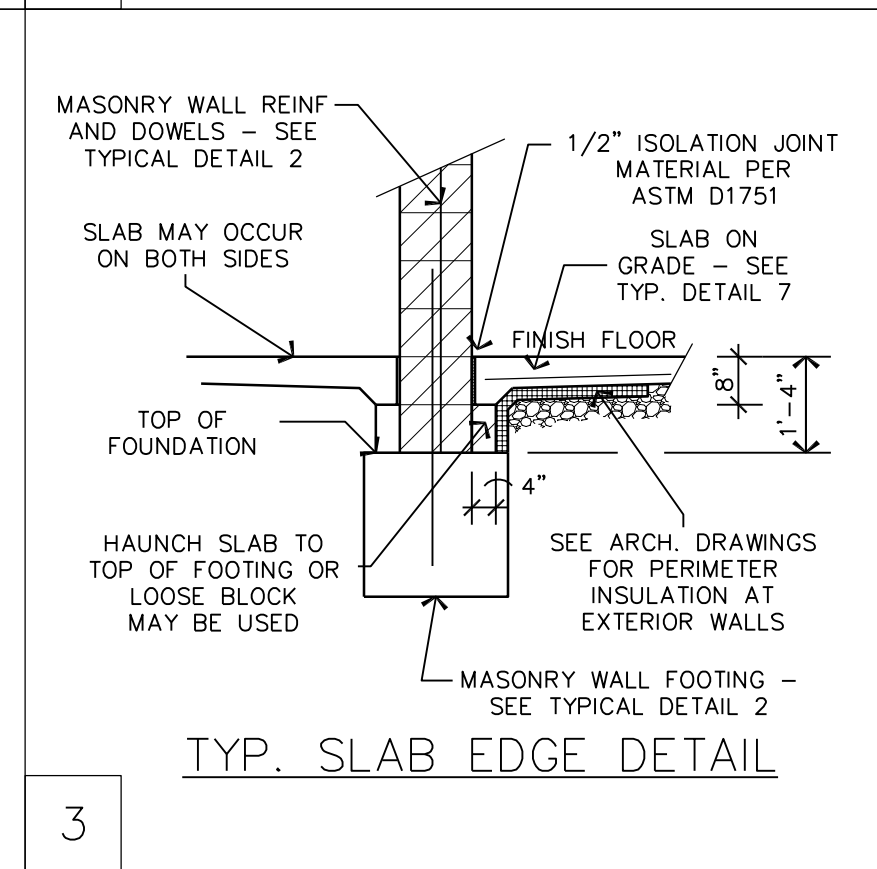
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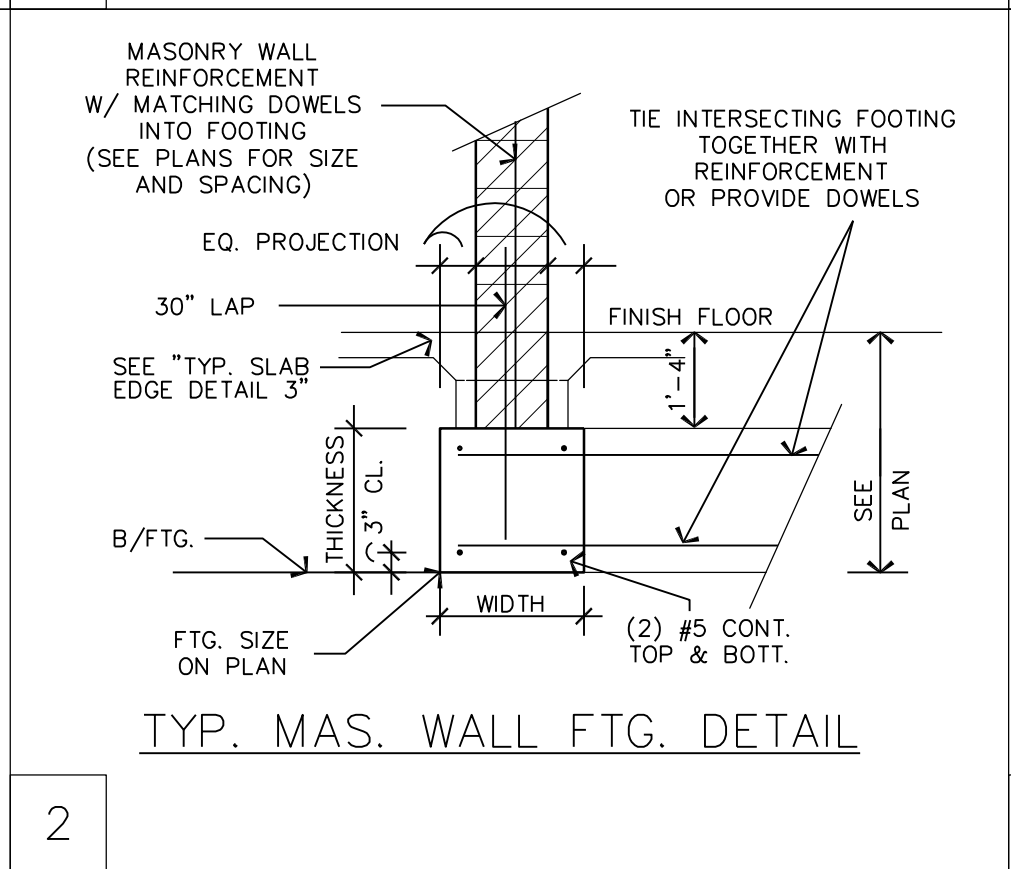
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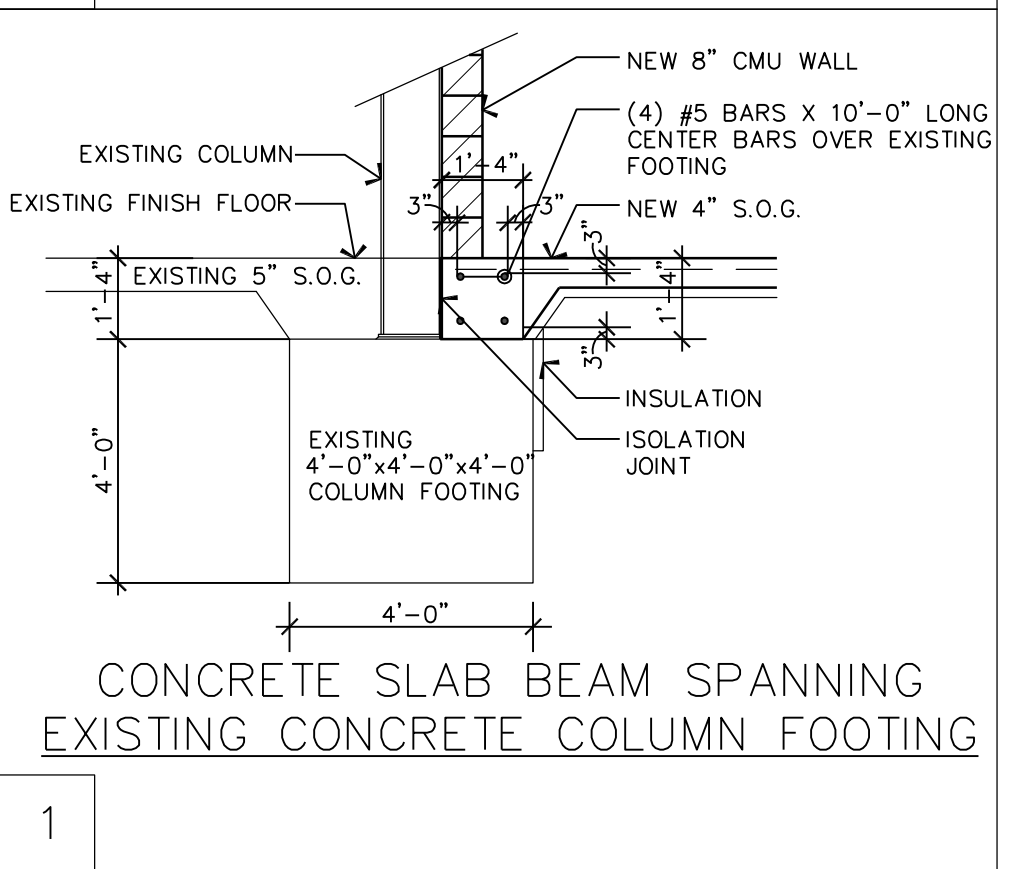
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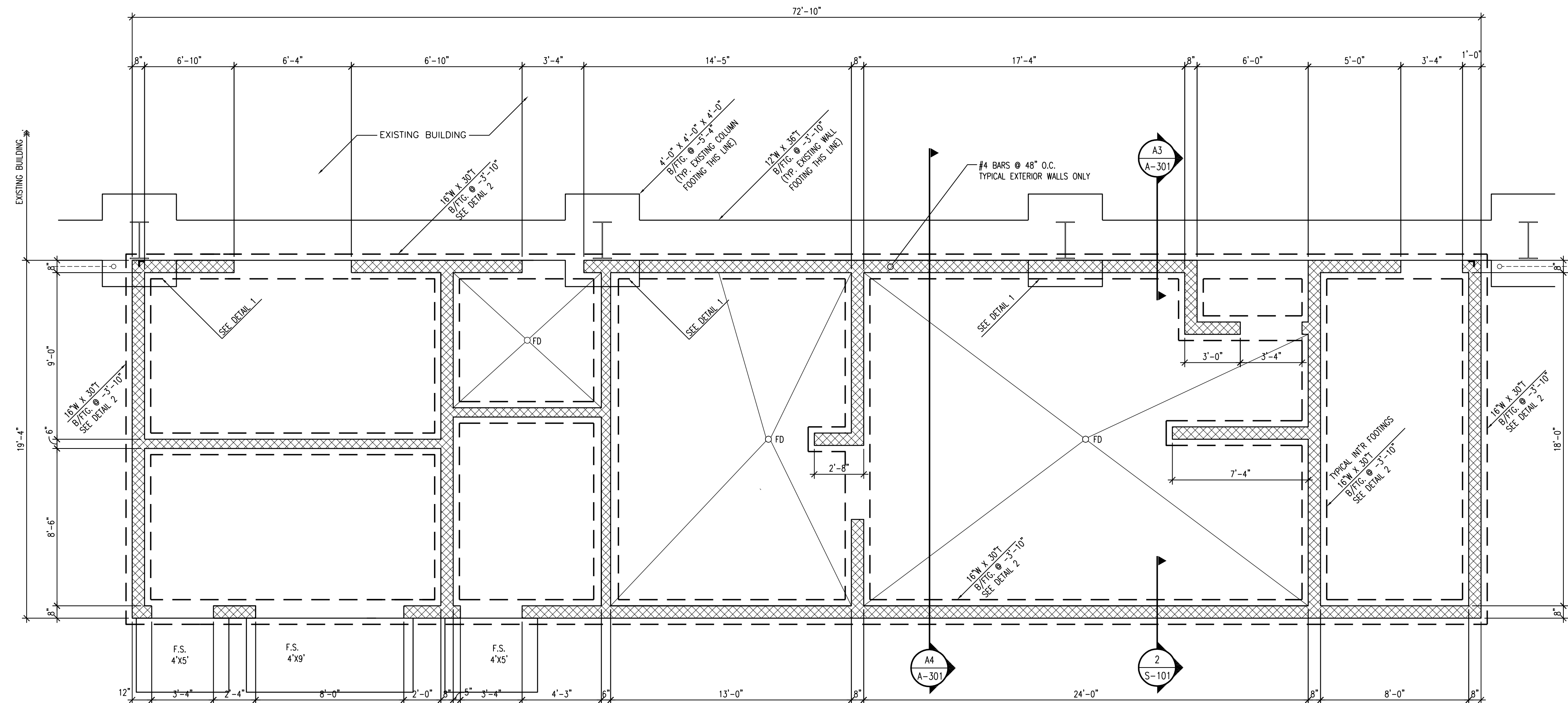
3



2



1



Foundation Plan - Locker Rooms

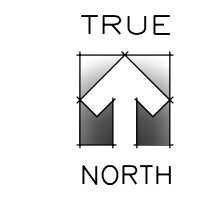
1/4" = 1'-0"

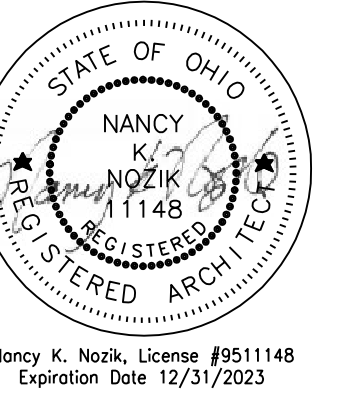
Revisions: 01.25.2023 For Bid
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Locker Rooms Addition #2
Elyria North Park Ice Arena
901 Duffey Street
Elyria, OH 44035

Foundation Plans & Details

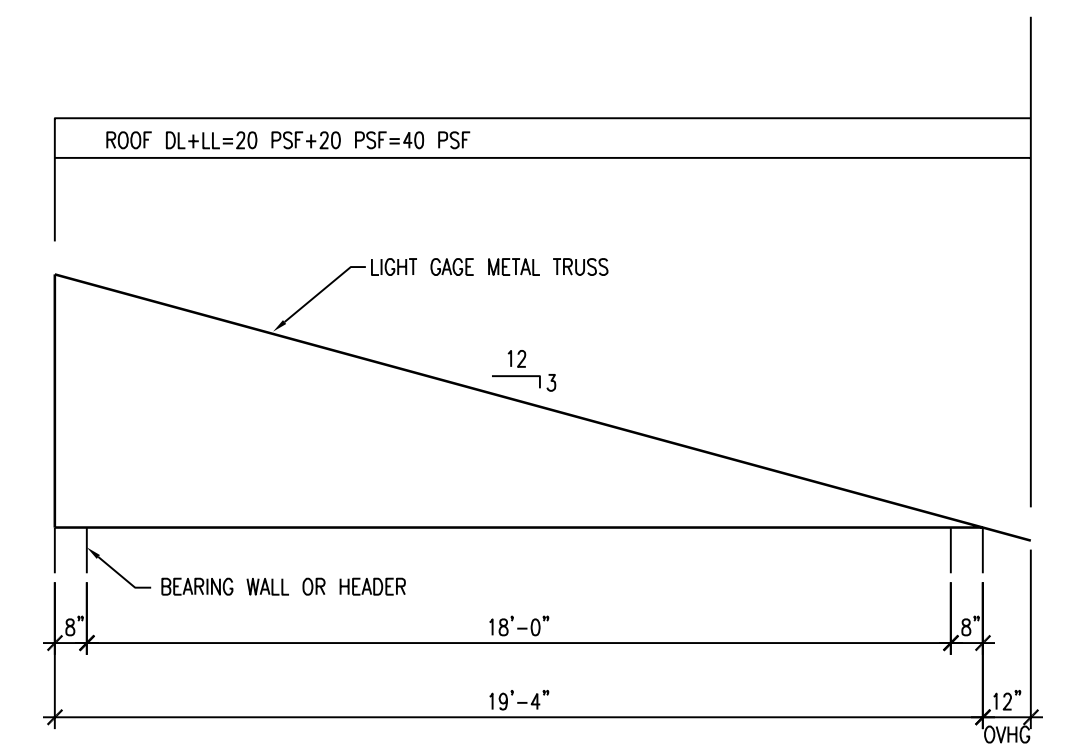
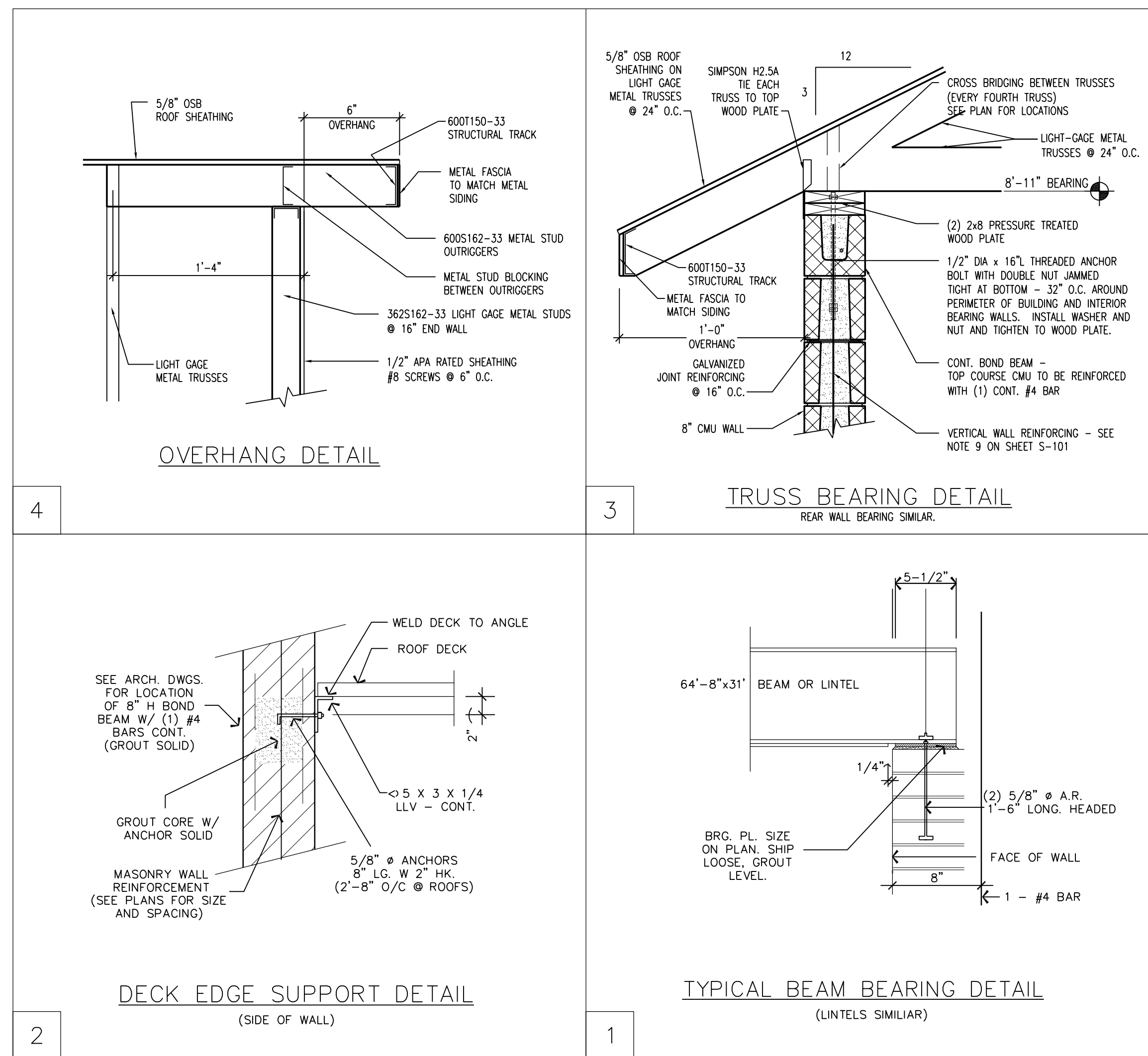
Project No. **S-101**
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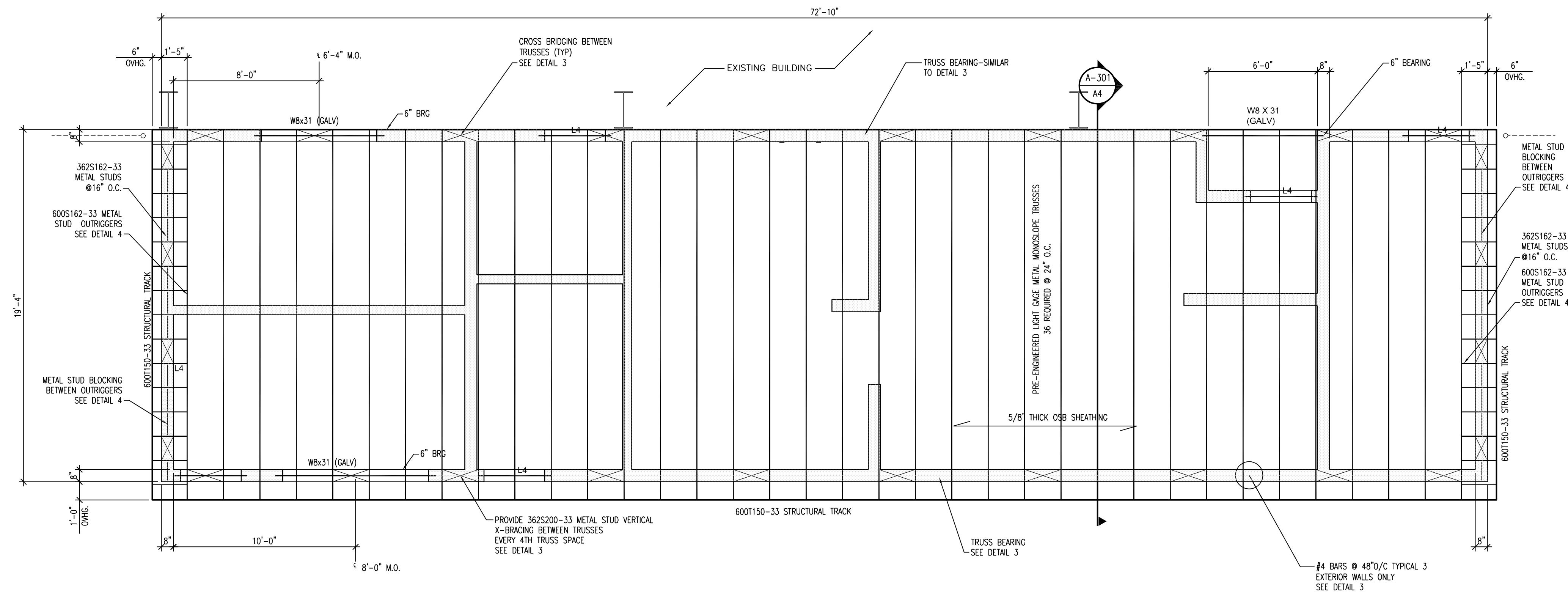
**Roof Framing
Plan Notes**

- DESIGN CRITERIA AND GENERAL NOTES ON DRAWING S-001.
- TYPICAL ROOF FRAMING DETAILS THIS SHEET.
- ALL DIMENSIONS SHOWN ON THIS DRAWING TO BE VERIFIED WITH ARCHITECTURAL DRAWINGS.
- SEE ARCHITECTURAL DRAWINGS FOR LINTEL ELEVATIONS AND WIDTH OF OPENINGS.
- SEE ARCHITECTURAL DRAWINGS FOR TRUSS BEARING ELEVATIONS.
- ALL ROOF SLOPES TO BE 3:12 AS NOTED ON ARCHITECTURAL DRAWINGS. SEE SHEET A-201.
- ROOF TRUSS PROFILE SHOWN ON THIS DRAWING.
- ROOF CONSTRUCTION (LOCKER ROOM):
5/8" OSB BOARD SHEATHING, WITH H-CLIPS (AS MANUFACTURED BY ADVANTECH OR EQUAL) SCREWED TO ROOF TRUSSES SPACED AT 24" O.C. AND OUTRIGGERS SPACED AT 16" O.C.
- ROOF CONSTRUCTION (MEETING ROOM):
3" DEEP, 22 GAGE, GALVANIZED ROOF DECK WELDED TO SUPPORTING STRUCTURAL STEEL, WELD USING A 3/65 OR 30/4 WELD PATTERN, TOUCH UP WELDS WITH ZINC RICH GALVANIZING PAINT.
- SCREWS FOR WALL SHEATHING PER OBC TABLE 2306.3 - USE #8 SCREWS @ 6" O.C.
- SCREWS FOR ROOF SHEATHING PER OBC TABLE 2306.2.1(1) - USE #8 SCREWS @ 6" O.C.
- OVHG = ROOF OVERHANG. SEE SECTIONS D3 AND D4.
- L4 = (2) ANGLES - 4" X 3-1/2" X 5/16" LLV. ANGLES TO BE GALVANIZED.



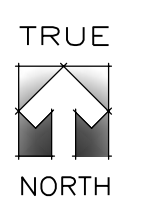
Truss Profile - Monoslope Truss

1/4"=1'-0"
TRUSS DESIGN LOADS AS NOTED



Framing Plan - Locker Rooms

1/4"=1'-0"



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Locker Rooms Addition #2

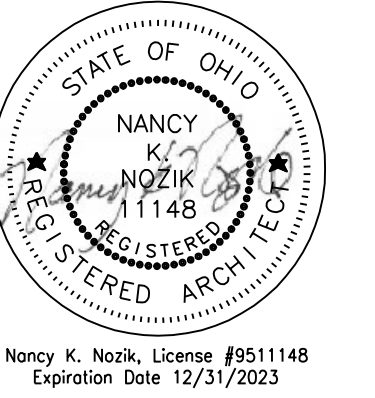
Elyria North Park Ice Arena
901 Duffey Street
Elyria, OH 44035

**Framing Plans &
Details**

Project No.

22074.00

S-102



Nancy K. Nozik, License #9511148
Expiration Date 12/31/2023

General Notes

- A. REFER TO FOUNDATION PLAN FOR LOCATION OF MASONRY WALLS.
- B. ALL MASONRY DIMENSIONS ARE NOMINAL.
- C. INTERIOR DIMENSIONS ARE TO FINISH FACE OF PARTITIONS.
- D. MECHANICAL AND ELECTRICAL ITEMS ARE SHOWN FOR THE SOLE PURPOSE OF INDICATING THEIR RESPECTIVE LOCATIONS. REFER TO MECHANICAL AND ELECTRICAL DRAWING FOR SIZE, TYPE, AND OTHER REQUIREMENTS PERTAINING SPECIFICALLY TO THESE ITEMS.

Toilet Accessories

- A SOAP DISPENSER (SD)
- B MIRRORS (MG)
- C TOILET TISSUE DISPENSER (TTD)
- D GRAB BARS (GB)
- E MOP AND BROOM HOLDER (MH)
- F WARM AIR DRYER (WD)
- G SANITARY NAPKIN DISPOSER (SND)
- H SHOWER CURTAIN & ROD
- J ROBE HOOK
- K TOILET PARTITION

Drawing Notes

1. SOLID SURFACE COUNTERTOP WITH INTEGRAL SINKS
2. BENCH - SEE DETAIL C1/A-301
3. HOOKS - PROVIDED BY OWNER
4. REMOVE EXISTING CHAIN LINK FENCE AT NEW ADDITION, ADJUST TO ENCLOSE REMAINING OPENING.
5. EXISTING STRUCTURE
6. FULL HT CMU - SEE PLAN FOR SIZE
7. 8" CMU PARTIAL HEIGHT
8. COUNTERTOP W/METAL BRACKETS
9. 1x4 FIBERCEMENT TRIM SURROUNDING SHOWER INSERT, TYP.
- ⊙ F.E. FIRE EXTINGUISHER

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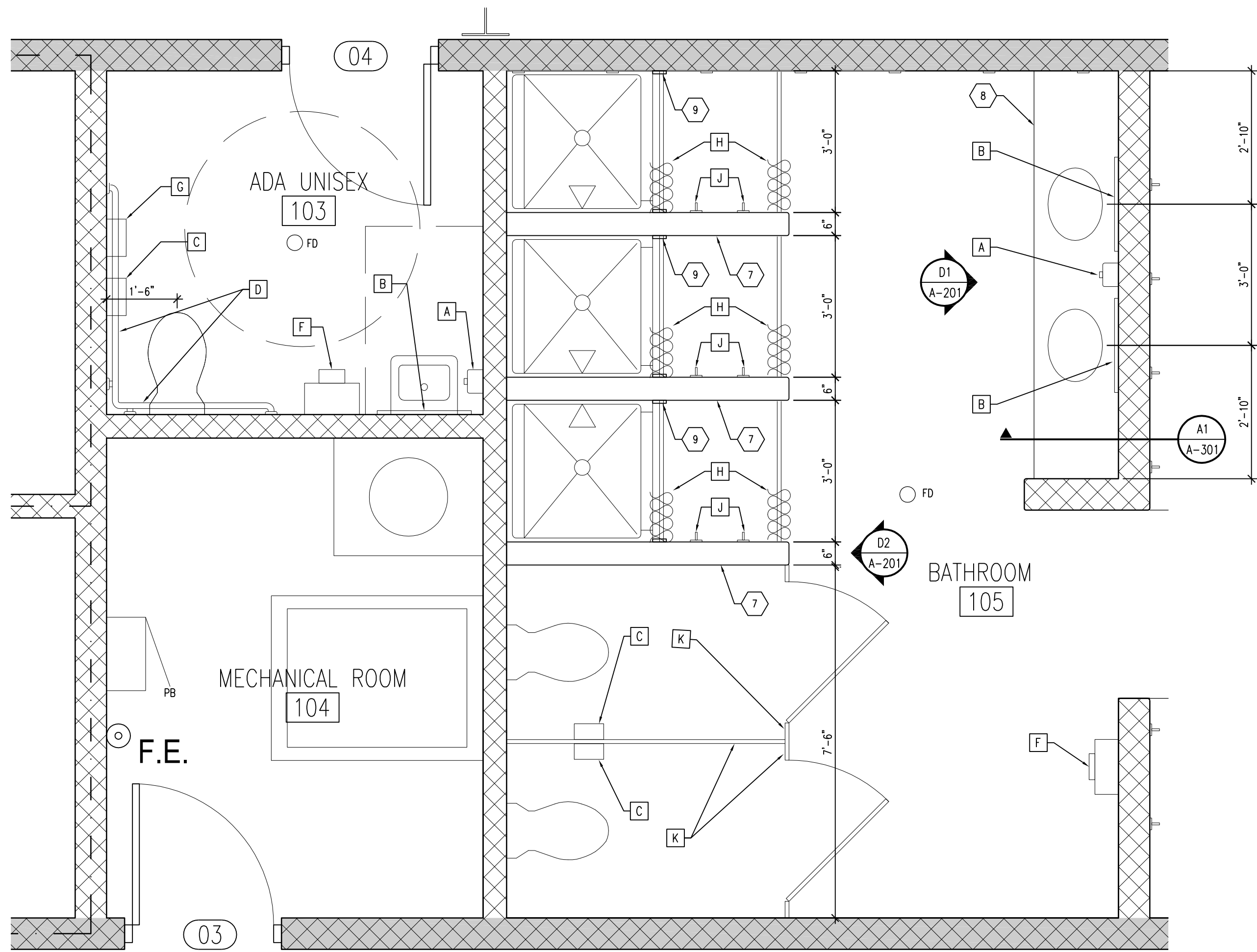
Floor Plans

Project No.

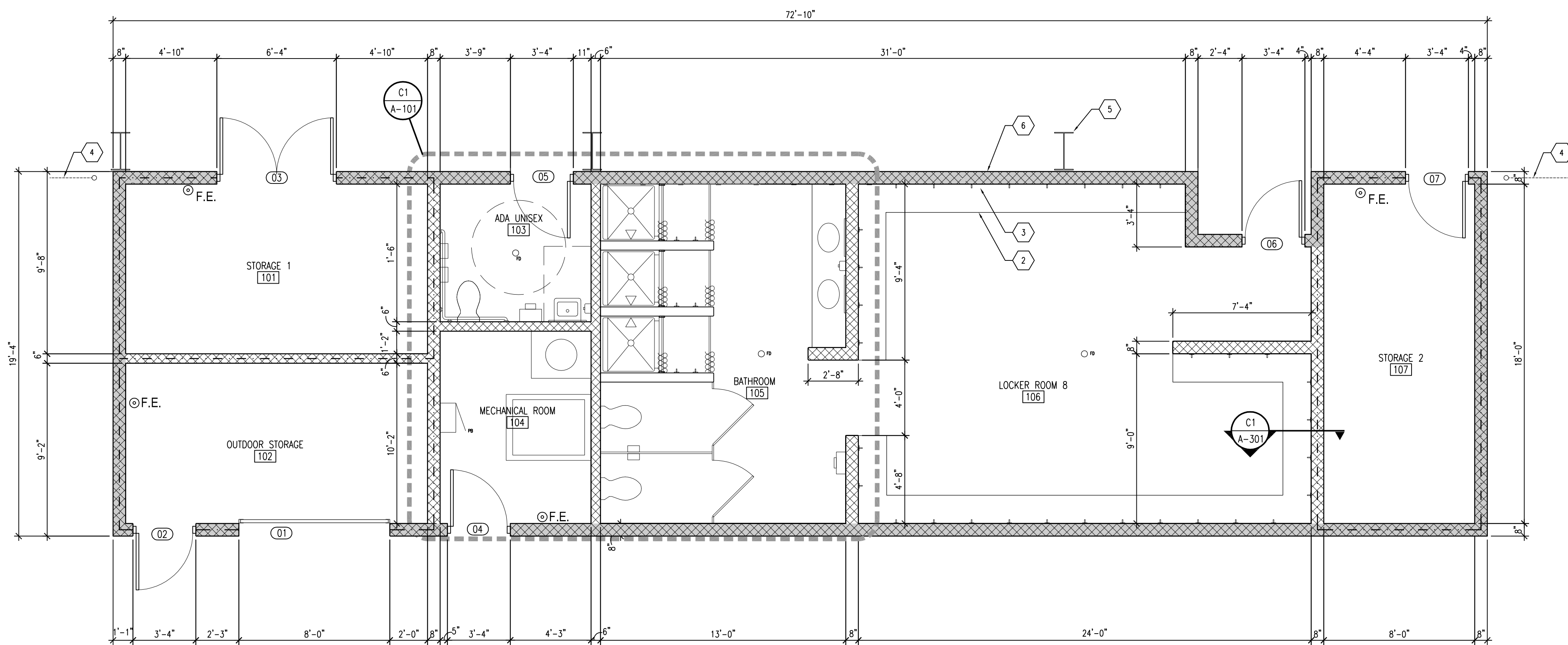
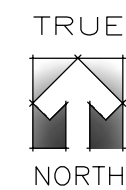
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A-101

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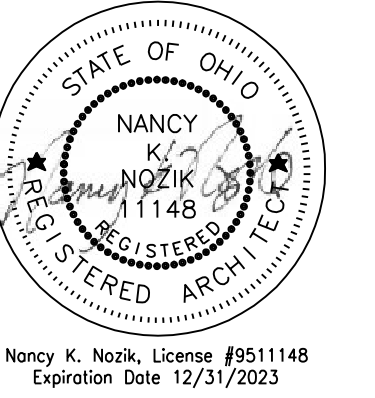


C1 Bathrooms Enlarged Floor Plan
1/2"=1'-0"

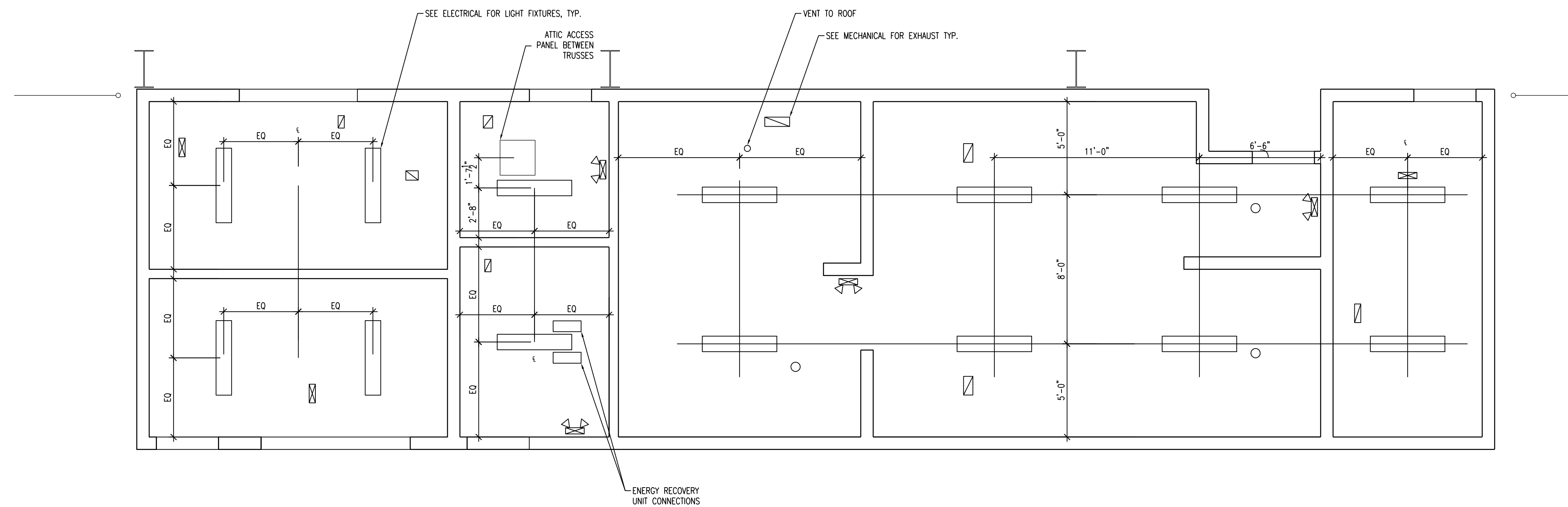


A1 Locker Rooms Floor Plan
1/4"=1'-0"





Nancy K. Nozik, License #9511148
Expiration Date 12/31/2023



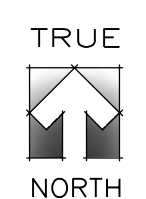
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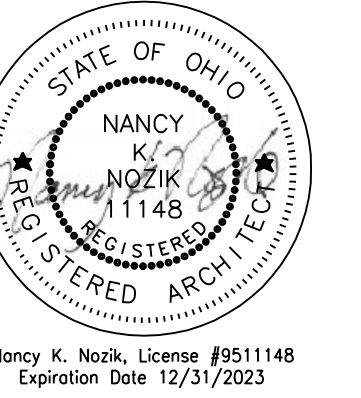
Reflected Ceiling Plans

Project No.	A-102
22074.00	



Locker Rooms Reflected Ceiling Plan

1/4"=1'-0"



Coded Notes

- 1 CORRUGATED METAL DECK
- 2 STANDING SEAM METAL ROOF
- 3 METAL FASCIA
- 4 METAL SIDING
- 5 GUTTER & DOWNSPOUT
- 6 SPLIT-FACE CMU
COLOR 1 COLOR 2
- 7 HOLLOW METAL DOOR AND FRAME
- 8 SPLASHBLOCK
- 9 EXISTING STRUCTURE
- 10 CONTROL JOINT
- 11 MASONRY WALL EXPANSION JOINT
- 12 OPEN TO BEYOND
- 13 6" CMU PARTIAL HEIGHT WALL
- 14 PROVIDE FOR POSITIVE DRAINAGE AWAY FROM BUILDING
- 15 VENTED METAL SOFFIT
- 16 INTERIOR SIGNAGE
- 17 CMU, PAINTED
- 18 CONCENTRIC PVC VENT
- 19 GRAVITY VENT
- 20 LOUVER

Toilet Accessories

- A SOAP DISPENSER (SD)
- B MIRRORS (MG)
- F WARM AIR DRYER (WD)
- H SHOWER CURTAIN & ROD
- K TOILET PARTITION
- L BACKSPLASH
- M SOLID SURFACE COUNTERTOP WITH INTEGRAL SINK AND BACKSPLASH
- N SUPPORT BRACKET

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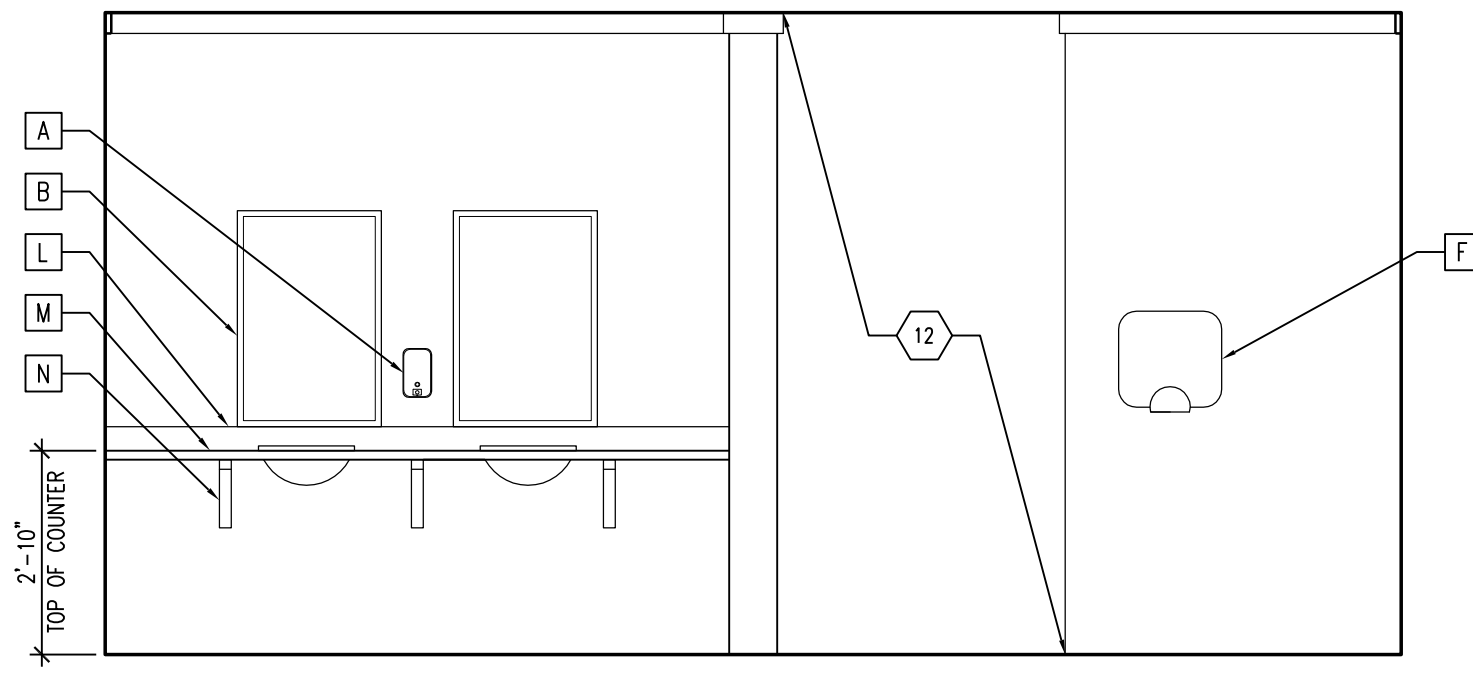
Elyria North Park Ice Arena
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Elevations

Project No.

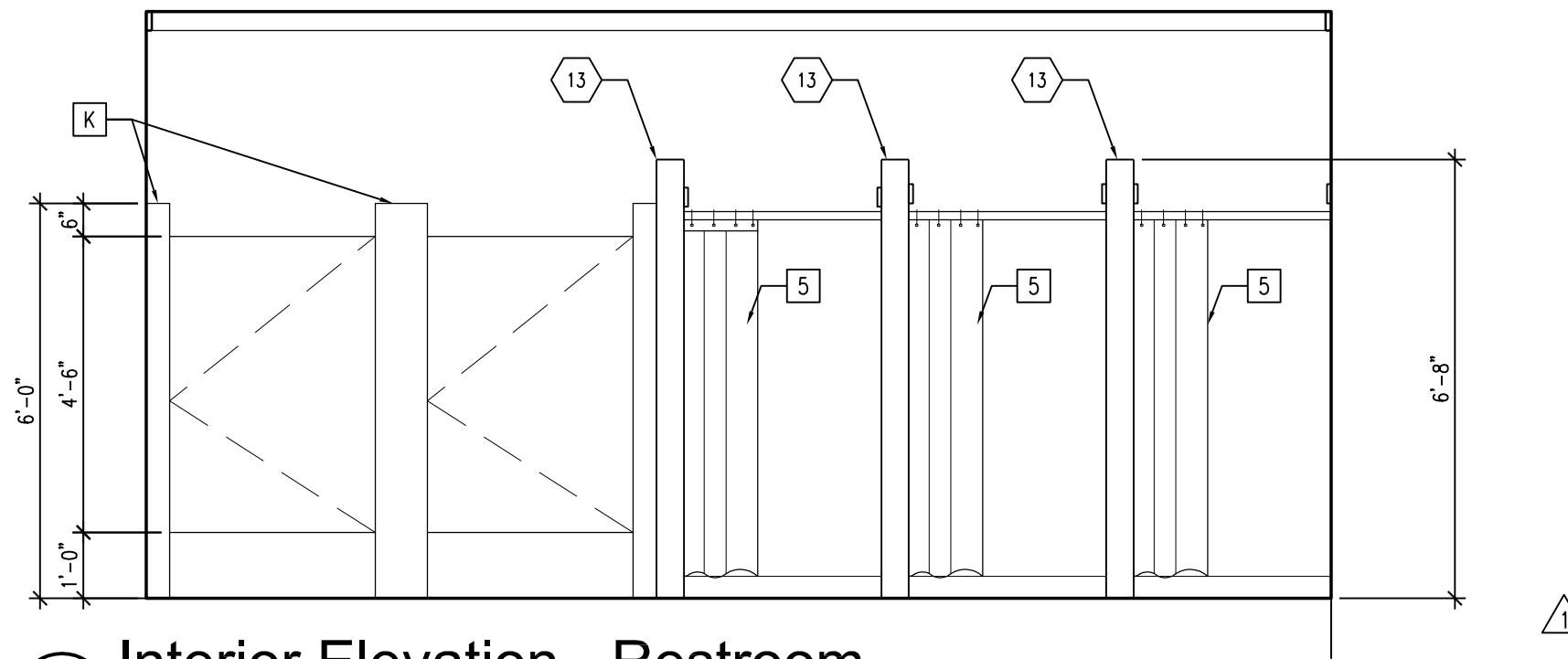
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A-201



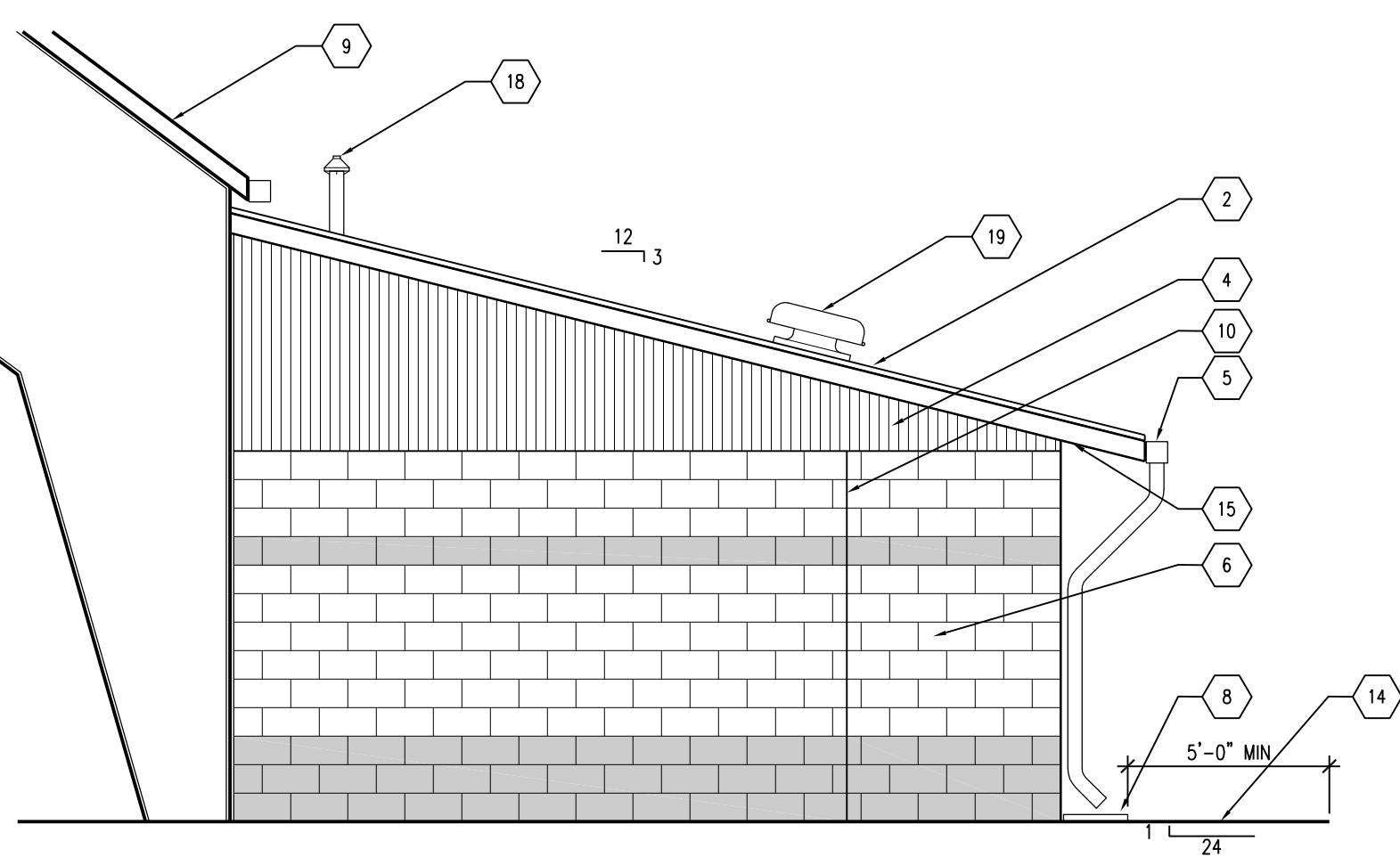
D1 Interior Elevation - Restroom

3/8"=1'-0"



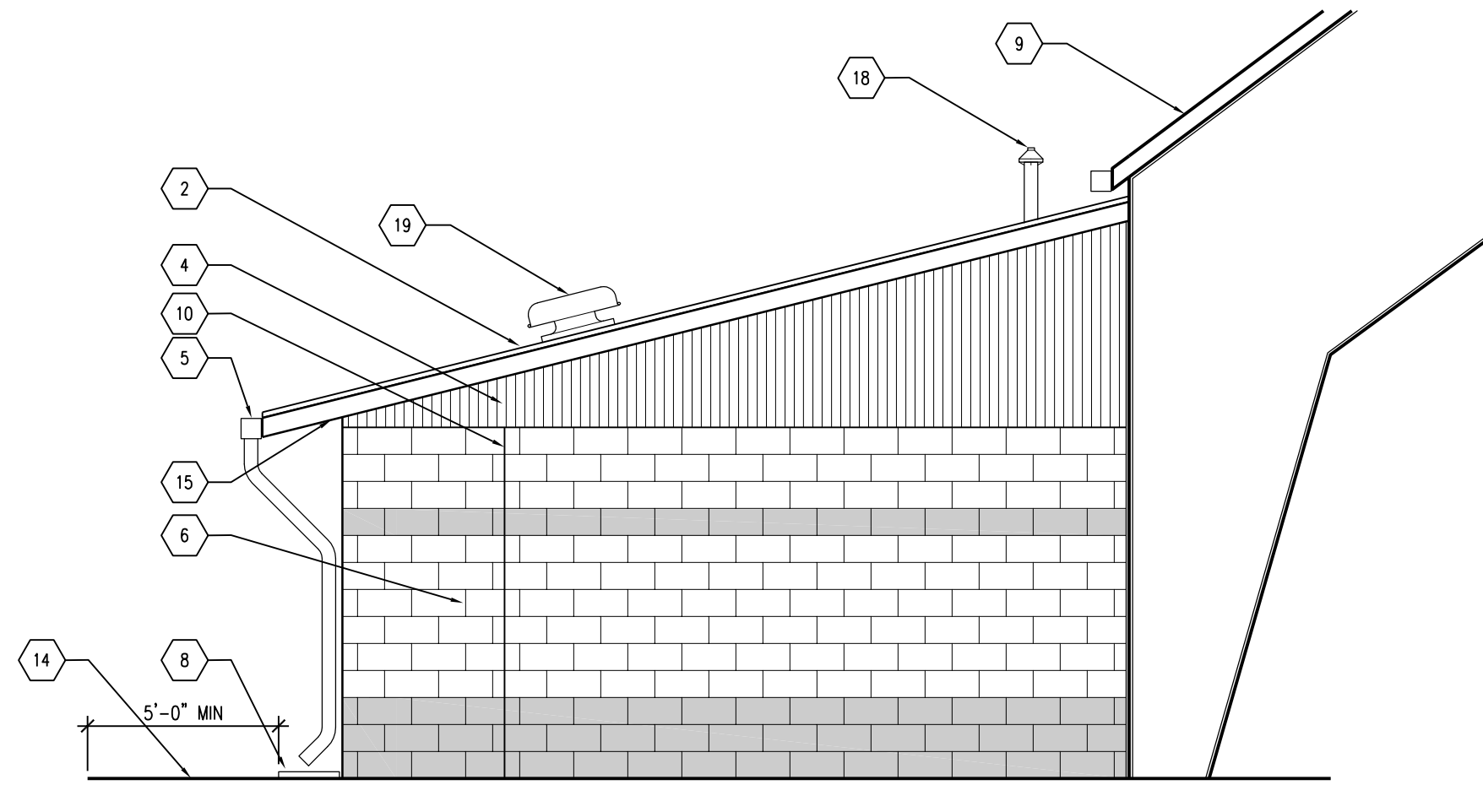
D2 Interior Elevation - Restroom

3/8"=1'-0"



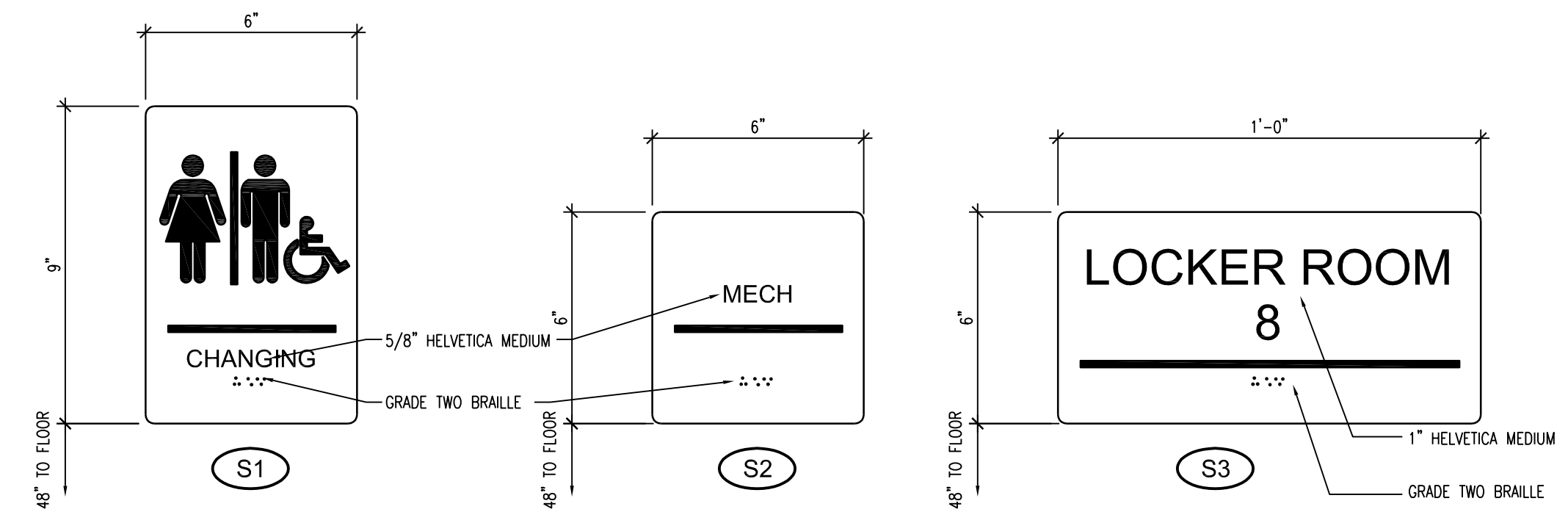
Locker Rooms West Elevation

1/4"=1'-0"



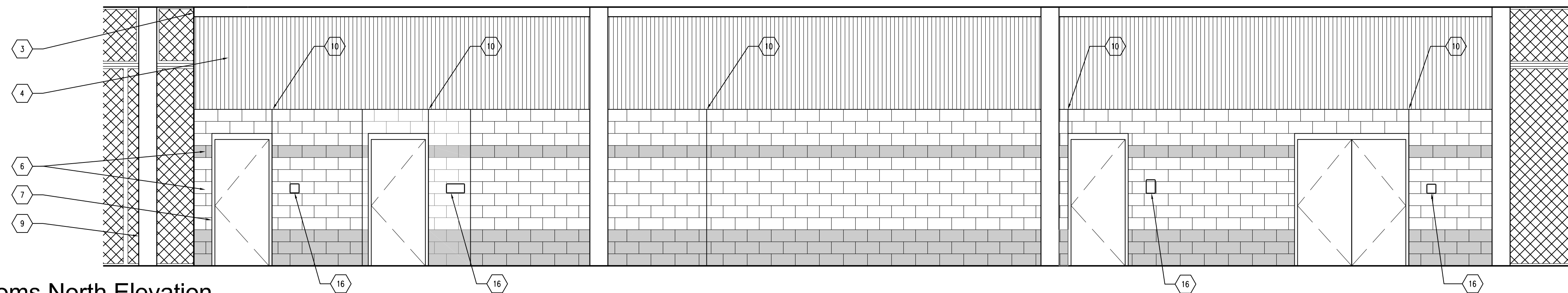
Locker Rooms East Elevation

1/4"=1'-0"



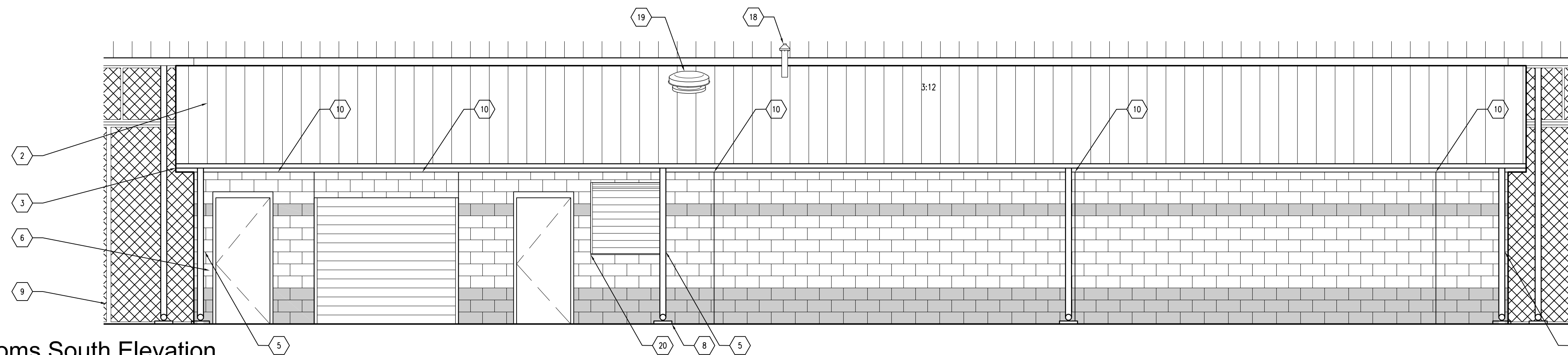
C2 Sign Details

3"=1'-0"



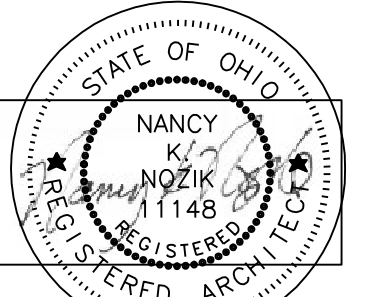
Locker Rooms North Elevation

1/4"=1'-0"

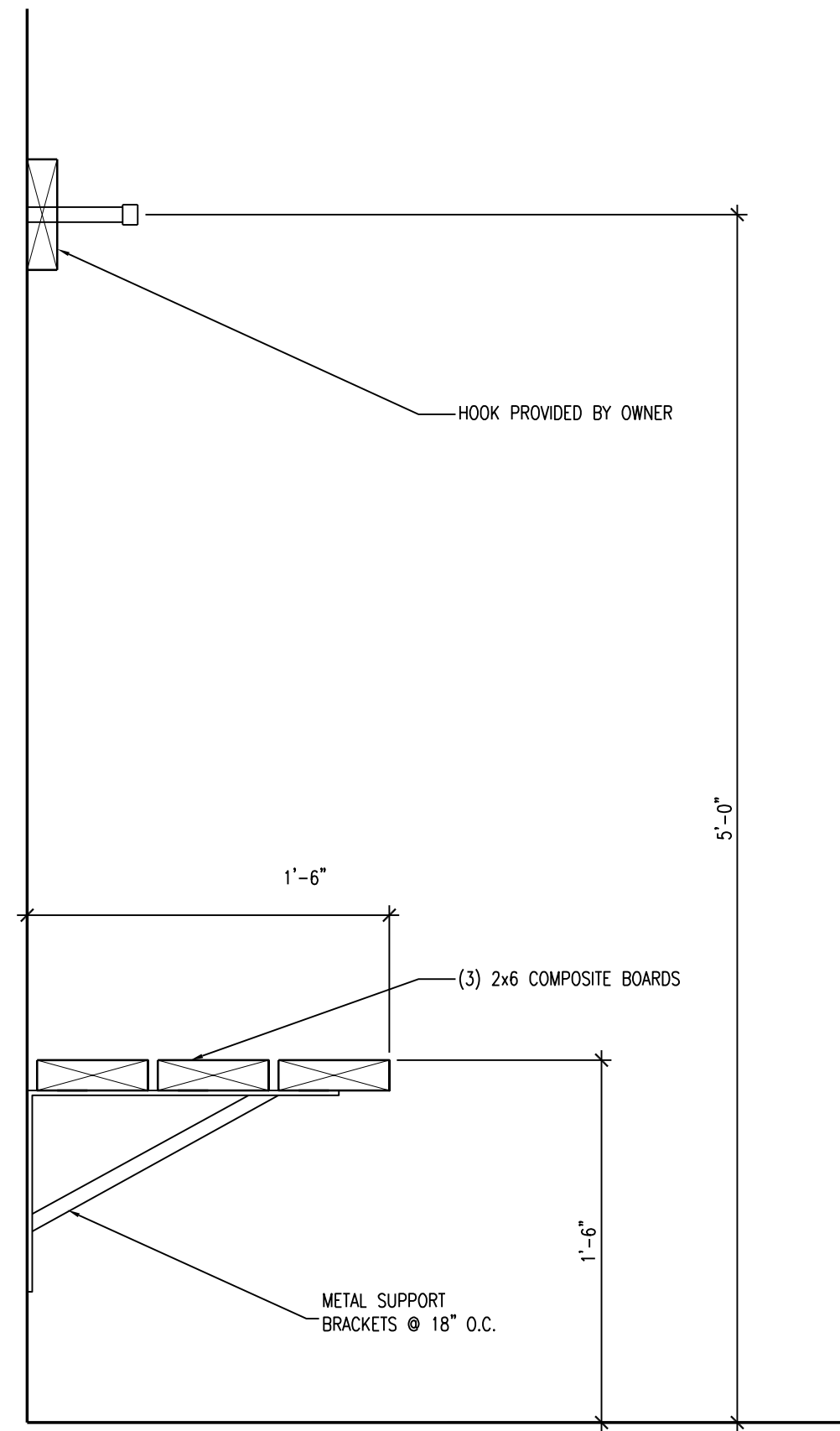


Locker Rooms South Elevation

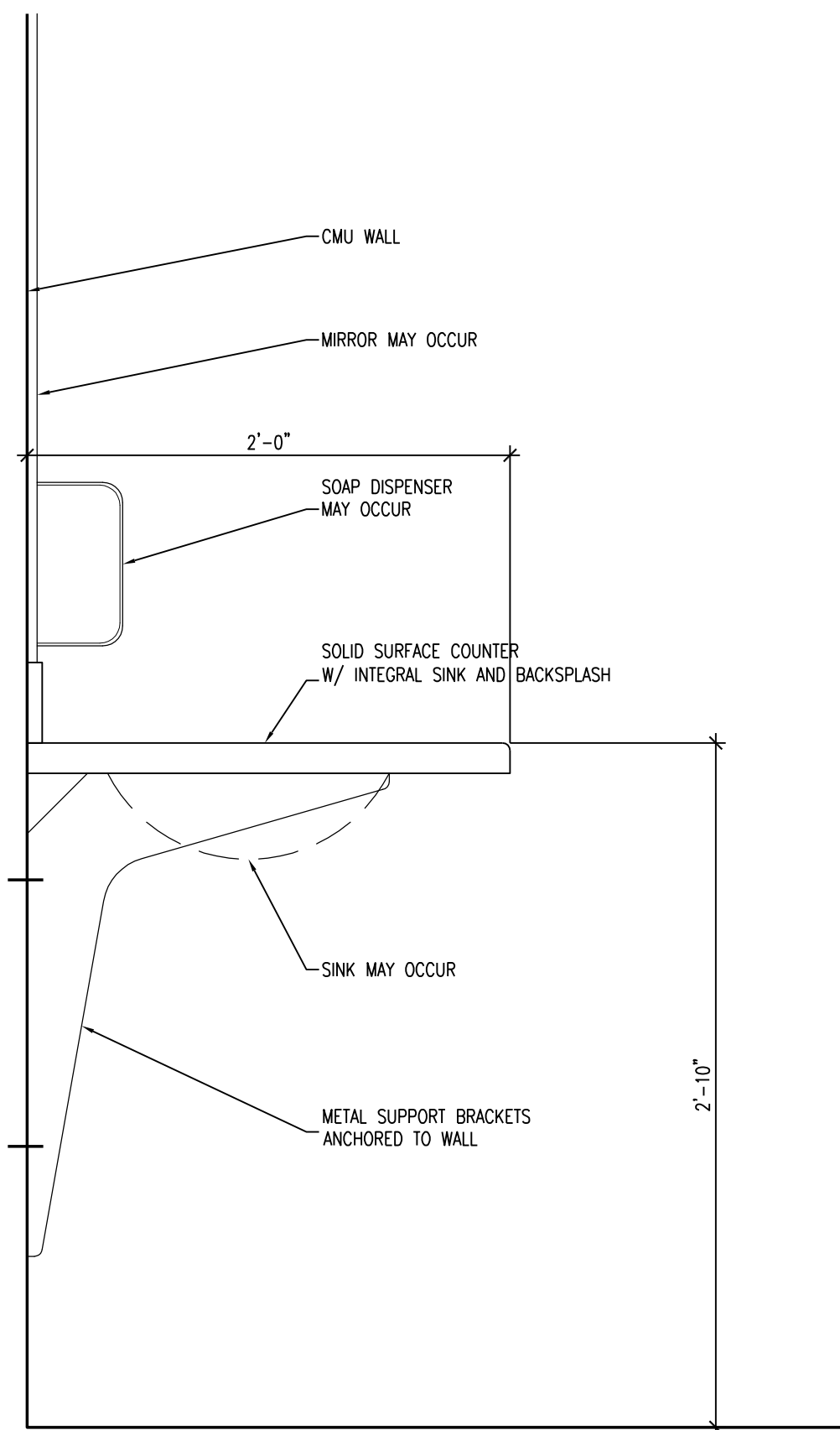
1/4"=1'-0"



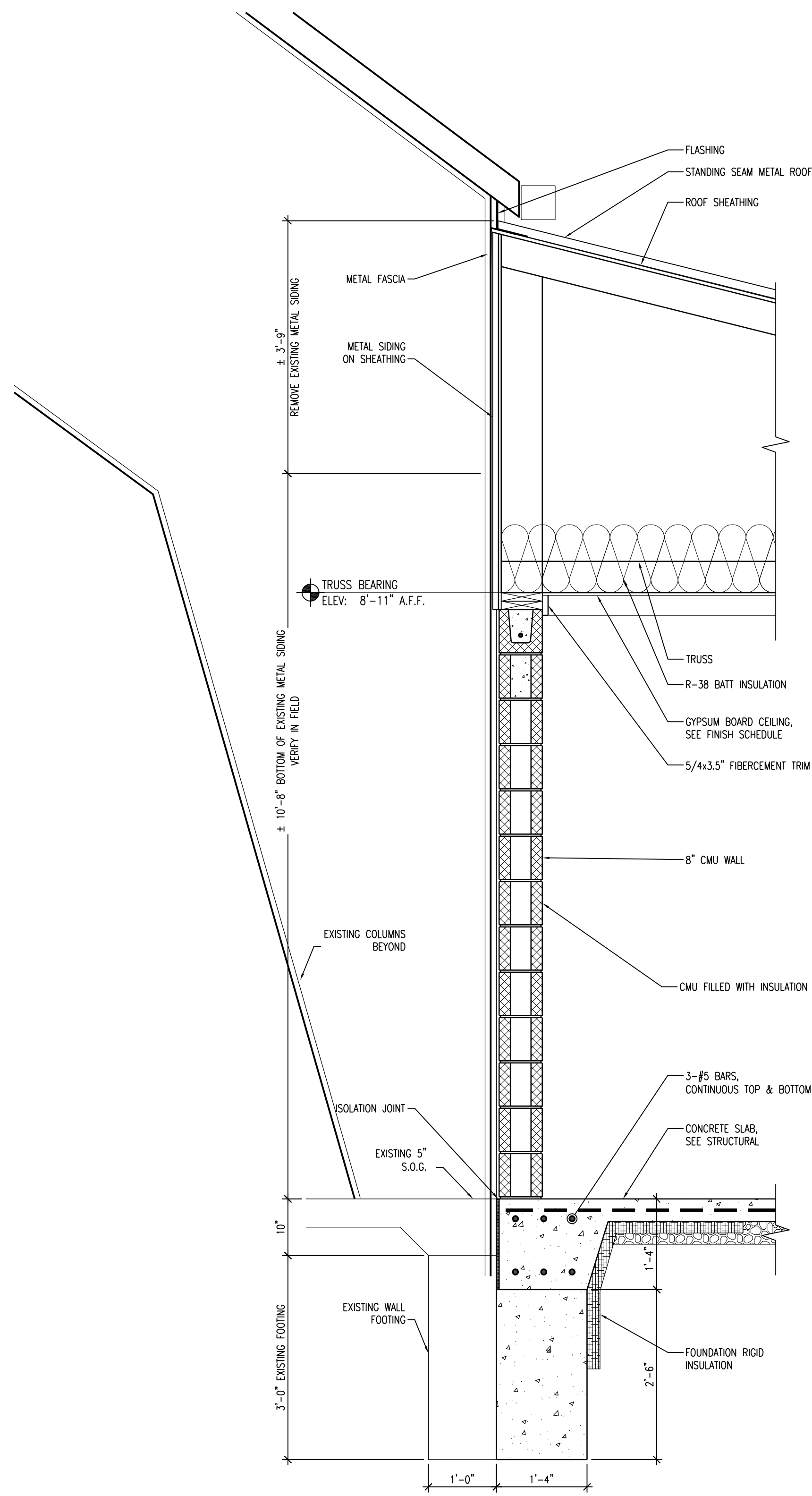
Nancy K. Nozik, License #9511148
Expiration Date 12/31/2023



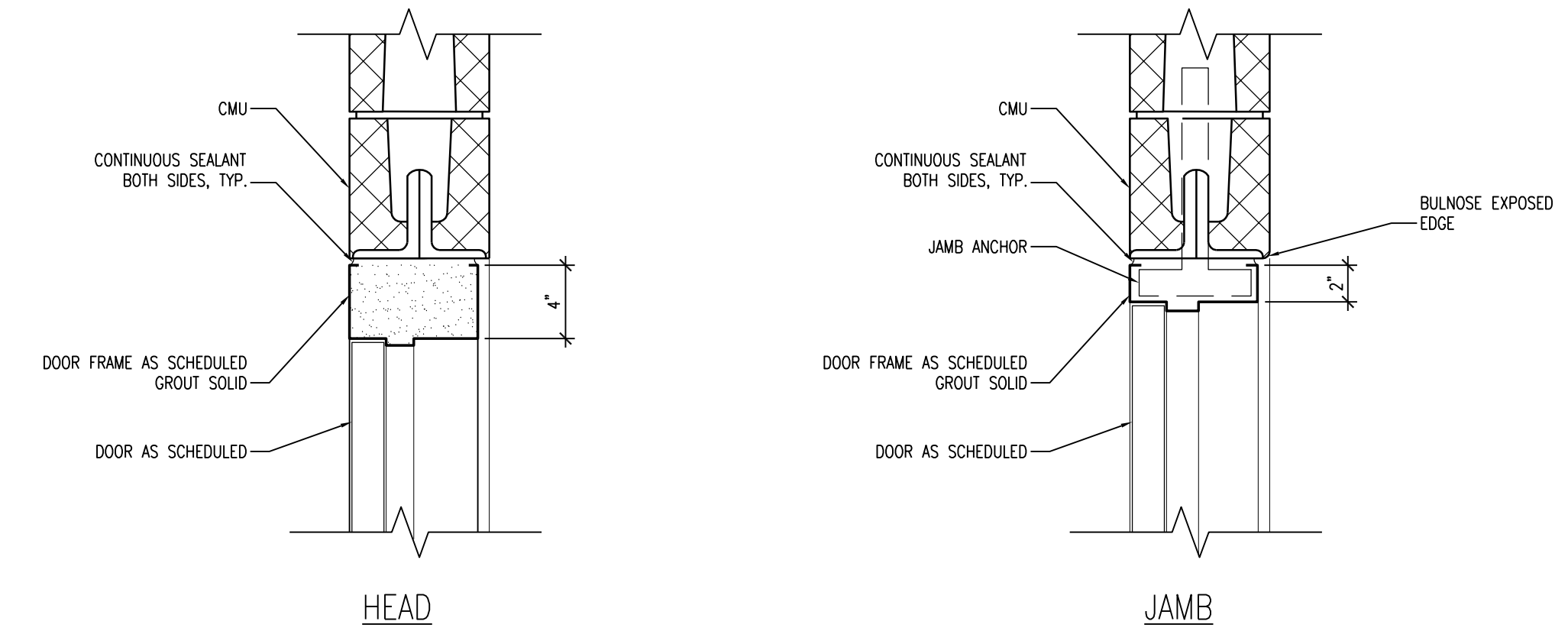
C1 Bench & Hook Detail
1/2"=1'-0"



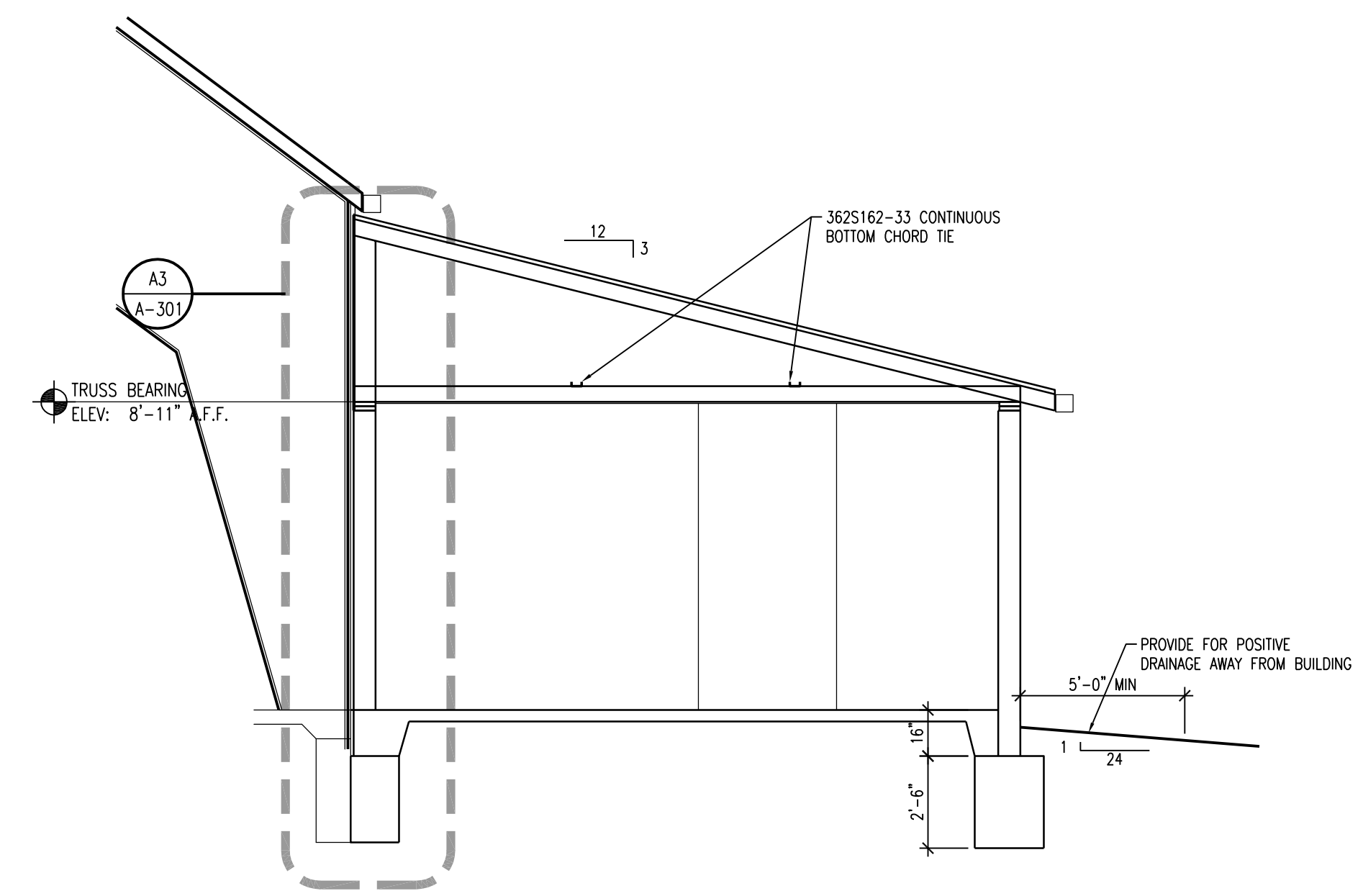
A1 Countertop Detail
1/2"=1'-0"



A3 Typical Wall Section Locker Rooms
3/4"=1'-0"



C4 Door Frame Details
1/2"=1'-0"



A4 Locker Rooms Building Section
1/4"=1'-0"

Revisions: 01.25.2023 For Bid
Issue Date: 12.21.2022 For Permit

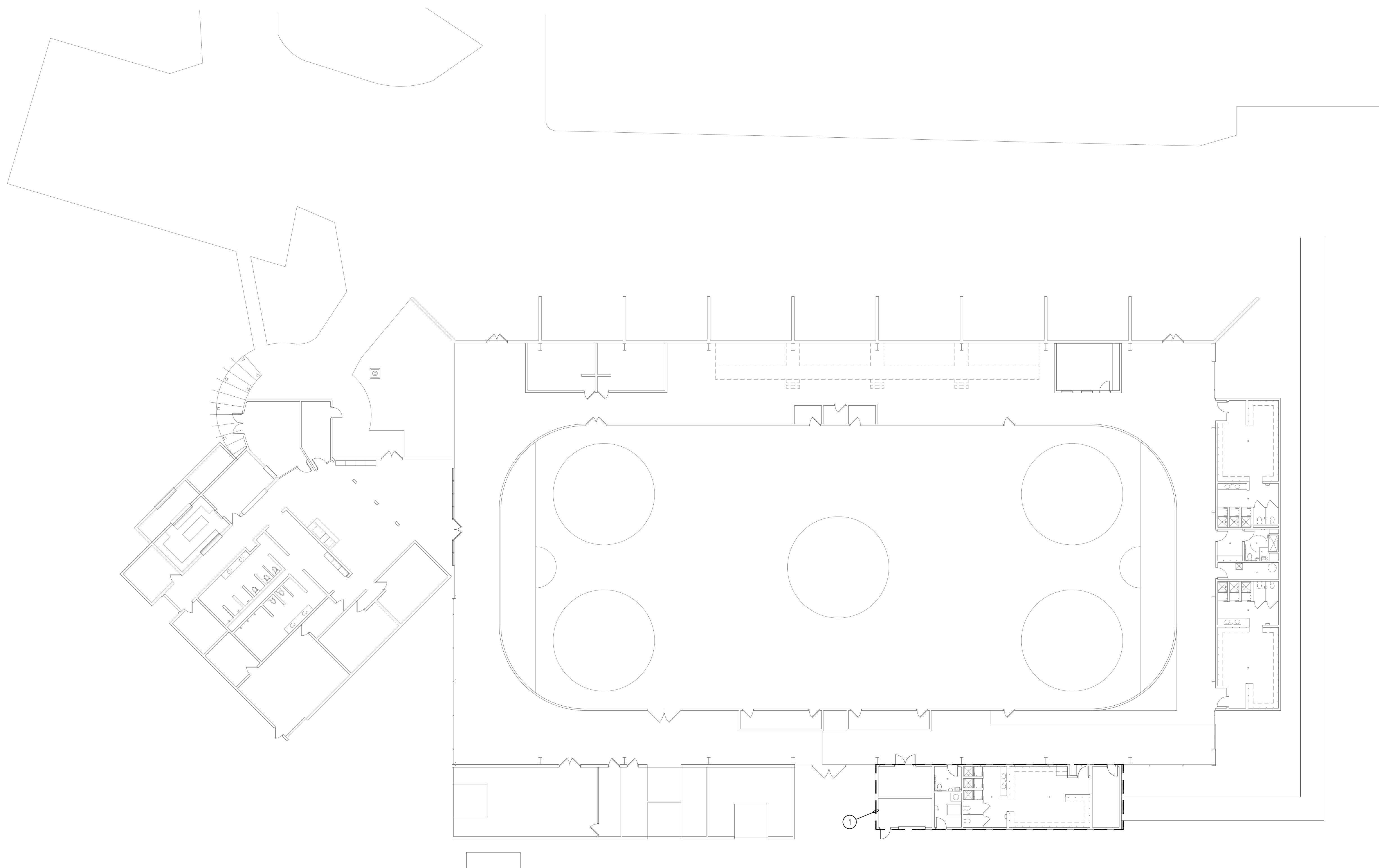
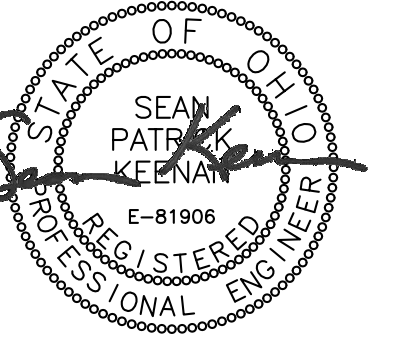
Locker Rooms Addition #2
Elyria North Park Ice Arena
901 Duffey Street
Elyria, OH 44035

Sections & Details

Project No.

22074.00

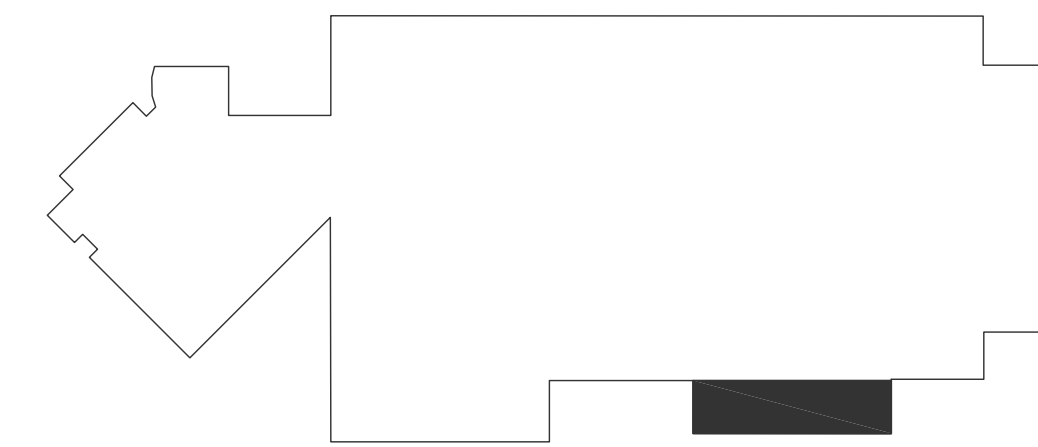
A-301



 **COMPOSITE MECHANICAL PLAN**
SCALE: 1/16" = 1'-0"

PLAN NOTES

- ① REFER 'MECHANICAL PLAN' ON DRAWING 'M-101'.



 **KEY PLAN**
NO SCALE

Revisions:
Issue Date: 12.21.2022 FOR PERMIT

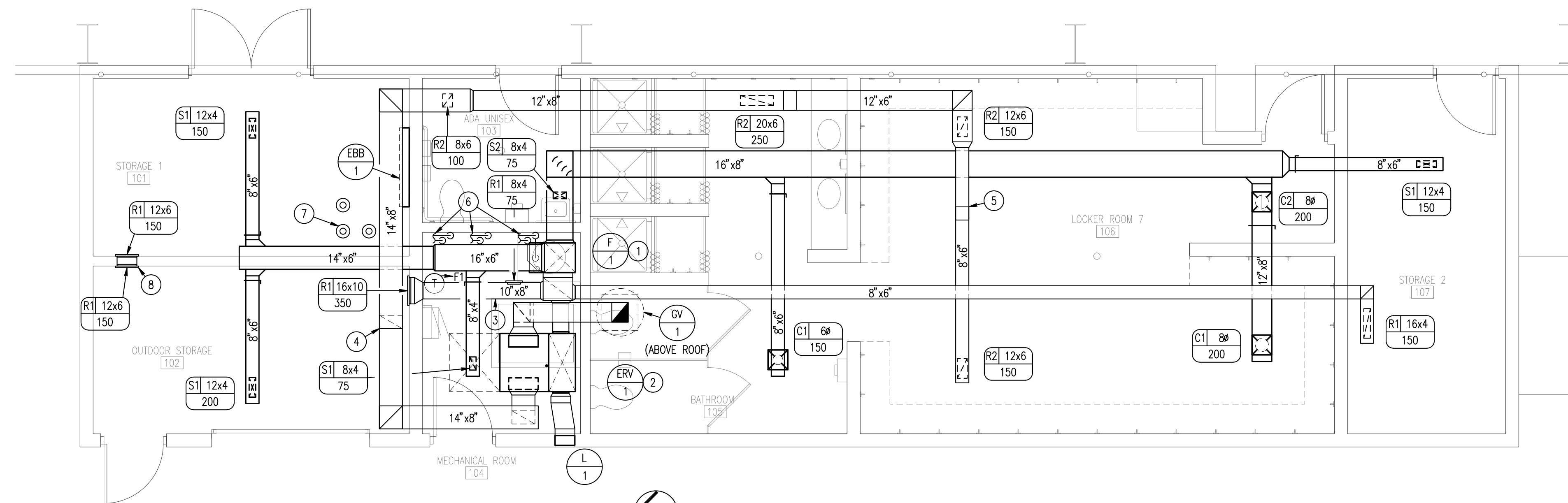
Locker Rooms Addition #2
Elyria North Park Ice Arena
901 Duffey Street
Elyria, OH 44035

**COMPOSITE
MECHANICAL PLAN**

Project No.

22074.00

M-100



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

PLAN NOTES

- 1) INSTALL GAS FURNACE PER MANUFACTURER'S RECOMMENDATIONS. ROUTE FURNACE CONDENSATE DRAIN TO NEAREST FLOOR DRAIN. TERMINATE 2" ABOVE FLOOR DRAIN.
- 2) INSTALL ENERGY RECOVERY UNIT PER MANUFACTURER'S RECOMMENDATIONS ON 4" CEMENT PAD. ROUTE OUTDOOR AIR DUCT FROM GRAVITY VENTILATOR, GV1, TO ENERGY RECOVERY UNIT. ROUTE EXHAUST DISCHARGE TO EXTERIOR WALL AND TERMINATE WITH LOUVER, L1.
- 3) RETURN DUCT BELOW CEILING TO STORAGE 1. FIELD VERIFY LOCATION.
- 4) TRANSITION EXHAUST DUCT DOWN THROUGH CEILING. ROUTE EXHAUST DUCT ABOVE DOOR IN MECHANICAL ROOM TO ERV1. FIELD VERIFY LOCATION.
- 5) ROUTE EXHAUST DUCT BELOW RETURN DUCT. FIELD VERIFY LOCATION.
- 6) ROUTE 3" CONCENTRIC VENT INTAKE AND 3" CONCENTRIC VENT EXHAUST FROM UNDERSIDE OF ROOF ABOVE 'STORAGE 1' DOWN TO TANKLESS WATER HEATERS (2) AND FURNACE (1).
- 7) TERMINATE CONCENTRIC VENTS (3) THROUGH ROOF 12 INCHES APART. FIELD VERIFY LOCATION.
- 8) MOUNT 12"x4" TRANSFER DUCT HIGH ON WALL.

Revisions:
Issue Date: 12.21.2022 FOR PERMIT

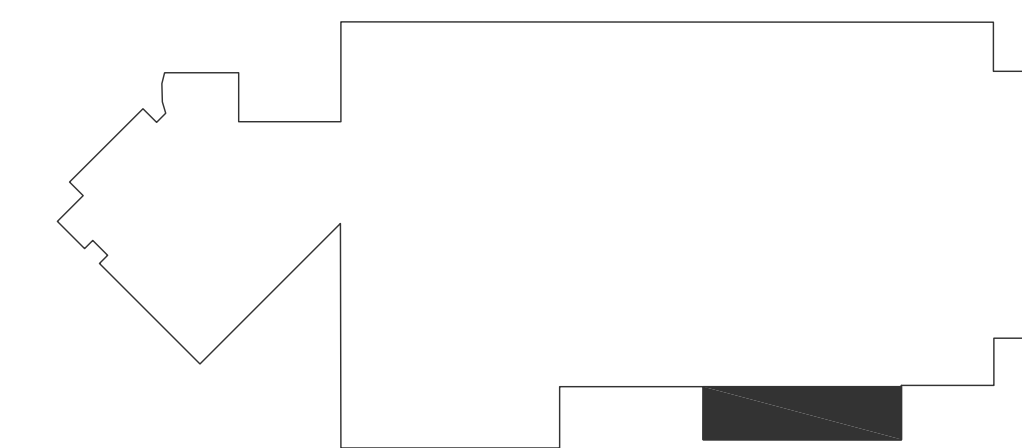
Locker Rooms Addition #2
Elyria North Park Ice Arena
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MECHANICAL PLAN

Project No.

22074.00

M-101



KEY PLAN
NO SCALE



ENERGY RECOVERY VENTILATOR SCHEDULE

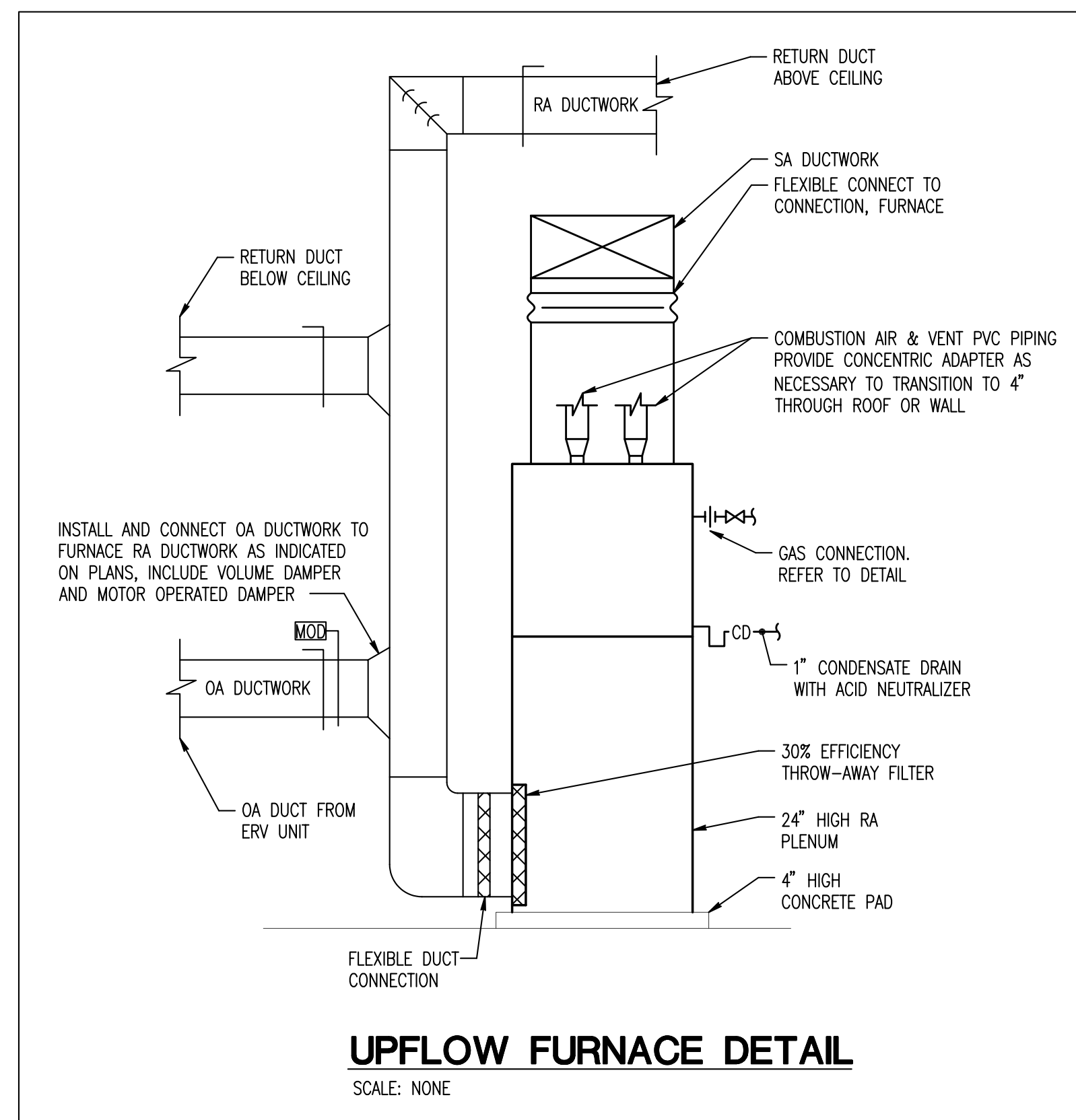
MARK	MANUFACTURER	MODEL	SERVICE	WINTER								SUMMER								HVAC REDUCTION		SUPPLY FAN			EXHAUST FAN			OPERATING WEIGHT (LBS)	REMARKS			
				DB/WB (°F)	ENTHALPY (BTU/LB)	DB/WB (°F)	ENTHALPY (BTU/LB)	DB/WB (°F)	ENTHALPY (BTU/LB)	DB/WB (°F)	ENTHALPY (BTU/LB)	ORIGINAL TOTAL (MBH)	RECOVERY TOTAL (MBH)	NET O.A. LOAD TOTAL (MBH)	DB/WB (°F)	ENTHALPY (BTU/LB)	DB/WB (°F)	ENTHALPY (BTU/LB)	DB/WB (°F)	ENTHALPY (BTU/LB)	ORIGINAL TOTAL (MBH)	RECOVERY TOTAL (MBH)	NET O.A. LOAD TOTAL (MBH)	COOLING (TONS)	HEATING (MBH)	CFM	HP			ESP	CFM	HP
ERV1	GREENHECK	MINVENT-750-VG	F1	55.9/46.1	18.4	72/55.7	23.8	0.0/-1.6	0.4	51.0	39.6	11.4	77.9/65.9	31.1	75/62.4	28.4	89.4/76.3	40.4	35.1	27.2	7.9	2.27	39.6	650	3/4	0.5	650	3/4	0.5	208/1	250	1

REMARKS:
1. ACCEPTABLE MANUFACTURERS: ENGINEERED AIR, GREENHECK, LOREN COOK, OR SEMCO.

ELECTRIC BASEBOARD RADIATOR SCHEDULE

MARK	MANUFACTURER	MODEL	NO. OF ELEMENTS	HEAT OUTPUT (KW)	LENGTH (FT)	ELECTRICAL VOLT./PH	REMARKS
EBB1	QMARK	QMCK2514W	1	1.0	4'	120/1	1,2

REMARKS:
1. ACCEPTABLE MANUFACTURERS: BERKO, CHROMALOX, INDECO, MARKEL, MARLEY, OR Q-MARK.
2. PROVIDE WITH INTEGRAL THERMOSTAT.



FURNACE SCHEDULE (GAS)

MARK	MANUFACTURER	MODEL	SERVICE	TYPE	FAN (CFM)	FAN ESP (\"WC)	FAN RPM	HP	FUEL TYPE	STAGE 1 INPUT/OUTPUT (MBH)	STAGE 2 INPUT/OUTPUT (MBH)	HEATING EAT/LAT/LAT STAGE 2 (°F)	FILTER TYPE	MINIMUM EFFICIENCY (%)	ELECTRICAL VOLT./PH	REMARKS
F1	TRANE	S9V2B040	LOCKER RM	VERTICAL	1200	0.5	VARIABLE	1/2	NAT GAS	26/25.6	40/39.1	55.9/84/96.2	DISPOSABLE	MERV 8	120/1	1

REMARKS:
1. ACCEPTABLE MANUFACTURERS: CARRIER, LENNOX, OR TRANE.

GRAVITY VENTILATOR SCHEDULE

MARK	MANUFACTURER	MODEL	SERVICE	CFM (MAX)	THROAT SIZE (IN)	FACE AREA (SQ FT)	PRESSURE DROP (\"WC)	OPERATING WEIGHT (LBS)	REMARKS
GV1	GREENHECK	GRS1-12	INTAKE	650	12.25	1	0.1	10	1

REMARKS:
1. ACCEPTABLE MANUFACTURERS: GREENHECK, LOREN-COOK, OR TWIN CITY.

LOUVER SCHEDULE

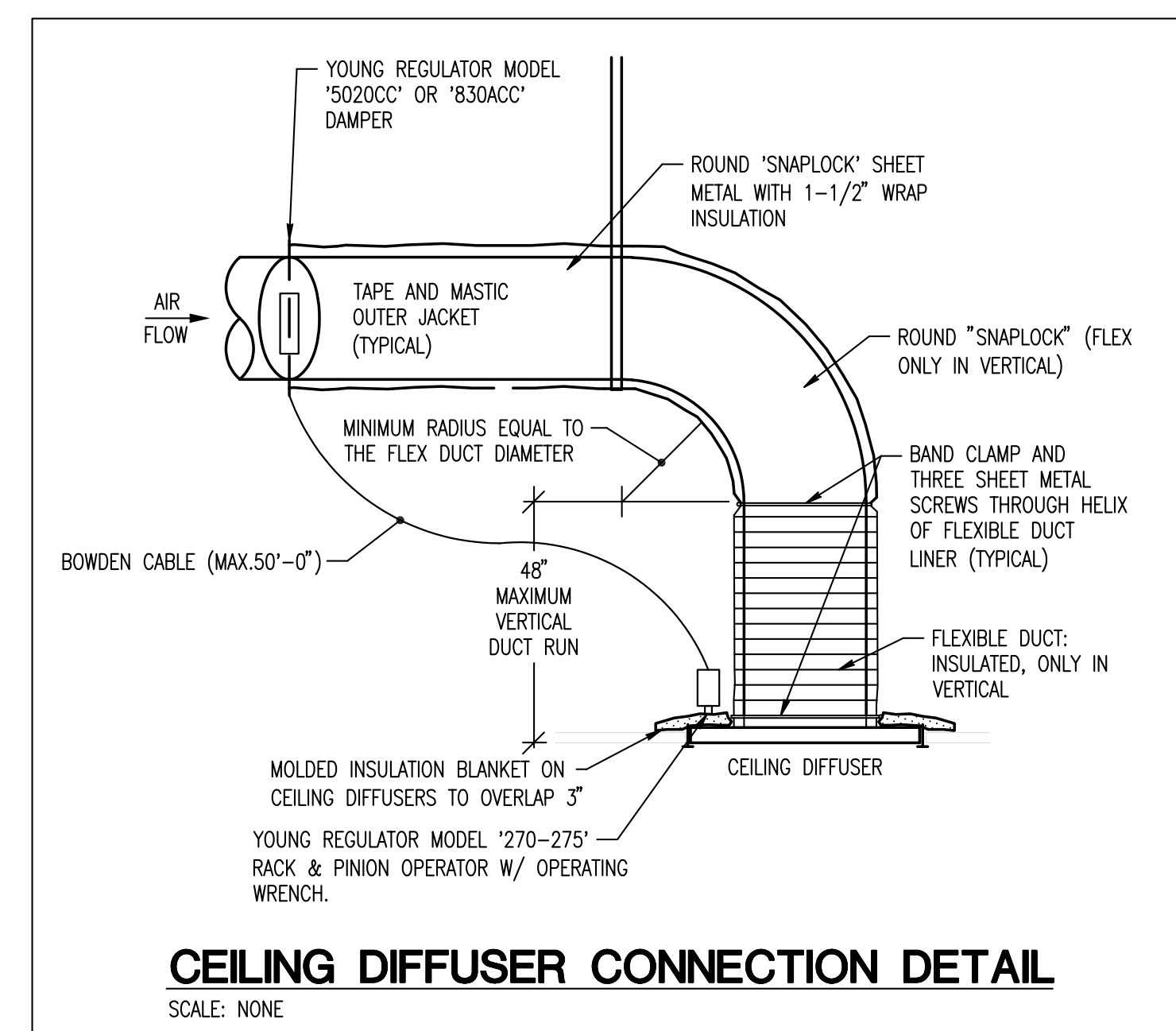
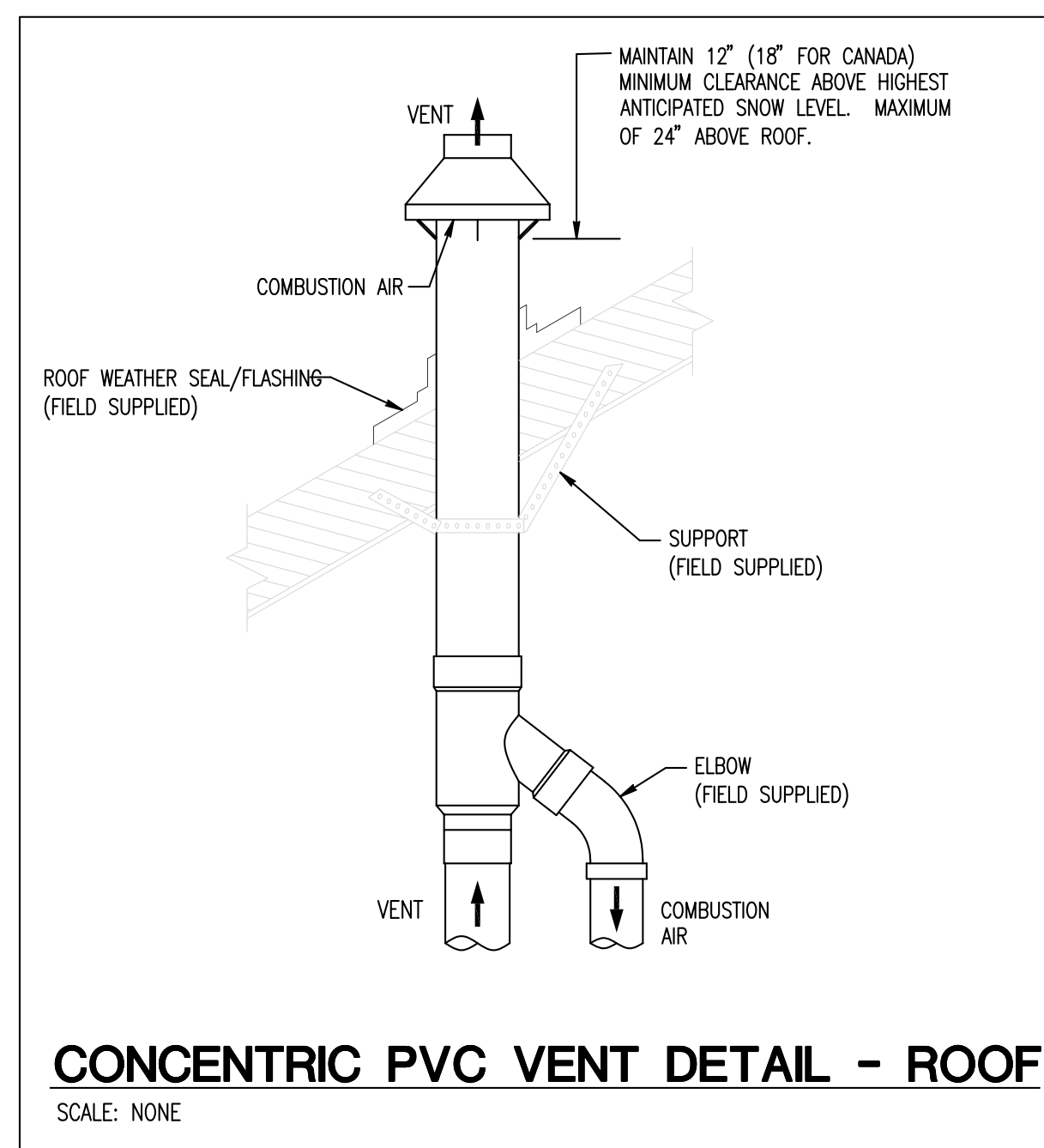
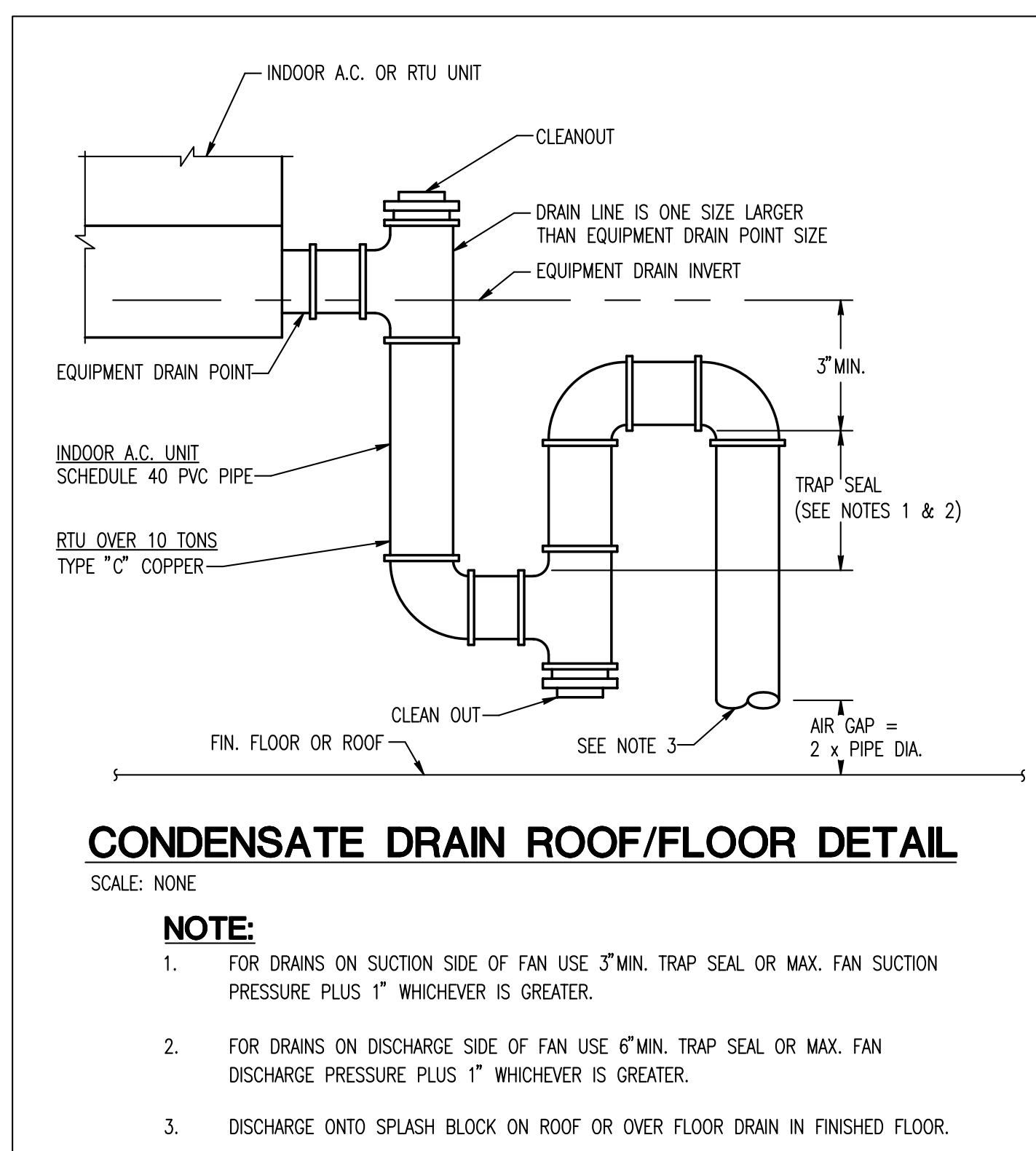
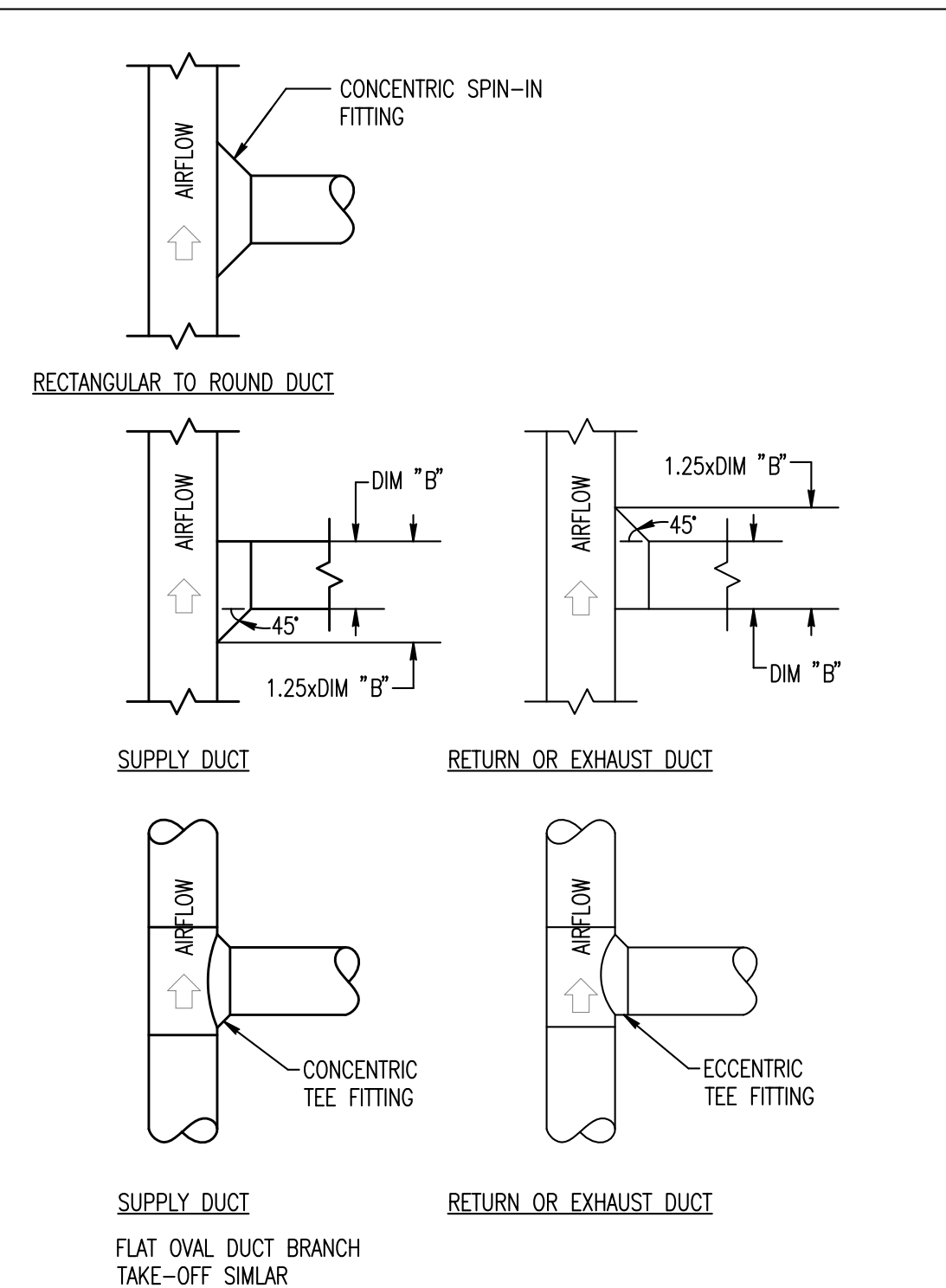
MARK	MANUFACTURER	MODEL	SERVICE	SIZE (W' x H')	MAX. AIRFLOW (CFM)	MIN. FREE AREA (FT²)	VELOCITY (FPM)	AIR P.D. (IN. WC.)	REMARKS
L1	GREENHECK	EACA-601	ERV EXHAUST	12\" x 30"	650	0.79	822	0.076	1,2,3

REMARKS:
1. ACCEPTABLE MANUFACTURERS: AIRLOTE, AMERICAN WARMING, GREENHECK, OR RUSKIN.
2. LOUVERS TO BE AMCA WORLDWIDE CERTIFIED FOR WATER PENETRATION.
3. PROVIDE STANDARD COLOR ANODIZED FINISH.
*NOTE: COORDINATE LOUVER LOCATIONS WITH BUILDING ELEVATIONS.

GRILLE AND DIFFUSER SCHEDULE

MARK	MANUFACTURER	MODEL	FRAME OR BOARDER TYPE	MODULE SIZE	DAMPER MODEL NO.	FINISH	REMARKS
C1	PRICE	ASPD	SURFACE MOUNT	12x12	-	BY OWNER	1,2
C2	PRICE	ASPD	SURFACE MOUNT	12x12	VCR9	BY OWNER	1,2
R1	PRICE	530	SURFACE MOUNT	SEE PLANS	VCS3	BY OWNER	1
R2	PRICE	630	SURFACE MOUNT	SEE PLANS	VCS3	BY OWNER	1
S1	PRICE	520	SURFACE MOUNT	SEE PLANS	VCS3	BY OWNER	1
S2	PRICE	620	SURFACE MOUNT	SEE PLANS	VCS3	BY OWNER	1

REMARKS:
1. ACCEPTABLE MANUFACTURERS: ANEMOSTAT, KRUEGER, NAILOR, PRICE, TITUS, OR TUTTLE AND BAILEY.
2. ALL CEILING DIFFUSERS ARE 4-WAY THROW UNLESS INDICATED OTHERWISE ON PLAN.



Revisions:
Issue Date: 12.21.2022 FOR PERMIT

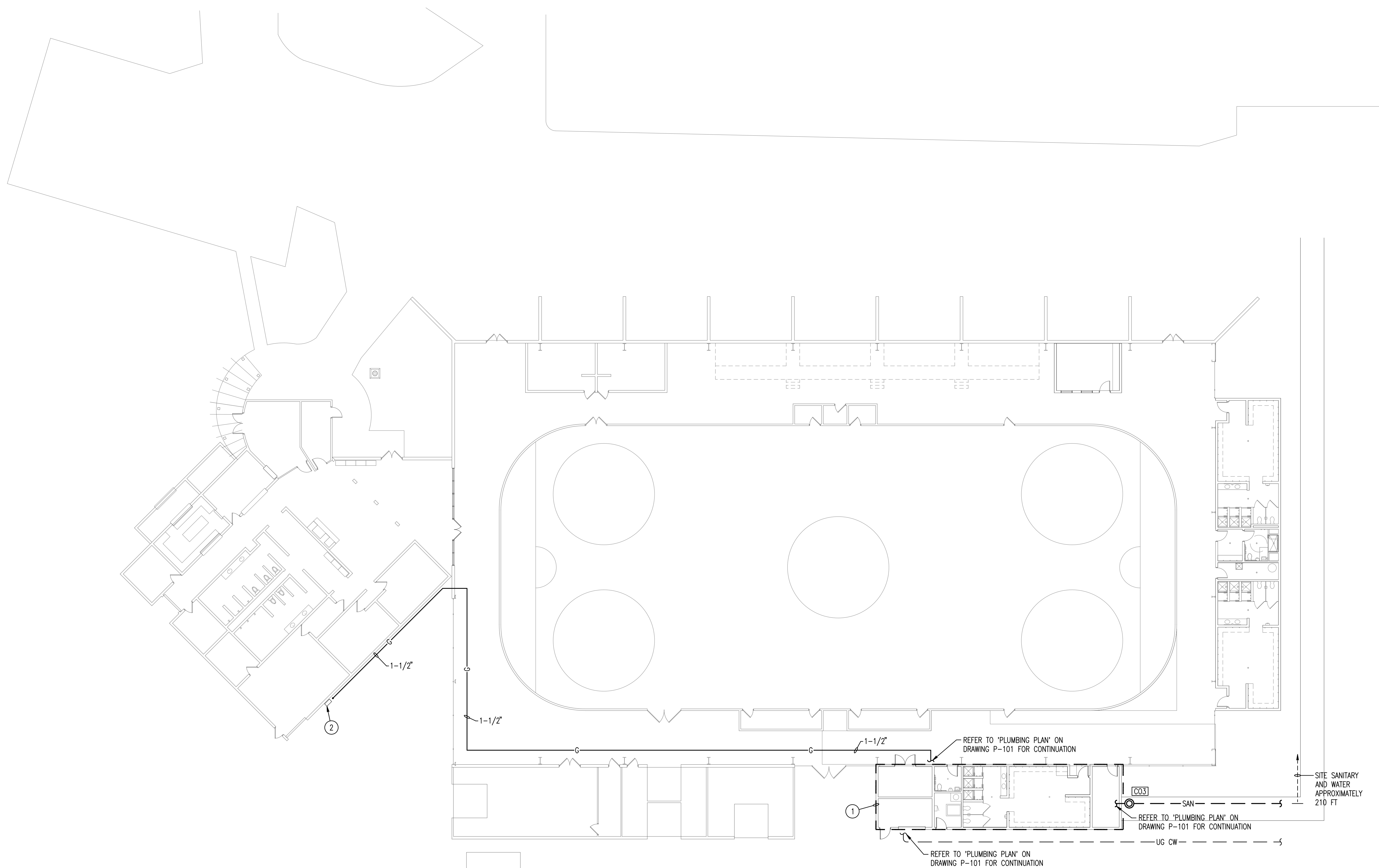
Locker Rooms Addition #2
Elyria North Park Ice Arena
901 Duffey Street
Elyria, OH 44035

MECHANICAL SCHEDULES AND DETAILS

Project No.

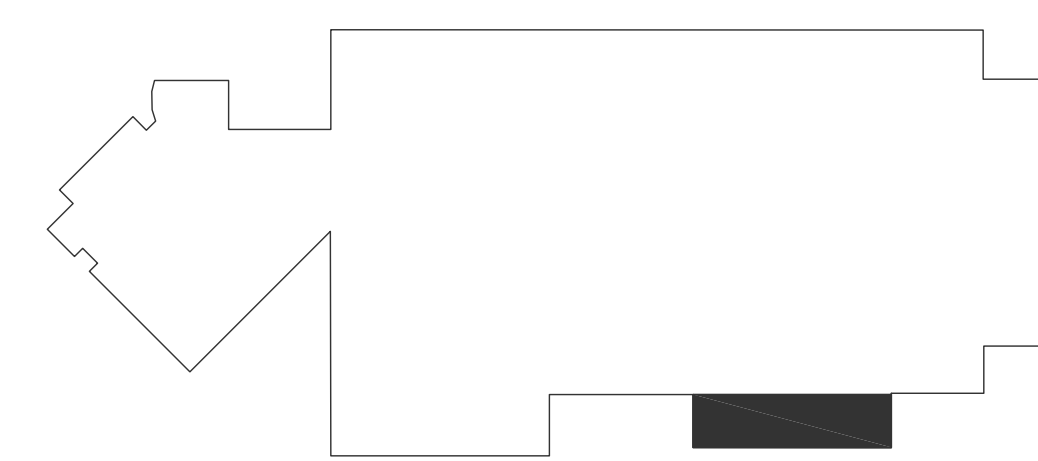
22074.00

M-600



COMPOSITE PLUMBING PLAN
SCALE: 1/16" = 1'-0"

- PLAN NOTES**
- ① REFER TO 'PLUMBING PLAN' ON DRAWING 'P-101'.
 - ② APPROXIMATE LOCATION OF EXISTING GAS METER. PLUMBING CONTRACTOR TO VERIFY EXISTING GAS LOADS PRIOR TO COORDINATING WITH GAS COMPANY. PLUMBING CONTRACTOR TO COORDINATE THE ADDITION OF 240 CFH WITH LOCAL GAS COMPANY AND REPLACE WITH NEW METER IF NECESSARY. FINAL LOCATION SHALL BE COORDINATED WITH LOCAL GAS COMPANY. FOR NEW GAS METER, PROVIDE VALVE EACH SIDE OF METER, ALL REQUIRED FITTINGS AND REGULATOR (AS REQUIRED) FOR COMPLETE INSTALLATION. PC SHALL COORDINATE EXACT ROUTING OF PIPING.



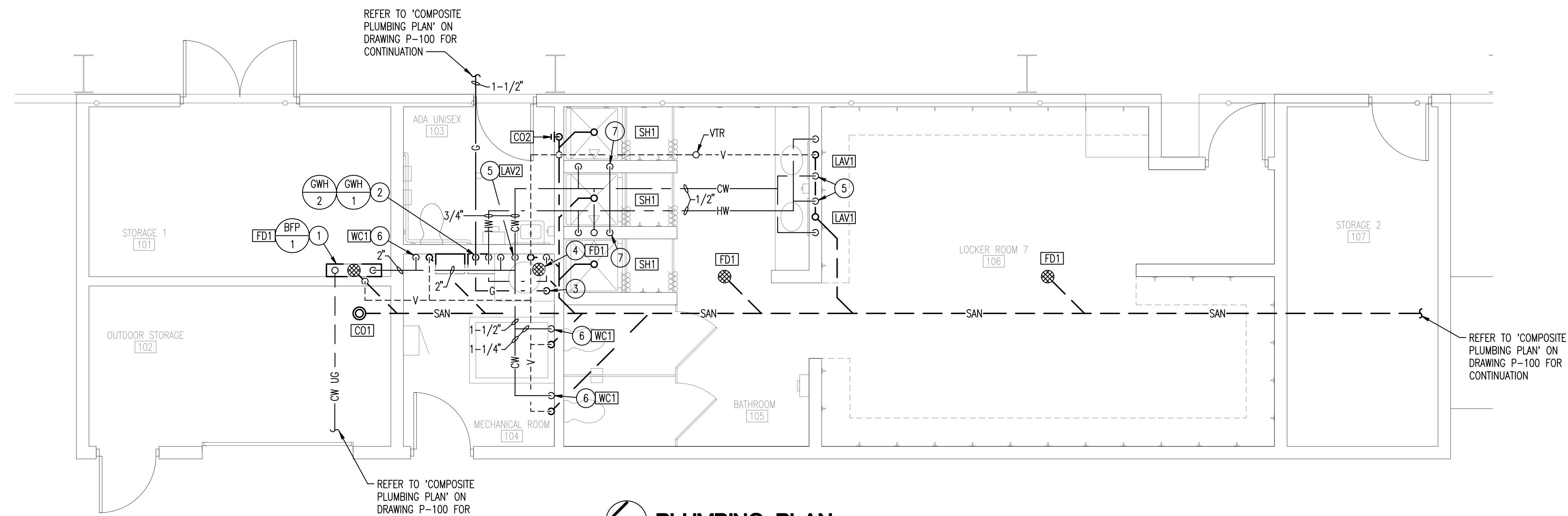
KEY PLAN
NO SCALE

Revisions:
Issue Date: 12.21.2022 FOR PERMIT

Locker Rooms Addition #2
Elyria North Park Ice Arena
901 Duffey Street
Elyria, OH 44035

**COMPOSITE
PLUMBING PLAN**

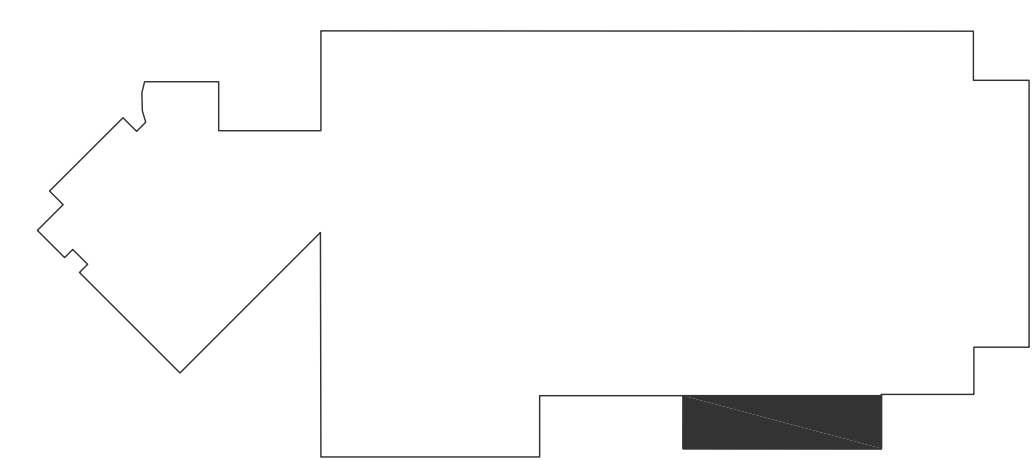
Project No. **P-100**
22074.00



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

PLAN NOTES

- ① 2" CW LINE SUPPLY UP TO BACKFLOW PREVENTER. ROUTE BACKFLOW PREVENTER DRAIN TO FLOOR DRAIN. TERMINATE 2" ABOVE FLOOR DRAIN.
- ② INSTALL TANKLESS GAS WATER HEATERS (GWH) PER MANUFACTURER'S RECOMMENDATIONS. ROUTE FULL SIZE GWH DRAINS TO NEAREST FLOOR DRAINS AND TERMINATE 2" ABOVE DRAIN. 1-1/4" GAS DOWN TO WATER HEATERS. 3/4" CW AND 3/4" HW DOWN TO WATER HEATERS.
- ③ ROUTE 3/4" GAS LINE TO FURNACE, F1.
- ④ MECHANICAL ROOM FLOOR DRAIN, TANKLESS GAS WATER HEATERS, GWH1 AND GWH2, AND FURNACE, F1, TO TERMINATE DRAINS 2" ABOVE FLOOR DRAIN.
- ⑤ 1/2" CW AND 1/2" HW DOWN TO LAVATORY.
- ⑥ 1-1/4" CW DOWN TO WATER CLOSET.
- ⑦ 1/2" CW AND 1/2" HW DOWN TO EACH SHOWER.
- ⑧ 1/2" CW AND 1/2" HW DOWN TO MOP BASIN.



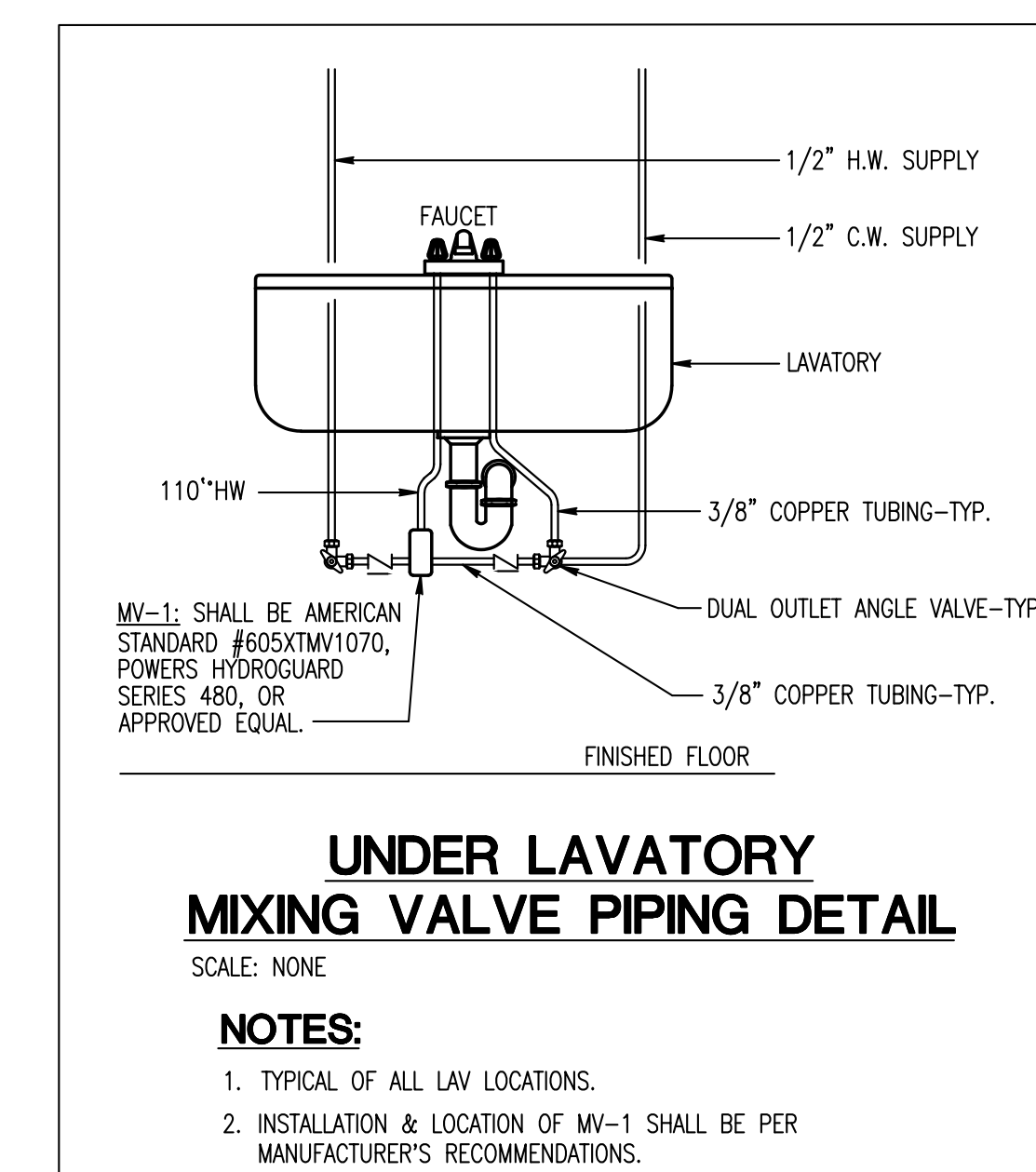
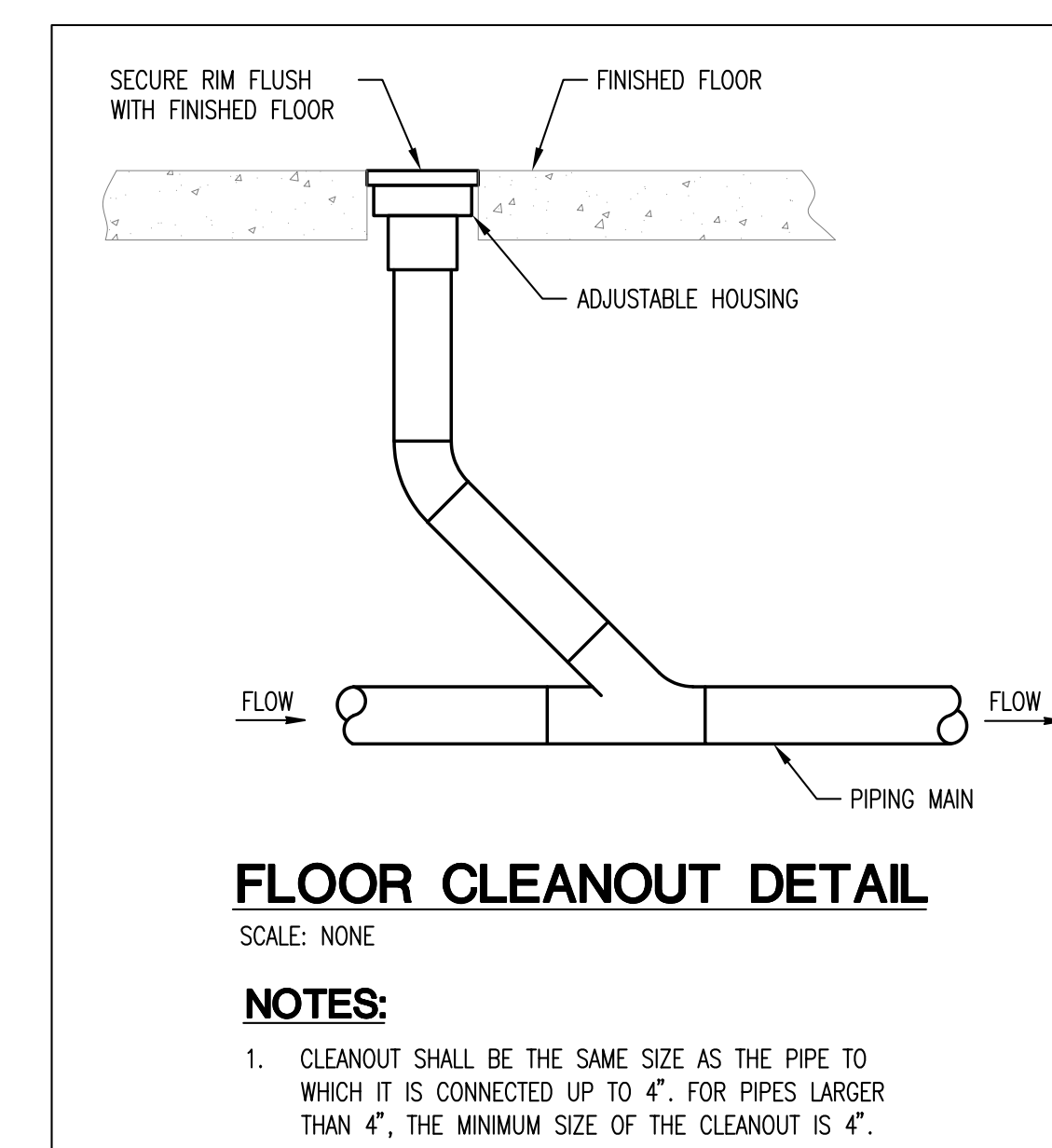
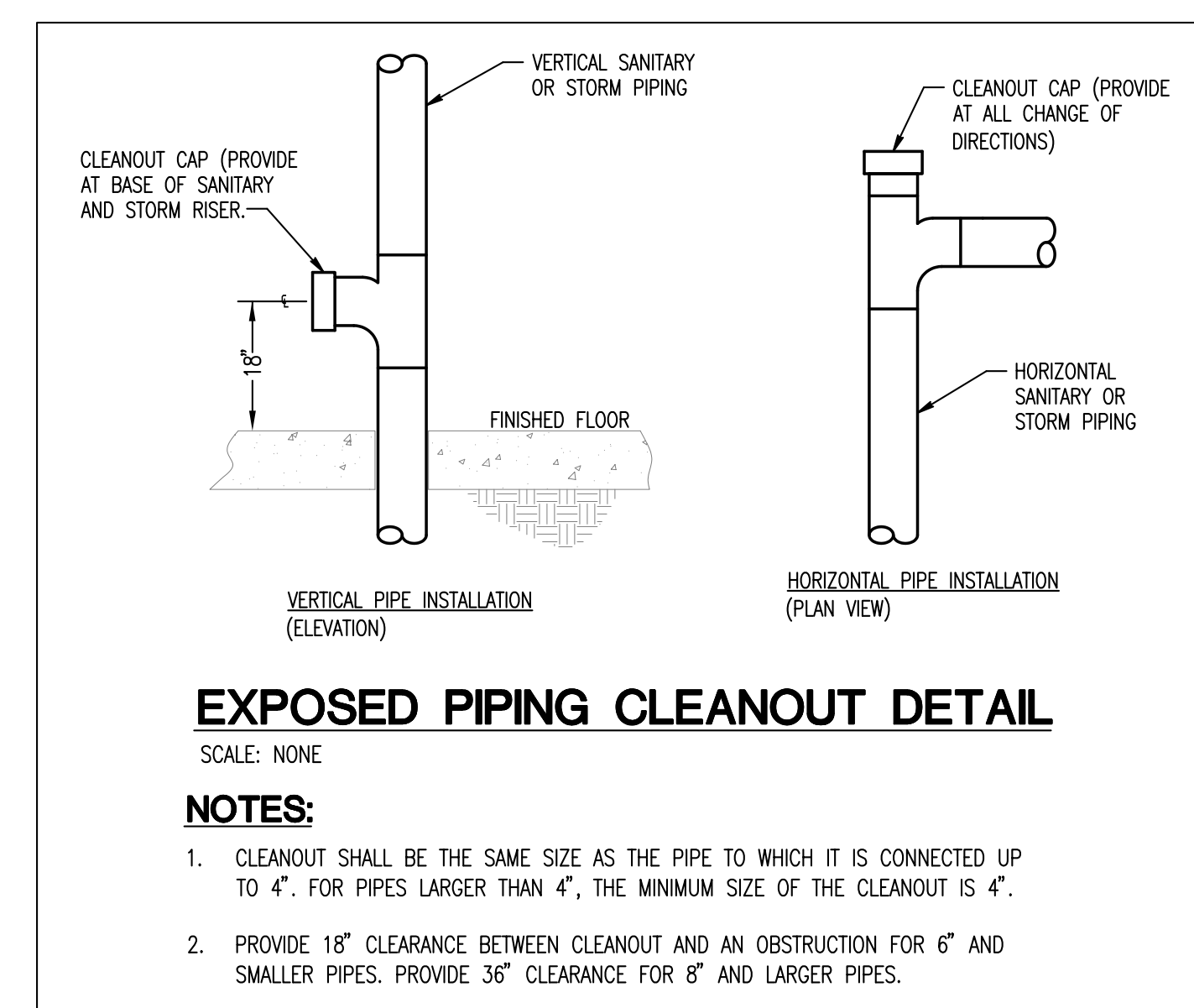
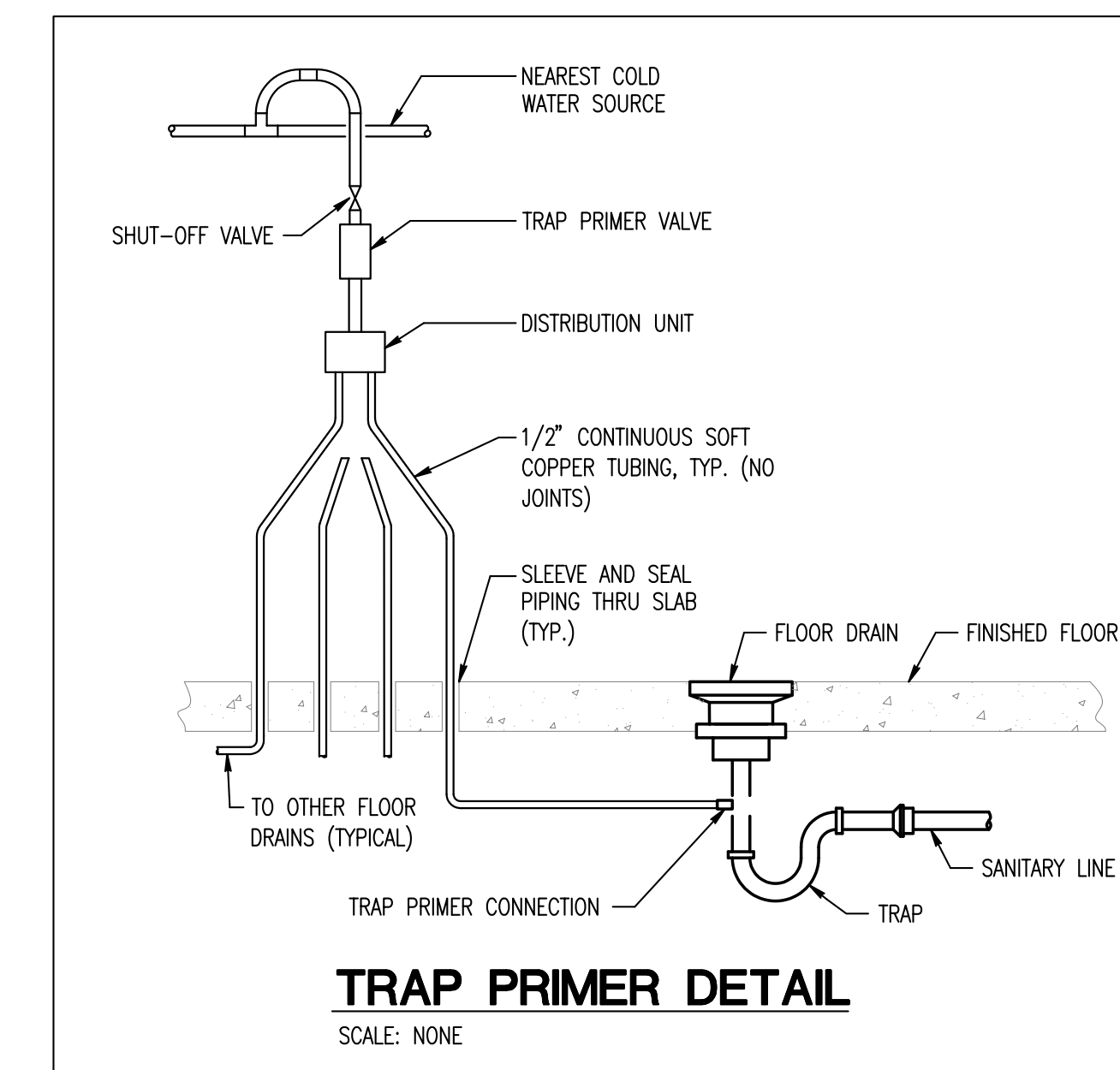
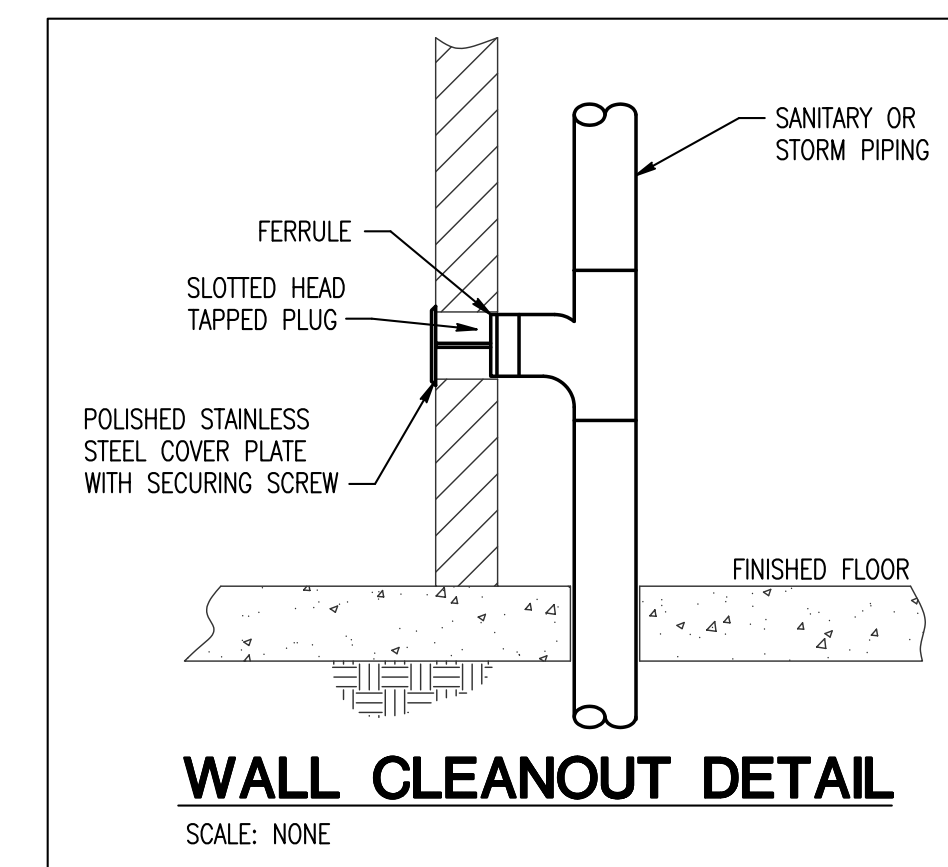
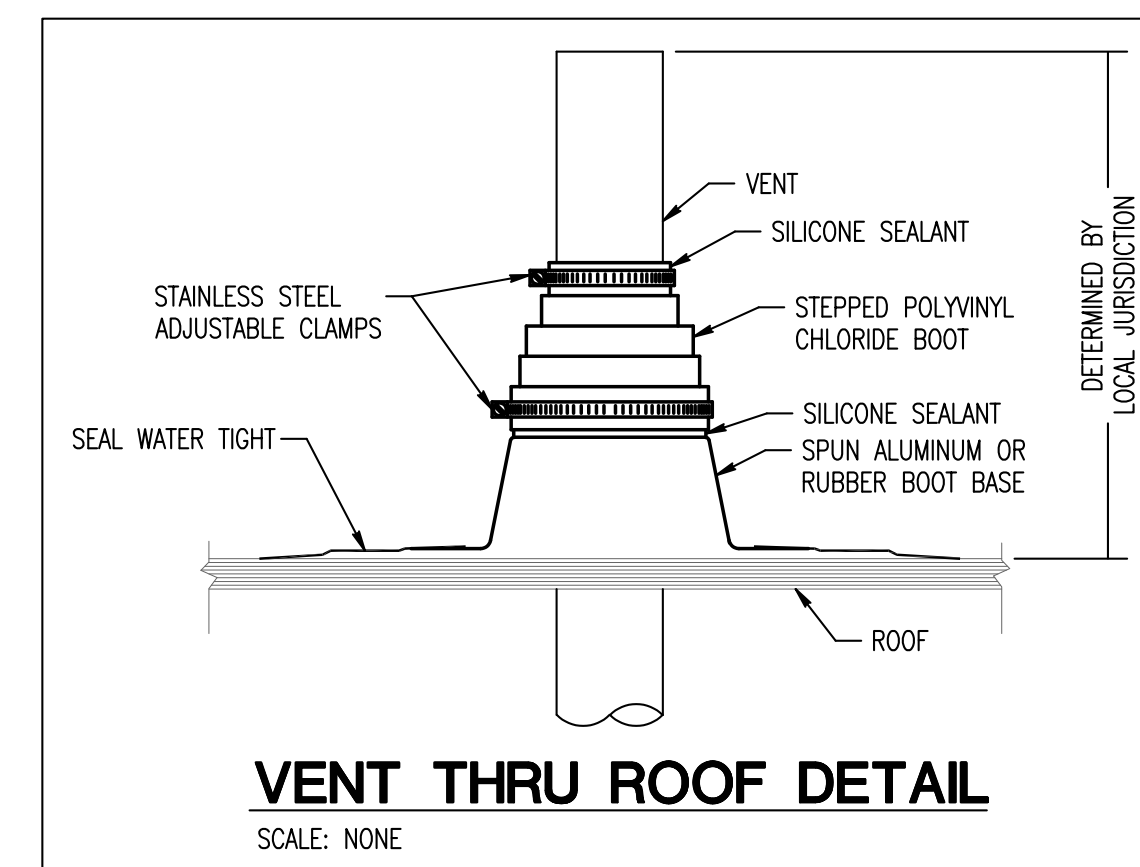
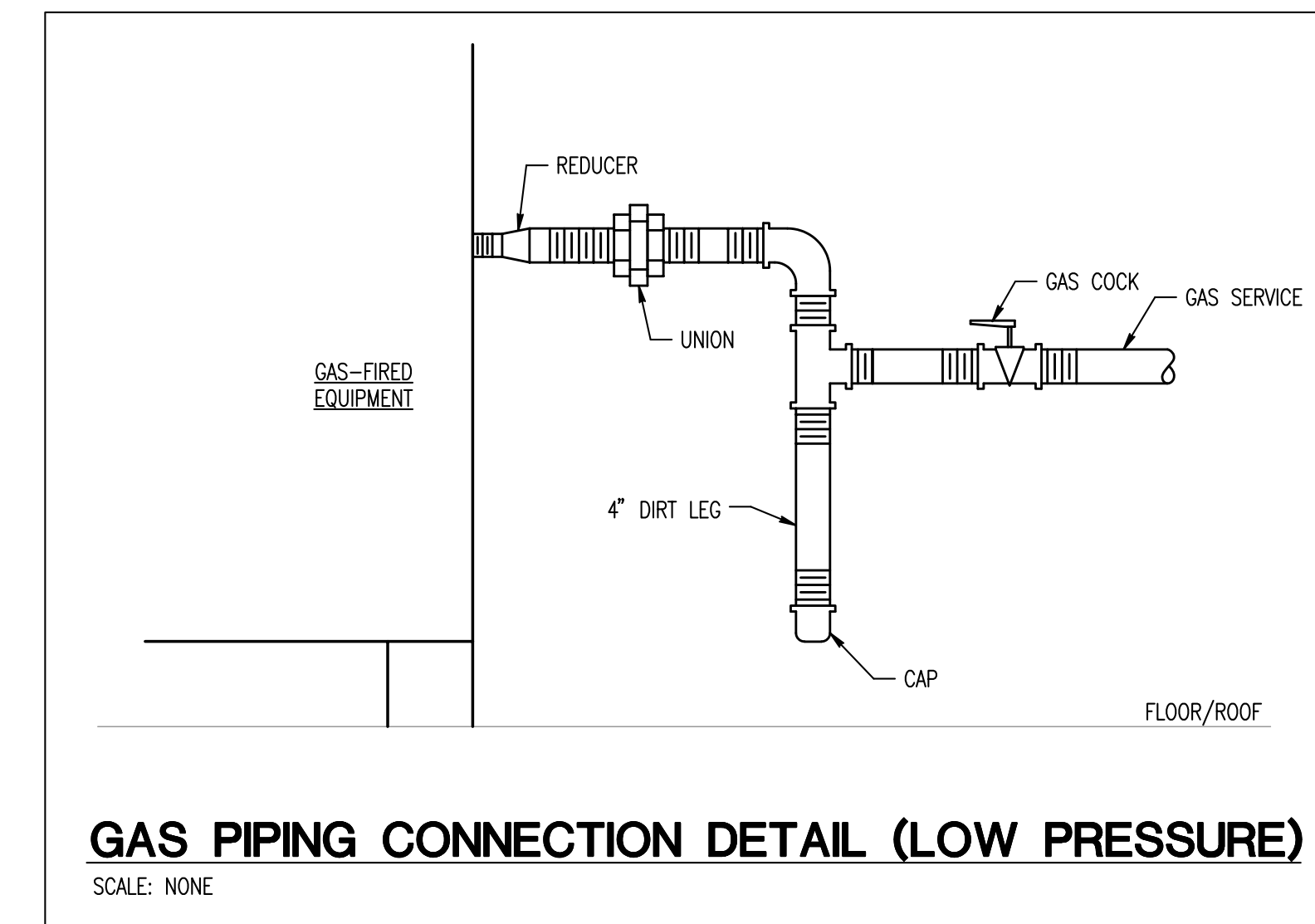
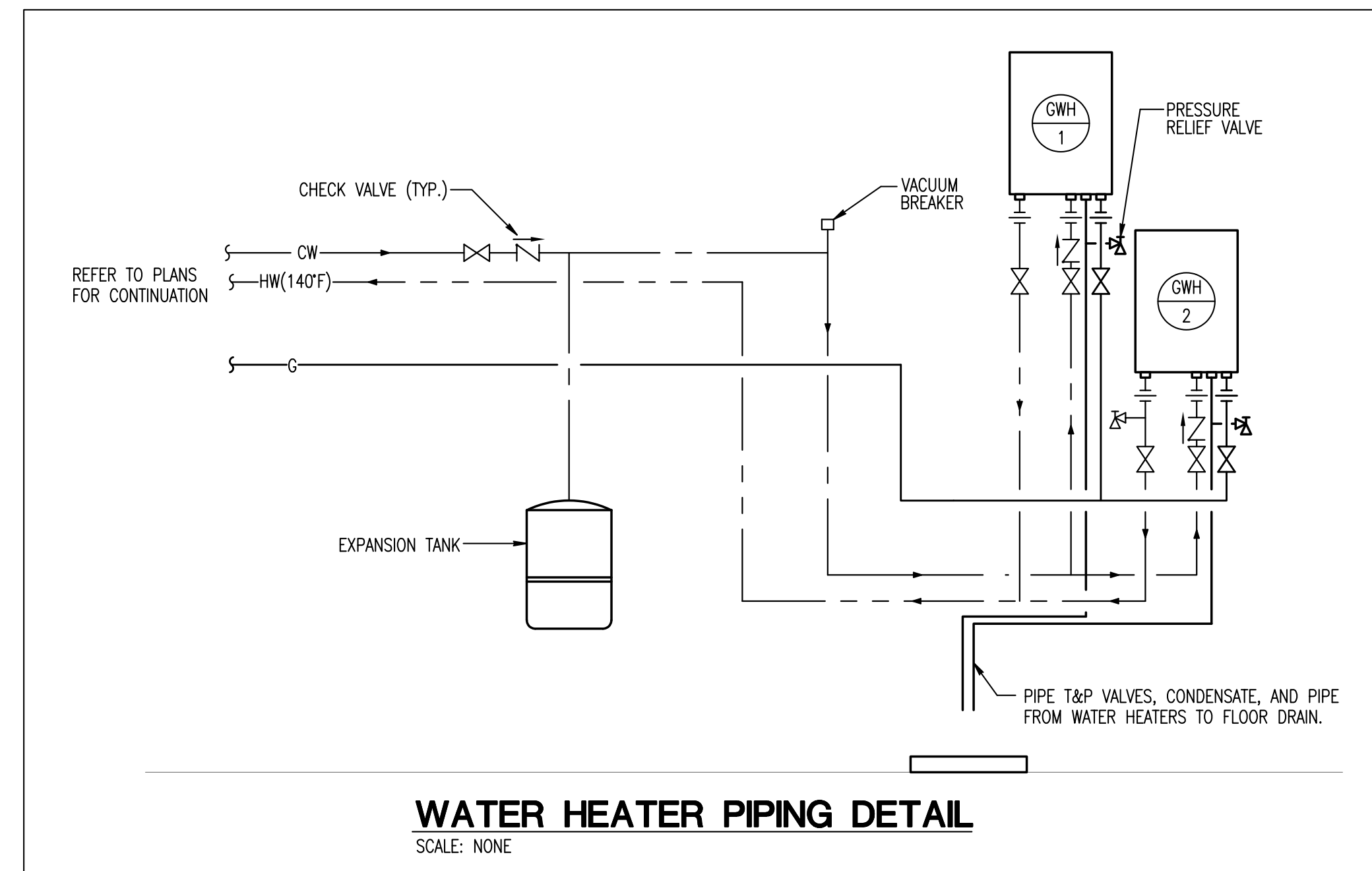
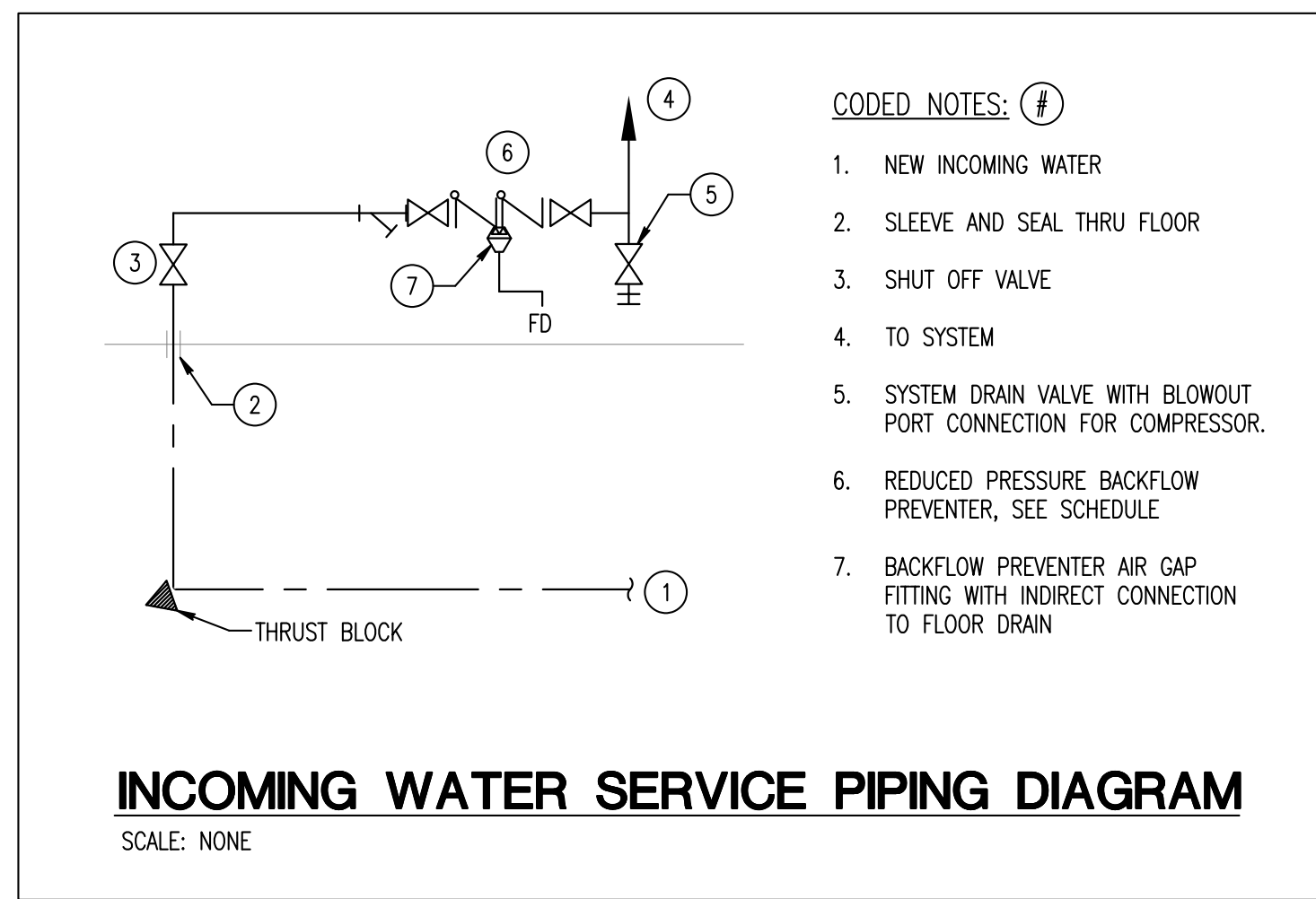
KEY PLAN
NO SCALE

Revisions:
Issue Date: 12.21.2022 FOR PERMIT

Locker Rooms Addition #2
Elyria North Park Ice Arena
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PLUMBING PLAN

Project No. **P-101**
22074.00



Revisions:
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Locker Rooms Addition #2
Elyria North Park Ice Arena
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PLUMBING DETAILS

Project No.

P-500

22074.00

GAS LOAD SCHEDULE			
MARK	DESCRIPTION	QUANTITY	GAS LOAD (CFH)
-	EXISTING GAS LOAD	①	①
F1	FURNACE 1	1	40
GW1,2	TANKLESS GAS WATER HEATERS	2	199
TOTAL LOAD (CFH)			①

NOTE: ① PLUMBING CONTRACTOR TO VERIFY IN FIELD PRIOR TO ANY WORK.

BACKFLOW PREVENTER SCHEDULE						
MARK	MANUFACTURER	MODEL	SERVICE	TYPE	SIZE	REMARKS
BFP1	WATTS	LF909	DOMESTIC	RFZ	2"	1,2

REMARKS:

- ACCEPTABLE MANUFACTURERS: AMES, CONBRACO, FEBCO, WATTS, OR ZURN.
- PROVIDE AIR GAP FITTING WITH INDIRECT CONNECTION TO FLOOR DRAIN.

PLUMBING FIXTURE CONNECTION SCHEDULE							
MARK	FIXTURE	MANUFACTURER/ MODEL	C.W.	H.W.	SAN	VENT	DESCRIPTION
CO1	CLEANOUT	J.R. SMITH 4020	-	-	SEE PLANS	SEE PLANS	DUCCO CAST IRON CLEANOUT WITH ROUND ADJUSTABLE SCORATED SECURED NICKEL BRONZE TOP.
CO2	WALL CLEANOUT	J.R. SMITH 4402	-	-	SEE PLANS	SEE PLANS	DUCCO CAST IRON CAULK FERRULE AND CAST IRON LEAD SEAL PLUG WITH STAINLESS STEEL ROUND COVER AND SCREW.
CO3	CLEANOUT	J.R. SMITH 4250	-	-	SEE PLANS	SEE PLANS	DUCCO CAST IRON CLEANOUT AND DOUBLE FLANGED HOUSING WITH HEAVY DUTY SECURED SCORATED CAST IRON COVER WITH LIFTING DEVICE.
FD1	FLOOR DRAIN	J.R. SMITH 2005	-	-	SEE PLANS	SEE PLANS	DUCCO CAST IRON BODY WITH FLASHING COLLAR AND ADJUSTABLE ROUND NICKEL BRONZE STRAINER HEAD, TRAP PRIMER CONNECTION.
LAV1	LAVATORY	AMERICAN STANDARD "AQUALYN 0476.028"	1/2"	1/2"	1-1/4"	1-1/4"	VITREOUS CHINA, 20" x 17" COUNTERTOP SELF-RIMMING LAVATORY, AMERICAN STANDARD MODEL 7385.003-V05 DECK MOUNTED SINGLE LEVER FAUCET, 0.5 GPM, GRID DRAIN AND TAILPIECE.
LAV2	ADA LAVATORY	AMERICAN STANDARD "LUCERNE 0355.012"	1/2"	1/2"	1-1/4"	1-1/4"	VITREOUS CHINA, 20" x 18" WALL HUNG LAVATORY BACK DRILLED FOR CONCEALED ARMCHAIR CARRIER, AMERICAN STANDARD MODEL 7385.003-V05 DECK MOUNTED SINGLE LEVER FAUCET, 0.5 GPM, OFFSET GRID DRAIN AND TAILPIECE. INSULATE ALL EXPOSED WASTE AND WATER SUPPLY PIPING UNDER LAVATORY WITH SAFETY COVERS PER ADA REQUIREMENTS AS MANUFACTURED BY PLUMBEREX, MCGUIRE, OR TRUEBRO. PROVIDE ASSE-1070 TEMPERING VALVE SET AT 90°. MOUNT FIXTURE AT HANDICAP HEIGHT.
MB1	MOP BASIN	FIAT MSB-2424	1/2"	1/2"	3"	1-1/2"	MOLDED STONE BASIN WITH TILING FLANGES, STAINLESS STEEL SPLASH PANELS, MOP HANGER, HOSE WITH WALL HOOK, 3" DRAIN WITH DOME STRAINER AND LINT BASKET, CHICAGO MODEL 897 FAUCET WITH VACUUM BREAKER SPOUT, ADJUSTABLE WALL BRACE, PAIL HOOK AND 3/4" HOSE THREAD OUTLET.
SH1	ADA SHOWER	AQUARIUS A 3634 SH CS	1/2"	1/2"	2"	1-1/2"	34-1/2" x 34-1/2" x 83-1/2" O.D. ONE-PIECE ACRYLIC SHOWER WITH TWO MOLDED SOAP LEDGES, MOEN MODEL 8375EP15 PRESSURE BALANCING, TEMPERATURE LIMITING SHOWER VALVE, SHOWER ARM AND VANDAL RESISTANT 1.5 GPM SHOWER HEAD.
TPV1	TRAP PRIMER VALVE	PRECISION PLUMBING No. 1	-	-	SEE PLANS	SEE PLANS	PROVIDE DISTRIBUTION UNIT FOR MULTIPLE DRAIN CONNECTIONS.
WC1	WATER CLOSET	AMERICAN STANDARD "AFWALL 2257.101"	1-1/4"	-	4"	2"	VITREOUS CHINA, ELONGATED BOWL, TOP SPUD, SIPHON JET FLUSH ACTION, 1.6 GPF, WALL MOUNTED, SLOAN MODEL 8111-1.6 BATTERY OPERATED AUTOMATIC FLUSH VALVE, CHURCH MODEL 295SSCT HEAVY DUTY PLASTIC, OPEN FRONT SEAT WITH SELF-SUSTAINING CHECK HINGE, VERTICAL MOUNTING CARRIER..
WC2	ADA WATER CLOSET	AMERICAN STANDARD "AFWALL 2257.101"	1-1/4"	-	4"	2"	VITREOUS CHINA, ELONGATED BOWL, TOP SPUD, SIPHON JET FLUSH ACTION, 1.6 GPF, WALL MOUNTED, SLOAN MODEL 8111-1.6 BATTERY OPERATED AUTOMATIC FLUSH VALVE, CHURCH MODEL 295SSCT HEAVY DUTY PLASTIC, OPEN FRONT SEAT WITH SELF-SUSTAINING CHECK HINGE, VERTICAL MOUNTING CARRIER.. FIXTURE TO CONFORM TO ADA REQUIREMENTS.

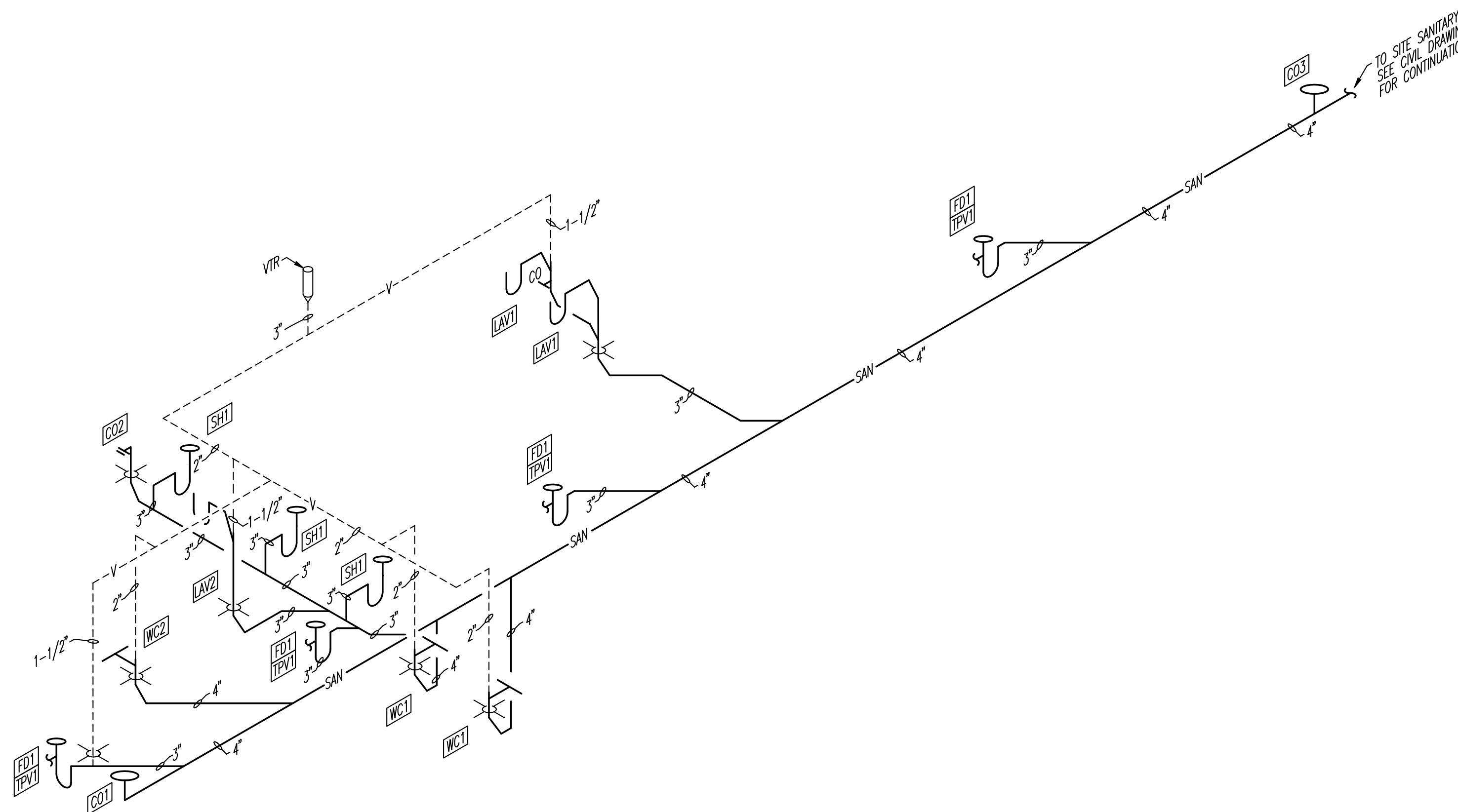
REMARKS:

- COORDINATE FIXTURES WITH ARCHITECT PRIOR TO FURNISHING.

DOMESTIC WATER HEATER SCHEDULE (GAS FIRED-TANKLESS)														
MARK	MANUFACTURER	MODEL	TYPE	OUTPUT TEMPERATURE (°F)	FUEL	INPUT (MBH)	GAS MIN / MAX OPERATING PRESSURE ("WC)	RELIEF VALVE SETTING (PSI)	RECOVERY AT 100(GPM)	FLUE SIZE (IN)	ELECTRICAL		WEIGHT (LB)	REMARKS
											VOLT.	PH.		
GW1,2	RINNAI	CU199i	GAS TANKLESS	140	N.G.	199	3.5/10.5	150	3.8	3	120	1	64	1,2

REMARKS:

- ACCEPTABLE MANUFACTURERS: RINNAI, A.O. SMITH, BRADFORD WHITE, LOCHINVAR, PVI, RHEEM, OR STATE.
- RECOVERY RATE BASED ON 40° F ENTERING WATER TEMPERATURE.



STACK DIAGRAM A
SCALE: NONE



Revisions:
Issue Date: 12.21.2022 FOR PERMIT

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Elyria North Park Ice Arena
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PLUMBING SCHEDULES AND DIAGRAMS

Project No.

P-600

22074.00

PLUMBING GENERAL NOTES

1. THE TERM GENERAL CONTRACTOR (GC) AS USED IN THESE DOCUMENTS REFERS TO THE CONTRACTOR / CONSTRUCTION MANAGER IN RESPONSIBLE CHARGE OF THE PROJECT IN TERMS OF COORDINATION, SCHEDULING, SUBCONTRACTOR COORDINATION, ETC. THIS TERM REFERS TO, BUT IS NOT LIMITED TO, GENERAL CONTRACTOR, CONSTRUCTION MANAGER, DESIGN BUILD CONTRACTOR, PRIME CONTRACTOR, ETC. THE TERM IS REFERENCING THE ENTITY THAT COORDINATES THE WORK OF OTHER TRADES.
2. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION AND PROPER INSTALLATION OF ALL MECHANICAL SYSTEMS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY OFFSETS AND FITTING WHICH MAY BE REQUIRED DUE TO SPACE CONSTRAINTS OR OTHER CONDITIONS.
3. THE PLUMBING SYSTEMS OR ITS MODIFICATIONS ARE DESIGNED TO BE A COMPLETE OPERATING SYSTEM AND STABLE AFTER THE BUILDING OR ITS MODIFICATIONS ARE FULLY COMPLETED. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE CONSTRUCTION, INSTALLATION, AND PROGRAMMING PROCEDURES AND SEQUENCES TO HAVE A COMPLETE AND WORKING SYSTEM AND TO INSURE THE SAFETY OF THE CONSTRUCTION PERSONNEL, PUBLIC, BUILDING AND ITS COMPONENT PARTS, AND ADJACENT BUILDINGS AND PROPERTIES. THIS INCLUDES THE ADDITION OF WHATEVER TEMPORARY OR PERMANENT BRACING, ETC. THAT MAY BE NECESSARY TO BRACE NEW OR EXISTING CONSTRUCTION, WALLS, AND FRAMING TO REMAIN SO THAT THE STRUCTURE IS BRACED FOR CONSTRUCTION LOADS, ETC. AND THAT NO HORIZONTAL OR VERTICAL SETTLEMENT OR ANY DAMAGE OCCURS TO THE ADJACENT NEW OR PERMANENT SUPPORTS AND BRACING THAT ARE INSTALLED. DESIGN OF THESE SUPPORTS SHALL BE PROVIDED BY THE CONTRACTOR. PROVIDE ALL MATERIALS, LABOR, EQUIPMENT, AND ACCESSORIES REQUIRED TO FURNISH AND INSTALL THE SYSTEMS IDENTIFIED IN SPECIFICATIONS AND DRAWINGS.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENFORCE ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.
5. CONSTRUCTION LOADS SHALL NOT EXCEED STRUCTURAL DESIGN LIVE LOADS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DESIGN REQUIRED TO SUPPORT CONSTRUCTION EQUIPMENT USED IN CONSTRUCTING THIS PROJECT. VERIFY AND COORDINATE WITH STRUCTURAL DRAWINGS.
6. THE CONTRACTOR SHALL PERFORM ALL CONSTRUCTION FOR THE PROJECT IN A MANNER AND SEQUENCE THAT ARE BASED ON ACCEPTED INDUSTRY STANDARDS THAT RECOGNIZE THE INTERACTION OF THE COMPONENTS THAT COMPRISE THE SYSTEMS, WITHOUT CAUSING DISTRESS, UNANTICIPATED MOVEMENTS OR IRREGULAR LOAD PATHS AS A RESULT OF THE CONSTRUCTION MEANS AND METHODS EMPLOYED.
7. THE CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS SUPPORTING STEEL, ETC. FOR THE PROPER INSTALLATION OF ALL MECHANICAL SYSTEMS.
8. BEFORE FABRICATION AND/OR INSTALLING ANY WORK, CONTRACTOR SHALL SEE THAT IT DOES NOT INTERFERE WITH CLEARANCE REQUIRED FOR FINISH ON BEAMS, COLUMNS, PLASTERS, WALLS, OR OTHER STRUCTURAL OR ARCHITECTURAL MEMBERS, AS SHOWN ON ARCHITECTURAL DRAWINGS. IF ANY WORK IS SO INSTALLED AND IT LATER DEVELOPS THAT ARCHITECTURAL DESIGN CANNOT BE FOLLOWED, CONTRACTOR SHALL, AT HIS OWN EXPENSE, MAKE SUCH CHANGES IN HIS WORK AS ARCHITECT MAY DIRECT TO PERMIT COMPLETION OF ARCHITECTURAL WORK IN ACCORDANCE WITH PLANS AND SPECIFICATIONS.
9. PIPES PASSING THROUGH OR UNDER WALLS SHALL BE PROTECTED FROM BREAKAGE. PIPES PASSING THROUGH STUDS, JOIST, RAFTERS OR SIMILAR MEMBERS LESS THAN 1 1/2" FROM THE NEAREST EDGE OF THE MEMBERS SHALL BE PROTECTED BY STEEL SHIELD PLATES.
10. PIPING SHALL BE INSTALLED TO PREVENT STRAINS AND STRESSES THAT EXCEED THE STRUCTURAL STRENGTH OF THE PIPE. WHERE NECESSARY, PROVISIONS SHALL BE MADE TO PROTECT PIPING FROM THE DAMAGE RESULTING FROM PIPE EXPANSION AND CONTRACTION AND STRUCTURAL/SOIL SETTLEMENT. EXPANSION JOINT FITTINGS SHALL BE USED WHERE NECESSARY TO PROVIDE FOR EXPANSION AND CONTRACTION OF THE PIPES. SLEEVED OPENINGS SHALL BE SIZED APPROPRIATELY TO ACCOMMODATE PIPE MOVEMENT AND STRUCTURAL/SOIL SETTLEMENT. EXPANSION JOINT FITTINGS SHALL BE OF THE TYPICAL MATERIAL SUITABLE FOR USE WITH THE TYPE OF PIPING IN WHICH FITTINGS ARE INSTALLED. AT A MINIMUM INSTALL RUBBER MECHANICAL JOINT COUPLINGS OR CSA-CERTIFIED EXPANSION JOINTS ON ALL VERTICAL PIPING AT EVERY OTHER FLOOR OF THE BUILDING AND RIGIDLY SUPPORT THE STACK PIPE ON ALTERNATING FLOORS TO DIRECT ANY MOVEMENT INTO THE APPROPRIATE EXPANSION COMPENSATOR. DESIGN OF THESE EXPANSION FITTINGS SHALL BE PROVIDED BY THE CONTRACTOR. ANY ANALYSIS WHICH REQUIRES ADDITIONAL SUPPORT OR EXPANSION DETAILING SHALL BE SHARED WITH THE MECHANICAL DESIGN PROFESSIONAL AND ANY STRESSES OR POINT LOADS CREATED BY THE ENGINEERED SYSTEM SHALL BE SHARED WITH THE STRUCTURAL DESIGNER FOR REVIEW.
11. INSTALL ADDITIONAL OFFSETS ON PIPING WHERE REQUIRED TO OBTAIN MAXIMUM HEADROOM OR TO AVOID CONFLICT WITH OTHER WORK WITHOUT ADDITIONAL COST TO OWNER.
12. REPORT ANY INTERFERENCES BETWEEN WORK UNDER THIS DIVISION AND THAT OF ANY OTHER CONTRACTORS TO ARCHITECT AS SOON AS THEY ARE DISCOVERED. ARCHITECT WILL DETERMINE WHICH EQUIPMENT SHALL BE RELOCATED, REGARDLESS OF WHICH WAS FIRST INSTALLED, AND HIS DECISION SHALL BE FINAL.
13. THE CONTRACTOR SHALL COORDINATE FLOOR, WALL, AND ROOF PENETRATIONS, ETC. WITH GENERAL TRADES.
14. GENERAL CONTRACTOR SHALL PROVIDE ALL OPENINGS REQUIRED THROUGH THE FRAMING BY THE MECHANICAL, ELECTRICAL, PLUMBING, OR OTHER TRADES, WHETHER OR NOT SHOWN ON THE STRUCTURAL DRAWINGS. ANY DEVIATION FROM THE OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR REVIEW.
15. ALL MECHANICAL AND ELECTRICAL WORK: PLUMBING, PIPING, WIRING, LIGHTING, ETC. AND ALL ARCHITECTURAL ITEMS THAT NEED TO BE REMOVED DURING THE MODIFICATION OF OR REINFORCING OF, EXISTING STRUCTURE SHALL BE REPLACED IN KIND BY THE RESPECTIVE CONTRACTOR. THE CONTRACTORS SHALL KEEP ALL EXISTING SYSTEMS IN OPERATION DURING THE CONSTRUCTION PHASE OF THE PROJECT.
16. ALL CONTRACTORS ARE REQUIRED TO EXAMINE THE DRAWINGS AND SPECIFICATIONS CAREFULLY, VISIT THE SITE AND FULLY TO VERIFY ALL EXISTING CONDITIONS AND LIMITATIONS, PRIOR TO AGREEING TO PERFORM THE WORK. FAILURE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AND LIMITATIONS WILL IN NO WAY RELIEVE THE CONTRACTOR FROM FURNISHING ANY MATERIALS OR PERFORMING ANY WORK IN ACCORDANCE WITH DRAWINGS AND SPECIFICATION WITHOUT ADDITIONAL COST TO THE OWNER TO HAVE A COMPLETE AND WORKING SYSTEM.
17. DO NOT SCALE DRAWINGS.
18. ANY DISCREPANCIES BETWEEN MECHANICAL AND ARCHITECTURAL DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND MECHANICAL ENGINEER.
19. SHOP DRAWINGS AND SUBMITTALS
 - A. SHOP DRAWINGS AND SUBMITTALS SHALL BE CHECKED AND COORDINATED WITH OTHER MATERIALS AND CONTRACTS BY THE GENERAL, MECHANICAL AND ELECTRICAL CONTRACTORS AND SHOP DRAWINGS AND SUBMITTALS SHALL BEAR THE PRIME CONTRACTOR'S REVIEW STAMP WITH THE CHECKER'S INITIALS BEFORE BEING SUBMITTED TO THE ARCHITECT FOR APPROVAL.
 - B. WHEN THE CONTRACTOR HAS BEEN AUTHORIZED TO USE THE ARCHITECT AND ENGINEER'S DRAWINGS AS CONSTRUCTION COORDINATION DRAWINGS, THE CONTRACTOR MUST REMOVE ALL TITLE BLOCKS, PROFESSIONAL SEALS AND ANY OTHER REFERENCES TO THE ARCHITECT AND ENGINEER FROM THOSE DRAWINGS. THE CONTRACTORS NAME AND TITLE SHALL BE PLACED ON THE DRAWINGS.
 - C. WHERE VOLTAGE, AMP DRAW, DIMENSIONS AND ELEVATIONS OF EXISTING CONSTRUCTION COULD AFFECT THE NEW CONSTRUCTION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE FIELD VERIFICATIONS AND MEASUREMENTS IN TIME FOR THEIR INCORPORATION INTO THE SHOP DRAWINGS.
20. PIPING SHALL NOT BE LOCATED OVER THE TOP OF ANY ELECTRICAL PANELS OR EQUIPMENT.
21. CONTRACTOR SHALL INCLUDE IN HIS BID ALL CUTTING, TRENCHING, AND PATCHING ASSOCIATED WITH THE INSTALLATION OF THIS PROJECTS WORK.

22. CUTTING, PATCHING AND DRILLING
 - A. ALL CUTTING AND PATCHING OF THE BUILDING CONSTRUCTION REQUIRED FOR THIS WORK SHALL BE BY THIS CONTRACTOR UNLESS SHOWN ON ARCHITECTURAL DRAWINGS AND CONFIRMED AS TO SIZE AND LOCATION PRIOR TO NEW CONSTRUCTION. CUTTING SHALL BE IN A NEAT AND WORKMANLIKE MANNER.
 - B. NEATLY SAW CUT ALL RECTANGULAR OPENINGS, SET SLEEVE THROUGH OPENING, AND FINISH PATCH OR PROVIDE TRIM FLANGE AROUND OPENING.
 - C. NEATLY SAW CUT FLOORS AND PATCH FLOOR TO MATCH EXISTING, INCLUDING FLOOR COVERING.
 - D. CONTRACTOR SHALL FIELD VERIFY SLAB-ON-GRADE OR SUPPORTED FLOOR CONSTRUCTION TYPE PRIOR TO CUTTING. UNDER NO CIRCUMSTANCES SHALL THIS CONTRACTOR CUT A FLOOR THICKER THAN 4 INCHES. A STRUCTURAL FLOOR SLAB, WHETHER ON GRADE OR SUPPORTED, WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT. IF FLOOR SLAB INDICATED TO BE CUT ON MECHANICAL PLANS IS FOUND TO BE STRUCTURAL IN NATURE, DO NOT CUT. CONTACT ARCHITECT IMMEDIATELY FOR FURTHER DIRECTIONS.
 - E. CORE DRILL AND SLEEVE ALL ROUND OPENINGS.
 - F. DO NOT CUT ANY STRUCTURAL COMPONENTS WITHOUT ARCHITECT'S WRITTEN APPROVAL, INCLUDING, BUT NOT LIMITED TO ROOF JOISTS, COLUMNS, FLOOR JOISTS, BEAMS, GIRDERS, STRUCTURAL FLOOR SLABS, REBAR, ETC.
 - G. PATCH, AND FINISH TO MATCH ADJACENT AREAS THAT HAVE BEEN CUT, DAMAGED OR MODIFIED AS A RESULT OF THE INSTALLATION OF THE MECHANICAL SYSTEMS. FIRE-STOP ALL PENETRATIONS OF FIRE RATED CONSTRUCTION IN A CODE APPROVED MANNER.
 - H. ALL CONTRACTORS SHALL CONFIRM WITH OWNER, PRIOR TO BID, TIMES AVAILABLE FOR NOISE PRODUCING WORK SUCH AS CUTTING AND CORE DRILLING OF FLOORS, WALLS, ETC. AS WELL AS TIMES FOR WORK WHICH REQUIRES ACCESS INTO ADJOINING TENANT SPACES. INCLUDE ANY PREMIUM TIME IN BID.
 - I. EXACT LOCATION OF ROOF TOP AIR CONDITIONING UNITS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER. MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SUPPLEMENTAL SUPPORT STEEL FOR EQUIPMENT AND ROOF PENETRATIONS AFTER APPROVAL OF STRUCTURAL ENGINEER.
 - J. THE MECHANICAL CONTRACTOR SHALL COORDINATE WORK WITH THE GENERAL CONTRACTOR PRIOR TO CONSTRUCTION. THE MECHANICAL CONTRACTOR SHALL PROVIDE INFORMATION REGARDING OPENINGS IN WALLS, FLOORS, ETC., CONCRETE EQUIPMENT PADS AND FOUNDATIONS TO THE GENERAL CONTRACTOR. IF THE MECHANICAL CONTRACTOR FAILS TO COMPLY WITH THIS REQUEST, OR IF INCORRECT INFORMATION IS GIVEN, THE NECESSARY CUTTING AND PATCHING WILL BE PERFORMED BY THE GENERAL CONTRACTOR, THE MECHANICAL CONTRACTOR'S EXPENSE.
 - K. ALL OPENINGS REQUIRED FOR THIS BRANCH OF WORK SHALL BE ACCOMPLISHED IN TIME TO BE INCORPORATED IN, AND BE COMPATIBLE WITH THE CONSTRUCTION PROGRAM; OTHERWISE THIS CONTRACTOR SHALL BE RESPONSIBLE AND PAY FOR ALL CHANGES MADE NECESSARY FOR HIS FAILURE TO DO SO. PIPE HOLES IN FLOORS AND WALLS SHALL BE CORE DRILLED IF NOT SLEEVED DURING CONSTRUCTION.
 - L. EXISTING SLABS SHALL BE CORE DRILLED AT REENTRANT CORNERS OF NEW FLOOR OPENINGS TO PREVENT OVERCUTTING.
23. REFER TO PLUMBING AND ELECTRICAL PLANS FOR LOCATION OF EQUIPMENT. COORDINATE LOCATION OF DISCONNECT SWITCH ASSOCIATED WITH EACH PIECE OF MECHANICAL AND PLUMBING EQUIPMENT WITH ELECTRICAL CONTRACTOR.
24. THE CONTRACTOR SHALL FURNISH ALL ACCESS PANELS OR DOORS IN HARD CEILINGS AND WALLS WITH A SIZE AS REQUIRED FOR SERVICING AND TESTING, FOR EQUIPMENT, VALVES AND/OR DEVICES FURNISHED UNDER THIS CONTRACT. THE GENERAL CONTRACTOR SHALL INSTALL ACCESS PANELS. THE CONTRACTOR SHALL COORDINATE THE SIZE AND LOCATION OF EACH ACCESS PANEL WITH THE ARCHITECT AND GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
25. ALL EQUIPMENT AND DEVICES FOR THIS PROJECT MUST BE UL LISTED. DEVICES, EQUIPMENT, SYSTEMS SHALL BE INSTALLED PER NATIONAL ELECTRICAL CODE REQUIREMENTS AND MANUFACTURER'S INSTRUCTIONS.
26. ALL CONDUIT AND CABLING SHALL BE PROPERLY SUPPORTED AS REQUIRED BY THE NATIONAL ELECTRICAL CODE. FOR EXISTING INSTALLATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE AND/OR REWORK EXISTING CONDUIT AND/OR CABLING THAT IS NOT IN COMPLIANCE WITH THIS REQUIREMENT.
27. ALL MATERIALS AND WORK IN THE CEILING RETURN AIR PLENUM SHALL BE APPROVED FOR PLENUM RATED APPLICATION IN ACCORDANCE TO THE CURRENT BUILDING CODE. WHERE OPEN WIRING METHODS FOR LOW VOLTAGE SYSTEMS IS PERMITTED BY THE CONTRACT DOCUMENTS AND LOCAL AUTHORITY, THE CONDUCTOR INSULATION MUST BE PLENUM RATED.
28. THE CONTRACTOR SHALL MAKE PROVISIONS FOR THE DELIVERY AND SAFE STORAGE OF HIS MATERIALS AND EQUIPMENT IN COORDINATION WITH THE WORK OF OTHERS. MATERIALS AND EQUIPMENT SHALL BE DELIVERED AT SUCH STAGES OF THE WORK AS WILL EXPEDITE THE WORK AS A WHOLE AND SHALL BE MARKED AND STORED IN SUCH A WAY AS TO BE EASILY CHECKED AND INSPECTED. THE ARRIVAL AND PLACING OF LARGE EQUIPMENT ITEMS SHALL BE SCHEDULED EARLY ENOUGH TO PERMIT ENTRY AND SETTING WHEN THERE IS NO RESTRICTION OR PROBLEM DUE TO SIZE AND WEIGHT.

EXCAVATING/BACKFILLING

1. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SURVEY AND THE GEOTECHNICAL INVESTIGATION REPORT BEFORE STARTING CONSTRUCTION. ALL UNDERGROUND WORK SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT EXCEPT WHERE NOTED OTHERWISE ON DRAWINGS OR SPECIFICATIONS.
2. ALL BUILDING PAD PREPARATION AND PATCHING SHALL FOLLOW THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT AND THE STRUCTURAL DRAWINGS AND ARCHITECTURAL DRAWINGS (UNLESS NOTED OTHERWISE).
3. ALL OBJECTIONABLE MATERIALS ENCOUNTERED ARE TO BE REMOVED FROM EXCAVATED AREAS OF THE SITE PER THE GEOTECHNICAL REPORT.
4. IF UNSTABLE SUBGRADE SECTORS CANNOT BE STABILIZED BY EXCAVATION AND RE-COMPACTION, THEN CRUSHED STONE OR SIMILAR COARSE AGGREGATE MATERIALS SHALL BE ROLLED INTO THE SUBGRADE UNTIL A FIRM SUBGRADE REACTION IS ACHIEVED.
5. THE GEOTECHNICAL ENGINEER SHALL DETERMINE ON SITE OR OFF SITE IMPORTED MATERIAL THAT CAN BE USED FOR ENGINEERED FILL. ALL FILL MATERIAL SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER.
6. THE PROPOSED ENGINEERED FILL MATERIALS ARE TO BE PLACED IN LIFTS NOT EXCEEDING EIGHT (8) INCHES IN LOOSE MEASURED THICKNESS. EACH LIFT IS TO BE COMPACTED AS FOLLOWS:
 - A. SLAB ON GRADE: MINIMUM OF 95 PERCENT MAXIMUM DENSITY BY ASTM D698.
7. ALL FILL MATERIALS SHALL BE FREE OF ORGANIC CONTAMINATIONS AND OTHER DELETERIOUS MATTER.
8. FOR BACK FILL AGAINST BASEMENT WALLS, RETAINING WALLS, FOOTINGS, ETC., PLACE IN 8 INCH THICK LAYERS, WITH EACH LIFT COMPACTED AT NEAR OPTIMUM MOISTURE CONTENT, UNTIL A MINIMUM IN PLACE DENSITY OF 95 PERCENT OF THE MAXIMUM DENSITY AS DETERMINED BY ASTM D698 IS ACHIEVED.
9. ALL SOIL SURROUNDING AND UNDER FOOTING SHALL BE PROTECTED FROM FROST ACTION AND FREEZING DURING THE COURSE OF CONSTRUCTION.
10. NOTIFY STRUCTURAL ENGINEER OF ANY UNUSUAL SOIL CONDITIONS THAT ARE IN VARIANCE WITH THE GEOTECHNICAL REPORT.

CONCRETE PADS

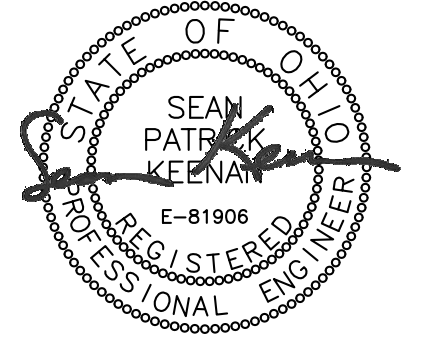
1. THIS CONTRACTOR SHALL PROVIDE TO THE GENERAL CONTRACTOR, DIMENSIONS FOR THE CONCRETE FOUNDATIONS OR BASES UNDER ALL EQUIPMENT THAT RESTS ON FLOORS IN MECHANICAL EQUIPMENT ROOMS OR OUTSIDE ON GRADE. MC SHALL FOLLOW DRAWINGS AND/OR MANUFACTURER'S LITERATURE WITH REGARD TO DESIGN AND CONSTRUCTION OF SAME. IN THE ABSENCE OF MORE SPECIFIC INFORMATION, EITHER ON DRAWINGS OR MANUFACTURER'S LITERATURE, THE BASES SHALL BE LEVEL, SHALL HAVE A MINIMUM HEIGHT ABOVE FINISHED FLOOR OF 4 INCHES AND EXTEND 3 INCHES BEYOND THE SKIDS, FEET OR BED PLATE OF THE ITEM OF EQUIPMENT.
2. CONCRETE PEDESTALS AND/OR SADDLES FOR SUPPORT OF PIPING AND/OR TANKS SHALL BE DESIGNED TO WITHSTAND STRESSES TO WHICH THEY MAY BE SUBJECTED AND TO DISTRIBUTE PROPERLY THE LOAD AND IMPACT OVER BUILDING AREAS.
3. CONCRETE SHALL BE A OF MIX PRODUCING COMPRESSIVE STRENGTH AFTER 28 DAYS OF 3,000 PSI MINIMUM REINFORCING AND BOLTS SHALL BE PROVIDED AS REQUIRED AND WORK SHALL BE DONE IN ACCORDANCE WITH APPLICABLE ARTICLES COVERING CONCRETE WORK.
4. SPACE APPROXIMATELY 1 INCH THICK BETWEEN BOTTOM OF EQUIPMENT AND TOP OF CONCRETE FOUNDATION OR BASE WHICH REMAINS AFTER SHIMMING, SHALL BE FILLED COMPLETELY WITH GROUTING. GROUT SHALL BE MADE UP WITH SAND AND CEMENT DESIGNED FOR THE PURPOSE WHICH DOES NOT SHRINK ON SETTING UP. EXPOSED SURFACE OF GROUTING SHALL BE FINISHED TO MAKE A NEAT APPEARANCE.

PLUMBING SYMBOL AND ABBREVIATION LEGEND

SYMBOL	DESCRIPTION	ABBREVIATIONS	
- - - - SAN - - - -	SANITARY - UNDERGROUND	A	AMPS
- - - - - V - - - - -	VENT LINE	MBH	1,000 BTUH
G	GAS LINE	Mech	MECHANICAL
CW	DOMESTIC COLD WATER	MIN	MINIMUM
HW	DOMESTIC HOT WATER	NEC	NATIONAL ELECTRIC CODE
[Valve Symbol]	SHUT-OFF VALVE	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
[Gate Valve Symbol]	GATE VALVE	NIC	NOT IN CONTRACT
[Check Valve Symbol]	CHECK VALVE	OD	OVERFLOW DRAIN
[Gas Cock Symbol]	GAS COCK	PC	PLUMBING CONTRACTOR
[Union Symbol]	UNION	PH ()	PHASE
[Direction of Flow Symbol]	DIRECTION OF FLOW	PRV	PRESSURE REDUCING VALVE
[DP, DN Tee Looking Down Symbol]	DP, DN TEE LOOKING DOWN	PSI	POUNDS/SQUARE INCH
[UP Tee Looking Up Symbol]	UP TEE LOOKING UP	PVC	POLYVINYL CHLORIDE
[DP, DN Elbow Down or Drop Symbol]	DP, DN ELBOW DOWN OR DROP	RPZ	REDUCED PRESSURE ZONE ASSEMBLY
[UP Elbow Up or Rise Symbol]	UP ELBOW UP OR RISE	SH	SHOWER
[Equipment Tag Symbol]	EQUIPMENT TAG	SK	SINK
[Sanitary Stack Designation Symbol]	SANITARY STACK DESIGNATION	SQ	SQUARE
[Plumbing Fixture Tag Symbol]	PLUMBING FIXTURE TAG	STL	STEEL
[Connect to Existing Symbol]	CONNECT TO EXISTING	TPV	TRAP PRIMER VALVE
		TYP	TYPICAL
		UG	UNDERGROUND
		UL	UNDERWRITER'S LABORATORY
		V	VOLTS
		VTR	VENT THRU ROOF
		W	WATTS
		W/	WITH
		WC	WATER CLOSET
		WCO	WALL CLEANOUT
		WH	WALL HYDRANT



Lexington Cincinnati Cleveland Dallas Charleston



Revisions:
Issue Date: 12.21.2022 FOR PERMIT

Locker Rooms Addition #2

Elyria North Park Ice Arena
901 Duffey Street
Elyria, OH 44035

PLUMBING GENERAL NOTES AND LEGEND

Project No.

P-601

22074.00

PLUMBING SPECIFICATIONS

GENERAL PROVISIONS

1. THE PROVISIONS OF THE INSTRUCTIONS TO BIDDERS, GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, ALTERNATES, ADDENDAS AND DIVISION 1 ARE A PART OF THIS SPECIFICATION. ELECTRICAL, ARCHITECTURAL, STRUCTURAL AND ALL OTHER DRAWINGS AS WELL AS THE SPECIFICATIONS FOR ALL THE DIVISIONS ARE A PART OF THE CONTRACT DOCUMENTS.
2. VISIT THE SITE OF THE WORK AND BECOME FAMILIAR WITH THE CONDITIONS AFFECTING THE INSTALLATION. SUBMISSION OF A PROPOSAL SHALL PRESUME KNOWLEDGE OF SUCH CONDITIONS AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED WHERE EXTRA LABOR OR MATERIALS ARE REQUIRED.
3. INCLUDE ALL LABOR, MATERIAL, EQUIPMENT, SERVICES AND PERMITS NECESSARY FOR THE PROPER COMPLETION OF ALL MECHANICAL WORK SHOWN. ITEMS OMITTED, BUT NECESSARY, TO MAKE THE MECHANICAL SYSTEM COMPLETE AND WORKABLE SHALL BE UNDERSTOOD TO BE PART OF THE WORK.
4. IT IS THE PURPOSE OF THE MECHANICAL DRAWINGS TO INDICATE THE APPROXIMATE LOCATION OF ALL EQUIPMENT, PIPING, ETC. DETERMINE EXACT LOCATIONS OF EQUIPMENT AND ARRANGE WORK ACCORDINGLY. THE RIGHT IS RESERVED TO EFFECT REASONABLE CHANGES IN THE LOCATION OF EQUIPMENT, PIPING, ETC., UP TO THE TIME OF ROUGHING-IN, WITHOUT ADDITIONAL COST TO THE OWNER.
5. SECURE AND PAY FOR PERMITS AND INSPECTIONS REQUIRED FOR THE MECHANICAL WORK. MAKE PAYMENTS TO ALL PUBLIC UTILITIES FOR WORK REQUIRED BY THE UTILITY.
6. INSTALL WORK IN ACCORDANCE WITH ALL APPLICABLE PROVISIONS OF LOCAL AND STATE CODES, AS WELL AS THE NFPA AS INTERPRETED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
7. CONSULT THE DRAWINGS, PRODUCT DATA AND SHOP DRAWINGS COVERING THE WORK FOR VARIOUS OTHER TRADES, THE FIELD LAYOUTS OF THE CONTRACTORS FOR THE TRADE AND MAKE ADJUSTMENTS ACCORDINGLY IN LAYING OUT THE MECHANICAL WORK.
8. WARRANT THAT EQUIPMENT AND ALL WORK IS INSTALLED IN ACCORDANCE WITH GOOD ENGINEERING PRACTICE AND THAT ALL EQUIPMENT WILL MEET THE REQUIREMENTS SPECIFIED. GUARANTEE AGAINST DEFECTS IN WORKMANSHIP AND MATERIALS; REPAIR OR REPLACE ANY DEFECTIVE WORK, MATERIAL OR EQUIPMENT WITHIN ONE YEAR FROM DATE OF FORMAL WRITTEN ACCEPTANCE BY THE OWNER. REFRIGERATION COMPRESSORS SHALL HAVE A FIVE YEAR WARRANTY.
9. PLAN WORK TO PERMIT THE CARRYING ON OF NORMAL BUSINESS FUNCTIONS. ANY SERVICE SHUTDOWNS THAT MAY BE REQUIRED SHALL BE SCHEDULED THROUGH THE OWNER AND SHALL BE DONE AT A TIME AS DIRECTED BY THE OWNER. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE SHUTDOWN PERIODS EVEN THOUGH PREMIUM-TIME WORK MAY BE REQUIRED. PROVIDE TEMPORARY SERVICE TO EQUIPMENT OR SYSTEMS THAT CANNOT BE SHUTDOWN, AS DETERMINED BY OWNER. PROVIDE A MINIMUM OF ONE WEEK'S NOTICE TO THE OWNER BEFORE ANY SERVICE SHUTDOWN IS SCHEDULED.
10. BASE BIDS UPON THE SPECIFIED PRODUCTS OR LISTED ALTERNATIVES. THE DRAWINGS AND SPECIFICATIONS ARE BASED ON THE PRODUCTS SPECIFIED BY TYPE, MODEL AND SIZE AND THUS ESTABLISH MINIMUM QUALITIES WHICH SUBSTITUTES MUST MEET TO QUALIFY FOR REVIEW. WHERE ONLY ONE MAKE IS NAMED, IT SHALL BE PROVIDED. VERBAL REQUESTS OR APPROVALS SHALL NOT BE BINDING ON THE ARCHITECT, ENGINEER OR OWNER. SHOULD MATERIALS AND EQUIPMENT OTHER THAN THOSE SPECIFIED BE PROPOSED, SUBMIT A WRITTEN REQUEST FOR SUBSTITUTIONS TO THE ARCHITECT IN ACCORDANCE WITH DIVISION 1 REQUIREMENTS. INDICATE ANY ADDITIONS OR DEDUCTIONS TO THE CONTRACT PRICE. EQUIPMENT AND MATERIALS USED ON THIS PROJECT SHALL BE NEW AND UL LABELED (AS REQUIRED) FOR THE APPLICATION.
11. PREPARE SHOP DRAWINGS AND PRODUCT DATA FOR ALL MECHANICAL EQUIPMENT SUCH AS: PLUMBING FIXTURES AND EQUIPMENT, AND ALL OTHER SPECIFIED SYSTEMS AND COMPONENTS. THE SUBMITTALS WILL BE REVIEWED ONLY FOR GENERAL COMPLIANCE AND NOT FOR DIMENSIONS, QUANTITIES, ETC. THE SUBMITTALS THAT ARE RETURNED SHALL BE USED FOR PROCUREMENT. THE RESPONSIBILITY OF CORRECT PROCUREMENT REMAINS SOLELY WITH THE CONTRACTOR. THE SUBMITTAL REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR ERRORS OR OMISSIONS OR DEVIATIONS FROM THE CONTRACT REQUIREMENTS. IF THE SUBMITTAL SHOWS VARIATIONS FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS FOR ANY REASON, MAKE MENTION OF SUCH VARIATION IN THE LETTER OF TRANSMITTAL. NOTE ON THE SUBMITTAL ANY CHANGE IN DESIGN OR DIMENSION ON THE ITEMS SUBMITTED INCLUDING CHANGES MADE BY THE MANUFACTURER WHICH MAY DIFFER FROM CATALOG INFORMATION. WHERE CONTENTS OF SUBMITTAL LITERATURE INCLUDES DATA NOT PERTINENT TO THE SUBMITTAL, CLEARLY INDICATE WHICH PORTION OF CONTENT IS BEING SUBMITTED FOR REVIEW. WHERE ADDITIONAL INSTALLATION DRAWINGS OR OTHER DRAWINGS ARE SPECIFIED AS A PART OF THE SUBMITTAL, THEY SHALL BE SUBMITTED AT THE SAME TIME WITH SHOP DRAWINGS AND PRODUCT DATA. PARTIAL SUBMITTALS ARE NOT ACCEPTABLE.
12. KEEP ONE COMPLETE SET OF THE CONTRACT WORKING DRAWINGS ON THE PROJECT SITE ON WHICH THE CONTRACTOR SHALL RECORD ANY DEVIATIONS OR CHANGES FROM SUCH CONTRACT DRAWINGS MADE DURING CONSTRUCTION. AFTER THE PROJECT IS COMPLETED, RECORD SETS OF DRAWINGS SHALL BE DELIVERED TO THE ARCHITECT IN GOOD CONDITION, AS A PERMANENT RECORD OF THE INSTALLATION AS CONSTRUCTED.
13. ALL CONTRACTOR PERSONNEL WHO PERFORM INSTALLATION, MAINTENANCE OR REPAIR WORK WHO MIGHT HAVE THE OPPORTUNITY TO RELEASE CFC'S, HCFC'S OR HFC'S INTO THE ATMOSPHERE SHALL HAVE A UNIVERSAL CERTIFICATION AS REQUIRED BY THE ENVIRONMENTAL PROTECTION AGENCY.
14. PROVIDE TO OWNER AFTER ALL EQUIPMENT IS IN OPERATION, COMPETENT INSTRUCTORS FOR THE PURPOSE OF TRAINING OWNERS PERSONNEL IN ALL PHASES OF OPERATION AND MAINTENANCE OF EQUIPMENT AND SYSTEMS. FURNISH FIVE COPIES OF SERVICE MANUALS CONTAINING OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL EQUIPMENT AND CONTROL.
15. IDENTIFY ALL PIPING IN EXPOSED LOCATIONS, ABOVE ACCESSIBLE CEILINGS AND IN ACCESSIBLE SHAFTS WITH LABELS AND COLOR BANDS AS MANUFACTURED BY THE SETON NAMEPLATE COMPANY, MARKING SERVICES INC. OR EQUAL.

SERVICE	BACKGROUND COLOR	LETTER COLOR
DOMESTIC COLD WATER	SAFETY GREEN	WHITE
DOMESTIC HOT WATER	SAFETY GREEN	WHITE

16. IDENTIFY EACH PIECE OF EQUIPMENT WITH EITHER STENCIL OR NAMEPLATES WITH THE DESIGNATION INDICATED ON THE DESIGN DRAWINGS.
17. PROVIDE AN ENGRAVED BRASS VALVE TAG ON EACH SHUT-OFF VALVE, ON RECORD DRAWINGS.
18. AT ALL TIMES KEEP PREMISES AND BUILDING IN NEAT AND ORDERLY CONDITION; FOLLOW EXPLICITLY AND INSTRUCTIONS OF ARCHITECT IN REGARD TO STORING OF MATERIALS, PROTECTIVE MEASURES AND DISPOSING OF DEBRIS.
19. TEST PIPING FOR LEAKS; REPAIR LEAKS IN COPPER TUBING BY SWEATING OUT JOINTS, THOROUGHLY CLEANING BOTH TUBE AND FITTING, AND RESOLDERING; CORRECT LEAKS IN SCREWED JOINTS BY REPLACING THREAD OR FITTING OR BOTH. PROVIDE CHEMICAL CLEANING FOR ALL PIPING SYSTEMS WITH APPROVED DETERGENT. PRESSURE TEST ALL PIPING SYSTEMS PER APPLICABLE CODES AND STANDARDS.
20. REMOVE ALL PREVIOUSLY ABANDONED EQUIPMENT AND PIPING ENCOUNTERED ABOVE EXISTING CEILINGS IN AREA OF WORK.
21. FINISH PAINTING IS INCLUDED UNDER DIVISION 9 EXCEPT WHERE SPECIFICALLY CALLED FOR ON THE DRAWINGS TO BE DONE BY THE MECHANICAL, PLUMBING OR FIRE PROTECTION CONTRACTORS.
22. ANY CORE DRILLING OR CUTTING OF FIRE RATED FLOORS, SHAFTS AND WALLS SHALL BE FIRE STOPPED PRIOR TO FINISH PATCHING. ALL PENETRATIONS SHALL BE SEALED IN ACCORDANCE WITH UL FIRE RESISTANCE DIRECTORY, VOLUME II, AND SHALL BE RATED TO MATCH THE FIRE RATING OF THE FLOORS, SHAFTS OR WALLS PENETRATED.
23. PROVIDE ALL CUTTING AND PATCHING IN EXISTING CONSTRUCTION AS NECESSARY FOR INSTALLATION OF THIS WORK. HAVE CUTTING DONE BY SKILLED MECHANICS IN THE TRADE.
24. ALL OCCUPIED AREAS OF BUILDING SHALL REMAIN FREE FROM ODORS, FUMES, DUST AND SMOKE GENERATED FROM INSTALLATION OF MATERIAL AND EQUIPMENT. PROVIDE TEMPORARY VENTILATION AND/OR FILTRATION SYSTEMS OF SUFFICIENT SIZE AND QUANTITY TO ENSURE COMPLETE REMOVAL OF ALL AIRBORNE CONTAMINANTS GENERATED. PROVIDE TEMPORARY PARTITIONS AND AIR SEALS TO PREVENT THE MIGRATION OF AIRBORNE CONTAMINANTS FROM UNOCCUPIED AREAS TO OCCUPIED AREAS.

INSULATION

1. ALL INSULATION MATERIAL (INSULATION, JACKETS, ADHESIVES, CEMENTS, MASTICS, SEALERS COATINGS AND FINISHES) SHALL HAVE COMPOSITE FIRE AND SMOKE HAZARD RATINGS AS TESTED UNDER PROCEDURE ASTM E-84, NFPA 255 AND UL 723, NOT EXCEEDING A FLAME SPREAD RATING OF 25 AND SMOKE DEVELOPED RATING OF 50.
2. PROVIDE INSULATION PRODUCTS AS MANUFACTURED BY OWENS-CORNING, ARMSTRONG, CERTAIN TEED OR KNAUF. ADHESIVES SHALL BE BENJAMIN FOSTER OR EQUAL.
3. ALL INSULATION SHALL BE INSTALLED OVER CLEAN DRY SURFACES. INSULATION MUST BE DRY AND IN GOOD CONDITION. WET OR DAMAGED INSULATION WILL NOT BE ACCEPTABLE. NO INSULATION SHALL BE APPLIED PRIOR TO PRESSURE TEST COMPLETION OF THE RESPECTIVE PIPING SYSTEMS.
4. ALL INSULATION SHALL BE CONTINUOUS THROUGH ALL WALL AND CEILING OPENINGS, SLEEVES AND PIPE HANGER LOCATIONS, EXCEPT THROUGH FIRE RATED WALL AND FLOORS.
5. INSULATE VALVE BONNETS, UNIONS, STRAINERS ON DOMESTIC WATER PIPING.
6. ALL INSULATION PRODUCTS SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS AND THIS SPECIFICATION. THE WORKMANSHIP SHALL BE FIRST CLASS AND ALL JOINTS SHALL BE MADE TIGHT.
7. REPAIR EXISTING PIPE, AND EQUIPMENT INSULATION WHERE REMOVED; TO MAKE NEW CONNECTIONS, TO ADD TEMPERATURE CONTROLS, OR WHERE DAMAGED BY NEW CONSTRUCTION. INSULATION SHALL BE THE SAME AS SPECIFIED FOR NEW SERVICE.
8. INSULATE ANY EXPOSED WATER PIPING UNDER LAVATORY WITH TRUEBRO PROTECTIVE COVERING OR APPROVED EQUAL.
9. THE FOLLOWING PIPE SYSTEMS SHALL BE INSULATED WITH OWENS-CORNING FIBERGLASS : ASJ/SSL-II HEAVY DENSITY ONE-PIECE PIPE INSULATION. THICKNESS OF INSULATION SHALL BE AS NOTED BELOW. PIPE INSULATION EXPOSED TO THE WEATHER SHALL BE COVERED WITH A TACK COAT OF BENJAMIN FOSTER 60-80K, A LAYER OF GLASS CLOTH/MESH IMBEDDED IN WET MASTIC AND WHEN DRY, COVER WITH A SECOND COAT OF MASTIC. PROVIDE ALUMINUM JACKETING 0.016 INCH ON STRAIGHT RUNS WITH FITTINGS TO MATCH.

SERVICE	PIPE SIZE	INSULATION THICKNESS
DOMESTIC COLD WATER,	ALL SIZES	1/2"
DOMESTIC HOT WATER	2" AND SMALLER	1"

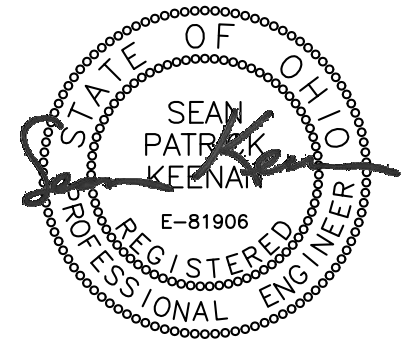
PIPING AND VALVES

1. FURNISH ALL MATERIAL, LABOR, EQUIPMENT, AND ACCESSORIES AS REQUIRED TO INSTALL COMPLETE PLUMBING SYSTEMS AS INDICATED ON MECHANICAL DRAWINGS AND IN THESE SPECIFICATIONS.
2. INSTALL IN FULL ACCORDANCE WITH LOCAL CODE REQUIREMENTS, OTHER SPECIFICATION SECTION REQUIREMENTS AND MANUFACTURER'S RECOMMENDATIONS.
3. CONNECTIONS TO EQUIPMENT FURNISHED BY OTHERS.
4. PROVIDE VALVED WATER AND/OR GAS CONNECTION FOR EQUIPMENT FURNISHED BY OTHER CONTRACTORS OR OWNER.
5. INCLUDE ACCESSORIES REQUIRED BY CODE, DRAWING OR MANUFACTURER'S INSTRUCTIONS.
6. HANGERS, ANCHORS, CLAMPS AND INSERTS.
 - A. PROVIDE ADJUSTABLE CLEVIS HANGERS FOR PIPING 2" AND LARGER, AND CAST BRASS SPLIT-RING HINGED HANGERS FOR SMALLER PIPING. SUPPORT PIPING FROM BUILDING STRUCTURE TO MAINTAIN REQUIRED GRADE AND PITCH OF PIPE LINES, PREVENT VIBRATION, AND SECURE PIPING IN PLACE. SECURE HANGERS TO INSERTS WHERE PRACTICAL. HANGER RODS SHALL HAVE MACHINE THREADS.
 - B. HANGER RODS SHALL BE CONNECTED TO BEAM CLAMP, UL-APPROVED CONCRETE INSERTS, PHILLIPS, OR APPROVED EQUAL EXPANSION SHIELDS. RAMSET OR POWER DRIVEN INSERTS WILL BE NOT BE ALLOWED.
 - C. HANGER SPACING SHALL MEET REQUIREMENTS OF STATE AND LOCAL CODES.
8. SANITARY SEWERS AND VENT SYSTEMS
 - A. INSTALL SANITARY SEWERS, STACKS, VENTS, DRAINS, CLEANOUTS, ETC., AS INDICATED ON THE DRAWINGS.
 - B. SEWERS TO BE PITCHED A MINIMUM OF 1/4" PER FOOT FOR 3" SIZES AND UNDER AND 1/8" PER FOOT FOR 4" SIZES AND LARGER OR TO GRADES INDICATED ON DRAWINGS.
 - C. CHANGES IN DIRECTION AND BRANCH CONNECTIONS SHALL BE MADE WITH APPROVED DRAINAGE FITTINGS COMPATIBLE WITH THE PIPING SYSTEM MATERIAL IN WHICH IT IS INSTALLED.
 - D. ALL FIXTURES AND SANITARY DRAINS SHALL BE VENTED AS INDICATED ON DRAWINGS AND IN ACCORDANCE WITH CODE.
 - E. VENTS ARE TO BE EXTENDED THROUGH ROOF AS INDICATED ON DRAWINGS AND FLASHED WITH 4 LB. LEAD WITH VENT FLASHING TOP TURNED DOWN TWO (2) INCHES MINIMUM INSIDE PIPE.
 - F. PVC PIPING SHALL NOT BE INSTALLED UNLESS PERMITTED BY CODE AND SHALL NOT BE INSTALLED IN RETURN AIR PLENUMS.
 - G. SANITARY SEWERS AND VENT MATERIAL SHALL BE AS FOLLOWS:
 - G.1. BELOW GRADE SANITARY SEWERS INSIDE BUILDING.
 - G.1.1. SERVICE WEIGHT - CAST IRON PIPE ASTM A-74-82 WITH ASTM C-564-70 NEOPRENE COMPRESSION JOINTS OR NO-HUB WITH CLAMPS.
 - G.1.2. PVC-DWV PLASTIC ASTM D-1785 WITH ASTM D-2665 DWV SOLVENT WELD SOCKET FITTINGS.
 - G.2. ABOVE GRADE SANITARY SEWERS AND VENT MATERIAL SHALL BE AS FOLLOWS:
 - G.2.1. NO-HUB CAST IRON PIPE CISPI 1-301-78.
 - G.2.2. PVC-DWV PLASTIC ASTM D-1785 WITH ASTM D-2665 DWV SOLVENT WELD SOCKET FITTINGS.
 - G.2.3. SCH. 40 GALVANIZED STEEL PIPE ASTM A-120-83 WITH CAST IRON SCREWED FITTINGS ANSI B-16.22 1983.
 - G.3. SITE SANITARY SEWERS
 - G.3.1. UP TO 15" - PVC PLASTIC ASTM D-3034 SDR 35 WITH ASTM D-3212 GASKET JOINTS.
 - G.3.2. 18" AND OVER - REINFORCED CONCRETE PIPE (RCP) ASTM C 76-83 WITH ASTM C 443-79 RUBBER GASKET JOINTS.

9. DOMESTIC WATER PIPING
 - A. INSTALL DOMESTIC WATER PIPING AS INDICATED ON DRAWINGS. INCLUDE ALL FITTINGS, VALVES, HANGERS, AND OTHER ACCESSORIES INCLUDING WATER METER AND BACKFLOW PREVENTER. EXTEND DOMESTIC WATER PIPING TO ALL FIXTURES AND EQUIPMENT REQUIRED FOR COMPLETE INSTALLATION.
 - B. INCLUDE UNIONS, OR OTHER DISCONNECT MEANS, STOPS OR VALVES FOR ISOLATION OF FIXTURES AND EQUIPMENT. VALVES TO BE FULLY COMPATIBLE WITH PIPING FOR SERVICE INTENDED AS MANUFACTURED BY NIBCO, CRANE OR MILWAUKEE. INCLUDE HOSE OR DRAIN VALVES AT LOW POINTS WHERE FIXTURES CANNOT BE USED FOR DRAINAGE.
 - C. INSTALL SHOCK ABSORBERS AT EACH QUICK CLOSING FIXTURE AND WHERE REQUIRED TO PREVENT WATER HAMMER AS MANUFACTURED BY J.R. SMITH, SIOUX CHIEF OF ZURN.
 - D. HANGERS ON INSULATED PIPE TO BE OUTSIDE OF INSULATION, SIZED ACCORDINGLY AND WITH A SUFFICIENT SADDLE TO PROTECT INSULATION AS MANUFACTURED BY GRINNELL OR MICHIGAN.
 - E. DOMESTIC WATER PIPING SHALL BE AS FOLLOWS:
 - E.1. ABOVE GRADE - TYPE "L" HARD COPPER ASTM B 88-832 WITH WROUGHT COPPER FITTINGS ASTM B 16.22 1980 AND NON-LEAD OR ANTIMONY SOLDER JOINTS.
 - E.2. BELOW GRADE - TYPE "K" SOFT COPPER WITHOUT JOINTS.
 - F. FLUSH, VENT AND SANITIZE ALL WATER PIPING WITH CHLORINE AS REQUIRED PER AWWA, LOCAL BUILDING DEPARTMENT AND HEALTH DEPARTMENT CODES.
 - G. DOMESTIC HOT AND COLD WATER PIPING UNDER CONCRETE FLOOR TO BE COVERED WITH SAND SO THAT PIPING WILL NOT BECOME EMBEDDED IN THE FLOOR SLAB.
 - H. EXTREME CAUTION MUST BE TAKEN SO THAT NO COPPER PIPING AND INSULATION UNDER CONCRETE FLOORS BECOMES CRUSHED, CUT, SPLIT OR DEFORMED DURING THE POURING OF THE FLOOR SLAB.
10. GAS PIPING
 - A. INSTALL GAS PIPING.
 - B. INCLUDE METER AND REGULATOR AS INDICATED ON DRAWINGS AND CONNECT TO ALL GAS USING EQUIPMENT.
 - C. EQUIPMENT CONNECTIONS AT EACH UNIT SHALL INCLUDE GAS COCK, UNION AND DIRT LEG.
 - D. CONSTRUCT CONCRETE BASE TO BELOW FROST LINE FOR METER INSTALLATION.
 - E. ALL GAS PIPING SHALL CONFORM TO RECOMMENDED PRACTICE AND REGULATIONS OF THE NFPA, LOCAL GAS COMPANY AND LOCAL CODES.
 - F. GAS PIPING SHALL BE AS FOLLOWS:
 - F.1. ABOVE-GRADE INSIDE OR OUTSIDE BUILDING, LOW PRESSURE.
 - F.1.1. SCHEDULE 40 SEAMLESS BLACK STEEL PIPE, BEVELED ENDS.
 - F.1.1.A. 2" AND SMALLER - SCREWED FITTINGS, WROUGHT IRON.
 - F.2. BELOW GRADE OUTSIDE BUILDING, LOW AND MEDIUM PRESSURE GAS SERVICE
 - F.2.1. POLYETHYLENE PLASTIC ASTM D-2513 WITH STAB COUPLINGS OR FUSION WELD JOINTS.
 - F.3. VALVES SHALL NOT BE LOCATED ABOVE ACCESSIBLE CEILING SPACES, WHETHER OR NOT SUCH SPACES ARE USED AS A PLENUM.
 - F.4. EXTERIOR EXPOSED BARE STEEL PIPE SHALL BE PAINTED WITH TWO (2) COATS OF RUST INHIBITIVE PAINT.
 - F.5. PIPING SHALL BE SUPPORTED AT INTERNALS NOT EXCEEDING THE FOLLOWING SPACING:
 - F.5.1. 1" OR SMALLER: 6 FEET SPACING.
 - F.5.2. 1-1/4" OR LARGER: 10 FEET SPACING.
11. VALVES:
 - A. BRANCH WATER LINES TO BE CRANE 1320 ALL BRONZE UP TO AND INCLUDING 2" IN SIZE. VALVES MAY BE FAIRBANKS, JENKINS BROS., OR EQUAL.
 - B. BALL VALVES - 2" AND SMALLER MILWAUKEE VALVE COMPANY #BA-100
 - C. SHUT-OFF VALVES SHALL BE PLACED IN ALL HOT AND COLD WATER SUPPLY CONNECTIONS TO ALL FIXTURES.
 - D. CHECK VALVE - 2" AND SMALLER CRANE #37.
 - E. BALANCE VALVE - BELL & GOSSETT "CIRCUIT SETTER"
 - F. FUEL GAS COCKS - CRANE 254, HAYS 7005 OR MUELLER H-11003
12. DISINFECTON OF WATER SYSTEMS
 - A. WATER PIPING SYSTEMS SHALL BE THOROUGHLY DISINFECTED WITH A SOLUTION CONTAINING NO LESS THAN 50 PARTS PER MILLION OF AVAILABLE CHLORINE. CHLORINATING MATERIALS SHALL BE EITHER LIQUID CHLORINE OR SODIUM HYPOCHLORITE SOLUTION, SHALL BE INTRODUCED INTO THE SYSTEM AND DRAWN TO ALL POINTS IN THE SYSTEM. DISINFECTON SOLUTION SHALL BE ALLOWED TO REMAIN IN SYSTEM FOR 24 HOURS, DURING THIS TIME, VALVES AND FAUCETS SHALL BE OPENED AND CLOSED SEVERAL TIMES. AFTER DISINFECTON, SOLUTION SHALL BE FLUSHED FROM THE SYSTEM WITH CLEAR WATER UNTIL RESIDUAL CHLORINE CONTENT IS NO GREATER THAN 0.2 PARTS PER MILLION.
13. INDIRECT WASTE PIPING SHALL BE DWV COPPER PIPE AND FITTINGS WITH 50/50 SOLDERED JOINTS. PITCH PIPING TO THE DRAIN AT NO LESS THAN 1/4" PER FOOT SLOPE.
14. PLUMBING CONTRACTOR SHALL FURNISH & INSTALL ALL MATERIAL, FIXTURES & LABOR WHICH IS NEITHER DRAWN NOR SPECIFIED, BUT WHICH IS OBVIOUSLY A COMPONENT PART OF, AND NECESSARY TO COMPLETE WORK, AND WHICH IS CUSTOMARILY A PART OF WORK OF SIMILAR CHARACTER.



Lexington Cincinnati Cleveland Dallas Charleston



Revisions:
Issue Date: 12.21.2022 FOR PERMIT

Locker Rooms Addition #2

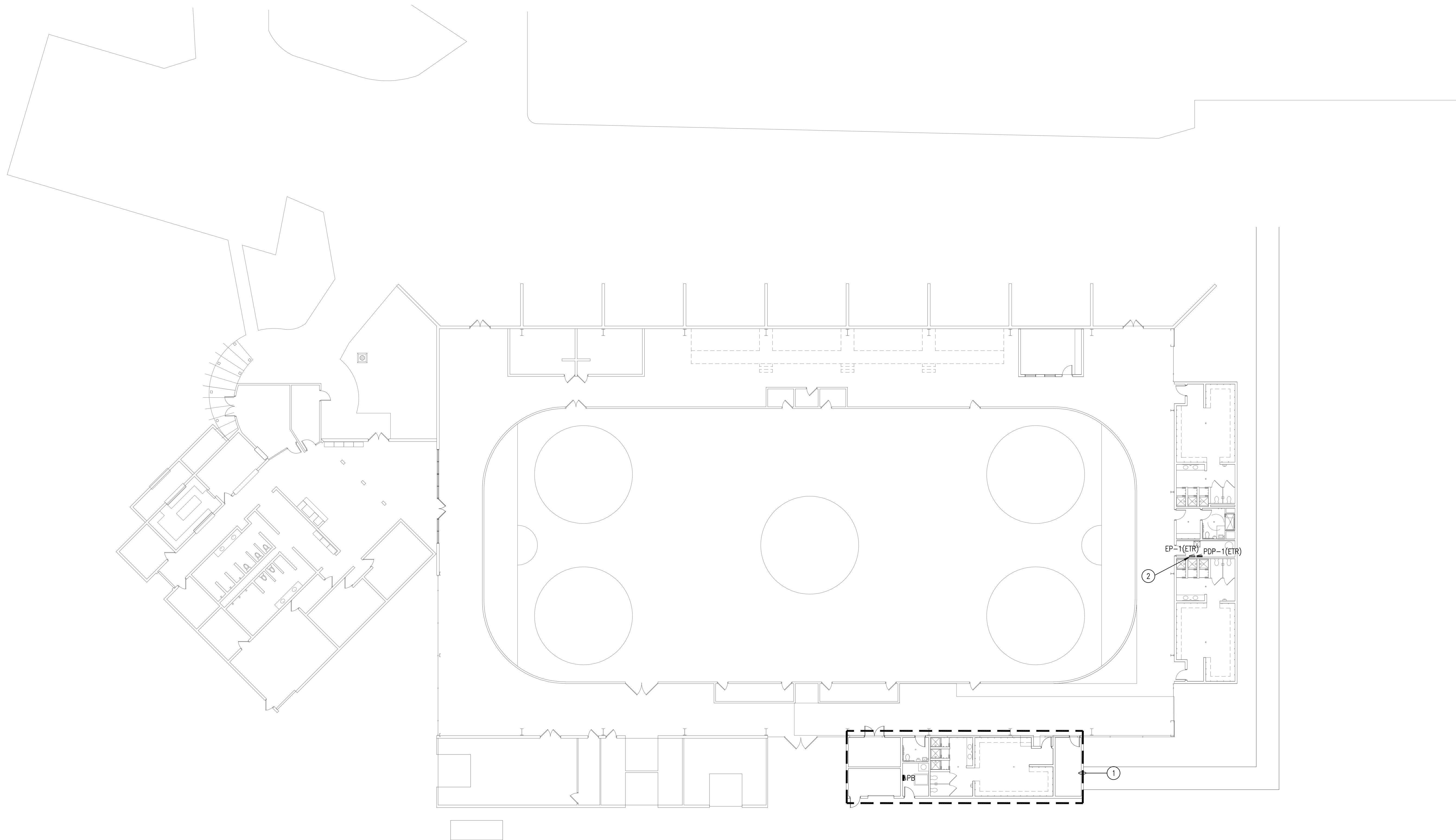
Elyria North Park Ice Arena
901 Duffey Street
Elyria, OH 44035

PLUMBING SPECIFICATIONS

Project No.

22074.00

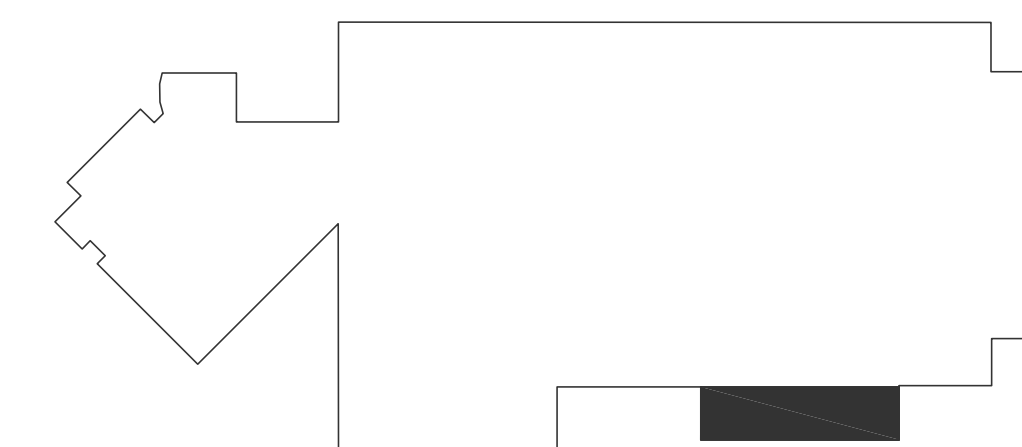
P-700



COMPOSITE ELECTRICAL PLAN
SCALE: 1/16" = 1'-0"

PLAN NOTES

- ① REFER TO "LIGHTING & POWER PLANS" ON DRAWING "E-101".
- ② EXISTING PANEL "EP-1" - POWER FOR ADDITION ORIGINATES HERE.



KEY PLAN
NO SCALE

Revisions:
Issue Date: 12.21.2022 FOR PERMIT

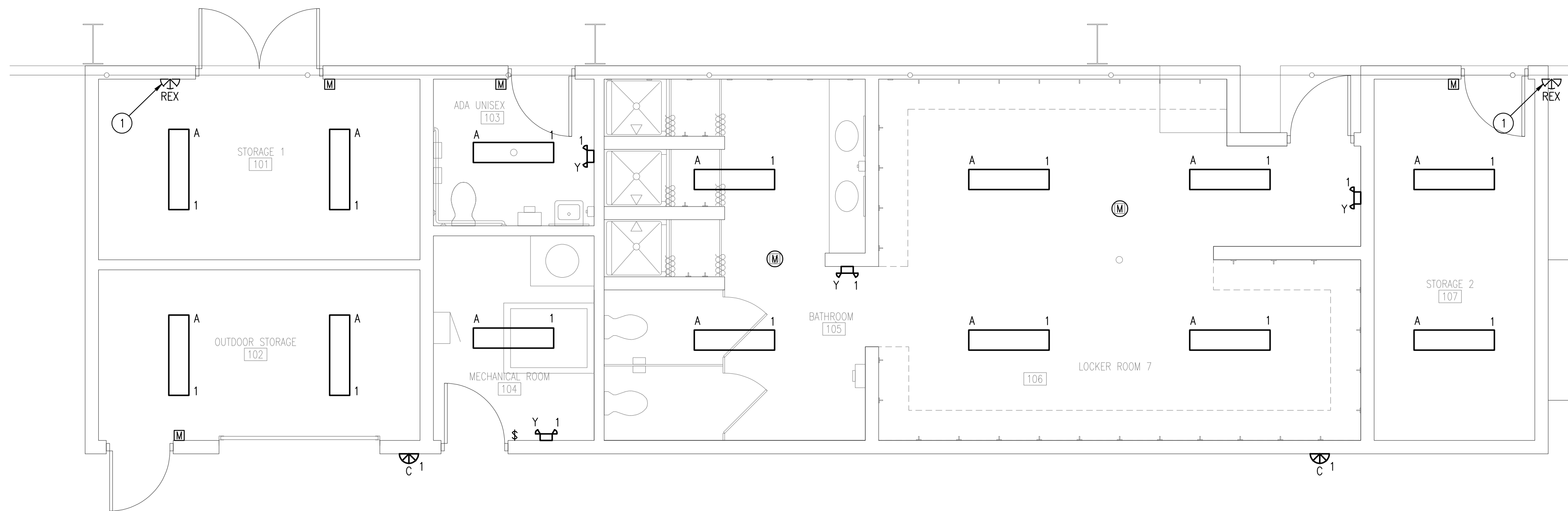
Locker Rooms Addition #2
Elyria North Park Ice Arena
901 Duffey Street
Elyria, OH 44035

**COMPOSITE
ELECTRICAL PLAN**

Project No.

22074.00

E-100



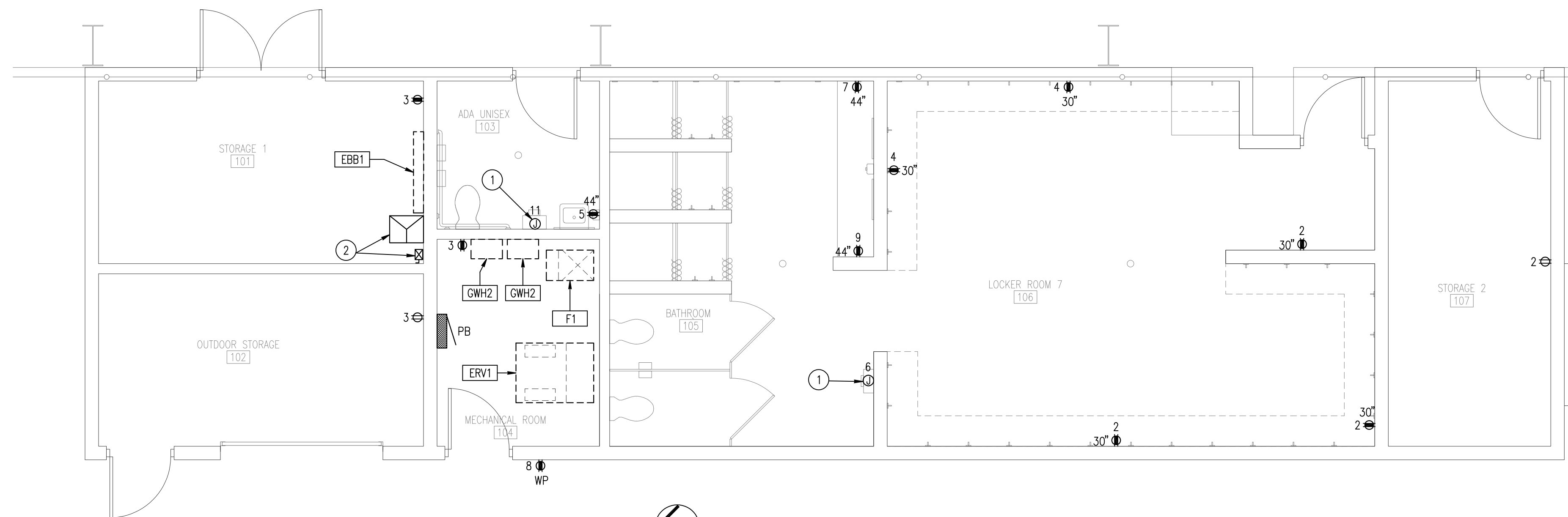
LIGHTING PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1. ALL LIGHTING FIXTURES SHOWN ON THIS DRAWING SHALL BE FED FROM PANEL PB UNLESS NOTED OTHERWISE.

PLAN NOTES

1. EC SHALL REMOVE EXISTING LIGHTING FIXTURE AND BOX AND REROUTE EXISTING CONDUIT, IF NECESSARY. COORDINATE IN FIELD.



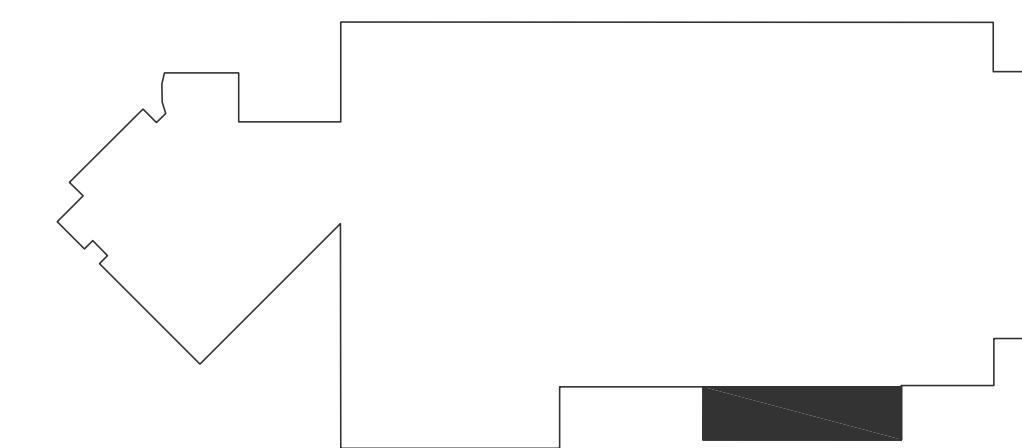
POWER PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1. ALL RECEPTACLES AND DEVICES SHOWN ON THIS DRAWING SHALL BE FED FROM PANEL PB UNLESS NOTED OTHERWISE.

PLAN NOTES

1. ELECTRICAL HAND DRYER (120V, 1.5KW) OR EQUAL BY OTHERS AT HEIGHT AS SHOWN ON ARCHITECTURAL ELEVATIONS.
2. NEW 30 KVA TRANSFORMER AND ASSOCIATED DISCONNECT SWITCH. REFER TO 'ONE LINE POWER DIAGRAM' ON DRAWING 'E-500'.



KEY PLAN
NO SCALE

Revisions:
Issue Date: 12.21.2022 FOR PERMIT

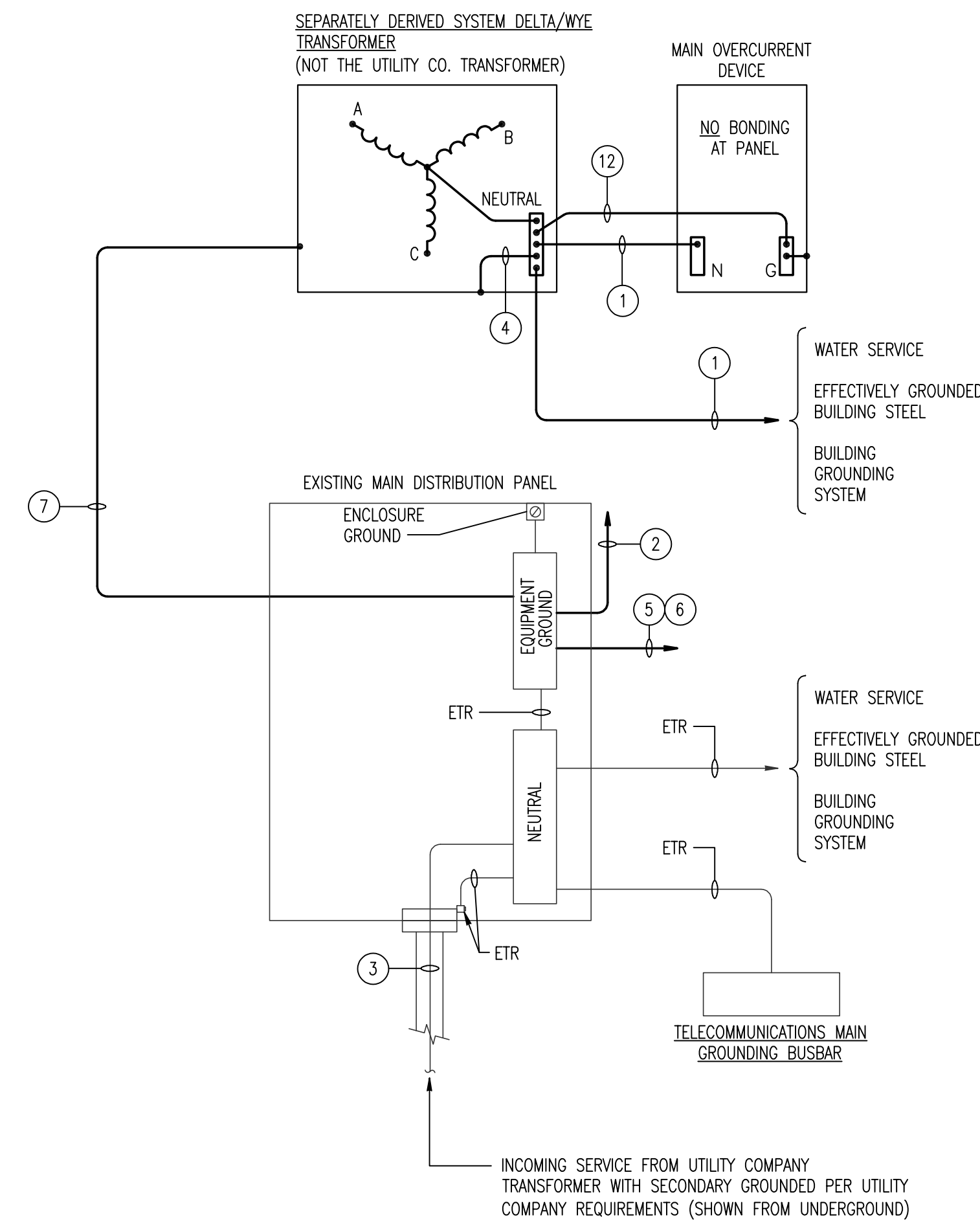
Locker Rooms Addition #2
Elyria North Park Ice Arena
901 Duffey Street
Elyria, OH 44035

ELECTRICAL PLANS

Project No.

22074.00

E-101



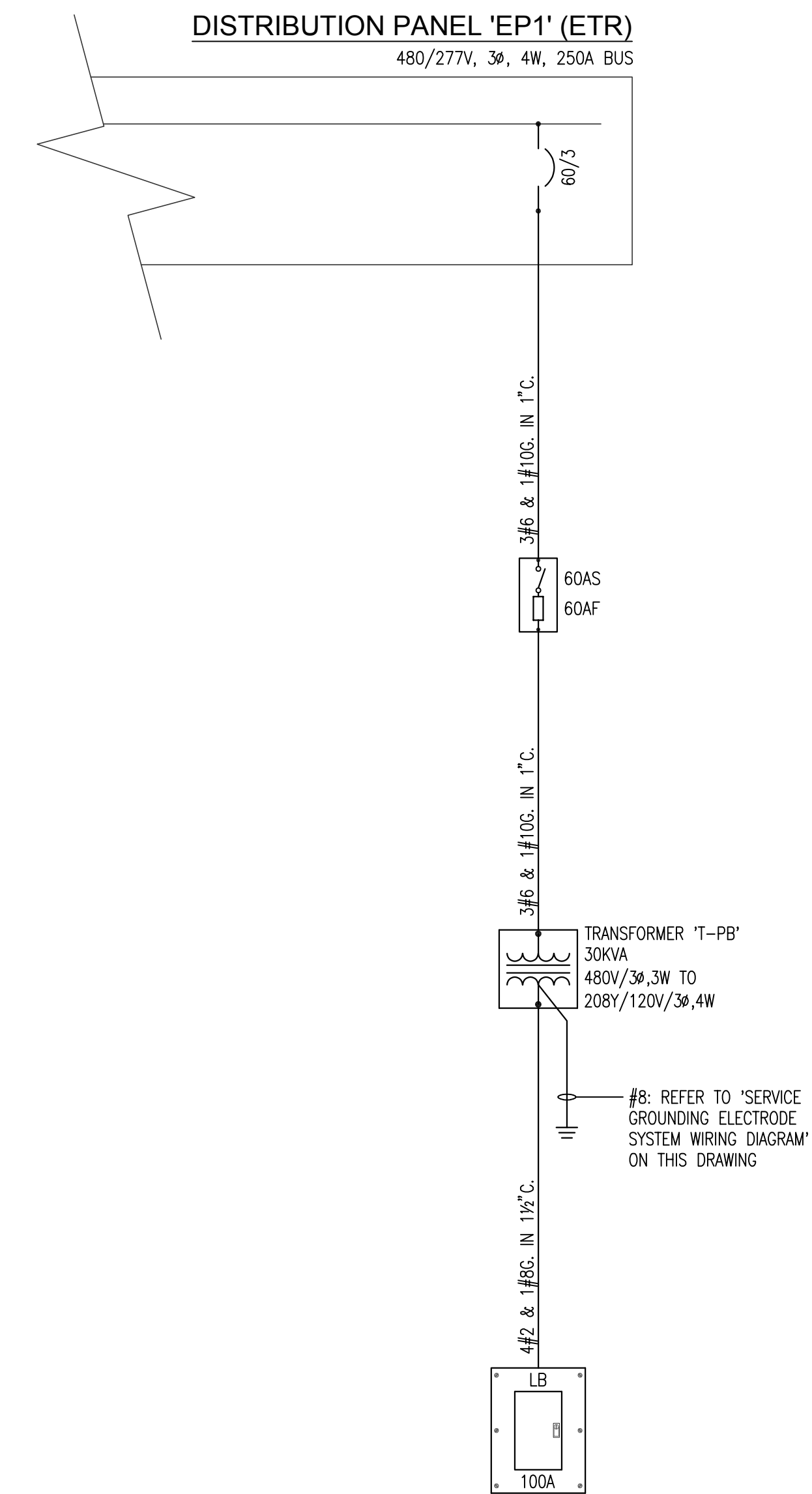
SERVICE GROUNDING ELECTRODE SYSTEM WIRING DIAGRAM

SCALE: NONE

NOTE: REFER TO ONE LINE DIAGRAM FOR GROUND AND BOND CONDUCTOR SIZING.

SERVICE GROUNDING ELECTRODE SYSTEM NOTES

- ① THE GROUNDING ELECTRODE CONDUCTORS SHALL BE SIZED AS PER TABLE 250.66 OF THE NEC. THE CONDUCTOR SHALL BE CONNECTED TO AN APPROVED GROUNDING ELECTRODE.
- ② GROUND CONDUCTORS TO OTHER POINTS AND EQUIPMENT, AS REQUIRED BY NEC ARTICLE 250 AND SPECIFICATIONS.
- ③ EXISTING SERVICE ENTRANCE PHASE CONDUCTORS WITH GROUNDED (NEUTRAL) CONDUCTOR.
- ④ SYSTEM BONDING JUMPER FOR SEPARATELY DERIVED SYSTEMS SHALL BE SIZED PER NEC 250.30(A)(1).
- ⑤ METAL WATER PIPING AND STRUCTURAL STEEL NOT INTENTIONALLY GROUNDED SHALL BE BONDED PER NEC 250.104 AND NEC TABLE 250.66.
- ⑥ OTHER METAL PIPING (GAS, ETC.) SHALL BE BONDED PER NEC 250.104 AND NEC TABLE 250.122.
- ⑦ EQUIPMENT GROUND CONDUCTOR FOR SEPARATELY DERIVED SYSTEM. SIZE PER NEC TABLE 250.122.
- ⑧ GROUND CONDUCTOR TO TELECOMMUNICATIONS MAIN GROUNDING ELECTRODE CONDUCTOR, PER NEC 250.66(C).



ONE LINE POWER DIAGRAM

SCALE: NONE

ONE LINE SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	BRANCH PANELBOARD
	TRANSFORMER
	GROUND
	CIRCUIT BREAKER
	DISCONNECT SWITCH IN AN ENCLOSURE

Revisions:
Issue Date: 12.21.2022 FOR PERMIT

Locker Rooms Addition #2
Elyria North Park Ice Arena
901 Duffey Street
Elyria, OH 44035

ELECTRICAL DIAGRAMS

Project No.

22074.00

E-500

LIGHTING FIXTURE SCHEDULE										KEEN ENGINEERING
FIXTURE TYPE	LAMP(S)	CCT	FIXTURE WATTAGE	FIXTURE VOLTAGE	FIXTURE DESCRIPTION	CATALOG NUMBER	EQUAL MANUFACTURERS	NOTES		
A	LED	4000K	35	120	LED 4' LONG, CHAIN HUNG STRIP FIXTURE WITH ACRYLIC LENS.	LITHONIA MNSL-148-2LL-MVOLT-40K-80CRI-M6	METALUX COLUMBIA DAY-BRITE	(4)	(5)	
C	LED	5000K	20	120	LED, BUILDING MOUNTED FLOOD WITH FORWARD THROW DISTRIBUTION AND PHOTOCCELL.	LITHONIA TWS-LED-P1-50K-MVOLT-PE-DDB-M4	AS APPROVED WITH PHOTOMETRIC CALCULATIONS	(4)	(5)	
Y	LED	NA	5	120	LED EMERGENCY LIGHTING UNIT WITH WHITE THERMOPLASTIC HOUSING, NICKEL CADMIUM BATTERY, BATTERY CHARGER, TEST SWITCH AND INDICATOR LIGHT.	LITHONIA ELM2L-M12	SURE-LITES EMERGI-LITE CHLORIDE	(1)	(5)	

LIGHTING FIXTURE SCHEDULE NOTES:

- ① WALL MOUNTED EXIT SIGNS SHALL BE ABOVE DOORS, CENTERED BETWEEN DOOR AND CEILING WHERE PRACTICAL, OR AT A SIMILAR HEIGHT IF NOT ABOVE DOORS. MOUNT EMERGENCY LIGHTING UNITS AT SIMILAR HEIGHT.
- ② FIXTURE SHALL BE WIRED AHEAD OF LOCAL SWITCHING.
- ③ AIM FIXTURES FOR OPTIMUM COVERAGE OF TASK AS DIRECTED IN FIELD BY THE ARCHITECT.
- ④ VERIFY MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN.
- ⑤ VERIFY FINISH WITH ARCHITECT PRIOR TO PROCUREMENT.

LIGHTING FIXTURE SUBSTITUTION NOTE:

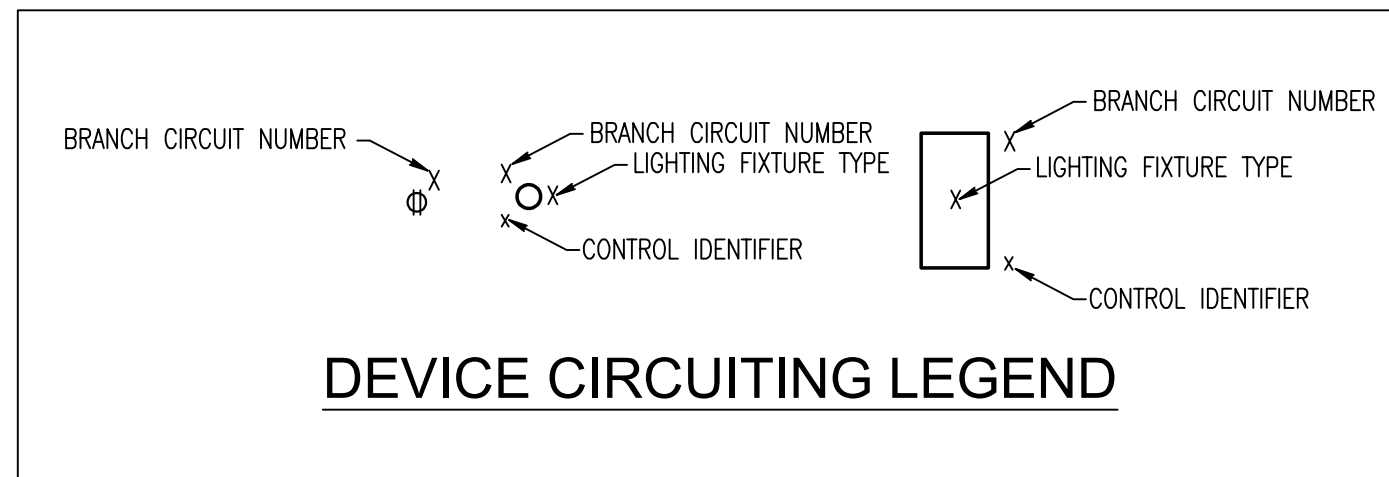
THE LIGHTING FIXTURE CATALOG NUMBERS INDICATED IN THE SCHEDULE ARE FOR THE BASIS OF SPECIFICATION. ALL SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER VIA EMAIL (SKEENAN@KEENENGINEERINGGROUP.COM) IN PORTABLE DOCUMENT FORMAT (PDF) AT LEAST 10 DAYS PRIOR TO BID. ANY SUBSTITUTIONS RECEIVED AFTER THIS DATE SHALL NOT BE REVIEWED, AND SHALL NOT BE ACCEPTED. THE SUBSTITUTION SUBMITTAL SHALL CONTAIN, AT A MINIMUM, THE FOLLOWING INFORMATION:
 1. SPECIFICATION SHEETS FOR ALL PROPOSED TYPES WITH THE TYPE NUMBER AND ANY DEVIATIONS FROM THE BASIS OF SPECIFICATION CLEARLY INDICATED.
 2. THE COST SAVINGS OR ADDITION ON THE ENTIRE SUBSTITUTION PACKAGE.

LIGHTING FIXTURE SCHEDULE KEY:

- 1. LAMP TYPE:
LED = LIGHT EMITTING DIODE

ELECTRICAL SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	HOMERUN TO A 20 AMPERE, SINGLE POLE CIRCUIT BREAKER (PANEL 'A' CIRCUIT NUMBER 'X'), UON. PROVIDE QUANTITY OF CONDUCTORS TO ACCOMMODATE CIRCUITING AND CONTROL INDICATED.
	CONDUIT INSTALLED BELOW GRADE OR BELOW FINISHED FLOOR
	SWITCH (20A, 120/277V, SINGLE POLE) AT 48" AFF, UON
	LIGHTING CONTROL OCCUPANCY SENSOR WITH DIMMER - WALL MOUNTED AT 48" AFF, UON
	LIGHTING CONTROL OCCUPANCY SENSOR - CEILING MOUNTED
	DUPLEX RECEPTACLE (20A, 125V) AT 18" AFF, UON
	DUPLEX RECEPTACLE (20A, 125V) GROUND FAULT CIRCUIT INTERRUPTER TYPE AT 18" AFF, UON ('WP' = WEATHERPROOF)
	JUNCTION BOX AT HEIGHT AS REQUIRED BY CODE OR AS INDICATED ON DRAWINGS
	PANELBOARD (20BY/120V, 3Ø, 4 WIRE)
	SINGLE OR THREE PHASE MOTOR - SEE DRAWINGS FOR DESCRIPTION
	ELECTRICAL CONNECTION TO EQUIPMENT ITEM - SEE CORRESPONDING EQUIPMENT CONNECTION SCHEDULE

ELECTRICAL ABBREVIATIONS	
ABBREVIATION	DESCRIPTION
A	AMPERES
AF	AMP FUSED
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AS	AMP SWITCH
C.	CONDUIT
C/B	CIRCUIT BREAKER
DWG.	DRAWING
EC	ELECTRICAL CONTRACTOR
EMT	ELECTRICAL METALLIC TUBING
FLA	FULL LOAD AMPS
GFCI	GROUND FAULT CIRCUIT INTERRUPTER - PERSON PROTECTION
HP	HORSEPOWER
KAIC	KILOAMPERES INTERRUPTING CURRENT RATING
KWC	KILOWATTS CONNECTED
KWD	KILOWATTS DEMAND
MCB	MAIN CIRCUIT BREAKER
NEC	NATIONAL ELECTRICAL CODE
UON	UNLESS OTHERWISE NOTED
∅	PHASE



PANEL 'PB'																			
MAIN: 100A MCB		VOLTAGE: 208/120		PHASE: 3		WIRE: 4		MOUNTING: SURFACE		AIC: 10,000		NOTES:		CTK					
CKT #	DESCRIPTION	HVAC	KIT	MTR	REC	MISC	LTG	POLE	TRIP	LOAD (KVA)	TRIP	LOAD (KVA)	DESCRIPTION	#					
1	STOR./T.R./JANITOR/MECH RM					0.5	20/1	A/B/C	20/1			0.7	STORAGE 2/LOCKER ROOM 7	2					
3	JANITOR/STORAGE/MECH				0.6		20/1		20/1			0.4	LOCKER ROOM 7	4					
5	UNISEX TOILET ROOM				0.2		20/1		20/1			1.5	HAND DRYER	6					
7	BATHROOM				0.2		20/1		20/1			0.2	OUTDOOR RECEPTACLE	8					
9	BATHROOM				0.2		20/1		15/2	1.0			ERV1	10					
11	HAND DRYER - ADA					1.5	20/1		20/1	1.0			F1	12					
13	EBB1	1.0					20/1		20/1	1.0			GW1, GW2	14					
15	SPARE						20/1		20/1			0.2	SPACE	16					
17	SPARE						20/1		20/1				SPACE	18					
19	SPARE												SPACE	20					
21	SPACE												SPACE	22					
23	SPACE												SPACE	24					
MISC (KVA): 3.2												CONNECTED (KVA): 10.2		DEMAND (KVA): 9.0					
RECEPTACLES (KVA): 2.5												PHASE A: 4		30.0		CONNECTED (AMPS): 28.2			
MOTORS (KVA):												PHASE B: 2		19.6					
LIGHTING (KVA): 0.5												PHASE C: 4		35.0					
KITCHEN (KVA):												KVA		AMPS					
HVAC (KVA): 4.0												DEMAND (AMPS): 25.0							
LIGHTING RECEPTACLES TOTAL: 2.5 KVA												125 %		=		0.6 KVA			
1ST REMAIN: 10.0 KVA												100 %		=		2.5 KVA			
HVAC: 4.0 KVA												100 %		=		4.0 KVA			
KITCHEN: KVA												65 %		=		KVA			
MISCELLANEOUS: 3.2 KVA												60 %		=		1.9 KVA			
MOTORS: KVA												100 %		=		KVA			
TOTAL: 9.0 KVA																			

PANEL 'EP-1' (ETR)																			
MAIN: 250A MCB		VOLTAGE: 480/277		PHASE: 3		WIRE: 4		MOUNTING: SURFACE		AIC: 10,000		NOTES:		CTK					
CKT #	DESCRIPTION	HVAC	KIT	MTR	REC	MISC	LTG	POLE	TRIP	LOAD (KVA)	TRIP	LOAD (KVA)	DESCRIPTION	#					
1	EXISTING WATER HEATER					18.0		80/3		40/3		3.0	EXISTING PANEL 'PDP-1'	2					
3						18.0						0.9		4					
5						18.0						1.3		6					
7	EXISTING HEATERS	6.0						30/3		30/3		5.0	EXISTING HEATERS	8					
9		6.0										5.0		10					
11		6.0										5.0		12					
13		3.0											EXISTING LOAD	14					
15	EXISTING HEATERS	3.0						30/3					EXISTING LOAD	16					
17		3.0											EXISTING LOAD	18					
19		2.0			1.1		0.5						EXISTING LOAD	20					
21	PANEL 'PB'	1.0			1.2	0.2		60/3					EXISTING LOAD	22					
23		1.0			0.2	3.0							EXISTING LOAD	24					
MISC (KVA): 62.0												CONNECTED (KVA): 120.9		DEMAND (KVA): 96.6					
RECEPTACLES (KVA): 6.9												PHASE A: 42		149.8		CONNECTED (AMPS): 145.4			
MOTORS (KVA):												PHASE B: 38		138.4					
LIGHTING (KVA): 2.0												PHASE C: 41		148.0					
KITCHEN (KVA):												KVA		AMPS					
HVAC (KVA): 50.0												DEMAND (AMPS): 116.1							
LIGHTING RECEPTACLES TOTAL: 6.9 KVA												125 %		=		2.5 KVA			
1ST REMAIN: 10.0 KVA												100 %		=		6.9 KVA			
HVAC: 50.0 KVA												100 %		=		50.0 KVA			
KITCHEN: KVA												65 %		=		KVA			
MISCELLANEOUS: 62.0 KVA												60 %		=		37.2 KVA			
MOTORS: KVA												100 %		=		KVA			
TOTAL: 96.6 KVA																			

MECHANICAL EQUIPMENT ELECTRICAL CONNECTION SCHEDULE														
ITEM	DESCRIPTION	LOAD			VOLTAGE	PHASE	DISCONNECT RATING	CONNECTION NEMA	CONNECTION	PANEL	CIRCUIT	CONDUIT/WIRE	LOCATION	NOTES
		KW	FLA	C/B										
EBB1	BASEBOARD HEATER	1.0	8	20	120	1			DC	PB	13	2#12,1#12G,3/4" C.	STORAGE 1 RM	2
ERV1	VENTILATOR	1.9	9	15	208	1			DC	PB	10,12	2#12,1#12G,3/4" C.	MECHANICAL RM	
F1	FURNACE	1.0	8	20	120	1			DC	PB	14	2#12,1#12G,3/4" C.	MECHANICAL RM	
GW1	WATER HEATER	0.1	1	20	120	1			DC	PB	16	2#12,1#12G,3/4" C.	MECHANICAL RM	1
GW2	WATER HEATER	0.1	1	20	120	1			DC	PB	16	2#12,1#12G,3/4" C.	MECHANICAL RM	1

CONNECTION NOTES
 1. MORE THAN ONE UNIT SHALL BE CONNECTED TO THE SAME CIRCUIT.
 2. UNIT PROVIDED WITH INTEGRAL DISCONNECT SWITCH. FURNISHED AND INSTALLED BY NC, WIRED BY EC.

CONNECTION LEGEND
 DC = DIRECT CONNECTION



Lexington Cincinnati Cleveland Dallas Charleston



Revisions:
 Issue Date: 12.21.2022 FOR PERMIT

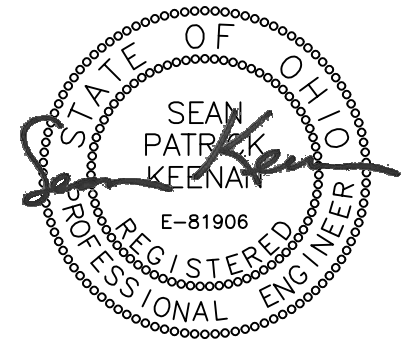
Locker Rooms Addition #2
 Elyria North Park Ice Arena
 901 Duffey Street
 Elyria, OH 44035

ELECTRICAL SCHEDULES

Project No.

22074.00

E-600



ELECTRICAL SPECIFICATIONS

ELECTRICAL GENERAL PROVISIONS

- THE PROVISIONS OF THE INSTRUCTIONS TO BIDDERS, GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, ALTERNATES, ADDENDA AND DIVISION 1 ARE A PART OF THIS SPECIFICATION. ELECTRICAL, ARCHITECTURAL, MECHANICAL AND ALL OTHER DRAWINGS AS WELL AS THE SPECIFICATIONS FOR ALL THE DIVISIONS SHALL BE DEFINED AS THE CONTRACT DOCUMENTS. CONTRACTOR SHALL REVIEW ENTIRE SET OF CONTRACT DOCUMENTS PRIOR TO BIDDING.
- VISIT THE SITE OF THE WORK AND BECOME FAMILIAR WITH THE CONDITIONS AFFECTING THE INSTALLATION. THIS CONTRACTOR SHALL FIELD VERIFY THAT ALL ELECTRICAL WORK CAN BE INSTALLED AS SHOWN ON THE DRAWINGS. ANY DISCREPANCY SHALL BE COMMUNICATED IN WRITING TO THE ARCHITECT OR ENGINEER PRIOR TO SUBMISSION OF A PROPOSAL. SUBMISSION OF A PROPOSAL SHALL PRESUPPOSE KNOWLEDGE OF SUCH CONDITIONS AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED WHERE EXTRA LABOR OR MATERIALS ARE REQUIRED BECAUSE OF IGNORANCE OF THESE CONDITIONS.
- "CONTRACTOR" AS USED WITHIN THE CONTEXT OF THE ELECTRICAL CONTRACT DOCUMENTS SHALL EXPLICITLY REFER TO THE "ELECTRICAL CONTRACTOR" AND THE ELECTRICAL CONTRACTOR'S "SUBCONTRACTORS". THE TERM "FURNISH" SHALL MEAN TO SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS. THE TERM "INSTALL" SHALL MEAN WORK WHICH INCLUDES THE ACTUAL UNLOADING, UNPACKING, ASSEMBLY, ERECTING, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS. THE TERM "PROVIDE" SHALL MEAN TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE. THE TERM "EQUAL" SHALL MEAN TO MEET OR EXCEED THE STANDARDS OF THE SPECIFIED PRODUCTS OR LISTED MANUFACTURERS.
- INCLUDE ALL LABOR, MATERIAL, EQUIPMENT, SERVICES AND PERMITS NECESSARY FOR THE PROPER COMPLETION OF ALL ELECTRICAL WORK SHOWN. ITEMS OMITTED, BUT NECESSARY TO MAKE THE ELECTRICAL SYSTEM COMPLETE AND WORKABLE, SHALL BE UNDERSTOOD TO FORM PART OF THE WORK. SECURE AND PAY FOR PERMITS AND INSPECTIONS REQUIRED FOR ELECTRICAL WORK.
- IT IS THE PURPOSE OF THE ELECTRICAL DRAWINGS TO INDICATE THE APPROXIMATE LOCATION OF ALL EQUIPMENT, DEVICES, ETC. ASCERTAIN EXACT LOCATIONS AND ARRANGE WORK ACCORDINGLY. THE RIGHT IS RESERVED TO EFFECT REASONABLE CHANGES IN THE LOCATION OF DEVICES UP TO THE TIME OF ROUGHING-IN, WITHOUT ADDITIONAL COST TO THE OWNER. CHANGES IN LOCATION OF DEVICES RESULTING FROM THE CONTRACTOR'S FAILURE TO COMPLY WITH THE CONTRACT DRAWING OR SPECIFICATION REQUIREMENTS SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.
- TEMPERATURE AND INTERLOCK CONTROLS SHALL BE PROVIDED AND WIRED BY A CONTROLS CONTRACTOR UNDER DIVISION 23. DIVISION 26 CONTRACTOR SHALL PROVIDE NECESSARY 120 VOLT POWER, TERMINATED AT JUNCTION BOXES, AS DIRECTED BY DIVISION 23 CONTRACTOR. LINE VOLTAGE (120 VOLT OR HIGHER) CONTROL DEVICES, SUCH AS THERMOSTATS, WHICH CONTROL FRACTIONAL HORSEPOWER, 120 VOLT MOTORS, SHALL BE PROVIDED BY THE DIVISION 23 CONTRACTOR, AND SHALL BE WIRED BY THE DIVISION 26 CONTRACTOR.
- WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE PROVISIONS OF LOCAL AND STATE CODES, AS WELL AS THE NATIONAL ELECTRICAL CODE (NEC), AS INTERPRETED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
- CONSULT THE DRAWINGS, PRODUCT DATA, WIRING DIAGRAMS AND SHOP DRAWINGS COVERING THE WORK FOR VARIOUS OTHER TRADES, THE FIELD LAYOUTS OF THE CONTRACTORS FOR THE TRADE AND MAKE ADJUSTMENTS ACCORDINGLY IN LAYING OUT THE ELECTRICAL WORK.
- WARRANT THAT EQUIPMENT AND ALL WORK IS INSTALLED IN ACCORDANCE WITH GOOD ENGINEERING PRACTICE AND THAT ALL EQUIPMENT WILL MEET THE REQUIREMENTS SPECIFIED, GUARANTEE AGAINST DEFECTS IN WORKMANSHIP AND MATERIALS; REPAIR OR REPLACE ANY DEFECTIVE WORK, MATERIAL OR EQUIPMENT WITHIN ONE YEAR FROM DATE OF FORMAL WRITTEN ACCEPTANCE BY THE OWNER.
- BIDS SHALL BE BASED UPON THE SPECIFIED PRODUCTS OR LISTED ALTERNATIVES. WHERE ONLY ONE MAKE IS NAMED, IT SHALL BE PROVIDED. VERBAL REQUESTS OR APPROVALS SHALL NOT BE BINDING ON THE ARCHITECT, ENGINEER OR OWNER.
- EQUIPMENT AND MATERIALS USED ON THIS PROJECT SHALL BE NEW AND U.L. LABELED FOR THE APPLICATION.
- PREPARE SHOP DRAWINGS AND PRODUCT DATA FOR LIGHTING FIXTURES, PANELBOARDS, AND ALL OTHER SPECIFIED SYSTEMS AND COMPONENTS. THE SUBMITTALS THAT ARE RETURNED SHALL BE USED FOR PROCUREMENT, WHERE ADDITIONAL INSTALLATION DRAWINGS, WIRING DIAGRAMS OR OTHER DRAWINGS ARE SPECIFIED AS A PART OF THE SUBMITTAL, THEY SHALL BE SUBMITTED AT THE SAME TIME WITH SHOP DRAWINGS AND PRODUCT DATA.
- THE CONTRACTOR SHALL KEEP ONE COMPLETE SET OF THE CONTRACT DRAWINGS ON THE PROJECT SITE ON WHICH SHALL BE RECORDED ANY DEVIATIONS OR CHANGES FROM SUCH CONTRACT DRAWINGS MADE DURING CONSTRUCTION. THE UPDATED CONTRACT DRAWINGS SHALL BECOME "RECORD DRAWINGS" OF THE COMPLETED CONSTRUCTION. AFTER THE PROJECT IS COMPLETED, THE RECORD DRAWINGS SHALL BE DELIVERED TO THE ARCHITECT IN GOOD CONDITION, AS A PERMANENT RECORD OF THE INSTALLATION AS CONSTRUCTED.
- PROVIDE NAMEPLATES ON PANELBOARDS, SAFETY SWITCHES, SYSTEM DISTRIBUTION JUNCTION BOXES AND PULLBOXES, RECEPTACLE COVERPLATES, AND METERING EQUIPMENT. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, LETTERING SHALL INCLUDE THE NAME OR DESIGNATION OF EQUIPMENT, HORSEPOWER, VOLTAGE RATING AND SERVICE DESIGNATION. NAMEPLATES SHALL BE LAMINATED PHENOLIC WITH A BLACK SURFACE AND WHITE CORE. IDENTIFICATION WITH A DYMO TYPE INSTRUMENT IS NOT PERMISSIBLE. THE INSIDE COVER OF ALL RECEPTACLE COVERPLATES SHALL BE PERMANENTLY MARKED TO INDICATE THE PANEL AND CIRCUIT NUMBER OF THE RECEPTACLE. THE OUTSIDE OF THE COVERPLATES FOR ALL JUNCTION BOXES SHALL BE PERMANENTLY MARKED TO INDICATE THE SYSTEM. IDENTIFICATION SHALL BE ON THE INSIDE OF COVERPLATES FOR ALL JUNCTION BOXES IF THEY ARE LOCATED IN FINISHED AREAS. IDENTIFICATION OF BRANCH CIRCUITS SHALL BE TYPEWRITTEN ON DIRECTORY CARDS FURNISHED WITH ALL PANELS AND PLACED IN THE CARD HOLDER ON THE DOOR.
- IDENTIFY SPARE CONDUITS AND CONDUIT STUBS AS FOLLOWS: IDENTIFY SYSTEM AND/OR PURPOSE AT SOURCE, IF POSSIBLE, AND AT TERMINATION END. ALSO, AT TERMINATION END, INDICATE LOCATION OF CONDUIT ORIGINATION.
- AFTER INSTALLATION, TEST FOR GROUNDS, SHORT CIRCUITS AND PROPER FUNCTION OF EACH NEW SYSTEM AND RELATED WIRING. FAULTS IN THE INSTALLATION SHALL BE CORRECTED.
- AFTER ALL TESTS AND ADJUSTMENTS HAVE BEEN COMPLETED, CLEAN ALL EQUIPMENT LEAVING EVERYTHING IN WORKING ORDER AT THE COMPLETION OF THIS WORK.
- PROVIDE A TEMPORARY ELECTRICAL SERVICE ADEQUATE IN SIZE FOR HEATING, FOR THE USE OF ALL TRADES AND FOR THE LIGHTING OF EACH ROOM DURING CONSTRUCTION. INSTALLATION SHALL CONFORM TO ARTICLE 590 OF THE NEC.

BASIC MATERIALS AND METHODS

- ALL BOXES AND COVERPLATES SHALL BE SUITABLE FOR THE APPLICATIONS, RIGIDLY SUPPORTED FROM THE BUILDING STRUCTURE INDEPENDENT OF THE CONDUIT SYSTEM. ALL BOXES SHALL BE 4"x4"x2" DEEP MINIMUM WITH COVERPLATES SUITABLE FOR THEIR INTENDED USE. BOX STABILIZERS SHALL BE UTILIZED TO PROPERLY SUPPORT BOXES IN METAL STUD CONSTRUCTION.
- EXTERIOR UNDERGROUND CONDUITS SHALL BE SCHEDULE 40 PVC, ENCASED IN CONCRETE UNDER DRIVES AND ROADWAYS WITH A MINIMUM 3" ENVELOPE. CONDUITS IN CONCRETE FLOORS, DAMP OR WET LOCATIONS, OR EXPOSED HIGH TRAFFIC AREAS WHERE SUBJECT TO PHYSICAL ABUSE SHALL BE HEAVY WALL RIGID GALVANIZED STEEL. ALL OTHER INTERIOR CONDUITS SHALL BE ELECTRICAL METALLIC TUBING (EMT), UNLESS OTHERWISE NOTED ON THE DRAWINGS OR WITHIN THESE SPECIFICATIONS. CONDUITS SHALL BE 3/4" TRADE SIZE, MINIMUM, UNLESS OTHERWISE NOTED ON THE DRAWINGS OR WITHIN THESE SPECIFICATIONS. ALL EMT CONDUITS SHALL HAVE COLD-ROLLED STEEL DOUBLE SET SCREW FITTINGS.
- CONDUITS THAT PASS FROM THE INTERIOR TO THE EXTERIOR OF THE BUILDING, OR ARE SUBJECT TO DIFFERENT TEMPERATURES. SHALL BE SEALED WITH AN APPROVED MATERIAL SUCH AS DUCT-SEAL TO PREVENT THE CIRCULATION OF COLD AIR TO A WARMER SECTION OF THE CONDUIT.
 - CONDUITS THAT STUB THROUGH THE ROOF SHALL BE SUPPLIED WITH PIPE SEALS AS MANUFACTURED BY THE PATE CO. AND SHALL BE INSTALLED AS RECOMMENDED BY THE MANUFACTURER. PIPE SEALS SHALL BE ONE PIECE ALUMINUM BASE TYPE WITH FIVE INCH SLOPED ROOF SURFACE FLANGES, GRADUATED PVC BOOTS AND ADJUSTABLE STAINLESS STEEL CLAMPS. RPS CORPORATION AND THYCURB CORPORATION ARE APPROVED EQUIVALENT MANUFACTURERS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE AND VERIFY EXACT REQUIREMENTS WITH THE ROOFING CONTRACTOR BEFORE PROCUREMENT AND INSTALLATION OF THE PIPE SEALS.
 - CONDUITS THAT STUB THROUGH THE FOUNDATION WALLS SHALL BE SUPPLIED WITH PIPE SEALS AS MANUFACTURED BY LINK-SEAL, OR BY EQUIVALENT METHOD AS APPROVED BY THE ARCHITECT. PIPE SEALS SHALL BE EPDM (BLACK) WITH STAINLESS STEEL HARDWARE. THE ELECTRICAL CONTRACTOR SHALL COORDINATE AND VERIFY EXACT REQUIREMENTS WITH THE ARCHITECT BEFORE PROCUREMENT AND INSTALLATION OF THE PIPE SEALS.
- ALL BRANCH CIRCUIT CONDUITS SHALL BE EMT CONDUIT. THE CONDUIT SHALL ITSELF QUALIFY AS AN EQUIPMENT GROUNDING RETURN PATH IN ACCORDANCE WITH NEC 250.118. WIRING SHALL BE AS SPECIFIED ELSEWHERE IN THIS SECTION.
- CONDUIT CONNECTIONS TO MOTORS, TRANSFORMERS, AND OTHER VIBRATING EQUIPMENT SHALL BE FLEXIBLE METAL "SEAL-TITE" TYPE "UT" CONDUIT AS MANUFACTURED BY THE AMERICAN BRASS COMPANY OR EQUIVALENT AND SHALL BE OF THE SAME SIZE AS THE FEEDER CONDUIT.
- LOCAL LIGHT SWITCHES SHALL BE 20 AMPERE, 120/277 VOLTS, AC SPECIFICATION GRADE, WITH GROUNDING TERMINAL - HUBBELL #HBL-122 SERIES, PASS AND SEYMOUR #PS20AC SERIES, OR LEVITON #122 SERIES.
- WALL MOUNTED VACANCY/OCCUPANCY SENSORS SHALL BE AUTO ON/AUTO OFF ONLY - LEVITON #OSSMT-GOW OR EQUAL BY PASS & SEYMOUR HUBBELL.
- CEILING MOUNTED OCCUPANCY SENSORS SHALL BE 2000 SQUARE FOOT COVERAGE, MULTI - TECHNOLOGY SENSORS - WATTSTOPPERS #DT-355 OR EQUAL BY PASS & SEYMOUR OR LEVITON.
- DUPLEX RECEPTACLES SHALL BE 20A, 125V, 2 POLE, 3 WIRE GROUNDING.
 - GENERAL PURPOSE "SPECIFICATION GRADE" DUPLEX RECEPTACLES: HUBBELL #5352, LEVITON #5362 OR PASS & SEYMOUR #5362.
- DUPLEX RECEPTACLES, WHERE INDICATED ON THE DRAWINGS OR WHERE REQUIRED BY CODE, SHALL HAVE INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER (GFCI) PROTECTION AND SHALL BE 20A, 125V, 2 POLE, 3 WIRE GROUNDING: HUBBELL #H5352, PASS & SEYMOUR #2091 OR LEVITON #8899. (HOSPITAL GRADE GFCI DUPLEX RECEPTACLES: HUBBELL #H8300.) GFCI RECEPTACLES SHALL NOT BE THROUGH-WIRED. PROVIDE INDIVIDUAL DUPLEX GFCI RECEPTACLES AS SHOWN ON THE DRAWINGS.
- DUPLEX RECEPTACLES, WHERE INDICATED ON THE DRAWINGS WITH "WP" SUBSCRIPT OR WHERE REQUIRED BY CODE SHALL BE RATED WEATHER RESISTANT, HAVE INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER (GFCI) PROTECTION, SELF-TESTING, VISIBLE TRIP ALERT AND SHALL BE 20A, 125V, 2 POLE, 3 WIRE GROUNDING: LEGRAND #209TRWR OR EQUAL BY LEVITON OR PASS & SEYMOUR WITH VERTICAL WHILE -IN-USE COVER, LEGRAND #WUC1GVSL OR EQUAL.
- ALL RECEPTACLES SHALL BE PROVIDED WITH A SELF-GROUNDING CLIP AT THE MOUNTING SCREW.
- ALL SWITCHES AND RECEPTACLES SHALL BE WHITE UNLESS OTHERWISE INDICATED WITHIN THESE SPECIFICATIONS. VERIFY COLOR WITH THE ARCHITECT PRIOR TO PROCUREMENT OF THE DEVICES. ALL COVERPLATES SHALL BE SMOOTH HIGH IMPACT COMMERCIAL GRADE THERMOPLASTIC OR SMOOTH NYLON FINISH WITH COLOR TO MATCH THE DEVICES. IN UNFINISHED AREAS, USE CADMIUM PLATED, ROUND CORNER, STEEL COVERPLATES FOR SURFACE MOUNTED OUTLET BOXES. BOTH THE WIRING DEVICES AND THE COVERPLATES SHALL BE BY THE SAME MANUFACTURER.
- WIRE AND CABLE FOR BRANCH CIRCUITS AND FOR FEEDERS SHALL BE 90 DEGREES C., 600VOLT, TYPE THHN/THWN, COPPER ONLY, UNLESS OTHERWISE NOTED ON THE DRAWINGS. TYPE XHHW SHALL ALSO BE ACCEPTABLE FOR FEEDERS. MINIMUM SIZE FOR POWER AND LIGHTING BRANCH CIRCUITS SHALL BE #12.
- CONDUITS SHALL BE CONTINUOUS AND SECURED TO ALL BOXES IN SUCH A MANNER THAT EACH CONDUIT SYSTEM SHALL BE ELECTRICALLY CONTINUOUS FROM THE POINT OF SERVICE TO ALL DEVICE BOXES. RUN CONDUITS CONCEALED UNLESS OTHERWISE INDICATED. THE ACTUAL ROUTING OF CONDUITS SHALL BE INSTALLED TO SUIT THE VARIOUS FIELD CONDITIONS.
- INDIVIDUAL BRANCH CIRCUITS ARE SHOWN ON THE DRAWINGS FOR CLARITY. LIGHTING AND RECEPTACLE CIRCUITS LESS THAN OR EQUAL TO 100 AMPERES MAY BE GROUPED FOR HOMERUNS, WITH A MAXIMUM OF TWO (2) CIRCUITS PER HOMERUN. NEUTRAL CONDUCTORS SHALL NOT BE SHARED.
- IDENTIFY WIRE AND CABLE FOR BRANCH CIRCUITS AS CALLED FOR IN THE NATIONAL ELECTRICAL CODE. IDENTIFICATION OF FEEDERS SHALL BE BY MEANS OF COLORED TAPE AT TERMINALS.
- MOUNTING HEIGHTS TO THE CENTER OF OUTLET BOXES SHALL BE AS INDICATED ON THE DRAWINGS.
- VERIFY MOUNTING HEIGHTS AND LOCATIONS WITH THE ARCHITECT BEFORE ROUGH-IN. REFER TO DETAILS AND INTERIOR WALL ELEVATIONS SHOWN ON THE ARCHITECTURAL DRAWINGS.
- ALL RECEPTACLES SHALL BE MOUNTED WITH THE GROUND OPENING ABOVE THE PHASE AND NEUTRAL OPENINGS.
- ALL DEVICES SHALL BE SECURED WITH MORE THAN A SINGLE SCREW.
- ALL HARDWARE, SUPPORTS, HANGERS, BRACKETS, ANGLE IRON, CHANNELS, RODS AND CLAMPS NECESSARY TO INSTALL ELECTRICAL EQUIPMENT SHALL BE PROVIDED TO SUIT THE FIELD CONDITIONS AND THE APPLICATIONS INTENDED AS SHOWN ON THE DRAWINGS. THE USE OF PERFORATED STRAPS IS NOT PERMITTED.
- ALL EQUIPMENT MOUNTED ON INTERIOR EQUIPMENT ROOM WALLS WHERE ADDITIONAL SUPPORT IS REQUIRED SHALL BE ATTACHED TO 3/4" PAINTED PLYWOOD FIRE RATED BOARDS FURRED OUT 1" FROM WALL. BOARDS SHALL BE PAINTED TO MATCH WALL FINISHES.

POWER DISTRIBUTION

- THE ELECTRICAL SERVICE TO THE EXISTING BUILDING SHALL REMAIN. THE BUILDING'S EXISTING POWER DISTRIBUTION SYSTEM SHALL BE EXTENDED AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN. THE BUILDING'S EXISTING GROUNDING ELECTRODE SYSTEM SHALL BE MAINTAINED.
- GROUND ALL ELECTRICAL SYSTEM CONDUITS, RACEWAYS, MOTORS, PANELS, CABINETS, FIXTURES, METAL BOXES, AND OTHER EXPOSED NON-CURRENT CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ALL PROVISIONS OF THE NEC, STATE BUILDING CODE AND LOCAL OR REGIONAL CODES.
- GROUNDING OF THE ELECTRICAL SYSTEM SHALL BE BY MEANS OF AN INSULATED GROUNDING CONDUCTOR INSTALLED WITH FEEDER AND BRANCH CIRCUIT CONDUCTORS IN ALL CONDUITS, SIZED IN ACCORDANCE WITH NEC ARTICLE 250.122.
- WHERE GROUNDING CONDUCTORS ARE SUBJECT TO MECHANICAL DAMAGE PROTECT SUCH CONDUCTORS BY ENCASEMENT IN CONCRETE OR INSTALLATION IN A RIGID METALLIC RACEWAY.
- ALL TERMINATIONS OF THE GROUNDING CONDUCTORS SHALL BE BY MEANS OF SOLDERLESS CONNECTIONS.
- FURNISH AND INSTALL BRANCH CIRCUIT BREAKER PANELBOARDS EQUIPPED WITH CIRCUIT BREAKERS, WITH FRAME AND TRIP RATINGS LISTED ON THE DRAWINGS. CIRCUIT BREAKERS SHALL BE THERMAL-MAGNETIC, MOLDED CASE BOLT-ON TYPE. ALL CURRENT CARRYING PARTS OF THE BUS STRUCTURE SHALL BE TIN-PLATED ALUMINUM. EACH PANEL SHALL CONTAIN A 100% RATED NEUTRAL BUS AND A GROUNDING BUS. PANELS SHALL HAVE "DOOR-WITHIN-DOOR" TRIM, HINGED BOX TO FRONT TYPE WITH LATCH ON OUTER DOOR. ALL LOCKS SHALL BE KEYED ALIKE.
- EACH PANEL, AS A COMPLETE UNIT, SHALL HAVE A MINIMUM SYMMETRICAL SHORT CIRCUIT CURRENT RATING OF 10,000 AMPERES FOR 240/120 VOLT RATED PANELS. CIRCUIT BREAKERS SHALL BE FULLY RATED. SERIES RATINGS ARE NOT PERMITTED.
- PANELS SHALL BE AS MANUFACTURED BY SQUARE D, SIEMENS/ITE, GENERAL ELECTRIC OR CUTLER HAMMER/WESTINGHOUSE.
- PANELS SHALL BE MOUNTED SO THAT TOP OF THE CABINET IS AT 6'-0" ABOVE FLOOR. A GLAZED DIRECTORY FRAME SHALL BE PROVIDED INSIDE EACH PANEL DOOR AND SHALL BE OF SUFFICIENT SIZE TO GIVE A COMPLETE DESCRIPTION OF EACH CIRCUIT. TYPED DIRECTORY CARDS SHALL BE PROVIDED LISTING EACH CIRCUIT SERVED.
- THE BRANCH CIRCUIT NUMBERS USED ON THE DRAWINGS SHALL BE APPLIED FOR THE CONSTRUCTION. HOWEVER, AT THE COMPLETION OF THE WORK, CIRCUIT NUMBER ADJUSTMENTS SHALL BE MADE AS REQUIRED TO PROVIDE BALANCED PHASE LOADING ON EACH PANEL.
- SPARE CIRCUIT BREAKERS SHALL BE IDENTIFIED AS SUCH ON THE PANEL DIRECTORY CARDS AND SHALL BE LEFT IN THE "OFF" POSITION.

LIGHTING

- LIGHTING FIXTURES SHALL BE PROVIDED AS SPECIFIED IN THE LIGHTING FIXTURE SCHEDULE ON THE DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR PROVIDING PROPER MOUNTING ACCESSORIES. CONTRACTOR SHALL REFER TO THIS SPECIFICATION FOR LAMP AND DRIVER REQUIREMENTS. SUBMITTALS SHALL INCLUDE PRODUCT INFORMATION FOR FIXTURES, LAMPS, AND DRIVERS.
- NON-DIMMING LED DRIVERS SHALL MEET THE FOLLOWING REQUIREMENTS: 85% MINIMUM EFFICIENCY, -40°C STARTING TEMPERATURE, > 0.90 POWER FACTOR, <20% TOTAL HARMONIC DISTORTION AND CLASS A SOUND RATING. SYSTEM MUST SURVIVE 250 REPETITIVE STRIKES ON "C LOW" WAVEFORMS AT 1 MINUTE INTERVALS WITH LESS THAN 10% DEGRADATION IN CLAMPING VOLTAGE. POWER SUPPLIES CAN BE UL CLASS I OR II OUTPUT. DIMMING DRIVERS SHALL BE SIMILAR TO NON-DIMMING DRIVERS WITH THE FOLLOING REQUIREMENTS: 0-10V DIMMING DRIVERS SHALL DIM TO A MINIMUM OF 10% AND SHALL BE TYPE AS RECOMMENDED BY MANUFACTURER UNLESS OTHER NOTED IN THE CONTRACT AND BE COMPATIBLE WITH DIMMER CONTROL SPECIFIED. PROVIDE LOW TEMPERATURE DRIVERS FOR LED FIXTURES IN EXTERIOR APPLICATIONS OR IN UNHEATED AREAS.
- LEDs SHALL BE MANUFACTURED BY NICHIA, SAMSUNG, CREE, PHILIPS, OR OSRAM. ALL OTHER LAMPS SHALL BE MANUFACTURED BY GENERAL ELECTRIC, SYLVANIA, (VENTURE), OR PHILIPS.
- ALL LEDs MUST BE BATCH SORTED FOR COLOR, BRIGHTNESS AND VISUAL CONSISTENCY. ALL FIXTURES SHALL BE SUPPLIED AT SAME TIME AND SHALL COME FROM SAME BATCH. SPARE LEDs SHALL BE PROVIDED FROM SAME BATCH. LED COMPONENTS SHALL BE MERCURY AND LEAD-FREE.
- THERMAL MANAGEMENT SHALL BE PASSIVE BY DESIGN. THE USE OF FANS OR OTHER MECHANICAL DEVICES SHALL NOT BE ALLOWED. FIXTURE MANUFACTURER SHALL ADHERE TO DEVICE MANUFACTURER GUIDELINES, CERTIFICATION PROGRAMS, AND TEST PROCEDURES FOR THERMAL MANAGEMENT. FIXTURES SHALL HAVE MINIMUM HEAT SINK SURFACE SUCH THAT LED MANUFACTURER'S MAXIMUM JUNCTION TEMPERATURE IS NOT EXCEEDED AT MAXIMUM RATED AMBIENT TEMPERATURE.
- SURFACE MOUNTED FIXTURES MOUNTED ON CEILINGS OTHER THAN ACCESSIBLE LAY-IN CEILING SYSTEMS, OR TO THE BUILDING STRUCTURE, SHALL BE SECURELY SUPPORTED IN A MANNER APPROVED BY THE ARCHITECT.
- ALL LIGHTING FIXTURES (INCLUDING "NORMALLY-OFF" EMERGENCY FIXTURES) THAT ARE CAPABLE OF BEING AIMED SHALL BE AIMED BY THE CONTRACTOR FOR THE OPTIMUM COVERAGE OF THEIR TASK, TO THE SATISFACTION OF, AND UNDER THE DIRECTION OF THE ARCHITECT.
- LIGHTING FIXTURES SHALL BE INSTALLED IN ACCORDANCE WITH NEC ARTICLE 410. LOW VOLTAGE LIGHTING FIXTURES AND SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH NEC ARTICLE 411.

Revisions:
Issue Date: 12.21.2022 FOR PERMIT

Locker Rooms Addition #2

Elyria North Park Ice Arena

901 Duffey Street
Elyria, OH 44035

ELECTRICAL SPECIFICATIONS

Project No.

22074.00

E-700