

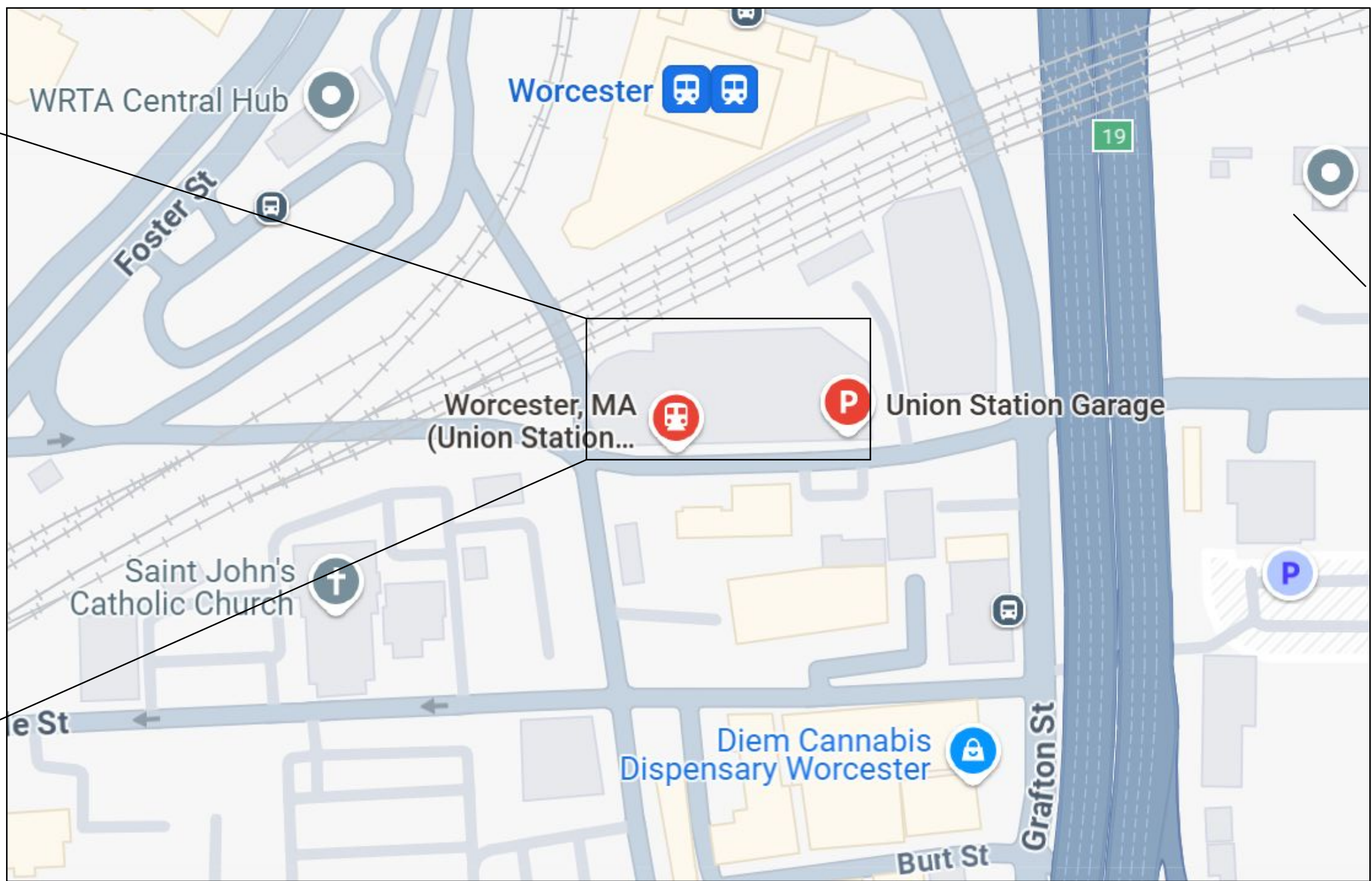
WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER

UNION STATION
225 FRANKLIN STREET, WORCESTER, MA 01604

FEBRUARY 2025



LOCUS PHOTO

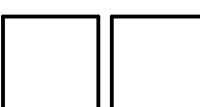
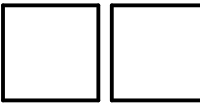


LOCUS MAP: (NOT TO SCALE)

DRAWING LIST

- A1 GROUND AND ROOF PLANS
- A2 DETAILS
- FX-001 FIRE PROTECTION LEGEND AND SYMBOLS
- FXD-101 GROUND FLOOR FIRE PROTECTION DEMOLITION PLAN
- FX-101 GROUND FLOOR FIRE PROTECTION NEW WORK PLAN
- PL-001 UNDERGROUND PLUMBING LEGEND AND SYMBOLS
- PL-101 UNDERGROUND PLUMBING NEW WORK PLAN
- PL-102 GROUND FLOOR PLUMBING NEW WORK PLAN
- PL-601 PLUMBING SCHEDULES
- E-001 ELECTRICAL LEGEND
- E-002 MOUNTING HEIGHTS AND LOCAL ALARM PANEL DETAILS
- EP-101 GROUND FLOOR ELECTRICAL NEW WORK PLAN
- FA-000 FIRE ALARM LEGEND, IO MATRIX AND DETAILS
- FA-001 FIRE ALARM RISER
- FAD-101 GROUND FLOOR FIRE ALARM DEMOLITION PLAN
- FAD-102 FIRST FLOOR ALARM DEMOLITION PLAN
- FAD-103 THIRD FLOOR FIRE ALARM DEMOLITION PLAN
- FAD-104 SECOND AND FOURTH FLOOR FIRE ALARM DEMOLITION PLAN
- FAD-105 FIFTH FLOOR FIRE ALARM DEMOLITION PLAN
- FA-101 GROUND FLOOR FIRE ALARM NEW WORK PLAN
- FA-102 FIRST FLOOR FIRE ALARM NEW WORK PLAN
- FA-103 SECOND FLOOR FIRE ALARM NEW WORK PLAN
- FA-104 THIRD FLOOR FIRE ALARM NEW WORK PLAN
- FA-105 FOURTH FLOOR FIRE ALARM NEW WORK PLAN
- FA-106 FIFTH FLOOR FIRE ALARM NEW WORK PLAN
- R-1 GRADE LEVEL FLOOR PLAN
- R-2 FIRST LEVEL FRAMING PLAN
- R-3 SECOND LEVEL FRAMING PLAN
- R-4 THIRD LEVEL FRAMING PLAN
- R-5 FOURTH LEVEL FRAMING PLAN
- R-6 FIFTH LEVEL FRAMING PLAN
- R-7 ELEVATION DRAWINGS
- R-8 TYPICAL DETAILS - SHEET 1
- R-9 TYPICAL DETAILS - SHEET 2
- R-10 TYPICAL DETAILS - SHEET 3

ARCHITECT:

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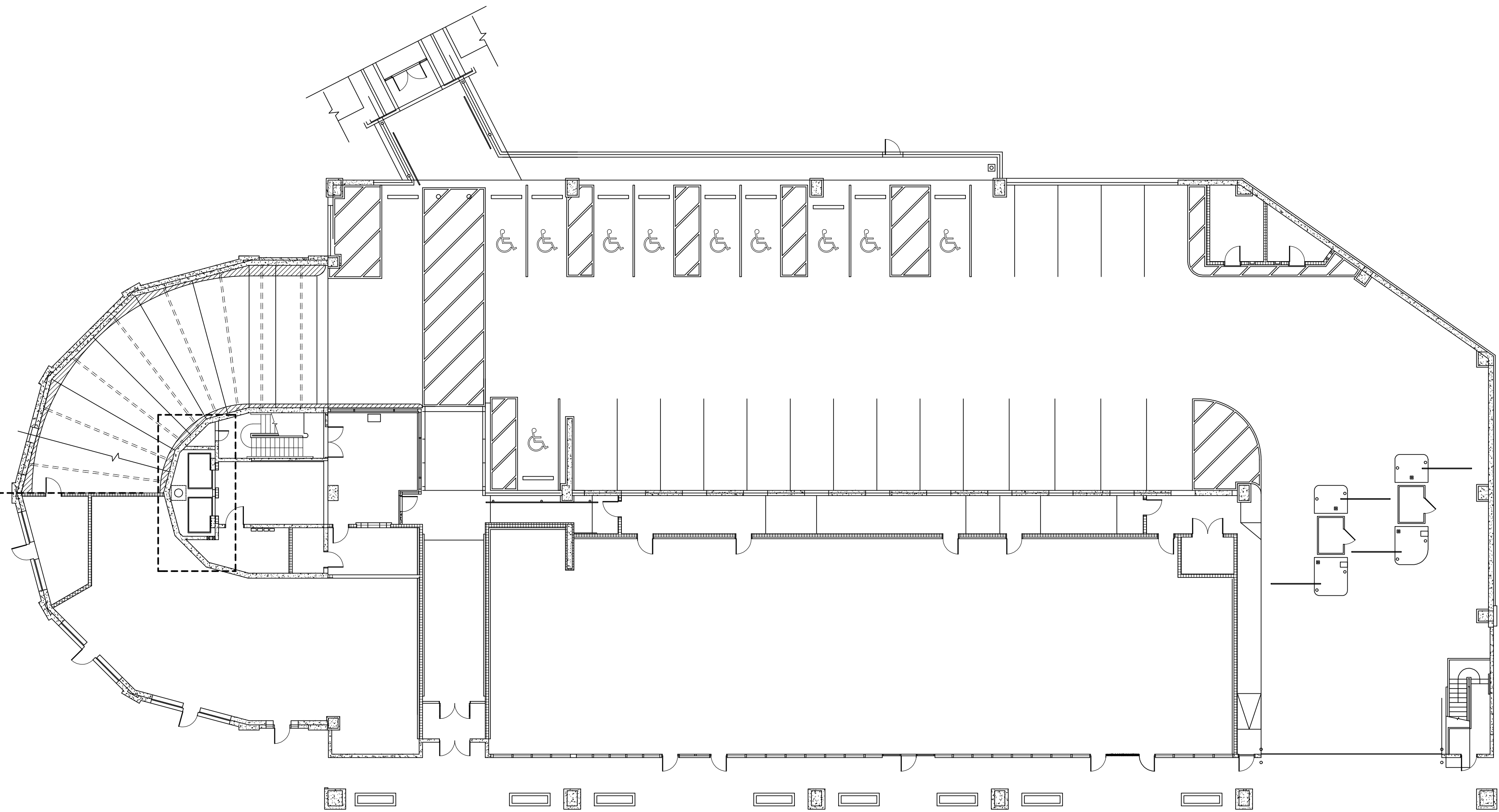
MECHANICAL AND FIRE PROECTION ENGINEER

HallamICS
AN EMPLOYEE OWNED COMPANY

GARAGE SPECIALTY ENGINEER

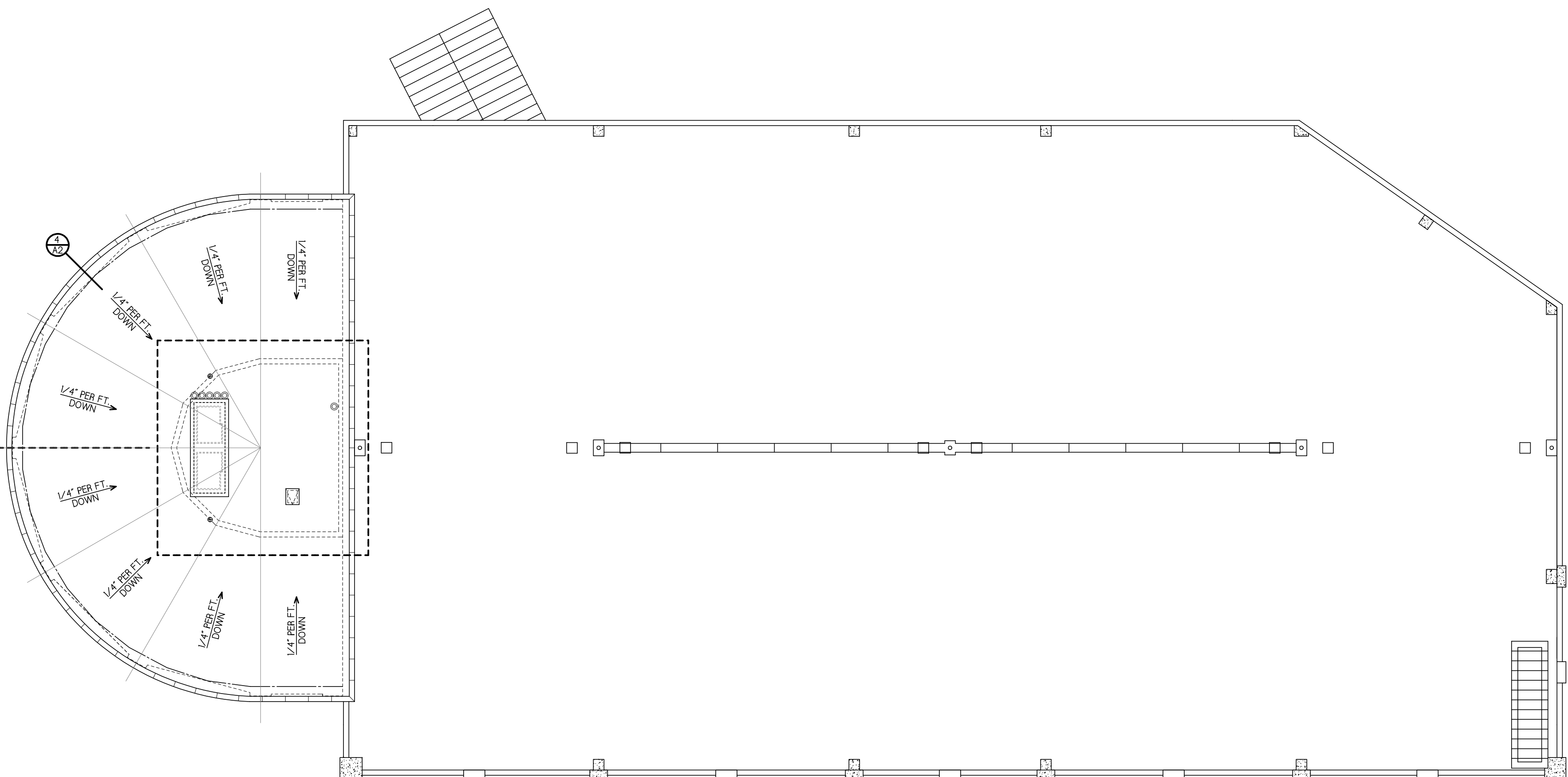
DESMAN
Design Management

DRAWING TITLE	
COVER SHEET	
JOB NUMBER: 1702.1 JOB TITLE WATERPROOFING AND REPAIRS UNION STATION GARAGE CITY OF WORCESTER	
CONSULTANT	
ARCHITECT	
 NAULT ARCHITECTS, INC. 71 HOPE AVENUE WORCESTER, MA 01603 TEL: (508) 755-6134 ADMIN@NAULTARCHITECTS.COM	
SCALE	DRAWING NO.
	T1
AS NOTED	DATE FEBRUARY 2025



Architectural drawing of a penthouse roof plan. The drawing shows a rectangular structure with a dashed outline indicating the interior of the wall. Key features and labels include:

- EXISTING VENT PIPES WITH EPDM BOOT**: Located at the top left, pointing to a row of four circular pipes.
- 7'-2"**: Dimension line indicating the width of the structure.
- RD**: Roof Drain symbol (a circle with a cross) located at the top center and bottom center.
- EL. #1**: Elevation marker for the upper level, indicated by a horizontal line.
- EL. #2**: Elevation marker for the lower level, indicated by a horizontal line.
- 18'-4"**: Dimension line indicating the total height of the structure.
- REMOVE ROOFING FROM PENTHOUSE WALLS. CLEAN AND COAT**: Instruction pointing to the dashed outline of the wall.
- DASHED LINES INDICATE ELEVATOR CAB**: Instruction pointing to the dashed outline of the elevator cab.
- DASHED LINE INDICATES INTERIOR OF WALL**: Instruction pointing to the dashed outline of the wall.
- PATCH ROOF AT BASE OF PENTHOUSE**: Instruction pointing to the bottom edge of the structure.
- EXISTING ROOF HATCH**: A small square symbol with a cross, located at the bottom right.
- 12'**: Dimension line indicating the width of the lower level.



DRAWING TITLE

JOB NUMBER: 1702.1
JOB TITLE

WATERPROOFING AND REPAIRS
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CITY OF WORCESTER

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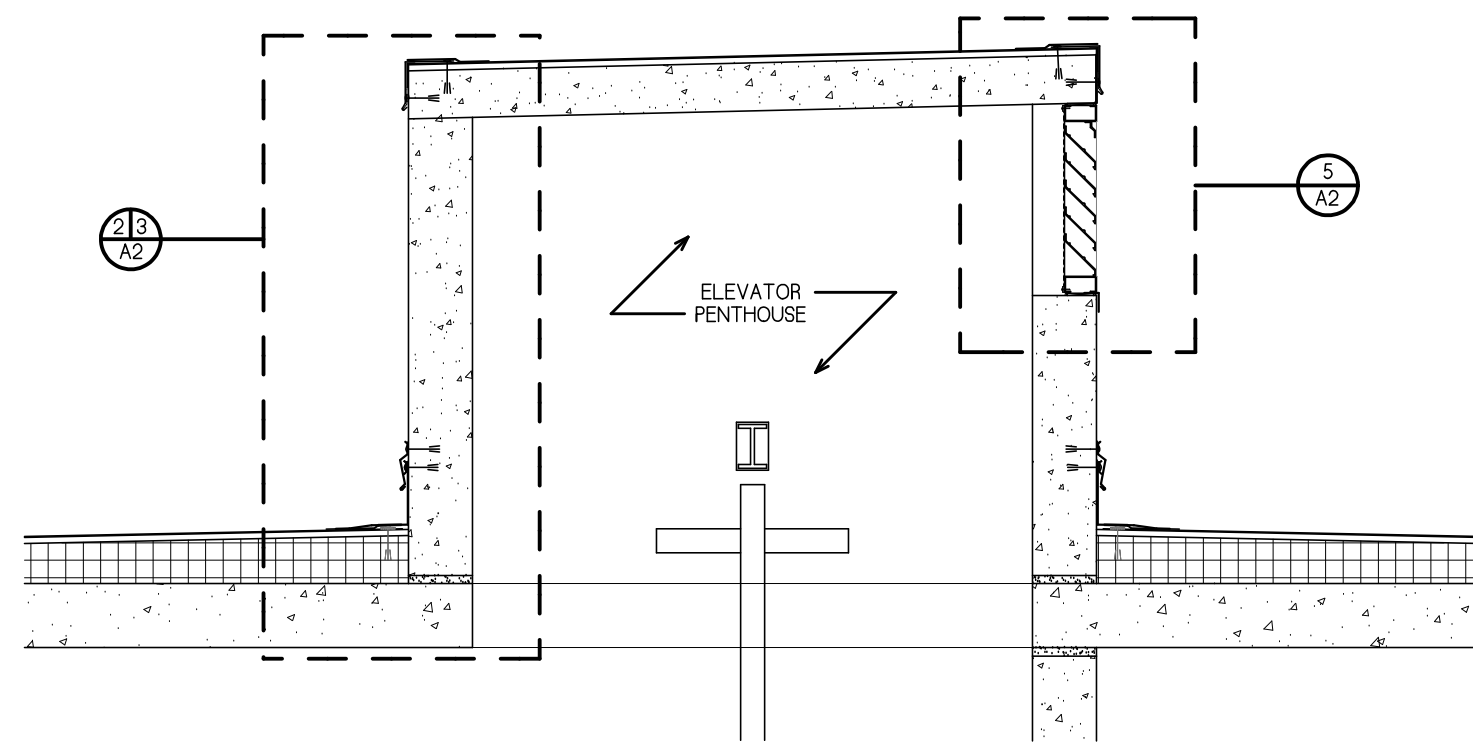
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DRAWING NO.

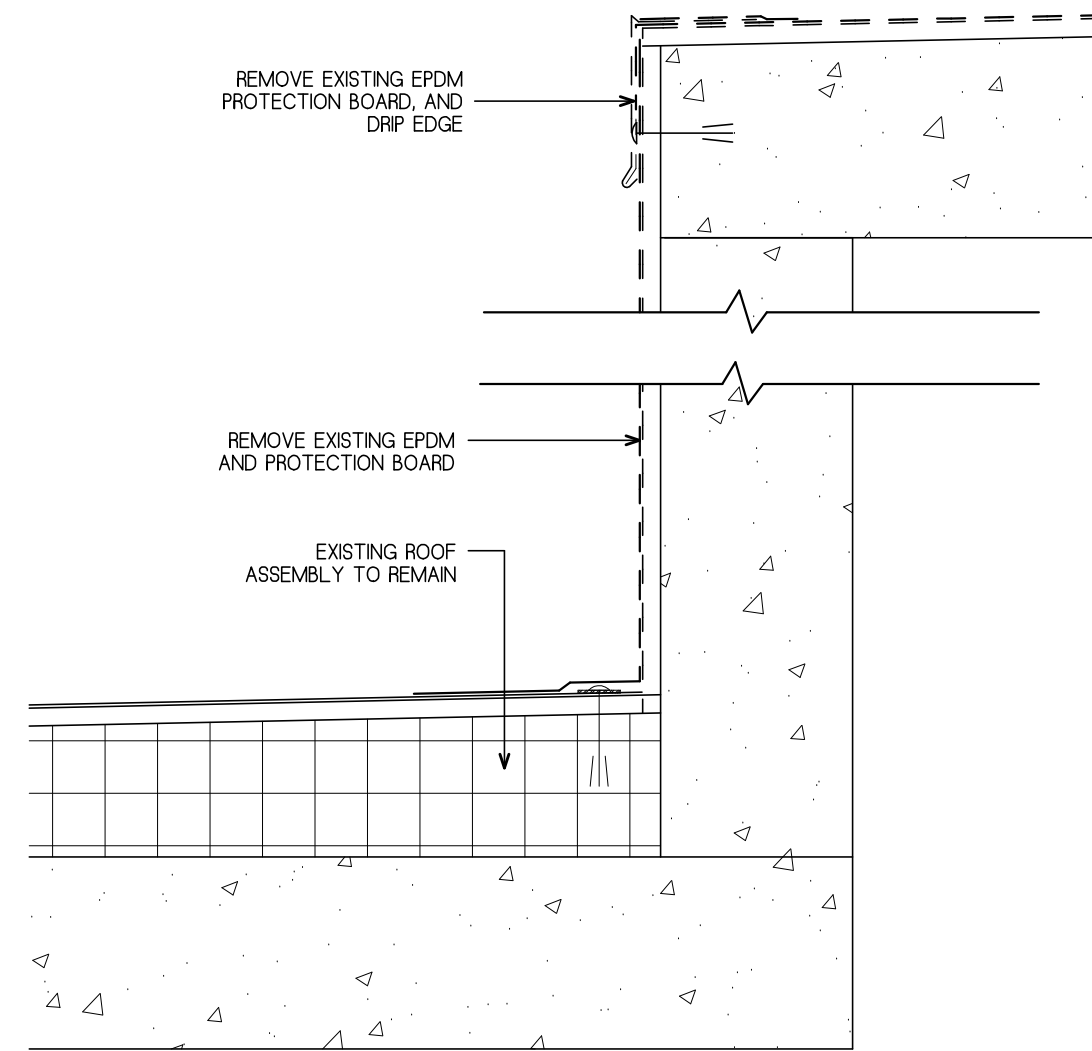
A1

SCALE
AS NOTED

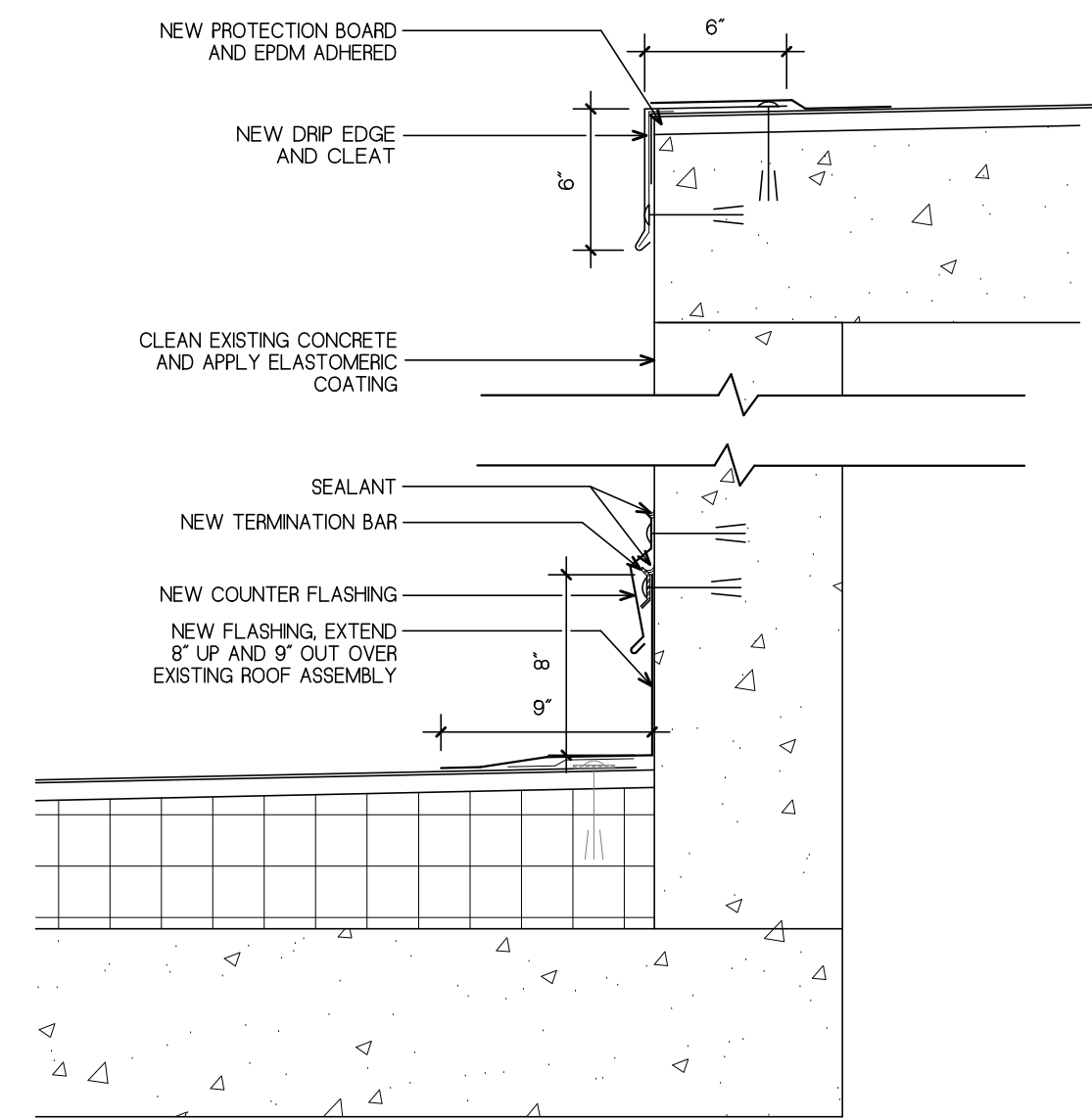
FEBRUARY 2025



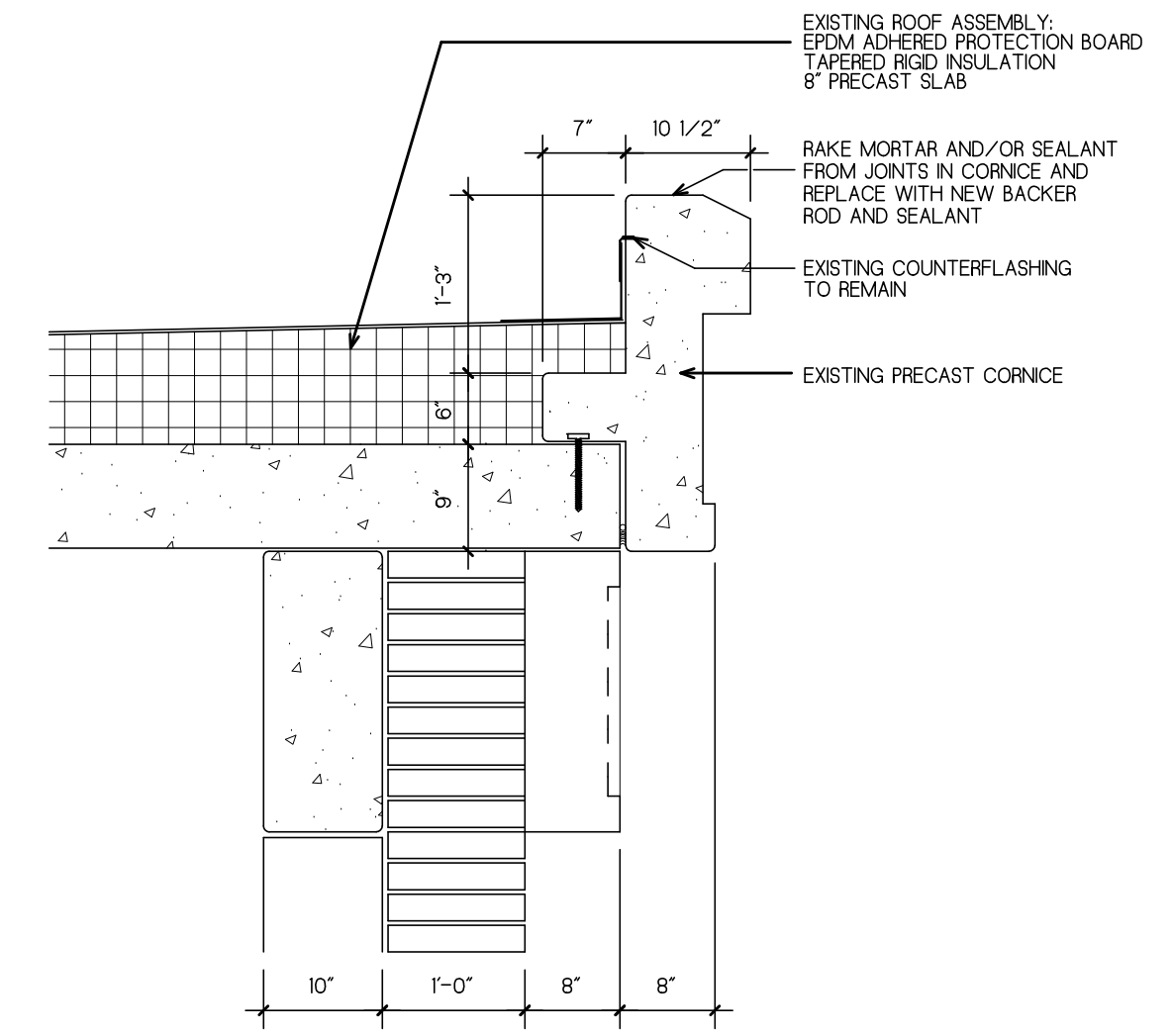
1 PENTHOUSE SECTION
1 1/2" = 1'-0"



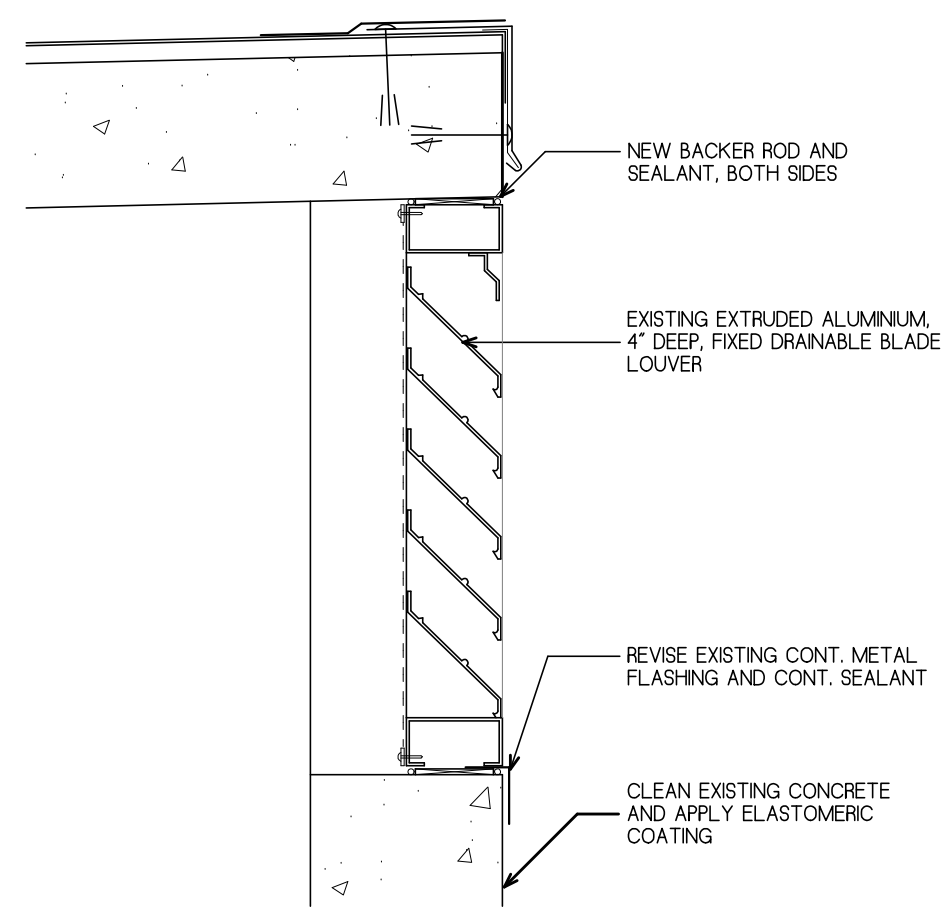
2 ROOF ASSEMBLY - DEMOLITION
1 1/2" = 1'-0"



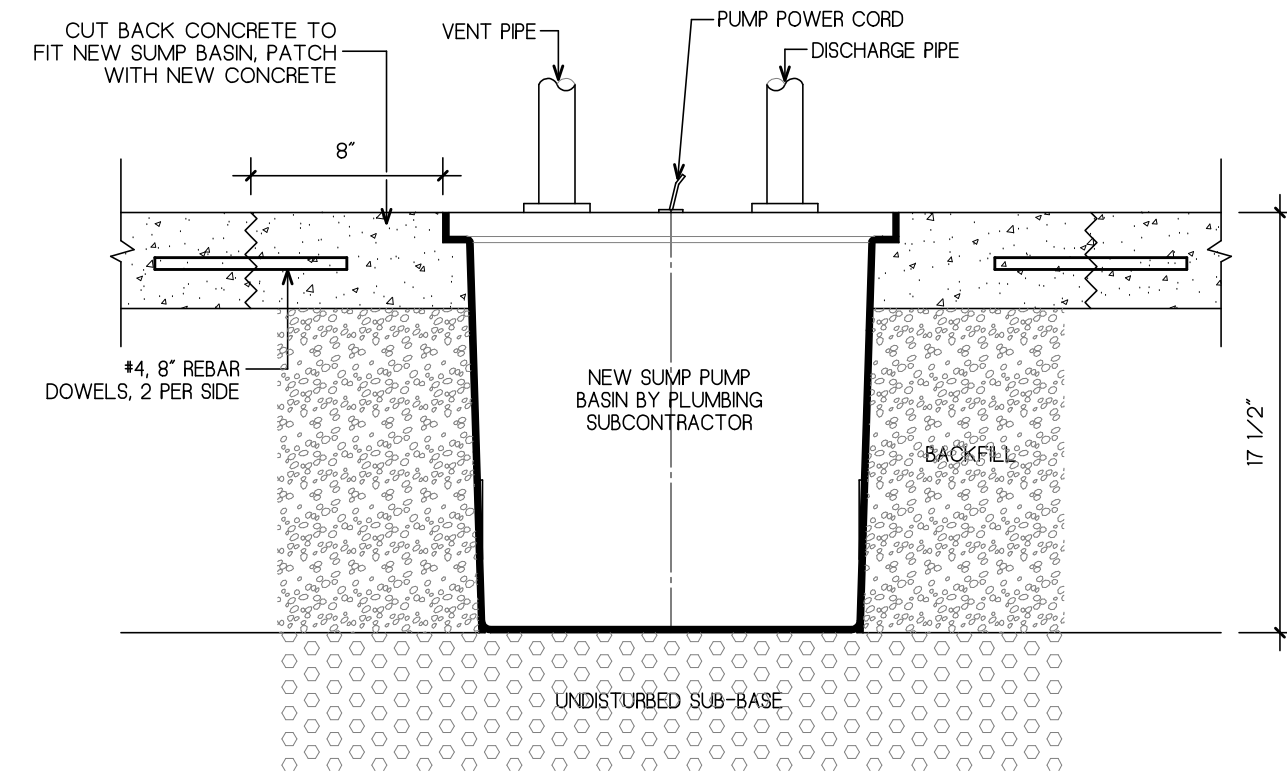
3 ROOF ASSEMBLY - NEW
1 1/2" = 1'-0"



4 PARAPET DETAIL
3/4" = 1'-0"



5 LOUVER DETAIL
1 1/2" = 1'-0"



6 SUMP BASIN DETAIL
1 1/2" = 1'-0"

GENERAL NOTES

KEY PLAN

DRAWING TITLE

DETAILS

JOB NUMBER: 1702.1
JOB TITLE

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DRAWING NO.

A2

SCALE
AS NOTED

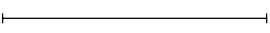
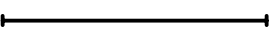
DATE
FEBRUARY 2025

FIRE PROTECTION LEGEND & SYMBOLS

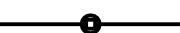
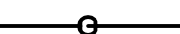
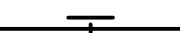
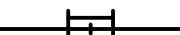
ABBREVIATIONS & SYMBOLS

AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL
BFF	BELOW FINISHED FLOOR
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTUH	BTU PER HOUR
CAP	CAPACITY
CL	CENTERLINE
CLG	CEILING
CO	CLEANOUT
CONN	CONNECTION
CTE	CONNECT TO EXISTING
DIA	DIAMETER
DN	DOWN
DWG	DRAWING
ERH	EXTERIOR ROOF HYDRANT
EXIST	EXISTING
ETR	EXISTING TO REMAIN
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN OR FIRE DAMPER
FDC	FIRE DEPARTMENT CONNECTION
FDV	FIRE DEPARTMENT HOSE VALVE
FLA	FULL LOAD AMPS
FM	FLOW METER OR FACTORY MUTUAL
FMS	FACILITY MANAGEMENT SYSTEM
FP	FIRE PROTECTION
FT	FEET
G	GAS
GC	GENERAL CONTRACTOR
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HD	HEAD
HP	HORSEPOWER OR HEAT PUMP
HS	HOSE STATION
HZ	HERTZ
ID	INSIDE DIAMETER
LBS	POUNDS
LWCO	LOW WATER CUT OFF
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPACITY
MOCP	MAXIMUM OVERCURRENT PROTECTION
MTD	MOUNTED
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
PAV	PRE-ACTION VALVE
PD	PRESSURE DROP
PG	PROPANE GAS OR PROPYLENE GLYCOL
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUND PER SQUARE INCH GAUGE
SPR	SPRINKLER
TYP	TYPICAL
UCD	UNDERCUT DOOR
UG	UNDERGROUND
V	VENT
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THROUGH ROOF
WCO	WALL CLEANOUT
WSA	WIRE SIZING AMPS
XP	EXPLOSION PROOF
	POINT OF DEACTIVATION OR NEW CONNECTION TO EXISTING

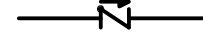
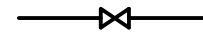
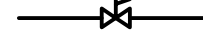
PIPING

	EXISTING WORK TO REMAIN
	EXISTING WORK TO BE REMOVED ON DEMOLITION DRAWINGS
	NEW WORK ON PROPOSED DRAWINGS
	FIRE PROTECTION PIPING

FITTINGS

	PIPE TURNING DOWN (PIPE DROP)
	PIPE TURNING UP (PIPE RISE)
	TEE UP (OFF TOP)
	TEE DOWN (OFF BOTTOM)
	PIPE DROP IN RUN
	PIPE DROP AND TURN
	TEE OFF TOP
	TEE OFF BOTTOM
	CROSS
	CROSS WITH RISER
	PLAIN ELBOW
	PLAIN TEE (OFF SIDE)
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	UNION
	FLANGED JOINT
	PIPE CAP
	THREADED HOSE END WITH CAP
	PIPE GUIDE
	PIPE ANCHOR
	WALL SLEEVE
	FLEX CONNECTION
	PRESSURE GAUGE
	BACKFLOW PREVENTER

VALVES

	CHECK
	GATE
	PRESSURE REGULATING OR REDUCING
	DOUBLE CHECK VALVE ASSEMBLY
	FLOW CONTROL VALVE ASSEMBLY

SPRINKLER SYMBOLS

	WET PENDENT, CONCEALED SPRINKLER
	WET PENDENT, SEMI-RECESSED SPRINKLER
	DRY PENDENT, CONCEALED SPRINKLER
	DRY PENDENT, SEMI-RECESSED SPRINKLER
	WET HORIZONTAL SIDEWALL SPRINKLER
	DRY HORIZONTAL SIDEWALL SPRINKLER
	WET UPRIGHT SPRINKLER
	DRY UPRIGHT SPRINKLER

GENERAL NOTES

1. THE SPRINKLER LAYOUT AND PIPE SIZES SHOWN ON THE FIRE PROTECTION DESIGN DOCUMENTS ARE TO DEFINE THE DESIGN INTENT FOR COMPETITIVE BIDDING AND FOR PRELIMINARY SUBMISSION TO THE AUTHORITIES HAVING JURISDICTION.
2. THE WORK OF THE FIRE PROTECTION CONTRACTOR'S CONTRACT SHALL INCLUDE HYDRAULIC CALCULATIONS AND SPRINKLER SYSTEM SHOP DRAWINGS INDICATIVE OF THE ACTUAL FIELD INSTALLED CONDITIONS. SPRINKLER SHOP DRAWINGS SHALL BE PREPARED BY THE FIRE PROTECTION CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO ANY SPRINKLER WORK BEGINNING IN THE FIELD. IT IS REQUIRED THAT SPRINKLER SYSTEMS BE SIZED HYDRAULICALLY IN ACCORDANCE WITH NFPA STANDARDS. ALL HYDRAULIC CALCULATIONS PREPARED AND SUBMITTED BY THE FIRE PROTECTION CONTRACTOR FOR REVIEW SHALL BEAR THE SEAL AND SIGNATURE OF A REGISTERED PROFESSIONAL ENGINEER.
3. THE FIRE PROTECTION CONTRACTOR SHALL LOCATE SPRINKLERS AS REQUIRED IN THESE DOCUMENTS AND PER THE REFERENCED NFPA 13 STANDARDS UTILIZING ARCHITECT'S REFLECTED CEILING PLAN, AS NECESSARY, FOR LOCATIONS OF LIGHTS, DIFFUSERS, ETC.
4. IT IS NOT THE INTENTION THAT THESE DRAWINGS DEPICT EVERY DEVICE REQUIRED FOR A COMPLETE SYSTEM. ALL SUCH ITEMS SHALL BE PROVIDED AS MAY BE NECESSARY TO PROVIDE A COMPLETE FIRE PROTECTION SYSTEM, TO THE SATISFACTION OF THE ENGINEER AND AUTHORITY HAVING JURISDICTION.

DRAWING TITLE
FIRE PROTECTION LEGEND
AND SYMBOLS

JOB NUMBER:
JOB TITLE

WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER

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WORCESTER, MA 01603 FAX: (508) 754-4681

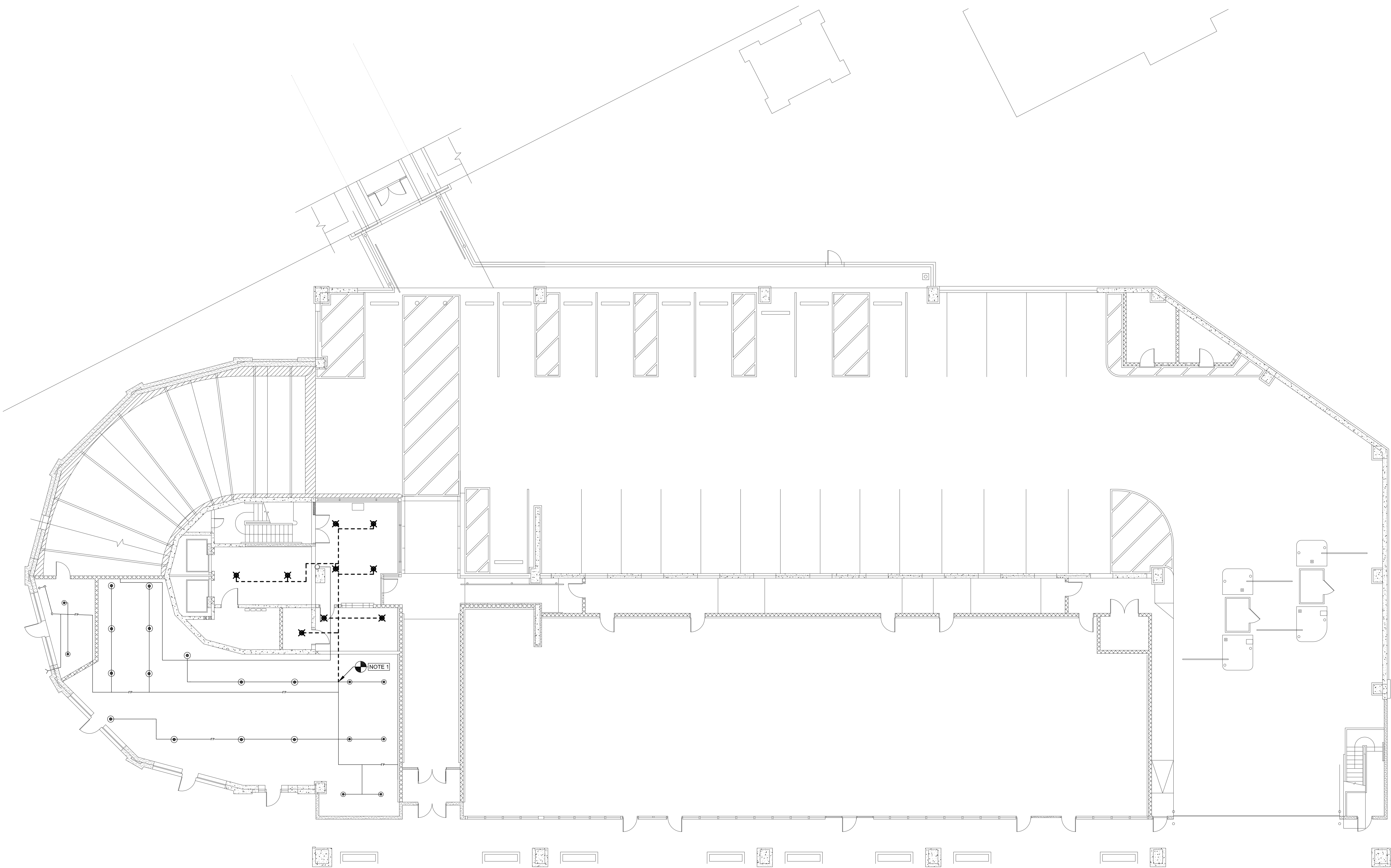
DRAWING NO.

FX-001

SCALE
NONE

DATE
FEBRUARY 2026

KEYED NOTES:
1. DEMOLISH EXISTING SPRINKLERS AND ASSOCIATED PIPING AND FITTINGS AS SHOWN.



1 FIRE PROTECTION - GROUND LEVEL - DEMOLITION
FXD-101/ SCALE: 3/32"=1'-0"

DRAWING TITLE
GROUND FLOOR FIRE
PROTECTION DEMOLITION PLAN

JOB NUMBER:
JOB TITLE

WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER

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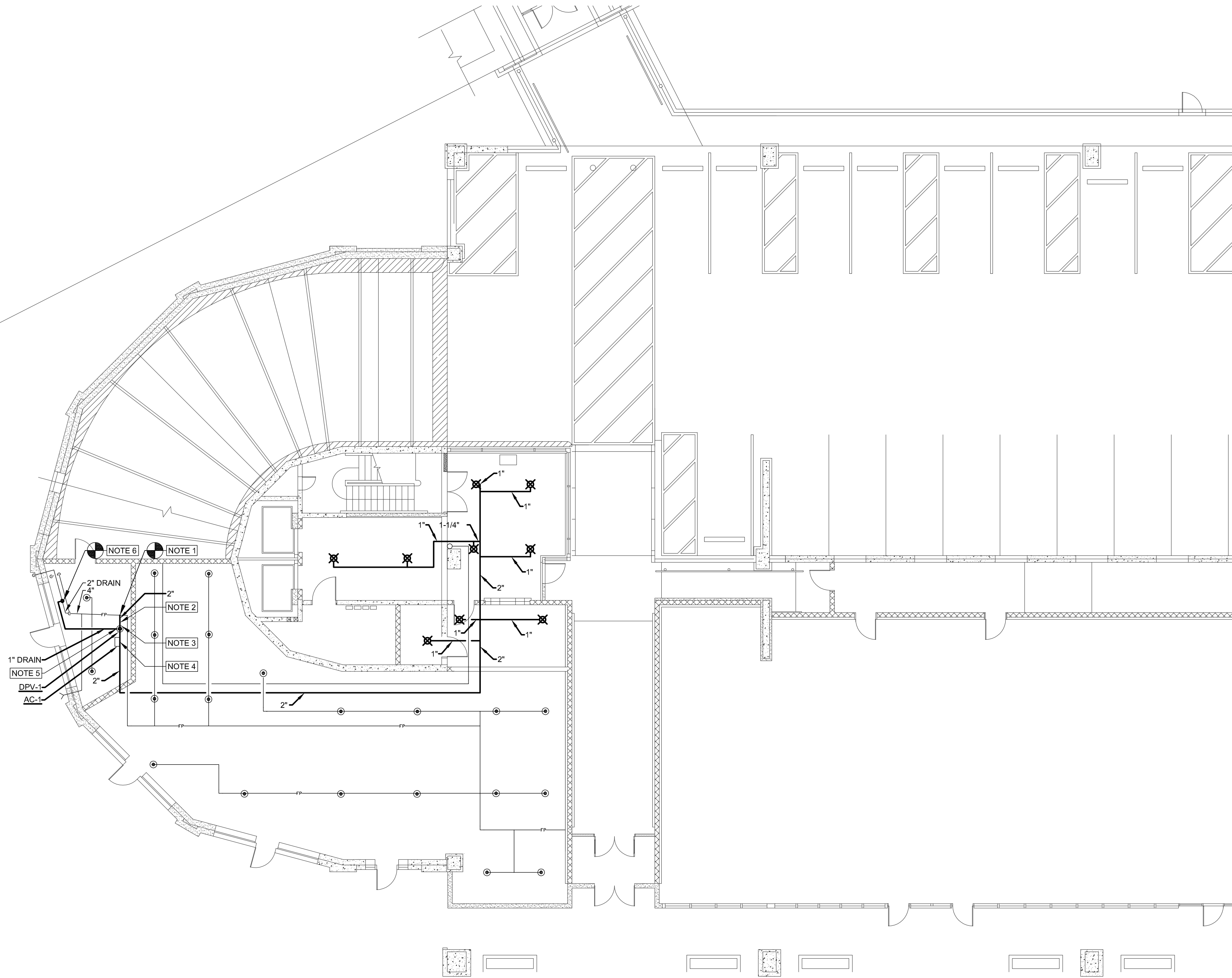
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DRAWING NO.

FXD-101

SCALE
3/32"=1'-0"

DATE
FEBRUARY 2026



1 FIRE PROTECTION - GROUND LEVEL - NEW WORK
FX-101 SCALE: 3/32"=1'-0"

DRY PIPE VALVE SCHEDULE								
TAG	MANUFACTURER	MODEL	MAXIMUM PRESSURE, PSIG	DIAMETER, IN.	CUT IN PRESSURE, PSIG	CUT OUT PRESSURE, PSIG	DRAIN DIAMETER, IN.	REMARKS
DPV-1	RELIABLE	65080-270	250	2	34	40	1	1, 2, 3
REMARKS:								
1) DRY VALVE MUST BE INSTALLED IN VERTICAL ORIENTATION.								
2) CONTROL VALVE AND PRESSURE SWITCH TO BE ORDERED LOOSE AND INSTALLED BY CONTRACTOR.								
3) FIRE PROTECTION CONTRACTOR TO CONFIRM VAVLE SIZE BASED ON HYDRAULIC CALCULATIONS.								

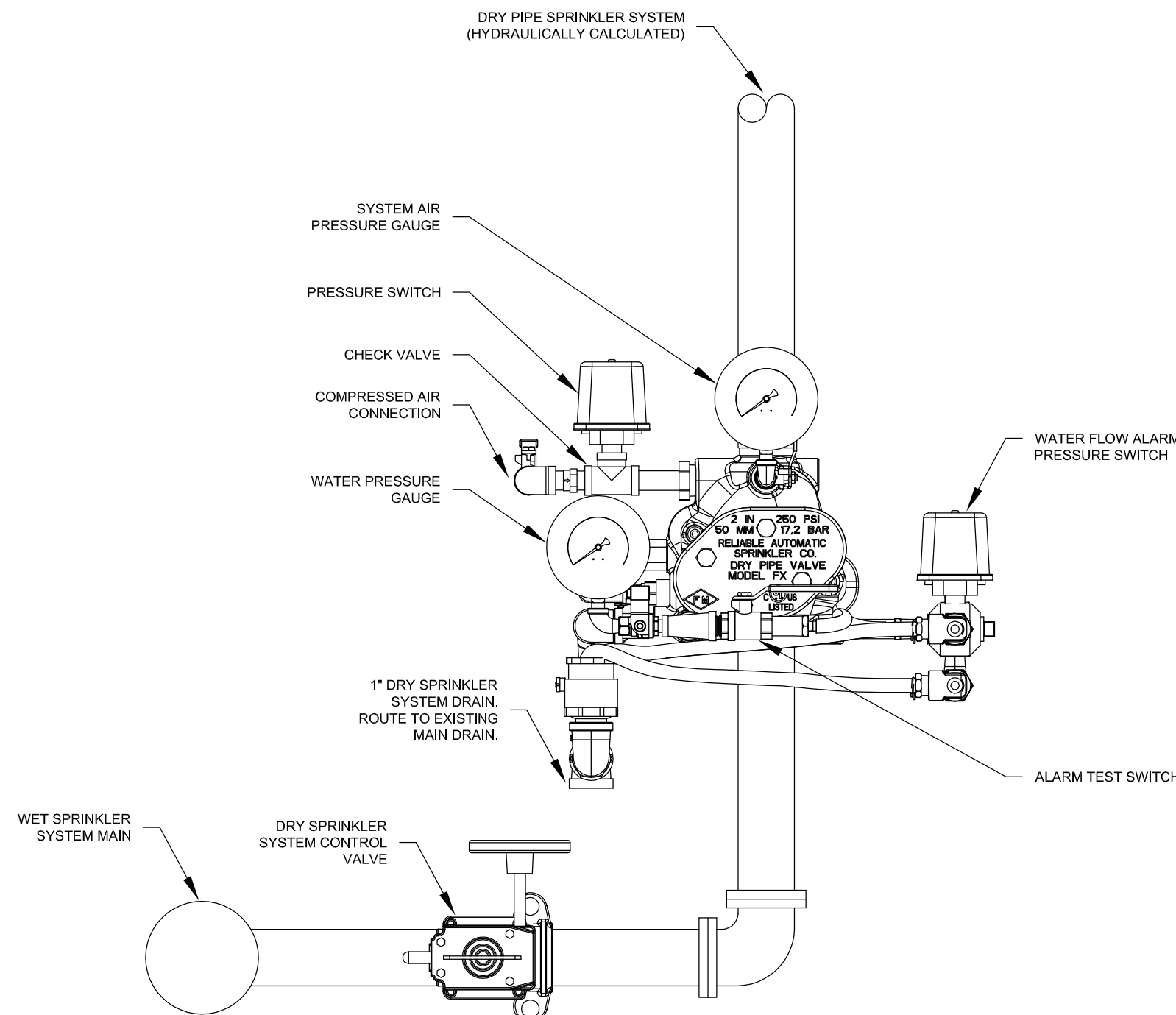
AIR COMPRESSOR SCHEDULE										
TAG	MANUFACTURER	MODEL	SYSTEM CAPACITY @ 40 PSI, GAL	CUT IN PRESSURE, PSIG	CUT OUT PRESSURE, PSIG	ELECTRICAL				REMARKS
						HP	VOLTAGE/HZ/PHASE	FLA	STARTUP AMP	
AC-1	RELIABLE	RRMA23016-2026	110	34	40	1/6	208/60/1	2.2	13	1, 2
REMARKS:										
1) FACTORY CUT IN / CUT OUT PRESSURES ARE 20 PSI / 26 PSI. ADJUST THE MAIN CALIBRATION SCREW TO ADJUST TO SCHEDULED SETPOINTS. SEE INSTALLATION MANUAL FOR LOCATION OF MAIN CALIBRATION SCREW.										
2) INCLUDE TANK-LESS CONNECTION KIT. PROVIDE AN AUTOMATIC DRAIN VALVE AT LOW POINT OF PIPING FROM AC-1 TO DPV-1. PROVIDE CHECK VALVE IN PIPING TO PREVENT WATER FROM FLOWING BACK TO COMPRESSOR.										

GENERAL NOTES:

- ALL NEW PIPE SIZING WAS DETERMINED USING THE PIPE SCHEDULE METHOD IN NFPA 13. FIRE PROTECTION CONTRACTOR SHALL DETERMINE PIPE SIZING BASED ON HYDRAULIC CALCULATIONS.

KEYED NOTES:

- PROVIDE A NEW 2" BRANCH CONNECTION TO EXISTING 4" MAIN AT THE LOCATION SHOWN.
- PROVIDE CONTROL VALVE IN HORIZONTAL PIPING UPSTREAM OF DRY PIPE VALVE, DPV-1. REFER TO FIRE PROTECTION RISER DETAIL AND SEQUENCE.
- ROUTE NEW 2" PIPE VERTICALLY AND PROVIDE DPV-1 IN VERTICAL RISE. DPV-1 SHALL BE INSTALLED IN VERTICAL ORIENTATION.
- ROUTE NEW 2" PIPE HORIZONTALLY AND PROVIDE RISER MOUNTED TANK-LESS AIR COMPRESSOR, AC-1.
- ROUTE 1" DRAIN FROM DPV-1 TO EXISTING 2" MAIN DRAIN PIPING.
- TIE 1" DRAIN FROM DPV-1 INTO EXISTING 2" MAIN DRAIN PIPING.



2 FIRE PROTECTION RISER DETAIL AND SEQUENCE
FX-101 SCALE: NOT TO SCALE

DRY PIPE VALVE AND AIR COMPRESSOR SEQUENCE OF OPERATIONS

- GENERAL: AC-1 SHALL PRESSURIZE THE DRY SIDE OF THE NEW FIRE PROTECTION BRANCH BETWEEN THE CUT IN AND CUT OUT PRESSURES.
- SET POINTS:
 - CUT IN PRESSURE: 34 PSIG
 - CUT OUT PRESSURE: 40 PSIG
- HIGH PRESSURE ALARM: GREATER THAN 40 PSIG
- STAGINGS: UTILIZE PACKAGED CONTROLS INTEGRAL TO AC-1.
 - WHEN THE PRESSURE IN THE DRY SYSTEM REACHES THE CUT IN PRESSURE, AC-1 SHALL BE ENGAGED AND BEGIN ADDING COMPRESSED AIR TO THE SYSTEM.
 - WHEN THE PRESSURE IN THE DRY SYSTEM REACHES THE CUT OUT PRESSURE, AC-1 SHALL BE DISENGAGED AND STOP ADDING COMPRESSED AIR TO THE SYSTEM.
- ALARMING:
 - WATER FLOW ALARM.
 - HIGH PRESSURE ALARM.

SPRINKLER SCHEDULE					
SYMBOL	MANUFACTURER	MODEL	TYPE	TEMPERATRUE RATING, °F	REMARKS
	REMARK 1	REMARK 1	DRY PENDENT SPRINKLER	155	1, 2
REMARKS:					
1) CONTRACTOR SHALL BE RESPONSIBLE FOR HYDRAULIC CALCULATIONS AND SELECTION OF DRY PENDENT SPRINKLER. REFER TO FIRE PROTECTION SPECIFICATION FOR ACCEPTABLE MANUFACTURERS.					
2) SPRINKLER SHALL BE SELECTED IN ACCORDANCE WITH "SPRINKLER HAZARD CLASSIFICATION".					

SPRINKLER HAZARD CLASSIFICATION		
HAZARD CLASSIFICATION	FLOW DENSITY, GPM/SQFT	AREA, SQFT
ORDINARY GROUP II	0.2	1,500

DRAWING TITLE
GROUND FLOOR FIRE PROTECTION NEW WORK PLAN

JOB NUMBER:
JOB TITLE

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DRAWING NO.

FX-101

SCALE
AS NOTED

DATE
FEBRUARY 2026

ABBREVIATIONS

AAV	AIR ADMITTANCE VALVE	PE	POLYETHYLENE
A/C	AIR CONDITIONING	PEX	CROSS LINKED POLYETHYLENE
ACH	AIR CHANGES PER HOUR	PF	PROPELLER FAN
AD	ACCESS DOOR	PG	PROPANE GAS OR PROPYLENE GLYCOL
AFF	ABOVE FINISHED FLOOR	PP	POLYPROPYLENE
AFG	ABOVE FINISHED GRADE	PRE	POWER ROOF EXHAUST
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY	PRV	PRESSURE REDUCING VALVE
AHU	AIR HANDLING UNIT	PWE	POWER WALL EXHAUSTER
AI	ANALOG INPUT	PSI	POUNDS PER SQUARE INCH
AO	ANALOG OUTPUT	PSIG	POUND PER SQUARE INCH GAUGE
AP	ACCESS PANEL	R/A	RETURN AIR
AS	AIR SEPARATOR	RD	ROOF DRAIN
ATC	AUTOMATIC TEMPERATURE CONTROLS	RH	RELATIVE HUMIDITY
BBD	BOILER BLOWDOWN	RTU	ROOFTOP UNIT
BD	BACKDRAFT DAMPER	RR	RETURN REGISTER
BF	BOILER FEED	S/A	SUPPLY AIR
BFF	BELOW FINISHED FLOOR	SD	SMOKE DAMPER OR SUPPLY DIFFUSER
BFP	BACKFLOW PREVENTER	SF	SUPPLY FAN
BG	BLAST GATE	SH	SHOWER
BHP	BRAKE HORSEPOWER	SIC	SQUARE INLINE CENTRIFUGAL
BI	BACKWARD INCLINED	SP	STATIC PRESSURE
BIA	BACKWARD INCLINED AIRFOIL	SR	SUPPLY REGISTER
BOD	BOTTOM OF DUCT	SS	STAINLESS STEEL
BOP	BOTTOM OF PIPE	T/A	TRANSFER AIR
BTU	BRITISH THERMAL UNIT	TAB	TESTING, ADJUSTING & BALANCING
BTUH	BTU PER HOUR	TD	TRENCH DRAIN
CAP	COMBUSTION AIR FAN	UR	TRANSFER GRILLE
CAP	CAPACITY	TIC	TUBULAR INLINE CENTRIFUGAL
CC	COOLING COIL	TMX	THERMOSTATIC MIXING VALVE
CD	CONDENSATE DRAIN	TOD	TOP OF DUCT
CFM	CUBIC FEET PER MINUTE	TSP	TOTAL STATIC PRESSURE
CI	CAST IRON	TYP	TYPICAL
CL	CENTERLINE	UCD	UNDERCUT DOOR
CLG	CEILING	UG	UNDERGROUND
CO	CLEANOUT	UH	UNIT HEATER
CONN	CONNECTION	UR	URINAL
COP	COEFFICIENT OF PERFORMANCE	US	UTILITY SINK
CU	CONDENSING UNIT OR COPPER	V	VENT
CUH	CABINET UNIT HEATER	VAV	VARIABLE AIR VOLUME
CW	COLD WATER OR CLOTHES WASHER	VB	VACUUM BREAKER
DB	DRY BULB	VD	VOLUME DAMPER
DDC	DIRECT DIGITAL CONTROL	VFD	VARIABLE FREQUENCY DRIVE
DF	DRINKING FOUNTAIN	VTR	VENT THROUGH ROOF
DG	DIGESTER GAS	WB	WET BULB
DI	DIGITAL INPUT	WC	WATER CLOSET OR WATER COLUMN
DIA	DIAMETER	WCO	WALL CLEANOUT
DN	DOWN	WG	WATER GAUGE
DO	DIGITAL OUTPUT	WH	WATER HEATER
DWG	DRAWING	XP	EXPLOSION PROOF
EA	EXHAUST AIR		
EAT	ENTERING AIR TEMPERATURE		
EC	ELECTRICAL CONTRACTOR		
EE	EMERGENCY EYEWASH		
EER	ENERGY EFFICIENCY RATIO		
EES	EMERGENCY EYEWASH & SHOWER		
EF	EXHAUST FAN		
EGT	ENTERING GAS TEMPERATURE		
EH	EXHAUST HOOD		
ER	EXHAUST REGISTER		
ERH	EXTERIOR ROOF HYDRANT		
ERU	ENERGY RECOVERY UNIT		
ESP	EXTERNAL STATIC PRESSURE		
ET	EXPANSION TANK		
EWC	ELECTRIC WATER COOLER		
EWI	ENTERING WATER TEMPERATURE		
EWH	EXTERIOR WALL HYDRANT		
EXIST	EXISTING		
FA	FREE AREA		
FC	FORWARD CURVED OR FLEXIBLE CONNECTION		
FCU	FAN COIL UNIT		
FCO	FLOOR CLEANOUT		
FD	FLOOR DRAIN OR FIRE DAMPER		
FDC	FIRE DEPARTMENT CONNECTION		
FDV	FIRE DEPARTMENT HOSE VALVE		
FFU	FAN FILTER UNIT		
FH	FILTER HOUSING		
FL	FAIL LAST		
FLA	FULL LOAD AMPS		
FM	FLOW METER OR FACTORY MUTUAL		
FMS	FACILITY MANAGEMENT SYSTEM		
FP	FIRE PROTECTION		
FPI	FINS PER INCH		
FPM	FEET PER MINUTE		
FRP	FIBERGLASS REINFORCED PLASTIC		
FS	FLOW SWITCH OR FLOOR SINK		
FT	FEET		
F&T	FLOAT AND THERMOSTATIC		
G	GAS		
GC	GENERAL CONTRACTOR		
GF	GAS FURNACE		
GMU	GLYCOL MAKEUP UNIT		
GPH	GALLONS PER HOUR		
GPM	GALLONS PER MINUTE		
GUH	GAS UNIT HEATER		
HB	HOSE BIBB		
HC	HEATING COIL		
HD	HEAD		
HP	HORSEPOWER OR HEAT PUMP		
HRU	HEAT RECOVERY UNIT		
HS	HOSE STATION		
HX	HEAT EXCHANGER		
HZ	HERTZ		
ID	INSIDE DIAMETER		
IEER	INTEGRATED ENERGY EFFICIENCY RATIO		
IH	INTAKE HOOD		
IW	INDIRECT WASTE		
IWH	INTERIOR WALL HYDRANT		
KS	KITCHEN SINK		
L	LAVATORY		
LAT	LEAVING AIR TEMPERATURE		
LGT	LEAVING GAS TEMPERATURE		
LBS	POUNDS		
LP	LIQUID PROPANE		
LWCO	LOW WATER CUT OFF		
LWT	LEAVING WATER TEMPERATURE		
MBH	THOUSAND BTUH		
MC	MECHANICAL CONTRACTOR		
MCA	MINIMUM CIRCUIT AMPACITY		
MMBH	MILLION BTUH		
MOCP	MAXIMUM OVERCURRENT PROTECTION		
MD	MOTORIZED DAMPER		
MS	MOP SINK		
MTD	MOUNTED		
NC	NORMALLY CLOSED		
NEC	NATIONAL ELECTRIC CODE		
NG	NATURAL GAS		
NIC	NOT IN CONTRACT		
NO	NORMALLY OPEN		
NTS	NOT TO SCALE		
OBD	OPPOSED BLADE DAMPER		
O/A	OUTSIDE AIR		
PD	PRESSURE DROP		

VALVES

	AUTOMATIC FLOW CONTROL
	BALL OR BUTTERFLY (SIZE DEPENDENT)
	CHECK
	BALANCING
	GATE
	GLOBE
	PLUG
	PRESSURE REGULATING OR REDUCING
	RELIEF
	ANGLE PATTERN MULTI PURPOSE PUMP DISCHARGE
	STRAIGHT PATTERN MULTI PURPOSE PUMP DISCHARGE
	VALVE IN TEE DROP
	VALVE IN TEE RISE
	VALVE IN ELBOW DROP
	VALVE IN ELBOW RISE
	2-WAY CONTROL (ELECTRONIC)
	2-WAY CONTROL (PNEUMATIC)
	3-WAY CONTROL (ELECTRONIC)
	3-WAY CONTROL (PNEUMATIC)

FITTINGS

	EXPANSION JOINT
	PIPE TURNING DOWN (PIPE DROP)
	PIPE TURNING UP (PIPE RISE)
	TEE UP (OFF TOP)
	TEE DOWN (OFF BOTTOM)
	PIPE DROP IN RUN
	PIPE DROP AND TURN
	TEE OFF TOP
	TEE OFF BOTTOM
	PLAIN ELBOW
	SANITARY ELBOW
	PLAIN TEE (OFF SIDE)
	SANITARY TEE (OFF SIDE)
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	UNION
	FLANGED JOINT
	PIPE CAP
	THREADED HOSE END WITH CAP
	METAL GASKET FACE SEAL
	PIPE GUIDE
	PIPE ANCHOR
	WALL SLEEVE
	FLEX CONNECTION
	PRESSURE GAUGE
	TEMPERATURE GAUGE
	AUTOMATIC AIR VENT
	MANUAL AIR VENT
	PUMP
	DIFFERENTIAL PRESSURE
	TRAP PRIMER
	TEST PLUG
	WATER FILTER HOUSING AND CARTRIDGE
	WYE STRAINER
	WYE STRAINER W/BLOWDOWN
	BASKET STRAINER
	PUMP SUCTION DIFFUSER
	VACUUM BREAKER
	BACKFLOW PREVENTER
	WALL HYDRANT (ELEVATION)
	WALL HYDRANT (PLAN VIEW)
	CLEANOUT END OF LINE
	WALL CLEANOUT
	FLOOR CLEANOUT
	TRAP

PIPING

	EXISTING WORK TO REMAIN
	EXISTING WORK TO BE REMOVED ON DEMOLITION DRAWINGS
	NEW WORK ON PROPOSED DRAWINGS
	CONDENSATE DRAIN
	GAS PIPING
	FUEL OIL FILL
	FUEL OIL SUPPLY
	FUEL OIL RETURN
	FUEL OIL VENT
	FIRE PROTECTION SPRINKLER
	TEPID WATER
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RECIRC.
	SANITARY DRAIN
	SANITARY DRAIN BELOW FLOOR
	SANITARY VENT
	STORM DRAIN
	STORM DRAIN BELOW FLOOR
	SECONDARY STORM DRAIN
	INDIRECT DRAIN
	NON POTABLE WATER
	NON POTABLE HOT WATER
	DIRECTION OF FLOW
	PITCH PIPE DOWN
	COMPRESSED AIR

DRAWING TITLE
UNDERGROUND PLUMBING
LEGEND AND SYMBOLS

JOB NUMBER:
JOB TITLE

WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER

CONSULTANT
HallamICS
AN EMPLOYEE OWNED COMPANY
575 West Street, Suite 220
Mansfield, MA 02048
Tel: 508.821.9739 www.Hallam-ICS.com

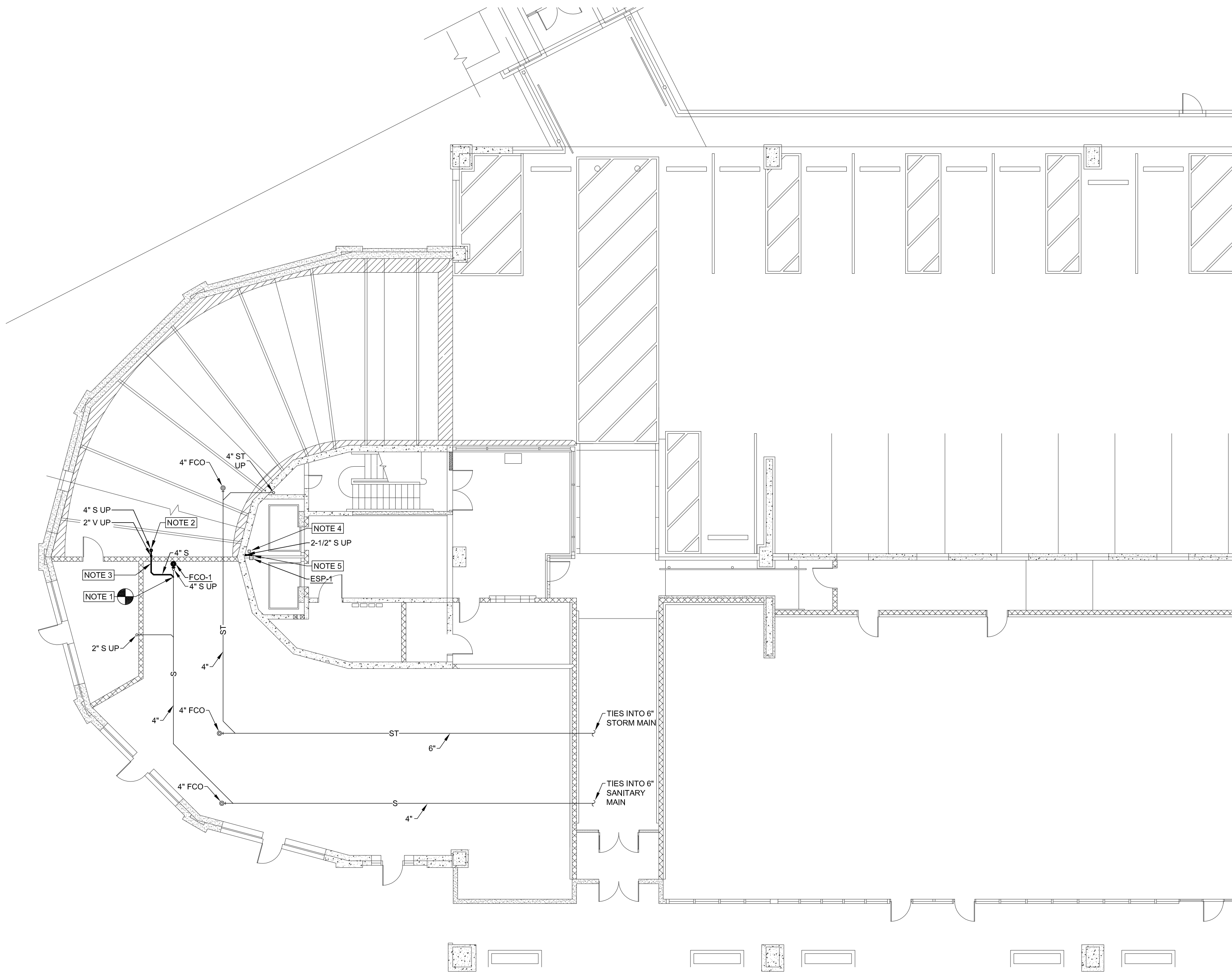
ARCHITECT
HAULT ARCHITECTS, INC.
77 HOPE AVENUE
WORCESTER, MA 01603
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FAX: (508) 754-6881

DRAWING NO.

PL-001

SCALE
NONE

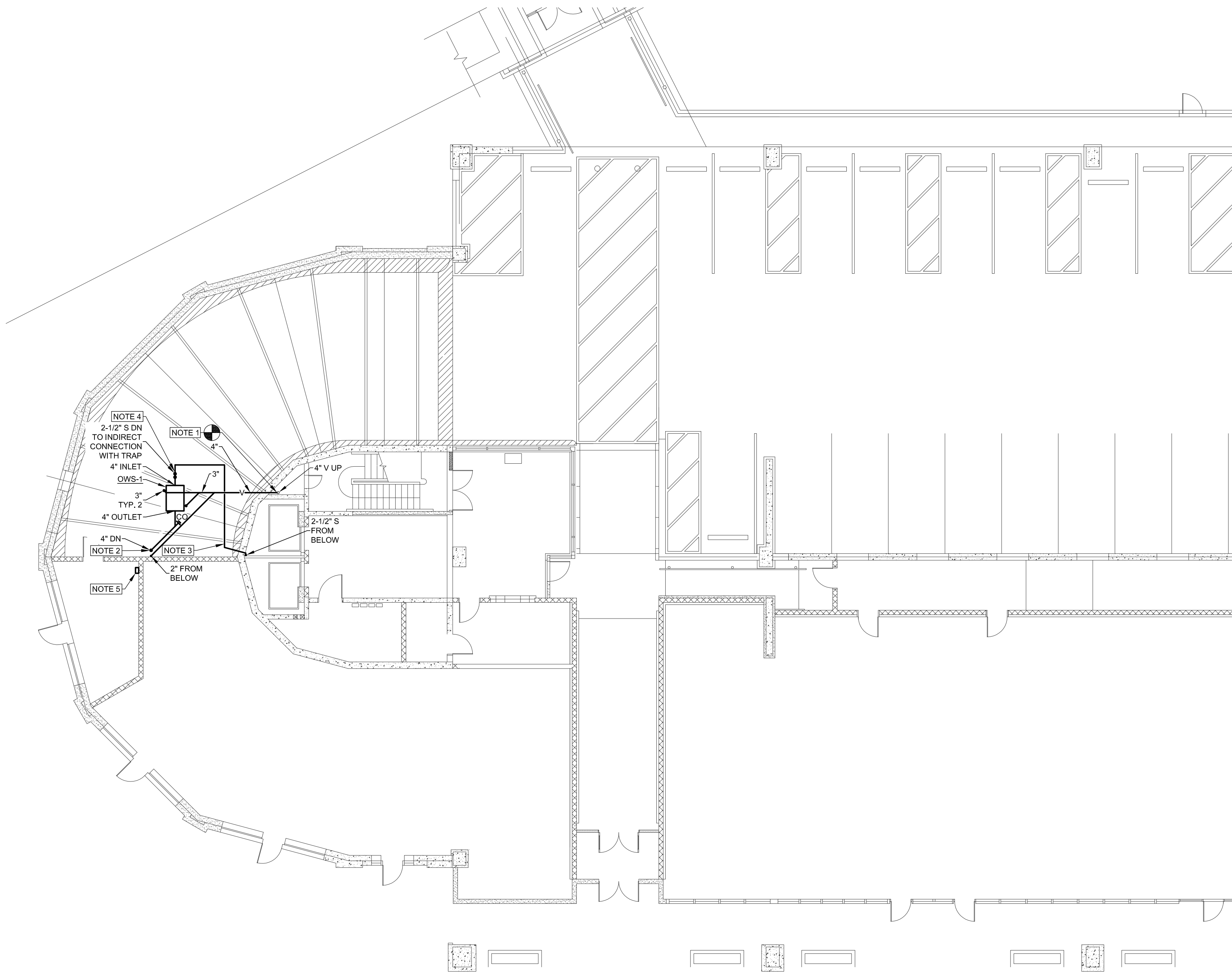
DATE
FEBRUARY 2026



- KEYED NOTES:
1. TIE IN NEW 4" SANITARY PIPE INTO EXISTING.
 2. ROUTE 4"S UP AND ROUTE TO QWS-1 OUTLET. SLOPE 4" S PIPE AT 1/4"FT SLOPED DOWN AWAY FROM QWS-1.
 3. PROVIDE CHECK VALVE IN NEW LENGTH OF SANITARY PIPING.
 4. PROVIDE WATERBUG 200, WB200 OR SIMILAR DEVICE TO LOCALLY ALARM IF WATER IS NOT BEING REMOVED FROM ELEVATOR PIT. REFER TO ELECTRICAL DRAWINGS FOR CONNECTION TO POWER AND LOCAL ALARM.
 5. TRANSITION FROM 2" TO 2-1/2" S AT THE DISCHARGE OF ESP-1.

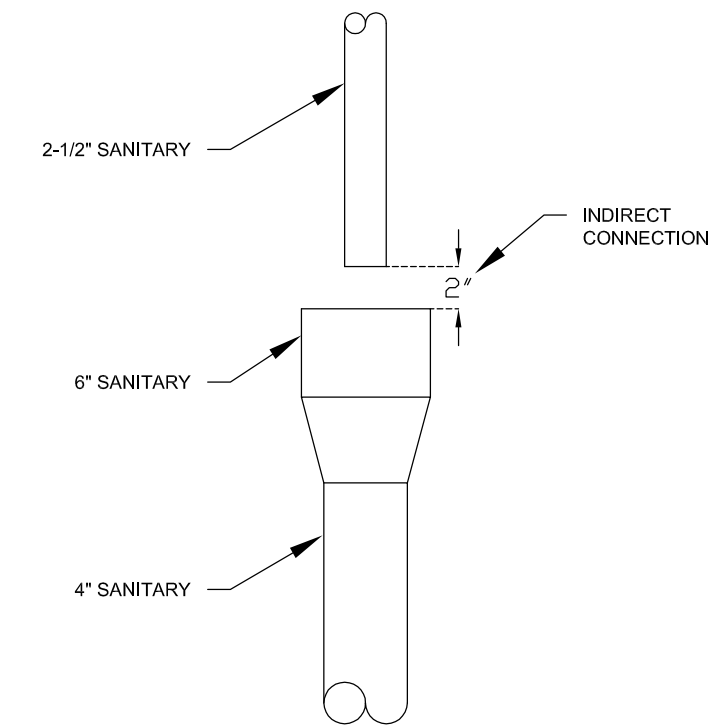
1 UNDERGROUND PLUMBING - NEW WORK
PL-101 SCALE: 3/32"=1'-0"

DRAWING TITLE UNDERGROUND PLUMBING NEW WORK PLAN	
JOB NUMBER: JOB TITLE WATERPROOFING AND REPAIRS UNION STATION GARAGE CITY OF WORCESTER	
CONSULTANT HallamICS AN EMPLOYEE OWNED COMPANY 575 West Street, Suite 220 Mansfield, MA 02048 Tel: 508.821.9739 www.Hallam-ICS.com	
ARCHITECT NAULT ARCHITECTS, INC. 17 HOPE AVENUE WORCESTER, MA 01603 TEL: (508) 776-6134 FAX: (508) 754-6881	
	DRAWING NO. PL-101
SCALE 3/32"=1'-0"	DATE FEBRUARY 2026

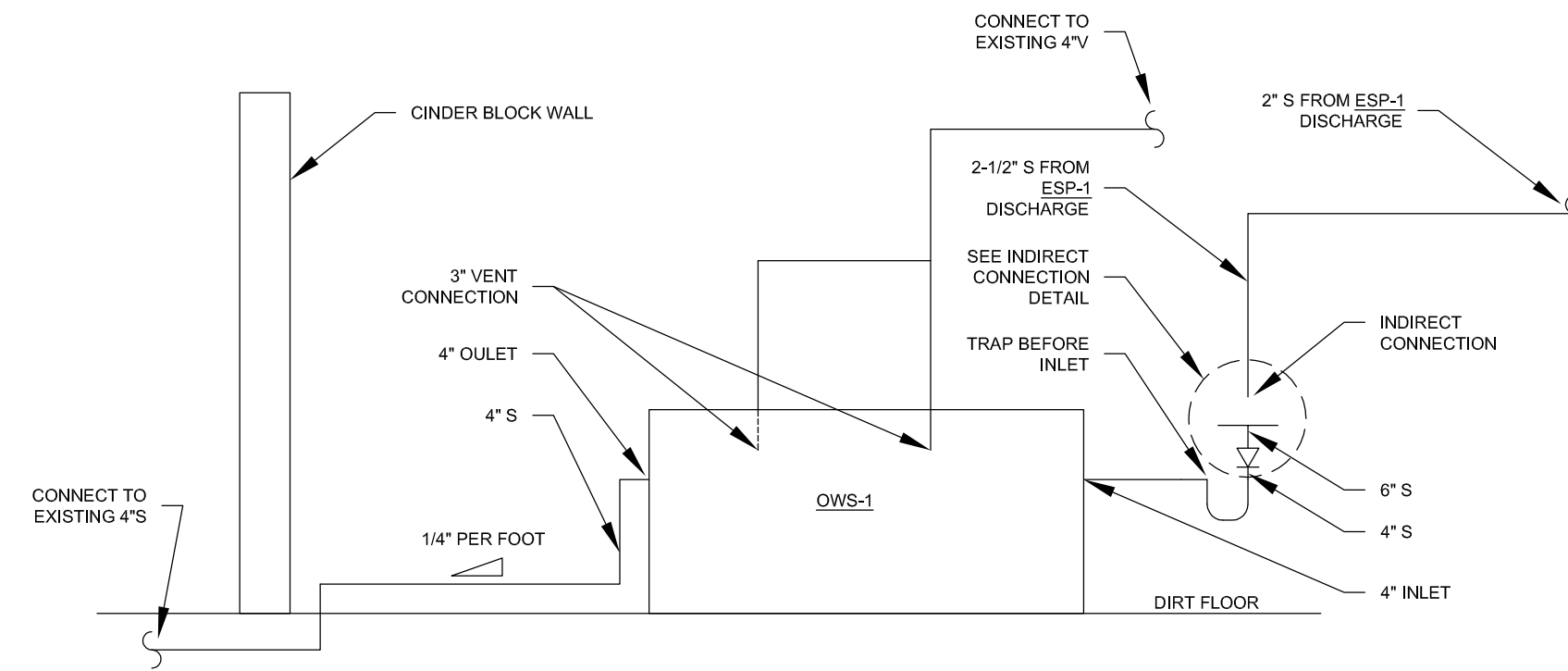


1 GROUND FLOOR PLUMBING - NEW WORK
SCALE: 3/32"=1'-0"

- KEYED NOTES:
1. TIE IN NEW 4" VENT PIPE INTO EXISTING 4" RISER.
 2. ROUTE 4" S PIPE FROM BELOW TO OUTLET OF OWS-1. SLOPE 4" S PIPE AT 1/4" FT SLOPED DOWN AWAY FROM OWS-1.
 3. PROVIDE AN ACCESSIBLE CHECK VALVE FOLLOWED BY AN ACCESSIBLE FULL PORT SHUT OFF VALVE.
 4. INDIRECTLY DRAIN 2-1/2" S FROM ESP-1 DISCHARGE INTO 6" S OPEN ENDED PIPE. REFER TO OIL WATER SEPARATOR PIPING DIAGRAM.
 5. MOUNT SLICK STICK CONTROL PANEL AS SHOWN IN MECHANICAL G05. REFER TO ELECTRICAL DRAWINGS FOR CONNECTION TO POWER AND LOCAL ALARM.



2 INDIRECT CONNECTION DETAIL
SCALE: NOT TO SCALE



3 OIL WATER SEPARATOR PIPING DIAGRAM
SCALE: NOT TO SCALE

DRAWING TITLE
GROUND FLOOR PLUMBING
NEW WORK PLAN

JOB NUMBER:
JOB TITLE

WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER

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DRAWING NO.

PL-102

SCALE
AS NOTED

DATE
FEBRUARY 2026

ELEVATOR SUMP PUMP SCHEDULE														
TAG	LOCATION	MANUFACTURER	MODEL	TYPE	DISCHARGE SIZE, IN.	CIRCULATING FLUID			ELECTRICAL				DIMENSIONS, IN. X IN.	REMARKS
						FLUID	FLOW, GPM	HEAD, FT	HP	VOLTS	PHASE	MAX RPM		
ESP-1	ELEVATOR PIT	SULZER	EJ 05W	SEWAGE PUMP	2	WATER	50	19	0.5	115	1	1,750	10 X 6.5	
REMARKS:														

OIL WATER SEPARATOR SCHEDULE												
TAG	MANUFACTURER	MODEL	TYPE	FLOW RATE, GPM	TOTAL CAPACITY, GAL	OIL CAPACITY, GAL	INLET / OUTLET, IN.	VENTS, IN.	VENT QUANTITY	DIMENSIONS L X W X H, IN.	WEIGHT, LBS	REMARKS
OWS-1	STRIEM	OS-50-SS	HIGH EFFICIENCY	50	57	14.25	4	3	2	37 X 28 X 31.5	93	1, 2
REMARKS:												
1) PROVIDE SLICK STICK OPTION FOR MONITORING AND ALARMING OF OIL LEVEL. SLICK STICK OPTION COMES WITH 50' OF WIRING INLCUDED. MOUNT SLICK STICK CONTROL PANEL IN MECHANICAL G05. REFER TO ELECTRICAL DRAWINGS FOR CONNECTION TO POWER AND LOCAL ALARM. DO NOT MONT IN A PUBLICLY ACCESSIBLE LOCATION.												
2) PROVIDE 1/2" PVC AS NECESSARY PER MANUFACTURER INSTALLATION INSTRUCTIONS FOR PROPER OPERATION OF SLICK STICK.												

PLUMBING FIXTURE SCHEDULE											
TAG	DESCRIPTION	DESIGN BASIS		MOUNTING	FLOW, GPM	CONNECTIONS, IN.					REMARKS
		MFR	MODEL			HW	CW	TW	V	S	
FCO-1	FLOOR CLEANOUT	ZURN	CO-2521 4"	FLOOR	0	0	0	0	0	4	
REMARKS:											

DRAWING TITLE
PLUMBING SCHEDULES

JOB NUMBER:
JOB TITLE

WATERPROOFING AND REPAIRS
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CITY OF WORCESTER

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DRAWING NO.

PL-601

SCALE
NONE
DATE
FEBRUARY 2026

ELECTRICAL SYMBOL LEGEND

REFER TO ELECTRICAL SPECIFICATIONS DIVISION 16000 FOR MORE INFORMATION.

POWER

	EQUIPMENT CONNECTION
	LIGHT SWITCH
	DIMMER LIGHT SWITCH
	OCCUPANCY SENSOR LIGHT SWITCH
	LIGHT SWITCH WITH PILOT LIGHT
	BOILER SWITCH
	KEY OPERATED SWITCH
	LOCKING SWITCH
	MOMENTARY LOW VOLTAGE SWITCH
	MOTOR SENTINEL SWITCH
	SPEED CONTROL SWITCH
	THREE WAY SWITCH
	FOUR WAY SWITCH
	SIMPLEX RECEPTACLE
	DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE, ABOVE COUNTER
	ARC FAULT RECEPTACLE
	COIL REEL RECEPTACLE
	GROUND FAULT DUPLEX RECEPTACLE
	WEATHERPROOF DUPLEX RECEPTACLE
	QUADRAPLEX RECEPTACLE
	DUPLEX RECEPTACLE, FLOOR MOUNTED
	SPECIAL PURPOSE RECEPTACLE
	SUBSCRIPT DENOTES NEMA CONFIGURATION
	JUNCTION BOX
	FLOOR BOX, W/DUPLEX RECEPTACLE AND TELE/DATA OUTLET
	OCCUPANCY SENSOR, WALL MOUNTED
	OCCUPANCY SENSOR, CEILING MOUNTED
	OCCUPANCY SENSOR, POWER PACK
	PHOTO CONTROLLED SWITCH
	AMBIENT LIGHT SWITCH
	VACANCY SENSOR
	DISCONNECT SWITCH
	FUSIBLE DISCONNECT SWITCH
	BUSPLUG DISCONNECT SWITCH
	MOTOR CONTROLLER
	COMBINATION MOTOR CONTROLLER/DISCONNECT
	RELAY
	CONTACTOR
	CIRCUIT BREAKER W/ENCLOSURE, NUMBER DENOTES AMPS
	AUTO TEMPERATURE CONTROL PANEL
	AUTOMATIC TRANSFER SWITCH
	VARIABLE FREQUENCY DRIVE
	VARIABLE SPEED DRIVE
	ELECTRICAL PANEL
	CURRENT TRANSFORMER CABINET
	MOTOR
	SINGLE UTILITY METER
	TIME CLOCK
	PUSH BUTTON
	FIOMATIC
	POWER/COMM. POLE
	BRANCH CIRCUIT HOMERUN TO PANEL
	ELECTRICAL EMERGENCY OFF BUTTON
	GAS SOLENOID EMERGENCY OFF BUTTON

LIGHTING

	EXIT LIGHT, WALL MOUNTED, LETTER DENOTES TYPE EXIT LIGHT, CEILING MOUNTED, LETTER DENOTES TYPE
	EMERGENCY LIGHTS, BATTERY BACKUP
	EMERGENCY LIGHTS, REMOTE BATTERY
	EMERGENCY LIGHTS, REMOTE HEAD
	SURFACE MOUNTED PANEL FIXTURE/TROFFER, UPPER CASE LETTER DENOTES TYPE, LOWER CASE DENOTES SWITCHING
	RECESSED MOUNTED PANEL FIXTURE/TROFFER, UPPER CASE LETTER DENOTES TYPE, LOWER CASE DENOTES SWITCHING
	WALL MOUNTED LINEAR FIXTURE, UPPER CASE LETTER DENOTES TYPE, LOWER CASE DENOTES SWITCHING
	STRIP LIGHT FIXTURE, UPPER CASE LETTER DENOTES TYPE, LOWER CASE DENOTES SWITCHING
	EMERGENCY INDUSTRIAL LIGHT FIXTURE
	EMERGENCY LIGHT PANEL FIXTURE/TROFFER, LETTER DENOTES TYPE.
	WALL MOUNTED LIGHT FIXTURE, UPPER CASE LETTER DENOTES TYPE, LOWER CASE DENOTES SWITCHING
	CEILING MOUNTED/RECESSED LIGHT FIXTURE, UPPER CASE LETTER DENOTES TYPE, LOWER CASE DENOTES SWITCHING
	EMERGENCY CEILING MOUNTED/RECESSED LIGHT FIXTURE, UPPER CASE LETTER DENOTES TYPE, LOWER CASE DENOTES SWITCHING
	PENDANT LIGHT FIXTURE, UPPER CASE LETTER DENOTES TYPE, LOWER CASE LETTER DENOTES SWITCHING
	POST TOP LUMINAIRE
	BOLLARD LIGHT FIXTURE
	POLE LIGHT, SINGLE HEAD
	POLE LIGHT, DOUBLE HEAD
	FAN/LIGHT COMBINATION
	TRACK LIGHTING W/FIXTURE HEAD
	EMERGENCY LIGHTING 924 MONITOR MODULE

DATA/COMM

	DATA OUTLET, SUBSCRIPT DENOTES QUANTITY
	TELEPHONE OUTLET, SUBSCRIPT DENOTES QUANTITY
	COMBINATION DATA/TELEPHONE OUTLET
	DATA OUTLET, FLOOR MOUNTED
	TELEPHONE OUTLET, FLOOR MOUNTED
	TELEPHONE BELL

SECURITY/ACCESS CONTROL

	CARD READER
	DOOR CONTACTS
	DOOR OPERATOR
	ELECTRIC STRIKE
	LOCAL DOOR ALARM
	DOOR LOCK
	MAGNETIC LOCK
	PASSIVE INFRARED SENSOR
	REQUEST TO EXIT DEVICE
	KEY PAD
	DOOR OPERATOR PUSH PAD
	CAMERA (FIXED IF NO SUBSCRIPT)
	PTZ SUBSCRIPT DENOTES PAN, TILT, ZOOM

NURSE CALL

	NURSE CALL, PATIENT STATION
	NURSE CALL, CODE CALL STATION
	NURSE CALL, MULTIPURPOSE STATION
	NURSE CALL, EMERGENCY STATION
	NURSE CALL, DOME LIGHT

FIRE ALARM

	MANUAL FIRE PULL STATION
	MASTER BOX
	BELL
	SPEAKER
	STROBE LIGHT/SPEAKER
	STROBE LIGHT/HORN
	HORN
	STROBE LIGHT-WALL MOUNTED
	STROBE LIGHT-CEILING MOUNTED
	MAGNETIC DOOR HOLDER
	REMOTE TEST STATION
	STROBE LIGHT/CHIME
	SMOKE DETECTOR, NO SUBSCRIPT-PHOTOELECTRIC, SUBSCRIPTS: I=IONIZATION, H=PHOTOELECTRIC W/135° HEAT DETECTION S=PHOTOELECTRIC W/SOUNDER BASE
	HEAT DETECTOR
	CO DETECTOR
	DUCT MOUNTED SMOKE DETECTOR
	DUCT MOUNTED HEAT DETECTOR
	SPRINKLER TAMPER SWITCH AND ADDRESSABLE MODULE
	SPRINKLER FLOW SWITCH AND ADDRESSABLE MODULE
	SPRINKLER PRESSURE SWITCH AND ADDRESSABLE MODULE
	FIRE ALARM CONTROL PANEL
	FIRE ALARM VOICE PANEL
	FIRE ALARM ANNUNCIATOR
	ADDRESSABLE RELAY MODULE
	ADDRESSABLE MODULE MONITOR
	ISOLATION MODULE
	KNOX BOX
	FIRE ALARM BOOSTER PANEL

ONE-LINE

	NON-FUSED DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	CONTACTOR
	PANELBOARD, MAIN LUG ONLY
	PANELBOARD, MAIN CIRCUIT BREAKER
	TRANSFER SWITCH: ATS=AUTOMATIC TRANSFER MTS=MANUAL TRANSFER BYP=BYPASS
	CIRCUIT BREAKER: AF=AMP FRAME AT=TRIP SETTING OF CIRCUIT BREAKER P=NUMBER OF POLES
	CIRCUIT BREAKER WITH AUXILIARY CONTACT
	CIRCUIT BREAKER WITH SHUNT TRIP
	CIRCUIT BREAKER WITH KIRK KEY
	CIRCUIT BREAKER WITH FIELD ADJUSTABLE LONG, SHORT, INSTANTANEOUS AND GROUND FAULT SETTING AND WITH DELAYS
	HORSEPOWER RATED LOCKABLE SWITCH WITH ENCLOSURE
	GROUND CONNECTION
	GENERATOR
	MOTOR
	FUSE
	METERSOCKET
	CURRENT TRANSFORMER CABINET AND METER SOCKET
	SURGE PROTECTIVE DEVICE

ABBREVIATIONS

A	AMPERES
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
C	CONDUIT
CB	CIRCUIT BREAKER
CLG	CEILING
BD	BUS DUCTS
DN	DOWN
DWG	DRAWING
EAS	ENVIRONMENTAL ALARM SYSTEM
EF	EXHAUST FAN
ELEV	ELEVATION
EXIST	EXISTING
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FG	FINISHED GRADE
FOC	FIBER OPTIC CABLE
FS	FLOAT SWITCH
G	GROUND
GEN	GENERATOR
HH	HAND HOLD
IDF	INTERMEDIATE DISTRIBUTION FRAME
JBOX	JUNCTION BOX
LP	LIGHTING PANEL
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDF	MAIN DISTRIBUTION FACILITY
MH	MAN HOLE/MAGNETIC HOLD
MIN	MINIMUM
MLO	MAIN LUG ONLY
MOCP	MAXIMUM OVERCURRENT PROTECTION
NACP	NOTIFICATION APPLIANCE CONTROL PANEL
NIC	NOT IN CONTRACT
φ	PHASE
P	POLE
PP	POWER PANEL
PRI	PRIMARY
SEC	SECONDARY
SW	SWITCH
TYP	TYPICAL
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
VSD	VARIABLE SPEED DRIVE
W	WIRE
WP	WEATHERPROOF
WW	WIREWAY
---	EXISTING WORK TO REMAIN
-----	EXISTING WORK TO BE REMOVED ON DEMOLITION DRAWINGS
---	NEW WORK ON PROPOSED DRAWINGS

DRAWING TITLE
ELECTRICAL LEGEND

JOB NUMBER:
JOB TITLE

WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER

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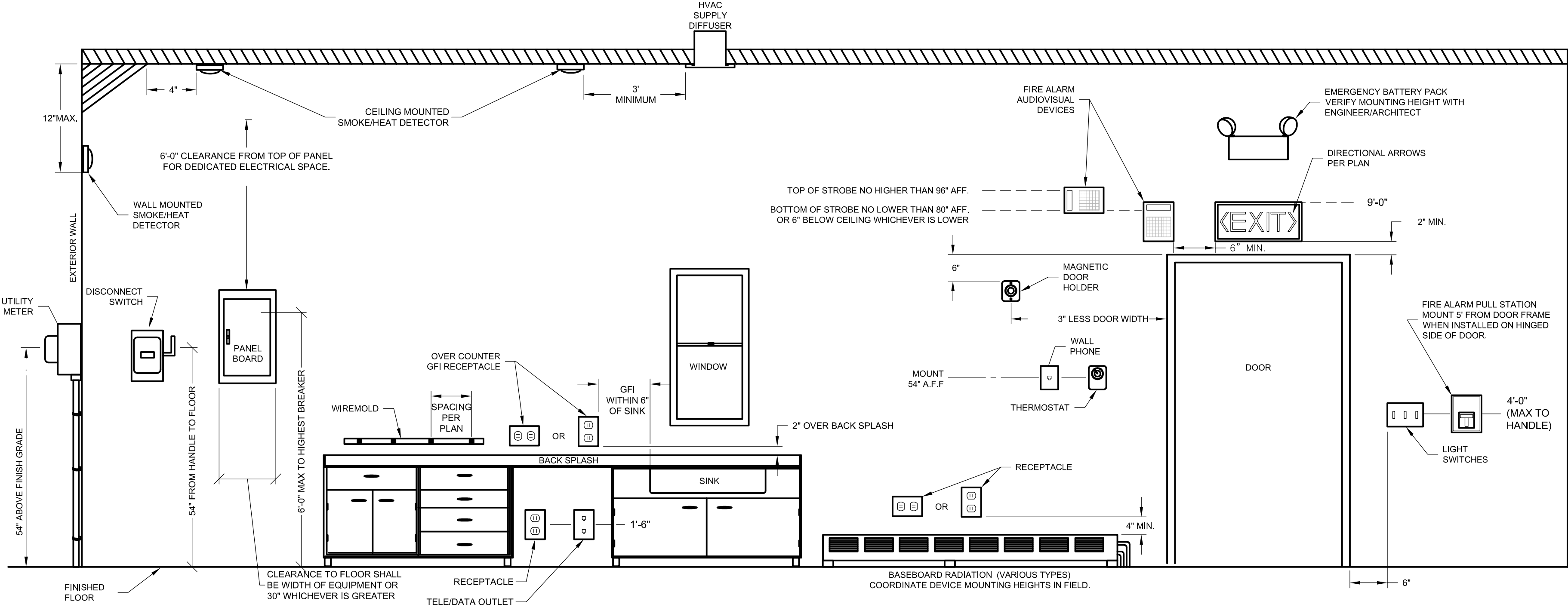
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DRAWING NO.

E-001

SCALE
NO SCALE

DATE
FEBRUARY 2026

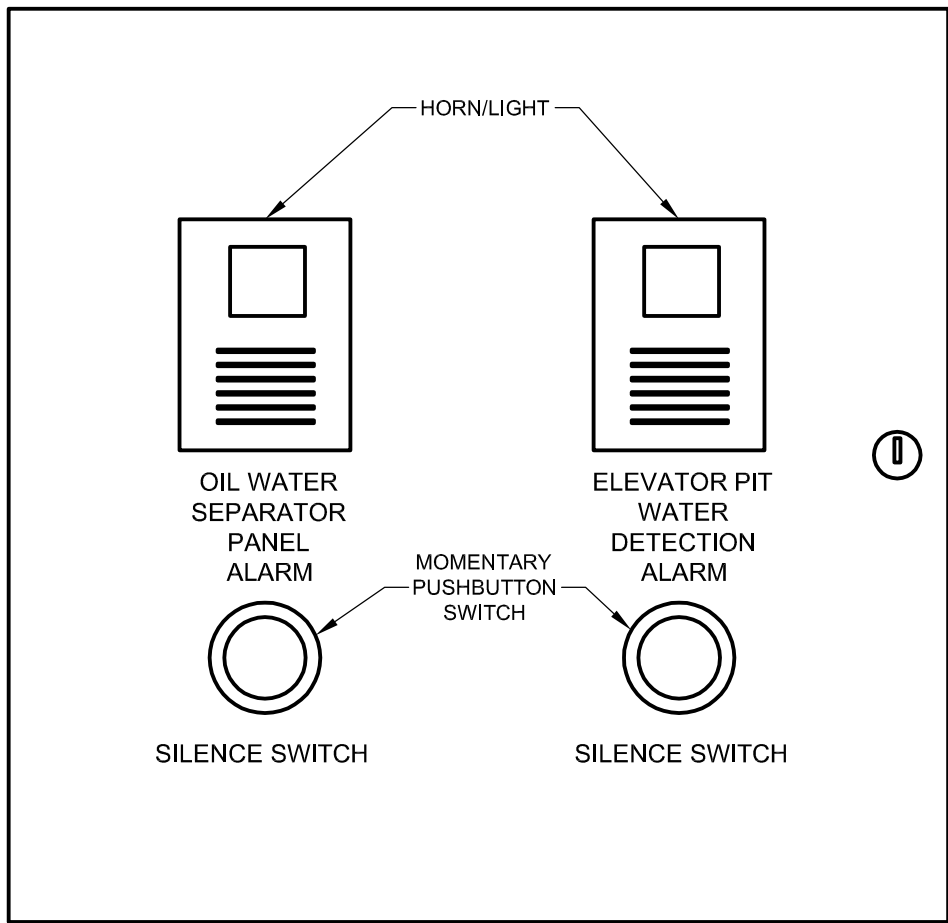


TYPICAL DEVICE MOUNTING HEIGHTS DETAIL

SCALE: NONE

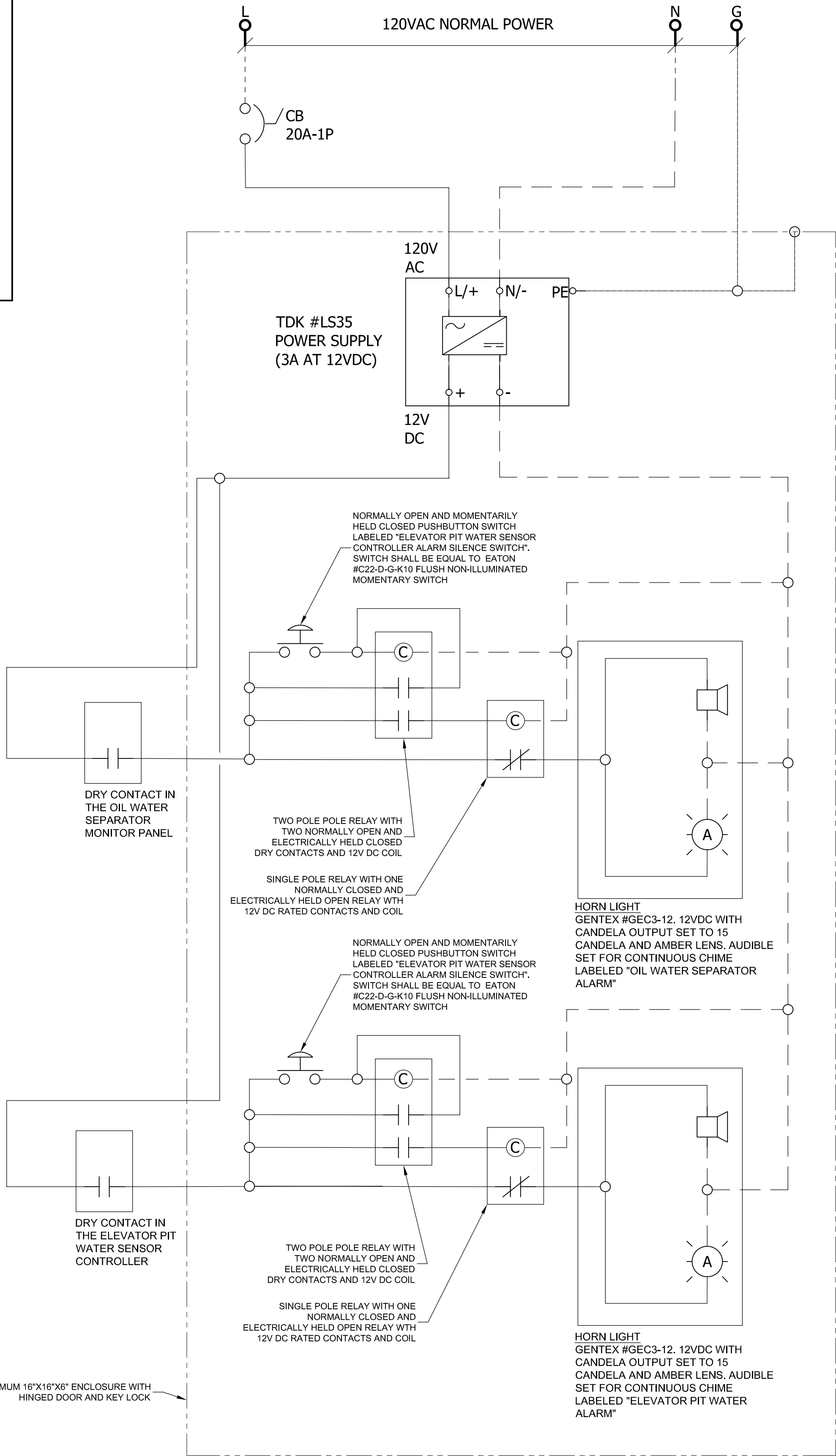
NOTES:

1. ALL MOUNTING HEIGHTS SHALL BE MEASURED FROM FINISHED FLOOR TO CENTERLINE OF DEVICE, EXCEPT FIRE ALARM AUDIOVISUAL DEVICES AND EXIT SIGNS.
2. DEVICES SHALL BE INSTALLED ON A COMMON VERTICAL CENTERLINE WHEREVER POSSIBLE.
3. ALL DEVICES SHALL BE INSTALLED AT MOUNTING HEIGHTS INDICATED ON THIS DETAIL UNLESS NOTED OTHERWISE. COORDINATE FINAL LOCATIONS OF ALL DEVICES WITH MILLWORK AND ARCHITECTURAL DRAWINGS.
4. VERIFY ORIENTATION (HORIZONTAL OR VERTICAL) OF COUNTER RECEPTACLE WITH ENGINEER/ARCHITECT.
5. ARCHITECTURAL ELEVATIONS AND SECTIONS SHALL SUPERSEDE THIS DETAIL WHEN IN CONFLICT.
6. MANUALLY OPERABLE DEVICES AND DEVICES HAVING VISUAL DISPLAYS SHALL NOT BE INSTALLED LESS THAN 18 INCHES FROM AN INSIDE CORNER OF A WALL FOR ACCESSIBILITY UNLESS OTHERWISE NOTED.
7. LOW VOLTAGE LIGHTING CONTROL DEVICES (I.E. OCCUPANCY SENSORS, PHOTOSENSORS, ETC.) ARE INCLUSIVE OF ASSOCIATED POWER PACKS AND POWER SUPPLIES UNLESS OTHERWISE NOTED.



LOCAL MONITORING ALARM PANEL FRONT ELEVATION

SCALE: NONE



LOCAL MONITORING ALARM PANEL WIRING DIAGRAM

SCALE: NONE

DRAWING TITLE
MOUNTING HEIGHT AND
LOCAL ALARM PANEL DETAILS

JOB NUMBER:
JOB TITLE

WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER

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DRAWING NO.

E-002

SCALE
NO SCALE

DATE
FEBRUARY 2026

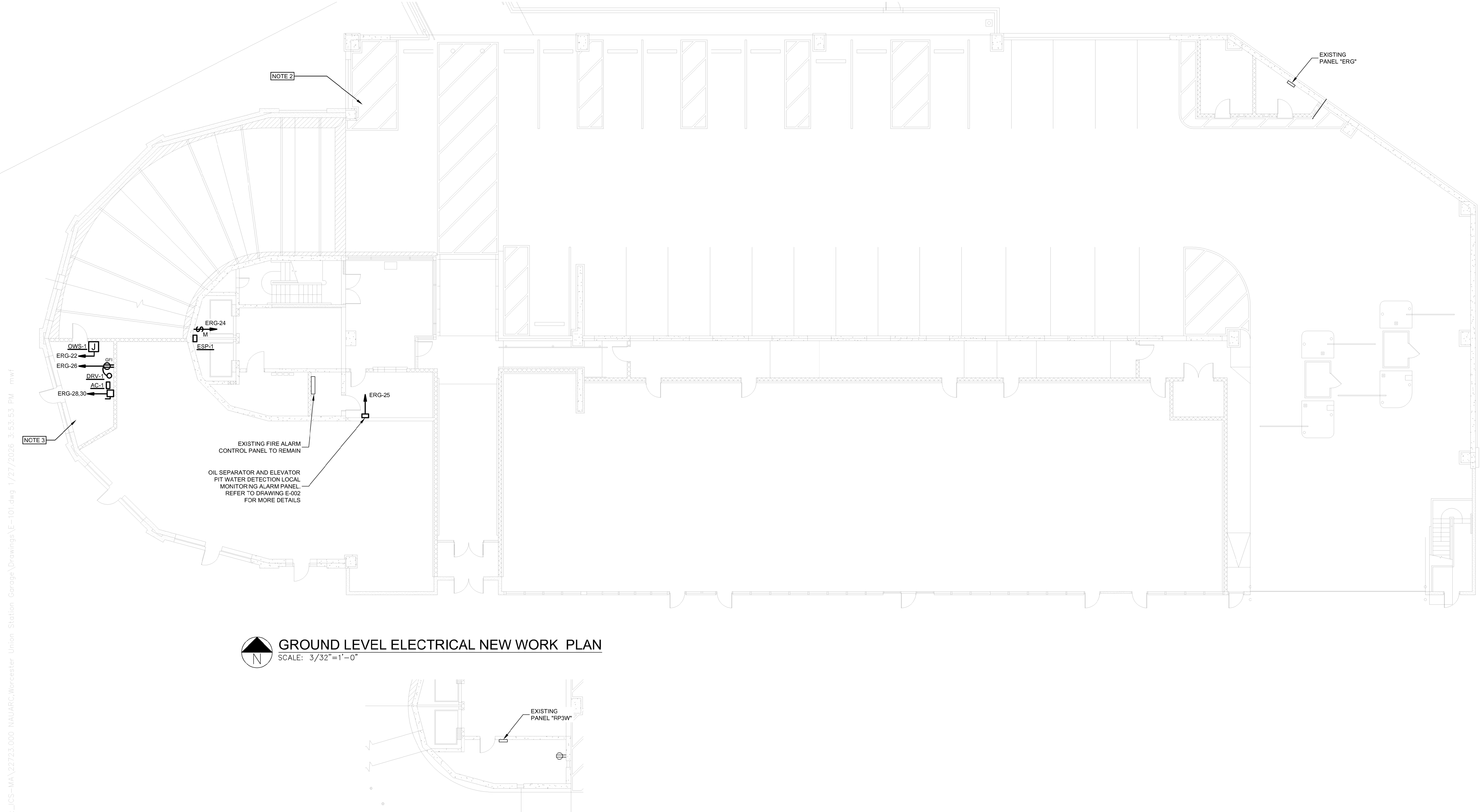
PANEL ERG									
	240/120 VOLTS, 1- PHASE, 3 - WIRE					LOCATION: MAIN EMERGENCY - ELECTRIC ROOM			
						MOUNTING: SURFACE			
	100A MAIN BREAKER					TYPE: -			
	225A BUS RATING								
				10KAIC		TOTAL LOAD: 14.7 KVA			
	REMARKS: -								
CIRC. NO	SIZE	DESCRIPTION	KVA	PH	CIRC. NO	SIZE	DESCRIPTION	KVA	
1	20A-1P	FIRE ALARM CONTROL PANEL	0.6	A	2	20A-1P	CCTV POWER SOURCE (PARKING OFFICE)	0.72	
3	20A-1P	FIRE ALARM NAC PANEL N1 ON 1ST FLOOR	0.6	B	4	20A-1P	EMERGENCY OUTLET	0.36	
5	20A-1P	SPARE		A	6	20A-1P	EMERGENCY OUTLET	0.36	
7				B	8				
9	40A-3P	7.5KW HEATER SERVING THE MAIN EMERGENCY ELECTRIC ROOM	8.3	A	10	60A-2P	ELEVATOR SUBPANEL		
11				B	12	20A-1P	EXISTING SPARE		
13	20A-1P	CALL FOR AID POWER SOURCE	0.2	A	14	20A-1P	GENERAL RECEPTACLES (MAIN EM - ELEC RM)	0.36	
15	20A-1P	PBX PLUGS	0.2	B	16	20A-1P	GENERAL RECEPTACLES (MAIN EM - ELEC RM)	0.36	
17	20A-1P	COMMUNICATIONS BOARD PLUGS	0.2	A	18	20A-1P	EXHAUST FAN DAMPER (MAIN EM - ELEC RM)	0.36	
19				B	20	20A-1P	EXISTING SPARE		
21	60A-3P	PANEL IN THE GENERATOR ENCLOSURE		A	22	20A-1P	OIL WATER SEPARATOR ALARM POWER	0.20	
23				B	24	20A-1P	ELEVATOR SUMP PUMP	1.30	
25	20A-1P	OWS AND LEAK DETECTION ALARM PANEL		A	26	20A-1P	AUTOMATIC DRAIN VALVE DEDICATED RECEPT	0.18	
27	20A-1P	SPARE		B	28				
29	20A-1P	SPARE		A	30	20A-2P	NEW AIR COMPRESSOR	0.45	

MOTOR CIRCUIT SCHEDULE													
TAG	DESCRIPTION	SOURCE/CIRCUIT	BRANCH CIRCUIT	OCPD	HORSEPOWER (kW) [FLA] <MCA>	VOLTAGE	PHASE	CONTROLLER			LOCAL DISCONNECT		NOTES
								TYPE	SIZE	LOCATION	SWITCH SIZE	FUSE SIZE	
AC-1	AIR COMPRESSOR	ERG-28,30	3#12 & 1#12GND IN 3/4"C	20A-2P	[2.2]	208	1	-	-	-	30A	-	1
DPV-1	DRY PIPE VALVE	ERG-26	2#12 & 1#12GND IN 3/4"C	20A-1P	(0.2)	120	1	-	-	-	-	-	2
ESP-1	ELEVATOR SUMP PUMP	ERG-24	2#12 & 1#12GND IN 3/4"C	20A-1P	[10.6]	120	1	-	-	-	-	-	

NOTES:
1. NON-FUSED LOCAL DISCONNECT INTEGRAL TO EQUIPMENT
2. PLUGS INTO A NEMA 5-20R OUTLET

GENERAL NOTES:
A. SEE SHEET E-001 FOR ELECTRICAL LEGEND AND ABBREVIATIONS.
B. SEE SHEET E-002 FOR DEVICE MOUNTING HEIGHT DETAIL.

KEYED NOTES:
1. REUSE EXISTING SPARE BREAKER.
2. NO POWER SCOPE WITHIN THIS REGION.
3. COORDINATE EXACT LOCATIONS OF EQUIPMENT WITH THE MECHANICAL AND PLUMBING CONTRACTORS PRIOR TO INSTALLATION.



GROUND LEVEL ELECTRICAL NEW WORK PLAN
SCALE: 3/32"=1'-0"

THIRD LEVEL ELECTRICAL ROOM PARTIAL PLAN
SCALE: 3/32"=1'-0"

DRAWING TITLE
**GROUND FLOOR ELECTRICAL
NEW WORK PLAN**

JOB NUMBER:
JOB TITLE

**WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER**

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FAX: (508) 754-6661

DRAWING NO.

EP-101

SCALE
3/32"=1'-0"

DATE
FEBRUARY 2026

FIRE ALARM

- F

MANUAL FIRE PULL STATION
- MB

MASTER BOX
- B

BELL
- S

SPEAKER
- SL

STROBE LIGHT/SPEAKER
- SLH

STROBE LIGHT/HORN
- H

HORN
- SLW

STROBE LIGHT-WALL MOUNTED
- SLC

STROBE LIGHT-CEILING MOUNTED
- MH

MAGNETIC DOOR HOLDER
- RT

REMOTE TEST STATION
- SLCH

STROBE LIGHT/CHIME
- S

SMOKE DETECTOR, NO SUBSCRIPT:PHOTOELECTRIC,
SUBSCRIPTS: I=IONIZATION,
H=PHOTOELECTRIC W/135° HEAT DETECTION
S=PHOTOELECTRIC W/SOUNDER BASE
- H

H_{95°} HEAT DETECTOR
- CD

CO DETECTOR
- DS

DUCT MOUNTED SMOKE DETECTOR
- DH

DUCT MOUNTED HEAT DETECTOR
- TS

SPRINKLER TAMPER SWITCH AND ADDRESSABLE MODULE
- FS

SPRINKLER FLOW SWITCH AND ADDRESSABLE MODULE
- PS

SPRINKLER PRESSURE SWITCH AND ADDRESSABLE MODULE
- FACP

FIRE ALARM CONTROL PANEL
- FAVP

FIRE ALARM VOICE PANEL
- FA

FIRE ALARM ANNUNCIATOR
- ARM

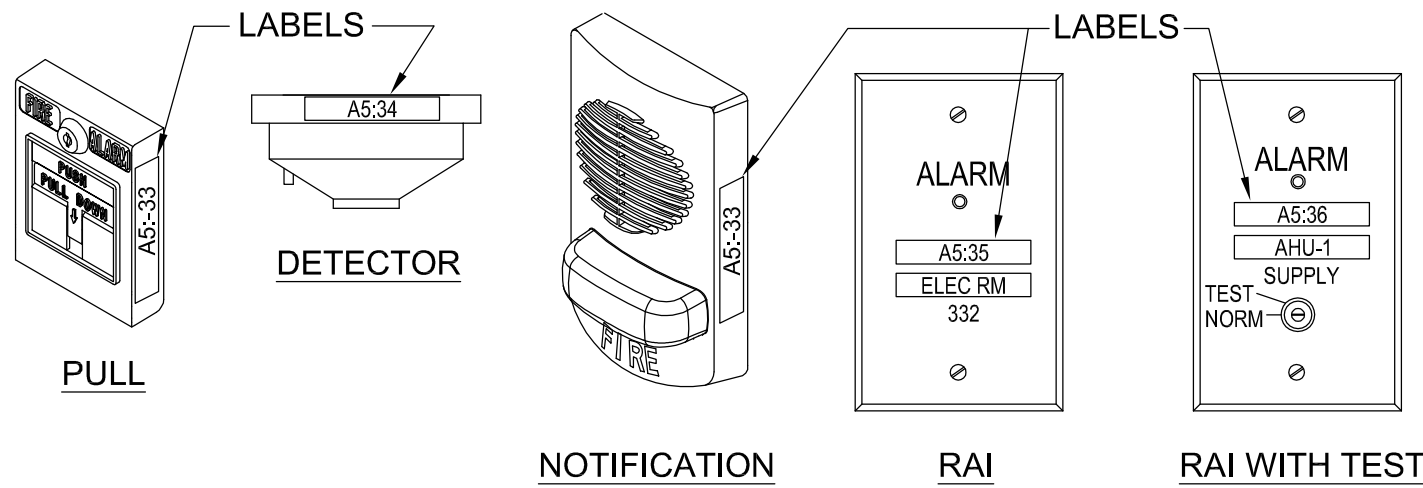
ADDRESSABLE RELAY MODULE
- AMM

ADDRESSABLE MODULE MONITOR
- IM

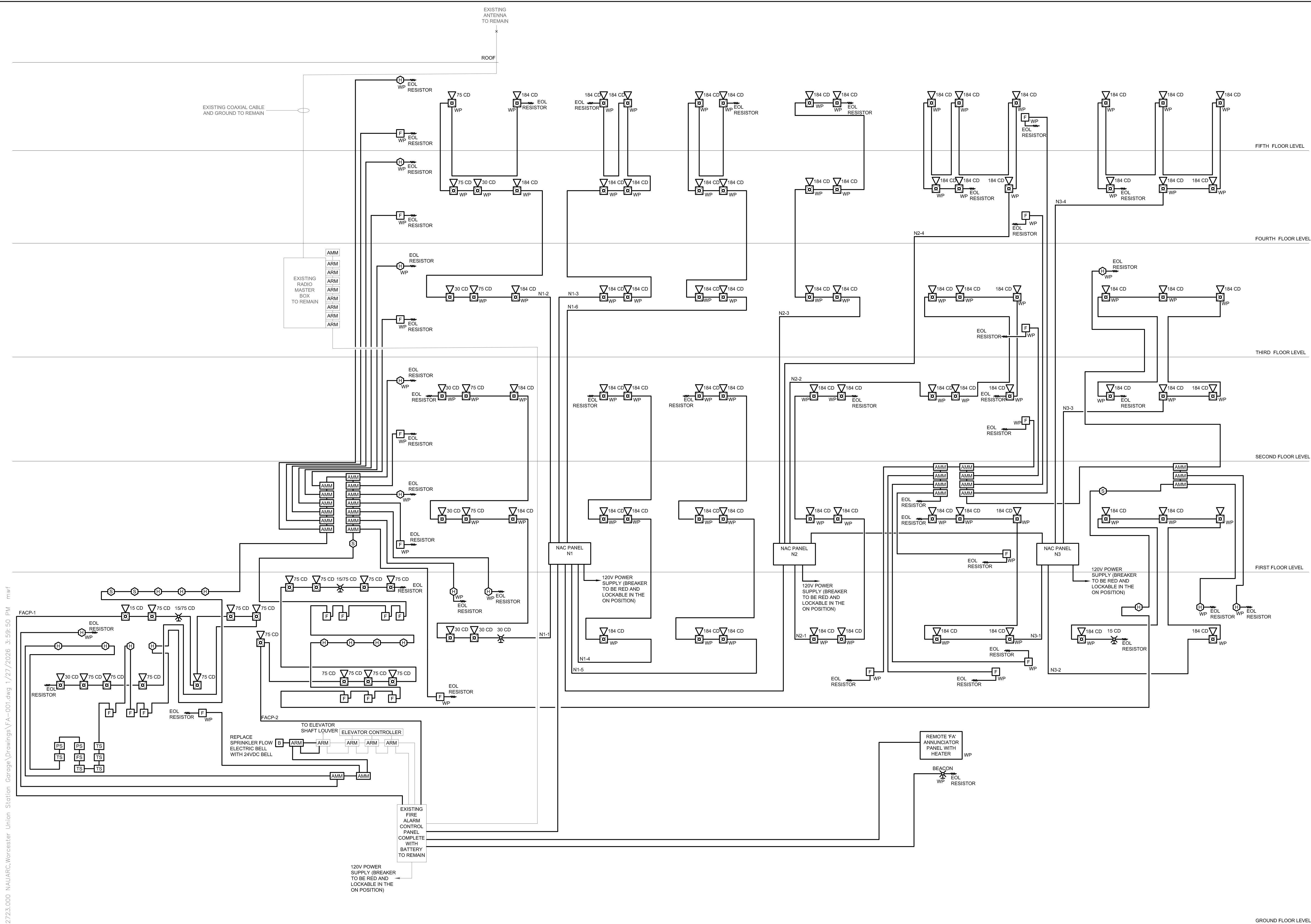
ISOLATION MODULE
- KB

KNOX BOX

FIRE ALARM INPUT/OUTPUT MATRIX																			
		CONTROL UNIT ANNUNCIATION						NOTIFICATION										REQUIRED SAFETY CONTROL	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
SYSTEM INPUTS		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	MANUAL PULL STATION	X	X					X	X	X	X								
2	SMOKE DETECTOR	X	X					X	X	X	X								
3	HEAT SMOKE DETECTOR	X	X					X	X	X	X								
4	HEAT DETECTOR IN GROUND ELEVATOR LOBBY (PRIMARY LEVEL)	X	X					X	X	X	X							X	X
5	HEAT DETECTOR IN FIRST FLOOR ELEVATOR LOBBY (SECONDARY LEVEL)	X	X					X	X	X	X							X	X
6	HEAT DETECTOR IN FLOOR ELEVATOR LOBBY (ABOVE FIRST FLOOR LEVEL)	X	X					X	X	X	X							X	X
7	HEAT DETECTOR IN ELEVATOR MACHINE ROOM	X	X					X	X	X	X								X
8	SPRINKLER FLOW SWITCH	X	X					X	X	X	X	X						X	
9	SPRINKLER HIGH PRESSURE (FLOW) SWITCH	X	X					X	X	X	X	X						X	
10	SPRINKLER LOW PRESSURE (FLOW) SWITCH			X	X							X							
11	SPRINKLER CONTROL VALVE			X	X							X							
12	NOTIFICATION APPLIANCE CIRCUIT SHORT					X	X											X	
13	FIRE ALARM AC POWER FAILURE					X	X											X	
14	FIRE ALARM SYSTEM LOW BATTERY					X	X											X	
15	OPEN CIRCUIT					X	X											X	
16	GROUND FAULT					X	X											X	
17	PLACE RADIO MASTER BOX IN BY-PASS															X			
18	RADIO MASTER BOX TROUBLE CONDITION					X	X										X		



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FIRE ALARM RISER
NOT TO SCALE

DRAWING TITLE
FIRE ALARM RISER

JOB NUMBER:
JOB TITLE

WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER

CONSULTANT
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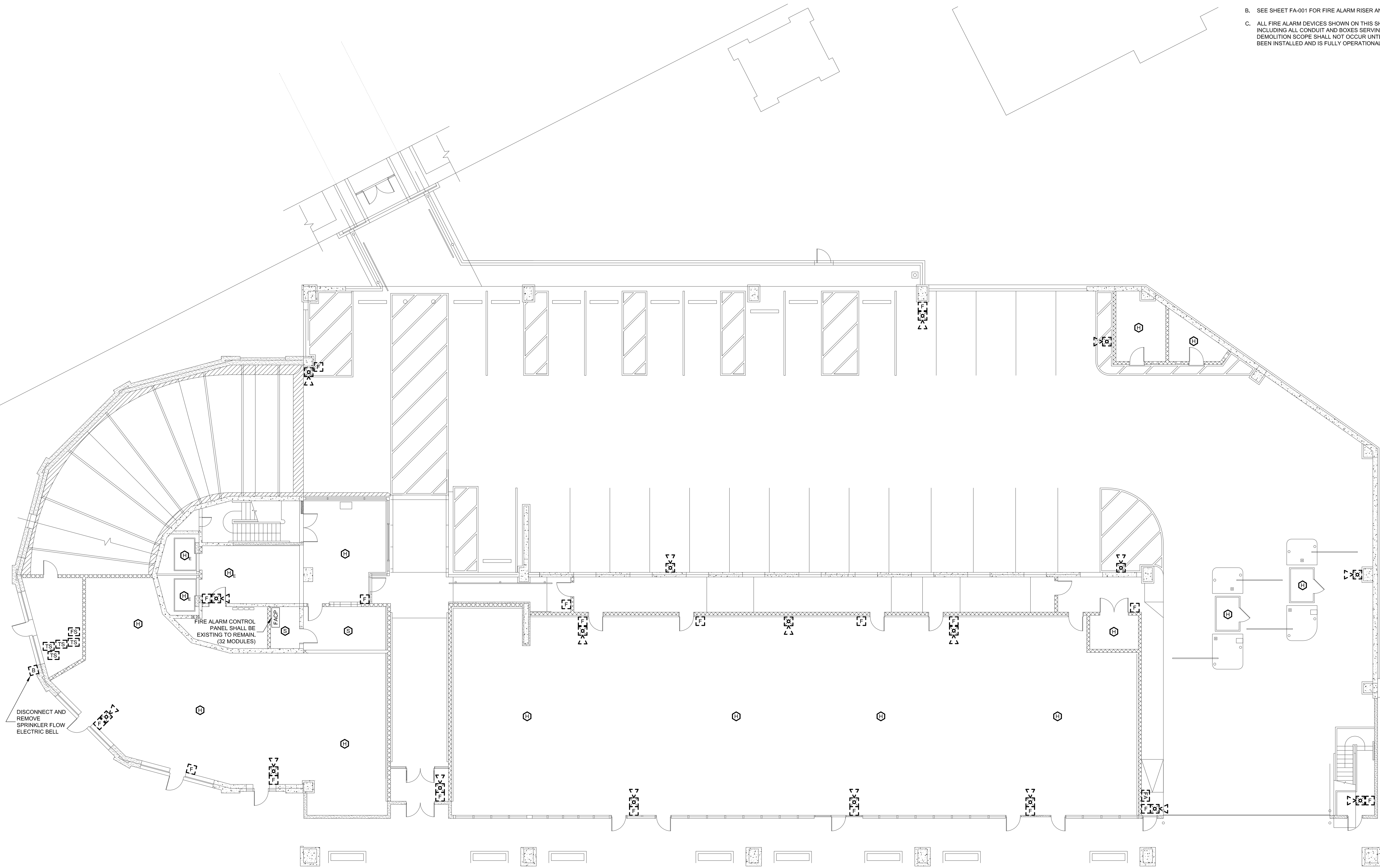
DRAWING NO.

FA-001

SCALE
NO SCALE

DATE
FEBRUARY 2026

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- GENERAL NOTES:
- A. SEE SHEET E-001 FOR ELECTRICAL/FIRE ALARM LEGEND AND ABBREVIATIONS.
 - B. SEE SHEET FA-001 FOR FIRE ALARM RISER AND DETAILS.
 - C. ALL FIRE ALARM DEVICES SHOWN ON THIS SHEET TO BE DEMOLISHED, INCLUDING ALL CONDUIT AND BOXES SERVING THE FIRE ALARM SYSTEM. DEMOLITION SCOPE SHALL NOT OCCUR UNTIL AFTER THE NEW SYSTEM HAS BEEN INSTALLED AND IS FULLY OPERATIONAL.

 **GROUND LEVEL FIRE ALARM DEMOLITION PLAN**
SCALE: 3/32"=1'-0"

DRAWING TITLE
**GROUND FLOOR FIRE ALARM
DEMOLITION PLAN**

JOB NUMBER:
JOB TITLE
**WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER**

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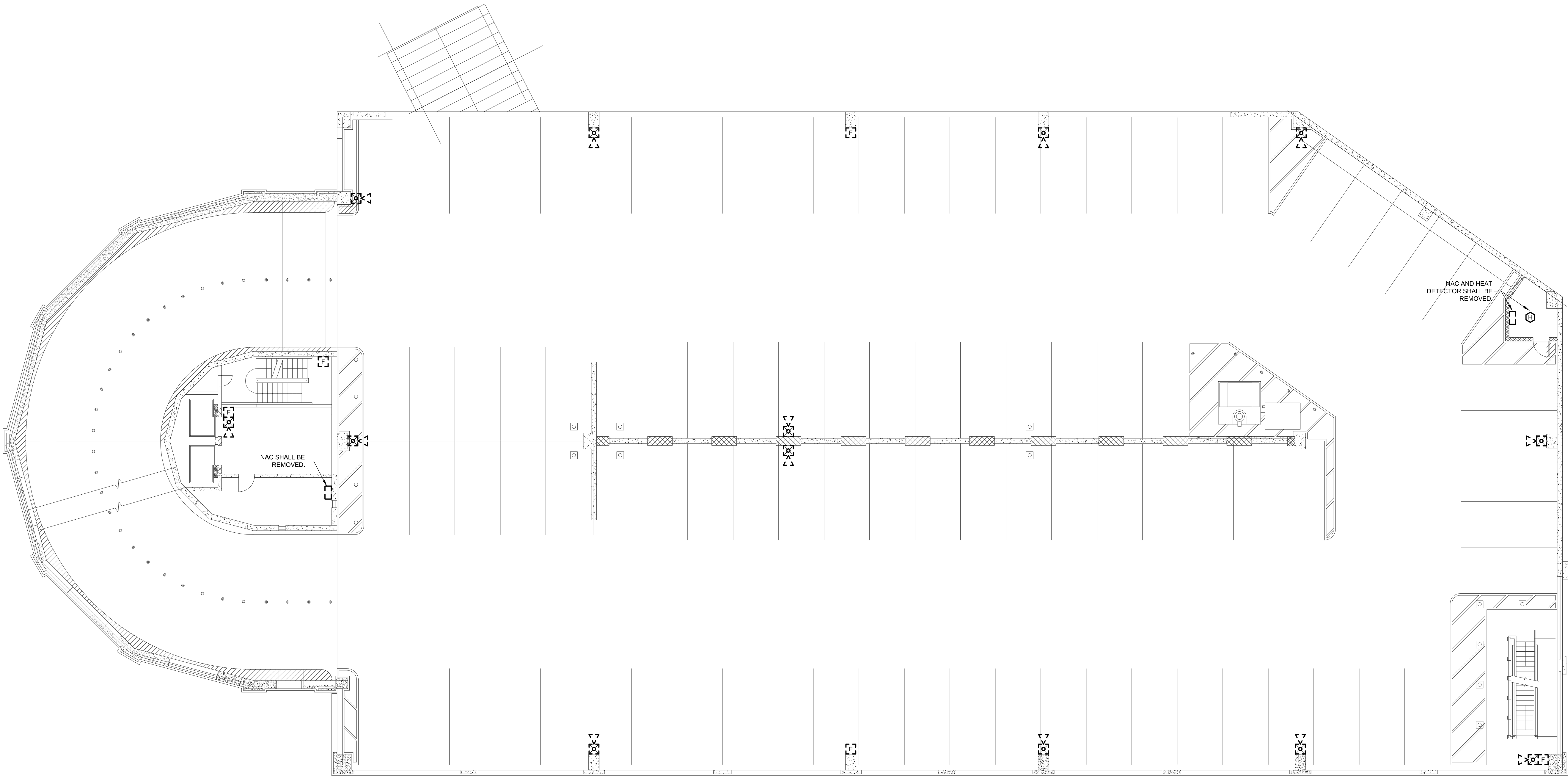
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FAX: (508) 754-4661

DRAWING NO.
FAD-101

SCALE
3/32"=1'-0"

DATE
FEBRUARY 2026

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- GENERAL NOTES:
- A. SEE SHEET E-001 FOR ELECTRICAL/FIRE ALARM LEGEND AND ABBREVIATIONS.
 - B. SEE SHEET FA-001 FOR FIRE ALARM RISER AND DETAILS.
 - C. ALL FIRE ALARM DEVICES SHOWN ON THIS SHEET TO BE DEMOLISHED, INCLUDING ALL CONDUIT AND BOXES SERVING THE FIRE ALARM SYSTEM. DEMOLITION SCOPE SHALL NOT OCCUR UNTIL AFTER THE NEW SYSTEM HAS BEEN INSTALLED AND IS FULLY OPERATIONAL.

 **FIRST FLOOR FIRE ALARM DEMOLITION PLAN**
SCALE: 3/32"=1'-0"

DRAWING TITLE
**FIRST FLOOR FIRE ALARM
DEMOLITION PLAN**

JOB NUMBER:
JOB TITLE

**WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER**

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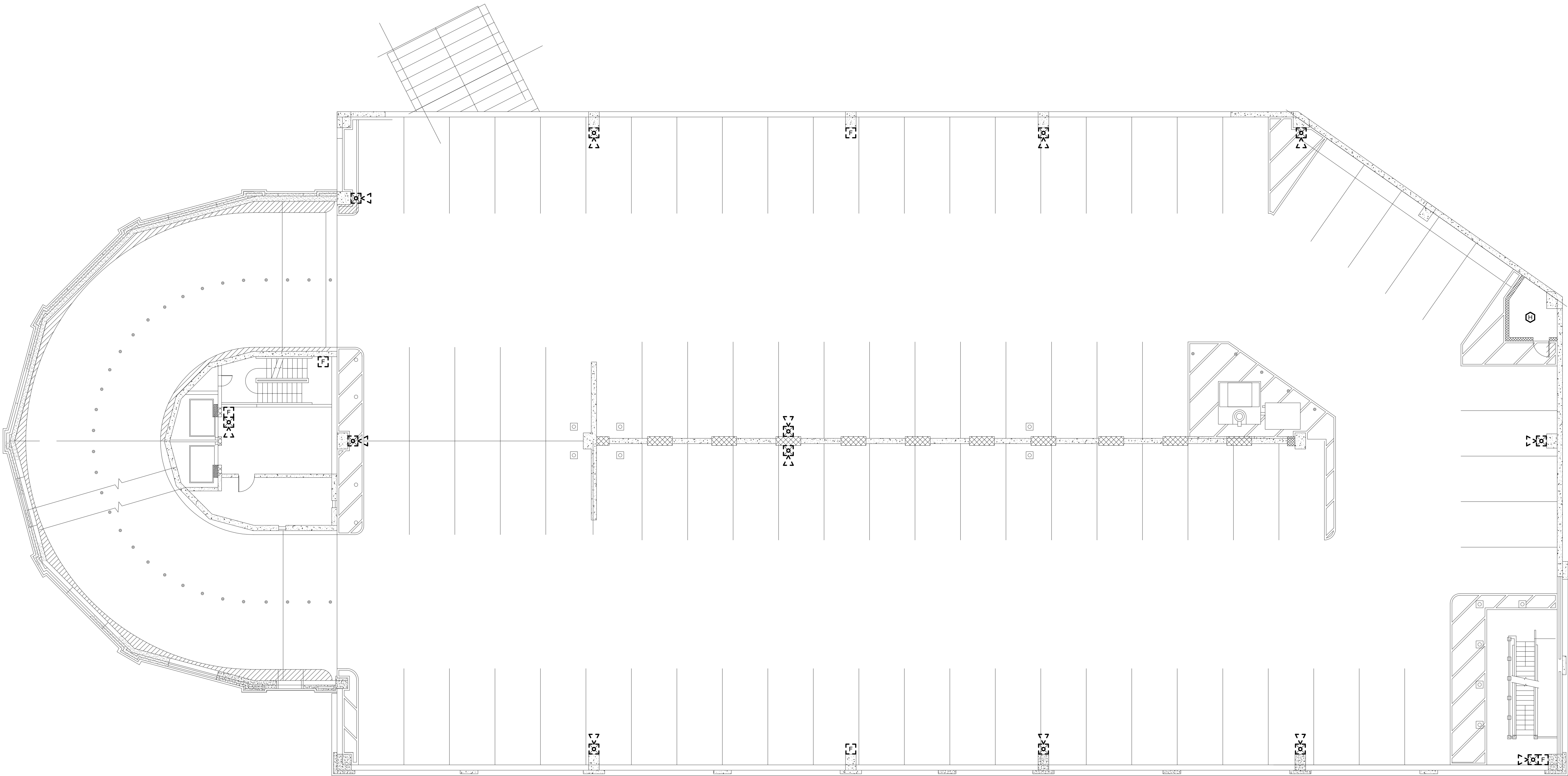
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FAD-102

SCALE
3/32"=1'-0"

DATE
FEBRUARY 2026

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- GENERAL NOTES:
- A. SEE SHEET E-001 FOR ELECTRICAL/FIRE ALARM LEGEND AND ABBREVIATIONS.
- B. SEE SHEET FA-001 FOR FIRE ALARM RISER AND DETAILS.
- C. ALL FIRE ALARM DEVICES SHOWN ON THIS SHEET TO BE DEMOLISHED, INCLUDING ALL CONDUIT AND BOXES SERVING THE FIRE ALARM SYSTEM. DEMOLITION SCOPE SHALL NOT OCCUR UNTIL AFTER THE NEW SYSTEM HAS BEEN INSTALLED AND IS FULLY OPERATIONAL.

 **THIRD FLOOR FIRE ALARM DEMOLITION PLAN**
SCALE: 3/32"=1'-0"

DRAWING TITLE
**THIRD FLOOR FIRE ALARM
DEMOLITION PLAN**

JOB NUMBER:
JOB TITLE

**WATERPROOFING AND REPAIRS
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CITY OF WORCESTER**

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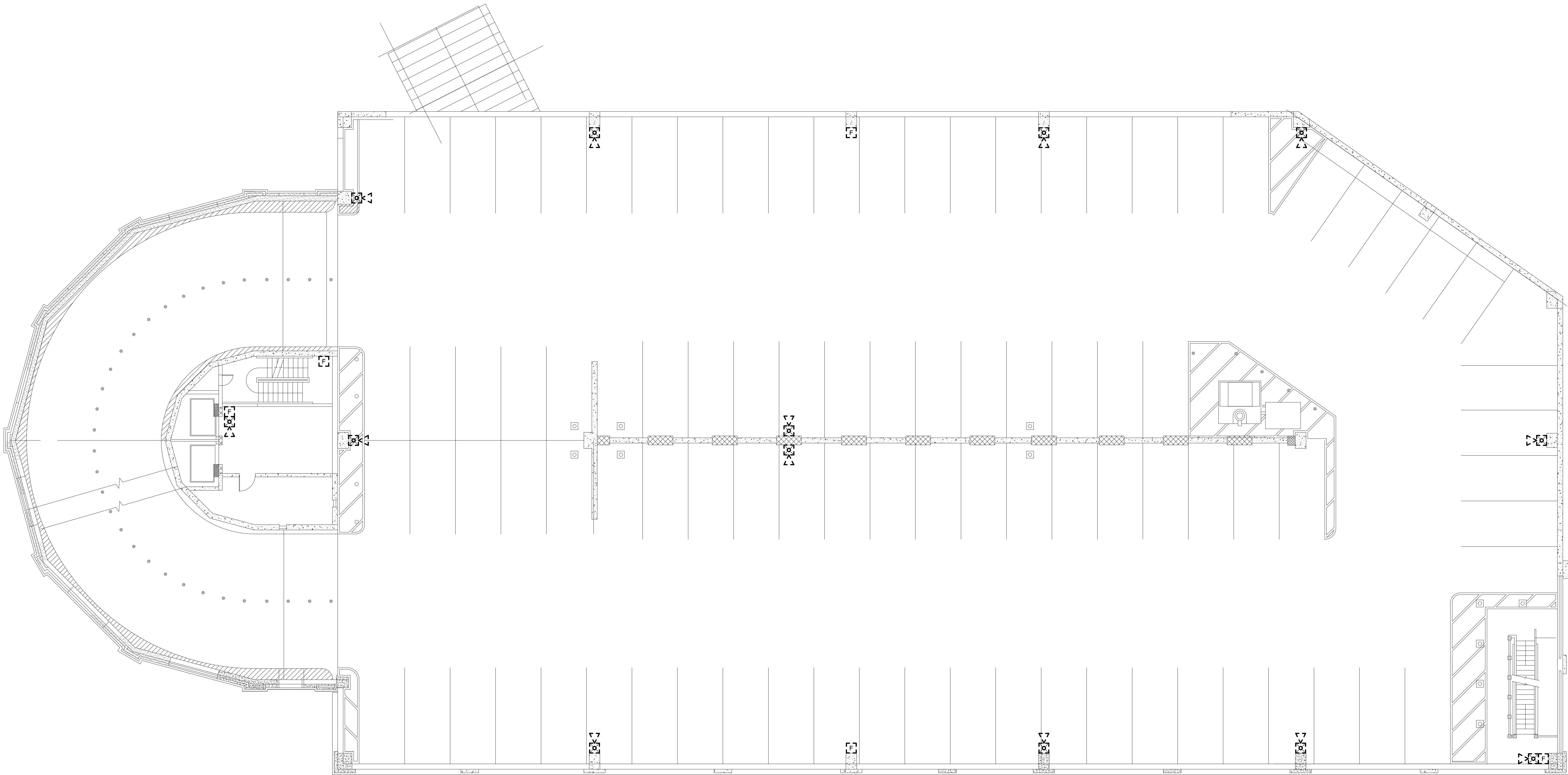
DRAWING NO.

FAD-103

SCALE
3/32"=1'-0"

DATE
FEBRUARY 2026

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- GENERAL NOTES:
- A. SEE SHEET E-001 FOR ELECTRICAL/FIRE ALARM LEGEND AND ABBREVIATIONS.
 - B. SEE SHEET FA-001 FOR FIRE ALARM RISER AND DETAILS.
 - C. ALL FIRE ALARM DEVICES SHOWN ON THIS SHEET TO BE DEMOLISHED, INCLUDING ALL CONDUIT AND BOXES SERVING THE FIRE ALARM SYSTEM. DEMOLITION SCOPE SHALL NOT OCCUR UNTIL AFTER THE NEW SYSTEM HAS BEEN INSTALLED AND IS FULLY OPERATIONAL.

 **SECOND AND FOURTH FLOOR FIRE ALARM DEMOLITION PLAN**
SCALE: 3/32"=1'-0"

DRAWING TITLE
**SECOND AND FOURTH FLOOR
FIRE ALARM DEMOLITION
PLAN**

JOB NUMBER:
JOB TITLE

**WATERPROOFING AND REPAIRS
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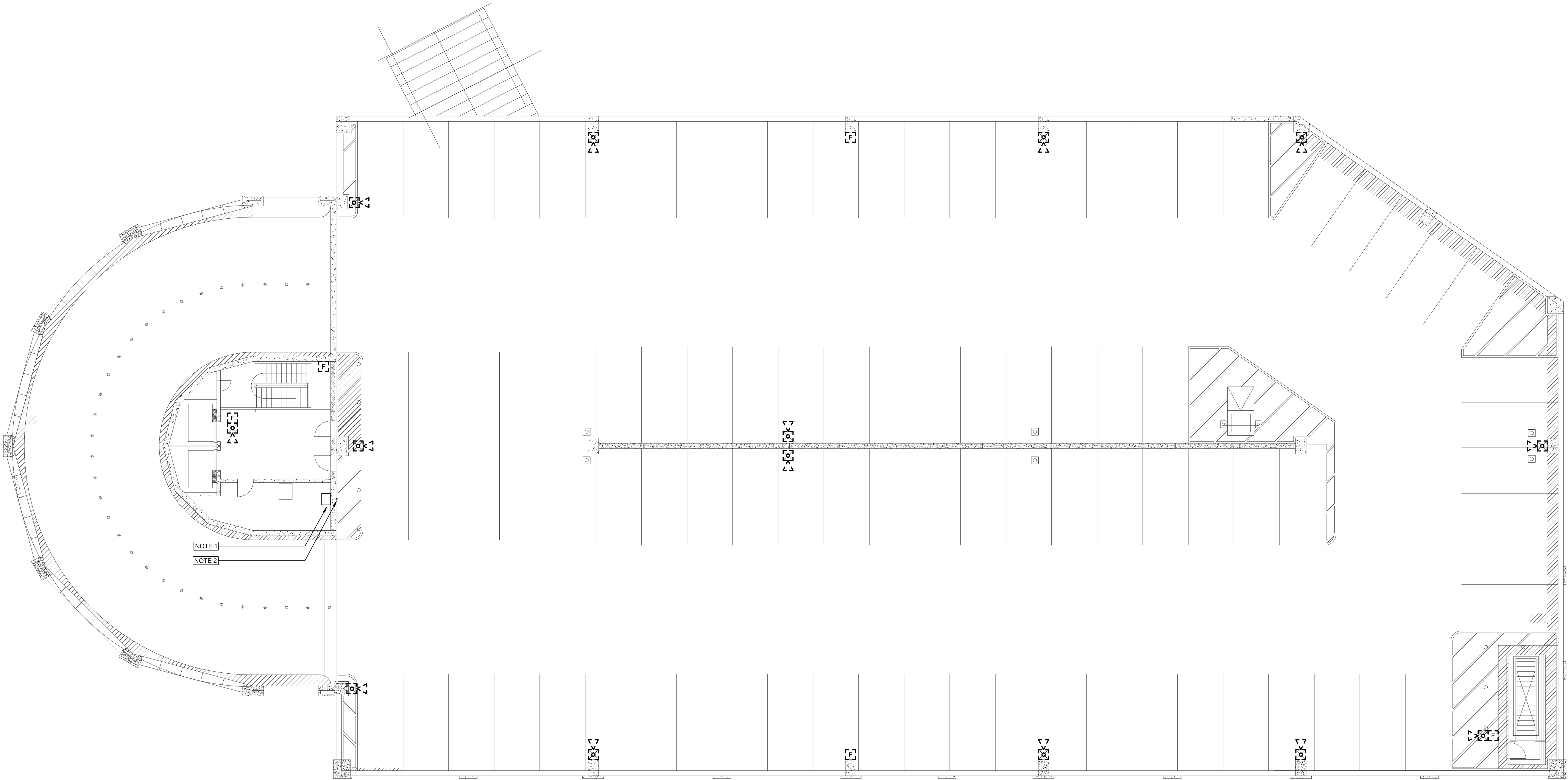
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FAD-104

SCALE
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DATE
FEBRUARY 2026

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NOTE 1
NOTE 2

- GENERAL NOTES:
- A. SEE SHEET E-001 FOR ELECTRICAL/FIRE ALARM LEGEND AND ABBREVIATIONS.
 - B. SEE SHEET FA-001 FOR FIRE ALARM RISER AND DETAILS.
 - C. ALL FIRE ALARM DEVICES SHOWN ON THIS SHEET TO BE DEMOLISHED, INCLUDING ALL CONDUIT AND BOXES SERVING THE FIRE ALARM SYSTEM. DEMOLITION SCOPE SHALL NOT OCCUR UNTIL AFTER THE NEW SYSTEM HAS BEEN INSTALLED AND IS FULLY OPERATIONAL.
- KEYED NOTES:
- 1. EXISTING SURGE ARRESTOR ENCLOSURE TO REMAIN.
 - 2. EXISTING COAXIAL CABLE UP TO REMOTE ANTENNA TO REMAIN.



FIFTH FLOOR FIRE ALARM DEMOLITION PLAN

SCALE: 3/32"=1'-0"

DRAWING TITLE
FIFTH FLOOR FIRE ALARM
DEMOLITION PLAN

JOB NUMBER:
JOB TITLE

WATERPROOFING AND REPAIRS
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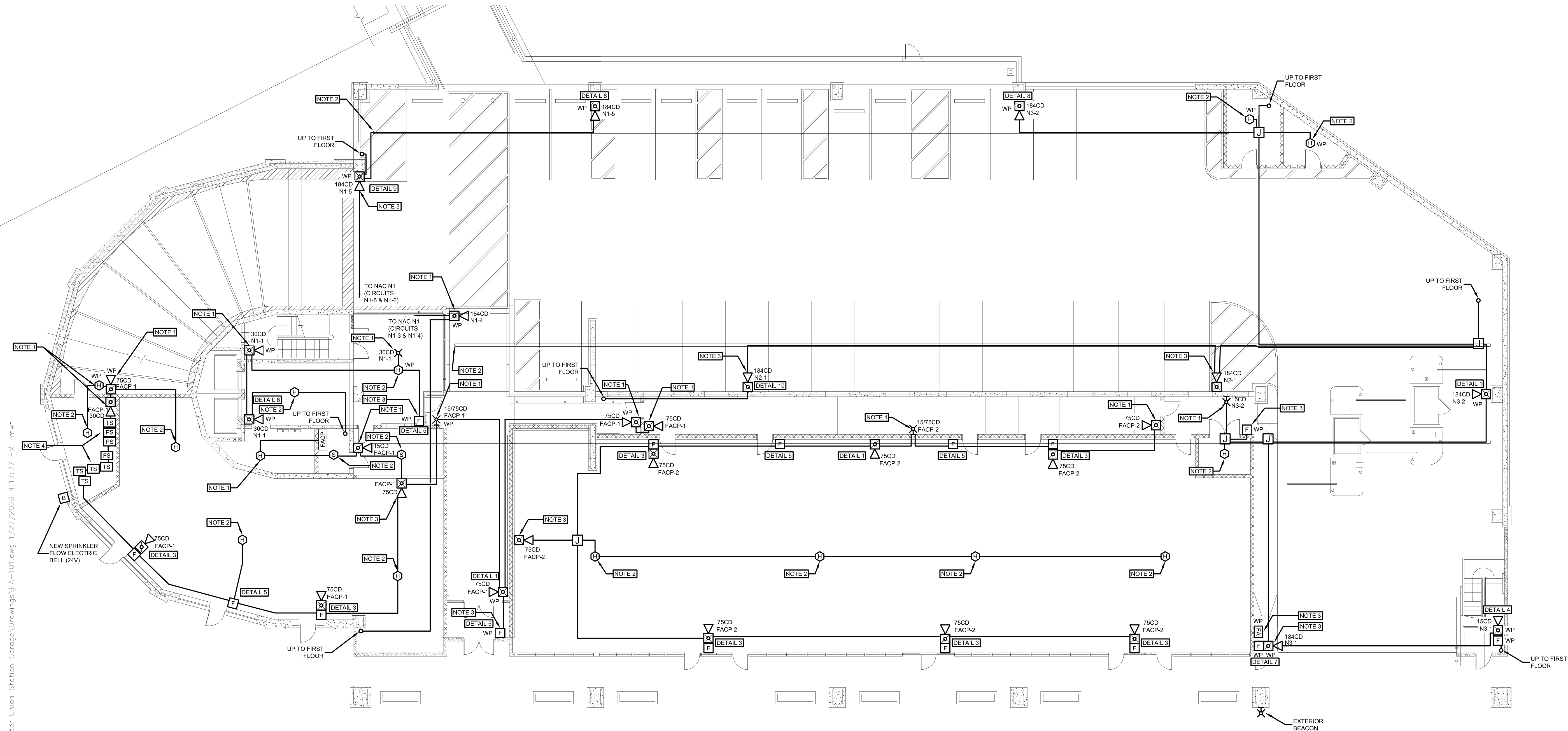
DRAWING NO.

FAD-105

SCALE
3/32"=1'-0"

DATE
FEBRUARY 2026

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- GENERAL NOTES:
- A. SEE SHEET E-001 FOR ELECTRICAL/FIRE ALARM LEGEND AND ABBREVIATIONS.
 - B. SEE SHEET FA-001 FOR FIRE ALARM RISER AND DETAILS.
 - C. MOUNT ALL NEW HORN/STROBE DEVICES AT THE SAME HEIGHT AS THE EXISTING DEVICES. THE HORN/STROBE DEVICES SHALL MAINTAIN A MOUNTING HEIGHT BETWEEN 80" AND 96".
 - D. MOUNT ALL NEW PULL STATION DEVICES AT THE SAME HEIGHT AS THE EXISTING DEVICES. THE HORN/STROBE DEVICES SHALL MAINTAIN A MOUNTING HEIGHT BETWEEN 42" AND 48".
 - E. ALL NEW DEVICES TO MATCH THE EXISTING MANUFACTURER.
- KEYED NOTES:
- 1. NEW DEVICE AND LOCATION, PROVIDE NEW CONDUIT ROUTING AS NECESSARY.
 - 2. MOUNT NEW CEILING MOUNTED DETECTOR AS CLOSE TO THE EXISTING DETECTOR AS POSSIBLE WITH NEW JUNCTION BOX. PROVIDE NEW CONDUIT AND ROUTING AS NECESSARY. REMOVE EXISTING DETECTOR AND ROUTING ONCE A NEW, FUNCTIONAL SYSTEM IS INSTALLED.
 - 3. MOUNT NEW DEVICE NEXT TO THE EXISTING DEVICE.
 - 4. COORDINATE EXACT LOCATIONS WITH THE MECHANICAL AND PLUMBING CONTRACTOR PRIOR TO INSTALLATION.

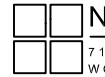
 **GROUND LEVEL FIRE ALARM NEW WORK PLAN**
SCALE: 3/32"=1'-0"

DRAWING TITLE
**GROUND FLOOR FIRE ALARM
NEW WORK PLAN**

JOB NUMBER:
JOB TITLE

**WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER**

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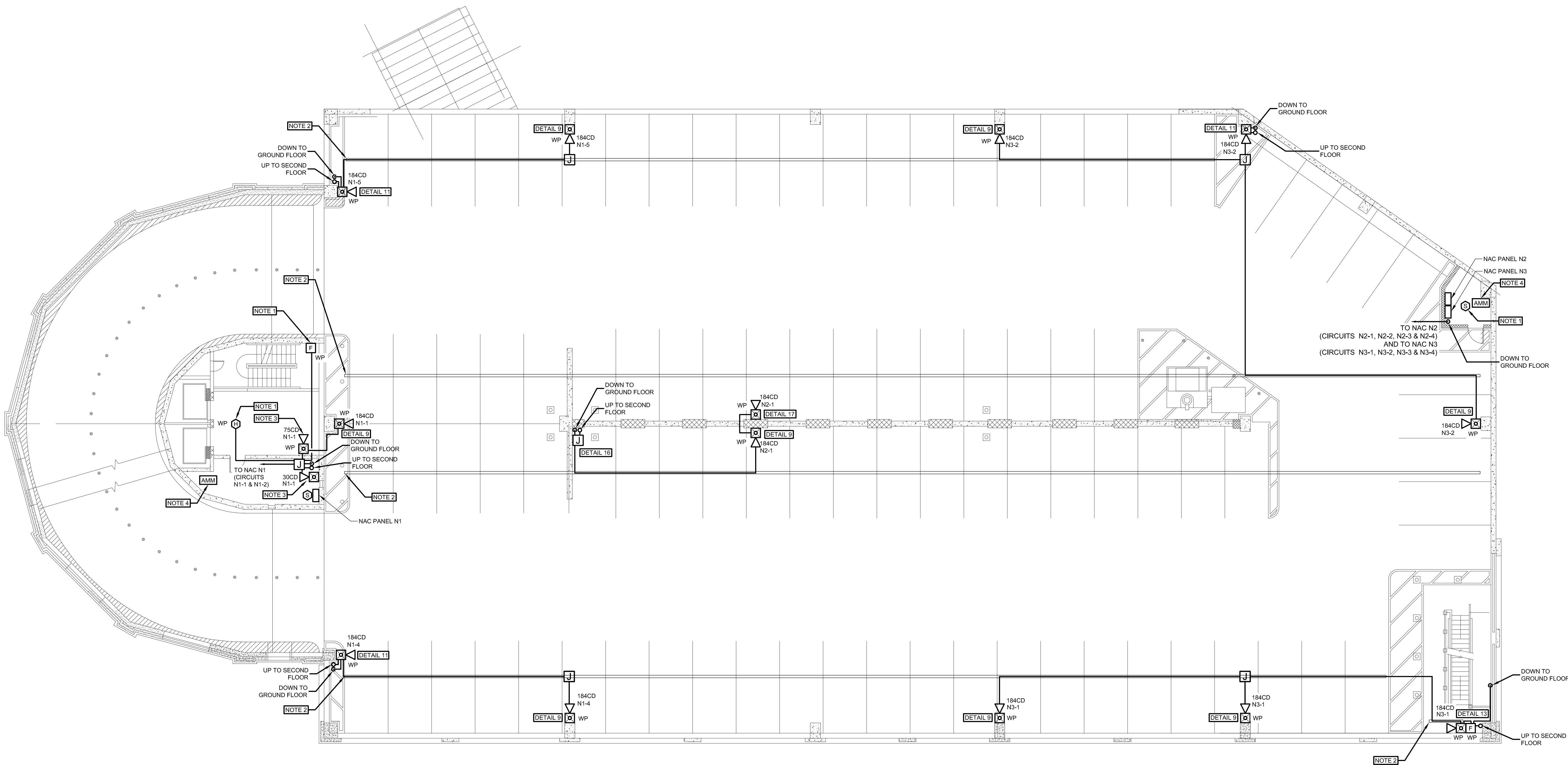
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FA-101

SCALE
3/32"=1'-0"

DATE
FEBRUARY 2026

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- GENERAL NOTES:
- A. SEE SHEET E-001 FOR ELECTRICAL/FIRE ALARM LEGEND AND ABBREVIATIONS.
 - B. SEE SHEET FA-001 FOR FIRE ALARM RISER AND DETAILS.
 - C. MOUNT ALL NEW HORN/STROBE DEVICES AT THE SAME HEIGHT AS THE EXISTING DEVICES. THE HORN/STROBE DEVICES SHALL MAINTAIN A MOUNTING HEIGHT BETWEEN 80" AND 96".
 - D. MOUNT ALL NEW PULL STATION DEVICES AT THE SAME HEIGHT AS THE EXISTING DEVICES. THE HORN/STROBE DEVICES SHALL MAINTAIN A MOUNTING HEIGHT BETWEEN 42" AND 48".
 - E. ALL NEW DEVICES TO MATCH THE EXISTING MANUFACTURER.
- KEYED NOTES:
- 1. MOUNT NEW DEVICE NEXT TO THE EXISTING DEVICE.
 - 2. UTILIZE EXISTING BEAM CUTOUT TO ROUTE CONDUIT FOR THE NEW DEVICES WITHIN THIS SPACE.
 - 3. NEW DEVICE AND LOCATION. PROVIDE NEW CONDUIT ROUTING AS NECESSARY.
 - 4. 13 ADDRESSABLE MONITOR MODULES SHALL BE LOCATED WITHIN THIS ROOM. COORDINATE EXACT LOCATIONS IN THE FIELD.

TYPICAL FIRST FLOOR FIRE ALARM NEW WORK PLAN
SCALE: 3/32"=1'-0"

DRAWING TITLE
FIRST FLOOR FIRE ALARM
NEW WORK PLAN

JOB NUMBER:
JOB TITLE

WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER

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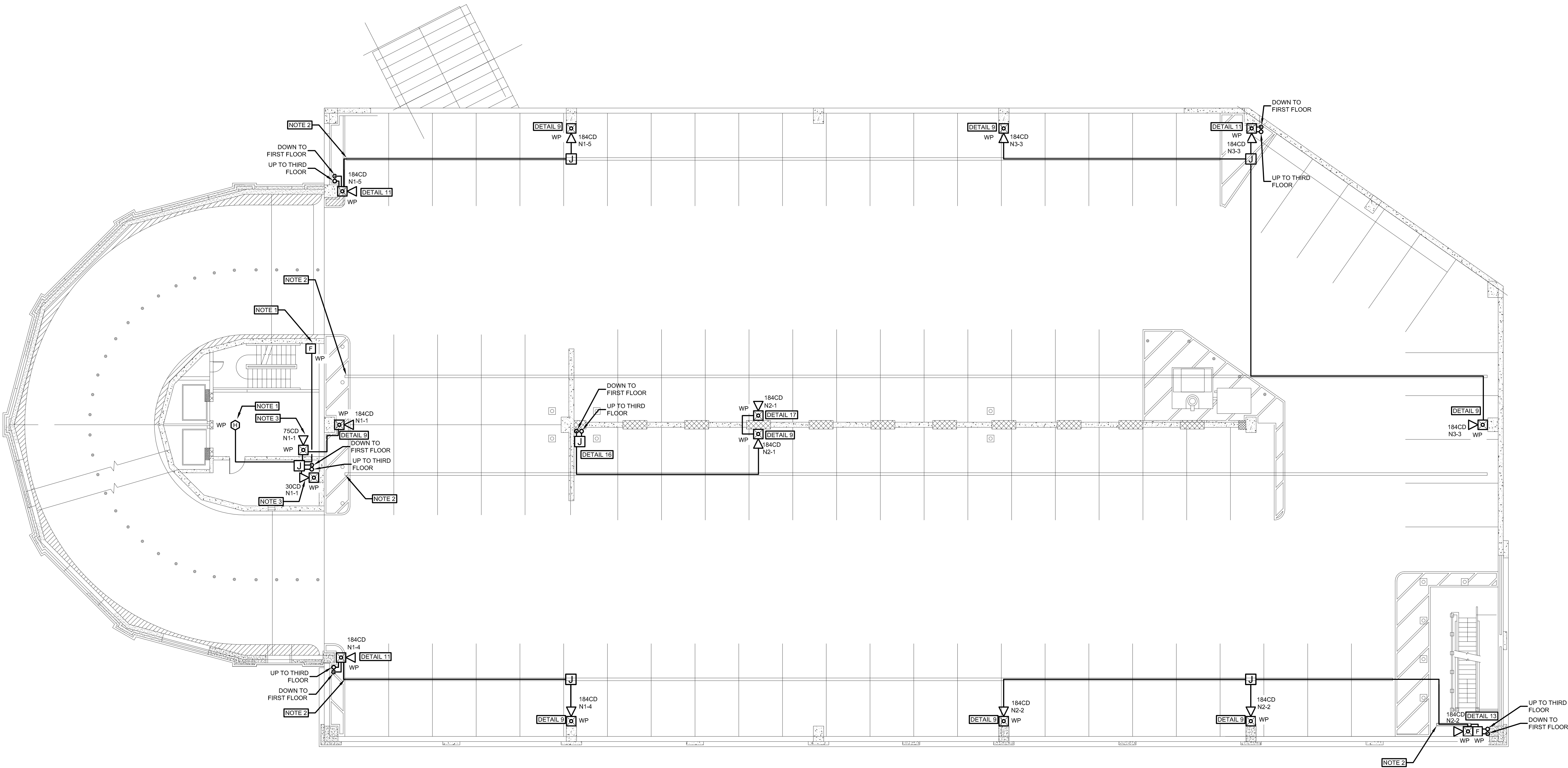
DRAWING NO.

FA-102

SCALE
3/32"=1'-0"

DATE
FEBRUARY 2026

- GENERAL NOTES:
- A. SEE SHEET E-001 FOR ELECTRICAL/FIRE ALARM LEGEND AND ABBREVIATIONS.
 - B. SEE SHEET FA-001 FOR FIRE ALARM RISER AND DETAILS.
 - C. MOUNT ALL NEW HORN/STROBE DEVICES AT THE SAME HEIGHT AS THE EXISTING DEVICES. THE HORN/STROBE DEVICES SHALL MAINTAIN A MOUNTING HEIGHT BETWEEN 80" AND 96".
 - D. MOUNT ALL NEW PULL STATION DEVICES AT THE SAME HEIGHT AS THE EXISTING DEVICES. THE HORN/STROBE DEVICES SHALL MAINTAIN A MOUNTING HEIGHT BETWEEN 42" AND 48".
 - E. ALL NEW DEVICES TO MATCH THE EXISTING MANUFACTURER.
- KEYED NOTES:
- 1. MOUNT NEW DEVICE NEXT TO THE EXISTING DEVICE.
 - 2. UTILIZE EXISTING BEAM CUTOUT TO ROUTE CONDUIT FOR THE NEW DEVICES WITHIN THIS SPACE.
 - 3. NEW DEVICE AND LOCATION, PROVIDE NEW CONDUIT ROUTING AS NECESSARY.



 **SECOND FLOOR FIRE ALARM NEW WORK PLAN**
SCALE: 3/32"=1'-0"

DRAWING TITLE
**SECOND FLOOR FIRE ALARM
NEW WORK PLAN**

JOB NUMBER:
JOB TITLE

**WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER**

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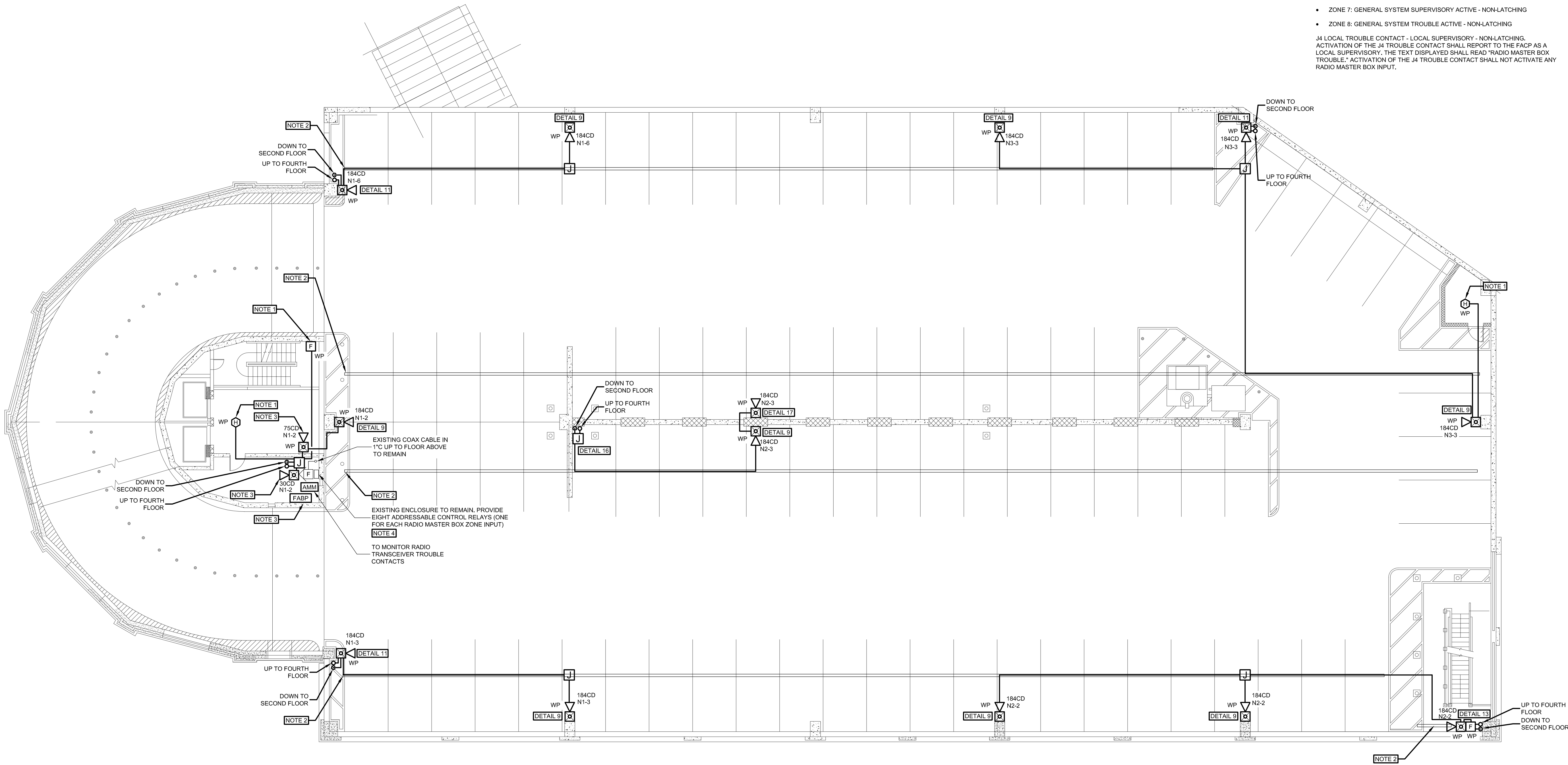
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FA-103

SCALE
3/32"=1'-0"

DATE
FEBRUARY 2026

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- GENERAL NOTES:
- A. SEE SHEET E-001 FOR ELECTRICAL/FIRE ALARM LEGEND AND ABBREVIATIONS.
 - B. SEE SHEET FA-001 FOR FIRE ALARM RISER AND DETAILS.
 - C. MOUNT ALL NEW HORN/STROBE DEVICES AT THE SAME HEIGHT AS THE EXISTING DEVICES. THE HORN/STROBE DEVICES SHALL MAINTAIN A MOUNTING HEIGHT BETWEEN 80" AND 96".
 - D. MOUNT ALL NEW PULL STATION DEVICES AT THE SAME HEIGHT AS THE EXISTING DEVICES. THE HORN/STROBE DEVICES SHALL MAINTAIN A MOUNTING HEIGHT BETWEEN 42" AND 48".
 - E. ALL NEW DEVICES TO MATCH THE EXISTING MANUFACTURER.
- KEYED NOTES:
- 1. MOUNT NEW DEVICE NEXT TO THE EXISTING DEVICE.
 - 2. UTILIZE EXISTING BEAM CUTOUT TO ROUTE CONDUIT FOR THE NEW DEVICES WITHIN THIS SPACE.
 - 3. NEW DEVICE AND LOCATION. PROVIDE NEW CONDUIT ROUTING AS NECESSARY.
 - 4. EXISTING RADIO TRANSCEIVER TO REMAIN. PROVIDE EIGHT ADDRESSABLE MONITOR MODULES TO MONITOR THE FOLLOWING EXISTING POINTS:
- ZONE 1: GENERAL FIRE ALARM - LATCHING - RESTORE ON ALARM SILENCE AND/OR SYSTEM RESET - RESOUND ON SUBSEQUENT ALARM
 - ZONE 2: WATER FLOW ALARM - LATCHING - RESTORE ON ALARM SILENCE AND/OR SYSTEM RESET - RESOUND ON SUBSEQUENT ALARM
 - ZONE 3: SPRINKLER SUPERVISORY ACTIVE NON-LATCHING
 - ZONE 4: CARBON MONOXIDE ALARM - LATCHING - RESTORE ON SYSTEM RESET
 - ZONE 5: ALLOCATED FOR BDA/DAS TROUBLE/OFF-NORMAL CONDITION - NON-LATCHING
 - ZONE 6: RADIO MASTER BOX BYPASS ACTIVE - NON-LATCHING
 - ZONE 7: GENERAL SYSTEM SUPERVISORY ACTIVE - NON-LATCHING
 - ZONE 8: GENERAL SYSTEM TROUBLE ACTIVE - NON-LATCHING
- J4 LOCAL TROUBLE CONTACT - LOCAL SUPERVISORY - NON-LATCHING. ACTIVATION OF THE J4 TROUBLE CONTACT SHALL REPORT TO THE FACP AS A LOCAL SUPERVISORY. THE TEXT DISPLAYED SHALL READ "RADIO MASTER BOX TROUBLE." ACTIVATION OF THE J4 TROUBLE CONTACT SHALL NOT ACTIVATE ANY RADIO MASTER BOX INPUT.

 **THIRD FLOOR FIRE ALARM NEW WORK PLAN**
SCALE: 3/32"=1'-0"

DRAWING TITLE
**THIRD FLOOR FIRE ALARM
NEW WORK PLAN**

JOB NUMBER:
JOB TITLE

**WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER**

CONSULTANT
Hallam ICS
AN EMPLOYEE OWNED COMPANY
575 West Street, Suite 220
Mansfield, MA 02048
Tel: 508.821.9739 www.Hallam-ICS.com

ARCHITECT
 **NAULT ARCHITECTS, INC.**
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FAX: (508) 754-6881

DRAWING NO.

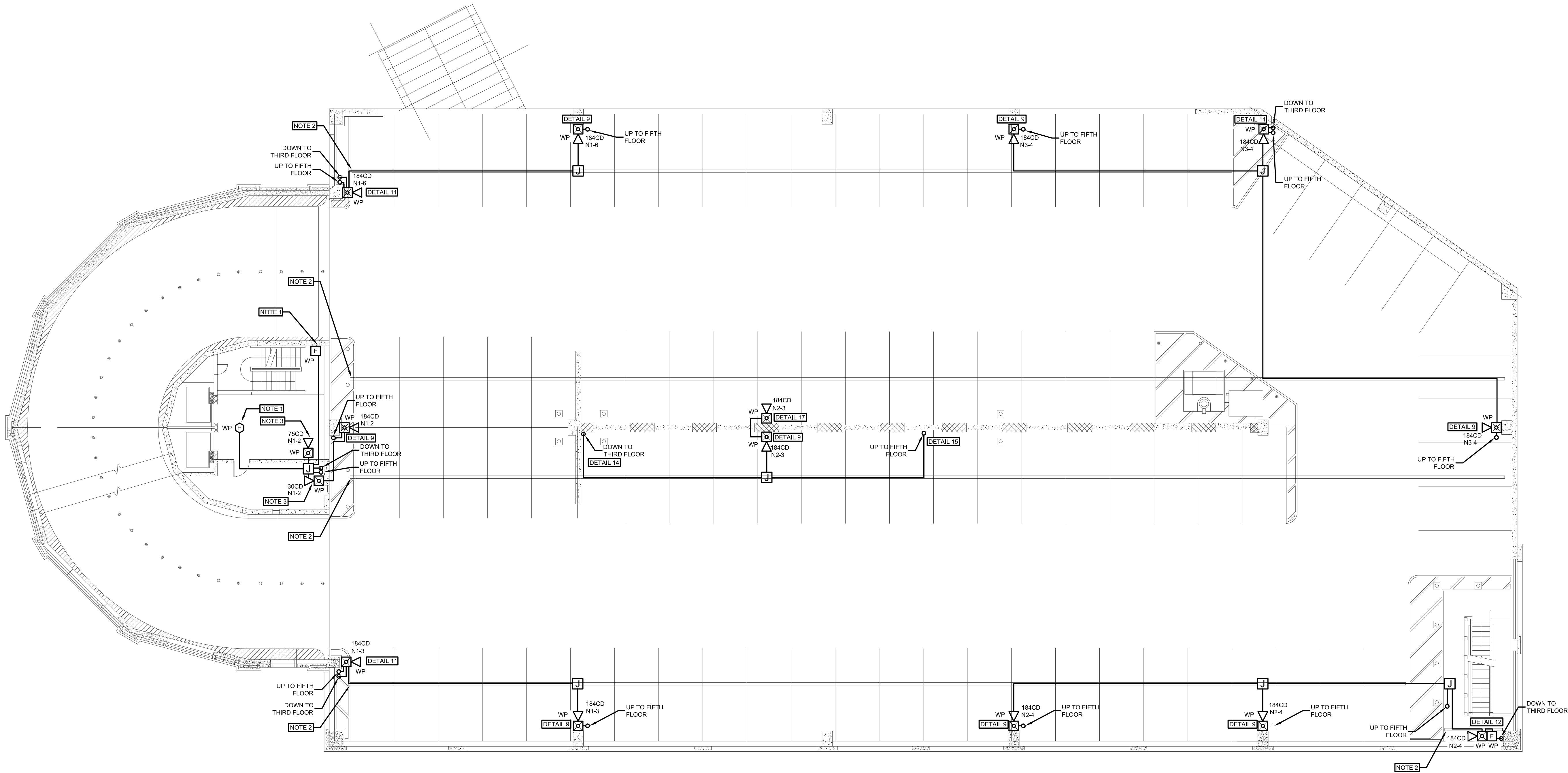
FA-104

SCALE
3/32"=1'-0"

DATE
FEBRUARY 2026

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- GENERAL NOTES:
- A. SEE SHEET E-001 FOR ELECTRICAL/FIRE ALARM LEGEND AND ABBREVIATIONS.
 - B. SEE SHEET FA-001 FOR FIRE ALARM RISER AND DETAILS.
 - C. MOUNT ALL NEW HORN/STROBE DEVICES AT THE SAME HEIGHT AS THE EXISTING DEVICES. THE HORN/STROBE DEVICES SHALL MAINTAIN A MOUNTING HEIGHT BETWEEN 80" AND 96".
 - D. MOUNT ALL NEW PULL STATION DEVICES AT THE SAME HEIGHT AS THE EXISTING DEVICES. THE HORN/STROBE DEVICES SHALL MAINTAIN A MOUNTING HEIGHT BETWEEN 42" AND 48".
 - E. ALL NEW DEVICES TO MATCH THE EXISTING MANUFACTURER.
- KEYED NOTES:
- 1. MOUNT NEW DEVICE NEXT TO THE EXISTING DEVICE.
 - 2. UTILIZE EXISTING BEAM CUTOUT TO ROUTE CONDUIT FOR THE NEW DEVICES WITHIN THIS SPACE.
 - 3. NEW DEVICE AND LOCATION, PROVIDE NEW CONDUIT ROUTING AS NECESSARY.



DRAWING TITLE
FOURTH FLOOR FIRE ALARM
NEW WORK PLAN

JOB NUMBER:
JOB TITLE

WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER

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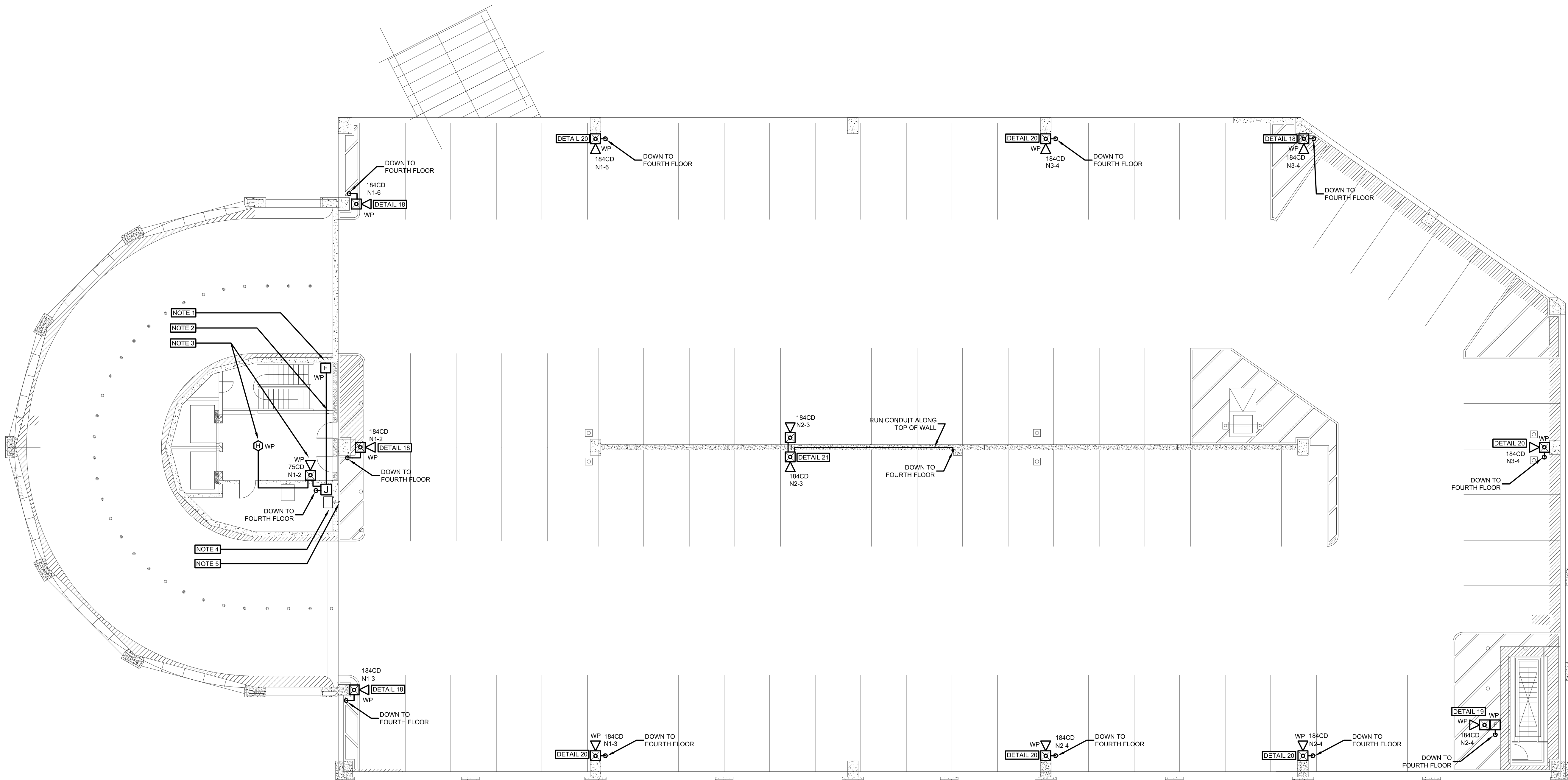
DRAWING NO.

FA-105

SCALE
3/32"=1'-0"

DATE
FEBRUARY 2026

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- GENERAL NOTES:
- A. SEE SHEET E-001 FOR ELECTRICAL/FIRE ALARM LEGEND AND ABBREVIATIONS.
 - B. SEE SHEET FA-001 FOR FIRE ALARM RISER AND DETAILS.
 - C. MOUNT ALL NEW HORN/STROBE DEVICES AT THE SAME HEIGHT AS THE EXISTING DEVICES. THE HORN/STROBE DEVICES SHALL MAINTAIN A MOUNTING HEIGHT BETWEEN 80" AND 96".
 - D. MOUNT ALL NEW PULL STATION DEVICES AT THE SAME HEIGHT AS THE EXISTING DEVICES. THE HORN/STROBE DEVICES SHALL MAINTAIN A MOUNTING HEIGHT BETWEEN 42" AND 48".
 - E. ALL NEW DEVICES TO MATCH THE EXISTING MANUFACTURER.
- KEYED NOTES:
- 1. MOUNT NEW DEVICE NEXT TO THE EXISTING DEVICE.
 - 2. UTILIZE EXISTING BEAM CUTOUT TO ROUTE CONDUIT FOR THE NEW DEVICES WITHIN THIS SPACE.
 - 3. NEW DEVICE AND LOCATION. PROVIDE NEW CONDUIT ROUTING AS NECESSARY.
 - 4. EXISTING SURGE ARRESTOR ENCLOSURE TO REMAIN.
 - 5. EXISTING COAXIAL CABLE UP TO REMOTE ANTENNA TO REMAIN.

 **FIFTH FLOOR FIRE ALARM NEW WORK PLAN**
SCALE: 3/32"=1'-0"

DRAWING TITLE
**FIFTH FLOOR FIRE ALARM
NEW WORK PLAN**

JOB NUMBER:
JOB TITLE

**WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER**

CONSULTANT
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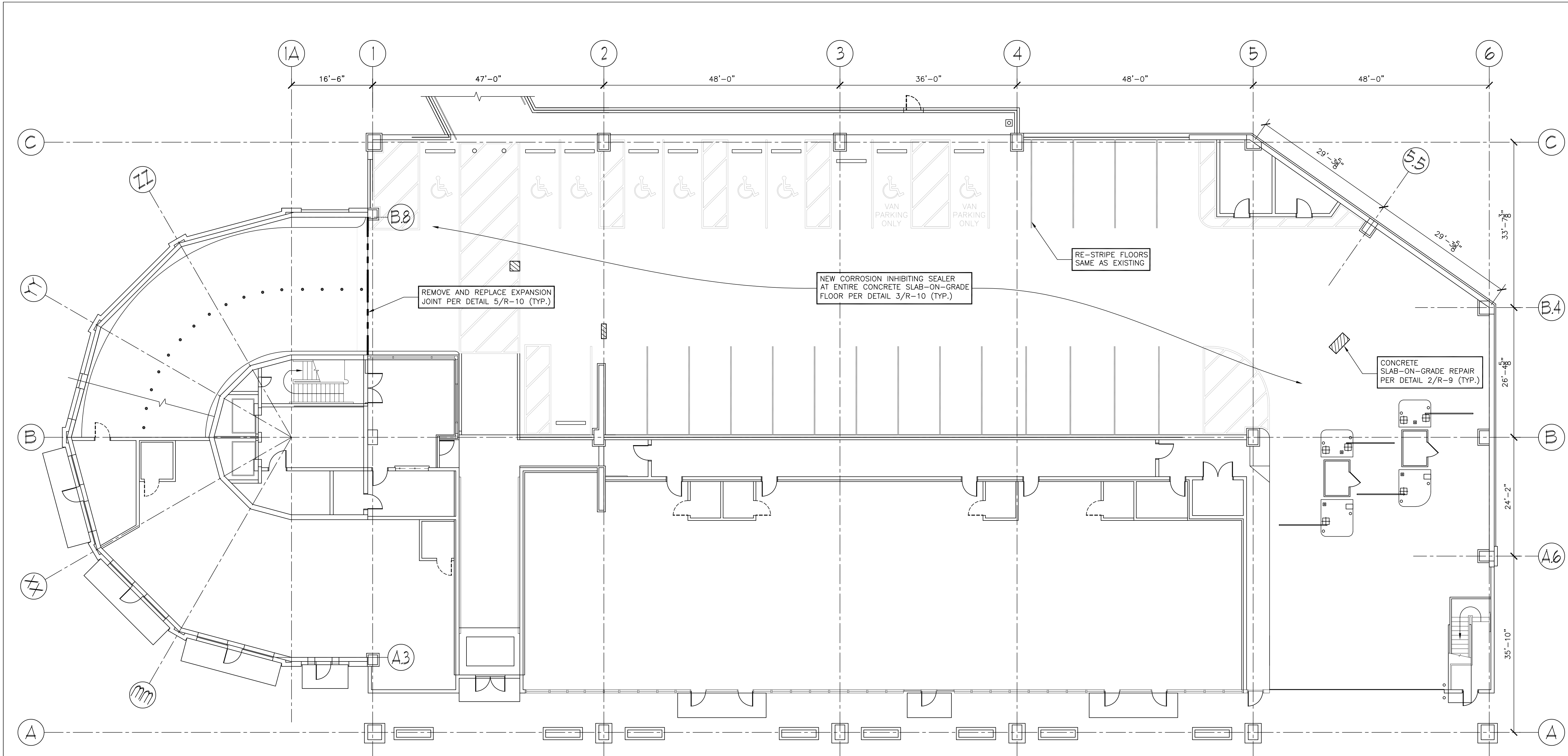
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DRAWING NO.

FA-106

SCALE
3/32"=1'-0"

DATE
FEBRUARY 2026



UNION STATION GARAGE – GRADE LEVEL FLOOR PLAN
SCALE: 3/32"=1'-0"

LEGEND									
REPAIR ITEMS	UNITS	APPROXIMATE QUANTITY	DETAIL	DESIGNATION ON PLAN	REPAIR ITEMS	UNITS	APPROXIMATE QUANTITY	DETAIL	DESIGNATION ON PLAN
FULL DEPTH CONCRETE REPAIR AT PRECAST TEES	SF	125	1/R-8 & 2/R-8		CORROSION INHIBITING SEALER	SF	28,000	3/R-10	
PARTIAL DEPTH CONCRETE REPAIR AT PRECAST TEES	SF	25	3/R-8		REMOVE AND REPLACE SEALANT AT PRECAST FLOOR JOINTS	LF	18,000	4/R-9	
CONCRETE SLAB-ON-GRADE REPAIR	SF	25	2/R-9		ROUT AND SEAL FLOOR CRACKS	LF	500	2/R-10	
EPOXY AND SAND REPAIR AT TEE CONNECTION	EA	20	8/R-9		REMOVE AND REPLACE SEALANT AT TEE ANCHOR POCKETS	EA	1,520	8/R-9	
OVERHEAD CONCRETE TEE FLANGE REPAIR	SF	5	3/R-8		REMOVE AND REPLACE VERTICAL SEALANT	LF	300	6/R-10	
CONCRETE WALL REPAIR	SF	25	3/R-9		REPLACE MORTAR POCKETS AT WALL PRECAST CONNECTIONS	EA	10	8/R-9	
RE-WELD TEE CONNECTIONS	EA	20	4/R-9		CONCRETE REPAIR AT STAIR RISER	SF	30	4/R-10	
REMOVE AND REPLACE EXPANSION JOINT	LF	505	5/R-10		REPAIR STAIR NOSING	EA	20	4/R-10	
WATERPROOFING LEVELING COURSE	SF	5,000	7/R-9		RE-STRIPE FLOORS SAME AS EXISTING	SF	166,000		
NEW WATERPROOFING MEMBRANE	SF	2,200	1/R-10						

- NOTES:
- ALL REPAIR LOCATIONS AND QUANTITIES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
 - FOR ELEVATION REPAIR SEE DRAWING R-7.
 - FOR REPAIR DETAILS SEE DRAWINGS R-8, R-9 AND R-10.
 - ALL NEW CONCRETE SHALL BE 5,000 PSI. CONCRETE DESIGN SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCING REPAIRS.
 - TEE CONNECTION REPAIRS ARE EXPECTED AT FULL DEPTH CONCRETE REPAIRS. REPAIR PER DETAIL 2/R-8 (TYP.).
 - RE-WELD TEE CONNECTIONS PER DETAIL 4/R-9 (TYP.).
 - REMOVE AND REPLACE SEALANT AT PRECAST FLOOR JOINTS PER DETAIL 4/R-9 (TYP.).
 - ROUT AND SEAL ALL FLOOR CRACKS GREATER THAN 1/16" PER DETAIL 2/R-10 (TYP.).
 - REMOVE AND REPLACE VERTICAL SEALANT BETWEEN PRECAST MEMBERS AT ROOF LEVEL PER DETAIL 6/R-10 (TYP.).
 - REMOVE AND REPLACE SEALANT AT TEE ANCHOR POCKETS (4 AT BOTH ENDS OF EACH DOUBLE TEE), PER DETAIL 8/R-9 (TYP.).
 - REPLACE MORTAR POCKETS AT WALL PRECAST CONNECTIONS, AT LOCATIONS SHOWN ON DRAWINGS, AND/OR AS INDICATED BY THE ENGINEER IN THE FIELD, PER DETAIL 8/R-9 (TYP.).
 - NEW WATERPROOFING MEMBRANE AT LOCATIONS SHOWN ON DRAWINGS PER DETAIL 1/R-10 (TYP.).
 - NEW CORROSION INHIBITING SEALER AT ENTIRE GRADE LEVEL FLOOR PER DETAIL 3/R-10 (TYP.).
 - CONCRETE STAIR RISER AND NOSING REPAIR PER DETAIL 4/R-10 (TYP.).
 - AFTER ALL CONCRETE AND WATERPROOFING REPAIRS ARE COMPLETE ALL GARAGE FLOORS SHALL BE RE-STRIPED SAME AS EXISTING.
 - AFTER ALL CONCRETE AND WATERPROOFING REPAIRS ARE COMPLETE, CONTRACTOR SHALL CLEAN EXISTING DRAINAGE SYSTEM.
 - CONTRACTOR SHALL TAKE CARE TO PROTECT IN PLACE OR STORE AND RE-INSTALL ALL EXISTING LIGHT FIXTURES AND CEILING MOUNTED ELECTRICAL CONDUITS DURING CONSTRUCTION.

GENERAL NOTES

KEY PLAN

DRAWING TITLE

GRADE LEVEL FLOOR PLAN

JOB NUMBER: 1702.1
JOB TITLE

WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER

CONSULTANT

DESMAN
Design Management

ARCHITECT

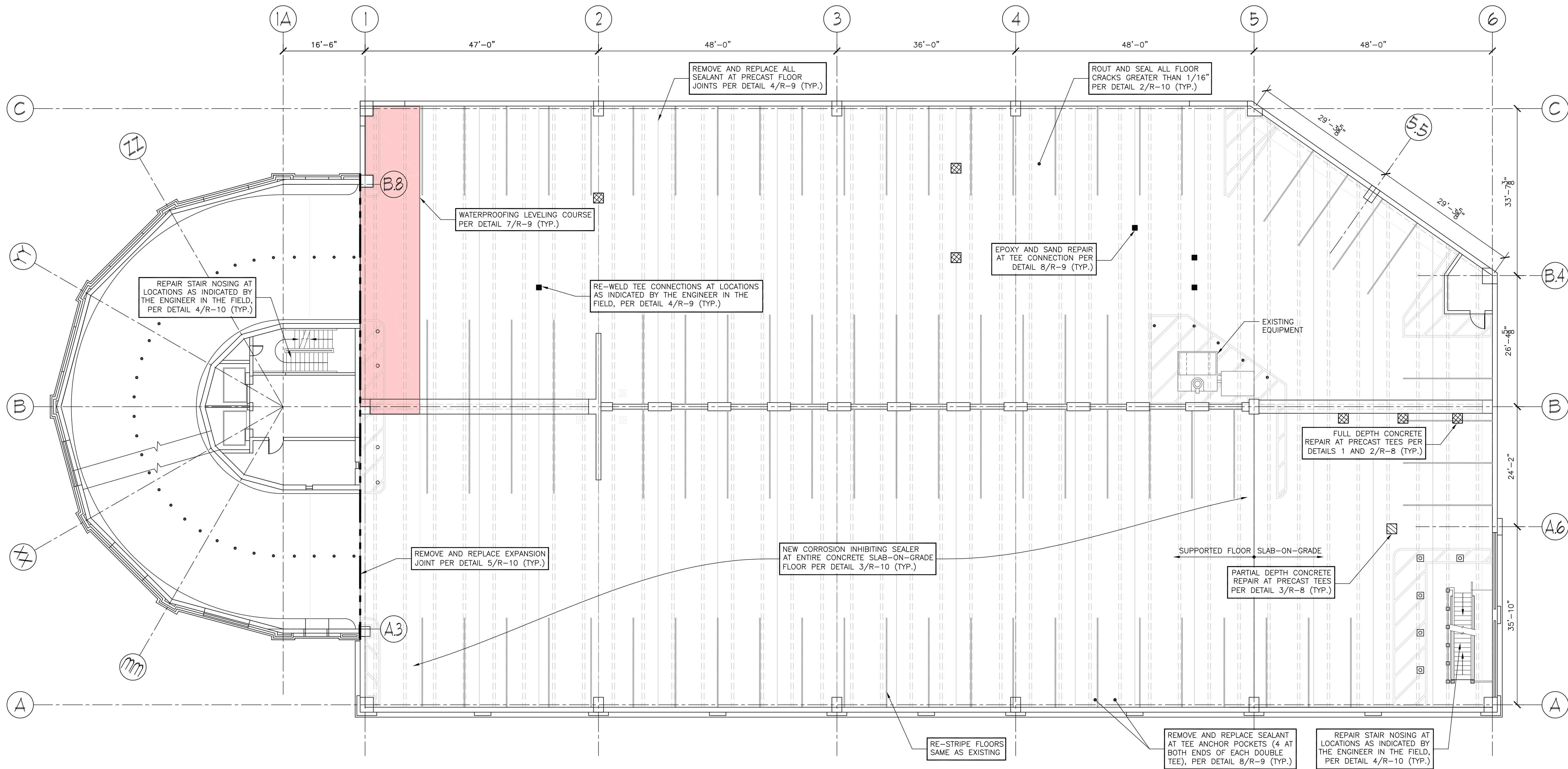
NAULT ARCHITECTS, INC.
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ADMIN@NAULTARCHITECTS.COM

DRAWING NO.

R1

SCALE
AS NOTED

DATE
FEBRUARY 2026



UNION STATION GARAGE – FIRST LEVEL FRAMING PLAN
SCALE: 3/32"=1'-0"

GENERAL NOTES

KEY PLAN

DRAWING TITLE

FIRST LEVEL FRAMING PLAN

JOB NUMBER: 1702.1
JOB TITLE

WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER

CONSULTANT

DESMAN
Design Management

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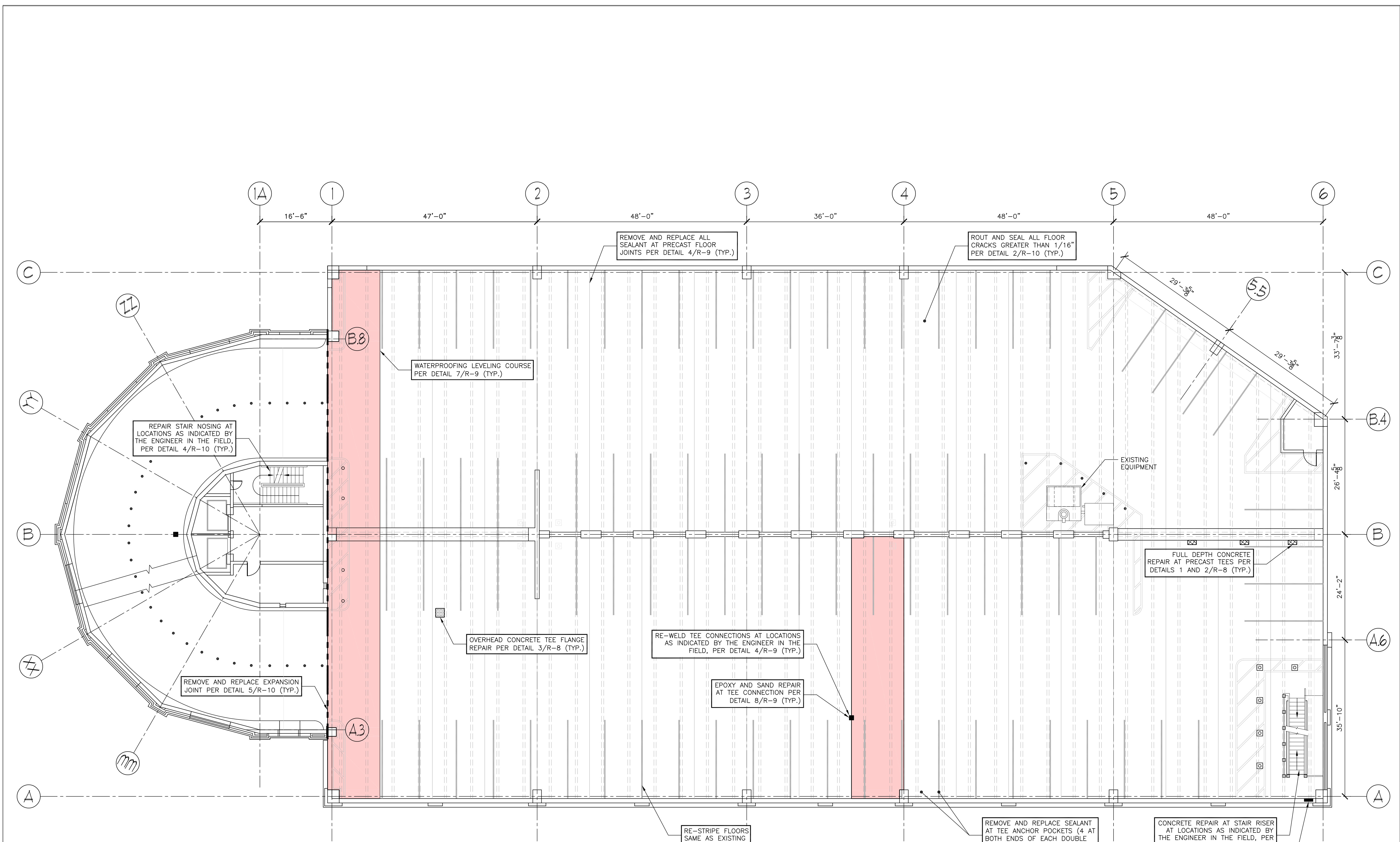
R2

SCALE

AS NOTED

DATE

FEBRUARY 2026



UNION STATION GARAGE - SECOND LEVEL FRAMING PLAN
SCALE: 3/32"=1'-0"

GENERAL NOTES

KEY PLAN

DRAWING TITLE

SECOND LEVEL FRAMING PLAN

JOB NUMBER: 1702.1
JOB TITLE
WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER

CONSULTANT

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Design Management

ARCHITECT

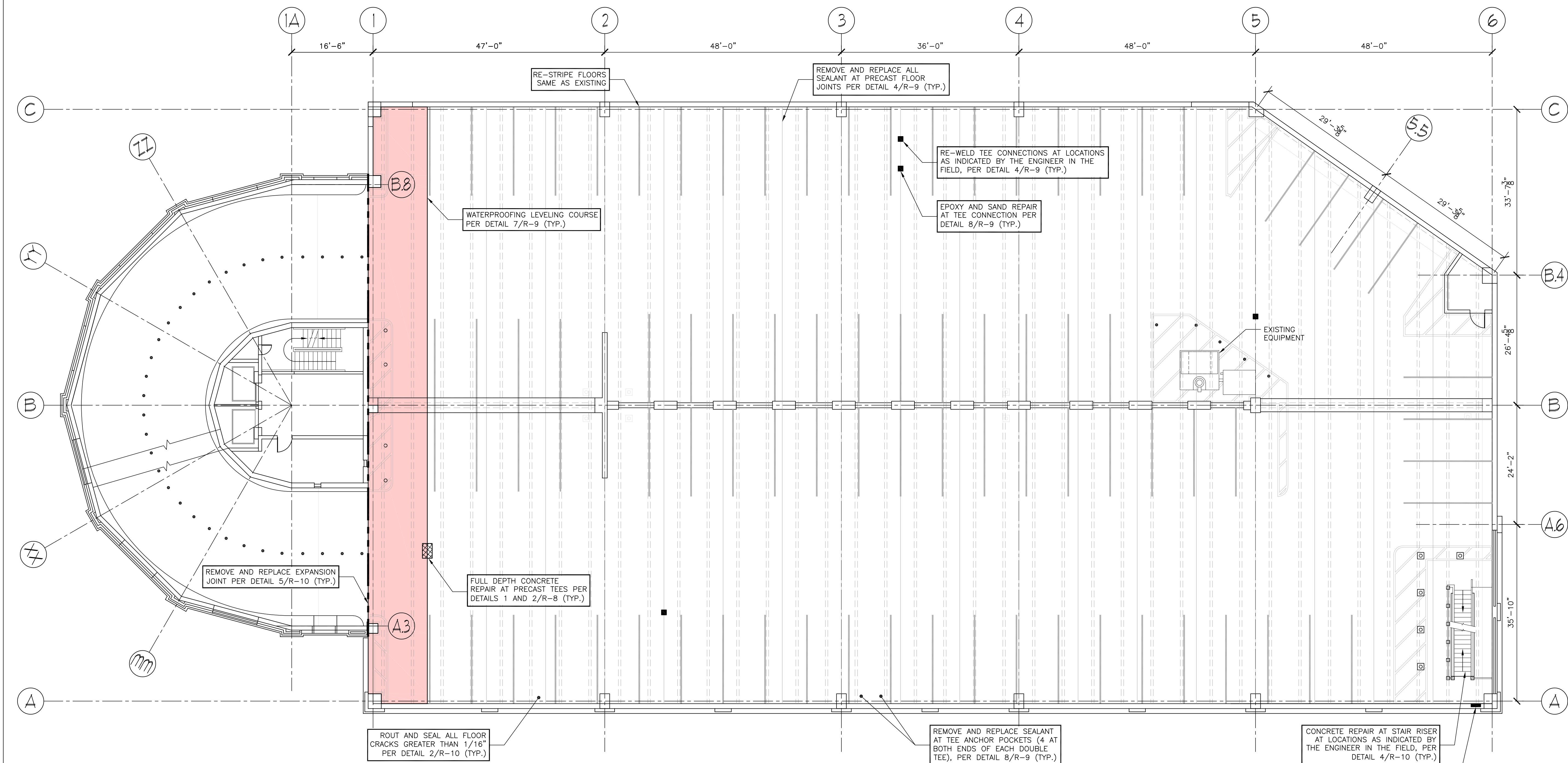
NAULT ARCHITECTS, INC.
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DRAWING NO.

R3

SCALE
AS NOTED

DATE
FEBRUARY 2026



UNION STATION GARAGE – THIRD LEVEL FRAMING PLAN
SCALE: 3/32"=1'-0"

GENERAL NOTES

KEY PLAN

DRAWING TITLE

THIRD LEVEL FRAMING PLAN

JOB NUMBER: 1702.1

JOB TITLE

WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER

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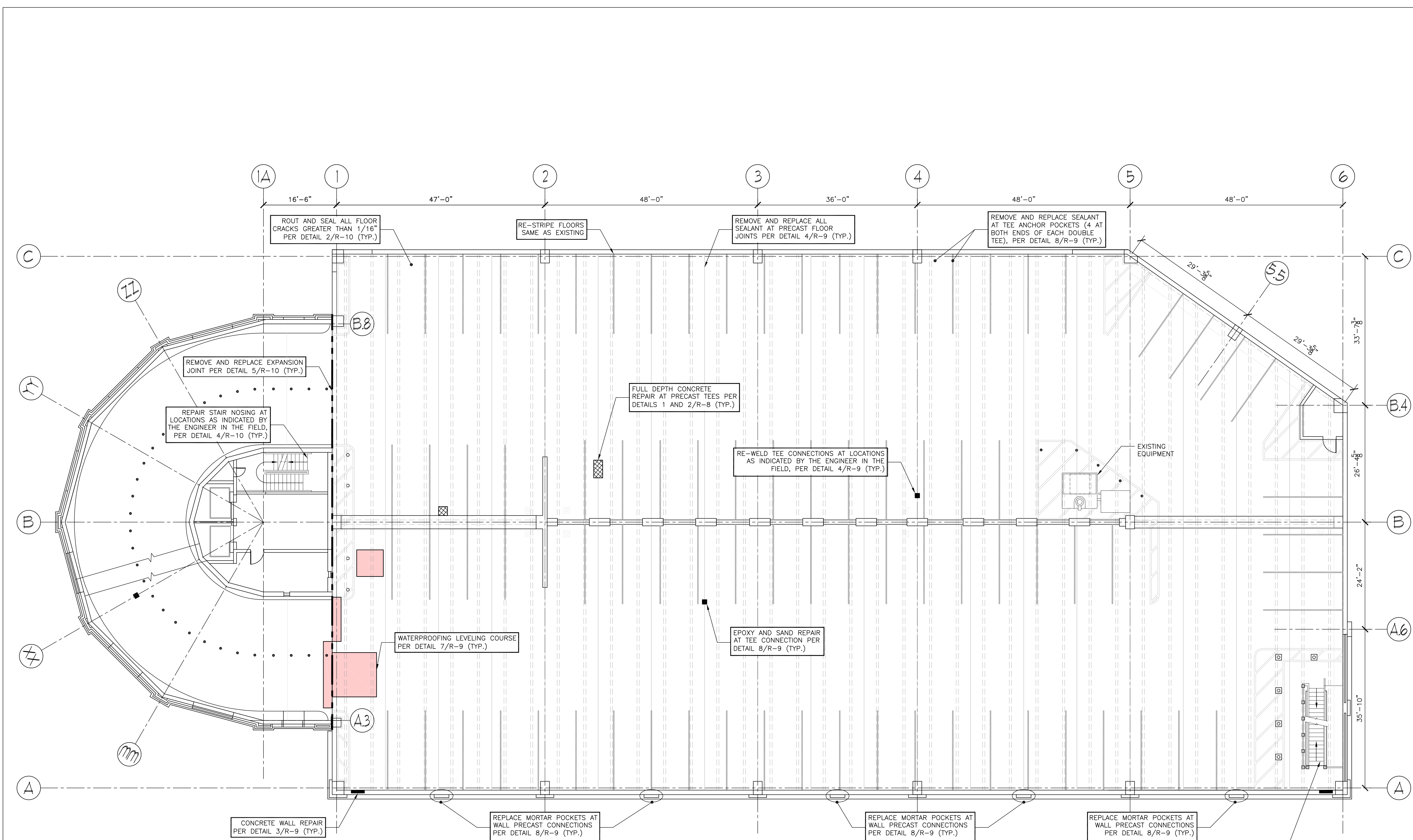
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SCALE

AS NOTED

DATE

FEBRUARY 2026



UNION STATION GARAGE – FOURTH LEVEL FRAMING PLAN
SCALE: 3/32"=1'-0"

GENERAL NOTES

KEY PLAN

DRAWING TITLE

FOURTH LEVEL FRAMING PLAN

JOB NUMBER: 1702.1
JOB TITLE
WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER

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ARCHITECT

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211 HOPE AVENUE
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DRAWING NO.

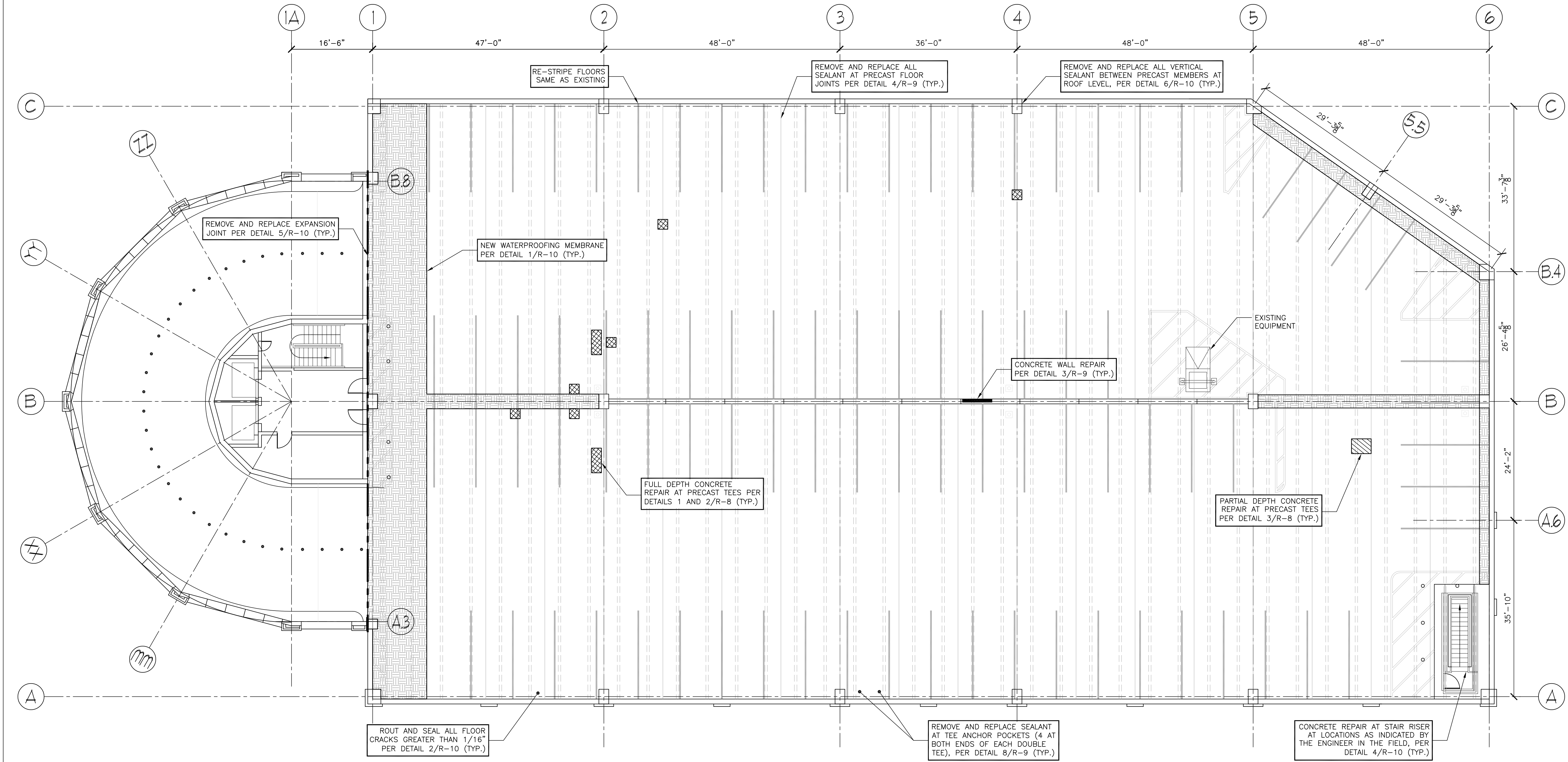
R5

SCALE

AS NOTED

DATE

FEBRUARY 2026



UNION STATION GARAGE - FIFTH LEVEL FRAMING PLAN
SCALE: 3/32"=1'-0"

GENERAL NOTES

KEY PLAN

DRAWING TITLE

FIFTH LEVEL FRAMING PLAN

JOB NUMBER: 1702.1
JOB TITLE

WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER

CONSULTANT

DESMAN
Design Management

ARCHITECT

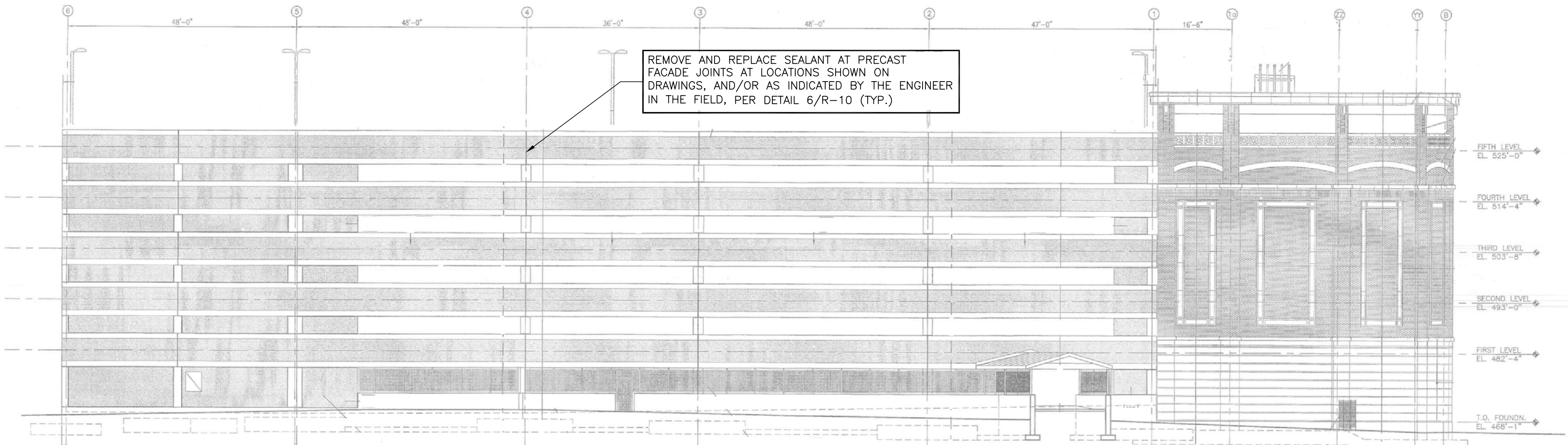
NAULT ARCHITECTS, INC.
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DRAWING NO.

R6

SCALE
AS NOTED

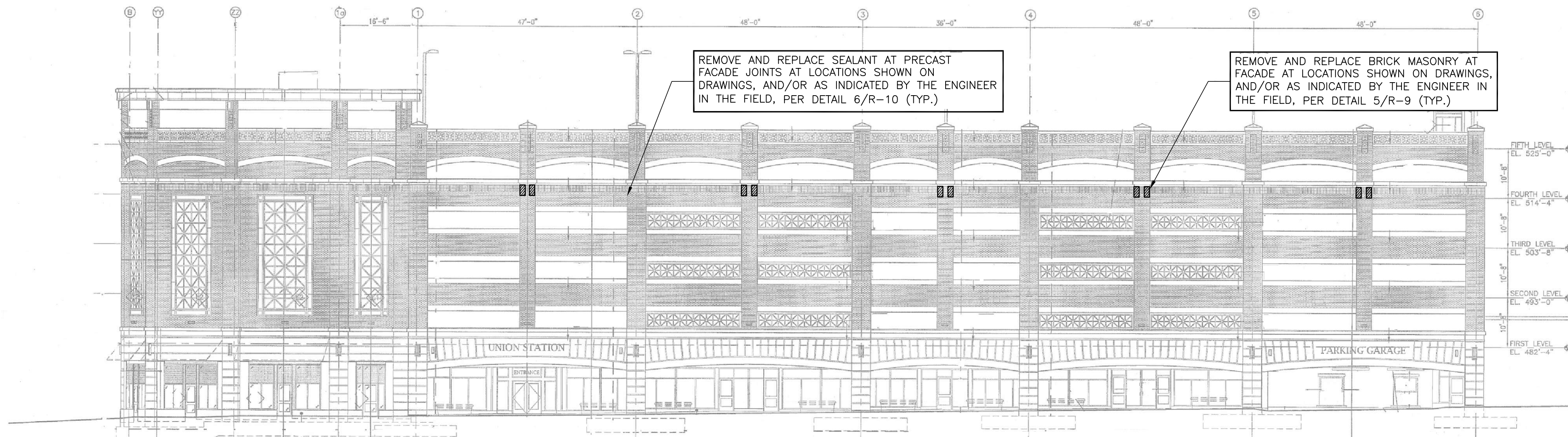
DATE
FEBRUARY 2026



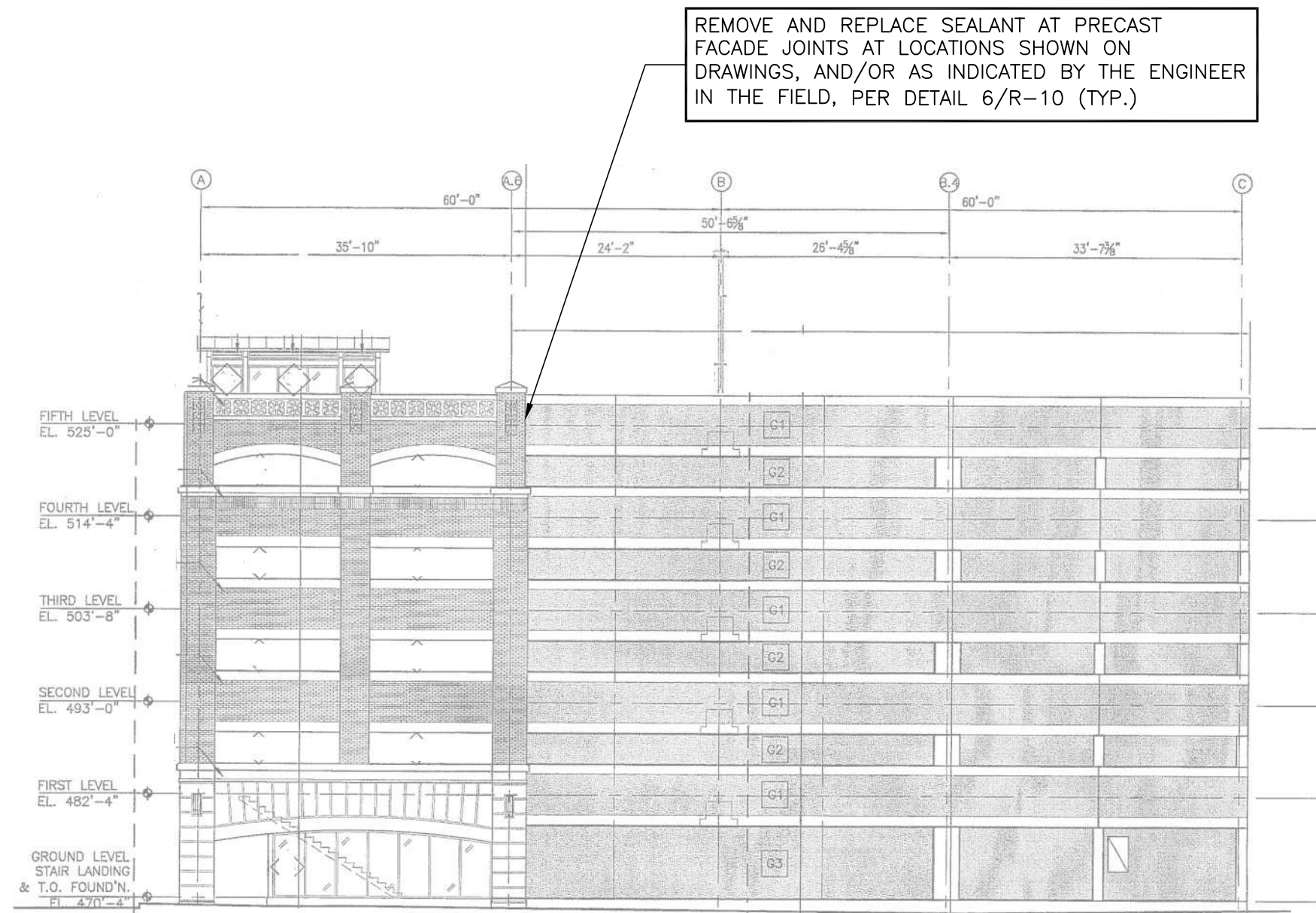
UNION STATION GARAGE – NORTH ELEVATION
SCALE: N.T.S.

LEGEND				
REPAIR ITEMS	UNITS	APPROXIMATE QUANTITY	DETAIL	DESIGNATION ON PLAN
REMOVE AND REPLACE BRICK AT MASONRY FACADE	EA	25	5/R-9	
REMOVE AND REPLACE SEALANT AT PRECAST FACADE JOINTS	LF	5,300	6/R-10	

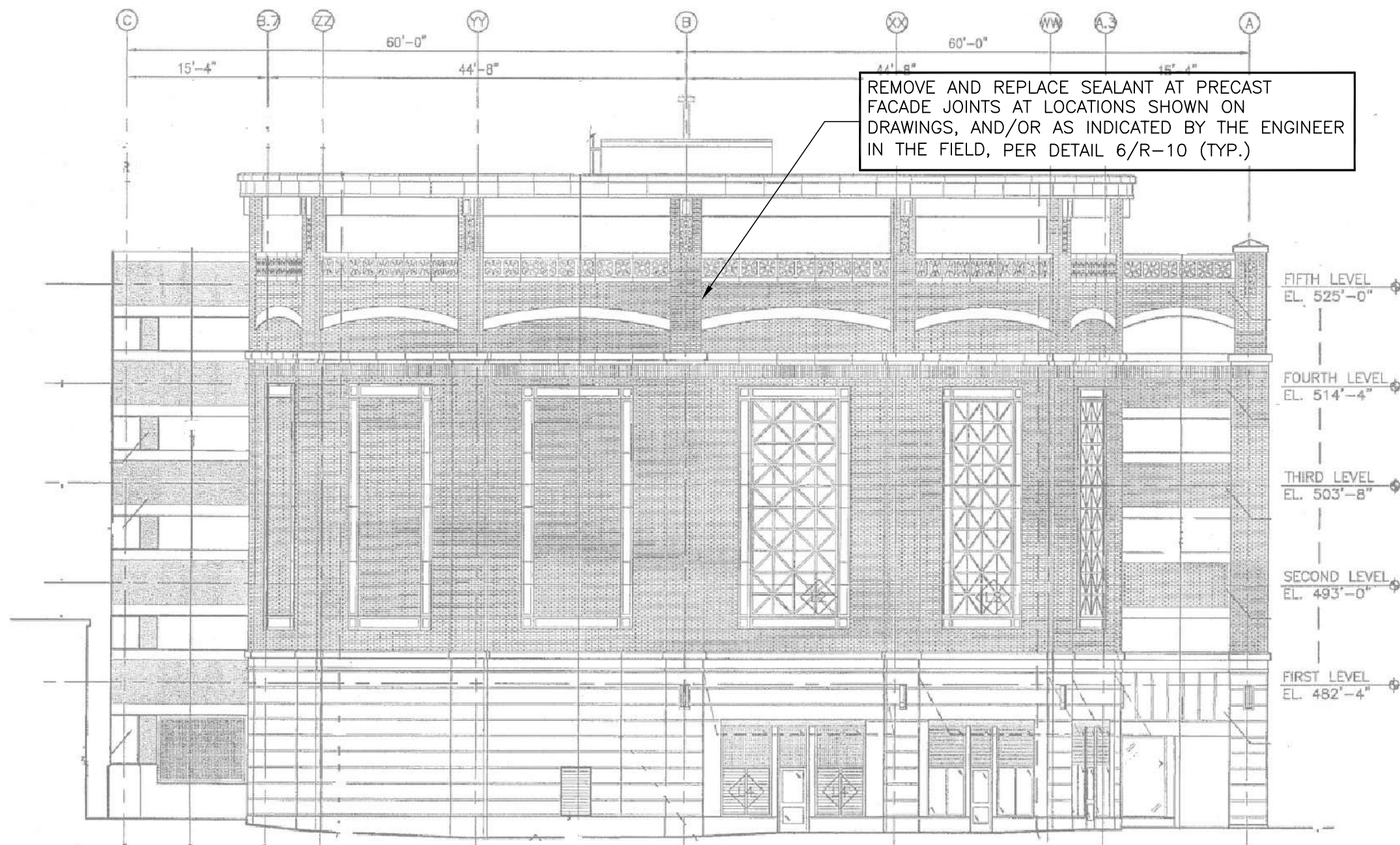
- NOTES:
- ALL REPAIR LOCATIONS AND QUANTITIES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
 - FOR REPAIR DETAILS SEE DRAWINGS R-8, R-9 AND R-10.
 - REMOVE AND REPLACE BRICK MASONRY AT FACADE AT LOCATIONS SHOWN ON DRAWINGS, AND/OR AS INDICATED BY THE ENGINEER IN THE FIELD, PER DETAIL 5/R-9 (TYP.)
 - REMOVE AND REPLACE SEALANT AT PRECAST FACADE JOINTS AT LOCATIONS SHOWN ON DRAWINGS, AND/OR AS INDICATED BY THE ENGINEER IN THE FIELD, PER DETAIL 6/R-10 (TYP.)



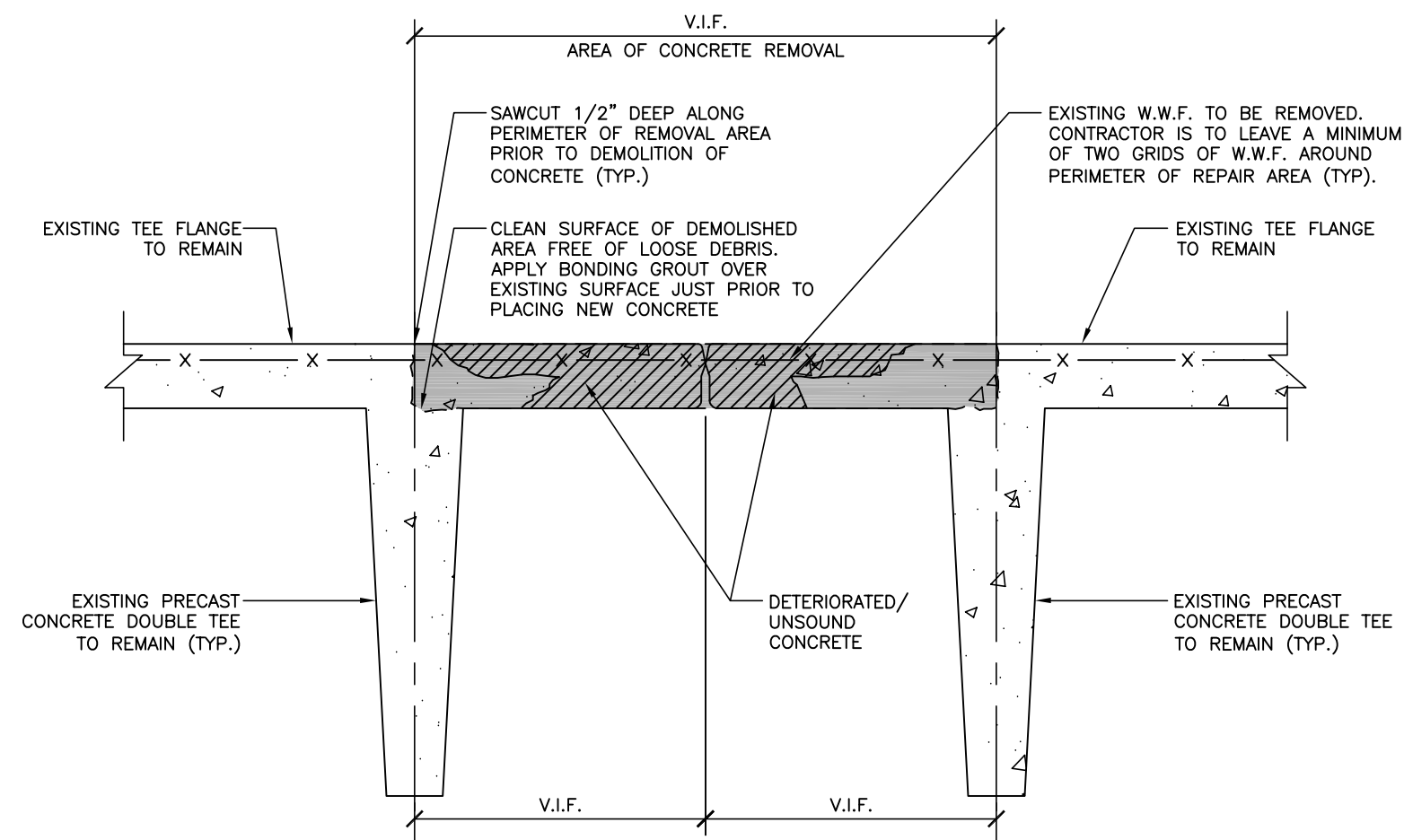
UNION STATION GARAGE – SOUTH ELEVATION
SCALE: N.T.S.



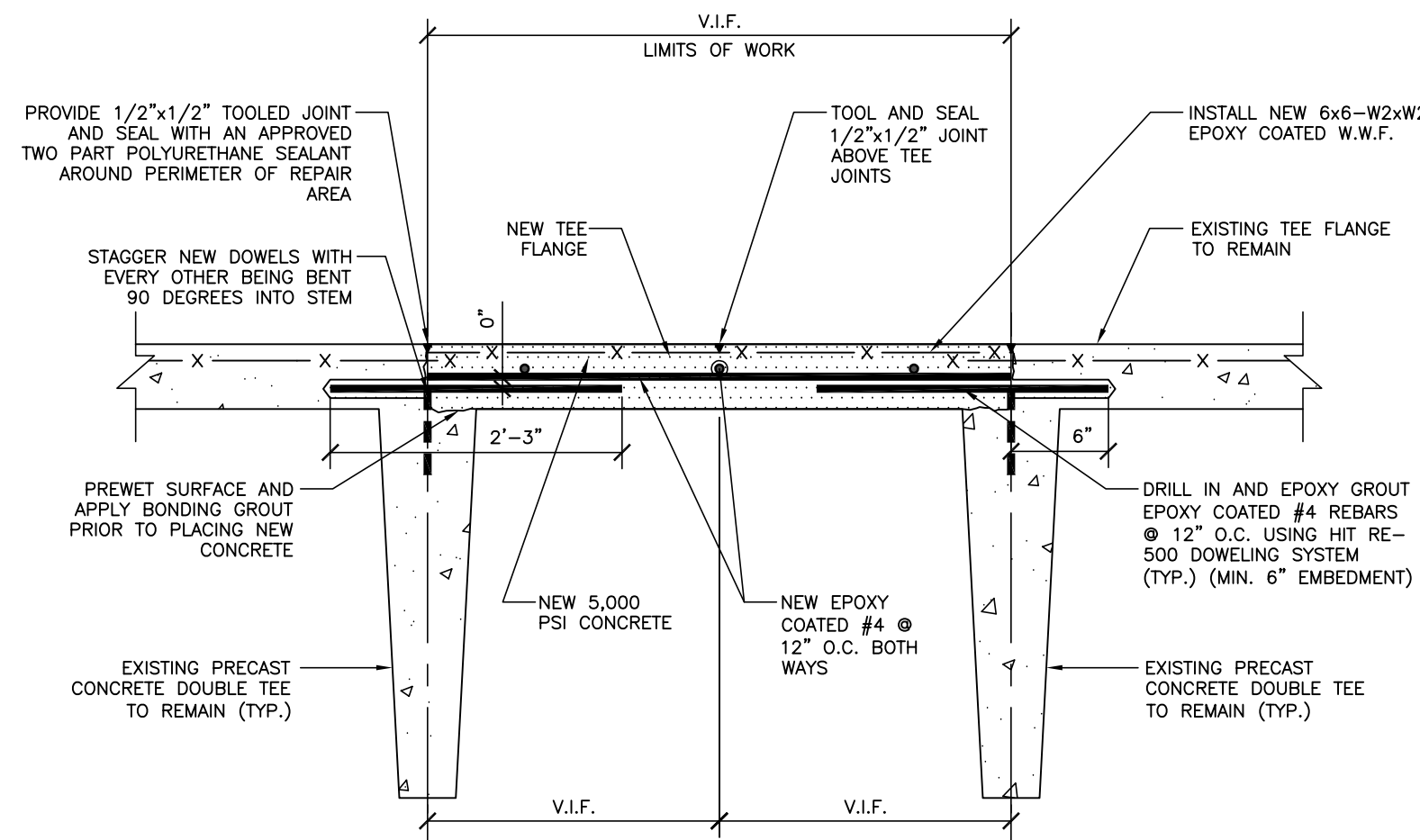
UNION STATION GARAGE – EAST ELEVATION
SCALE: N.T.S.



UNION STATION GARAGE – WEST ELEVATION
SCALE: N.T.S.

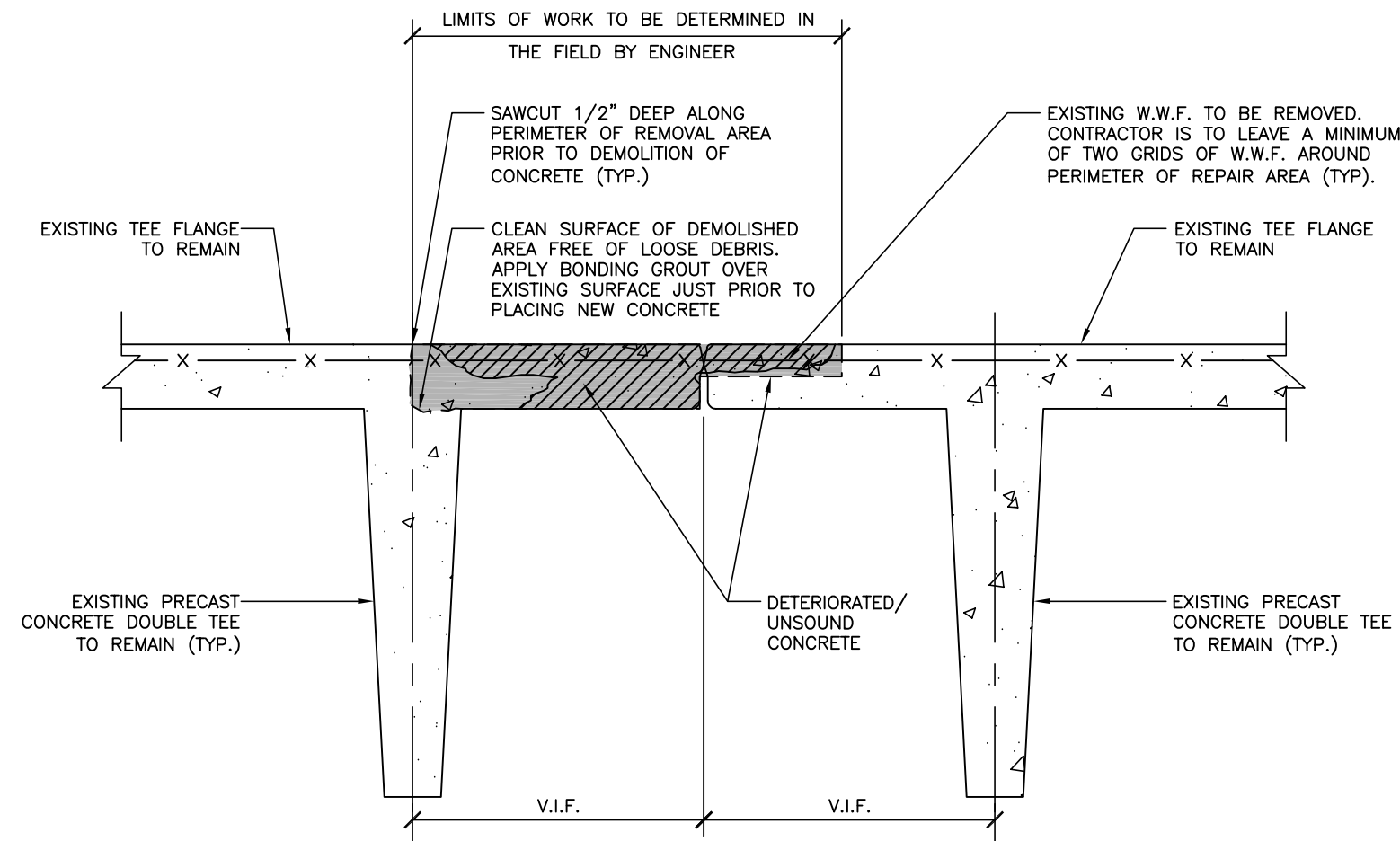


EXISTING CONDITION AND REMOVAL

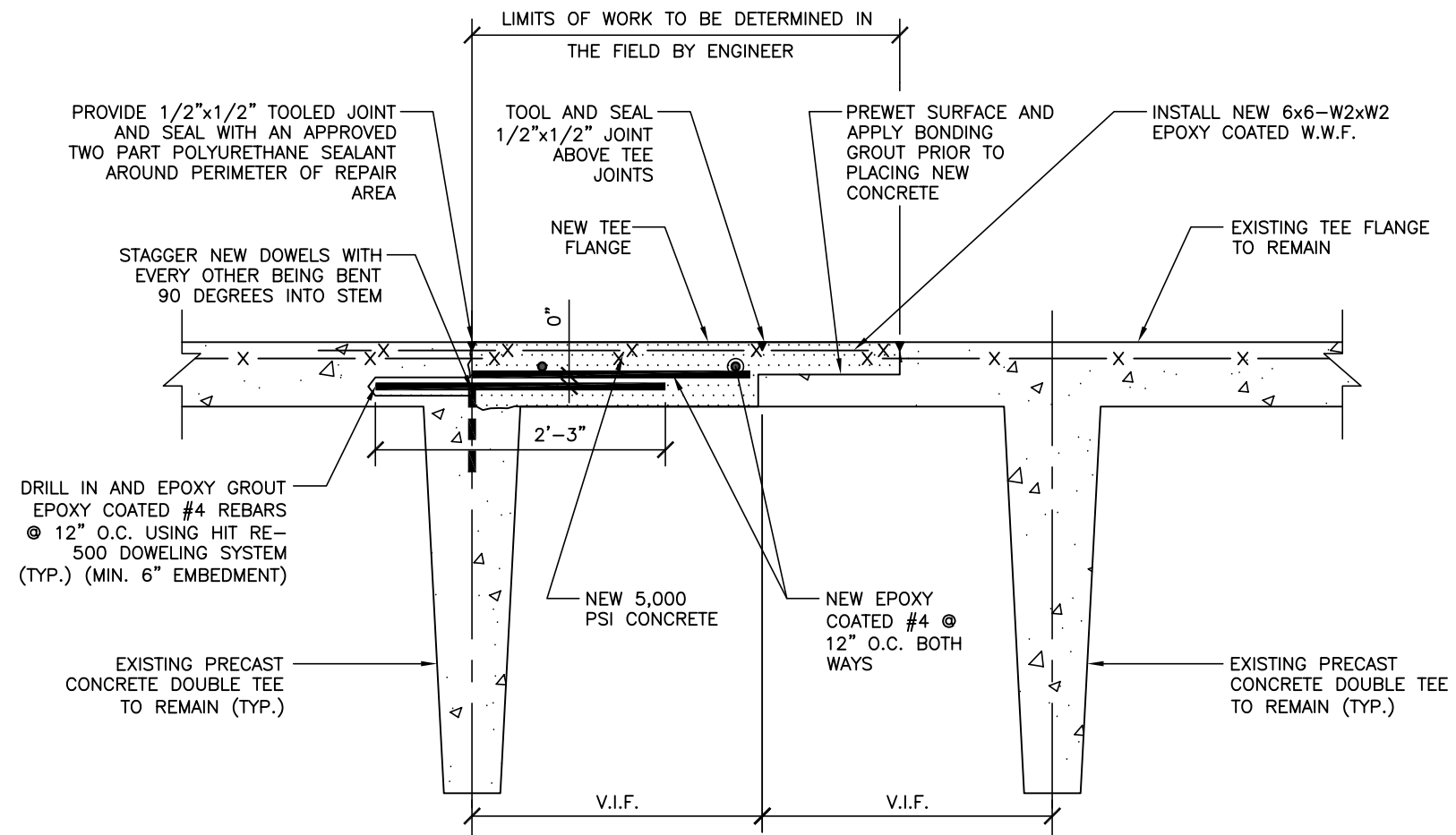


REPAIRED CONDITION

FULL DEPTH REPAIR AT ADJACENT TEE FLANGES

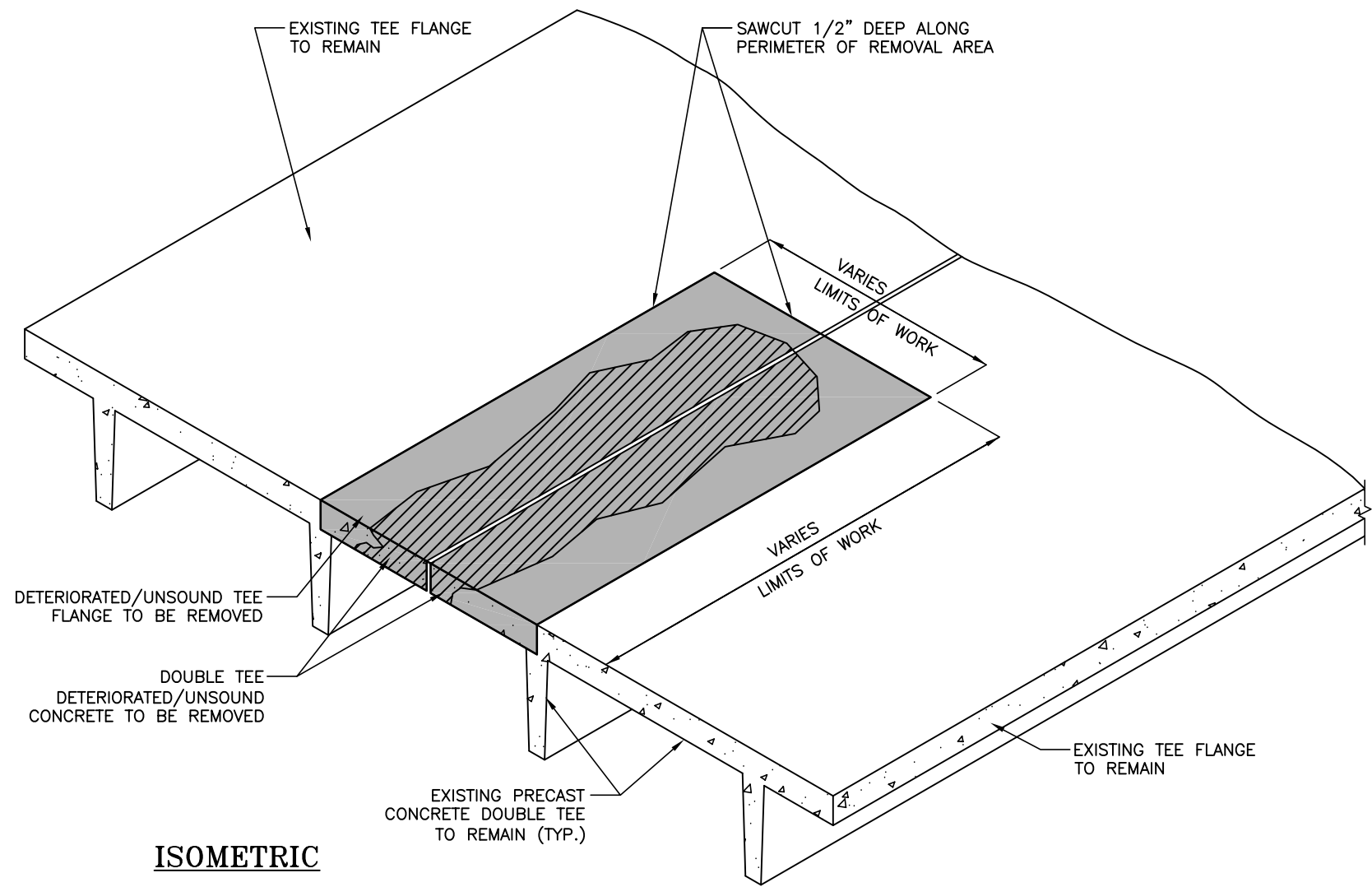


EXISTING CONDITION AND REMOVAL



REPAIRED CONDITION

FULL DEPTH REPAIR AT ONE TEE FLANGE

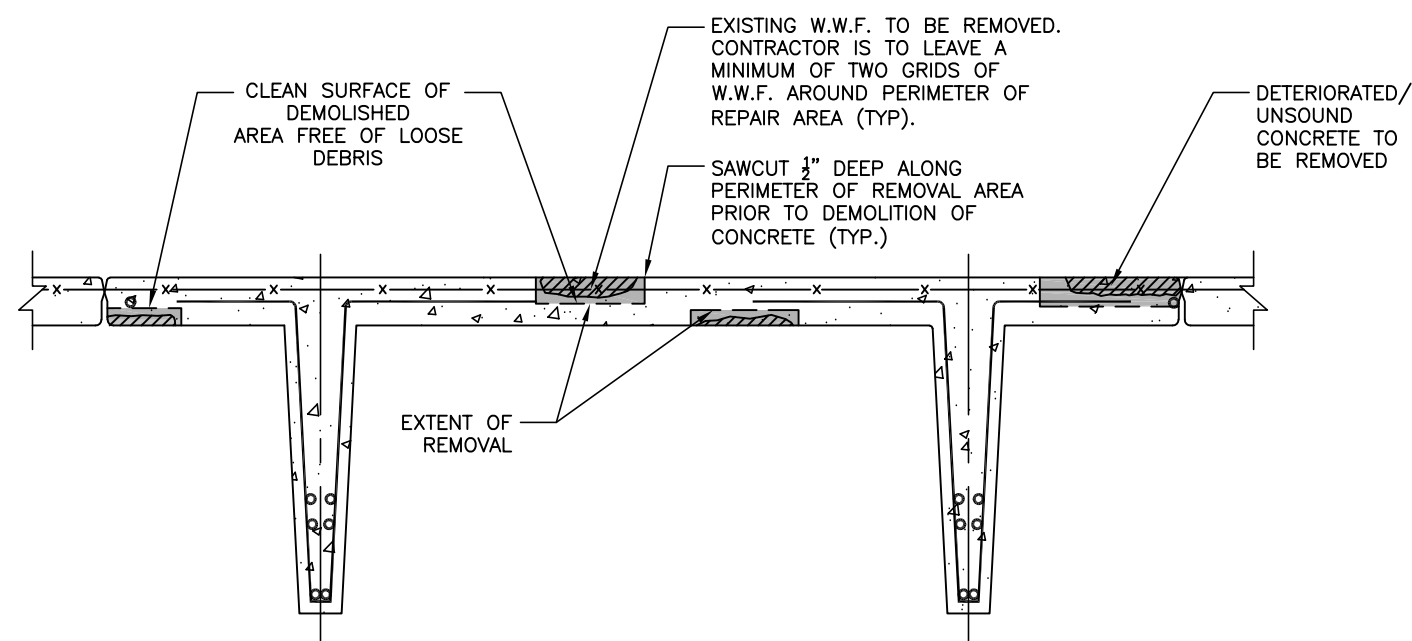


ISOMETRIC

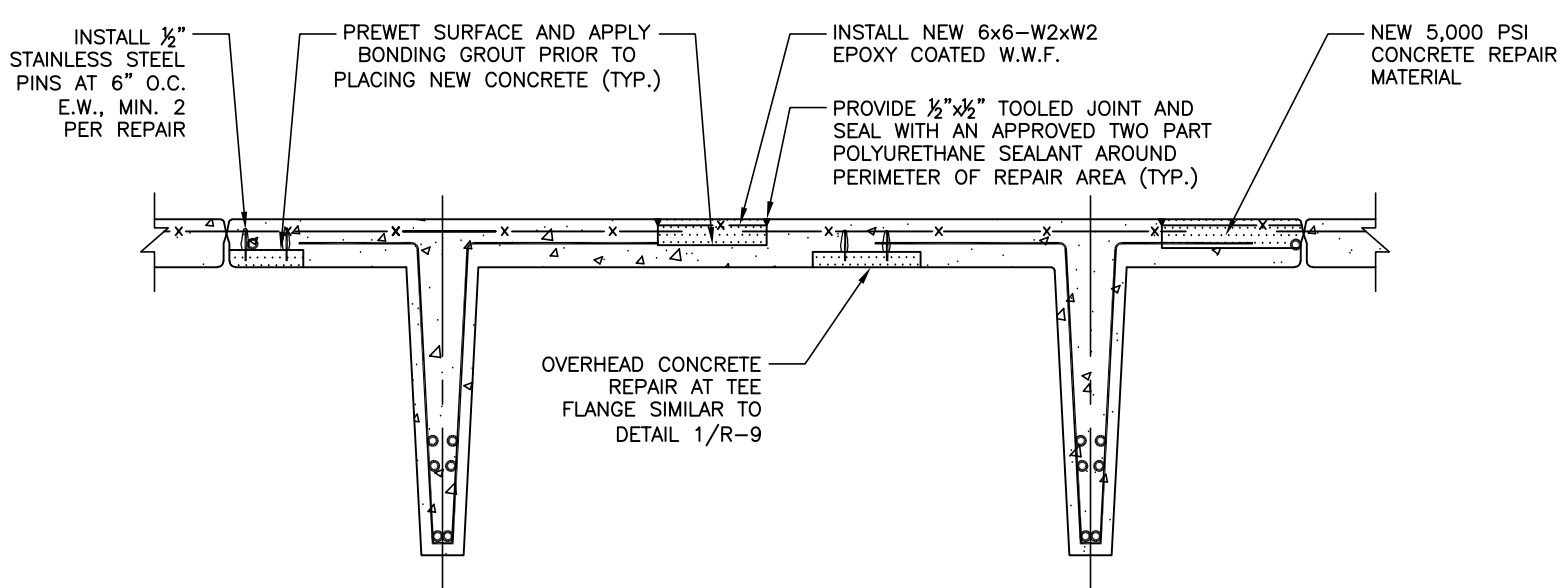
REPAIR PROCEDURE:

1. MARK OUT REPAIR AREA IN THE PRESENCE OF THE ENGINEER AND SAWCUT 1/2" DEEP ALONG PERIMETER OF REPAIR AREA.
2. REMOVE DELAMINATED AND SOUND CONCRETE AS SHOWN FULL DEPTH.
3. DRILL IN AND INSTALL EPOXY COATED #4 DOWELS AT 12" O.C. USING THE HILTI HIT RE 500 SYSTEM WITH A 6" MINIMUM EMBEDMENT.
4. REFER TO DETAIL 2/R-8 FOR TEE CONNECTION REPAIR AND DETAIL 4/R-9 FOR TEE CONNECTION RE-WELD, WHERE REQUIRED.
5. CLEAN SURFACE OF DEMOLISHED CONCRETE TEE FREE OF LOSE MATERIAL AND DEBRIS. APPLY BONDING GROUT OVER EXISTING SURFACE JUST PRIOR TO PLACING NEW CONCRETE.
6. FORM AND PLACE NEW 5,000 PSI, FIBER REINFORCED, CONCRETE AND WET CURE AS PER SPECIFICATIONS. TOOL 1/2"x1/2" JOINTS ALONG PERIPHERY OF REPAIR AREA AND ABOVE ORIGINAL TEE JOINTS AND SEAL THE SAME WITH AN APPROVED TWO PART URETHANE SEALANT.

1 LARGE AREA FULL DEPTH REPAIR AT PRECAST CONCRETE TEES
R-8 SCALE: N.T.S.



EXISTING CONDITION AND REMOVAL

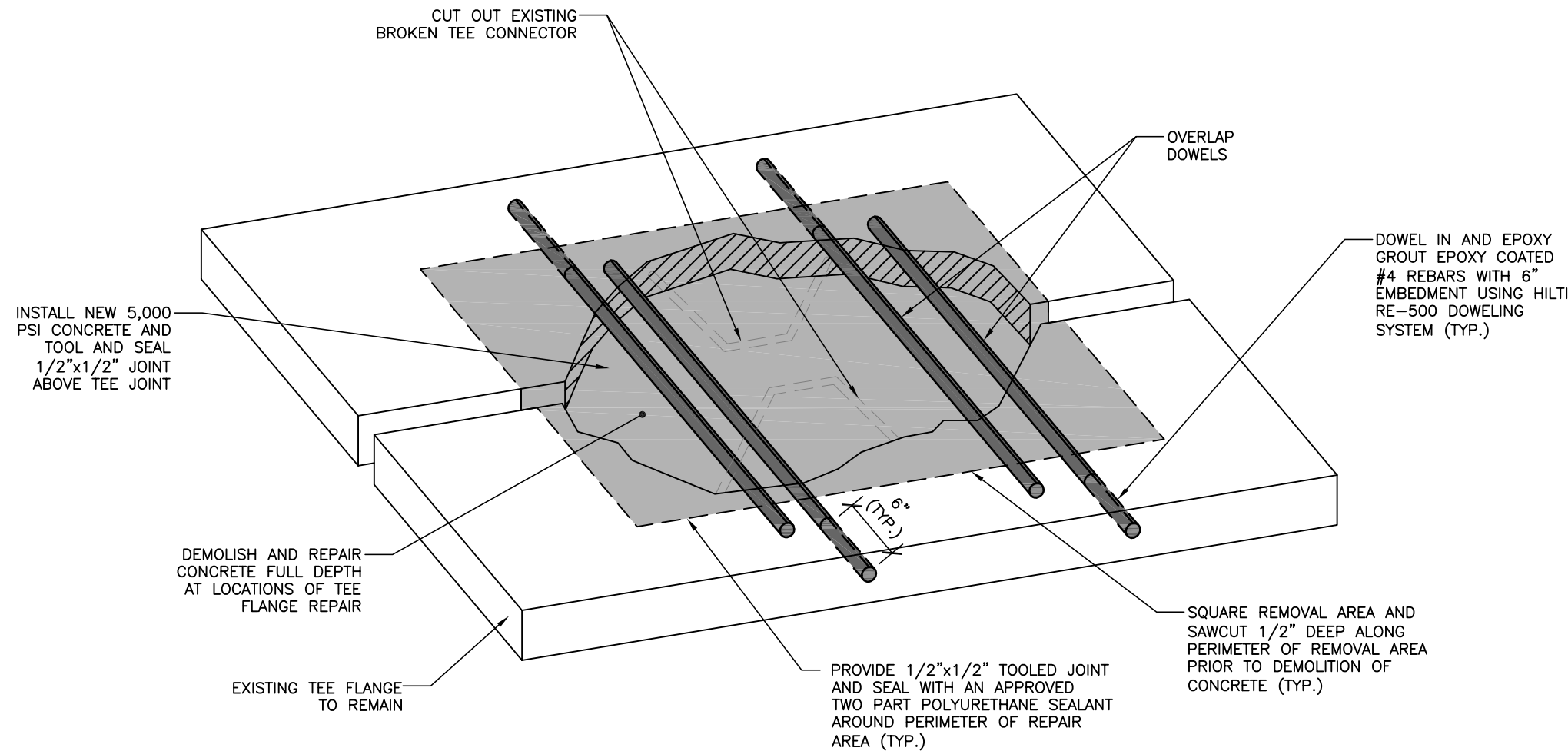


REPAIRED CONDITION

REPAIR PROCEDURE:

1. DETERMINE EXACT LOCATION OF CONCRETE REPAIR BY SOUNDING TOPPING IN THE PRESENCE OF THE ENGINEER.
2. PROVIDE 1/2" DEEP SAWCUT ALONG PERIMETER OF REPAIR AREA.
3. COMPLETELY REMOVE CONCRETE USING CHIPPING HAMMERS (30 LBS MAX.), WHERE EXISTING REINFORCING IS EXPOSED, REMOVE CONCRETE TO A DEPTH OF 3/4" BELOW THE REBAR.
4. SUPPLEMENT EXISTING REINFORCING BARS THAT HAVE LOST MORE THAN 20% OF THEIR ORIGINAL CROSS-SECTION WITH NEW EPOXY COATED #4 REBARS.
5. PATCH AREA WITH AN APPROVED 5,000 PSI REPAIR MATERIAL (NON-SAG AT OVERHEAD) AS PER THE RECOMMENDATIONS OF THE MANUFACTURER.
6. PROVIDE 1/2"x1/2" TOOLED JOINT AROUND PERIMETER OF REPAIR AND ABOVE THE TEE JOINT AND SEAL WITH AN APPROVED TWO-PART URETHANE SEALANT.

3 PARTIAL DEPTH PRECAST CONCRETE AND OVERHEAD TEE FLANGE REPAIR
R-8 SCALE: N.T.S.



REPAIR PROCEDURE:

1. THIS REPAIR OCCURS WHEN SPALL REPAIR REQUIRES EXPOSING BAR ANCHORS DURING DEMOLITION.
2. REMOVAL WIDTH SHALL BE SUFFICIENT ENOUGH TO INSTALL OVERLAPPED DOWELS IN PLACE OF BROKEN CONNECTION.
3. EDGE OF PATCH TO BE CHAMFERED OR TOOLED TO MATCH ADJACENT EDGE OF EXISTING CONCRETE.
4. PATCH AREA WITH AN APPROVED 5,000 PSI REPAIR MATERIAL AS PER THE RECOMMENDATIONS OF THE MANUFACTURER.
5. PROVIDE 1/2"x1/2" TOOLED JOINT AROUND PERIMETER OF REPAIR AND ABOVE THE TEE JOINT AND SEAL WITH AN APPROVED TWO-PART URETHANE SEALANT.
6. REFER TO DETAIL 4/R-9 FOR TEE CONNECTION RE-WELD, WHERE REQUIRED.

2 SMALL AREA FULL DEPTH REPAIR AT TEE CONNECTIONS
R-8 SCALE: N.T.S.

KEY PLAN

DRAWING TITLE

TYPICAL DETAILS – SHEET 1

JOB NUMBER: 1702.1
JOB TITLE

WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER

CONSULTANT

DESMAN
Design Management

ARCHITECT

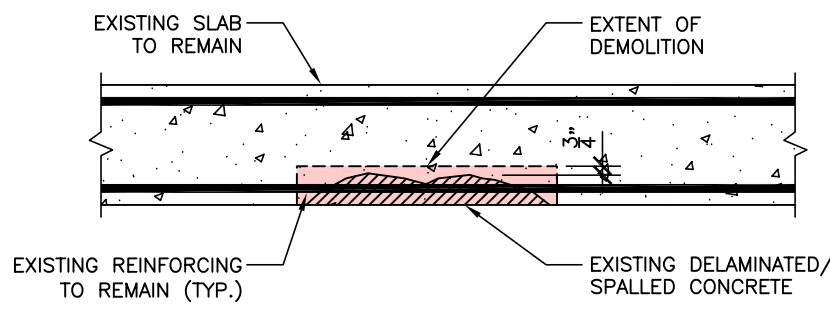
HAULT ARCHITECTS, INC.
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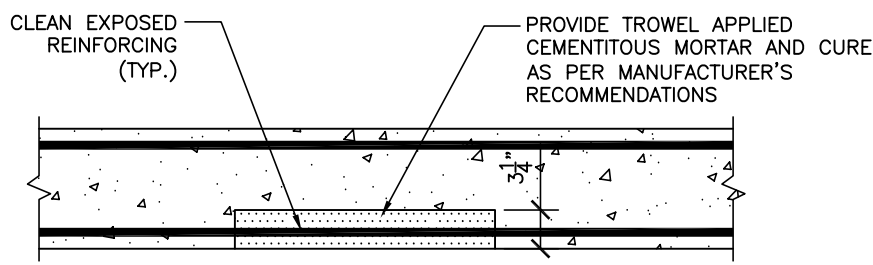
R8

SCALE
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DATE
FEBRUARY 2026



EXISTING CONDITION AND DEMOLITION



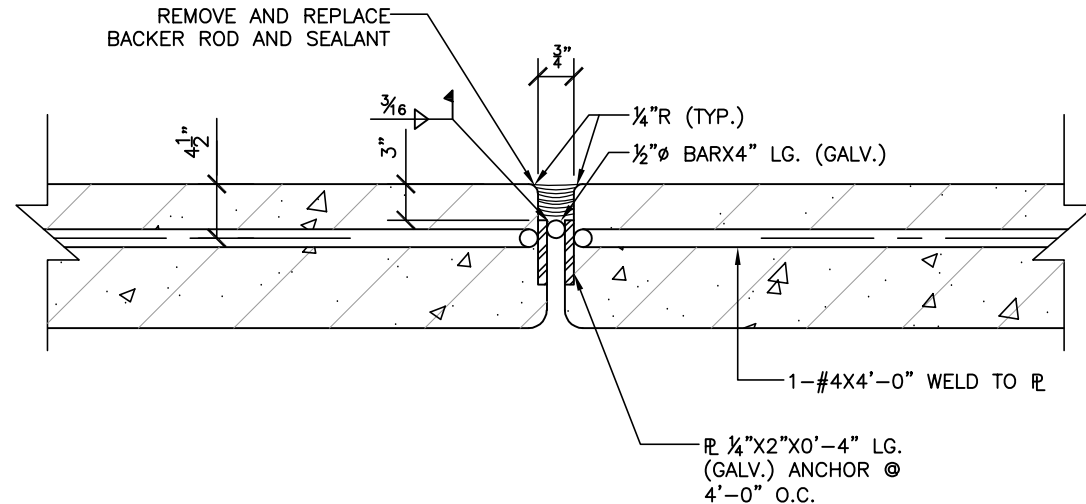
REPAIRED CONDITION

REPAIR PROCEDURE:

1. REMOVE UNSOUND AND SOUND CONCRETE AS DIRECTED BY THE ENGINEER TO A DEPTH OF 3/4" BEHIND EXISTING REINFORCING USING CHIPPING HAMMERS AND CLEAN EXPOSED STEEL.
2. SUPPLEMENT EXISTING REINFORCING BARS THAT HAVE LOST MORE THAN 20% OF THEIR ORIGINAL CROSS SECTION WITH NEW EPOXY COATED #4 BARS. NEW REINFORCING SHALL BE PROPERLY LAP SPLICED TO EXISTING.
3. APPLY NON SAG REPAIR MORTAR IN LAYERS AS PER MANUFACTURER'S REPAIR PROCEDURE. LAYERS SHALL BE LIMITED IN THICKNESS. EXISTING CONCRETE SURFACE SHALL BE PREWET PRIOR TO APPLICATION.
4. CURE AND PROTECT FINISHED REPAIR.

1 OVERHEAD CONCRETE REPAIR

R-9 SCALE: N.T.S.

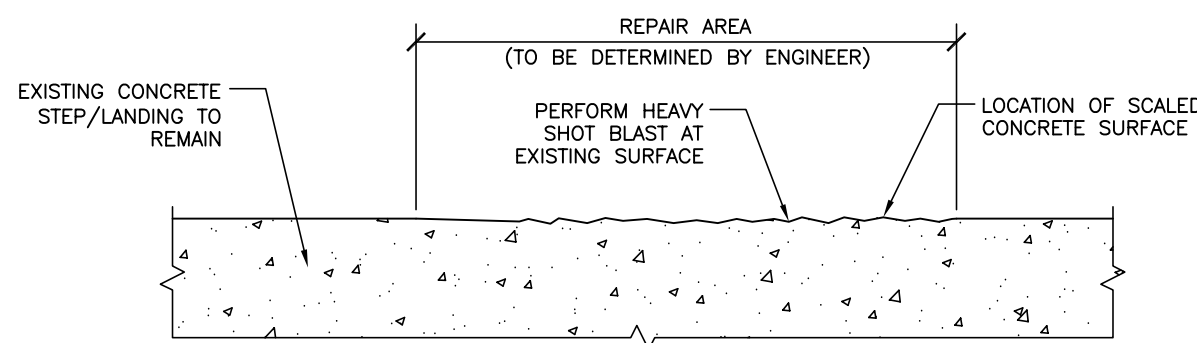


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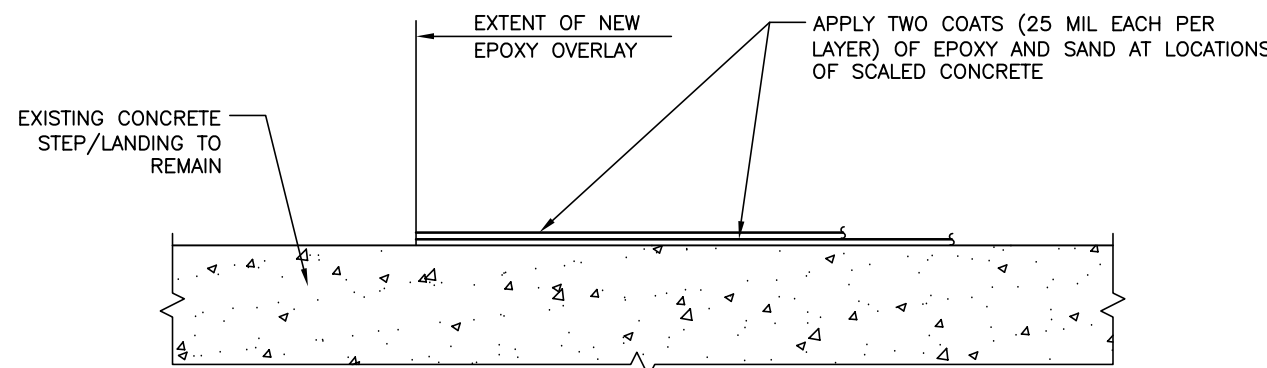
1. CLEAN AND EPOXY COAT EXPOSED STEEL CONNECTIONS.
2. REPAIR WELDS AS NOTED PER DIRECTION OF THE ENGINEER (IF REQUIRED).

4 REMOVE AND REPLACE SEALANT AT PRECAST JOINTS AND RE-WELD TEE CONNECTION

R-9 SCALE: N.T.S.



SURFACE PREPARATION



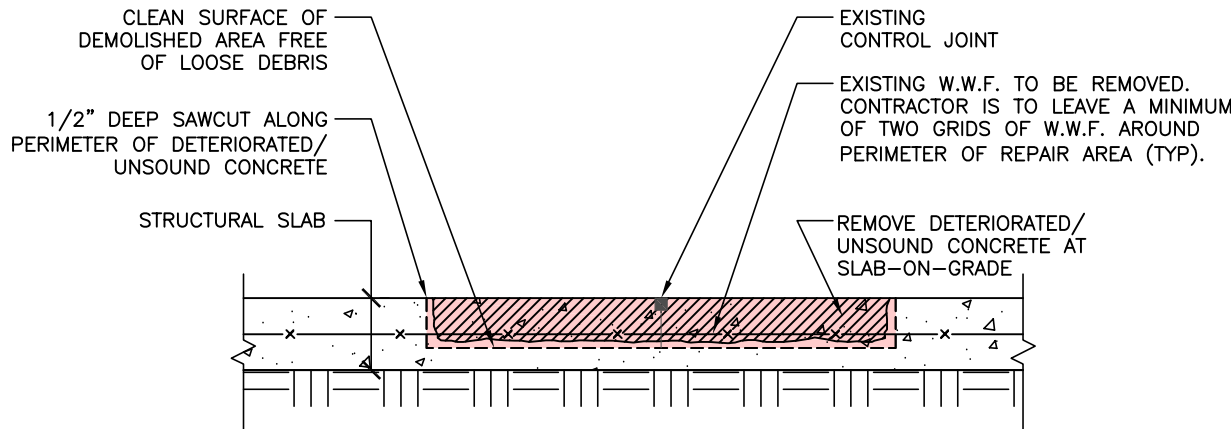
REPAIRED CONDITION

REPAIR PROCEDURE:

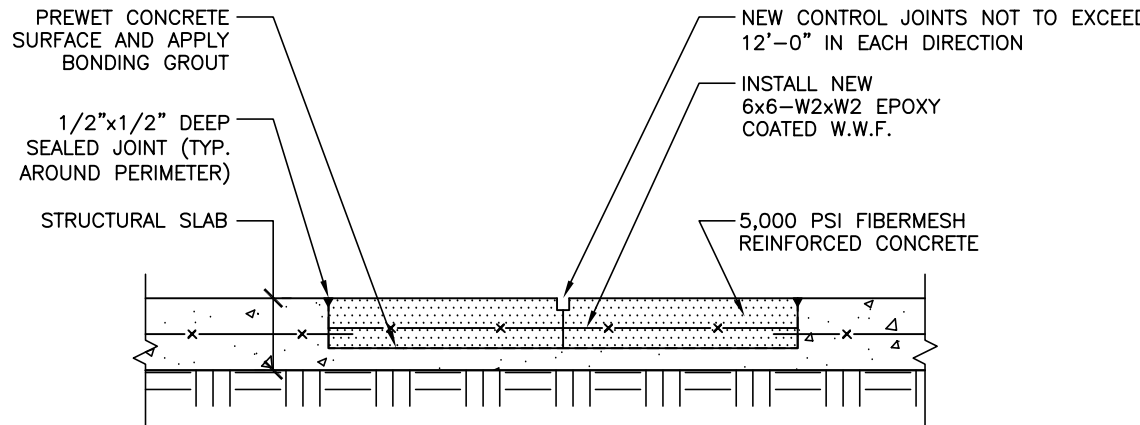
1. THE REPAIR AREA SHALL BE CLEANED BY SHOTBLASTING TO REMOVE ANY OIL, DIRT, RUBBER OR ANY OTHER POTENTIALLY DETRIMENTAL MATERIAL SUCH AS CURING COMPOUND AND LATENCIES, WHICH, IN THE OPINION OF THE ENGINEER, WOULD PREVENT PROPER BONDING AND CURING OF THE REPAIR MATERIAL.
2. THE REPAIR AREA SHALL BE DRY AT THE TIME OF APPLICATION. IMMEDIATELY BEFORE APPLYING THE REPAIR MATERIAL, ALL PREPARED SURFACES SHALL BE CLEANED WITH COMPRESSED AIR TO REMOVE DUST AND DEBRIS.
3. APPLY AND CURE THE REPAIR MATERIAL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE REPAIR MATERIAL MANUFACTURER MUST HAVE A REPRESENTATIVE ON THE SITE AT TIME OF APPLICATION.
4. TWO LAYERS OF SAND AND EPOXY IS TO BE BROADCAST AT LOCATIONS OF SCALED CONCRETE. LOCATIONS AT STEP/LANDING, AS SHOWN ON PLANS AND AS DIRECTED BY THE ENGINEER IN THE FIELD.

7 CONCRETE SCALING REPAIR DETAIL

R-9 SCALE: N.T.S.



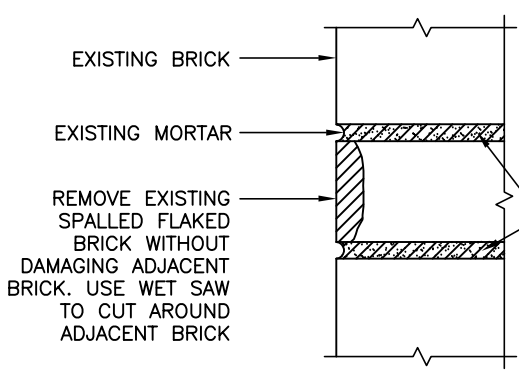
EXISTING CONDITION AND DEMOLITION



REPAIRED CONDITION

2 PARTIAL DEPTH REPAIR AT SLAB-ON-GRADE

R-9 SCALE: N.T.S.



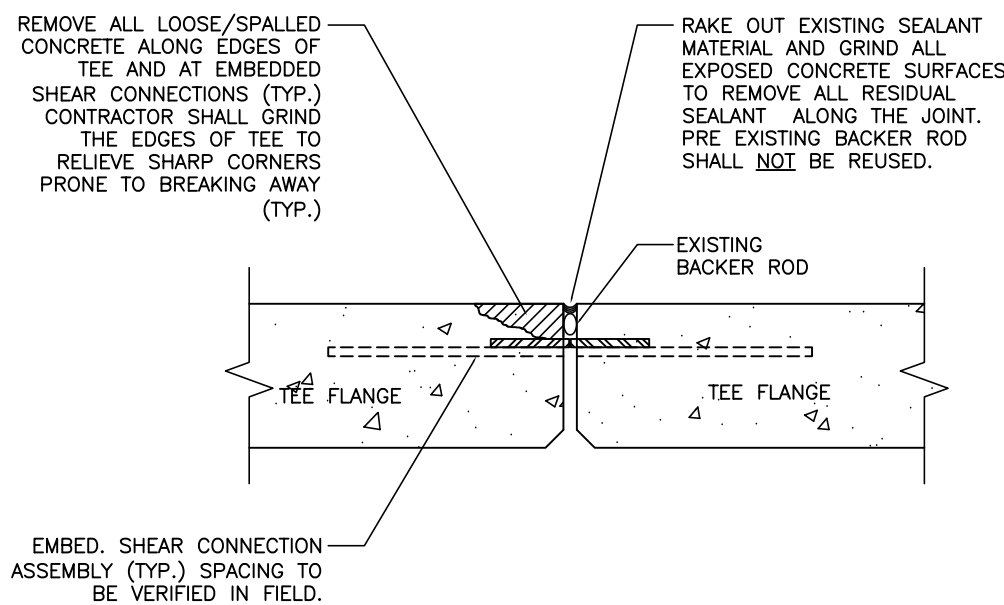
EXISTING CONDITION

REPAIR PROCEDURE:

1. USE WET SAW TO CUT AROUND BRICK SCHEDULED TO BE REPLACED. EXERCISE CARE SO AS NOT TO DAMAGE EXISTING BRICK SCHEDULED TO REMAIN.
2. INSTALL NEW BRICK WITH GEOMETRY AND COURSING TO MATCH EXISTING.
3. REPLACE MORTAR PER DETAIL 6/R-9.

5 BRICK REPLACEMENT DETAIL

R-9 SCALE: N.T.S.



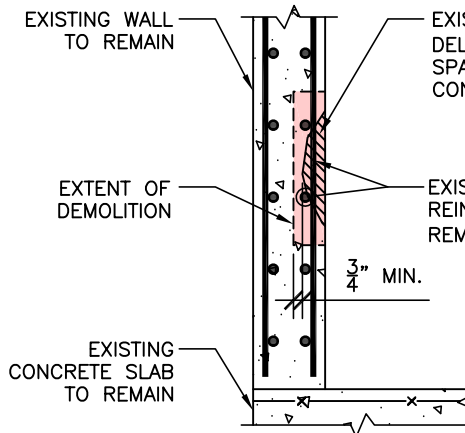
EXISTING CONDITION AND DEMOLITION

NOTES:

1. ALL EXPOSED SURFACES SHALL BE THOROUGHLY CLEANED BY BLAST CLEANING OR EQUIVALENT MECHANICAL MEANS PRIOR TO CONCRETE REPAIR OR INSTALLATION OF NEW SEALANT.
2. REFER TO DETAIL 2/R-8 FOR TEE CONNECTION REPAIR AND DETAIL 4/R-9 FOR TEE CONNECTION RE-WELD, WHERE REQUIRED.

8 SAND AND EPOXY REPAIR

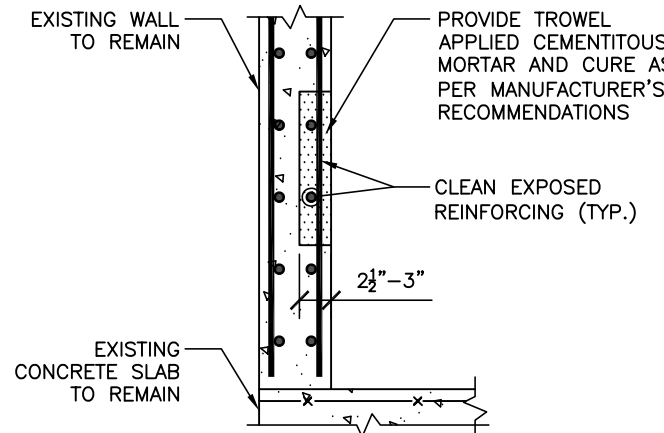
R-9 SCALE: N.T.S.



EXISTING CONDITION AND DEMOLITION

REPAIR PROCEDURE:

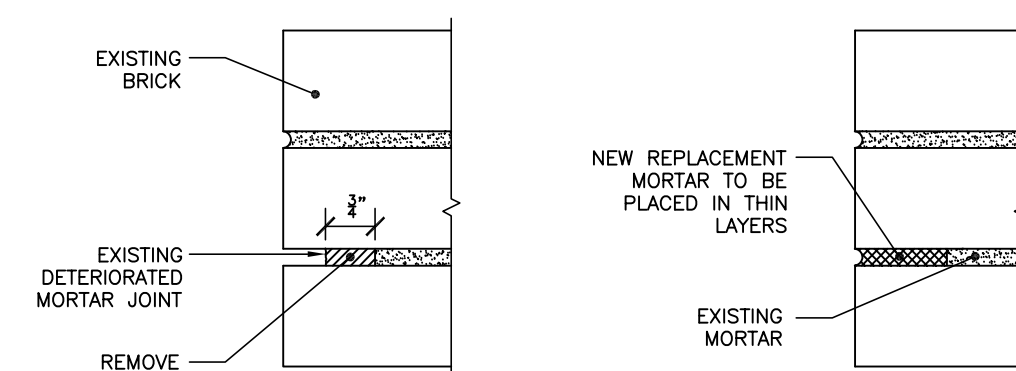
1. REMOVE UNSOUND AND SOUND CONCRETE AS DIRECTED BY THE ENGINEER TO A DEPTH OF 1/2" BEHIND EXISTING REINFORCING USING CHIPPING HAMMERS AND CLEAN EXPOSED STEEL.
2. CLEAN SURFACE OF DEMOLITION AREA FREE OF LOOSE DEBRIS. SUPPLEMENT EXISTING REINFORCING BARS THAT HAVE LOST MORE THAN 20% OF THEIR ORIGINAL CROSS SECTION WITH NEW EPOXY COATED #4 BARS. NEW REINFORCING SHALL BE PROPERLY LAP SPLICED TO EXISTING.
3. APPLY NON SAG REPAIR MORTAR IN LAYERS AS PER MANUFACTURER'S REPAIR PROCEDURE OR FORM AND PUMP REPAIR. LAYERS SHALL BE LIMITED IN THICKNESS. EXISTING CONCRETE SURFACE SHALL BE PREWET PRIOR TO APPLICATION.
4. CURE AND PROTECT FINISHED REPAIR.



REPAIRED CONDITION

3 CONCRETE WALL REPAIR DETAIL

R-9 SCALE: N.T.S.



EXISTING CONDITION

REPAIRED CONDITION

REPAIR PROCEDURE:

1. CUT OUT OLD MORTAR MIN. 3/4" DEEP, TAKING CARE NOT TO DAMAGE EDGES OF EXISTING BRICK.
2. REMOVE DUST AND DEBRIS FROM JOINT BY BRUSHING, BLOWING WITH AIR OR RINSING WITH WATER.
3. PRE-HYDRATE NEW MORTAR TO REDUCE SHRINKAGE.
4. DAMPEN JOINTS TO BE TUCK-POINTED.
5. ADD WATER TO PRE-HYDRATED MORTAR TO MAKE A WORKABLE CONSISTENCY.
6. PACK MORTAR TIGHTLY INTO JOINT IN THIN LAYERS (1/4" MAX). EACH LAYERS SHOULD BE "THUMB-PRINT" HARD BEFORE APPLYING NEXT LAYER.
7. AFTER PLACEMENT OF LAST LAYER, TOOL JOINT TO MATCH ORIGINAL PROFILE.

6 TUCK POINTING DETAIL

R-9 SCALE: N.T.S.

GENERAL NOTES

KEY PLAN

DRAWING TITLE

TYPICAL DETAILS - SHEET 2

JOB NUMBER: 1702.1
JOB TITLE

WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER

CONSULTANT

ARCHITECT

NAULT ARCHITECTS, INC.
21 HOPE AVENUE
WORCESTER, MA 01603
TEL: (508) 755-4134
ADMIN@NAULTARCHITECTS.COM

SCALE

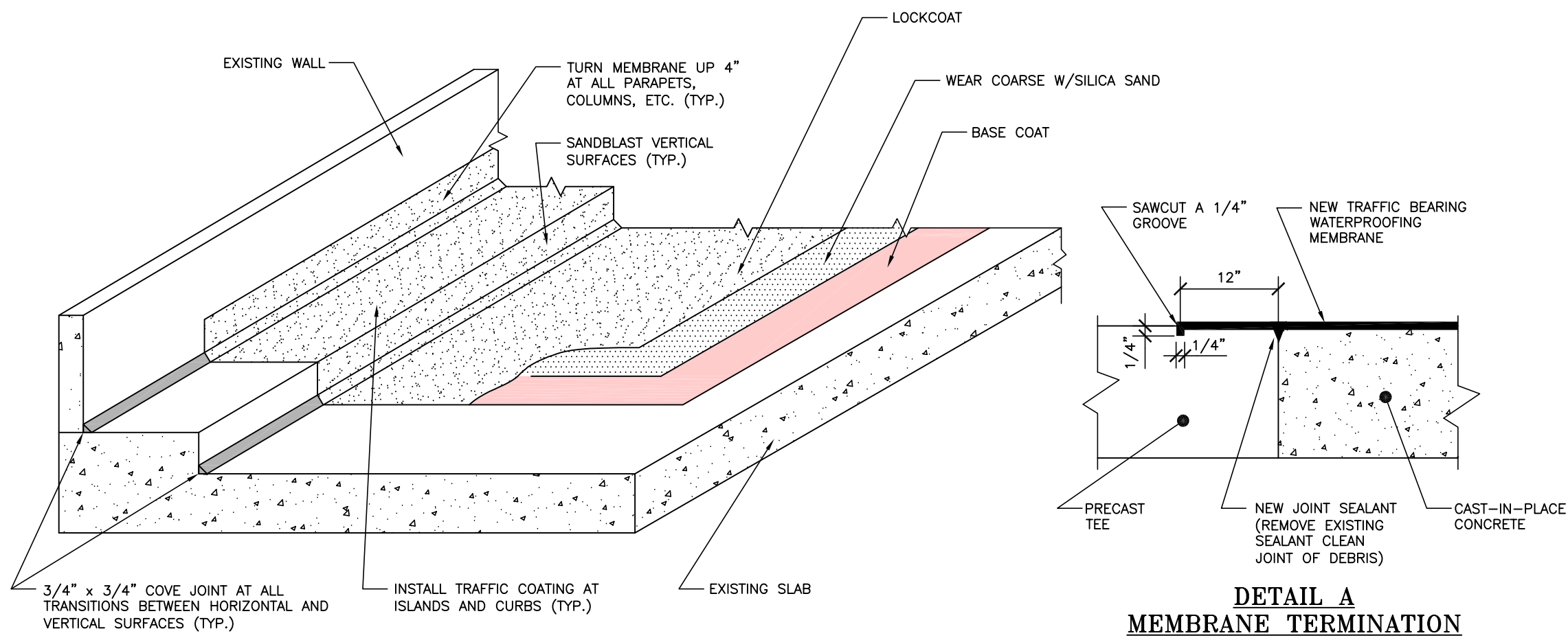
AS NOTED

DATE

FEBRUARY 2026

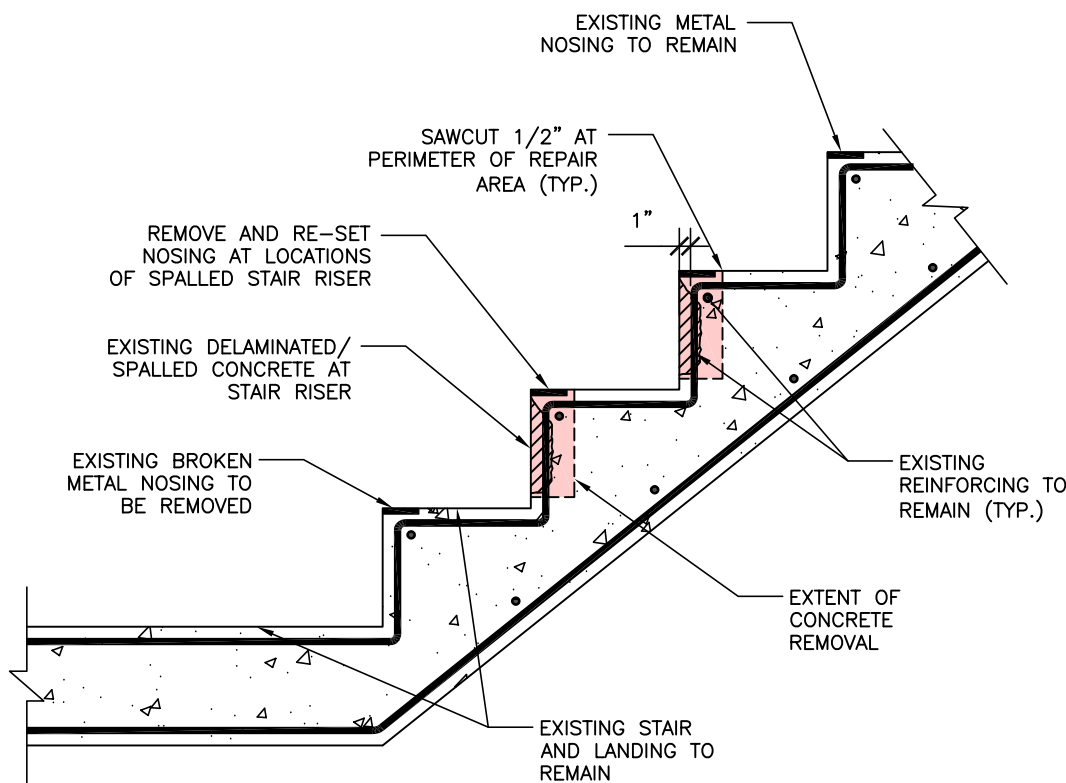
DRAWING NO.

R9

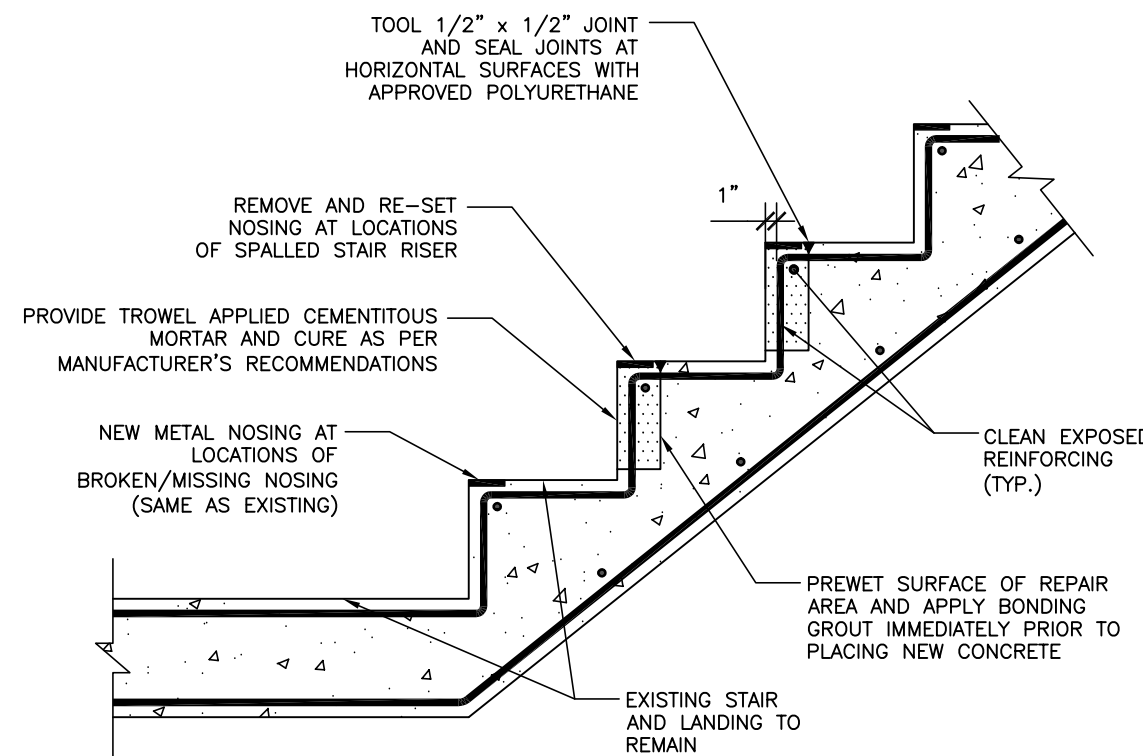


- REPAIR PROCEDURE:**
- SHOTBLAST CLEAN HORIZONTAL SURFACES AND SANDBLAST CLEAN VERTICAL SURFACES SCHEDULED TO RECEIVE TRAFFIC BEARING WATERPROOFING MEMBRANE. OIL STAINS, PAIN AND OTHER CONTAMINANTS SHALL BE REMOVES AS RECOMMENDED BY THE SYSTEM MANUFACTURER.
 - SURFACE PREPARATION SHALL ALSO INCLUDE REMOVING ANY EXISTING DETERIORATED MEMBRANE, GRINDING HIGH RIDGES IN THE EXISTING CONCRETE AND NEWLY CONSTRUCTED AREAS, WHICH MAY BE DETRIMENTAL TO THE SYSTEM PERFORMANCE. SYSTEM MANUFACTURER WILL BE EXPECTED TO SIGN OFF ON FINAL DECK PREPARATION PRIOR TO MEMBRANE APPLICATION.
 - ALL CRACKS GREATER THAN 1/16" AND CONSTRUCTION JOINTS SHALL BE ROUTED AND SEALED WITH AN APPROVED TWO-PART POLYURETHANE. PLACE A 3/4" BY 3/4" COVE JOINT AT ALL INTERFACES BETWEEN HORIZONTAL AND VERTICAL SURFACES AS PER DETAIL 2/R-10.
 - THE SYSTEM MANUFACTURER AND COATING APPLICATOR SHALL PERFORM THE FOLLOWING:
 - VERIFY THE MOISTURE CONTENT OF THE EXISTING AND NEW CONCRETE AREAS.
 - PERFORM ADHESION TESTING ON EXISTING MEMBRANE AND NEW CONCRETE AREAS TO VERIFY COMPLIANCE WITH THE SYSTEM PERFORMANCE. DECK PREPARATION SHALL BE PER SPECIFICATION IN ALL TEST AREAS.
 - THE SYSTEM MANUFACTURER AND COATING APPLICATOR SHALL SUBMIT A JOINT LETTER STATING THAT THE ABOVE TESTING WAS PERFORMED, THAT THE SURFACE PREPARATION IS ACCEPTABLE AND THAT THE SYSTEM WILL PERFORM PER SPECIFICATIONS, AS APPLIED ON THE CONCRETE SLAB.
 - APPLY THE APPROPRIATE (CONCRETE, METAL, ETC.) PRIMER PER MANUFACTURER'S RECOMMENDATIONS.
 - DETAIL CRACKS WITH BASE COAT(S) AS PER MANUFACTURER'S RECOMMENDED PROCEDURE.
 - APPLY BASE COAT TO SPECIFIED THICKNESS.
 - APPLY THE WEARING COURSE TO THE SPECIFIED THICKNESS AND COLOR.
 - INSTALL MEMBRANE IN LAYERS, IF REQUIRED, AS PER MANUFACTURER'S RECOMMENDATION.
 - INSTALL THE LOCK COAT OR TOP COAT AS PER SYSTEM REQUIREMENTS.

1 TRAFFIC BEARING WATERPROOFING MEMBRANE
R-10 SCALE: N.T.S.



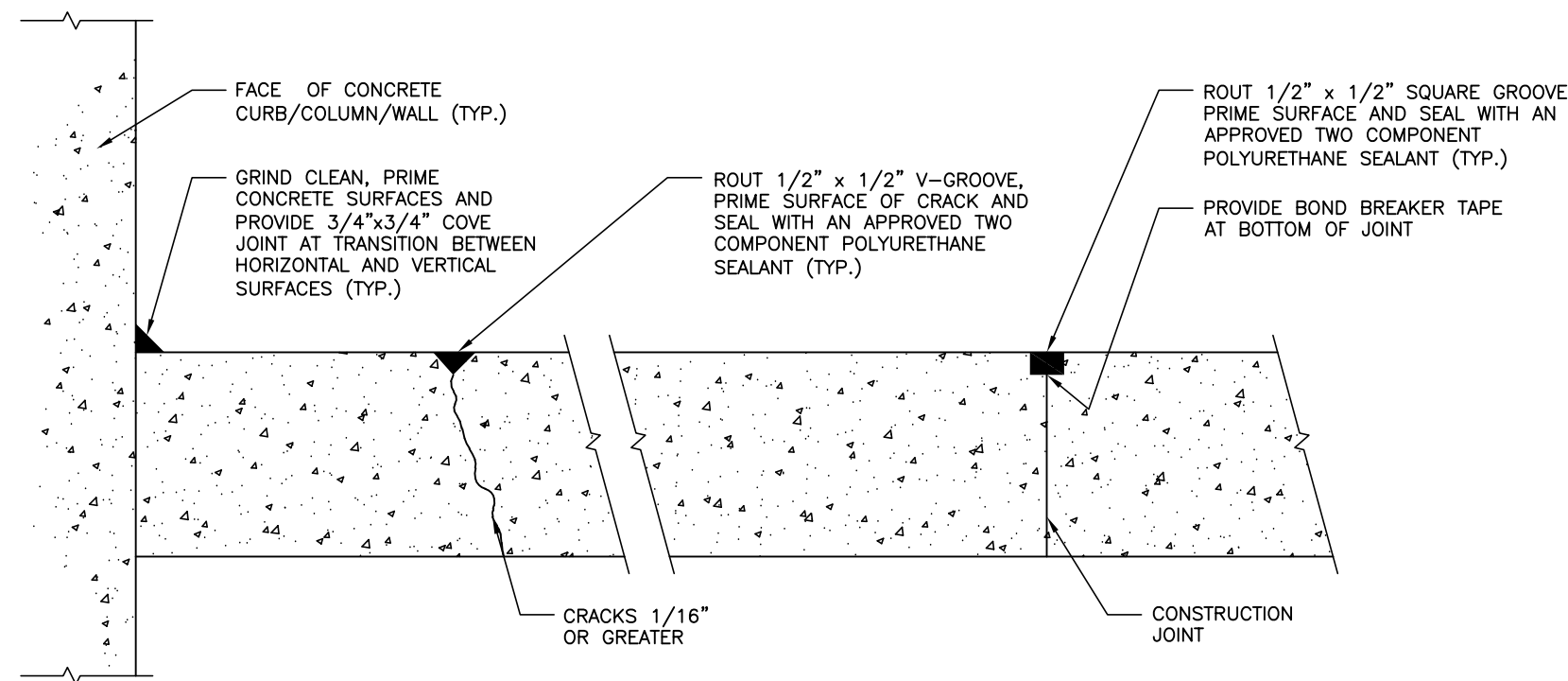
EXISTING CONDITION AND DEMOLITION



REPAIRED CONDITION

- REPAIR PROCEDURE:**
- REMOVE UNSOUND AND SOUND CONCRETE AS DIRECTED BY THE ENGINEER TO A DEPTH OF 3/4" BEHIND EXISTING REINFORCING USING CHIPPING HAMMERS AND CLEAN EXPOSED STEEL.
 - SUPPLEMENT EXISTING REINFORCING BARS THAT HAVE LOST MORE THAN 20% OF THEIR ORIGINAL CROSS SECTION WITH NEW EPOXY COATED #3 BARS. NEW REINFORCING SHALL BE PROPERLY LAP SPLICED TO EXISTING.
 - APPLY NON SAG REPAIR MORTAR IN LAYERS AS PER MANUFACTURER'S REPAIR PROCEDURE. LAYERS SHALL BE LIMITED IN THICKNESS. EXISTING CONCRETE SURFACE SHALL BE PREWET PRIOR TO APPLICATION.
 - CURE AND PROTECT FINISHED REPAIR.
 - INSTALL NEW STAIR NOSING AT LOCATIONS OF MISSING/BROKEN STAIR NOSING (SAME AS EXISTING).

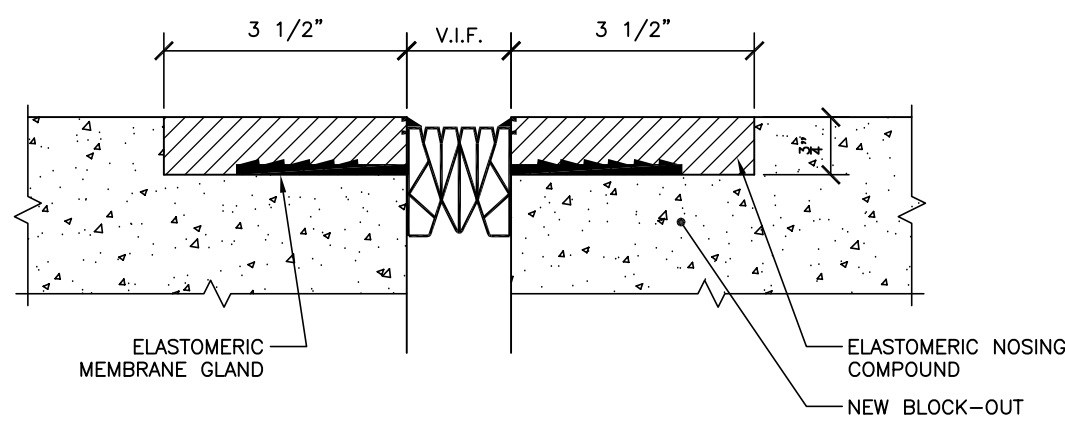
4 CONCRETE REPAIRS AT STAIR RISERS AND NOSINGS REPLACEMENT
R-10 SCALE: N.T.S.



CRACKS AND COVE JOINTS

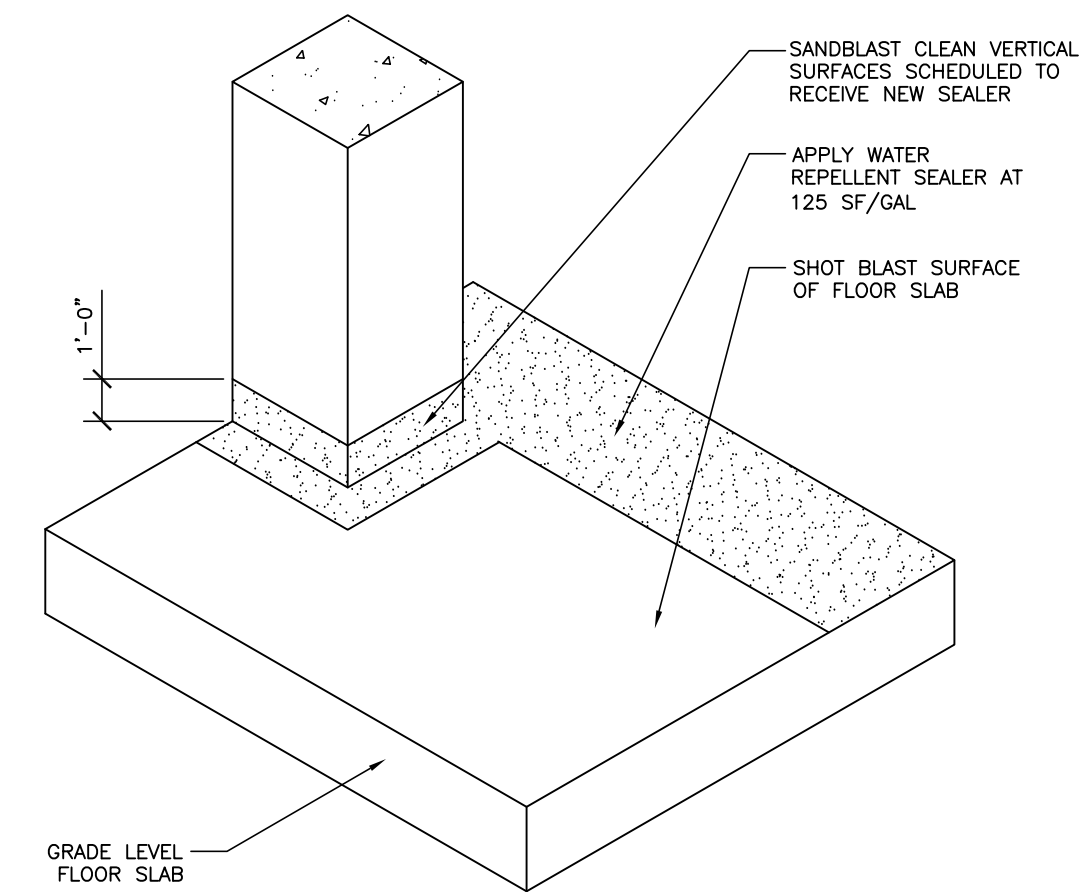
- REPAIR PROCEDURE:**
- CONCRETE SURFACES SHALL BE FULLY DRY AND CURED PRIOR TO INSTALLATION OF APPROVED SEALANT MATERIAL.
 - ROUT/GRIND CRACKS AND JOINTS AS REQUIRED, CLEAN PROFILED SURFACES USING COMPRESSED AIR OR OTHER MEANS TO REMOVE DUST, DEBRIS AND OTHER MATERIAL WHICH MIGHT IMPAIR THE SEALANT BOND TO THE SUBSTRATE.
 - PRIME SURFACES TO RECEIVE SEALANT, PROVIDE BOND BREAKER TAPE (AS REQUIRED) AND SEAL WITH AN APPROVED TWO COMPONENT POLYURETHANE SEALANT AS SHOWN.
 - WHERE SEALANT IS TO BE LEFT EXPOSED TOOL TO FORM A CONCAVE PROFILE, WHERE THE SEALANT WILL BE COVERED BY A WATERPROOFING MEMBRANE LEAVE FLUSH WITH FLOOR SURFACE.
 - PROHIBIT VEHICULAR AND PEDESTRIAN TRAFFIC ON SEALED JOINTS UNTIL SEALANT MATERIAL HAS CURED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

2 COVE JOINT AND CRACK REPAIR DETAILS
R-10 SCALE: N.T.S.



- REPAIR PROCEDURE:**
- SAWCUT 1/2" AT PERIMETER OF CONCRETE REMOVAL AREA AS SHOWN ON PLAN AND DETAILS.
 - REMOVE AND REPAIR CONCRETE AS MAY BE NECESSARY. CONTRACTOR SHALL EXERCISE CARE NOT TO DAMAGE THE EXISTING REINFORCING SCHEDULED TO REMAIN. ALL EXPOSED STEEL SHALL BE SANDBLAST CLEANED. CLEAN SURFACE FREE OF ALL DELETERIOUS MATERIALS.
 - APPLY BONDING GROUT AND PLACE NEW 5,000 PSI FIBER REINFORCED CONCRETE OR APPROVED REPAIR MATERIAL. HEADER WITH BLOCK-OUT REQUIRED FOR THE NEW EXPANSION JOINT SEAL. CONCRETE SHALL BE PLACED AND CURED IN ACCORDANCE WITH DIVISION 3 OF THE SPECIFICATIONS.
 - TOOL 1/2" X 1/2" V-GROOVE ALONG PERIMETER OF THE REPAIR AREA AND SEAL THE SAME WITH AN APPROVED TWO-PART URETHANE CAULK.
 - ONCE THE CONCRETE HAS CURED, INSTALL THE NEW EXPANSION JOINT SEAL IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION PROCEDURES.

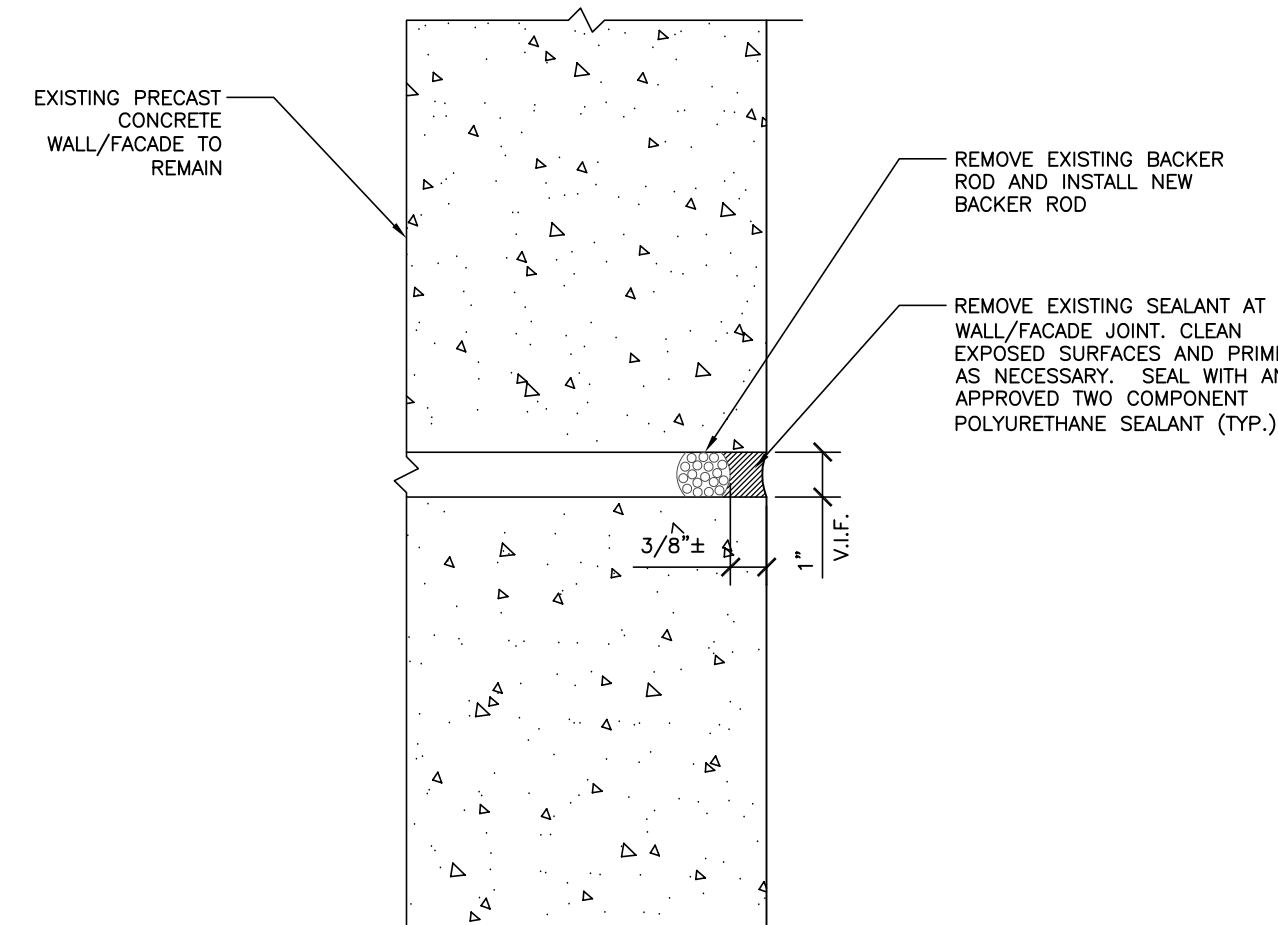
5 NEW WINGED EXPANSION JOINT SEAL
R-10 SCALE: N.T.S.



CONSTRUCTION JOINTS

- APPLICATION PROCEDURE:**
- FOLLOW THE MANUFACTURER'S RECOMMENDATIONS FOR THE PROPER APPLICATION. THE FOLLOWING STEP SEQUENCE IS SUGGESTED TO ASSURE PROPER PRODUCT APPLICATION (+ 125 SQ. FT./GAL). PRIOR TO FULL SCALE APPLICATION, A TEST AREA SHALL BE ESTABLISHED. THE SEALER SHALL BE APPLIED TO THIS CLEANED SURFACE AT THE RECOMMENDED APPLICATION RATE.
- SURFACE PREPARATION**
THE PRODUCT SHALL BE APPLIED TO A DRY SURFACE. VERTICAL SURFACES SHALL BE PREPARED BY SAND-BLASTING OR OTHER APPROVED MECHANICAL METHODS PRODUCING DESIRED RESULTS.
 - APPLICATION AND EQUIPMENT**
THE RECOMMENDED APPLICATION EQUIPMENT IS A LOW PRESSURE (15 PSI MAXIMUM) AIRLESS-TYPE SPRAYER, SUCH AS A GARDEN OR FOM OIL SPRAYER. HOWEVER, A BRUSH OR ROLLER MAY BE USED. COVER APPROXIMATELY EIGHT INCHES WITH EACH SPRAY PASS IN ROLLER MAY BE USED. COVER APPROXIMATELY EIGHT INCHES WITH EACH SPRAY PASS IN SLIGHTLY OVERLAPPING PATTERNS. WHEN A BRUSH IS USED, REPEATED APPLICATIONS SHOULD BE MADE UNTIL THE SURFACE REMAINS MOIST FOR SEVERAL MINUTES BEFORE ALL SOLUTION DISAPPEARS.
 - APPLY PRODUCT UNTIL SOLUTION RUNS OR STANDS**
VERTICAL SURFACES SHOULD BE TREATED FROM THE BOTTOM UP. PROPER QUANTITIES ARE BEING APPLIED WHEN EXCESS SOLUTION RUNS SIX TO EIGHT INCHES BELOW THE SPRAY PATTERN BEFORE PENETRATING THE SURFACE WHICH HAS JUST BEEN SPRAYED. PROPER QUANTITY ON HORIZONTAL SURFACES IS INDICATED WHEN SOLUTION STANDS FOR A FEW SECONDS BEFORE COMPLETELY PENETRATING.
 - CLEAN-UP AFTER USE**
THOROUGHLY WASH ALL EQUIPMENT AND CLOTHING AFTER USE.
 - SAFETY PRECAUTIONS**
DO NOT STORE OR USE PRODUCT NEAR HEAT, SPARKS OR AN OPEN FLAME. DO NOT SMOKE IN THE VICINITY WHERE PRODUCT IS BEING APPLIED.

3 WATER REPELLENT, CORROSION INHIBITING SURFACE SEALER AT SLAB-ON-GRADE
R-10 SCALE: N.T.S.



6 CONCRETE WALL/FACADE JOINT REPLACEMENT DETAIL (PLAN VIEW SECTION)
R-10 SCALE: N.T.S.

GENERAL NOTES

KEY PLAN

DRAWING TITLE

TYPICAL DETAILS – SHEET 3

JOB NUMBER: 1702.1
JOB TITLE

WATERPROOFING AND REPAIRS
UNION STATION GARAGE
CITY OF WORCESTER

CONSULTANT

DESMAN
Design Management

ARCHITECT

NAULT ARCHITECTS, INC.
21 HOPE AVENUE
WORCESTER, MA 01603
TEL: (508) 755-4134
ADMIN@NALTARCHITECTS.COM

DRAWING NO.

R10

SCALE

AS NOTED

DATE

FEBRUARY 2026