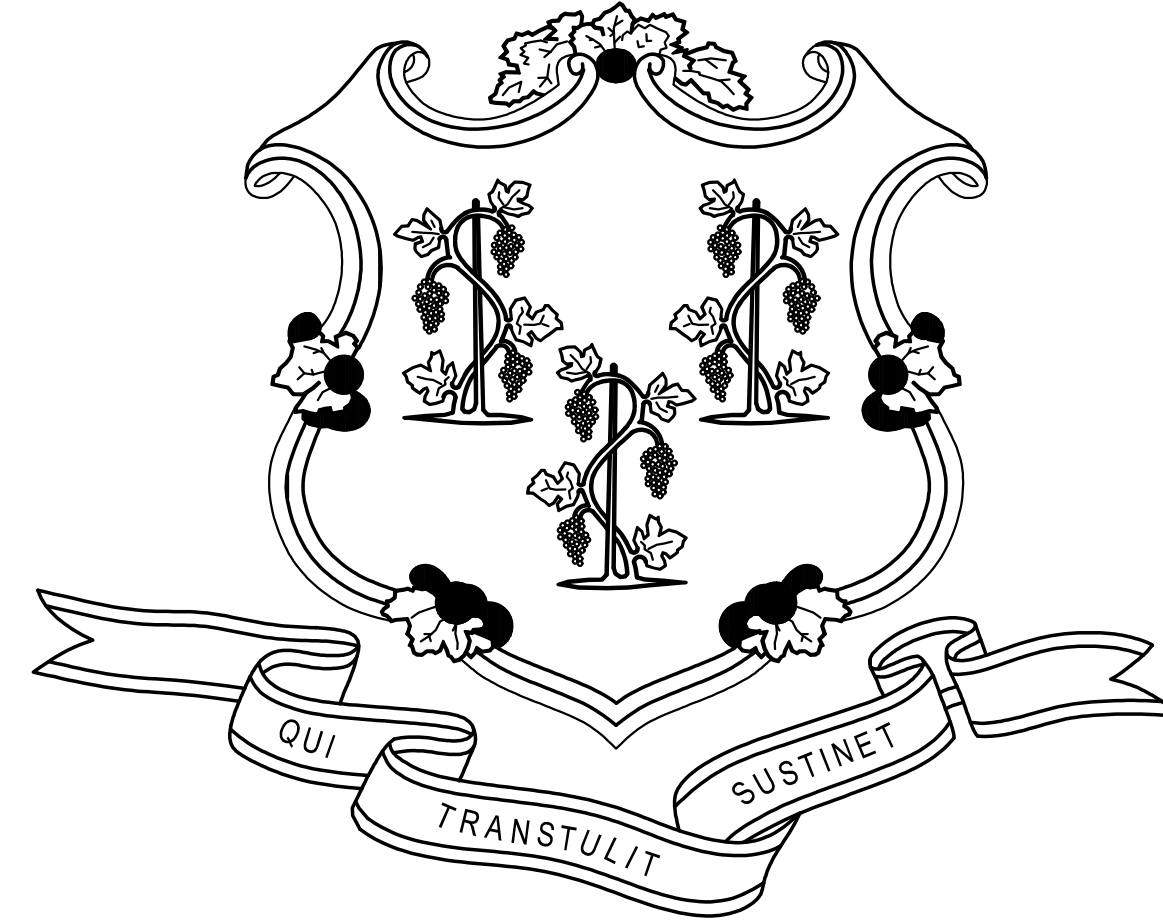


# STATE OF CONNECTICUT

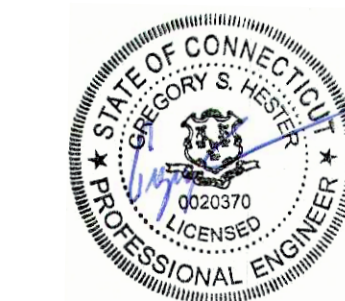


## GOVERNOR NED LAMONT

DEPARTMENT OF ADMINISTRATIVE SERVICES  
 JOSH GEBALLE  
 COMMISSIONER

505 HUDSON STREET  
 LOWER GARAGE RAMP  
 RESTORATION PROJECT  
 HARTFORD, CONNECTICUT  
 PROJECT NO. BI-2B-438

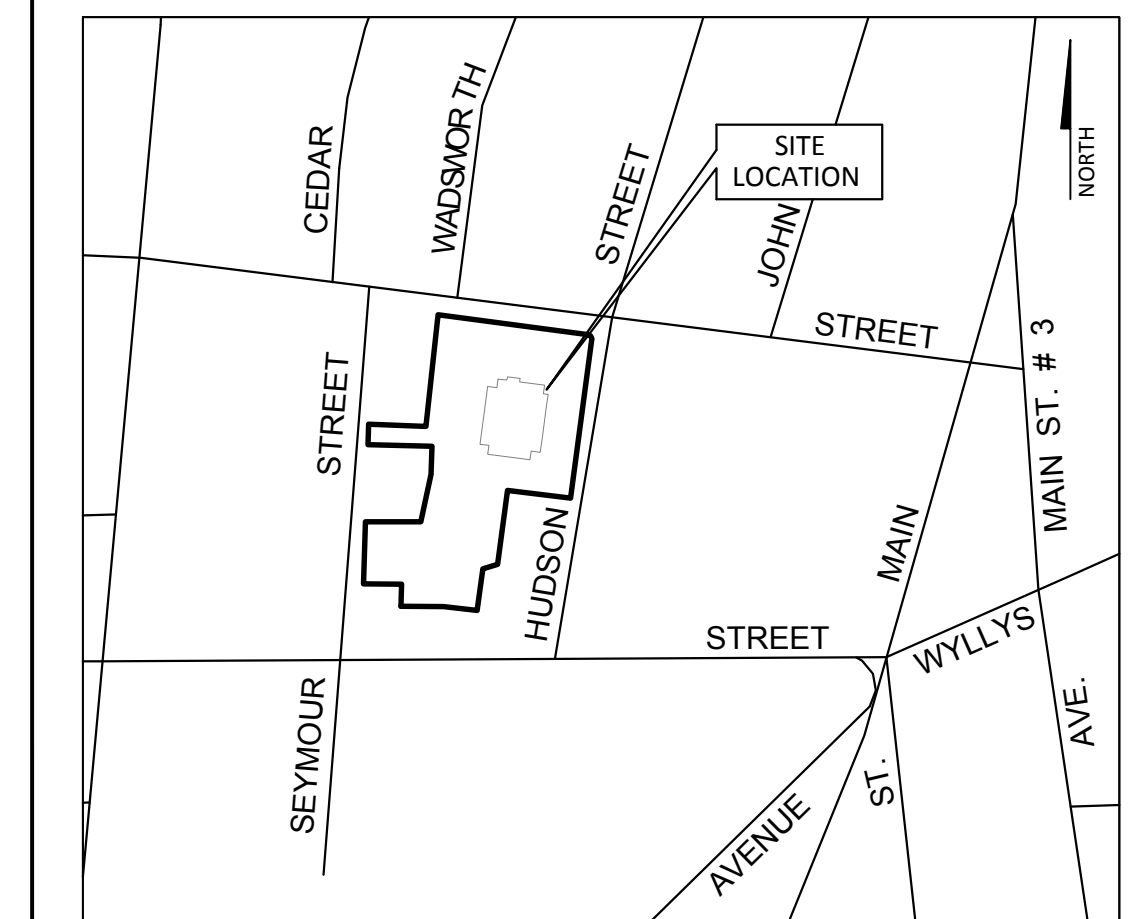
ENGINEER  
 FREEMAN COMPANIES, LLC  
 36 JOHN STREET  
 HARTFORD, CT 06106  
 860-251-9550



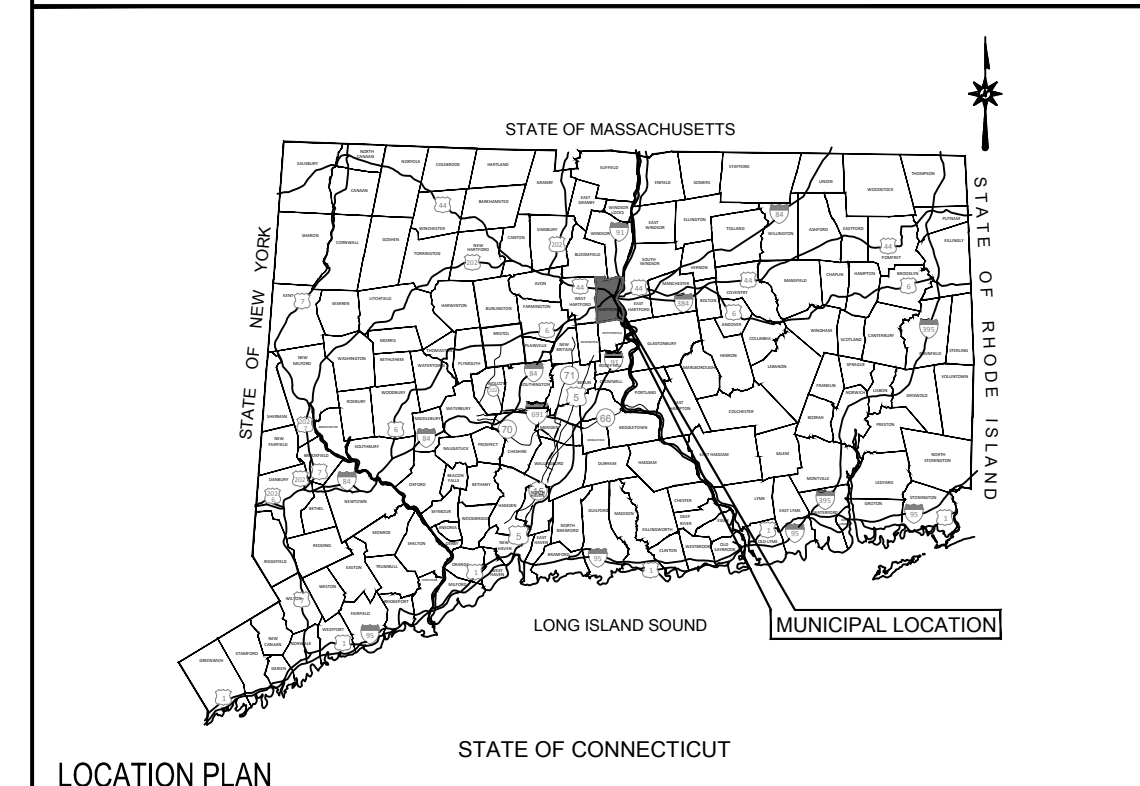
CONTRACT DRAWINGS

NO.	TITLE
-	COVER SHEET
B1.01	EXISTING CONDITIONS PLAN
B1.02	EXISTING CONDITIONS PLAN
C1.01	OVERALL SITE PLAN
C1.02	ENLARGED SITE PLAN
M0.01	ABBREVIATIONS & SYMBOLS
MP1.01	DEMOLITION DRAWING
MP1.02	NEW WORK DRAWING
MP5.01	DETAILS AND SCHEDULES
MP5.02	DETAILS
MP6.01	FLOW DIAGRAMS
MP6.02	CONTROLS
E1.01	ELECTRICAL SITE PLAN

D.C.S BUILDING NUMBER 19064



SITE PLAN



LOCATION PLAN

APPROVALS	
DEPT. OF ADMINISTRATIVE SERVICES	DATE
AGENCY	DATE

MAP REFERENCES:

- PROPERTY MAP; STATE OF CONNECTICUT DEPARTMENT OF PUBLIC WORKS; PURCELL ASSOCIATES; APRIL 1993
- TOPOGRAPHIC SURVEY; NO.'S 142,158-170,180&167-173 SEYMOUR STREET; PREPARED FOR BROAD PARK DEVELOPMENT; HARTFORD, CONN.; AESCHLIMAN LAND SURVEYING; 10-18-95

Disclaimer:  
The underground utilities shown have been located from limited field survey information and existing drawings. The surveyor makes no guarantee that the underground utilities shown comprise all such utilities in the area either in service or abandoned. To meet the requirements of our professional liability insurance, the terms CERTIFICATE, CERTIFY, AND CERTIFICATION mean to the best information, knowledge, and belief of the engineer; and are not an unconditional certification, warranty or guarantee which are not covered under the policy.

REVISIONS TO THESE PLANS BY ANYONE OTHER THAN KJA SHALL MAKE THESE PLANS NULL AND VOID. KJA SHALL TAKE NO RESPONSIBILITY FOR SAID REVISIONS.

SURVEY NOTES:  
THIS MAP HAS BEEN PREPARED IN ACCORDANCE WITH THE MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT AS ADOPTED FOR USE BY THE REGULATIONS OF CONNECTICUT STATE AGENCIES ON SEPTEMBER 26, 1996. (CT SECTIONS 20-300b-1 TO 20-300b-20).

THE TYPE OF SURVEY PERFORMED IS AN IMPROVEMENT LOCATION MAP.

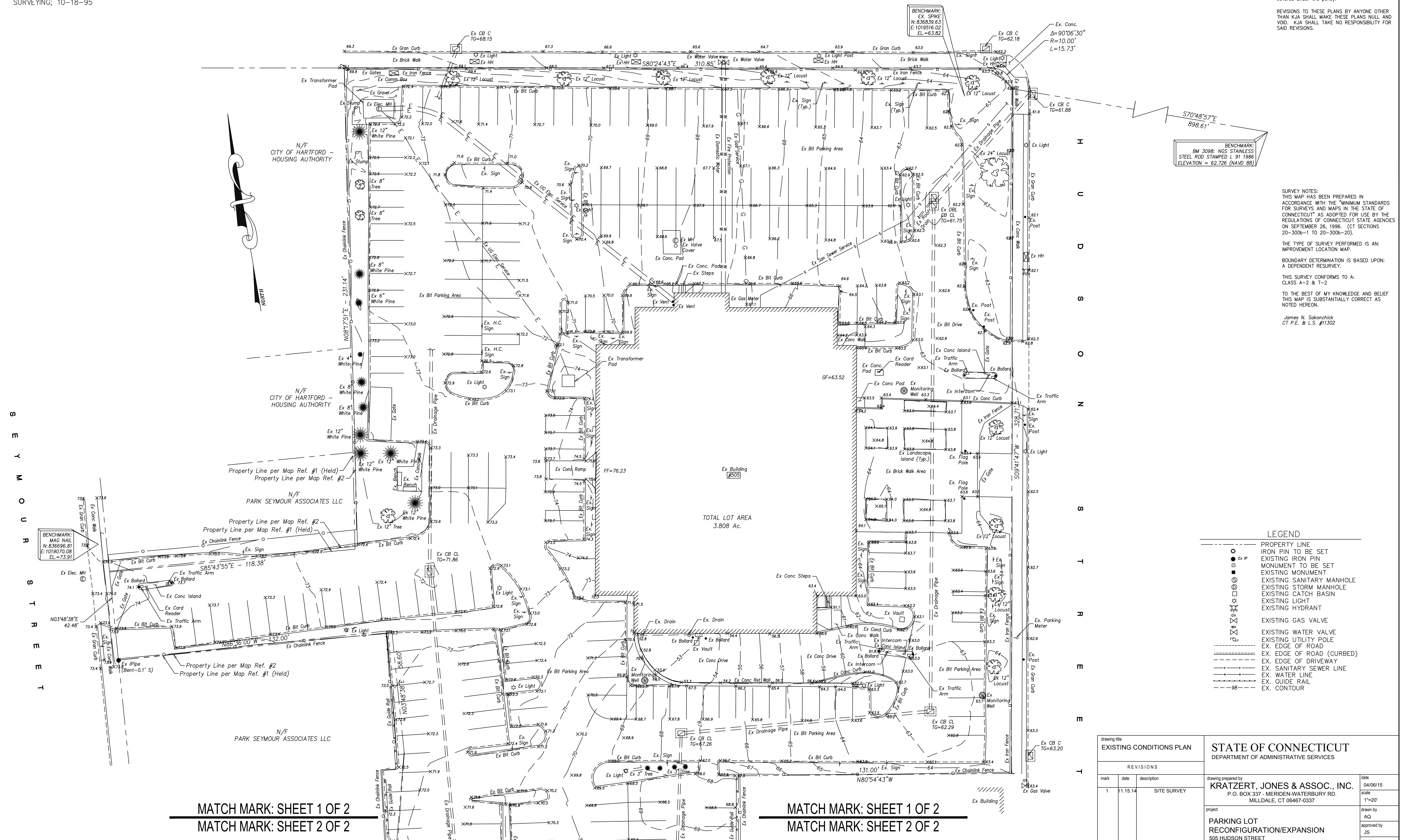
BOUNDARY DETERMINATION IS BASED UPON A DEPENDENT RESURVEY.

THIS SURVEY CONFORMS TO A: CLASS A-2 & T-2

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

James N. Sakonchick  
CT P.E. & L.S. #11302

P A R K S E Y M O U R S T R E E T



MATCH MARK: SHEET 1 OF 2  
MATCH MARK: SHEET 2 OF 2

MATCH MARK: SHEET 1 OF 2  
MATCH MARK: SHEET 2 OF 2

**LEGEND**

--- (dashed line)	PROPERTY LINE
○ (circle with dot)	IRON PIN TO BE SET
□ (square with dot)	EXISTING IRON PIN
■ (solid square)	MONUMENT TO BE SET
⊕ (circle with cross)	EXISTING MONUMENT
⊙ (circle with dot)	EXISTING SANITARY MANHOLE
⊗ (circle with cross)	EXISTING STORM MANHOLE
⊕ (circle with cross)	EXISTING CATCH BASIN
⊙ (circle with dot)	EXISTING LIGHT
⊗ (circle with cross)	EXISTING HYDRANT
⊕ (circle with cross)	EXISTING GAS VALVE
⊙ (circle with dot)	EXISTING WATER VALVE
⊗ (circle with cross)	EXISTING UTILITY POLE
---	EX. EDGE OF ROAD (CURBED)
---	EX. EDGE OF DRIVEWAY
---	EX. SANITARY SEWER LINE
---	EX. WATER LINE
---	EX. GUIDE RAIL
---	EX. CONTOUR

drawing title <b>EXISTING CONDITIONS PLAN</b>			<b>STATE OF CONNECTICUT</b> DEPARTMENT OF ADMINISTRATIVE SERVICES	
REVISIONS				
mark	date	description	drawing prepared by	date
1	11.15.14	SITE SURVEY	<b>KRATZERT, JONES &amp; ASSOC., INC.</b> P.O. BOX 337 - MERIDEN-WATERBURY RD. MILLDALE, CT 06467-0337	04/06/15 scale 1"=20'
project			drawn by	approved by
PARKING LOT RECONFIGURATION/EXPANSION 505 HUDSON STREET HARTFORD, CT 06106			JS	JS
CAD no. 505 HUDSON.dwg			project no.	drawing no.
			BI-2B-438	<b>B1.01</b>

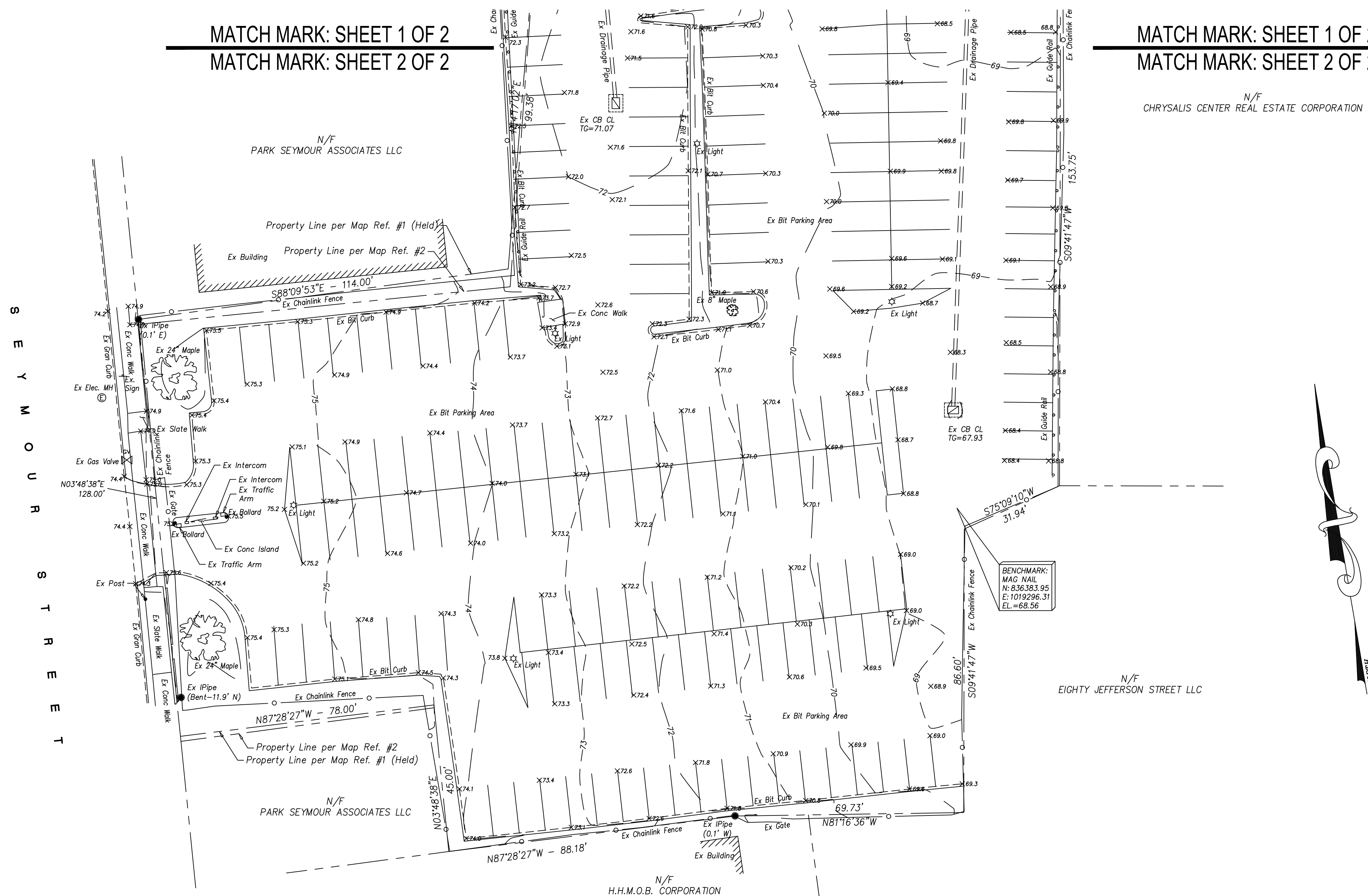


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MATCH MARK: SHEET 1 OF 2  
 MATCH MARK: SHEET 2 OF 2

MATCH MARK: SHEET 1 OF 2  
 MATCH MARK: SHEET 2 OF 2



N/F  
 CHRYSALIS CENTER REAL ESTATE CORPORATION

N/F  
 EIGHTY JEFFERSON STREET LLC

N/F  
 H.H.M.O.B. CORPORATION

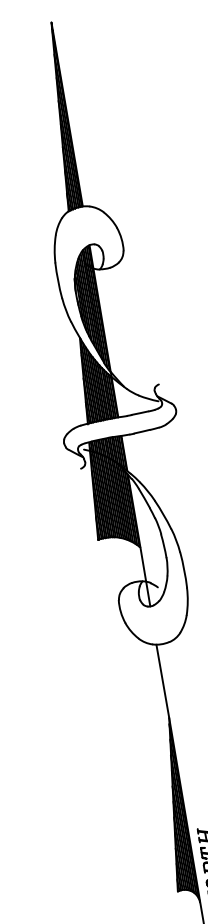
SURVEY NOTES:  
 THIS MAP HAS BEEN PREPARED IN ACCORDANCE WITH THE "MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED FOR USE BY THE REGULATIONS OF CONNECTICUT STATE AGENCIES ON SEPTEMBER 26, 1996. (CT SECTIONS 20-300b-1 TO 20-300b-20).

THE TYPE OF SURVEY PERFORMED IS AN: IMPROVEMENT LOCATION MAP.  
 BOUNDARY DETERMINATION IS BASED UPON: A DEPENDENT RESURVEY.

THIS SURVEY CONFORMS TO A: CLASS A-2 & T-2

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

James N. Sakonchick  
 CT P.E. & L.S. #11302



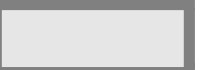
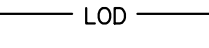


LEGEND

- PROPERTY LINE
- EX PIN
- EXISTING IRON PIN
- MONUMENT TO BE SET
- EXISTING MONUMENT
- ⊙ EXISTING SANITARY MANHOLE
- ⊕ EXISTING STORM MANHOLE
- EXISTING CATCH BASIN
- ☆ EXISTING LIGHT
- ⊕ EXISTING HYDRANT
- ⊕ EXISTING GAS VALVE
- ⊕ EXISTING WATER VALVE
- ⊕ EXISTING UTILITY POLE
- - - EX. EDGE OF ROAD
- - - EX. EDGE OF ROAD (CURBED)
- - - EX. EDGE OF DRIVEWAY
- - - EX. SANITARY SEWER LINE
- - - EX. WATER LINE
- - - EX. GUIDE RAIL
- - - EX. CONTOUR

drawing title <b>EXISTING CONDITIONS PLAN</b>			<b>STATE OF CONNECTICUT</b> DEPARTMENT OF ADMINISTRATIVE SERVICES	
REVISIONS				
mark	date	description		
1	11.15.14	SITE SURVEY		
drawing prepared by <b>KRATZERT, JONES &amp; ASSOC., INC.</b> P.O. BOX 337 - MERIDEN-WATERBURY RD. MILLDALE, CT 06467-0337			date 04/06/15	scale 1"=20'
project <b>PARKING LOT RECONFIGURATION/EXPANSION</b> 505 HUDSON STREET HARTFORD, CT 06106			drawn by AQ	approved by JS
CAD no. 505 HUDSON.dwg	project no. BI-2B-438	drawing no. <b>B1.02</b>		

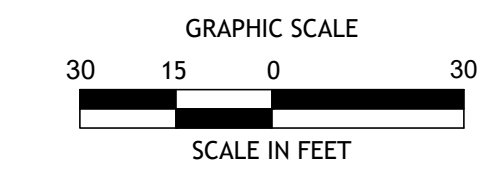
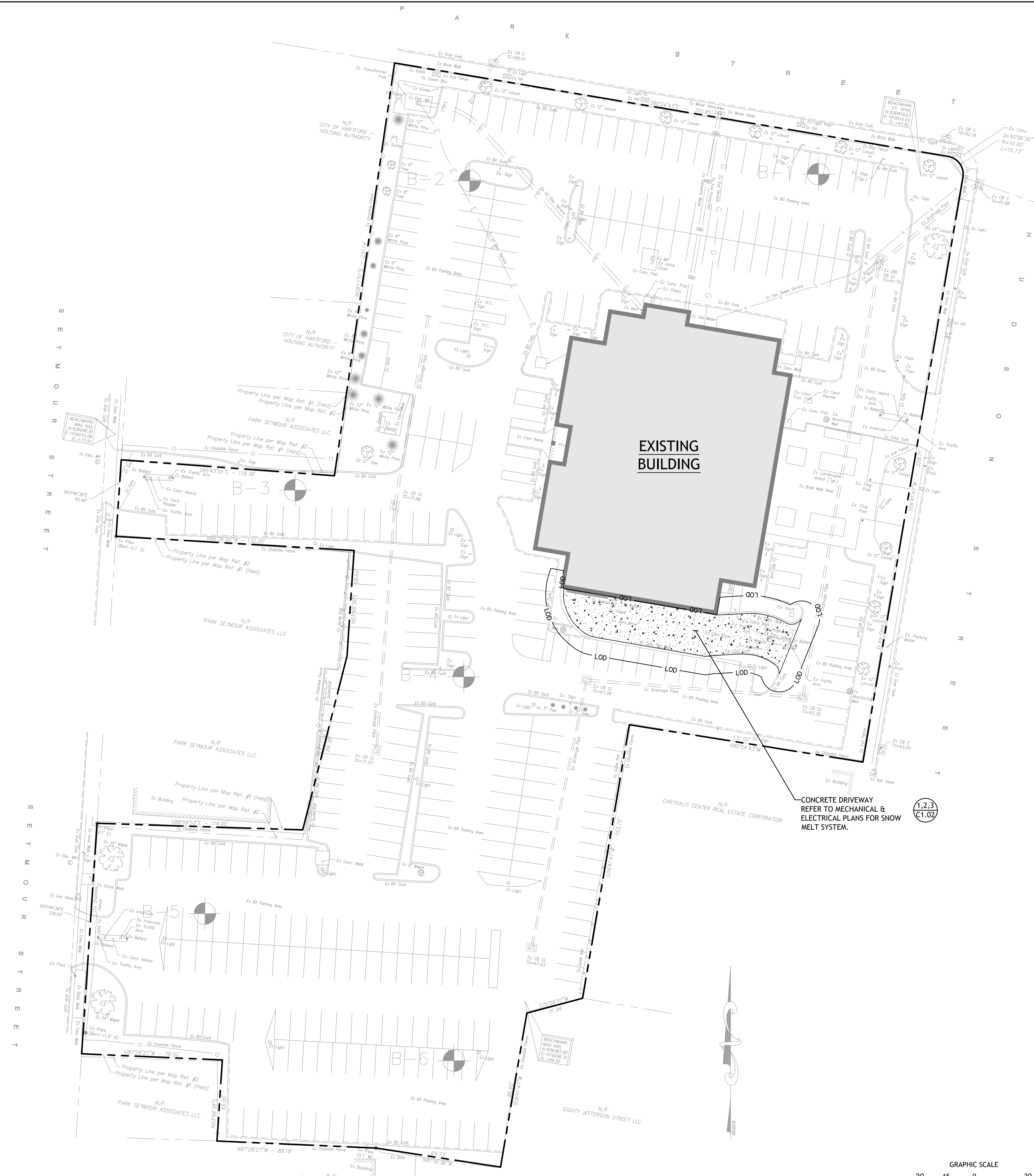


**LEGEND**

-  EXISTING BUILDING
-  LOD LIMIT OF DISTURBANCE
-  PROPERTY LINE/RIGHT OF WAY LINE
-  CONCRETE RAMP

**SITE PLAN NOTES**

1. ALL CONSTRUCTION SHALL COMPLY WITH PROJECT SPECIFICATION MANUAL; DAS STANDARDS AND THE HIERARCHY AS SPECIFIED IN DIV 01 OF THE SPECIFICATION. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE OSHA, FEDERAL, STATE AND LOCAL REGULATIONS.
2. THE CONTRACTOR SHALL OBTAIN ALL CITY CONSTRUCTION PERMITS. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
3. REFER TO PLANS, DETAILS AND PROJECT MANUAL FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS IN THE FIELD AND CONTACT THE ENGINEER IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT APPROPRIATE REVISIONS CAN BE MADE PRIOR TO BIDDING/CONSTRUCTION. ANY CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS SHALL BE CONFIRMED WITH THE OWNER'S CONSTRUCTION ADMINISTRATOR PRIOR TO CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING COPIES OF THE LATEST APPLICABLE STATE CODES AND FOLLOWING REGULATIONS AND RETAIN AT THE PROJECT SITE TO BE AVAILABLE FOR REFERENCE BY PARTIES WHO HAVE A REASONABLE NEED DURING SUBMITTALS, PLANNING, AND PROGRESS OF THE WORK, UNTIL SUBSTANTIAL COMPLETION.
5. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PRODUCTS, MATERIALS PER PLANS AND SPECIFICATIONS TO THE OWNER AND ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.
6. SHOULD ANY UNKNOWN OR INCORRECTLY LOCATED EXISTING PIPING OR OTHER UTILITY BE UNCOVERED DURING EXCAVATION, CONSULT THE OWNER AND OWNER'S REPRESENTATIVE IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH WORK IN THIS AREA.
7. DO NOT INTERRUPT EXISTING UTILITIES SERVICING FACILITIES OCCUPIED AND USED BY THE OWNER OR OTHERS DURING OCCUPIED HOURS, EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE OWNER AND THE LOCAL MUNICIPALITY. INTERRUPTIONS SHALL ONLY OCCUR AFTER ACCEPTABLE TEMPORARY SERVICE HAS BEEN PROVIDED.
8. ALL SITE DIMENSIONS ARE REFERENCED TO THE FACE OF CURB OR EDGE OF PAVING AS APPLICABLE, UNLESS OTHERWISE NOTED.
9. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC CONTROL DEVICES FOR PROTECTION OF VEHICLES AND PEDESTRIANS CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES, FLAGGERS AND UNIFORMED TRAFFIC OFFICERS AS REQUIRED OR AS ORDERED BY THE ENGINEER, AS REQUIRED BY THE LOCAL GOVERNING AUTHORITIES OR AS REQUIRED BY PERMIT STIPULATIONS.
10. THE CONTRACTOR SHALL ABIDE BY ALL OSHA, FEDERAL, STATE AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES, CONTACT POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS. ANY UTILITY COMPANY FEES SHALL BE PAID FOR BY THE CONTRACTOR.
11. THE CONTRACTOR SHALL RESTORE ANY DRAINAGE STRUCTURE, PIPE, CONDUIT, PAVEMENT, CURBING, SIDEWALKS, LANDSCAPED AREAS OR SIGNAGE DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER, AS APPROVED BY THE ENGINEER.
12. THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE OWNER AT THE END OF CONSTRUCTION.
13. THE ENGINEER IS NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ENGINEER HAS NO CONTRACTUAL DUTY TO CONTROL THE SAFEST METHODS OR MEANS OF THE WORK. JOB SITE RESPONSIBILITIES, SUPERVISION OF PERSONNEL OR TO SUPERVISE SAFETY AND DO NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.
14. THE CONTRACTOR SHALL COMPLY WITH OSHA CFR 29 PART 1926 FOR EXCAVATION TRENCHING AND TRENCH PROTECTION REQUIREMENTS.
15. EXISTING BOUNDARY AND TOPOGRAPHY IS BASED ON THE DRAWING TITLED "EXISTING CONDITIONS PLAN SCALE" DATED SEPTEMBER 10, 2014 BY KRATZERT, JONES & ASSOCIATES, INC.
16. INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE SYSTEMS HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE SYSTEMS ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE SYSTEMS INCLUDING SERVICES. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" 72 HOURS BEFORE COMMENCEMENT OF WORK AT (800) 922-4455 AND VERIFY ALL UTILITY AND STORM DRAINAGE SYSTEM LOCATIONS.
17. THE SITE IS CURRENTLY SERVICED BY PUBLIC WATER.
18. NO PART OF THE PROJECT PARCEL IS LOCATED WITHIN ANY FEMA DESIGNATED FLOOD HAZARD AREAS.
19. THERE ARE NO WETLANDS LOCATED ON THE SITE AS INDICATED BY NATIONAL WETLAND INVENTORY MAPPING.



drawing title <b>OVERALL SITE PLAN</b>		<b>STATE OF CONNECTICUT</b> DEPARTMENT OF ADMINISTRATIVE SERVICES	
REVISIONS		drawing prepared by <b>FREEMAN COMPANIES, LLC</b> 36 JOHN STREET HARTFORD, CT 06106	
mark	date	description	date
1			02/20/2020
project <b>LOWER GARAGE RAMP RESTORATION</b> 505 HUDSON STREET HARTFORD, CT 06106		drawn by MK	scale 1" = 30'
CAD no.		approved by PAR	drawing no. <b>C1.01</b>
project no. 61-2B-438			







**GENERAL DRAWING NOTES**

- 1) THE INTENT OF THESE DOCUMENTS IS TO PROVIDE ENOUGH DETAIL FOR RESPONSIBLE CONTRACTORS TO PROVIDE COMPLETE MECHANICAL AND ELECTRICAL INSTALLATIONS. THE PLUMBING, HVAC AND ELECTRICAL SYSTEMS SHALL BE COMPLETE IN ALL RESPECTS: OPERATIONAL, TESTED, ADJUSTED, CALIBRATED, APPROVED BY AUTHORITIES HAVING JURISDICTION AND READY FOR BENEFICIAL USE BY THE OWNER
- 2) THE TRADES SHALL REVIEW ALL DRAWINGS BEFORE SUBMITTING BID. THE INFORMATION IS PROVIDED ON VARIOUS DRAWINGS, SCHEDULES AND SPECIFICATIONS (WHERE REQUIRED). INFORMATION ON THE EQUIPMENT PROVIDED DIRECTLY BY THE OWNER IS ALSO INCLUDED
- 3) THE INFORMATION PROVIDED IS DIAGRAMMATIC IN NATURE AND IS BASED ON DRAWINGS, SCHEDULES AND SITE INTERVIEWS CONDUCTED BY EBD ENGINEERING. THE DRAWINGS SHOW THE GENERAL ARRANGEMENT OF SYSTEMS AND ASSOCIATED PIPING AND ELECTRICAL INFRASTRUCTURE. THE INFORMATION IS PROVIDED TO DEPICT THE EXPECTED WORK UNDER THIS PROJECT. ANY MODIFICATION TO THE EQUIPMENT LAYOUT, REQUIRED FOR INSTALLATION, IS TO BE PERFORMED UNDER THE CONTRACT AT NO ADDITIONAL COST TO THE OWNER
- 4) PERFORM ALL WORK IN COMPLIANCE WITH APPLICABLE CODES, ORDINANCES AND THE REGULATORY AGENCIES HAVING JURISDICTION. IN CASES WHERE THE SCOPE OF WORK REQUESTS ITEMS IN EXCESS OF CODE, THE SCOPE OF WORK SHALL BE FOLLOWED
- 5) WHERE A CONFLICT OCCURS BETWEEN THE DOCUMENTS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER
- 6) PROVIDE THE REQUIRED SLEEVES AND HANGERS FOR A SAFE, CODE COMPLIANT SYSTEM
- 7) REPAIR EXISTING CONCRETE FLOORS/HOUSEKEEPING PADS FOR NEW EQUIPMENT INSTALLATION
- 8) PROVIDE PIPING, DUCTWORK, VALVES AND VENTS, CONDUIT AND ALL OTHER ACCESSORIES AS REQUIRED FOR PROPER AND PROFESSIONAL SYSTEMS INSTALLATION
- 9) TEST AND BALANCE ALL MECHANICAL SYSTEMS AND PROVIDE BALANCING REPORT TO ENGINEER AND OWNER
- 10) PROVIDE THE REQUIRED CLEARANCES BETWEEN PIPING AND ELECTRICAL PANELS
- 11) ENSURE ADEQUATE SERVICE CLEARANCE FOR ALL EQUIPMENT AS REQUIRED BY THE MANUFACTURERS
- 12) PROVIDE PIPE EXPANSION COMPENSATION FOR THE VARIOUS PIPING SYSTEMS. SUBMIT ENGINEERED DETAILS FOR APPROVAL AND VERIFY INSTALLATION IS IN ACCORDANCE WITH CODE REQUIREMENTS. THE CONTRACTORS CONSULTING ENGINEER SHALL REVIEW THE INSTALLATION AND PROVIDE A WRITTEN REPORT ON THE FINDINGS
- 13) PROVIDE OFFSETS AND TRANSITIONS IN ALL PIPING, DUCTWORK AND CONDUIT, AS REQUIRED, FOR COORDINATION WITH BUILDING STEEL AND OTHER MECHANICAL/ELECTRICAL ITEMS
- 14) NO MECHANICAL OR ELECTRICAL SYSTEM COMPONENTS SHALL BE SUPPORTED FROM STRUCTURAL BASED FRAMES
- 15) THIS PROJECT INVOLVES THE REPLACEMENT/RENOVATION OF EXISTING EQUIPMENT WITHIN AN EXISTING FACILITY. BEFORE THE CONTRACTOR PROVIDES A BID, IT IS REQUIRED THAT THE CONTRACTOR VISIT THE SITE TO BECOME THOROUGHLY FAMILIAR WITH THE EXISTING CONDITIONS UNDER WHICH THE PROJECT WILL BE COMPLETED
- 16) CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ASSUMPTIONS, OMISSIONS OR ERRORS MADE AS A RESULT OF FAILURE IN BECOMING FULLY FAMILIAR WITH THE EXISTING CONDITIONS
- 17) IT IS NOT THE INTENT OF THESE DRAWINGS TO SHOW EVERY DEVICE, APPURTENANCE, PIPE, ELECTRICAL FEEDER OR CONDUIT. SYSTEMS AND EQUIPMENT NOT BEING RE-USED SHALL BE DEMOLISHED AND REMOVED FROM THE SITE IN THEIR ENTIRETY, INCLUDING HANGERS, SUPPORT BASES, PADS, PIPES, CONDUITS, FEEDERS, INSULATION AND CONTROLS. EQUIPMENT, PIPING OR CONDUIT NOT UTILIZED SHALL NOT BE ABANDONED IN PLACE UNLESS SPECIFICALLY NOTED BY THE OWNER
- 18) RELOCATE EXISTING EQUIPMENT, DEVICES, PIPING, ELECTRICAL FEEDERS AND RELATED SYSTEMS AS REQUIRED FOR CONSTRUCTION. ALL RELOCATED EQUIPMENT SHALL BE PROTECTED AND SHALL BE REPLACED AND PLACED BACK INTO SERVICE POST CONSTRUCTION.
- 19) PROVIDE TEMPORARY CONNECTIONS AND SYSTEM MODIFICATIONS AS REQUIRED FOR CONSTRUCTION AND PHASING PURPOSES
- 20) PROVIDE BRANCH CIRCUITS FROM ELECTRICAL PANELS WITH SUFFICIENT CAPACITY AND SPACE FOR MISCELLANEOUS SYSTEMS
- 21) ALL NECESSARY STAGING AND MATERIAL STORAGE AREAS SHALL BE PROVIDED BY CONTRACTOR AND APPROVED BY OWNER
- 22) OBTAIN ALL NECESSARY PERMITS FOR COMPLETION OF THE WORK
- 23) PERFORM ALL NECESSARY CUTTING, PATCHING, REPAIRS AND PAINTING
- 24) ALL WORK TO BE PERFORMED WITH THE INTENT AS TO NOT INTERFERE WITH THE NORMAL OPERATION OF THE FACILITY. COORDINATE AS NECESSARY, SHUTDOWNS, WITH THE OWNER
- 25) PROVIDE ALL SUPPLEMENTAL STEEL AS NECESSARY TO TRANSFER LOADS OF EQUIPMENT AND PIPING TO THE BUILDING STRUCTURE
- 26) ALL INSTRUMENTS PROVIDED SHALL BE INSTALLED EASY ACCESS AND MAINTENANCE AND SHALL BE INSTALLED PER MANUFACTURERS REQUIREMENTS
- 27) PROVIDE VALVED DRAINS ON ALL WATER PIPING SYSTEM LOW POINTS
- 28) PROVIDE ALL MANUAL AIR VENTS WHERE REQUIRED TO VENT WATER SYSTEM HIGH POINTS
- 29) NO PIPING SMALLER THAN 3/4" EXCEPT AS NOTED
- 30) REPAIR, PATCH AND WATERPROOF ALL ROOF AND EXTERIOR WALL PENETRATIONS/MODIFICATIONS OR CUTTING OF ROOF TO ACCOMMODATE WORK UNDER THIS CONTRACT. ALL WORK SHALL BE PERFORMED SO AS TO NOT VOID ANY EXISTING WARRANTIES OR GUARANTEES
- 31) PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING COORDINATED DRAWINGS BETWEEN ALL TRADES
- 32) ALL PIPING SYSTEMS SHALL BE THOROUGHLY CLEANED BEFORE PLACING IN OPERATION TO RID SYSTEM OF DIRT, PIPING COMPOUND, MILL SCALE, OIL AND ANY AND ALL OTHER MATERIAL FOREIGN TO WATER BEING CIRCULATED. THIS APPLIES EQUALLY AND ESPECIALLY TO SYSTEMS WHERE PHASES OR PORTIONS OF SYSTEMS ARE OPERATED DURING CONSTRUCTION
- 33) ALL DEMOLITION OR NEW WORK SHOWN ON THE PLAN, BUT NOT THE SCHEMATIC, OR VICE VERSA, SHALL BE INCLUDED AS IF SHOWN ON BOTH
- 34) ALL EQUIPMENT SHALL BE INSTALLED IN A NEAT, WORKMANLIKE MANNER, RECTILINEAR TO THE BUILDING STRUCTURE

**COORDINATION WITH OTHER TRADES**

- 1) ELECTRICAL, STRUCTURAL, SITE/CIVIL, CONTROLS

**GENERAL SCOPE OF WORK**

THE SCOPE OF WORK INCLUDED IN THESE DESIGN DOCUMENTS INCLUDE MODIFICATIONS FOR THE BUILDING LOCATED AT 505 HUDSON STREET IN HARTFORD, CT. PROVIDE ALL LABOR AND MATERIALS AS REQUIRED FOR PROPER OPERATION OF NEW SYSTEMS. SCOPE OF WORK TO INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:

**BASE BID PROJECT**

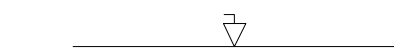




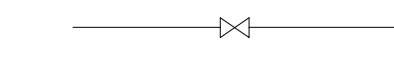

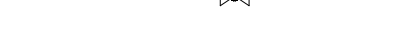
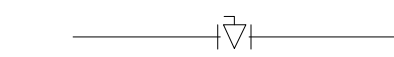

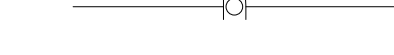
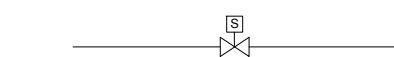

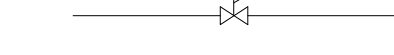


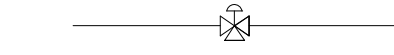





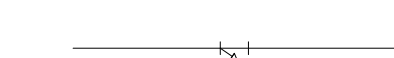


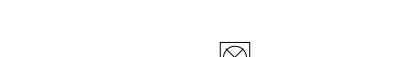

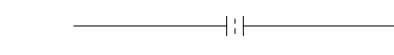




THE BASE BID PROJECT SCOPE INCLUDES:

- 1) COORDINATION OF DEMOLITION AND REPLACEMENT OF EXISTING EQUIPMENT WITH STATE OF CONNECTICUT, BUILDING MANAGER AND GENERAL CONTRACTOR
- 2) LOCKOUT AND TAGOUT PROCEDURES PER STATE OF CONNECTICUT, BUILDING MANAGER AND CONTRACTOR EH&S GUIDELINES
- 3) CONTRACTOR SHALL RELOCATE ANY EXISTING PIPING OR EQUIPMENT, AS NECESSARY, TO ALLOW OR REMOVAL OF EXISTING AND INSTALLATION OF NEW EQUIPMENT
- 4) CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORTS, AS NECESSARY DURING CONSTRUCTION
- 5) CONTRACTOR SHALL SUPPLY ALL PROJECT RIGGING. RIGGER SHALL DETERMINE FINAL RIGGING PATH FOR ALL EQUIPMENT AND SHALL RETAIN A STRUCTURAL ENGINEER TO EVALUATE THE RIGGING PATH AND PROVIDE SUPPLEMENTARY STEEL AND SUPPORTS FOR THE BUILDING STRUCTURE AND SLABS AS REQUIRED TO RIG EXISTING EQUIPMENT OUT AND NEW EQUIPMENT INTO PLACE IF REQUIRED
- 6) CONTRACTOR SHALL NOTE ANY PIPING THAT APPEARS TO BE DETERIORATED AND OF CONCERN TO THE CONTRACTOR SHALL BE BROUGHT TO THE ATTENTION OF THE STATE, BUILDING MANAGER AND ENGINEER
- 7) THE REMOVAL OF AN EXISTING HOT WATER TO GLYCOL, SNOW MELT PLATE AND FRAME HEAT EXCHANGER AND ASSOCIATED GLYCOL PUMP LOCATED IN A MECHANICAL ROOM IN THE LOWER LEVEL GARAGE AREA. EXISTING PAD/FLOOR TO BE REPAIRED AND LEVEL TO ACCEPT NEW EQUIPMENT
- 8) DEMOLITION AND REMOVAL FROM SITE ALL DEMOLISHED MATERIAL
- 9) PROPER DISPOSAL OF ALL WATER AND GLYCOL
- 10) THE INSTALLATION OF A NEW, CONTRACTOR PROVIDED, SNOW MELT HEAT EXCHANGER (HOT WATER TO 40% PROPYLENE GLYCOL) ALONG WITH ASSOCIATED PIPING, INSULATION, VALVES, FITTINGS, THERMOMETERS AND GAUGES
- 11) THE INSTALLATION OF A NEW CONTRACTOR SUPPLIED GLYCOL CIRCULATION PUMP, STRAINER, BALANCING VALVE, DISCONNECT, POWER WIRING, CONDUIT AND CONTROLS
- 12) THE REPLACEMENT OF AN EXISTING ELECTRONIC HOT WATER CONTROL VALVE USED TO MAINTAIN THE DESIGN GLYCOL SUPPLY TEMPERATURE FROM THE PLATE AND FRAME HEAT EXCHANGER. NEW VALVE SHALL BE CONNECTED AND CONTROLLED VIA THE EXISTING TRANE BUILDING MANAGEMENT SYSTEM
- 13) THE REPLACEMENT OF THE TWO MAIN HOT WATER PUMP IMPELLERS
- 14) THE MODIFICATION OF THE EXISTING SNOW MELT GLYCOL SUPPLY AND RETURN PIPING TO ALLOW FOR A NEW SNOW MELT CIRCUIT FOR THE VEHICLE RAMP
- 15) COORDINATION WITH THE GENERAL CONTRACTOR FOR THE REMOVAL OF AN EXISTING CONCRETE VEHICLE RAMP LOCATED ON THE SOUTH SIDE OF THE BUILDING TO ALLOW FOR THE INSTALLATION OF A NEW SNOW MELT SYSTEM FOR THIS RAMP. THIS IS THE REPLACEMENT OF AN EXISTING SYSTEM AND AS SUCH, SOME EXISTING COMPONENTS ARE TO BE REUSED AND CONTRACTOR MUST TAKE CARE TO REVIEW DRAWINGS AND EXISTING CONDITIONS
- 16) NEW, CONTRACTOR SUPPLIED PIPING, INSULATION, VALVES, FITTINGS, HANGERS, FLOOR AND WALL CORE BORING, SLEEVES, ETC FOR NEW 2' GLYCOL PIPING TO NEW SNOW MELT CIRCUITS FOR VEHICLE RAMP
- 17) THE INSTALLATION OF CONTRACTOR SUPPLIED 3/4" HDPE TUBING, STAPLES, SNOW MELT SENSORS, MANIFOLDS, BALANCING AND SHUTOFF VALVES, THERMOMETERS AND PRESSURE GAUGES FOR FULLY FUNCTIONAL SNOW MELT SYSTEM
- 18) COORDINATION WITH THE GENERAL CONTRACTOR FOR PLACEMENT OF NEW VEHICLE RAMP CONCRETE PAD
- 19) MODIFICATION/EXPANSION OF THE EXISTING BUILDING MANAGEMENT SYSTEM (BMS) TO ALLOW FOR THE CONTROL OF THE NEW GLYCOL CIRCULATION PUMP BASED ON THE FEEDBACK FROM THE CONTRACTOR SUPPLIED SNOW MELT SENSOR
- 20) MODIFICATION/EXPANSION OF THE EXISTING BUILDING MANAGEMENT SYSTEM (BMS) TO ALLOW FOR MONITORING OF HOT WATER AND GLYCOL SUPPLY AND RETURN TEMPERATURES FOR THE VEHICLE RAMP SNOW MELT SYSTEM
- 21) INSTALLATION OF CONTRACTOR SUPPLIED 40% GLYCOL SOLUTION FOR SNOW MELT SYSTEM
- 22) INSTALLATION OF CONTRACTOR SUPPLIED GLYCOL MAKEUP SYSTEM
- 23) ALL NEW PIPING SHALL BE MARKED AND LABELED FOR SERVICE AND FLOW DIRECTION
- 24) CONTRACTOR SHALL TEST, ADJUST, BALANCE AND COMMISSION THE HOT WATER AND GLYCOL SYSTEMS TO MATCH THE REQUIREMENTS OF THE BID DOCUMENTS. PLEASE ALSO REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS

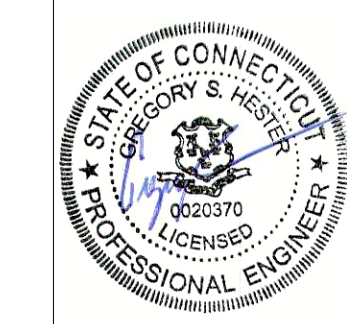
**CODES LISTED BELOW APPLY TO ALL DRAWINGS FOR THIS PROJECT**

- |  |  |
|--|--|
| 1) 2015 INTERNATIONAL BUILDING CODE            | 8) 2009 ICC A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES  |
| 2) 2015 INTERNATIONAL EXISTING BUILDING CODE   | 9) 2014 NATIONAL ELECTRIC CODE (NFPA 70)   |
| 3) 2015 INTERNATIONAL PLUMBING CODE            | 10) 2016 ANSI/ASHRAE/IESNA STANDARD 90.1 - ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS |
| 4) 2015 INTERNATIONAL MECHANICAL CODE          | 11) NFPA 54 NATIONAL FUEL GAS CODE   |
| 5) 2015 INTERNATIONAL ENERGY CONSERVATION CODE | 12) GENERAL STATUTES OF CONNECTICUT WITH SUPPLEMENTS   |
| 6) 2016 CONNECTICUT FIRE SAFETY CODE           |  |
| 7) 2015 CONNECTICUT FIRE PREVENTION CODE       |  |

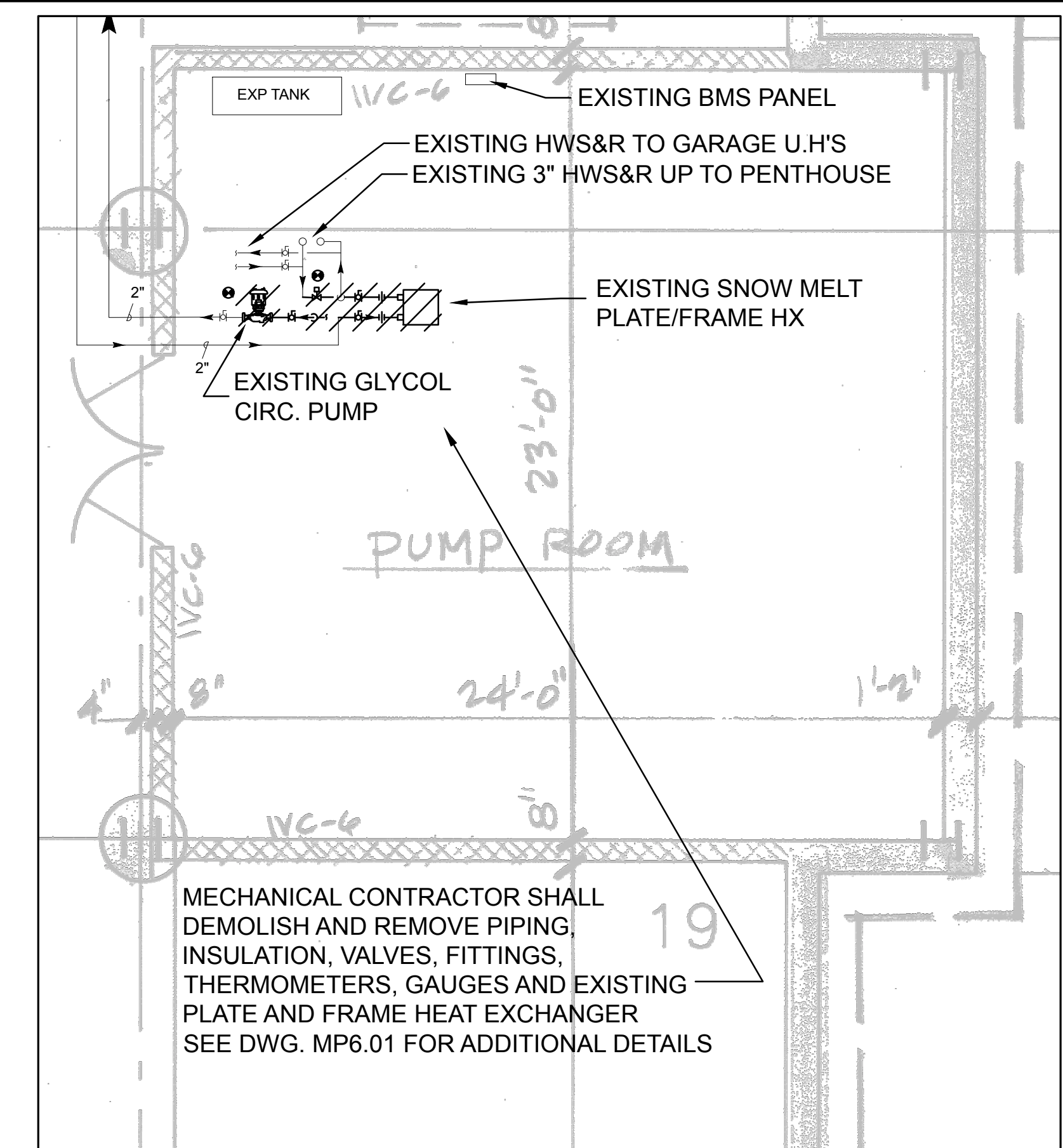
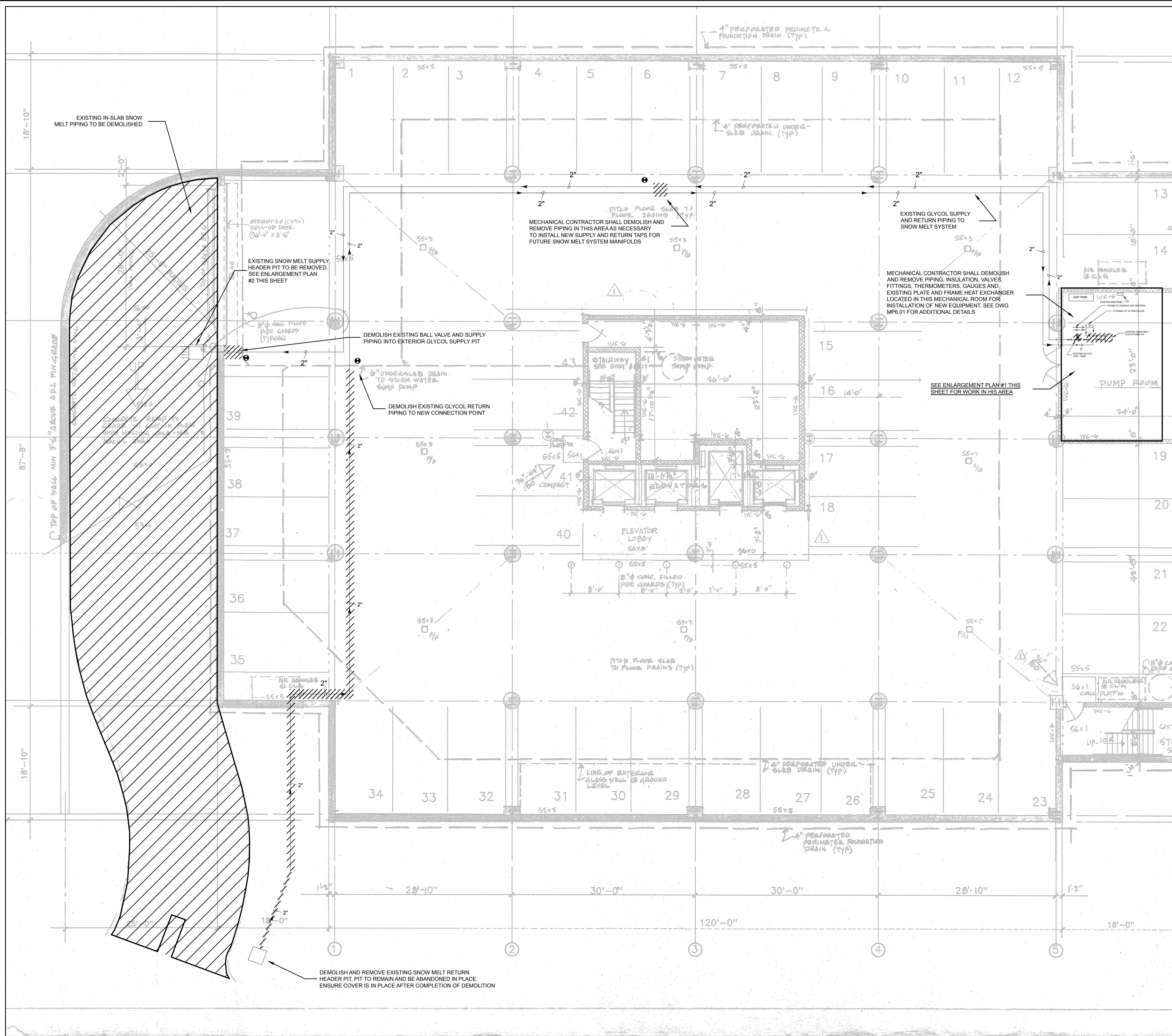
**PIPING SYMBOLS LIST**

- |   |                                |
|---|--------------------------------|
|    | AUTOMATIC VENT                 |
|    | RELIEF VALVE                   |
|    | BUTTERFLY VALVE                |
|    | GATE VALVE                     |
|    | GLOBE VALVE                    |
|    | PLUG VALVE                     |
|    | BALL VALVE                     |
|    | SOLENOID VALVE                 |
|    | PRESSURE REDUCING VALVE        |
|    | TWO-WAY CONTROL VALVE          |
|    | THREE-WAY CONTROL VALVE        |
|    | ELECTRIC ACTUATOR              |
|    | PNEUMATIC ACTUATOR             |
|    | CHECK VALVE                    |
|    | STRAINER WITH VALVE            |
|    | BASKET STRAINER                |
|    | FLOOR DRAIN                    |
|    | ORIFICE PLATE                  |
|    | REDUCER                        |
|    | DIRECTION OF FLOW              |
|    | UNION                          |
|    | EQUIPMENT OR PIPING DEMOLITION |
|    | BLIND FLANGE                   |
|    | STEAM TRAP                     |
|    | CONNECTION POINT               |
|    | PRESSURE GAUGE                 |
|    | THERMOMETER                    |
|    | FLEXIBLE CONNECTOR             |
|    | TEMPERATURE TRANSMITTER        |
|  | PRESSURE TRANSMITTER           |
|  | DIFF. PRESSURE TRANSMITTER     |
|  | FLOW METER                     |

drawing title <b>ABBREVIATIONS &amp; SYMBOLS</b>		<b>STATE OF CONNECTICUT</b> DEPARTMENT OF ADMINISTRATIVE SERVICES	
REVISIONS			
mark	date	description	drawing prepared by
1			<b>EBD ENGINEERING</b> 31-33 NORTH MAIN STREET MARLBOROUGH, CT 06447
		project	date
		<b>PARKING LOT RECONFIGURATION/ EXPANSION PROJECT</b> 505 HUDSON STREET HARTFORD, CT	02/20/2020
		CAD no.	scale
		project no. BI-2B-386	N/A
		approved by	drawn by
		GSH	GSH
		drawing no.	<b>M0.01</b>

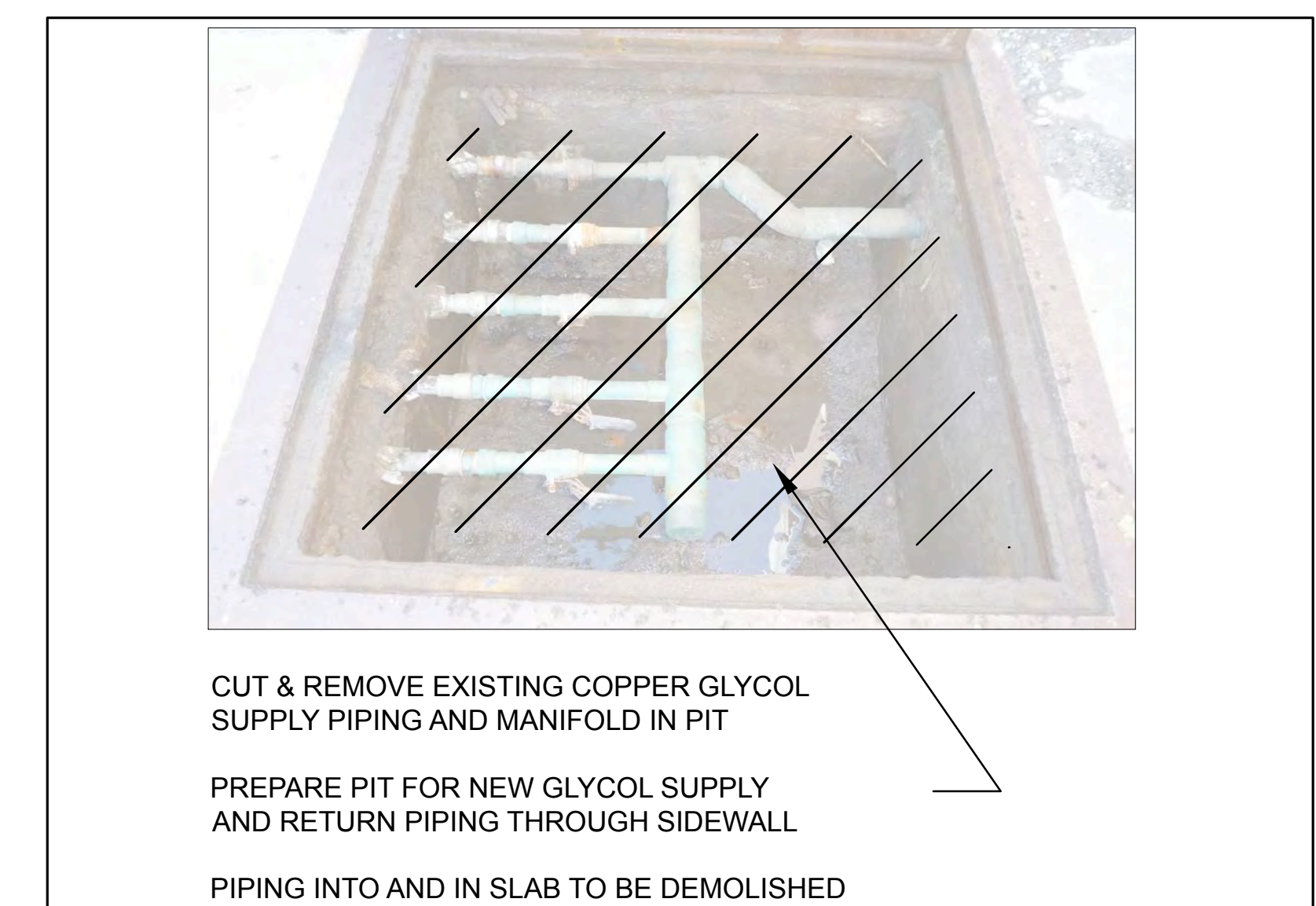






ENLARGEMENT PLAN #1

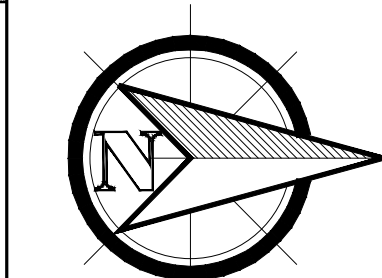
LOWER LEVEL MECHANICAL ROOM DEMOLITION DRAWING  
SCALE: NOT TO SCALE  
(FIELD VERIFY EXISTING CONDITIONS)



ENLARGEMENT PLAN #2

SNOW MELT SUPPLY PIT SCOPE OF WORK  
SCALE: NOT TO SCALE  
(FIELD VERIFY EXISTING CONDITIONS)

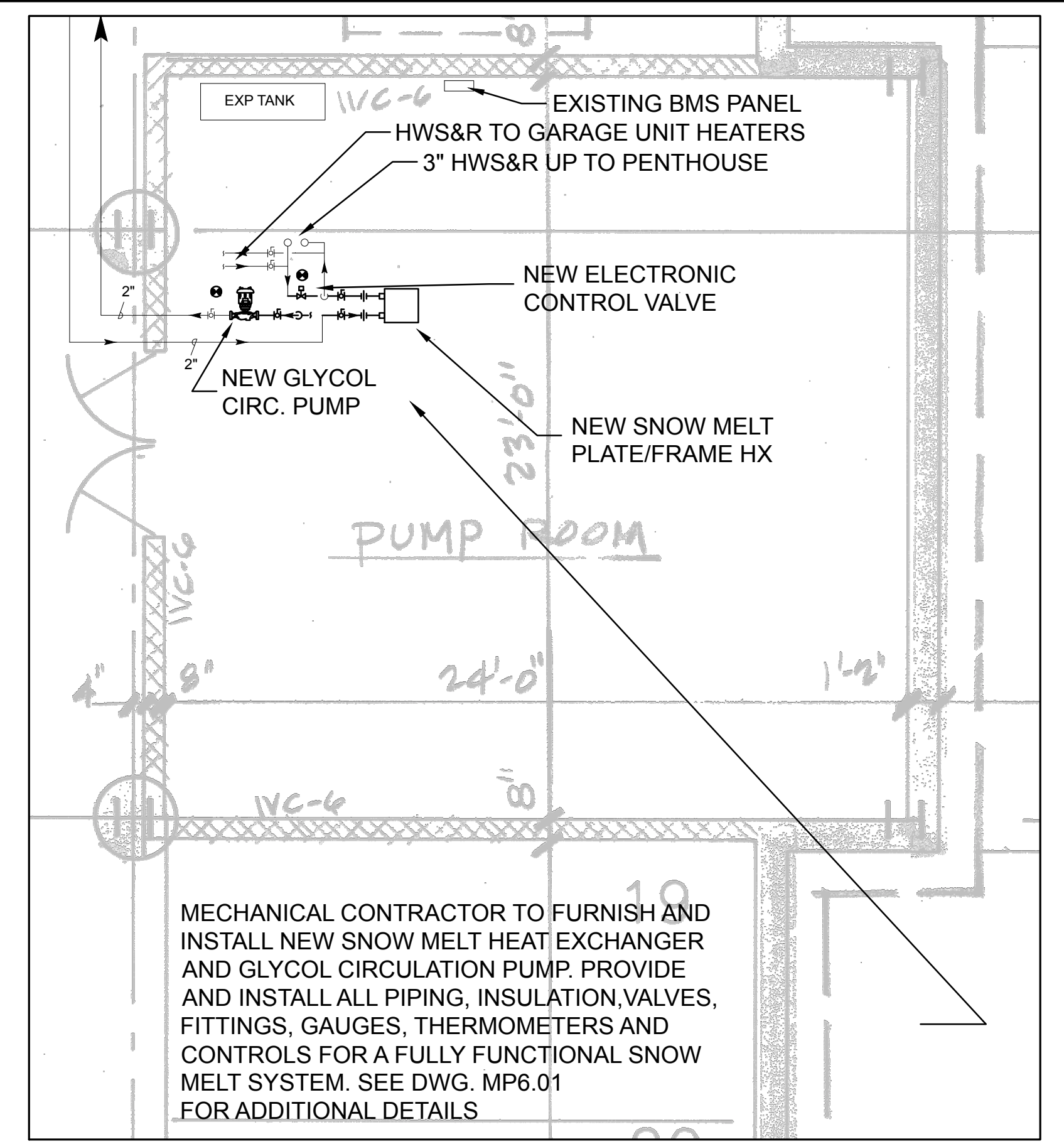
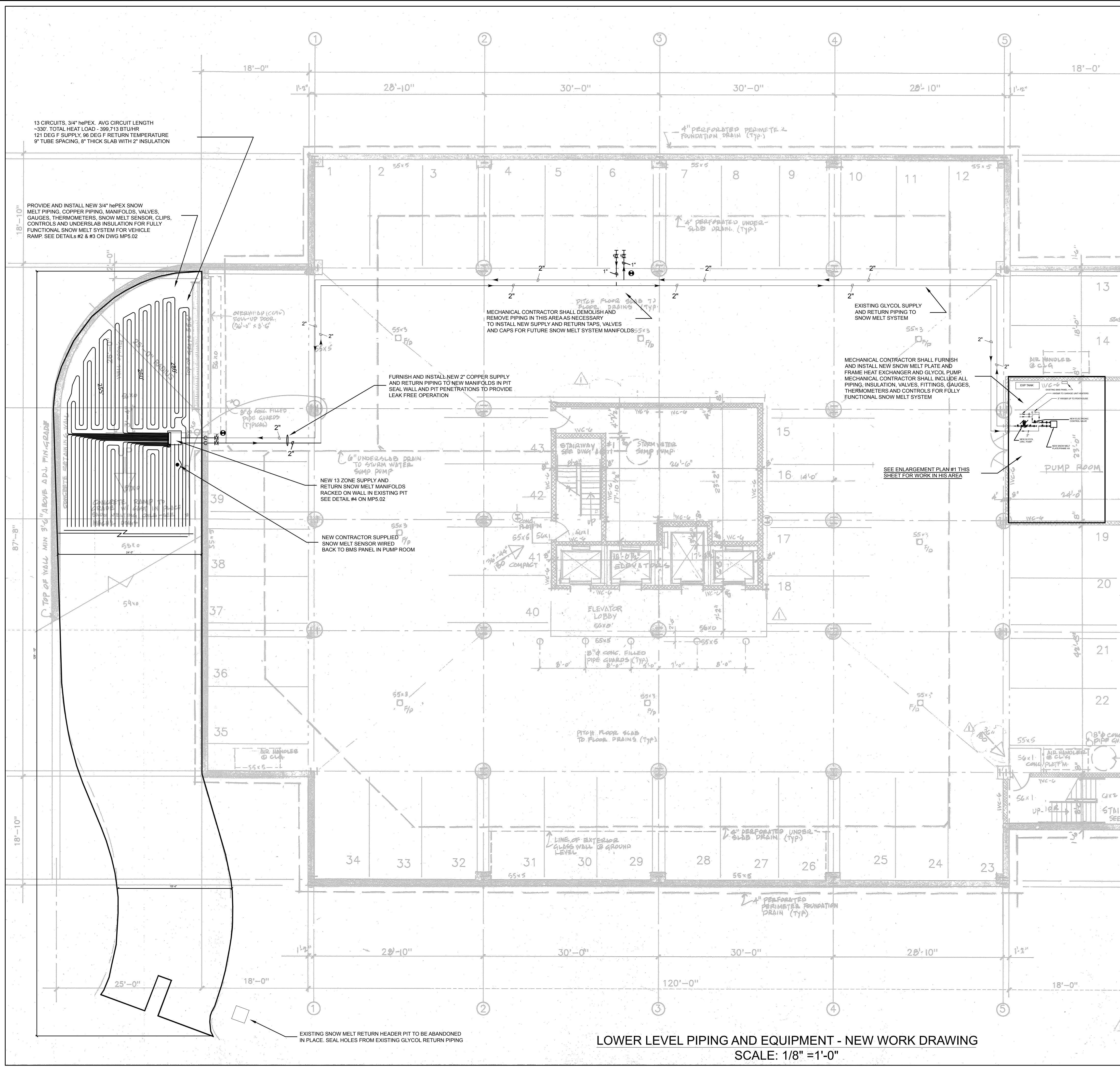
LOWER LEVEL PIPING AND EQUIPMENT - DEMOLITION DRAWING  
SCALE: 1/8" = 1'-0"



drawing title DEMOLITION DRAWING		STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES	
REVISIONS			
mark	date	description	
1			
drawing prepared by EBD ENGINEERING 31-33 NORTH MAIN STREET MARLBOROUGH, CT 06447		date 02/20/2020	scale N/A
project PARKING LOT RECONFIGURATION/ EXPANSION PROJECT 505 HUDSON STREET HARTFORD, CT		drawn by GSH	approved by GSH
CAD no.		project no. BI-2B-386	drawing no. MP1.01





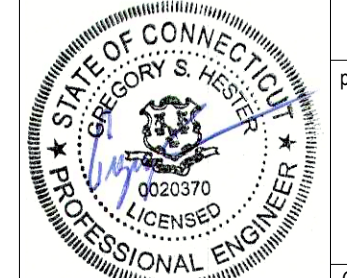
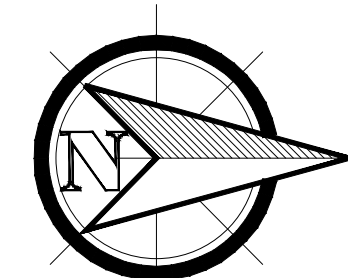


ENLARGEMENT PLAN #1

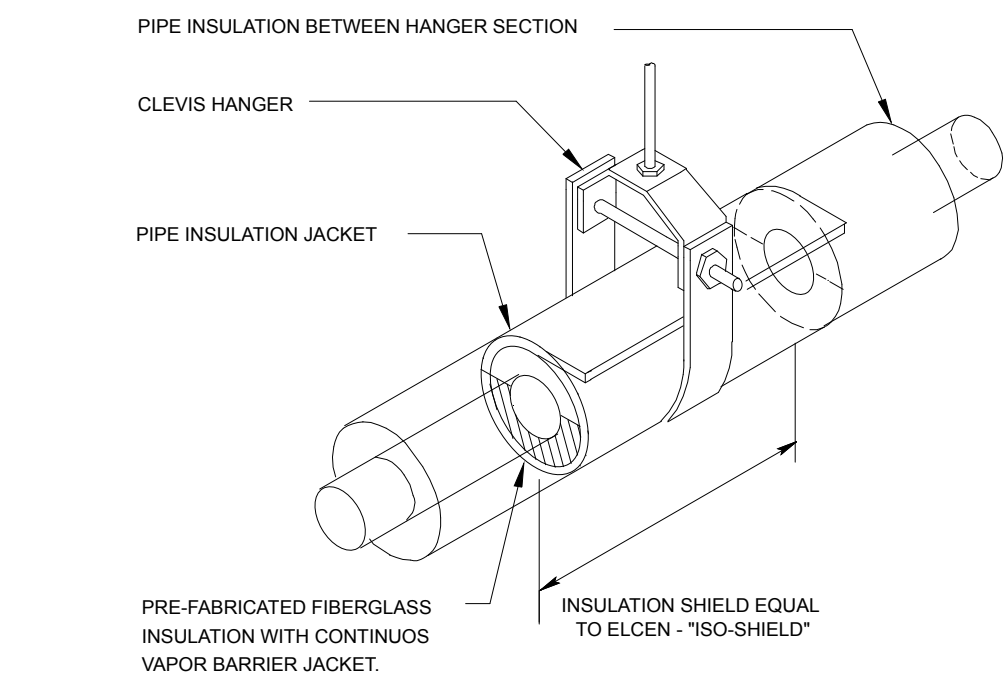
LOWER LEVEL MECHANICAL ROOM NEW WORK DRAWING  
SCALE: NOT TO SCALE  
(FIELD VERIFY)

LOWER LEVEL PIPING AND EQUIPMENT - NEW WORK DRAWING  
SCALE: 1/8" = 1'-0"

drawing title NEW WORK DRAWING		STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES	
REVISIONS			
mark	date	description	
1			
drawing prepared by EBD ENGINEERING 31-33 NORTH MAIN STREET MARLBOROUGH, CT 06447		date 02/20/2020	scale N/A
project PARKING LOT RECONFIGURATION/ EXPANSION PROJECT 505 HUDSON STREET HARTFORD, CT		drawn by GSH	approved by GSH
CAD no. B1-2B-386		drawing no. MP1.02	

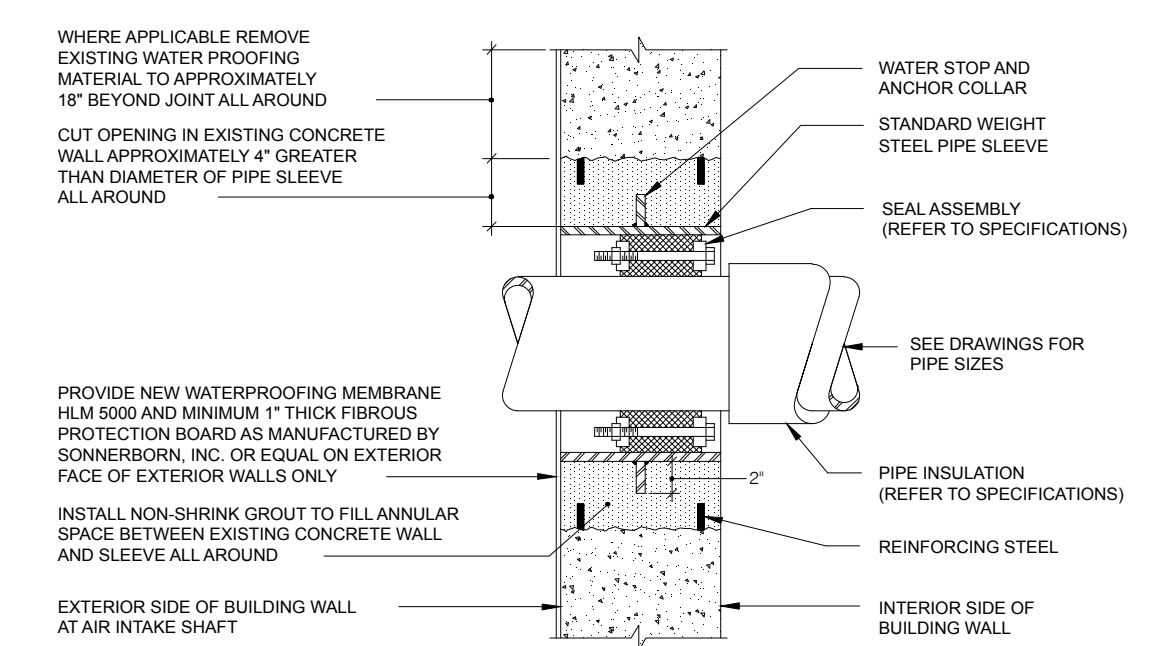






**INSULATED PIPE HANGER DETAIL**

NOT TO SCALE



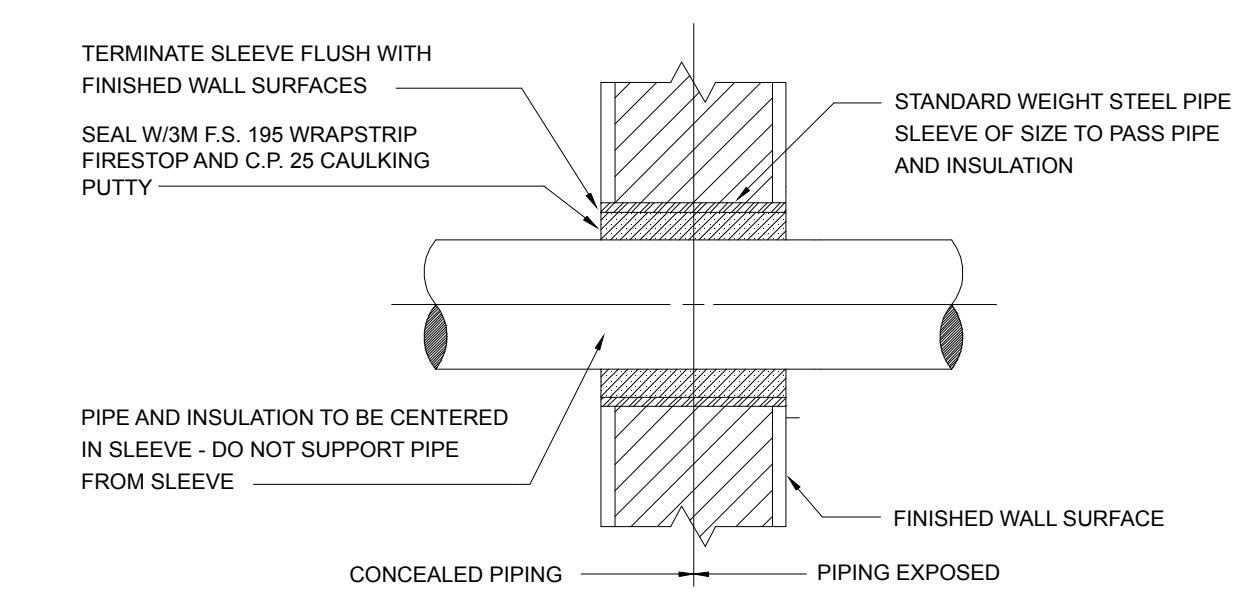
**WATER TIGHT SLEEVE DETAIL**

NOT TO SCALE

NOTES:

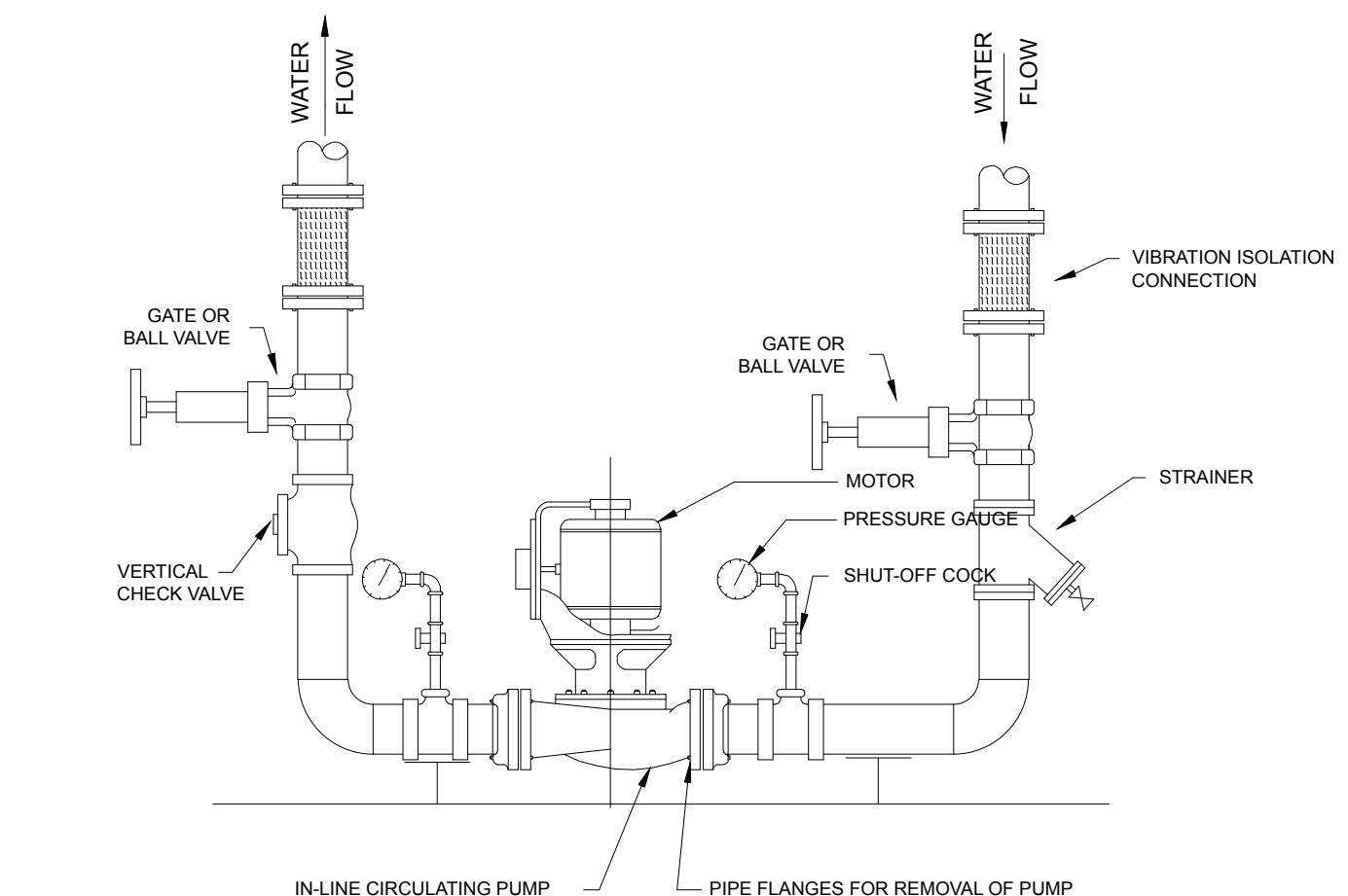
SLEEVES SHALL GENERALLY BE CAST IN PLACE DURING THE CONSTRUCTION PROCESS. WHEN NOT INSTALLED AS WALLS ARE POURED, CUT OPENING AS DEFINED ON DETAIL.

WHERE WATERTIGHT SLEEVES OCCUR IN A FIRE RATED WALL, CONTRACTOR SHALL PACK SLEEVE WITH 3M FIRE DIAM 120 3 HOUR RATED CAULK OR EQUAL. MINIMUM 25mm DEEP. WATERTIGHT ASSEMBLY SHALL BE INSTALLED ON ACCESSIBLE SIDE OF SLEEVE INSTALLATION.



**INTERIOR WALL PIPING PENETRATION**

NOT TO SCALE

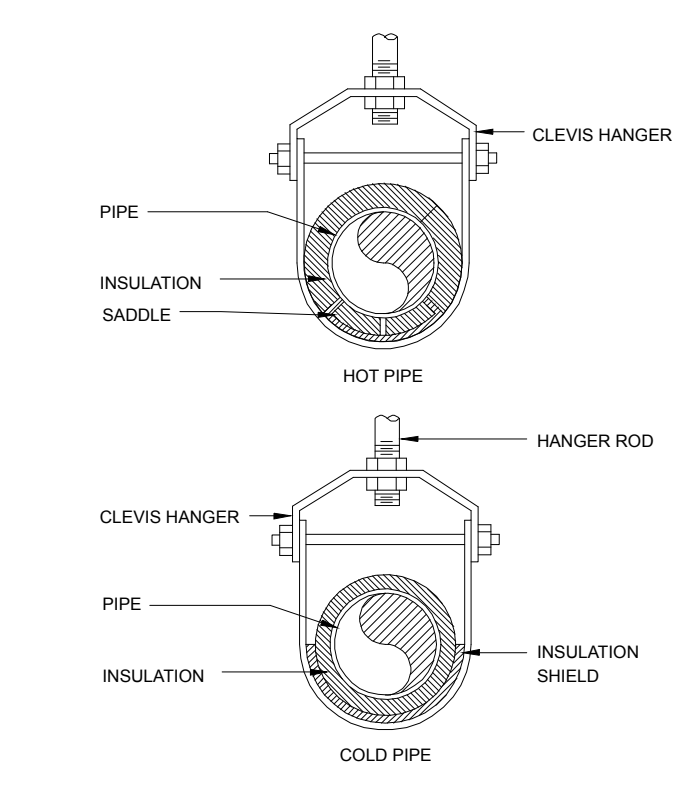


**INLINE CIRCULATION PUMP**

NOT TO SCALE

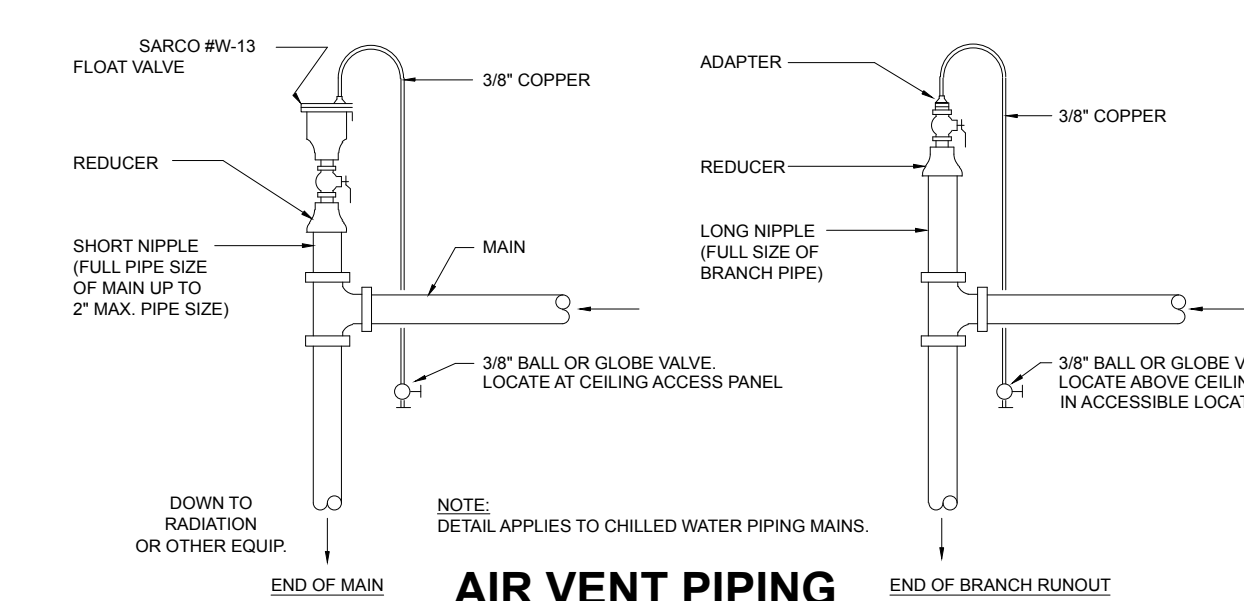
NOTES:

CONTRACTOR SHALL BE RESPONSIBLE FOR FABRICATING AND INSTALLING FLOOR MOUNTED SUPPORT FOR IN-LINE PUMP SO THAT NO LOADS ARE IMPARTED ON PIPING SYSTEM. SEE BEG'S INSTALLATION INSTRUCTIONS.



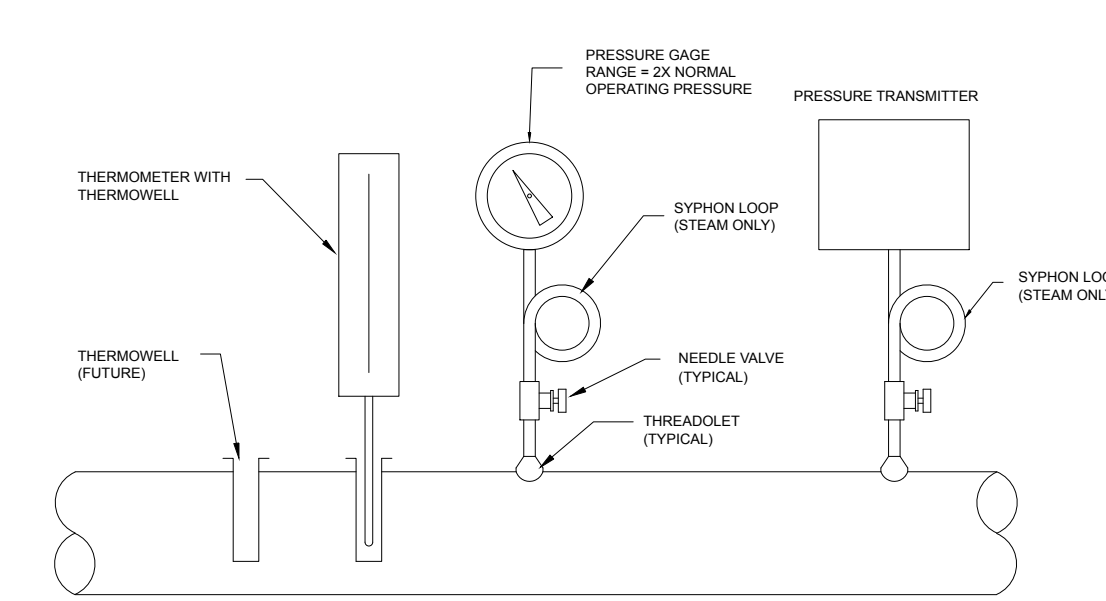
**CLEVIS HANGER PIPING DETAIL**

NOT TO SCALE



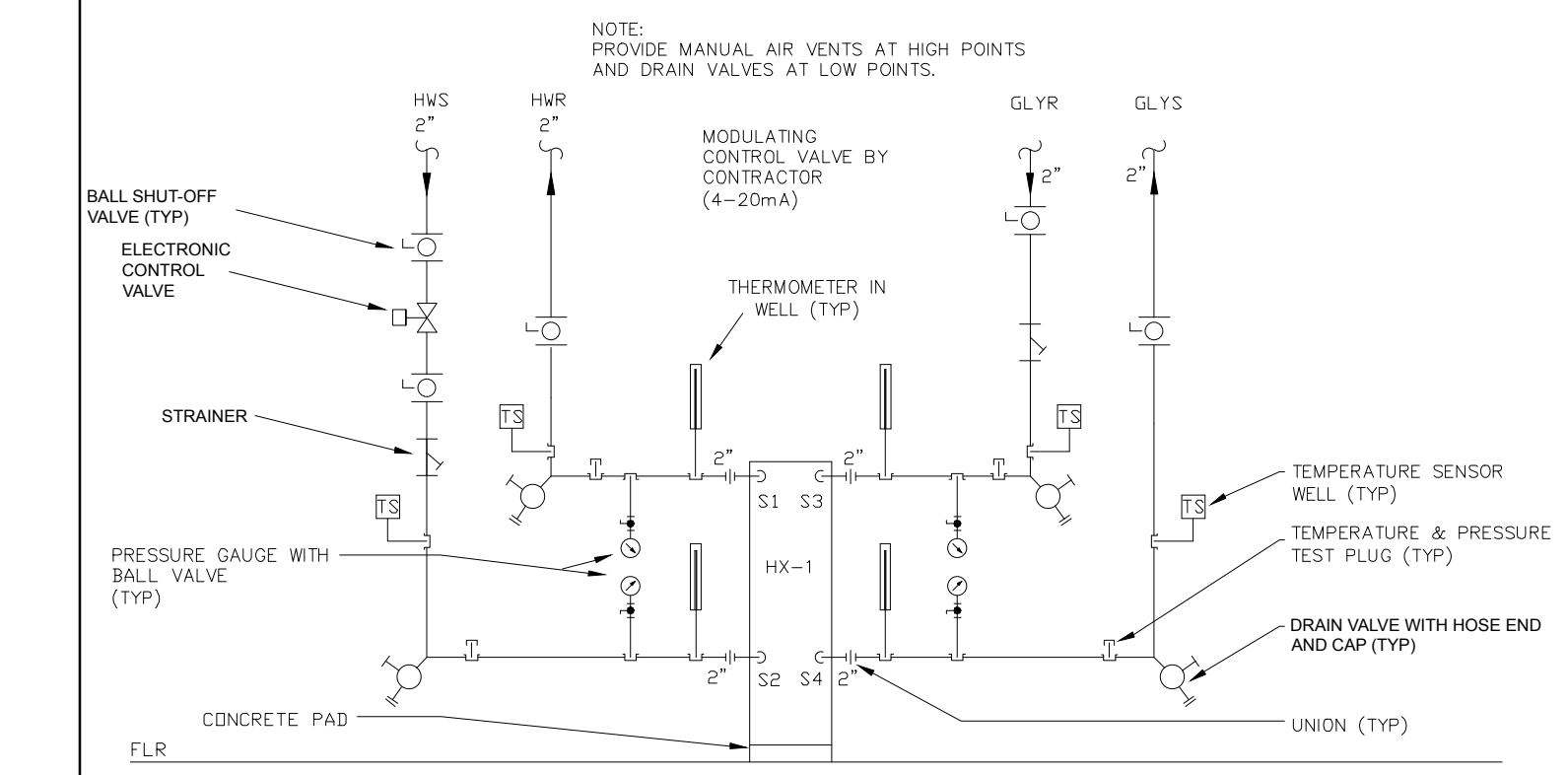
**AIR VENT PIPING**

NOT TO SCALE



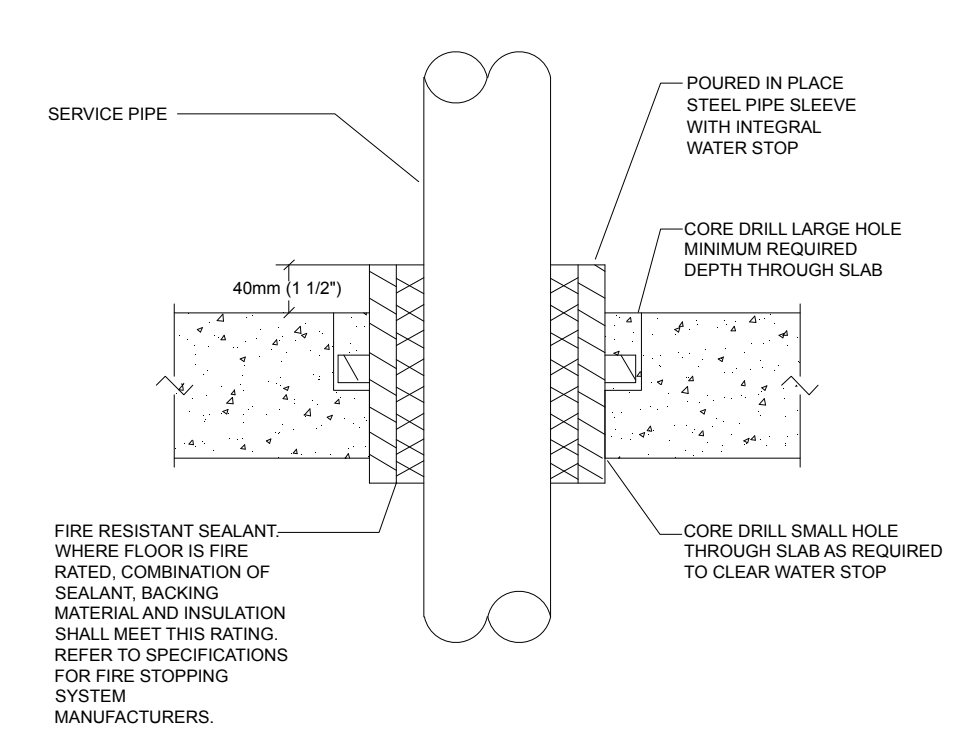
**TEMPERATURE AND PRESSURE GAGE DETAIL**

NOT TO SCALE



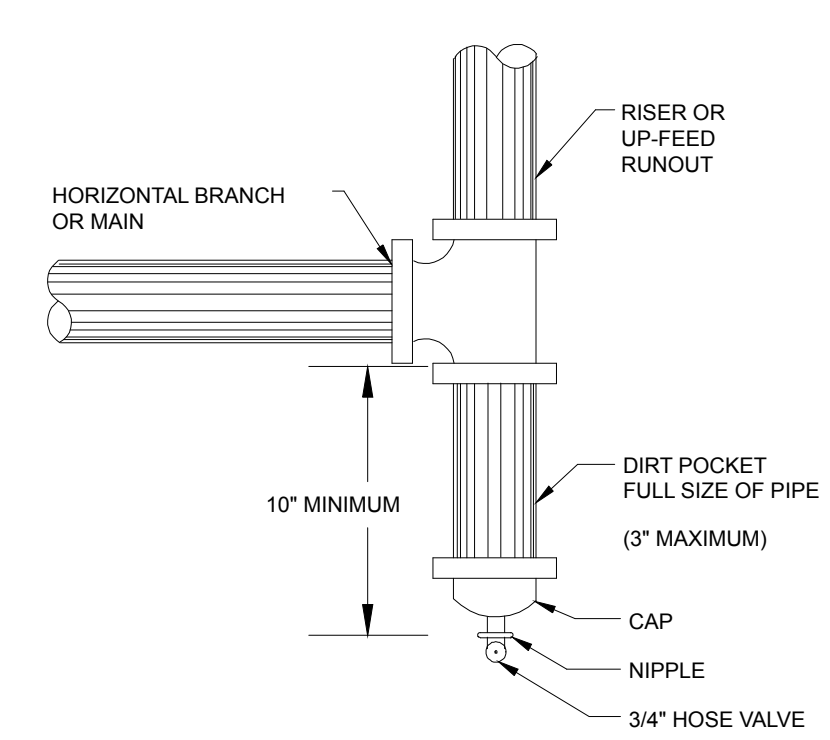
**HEAT EXCHANGER PIPING DETAIL**

NOT TO SCALE



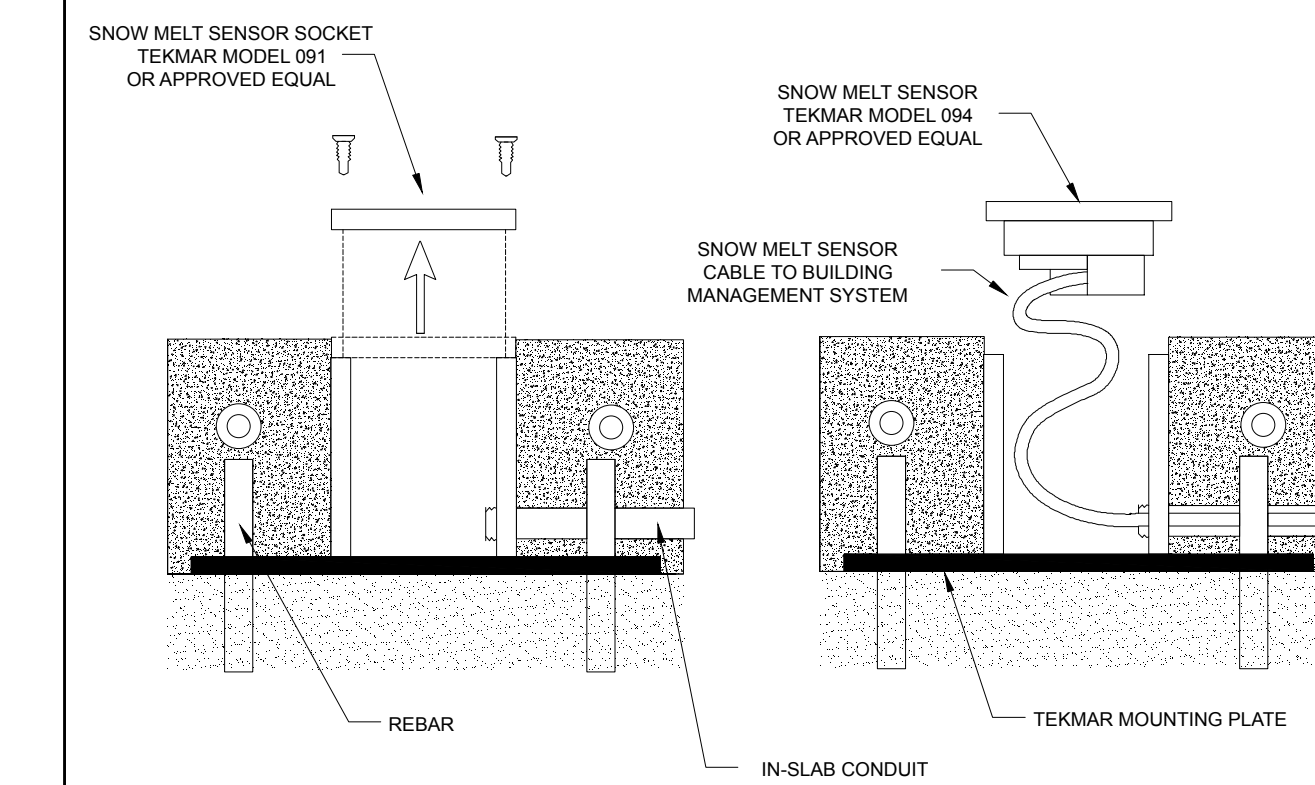
**CORE DRILLED PIPE SLEEVE**

NOT TO SCALE



**DRAIN VALVE PIPING**

NOT TO SCALE

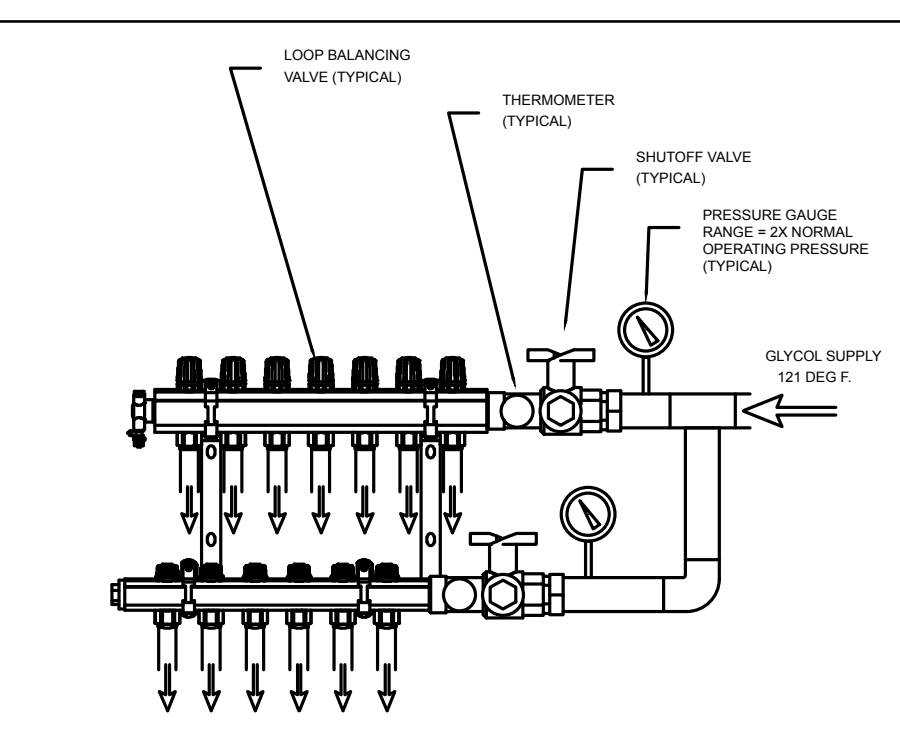


**SNOW MELT SENSOR DETAIL**

NOT TO SCALE

NOTES:

DRAWING IS DIAGRAMMATIC IN NATURE. REFER TO TEKMAR INSTALLATION & OPERATIONS MANUAL FOR INSTALLATION INSTRUCTIONS.



**HEPEX TURBINE MANIFOLD PIPING DETAIL**

NOT TO SCALE

DRAWING IS DIAGRAMMATIC IN NATURE. REFER TO UPONOR INSTALLATION & OPERATIONS MANUAL FOR ADDITIONAL DETAIL.

SUPPLY AND RETURN HEADERS FOR VEHICLE RAMP SNOW MELT SYSTEM TO BE INSTALLED IN EXISTING SUPPLY PIT EXTERNAL TO PARKING GARAGE. CONTRACTOR TO WORK WITH MANIFOLD SUPPLIER TO ENSURE PROPER FIT IN EXISTING PIT. SEE SPECIFICATION 28516 FOR MANIFOLD REQUIREMENTS.

COORDINATE WITH GENERAL CONTRACTOR FOR TIMING OF INSTALLATION.

13 TOTAL CIRCUITS OF 3/4" hPEX. ESTIMATED TOTAL LINEAR FOOTAGE OF hPEX TUBING IS ~4,300 FEET.

PUMP SCHEDULE																				
UNIT	ACTION	SERVING	OPERATION	SPEED	MFC	MODEL	TYPE	GPM	HEAD (FT)	FLUID	FLANGE SIZE (IN.)	PUMP EFF.	VFD	IMPELLER	MOTOR	ELECTRICAL	NOTES			
															HP	RPM	VOLTS	PHASE	HZ	
P-1	NEW	SNOW MELT SYSTEM	PRIMARY	VARIABLE	TACO	1919	INLINE	38.1	62	40% PROPANE GLYCOL	2	76	YES	7.8"	2	1760	480	3	60	1

NOTES:

1. SELECTION BASED ON TACO MODEL 1919 WITH INTEGRAL VFD

PACKAGED HEAT EXCHANGER SCHEDULE																			
UNIT	MODEL	SERVING	TYPE	MBH	HOT WATER SIDE					GLYCOL SIDE					SIZE			OPERATING WEIGHT LB	ACCESSORIES
					FLOW GPM	ENT F	LWT F	DESIGN PRESSURE PSIG	DESIGN PRESSURE PSIG	FLOW GPM	ENT F	LWT F	DESIGN PRESSURE PSIG	DESIGN PRESSURE PSIG	LENGTH IN	WIDTH IN	HEIGHT IN		
HX-1	FP10X20L-30	SNOW MELT	PLATE AND FRAME	438	35.6	150	125	1.2	150	38.1	96.1	121.0	1.5	150	9.8	3.1	20.3	54	ALL

NOTES:

1. SELECTIONS BASED ON GEA HEAT EXCHANGER

2. FOULING FACTOR = 0.0001

3. 2" INLET/OUTLET CONNECTIONS

4. PLATE SHALL BE PROVIDED WITH 25% EXCESS CAPACITY

5. MIN/MAX WORKING TEMPERATURES = -320/350 DEG F

6. MAX WORKING PRESSURE = 450 PSI

ACCESSORIES:

1. PLATE MATERIAL 316 SS

2. LUL, CEN

3. 2" STAINLESS STEEL CONNECTIONS

4. BRAZING SHALL BE COPPER

5. COUNTER FLOW

6. FACTORY SUPPLIED INSULATION KIT (2" ARMAFLEX WITH EXTRA STRENGTH ADHESIVE BACKING)

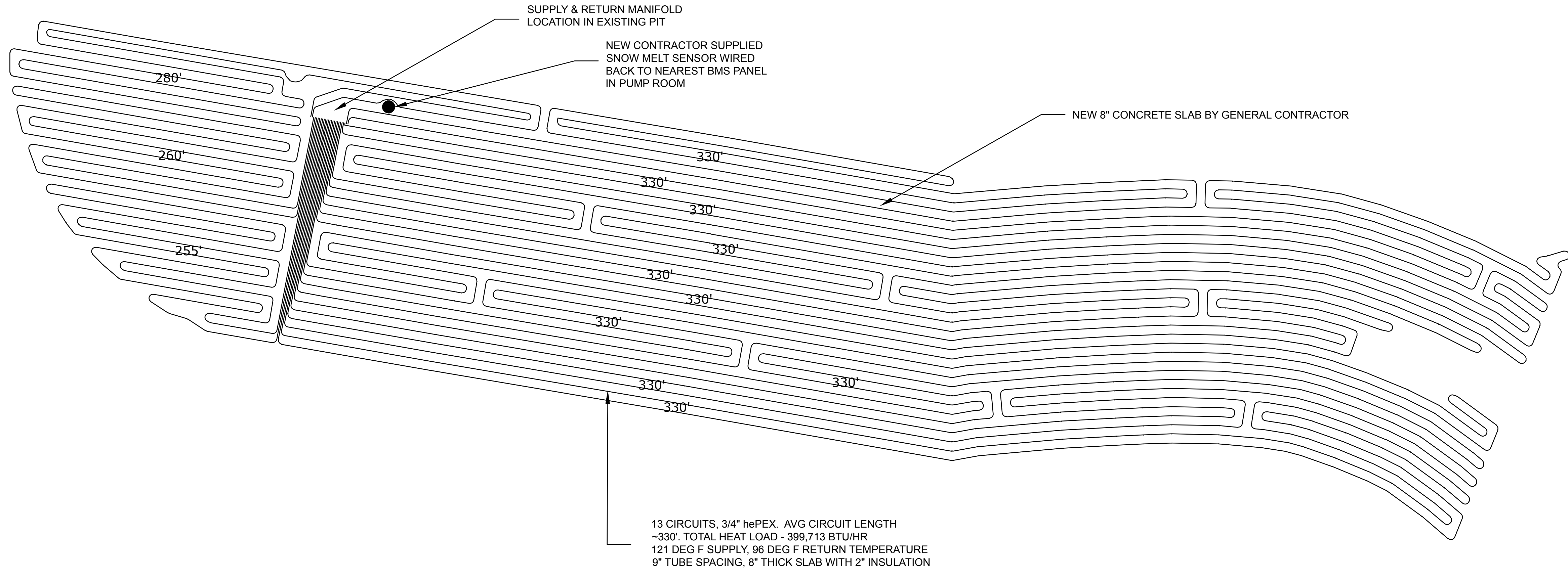
7. FACTORY SUPPLIED INSULATION KIT

8. FACTORY START-UP & REPORT

drawing title		STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES	
DETAILS AND SCHEDULES		drawing prepared by	
REVISIONS		EBD ENGINEERING	
mark	date	description	date
1			02/20/2020
		scale	
		N/A	
		drawing by	
		GSH	
		approved by	
		GSH	
		drawing no.	
		MP5.01	
		project	
		PARKING LOT RECONFIGURATION/ EXPANSION PROJECT	
		505 HUDSON STREET	
		HARTFORD, CT	
		CAD no.	
		project no.	
		BI-2B-386	

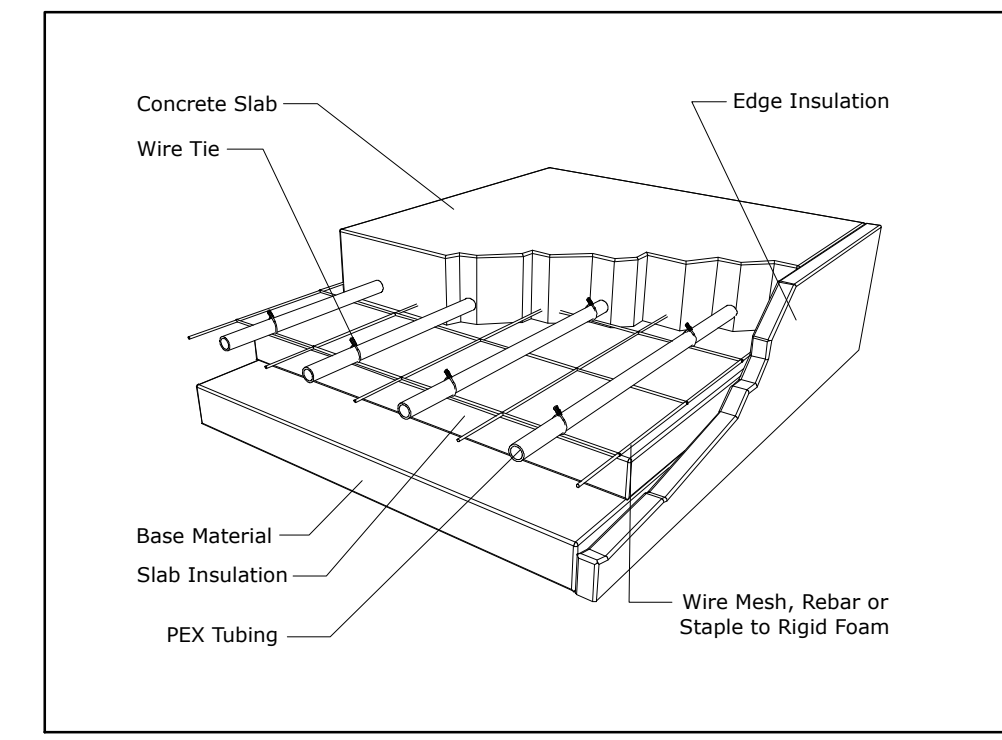


NOTE: PLEASE SEE DRAWING C1.02 FOR DETAIL



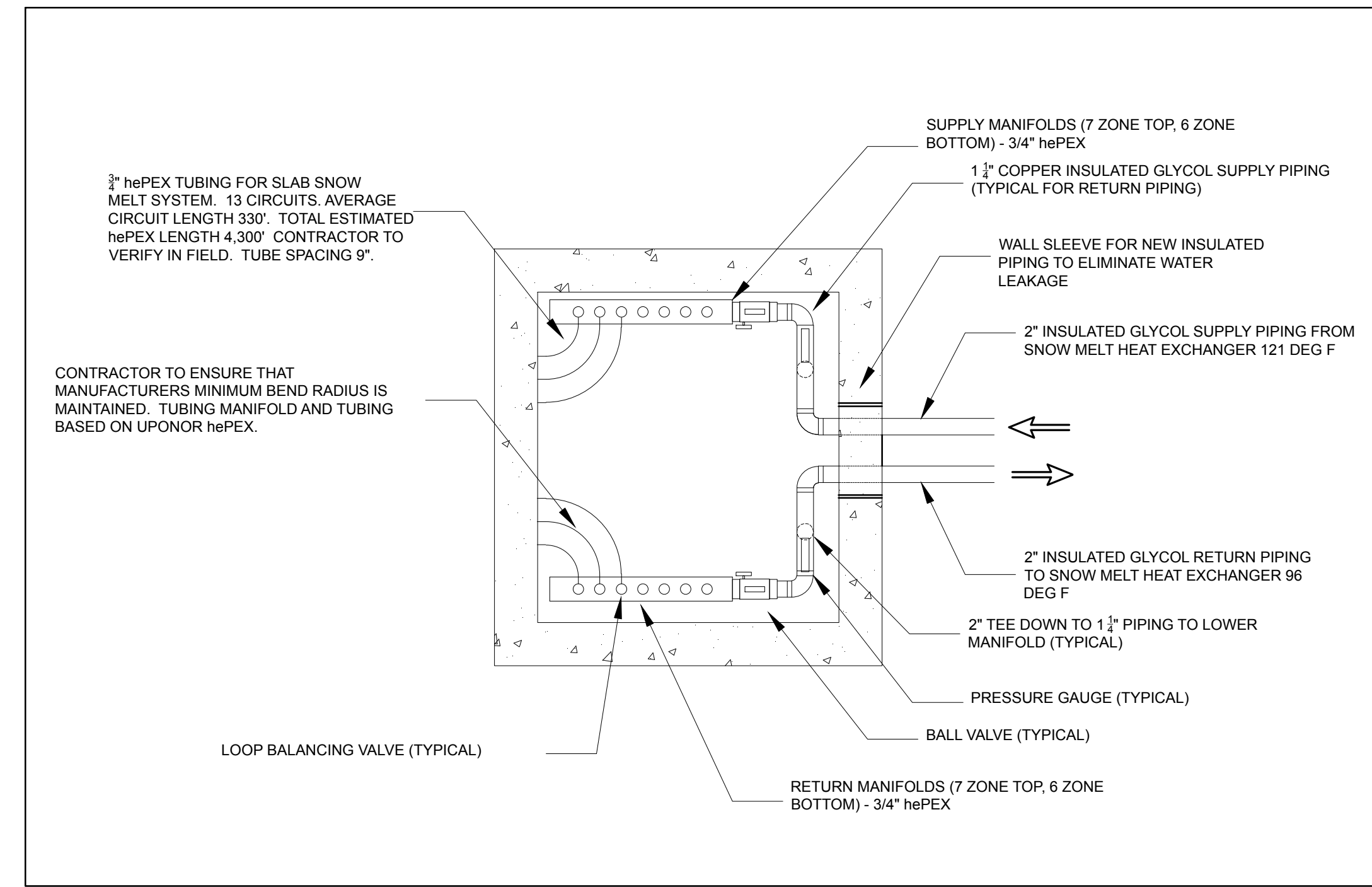
13 CIRCUITS, 3/4" hePEX. AVG CIRCUIT LENGTH ~330'. TOTAL HEAT LOAD - 399,713 BTU/HR  
121 DEG F SUPPLY, 96 DEG F RETURN TEMPERATURE  
9" TUBE SPACING, 8" THICK SLAB WITH 2" INSULATION

**1 VEHICLE RAMP PEX PIPING DETAIL**  
MP5.02 1/8" - 1'-0"



**2 PEX INSTALLATION DETAIL IN CONCRETE**  
MP5.02 NOT TO SCALE

NOTE: PEX INSTALLATION MUST MEET THE CORRECT ASTM STANDARDS FOR PEX PIPING AND FITTINGS THAT ARE USED FOR SNOW MELT SYSTEMS AS NOTED IN THE 2003 PLUMBING CODE, SECTION 605 - "MATERIALS, JOINTS AND CONNECTIONS".

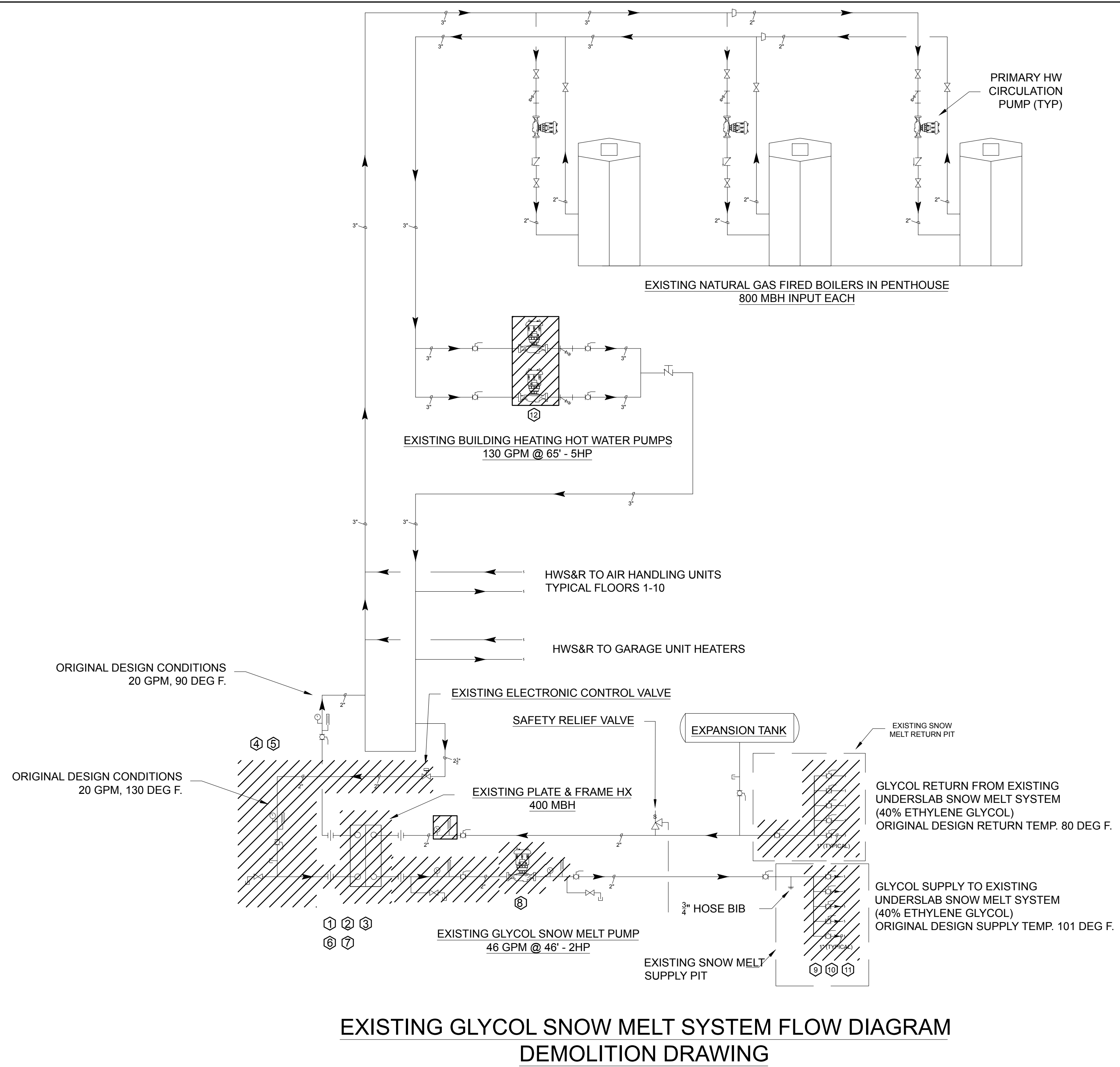


**3 SUPPLY PIT DETAIL**  
MP5.02 NOT TO SCALE

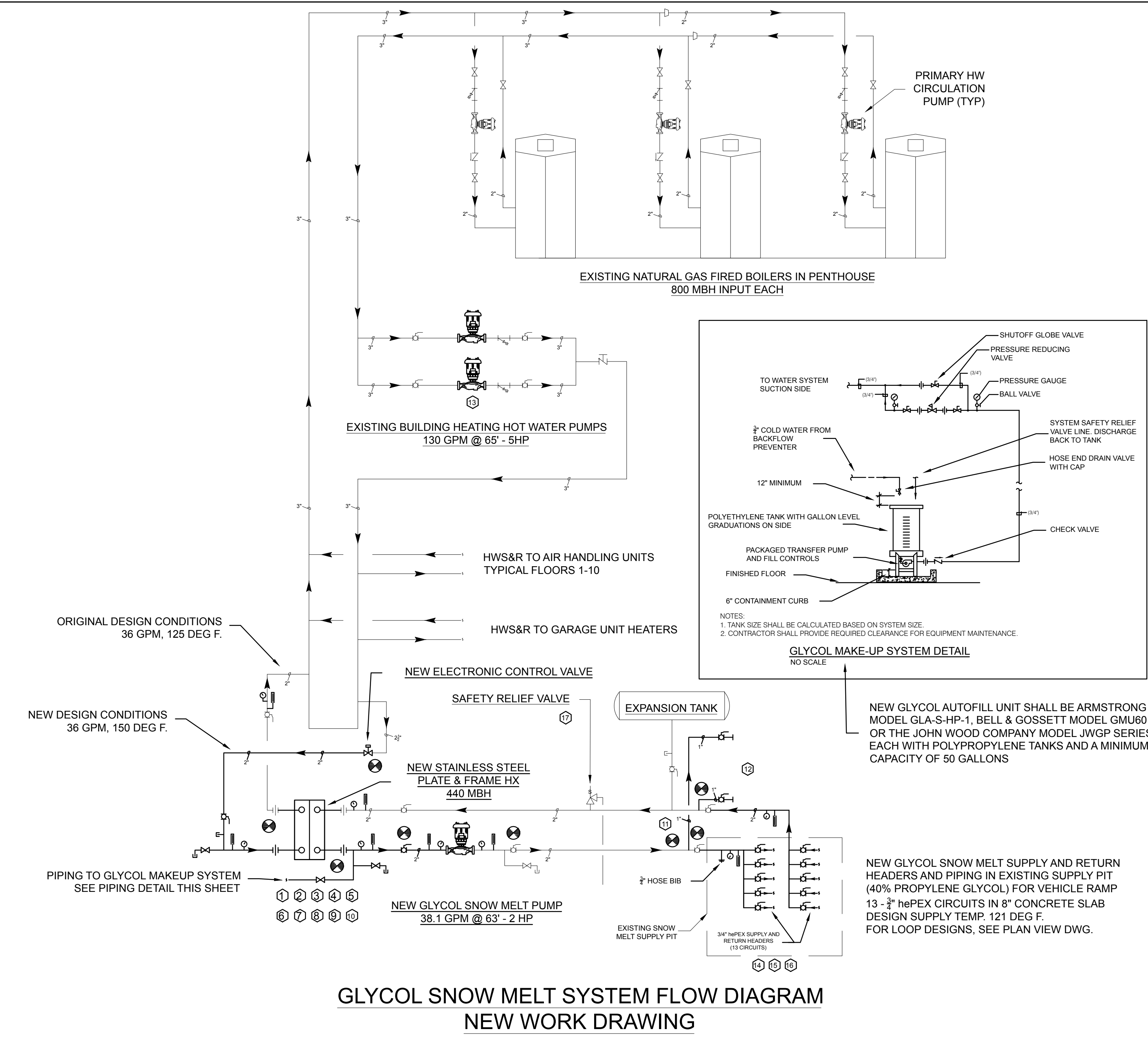
drawing title <b>DETAILS</b>			STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES		
REVISIONS			drawing prepared by <b>EBD ENGINEERING</b> 31-33 NORTH MAIN STREET MARLBOROUGH, CT 06447		
mark	date	description	date	scale	
1			02/20/2020	N/A	
project <b>PARKING LOT RECONFIGURATION/ EXPANSION PROJECT</b> 505 HUDSON STREET HARTFORD, CT			drawn by GSH	approved by GSH	drawing no. <b>MP5.02</b>
CAD no.			project no. BI-2B-386		







**EXISTING GLYCOL SNOW MELT SYSTEM FLOW DIAGRAM  
DEMOLITION DRAWING**



**GLYCOL SNOW MELT SYSTEM FLOW DIAGRAM  
NEW WORK DRAWING**

**SNOW MELT SYSTEM DEMOLITION NOTES (BASE BID)**

- ① COORDINATE DEMOLITION WITH STATE OF CONNECTICUT AND BUILDING OPERATIONS PERSONNEL
- ② LOCKOUT AND TAG OUT ALL SOURCES OF ENERGY FOR SAFE DEMOLITION
- ③ DRAIN EXISTING GLYCOL AND HOT WATER SYSTEMS AS NECESSARY TO PERFORM THE DEMOLITION OF EXISTING GLYCOL PUMP, HEAT EXCHANGER, VALVES, PIPING, FITTINGS, THERMOMETERS, GAUGES, ETC. ALL WATER/GLYCOL TO BE PROPERLY DISPOSED OF PER STATE OF CONNECTICUT AND BUILDING OPERATIONS PERSONNEL REGULATIONS/REQUIREMENTS
- ④ DEMOLISH AND REMOVE FROM SITE THE EXISTING HOT WATER CONTROL VALVE, HOT WATER SUPPLY PIPING, THERMOMETERS, PRESSURE GAUGES AND OTHER VALVES AND FITTINGS TO THE EXISTING SNOW MELT PLATE AND FRAME HEAT EXCHANGER AS NECESSARY FOR THE INSTALLATION OF THE NEW EQUIPMENT
- ⑤ DEMOLISH AND REMOVE FROM SITE THE EXISTING HOT WATER RETURN PIPING, VALVES, THERMOMETERS, PRESSURE GAUGES AND FITTINGS FROM THE EXISTING SNOW MELT PLATE AND FRAME HEAT EXCHANGER AS NECESSARY FOR THE INSTALLATION OF NEW EQUIPMENT
- ⑥ DEMOLISH AND REMOVE FROM SITE THE EXISTING SNOW MELT PLATE AND FRAME HEAT EXCHANGER. REPAIR FLOOR AND MAKE LEVEL AFTER REMOVAL TO ALLOW FOR THE INSTALLATION OF NEW EQUIPMENT
- ⑦ DEMOLISH AND REMOVE EXISTING PIPE AND EQUIPMENT INSULATION AND REPLACE IN KIND AFTER THE INSTALLATION OF NEW EQUIPMENT, VALVES AND PIPING
- ⑧ DEMOLISH AND REMOVE FROM SITE EXISTING GLYCOL DISTRIBUTION PUMP, WIRING AND CONDUIT
- ⑨ DEMOLISH AND REMOVE FROM SITE THE EXISTING SNOW MELT SUPPLY PIPING MANIFOLD IN EXISTING SUPPLY MANIFOLD PIT. EXISTING 2" COPPER SUPPLY PIPING SHALL BE REUSED. CONTRACTOR SHALL TAKE CARE DURING DEMOLITION TO MAINTAIN EXISTING PIPING IN GOOD CONDITION
- ⑩ DEMOLISH AND REMOVE FROM SITE EXISTING GLYCOL RETURN PIPING UP TO POINT OF CONNECTION WITH NEW RETURN PIPING AS SHOWN IN PLAN VIEW DRAWING. EXISTING GLYCOL RETURN HEADER LOCATED IN EXISTING EXTERIOR RETURN MANIFOLD PIT SHALL BE REMOVED. THIS PIT WILL NO LONGER BE USED
- ⑪ CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR FOR THE DEMOLITION AND REMOVAL FROM SITE OF THE EXISTING CONCRETE VEHICLE RAMP AND EXISTING IN SLAB SNOW MELT PIPING. CONTRACTOR SHALL TAKE CARE TO NOT DAMAGE EXISTING IN-SLAB JUNCTION BOX
- ⑫ CONTRACTOR SHALL REMOVE EXISTING IMPELLERS FROM THE TWO EXISTING B&G SERIES 80 MAIN HEATING PUMPS

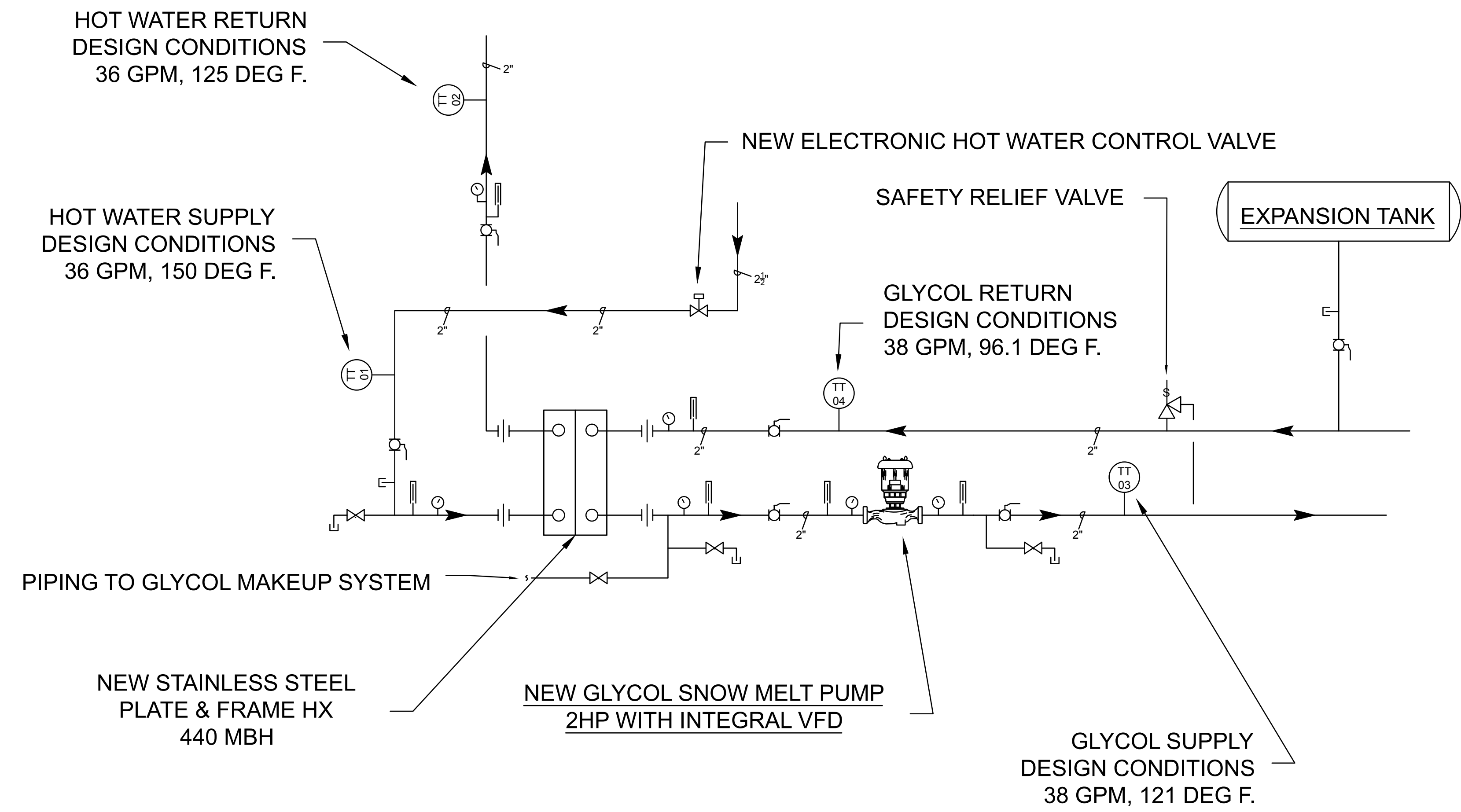
**SNOW MELT SYSTEM MODIFICATION AND INSTALLATION NOTES**

- ① COORDINATE INSTALLATION WITH STATE OF CONNECTICUT AND BUILDING OPERATIONS PERSONNEL
- ② LOCKOUT AND TAG OUT ALL SOURCES OF ENERGY FOR SAFE SYSTEM INSTALLATION
- ③ PROVIDE AND INSTALL NEW STAINLESS STEEL PLATE AND FRAME HEAT EXCHANGER, GLYCOL PUMP, SNOW MELT MANIFOLDS AND SENSORS, 3/4" PEX TUBING, CONNECTORS, FITTINGS, THERMOSTATS, PRESSURE GAUGES, AIR VENTS, STAPLES, HANGERS, INSULATION AND CONTROLS TO PROVIDE A FULLY FUNCTIONAL SNOW MELT SYSTEM FOR THE VEHICLE RAMP ON THE SOUTH SIDE OF THE BUILDING
- ④ PROVIDE AND INSTALL NEW HOT WATER AND GLYCOL PIPING, DRAINS AND DRAIN PIPING, FITTINGS, VALVES, VENTS, THERMOSTATS AND PRESSURE GAUGES TO PROVIDE A FULLY FUNCTIONAL SNOW MELT SYSTEM FOR THE VEHICLE RAMP ON THE SOUTH SIDE OF THE BUILDING
- ⑤ INSULATE ALL NEW WORK AND EQUIPMENT AND PIPING FROM WHICH INSULATION WAS REMOVED TO PERFORM WORK
- ⑥ PRESSURE TEST SYSTEMS TO ENSURE PROPER INSTALLATION
- ⑦ PROVIDE AND INSTALL NEW 40% PROPYLENE GLYCOL SOLUTION TO SNOW MELT SYSTEM AND PROVIDE GLYCOL MAKEUP SYSTEM PER THE DETAIL PROVIDED.
- ⑧ PURGE ALL AIR FROM SYSTEM. PROVIDE MEANS FOR OPERATIONS STAFF TO MAINTAIN GLYCOL CONCENTRATION LEVELS
- ⑨ MODIFY EXISTING BUILDING CONTROL SYSTEM TO ENABLE/DISABLE SNOW MELT SYSTEM BASED ON SNOW MELT SENSORS. SEE DWG M6.02
- ⑩ FURNISH AND INSTALL ALL NEW POWER AND CONTROL WIRING, CONDUITS, FITTINGS, ETC. TO PROVIDE A FULLY FUNCTIONAL SNOW MELT SYSTEM. PLEASE REFER TO ELECTRICAL DRAWINGS FOR MORE DETAIL
- ⑪ ENSURE THAT NEW PIPING PENETRATING EXTERIOR WALLS ARE ADEQUATELY INSTALLED SO AS TO PREVENT MOISTURE FROM ENTERING THE BUILDING AND TO PREVENT DAMAGE TO THE PIPING DUE TO EXPANSION AND CONTRACTION
- ⑫ FURNISH AND INSTALL NEW 1" SUPPLY AND RETURN TAPS, VALVES AND CAPS FOR FUTURE PEDESTRAIN RAMP UNDERSLAB HEATING SYSTEM
- ⑬ PROVIDE AND INSTALL NEW 9" IMPELLERS FOR TWO EXISTING B&G SERIES 80 MAIN HEATING PUMPS. IMPELLERS SHALL BE BRONZE AND PROVIDED BY PUMP MANUFACTURER

- ⑭ PROVIDE AND INSTALL NEW PIPING TAPS, FLOOR AND WALL CORE BORING AND SLEEVES, SUPPLY AND RETURN MANIFOLDS, PIPING, VALVES, FITTINGS, 3/8" PEX TUBING, THERMOSTATS, GAUGES, ETC FOR FULLY OPERATIONAL VEHICLE RAMP SNOW MELT SYSTEM
- ⑮ COORDINATE WITH STATE OF CONNECTICUT AND BUILDING OPERATOR FOR ACCEPTABLE HOURS OF CONSTRUCTION IN PARKING GARAGE AREA
- ⑯ COORDINATE WITH SITE GENERAL CONTRACTOR FOR THE INSTALLATION OF THE UNDERSLAB INSULATION, PEX TUBING, SNOW SENSOR, ETC. PRIOR TO PLACEMENT OF CONCRETE FOR THE VEHICLE RAMP
- ⑰ SAFETY RELIEF VALVE SHALL BE 3/4" ASME RATED, MANUFACTURED OUT OF BRONZE WITH STAINLESS STEEL SPRING, SILICON DISC AND BRONZE SEAT AND RATED FOR OPERATING PRESSURE OF THE SYSTEM PROTECTED

drawing title <b>FLOW DIAGRAMS</b>			<b>STATE OF CONNECTICUT</b> DEPARTMENT OF ADMINISTRATIVE SERVICES		
REVISIONS			drawing prepared by <b>EBD ENGINEERING</b> 31-33 NORTH MAIN STREET MARLBOROUGH, CT 06447		
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1			02/20/2020	N/A	GSH
project <b>PARKING LOT RECONFIGURATION/ EXPANSION PROJECT</b> 505 HUDSON STREET HARTFORD, CT			approved by GSH	drawing no. <b>MP.01</b>	
CAD no.			project no. BI-2B-386		





SMS #1

NEW SNOW MELT SENSOR TO BE FURNISHED AND INSTALLED BY CONTRACTOR IN NEW PEDESTRIAN RAMP AND WIRED BACK TO THE TRANE TRACER CONTROL PANEL IN THE PUMP ROOM

**SEQUENCE OF OPERATIONS**

- 1) SYSTEM SHALL BE SEMI-AUTOMATIC
- 2) BUILDING MANAGER SHALL INITIATE SYSTEM OPERATION
- 3) BUILDING MANAGEMENT SYSTEM (BMS) SHALL ENABLE SYSTEM OPERATION AT USER-ADJUSTABLE OUTDOOR AIR SETPOINT
- 4) BMS SHALL MONITOR SLAB TEMPERATURE AND MOISTURE SENSOR AND INITIATE OPERATION ON USER-ADJUSTABLE TEMPERATURE SETPOINT AND PRESENCE OF MOISTURE
- 5) BMS SHALL MONITOR SLAB TEMPERATURE AND SHALL MODULATE THE NEW HOT WATER CONTROL VALVE TO MAINTAIN THE USER-ADJUSTABLE SLAB TEMPERATURE
- 6) BMS SHALL MAINTAIN A USER-ADJUSTABLE TIMER THAT WILL DISABLE THE SYSTEMS OPERATION AFTER NO DETECTION OF MOISTURE FOR A USER-ADJUSTABLE PERIOD OF TIME
- 7) GLYCOL PUMP VFD SPEED SHALL BE SET BY THE BALANCER DURING INSTALLATION AND COMMISSIONING TO A PRESET LEVEL TO ACHIEVE THE DESIGN FLOW WITH ALL CIRCUITS IN OPERATION

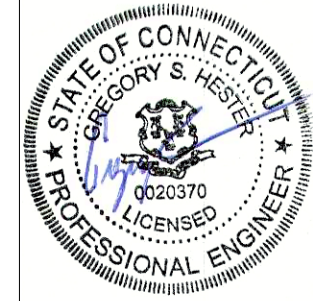
## GLYCOL SNOW MELT SYSTEM CONTROL INSTRUMENT LOCATION DETAIL

### 505 HUDSON STREET, HARTFORD, CONNECTICUT SNOW MELT SYSTEM - CONTROL POINTS LIST

POINT ABBREVIATION	TAG	AI	DI	AO	DO	MODBUS	POINT DESCRIPTION	TREND	GRAPHICS
HWS	TT-01	X					HOT WATER SUPPLY TEMPERATURE TO SNOW MELT HX	X	X
HWR	TT-02	X					HOT WATER RETURN TEMPERATURE FROM SNOW MELT HX	X	X
GLYS #1	TT-03	X					GLYCOL SUPPLY TEMPERATURE TO SNOW MELT SYSTEM	X	X
GLYR #1	TT-04	X					GLYCOL RETURN TEMPERATURE FROM SNOW MELT SYSTEMS	X	X
HWCVL				X			HOT WATER CONTROL VALVE SIGNAL	X	X
GLYSTS						X	GLYCOL PUMP STATUS	X	X
GLYEN						X	GLYCOL PUMP ENABLE/DISABLE	X	X
GLYCSPEED						X	GLYCOL PUMP SPEED SIGNAL	X	X
SMS #1		X					SNOW MELT SENSOR #1 STATUS (VEHICLE RAMP)	X	X

- NOTES:**
- 1) ALL SENSORS AND EQUIPMENT ARE LOCATED ON LOWER LEVEL OF GARAGE
  - 2) CONTRACTOR SHALL DEMOLISH AND REMOVE EXISTING SENSORS AND VALVES
  - 3) CONTRACTOR TO FURNISH AND INSTALL ALL WELLS, TEMPERATURE TRANSMITTERS, VFD'S, SNOW MELT SENSORS, WIRING, CONDUIT AND CONTROL VALVES FOR FULLY FUNCTIONAL SYSTEM
  - 4) CONTRACTOR SHALL MODIFY THE EXISTING TRANE TRACER CONTROL SYSTEM AS NECESSARY TO ALLOW FOR THE INSTALLATION OF THE CONTROL POINTS LISTED HERE
  - 5) VERIFY ALL ELECTRICAL REQUIREMENTS WITH VENDOR

drawing title <b>CONTROLS</b>			<b>STATE OF CONNECTICUT</b> DEPARTMENT OF ADMINISTRATIVE SERVICES		
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1			<b>EBD ENGINEERING</b> 31-33 NORTH MAIN STREET MARLBOROUGH, CT 06447	02/20/2020	
			project	scale	
			<b>PARKING LOT RECONFIGURATION/ EXPANSION PROJECT</b> 505 HUDSON STREET HARTFORD, CT	N/A	
			drawn by	approved by	
			GSH	GSH	
			drawing no.		
					<b>MP6.02</b>
			CAD no.	project no.	
				BI-2B-386	





**GENERAL DRAWING NOTES :**

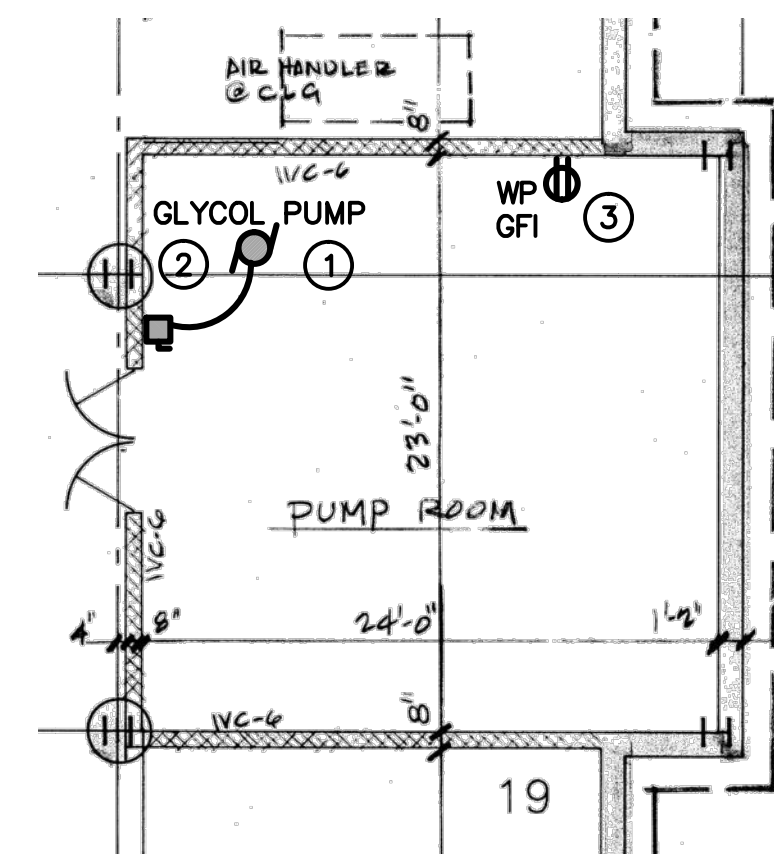
- A. THE PARKING GARAGE IS A WET LOCATION. ALL WIRING METHODS, JUNCTION BOXES AND WIRE USED WITHIN THE GARAGE ARE TO BE WET LOCATION RATED.
- B. ALL CONDUIT IN THE GARAGE IS TO BE RIGID GALVANIZED STEEL.

**DRAWING KEY NOTES :**

- ① DISCONNECT EXISTING INLINE CIRCULATOR PUMP AND REMOVE EXISTING FEEDER AND ACROSS THE LINE STARTER. FEEDER AND DISCONNECT TO REMAIN.
- ② FEEDER TO NEW GLYCOL CIRCULATOR PUMP. FEED VFD MOUNTED ON PUMP FROM EXISTING DISCONNECT SWITCH WITH 3#12 & 1#12 GND IN 3/4" C.
- ③ PROVIDE ONE (1) GROUND FAULT RECEPTACLE ADJACENT TO GLYCOL FEEDER AT 42" AFF. CONNECT RECEPTACLE TO NEAREST NEAREST GENERAL PURPOSE OUTLET BRANCH CIRCUIT.

**GENERAL PROJECT NOTES:**

- 1. EXISTING CONDITIONS NOT GENERALLY SHOWN. CONTRACTOR SHALL VERIFY ALL CONDITIONS IN FIELD PRIOR TO SUBMISSION OF BID.
- 2. COORDINATE SCOPE OF DEMOLITION WORK WITH DRAWINGS OF OTHER TRADES.
- 3. DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CONTRACTOR SHALL:
  - A. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS AND OTHER TRADES RELATING TO WORK TO VERIFY SPACE IN WHICH WORK WILL BE INSTALLED. MAINTAIN HEADROOM AND MINIMUM CODE REQUIRED WORKING CLEARANCES AT ALL TIMES.
  - B. FURNISH AND INSTALL ALL NECESSARY OUTLETS, SUPPORTS, PULLBOXES, CONDUITS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES, REGULATIONS, BUILDING STANDARDS AND THE BEST PRACTICES OF THE TRADE FOR INSTALLATION OF WORK.
- 4. DRAWINGS INDICATE SIZE AND GENERAL LOCATION OF WORK. SCALED DIMENSIONS SHALL NOT BE USED.
- 5. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD MEASUREMENTS AND VERIFICATION OF FIELD CONDITIONS PRIOR TO INSTALLATION OF WORK. ANY CHANGES IN WORK NECESSITATED BY FAILURE OF THE CONTRACTOR TO COMPLY WITH THIS PROVISION SHALL BE UNDERTAKEN BY THE CONTRACTOR AT HIS OWN EXPENSE.
- 6. ALL NECESSARY CUTTING AND PATCHING FOR WORK OF THIS CONTRACT SHALL BE BY THE CONTRACTOR. PRIOR TO PERFORMING ANY CHASING, CHOPPING OR CORE DRILLING, THE CONTRACTOR SHALL FIELD INVESTIGATE CONDITIONS AND COORDINATE WITH ALL APPROPRIATE TRADES TO ENSURE THAT WORK WILL BE IN HARMONY WITH OTHER WORK AND NOT AFFECT ANY EXISTING SYSTEMS. WORK ON EXISTING SYSTEMS MUST BE APPROVED BY THE OWNER PRIOR TO PROCEEDING.
- 7. CONTRACTOR SHALL COORDINATE WORK WITH OTHER TRADES FOR EXACT LOCATIONS OF ALL EQUIPMENT AND CONTROL DEVICES. LOCATIONS AS SHOWN ON ELECTRICAL DRAWINGS ARE APPROXIMATE.
- 8. OPENINGS AROUND ELECTRICAL PENETRATIONS THROUGH FIRE RESISTANCE RATED WALLS, PARTITIONS, FLOORS OR CEILINGS SHALL BE FIRE STOPPED USING APPROVED METHODS. SEALANT SHALL BE RATED FOR THREE (3) HOURS.
- 9. ALL EQUIPMENT, DEVICE BOXES, JUNCTION BOXES, PULLBOXES AND OUTLET BOXES SHALL BE INSTALLED SO AS TO ALLOW ACCESS TO THE COVER. IF NECESSARY AND APPROVED BY ENGINEER, PROVIDE ACCESS DOORS OR COVER PLATES IN AREAS WHERE UNOBSTRUCTED ACCESS IS NOT POSSIBLE.

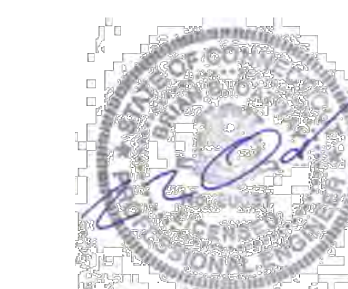
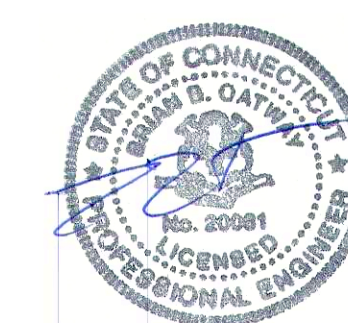


**LOWER LEVEL PART PLAN**  
1/8"=1'-0"

ELECTRICAL SYMBOL LIST	
	MOTOR OR MOTORIZED EQUIPMENT
	HEAVY DUTY FUSED DISCONNECT SWITCH, NEMA TYPE 3R FOR WET LOCATION. PROVIDE FUSES AS REQUIRED.
	HOMERUN, TOP NUMBER INDICATES PANEL, BOTTOM NUMBER INDICATES BREAKER SIZE. WIRE IS 2#12 & 1#12 GND IN 3/4" UNLESS NOTED OTHERWISE.
	JUNCTION BOX SIZED AS REQUIRED BY NEC
	LIGHT SWITCH, HUBBELL HBL1221. SUBLETTER "3" INDICATES 3-WAY, SUBLETTER "PL" INDICATES PILOT LIGHT. SUBLETTER "M" INDICATES MOTION SENSOR. SUBLETTER "EPO" INDICATES EMERGENCY POWER OFF. SUBLETTER "PB" INDICATES PUSHBUTTON, SUBLETTER "TM" INDICATES TIMER SWITCH (WATSTOPPER # TS-200), MOUNT SWITCHES AT 48" AFF UNLESS NOTED OTHERWISE
	120/208V PANELBOARD

ABBREVIATIONS			
ABBV.	DESCRIPTION	ABBV.	DESCRIPTION
TYP.	TYPICAL	WP	WATER PROOF
E.C.	ELECTRICAL CONTRACTOR	TP	TAMPER PROOF
F.A.	FIRE ALARM	GFI	GROUND FAULT INTERRUPTER
U.O.N.	UNLESS OTHERWISE NOTED	AFG	ABOVE FINISHED GRADE
CLG.	CEILING	RM	REMOVE
REQD.	REQUIRED	N	NEW
MTD.	MOUNTED	EX	EXISTING
MIN.	MINIMUM	RL	EXISTING TO BE RELOCATED
C/B	CIRCUIT BREAKER	NL	NEW LOCATION
AFF	ABOVE FINISHED FLOOR	EM	CONNECTION TO EMERGENCY POWER
WG	WIRE GUARD		

LINE REPRESENTATION	
	NEW BURIED WIRING
	NEW WIRING/EQUIPMENT
	EXISTING WIRING/EQUIPMENT
	DEMOLISH WIRING/EQUIPMENT



drawing title ELECTRICAL LOWER LEVEL PLAN		STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES	
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drawing prepared by <b>PROGRESSIVE ENGINEERING, INC.</b> 290 SUMMIT AVENUE, EAST HARTFORD, CT 06108 TEL: 860.895.8385 FAX: 860.895.8386		date	
project LOWER GARAGE RAMP RESTORATION 505 HUDSON STREET HARTFORD, CT 06106		scale 1/8" = 1'-0"	
CAD no. 15016 E-2.dwg		drawing no. E1.01	
project no. BI-2B-438		approved by BBO	
		drawing no.	