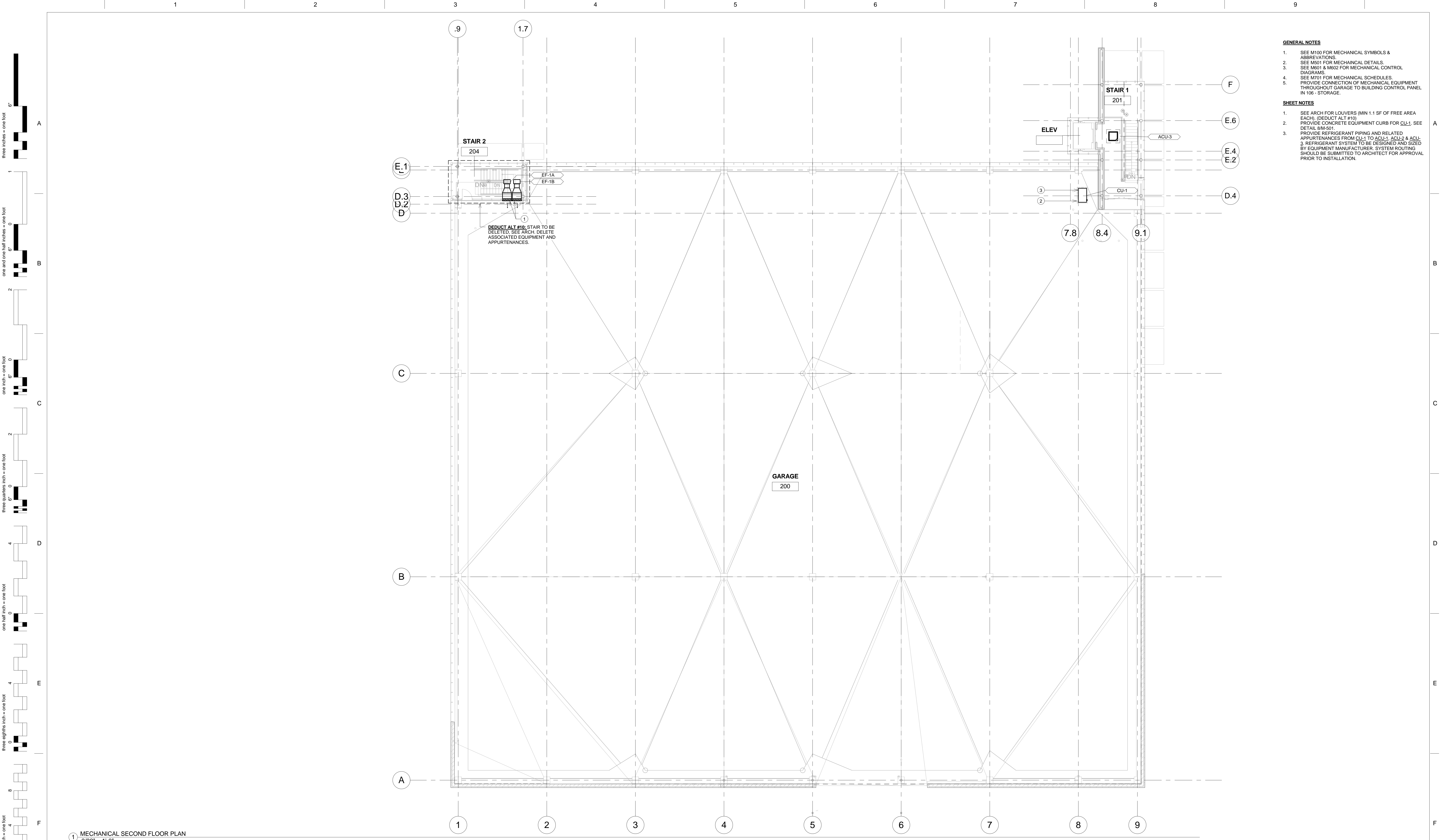


Scale: $3/32" = 1'-0"$

**Office of
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- GENERAL NOTES**
- SEE M100 FOR MECHANICAL SYMBOLS & ABBREVIATIONS.
 - SEE M501 FOR MECHANICAL DETAILS.
 - SEE M601 & M602 FOR MECHANICAL CONTROL DIAGRAM.
 - SEE M701 FOR MECHANICAL SCHEDULES.
 - PROVIDE CONNECTION OF MECHANICAL EQUIPMENT THROUGHOUT GARAGE TO BUILDING CONTROL PANEL IN 105 - STORAGE.
- SHEET NOTES**
- SEE ARCH FOR LOUVERS (MIN 1.1 SF OF FREE AREA EACH). (DEDUCT ALT #10).
 - PROVIDE CONCRETE EQUIPMENT CURB FOR CU-1. SEE DETAIL 8/M-501.
 - PROVIDE REFRIGERANT PIPING AND RELATED APPURTENANCES FROM CU-1 TO ACU-1, ACU-2 & ACU-3. REFRIGERANT SYSTEM TO BE DESIGNED AND SIZED BY EQUIPMENT MANUFACTURER. SYSTEM ROUTING SHOULD BE SUBMITTED TO ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION.

1 MECHANICAL SECOND FLOOR PLAN
3/32" = 1'-0"

No.	Description	Date
	FINAL SUBMISSION	9/24/2013
Revisions:		Date

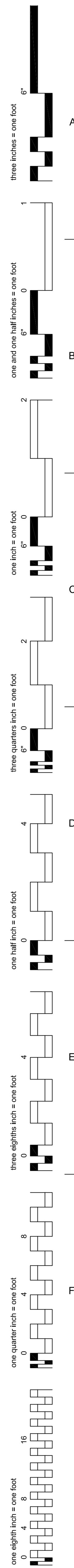
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		Westlake Reed Leskosky	MECHANICAL LEVEL 2 PLAN		VA Erie Parking Structure		11159.00		
							Building Number		
			Approved: Project Director		Location Erie, PA		Drawing Number		
							M102		
		The Huntington Building 925 Euclid Avenue, Suite 1900 Cleveland, Ohio 44115-1407 216.522.1350			Date 9/24/2013	Checked SCS	Drawn CJW		Department of Veterans Affairs

FINAL SUBMISSION

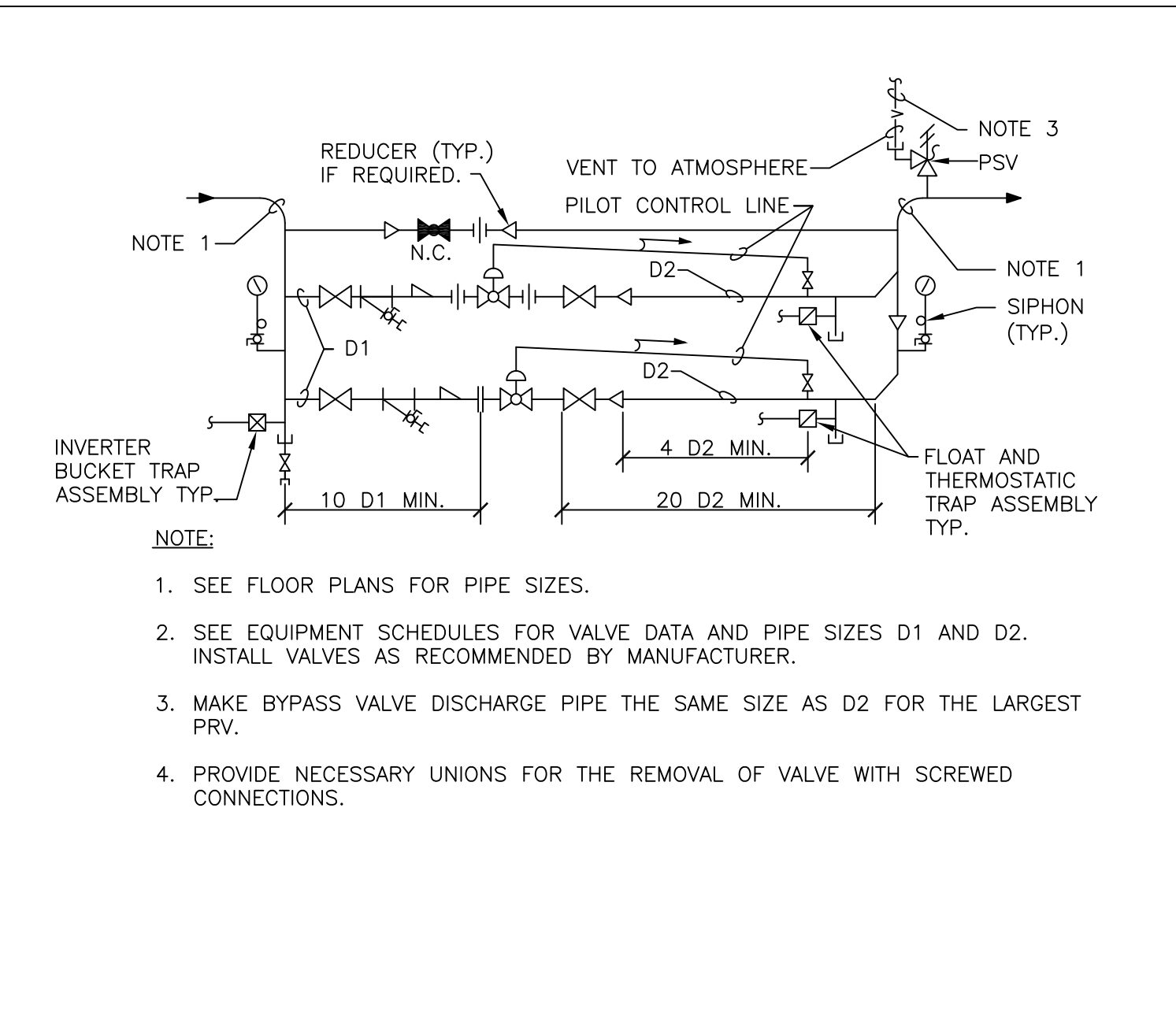
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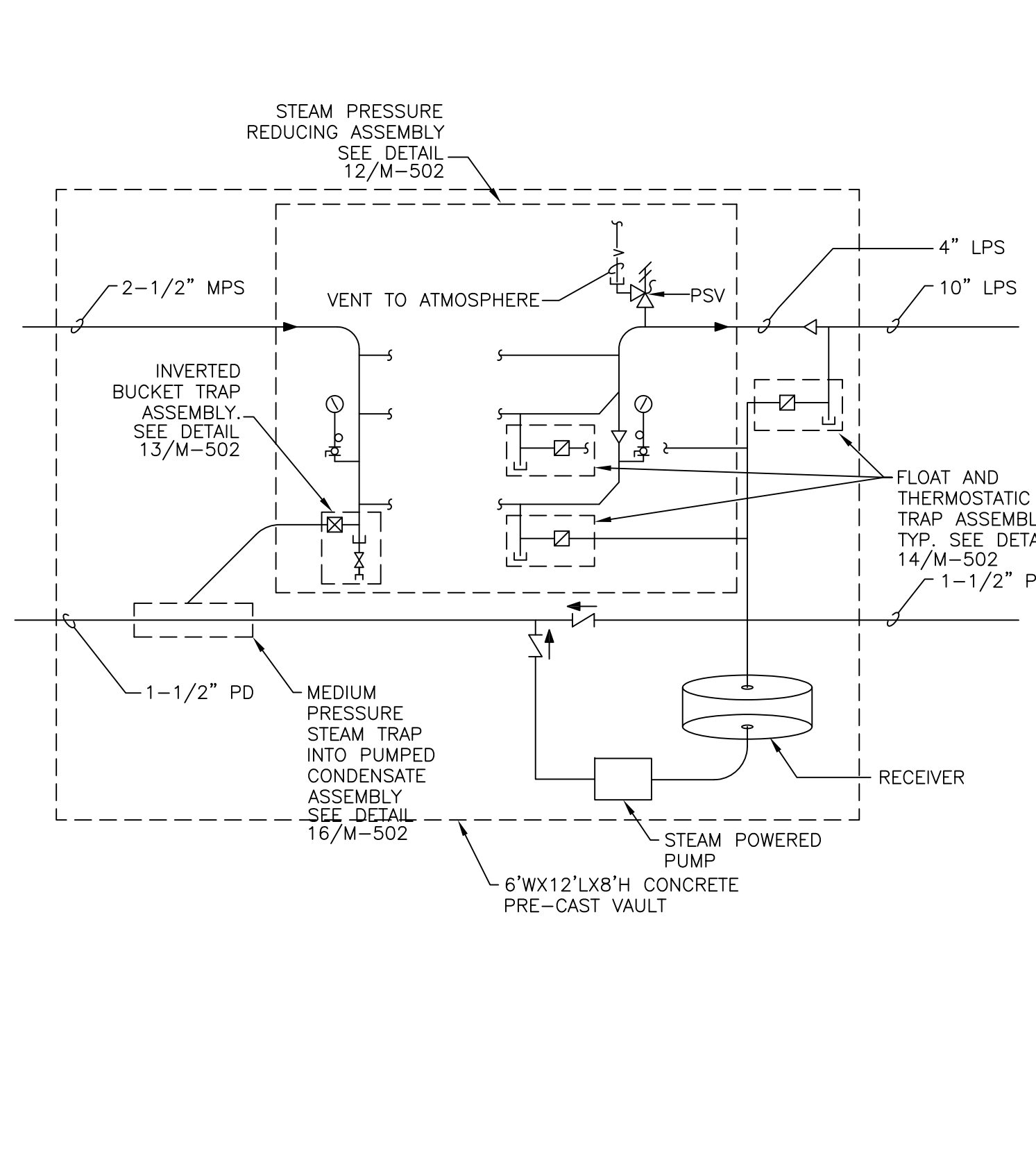
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		Westlake Reed Leskosky	MECHANICAL DETAILS		VA Erie Parking Structure		11159.00		
			Approved: Project Director		Location Erie, PA		Building Number		
		The Huntington Building 925 Euclid Avenue, Suite 1900 Cleveland, Ohio 44115-1407 216.522.1350	Date 9/24/2013		Checked SCS	Drawn CJW	Drawing Number M501		



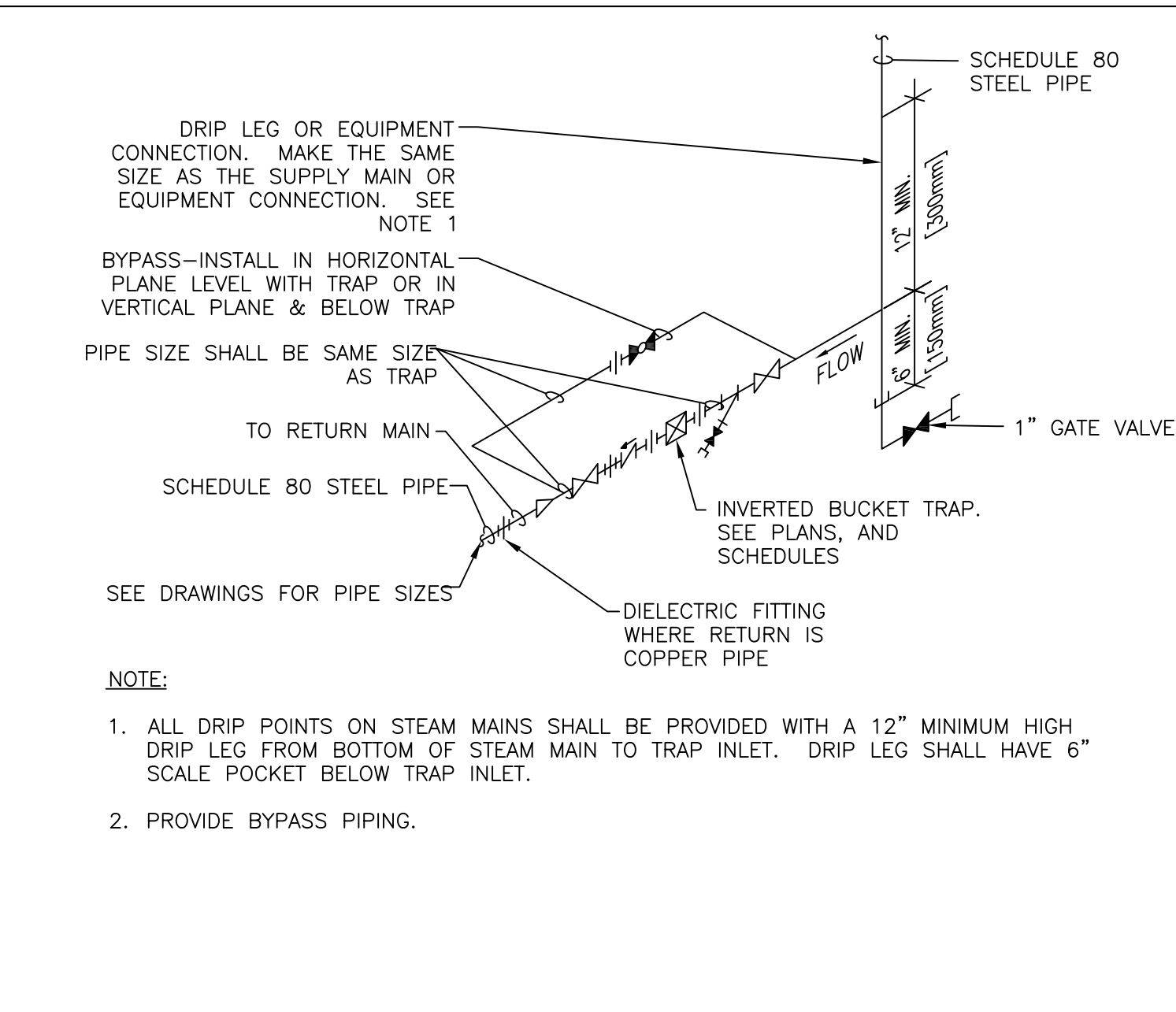
12
STEAM PRESSURE REDUCING STATION DOUBLE VALVE (1/3 AND 2/3)



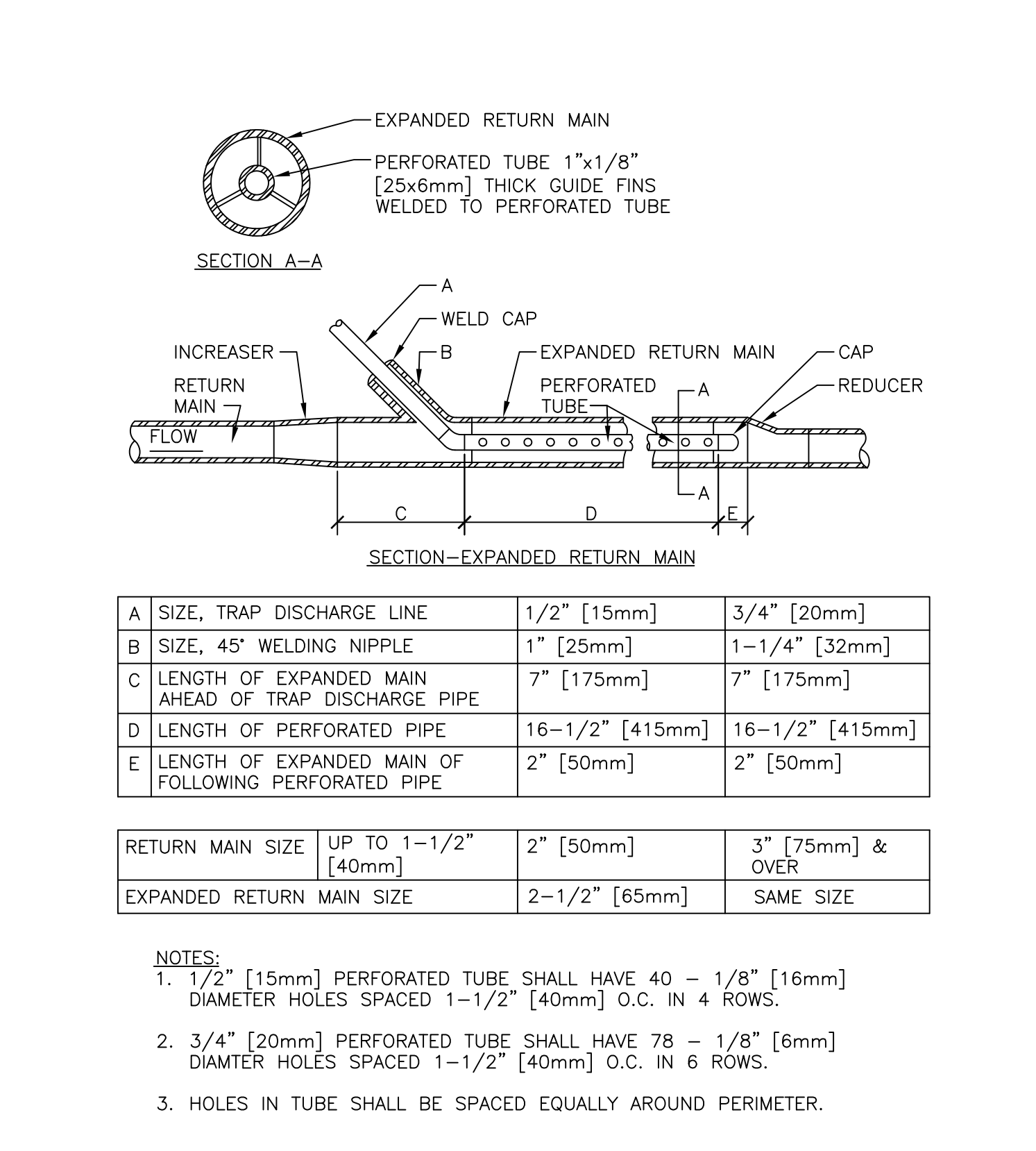
15
STEAM PRESSURE REDUCING VAULT PIPING SCHEMATIC



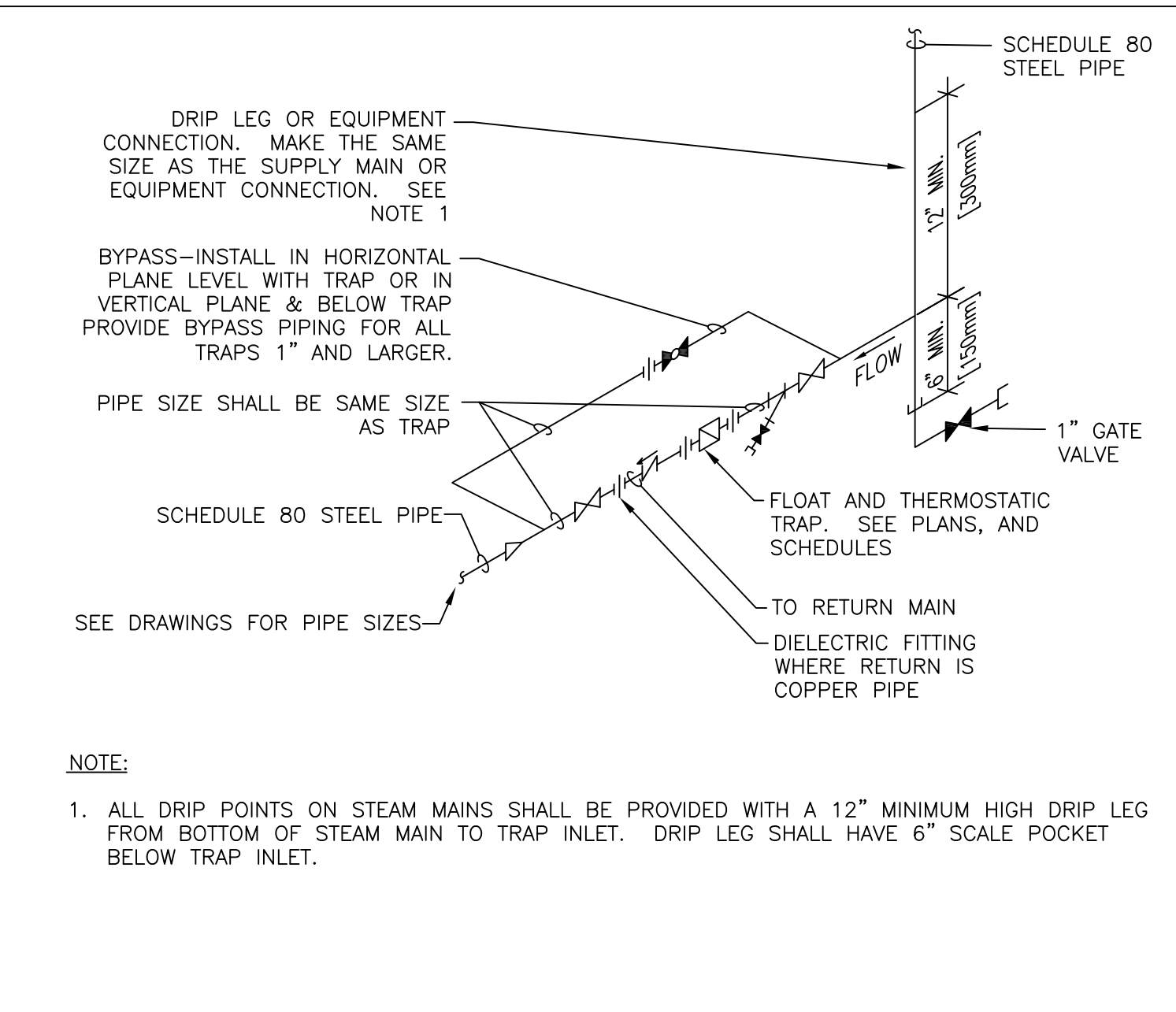
13
INVERTED BUCKET TRAP ASSEMBLY



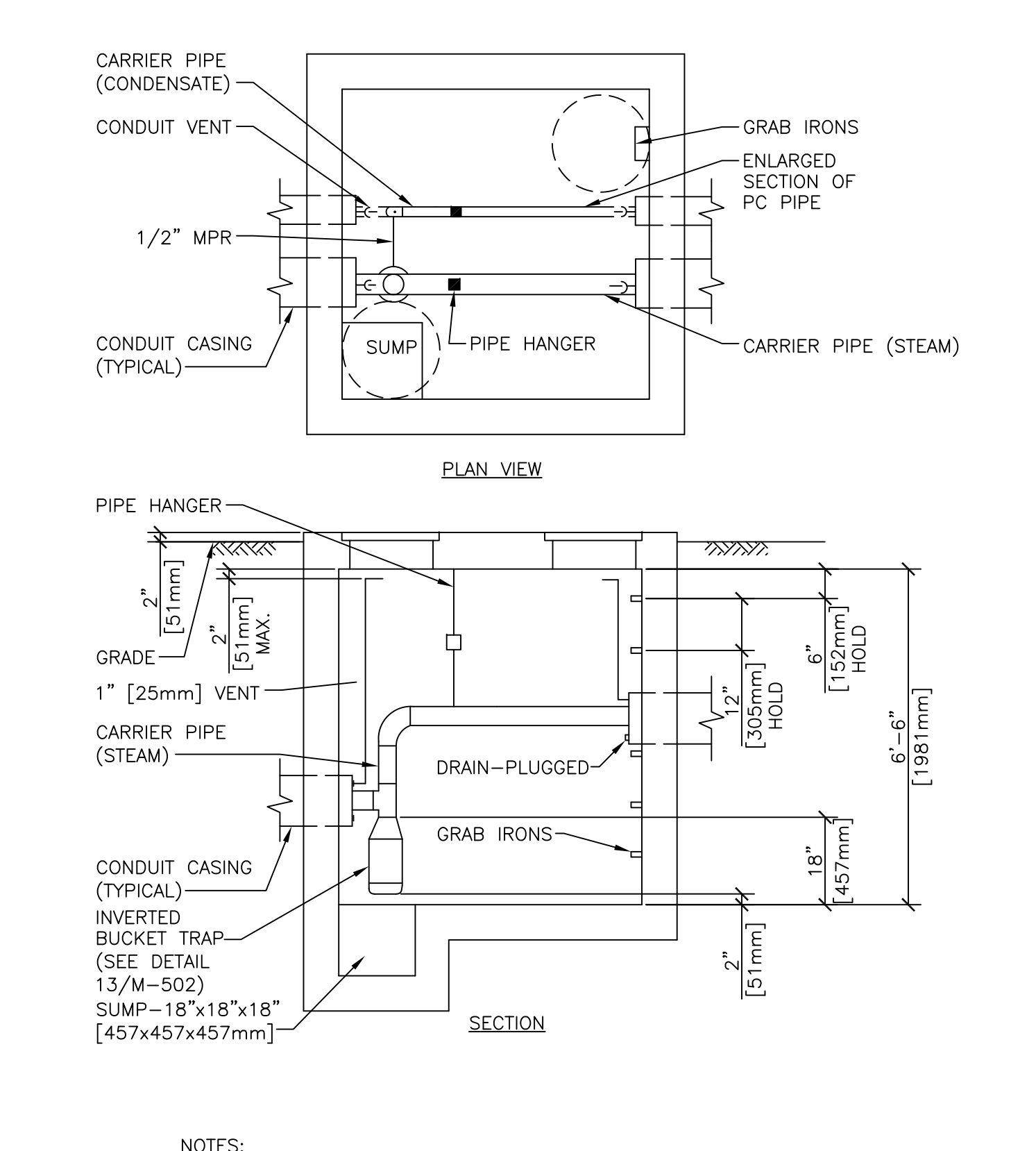
16
HIGH AND MEDIUM PRESSURE STEAM TRAP DISCHARGE INTO PUMPED CONDENSATE RETURN LINE



14
FLOAT AND THERMOSTATIC STEAM TRAP ASSEMBLY

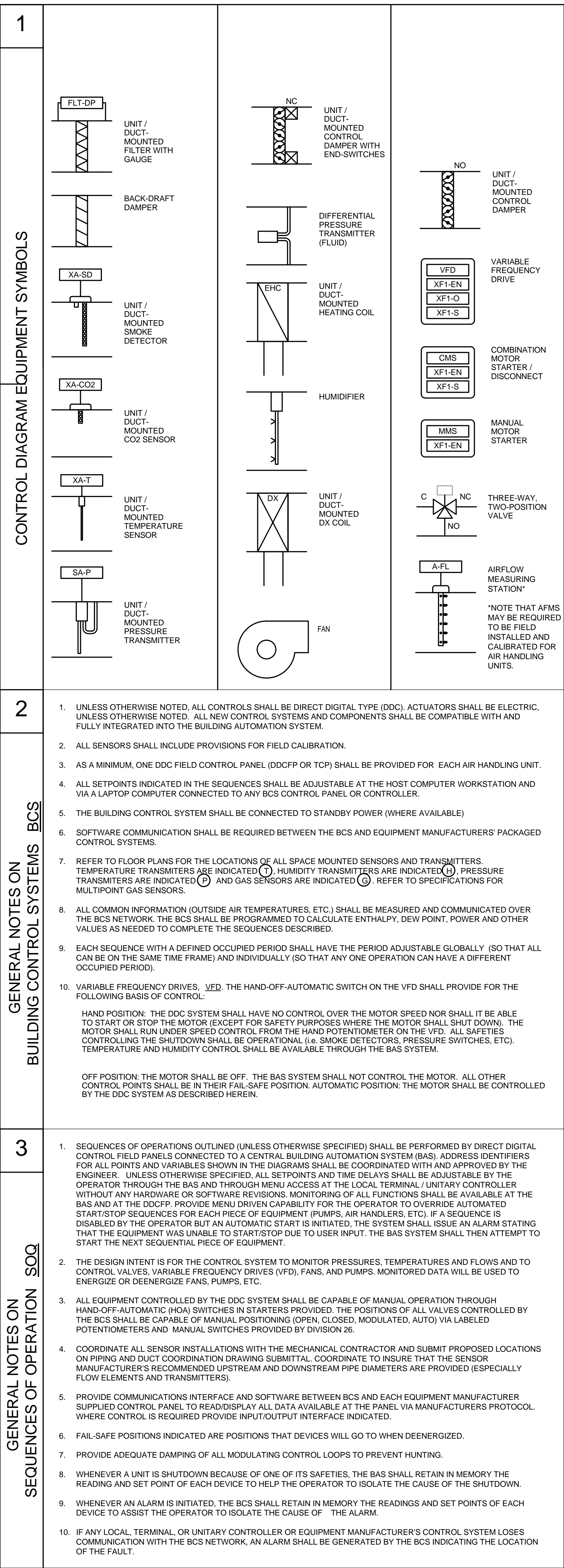
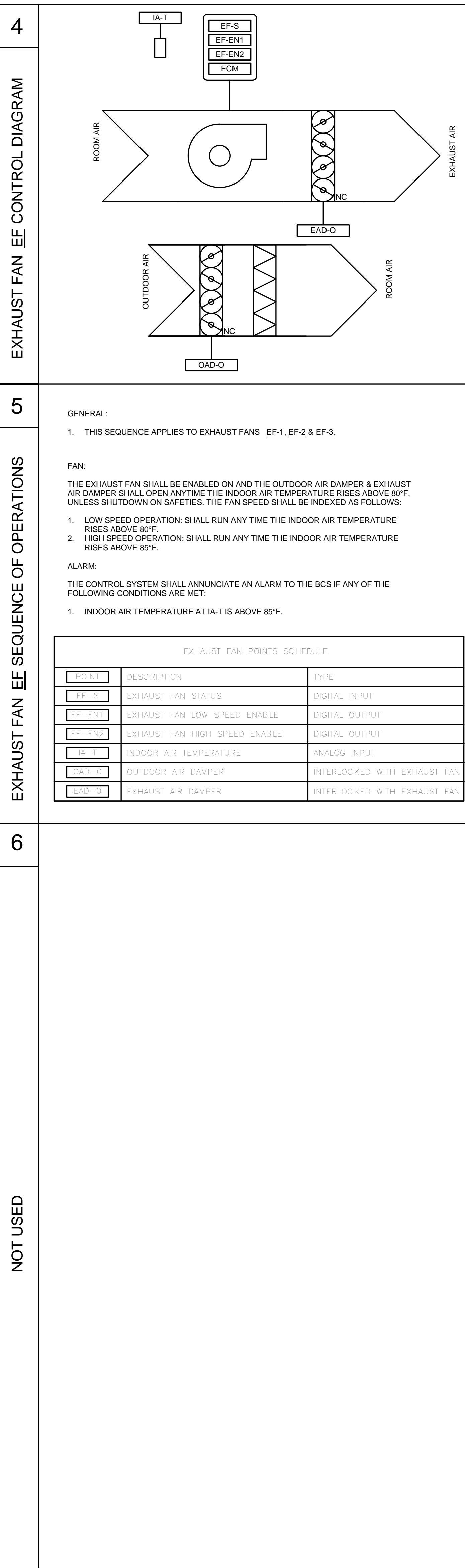
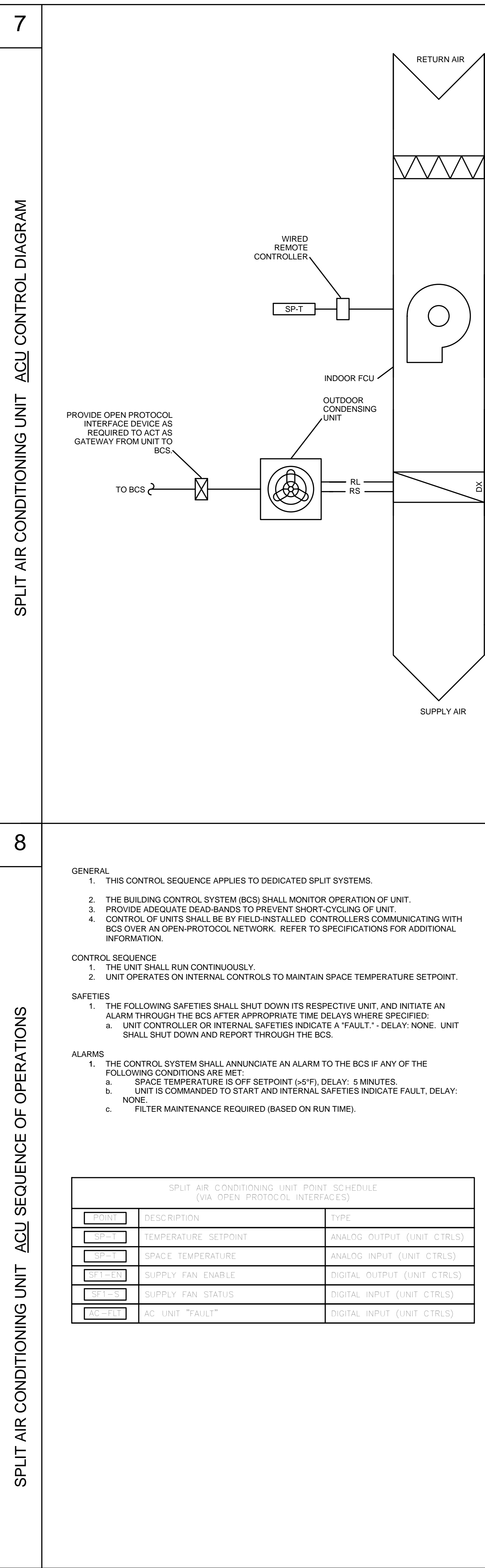
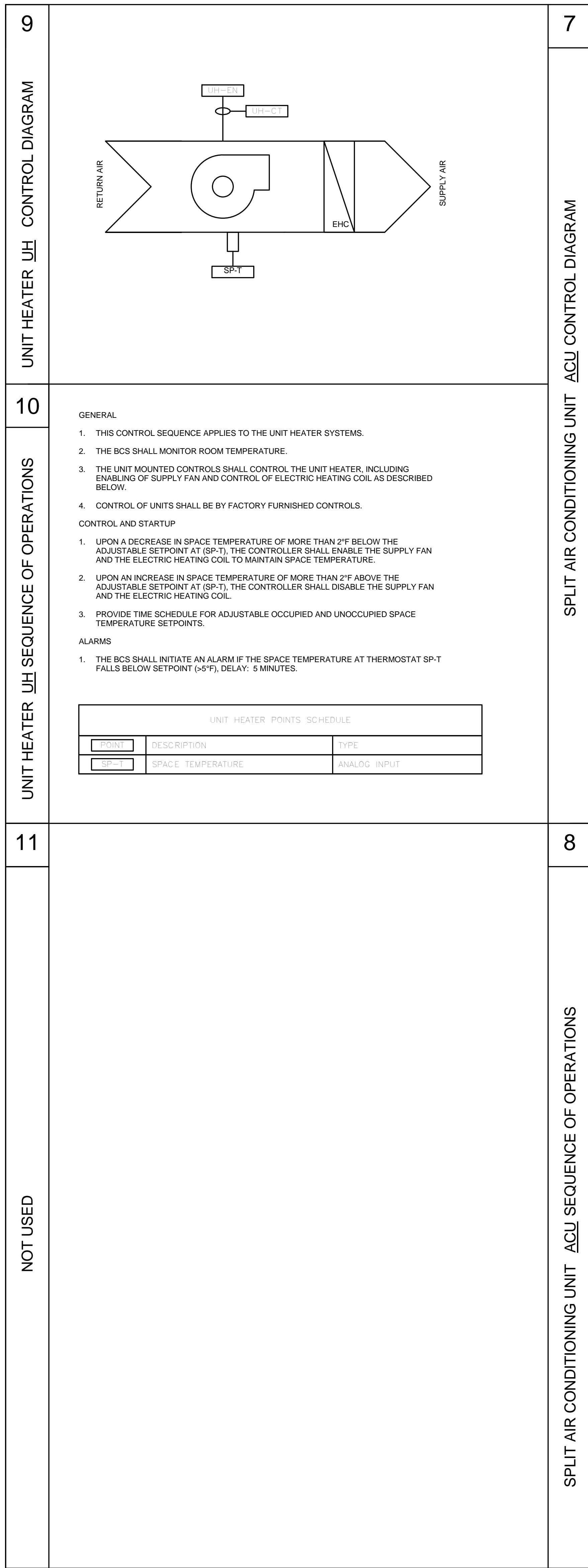


17
PRECAST CONCRETE MANHOLE DETAIL



No.	Description	Date	CONSULTANTS		ARCHITECT/ ENGINEERS		Drawing Title		Project Title		Project Number	
	FINAL SUBMISSION	9/24/2013			Westlake Reed Leskosky		MECHANICAL DETAILS		VA Erie Parking Structure		11159.00	
Revisions:					The Huntington Building 925 Euclid Avenue, Suite 1900 Cleveland, Ohio 44115-1407 216.522.1350		Approved: Project Director		Location Erie, PA		Building Number	
									Date 9/19/2013		Drawing Number M502	
									Checked SCS		Drawn CJW	
											Office of Construction and Facilities Management Department of Veterans Affairs	

FINAL SUBMISSION



No.	Description	Date
	FINAL SUBMISSION	9/24/2013
Revisions:		Date

CONSULTANTS

ARCHITECT/ ENGINEERS
Westlake Reed Leskosky

The Huntington Building
925 Euclid Avenue, Suite 1900
Cleveland, Ohio
44115-1407
216.522.1350

Drawing Title

MECHANICAL CONTROL
DIAGRAMS

Approved: Project Director

Project Title	VA Erie Parking Structure
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Location
Erie, PAChecked
SCS

Drawn
C.JW

Project Number
11159.00

Building Number

Drawing Number

M601

**Office of
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Scale:



- | VRF INDOOR UNIT POINT SCHEDULE | | |
|--------------------------------|----------------------------|----------------------------|
| POINT | DESCRIPTION | TYPE |
| FLT1-DP | FILTER DIFF. PRESS. STATUS | DIGITAL INPUT (BY MANUF.) |
| FCU1-EN | INDOOR UNIT ENABLE | DIGITAL OUTPUT (BY MANUF.) |
| FCU1-S | INDOOR UNIT STATUS | DIGITAL INPUT (BY MANUF.) |
| FCU1-FS | INDOOR UNIT FAN SPEED | ANALOG INPUT (BY MANUF.) |
| FCU1-T | ROOM SETPOINT | ANALOG OUTPUT (BY MANUF.) |
| SP1-T | SPACE TEMPERATURE | ANALOG INPUT (BY MANUF.) |
| FCU1-CT | CURRENT/ENERGY | ANALOG INPUT (BY MANUF.) |
| FLT2-DP | FILTER DIFF. PRESS. STATUS | DIGITAL INPUT (BY MANUF.) |
| FCU2-EN | INDOOR UNIT ENABLE | DIGITAL OUTPUT (BY MANUF.) |
| FCU2-S | INDOOR UNIT STATUS | DIGITAL INPUT (BY MANUF.) |
| FCU2-FS | INDOOR UNIT FAN SPEED | ANALOG INPUT (BY MANUF.) |
| FCU2-T | ROOM SETPOINT | ANALOG OUTPUT (BY MANUF.) |
| SP2-T | SPACE TEMPERATURE | ANALOG INPUT (BY MANUF.) |
| FCU2-CT | CURRENT/ENERGY | ANALOG INPUT (BY MANUF.) |

POINT	DESCRIPTION	TYPE
COMP1-0	COMPRESSOR 1 RUN	DIGITAL OUTPUT (BY MANUF.)
COMP2-0	COMPRESSOR 2 RUN	DIGITAL OUTPUT (BY MANUF.)
RV1-0	REVERSING VALVE 1 POSITION	DIGITAL OUTPUT (BY MANUF.)
RV2-0	REVERSING VALVE 2 POSITION	DIGITAL OUTPUT (BY MANUF.)
FLT1-1	FAULT 1	ANALOG INPUT (BY MANUF.)
FLT2-1	FAULT 2	ANALOG INPUT (BY MANUF.)
HRP1-1	HIGH REFRIGERANT PRESSURE ALARM	DIGITAL INPUT (BY MANUF.)
HRP2-1	HIGH REFRIGERANT PRESSURE ALARM 2	DIGITAL INPUT (BY MANUF.)
LRP1-1	LOW REFRIGERANT PRESSURE ALARM 1	DIGITAL INPUT (BY MANUF.)
LRP2-1	LOW REFRIGERANT PRESSURE ALARM 2	DIGITAL INPUT (BY MANUF.)

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Approved: Project Director


Drawn
C. IW

Drawing Number

M602

Scale:

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VARIABLE REFRIGERANT FAN COIL SCHEDULE													
MARK	AREA SERVED	FAN		COOLING	HEATING	ELECTRICAL			OPERATING WEIGHT (LBS)	MFG	MODEL	NOTES	
		MAX FLOW (CFM)	MIN FLOW (CFM)	TOT. CAP. (BTU/H)	TOT. CAP. (BTU/H)	VOLT.	PH.	MCA (A)					MFA (A)
ACU-1	112 ELEV. EQUIP	300	180	12000	13500	208	1	0.4	15.0	25	DAIKIN AC (AMERICAS), INC.	FXA012MVJU	1, 2
ACU-2	STAIR 1	990	740	36000	40000	208	1	1.4	15.0	77	DAIKIN AC (AMERICAS), INC.	FXF036MVJU	1
ACU-3	STAIR 1	990	740	36000	40000	208	1	1.4	15.0	77	DAIKIN AC (AMERICAS), INC.	FXF036MVJU	1

NOTES:

1. PROVIDE WITH CONDENSATE PUMP.
2. DEDUCT ALT #9 - ELEVATOR SHAFT TO BE SHELL. REMOVE ACU-1, CAP AND VALVE REFRIGERANT PIPING AND RELATED APPURTENANCES FOR FUTURE ACU IN 102 - ELEV EQUIP.

VARIABLE REFRIGERANT CONDENSING UNIT SCHEDULE																
MARK	LOCATION	COOLING		DESIGN AMBIENT TEMP. (°F)	HEATING		DESIGN AMBIENT TEMP. (°F)	OPERATING WEIGHT (LBS)	ELECTRICAL					Manufacturer	MODEL	NOTES
		TOT. CAP. (BTU/H)	EER		TOT. CAP. (BTU/H)	COP			VOLT.	PHA	MCA (A)	MFA (A)	RLA (A)			
CU-1	203 GARAGE	70000	12.6	95	77000	3.5	47	732	460	3	16	20	9	DAIKIN AC (AMERICAS), INC.	REYQ72PAYD	1, 2, 3, 4, 5

NOTES:

1. PROVIDE WITH LOW-AMBIENT OPTION.
2. DISCONNECT & STARTER BY ELECTRICAL CONTRACTOR.
3. PROVIDE WITH RUBBER ISOLATOR KIT.
4. ALL REFRIGERANT PIPING FROM CONDENSING UNIT TO A/C UNITS SHALL BE DESIGNED AND SIZED BY EQUIPMENT MANUFACTURER.
5. CONTRACTOR SHALL BE CERTIFIED BY EQUIPMENT MANUFACTURER FOR INSTALLATION OF SYSTEM.

FAN SCHEDULE										
Mark	Air Flow Rate	Static Pressure	Fan RPM	Drive Type	BHP	Voltage	Phase	Manufacturer	MODEL	Notes
EF-1A	1000 CFM	0.45 in-wg	1450	Direct	1.05	115 V	1	Greenheck	SP-A1410	Provide w/ Integral Backdraft Damper, Grille Filter and Isolation Kit
EF-1B	1000 CFM	0.45 in-wg	1450	Direct	1.05	115 V	1	Greenheck	SP-A1410	Provide w/ Integral Backdraft Damper, Grille Filter and Isolation Kit
EF-2	1000 CFM	0.40 in-wg	1725	Direct	0.12	115 V	1	Greenheck	SE1-12-436-VG	Provide w/ Wall Housing, MOD & Damper Guard.
EF-3	1000 CFM	0.40 in-wg	1725	Direct	0.12	115 V	1	Greenheck	SE1-12-436-VG	Provide w/ Wall Housing, MOD & Damper Guard.
SF-1	50 CFM	0.05 in-wg	1350	Direct	0.02	115 V	1	Greenheck	SS1-8-440-G	Provide w/ Wall Housing, Gravity Damper, Damper Guard & Flat Filter.
SF-2	50 CFM	0.05 in-wg	1350	Direct	0.02	115 V	1	Greenheck	SS1-8-440-G	Provide w/ Wall Housing, Gravity Damper, Damper Guard & Flat Filter.
SF-3	50 CFM	0.05 in-wg	1350	Direct	0.02	115 V	1	Greenheck	SS1-8-440-G	Provide w/ Wall Housing, Gravity Damper, Damper Guard & Flat Filter.

ELECTRIC UNIT HEATER SCHEDULE						
Mark	Area Served	Air Terminal Air Flow	Total Heating Capacity	Voltage	Phase	Manufacturer Model
UH-1	106 - STORAGE	175 CFM	6825.0 Btu/h	277 V	1	TRANE UHAA021
UH-2A	STAIR 2	245 CFM	17065.0 Btu/h	277 V	1	TRANE UHWA-051
UH-2B	STAIR 2	245 CFM	17065.0 Btu/h	277 V	1	TRANE UHWA-051
UH-3	103 - ELECTRICAL	175 CFM	6825.0 Btu/h	277 V	1	TRANE UHAA021
UH-4	107 - EMERGENCY ELECTRICAL	175 CFM	6825.0 Btu/h	277 V	1	TRANE UHAA021

NOTES:

1. PROVIDE WITH BUILT-IN THERMOSTAT CONTROL.

SPLIT SYSTEM INDOOR UNIT SCHEDULE												
Mark	Area Served	Total Cooling Capacity	Energy Efficiency Rating	Seasonal Energy Efficiency Rating	Total Heating Capacity	Coefficient of Performance	Air Terminal Air Flow	Voltage	Phase	Manufacturer	Model	Notes
ACU-5	106 - Storage	15000.0 Btu/h	12.9	21	11580.0 Btu/h	3.99	490 CFM	208 V	1	DAIKIN	FTXG15HVJU	1

NOTES:

1. PROVIDE WITH CONDENSATE PUMP.

SPLIT SYSTEM OUTDOOR UNIT SCHEDULE															
Mark	Equipment Served	Compressor Type	Total Cooling Capacity	Design Ambient Summer Dry Bulb Temperature	Design Ambient Summer Wet Bulb Temperature	Total Heating Capacity	Design Ambient Winter Dry Bulb Temperature	Voltage	Phase	Rated Load Current	Minimum Circuit Current	Maximum Overcurrent Protection	Manufacturer	Model	Notes
CU-2	ACU-5	Inverter	15000.0 Btu/h	75 °F	95 °F	11580.0 Btu/h	47 °F	208 V	1	4.6 A	14.5 A	15 A	DAIKIN	RXG15HVJU	

No.	Description	Date
	FINAL SUBMISSION	9/24/2013
Revisions:		Date

CONSULTANTS

ARCHITECT/ ENGINEERS

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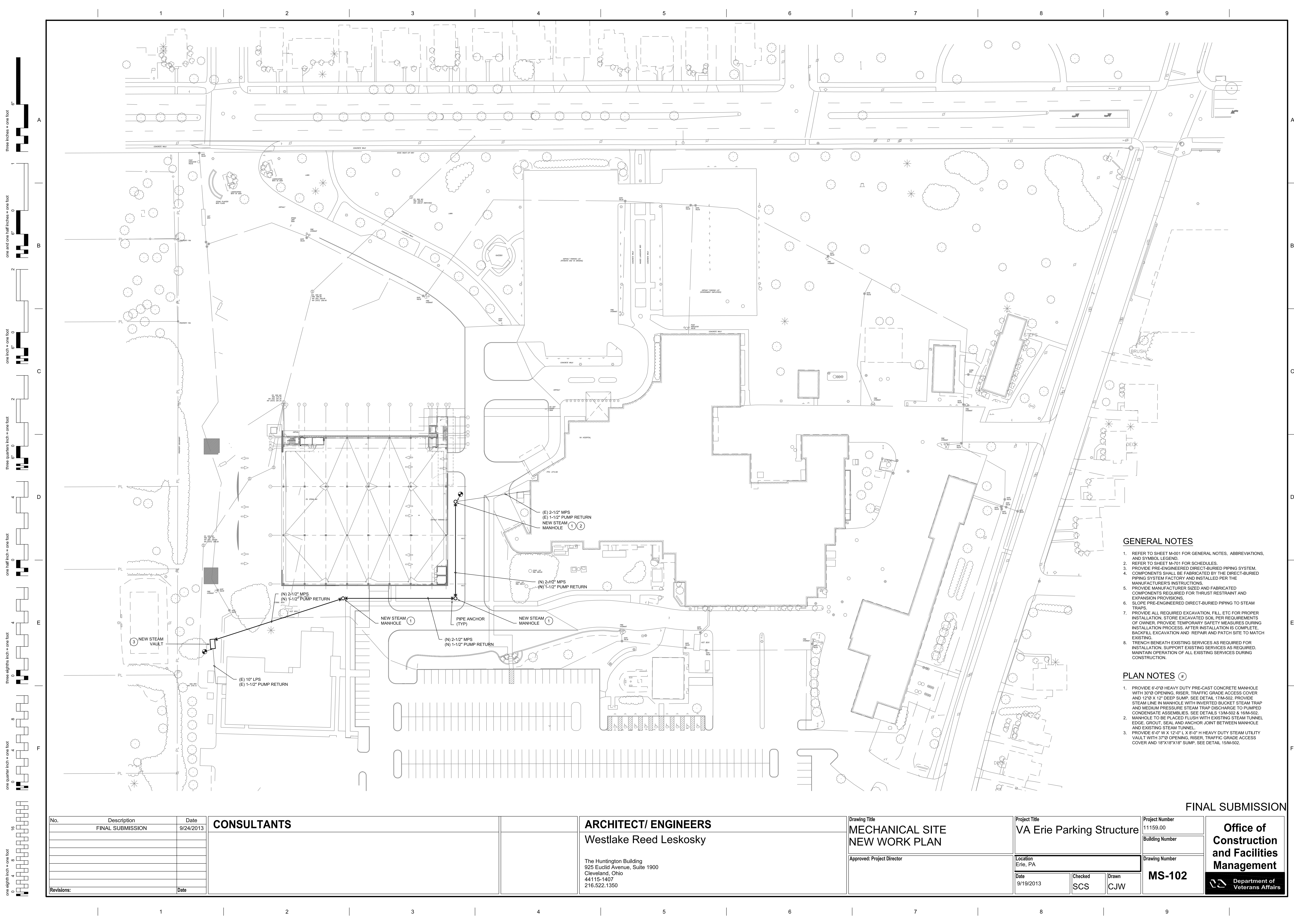
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Approved: Project Director		Location Erie, PA		Building Number		
		Date 9/24/2013		Drawing Number M701		
		Checked SCS	Drawn CJW			

Scale:

**Office of
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FINAL SUBMISSION



GENERAL NOTES

1. REFER TO SHEET M-001 FOR GENERAL NOTES, ABBREVIATIONS, AND SYMBOL LEGEND.
2. REFER TO SHEET M-701 FOR SCHEDULES.
3. PROVIDE PRE-ENGINEERED DIRECT-BURIED PIPING SYSTEM.
4. COMPONENTS SHALL BE FABRICATED BY THE DIRECT-BURIED PIPING SYSTEM FACTORY AND INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS.
5. PROVIDE MANUFACTURER SIZED AND FABRICATED COMPONENTS REQUIRED FOR THRUST RESTRAINT AND EXPANSION PROVISIONS.
6. SLOPE PRE-ENGINEERED DIRECT-BURIED PIPING TO STEAM TRAPS.
7. PROVIDE ALL REQUIRED EXCAVATION, FILL, ETC FOR PROPER INSTALLATION. STORE EXCAVATED SOIL PER REQUIREMENTS OF OWNER. PROVIDE TEMPORARY SAFETY MEASURES DURING INSTALLATION PROCESS. AFTER INSTALLATION IS COMPLETE, BACKFILL EXCAVATION AND REPAIR AND PATCH SITE TO MATCH EXISTING.
8. TRENCH BENEATH EXISTING SERVICES AS REQUIRED FOR INSTALLATION. SUPPORT EXISTING SERVICES AS REQUIRED. MAINTAIN OPERATION OF ALL EXISTING SERVICES DURING CONSTRUCTION.

PLAN NOTES

1. PROVIDE 6'-0"Ø HEAVY DUTY PRE-CAST CONCRETE MANHOLE WITH 30"Ø OPENING, RISER, TRAFFIC GRADE ACCESS COVER AND 12'0" X 12'0" DEEP SUMP. SEE DETAIL 17M-502. PROVIDE STEAM LINE IN MANHOLE WITH INVERTED BUCKET STEAM TRAP AND MEDIUM PRESSURE STEAM TRAP DISCHARGE TO PUMPED CONDENSATE ASSEMBLIES. SEE DETAILS 15M-502 & 16M-502. MANHOLE TO BE PLACED FLUSH WITH EXISTING STEAM TUNNEL EDGE. GROUT, SEAL AND ANCHOR JOINT BETWEEN MANHOLE AND EXISTING STEAM TUNNEL.
2. PROVIDE 6'-0" W X 12'-0" L X 8'-0" H HEAVY DUTY STEAM UTILITY VAULT WITH 37"Ø OPENING, RISER, TRAFFIC GRADE ACCESS COVER AND 18'X18'X18" SUMP. SEE DETAIL 15M-502.

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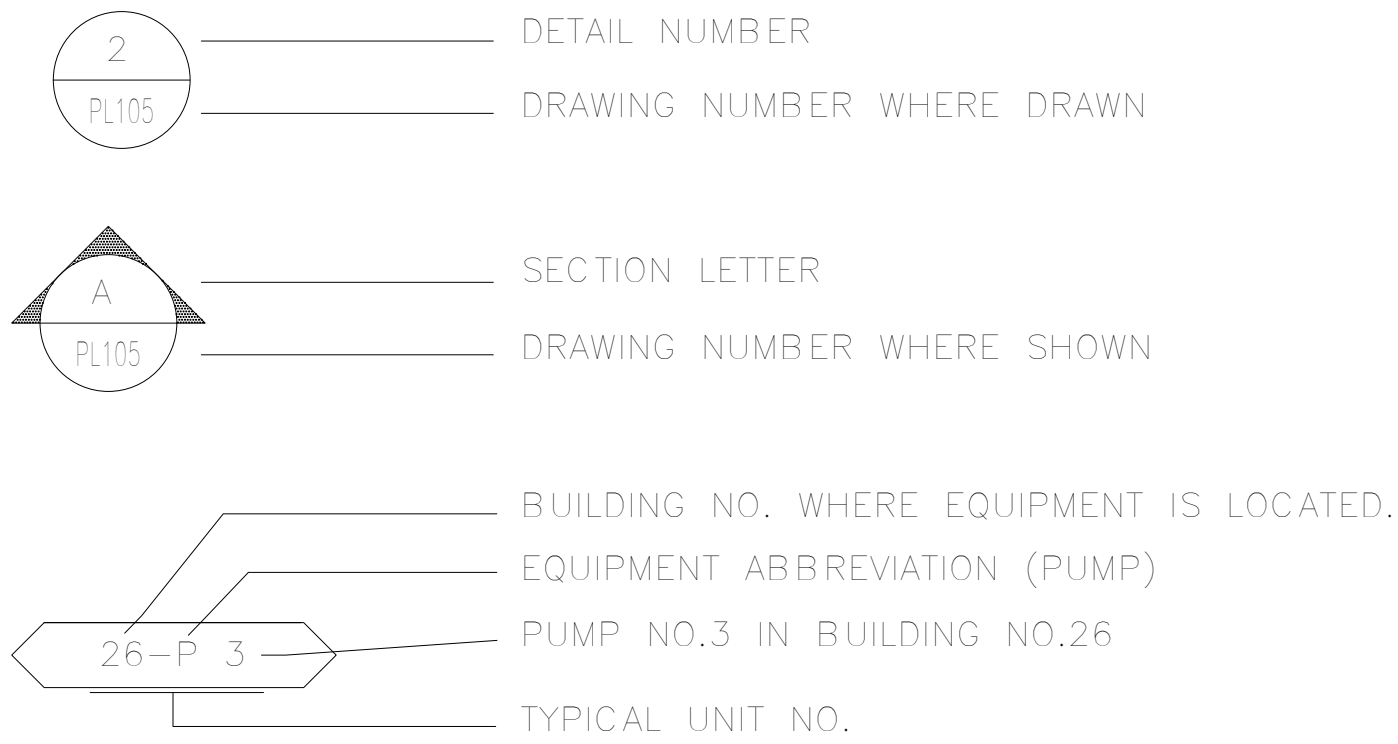
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		FINAL SUBMISSION		9/24/2013								MECHANICAL SITE NEW WORK PLAN		VA Erie Parking Structure		11159.00							
																Building Number							
																Drawing Number							
																MS-102							
Revisions:				Date								Approved: Project Director		Location Erie, PA									

three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot

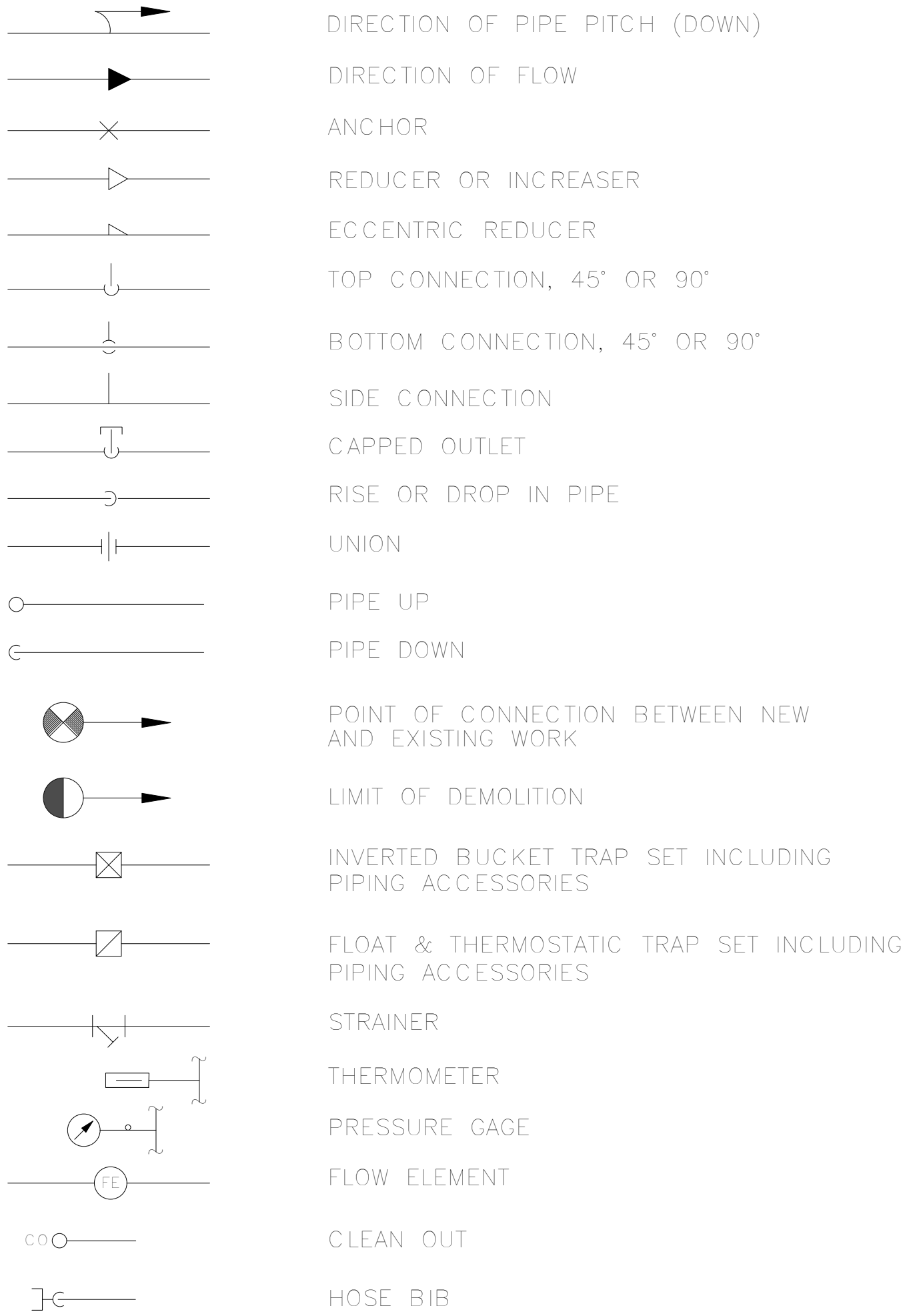
PLUMBING ABBREVIATIONS

A/E	ARCHITECT / ENGINEER
AD	AREA DRAIN
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AG	AIR GAP
BFP	REDUCED PRESSURE BACKFLOW PREVENTER
BHP	BREAK HORSEPOWER
C	CELSIUS
CO	CLEANOUT
CV	CONTROL VALVE
DCW	DOMESTIC COLD WATER
DN	DOWN
DS	DOWNSPOUT
DW	DISHWASHER
DWG	DRAWING
EL	ELEVATION
EX	EXISTING
F	FAHRENHEIT
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FM	FLOW METER
FS	FLOOR SINK
FU	FIXTURE UNITS
GAL	GALLON
GCO	GRADE CLEANOUTS
GPM	GALLONS PER MINUTE
H&CW	HOT AND COLD WATER
HB	HOSE BIBB
HP	HORSEPOWER
HYD	HYDRANT
INV	INVERT
IPC	INTERNATIONAL PLUMBING CODE
IW	INDIRECT WASTE
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTC	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFD	OVERFLOW DRAIN
OVFL	OVERFLOW
PP	PLUMBING PUMP
PSI	POUNDS PER SQUARE INCH
RD	ROOF DRAIN
RDL	ROOF DRAIN LEADER
RL	ROOF LEADER
RWL	RAIN WATER LEADER
SAN	SANITARY SEWER
SDMH	STORM DRAIN MANHOLE
SP	SUMP PUMP
SQFT	SQUARE FEET
SW	STORM WATER
TD	TRENCH DRAIN
TEMP	TEMPERATURE
TYP	TYPICAL
UPC	UNIFORM PLUMBING CODE
V	VENT
W	WASTE
WCO	WALL CLEANOUT
WH	WALL HYDRANT
WL	WATER LINE
WM	WATER METER
WPD	WATER PRESSURE DROP

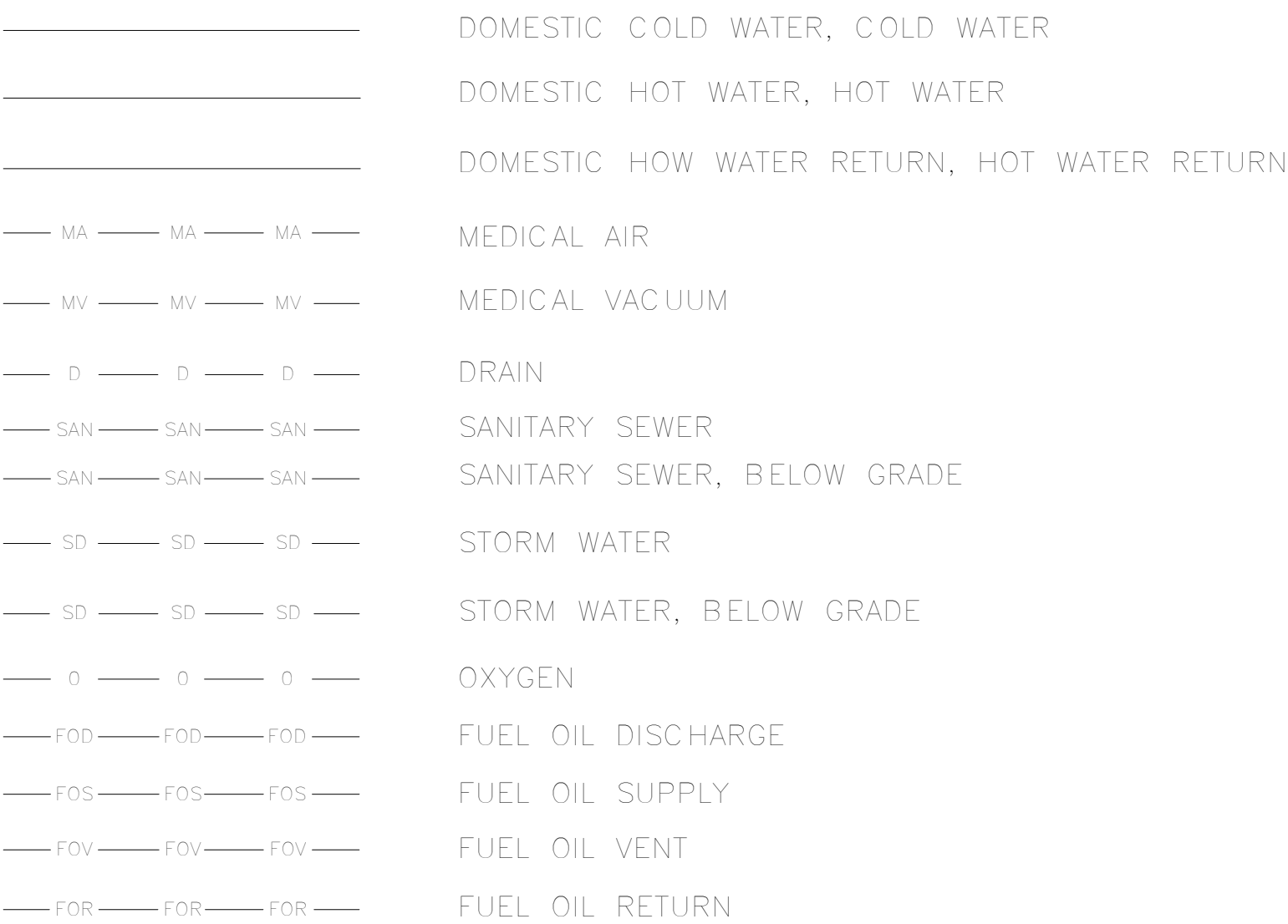
DRAWING SYMBOLS



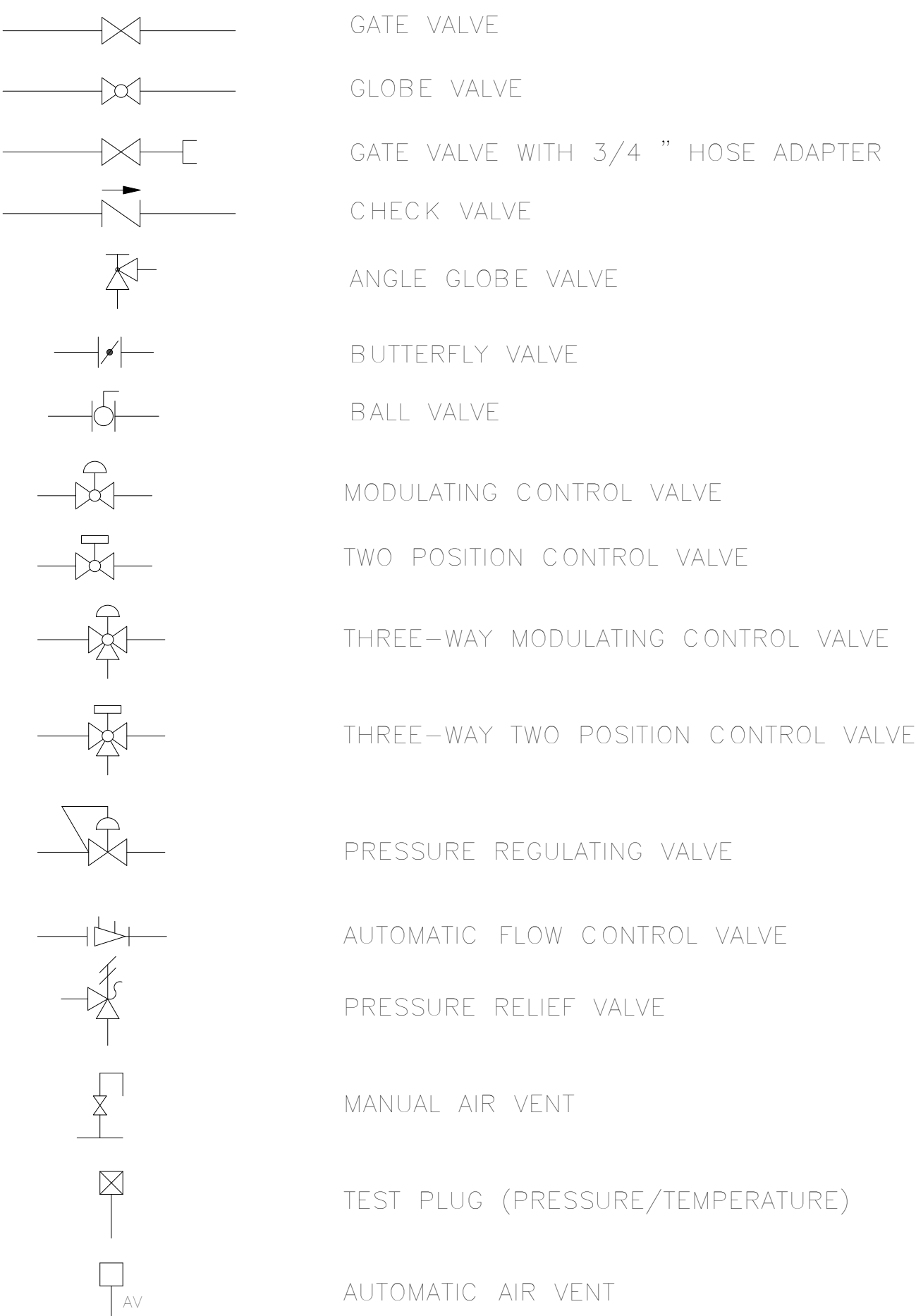
GENERAL PLUMBING SYMBOLS



PLUMBING PIPING SYMBOLS



PLUMBING VALVE SYMBOLS



PUMP SCHEDULE											
Mark	Location	Design Pump Water Flow	Pump Head	Pump HP	Pump Speed	Voltage	Phase	Full Load Current	Manufacturer	Model	Notes
SP-1	Elevator Pit	55 GPM	18.00	1	3600	460 V	3	2 A	Stancor	SE-50	Provide with oil detection system that shuts off sump pump when oil is detected.

No.	Description	Date
	FINAL SUBMISSION	9/24/2013
Revisions:		Date

CONSULTANTS

ARCHITECT/ ENGINEERS
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Drawing Title	PLUMBING SYMBOLS, SCHEDULES & ABBREVS		
Approved: Project Director			

Project Title	VA Erie Parking Structure		
Location	Erie, PA		
Date	Checked	Drawn	
9/24/2013	SCS	CJW	

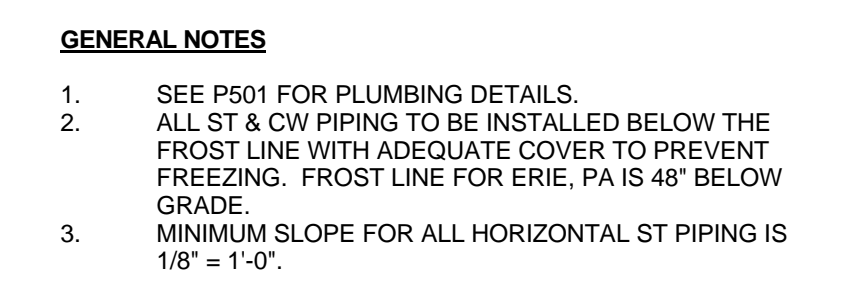
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Building Number	
Drawing Number	P001

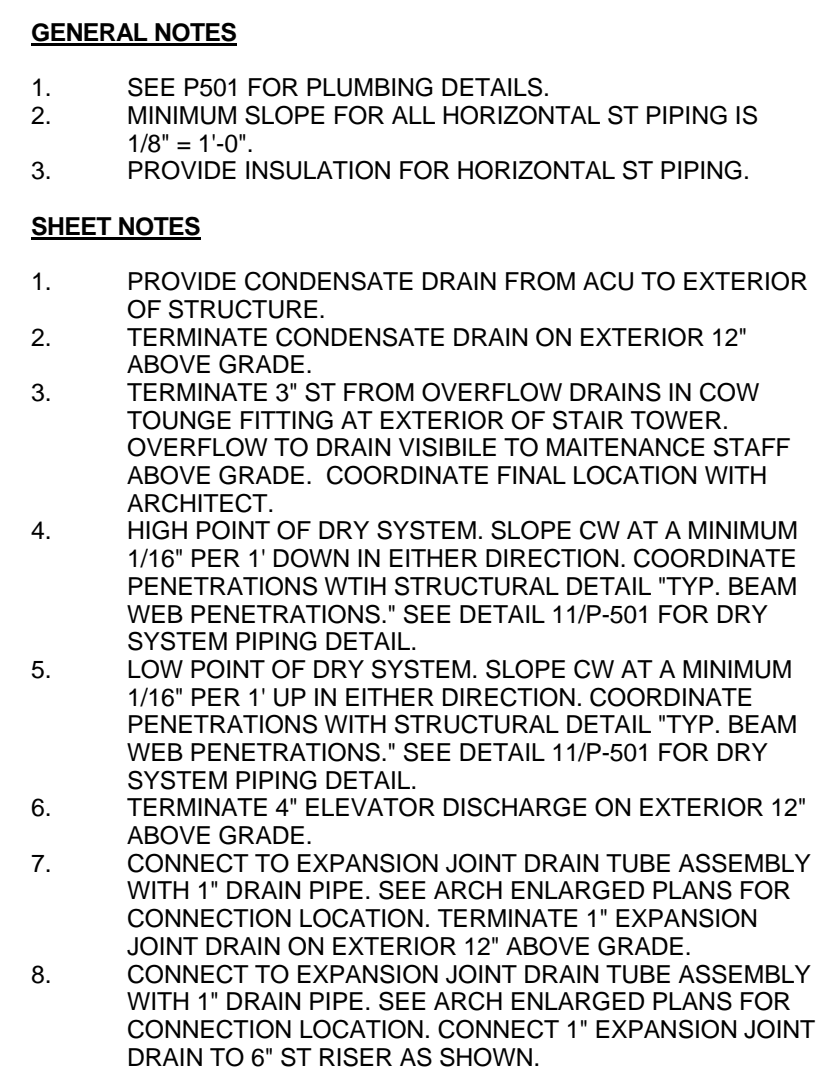
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Scale:

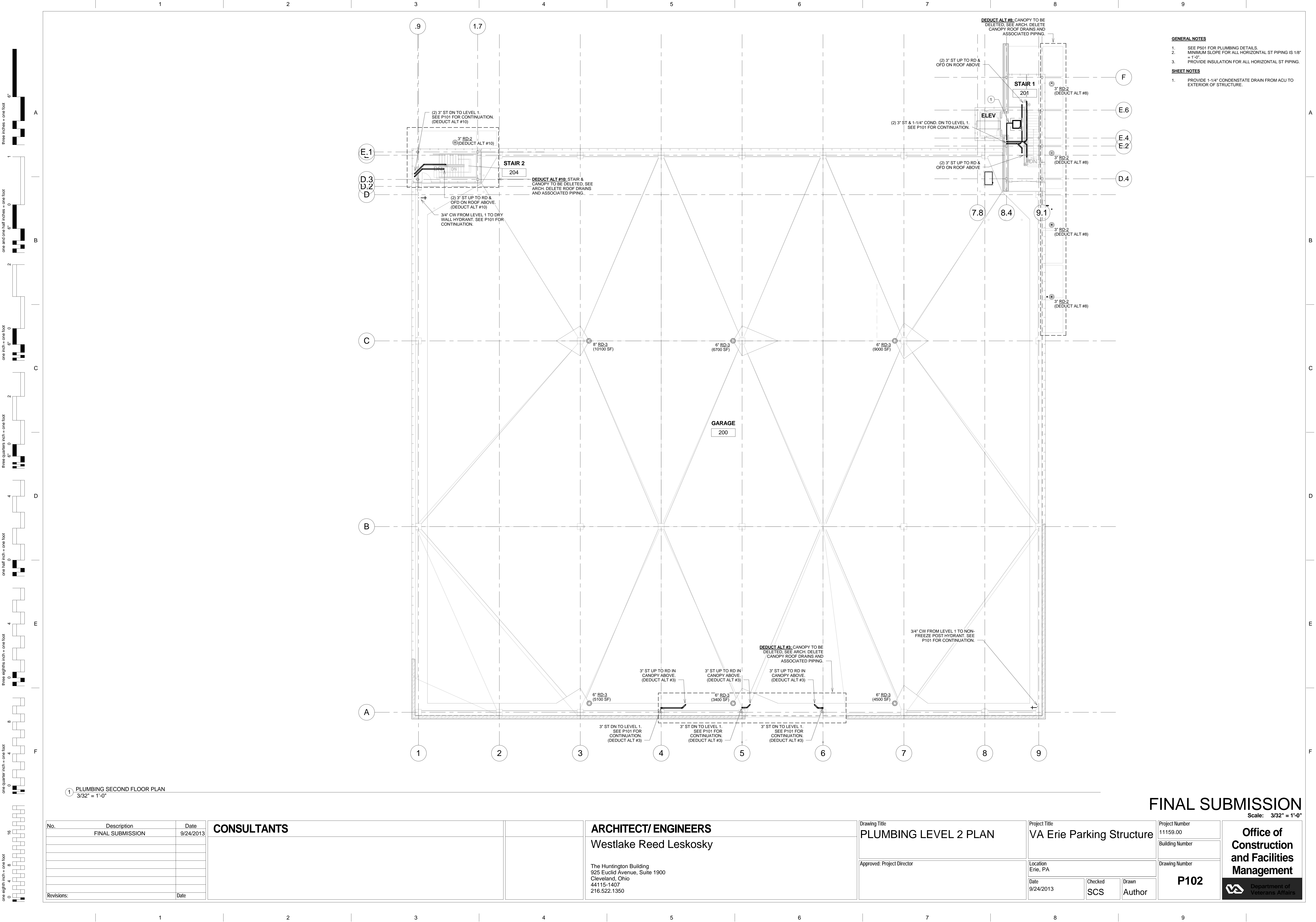


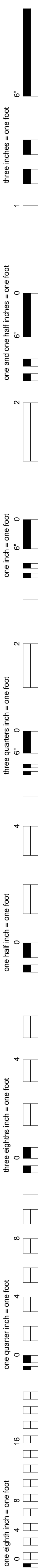


FINAL SUBMISSION
Scale: 3/32" = 1'-0"

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- # FINAL SUBMISSION
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