



# City of Madison Water Utility Vehicle Storage Building Improvements

Madison, Wisconsin  
Contract No. 7823, Project No. 10442

**Mead & Hunt**  
Mead & Hunt, Inc.  
2440 Deming Way  
Middleton, WI 53562  
phone: 608-273-6380  
meadhunt.com

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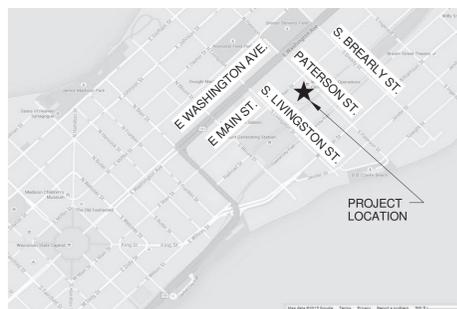


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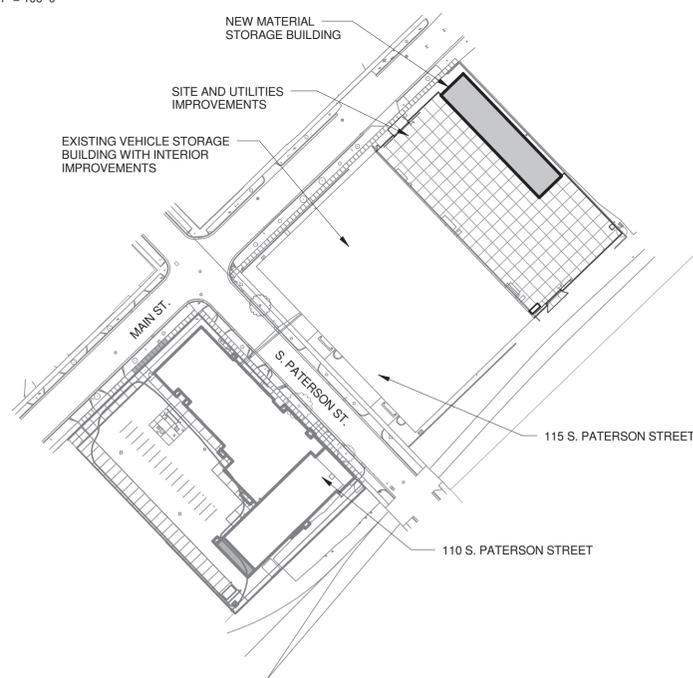
**STATE MAP:**



**VICINITY MAP:**

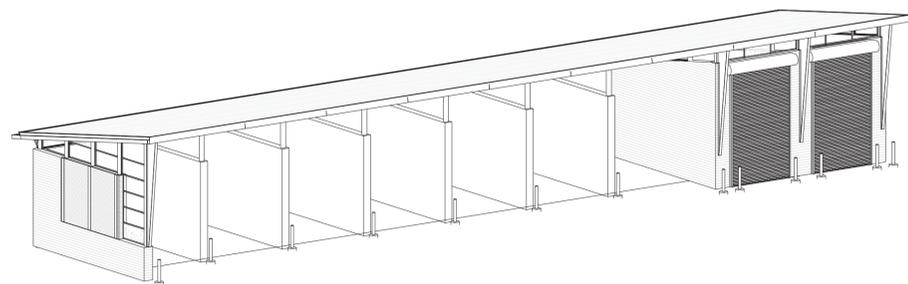


**SITE MAP**  
1" = 100'-0"



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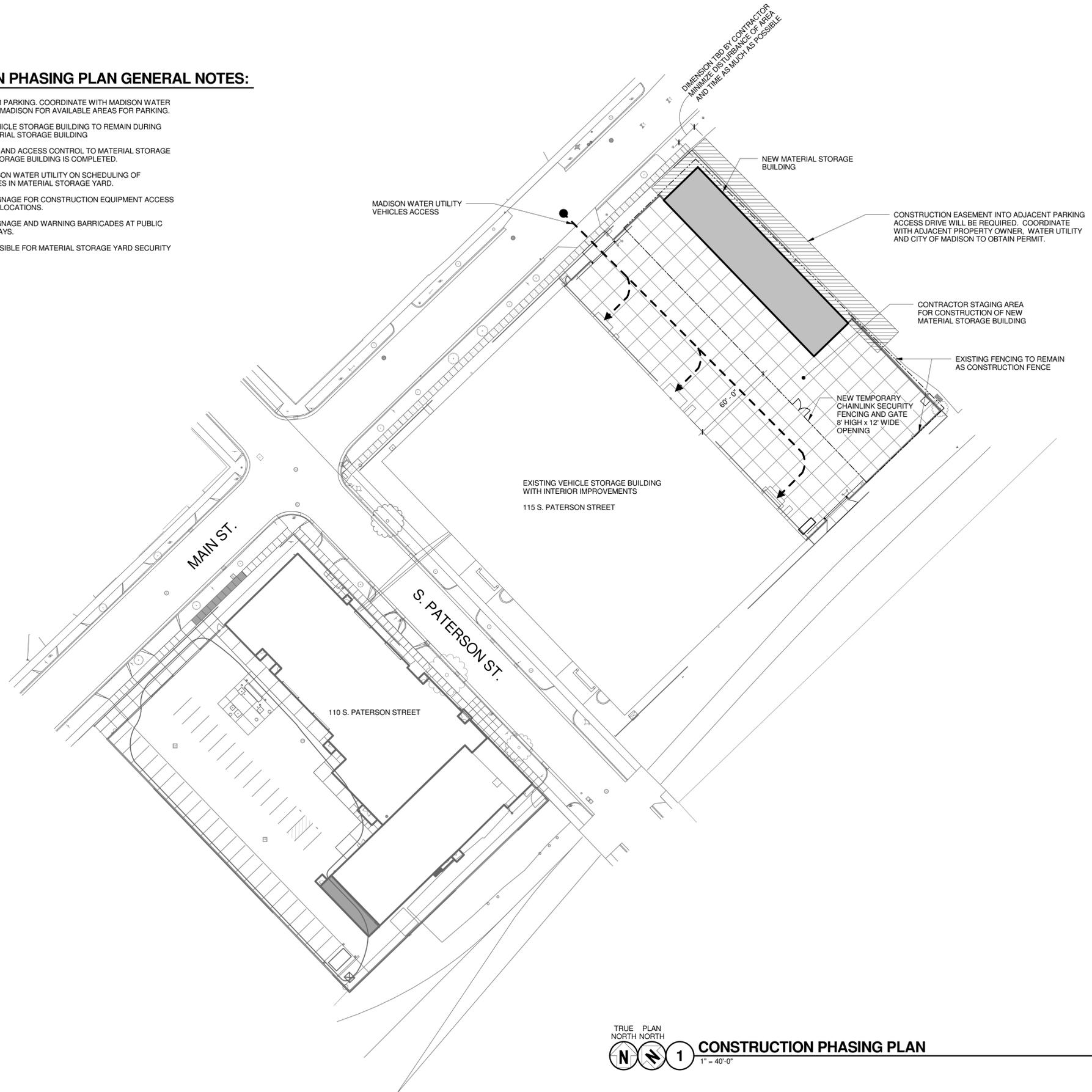
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SHEET CONTENTS  
COVER SHEET

SHEET NO.:  
**G-001**

**CONSTRUCTION PHASING PLAN GENERAL NOTES:**

1. NO ON SITE CONTRACTOR PARKING. COORDINATE WITH MADISON WATER UTILITY AND THE CITY OF MADISON FOR AVAILABLE AREAS FOR PARKING.
2. ACCESS TO EXISTING VEHICLE STORAGE BUILDING TO REMAIN DURING CONSTRUCTION OF MATERIAL STORAGE BUILDING.
3. MAINTAIN EXISTING GATE AND ACCESS CONTROL TO MATERIAL STORAGE YARD UNTIL MATERIAL STORAGE BUILDING IS COMPLETED.
4. COORDINATE WITH MADISON WATER UTILITY ON SCHEDULING OF CONSTRUCTION ACTIVITIES IN MATERIAL STORAGE YARD.
5. PROVIDE TEMPORARY SIGNAGE FOR CONSTRUCTION EQUIPMENT ACCESS AND MATERIAL DELIVERY LOCATIONS.
6. PROVIDE TEMPORARY SIGNAGE AND WARNING BARRICADES AT PUBLIC SIDEWALKS AND ALLEYS.
7. CONTRACTOR IS RESPONSIBLE FOR MATERIAL STORAGE YARD SECURITY DURING CONSTRUCTION.



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SHEET CONTENTS  
CONSTRUCTION  
PHASING PLAN

SHEET NO.:  
**G-002**

**APPLICABLE CODES AND DESIGN CRITERIA**

**Project Name and Location:**  
 Madison Water Utility  
 Vehicle Storage Building Improvements  
 115 S. Paterson Street  
 Madison, WI

**Applicable Design Criteria and Codes:**

Building Code / Structural Code: International Building Code (IBC 2009)  
 Wisconsin Administrative Code, Chapter SPS 362

Existing Structure: International Existing Building Code (2009)  
 Wisconsin Administrative Code, Chapter SPS 366

Plumbing Code: Wisconsin Administrative Code, Chapters SPS 381 - SPS 384

Mechanical Code: International Mechanical Code (IMC 2009)  
 Wisconsin Administrative Code, Chapter SPS 364

Electrical Code: National Electric Code (NEC 2008)  
 Wisconsin Administrative Code, Chapter SPS 316

Fire/Life Safety Code: National Fire Protection Association, Chapter 1 (NFPA-1, 2009)  
 Wisconsin Administrative Code, Chapters SPS 14 & SPS 30

Accessibility Code: International Building Code, Chapter 11 (IBC 2009)  
 Wisconsin Administrative Code, Chapter SPS 369

Energy Code: International Energy Conservation Code, (IECC 2009)  
 Wisconsin Administrative Code, Chapter SPS 363

Gas Code: International Fuel Gas Code, (IFGC 2009)  
 Wisconsin Administrative Code, Chapter SPS 365

Boiler Code: Wisconsin Administrative Code, Chapter SPS 341

Elevator Code: ASME A17.1-2013  
 Wisconsin Administrative Code, Chapter SPS 318

**FIRE PROTECTION AND LIFE SAFETY ANALYSIS**

**Building Occupancy Classifications**  
 IBC Section 311.2: Moderate-hazard Storage, Group S-1

**Construction Type**  
 IBC Table 601  
 Type IIB  
 Sprinklered: Existing Building: Yes Accessory Building: No

**Building Area**  
 IBC Table 503:  
 Group S-1 / IIB = 17,500 s.f. per story

Allowable Area Increase  
 IBC Section 506.3: Automatic sprinkler system increase. (Is = 2)  
 IBC Section 506.2.1: Width limits. (W = 30)  
 IBC Section 506.2: Frontage increase  
 If =  $[790/790 - 0.25]30/30 = .75$   
 IBC Section 506.1: General - Total allowable area increase  
 Aa =  $[17,500 \text{ s.f.} + [17,500 \times .75] + [17,500 \times 2]] = 65,625 \text{ s.f.}$   
 Aa =  $[17,500 \text{ s.f.} + [17,500 \times .75]] = 65,625 \text{ s.f.}$

Total Allowable Area and Actual Area	Allowable Area (S.F.) with Increase	Actual Area (S.F.)
Group S-1 Existing Building	65,625	Unchanged - 45,287
Group S-1 Accessory Building	30,625	5,350

**Allowable Building Height and Number of Stories**  
 IBC Table 503:  
 Group S-1 / IIB = 55 Feet High & 2 Stories

Automatic Sprinkler Value Increase to Height and Number of Stories  
 IBC Section 504.2: Maximum building height increase: 20 feet  
 IBC Section 504.2: Maximum number of stories increase: 1-story

	Maximum Allowed		Actual	
	Height	Stories	Height	Stories
Group S-1 Existing Building	75	3	27'-6"	1
Group S-1 Accessory Building	55	2	27'-2"	1

**Fire Resistive Requirements for Building Elements**  
 IBC Table 601: Type IIB

Structural Frame:	0 hr
Bearing Walls	
Exterior:	0 hr
Interior:	0 hr
Interior Nonbearing Walls and Partitions:	0 hr
Floor Construction:	0 hr
Roof construction and secondary framing:	0 hr

**Fire Resistive Requirements for Exterior Walls Based on Separation Distance**  
 IBC Table 602  
 Exterior Nonbearing Walls and Partitions where "x" is distance from fire separation  
 Group S-1  
 X ≥ 30 ft  
 0 hr

**Interior Finishes:**  
 IBC Table 803.9 (Building fully sprinklered)  
 Interior Wall and Ceiling Finish for Exit Enclosures and Exit Passageways: Class B (Minimum)  
 Interior Wall and Ceiling Finish for Corridors: Class C (Minimum)  
 Interior Wall and Ceiling Finish for Rooms and Enclosed Spaces: Class C (Minimum)  
 Interior Floor Finish for All Floor Coverings: Class II

**Occupant Load**  
 IBC Table 1004.1.1  
 Industrial Occupancy: 1 occupant / 100 gsf  
 Accessory Storage, Mech. Equip Rm. Occupancy: 1 occupant / 300 gsf

Function / Floor	Area	Occupants
Vehicle Storage	Unchanged - 45,287	Unchanged
Accessory Building	5,350	18

**Capacity of Means of Egress**  
 IBC Section 1005 - Means of Egress Width for Other Components .2"

**Spaces with One Exit or Exit Access Doorway**  
 IBC Section 1015.1

S Occupancy	Maximum Occupant Load
	29

**Common Path of Travel**  
 IBC Section 1014.3

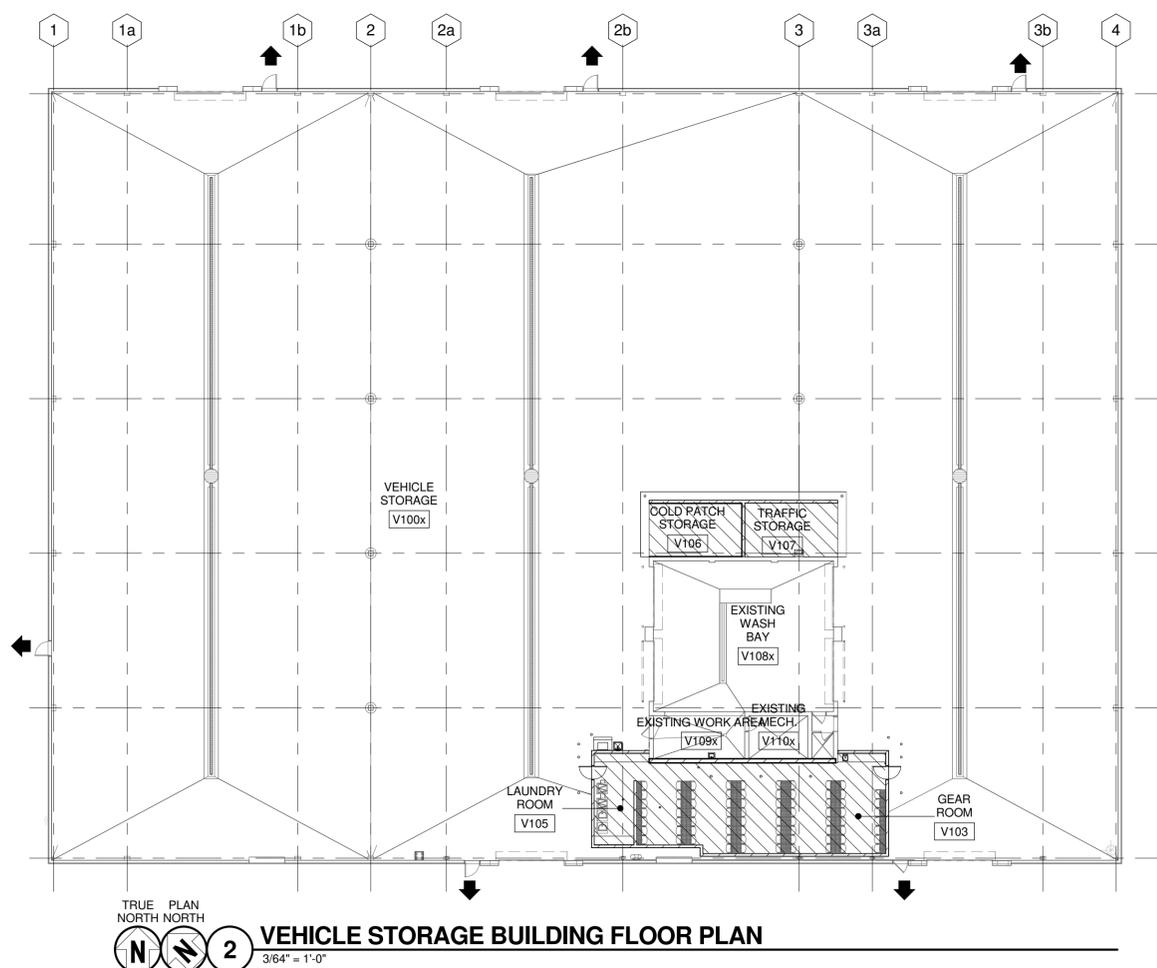
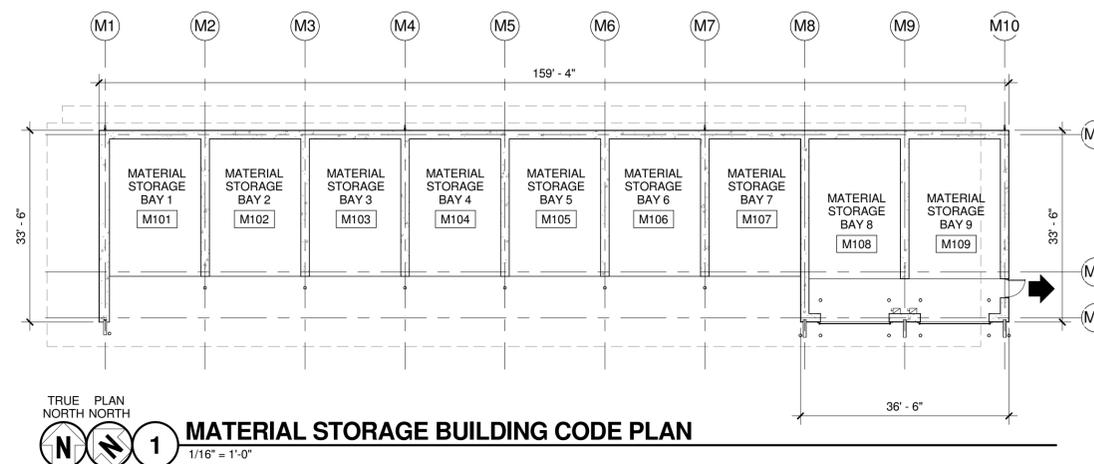
S Occupancy, Fully Sprinklered	100 feet
S Occupancy	75 feet

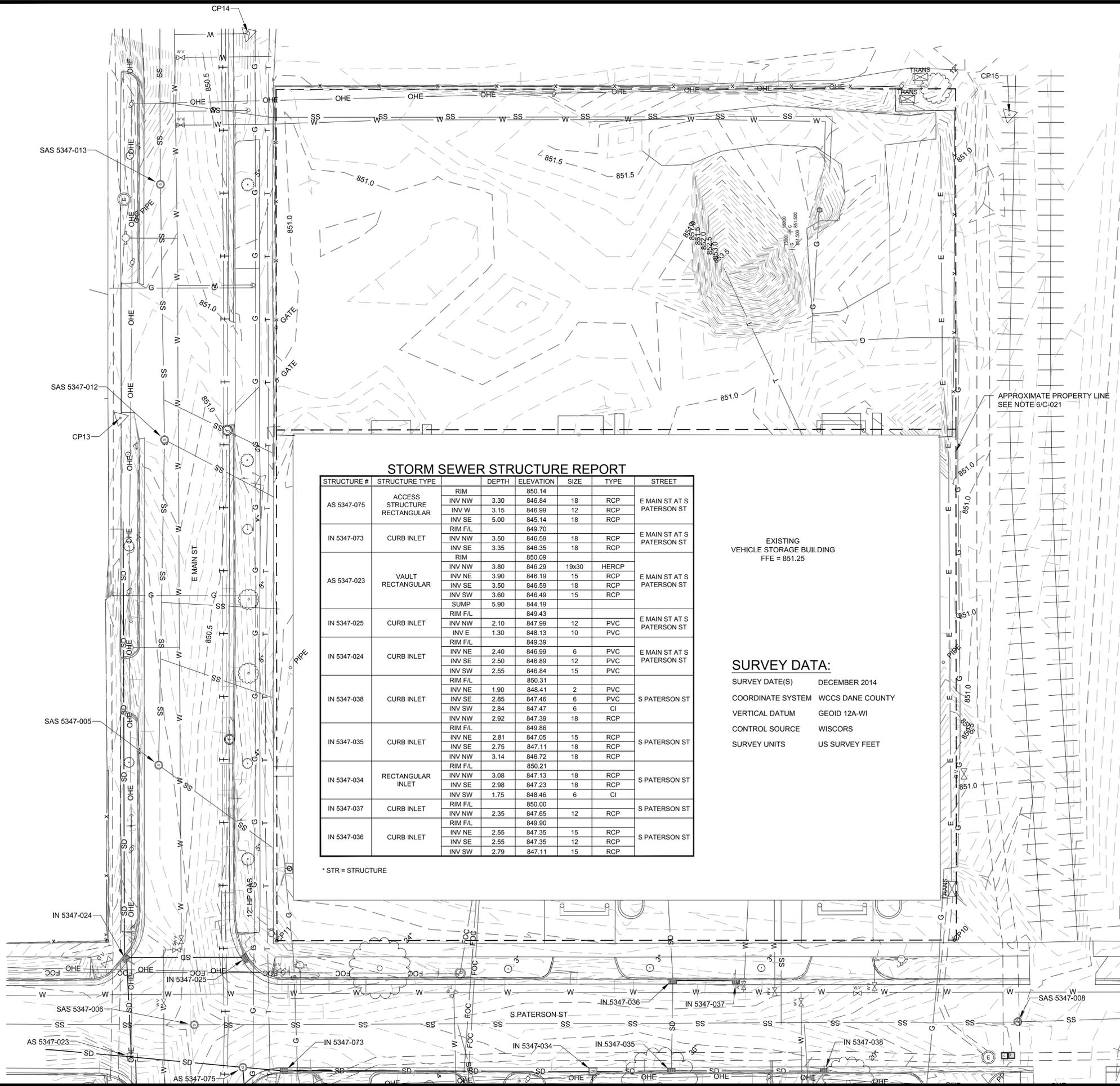
**Exit Access Travel Distance**  
 IBC Table 1016.1

S Occupancy, Fully Sprinklered	250 feet
S Occupancy	200 feet

**Exit Discharge**  
 IBC Section 1027.1, Exits shall discharge directly to the exterior of the building

**FIRE / LIFE SAFETY / MEANS OF EGRESS LEGEND:**





**SITE SURVEY PLAN NOTES:**

1. CONTOUR INTERVALS SHOWN ARE 1.0'.
2. PRIVATE SUBSURFACE UTILITY LOCATIONS SHOWN HEREON ARE BASED UPON GROUND MARKINGS PLACED BY CLIENT REPRESENTATIVE. MARKINGS MAY NOT BE BY BENEFIT OF SUBSURFACE DETECTING INSTRUMENTS AS SOME WERE MARKED PER PERSONNEL BEST RECOLLECTION.
3. PUBLIC SUBSURFACE UTILITY LOCATIONS SHOWN HEREON ARE BASED UPON GROUND MARKINGS PLACED BY DIGGERS HOTLINE. DIGGERS HOTLINE DOES NOT GUARANTEE THE PRECISION OF THEIR MARKINGS. IN ACCORDANCE WITH WISCONSIN LAW, SUBSURFACE UTILITIES MUST BE EXPOSED VIA HAND DIGGING BEFORE MACHINE DIGGING IS PERMISSIBLE. UTILITY LOCATION MARKINGS ARE VALID FOR ONLY 10 DAYS. CONTRACTOR MUST ORDER NEW UTILITY LOCATE PRIOR TO ANY EXCAVATION.
4. SANITARY SEWER AND STORM SEWER LOCATIONS HAVE BEEN DETERMINED BY OBSERVABLE SURFACE STRUCTURES AND RESPECTIVE FEATURES. INTERMEDIATE PIPE LOCATIONS ARE APPROXIMATE AS ACCURATE LOCATIONS WERE NOT AVAILABLE AT TIME OF SURVEY.
5. CONTROL POINTS AND BENCHMARKS SHOWN HEREON ARE FOR REFERENCE PURPOSES ONLY. PRIOR TO STAKING, THE CONTROL MUST BE INDEPENDENTLY VERIFIED AS UNDISTURBED. NO WARRANTY IS MADE WITH RESPECT TO THE ACCURACY OF CONTROL SHOWN HEREON AS THEY ARE SUBJECT TO POTENTIAL DISTURBANCE.
6. LOT LINES ARE NOT MEASURED OR FIELD VERIFIED AND ARE SHOWN AS RECORDED ON THE ORIGINAL PLAT OF THE CITY OF MADISON. ALL TOPOGRAPHIC DATA IS REFERENCED TO WISCONSIN COUNTY COORDINATE SYSTEM.

**SURVEY CONTROL DATA**

POINT #	DESCRIPTION	ELEVATION	NORTHING	EASTING
CP10	NO.6 REBAR	851.20	485105.156	824579.052
CP11	NO.6 REBAR	850.53	485294.867	824396.620
CP13	CHISELED X	851.22	485479.093	824500.673
CP14	TOP NUT	850.46	485546.441	824642.595
CP15	RR SPIKE	851.04	485311.305	824824.660

**LEGEND:**

- BOLLARD
- CONTROL POINT
- DOWNSPOUT
- ELECTRICAL TRANSFORMER BOX
- ELECTRICAL SERVICE PANEL
- ELECTRICAL HANDHOLE/PULLBOX
- FIRE HYDRANT
- FLAGPOLE
- GAS METER
- GAS VALVE
- INLET, CURB
- INLET, ROUND
- INLET, SQUARE
- IRON PIN
- LIGHT POLE (SINGLE)
- MANHOLE, ELECTRIC
- MANHOLE, SANITARY SEWER
- MANHOLE, STORM SEWER
- MANHOLE, TELECOMMUNICATIONS
- MARKER, CABLE
- POWER POLE
- SIGN (SINGLE POST)
- SOIL BORING
- TREE, DECIDUOUS
- WATER VALVE
- WATER METER
- WATER SHUTOFF
- MONITORING WELL
- GAS
- ELECTRIC, OVERHEAD
- ELECTRIC, UNDERGROUND
- EXISTING CONTOUR LINES
- FENCE
- HANDRAIL
- SANITARY SEWER
- STORM SEWER / ROOF DRAIN
- TELEPHONE
- TV CABLE
- WATER
- RAILROAD TRACKS

**STORM SEWER STRUCTURE REPORT**

STRUCTURE #	STRUCTURE TYPE	DEPTH	ELEVATION	SIZE	TYPE	STREET	
AS 5347-075	ACCESS STRUCTURE RECTANGULAR	RIM	850.14				
		INV NW	3.30	846.84	18	RCP	E MAIN ST AT S PATERSON ST
		INV W	3.15	846.99	12	RCP	
		INV SE	5.00	845.14	18	RCP	
IN 5347-073	CURB INLET	RIM F/L	849.70				
		INV NW	3.50	846.59	18	RCP	E MAIN ST AT S PATERSON ST
		INV SE	3.35	846.35	18	RCP	
AS 5347-023	VAULT RECTANGULAR	RIM	850.09				
		INV NW	3.80	846.29	19x30	HERCP	E MAIN ST AT S PATERSON ST
		INV NE	3.90	846.19	15	RCP	
		INV SE	3.50	846.59	18	RCP	
		INV SW	3.60	846.49	15	RCP	
		SUMP	5.90	844.19			
IN 5347-025	CURB INLET	RIM F/L	849.43				
		INV NW	2.10	847.99	12	PVC	E MAIN ST AT S PATERSON ST
		INV E	1.30	848.13	10	PVC	
IN 5347-024	CURB INLET	RIM F/L	849.39				
		INV NE	2.40	846.99	6	PVC	E MAIN ST AT S PATERSON ST
		INV SE	2.50	846.89	12	PVC	
		INV SW	2.55	846.84	15	PVC	
IN 5347-038	CURB INLET	RIM F/L	850.31				
		INV NE	1.90	848.41	2	PVC	S PATERSON ST
		INV SE	2.85	847.46	6	PVC	
		INV SW	2.84	847.47	6	CI	
IN 5347-035	CURB INLET	RIM F/L	849.86				
		INV NE	2.81	847.05	15	RCP	S PATERSON ST
		INV SE	2.75	847.11	18	RCP	
		INV NW	3.14	846.72	18	RCP	
IN 5347-034	RECTANGULAR INLET	RIM F/L	850.21				
		INV NW	3.08	847.13	18	RCP	S PATERSON ST
		INV SE	2.98	847.23	18	RCP	
IN 5347-037	CURB INLET	RIM F/L	850.00				
		INV NW	2.35	847.65	12	RCP	S PATERSON ST
		RIM F/L	849.90				
IN 5347-036	CURB INLET	INV NE	2.55	847.35	15	RCP	S PATERSON ST
		INV SE	2.55	847.35	12	RCP	
		INV SW	2.79	847.11	15	RCP	

\* STR = STRUCTURE

EXISTING VEHICLE STORAGE BUILDING  
FFE = 851.25

**SURVEY DATA:**

SURVEY DATE(S) DECEMBER 2014  
 COORDINATE SYSTEM WCCS DANE COUNTY  
 VERTICAL DATUM GEOID 12A-WI  
 CONTROL SOURCE WISCORS  
 SURVEY UNITS US SURVEY FEET

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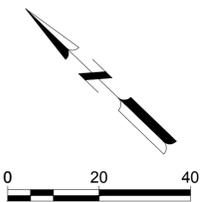


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SHEET CONTENTS  
EXISTING SITE PLAN

SHEET NO.





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SHEET CONTENTS  
SITE IMPROVEMENTS PLAN

SHEET NO.

C-101

### SITE IMPROVEMENTS PLAN NOTES:

1. LOT LINES ARE NOT MEASURED OR FIELD VERIFIED AND ARE SHOWN AS RECORDED ON THE ORIGINAL PLAT OF THE CITY OF MADISON. ALL TOPOGRAPHIC DATA IS REFERENCED TO WISCONSIN COUNTY COORDINATE SYSTEM.
2. CONTAMINATED SOIL DATA CAN BE FOUND IN THE MATERIAL MANAGEMENT PLAN.
3. FOR ALL CONCRETE IN DRIVEWAY INCLUDING SIDEWALK SECTION IN DRIVEWAY, CONSTRUCT ACCORDING TO DETAILS #3 AND #13, SHEET C-501 AND CITY OF MADISON STANDARD DRIVEWAY APRON DETAIL.
4. ANY PAVEMENT DAMAGED DURING CONSTRUCTION MUST BE REPLACED BY CONTRACTOR AT NO ADDITIONAL EXPENSE TO OWNER.
5. GATE OPERATOR SHALL BE INSTALLED PER THE SPECIFICATIONS. FOUNDATION SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS. SEE ELECTRICAL SITE SHEETS FOR POWER AND TECHNOLOGY DETAILS.
6. INSTALL EXPANSION JOINTS AROUND ALL MANHOLES AND STRUCTURES.
7. ALL WORK NEAR ATC LINES REQUIRES AN ATC REPRESENTATIVE. THREE DAY PRIOR NOTIFICATION IS REQUIRED. CALL DOUG VOSBERG 608-877-7650. CARE MUST BE TAKEN DURING EXCAVATION AROUND THE ATC PIPES. IF EXPOSURE IS REQUIRED, IT MUST BE DONE WITH SMALL HAND TOOLS. INSPECTION FOR DEFECTS OF THE PIPE IS REQUIRED AND BACKFILL SHALL MEET THE ATC SPECIFICATION SN-2500.
8. CONTRACTOR SHALL WORK WITH WATER UTILITY TO LOCATE PROPERTY LINE ON ALL SIDES OF THE SIDE WHERE IT IS PERTINENT. LOCATED NORTH PROPERTY LINE SO FENCE CAN BE INSTALLED AT THE PROPERTY LINE.

### JOINTING PLAN LEGEND:

- C= CONTRACTION JOINT (SEE 8/C-501)
- CONSTRUCTION JOINT BETWEEN POURS (SEE 4/C-501)
- T= THICKENED EDGE (SEE 1/C-501)
- E= EXPANSION JOINT (SEE 6/C-501)
- S= SIDEWALK JOINT (SEE 3/C-502)

### Parking Lot Plan Site Information Block

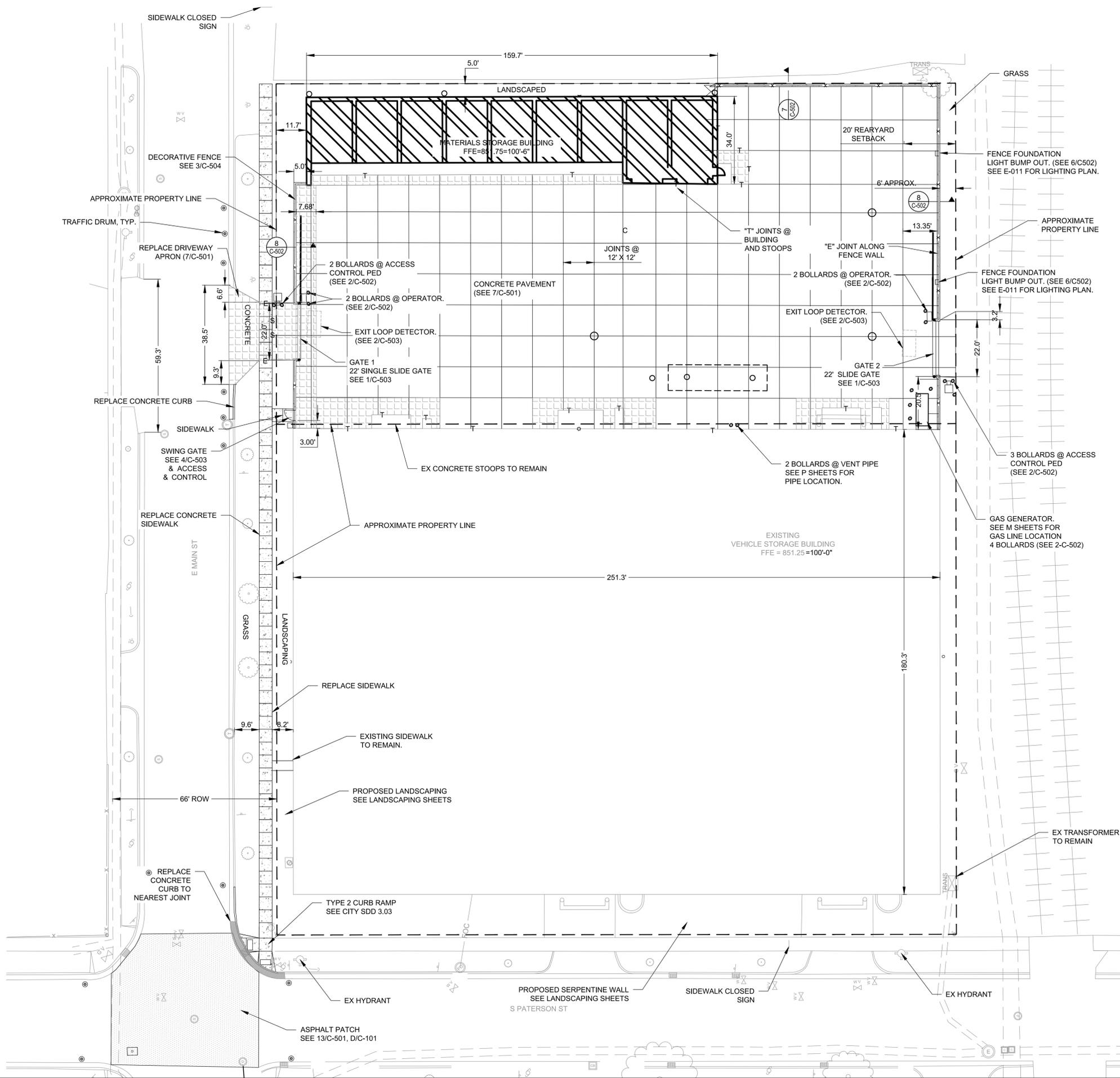
Site Address: 115 S. PATERSON ST.  
Site acreage (total): 2 ACRES  
Number of building stories: 1  
Building Height: 24'  
DILHR type of construction: NEW  
Total square footage of building: 2,115 SF  
Use of property: MATERIAL STORAGE  
Number of employees in warehouse: 0  
Number of bicycle stalls shown: 0  
Number of parking stalls shown: 0  
Number of trees: 3 NEW

### LEGEND:

- APPROXIMATE PROPERTY LINE
- ASPHALT
- CONCRETE
- WELDED WIRE REINFORCEMENT (SEE 12/C501)
- (SEE X-XXX) SHEET REFERENCE
- (SEE X/X-XXX) DETAIL REFERENCE

### ACCESS PLAN NOTES:

- CONTRACTOR SHALL ENCLOSE THE SITE IN FENCE AT ALL TIMES. SITE FENCE SHALL BE LOCKED AT THE COMPLETION OF EACH WORK DAY AND WHEN CONTRACTOR IS NOT IN-SITE.
- TEMPORARY CHAINLINK FENCE SHALL BE PROVIDED TO ENCLOSE THE WORK ZONE WHERE THE EXISTING FENCE IS NOT AVAILABLE OR UTILIZED.
- THE UTILITY CONNECTIONS IN THE STREET SHALL BE SIGNED ACCORDING TO MUTCD STANDARDS. TEMPORARY FENCE IS NOT REQUIRED FOR UTILITY TRENCHING WORK COMPLETED IN ONE DAY.
- ONE LANE SHALL BE KEPT OPEN ON S. PATERSON AND E MAIN AT ALL TIMES. WHEN ONE LANE IS CLOSED, CONTRACTOR SHALL PROVIDE A FLAGGER AND PROPER SIGNAGE.



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 EROSION CONTROL PLAN

SHEET NO.

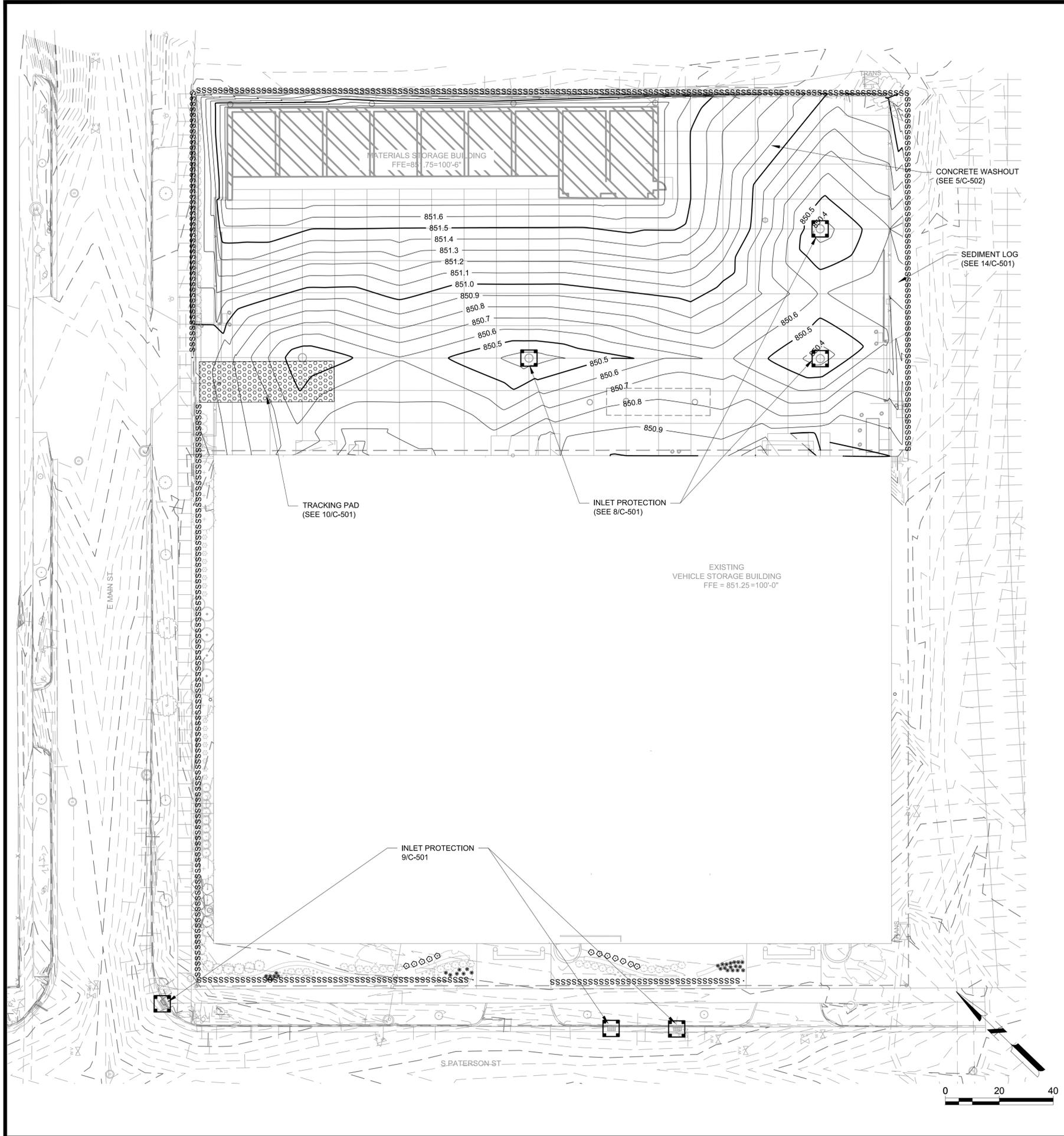
**C-121**

**EROSION AND SEDIMENT CONTROL NOTES**

1. CONSTRUCTION SITE DEWATERING WATER SHALL BE TESTED FOR CONTAMINATION AND DISPOSED OF PROPERLY BASED ON TEST RESULTS.
2. IF HIGH CAPACITY DEWATERING WELLS ARE REQUIRED, OBTAIN PERMIT FROM WDNR ACCORDING TO NR812.09
3. CONTRACTOR IS RESPONSIBLE FOR PROPER DISPOSAL OF WASTE FROM CONSTRUCTION SITE.
4. IF A SPILL OF OIL OR OTHER HAZARDOUS SUBSTANCE TAKES PLACE ON-SITE, IT SHALL BE CONTAINED ON-SITE AND CLEANED UP IF THERE IS AN IMPACT TO THE ENVIRONMENT OR HUMAN HEALTH. ANY RELEASE OFF-SITE SHALL BE REPORTED TO THE CITY AND WDNR HOTLINE 1-800-943-0003.
5. CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL SHALL COMPLY WITH THE REQUIREMENTS OF THE CITY OF MADISON & WDNR.
6. THE CONTRACTOR SHALL KEEP THE STORMWATER MANAGEMENT REPORT & EROSION CONTROL PLAN ON SITE DURING THE CONSTRUCTION FOR REFERENCE.
7. ALL EROSION CONTROL MEASURES SHALL BE ADJUSTED TO MEET FIELD CONDITIONS AND SHALL BE INSTALLED PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL ON THE SITE.
8. THE CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL MEASURES AS NEEDED.
9. EROSION AND SEDIMENT CONTROL SHALL BE INSPECTED WEEKLY AND AFTER 0.5 INCHES OF RAIN. A LOG OF ALL INSPECTIONS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANUP AND REMOVAL OF ALL SEDIMENT LEAVING PROPERTY. EROSION CONTROL MEASURES SHALL BE IN WORKING CONDITION AT THE END OF EACH WORKING DAY.
11. SEDIMENT LOGS, TRACKING PAD AND INLET PROTECTION SHALL BE INSTALLED IN THE LOCATIONS SHOWN ON THE CONSTRUCTION PLANS.
12. EROSION CONTROL MEASURES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL THE SITE IS FULLY STABILIZED.
13. THE CONTRACTOR SHALL ALLOW FREE AND UNLIMITED ACCESS TO THE PROJECT SITE AT ANY TIME TO ANY REGULATORY AGENCY EMPLOYEE INSPECTING THE EROSION CONTROL MEASURES.
14. AFTER STABILIZATION, CONTRACTOR SHALL REMOVE INLET PROTECTION AND SEDIMENT LOG.
15. MULCH SHALL BE STRAW MULCH AND SHALL BE APPLIED AT 1.5 TONS PER ACRE. THE SEED MIX SHALL BE WISDOT SEED MIX #40 SHALL BE APPLIED AT 3 POUNDS PER 1,000 SF. THE FERTILIZER SHALL BE WISDOT TYPE A AND APPLIED AT A RATE OF 7 POUNDS PER 1,000 SF.
16. CONCRETE WASHOUT PLAN SHALL CONFORM TO SHEET C-503 DETAIL.
17. SEED RATE = 4 POUNDS PER 1,000 SF FERTILIZER RATE = 7 POUNDS PER 1,000 SF

**LEGEND:**

- INLET PROTECTION
- SEDIMENT LOG
- TRACKING PAD
- EXISTING CONTOUR LINES
- PROPOSED CONTOUR LINES
- GRADING LIMITS
- FINISHED / PROPOSED SPOT ELEVATION
- FINISHED / PROPOSED SLOPE



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**City of Madison Water Utility**  
Vehicle Storage Building Improvements  
Contract No. 7823, Project No. 10442  
Madison, Wisconsin

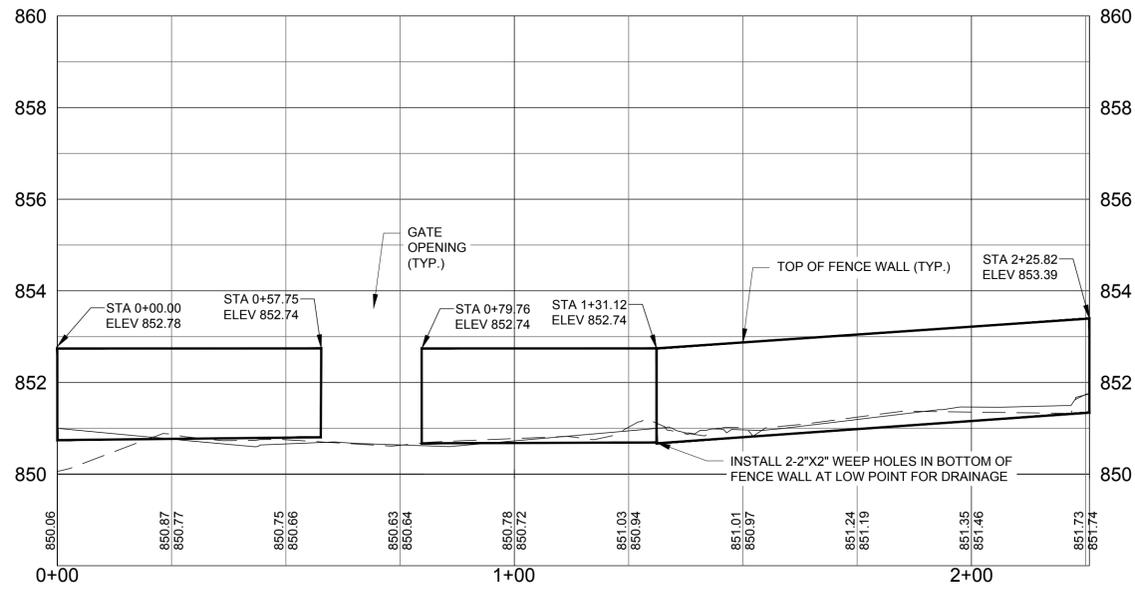
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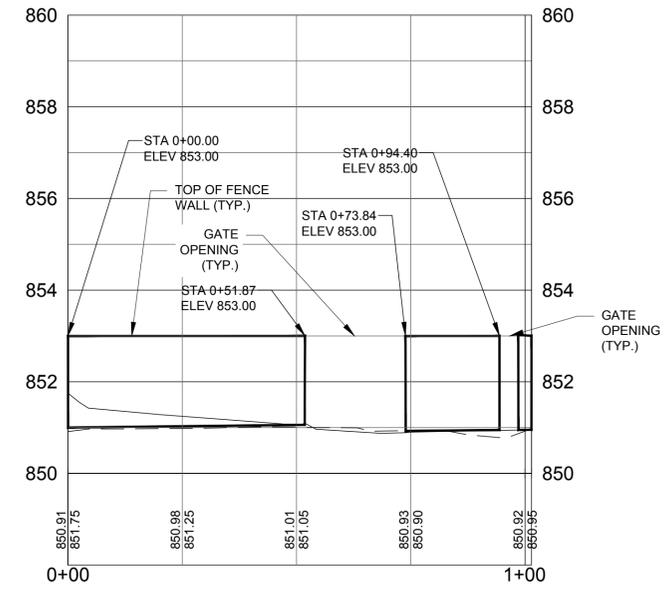
SHEET CONTENTS  
FENCE WALL  
ELEVATIONS

SHEET NO.

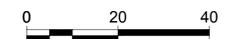
**C-123**



EAST AND NORTH TOP OF WALL PROFILE



WEST TOP OF WALL PROFILE



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SHEET CONTENTS  
SITE UTILITY PLAN

SHEET NO.

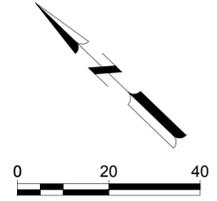
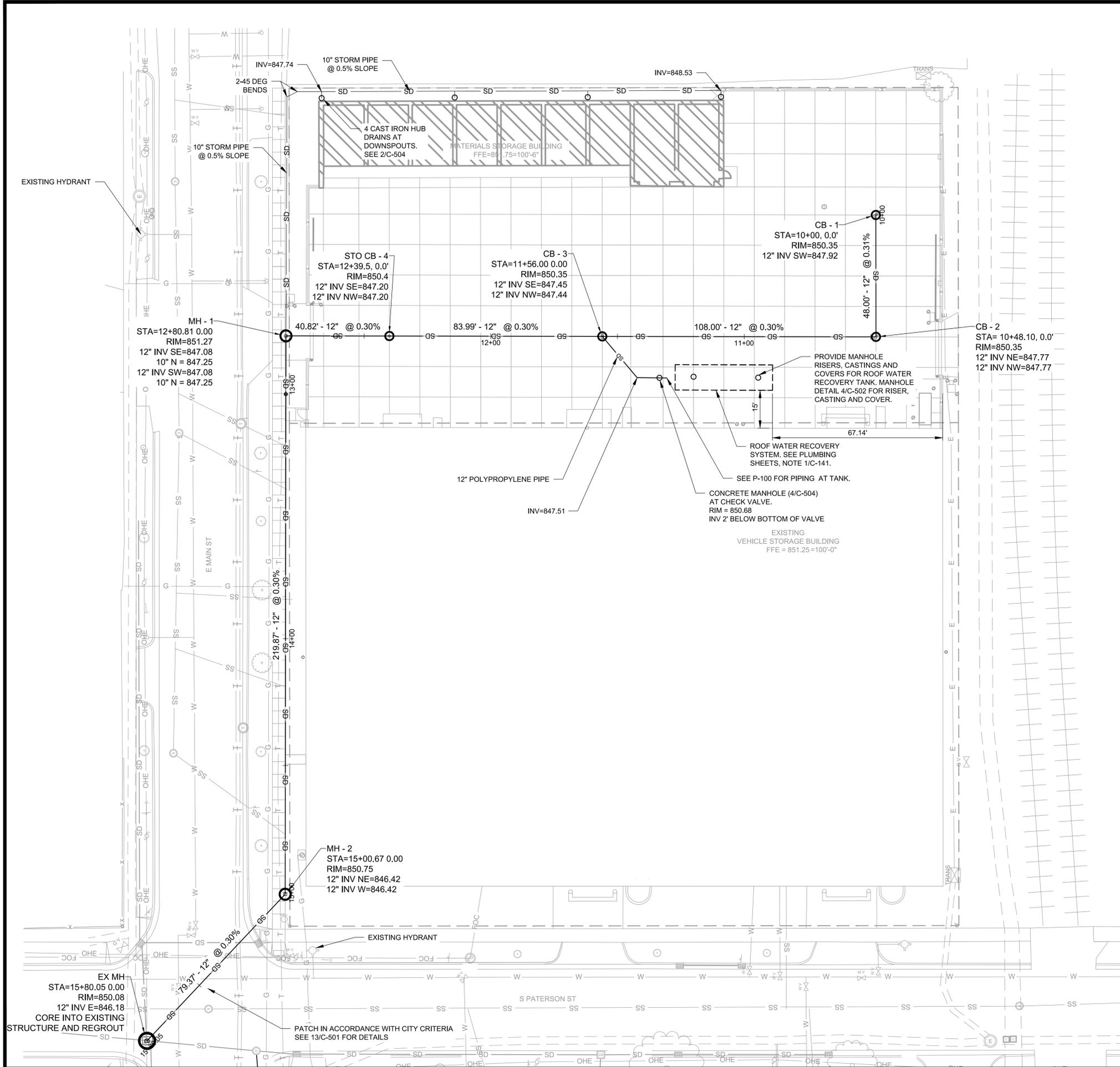
**C-141**

### SITE UTILITY PLAN NOTES:

1. NO CONSTRUCTION TRAFFIC PERMITTED OVER ROOF OF WATER TANK. PROTECT THE AREA AROUND THE TANK UNTIL CONCRETE PAVING IS COMPLETE.
2. NO CONSTRUCTION VEHICLE TRACKING OVER STORM SEWER PIPE UNTIL A MINIMUM OF 2.5 FEET OF COVER IS INSTALLED.
3. MANHOLES SHALL BE AS IS SHOWN IN DETAIL 4/C-504.
4. CATCH BASINS SHALL BE AS IS SHOWN IN DETAIL 5/C-504.
5. STORM SEWER PIPES ARE POLYPROPYLENE UNLESS LABELED OTHERWISE ON C-141 OR P100.

### LEGEND:

- STORM INLET, CURB
- STORM INLET, ROUND
- STORM INLET, SQUARE
- STORM SEWER MANHOLE
- STORM SEWER



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ACCEPTABLE ALTERNATIVE COLD DRAWN STEEL FABRIC SIZES ARE:

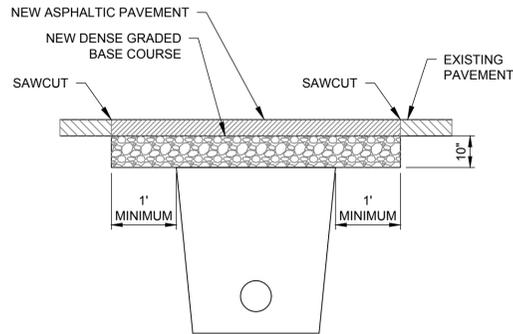
- W8 @ 10" C-C EACH WAY
- W6.5 @ 8" C-C EACH WAY
- W5 @ 6" C-C EACH WAY
- W4 @ 4" C-C EACH WAY

(MESH DEPTH TO BE PLACED AT  $T/4 + 1"$  IN AREAS SHOWN)  
T = PAVEMENT THICKNESS

FABRIC TO BE PLACED ON STANDS

### 12 WELDED WIRE REINFORCEMENT

NOT TO SCALE

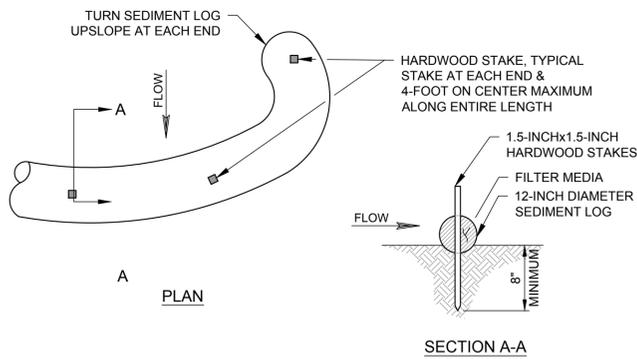


NOTES:

1. THE PATCH SHALL BE CRUSHED STONE BASE COURSE, GRADATION NO. 2 OVERLAID WITH ASPHALT UPPER LAYER EQUAL IN THICKNESS TO THE EXISTING ASPHALTIC PAVEMENT, WITH A MINIMUM THICKNESS OF 3" AND A MAXIMUM THICKNESS OF 5" UNLESS OTHERWISE SPECIFIED AND LAID IN ONE OR MORE COURSES AS DIRECTED BY THE ENGINEER.
2. THE PAVEMENT ALONG THE PATH SHALL BE SAWCUT, FULL DEPTH. THE EDGES OF THE EXISTING ASPHALTIC PAVEMENT SHALL BE FREE OF LOOSE STONES OR PAVEMENT MATERIAL.
3. THE CRUSHED STONE BASE COURSE SHALL BE INSTALLED IN TWO LIFTS. THE LOWER LIFT SHALL BE THOROUGHLY MECHANICALLY COMPACTED PRIOR TO PLACING THE UPPER LIFT.
4. THE ASPHALT SHALL BE LAID IN TWO LIFTS. THE ASPHALT UPPER LAYER SHALL BE MACHINE LAID WHERE DIRECTED BY THE ENGINEER. WHERE THE ASPHALT UPPER LAYER IS MACHINE LAID AND IS NOT MORE THAN 3" IN THICKNESS, THE ASPHALT SURFACE COURSE MAY BE IN ONE LIFT.
5. PRIOR TO PLACING THE ASPHALT UPPER LAYER, THE EDGES OF THE PATCH AND THE SURFACE OF THE CRUSHED STONE VASE SHALL BE TACKED AND PRIMED WITH LIQUID ASPHALT.
6. THE TYPICAL PAVEMENT PATCH SECTION RELATES TO THE CITY OF MADISON ENGINEERING DIVISION STANDARD DETAIL DRAWING 5.2.4.

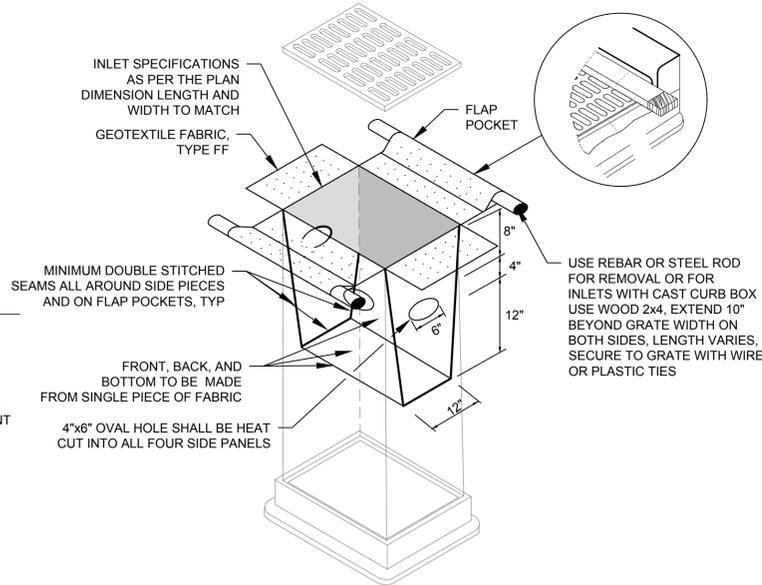
### 13 TYPE III UTILITY TRENCH PATCH

NOT TO SCALE



### 9 INLET PROTECTION DETAIL, TYPE D

NOT TO SCALE

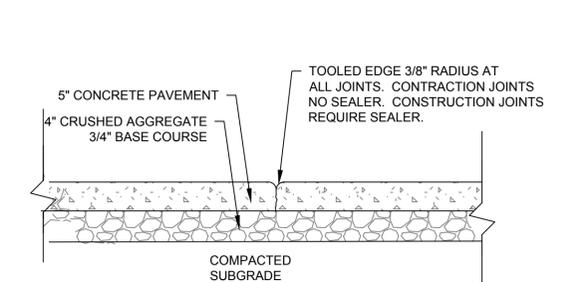


NOTES:

1. THE PATCH SHALL BE CRUSHED STONE BASE COURSE, GRADATION NO. 2 OVERLAID WITH ASPHALT UPPER LAYER EQUAL IN THICKNESS TO THE EXISTING ASPHALTIC PAVEMENT, WITH A MINIMUM THICKNESS OF 3" AND A MAXIMUM THICKNESS OF 5" UNLESS OTHERWISE SPECIFIED AND LAID IN ONE OR MORE COURSES AS DIRECTED BY THE ENGINEER.
2. THE PAVEMENT ALONG THE PATH SHALL BE SAWCUT, FULL DEPTH. THE EDGES OF THE EXISTING ASPHALTIC PAVEMENT SHALL BE FREE OF LOOSE STONES OR PAVEMENT MATERIAL.
3. THE CRUSHED STONE BASE COURSE SHALL BE INSTALLED IN TWO LIFTS. THE LOWER LIFT SHALL BE THOROUGHLY MECHANICALLY COMPACTED PRIOR TO PLACING THE UPPER LIFT.
4. THE ASPHALT SHALL BE LAID IN TWO LIFTS. THE ASPHALT UPPER LAYER SHALL BE MACHINE LAID WHERE DIRECTED BY THE ENGINEER. WHERE THE ASPHALT UPPER LAYER IS MACHINE LAID AND IS NOT MORE THAN 3" IN THICKNESS, THE ASPHALT SURFACE COURSE MAY BE IN ONE LIFT.
5. PRIOR TO PLACING THE ASPHALT UPPER LAYER, THE EDGES OF THE PATCH AND THE SURFACE OF THE CRUSHED STONE VASE SHALL BE TACKED AND PRIMED WITH LIQUID ASPHALT.
6. THE TYPICAL PAVEMENT PATCH SECTION RELATES TO THE CITY OF MADISON ENGINEERING DIVISION STANDARD DETAIL DRAWING 5.2.4.

### 10 TRACKING PAD

NOT TO SCALE



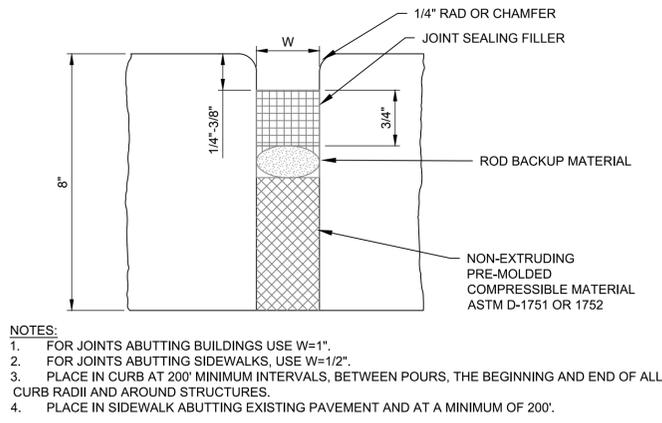
### 11 CONCRETE SIDEWALK DETAIL

NOT TO SCALE



### 5 TYPICAL EXPANSION JOINT MATERIAL DETAIL

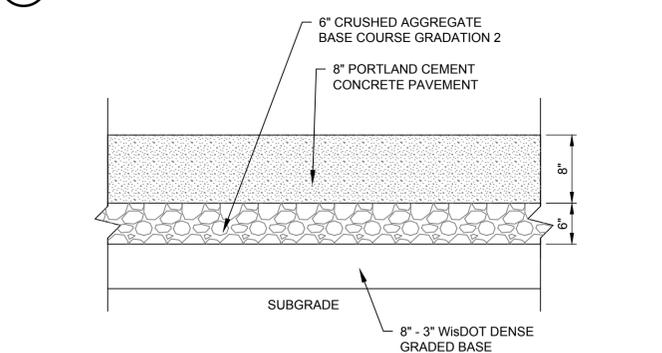
NOT TO SCALE



- NOTES:
1. FOR JOINTS ABUTTING BUILDINGS USE W=1".
  2. FOR JOINTS ABUTTING SIDEWALKS, USE W=1/2".
  3. PLACE IN CURB AT 200' MINIMUM INTERVALS, BETWEEN POURS, THE BEGINNING AND END OF ALL CURB RADII AND AROUND STRUCTURES.
  4. PLACE IN SIDEWALK ABUTTING EXISTING PAVEMENT AND AT A MINIMUM OF 200'.

### 6 (E) TYPICAL EXPANSION JOINT DETAIL

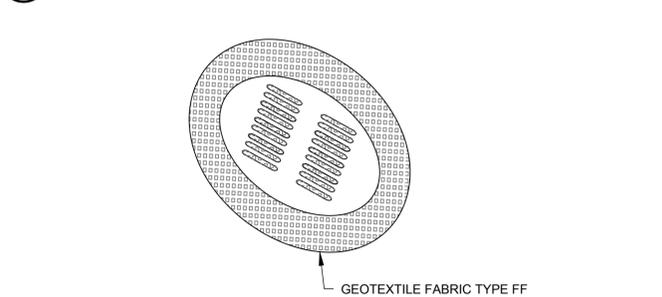
NOT TO SCALE



- NOTES:
1. PLACE EXPANSION JOINTS AT BUILDING EDGE.
  2. PLACE CONTRACTION JOINTS AT APPROXIMATELY 10' X 10' TO 12' X 12' SQUARES

### 7 TYPICAL CONCRETE PAVEMENT SECTION

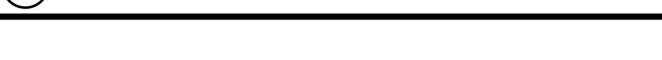
NOT TO SCALE



- NOTES:
1. FABRIC SIZE SHALL BE 8-INCH (MIN) GREATER ON ALL SIDES OF THE INLET COVER TO PROVIDE A HAND HOLD WHEN MAINTENANCE OR REMOVAL IS REQUIRED.
  2. CLEAN OR REPLACE WHEN PLUGGED

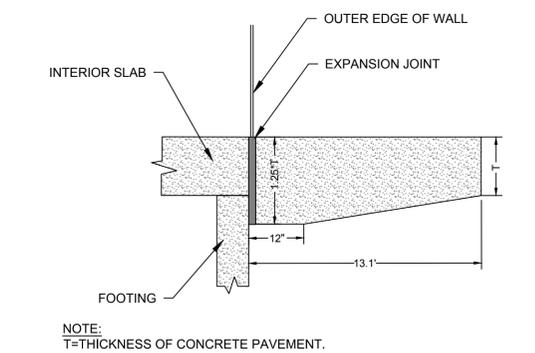
### 8 INLET PROTECTION DETAIL, TYPE B

NOT TO SCALE



### (T) TYPICAL THICKENED CONCRETE PAVEMENT EDGE AT BUILDING

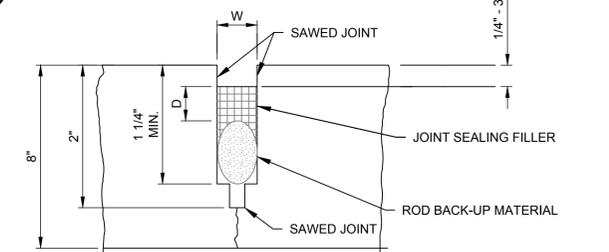
NOT TO SCALE



- NOTE:  
T=THICKNESS OF CONCRETE PAVEMENT.

### 2 TYPICAL CONTRACTION JOINT DETAIL

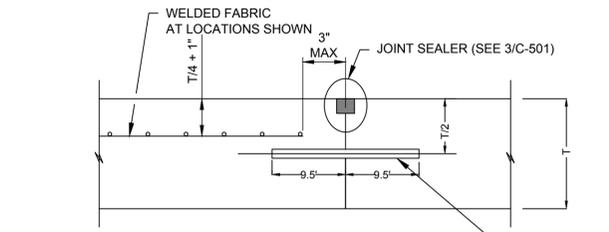
NOT TO SCALE



- NOTES:
1. SEALANT RESERVOIR SIZED TO PROVIDE PROPOSED SHAPE FACTOR W/D AS RECOMMENDED BY THE SEALANT MANUFACTURER FOR OPTIMUM PERFORMANCE.
  2. ROD BACKUP MATERIAL SHALL BE COMPATIBLE WITH THE TYPE OF SEALANT USED AND SIZED TO PROVIDE THE ADEQUATE SHAPE FACTOR.
  3. FOR SIDEWALK AND CURB USE NON-DOWELED CONTRACTION JOINTS AT 5' INTERVALS FOR SIDEWALK AND 10' INTERVALS FOR CURB.

### 3 TYPICAL CONTRACTION JOINT MATERIAL DETAIL

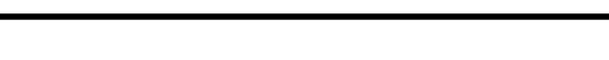
NOT TO SCALE



- DOWELS TO BE DRILLED INTO EXISTING CONCRETE WITH HOLE BLOWN CLEAN & DOWEL EPOXIED. ALSO PLACE AT EXISTING PAVEMENTS WHERE INDICATED & AT CONTINUATION OF NEXT DAY POURS.
- EPOXY-COATED SMOOTH STEEL DOWELS, 1" IN DIAMETER, 19" IN LENGTH, SPACED AT 12", BOTH WAYS. (NOTE: PAINTED CAN BE SUBSTITUTED FOR EPOXY COATED.) (OIL PRIOR TO CONCRETE PLACEMENT).
- NOTE:  
T=THICKNESS OF CONCRETE PAVEMENT.

### (C) DOWELED CONSTRUCTION JOINT DETAIL

NOT TO SCALE



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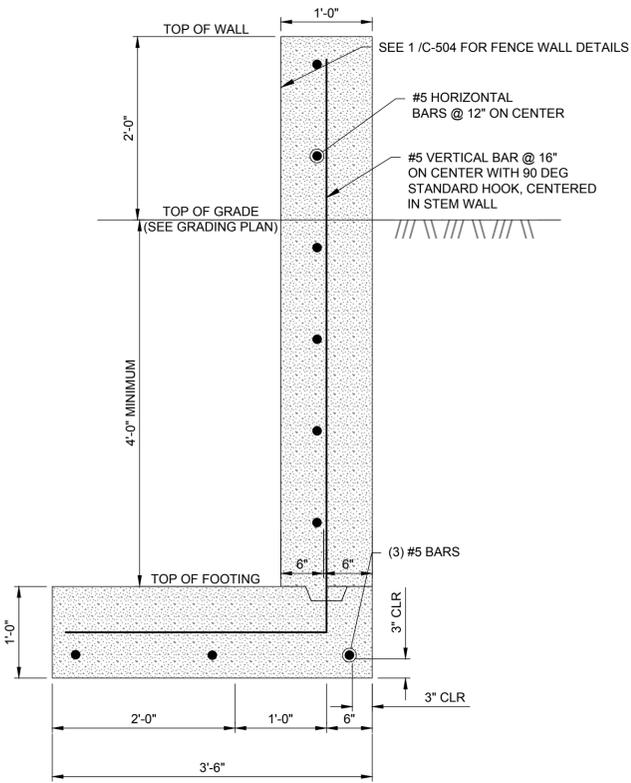
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Vehicle Storage Building Improvements  
Contract No. 7823, Project No. 10442  
Madison, Wisconsin

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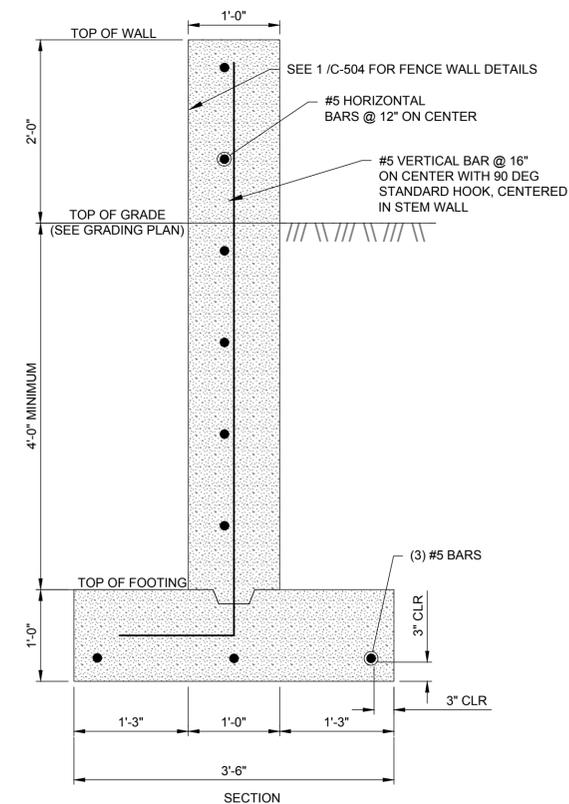
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SHEET CONTENTS  
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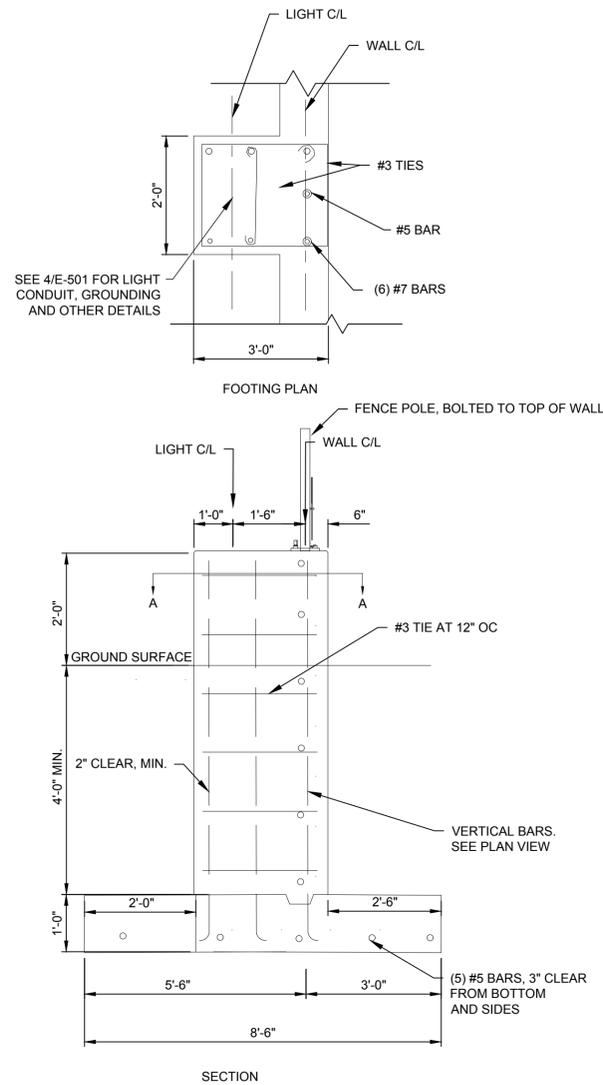
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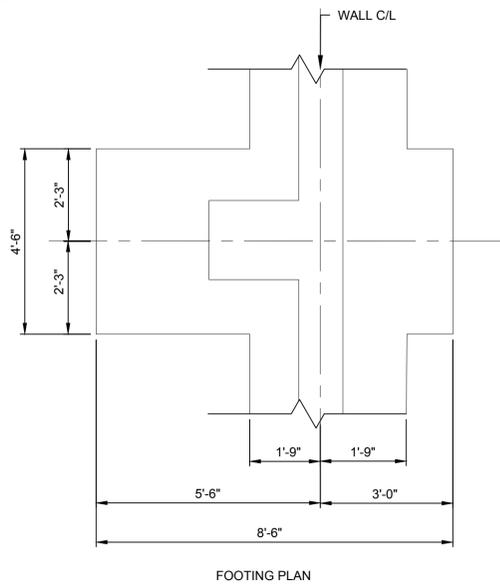
**7 DECORATIVE FENCE OFFSET FOOTING DETAIL**  
NOT TO SCALE



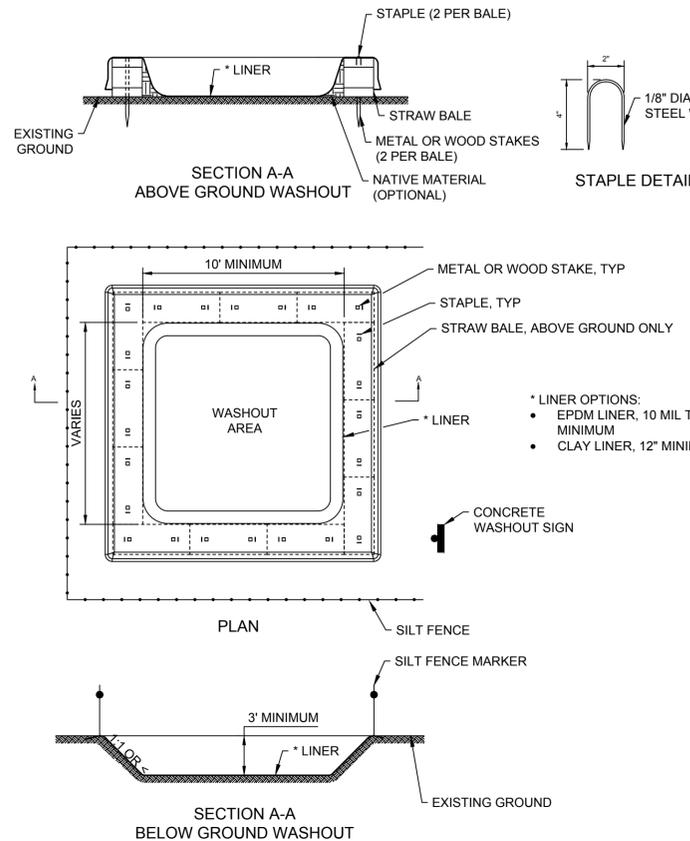
**8 DECORATIVE FENCE FOOTING DETAIL**  
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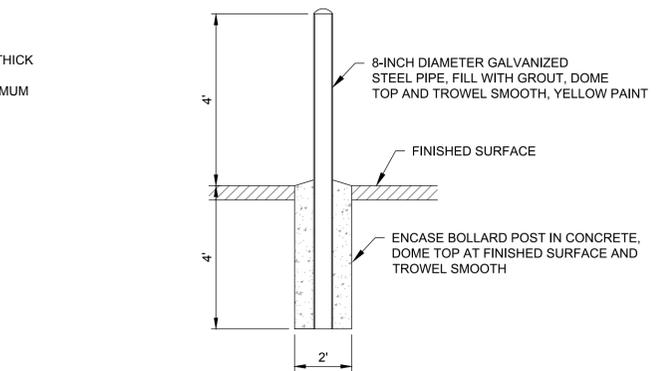
**6 DECORATIVE FENCE & LIGHT FOUNDATION DETAIL**  
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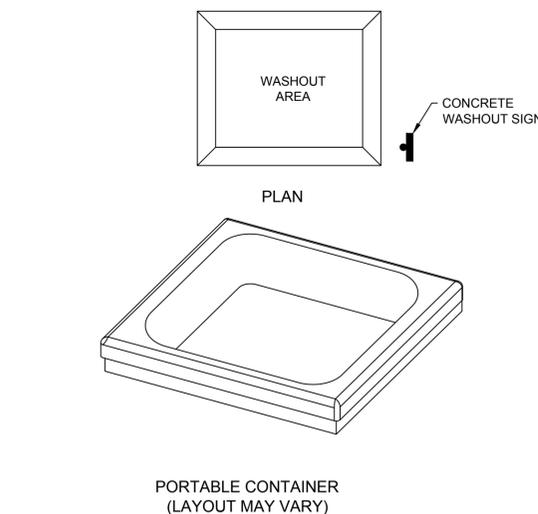
**5 CONCRETE WASHOUT DETAIL**  
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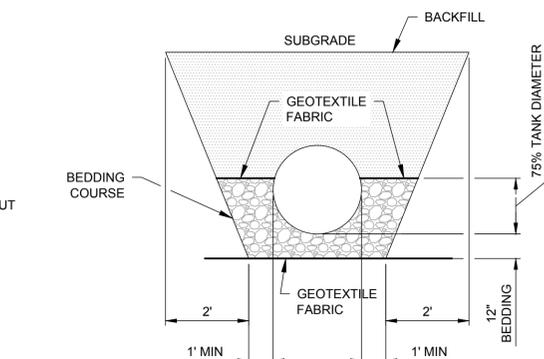
**1 STORM SEWER PIPE TRENCH DETAIL**  
NOT TO SCALE



**2 BOLLARD POST DETAIL**  
NOT TO SCALE



**3 SIDEWALK TRANSITION DETAIL (S)**  
NOT TO SCALE



**4 ROOF WATER TANK TRENCH DETAIL**  
NOT TO SCALE

**NOTES:**

- WASHOUT LOCATION SHALL BE MARKED WITH A SIGN.
- IF PROJECT SITE WARRANTS, ADDITIONAL SIGNAGE MAY BE REQUIRED TO DIRECT CONCRETE WASHOUT ACTIVITIES TO THE WASHOUT LOCATION(S).
- WASHOUT SHALL BE INSPECTED DAILY FOR LEAKS AND REPAIRED AS NECESSARY.
- PUMPING OF WASH WATER MAY BE REQUIRED IF ADEQUATE SPACE IS NOT AVAILABLE FOR NEXT CONCRETE POUR.
- REPLACEMENT WASHOUT, SHALL BE CONSIDERED INCIDENTAL.
- PORTABLE CONTAINERS SHALL BE IMPERMEABLE AND EASILY MOVED WITHOUT OVERFLOW.

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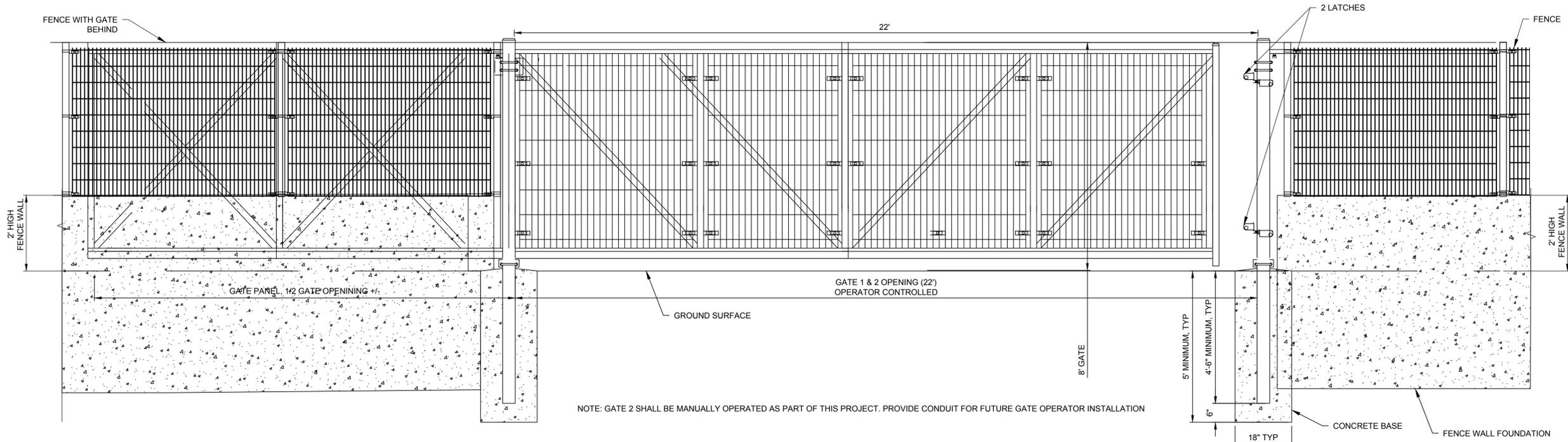
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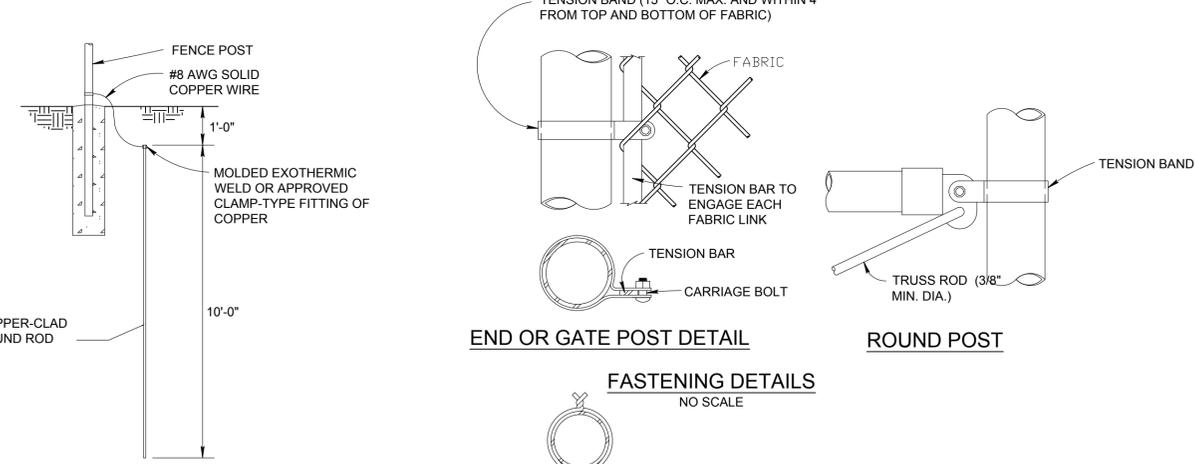
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DETAILS

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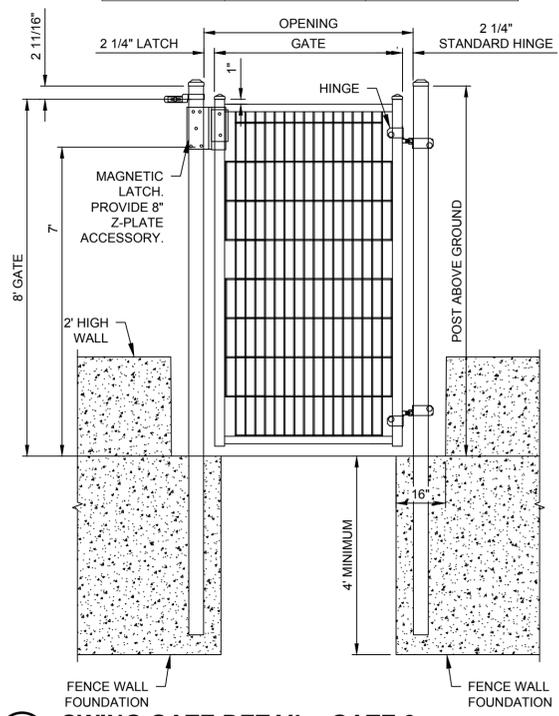
C-503



**1 SLIDE GATE DETAIL - GATE 1 AND 2**  
NOT TO SCALE

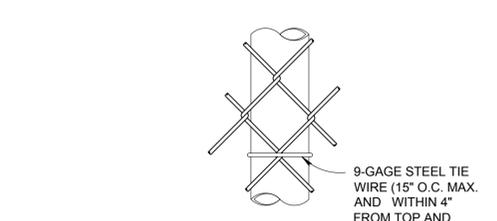


GATE POST DIMENSIONS		
PANEL (H)	OPENING	POSTS
8'	3' TO 7'	3\"X3\" 11GA
8'	10' TO 26'	6\"X6\" 3/16"



**4 SWING GATE DETAIL - GATE 3**  
NOT TO SCALE

**GROUNDING DETAIL**  
NO SCALE

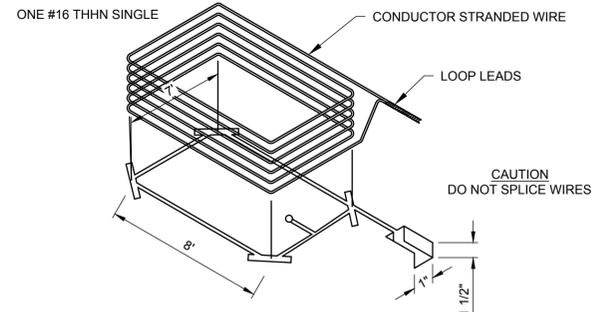
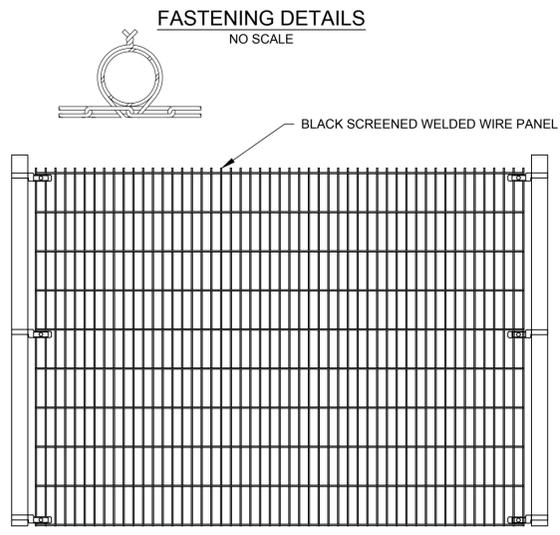


**ROUND POST**  
NO SCALE



- NOTES:**
1. DETAILS SHOWN ARE TO CLARIFY REQUIREMENTS AND ARE NOT INTENDED TO LIMIT OTHER TYPES OF FENCE SECTIONS AND METHODS OF INSTALLATION THAT COMPLY WITH THE SPECIFICATIONS.
  2. WIRE TIES, RAILS, POSTS, AND BRACES SHALL BE CONSTRUCTED ON THE SECURE SIDE OF THE FENCE ALIGNMENT. FABRIC SHALL BE PLACED ON THE SIDE OPPOSITE THE SECURE AREA.
  3. PROVIDE BRACE PANELS AT BENDS AND WHERE LENGTH EXCEEDS 500 FEET.

**3 FENCE DETAILS (6' HIGH FENCE)**  
NOT TO SCALE



**PERSPECTIVE VIEW OF DETECTOR LOOP**  
DO NOT FRACTURE WIRE INSULATION. LOOPS SHORTED TO GROUND WILL CAUSE DETECTOR MALFUNCTION. WHEN PLACING WIRE IN THE SLOT, DO NOT USE SCREWDRIVER OR OTHER SHARP TOOLS

**TYPICAL LAYOUT FOR LOOP**  
SAW SLOT IN EXISTING CONCRETE 3/16\"X1/2\" DEEP. MAKE RECTANGULAR SHAPE TO SPECIFIED LOOP DIMENSIONS PLUS A SLOT FOR LEAD CONDUIT. SEAL WITH LOOP DETECTOR SEALANT 271, A PRODUCT OF CRAFCO INC. OR ENGINEER APPROVED EQUIVALENT. (EXAMPLE: DE WITT'S NO. 99 BLACK MASTIC CAULK) SELECTED SEALANT SHALL NOT BE A WATER BASED PRODUCT. FOLLOW MANUFACTURER RECOMMENDATIONS FOR PRODUCT INSTALLATION.

- NOTES:**
1. LOOP LEADS ARE LIMITED TO 100 FEET.
  2. LOOP LEADS MUST HAVE FOUR (4) TWIST PER FOOT.
  3. LOOP & LOOP LEADS MUST BE LOCATED AT LEAST 18\"/>

**2 SLIDE GATE EXIT LOOP DETECTOR**  
NOT TO SCALE

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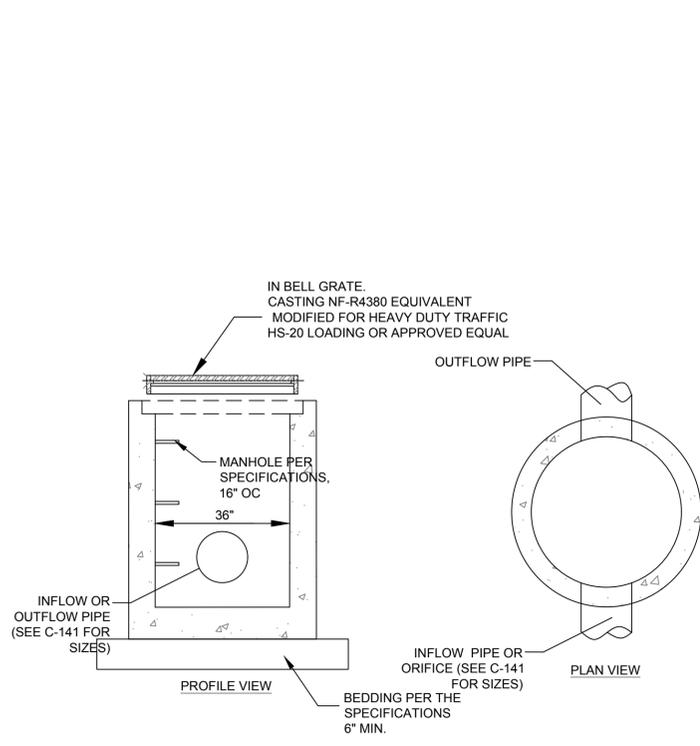
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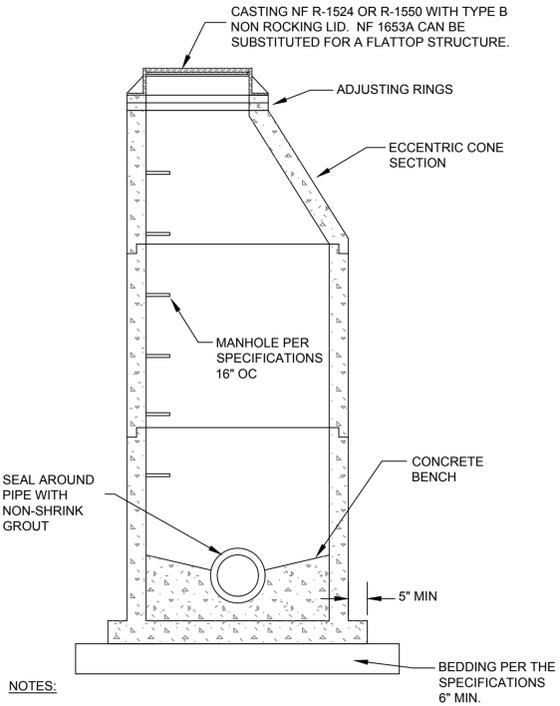
SHEET NO.

**C-504**



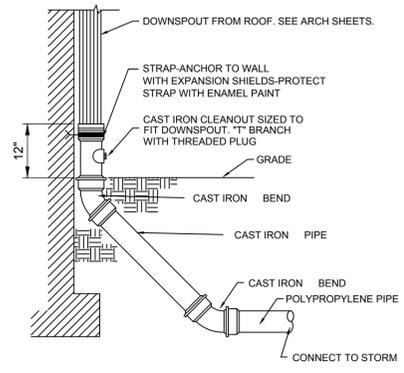
- NOTES:
1. PRECAST INLET IN ACCORDANCE WITH THE SPECIFICATIONS.
  2. BASE SHALL BE MONOLITHIC WITH THE RISER SECTION BOTTOM A MINIMUM OF 24 INCHES HIGH.

**5 36-INCH CATCH BASIN DETAIL**  
NOT TO SCALE

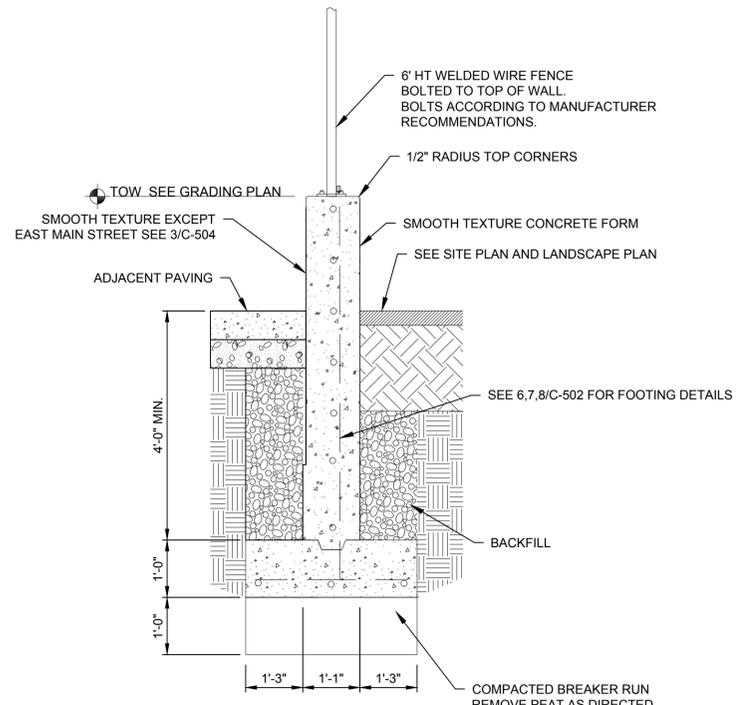


- NOTES:
1. PROVIDE 4 FOOT DIAMETER MANHOLES UNLESS OTHERWISE SPECIFIED ON THE PLANS.
  2. MANHOLE BASE SHALL BE CAST MONOLITHICALLY WITH THE BARREL SECTION. BOTTOM BARREL SECTION SAHLL BE A MINIMUM OF 28 INCHES HIGH.
  3. PROVIDE A MINIMUM OF 4 INCHES OF RING ADJUSTMENT.
  4. WHEN ADDITIONAL ADJUSTMENT IS REQUIRED, IT SHALL BE DONE WITH A COMBINATION OF RINGS THICKER THAN 2 INCHES.

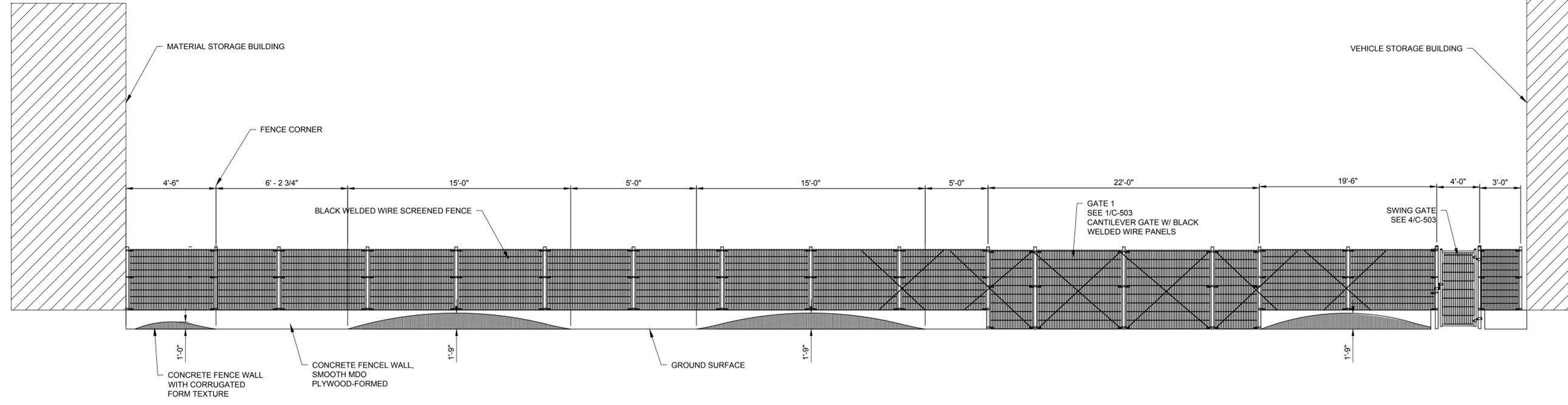
**4 STORM MANHOLE DETAIL**  
NOT TO SCALE



**2 HUB DRAIN DETAIL**  
NOT TO SCALE

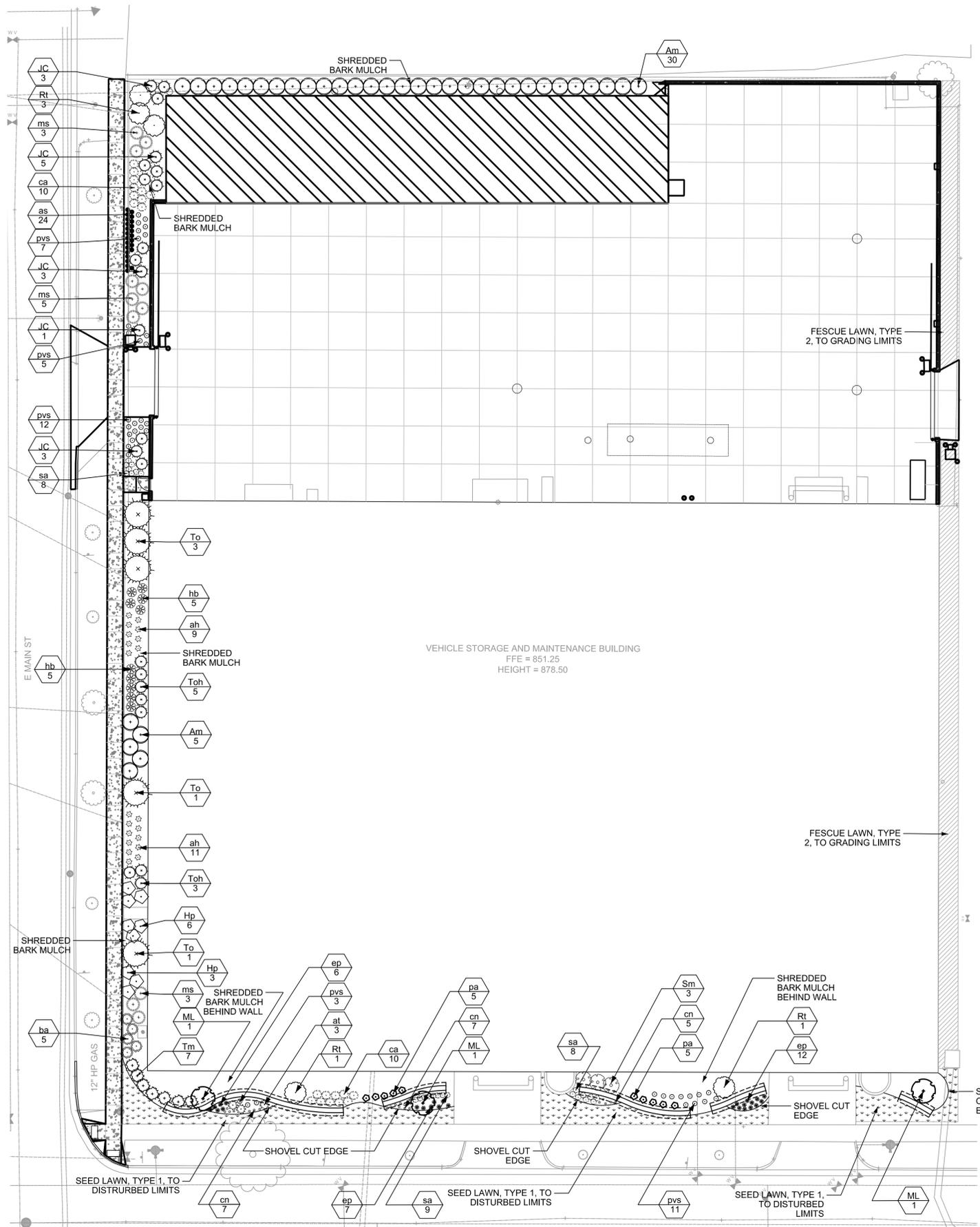


**1 FENCE FENCE WALL DETAIL**  
NOT TO SCALE



**3 EAST MAIN FENCE ELEVATION VIEW**  
NOT TO SCALE

X:\3235300\131021\_02\TECH\CAD\C-501.DWG 10/14/2016 11:30:04 AM



Key	Botanical Name	Common Name	Quantity	Size	Spec	Comments	Mature Size
<b>Deciduous Trees</b>							
ML	<i>Malus 'Lanzam'</i>	Lancelot Crabapple	3	1-1/2" Cal.	B&B	See plan for spacing	8'-10' ht x 8' sp
<b>Evergreen Shrubs &amp; Trees</b>							
JC	<i>Juniperus chinensis 'Trautman'</i>	Trautman Juniper	15	5' Ht.	B&B	See plan for spacing	12' ht x 4' sp
To	<i>Thuja occidentalis 'Hetz Wintergreen'</i>	Hetz Wintergreen Arborvitae	5	6' Ht.	B&B	See plan for spacing	20-30' ht x 5-10' sp
Toh	<i>Thuja occidentalis 'Hetz Midget'</i>	Hetz Midget Arborvitae	8	6' Ht.	B&B	See plan for spacing	3-4' ht x 4-5' sp
Tm	<i>Taxus x media 'Taunton'</i>	Taunton Yew	7	24" Ht.	B&B	Single, straight leader, match specimens	2-3' ht x 4-5' sp
<b>Deciduous Shrubs &amp; Vines</b>							
Am	<i>Aronia melanocarpa var. elata</i>	Glossy Black Chokeberry	35	5 gal.	Cont.	Space 5'-0" o.c.	4-6' ht x 4-6' sp
Hp	<i>Hydrangea paniculata 'Jane'</i>	Little Lime Hydrangea	9	36" Ht.	B&B	Space 4'-0" o.c.	4-5' ht x 4-5' sp
Rt	<i>Rhus typhina 'Bailtiger'</i>	Tiger Eyes Sumac	5	5 gal.	Cont.	See plan for spacing	3-6' ht x 3-6' sp
Sm	<i>Syringa meyeri 'Palibin'</i>	Meyer Lilac	3	3 gal.	Cont.	Space 5'-0" o.c.	4-5' ht x 5-7' sp
<b>Perennials &amp; Ornamental Grasses</b>							
ah	<i>Amsonia hubrichtii 'Halfway to Arkansas'</i>	Halfway to Arkansas Narrow Leaf Blue Star	20	1 gal.	Cont.	Space 3'-0" o.c.	3' ht x 2.5-3' sp
as	<i>Allium x 'Summer Beauty'</i>	Summer Beauty Allium	24	1 gal.	Cont.	Space 18" o.c.	1.5' ht x 1.5' sp
at	<i>Asclepias tuberosa</i>	Butterfly Weed	3	1 gal.	Cont.	Space 24" o.c.	1-2.5' ht x 1.5' sp
ba	<i>Baptisia australis</i>	Blue False Indigo	5	1 gal.	Cont.	Space 3'-0" o.c.	3' ht x 2.5-3' sp
ca	<i>Calamagrostis x acutiflora 'Karl Foerster'</i>	Karl Foerster Feather Reed Grass	20	3 gal.	Cont.	Space 2'-6" o.c.	4-6' ht x 2-3' sp
cn	<i>Calamintha nepeta ssp. nepeta</i>	Lesser Calamintha	19	1 gal.	Cont.	Space 24" o.c.	1.5-2' ht x 1.5-2' sp
ep	<i>Echinacea x 'Pixie Meadowbrite'</i>	Pixie Meadowbrite Coneflower	25	1 gal.	Cont.	Space 18" o.c.	1.5-2' ht x 1.5-2' sp
hb	<i>Hosta 'Blue Angel'</i>	Blue Angel Hosta	10	2 gal.	Cont.	Space 3'-6" o.c.	2.5' ht x 4' sp
ms	<i>Miscanthus sinensis 'Gracillimus'</i>	Narrow Leaved Japanese Silver Grass	11	3 gal.	Cont.	Space 4'-0" o.c.	4-6' ht x 4-6' sp
pa	<i>Perovskia atriplicifolia 'Little Spire'</i>	Little Spire Russian Sage	10	1 gal.	Cont.	Space 2'-6" o.c.	1.5-2' ht x 1.5-2' sp
pvs	<i>Panicum virgatum 'Shenandoah'</i>	Shenandoah Switchgrass	48	1 gal.	Cont.	Space 2'-6" o.c.	3.5' ht x 2.5-3' sp
sa	<i>Sesleria autumnalis</i>	Autumn Moor Grass	25	1 gal.	Cont.	Space 1'-6" o.c.	1.5' ht x 1.5' sp

City of Madison - Landscape Worksheet

Plant Type/ Element	Minimum Size at Installation	Points	Credit/ Existing Landscaping	New/ Proposed Landscaping
			Quantity	Quantity
Overstory deciduous tree	2 1/2 inch caliper (dbh)	35		0
Tall evergreen tree (i.e. pine, spruce)	5-6 feet tall	35		0
Ornamental tree	1 1/2 inch caliper	15		45
Upright evergreen shrub (i.e. arborvitae)	3-4 feet tall	10		200
Shrub, deciduous	#3 gallon container size, Min. 12"-24"	3		156
Shrub, evergreen	#3 gallon container size, Min. 12"-24"	4		60
Ornamental grasses/ perennials	#1 gallon container size, Min. 8"-18"	2		440
Ornamental/decorative fencing or wall	n/a	4 per 10 ln ft		131
Existing significant specimen tree	min. 2-1/2" cal.	14 per inch dbh		0
Landscape furniture for public seating and/or transit connections	publicly accessible	5 per seat		0
			<b>TOTAL POINTS</b>	<b>1032</b>

In cases where development frontage landscaping cannot be provided due to site constraints, the zoning administrator may waive the requirement or substitute alternative screening methods for the required landscaping.



2440 Deming Way  
Middleton, WI 53562  
phone: 608-273-6380  
meadhunt.com



303 S. PARKER ST.  
MADISON, WI 53702  
phone: 608.931.3935  
www.ksi-ia.com

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City of Madison Water Utility  
Vehicle Storage Building Improvements  
Contract No. 7823, Project No. 10442  
Madison, Wisconsin

ISSUED  
10/21/16 BID SET

M&H NO.: 3235300-131021.02  
DATE: October 21, 2016  
DESIGNED BY:  
DRAWN BY:  
CHECKED BY:  
DO NOT SCALE DRAWINGS

SHEET CONTENTS  
LANDSCAPE PLAN

SHEET NO.

L-100

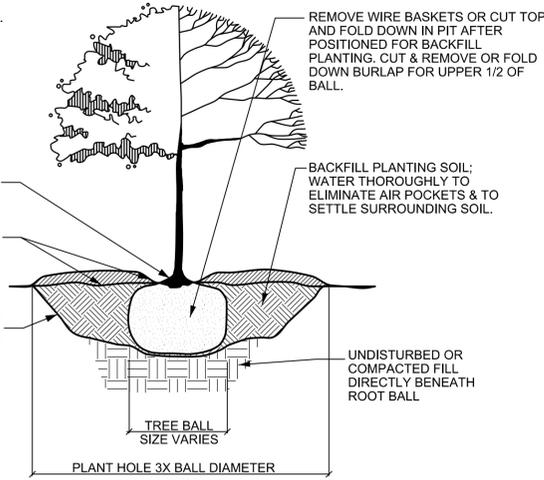
NOTE:  
1. STREET TREE PLANTING IN THE CITY R.O.W. SHALL CONFORM TO CITY OF MADISON STANDARDS. SEE STD. DETAIL 2.01.

2. CUT & REMOVE ALL POLY TIES.

ROOT FLARE MUST BE EXPOSED AND 2-3" ABOVE FINISHED GRADE. TREES WHERE ROOT FLARE IS NOT VISIBLE SHALL BE REJECTED. DO NOT PLACE FILL ON TOP OF ROOT BALL

3" AVE. DEPTH MULCH; PULL BACK FROM TRUNK AND DISH AWAY.

FLARE EDGES OF PLANTING HOLE; BREAK UP GLAZED SOIL ON SIDES BEFORE BACKFILLING



1 TREE PLANTING  
L400 1/2" = 1'-0"

NOTE: THIS DETAIL APPLIES FOR BOTH DECIDUOUS & EVERGREEN SHRUBS

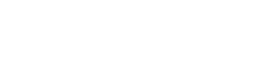
PLANT SHRUB SUCH THAT 2-3" OF ROOT FLARE IS ABOVE SOIL LINE

UNDISTURBED SOIL

SHRUB BALL SIZE VARIES

PLANTING HOLE WIDTH

BREAK UP GLAZED SOIL ON SIDES OF PLANTING HOLE



2 SHRUB PLANTING  
L400 1/2" = 1'-0"

PERENNIAL PLANTS; SEE PLANT SCHEDULE FOR SPACING

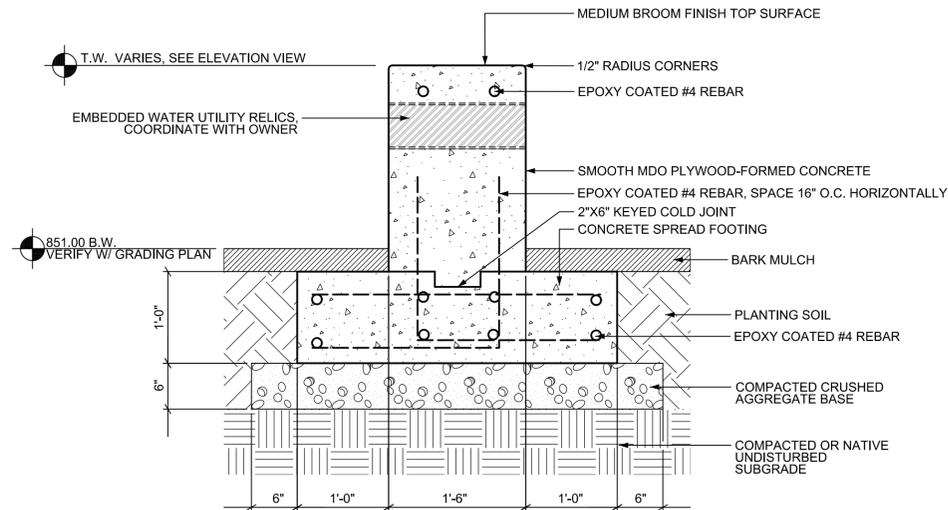
2" MULCH; KEEP 2-3" CLEAR OF ALL STEMS

PLANTING SOIL



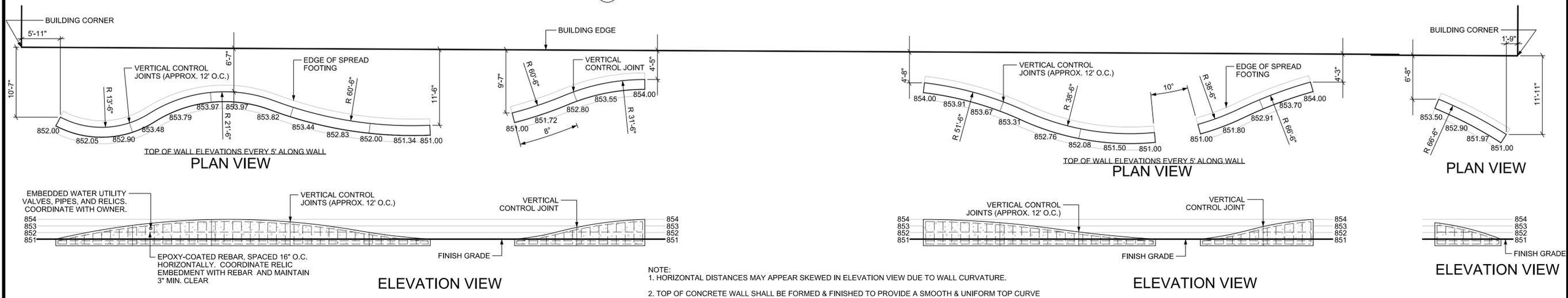
3 PERENNIAL/ GROUNDCOVER PLANTING  
L400 1/2" = 1'-0"

NOTE:  
1. PROVIDE VERTICAL CONTROL JOINTS AS SHOWN ON ELEVATION VIEW.  
2. REBAR SHALL MAINTAIN 2" MIN. CLEAR OF EXPOSED EDGES AND PVC PIPES.



4 SHOVEL-CUT PLANTING BED EDGE  
L400 1/2" = 1'-0"

5 SERPENTINE SITE WALL - TYPICAL SECTION  
L400 1" = 1'-0"

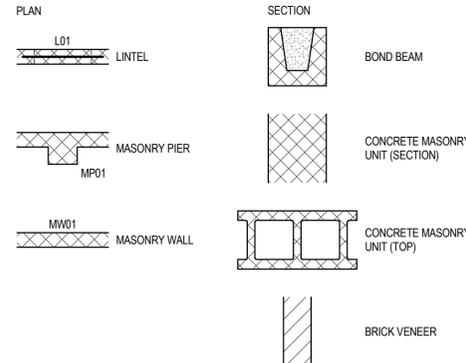


NOTE:  
1. HORIZONTAL DISTANCES MAY APPEAR SKEWED IN ELEVATION VIEW DUE TO WALL CURVATURE.  
2. TOP OF CONCRETE WALL SHALL BE FORMED & FINISHED TO PROVIDE A SMOOTH & UNIFORM TOP CURVE

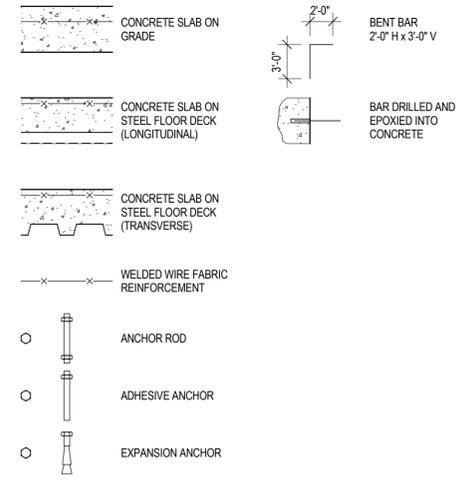
6 PATERSON ST. SITE WALL ENLARGEMENTS  
L400 1/8" = 1'-0"

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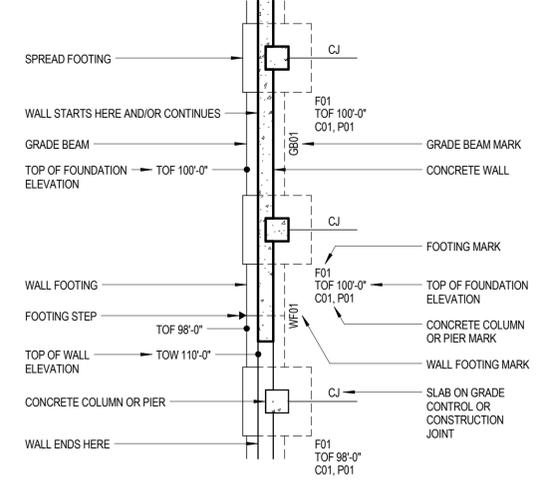
### CONCRETE MASONRY LEGEND



### CONCRETE LEGEND



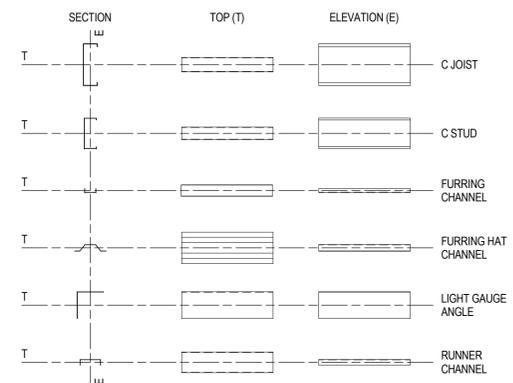
### FOUNDATION PLAN LEGEND



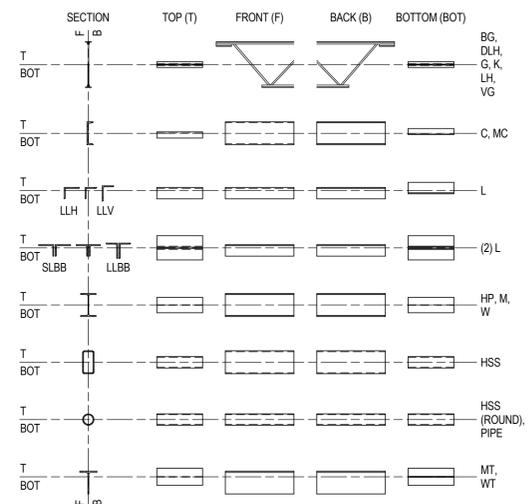
### ABBREVIATIONS

1WAY	ONE-WAY	LB	POUND
AB	ANCHOR BOLT	LD BRG	LOAD-BEARING
ADDL	ADDITIONAL	LH	LONG DIMENSION HORIZONTAL
ADDM	ADDENDUM	LDV	LONG DIMENSION VERTICAL
AHU	AIR HANDLING UNIT	LL	LIVE LOAD
ALT	ALTERNATE	LLBB	LONG LEG BACK TO BACK
APPROX	APPROXIMATE	LLH	LONG LEG HORIZONTAL
AR	AS REQUIRED	LLV	LONG LEG VERTICAL
ARCH	ARCHITECT	LVR	LOUVER
B PL	BASE PLATE	M	MOMENT
B/B	BACK TO BACK	MAX	MAXIMUM
BC	BOTTOM CHORD	MBR	MEMBER
BF	BOTH FACES	MC	MOMENT CONNECTION
BM	BEAM	MD	METAL DECK
BO	BOTTOM OF (REFER TO TOP OF)	MECH	MECHANICAL
BOT	BOTTOM	MEZZ	MEZZANINE
BRDG	BRIDGING	MFR	MANUFACTURER
BRG PL	BEARING PLATE	MFR REC	MANUFACTURER'S RECOMMENDATION
BS	BOTH SIDES	MID	MIDDLE
BSMT	BASEMENT	MIN	MINIMUM
BW	BOTH WAYS	MISC	MISCELLANEOUS
C	CHANNEL	ML	MONOLITHIC
C TO C	CENTER TO CENTER	MO	MASONRY OPENING
CANTIL	CANTILEVER	MTL	METAL
CIP	CAST-IN-PLACE	MULT	MULTIPLE
CJ	CONSTRUCTION JOINT	N	NORTH
CJ	CONTROL JOINT	NF	NEAR FACE
CL	CENTER LINE	NIC	NOT IN CONTRACT
CMU	CONCRETE MASONRY UNIT	NLB	NONLOADBEARING
COL	COLUMN	NO	NUMBER
CONC	CONCRETE	NOM	NOMINAL
CONN	CONNECT	NS	NEAR SIDE
CONSTR	CONSTRUCTION	NTS	NOT TO SCALE
CONT	CONTINUE/CONTINUOUS	OC	ON CENTER
CONTR	CONTRACTOR	OD	OUTSIDE DIAMETER
CPRS	COMPRESSIBLE	OF	OUTSIDE FACE
CTRL	CONTROL	OPNG	OPENING
CU	CUBIC	OPH	OPPOSITE HAND
CU FT	CUBIC FEET	OPP	OPPOSITE
CU IN	CUBIC INCH	OPT	OPTIONAL
CU YD	CUBIC YARD	OIO	OUT TO OUT
D	DEEP	PCC	PRECAST CONCRETE
D	DEPTH	PCF	POUNDS PER CUBIC FOOT
D BE	DECK BEARING ELEVATION	PL	PLATE
DBL	DOUBLE	PLF	POUNDS PER LINEAR FOOT
DEG	DEGREE	PLYWD	PLYWOOD
DET	DETAIL	PRCST	PRECAST
DEMO	DEMOLITION	PRELIM	PRELIMINARY
DIA	DIAMETER	PS CONC	PRESTRESSED CONCRETE
DIAG	DIAGONAL	PSF	POUNDS PER SQUARE FOOT
DM	DIMENSION	PSI	POUNDS PER SQUARE INCH
DIR	DIRECTION	PT	POST-TENSIONED
DL	DEAD LOAD	PT	PRESSURE TREATED
DWG	DRAWING	PT CONC	POST-TENSIONED CONCRETE
E	EAST	QTY	QUANTITY
EA	EACH	R	RADIUS
EE	EACH END	RD	ROOF DRAIN
EF	EACH FACE	REF	REFERENCE
EJ	EXPANSION JOINT	REINF	REINFORCE
EL	ELEVATION	REQD	REQUIRED
ELEC	ELECTRIC	REV	REVISION
ELEV	ELEVATOR	RTU	ROOF TOP UNIT
ENGR	ENGINEER	S	SOUTH
ENR	EDGE OF DECK	SCHED	SCHEDULE
EOD	EDGE OF DECK	SCHEM	SCHEMATIC
EOG	EDGE OF GRATING	SE	STRUCTURAL ENGINEER
EOS	EDGE OF SLAB	SECT	SECTION
EQ	EQUAL	SF	SQUARE FOOT (FEET)
EQL SP	EQUALLY SPACED	SHT	SHEET
EQUIP	EQUIPMENT	SIM	SIMILAR
EQUIV	EQUIVALENT	SL	SLAB
EW	EACH WAY	SLBB	SHORT LEG BACK TO BACK
EXC	EXCAVATE	SP	SUMP PIT
EXIST. (E)	EXISTING	SPCL	SPECIAL
EXP	EXPANSION	SPEC	SPECIFICATION
EXP BT	EXPANSION BOLT	SQ	SQUARE
EXT	EXTERIOR	SQ IN	SQUARE INCH
FDTN	FOUNDATION	SQ YD	SQUARE YARD
FF	FAR FACE	STD	STANDARD
FLR	FLOOR	STIF	STIFFENER
FR	FRAME	STL JST	STEEL JOIST
FS	FAR SIDE	STRUC	STRUCTURAL
FSTNR	FASTENER	SYMM	SYMMETRICAL
FEET	FEET	T&B	TOP AND BOTTOM
FTG	FOOTING	TB	THROUGH BOLT
FUT	FUTURE	TC	TOP CHORD
GA	GAGE	TEMJ	TOP ELEVATION MATCHES JOIST
GALV	GALVANIZED	TEMP	TEMPORARY
GC	GENERAL CONTRACTOR	THK	THICKNESS
GLU LAM	GLUE LAMINATED WOOD	THRU	THROUGH
GR BM	GRADE BEAM	TOB	TOP OF BEAM
GRTG	GRATING	TOC	TOP OF CONCRETE
H	HIGH	TOD	TOP OF DECK
HDR	HEADER	TOP	TOP OF FOUNDATION
HGR	HANGER	TOP	TOP OF PIER
HORIZ, H	HORIZONTAL	TOS	TOP OF STEEL
HS	HIGH STRENGTH	TOW	TOP OF WALL
HSKPG	HOUSEKEEPING	TS	TUBE STEEL
HT	HEIGHT	TYP	TYPICAL
I	MOMENT OF INERTIA	UNO	UNLESS NOTED OTHERWISE
ID	INSIDE DIAMETER	VAR	VARIES
IF	INSIDE FACE	VERT, V	VERTICAL
INFO	INFORMATION	VIF	VERIFY IN FIELD
INT	INTERIOR	W	WEST
JST	JOIST	W	WIDE
JST BRG	JOIST BEARING	W	WITH
K	KIP	WO	WITHOUT
KB	KNEE BRACE	WBL	WOOD BLOCKING
KIP	THOUSAND POUNDS	WD	WOOD
KLF	KIPS PER LINEAR FOOT	WF	WIDE FLANGE
KOP	KNOCK OUT PANEL	WP	WORK POINT
KSF	KIPS PER SQUARE FOOT	WT	WEIGHT
KSI	KIPS PER SQUARE INCH	WWF	WELDED WIRE FABRIC
KWY	KEYWAY	WWM	WELDED WIRE MESH
L	ANGLE	YD	YARD
LATL	LATERAL		

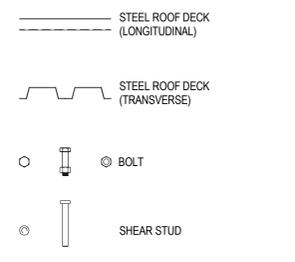
### COLD-FORMED SHAPES LEGEND



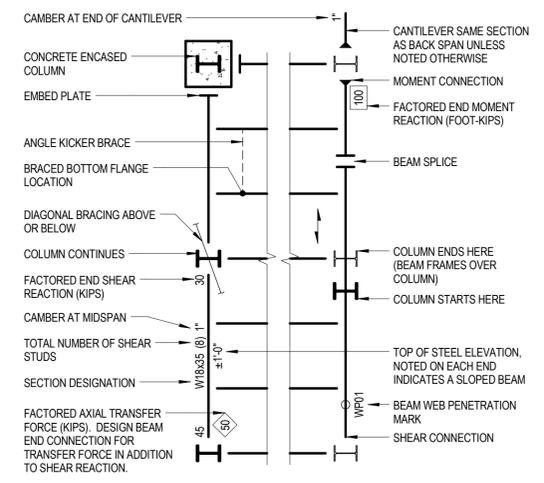
### STEEL SHAPES LEGEND



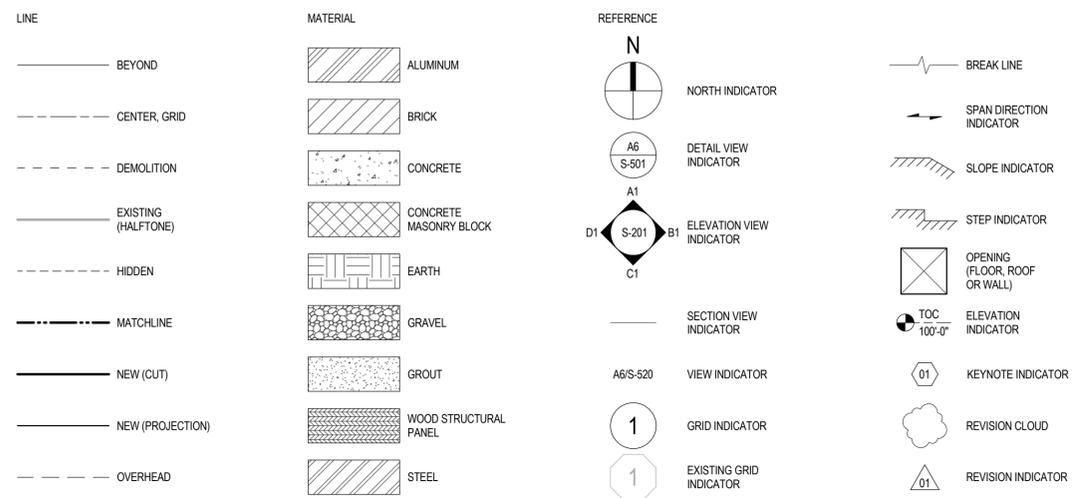
### STEEL LEGEND



### STEEL FRAMING PLAN LEGEND



### SYMBOL LEGEND



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S-521	STEEL DETAILS

**Mead & Hunt**  
 2440 Deming Way  
 Middleton, WI 53562  
 phone: 608-273-6380  
 meadhunt.com

**GRÄEF**  
 5126 WEST TERRACE DRIVE  
 SUITE 111  
 MADISON, WI 53718  
 608 / 242 1550

www.graef-usa.com

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City of Madison Water Utility  
 Vehicle Storage Building Improvements  
 Contract No. 7823, Project No. 10442  
 Madison, Wisconsin

ISSUED 10/21/16 BID SET

MSH NO.: 3235300-131021.02  
 DATE: October 21, 2016  
 DESIGNED BY: EMF  
 DRAWN BY: KRN  
 CHECKED BY: EMF

DO NOT SCALE DRAWINGS  
 SHEET CONTENTS  
 GENERAL INFORMATION

SHEET NO.:

**S-001**

## DESIGN SPECIFICATIONS

- DESIGN IS IN ACCORDANCE WITH THE STATE OF WISCONSIN AND THE 2009 INTERNATIONAL BUILDING CODE.
- MINIMUM 28 DAY CONCRETE CYLINDER STRENGTH SHALL BE:
 

FOOTINGS	3000 PSI
SLABS ON GROUND	4000 PSI
WALLS	4000 PSI
PRECAST TOPPING	3000 PSI
- REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60.
- CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90 TYPE II NORMAL WEIGHT UNITS.
- MORTAR SHALL CONFORM TO ASTM C270 TYPE N.
- MASONRY GROUT SHALL CONFORM TO ASTM C476. MINIMUM COMPRESSIVE STRENGTH SHALL BE  $f_c = 3000$  PSI.
- MINIMUM COMPRESSIVE STRENGTH OF REINFORCED CONCRETE MASONRY CONSTRUCTION SHALL BE  $f_m = 2000$ .
- STRUCTURAL STEEL W-SHAPES SHALL CONFORM TO ASTM A992 GRADE 50.
- STRUCTURAL STEEL PLATES, ANGLES, CHANNELS, AND OTHER ROLLED MEMBERS SHALL CONFORM TO ASTM A36.
- RECTANGULAR OR SQUARE HSS MEMBERS SHALL CONFORM TO ASTM A500 GRADE C.
- SEE CGC GEOTECHNICAL EXCAVATION REPORT C05459 DATED DECEMBER 5, 2005. CGC BEARING CAPACITY OF 3000 PSF BASED UNDERCUTTING AND BACKFILLING THE SITE. FOOTING EXCAVATION REQUIRES FULL REMOVAL OF THE MISCELLANEOUS FILLSOFT CLAY (CGC ESTIMATED MINIMUM DEPTH OF 4 FEET BELOW BOTTOM OF NEW FOOTING). ONCE REMOVED, PER CGC REPORT, COMPACT 6" OF BREAKER ROCK INTO NATIVE SOIL AT THE BASE OF EACH FOOTING EXCAVATION. SLABS ON GRADE EXCAVATION REQUIRES A MINIMUM REMOVAL OF 1.5 FEET OF THE MISCELLANEOUS FILLSOFT CLAY. RESTORE UNDERCUT AREAS WITH COMPACTED ENGINEERED FILL. NOTE, CGC REPORT SHOWS THE PRESENCE OF CONTAMINATED SOILS.
- DESIGN LOADS:
 

FLOOR LIVE LOADS (IBC 2009)	
MECHANICAL PLATFORM	125 PSF
GEAR ROOM	40 PSF
PARTITIONS	20 PSF

LIVE LOAD REDUCTION PER IBC 2009 SECTION 1607.9 IS INCLUDED

ROOF SNOW LOAD (ASCE 7-05)	
OCCUPANCY CATEGORY	II
IMPORTANCE FACTOR	$I_s = 1.0$
GROUND SNOW LOAD	$P_g = 35.0$ PSF
FLAT ROOF SNOW LOAD	$P_f = 25.0$ PSF
EXPOSURE FACTOR	$C_e = 1.0$
THERMAL FACTOR	$C_t = 1.0$

WIND LOAD (ASCE 7-05)	
OCCUPANCY CATEGORY	II
IMPORTANCE FACTOR	$I_w = 1.0$
BASIC WIND SPEED	$V = 90$ MPH
EXPOSURE	B
INTERNAL PRESSURE COEFFICIENT	$G C_{pi} = +/- 0.18$
COMPONENTS AND CLADDING	REFER TO TABLE THIS SHEET

SEISMIC LOAD (IBC 2009)	
OCCUPANCY CATEGORY	II
IMPORTANCE FACTOR	$I_e = 1.0$
SPECTRAL RESPONSE ACCELERATIONS	$S_S = 0.103$ g
	$S_1 = 0.044$ g
SPECTRAL RESPONSE COEFFICIENTS	$S_{DS} = 0.112$ g
	$S_{D1} = 0.070$ g
SEISMIC RESPONSE COEFFICIENT	$C_s = 0.028$
RESPONSE MODIFICATION FACTOR	$R = 4$
SOIL SITE CLASS	D
SEISMIC DESIGN CATEGORY	B
BASIC SEISMIC FORCE RESISTING SYSTEM	ORDINARY REINFORCED CONCRETE
	SHEAR WALLS
ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE PROCEDURE
DESIGN BASE SHEAR	50 KIPS

RESISTANCE TO LATERAL LOADS ON STRUCTURE IS PROVIDED BY ROOF DIAPHRAGMS. CONTRACTOR SHALL PROVIDE SUFFICIENT TEMPORARY BRACING UNTIL ALL LATERAL SUPPORT SYSTEMS ARE IN PLACE AND FUNCTIONAL.

ALL STRUCTURAL FRAMING AND CONNECTIONS HAVE BEEN DESIGNED FOR THE FINAL COMPLETED CONDITION AND HAVE NOT BEEN INVESTIGATED FOR POTENTIAL LOADINGS ENCOUNTERED DURING ERECTION AND CONSTRUCTION. ANY INVESTIGATION OF THE STRUCTURAL FRAMING AND CONNECTIONS FOR ADEQUACY DURING THE ERECTION AND CONSTRUCTION PROCESS IS THE RESPONSIBILITY OF THE CONTRACTOR.

CONTRACTOR IS RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION AND JOB SITE SAFETY.

PROVISIONS ARE NOT INCLUDED FOR FUTURE ADDITIONS.

## GENERAL NOTES

### EARTHWORK

- FOOTINGS SHALL BE CAST ON OVER EXCAVATED STRUCTURAL BACKFILL. IF DESIGN CAPACITY IS NOT ENCOUNTERED AT THE ELEVATIONS SHOWN, FOOTINGS MUST BE LOWERED. CONSULT ENGINEER BEFORE PROCEEDING.
- NO HOLES, TRENCHES OR DISTURBANCES OF THE SOIL SHALL BE ALLOWED WITHIN THE VOLUME DESCRIBED BY 45 DEGREE LINES SLOPING FROM THE BOTTOM EDGE OF THE FOOTING. IF SUCH ARE REQUIRED, FOOTINGS MUST BE LOWERED.
- BACKFILL EVENLY ON EACH SIDE OF FOUNDATION WALLS AND RETAINING WALLS.
- DO NOT BACKFILL AGAINST BASEMENT WALLS UNTIL FLOOR SYSTEM IS IN PLACE AND FASTENED OR UNTIL WALLS ARE ADEQUATELY BRACED. BRACING SHALL BE DESIGNED BY THE CONTRACTOR.
- TOPSOIL AND FILL BELOW SLABS ON GROUND SHALL BE REMOVED. AGGREGATE BASE COURSE UNDER SLABS ON GROUND SHALL BE AS SPECIFIED EXCEPT WHERE LOOSE FILL IS INDICATED ON PLANS.
- BACKFILL AGAINST INTERIOR FOUNDATION WALLS SHALL BE AS SPECIFIED COMPACTED TO MAXIMUM 6-INCH LAYERS.
- BACKFILL AGAINST EXTERIOR FOUNDATION WALLS SHALL BE AS SPECIFIED COMPACTED TO MAXIMUM 6-INCH LAYERS.
- PROVIDE MINIMUM 24 INCHES OF FREE DRAINING AGGREGATE AS SPECIFIED OVER ALL DRAIN TILES AND 4 INCHES BELOW.

### CONCRETE

- FORMWORK SHALL BE DESIGNED IN ACCORDANCE WITH THE ACI "MANUAL OF CONCRETE PRACTICE", LATEST EDITION.
- REINFORCING STEEL SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH THE ACI "MANUAL OF CONCRETE PRACTICE", LATEST EDITION, UNLESS OTHERWISE NOTED.
- LAP ALL WALL BARS 36 DIAMETERS WITH CLASS B SPLICES UNLESS OTHERWISE DETAILED. LAP WELDED WIRE MESH 6 INCHES.
- PROVIDE COLUMN AND WALL DOWELS OF THE SAME SIZE AND NUMBER AS THE RESPECTIVE COLUMN AND WALL REINFORCING UNLESS OTHERWISE DETAILED.
- PROVIDE TWO #4 BARS AS STIRRUP CARRY BARS WHERE NO TOP STEEL IS AVAILABLE TO HOLD STIRRUPS.
- WHEREVER AN APPROVED PIPE OR CONDUIT EXTENDS THROUGH A BEAM, PROVIDE ONE ADDITIONAL STIRRUP ON EACH SIDE OF THE OPENING.
- CONCRETE PROTECTION FOR REINFORCING BARS SHALL BE IN ACCORDANCE WITH THE "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", ACI 318-08.
- SLABS ON GRADE SHALL BE CAST ALLOWING A SUFFICIENT NUMBER OF JOINTS TO ADEQUATELY CONTROL SHRINKAGE CRACKING. SAWCUTTING SHALL BE DONE AS SOON AS SAWCUT WILL NOT RAVEL CONCRETE OR WITHIN 24 HOURS MAXIMUM OF INITIAL POURING OPERATION. MAXIMUM SIZE OF PANELS SHALL BE 15 FEET BY 15 FEET. GENERALLY, JOINTS SHALL OCCUR ON COLUMN CENTERLINES.
- ALLOW AT LEAST 24 HOURS BEFORE POURING ADJACENT WALL SECTIONS BETWEEN CONSTRUCTION JOINTS. MAXIMUM LENGTH OF POUR TO BE 40 FEET, UNLESS CRACK INDUCERS ARE USED AS DETAILED ON THE DRAWINGS.
- CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 24 HOURS PRIOR TO PLACING CONCRETE.
- CONSTRUCTION JOINTS IN BEAMS, JOISTS OR SLABS TO BE LOCATED BETWEEN THE 1/4 POINT AND CENTERLINE OF SPAN, OR AS DIRECTED BY THE ENGINEER.
- DO NOT PLACE OR CUT HOLES IN CONCRETE SLABS, BEAMS, WALLS OR COLUMNS WITHOUT PRIOR APPROVAL OF THE ENGINEER.
- PIPES AND CONDUITS EMBEDDED IN OR PASSING THROUGH STRUCTURAL MEMBERS MUST BE APPROVED BY THE STRUCTURAL ENGINEER. PIPE AND CONDUITS EMBEDDED IN CONCRETE SHALL NOT BE LARGER THAN 2 INCHES IN OUTSIDE DIAMETER AT THEIR WIDEST POINT OR FITTING OR 1/3 OF THE THICKNESS OF THE SLAB, BEAM OR WALL.

ELECTRICAL CONDUIT OR PIPES EMBEDDED IN OR PASSING THROUGH SLABS, BEAMS OR WALLS SHALL BE LOCATED AND PLACED SO THAT:

- THEY ARE NOT CLOSER THAN THREE DIAMETERS ON CENTER.
- THE CONCRETE COVER IS NOT LESS THAN 2 INCHES.
- THEY RUN BETWEEN REINFORCING AND DO NOT DISPLACE IT IN ANY MANNER.

- ALUMINUM CONDUITS SHALL NOT BE PLACED IN CONCRETE.
- CHAMFER ALL EXPOSED CONCRETE CORNERS. SEE ARCHITECTURAL/STRUCTURAL DRAWINGS FOR REQUIREMENTS.
- CONCRETE SHALL BE TESTED BY THE OWNER'S TESTING LAB. REFER TO SPECIFICATIONS FOR REQUIREMENTS.
- PROPER CURING PROCEDURES SHALL BE USED FOR SLAB ON GRADE TO PREVENT CURLING.
- CALCIUM CHLORIDE SHALL NOT BE USED IN CONCRETE MIXES.
- PROVIDE WATERSTOPS AT ALL CONSTRUCTION JOINTS BELOW THE WATER TABLE AND AS SHOWN ON DRAWINGS. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

### STRUCTURAL STEEL

- STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE AISC "STEEL CONSTRUCTION MANUAL", THIRTEENTH EDITION, AND THE AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES", MARCH 18, 2005 EDITION.
- WHERE INDICATED ON DRAWINGS, STRUCTURAL AND MISCELLANEOUS STEEL WHICH SHALL REMAIN EXPOSED TO VIEW SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC "SPECIFICATION FOR ARCHITECTURALLY EXPOSED STRUCTURAL STEEL", LATEST EDITION, WITHOUT GAPS OR OPEN JOINTS.
- STEEL DECK FABRICATION AND ERECTION SHALL CONFORM TO THE STANDARD SPECIFICATIONS OF THE STEEL DECK INSTITUTE.
- ALL WELDING SHALL COMPLY WITH AWS D1.1 USING E70XX ELECTRODES. ALL WELDING TO BE DONE BY AWS PREQUALIFIED WELDERS, CERTIFIED FOR WELDS MADE. PROVIDE CONTINUOUS MINIMUM SIZED WELDS PER AISC REQUIREMENTS, UNLESS NOTED OTHERWISE.
- THE MINIMUM SIZE OF FILLET WELDS SHALL BE AS SPECIFIED IN TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL".
- MINIMUM NUMBER OF BOLTS FOR END SHEAR REACTIONS ARE AS FOLLOWS:
 

1. W8, W10 OR W12	2. W21 OR W24	3. W33, W36 OR W40	4. W44
5. W50, W54 OR W60	6. W66, W70 OR W74	7. W80, W84 OR W90	8. W100, W108 OR W114
- ALL STRUTS, HANGERS, AND BRACES SHALL HAVE CONNECTIONS DESIGNED TO DEVELOP THE FULL ALLOWABLE TENSILE STRENGTH OF THE MEMBER UNLESS THE DESIGN FORCE IS INDICATED ON THE DRAWINGS, IN WHICH CASE THE CONNECTIONS SHALL BE DESIGNED FOR THE FORCE INDICATED.
- COLUMN BASE PLATES SHALL HAVE OVERSIZED HOLES WITH PLATE WASHERS, REFER TO AISC 360-05 TABLE L4.2.
- GROUT UNDER BASE PLATES IN ACCORDANCE WITH THE "AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES", MARCH 18, 2005 EDITION.
- STEEL ROOF DECK SHALL BE SECURELY FASTENED TO ALL STRUCTURAL SUPPORTS BY WELDING IN THE 1ST, 3RD, 5TH, AND 7TH RIBS OF 36-INCH WIDE DECK (36" WELD PATTERN) UNLESS SHOWN OTHERWISE ON THE DRAWINGS. WELDS SHALL BE MADE WITH 5/8-INCH DIAMETER PUDDLE WELDS. IN NO CASE SHALL WELDS BE SPACED GREATER THAN 12 INCHES ON CENTER. ROOF DECK SHALL BE A MINIMUM OF TWO OR THREE CONTINUOUS SPANS.
- STEEL ROOF DECK SHALL BE SECURELY FASTENED TO ALL PERIMETER STRUCTURAL SUPPORTS BY WELDING IN EVERY RIB. WELDS SHALL BE MADE WITH 5/8-INCH DIAMETER PUDDLE WELDS. IN NO CASE SHALL WELDS BE SPACED GREATER THAN 6 INCHES ON CENTER.

STEEL ROOF DECK SIDELAPS TO BE SCREWED AT 24 INCHES ON CENTER MAXIMUM UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

DECK END LAPPS SHALL BE 2-INCH MINIMUM AND SHALL OCCUR AT SUPPORTS. LOCATE AT VALLEYS AND RIDGES.

WHERE CONTINUOUS DIAPHRAGM CHORD ANGLES ARE INDICATED, PROVIDE A FULL PENETRATION WELD AT THE SPLICE LOCATIONS.

- CLEAN, PREPARE, AND SHOP PRIME EXTERIOR EXPOSED STRUCTURAL STEEL MEMBERS IN ACCORDANCE WITH SSPC STANDARDS SP-1 AND SP-6.
- CLEAN, PREPARE, AND SHOP PRIME INTERIOR EXPOSED STRUCTURAL STEEL MEMBERS IN ACCORDANCE WITH SSPC STANDARDS SP-1 AND SP-3.

WHILE THE DESIGN DOCUMENTS MAY REFERENCE OSHA, THEY ARE NOT INTENDED TO SPECIFICALLY IDENTIFY ALL APPLICABLE OSHA REQUIREMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND COMPLY WITH ALL APPLICABLE OSHA REQUIREMENTS.

ALL STRUCTURAL STEEL PERMANENTLY EXPOSED TO THE WEATHER, INCLUDING MASONRY SHELF ANGLES, SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123, UNLESS OTHERWISE NOTED.

REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL MISCELLANEOUS STEEL.

### CONCRETE MASONRY

PRODUCTION AND CONSTRUCTION OF CONCRETE MASONRY SHALL BE IN ACCORDANCE WITH THE "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES", ACI 530-08, AND THE NCM "TEK MANUAL FOR CONCRETE MASONRY DESIGN AND CONSTRUCTION", LATEST EDITION.

HOT AND COLD WEATHER CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE IMAC (INTERNATIONAL MASONRY INDUSTRY ALL-WEATHER COUNCIL) "RECOMMENDED PRACTICES AND GUIDE SPECIFICATIONS FOR HOT AND COLD WEATHER MASONRY AND CONSTRUCTION".

CALCIUM CHLORIDE OR ADMIXTURES CONTAINING CALCIUM CHLORIDE SHALL NOT BE USED.

MASONRY WALLS SHALL BE ADEQUATELY BRACED TO RESIST WIND FORCES UNTIL PERMANENT DESIGN SUPPORTS ARE IN PLACE AND FUNCTIONAL. BRACING SHALL BE DESIGNED BY THE CONTRACTOR.

PROVIDE DOWELS INTO FOUNDATION THE SAME SIZE AND NUMBER AS WALL REINFORCING.

LAP REINFORCING BARS 48 DIAMETERS.

CONCRETE MASONRY WALLS SHALL BE REINFORCED AT EVERY OTHER BED JOINT WITH 9 GAGE LADDER TYPE JOINT REINFORCEMENT.

VERTICAL BARS SHOWN ON THE DESIGN DRAWINGS SHALL BE PLACED IN A CONTINUOUS UNOBSTRUCTED CELL OF NOT LESS THAN 3 INCHES BY 4 INCHES.

ALL BOND BEAMS AND PILASTERS SHALL BE REINFORCED AS SHOWN ON THE DESIGN DRAWINGS AND FILLED WITH GROUT.

ALL DOOR AND WINDOW JAMBS SHALL BE GROUTED 8 INCHES WIDE UNLESS SHOWN OTHERWISE.

WHERE NOT SHOWN OTHERWISE, MINIMUM SOLID GROUTED MASONRY BELOW BEAM REACTIONS SHALL BE 16 INCHES DEEP BY 32 INCHES LONG.

WHERE NOT SHOWN OTHERWISE, MINIMUM SOLID GROUTED MASONRY BELOW LINTEL REACTIONS SHALL BE 16 INCHES DEEP BY 16 INCHES LONG.

### COLD-FORMED STEEL FRAMING

DESIGN, FABRICATION, AND ERECTION OF COLD-FORMED STEEL FRAMING SHALL BE IN ACCORDANCE WITH THE AISI "COLD-FORMED STEEL DESIGN MANUAL", LATEST EDITION. ALL FRAMING MEMBERS SHOWN ON PLANS ARE SCHEMATIC AND ARE SHOWN FOR INTENT ONLY. DESIGN AND CALCULATIONS WILL BE REVIEWED BY GRAEF.

STEEL STUD CURTAIN WALL AND CONNECTIONS TO BE DESIGNED BY SUPPLIER. STEEL STUD CURTAIN WALL AND CONNECTION DESIGN SHALL BE SEALED BY PROFESSIONAL ENGINEER EXPERIENCED IN THIS WORK AND REGISTERED IN THE STATE OF WISCONSIN.

LIVE LOAD DEFLECTION CRITERIA FOR COMPONENTS SHALL BE AS FOLLOWS:

EXTERIOR WALL STUDS	L/240 (NOT TO EXCEED 1-INCH) AND NOT TO EXCEED 1/4-INCH AT WINDOW OPENINGS
ROOF PURLINS	L/360 FOR WALL STUDS W/ ATTACHED DRYWALL L/240

SPLICES IN AXIALLY LOADED STUDS ARE NOT PERMITTED.

STUDS SHALL BE PLUMBED, ALIGNED, AND SECURELY ATTACHED TO FLANGES OR WEBS OF LOWER TRACK. STUDS SHALL BE SEATED TIGHT TO TRACK WEBS PRIOR TO ATTACHMENT.

JOISTS SHALL BE LOCATED DIRECTLY OVER BEARING STUDS OR A LOAD DISTRIBUTION MEMBER SHALL BE PROVIDED AT THE TOP OF THE WALL.

REFER TO ARCHITECTURAL WALL SECTIONS AND DETAILS FOR ADDITIONAL INFORMATION.

ALL MEMBERS 0.0566-INCH MINIMUM THICKNESS OR THICKER (16 GAGE OR LOWER) SHALL BE OF MINIMUM 50 KSI STEEL. ALL MEMBERS OF 0.0451-INCH MINIMUM THICKNESS OR THINNER (18 GAGE OR HIGHER) AND ALL ACCESSORIES SHALL BE OF MINIMUM 33 KSI STEEL.

STEEL STUD ERECTOR SHALL CONSTRUCT ALL LIGHTGAGE FRAMING IN A MANNER WHICH PROTECTS LATERAL STABILITY OF THE STRUCTURE.

ALL WELDS PERFORMED ON GALVANIZED LIGHTGAGE COMPONENTS SHALL BE COATED WITH ZINC RICH PAINT FOR CORROSION PROTECTION IN ACCORDANCE WITH ASTM A780. CONTRACTOR SHALL NOTIFY THE ARCHITECT TO ALLOW ADEQUATE TIME FOR WELDS TO BE REVIEWED BEFORE SYSTEMS ARE ENCLOSED.

STEEL STUD WALLS SHALL BE DESIGNED AND CONSTRUCTED TO PROVIDE REQUIRED CAPACITIES TO CARRY CONSTRUCTION LOADS. CONTRACTOR SHALL PROVIDE NECESSARY BRACING OR ATTACHMENT TO WALL SHEATHING BEFORE STRUCTURAL COMPONENTS ARE LOADED.

### PRECAST CONCRETE

PRECAST CONCRETE MEMBERS SHALL BE DESIGNED IN ACCORDANCE WITH THE "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", ACI 318-08.

PRECAST CONCRETE SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE ACI "MANUAL OF CONCRETE PRACTICE", LATEST EDITION, AND THE AFOREMENTIONED CONCRETE PROVISIONS.

PRECAST CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER DESIGN AND REINFORCING OF PRECAST CONCRETE FOR HANDLING AND ERECTION STRESSES.

PRECAST MEMBERS SHALL BE ATTACHED AND SUPPORTED BY THE STRUCTURE AS INDICATED ON THE DRAWINGS. DEVIATION FROM THESE LOCATIONS WILL CONSTITUTE MEANS FOR REJECTION OF MEMBERS.

PRECAST MEMBERS SHALL BE DESIGNED AND REINFORCED FOR SELF-WEIGHT AND ALL SUPERIMPOSED LOADS SHOWN ON THE DRAWINGS.

PRECAST MEMBERS SHALL BE CAPABLE OF SAFELY SUPPORTING ANY CONCENTRATED LOADS INDICATED BY THE STRUCTURAL, MECHANICAL, AND ARCHITECTURAL DRAWINGS.

PRECAST CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS (HANGERS, CLIPS, PLATES, HEADERS, ANCHORAGES, ETC.) WHICH MUST BE PRECAST INTO THE CONCRETE UNLESS OTHERWISE NOTED OR REQUIRED FOR CONNECTION OF PRECAST TO STRUCTURE.

CONTRACTOR SHALL COORDINATE LOCATIONS OF ALL HOLES OR OPENINGS WITH RESPECTIVE TRADES BEFORE FABRICATION. ANY DEVIATION FROM THESE LOCATIONS OR ADDITIONAL OPENINGS MUST BE APPROVED BY THE FABRICATOR.

MAXIMUM ALLOWABLE CAMBER SHALL BE 1-1/2 INCH.

FIRE RATING OF PRECAST FLOOR PLANK SHALL BE AS NOTED ON ARCHITECTURAL DRAWINGS.

GROUT IN PRECAST MEMBER KEYWAYS SHALL BE SAND-CEMENT GROUT. MINIMUM COMPRESSIVE STRENGTH SHALL BE 4000 PSI.

WALL PANEL JOINTS SHALL BE FILLED WITH APPROVED FIRE STOP MATERIAL AND POLYURETHANE JOINT SEALANT.

### MISCELLANEOUS

DIMENSIONS OF EXISTING CONSTRUCTION OR CONSTRUCTION IN PROGRESS SHALL BE VERIFIED AND COORDINATED PRIOR TO FABRICATION OF STRUCTURAL COMPONENTS.

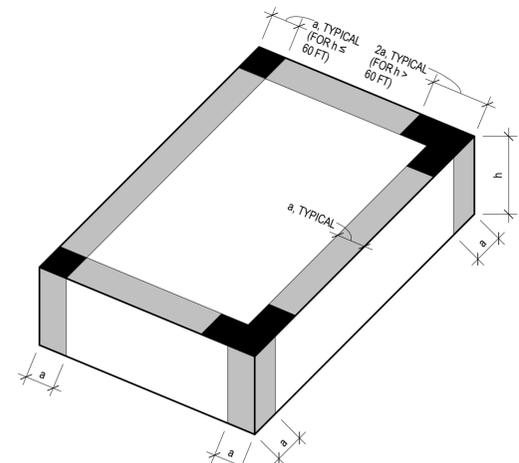
VERIFY AND COORDINATE, WITH ALL CONTRACTORS, THE LOCATION OF ALL ARCHITECTURAL AND MECHANICAL APPURTENANCES AND OPENINGS.

EXPANSION ANCHORS SHALL BE HILTI KWIK BOLT TZ.

ADHESIVE ANCHORS SHALL BE HILTI HIT-HY 200.

SLEEVE ANCHORS SHALL BE HILTI HL.C.

### WIND PRESSURE LOADS



FLAT ROOF BUILDING  
a = 3'-0"

- = INTERIOR ZONE  
ROOF = ZONE 1  
WALLS = ZONE 4
- = END ZONE  
ROOF = ZONE 2  
WALLS = ZONE 5
- = CORNER ZONE  
ROOF = ZONE 3

TRIBUTARY AREA (SF)	ROOF PRESSURE TABLE (PSF)				CORNER ZONE 3 (PSF)	
	INTERIOR ZONE 1 (PSF)		EDGE ZONE 2 (PSF)		POSITIVE	NEGATIVE
	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE		
10	10.0	15.0	10.0	25.1	10.0	37.8
50	10.0	14.1	10.0	18.9	10.0	22.7
>100	10.0	13.7	10.0	16.2	10.0	16.2

TRIBUTARY AREA (SF)	OVERHANGS, CANOPIES, AWNINGS PRESSURE TABLE (PSF)			
	ZONES 1 & 2 (PSF)		ZONE 3 (PSF)	
	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE
10		21.6		35.5
50		20.7		17.8
>100		20.3		10.2

TRIBUTARY AREA (SF)	WALL PRESSURE TABLE (PSF)			
	INTERIOR ZONE 4 (PSF)		EDGE ZONE 5 (PSF)	
	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE
10	13.7	14.8	13.7	18.3
100	11.7	12.8	11.7	14.2
>500	10.3	11.4	10.3	11.4

NOTES:

1. POSITIVE AND NEGATIVE VALUES INDICATE WIND PRESSURES ACTING TOWARD AND AWAY FROM THE SURFACES, RESPECTIVELY.

2. TRIBUTARY AREA IS THE PRODUCT OF SPAN LENGTH MULTIPLIED BY THE TRIBUTARY WIDTH OF THE ELEMENT UNDER CONSIDERATION THE TRIBUTARY WIDTH IS THE SMALLER OF ONE THIRD OF THE SPAN OR THE ACTUAL WIDTH OF THE DOOR/WINDOW/WALL.

# Mead & Hunt

2440 Deming Way  
Middleton, WI 53562  
phone: 608-273-6380  
meadhunt.com

# GRAEF

5126 WEST TERRACE DRIVE  
SUITE 111  
MADISON, WI 53718  
608 / 242 1550

www.graef-usa.com

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City of Madison Water Utility  
 Vehicle Storage Building Improvements  
 Contract No. 7823, Project No. 10442  
 Madison, Wisconsin

ISSUED

10/21/16 BID SET

MAH NO.: 3235300-131021.02  
DATE: October 21, 2016  
DESIGNED BY: EMF  
DRAWN BY: KRN  
CHECKED BY: EMF

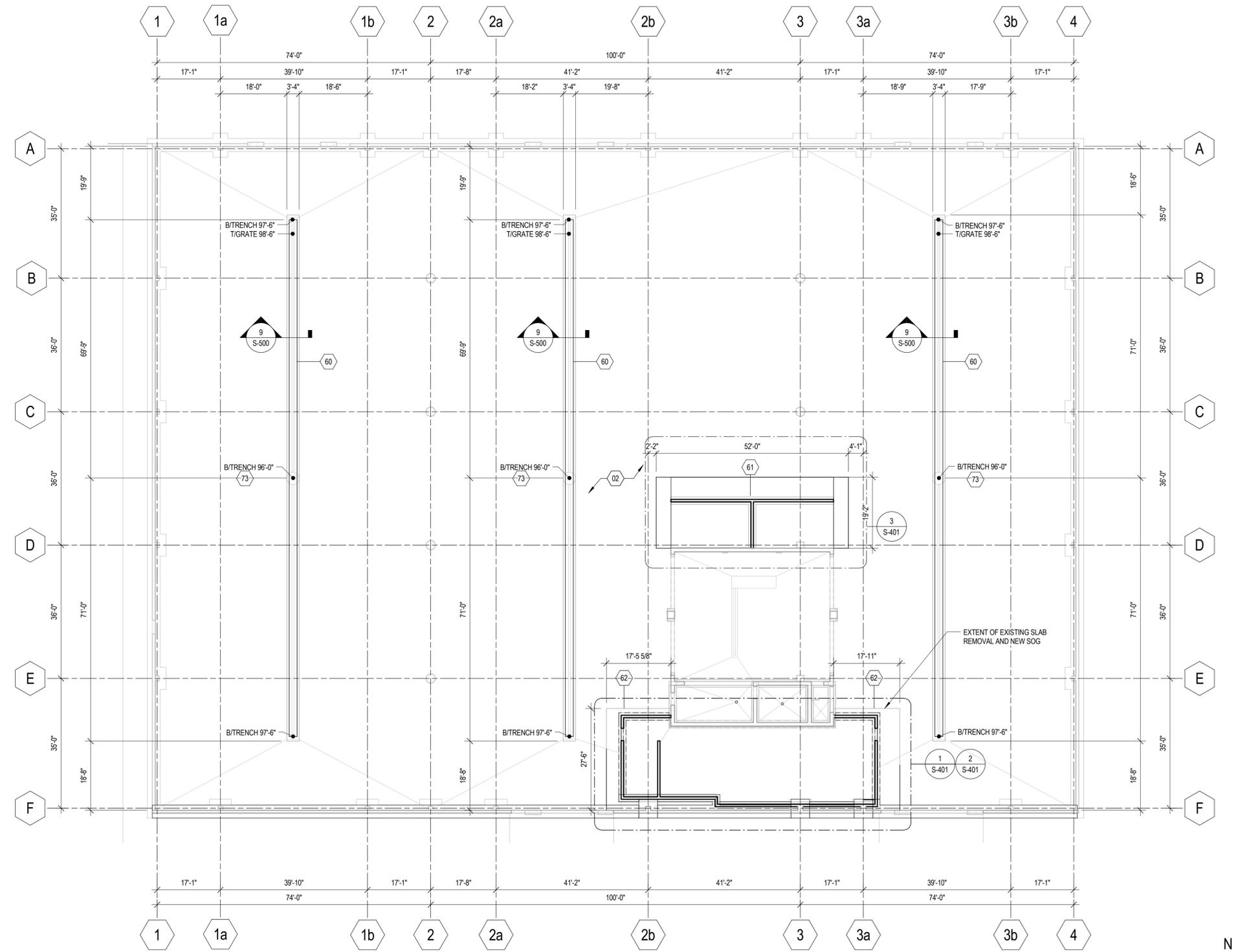
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SHEET CONTENTS  
GENERAL NOTES

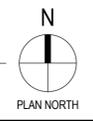
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# S-002

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**1 FOUNDATION PLAN**  
1/16" = 1'-0"



KEYNOTES	
02	EXISTING 8" REINFORCED SLAB ON GRADE
60	SAWCUT AND REMOVE EXISTING SLAB FOR NEW CAST-IN-PLACE TRENCH DRAIN
61	SAWCUT AND REMOVE EXISTING SLAB FOR NEW STORAGE AREA
62	SAWCUT AND REMOVE EXISTING SLAB FOR NEW GEAR ROOM
73	SEE PLUMBING DRAWINGS FOR DRAIN CONNECTION

**Mead & Hunt**  
2440 Deming Way  
Middleton, WI 53562  
phone: 608-273-6380  
meadhunt.com

**GRAEF**  
5126 WEST TERRACE DRIVE  
SUITE 111  
MADISON, WI 53718  
608 / 242 1550  
www.graef-usa.com

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**City of Madison Water Utility**  
Vehicle Storage Building Improvements  
Contract No. 7823, Project No. 10442  
Madison, Wisconsin

ISSUED  
10/21/16 BID SET

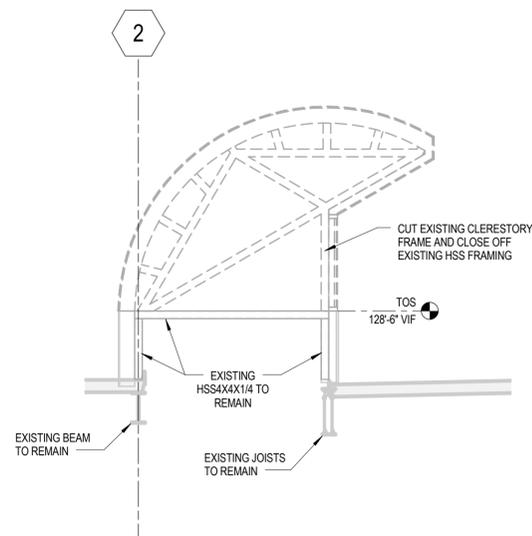
MSH NO.: 3235300-131021.02  
DATE: October 21, 2016  
DESIGNED BY: EMF  
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SHEET CONTENTS  
**VEHICLE STORAGE BUILDING FLOOR PLAN**

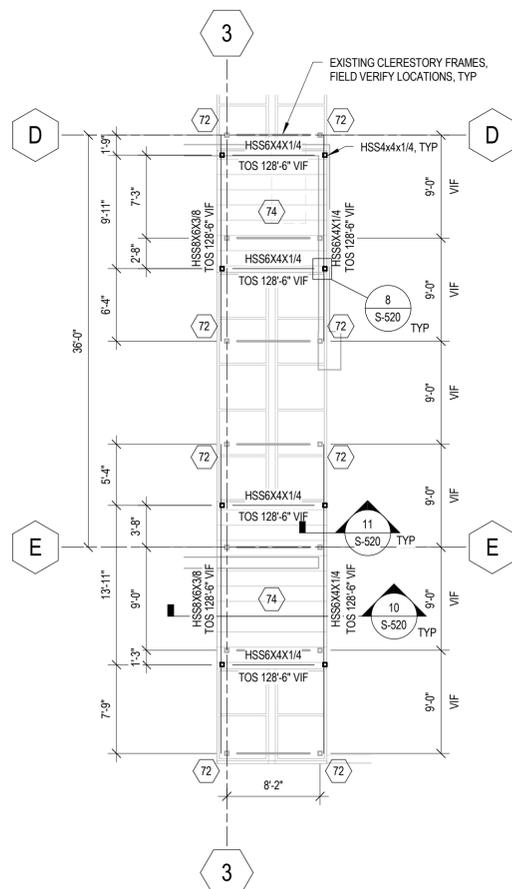
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**S-101**

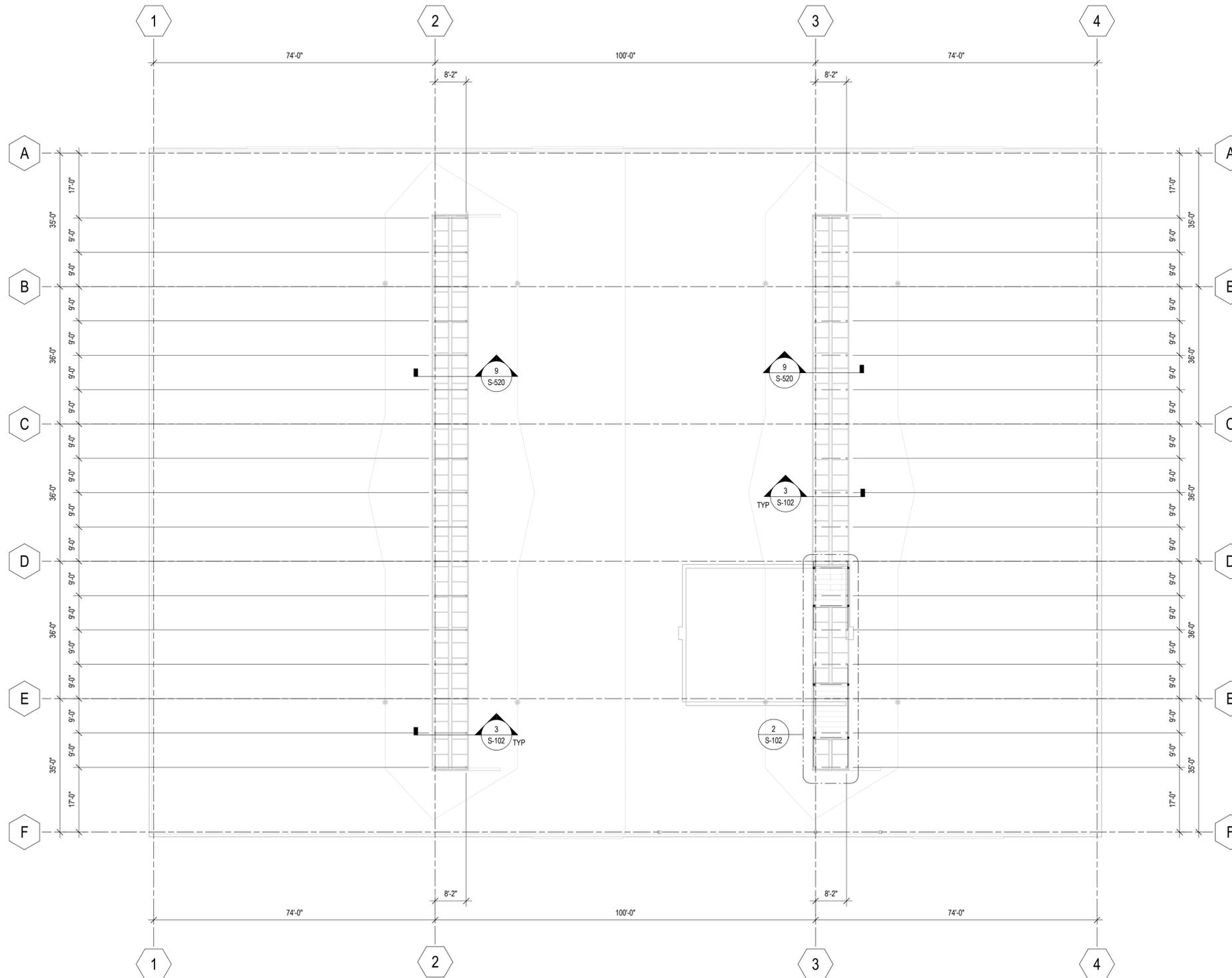
KEYNOTES	
72	PROVIDE SUPPORT ANGLE PER DETAIL 6/S-520 FOR LIGHT GAGE HEADER AND HSS BEAM BEARING. WELD HSS WITH FLARE BELVEL WELDS TO SUPPORT ANGLE AND EXISTING CLERESTORY HSS FRAME.
74	2"x3/16" WELDED (19-W-4) GALVANIZED GRATING (40PSF LIVE LOAD).



**3 DEMOLITION SECTION AT CLERESTORY**  
1/4" = 1'-0"

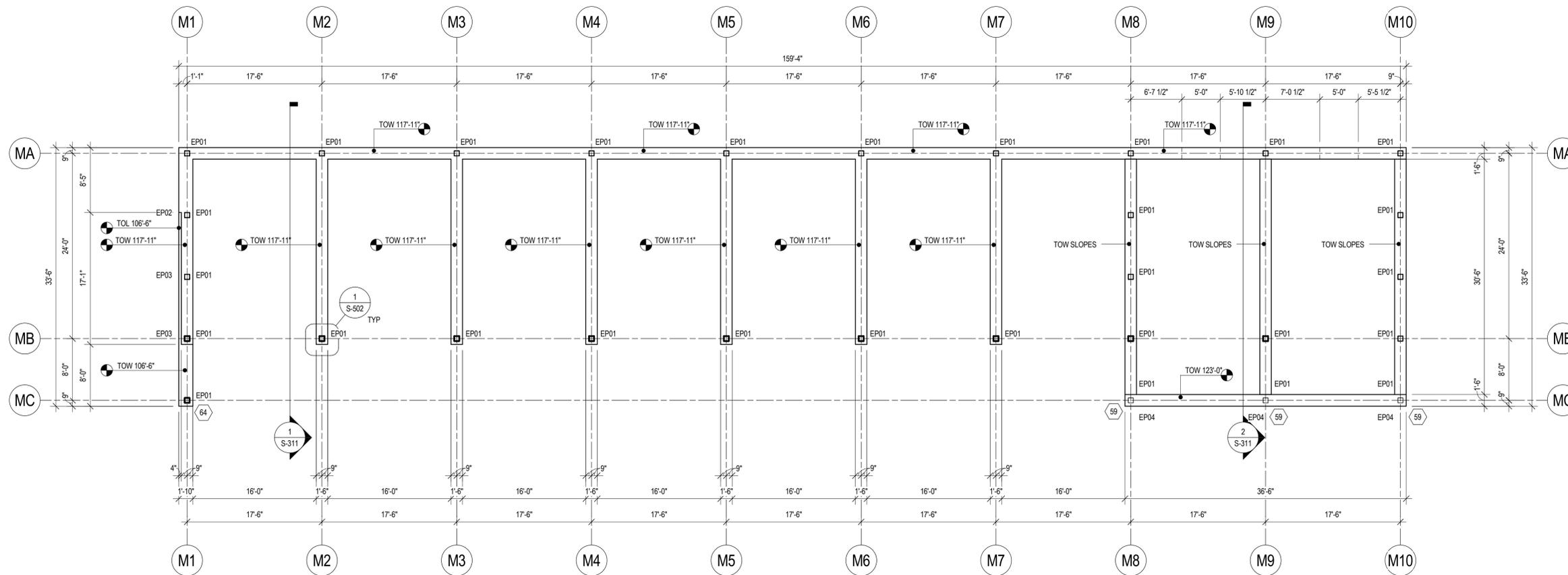


**2 ROOF FRAMING PLAN**  
1/8" = 1'-0"

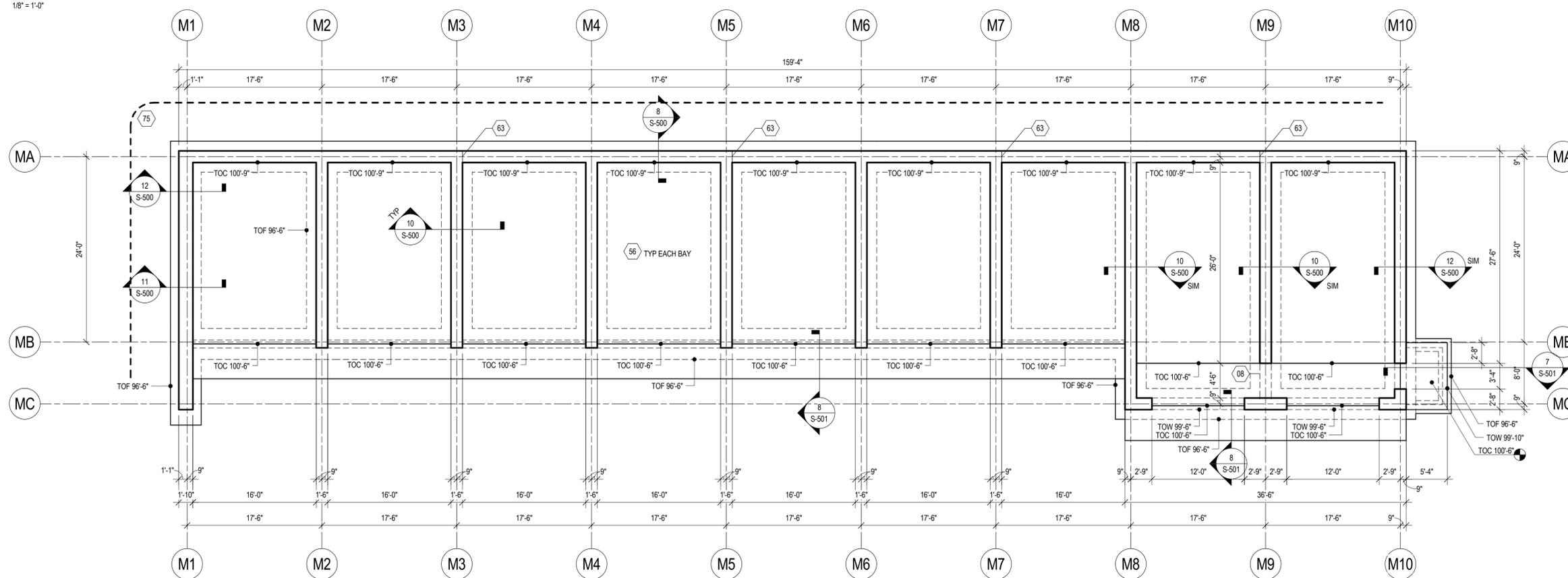
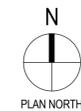


**1 ROOF FRAMING PLAN**  
1/16" = 1'-0"

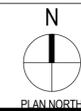




**2 TOP OF WALL PLAN**  
 1/8" = 1'-0"



**1 FOUNDATION PLAN**  
 1/8" = 1'-0"



**GENERAL NOTES:**  
 SEE SHEET S-500 FOR TYPICAL CONCRETE AND FOUNDATION DETAILS

EP01 - SEE DETAIL 1/S-520  
 EP02 - SEE DETAIL 2/S-520  
 EP03 - SEE DETAIL 3/S-520  
 EP04 - SEE DETAIL 4/S-520

KEYNOTES	
08	DOOR OPENING. SEE ARCHITECTURAL PLANS. REINFORCE OPENING PER DETAIL 1/S-501.
56	8" SLAB ON GRADE REINFORCED WITH #4@12" OC EW. SLOPE SLAB AS SHOWN ON PLAN.
59	(3)#5x4' LONG CORNER BARS AT OVERHEAD DOOR OPENING PER 1/S-501.
63	CONCRETE WALL CONTROL JOINT, SEE DETAIL 2/S-500.
64	METAL BRACKET APPLIED TO COLUMN. SEE DETAILS 1/A-502 AND S/S-500.
75	TEMPORARY EARTH RETENTION REQUIRED. SEE CIVIL PLANS FOR EXTENT AND SITE WALL ELEVATIONS.



**City of Madison Water Utility**  
**Vehicle Storage Building Improvements**  
 Contract No. 7823, Project No. 10442  
 Madison, Wisconsin

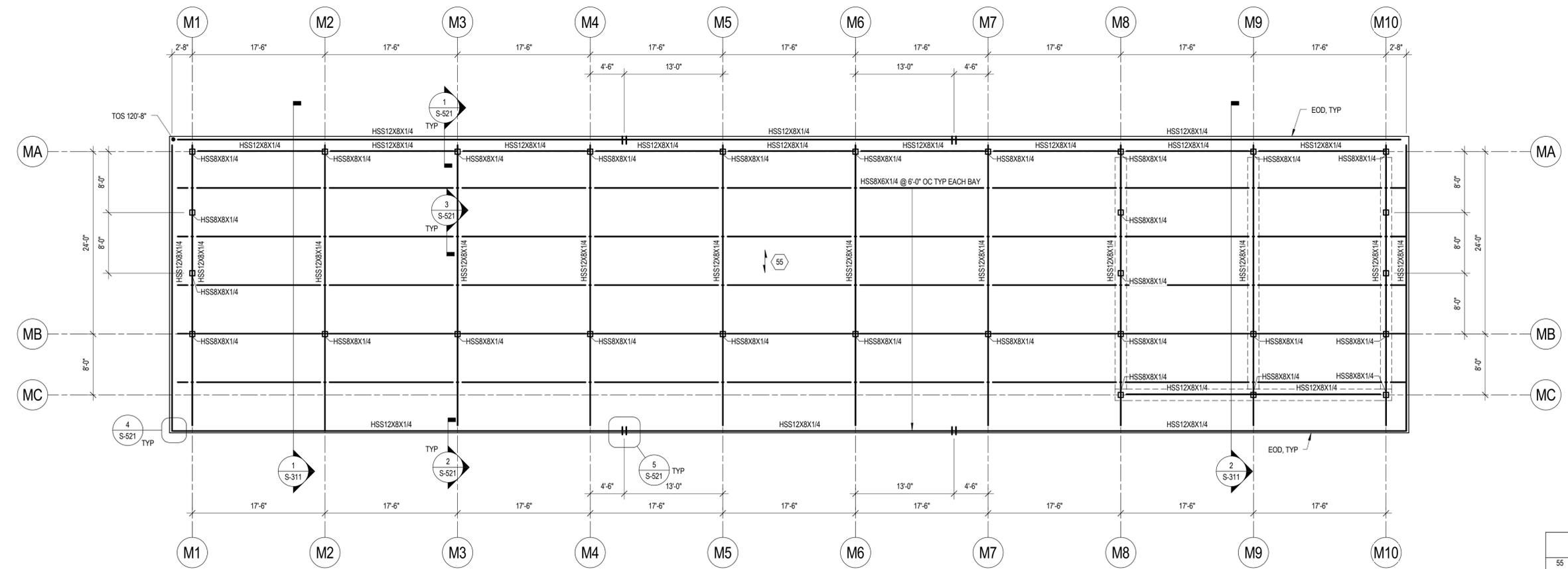
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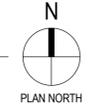
SHEET CONTENTS  
 MATERIAL STORAGE  
 BUILDING ROOF  
 FRAMING PLAN

SHEET NO.:

**S-112**

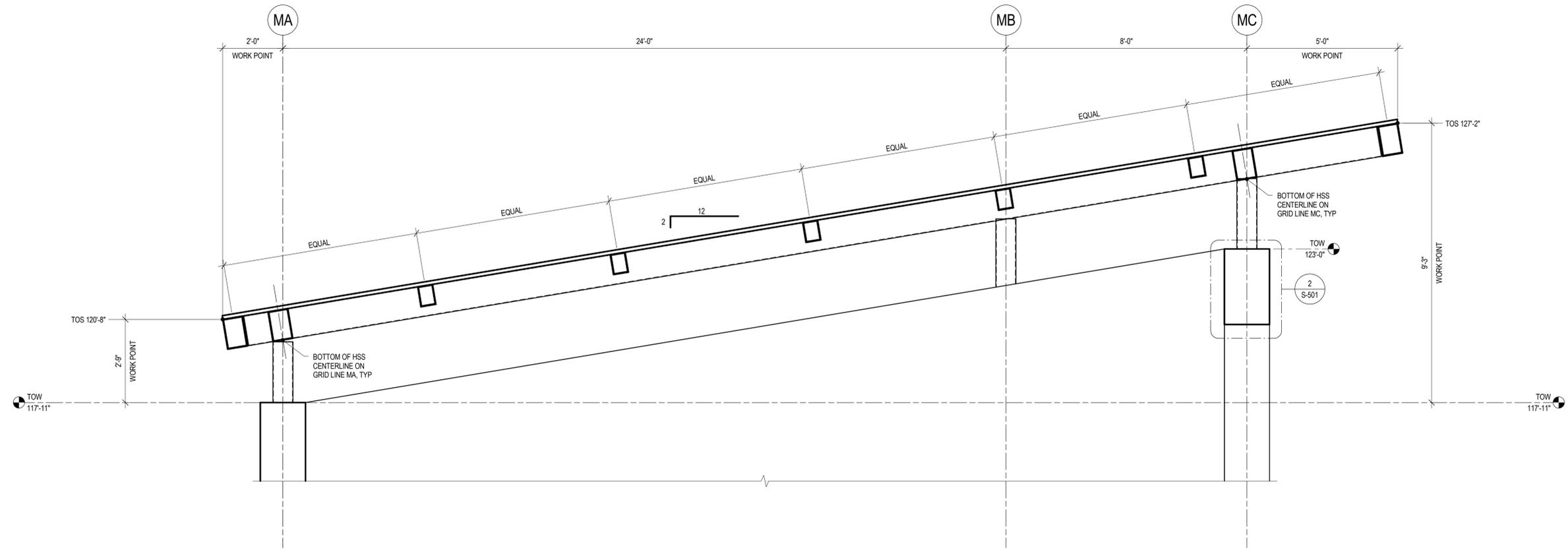


**1 ROOF FRAMING PLAN**  
 1/8" = 1'-0"

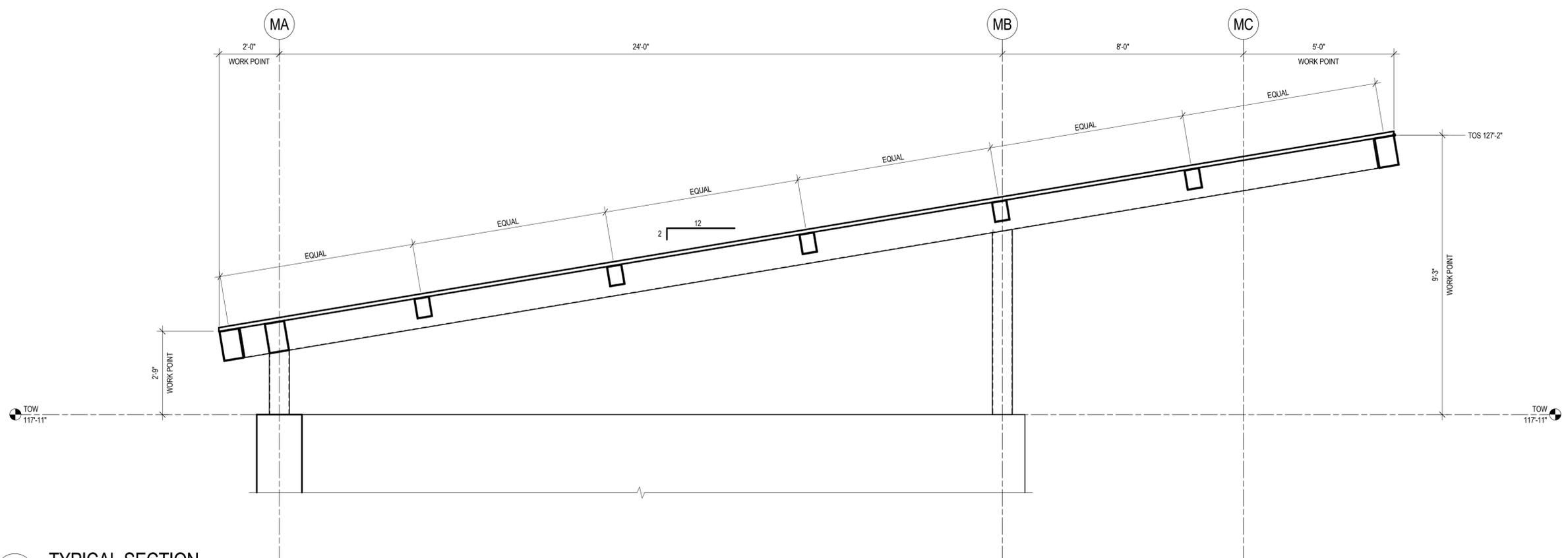


KEYNOTES	
55	1 1/2" x 18 GA. WIDE RIB ROOF DECK, TOS = VARIES.

10/14/2016 11:26:57 AM K:\lobz013\2013\35300\BIM\Central\Task\100-BigBlueMaterialStorage\20135300\_100L\_S15.rvt



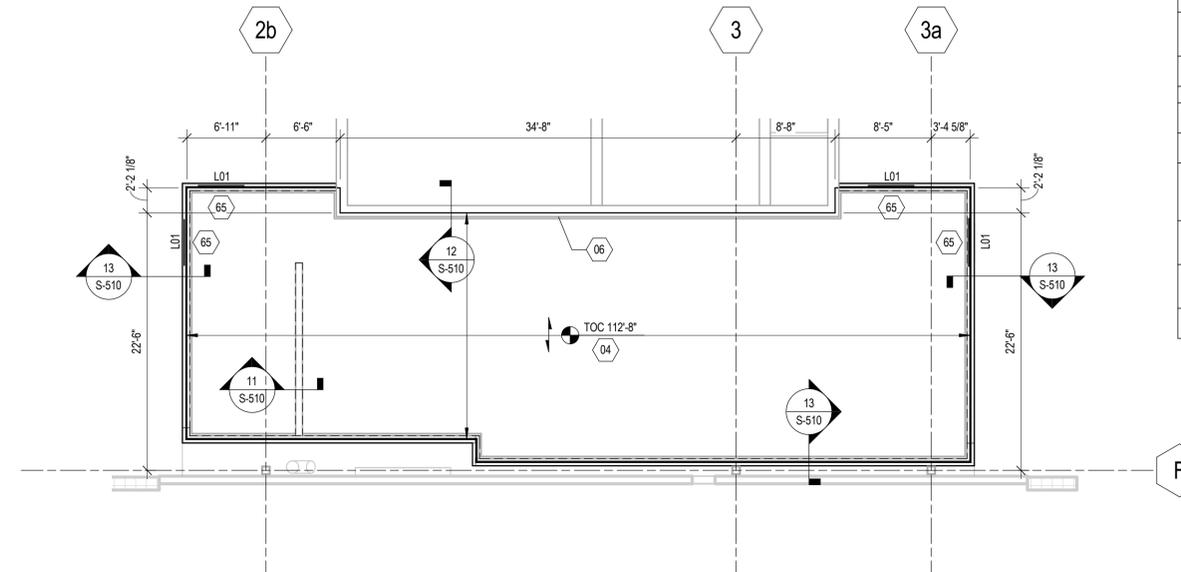
2 SECTION  
 1/2" = 1'-0"



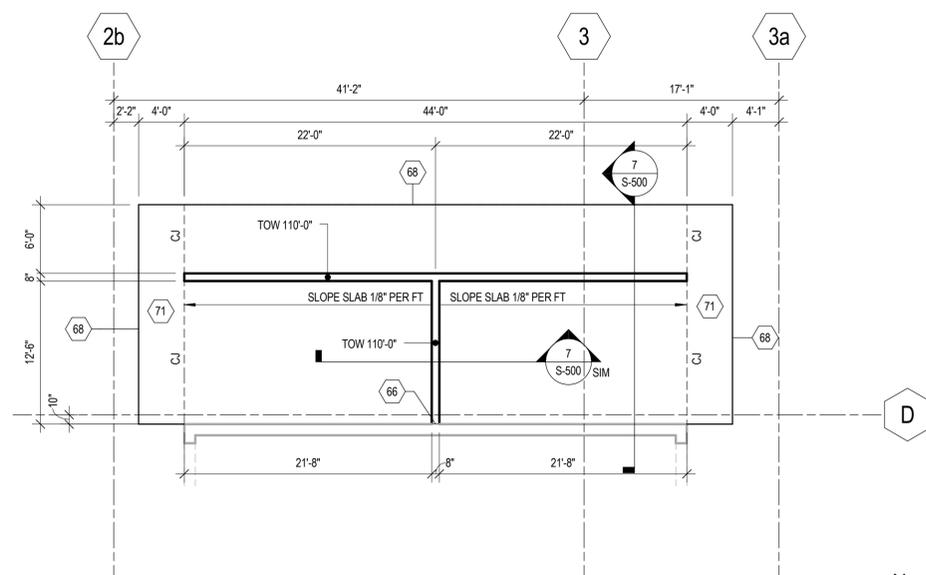
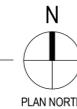
1 TYPICAL SECTION  
 1/2" = 1'-0"

GENERAL NOTES:  
 SEE SHEET S-510 FOR TYPICAL CMU WALL DETAILS.  
 CJ - CONTROL JOINT, SEE 1/S-500  
 FD - FLOOR DRAIN, SEE PLUMBING DRAWINGS.  
 CREATE 2'-0" x 2'-0" SLAB OPENING FOR DRAIN PER  
 DETAIL 1/S501.

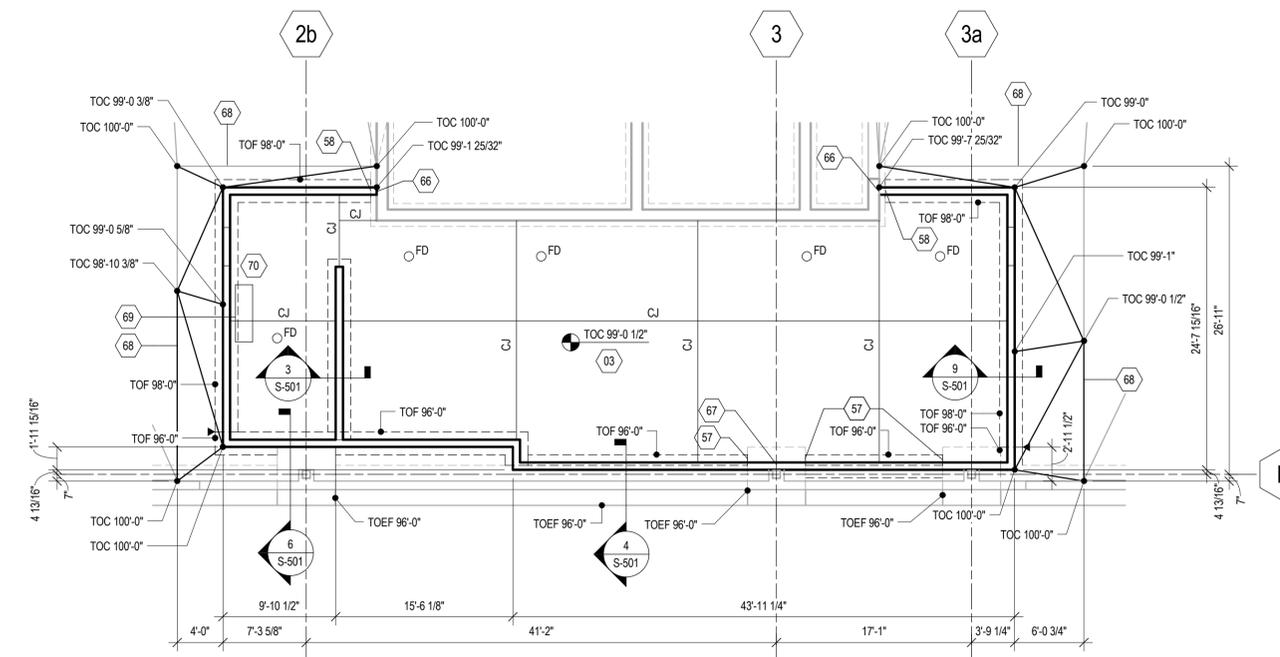
KEYNOTES	
03	NEW 5" SLAB ON GRADE, REINFORCE WITH MACROFIBERS AT 3.5 LB/CYD.
04	8" PRECAST CONCRETE HOLLOW CORE SLAB WITH 2" TOPPING, REINFORCED WITH MACRO FIBERS, SEE SPECIFICATIONS. DESIGN LIVE LOAD OF 125 PSF FOR LIGHT STORAGE. MATCH EXISTING FLOOR TOPPING ELEVATION.
06	EXISTING UNREINFORCED 12" CMU WALL. REMOVE EXISTING 4" CMU TO PROVIDE NEW PLANK BEARING SURFACE.
57	#4 x 2'-0" DOWEL AT 12" OC, EMBED 5" MINIMUM INTO MID DEPTH OF EXISTING SPREAD FOOTING.
58	DOWEL NEW FOOTING TO EXISTING FOOTING. SEE DETAIL 5/S-501.
65	MASONRY LINTEL L01, SEE DETAIL 1/S-510.
66	CMU WALL INTERSECTION, SEE DETAIL 8/S-510.
67	MASONRY CONTROL JOINT, SEE DETAIL 9/S-510.
68	CONNECT TO EXISTING NEW CONCRETE SLAB ON GRADE WITH #4x1'-6" DOWEL AT 24" OC, EMBED 9" WITH HILTI HY200 ADHESIVE.
69	SLAB ON GRADE DEPRESSION FOR WASHERS, SEE PLUMBING DETAIL 9/P-501 AND 5/S-500.
70	DRYER ANCHORAGE REQUIRED, CONTRACTOR TO COORDINATE LOCATION AND SIZE WITH MANUFACTURER.
71	8" SLAB ON GRADE WITH #5@12" OC AT SLAB MID-DEPTH.



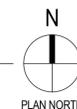
2 MECHANICAL PLATFORM PLAN  
 1/8" = 1'-0"



3 STORAGE BAY ENLARGED PLAN  
 1/8" = 1'-0"



1 GEAR ROOM FOUNDATION PLAN  
 1/8" = 1'-0"



**Mead & Hunt**  
 2440 Deming Way  
 Middleton, WI 53562  
 phone: 608-273-6380  
 meadhunt.com

**GRÄEF**  
 5126 WEST TERRACE DRIVE  
 SUITE 111  
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City of Madison Water Utility  
 Vehicle Storage Building Improvements  
 Contract No. 7823, Project No. 10442  
 Madison, Wisconsin

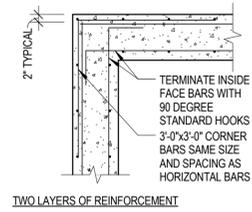
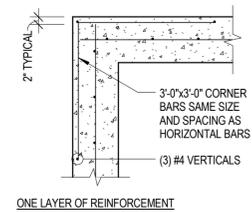
ISSUED  
 10/21/16 BID SET

MSH NO.: 3235300-131021.02  
 DATE: October 21, 2016  
 DESIGNED BY: EMF  
 DRAWN BY: KRN  
 CHECKED BY: EMF

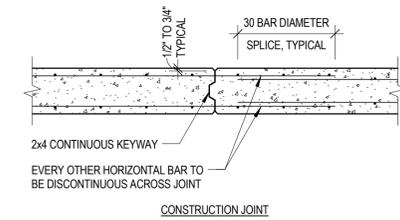
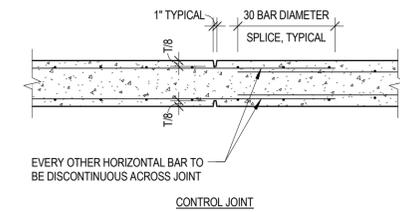
DO NOT SCALE DRAWINGS  
 SHEET CONTENTS  
 VEHICLE STORAGE  
 ENLARGED PLANS

SHEET NO.:

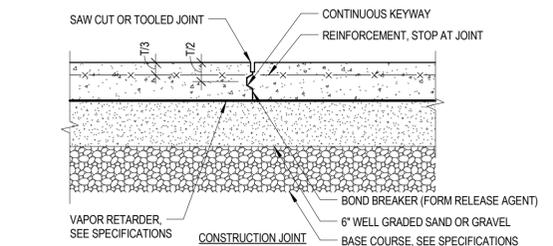
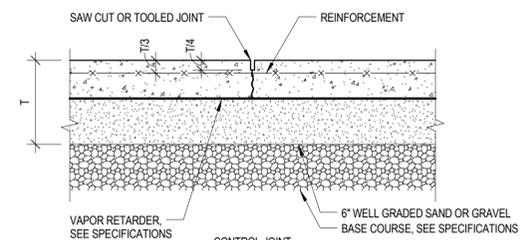
S-401



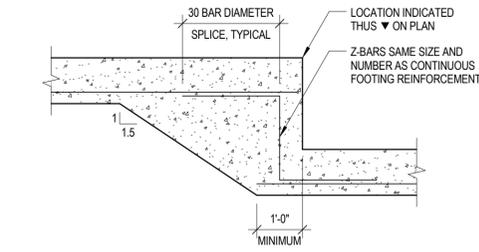
**3 WALL CORNER**  
 1/2" = 1'-0"



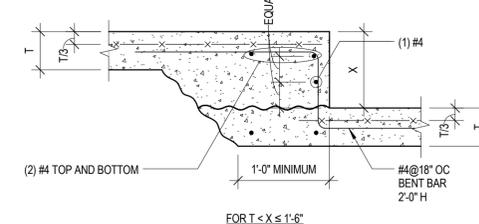
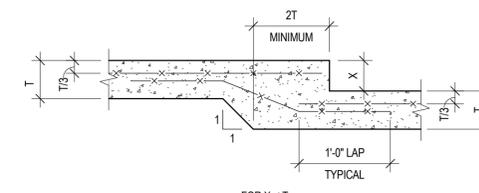
**2 WALL CONTROL AND CONSTRUCTION JOINT**  
 1/2" = 1'-0"



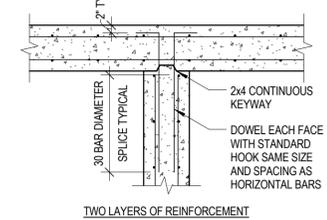
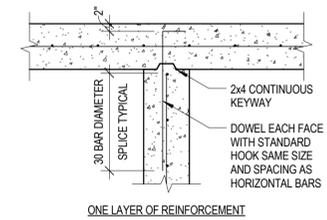
**1 SLAB ON GRADE CONTROL AND CONSTRUCTION JOINT**  
 1" = 1'-0"



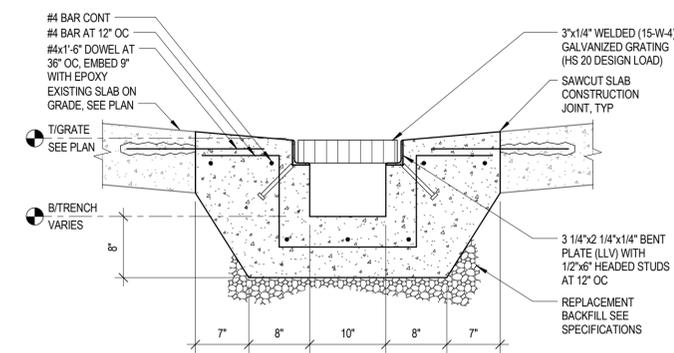
**6 FOOTING STEP**  
 1/2" = 1'-0"



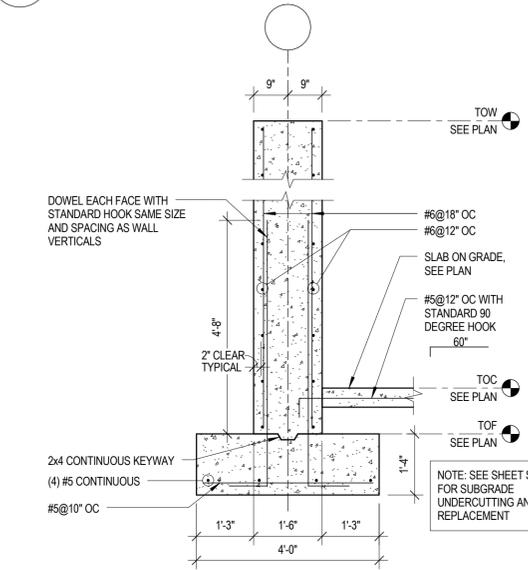
**5 SLAB ON GRADE DEPRESSION**  
 1" = 1'-0"



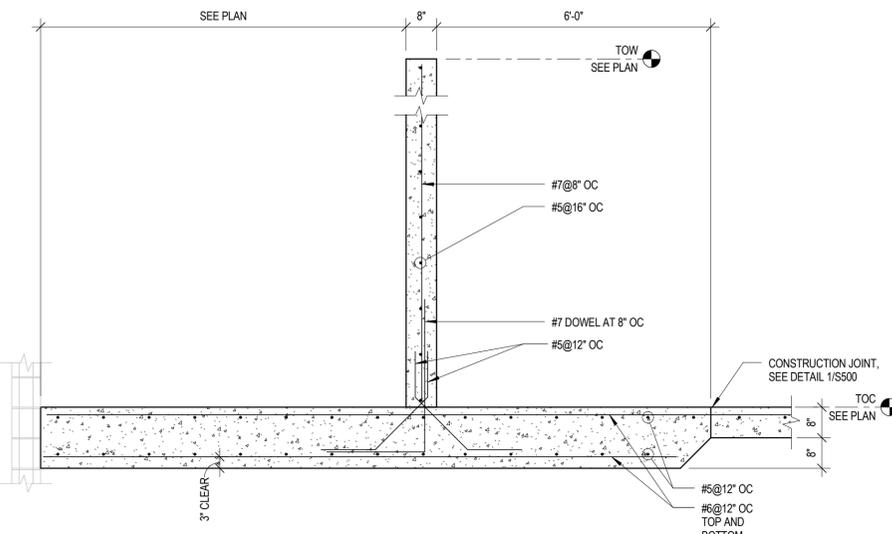
**4 WALL INTERSECTION**  
 1/2" = 1'-0"



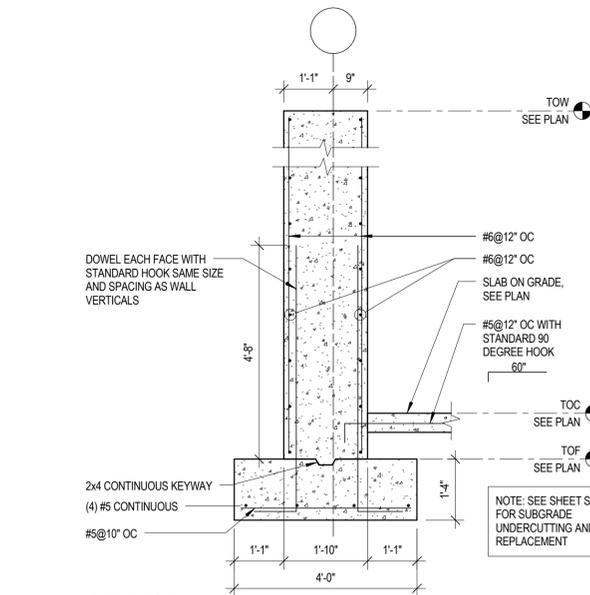
**9 SECTION**  
 1" = 1'-0"



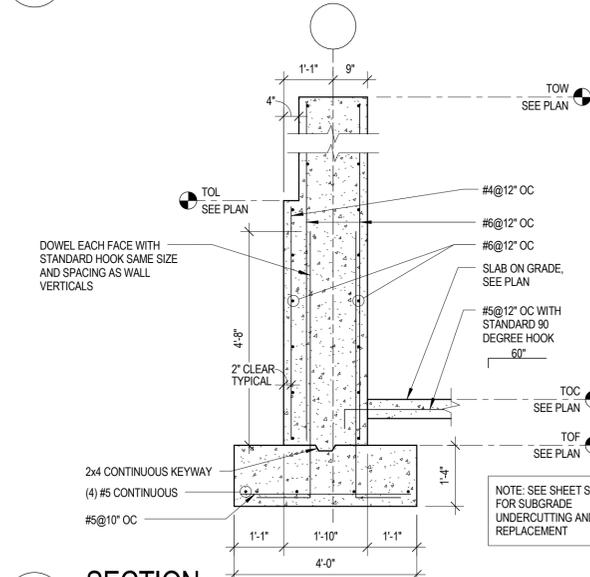
**8 SECTION**  
 1/2" = 1'-0"



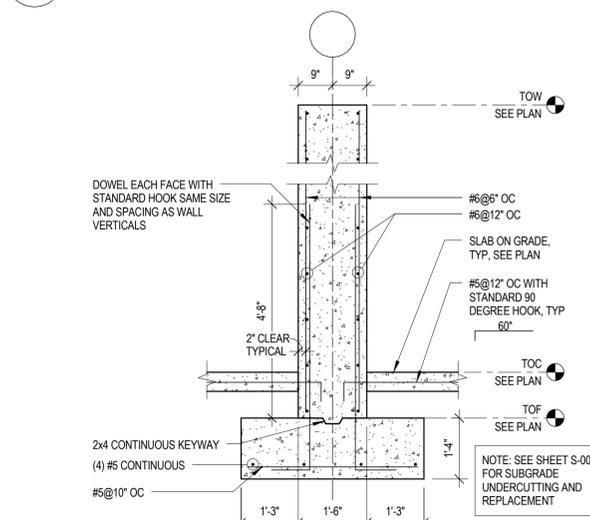
**7 SECTION**  
 1/2" = 1'-0"



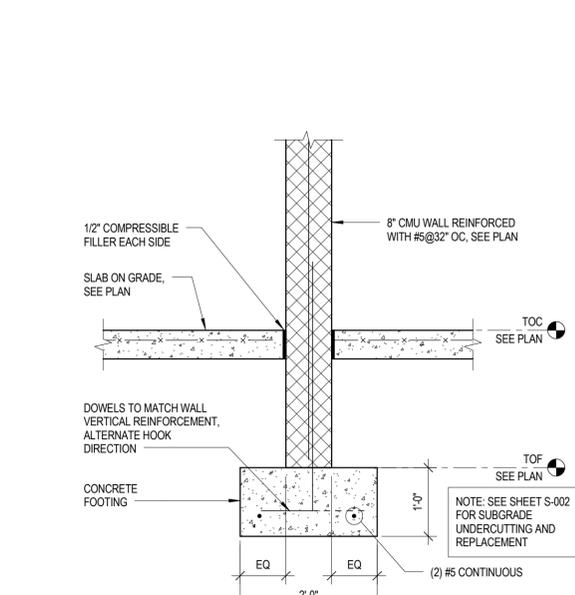
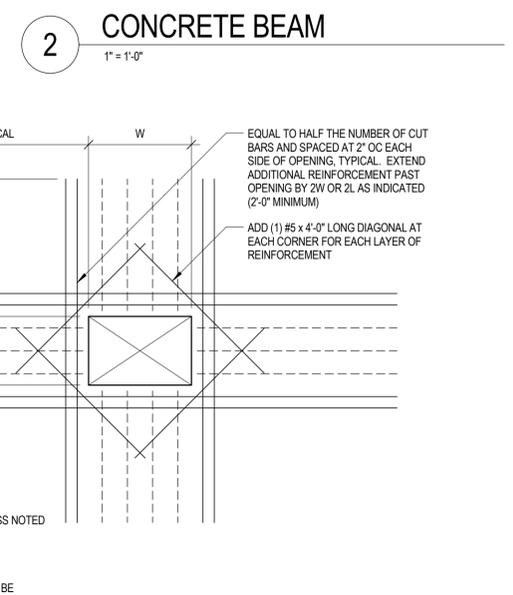
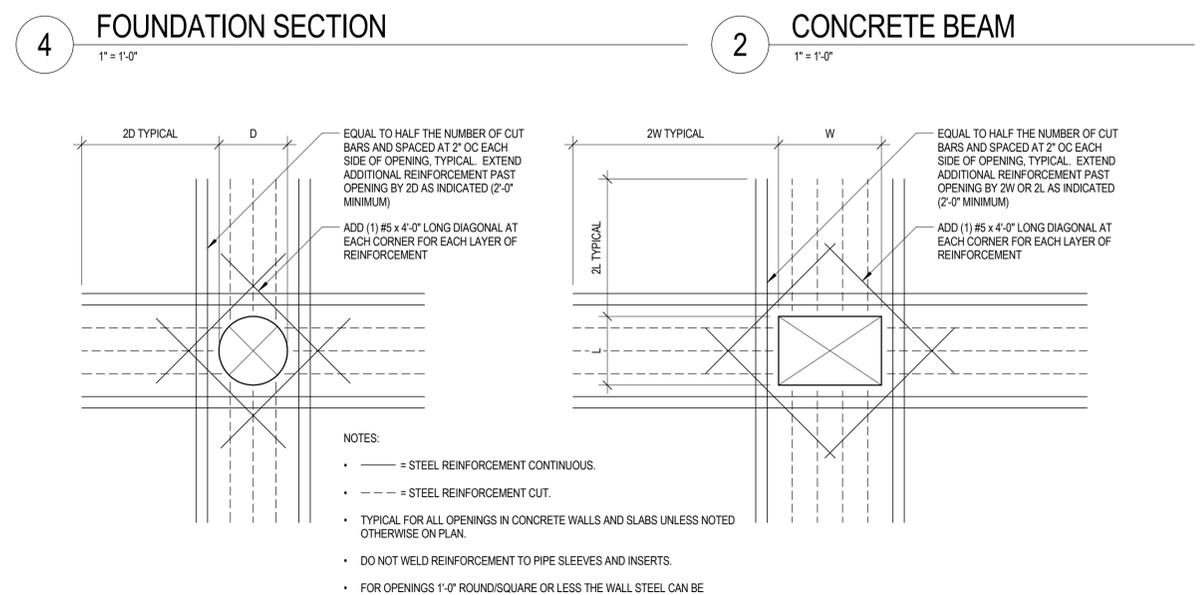
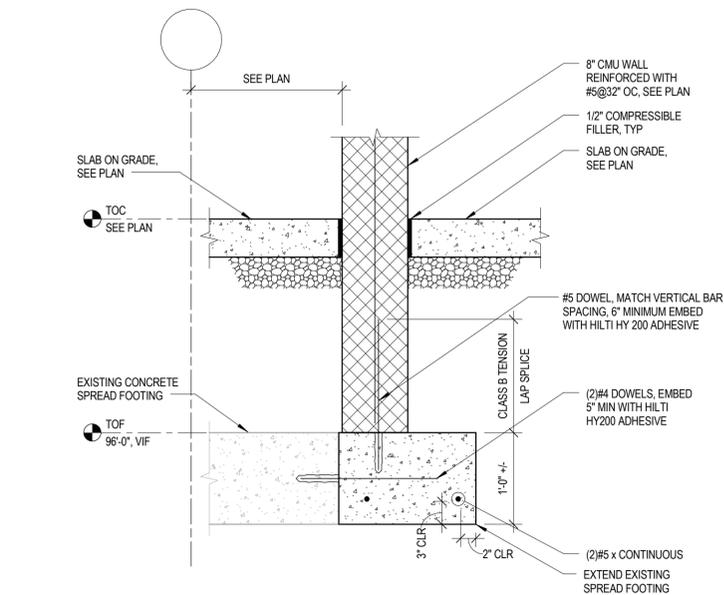
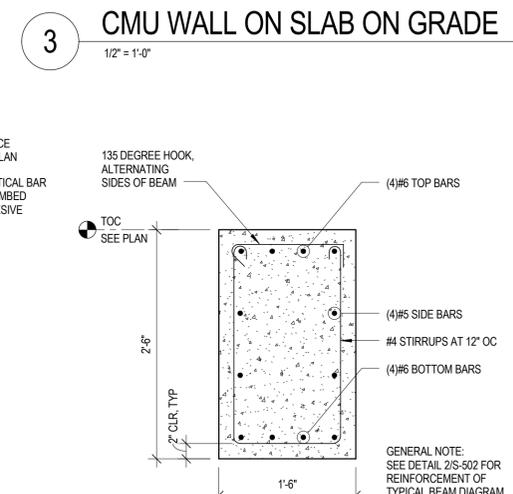
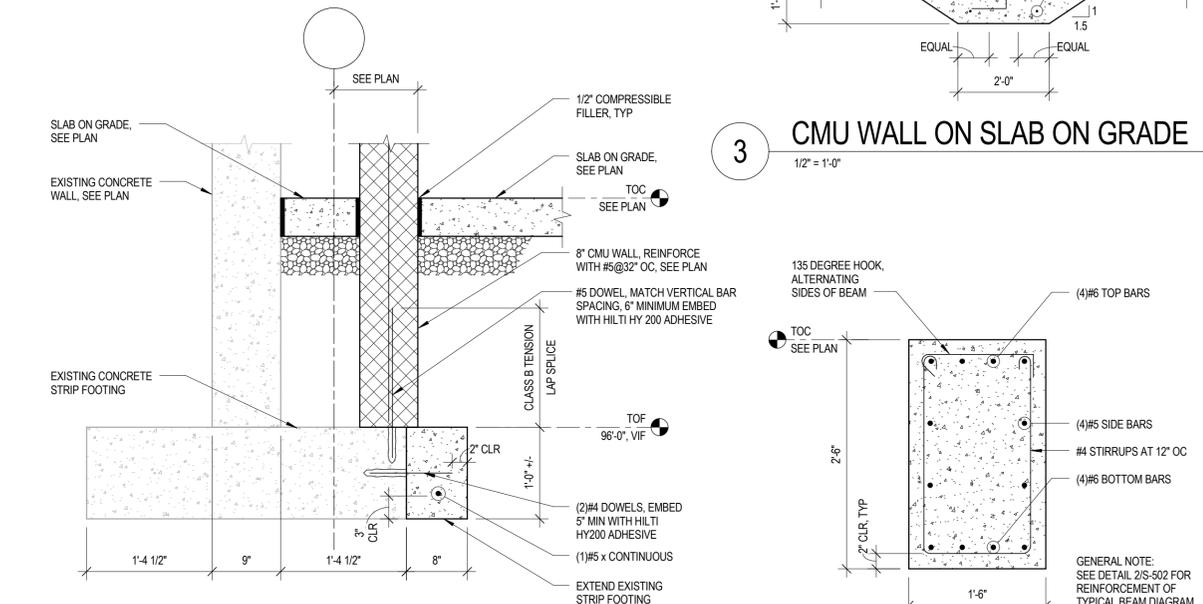
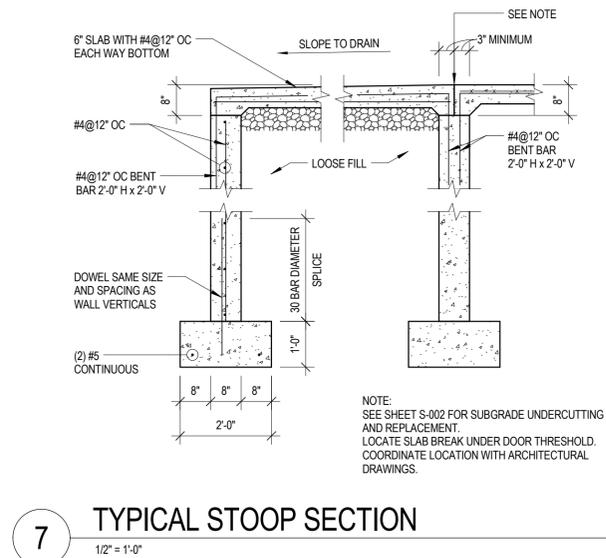
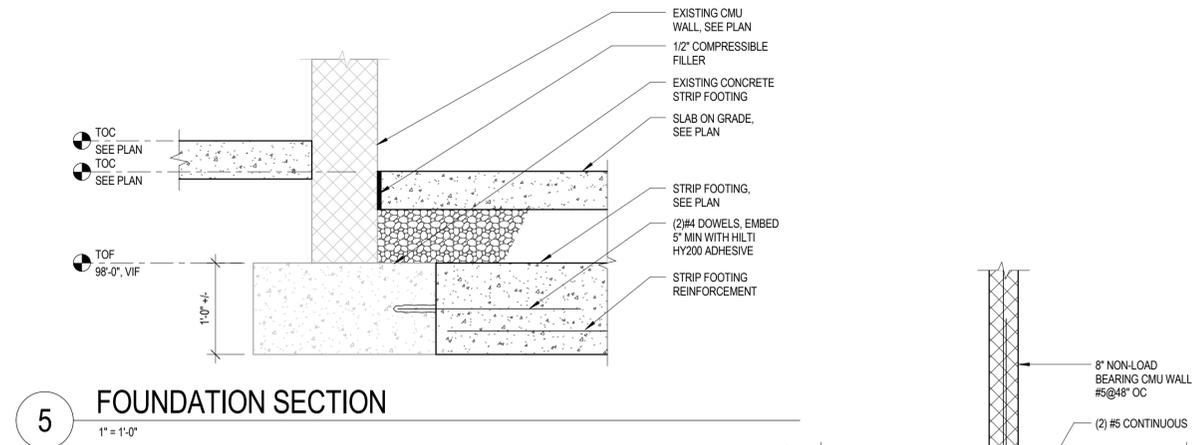
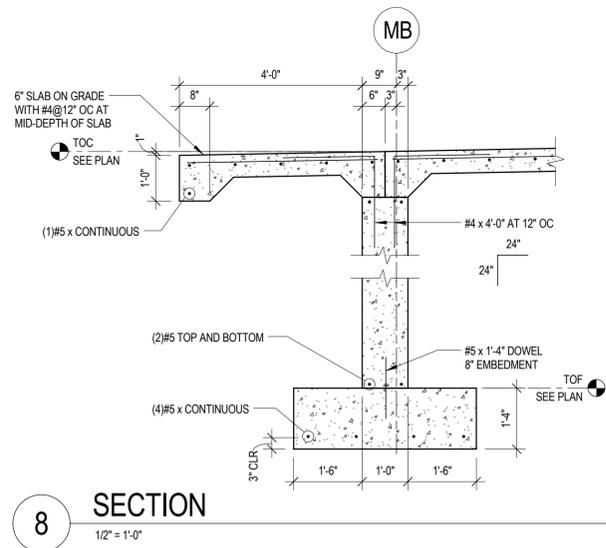
**12 SECTION**  
 1/2" = 1'-0"



**11 SECTION**  
 1/2" = 1'-0"



**10 SECTION**  
 1/2" = 1'-0"



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**Mead & Hunt**  
2440 Deming Way  
Middleton, WI 53562  
phone: 608-273-6380  
meadhunt.com

**GRAEF**  
5126 WEST TERRACE DRIVE  
SUITE 111  
MADISON, WI 53718  
608 / 242 1550  
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City of Madison Water Utility  
Vehicle Storage Building Improvements  
Contract No. 7823, Project No. 10442  
Madison, Wisconsin

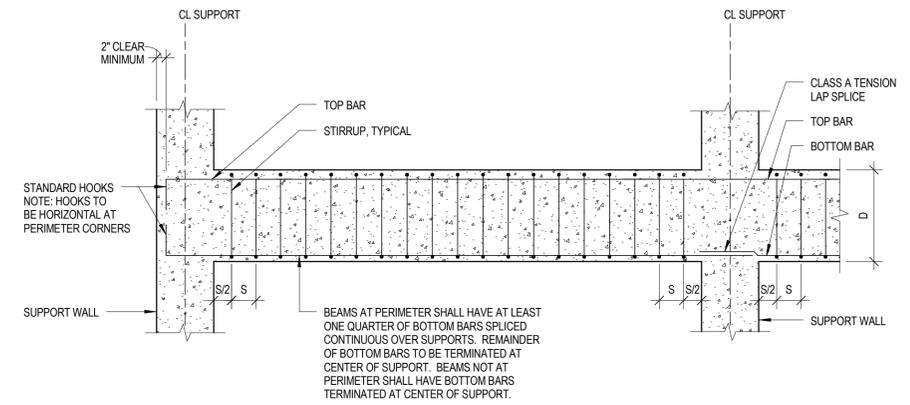
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DATE: October 21, 2016  
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DRAWN BY: KRN  
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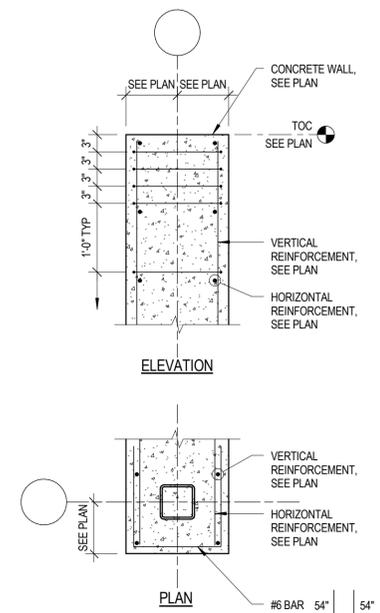
SHEET CONTENTS  
FOUNDATION AND CONCRETE DETAILS

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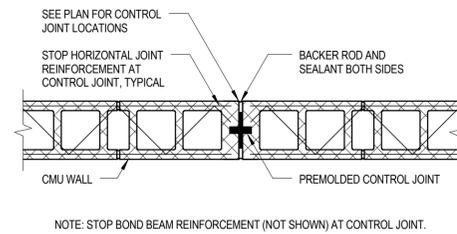
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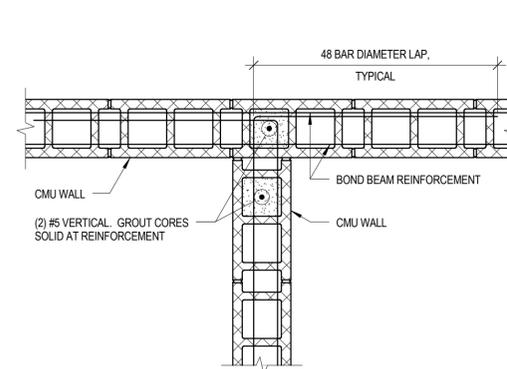
**2** TYPICAL BEAM DIAGRAM  
1/2" = 1'-0"



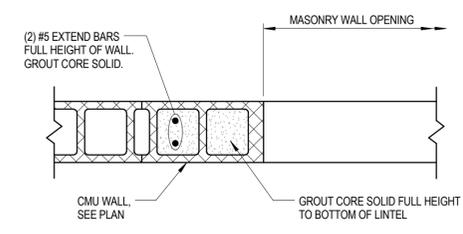
**1** CONCRETE DETAIL  
3/4" = 1'-0"



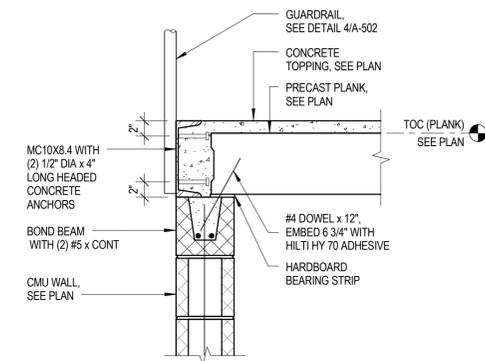
**9** CMU WALL VERTICAL CONTROL JOINT  
 1" = 1'-0"



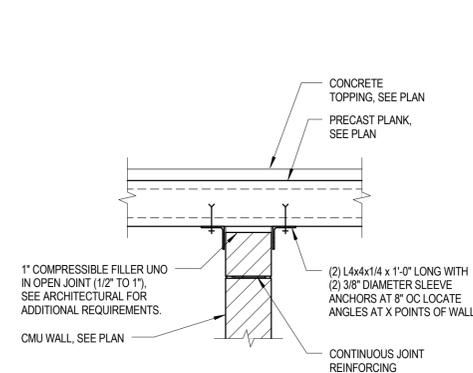
**6** BOND BEAM INTERSECTION  
 1" = 1'-0"



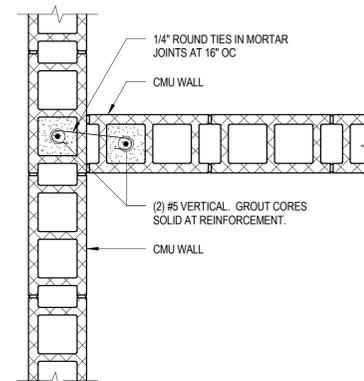
**3** TYPICAL CMU JAMB DETAIL  
 1" = 1'-0"



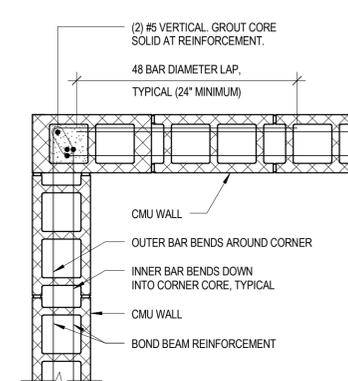
**13** GUARDRAIL CONNECTION  
 1" = 1'-0"



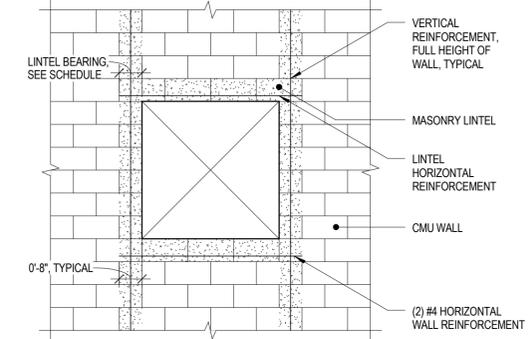
**11** SECTION  
 3/4" = 1'-0"



**8** CMU WALL INTERSECTION  
 1" = 1'-0"



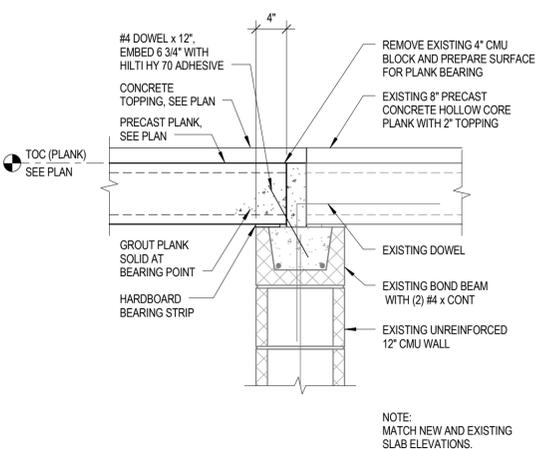
**5** BOND BEAM CORNER  
 1" = 1'-0"



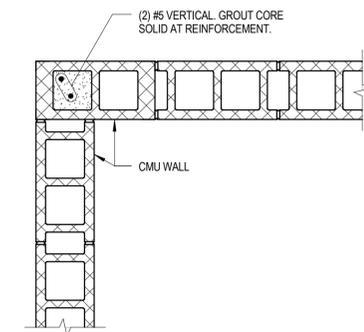
**2** TYPICAL CMU WALL PUNCHED OPENING  
 3/8" = 1'-0"

LINTEL SCHEDULE			
MARK	SIZE	BEARING LENGTH	REMARKS
L01	8" BOND BEAM WITH (2) #5 BOTTOM	8"	
N/A	8" BOND BEAM WITH (2) #5 BOTTOM	8"	ALL INTERIOR NON-LOAD-BEARING WALL OPENINGS LESS THAN OR EQUAL TO 6'-0"
N/A	16" BOND BEAM WITH (2) #5 BOTTOM	8"	ALL INTERIOR NON-LOAD-BEARING WALL OPENINGS GREATER THAN 6'-0" BUT LESS THAN OR EQUAL TO 12'-0"

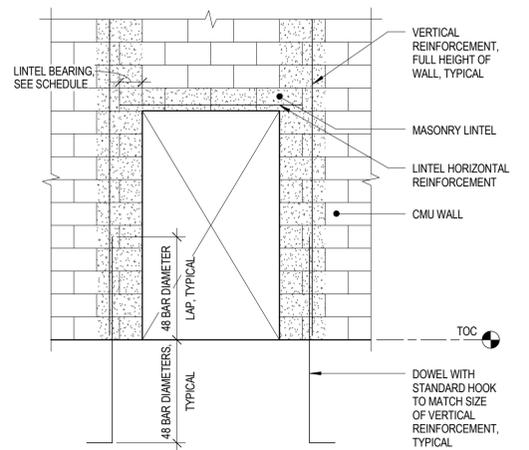
NOTE: SEE DETAIL 3/S-510 FOR TYPICAL CMU JAMB.



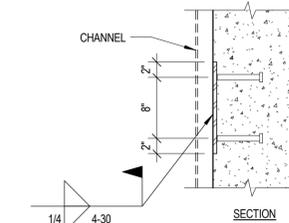
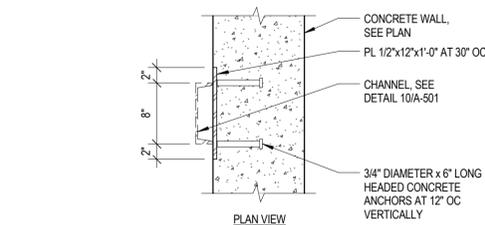
**12** SECTION  
 1" = 1'-0"



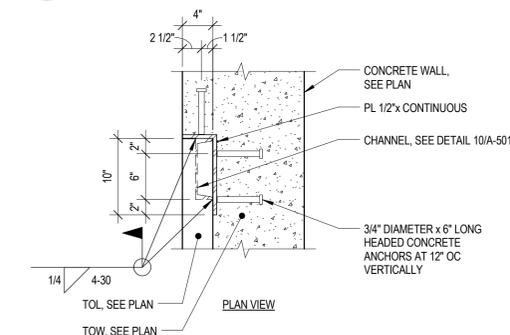
**7** CMU WALL CORNER  
 1" = 1'-0"



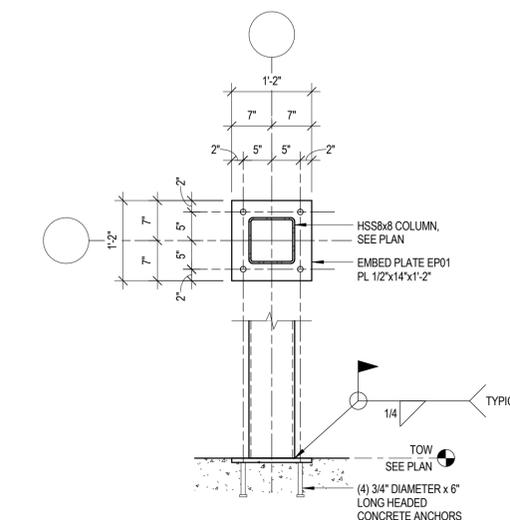
**1** TYPICAL CMU WALL DOOR OPENING  
 3/8" = 1'-0"



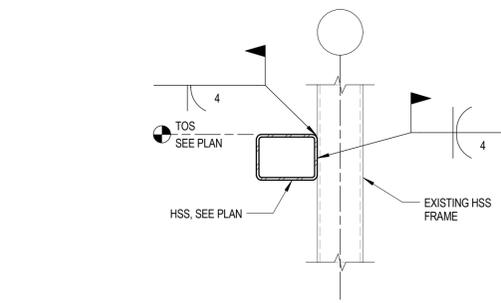
**3 EMBEDMENT PLATE - EP03**  
 1" = 1'-0"



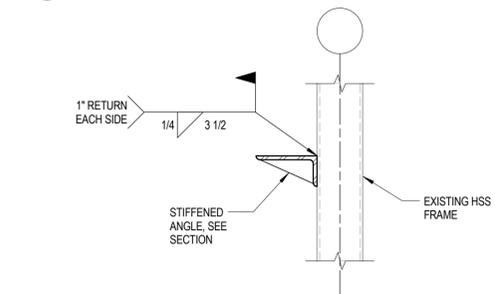
**2 EMBEDMENT PLATE - EP02**  
 1" = 1'-0"



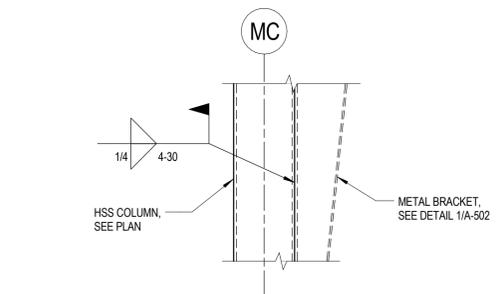
**1 EMBEDMENT PLATE - EP01**  
 3/4" = 1'-0"



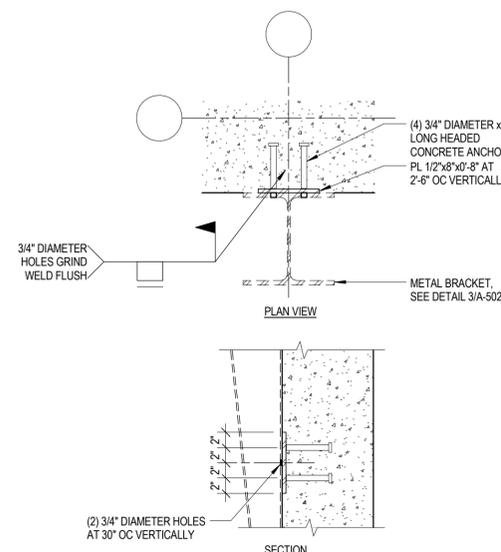
**7 HSS TO EXISTING**  
 1" = 1'-0"



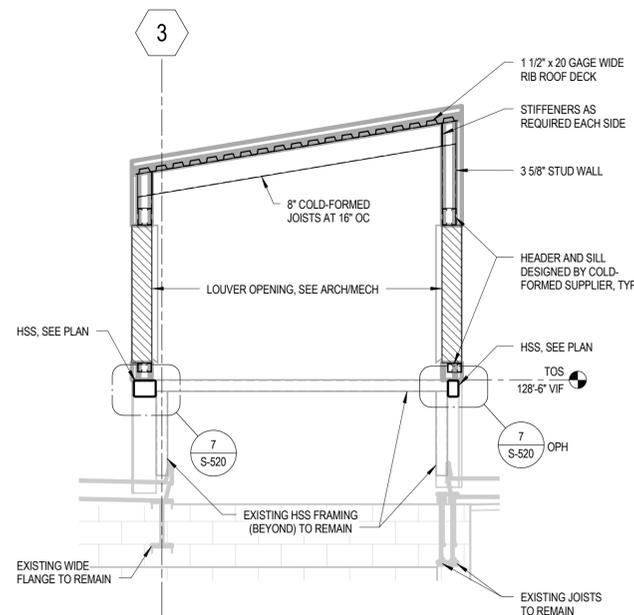
**6 ANGLE TO EXISTING FRAME CONNECTION**  
 1" = 1'-0"



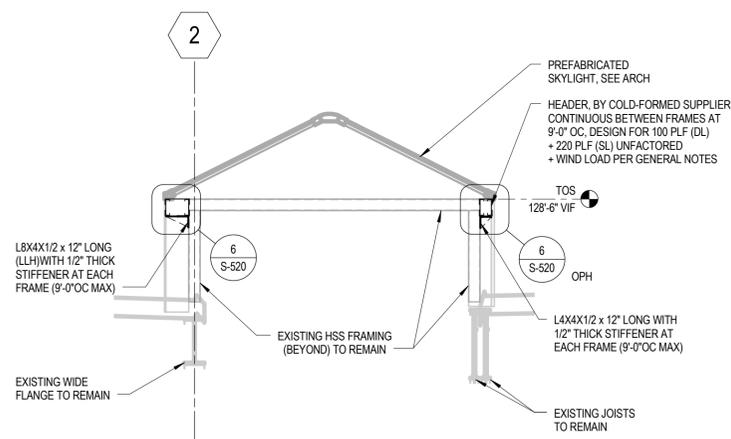
**5 METAL BRACKET CONNECTION**  
 1" = 1'-0"



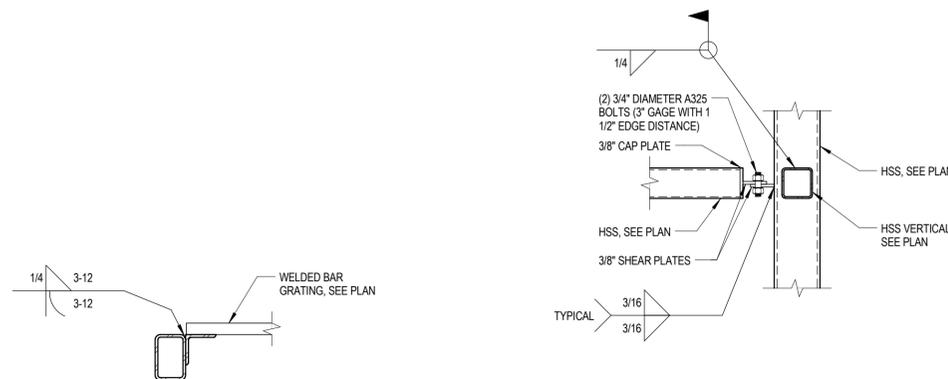
**4 EMBEDMENT PLATE - EP04**  
 1" = 1'-0"



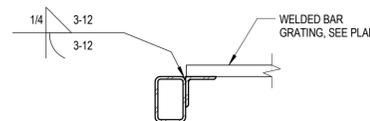
**10 LOUVER SECTION**  
 3/8" = 1'-0"



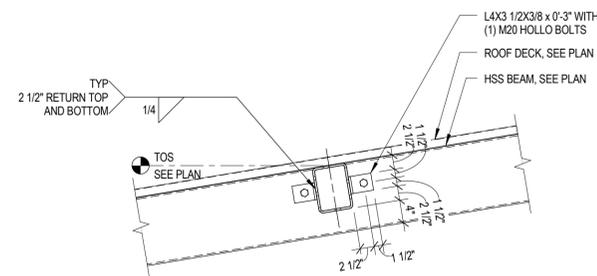
**9 SECTION AT SKYLIGHT**  
 3/8" = 1'-0"



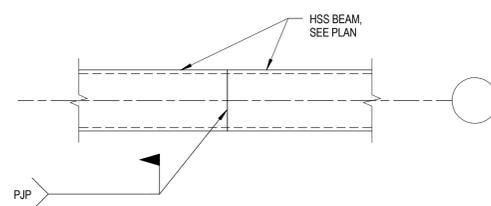
**8 VERTICAL TUBE TO HSS CONNECTION**  
 1" = 1'-0"



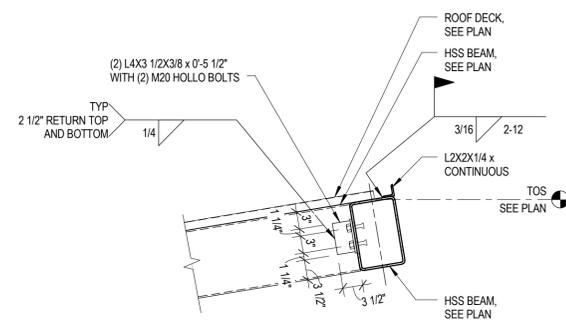
**11 WELDED BAR GRATING SUPPORT**  
 1" = 1'-0"



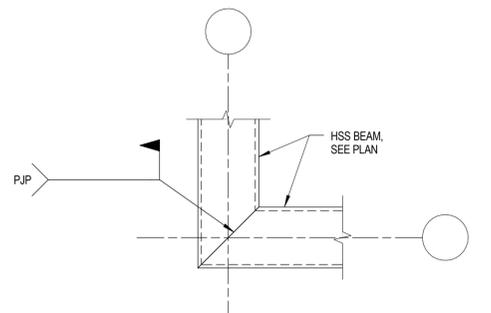
**3** TYPICAL BEAM TO BEAM CONNECTION  
3/4" = 1'-0"



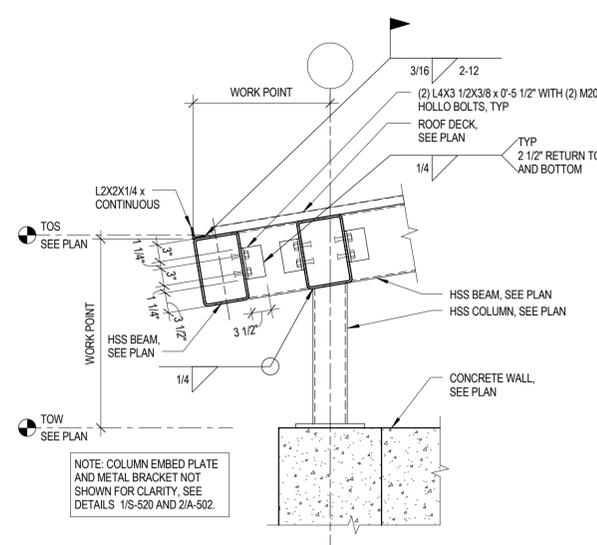
**5** TYPICAL FRAMING SPLICE CONNECTION  
1" = 1'-0"



**2** BEAM TO BEAM CONNECTION  
3/4" = 1'-0"



**4** TYPICAL CORNER FRAMING CONNECTION  
1" = 1'-0"



**1** COLUMN TO BEAM CONNECTION  
3/4" = 1'-0"

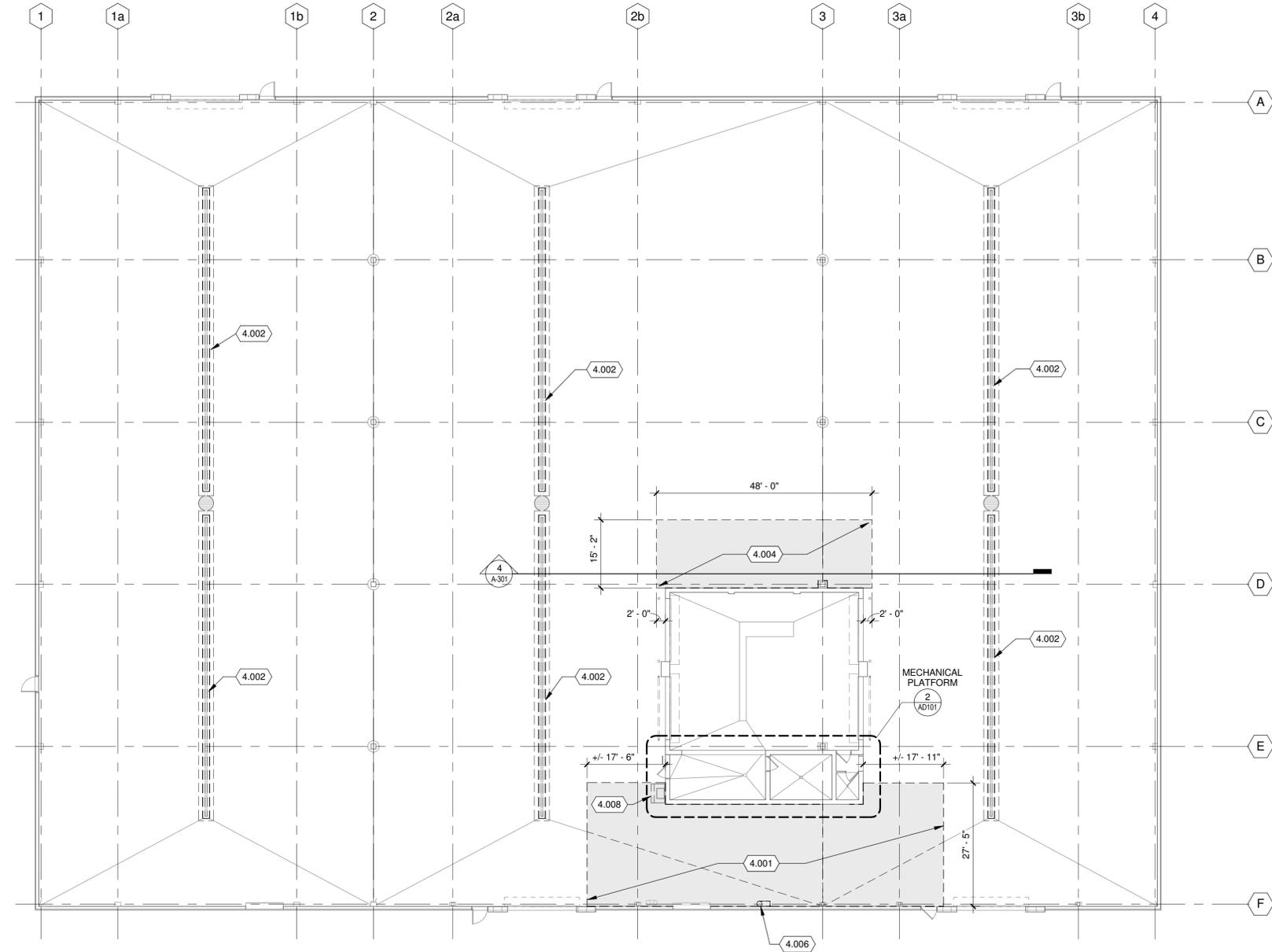


**ARCHITECTURAL PLAN  
DEMOLITION GENERAL NOTES:**

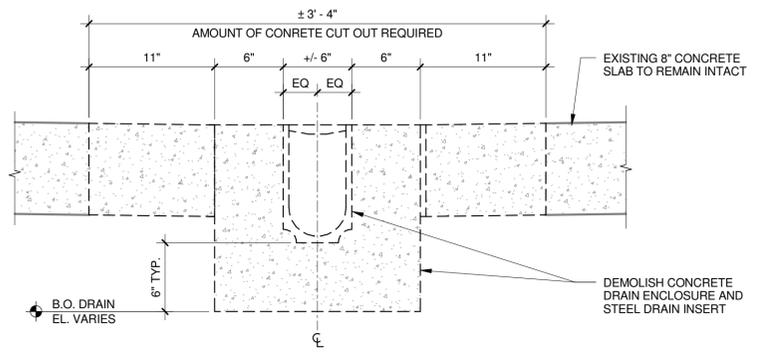
1. SITE DATUM OF FINISHED FIRST FLOOR INDICATED ON CIVIL SITE PLAN - ELEVATION 100'-0" ON STRUCTURAL DRAWINGS.
2. THE GENERAL CONTRACTOR SHALL VERIFY ALL BUILDING AND SITE CONDITIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING WITH ANY SCHEDULED DEMOLITION WORK.
3. THE GENERAL CONTRACTOR SHALL COORDINATE ARCHITECTURAL, STRUCTURAL, CIVIL, MECHANICAL, ELECTRICAL, TECHNOLOGY, AND PLUMBING WORK AND ALL SUBCONTRACTORS FOR DEMOLITION AND REPAIR WORK.
4. IT IS THE INTENT OF THESE DRAWINGS TO INDICATE THE REMOVAL OF ALL ITEMS WHICH INTERFERE WITH THE FINAL CONSTRUCTION AS SHOWN ON THE FLOOR PLANS, ELEVATIONS, DETAILS, AND SCHEDULES.
5. REMOVE ALL ITEMS OF DEMOLITION WORK FROM THE PROJECT DAILY AND DISPOSE OF PROPERLY.
7. DEMOLISH CONCRETE FLOOR SLABS AS REQUIRED TO INSTALL NEW PLUMBING SYSTEMS AND FLOOR DRAINS. REF: PLUMBING DEMOLITION AND PLUMBING DRAWINGS.
8. PROTECT EXISTING SURFACES TO REMAIN DURING DEMOLITION AND CONSTRUCTION.
9. EXISTING STRUCTURE TO REMAIN, TYP. PROTECT COLUMNS, BEAMS, AND SLABS.
10. REPAIR OR REPLACE ANY EXISTING CONSTRUCTION (WALLS, DOORS, CEILINGS, FLOORS, ETC.) TO REMAIN WHICH ARE DAMAGED DURING CONSTRUCTION. REPLACEMENT MATERIAL SHALL MATCH IKIND.
11. MAINTAIN CLEAR ROUTES FOR OWNER OCCUPIED SPACE WITH 24 HOUR OPERATIONS. REFER TO WORK SEQUENCING REQUIREMENTS IN THE SPECIFICATIONS. ALL INFRASTRUCTURE SERVICES TO OCCUPIED AREAS SHALL REMAIN OPERABLE. COORDINATE ANY DISRUPTION OF SERVICES WITH OWNER.

**KEYED NOTES**

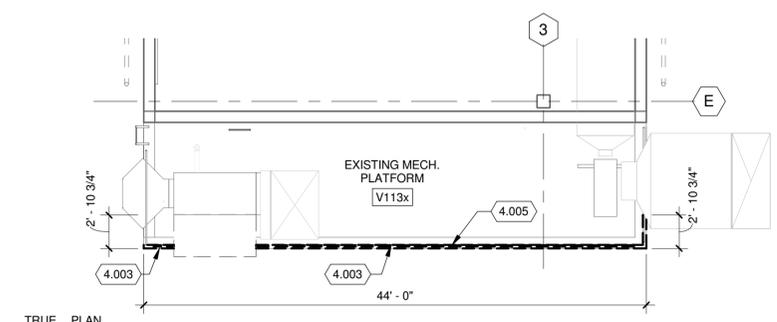
- 4.001 SAWCUT PORTION OF EXISTING 8" CONCRETE SLAB (APPROX. 1,805 S.F.) AND REMOVE FOR INSTALLATION OF NEW FLOOR SLAB AT GEAR / LAUNDRY ROOMS. COORDINATE WITH STRUCTURAL DRAWINGS.
- 4.002 DEMOLISH CONCRETE TRENCH DRAIN, STEEL DRAIN INSERT, AND PORTION OF EXISTING CONCRETE SLAB (CATCH BASIN TO REMAIN). COORDINATE ANY ADDITIONAL DEMOLITION REQUIREMENTS OF CONCRETE AND DRAINS WITH STRUCTURAL AND PLUMBING DRAWINGS. SEE DETAIL 3/AD101.
- 4.003 DEMOLISH GUARDRAILS ALONG SOUTH WALL OF EXISTING MECHANICAL PLATFORM. SALVAGE ALL COMPONENTS TO OWNER.
- 4.004 SAWCUT PORTION OF EXISTING 8" CONCRETE SLAB (APPROX. 724 S.F.) AND REMOVE FOR INSTALLATION OF NEW FLOOR SLAB AT STORAGE AREAS. COORDINATE WITH STRUCTURAL DRAWINGS.
- 4.005 REMOVE EXISTING 4" GROUDED SOLID CMU ALONG SOUTH SIDE OF MEZZANINE. PREP FOR INSTALLATION OF NEW PC PLANK BEARING.
- 4.006 DEMOLISH EXISTING STORM DRAIN. CAP BELOW EXISTING FLOOR ELEVATION.
- 4.008 REMOVE AND RELOCATE ICE STORAGE MACHINE. RELOCATE TO TEMPORARY LOCATION TO PROVIDE CONTINUOUS ACCESS DURING CONSTRUCTION.



TRUE PLAN NORTH NORTH  
**1 VEHICLE STORAGE BUILDING DEMOLITION FLOOR PLAN**  
1/16" = 1'-0"



**3 TRENCH DRAIN DEMOLITION**  
1/2" = 1'-0"



TRUE PLAN NORTH NORTH  
**2 VEHICLE STORAGE DEMOLITION MECH. PLATFORM**  
1/8" = 1'-0"

**ARCHITECTURAL PLAN  
 DEMOLITION GENERAL NOTES:**

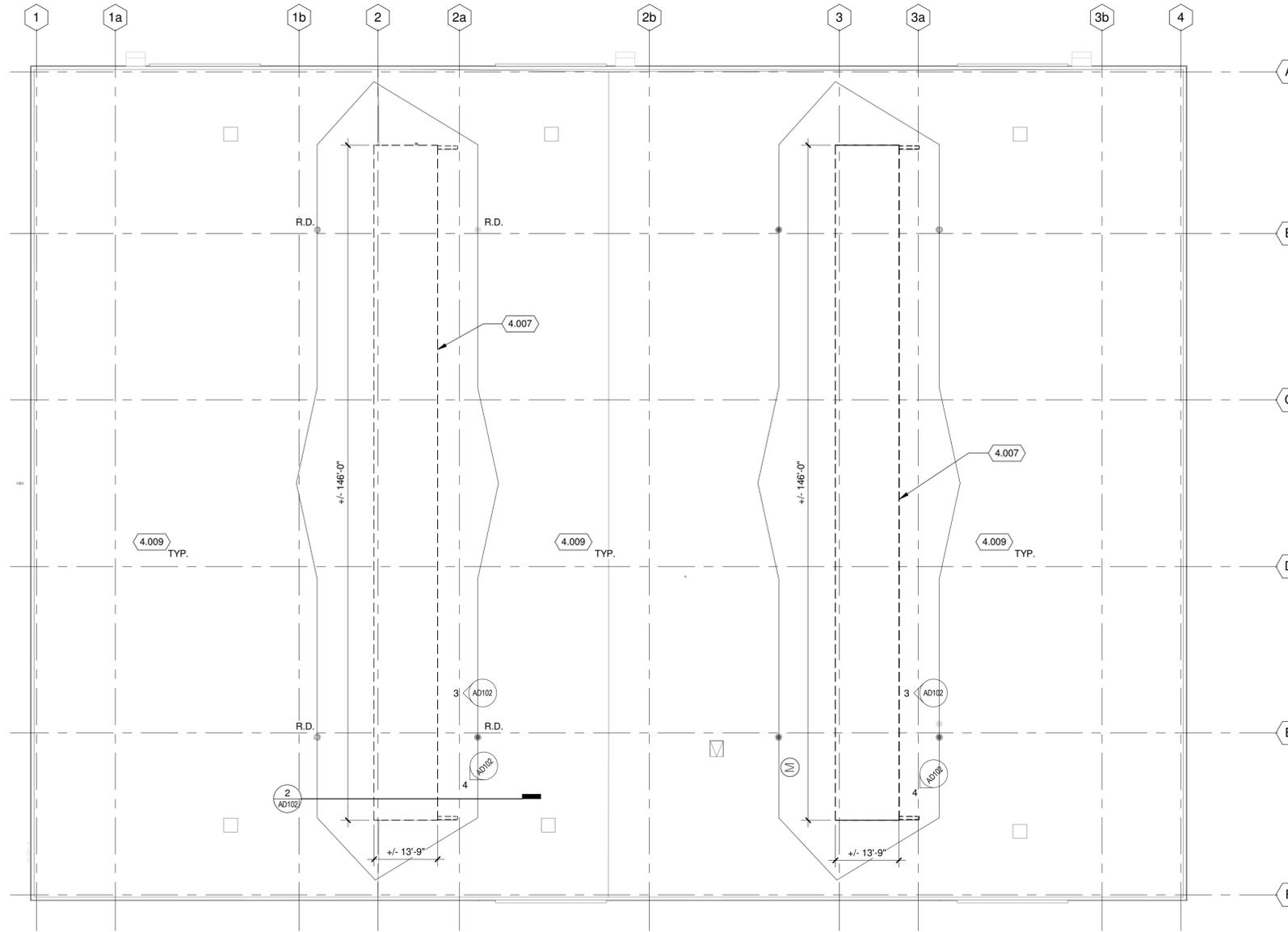
1. SITE DATUM OF FINISHED FIRST FLOOR INDICATED ON CIVIL SITE PLAN = ELEVATION 100'-0" ON STRUCTURAL DRAWINGS.
2. THE GENERAL CONTRACTOR SHALL VERIFY ALL BUILDING AND SITE CONDITIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING WITH ANY SCHEDULED DEMOLITION WORK.
3. THE GENERAL CONTRACTOR SHALL COORDINATE ARCHITECTURAL, STRUCTURAL, CIVIL, MECHANICAL, ELECTRICAL, TECHNOLOGY, AND PLUMBING WORK AND ALL SUBCONTRACTORS FOR DEMOLITION AND REPAIR WORK.
4. IT IS THE INTENT OF THESE DRAWINGS TO INDICATE THE REMOVAL OF ALL ITEMS WHICH INTERFERE WITH THE FINAL CONSTRUCTION AS SHOWN ON THE FLOOR PLANS, ELEVATIONS, DETAILS, AND SCHEDULES.
5. REMOVE ALL ITEMS OF DEMOLITION WORK FROM THE PROJECT DAILY AND DISPOSE OF PROPERLY.
7. DEMOLISH CONCRETE FLOOR SLABS AS REQUIRED TO INSTALL NEW PLUMBING SYSTEMS AND FLOOR DRAINS, REF: PLUMBING DEMOLITION AND PLUMBING DRAWINGS.
8. PROTECT EXISTING SURFACES TO REMAIN DURING DEMOLITION AND CONSTRUCTION.
9. EXISTING STRUCTURE TO REMAIN, TYP. PROTECT COLUMNS, BEAMS, AND SLABS.
10. REPAIR OR REPLACE ANY EXISTING CONSTRUCTION (WALLS, DOORS, CEILINGS, FLOORS, ETC.) TO REMAIN WHICH ARE DAMAGED DURING CONSTRUCTION. REPLACEMENT MATERIAL SHALL MATCH IKIND.
11. MAINTAIN CLEAR ROUTES FOR OWNER OCCUPIED SPACE WITH 24 HOUR OPERATIONS. REFER TO WORK SEQUENCING REQUIREMENTS IN THE SPECIFICATIONS. ALL INFRASTRUCTURE SERVICES TO OCCUPIED AREAS SHALL REMAIN OPERABLE. COORDINATE ANY DISRUPTION OF SERVICES WITH OWNER.

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**KEYED NOTES**

- 4.007 DEMOLISH PORTION OF EXISTING SKYLIGHT, FULL LENGTH. CUT OFF TUBE FRAMING ABOVE SKYLIGHT CURB AS SHOWN ON 2/AD102.
- 4.009 EXISTING ROOF SYSTEM TO REMAIN. ALL NEW WORK SHALL BE PREFORMED IN ORDER TO KEEP THE ROOFING MANUFACTURERS WARRANTY INTACT.



TRUE PLAN NORTH NORTH  
**1 VEHICLE STORAGE DEMOLITION ROOF PLAN**  
 1/16" = 1'-0"



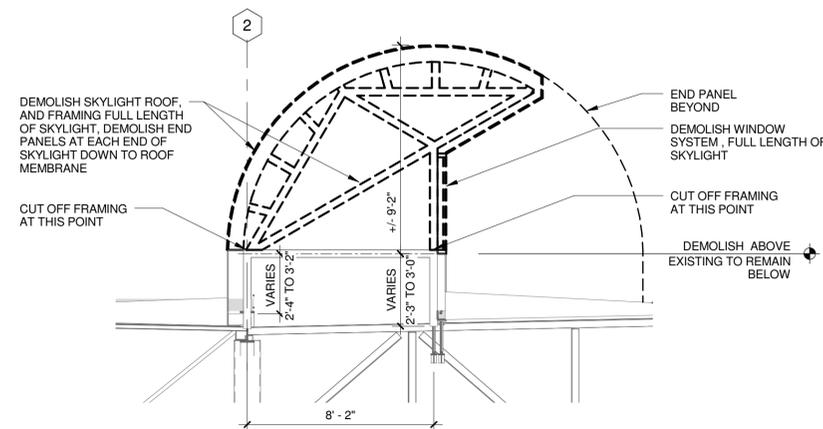
- REMOVE SKYLIGHT
- REMOVE FLASHING
- FLASHING TO REMAIN
- EXISTING ROOF SYSTEM TO REMAIN. ALL NEW WORK SHALL BE PREFORMED IN ORDER TO KEEP THE ROOFING MANUFACTURERS WARRANTY INTACT.

**3 SKYLIGHT CURB DEMOLITION**  
 NO SCALE



- REMOVE WALL
- REMOVE SKYLIGHT
- REMOVE FLASHING
- FLASHING TO REMAIN
- EXISTING ROOF SYSTEM TO REMAIN. ALL NEW WORK SHALL BE PREFORMED IN ORDER TO KEEP THE ROOFING MANUFACTURERS WARRANTY INTACT.

**4 SKYLIGHT CURB DEMOLITION**  
 1/16" = 1'-0"



**2 SECTION AT EXISTING SKYLIGHT**  
 1/4" = 1'-0"

**City of Madison Water Utility**  
 Vehicle Storage Building Improvements  
 Contract No. 7823, Project No. 10442  
 Madison, Wisconsin

ISSUED  
 10/21/16 BID SET

MSH NO.: 3235300-131021.02  
 DATE: October 21, 2016  
 DESIGNED BY: SZK  
 DRAWN BY: NJD  
 CHECKED BY: RCL  
 DO NOT SCALE DRAWINGS

SHEET CONTENTS  
 DEMOLITION  
 MATERIAL STORAGE  
 ROOF PLAN

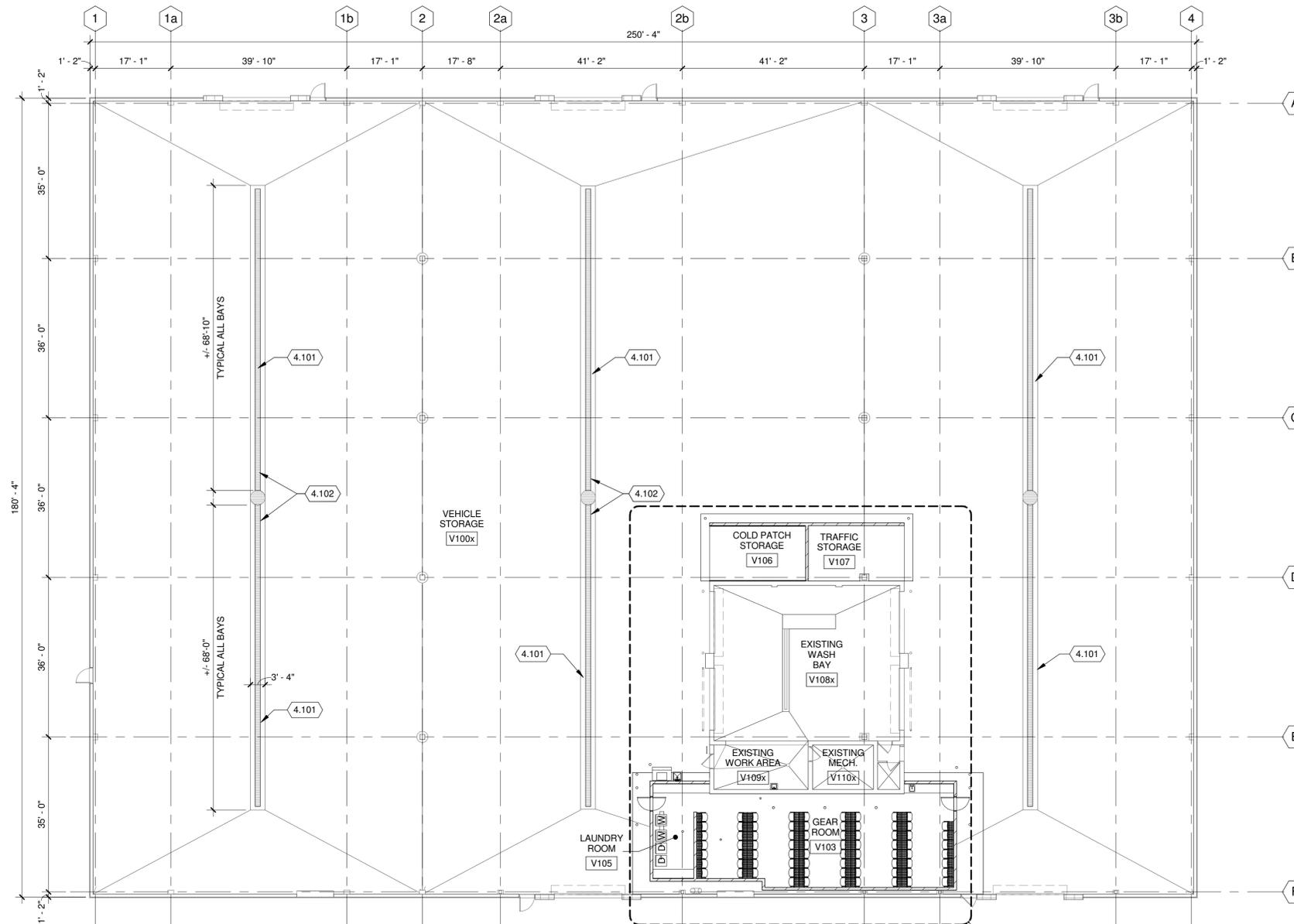
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**AD102**

**ARCHITECTURAL PLAN GENERAL NOTES:**

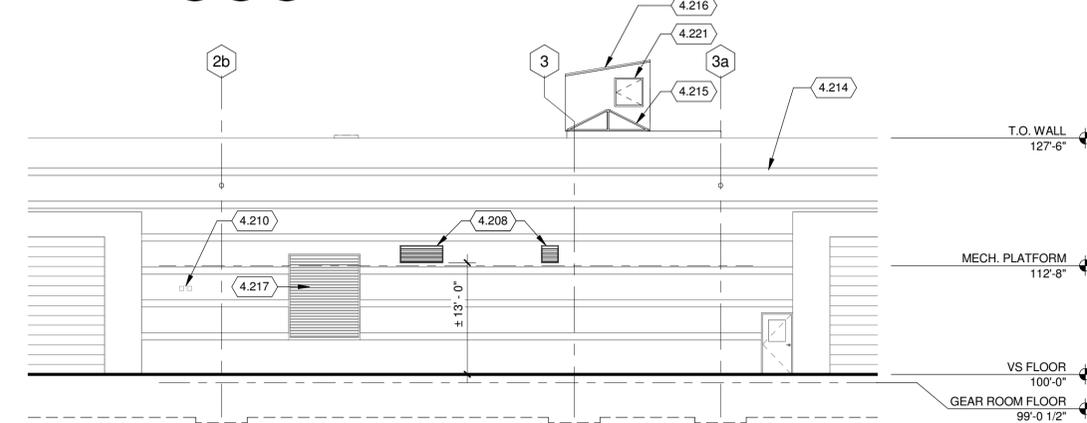
1. SITE DATUM OF EXISTING FINISHED FIRST FLOOR HIGH POINT INDICATED ON CIVIL SITE PLAN = ELEVATION 100'-0" ON ARCHITECTURAL DRAWINGS.
2. FIELD VERIFY ALL DIMENSIONS. BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR FINAL DECISION.
3. COORDINATE ALL FLOOR/TRENCH DRAIN LOCATIONS WITH PLUMBING AND FLATWORK PLANS (IF APPLICABLE).
4. MAINTAIN ALL INFRASTRUCTURE TO OCCUPIED AREAS AND COORDINATE ANY DISRUPTION OF SERVICES WITH OWNER'S REPRESENTATIVE.
5. BOTTOM OF TRENCH DRAIN ELEVATIONS ARE TYPICAL FOR ALL (3) BAYS.
6. GENERAL CONTRACTOR SHALL PATCH AND REPAIR EXISTING CONSTRUCTION (WALLS, DOORS, CEILINGS, FLOORS, ETC.) AS REQUIRED FROM DEMOLITION OR CONSTRUCTION TO ALLOW FOR THE PREP WORK AND COMPLETION OF NEW AND EXISTING FINISHES. REPAIRS OR REPLACEMENTS MUST BE DURABLE, SEAMLESS, AND MATCH THE EXISTING MATERIAL.
7. GENERAL CONTRACTOR SHALL PATCH ALL FLOOR AND WALL PENETRATIONS CAUSED BY DEMOLITION OF MECHANICAL, ELECTRICAL, TECHNOLOGY, AND PLUMBING, INCLUDING BUT NOT LIMITED TO PIPING AND CONDUIT RUNS, IN A MANNER THAT IS CONSISTENT WITH THE EXISTING FLOOR AND WALL CONSTRUCTION AND FINISH. ALL PENETRATIONS SHALL MEET REQUIRED FIRE RATINGS.
8. COORDINATE THE INSTALLATION OF ALL OWNER-SUPPLIED APPLIANCES AND EQUIPMENT. REFERENCE PLANS, SPECS, AND INTERIOR ELEVATIONS FOR SPECIFIC EQUIPMENT AND ITS INSTALLATION REQUIREMENTS.
9. GENERAL CONTRACTOR SHALL PROVIDE BLOCKING, STIFFENERS, BRACINGS, BACKING PLATES AND SUPPORTING BRACKETS REQUIRED FOR THE PROPER INSTALLATION OF ALL CASEWORK AND MISCELLANEOUS EQUIPMENT.
10. INFILL CONCRETE FLOOR AND TRANSITIONS SHALL BE MADE LEVEL, PLUMB AND IN SOUND CONDITION AS REQUIRED FOR THE INSTALLATION OF FINAL FLOOR FINISHES. TYPICAL PROVIDE GRINDING OR EPOXY FILLERS AS REQUIRED FOR A SMOOTH WALKABLE AREA.
11. SEE ENLARGED PLANS FOR NOTES, DIMENSIONS, AND WALL TYPES WITHIN THE DETAIL CALLOUT BOUNDARIES

**KEYED NOTES**

- 4.101 NEW CONCRETE TRENCH DRAIN WITH GALVANIZED STEEL GRATING AS COVER. SLOPE BOTTOM OF POURED CONCRETE TRENCH DRAIN AS NOTED. SEE STRUCTURAL DRAWINGS.
- 4.102 CONNECT TRENCH DRAINS TO EXISTING CATCH BASIN, SEE PLUMBING DRAWINGS.
- 4.208 CUT OPENING IN EXISTING METAL PANEL WALL FOR MECHANICAL LOUVER. CORRDINATE WITH MECHANICAL DRAWINGS. FLASH OPENING AS REQUIRED PER MECHANICAL LOUVER MANUFACTURER'S REQUIREMENTS TO PROVIDE A WATERTIGHT SEAL.
- 4.210 CUT OPENINGS IN EXISTING METAL PANEL FOR DRYER VENTS. SEE MECHANICAL DRAWINGS. PROVIDE A WATERTIGHT SEAL.
- 4.214 EXISTING METAL WALL PANEL
- 4.215 NEW SKYLIGHT, SEE SHEET A-102
- 4.216 NEW MECHANICAL LOUVER ENCLOSURE, SEE SHEET A-102
- 4.217 EXISTING LOUVER TO REMAIN
- 4.221 36"x36" ACCESS DOOR ON SOUTH WALL OF ENCLOSURE ONLY



TRUE PLAN NORTH NORTH  
**1 EXISTING VEHICLE STORAGE BUILDING FLOOR PLAN**  
1/16" = 1'-0"



**2 PARTIAL SOUTH ELEVATION**  
3/32" = 1'-0"

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**City of Madison Water Utility**  
 Vehicle Storage Building Improvements  
 Contract No. 7823, Project No. 10442  
 Madison, Wisconsin

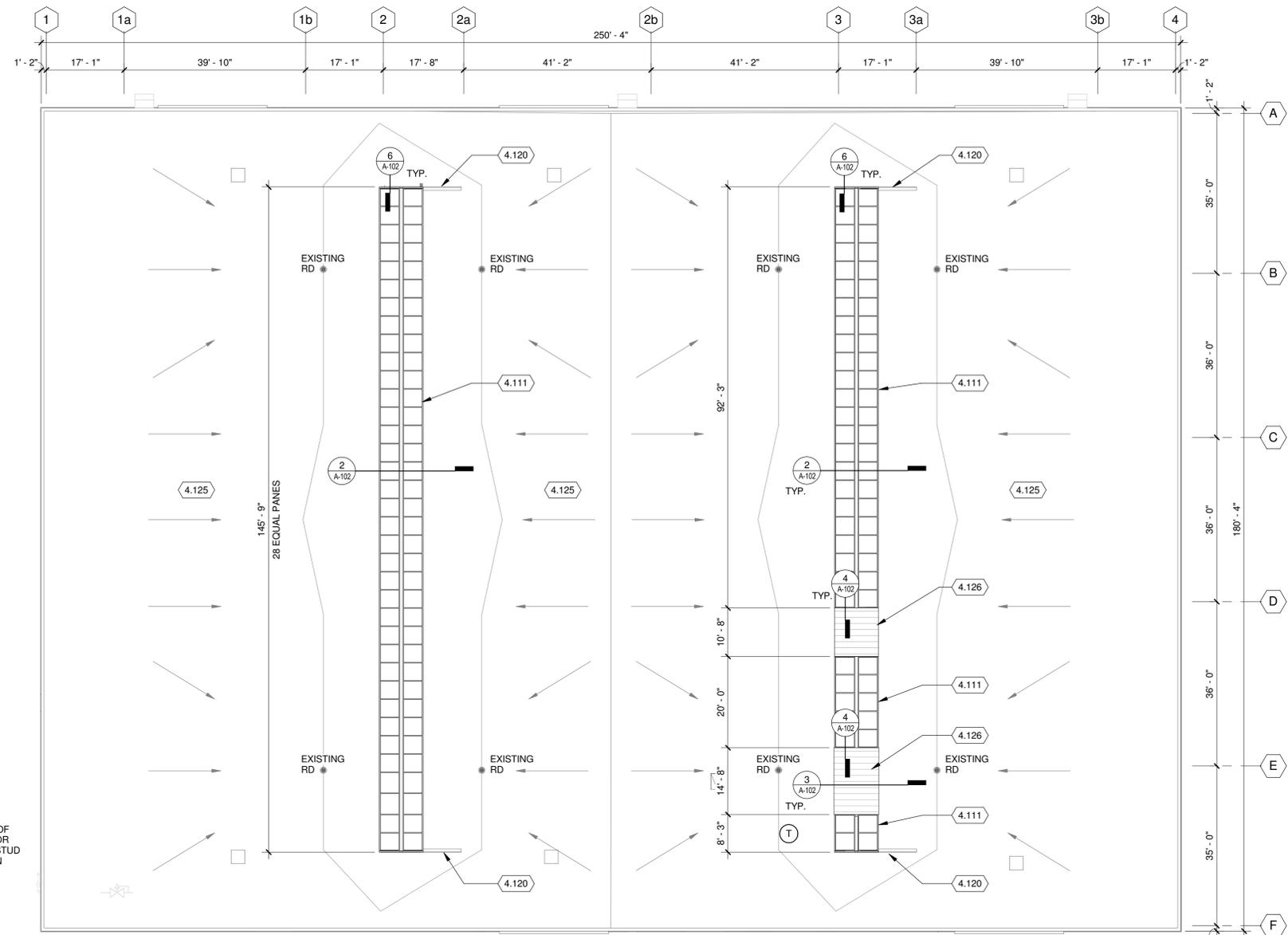
ISSUED  
 10/21/16 BID SET

MSH NO.: 3235300-131021-02  
 DATE: October 21, 2016  
 DESIGNED BY: SZK  
 DRAWN BY: NJD  
 CHECKED BY: RCL  
 DO NOT SCALE DRAWINGS

SHEET CONTENTS  
 VEHICLE STORAGE  
 ROOF PLAN AND  
 DETAILS

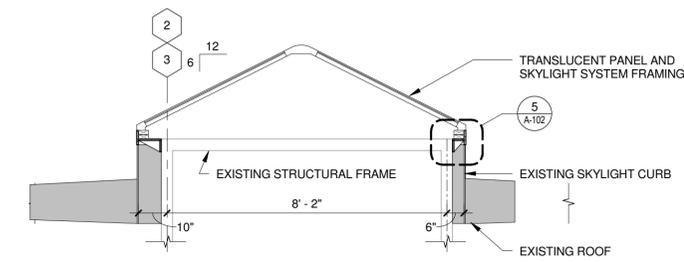
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**A-102**

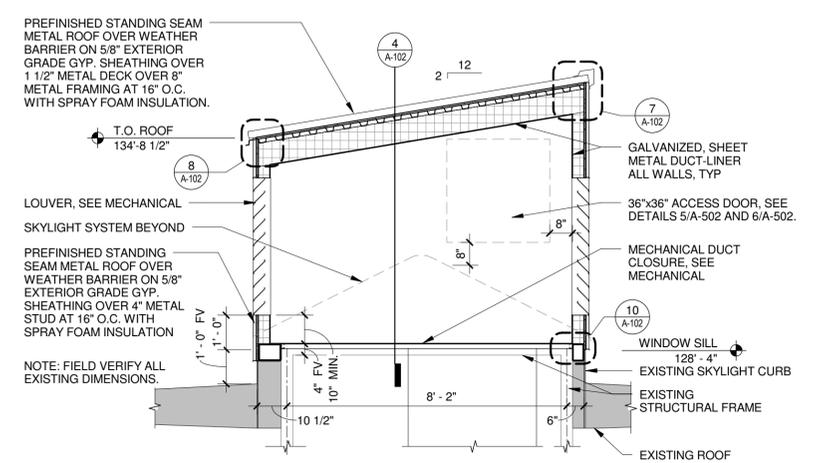


TRUE PLAN NORTH NORTH  
**1 VEHICLE STORAGE ROOF PLAN**  
 1/16" = 1'-0"

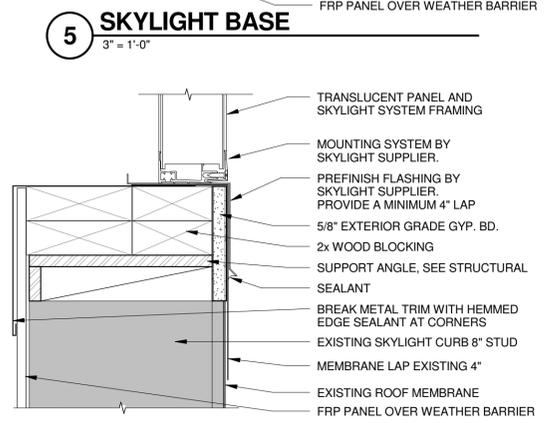
- KEYED NOTES**
- 4.111 PROVIDE NEW SKYLIGHT (LENGTH x WIDTH) OF EXISTING SKYLIGHT CURB.
  - 4.120 PROVIDE PREFINISHED PARPET CAP TRIM AND BLOCKING AS REQUIRED TO MAINTAIN WEATHERTIGHT ROOF SYSTEM.
  - 4.125 PATCH AND REPAIR EXISTING ROOF SYSTEM TO MAINTAIN A WEATHERTIGHT SYSTEM. ALL NEW WORK SHALL BE PERFORMED IN ORDER TO KEEP THE ROOFING MANUFACTURERS WARRANTY IN TACT.
  - 4.126 PREFINISHED STANDING SEAM METAL ROOF OVER WEATHER BARRIER ON 5/8" EXTERIOR GRADE GYP. SHEATHING OVER 1 1/2" METAL DECK OVER 3 5/8" METAL FRAMING AT 16" O.C. WITH SPRAY FOAM INSULATION.



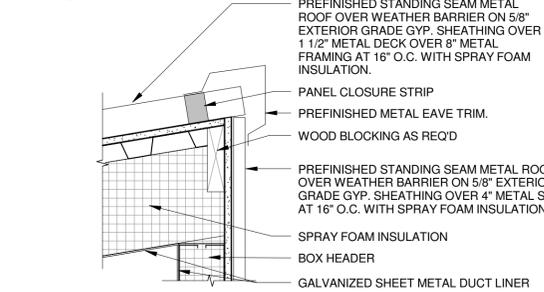
**2 NEW SKYLIGHT SECTION**  
 3/8" = 1'-0"



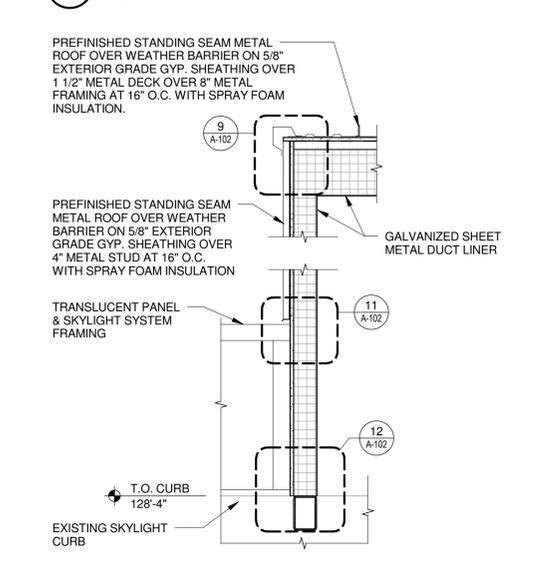
**3 LOUVER ENCLOSURE SECTION**  
 3/8" = 1'-0"



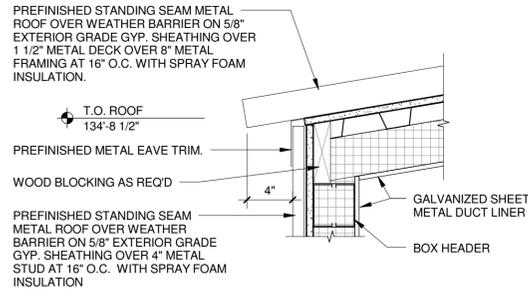
**6 SKYLIGHT GABLE END BASE**  
 3" = 1'-0"



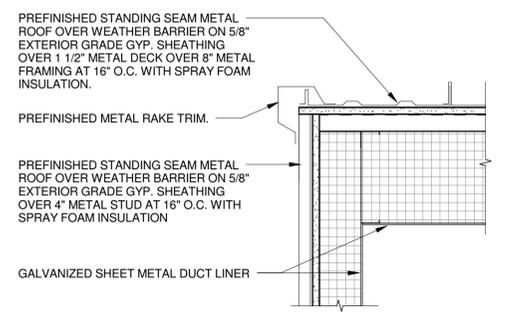
**7 LOUVER ENCLOSURE HIGH EAVE**  
 1 1/2" = 1'-0"



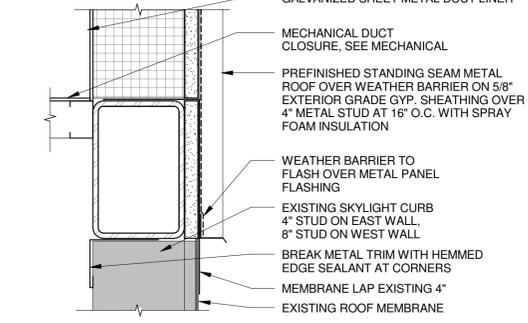
**4 LOUVER ENCLOSURE WALL SECTION**  
 3/4" = 1'-0"



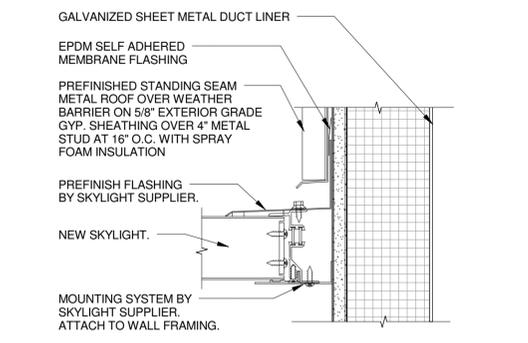
**8 LOUVER ENCLOSURE LOW EAVE**  
 1 1/2" = 1'-0"



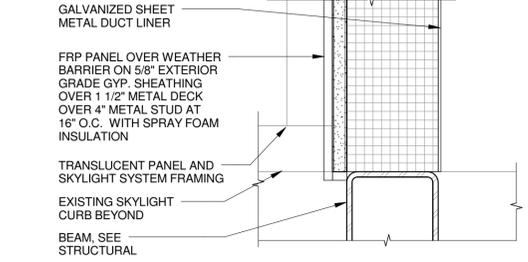
**9 LOUVER ENCLOSURE RAKE**  
 1 1/2" = 1'-0"



**10 LOUVER ENCLOSURE BASE**  
 3" = 1'-0"



**11 SKYLIGHT AT LOUVER ENCLOSURE**  
 3" = 1'-0"



**12 LOUVER ENCLOSURE BASE**  
 3" = 1'-0"

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**ARCHITECTURAL  
 PLAN GENERAL NOTES:**

1. SITE DATUM OF FINISHED FIRST FLOOR INDICATED ON CIVIL SITE PLAN = ELEVATION 100'-6" ON STRUCTURAL DRAWINGS.
2. FIELD VERIFY ALL DIMENSIONS. BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR FINAL DECISION.
3. PAINT ALL EXPOSED STEEL FRAMING PT-1.

**KEYED NOTES**

- 4.104 LINE OF ROOF OVERHANG ABOVE.
- 4.105 6" DIA. CONCRETE FILLED, PAINTED STEEL PIPE BOLLARD. SEE DETAILS 1 & 2/A-501.
- 4.106 6" DIA. CONCRETE FILLED, PAINTED STEEL PIPE BOLLARD. SEE DETAIL 2/A-501. CENTERED ON WALL AT GRID LINES M2 THROUGH M7. CENTER ON ADJACENT PERPENDICULAR WALL AT GRIDS M1, M8 & M10.
- 4.113 4"x4" THROUGH WALL OPENING AT BASE OF WALL WITH PEST / INSECT CONTROL SCREENS.
- 4.128 BENT SHEET METAL CLOSURE PLATE TO SPAN OVER GAP TO MECHANICAL PLATFORM FLOOR. SEE DETAIL 7/A-502

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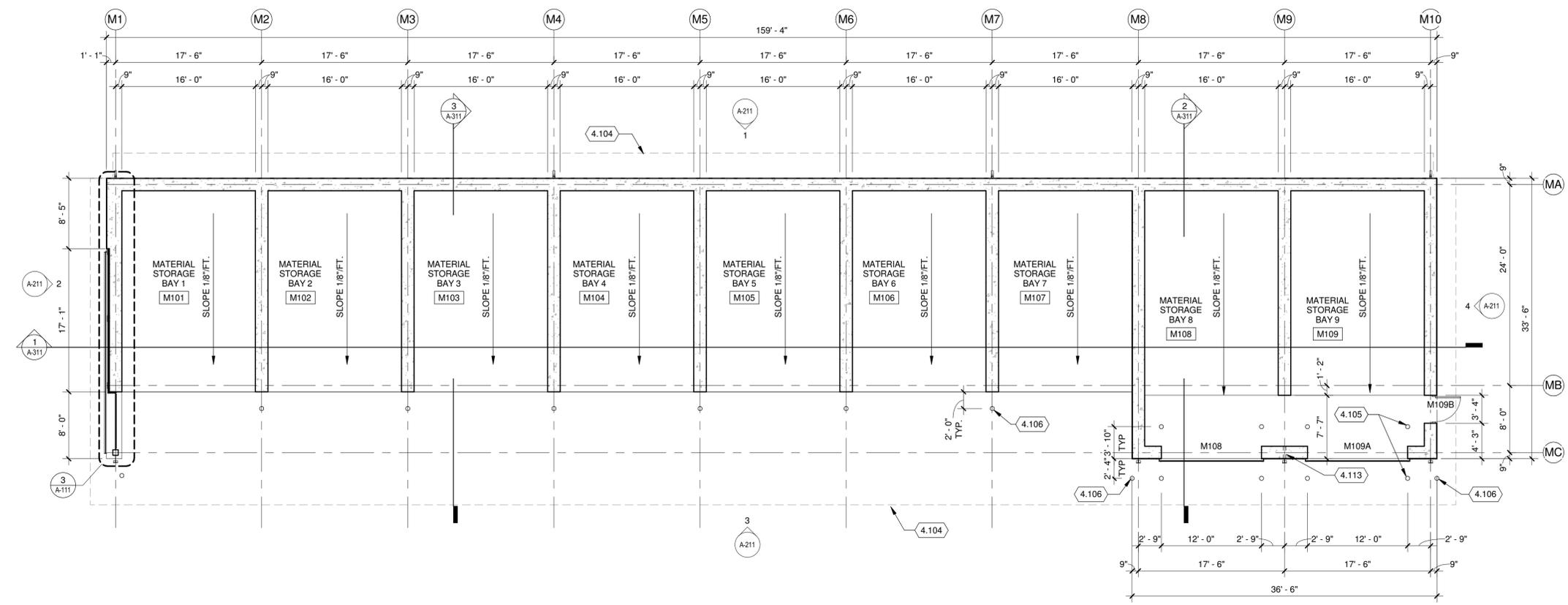
**City of Madison Water Utility**  
 Vehicle Storage Building Improvements  
 Contract No. 7823, Project No. 10442  
 Madison, Wisconsin

ISSUED  
 10/21/16 BID SET

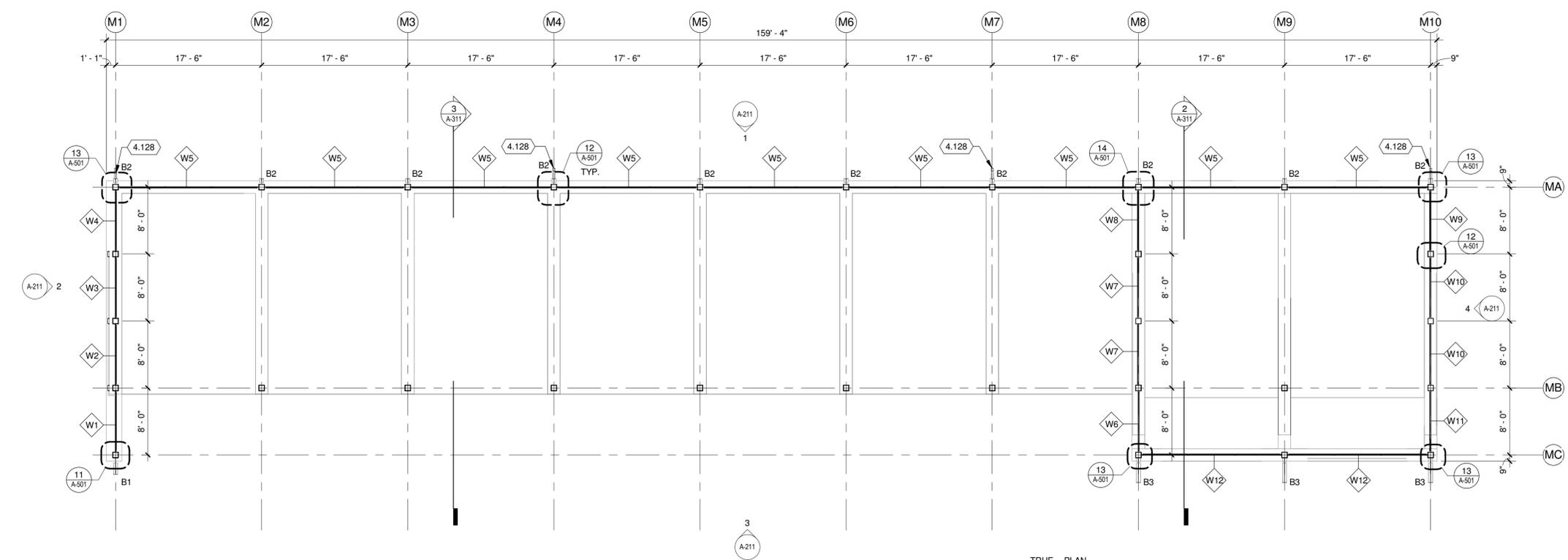
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 DATE: October 21, 2016  
 DESIGNED BY: SZK  
 DRAWN BY: NJD  
 CHECKED BY: RCL

DO NOT SCALE DRAWINGS  
 SHEET CONTENTS  
 MATERIAL STORAGE BUILDING FLOOR PLAN

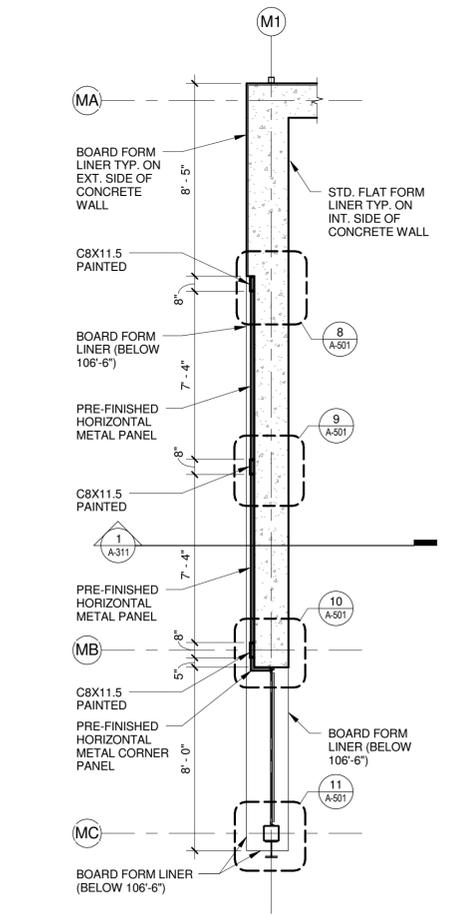
SHEET NO.:  
**A-111**



TRUE PLAN NORTH NORTH  
**1 MATERIAL STORAGE BUILDING FLOOR PLAN**  
 1/8" = 1'-0"



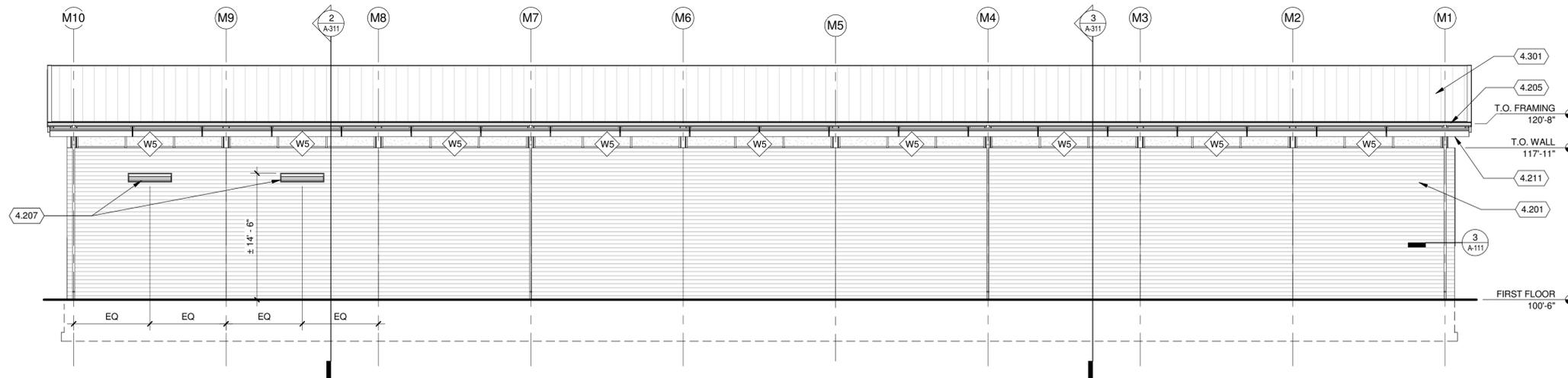
TRUE PLAN NORTH NORTH  
**2 MATERIAL STORAGE BUILDING GLAZING PLAN**  
 1/8" = 1'-0"



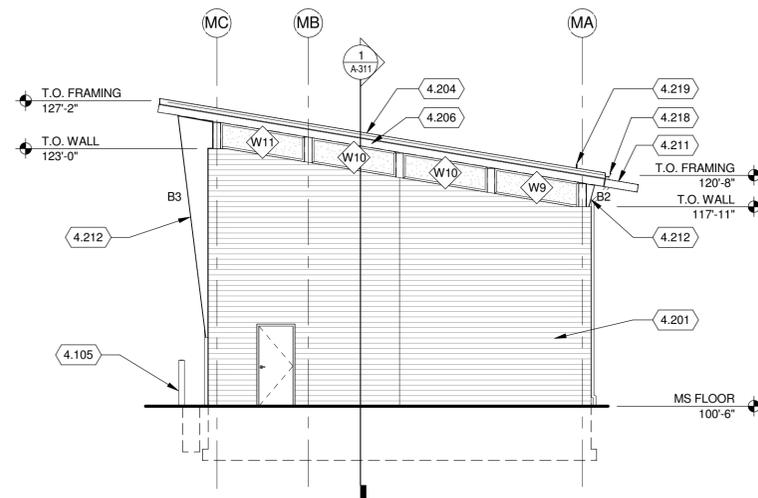
TRUE PLAN NORTH NORTH  
**3 ENLARGED PLAN**  
 1/4" = 1'-0"

**KEYED NOTES**

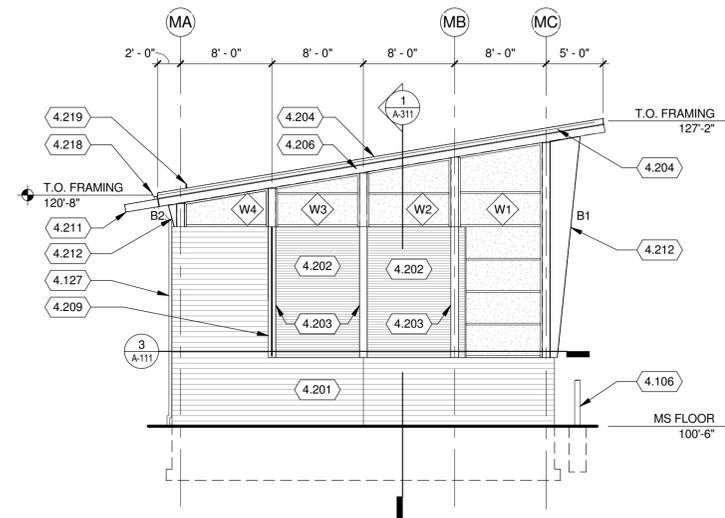
- 4.105 6" DIA. CONCRETE FILLED, PAINTED STEEL PIPE BOLLARD. SEE DETAILS 1 & 2/A-501.
- 4.106 6" DIA. CONCRETE FILLED, PAINTED STEEL PIPE BOLLARD. SEE DETAIL 2/A-501. CENTERED ON WALL AT GRID LINES M2 THROUGH M7. CENTER ON ADJACENT PERPENDICULAR WALL AT GRIDS M1, M8 & M10.
- 4.113 4"x4" THROUGH WALL OPENING AT BASE OF WALL WITH PEST / INSECT CONTROL SCREENS.
- 4.127 4" DOWNSPOUT LOCATION, CONNECT TO STORM HUB.
- 4.201 CONCRETE WALL WITH BOARD FORMED LINER EXTERIOR FINISH.
- 4.202 PRE-FINISHED HORIZONTAL METAL PANEL OVER 7/8" FURRING CHANNELS AT 16" O.C..
- 4.203 PAINTED GALVANIZED C-CHANNEL C8x11.5 DECORATIVE COLUMN.
- 4.204 PRE-FINISHED METAL RAKE COPING EDGE.
- 4.205 PRE-FINISHED METAL EAVE COPING EDGE.
- 4.206 PAINT ALL EXPOSED STEEL COLUMNS AND BEAMS PT-1
- 4.207 MECHANICAL LOUVER OPENING (APPROX. 60" x 12") IN CONCRETE WALL. FLASH OPENING AS REQUIRED PER MECHANICAL LOUVER MANUFACTURER'S REQUIREMENTS.
- 4.209 SURFACE LIGHT STRIP, SEE ELECTRICAL DRAWINGS.
- 4.211 ALUMINUM SUN SHADE CONTROL DEVICE.
- 4.212 ARCHITECTURAL METAL BRACKET, SEE DETAILS ON SHEET A-502
- 4.213 INTERIOR FINISH OF ALL MATERIAL STORAGE BAYS SHALL BE STD. FLAT FORM LINER CONCRETE WALL
- 4.218 4" DEEP x 6" WIDE GUTTER
- 4.219 SNOW RETENTION SYSTEM CLAMPED TO VERTICAL SEAM OF ROOF PANELS
- 4.220 PROVIDE BIRD CONTROL NETTING AT UNDERSIDE OF EXPOSED ROOF STRUCTURE
- 4.301 PRE-FINISHED STANDING METAL ROOF OVER FULLY ADHERED MEMBRANE UNDERLAYMENT OVER COVER BOARD ON STRUCTURAL STEEL ROOF DECK.



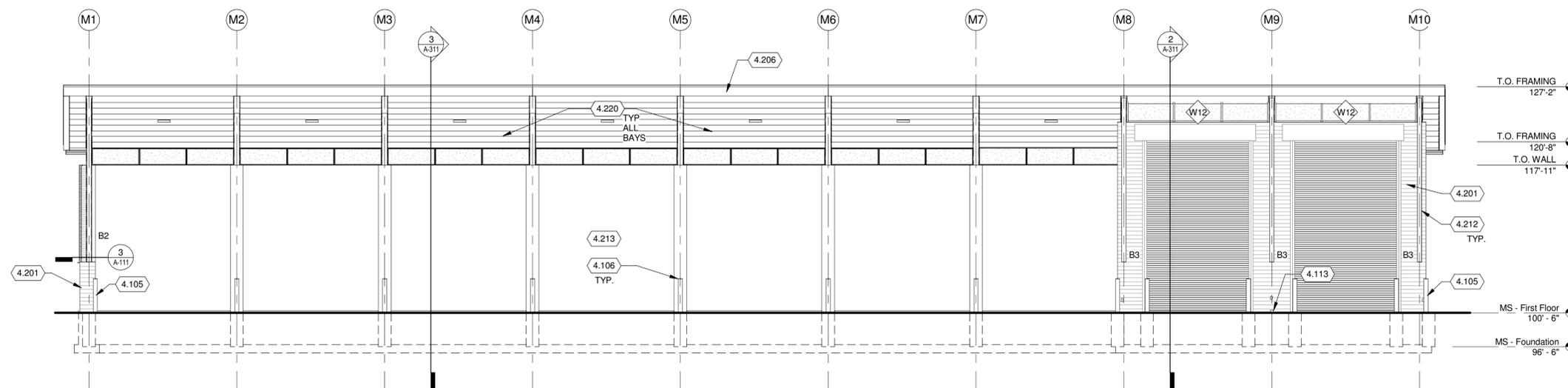
**1 MATERIAL STORAGE - NORTH ELEVATION**  
1/8" = 1'-0"



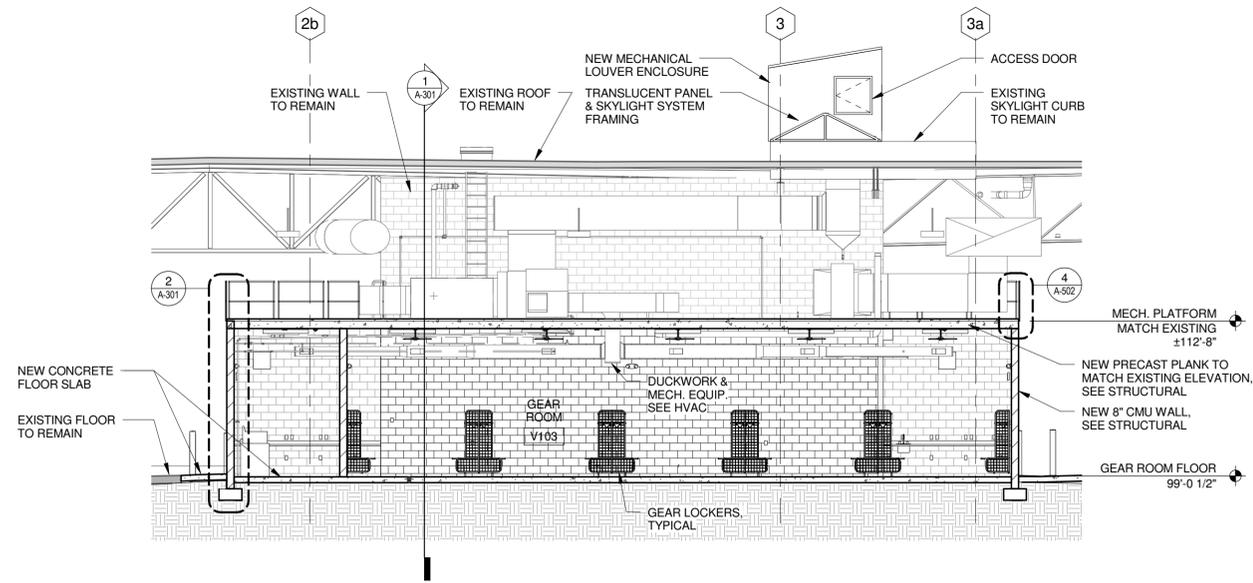
**4 MATERIAL STORAGE - EAST ELEVATION**  
1/8" = 1'-0"



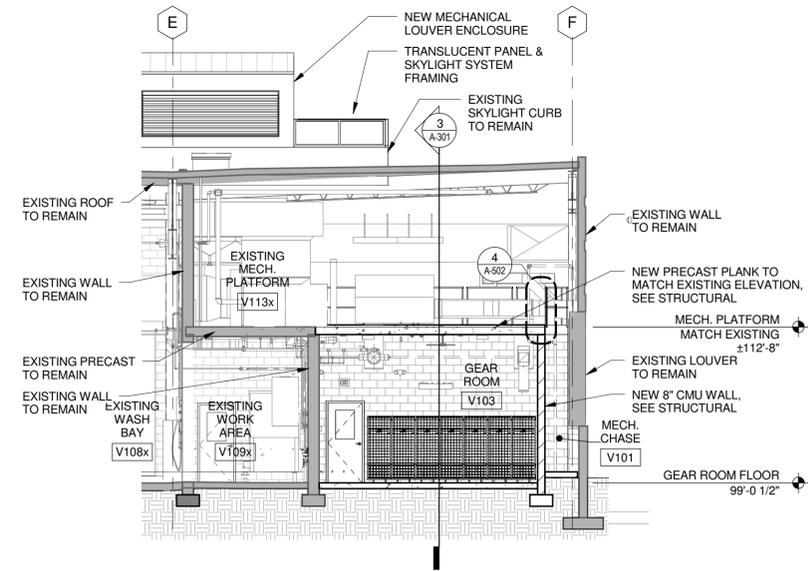
**2 MATERIAL STORAGE - WEST ELEVATION**  
1/8" = 1'-0"



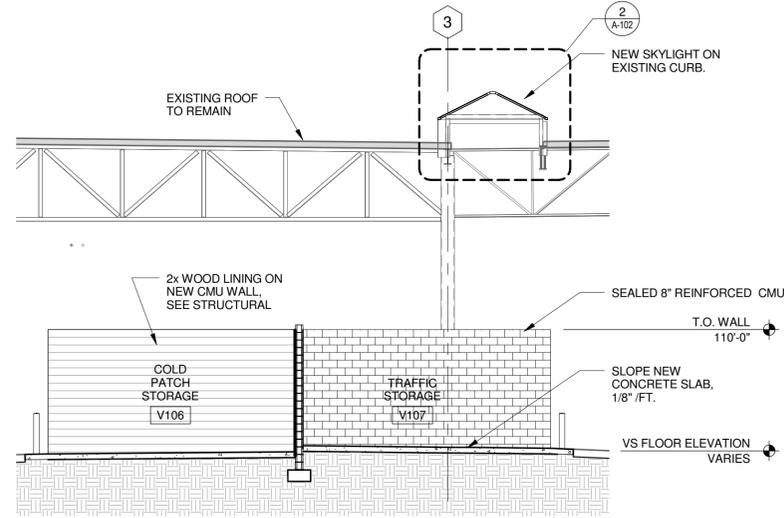
**3 MATERIAL STORAGE - SOUTH ELEVATION**  
1/8" = 1'-0"



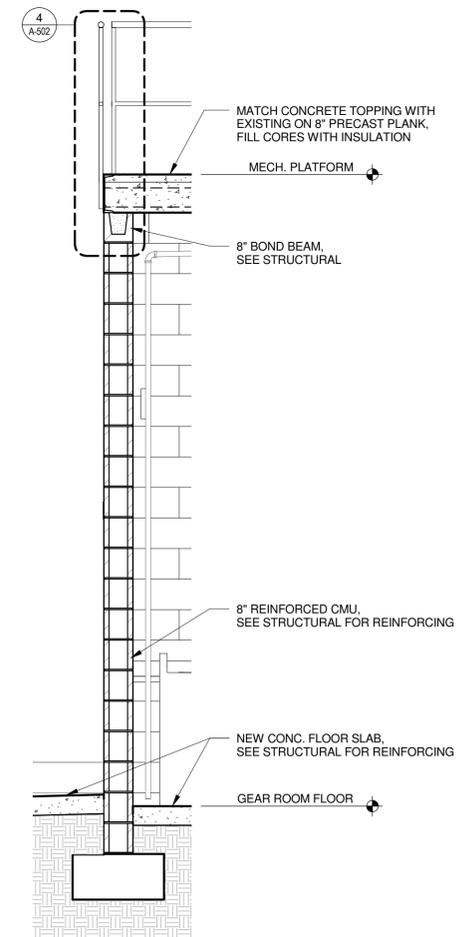
**3 PARTIAL BUILDING SECTION**  
1/8" = 1'-0"



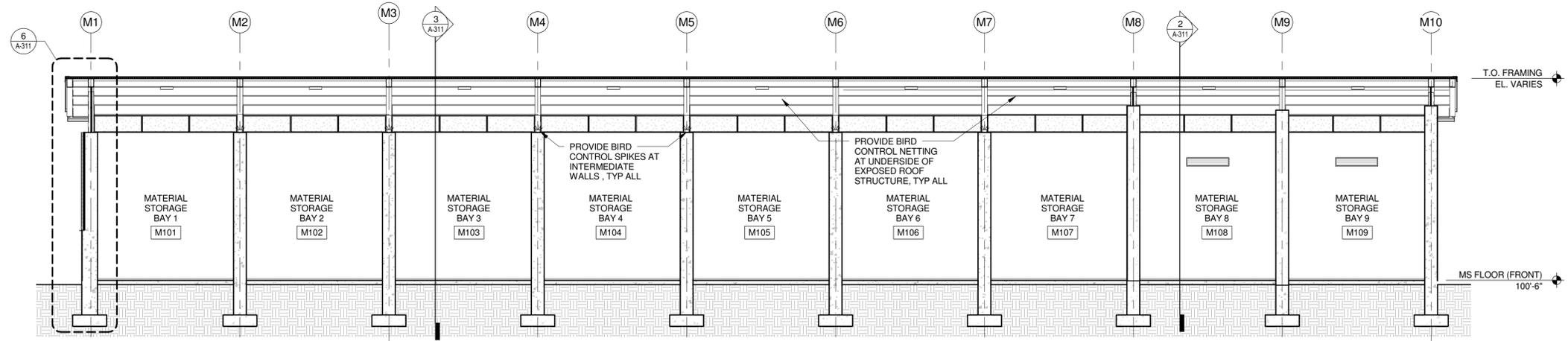
**1 PARTIAL BUILDING SECTION**  
1/8" = 1'-0"



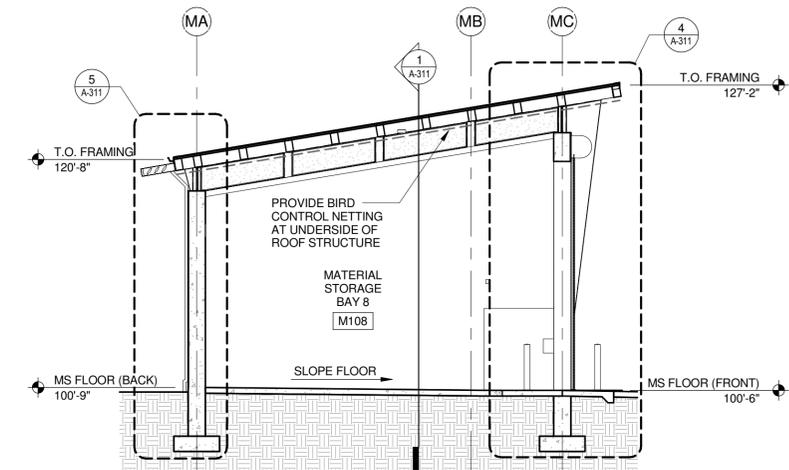
**4 SECTION THROUGH STORAGE BAYS**  
1/8" = 1'-0"



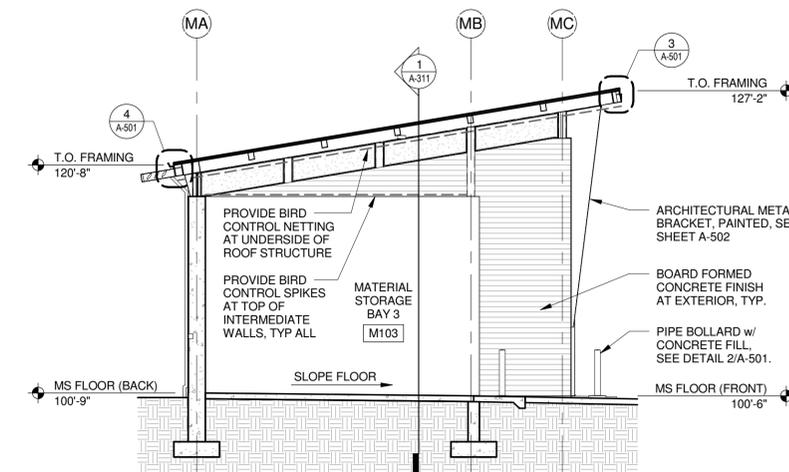
**2 WALL SECTION TYPICAL**  
1/2" = 1'-0"



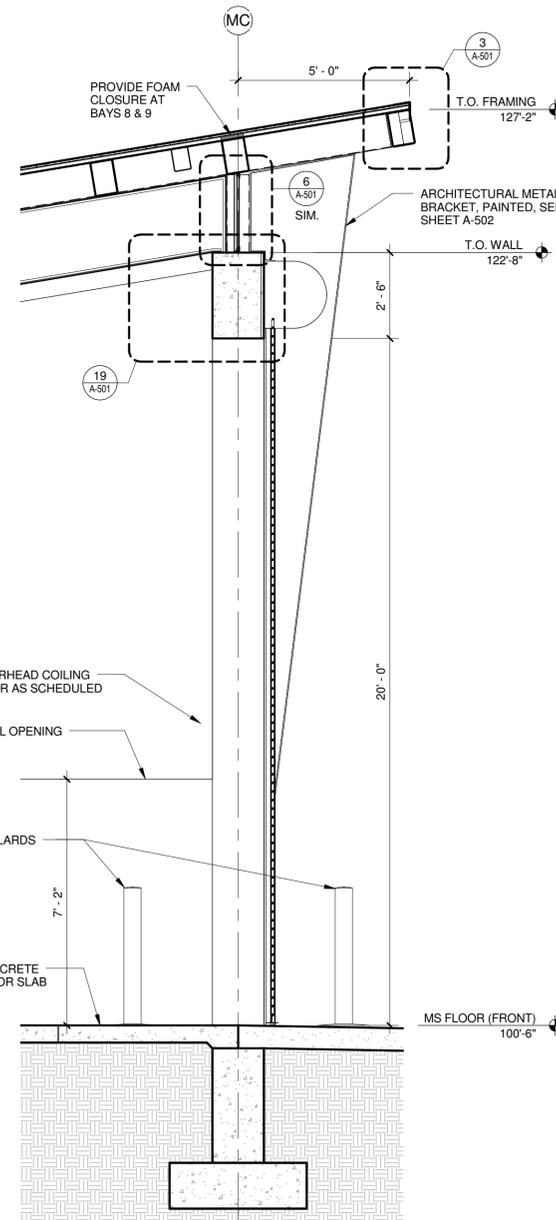
**1 MATERIAL STORAGE - BUILDING SECTION**  
 1/8" = 1'-0"



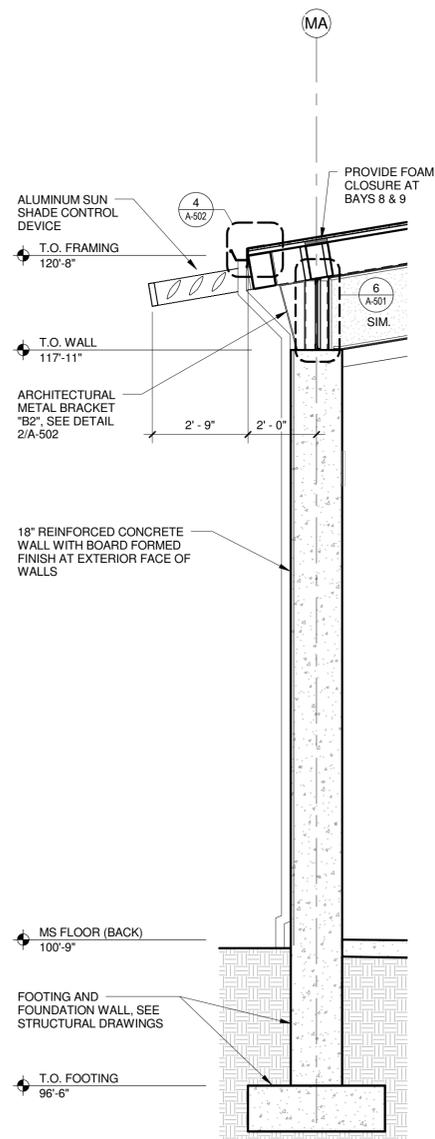
**2 MATERIAL STORAGE - BUILDING SECTION**  
 1/8" = 1'-0"



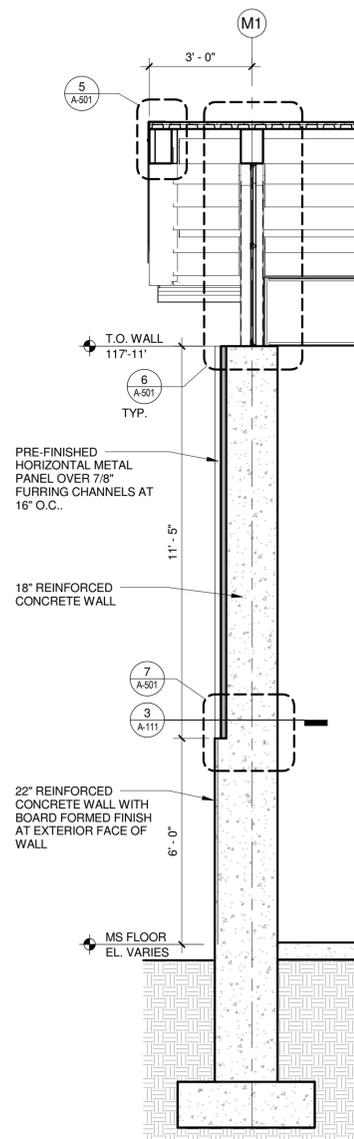
**3 MATERIAL STORAGE - BUILDING SECTION**  
 1/8" = 1'-0"



**4 MS - WALL SECTION**  
 3/8" = 1'-0"



**5 MS - WALL SECTION**  
 3/8" = 1'-0"



**6 MS - WALL SECTION**  
 3/8" = 1'-0"

**ARCHITECTURAL  
 PLAN GENERAL NOTES:**

- SITE DATUM OF EXISTING FINISHED FIRST FLOOR HIGH POINT INDICATED ON CIVIL SITE PLAN = ELEVATION 100'-0" ON ARCHITECTURAL DRAWINGS.
- FIELD VERIFY ALL DIMENSIONS, BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR FINAL DECISION.
- REPAIR AND REFINISH ANY EXISTING WALLS AND/OR SURFACES DISTURBED BY DEMOLITION AND/OR NEW CONSTRUCTION. (MATCH EXISTING, U.O.N.)
- TIE-IN ALL NEW CONCRETE FLOOR ELEVATIONS INTO EXISTING FLOOR ELEVATIONS TO MAINTAIN POSITIVE DRAINAGE TO TRANCH DRAINS.
- MAINTAIN ALL INFRASTRUCTURE TO OCCUPIED AREAS AND COORDINATE ANY DISRUPTION OF SERVICES WITH OWNER'S REPRESENTATIVE.

**KEYED NOTES**

- 4.109 PROVIDE (4'-0" LONG) SECTIONS OF REMOVABLE 1 1/2" PAINTED STEEL PIPE GUARDRAILS, 42" HIGH, SEE DETAIL 4/A-502.
- 4.110 LOCKERS, SEE SPECIFICATIONS FOR BASIS OF DESIGN
- 4.112 8" REINFORCED CMU WALLS, SEE STRUCTURAL FOR REINFORCING. TOP OF WALLS AT EL. 110'-0".
- 4.114 6" DIA. CONCRETE FILLED, PAINTED STEEL PIPE BOLLARD. SEE DETAIL 2/A-501.
- 4.115 RELOCATE EXISTING, OWNER FURNISHED ICE STORAGE UNIT.
- 4.117 TIE NEW CONCRETE RAMP ELEVATION INTO EXISTING FLOOR SLAB, SLOPE MAX. 1:20.
- 4.121 2x8 P.T. WOOD LINER LAID FLAT HORIZONTALLY, ANCHOR TO CMU WITH COUNTER SUNK 3/4" EXPANSION ANCHORS AT 24" O.C.
- 4.122 NEW SLAB INFILL TO MATCH EXISTING SLAB ELEVATION AND SLOPE UNLESS NOTED OTHERWISE.
- 4.123 COMMERCIAL WASHER (OFCI) - COORDINATE LAUNDRY TRENCH DRAIN LOCATION AND WASHER FLOOR ANCHORS.
- 4.124 COMMERCIAL DRYER (OFCI)
- 4.128 BENT SHEET METAL CLOSURE PLATE TO SPAN OVER GAP TO MECHANICAL PLATFORM FLOOR. SEE DETAIL 7/A-502

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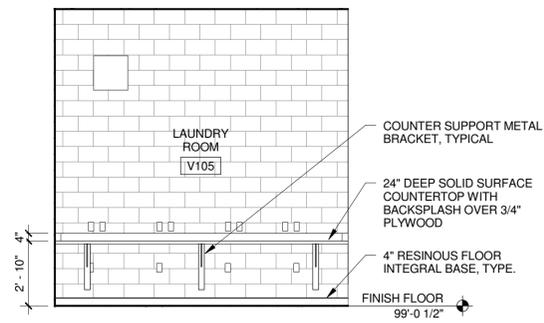
**City of Madison Water Utility**  
 Vehicle Storage Building Improvements  
 Contract No. 7823, Project No. 10442  
 Madison, Wisconsin

ISSUED  
 10/21/16 BID SET

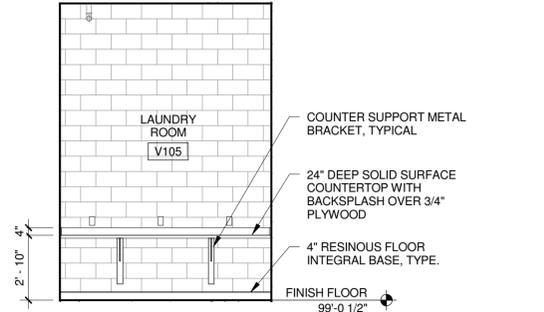
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SHEET CONTENTS  
 VEHICLE STORAGE  
 ENLARGED PLAN

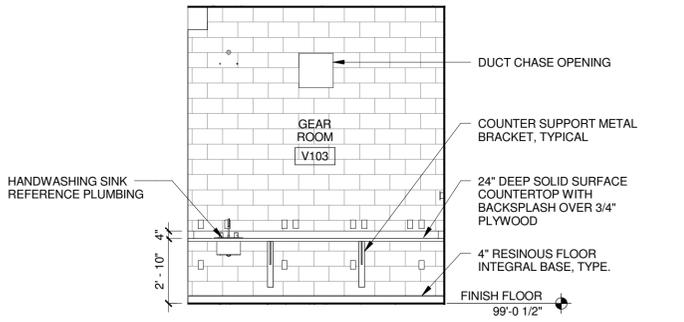
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**A-401**



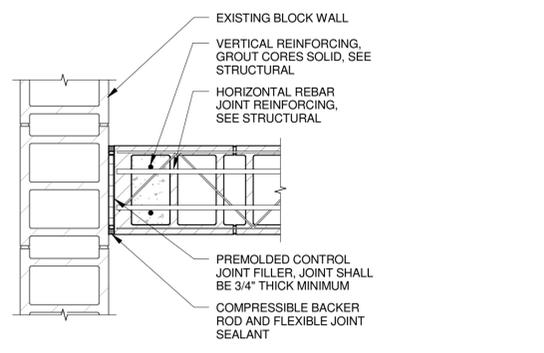
**3 LAUNDRY ROOM NORTH ELEVATION**  
 1/4" = 1'-0"



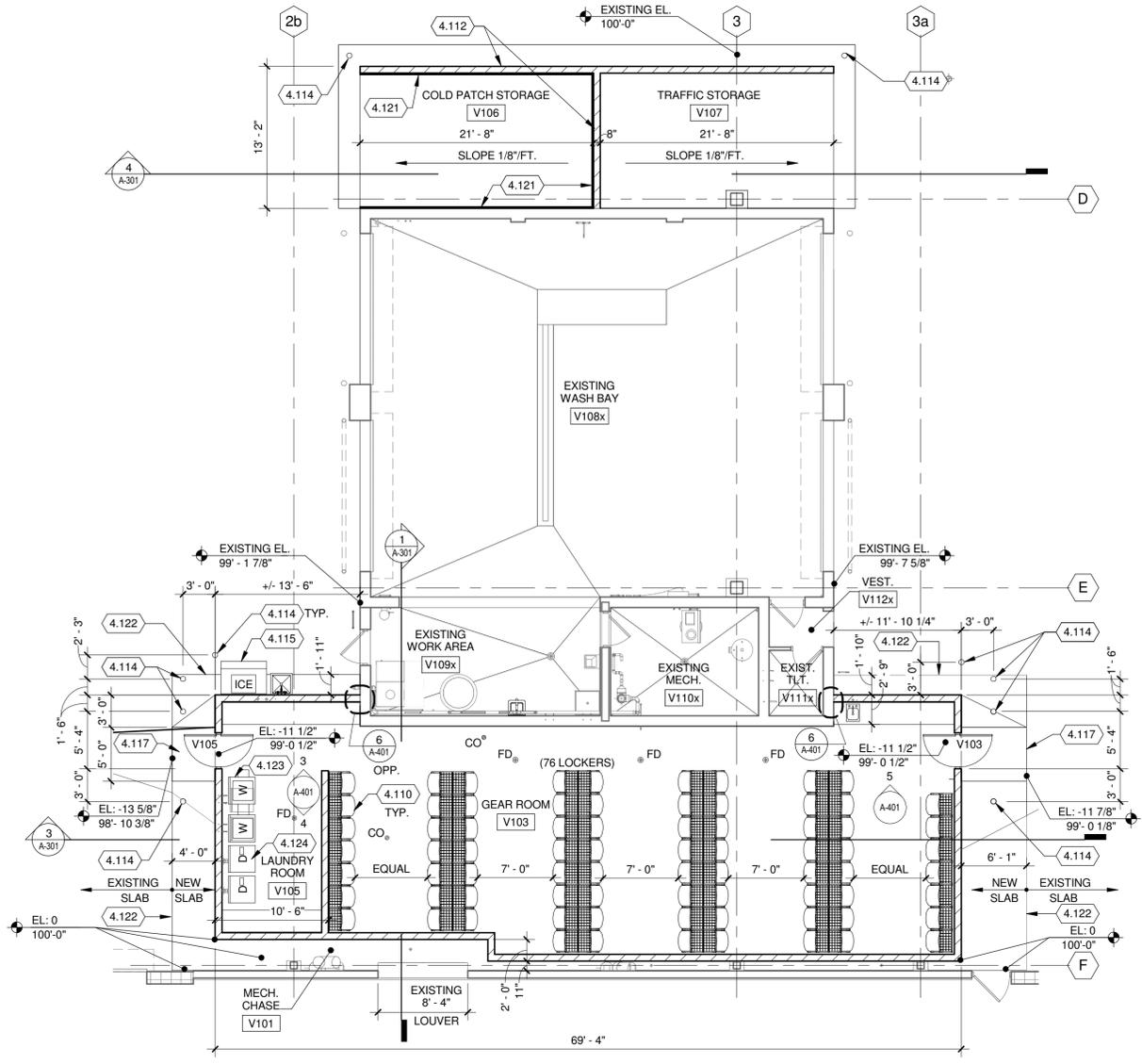
**4 LAUNDRY ROOM SOUTH ELEVATION**  
 1/4" = 1'-0"



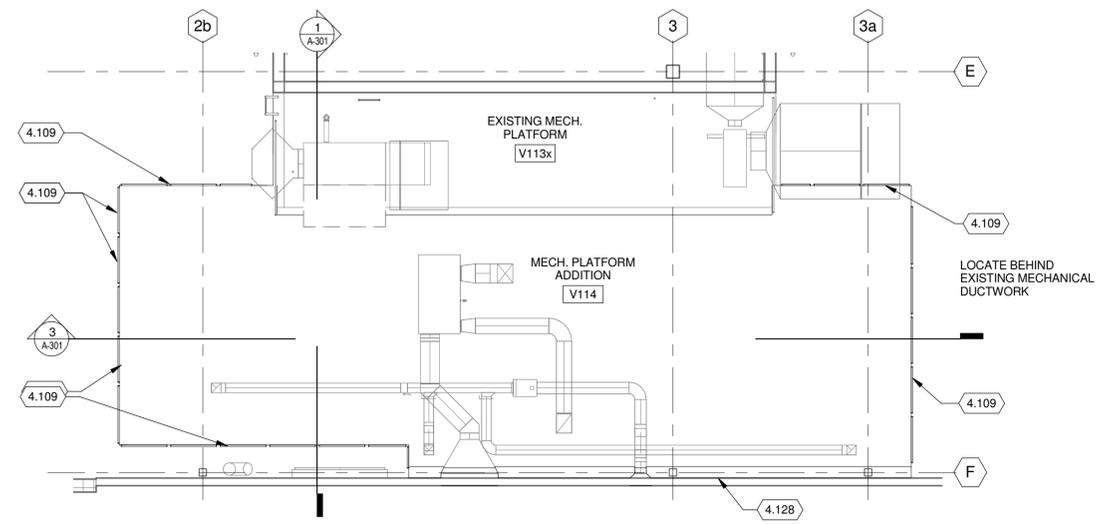
**5 GEAR ROOM NORTH ELEVATION**  
 1/4" = 1'-0"



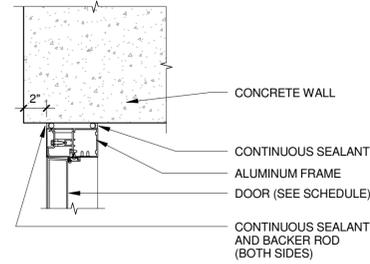
**6 TYPICAL NEW TO EXISTING MASONRY WALL CONNECTION**  
 1" = 1'-0"



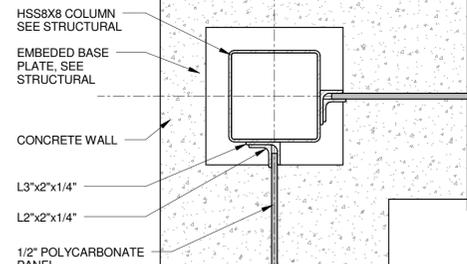
**1 ENLARGED FLOOR PLAN**  
 1/8" = 1'-0"



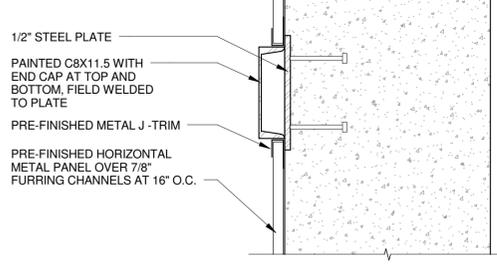
**2 VEHICLE STORAGE MECHANICAL PLATFORM**  
 1/8" = 1'-0"



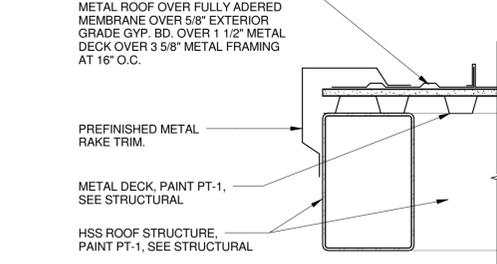
**17 FRP DOOR HEAD**  
1 1/2" = 1'-0"



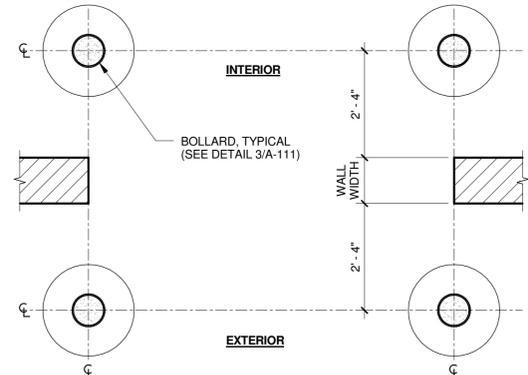
**13 WINDOW JAMB DETAIL AT CORNER**  
1 1/2" = 1'-0"



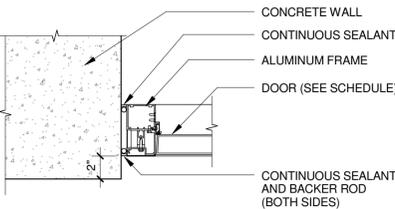
**9 ENLARGED PLAN DETAIL**  
1 1/2" = 1'-0"



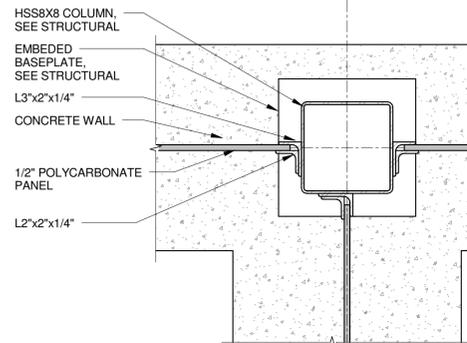
**5 MATERIAL STORAGE RAKE**  
1 1/2" = 1'-0"



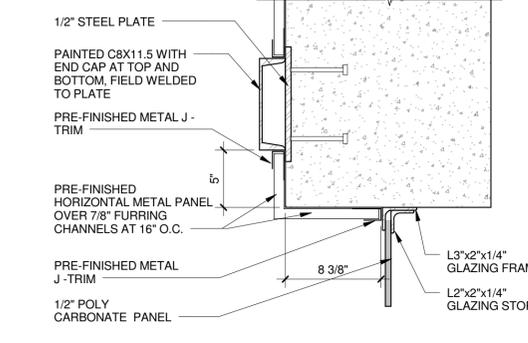
**1 BOLLARD LOCATION PLAN**  
1/2" = 1'-0"



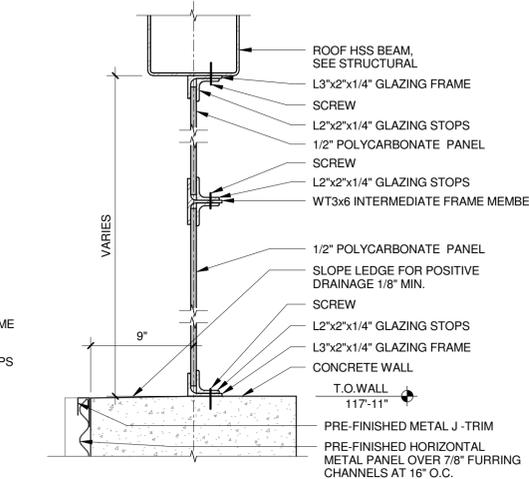
**18 FRP DOOR JAMB**  
1 1/2" = 1'-0"



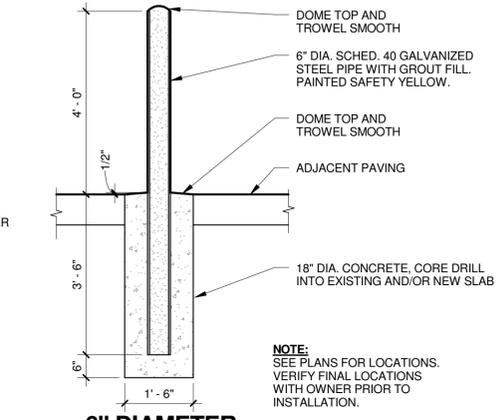
**14 WINDOW JAMB DETAIL AT TEE**  
1 1/2" = 1'-0"



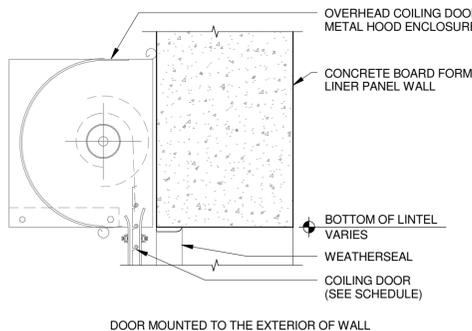
**10 ENLARGED PLAN DETAIL**  
1 1/2" = 1'-0"



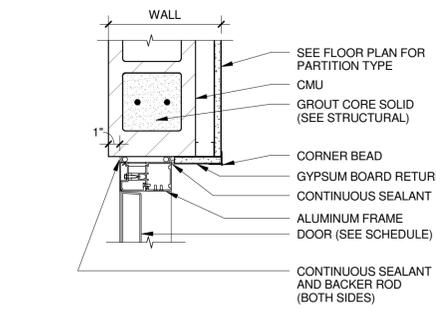
**6 WINDOW HEAD/SILL DETAIL**  
1 1/2" = 1'-0"



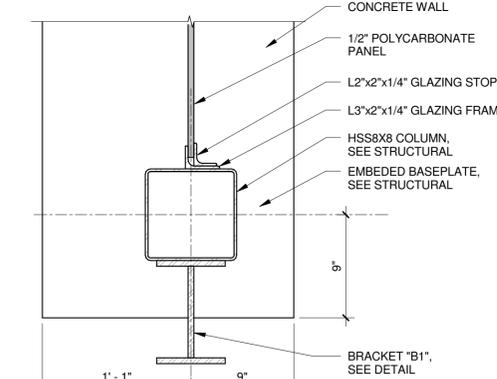
**2 6" DIAMETER GALVANIZED BOLLARD POST**  
1/2" = 1'-0"



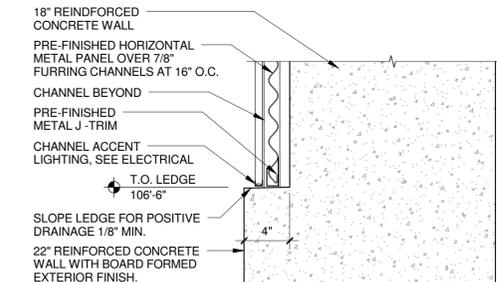
**19 COILING DOOR HEAD**  
1" = 1'-0"



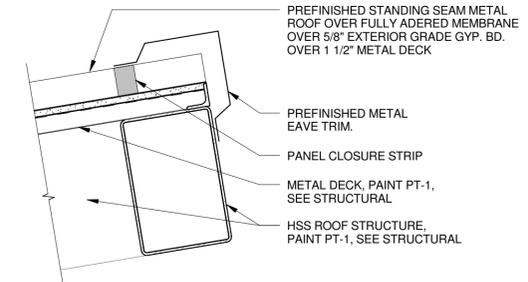
**15 FRP DOOR HEAD**  
1 1/2" = 1'-0"



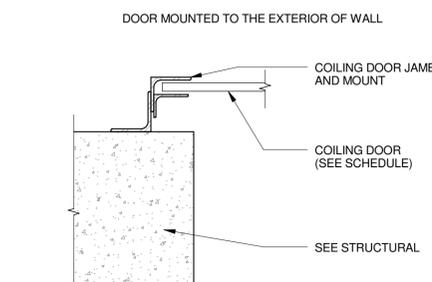
**11 ENLARGED PLAN DETAIL**  
1 1/2" = 1'-0"



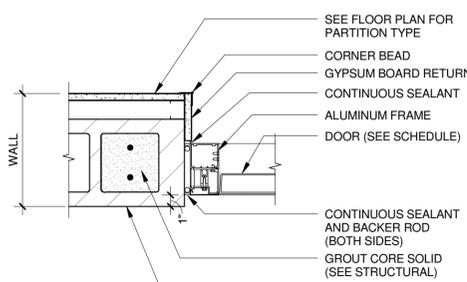
**7 WALL SECTION DETAIL**  
1 1/2" = 1'-0"



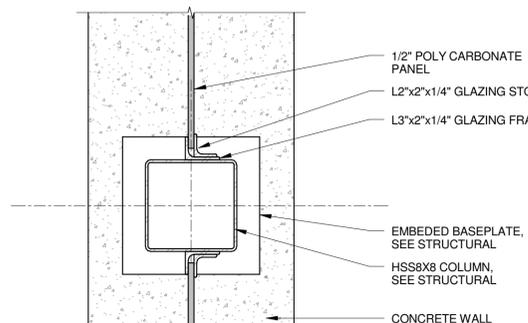
**3 MATERIAL STORAGE HIGH EAVE**  
1 1/2" = 1'-0"



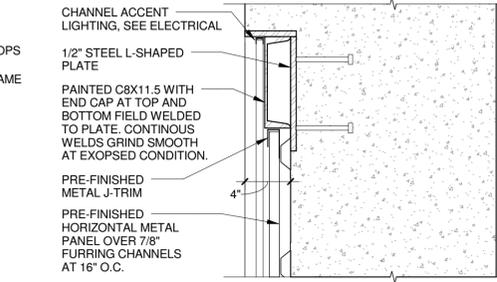
**20 COILING DOOR JAMB**  
1 1/2" = 1'-0"



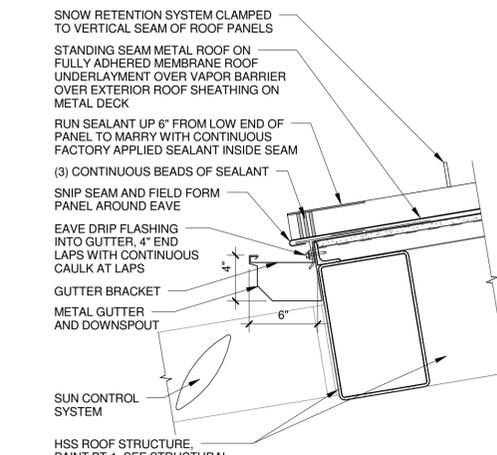
**16 FRP DOOR JAMB**  
1 1/2" = 1'-0"



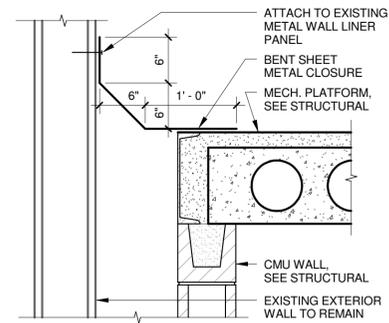
**12 WINDOW JAMB DETAIL**  
1 1/2" = 1'-0"



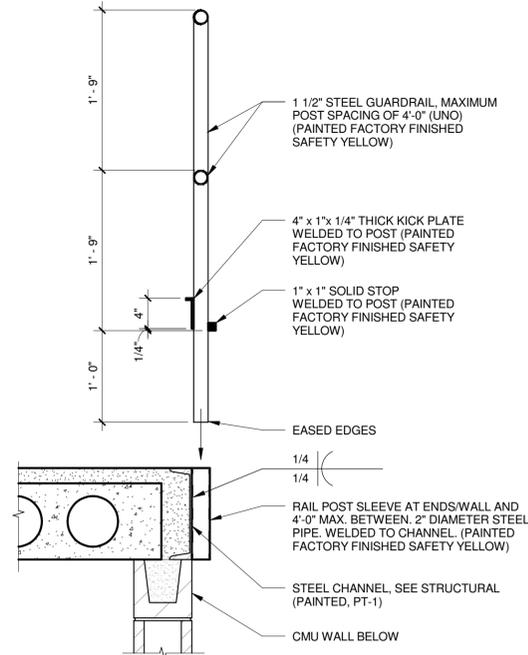
**8 ENLARGED PLAN DETAIL**  
1 1/2" = 1'-0"



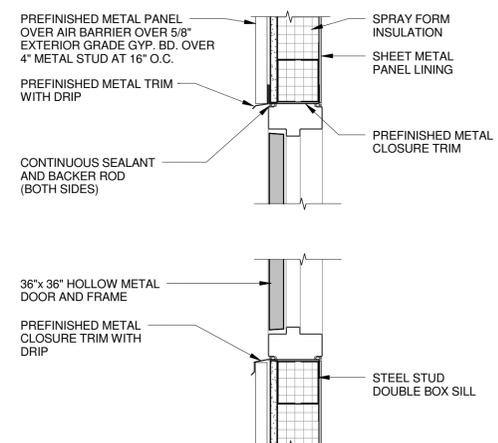
**4 MATERIAL STORAGE LOW EAVE**  
1 1/2" = 1'-0"



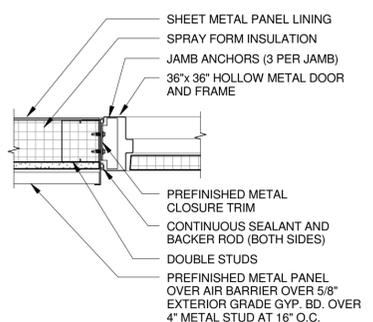
**7 BENT SHEET METAL CLOSURE**  
1" = 1'-0"



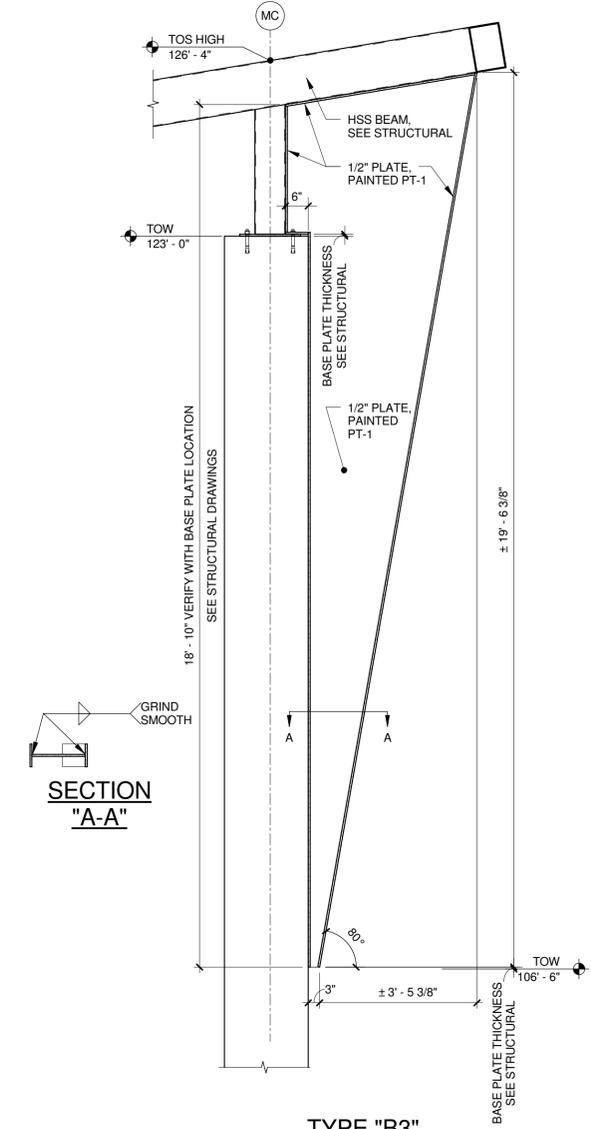
**4 REMOVABLE GUARDRAIL**  
1" = 1'-0"



**5 LOUVER ENCLOSURE ACCESS DOOR HEAD / SILL**  
1 1/2" = 1'-0"

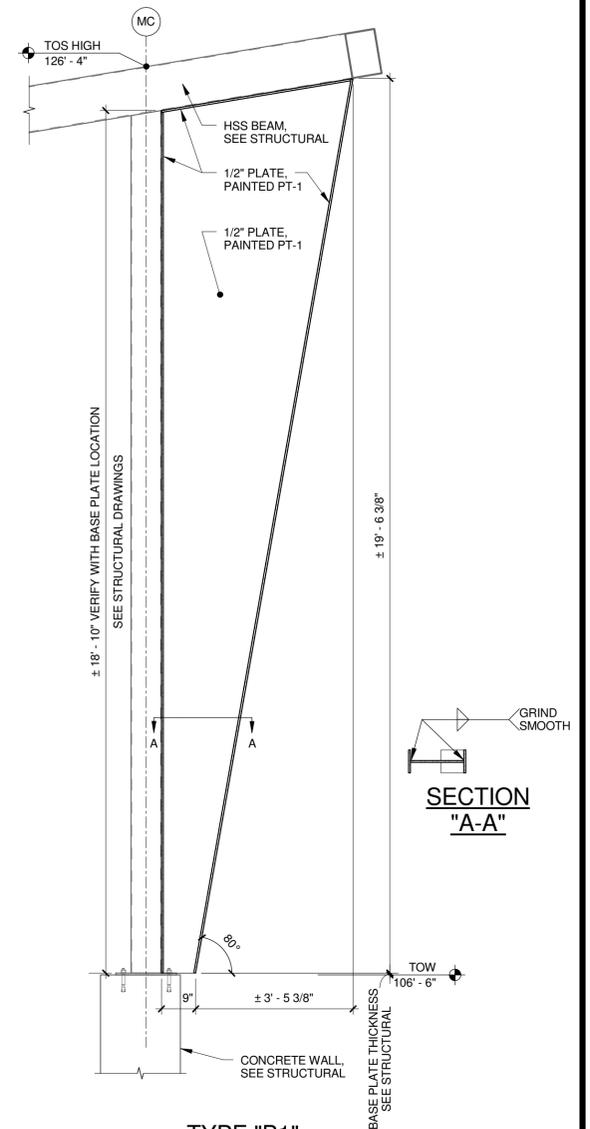


**6 LOUVER ENCLOSURE ACCESS DOOR JAMB**  
1 1/2" = 1'-0"

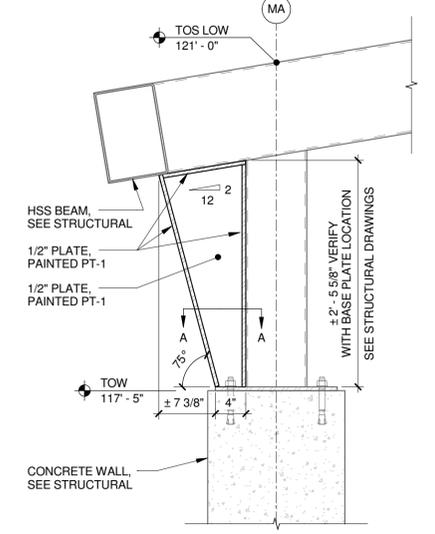


**3 METAL BRACKETS**  
1/2" = 1'-0"

NOTE: ALL STEEL BRACKETS SHALL BE GALVANIZED AND PAINTED PT-1



**1 METAL BRACKETS**  
1/2" = 1'-0"



**2 METAL BRACKETS**  
1" = 1'-0"

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Madison, Wisconsin

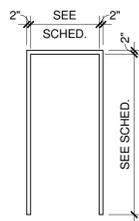
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SHEET CONTENTS  
DETAILS

SHEET NO.:

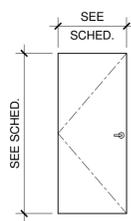
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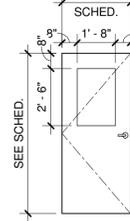
**FRAME TYPE**

1/4" = 1'-0"



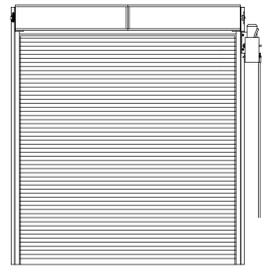
F

FLUSH DOOR



HG

HALF GLASS DOOR



RC

OVERHEAD  
ROLLING COILING

**DOOR TYPES**

NO SCALE

DOOR AND HARDWARE SCHEDULE																
DOOR NUMBER	DOOR				FRAME						MISCELLANEOUS			REMARKS		
	QTY.	WIDTH	HEIGHT	TYPE	MAT'L	GLAZING TYPE	FINISH	TYPE	MAT'L	DETAILS			LABEL		HDWR SET	
										HEAD	JAMB	OTHER	FINISH			
M108	(1)	12'-0"	20'-0"	RC	STL	-	-	-	STL	19/A-501	20/A-501	-	PC	-	3	1
M109A	(1)	12'-0"	20'-0"	RC	STL	-	-	-	STL	19/A-501	20/A-501	-	PC	-	3	1
M109B	(1)	3'-0"	7'-0"	F	FRP	-	-	1	AL	17/A-501	18/A-501	-	ANN	-	1	2
V103	(1)	3'-0"	7'-0"	HG	FRP	T	-	1	AL	15/A-501	16/A-501	-	ANN	-	2	2
V105	(1)	3'-0"	7'-0"	HG	FRP	T	-	1	AL	15/A-501	16/A-501	-	ANN	-	2	2

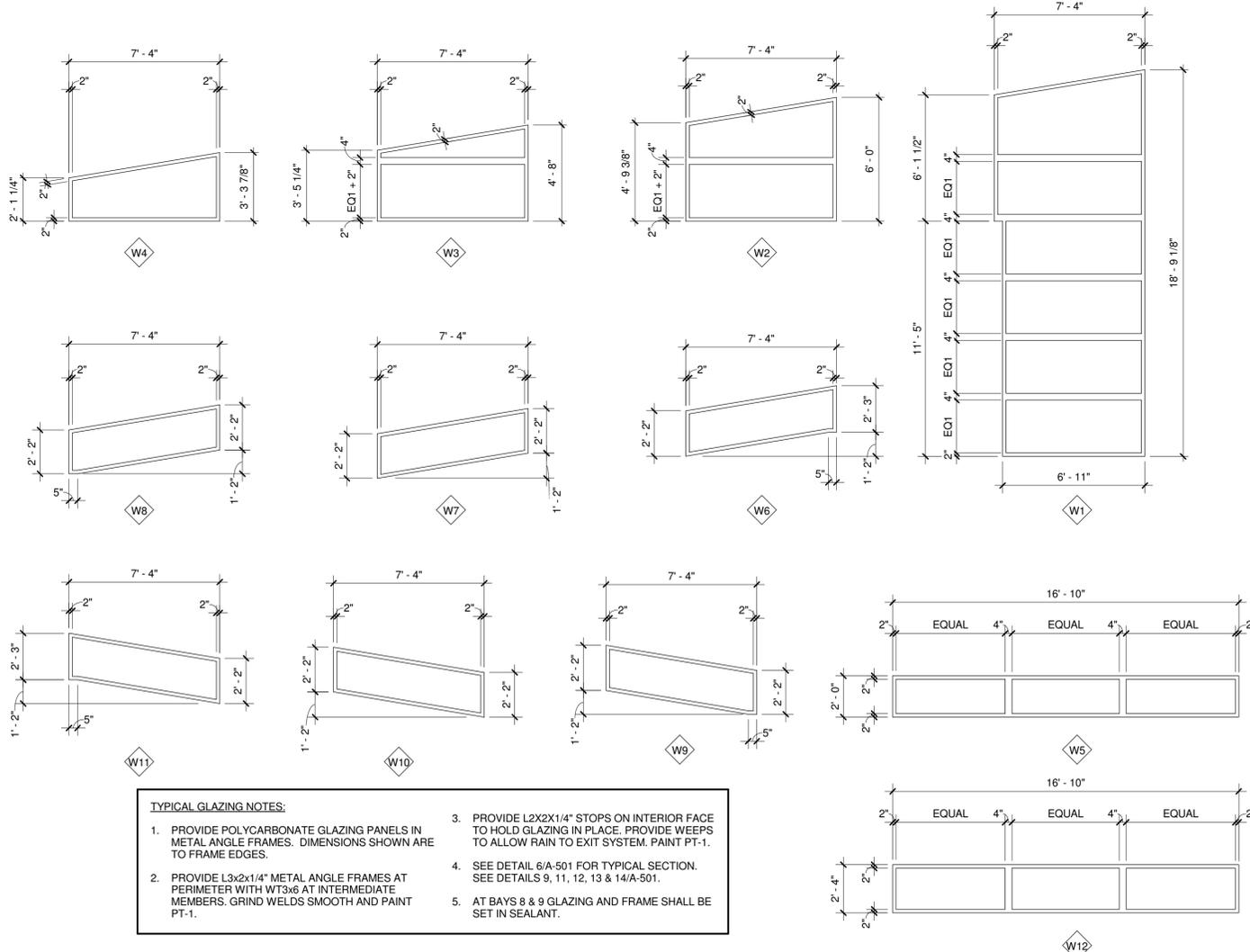
**DOOR AND HARDWARE SCHEDULE ABBREVIATIONS**

DOOR/FRAME MATERIALS  
 AL = ALUMINUM  
 ANN = ANODIZED  
 FRP = FIBERGLASS REINFORCED POLYESTER  
 PC = FACTORY FINISH HEAVY DUTY POWDER COAT  
 PT = PAINT  
 STL = STEEL

GLAZING TYPES  
 T = 1/4" CLEAR TEMPERED SAFETY GLASS

**DOOR AND HARDWARE SCHEDULE NOTES**

1. PROVIDE MANUFACTURER STANDARD GREY.
2. PROVIDE MANUFACTURER STANDARD DARK GREY FRP FINISH.



**TYPICAL GLAZING NOTES:**

1. PROVIDE POLYCARBONATE GLAZING PANELS IN METAL ANGLE FRAMES. DIMENSIONS SHOWN ARE TO FRAME EDGES.
2. PROVIDE L3x2x1/4" METAL ANGLE FRAMES AT PERIMETER WITH WT3x6 AT INTERMEDIATE MEMBERS. GRIND WELDS SMOOTH AND PAINT PT-1.
3. PROVIDE L2x2x1/4" STOPS ON INTERIOR FACE TO HOLD GLAZING IN PLACE. PROVIDE WEEPS TO ALLOW RAIN TO EXIT SYSTEM. PAINT PT-1.
4. SEE DETAIL 6/A-501 FOR TYPICAL SECTION. SEE DETAILS 9, 11, 12, 13 & 14/A-501.
5. AT BAYS 8 & 9 GLAZING AND FRAME SHALL BE SET IN SEALANT.

**WINDOW TYPES**

1/4" = 1'-0"

ARCHITECTURAL FINISHES SCHEDULE						
FINISH NUMBER	FINISH DESCRIPTION	PRODUCT DESCRIPTION			SIZE	NOTES
		MANUFACTURER	STYLE	COLOR		
AG	ANTI-GRAFFITI COATING	SHERWIN-WILLIAMS				
CS	CONCRETE SEALER					
EP-1	EPOXY PAINT COLOR - TYPE 1	SHERWIN-WILLIAMS		NATURAL CHOICE-SW7011		
EP-2	EPOXY PAINT COLOR - TYPE 2	SHERWIN-WILLIAMS		BRACING BLUE-SW6242		
EXP	EXPOSED					
PT-1	PAINT COLOR - TYPE 1	SHERWIN-WILLIAMS		WEB GRAY-SW7075		
RF-1	RESINOUS FLOORING - TYPE 1	SIKA FLOOR		LIGHT GREY		1
SS-1	SOLID SURFACE - TYPE 1	CORIAN		BLUE PEBBLE		

ROOM FINISH SCHEDULE - MATERIAL STORAGE										
ROOM NO.	ROOM NAME	FLOOR	BASE	WALLS				CEILING		REMARKS
				NORTH	EAST	SOUTH	WEST	MTL	HEIGHT	
M101	MATERIAL STORAGE BAY 1	CS	-	CS/AG	CS/AG	CS/AG	CS/AG	PT-1	VARIABLES	4,5
M102	MATERIAL STORAGE BAY 2	CS	-	CS/AG	CS/AG	CS/AG	CS/AG	PT-1	VARIABLES	4,5
M103	MATERIAL STORAGE BAY 3	CS	-	CS/AG	CS/AG	CS/AG	CS/AG	PT-1	VARIABLES	4,5
M104	MATERIAL STORAGE BAY 4	CS	-	CS/AG	CS/AG	CS/AG	CS/AG	PT-1	VARIABLES	4,5
M105	MATERIAL STORAGE BAY 5	CS	-	CS/AG	CS/AG	CS/AG	CS/AG	PT-1	VARIABLES	4,5
M106	MATERIAL STORAGE BAY 6	CS	-	CS/AG	CS/AG	CS/AG	CS/AG	PT-1	VARIABLES	4,5
M107	MATERIAL STORAGE BAY 7	CS	-	CS/AG	CS/AG	CS/AG	CS/AG	PT-1	VARIABLES	4,5
M108	MATERIAL STORAGE BAY 8	CS	-	CS	CS	CS	CS	PT-1	VARIABLES	4,5
M109	MATERIAL STORAGE BAY 9	CS	-	CS	CS	CS	CS	PT-1	VARIABLES	4,5

ROOM FINISH SCHEDULE - VEHICLE STORAGE										
ROOM NO.	ROOM NAME	FLOOR	BASE	WALLS				CEILING		REMARKS
				NORTH	EAST	SOUTH	WEST	MTL	HEIGHT	
V101	MECH. CHASE	CS	-	-	-	-	-	EXP	-	
V103	GEAR ROOM	RF-1	RF-1	EP-2	EP-1	EP-1	EP-1	EP-1	12'-0"	1,3
V105	LAUNDRY ROOM	RF-1	RF-1	EP-2	EP-1	EP-1	EP-1	EP-1	12'-0"	1,3
V106	COLD PATCH STORAGE	CS	-	CS	CS	CS	CS	EXP	-	2
V107	TRAFFIC STORAGE	CS	-	CS	CS	CS	CS	EXP	-	2
V114	MECH. PLATFORM ADDITION	CS	-	-	-	-	-	EXP	-	

**ROOM FINISH SCHEDULE REMARKS:**

1. RESINOUS FLOORING WITH INTEGRAL COVE BASE.
2. COAT ALL SIDES OF ENCLOSURE PARTITIONS.
3. PROVIDE EP-2 AT VEHICLE STORAGE SIDES OF PARTITIONS.
4. APPLY ANTI-GRAFFITI COATING TO ALL EXTERIOR SIDES OF MATERIAL STORAGE BUILDING PARTITIONS.
5. ALL EXPOSED STEEL COMPONENTS (COLUMNS, ROOF FRAMING AND DECK TO RECEIVE PT-1 PAINT).

**ARCHITECTURAL FINISHES / ROOM FINISH GENERAL NOTES:**

1. PREP ALL EXISTING AND/OR NEW WORK AREAS AS REQUIRED TO ACCOMMODATE SCHEDULED FINISHES.
2. ALL EXPOSED STEEL STRUCTURE TO BE PAINTED PT-1 WEB GREY.
3. FLOOR PREP BY INSTALLER FOR FLUSH TRANSITIONS. ALL FLOORING TRANSITIONS SHALL BE CENTERED UNDER DOOR IN CLOSED POSITION U.N.O. FLOOR LEVELING SHALL BE 1/8" TOLERANCE FOR GENERAL FLOORING.
4. GWB CONTROL JOINTS TO BE LOCATED A MAXIMUM OF 30 FT. COORDINATE LOCATIONS WITH ARCHITECT.
5. CONTRACTOR TO CAULK AROUND ALL WINDOW FRAMES. CAULK TO MATCH ALUMINUM FRAME COLOR.
6. ALL PAINTED SURFACES SHALL BE PAINTED IN EGGSHELL SHEEN, U.N.O. GYPSUM BOARD SUBSTRATE SHALL HAVE LIGHT ORANGE PEEL TEXTURE.
7. ALL SHOP PRIMED ACCESS PANELS, ELECTRICAL PANELS, EXPOSED CONDUIT, MECH PIPING, AND SPRINKLER PIPING SHALL BE PAINTED TO MATCH ADJACENT SURFACE, TYPICAL U.N.O.
8. ALL EXPOSED MECHANICAL DUCTS SHALL BE GALVANIZED METAL, TYPICAL.
9. ALL EXPOSED CONCRETE AND CMU NOT SCHEDULED TO RECEIVE A FINISH SHALL BE SEALED, U.N.O.
10. VERIFY THAT ALL TRANSITION STRIP AND METAL EDGE PRODUCTS COORDINATE WITH FLOOR FINISH HEIGHTS PRIOR TO PROCUREMENT.
11. ALL PAINT TRANSITIONS ARE INTENDED TO MEET INSIDE CORNERS, TYP. COORDINATE W/ ARCHITECT ANY DISCREPANCIES WITH ARCHITECT.
12. ALL CMU OUTSIDE CORNERS SHALL BE BULLNOSE.
13. REFERENCE INTERIOR ELEVATIONS FOR MOUNTING HEIGHTS.
14. APPLY ANTI-GRAFFITI COATING TO ALL EXTERIOR, EXPOSED, CONCRETE SURFACES OF THE MATERIAL STORAGE BUILDING.
15. PROVIDE BIRD CONTROL NETTING AT THE ENTIRE EXTERIOR EXPOSED ROOF STRUCTURE OF THE MATERIAL STORAGE BUILDING.
16. PROVIDE BIRD CONTROL SPIKES AT THE TOP OF ALL INTERMEDIATE MATERIAL BAY WALLS OF THE MATERIAL STORAGE BUILDING.

**Mead & Hunt**  
 2440 Deming Way  
 Middleton, WI 53562  
 phone: 608-273-6380  
 meadhunt.com

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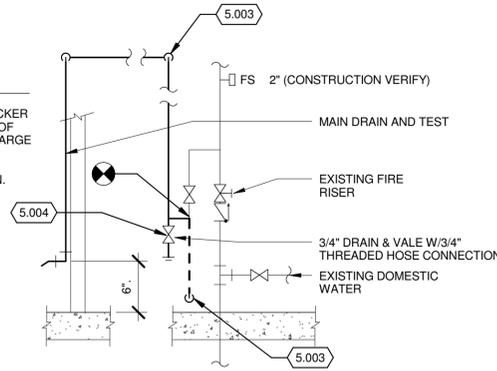
SHEET CONTENTS  
 ARCHITECTURAL SCHEDULES

SHEET NO.:

**A-601**

**KEYED NOTES**

- 5.003 REROUTE MAIN DRAIN TO ABOVE CEILING OF LOCKER ROOM. EXTEND EAST AND DROP IN NORTHEAST OF LOCKER ROOM APPROX. 6" AFF & EXTEND DISCHARGE THROUGH WALL.
- 5.004 PROVIDE 3/4" DRAIN & LOW POINT OF MAIN DRAIN.



**1 WATER MAIN ENTRANCE**  
NO SCALE

**FIRE PROTECTION ABBREVIATIONS:**

- AFF ABOVE FINISHED FLOOR
- BPD BACKFLOW PREVENTION DEVICE
- CW COLD WATER
- DCVA DOUBLE CHECK VALVE ASSEMBLY
- DI DUCTILE IRON
- FDC FIRE DEPARTMENT CONNECTION
- FPE PROFESSIONAL FIRE PROTECTION
- SP ENGINEER SPRINKLER MAIN
- TFA TO FLOOR ABOVE
- TFB TO FLOOR BELOW

**FIRE PROTECTION SYMBOLS:**

- FIRE DEPARTMENT CONNECTION
- ORIFICE
- FLOW SWITCH
- ALARM BELL
- ISOLATION VALVE
- GATE VALVE
- PRESSURE GAUGE
- CHECK VALVE
- VALVE SUPERVISION/TAMPER SWITCH
- STRAINER
- PIPE DROP
- PIPE RISE

**FIRE PROTECTION NOTES:**

1. PROVIDE A HYDRAULICALLY DESIGNED WET SPRINKLER SYSTEM AT CRITERIA FOR HAZARD CLASSIFICATION SHOWN IN CONFORMANCE WITH THE FOLLOWING CODES AND STANDARDS:
  - A. WISCONSIN BUILDING CODE.
  - B. NFPA - 13, (LATEST PREVAILING EDITION)
2. DESIGN REQUIREMENTS INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:
  - USE AREA/DENSITY METHOD TO DETERMINE WATER DEMAND REQUIREMENTS. PROVIDE VALVED OUTLETS TO DRAIN ALL PIPING. EXTEND DRAIN PIPING TO EXTERIOR.
  - PROVIDE SUPERVISORY SWITCHES ON ALL ISOLATION VALVES INSTALLED IN CIRCUITS TO ANY SPRINKLER.
  - PROVIDE IDENTIFICATION TAGS ON SPECIFIC COMPONENTS.
  - PAINT EXPOSED PIPE. SHOW FLOW DIRECTION AND PIPE IDENTIFICATION.
  - INSTALL EXTENDED SLEEVES AT ALL WALL PENETRATIONS.
  - FPE STAMP ON ALL SUBMITTALS.
  - PROVIDE TAMPER SWITCHES ON ALL ISOLATION VALVES INSTALLED IN CIRCUITS TO ANY SPRINKLER.

**FIRE PROTECTION HATCH PATTERN LEGEND:**

- LIGHT HAZARD
- ORDINARY HAZARD GROUP 1

**NOTE TO BIDDERS:**

QUALIFIED CONTRACTORS SHALL INSTALL BOTH FIRE SUPPRESSION AND FIRE DETECTION AS AN ALL INCLUSIVE SYSTEM

**WATER SUPPLY FLOW BASIS FOR BID:**

NOTES:  
BASIS FOR BID SHOWN. NOT FOR DESIGN.  
FIRE SPRINKLER DESIGN/INSTALLATION CONTRACTOR SHALL CONDUCT WATER FLOW TEST AND USE RESULTS IN HYDRAULIC CALCULATIONS.

PRELIMINARY FIRE TEST FLOW:	
LOCATION:	115 S. PATERSON STREET
LOCATION ELAVATION:	24" ABOVE GRADE
STATIC PRESSURE:	86 PSI
RESIDUAL PRESSURE:	80 PSI
FLOWING:	1405 GPM
FLOWING PRESSURE:	66 PSI
TEST DATE:	03/11/2015 @ 12:00 PM
MAIN SIZE:	12"

**FIRE PROTECTION GENERAL NOTES:**

1. ABBREVIATIONS INDICATED HERE AND NOT USED IN THE CONTRACT DOCUMENTS DO NOT APPLY TO THIS PROJECT. ADDITIONAL ABBREVIATIONS MAY BE INDICATED IN THE CONTRACT DOCUMENTS.
2. THESE DRAWINGS ARE DESIGN DRAWINGS AND ARE DIAGRAMMATIC. THEY MAY NOT SHOW ALL PHYSICAL ARRANGEMENTS, OFFSETS, BENDS, OR ELBOWS WHICH MAY BE REQUIRED FOR INSTALLATION OF VARIOUS MATERIALS, EQUIPMENT AND PIPING IN ALLOTTED SPACES. EXAMINE THESE AND OTHER AVAILABLE DRAWINGS TO DETERMINE SPACE LIMITATIONS AND INTERFERENCES. MAKE ANY MINOR CHANGES IN LOCATIONS OF EQUIPMENT AND PIPING FROM THAT SHOWN ON DRAWINGS AND FOR ALL PHYSICAL DETAILS REQUIRED FOR INSTALLATION. COST FOR ADAPTING WORK TO JOB SITE CONDITIONS SHALL NOT BE CONSIDERED AS BASIS OF AN EXTRA COST TO CONTRACT.
3. ELEVATION OF PIPING INDICATED ON THESE DRAWINGS ARE TO BE USED AS GUIDELINES TO ASSIST WITH INSTALLATIONS. MINOR CHANGES TO THESE ELEVATIONS MAY BE NECESSARY TO ELIMINATE UNFORESEEN INTERFERENCES. ANY CHANGE IN ELEVATION SHALL BE APPROVED PRIOR TO CHANGE.
4. ACCURATE AND LEGIBLE RECORD DRAWINGS SHALL BE MAINTAINED AT THE JOB SITE AND BE SUBMITTED PRIOR TO FINAL PAYMENT.
5. VERIFY ALL EQUIPMENT LOCATIONS AND PIPE ROUTING WITH OWNER PRIOR TO INSTALLATION.
6. SEQUENCE OF WORK AND/OR PLACE OF COMMENCEMENT OF WORK SHALL BE APPROVED PRIOR TO WORK BEING STARTED. SCHEDULED SHUTDOWNS SHALL BE CLOSELY COORDINATED WITH OWNER.
7. COORDINATE WITH ARCHITECTURAL PLANS FOR CEILINGS TYPES AND HEIGHTS.

NFPA-13 HYDRAULIC CALCULATION STANDARD				
HAZARD CLASS	DENSITY GPM/SQ.FT.	AREA OF SPRINKLER OPERATION SQ. FT.	TOTAL HOSE STREAM GPM	DURATION MINIMUM
LIGHT HAZARD	0.10	1500	250	60
ORDINARY GROUP 1	0.15	1500	500	60-90
-	-	-	-	-

\* THE MOST HYDRAULICALLY REMOTE LOCATIONS MUST MEET THE ABOVE REQUIREMENTS.

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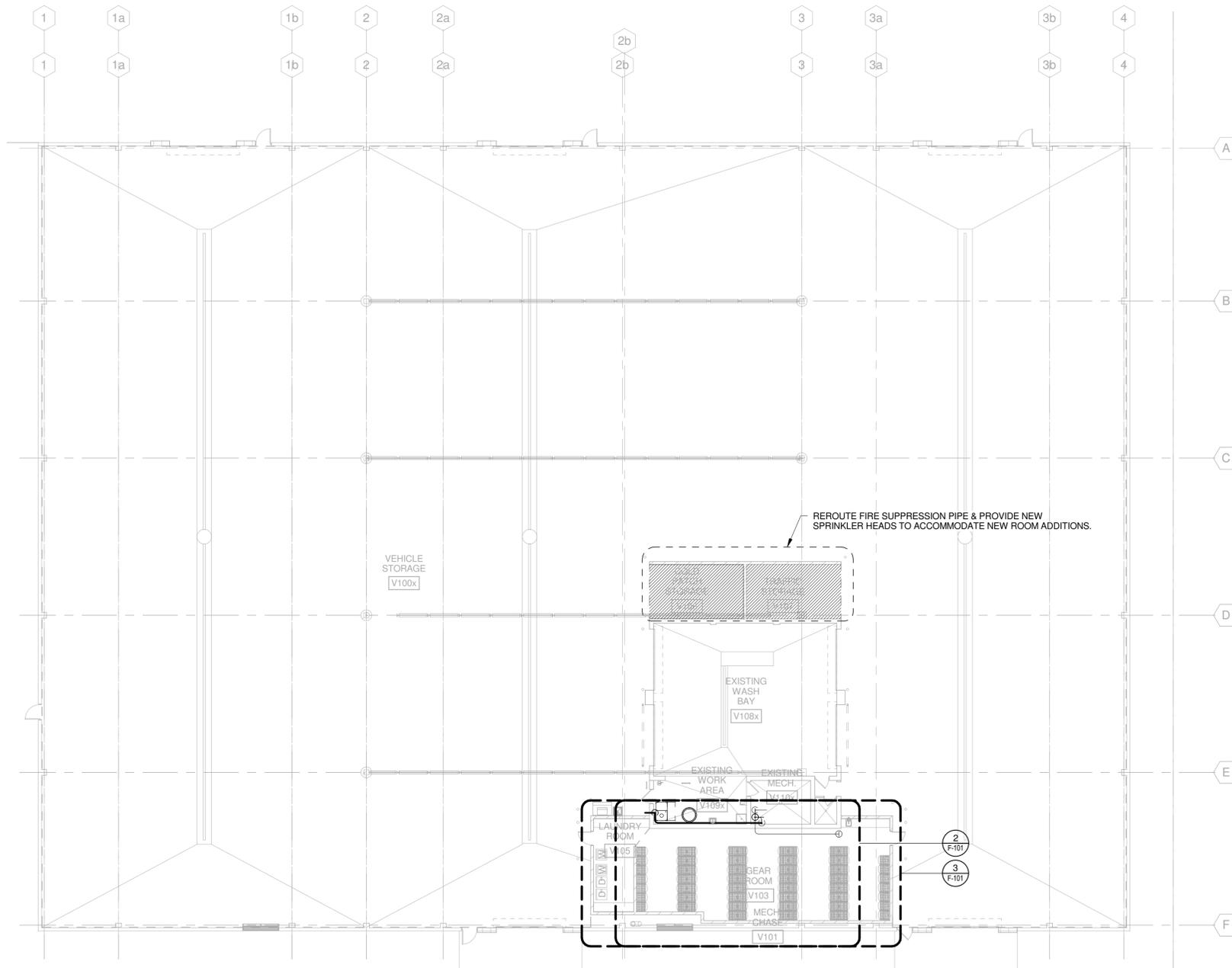
**City of Madison Water Utility**  
Vehicle Storage Building Improvements  
Contract No. 7823, Project No. 10442  
Madison, Wisconsin

ISSUED  
10/21/16 BID SET

MSH NO.: 3235300-131021.02  
DATE: October 21, 2016  
DESIGNED BY: MFP  
DRAWN BY: JET  
CHECKED BY: RMM  
DO NOT SCALE DRAWINGS

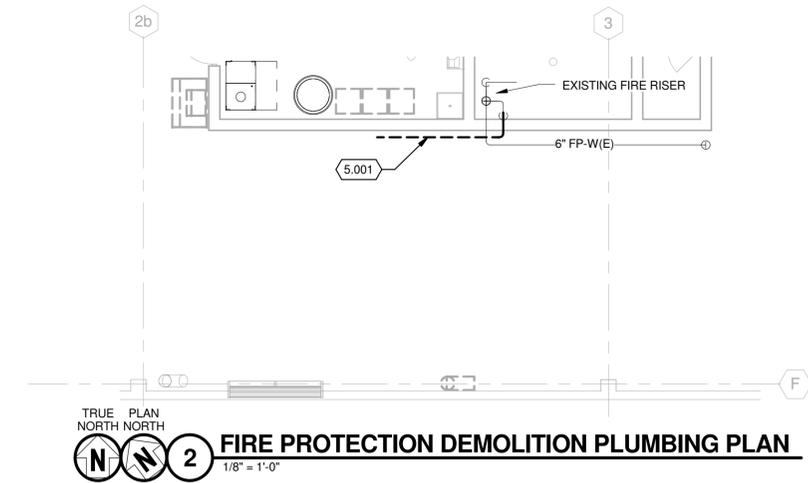
SHEET CONTENTS  
FIRE PROTECTION NOTES, SYMBOLS & ABBREVIATIONS

SHEET NO.:  
**F-001**

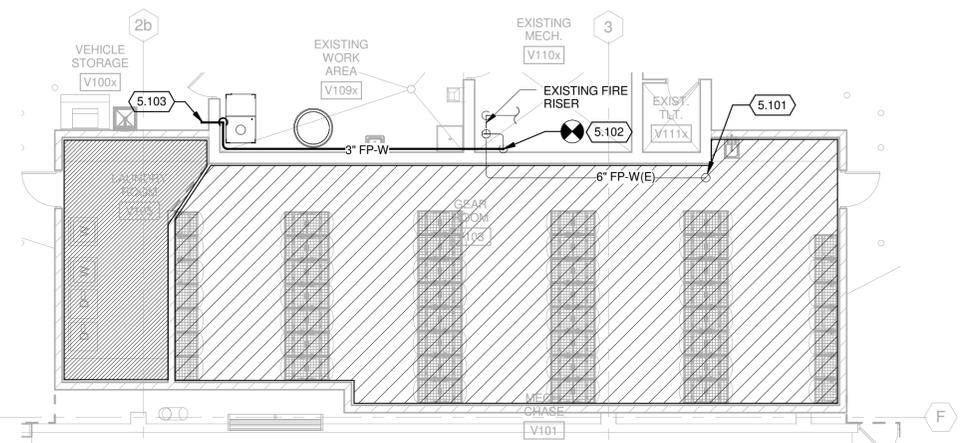


TRUE PLAN NORTH NORTH  
**1** 1/16" = 1'-0"  
**VEHICLE STORAGE BUILDING FLOOR PLAN**

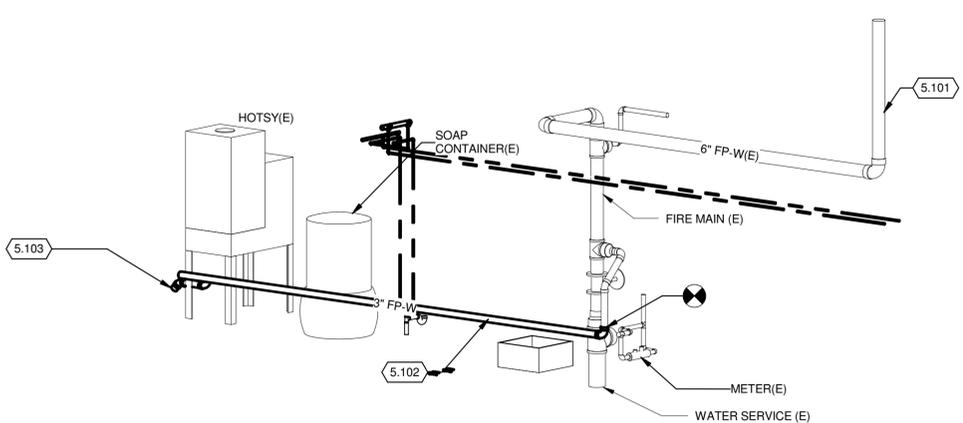
- KEYED NOTES**
- 5.001 REROUTE EXISTING MAIN DRAIN.
  - 5.101 COORDINATE WITH GENERAL CONTRACTOR FOR INSTALLATION OF PRECAST PLANKING. DISCONNECT SPRINKLER MAIN, CORE HOLE THRU CONCRETE PLANK AND RECONNECT SPRINKLER MAIN. PROVIDE ESCUTCHEON PLATE ON BOTH SIDES OF CORE.
  - 5.102 REROUTE EXISTING MAIN DRAIN AS SHOWN. EXTEND WEST THRU MECHANICAL ROOM WALL APPROXIMATELY 24" AFF. COUNTINUE PIPE WEST TIGHT TO WALL AS INDICATED.
  - 5.103 EXTEND DISCHARGE THRU WALL APPROX 14" AFF & 45° INTO BUILDING.



TRUE PLAN NORTH NORTH  
**2** 1/8" = 1'-0"  
**FIRE PROTECTION DEMOLITION PLUMBING PLAN**



TRUE PLAN NORTH NORTH  
**3** 1/8" = 1'-0"  
**ENLARGED FLOOR PLAN**



**4** NO SCALE  
**FIRE PROTECTION PLUMBING PLAN**

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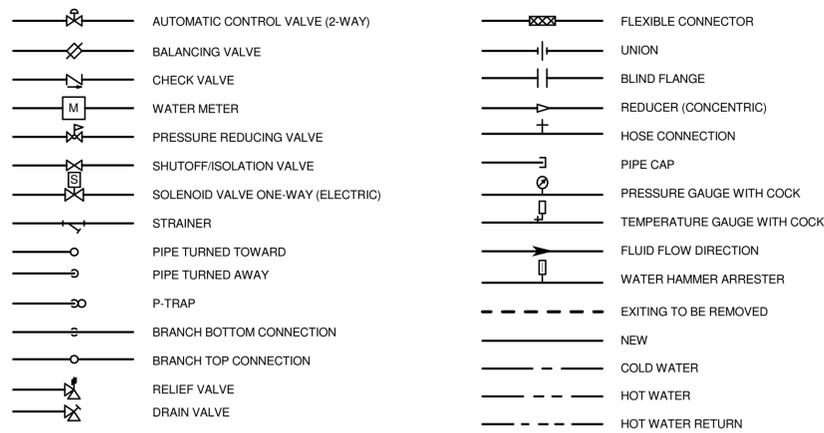
**GENERAL ABBREVIATIONS**

AF	ABOVE FINISH FLOOR	GPD	GALLONS PER DAY	PD	PRESSURE DROP
AG	ABOVE GROUND	GPH	GALLONS PER HOUR	PH	PHASE
AST	ABOVE GROUND STORAGE TANK	GPM	GALLONS PER MINUTE	POC	POINT OF CONNECTION
BHP	BRAKE HORSE POWER	GWH	GAS WATER HEATER	PSI	POUNDS PER SQUARE INCH
BJH	BETWEEN JOIST ABOVE	HD	HEAD (FEET)	PSIA	POUNDS PER SQUARE INCH-ABSOLUTE
BOB	BOTTOM OF BEAM	HP	HORSEPOWER	PSID	POUNDS PER SQUARE INCH-DIFFERENTIAL
BOJ	BOTTOM OF JOIST	HR	HOSE REEL	PSIG	POUNDS PER SQUARE INCH-GAUGE
BOP	BOTTOM OF PIPE	IAW	IN ACCORDANCE WITH	RPM	REVOLUTIONS PER MINUTE
BOS	BOTTOM OF STEEL	ID	INSIDE DIAMETER	SHT	SHEET
CL	CENTERLINE	IN	INCH	STD	STANDARD
CTB	CLOSE TO BEAM	INV	INVERT	STL	STEEL
CTC	CLOSE TO COLUMN	IWS	IN WALL SPACE	TFA	TO FLOOR ABOVE
CTJ	CLOSE TO JOIST	KW	KILOWATT	TFB	TO FLOOR BELOW
CTW	CLOSE TO WALL	LB	POUNDS	TJA	THRU JOIST ABOVE
DIA	DIAMETER	MFR	MANUFACTURER	TOB	TOP OF BEAM
DIM	DIMENSION	MTD	MOUNTED	TOP	TOP OF PIPE
DN	DOWN	NA	NOT APPLICABLE	TOS	TOP OF STEEL
E	EXISTING	NC	NORMALLY CLOSED	TP	TYPICAL
EL	ELEVATION	NIC	NOT IN CONTRACT	UST	UNDERGROUND STORAGE TANK
ETR	EXISTING TO REMAIN	NO	NORMALLY OPEN	V	VOLTS
FC	FLEXIBLE CONNECTION	NOM	NOMINAL	VOL	VOLUME
FFA	FROM FLOOR ABOVE	NPS	NOMINAL PIPE SIZE	VTR	VENT THRU ROOF
FFB	FROM FLOOR BELOW	NPT	NATIONAL PIPE THREAD	VTW	VENT THRU WALL
FLA	FULL LOAD AMPERES	NTS	NOT TO SCALE	WG	WATER GAUGE
FLR	FLOOR	OC	ON CENTER	WTR	WATER
FPS	FEET PER SECOND	OD	OUTSIDE DIAMETER		
FT	FEET	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED		
GAL	GALLON	OFOI	OWNER FURNISHED OWNER INSTALLED		

**PLUMBING ABBREVIATIONS**

BPD	BACKFLOW PREVENTION DEVICE	IE	INVERT ELEVATION	TMV	THERMOSTATIC MIXING VALVE
CB	CATCH BASIN	INT	INTERCEPTOR	TP	TRAP PRIMER
CI	CAST IRON	L	LAVATORY	UR	URINAL
CO	CLEAN OUT	LCO	LINE CLEANOUT	WC	WATER CLOSET
CP	CIRCULATING PUMP	MH	MAN HOLE	WCO	WALL CLEANOUT
CS	CIRCUIT SETTER	P	PUMP	WH	WATER HEATER
DFU	DRAINAGE FIXTURE UNIT	PRW	PUMPED RAIN WATER	WHA	WATER HAMMER ARRESTOR
DMW	DOMESTIC WATER METER	PVC	POLYVINYL CHLORIDE	WIV	WATER INLET VALVE
EWC	ELECTRIC WATER COOLER	RD	ROOF DRAIN	WMV	WATER MIXING VALVE
FCO	FLOOR CLEANOUT	SCO	STACK CLEANOUT	WS	WATER SOFTENER
FD	FLOOR DRAIN	SH	SHOWER	WSFU	WATER SUPPLY FIXTURE UNIT
GI	GREASE INTERCEPTOR	SK	SINK	YCO	YARD CLEANOUT
HC	HOSE CONNECTION	SR	SERVICE RECEPTOR	YH	YARD HYDRANT
HD	HUB DRAIN				

**SYMBOLS**



**GENERAL NOTES**

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- THESE DRAWINGS ARE DESIGN DRAWINGS AND ARE DIAGRAMMATIC. THEY MAY NOT SHOW ALL PHYSICAL ARRANGEMENT, OFFSETS, BENDS, OR ELBOWS WHICH MAY BE REQUIRED FOR INSTALLATION OF VARIOUS MATERIALS, EQUIPMENT, PIPING AND DUCTWORK SYSTEMS IN ALLOTTED SPACES. EXAMINE THESE AND OTHER AVAILABLE DRAWINGS TO DETERMINE SPACE LIMITATIONS AND INTERFERE. MAKE ANY MINOR CHANGES IN LOCATIONS OF EQUIPMENT, PIPING, AND DUCTWORK FROM THAT SHOWN ON DRAWINGS AND FOR ALL PHYSICAL DETAILS REQUIRED FOR INSTALLATION. COST FOR ADAPTING WORK TO JOB SITE CONDITIONS SHALL NOT BE CONSIDERED AS BASIS OF AN EXTRA COST TO CONTRACT.
- ELEVATION OF PIPING AND DUCTWORK INDICATED ON THESE DRAWINGS ARE TO BE USED AS GUIDELINES TO ASSIST WITH INSTALLATIONS. MINOR CHANGES TO THESE ELEVATIONS MAY BE NECESSARY TO ELIMINATE UNFORSEEN INTERFERENCES. ANY CHANGE IN ELEVATION SHALL BE APPROVED PRIOR TO CHANGE.
- ANY AND ALL INFORMATION SHOWN ON THESE DRAWINGS WITH RESPECT TO EXISTING UTILITIES, IS AN EXACT AS COULD BE SECURED. THE INFORMATION IS NOT WARRANTED NOR GUARANTEED ACCURATE. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO PROCEEDING WITH WORK.
- ACCURATE AND LEGIBLE RECORD (AS-BUILT) DRAWINGS SHALL BE MAINTAINED AT THE JOB SITE, AND BE SUBMITTED PRIOR TO FINAL PAYMENT.
- ALL NEW ROOFING SYSTEMS SHALL BE PROTECTED FROM DAMAGE DURING CONSTRUCTION ACTIVITIES.
- TEMPORARILY PATCH ALL ROOF OPENINGS WATERTIGHT UNTIL FINAL CLOSURE CAN BE MADE.
- VERIFY ALL EQUIPMENT LOCATIONS AND PIPE ROUTING WITH OWNER PRIOR TO INSTALLATION.
- SEQUENCE OF WORK AND/OR PLACE OF COMMENCEMENT OF WORK SHALL BE APPROVED PRIOR TO WORK BEING STARTED. SCHEDULED SHUTDOWNS SHALL BE CLOSELY COORDINATED WITH EXISTING OPERATIONS.
- ALL ELEVATIONS SHOWN ARE RELATIVE TO FIRST FLOOR SLAB ELEVATIONS OF 100'-0".

**PLUMBING SCHEDULES GENERAL NOTES**

- SCHEDULES APPLY UNLESS OTHERWISE NOTED ON DRAWINGS.
- SEE REMARKS FOR ITEMS SHOWN IN PARENTHESIS.

**PIPE ROUTING SCHEDULE (1)**

LOCATION			
ORIENTATION	ROOMS	SERVICE	ROUTING
VERTICAL	ALL EXCEPT MECHANICAL, AND BASEMENT.	ALL	CONCEALED INSIDE WALL SPACE
	MECHANICAL, AND BASEMENT.	ALL	EXPOSED CLOSE TO WALL
HORIZONTAL	WITH SUSPENDED CEILINGS	ALL	CONCEALED ABOVE SUSPENDED CEILING
	WITHOUT SUSPENDED CEILINGS	ALL	EXPOSED CLOSE TO CEILING
DRAIN AND VENT PITCH			
SIZE	MINIMUM PITCH		
2" AND SMALLER	1/4" PER FOOT		
LARGER THAN 2"	1/8" PER FOOT		
<b>REMARKS:</b>			
(1) SEE PLUMBING SCHEDULES GENERAL NOTES			

**PIPE IDENTIFICATION TABLE (1)**

ABBREVIATION	SERVICE (2)	PIPE LABEL	
		TEXT	COLORS
CW	COLD DOMESTIC WATER	CW	(3)
HP-HW	HIGH PRESSURE HOT WATER	HP-HW	(3)
HW	HOT DOMESTIC WATER	HW	(3)
HWR	HOT DOMESTIC WATER RETURN	HWR	(3)
NPCW	NON-POTABLE COLD WATER	NPCW	(4)
PRW	PUMPED RAIN WATER	PRW	(4)
PRWR	PUMPED RAIN WATER RECIRCULATION	PRWR	(4)
SAN	SANITARY DRAIN	SAN	(4)
V	VENT FOR SANITARY DRAIN	V	(4)
<b>REMARKS:</b>			
(1) SEE PLUMBING SCHEDULES GENERAL NOTES			
(2) NOT ALL SERVICES USED			
(3) GREEN BACKGROUND, WHITE TEXT			
(4) YELLOW BACKGROUND, BLACK TEXT			
(5) PURPLE BACKGROUND, WHITE TEXT			

**PIPE SIZE SCHEDULE (1)**

SUPPLY, DRAIN, AND VENT PIPE SIZES FOR SINGLE FIXTURES (1) (4)				
FIXTURE	CW	HW	DRAIN	VENT
FD/HD/TD	N/A	N/A	(3)	1-1/2
HB	3/4	N/A	N/A	N/A
MINIMUM PIPE SIZES FOR CIRCUITS				
SERVICE	MINIMUM PIPE SIZE			
SANITARY DRAIN	1-1/2 (2)			
VENT	1-1/2			
VTR	4			
SUPPLY	3/4			
PIPE SIZE CHANGES				
PIPE SIZES ARE INDICATED ON THIS SCHEDULE AND ON DRAWINGS. FROM WHERE PIPE SIZE IS INDICATED:				
	SUPPLY PIPE SIZE SHALL NOT DIMINISH IN UPSTREAM DIRECTION,			
	DRAIN PIPE SIZE SHALL NOT DIMINISH IN DOWNSTREAM DIRECTION, AND			
	VENT PIPE SIZE SHALL NOT DIMINISH IN DIRECTION AWAY FROM CONNECTION WITH DRAIN.			
<b>REMARKS:</b>				
(1) SEE PLUMBING SCHEDULES GENERAL NOTES				
(2) 2" UNDERGROUND				
(3) MATCH FIXTURE PIPE SIZE				

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City of Madison Water Utility  
Vehicle Storage Building Improvements  
Contract No. 7823, Project No. 10442  
Madison, Wisconsin

ISSUED  
10/21/16 BID SET

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DATE: October 21, 2016  
DESIGNED BY: MFP  
DRAWN BY: JET  
CHECKED BY: RMM

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SHEET CONTENTS  
PLUMBING NOTES,  
SYMBOLS &  
ABBREVIATIONS

SHEET NO.:

**P-001**

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 Madison, Wisconsin

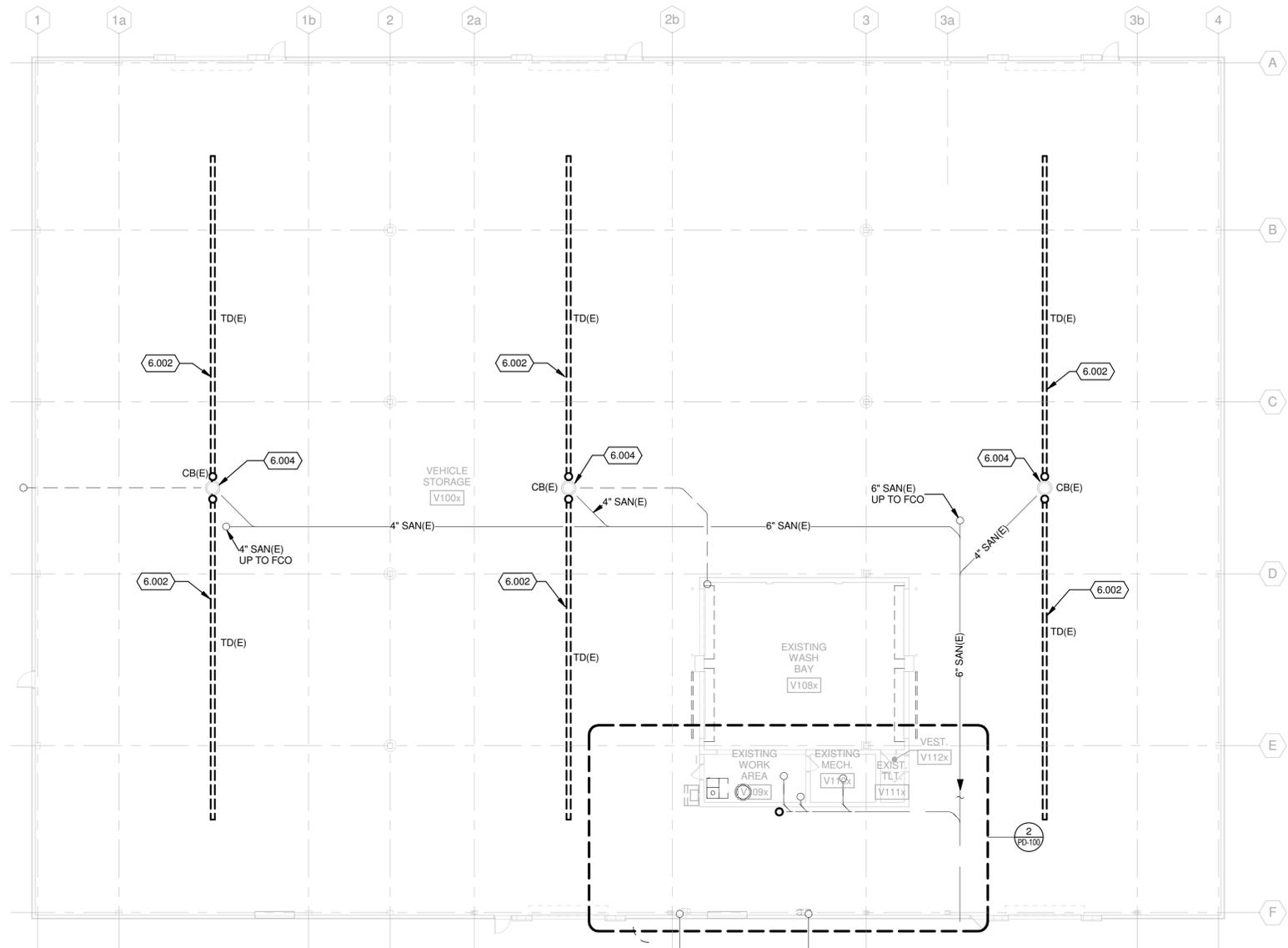
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 UNDERGROUND  
 DRAIN AND VENT  
 PLUMBING  
 DEMOLITION PLAN

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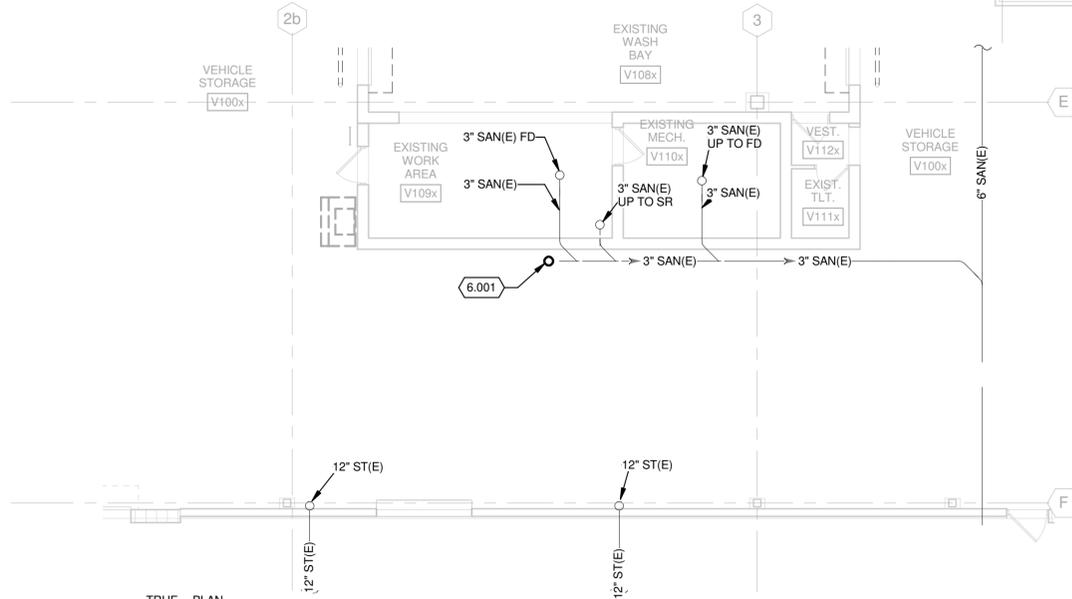
**PD-100**



TRUE PLAN  
 NORTH NORTH  
**1** 1/16" = 1'-0"  
**UNDERGROUND DRAIN AND VENT PLUMBING DEMOLITION PLAN**

**KEYED NOTES**

- 6.001 REMOVE AND RELOCATE EXISTING 3" FCO TO ACCOMMODATE NEW FLOOR ELEVATION.
- 6.002 EXISTING TRENCH DRAIN TO BE REMOVED AND REPLACED (COORDINATE WITH STRUCTURAL DRAWINGS)
- 6.004 DISCONNECT AND REMOVE PIPING BETWEEN TRENCH DRAIN AND CATCH BASIN. REPLACE PIPING AND RECONNECT NEW TRENCH DRAIN TO EXISTING CATCH BASIN UNDER NEW CONSTRUCTION. (TYP. OF 9)



TRUE PLAN  
 NORTH NORTH  
**2** 1/8" = 1'-0"  
**ENLARGED UNDERGROUND DRAIN AND VENT PLUMBING DEMOLITION PLAN**

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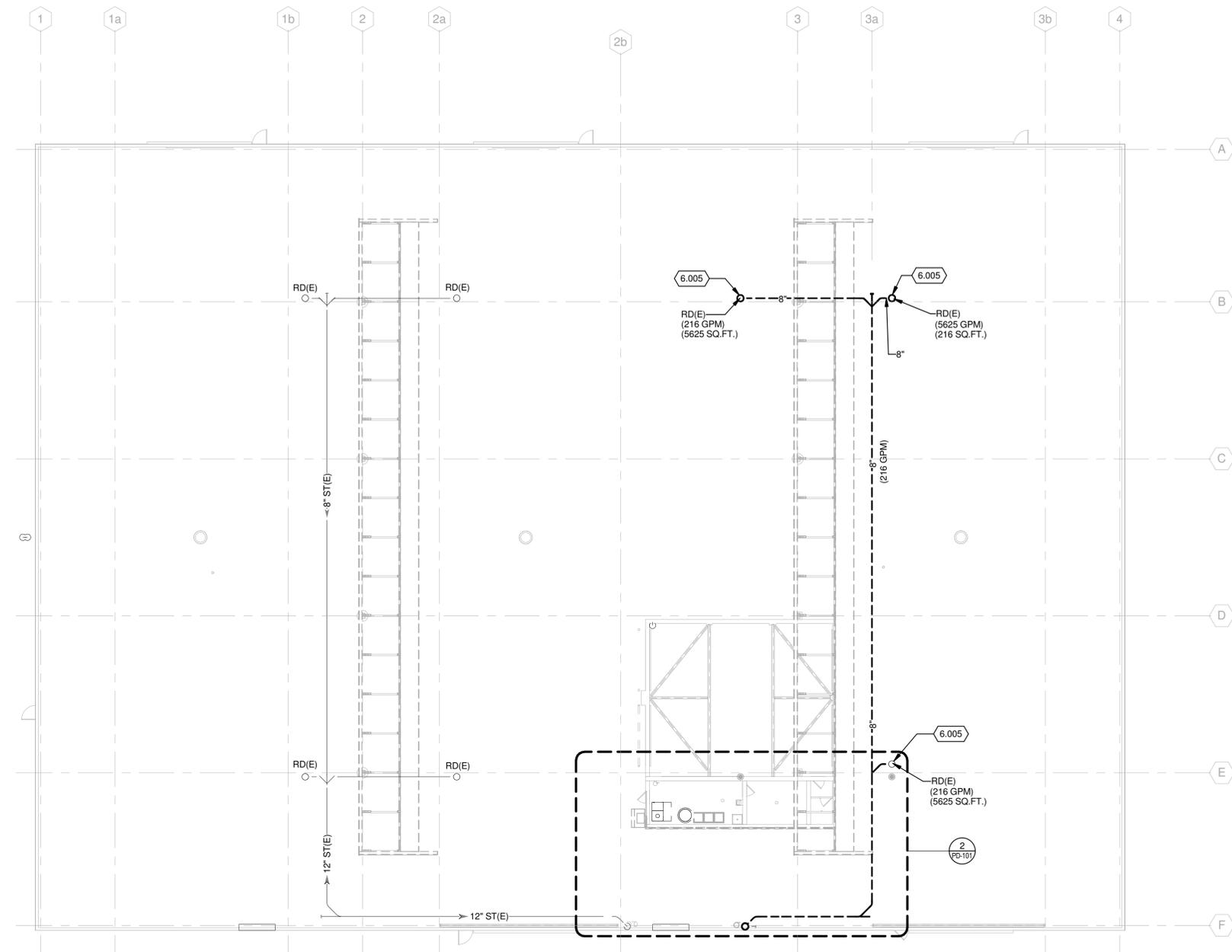
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SHEET CONTENTS  
 ABOVEGROUND  
 DRAIN AND VENT  
 PLUMBING  
 DEMOLITION PLAN

SHEET NO.:

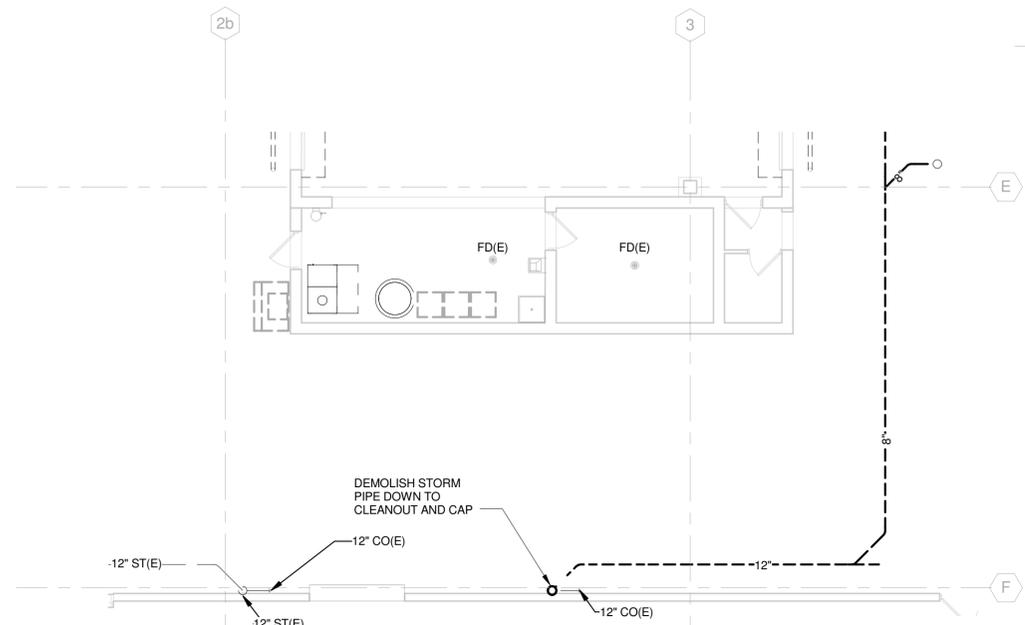
**PD-101**



TRUE PLAN NORTH NORTH  
**1** DRAIN AND VENT DEMOLITION PLAN  
 1/16" = 1'-0"

**KEYED NOTES**

6.005 DISCONNECT AND REMOVE EXISTING STORM PIPING. REROUTE PER NEW CONSTRUCTION.



TRUE PLAN NORTH NORTH  
**2** DRAIN AND VENT ENLARGED DEMOLITION PLAN  
 1/8" = 1'-0"

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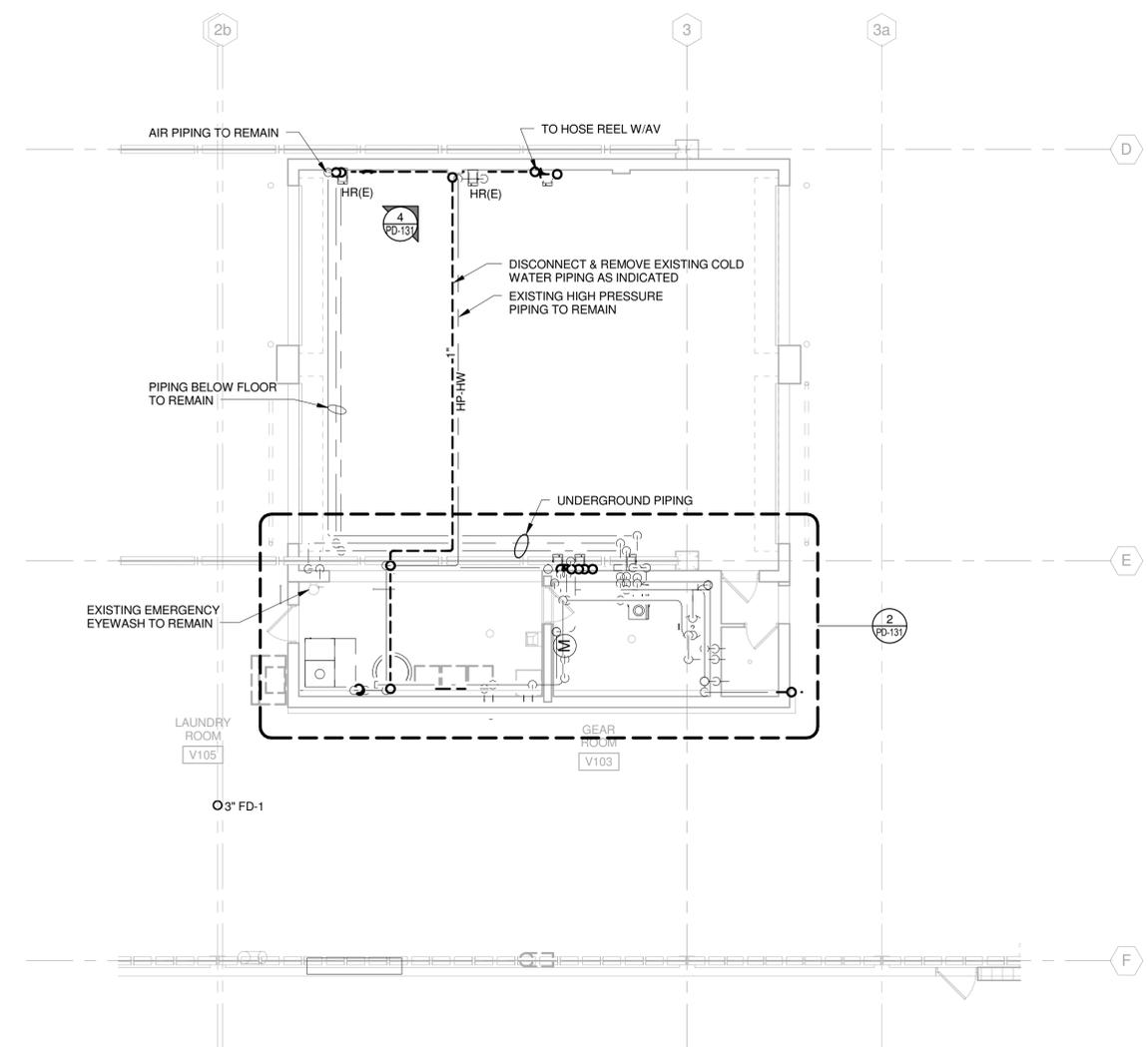
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SHEET CONTENTS  
 FIRST FLOOR PLAN - SUPPLY DEMOLITION

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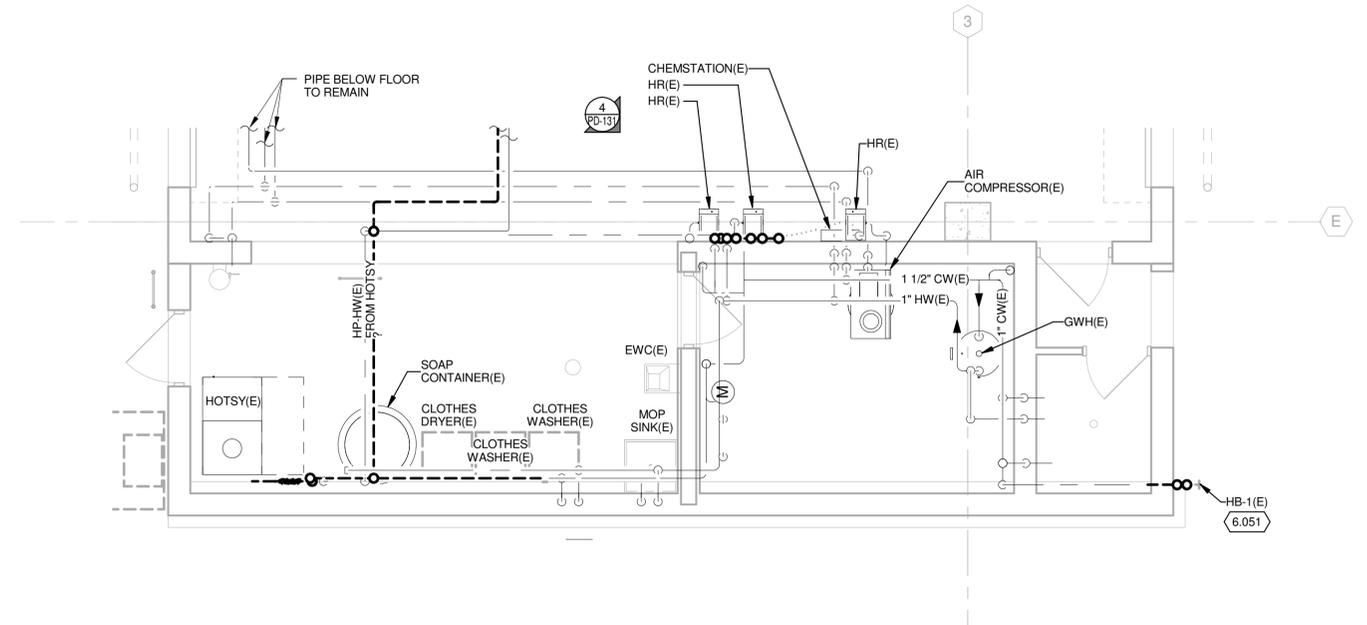
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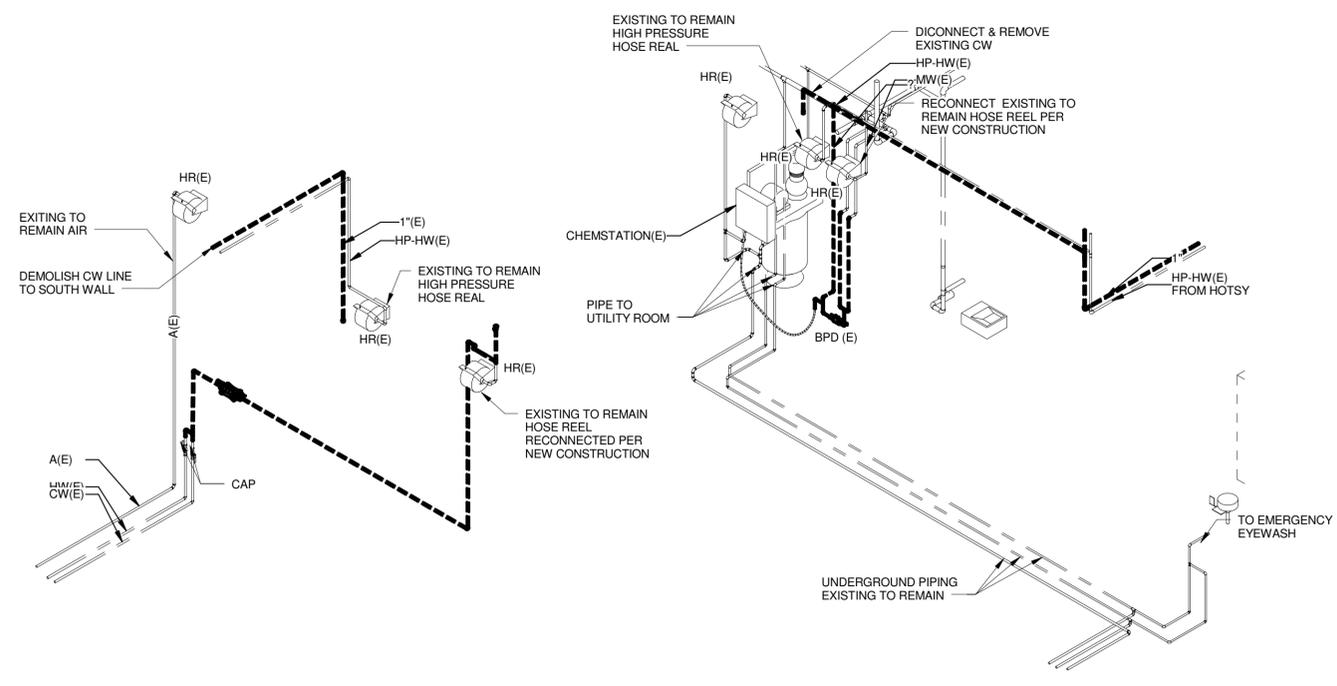
TRUE PLAN NORTH NORTH  
**1** FIRST FLOOR PLAN - SUPPLY DEMOLITION  
 1/8" = 1'-0"

**KEYED NOTES**

6.051 REMOVED EXISTING HOSE BIB AND AVB. HOSE BIB AND AVB TO BE RELOCATED, (SEE P-131 FOR LOCATION)



TRUE PLAN NORTH NORTH  
**2** SUPPLY PLUMBING DEMOLITION ENLARGED PLAN - FIRST FLOOR  
 1/4" = 1'-0"



**3** SUPPLY PLUMBING DEMOLITION NORTH WALL OF WASH BAY  
 NO SCALE

**4** SUPPLY PLUMBING DEMOLITION SOUTH WALL OF WASH BAY  
 NO SCALE

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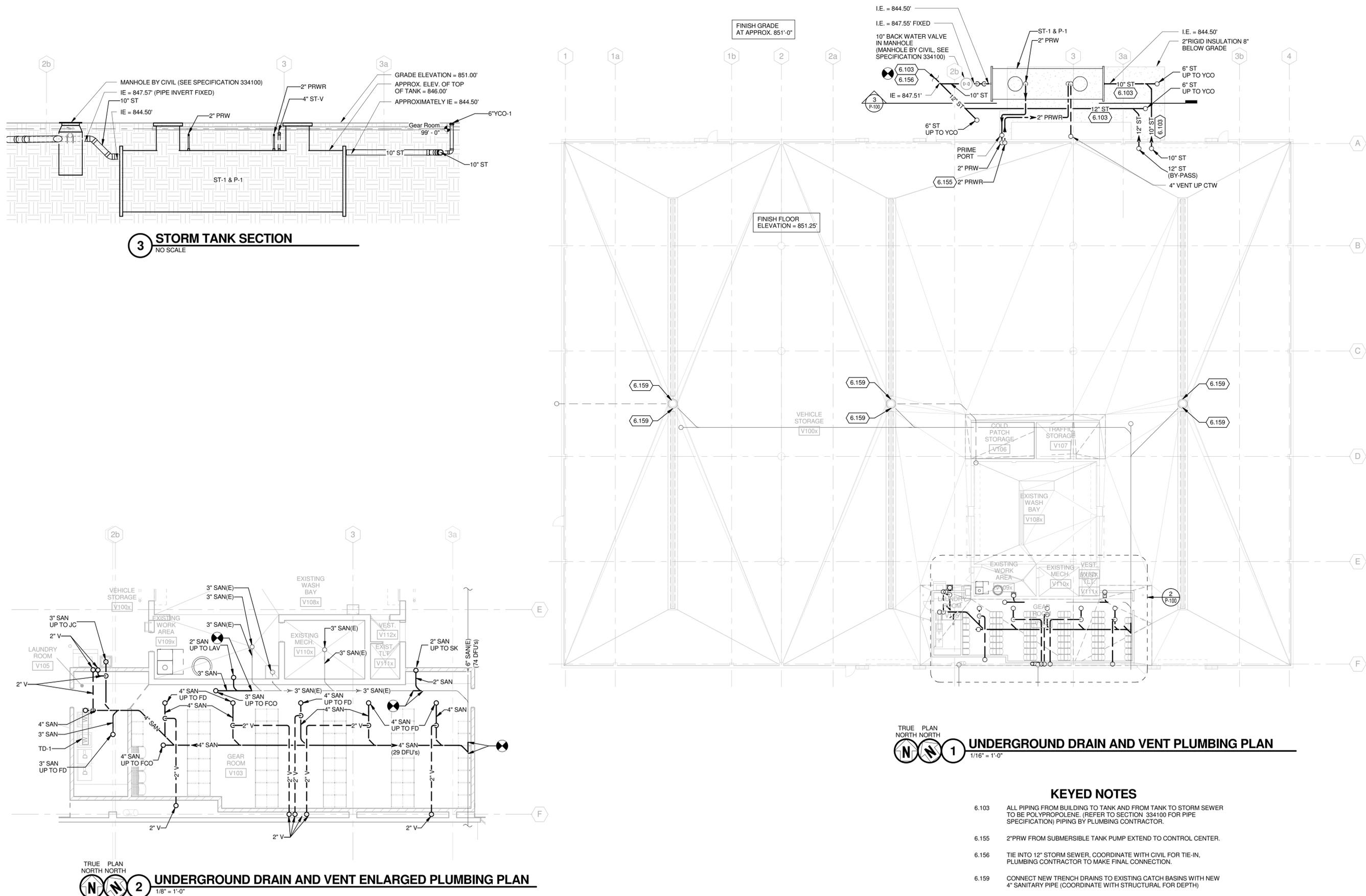
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SHEET CONTENTS  
 UNDERGROUND  
 DRAIN & VENT  
 PLUMBING PLAN

SHEET NO.:

**P-100**



**3 STORM TANK SECTION**  
 NO SCALE

FINISH FLOOR ELEVATION = 851.25'

FINISH GRADE AT APPROX. 851'-0"

**1 UNDERGROUND DRAIN AND VENT PLUMBING PLAN**  
 TRUE PLAN NORTH NORTH  
 1/16" = 1'-0"

**2 UNDERGROUND DRAIN AND VENT ENLARGED PLUMBING PLAN**  
 TRUE PLAN NORTH NORTH  
 1/8" = 1'-0"

- KEYED NOTES**
- 6.103 ALL PIPING FROM BUILDING TO TANK AND FROM TANK TO STORM SEWER TO BE POLYPROPYLENE. (REFER TO SECTION 334100 FOR PIPE SPECIFICATION) PIPING BY PLUMBING CONTRACTOR.
  - 6.155 2"PRW FROM SUBMERSIBLE TANK PUMP EXTEND TO CONTROL CENTER.
  - 6.156 TIE INTO 12" STORM SEWER. COORDINATE WITH CIVIL FOR TIE-IN. PLUMBING CONTRACTOR TO MAKE FINAL CONNECTION.
  - 6.159 CONNECT NEW TRENCH DRAINS TO EXISTING CATCH BASINS WITH NEW 4" SANITARY PIPE (COORDINATE WITH STRUCTURAL FOR DEPTH)

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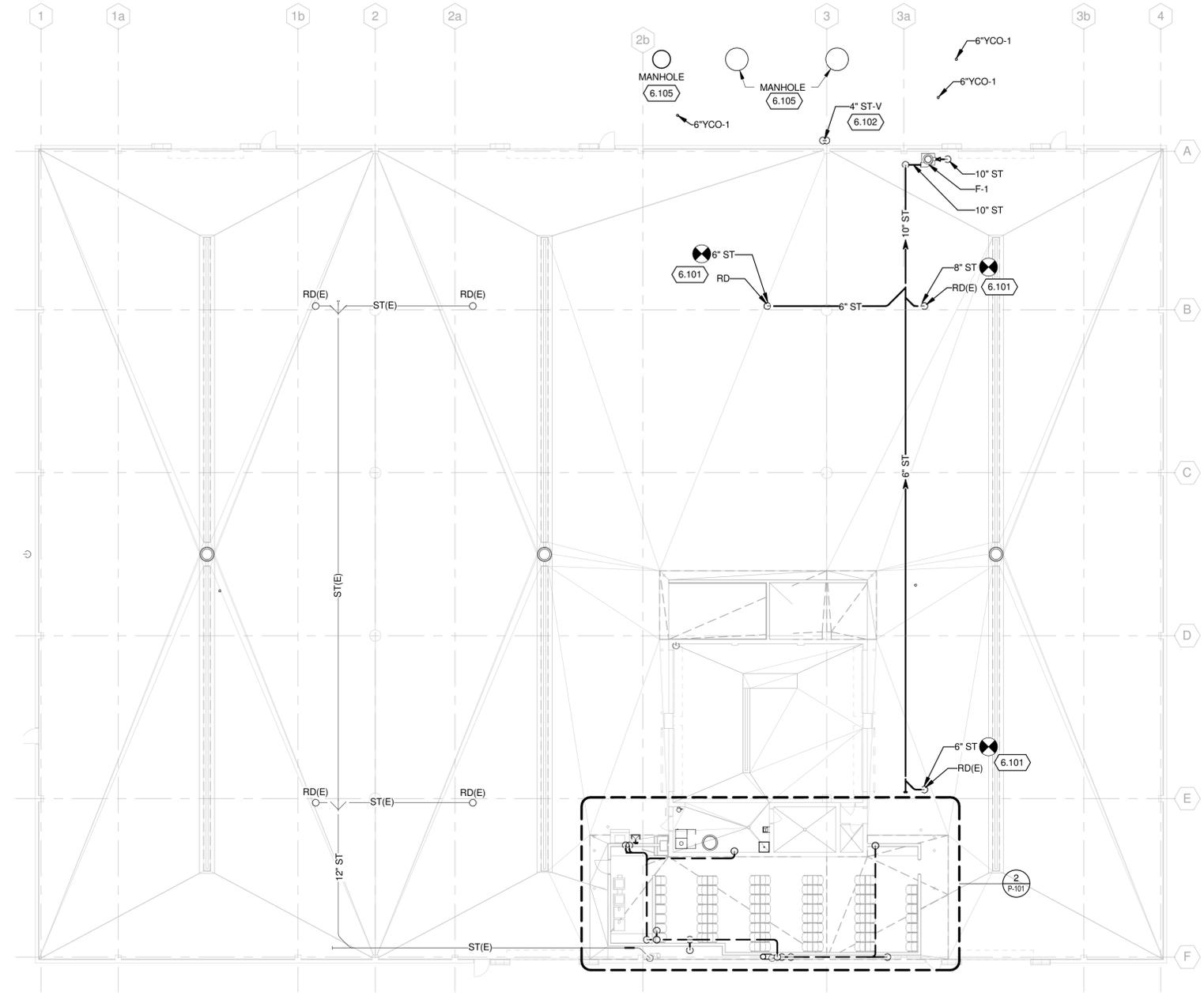
**City of Madison Water Utility**  
Vehicle Storage Building Improvements  
Contract No. 7823, Project No. 10442  
Madison, Wisconsin

ISSUED  
10/21/16 BID SET

MSH NO.: 3235300-131021.02  
DATE: October 21, 2016  
DESIGNED BY: MFP  
DRAWN BY: JET  
CHECKED BY: RMM  
DO NOT SCALE DRAWINGS

SHEET CONTENTS  
DRAIN & VENT  
PLUMBING PLAN -  
FIRST FLOOR PLAN -

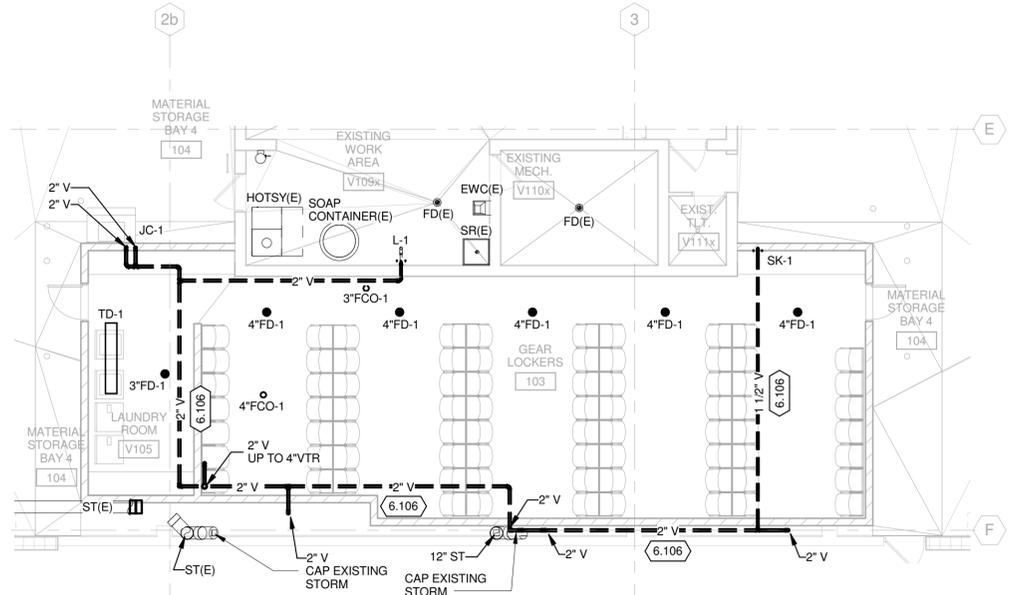
SHEET NO.:



TRUE PLAN NORTH NORTH  
**1** ABOVE GROUND DRAIN AND VENT PLUMBING PLAN  
1/16" = 1'-0"

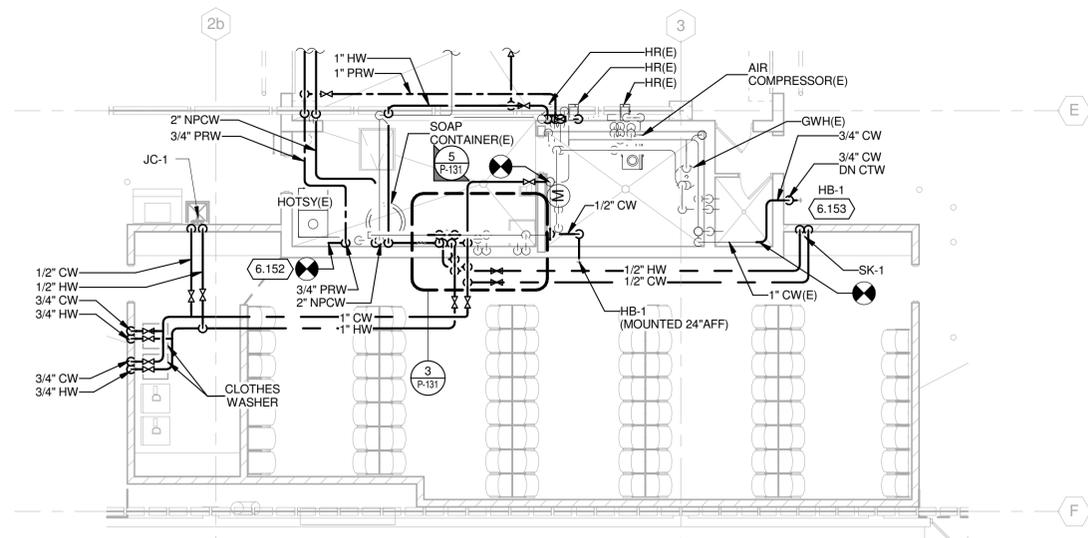
**KEYED NOTES**

- 6.101 RECONNECT NEW STORM DRAIN PIPING TO EXISTING ROOF DRAINS.
- 6.102 ROUTE VENT FOR STORAGE TANK CLOSE TO BUILDING WALL TO 12' ABOVE FINISHED GRADE.
- 6.105 ALL MANHOLES TO BE HS-20 RATED.
- 6.106 HOLD VENT PIPING TIGHT TO BOTTOM OF LOCKER ROOM STRUCTURE.

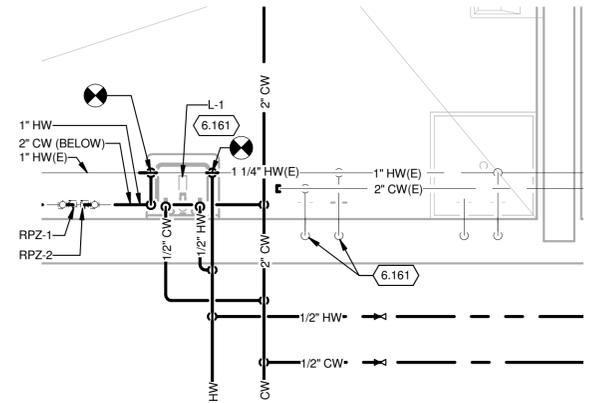


TRUE PLAN NORTH NORTH  
**2** ABOVE GROUND DRAIN AND VENT ENLARGED PLUMBING PLAN  
1/8" = 1'-0"

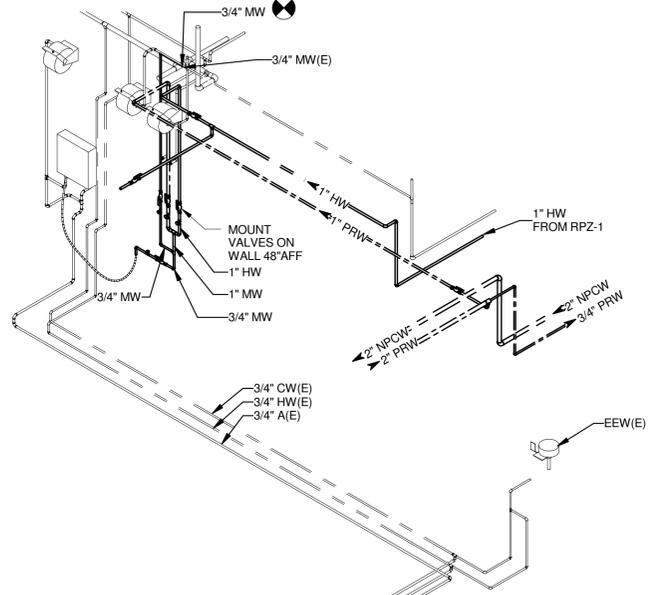
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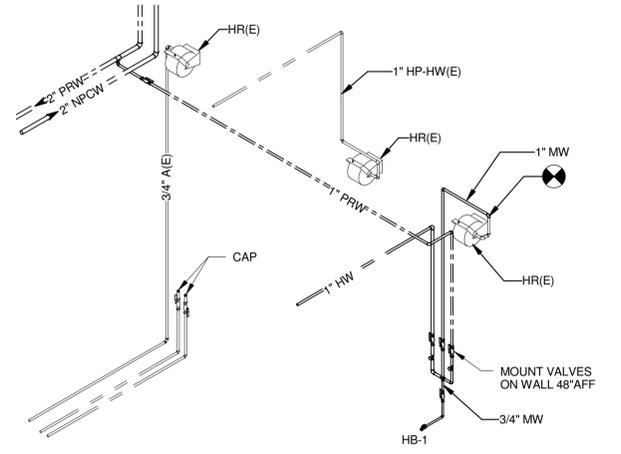
**2 SUPPLY PLUMBING PLAN - ENLARGED FIRST FLOOR**  
1/8" = 1'-0"



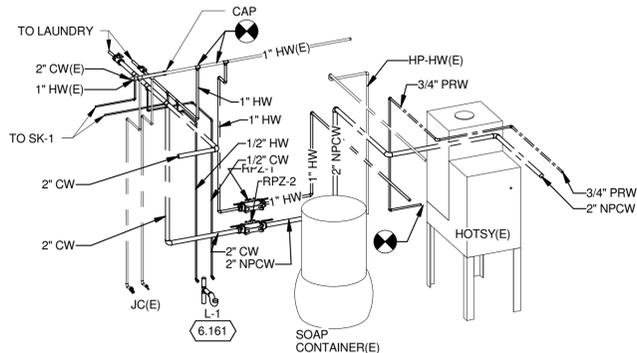
**3 P-131 Enlarged Plan - Existing Laundry**  
1/2" = 1'-0"



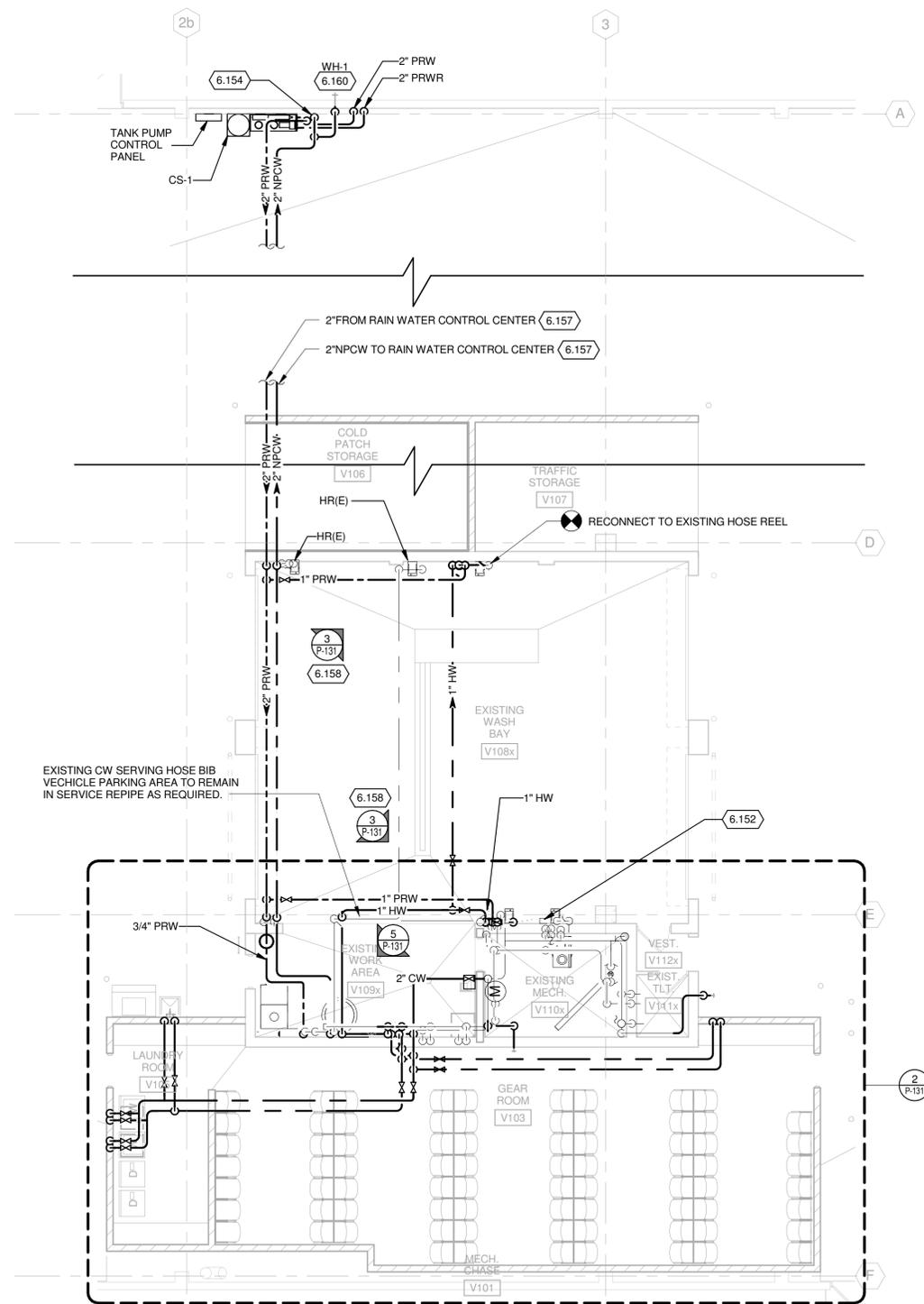
**44 SUPPLY PLUMBING PLAN - SOUTH WALL OF WASH BAY**  
NO SCALE



**33 SUPPLY PLUMBING - NORTH WALL OF WASH BAY**  
NO SCALE



**55 SUPPLY PLUMBING PLAN - HOTSY**  
NO SCALE



**1 FIRST FLOOR PLAN - SUPPLY**  
1/8" = 1'-0"

- KEYED NOTES**
- 6.152 CONNECT TO RAIN WATER SYSTEM.
  - 6.153 REUSE THE PREVIOUSLY DEMOLISHED HOSE BIB AND AV IN THIS LOCATION.
  - 6.154 2"NPCW DN TO CONTROL CENTER. TIE INTO RAIN WATER SYSTEM CONTROL PANEL TO MAINTAIN WATER TO PLUMBING FIXTURES.
  - 6.157 RUN TIGHT TO STRUCTURE.
  - 6.158 SEE PIPING SCHEMATICS ON SHEET P-501.
  - 6.160 MOUNT 12" ABOVE STUCCO WALL APPROXIMATELY 5'AFG.
  - 6.161 DISCONNECT & REMOVE EXISTING HOSE BIBBS, EXTEND EXISTING PIPING DOWN TO SERVE AS ROUGH-IN FOR L01. PROVIDE STOPS & SUPPLY TUBES AS REQUIRED FOR CONNECTION TO L-1 FAUCET.

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**City of Madison Water Utility**  
 Vehicle Storage Building Improvements  
 Contract No. 7823, Project No. 10442  
 Madison, Wisconsin

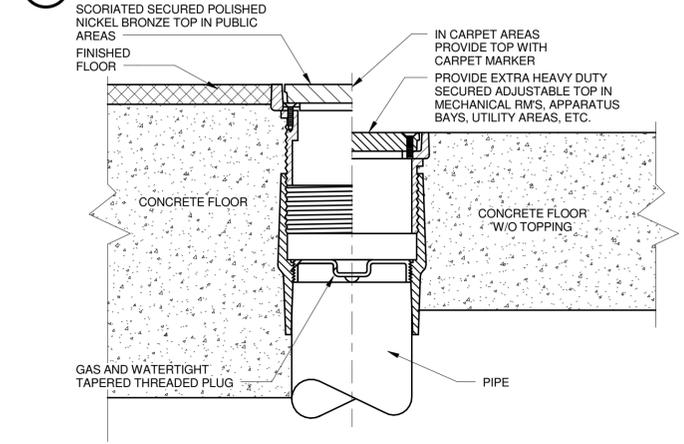
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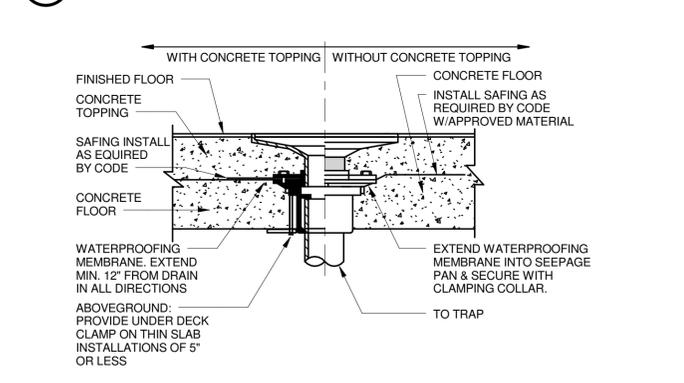
SHEET CONTENTS  
 PLUMBING DETAILS

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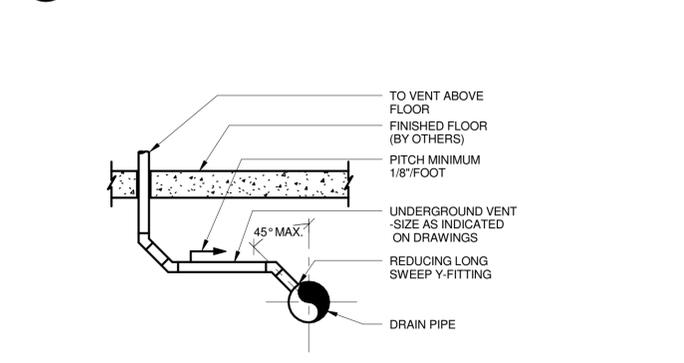
**1 WATER LATERAL FIXTURE DROP**  
 NO SCALE



**2 FLOOR CLEANOUT (FCO)**  
 NO SCALE

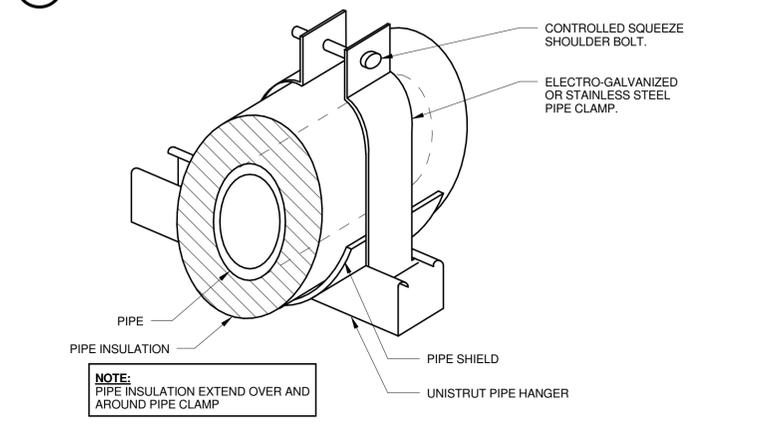


**3 FLOOR DRAIN - CAST IN PLACE (FD-1)**  
 NO SCALE

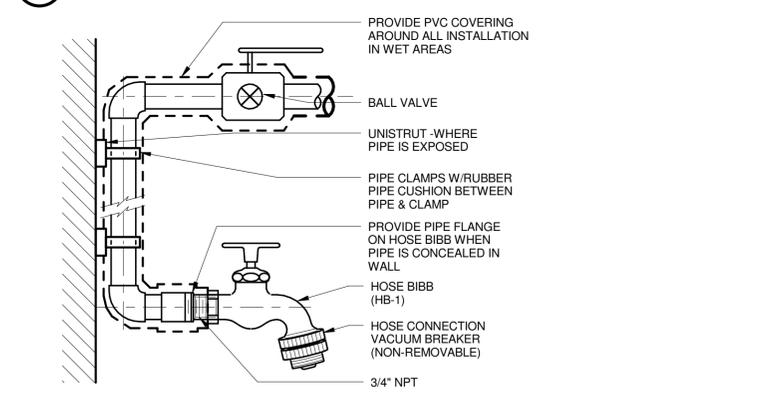


**4 UNDERGROUND VENT SECTION**  
 NO SCALE

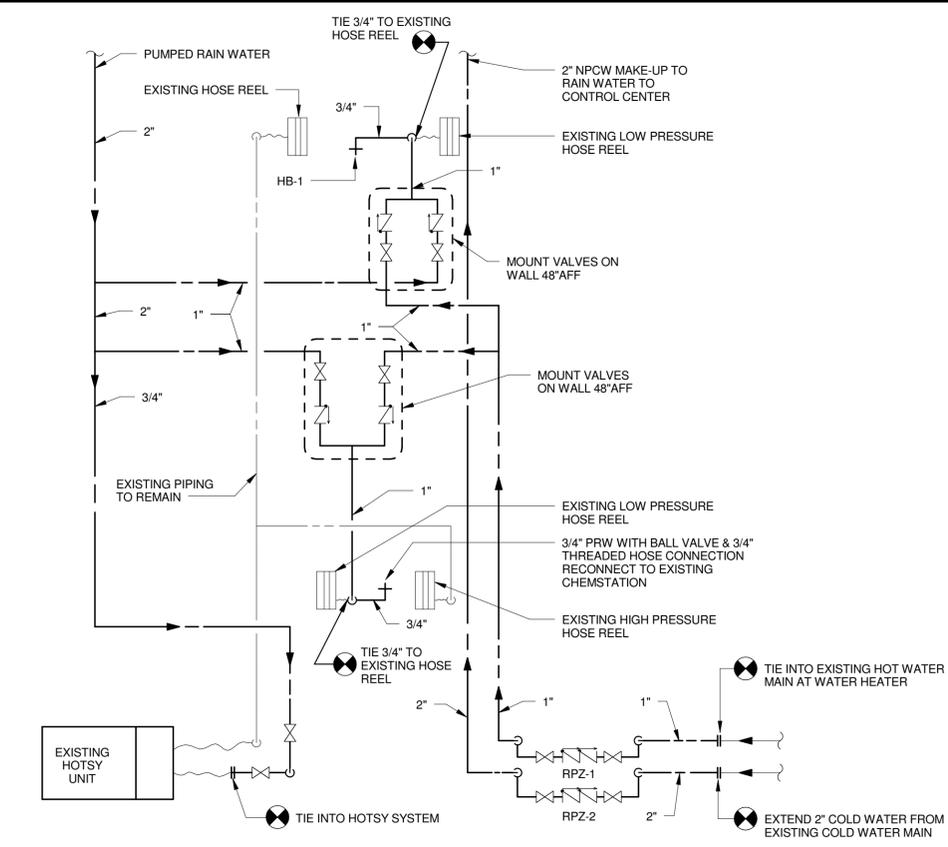
**5 INSULATED PIPE SUPPORTS**  
 NO SCALE



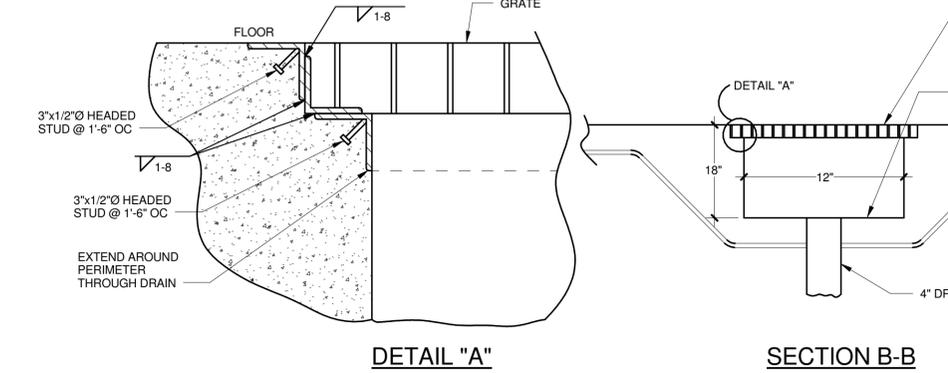
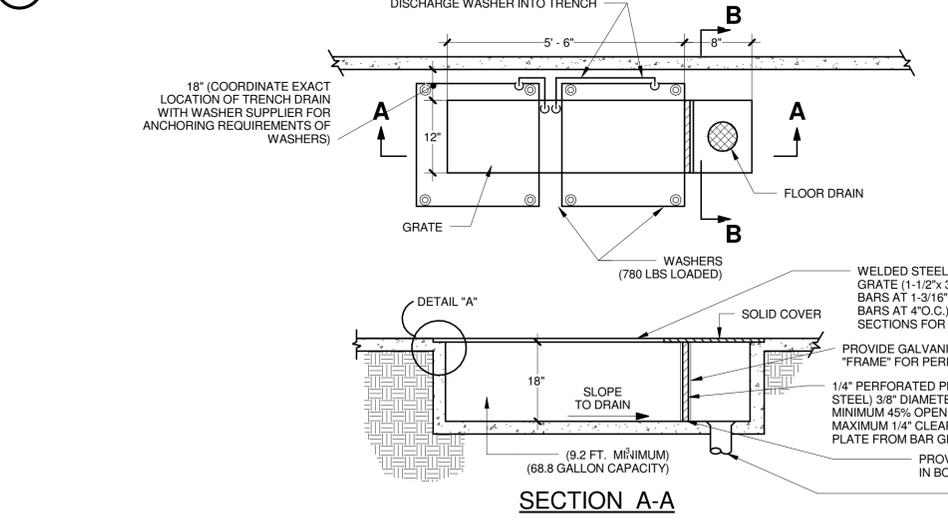
**6 UNISTRUT - PIPE SUPPORT**  
 NO SCALE



**7 HOSE BIBB (HB-1)**  
 NO SCALE

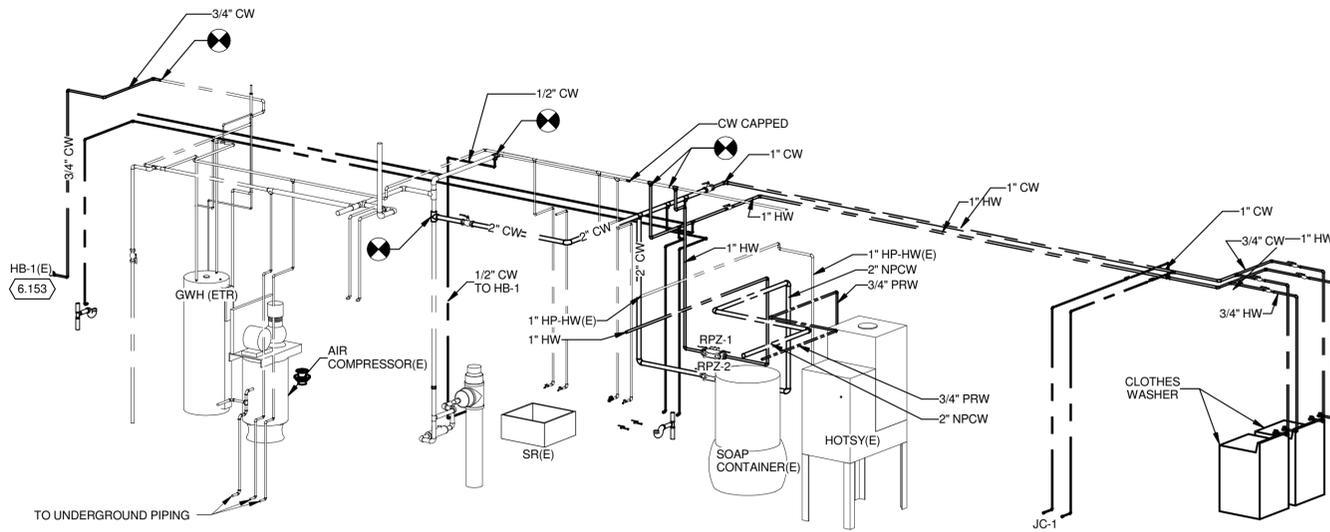


**8 RAIN WATER PIPING - SCHEMATIC**  
 NO SCALE

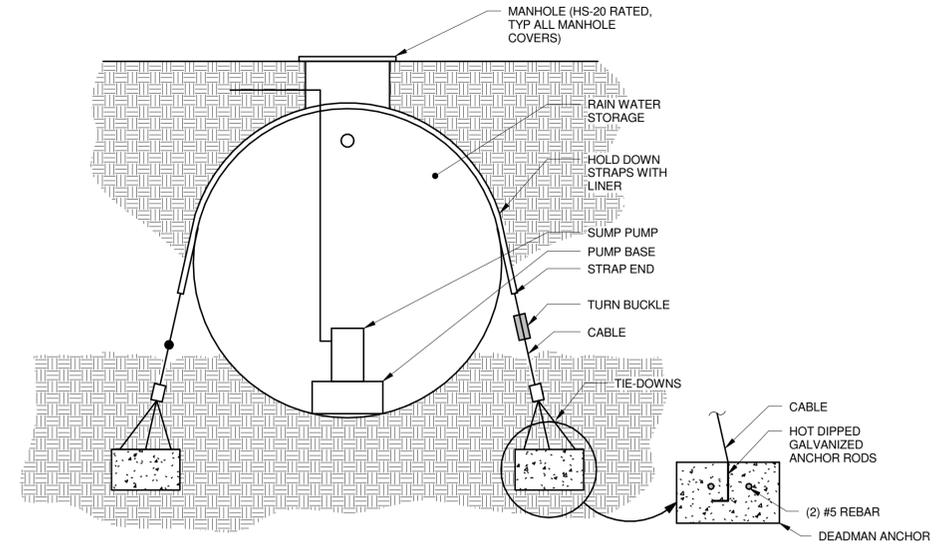


**9 LAUNDRY TRENCH DRAIN**  
 NO SCALE

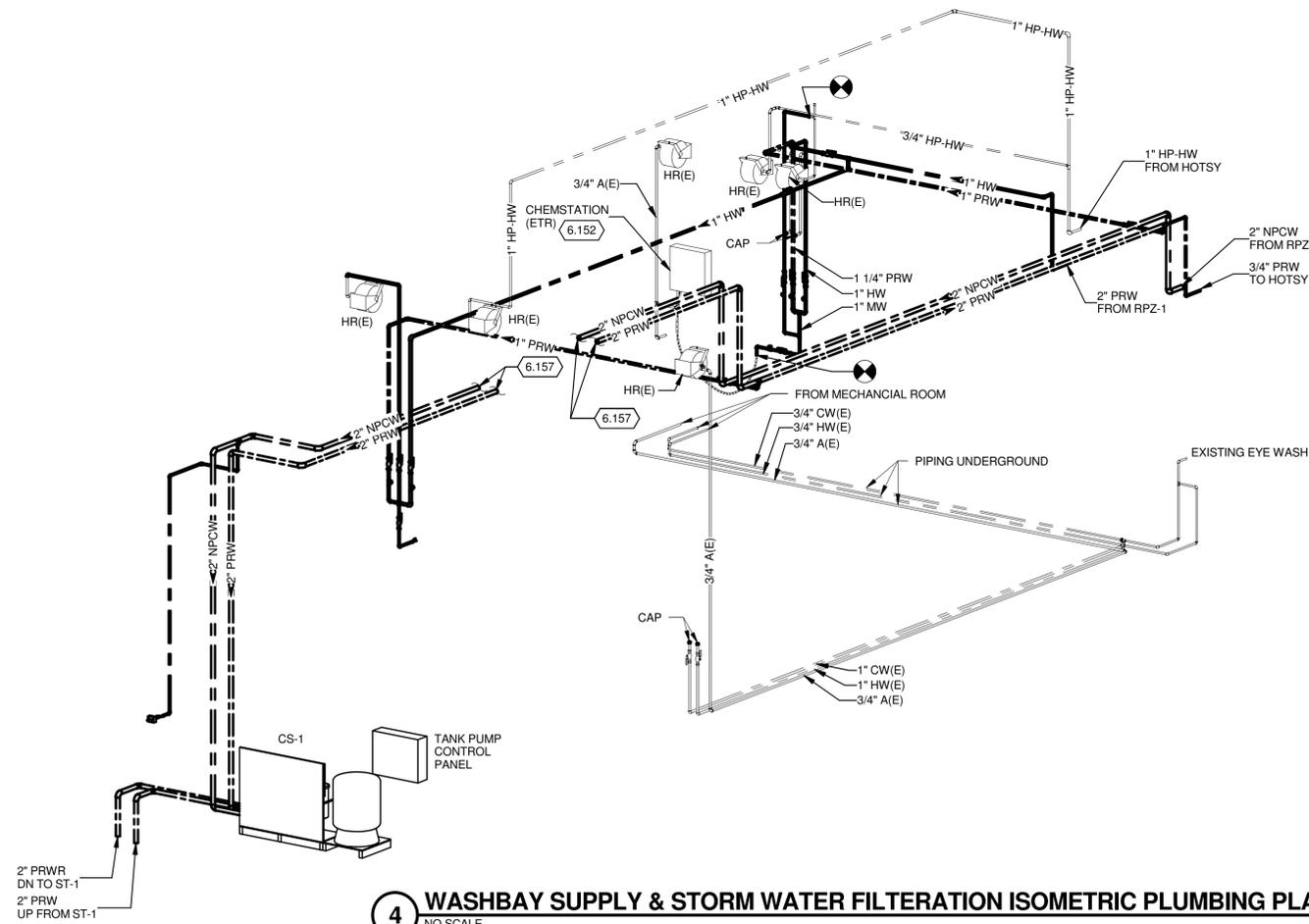
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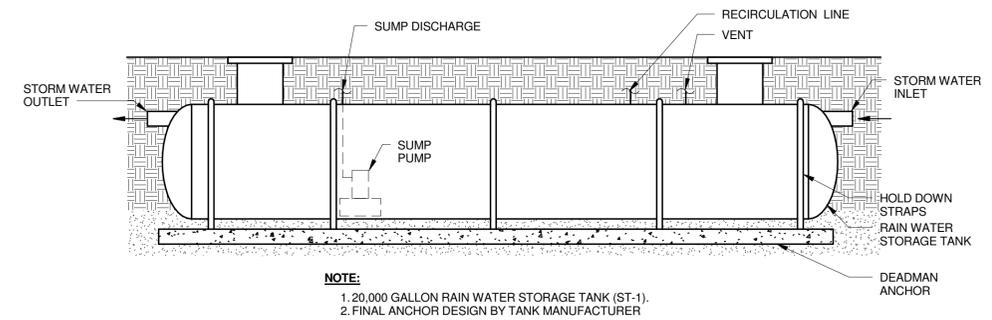
**3 SUPPLY PLUMBING ISOMETRIC - ROOMS V110x, V109x AND LAUNDRY ROOM V105**  
NO SCALE



**1 RAIN WATER STORAGE TANK ANCHORING (ST-1)**  
NO SCALE



**4 WASHBAY SUPPLY & STORM WATER FILTRATION ISOMETRIC PLUMBING PLAN**  
NO SCALE



**2 RAIN WATER STORAGE TANK ANCHORING - ELEVATION (ST-1)**  
NO SCALE

PLUMBING SPECIALTIES SCHEDULE (1)										
MARK	MANUFACTURER, MODEL NUMBER	UPSTREAM PIPE SIZE (IN)	DOWNSTREAM PIPE SIZE (IN)	DEVICE	PEAK FLOW RATE (GPM)	MIN. FLOW RATE (GPM)	MAX. ALLOWABLE PRESSURE LOSS (PSI)	MAX. OPERATING TEMP (F)	LOCATION	REMARKS
RPZ-1	WATTS LF009-QTS (HOT WATER SUPPLY)	1	1	B	20	0	10 PSI AT 20 GPM	N/A	EXISTING WORK RM. 03	
RPZ-2	WATTS LF909-QTS (COLD WATER SUPPLY)	2	2	B	35	0	7 PSI AT 35 GPM	N/A	EXISTING WORK RM. 03	
DEVICE										
A	WATER HAMMER ARRESTOR		D	MIXING VALVE						
B	BACKFLOW PREVENTER		E	WATER METER						
C	WATER FILTER									

**REMARKS:**  
(1) SEE GENERAL NOTES ON SHEET P-001.  
(2) SET AT 106°F.

PLUMBING FIXTURE & EQUIPMENT SCHEDULE (1)						
MARK	EQUIPMENT TYPE	MANUFACTURER, MODEL NUMBER	DESCRIPTION SUMMARY	ELECTRICAL		REMARKS
				(VOLT / PH)	(FLA)	
HB-1	HOSE BIBB	WOODFORD MODEL 24	STANDARD CHROME FINISH, WITH ASSE 1011 VACUUM BREAKER	N/A	N/A	
HB-2	HOSE BIBB	WOODFORD MODEL 24; 24P 3/4"	STANDARD CHROME FINISH, WITH ASSE 1011 VACUUM BREAKER, 3/4" INLET AND OUTLET.	N/A	N/A	
WH-1	WALL HYDRANT	WOODFORD, MODEL 65	AUTOMATIC DRAINING WITH ANTI-SIPHON ASSE 1019 VACUUM BREAKER, 3/4" INLET	N/A	N/A	
FD-1	FLOOR DRAIN (PUBLIC AND STAFF AREAS)	ZURN Z-415-S-VP	CAST IRON BODY, COMBINATION INVERTIBLE MEMBRANE CLAMP, ADJUSTABLE COLLAR WITH HEEL PROOF POLISHED NICKEL BRONZE HEEL PROOF STRAINER VANDAL PROOF TOP. PROVIDE SQUARE STRAINERS IN TILED FLOORS.	N/A	N/A	(4)
FCO-1	FLOOR CLEANOUT (PUBLIC AREAS)	ZURN Z-1400 SERIES "LEVEL-TROL"	CAST IRON, MEDIUM DUTY NICKEL-BRONZE COVER	N/A	N/A	
ST-1	UNDERGROUND STORM WATER STORAGE TANK	XERXES MODEL S10 889-05	20,000 STORM WATER STORAGE TANK, PROVIDE MANHOLES PER STATE REQUIREMENTS, ANCHOR TANK TO PREVENT FLOATATION PER MANUFACTURE REQUIREMENTS, PROVIDE ALL PIPE CONNECTIONS AS REQUIRED FOR COMPLETE AND PROPER INSTALLATION. SEE...	N/A	N/A	SEE SPECIFICATIONS (5)
CS-1	CONTROL CENTER	WATER CONTROL CORP. MODEL RW-UV-40 WITH SUBMERSIBLE PUMP	RAIN WATER CONTROL CENTER, SEE SPECIFICATIONS			SEE SPECIFICATIONS
F-1	DOWN SPOUT SEPARATOR	VORTEX MODEL WFF300	SEE SPECIFICATIONS	N/A	N/A	SEE SPECIFICATIONS
SK-1	SINK, SINGLE COMPARTMENT	ELKAY LR-2522-8.5	SINGLE COMPARTMENT, 18 GAUGE TYPE 304 S/S, COUNTER MOUNT. PROVIDE AND INSTALL CHROME PLATED CAST BRASS "P" TRAP, LOOSE KEY ANGLE STOPS WITH SHIELD CAPS, SUPPLIES AND ESCUTCHEON PLATES ON SUPPLIES AND DRAIN PIPES.			(3)
	SINK FAUCET	MOEN: MODEL 8225SMF1.5	DECK MOUNTED, ADA COMPLIANT, CHROME PLATED, HEAVY DUTY RIGID/SWING GOOSENECK SPOUT KITCHEN FAUCET WITH WRIST BLADE INDEXED HANDLES AND 1.5 GPM AERATOR.			
L-1	LAVATORY BOWL ( WALL HUNG)	KOHLER KINGSTON K-2005	WALL MOUNTED LAV. PROVIDE AND INSTALL WALL MOUNTED CARRIER, CHROME PLATED CAST BRASS "P" TRAP WITH OFFSET TAILPIECE AND GRID STRAINER, LOOSE KEY ANGLE STOPS, SUPPLIES AND ESCUTCHEON PLATES AROUND ALL PIPE PENETRATIONS. PROVIDE TRAP WRAP ON ALL EXPOSED SUPPLY & DRAIN PIPING BELOW SINK.			(3)
	LAVATORY FAUCET	MOAN (COMMERCIAL) MODEL 8416F0.5	SINGLE LEVER SOLID BRASS CONSTRUCTION, CHROME LAVATORY FAUCET, 0.5 GPM FLOW AERATOR, TEMPERATURE LIMIT STOP, CERAMIC DISC CARTRIDGE, OFFSET GRID STRAINER DRAIN, LESS POP UP, ASI 1070 THERMOSTATIC MIXING VALVE, AND SUPPLIES, PROVIDE ALL COMPONENTS FOR COMPLETE AND PROPER OPERATION OF FIXTURE.			
JC-1	JANITORS CLOSET	STERN WILLIAMS - HL-1800	FLOOR MOUNTED TERRAZZO MOP SINK, 24"X24"X12" WITH 3" DRAIN HOLE, STAINLESS STEEL STRAINER, STAINLESS STEEL BACK PLATES AND RIM GUARD.	N/A	N/A	
	SERVICE RECEPTOR FAUCET	CHICAGO FAUCETS - 911-IS WITH ELEVATED VACUUM BREAKER, WITH OUT THREADED SPOUT.	SERVICE SINK FAUCET WITH WALL BRACE, VACUUM BREAKER, AND PAIL HOOK ON SPOUT, WITH OUT THREADED SPOUT.	N/A	N/A	(3)
P-1	SUBMERSIBLE PUMP	SEE SPECIFICATIONS	SUBMERSIBLE PUMP TO SUPPLEMENT THE LIFT REQUIREMENTS FROM THE STORAGE TANK TO THE RW-LV CONTROL CENTER.	SEE SPECIFICATIONS	SEE SPECIFICATIONS	

**REMARKS:**  
(1) SEE GENERAL NOTES P-001  
(2) OWNER FURNISHED, CONTRACTOR INSTALLED  
(3) EXPOSED PIPING TO BE CHROME PLATED  
(4) PROVIDE AND INSTALL PPP PRIME RITE TRAP PRIMERS ON ALL BASEMENT MECHANICAL ROOM FLOOR DRAINS.  
(5) STORAGE TANK MANHOLE FRAME AND COVERS TO HAVE AN HS-20 RATING.

WATER HAMMER ARRESTOR SCHEDULE		
PIPE SIZE	FIXTURE UNIT	CROSS REFERENCE (PDI)
1/2"	1-11	A
3/4"	12-32	B
1"	33-60	C
1 1/4"	60-113	D
1 1/2"	114-154	E

#### WATER CALCULATION WORKSHEET

##### Information Needed for Water Sizing.

- 58.0 gpm. Demand of building in gallons per minute.
- 70.0 psi. Low pressure at main in street (or at external pressure tank).  
pressure taken after water meter at service sink.
- 0.0 ft. Difference in elevation from main to meter (or external pressure tank to building control...)
- 0.0 in. Size of water meter (if applicable).
- 0.0 ft. Developed length from main to meter (or external pressure tank to building control...)

##### You Must First Find the Available Pressure After the Water...

(or at building control valve). To obtain this pressure, you must:

- 0.00 psi. Find pressure loss due to friction in 2.0 inch water service. 0 ft./100ft.
- 0.00 psi. Find pressure loss due to elevation, main to meter (or external pressure tank to building control valve). (difference in elevation) 0.0 x .434 psi/ft.
- 0.00 psi. Find pressure loss due to meter. (from manufacturer or AWWA).
- 70.0 psi. Subtract the loss due to friction (step 6), loss due to elevation (step 7), and loss due to meter (step 8) from the low main pressure ( or low pressure at external pressure tank). This calculation is the available pressure after the water meter ( or at the building control valve). This answer is entered in Line B, below.

##### Information Needed for Water Distribution Sizing

Using the following formula, find the pressure available for uniform loss ( psi / 100' of pipe).

$$A = \frac{B - (C + D + E)}{F} \times 100$$

##### WHERE:

- 5.39 psi. Pressure available for uniform loss (psi / 100 ft. of pipe).
- 70.00 psi. Available pressure after water meter ( at the building control valve or low pressure at internal pressure tank). ( see item 9, above).
- 25.0 psi. Pressure needed at controlling fixture.
- 0.87 psi. Difference in elevation between water meter ( building control valve or... pressure tank) and controlling fixture in feet 2 ft.
- 15.0 psi. Pressure loss due to water softeners, water treatment devices, instantaneous water heaters and backflow preventers. Conventional water heaters usually do not have a pressure loss.
- 540.0 ft. Developed length from water meter ( building control valve or internal pressure tank) to controlling fixture in feet 360.0 x 1.5.

**Mead & Hunt**

2440 Deming Way  
Middleton, WI 53562  
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SHEET CONTENTS  
PLUMBING  
SCHEDULES

SHEET NO.:  
**P-601**

**GENERAL ABBREVIATIONS:**

AD AREA DRAIN	FLR FLOOR	PD PRESSURE DROP
AFF ABOVE FINISH FLOOR	FT FEET	PH PHASE
BOB BOTTOM OF BEAM	GC GENERAL CONTRACTOR	PSI POUND PER SQUARE INCH
BOD BOTTOM OF DUCT	HD HEAD (FEET)	RPM REVOLUTIONS PER MINUTE
BOJ BOTTOM OF JOIST	HP HORSEPOWER	RTD RESISTIVE THERMAL DEVICE
BOP BOTTOM OF PIPE	ID INSIDE DIAMETER	SHT SHEET
BOS BOTTOM OF STEEL	IN INCH	TFA TO FLOOR ABOVE
CL CENTERLINE	IWS IN WALL SPACE	TFB TO FLOOR BELOW
CTB CLOSE TO BEAM	KW KILOWATT	TJA THRU JOISTS ABOVE
CTC CLOSE TO COLUMN	MFR MANUFACTURER	TOB TOP OF BEAM
CTJ CLOSE TO JOIST	NC NORMALLY CLOSED	TOD TOP OF DUCT
CTW CLOSE TO WALL	NIC NOT IN CONTRACT	TOP TOP OF PIPE
DIA DIAMETER	NO NORMALLY OPEN	TOS TOP OF STEEL
DN DOWN	NPS NOMINAL PIPE SIZE	TYP TYPICAL
E EXISTING	OC ON CENTER	V VOLTS
EL ELEVATION	OD OUTSIDE DIAMETER	
ETR EXISTING TO REMAIN	OFCI OWNER FURNISHED, CONTRACTOR INSTALLED	
FC FLEXIBLE CONNECTION	OFOI OWNER FURNISHED, OWNER INSTALLED	
FFA FROM FLOOR ABOVE		
FFB FROM FLOOR BELOW		

**MECHANICAL ABBREVIATIONS:**

A COMPRESSOR AIR	FAF FORCED AIR FURNACE	OA OUTSIDE AIR
AC AIR COMPRESSOR	FCU FAN COIL UNIT	P PUMP
ACV AUTOMATIC CONTROL VALVE	FM FLOWMETER	PCV PRESSURE CONTROL VALVE
AD AIR DROP/ACCESS DOOR	FOR FUEL OIL RETURN	PF PRE-FILTER
AF AIR FILTER	FOS FUEL OIL SUPPLY	PRV PRESSURE REGULATING/REDUCING VALVE
B BOILER	FS FLOW SWITCH	RAD RADIATOR
BBS BOILER BLOWDOWN SEPARATOR	FT FLASH TANK	RC REHEAT COIL
BTU BRITISH THERMAL UNIT	FTC FIN TUBE CONVECTOR	RCP RADIANT CEILING PANEL
BTUH BTU's PER HOUR	GRV GAS REGULATOR VALVE	RTU ROOFTOP AIR HANDLING UNIT
CA COMBUSTION AIR/COMPRESSED AIR	HC HEATING COIL	RV RELIEF VENT/RELIEF VALVE
CH CHILLER	HE HEAT EXCHANGER	SMF STEAM FILTER
COND CONDENSATE	HUM HUMIDIFIER	SRV SAFETY RELIEF VALVE
CRP CONDENSATE RETURN PUMP	HTP HEAT PUMP	UH UNIT HEATER
CT COOLING TOWER	HWB HOT WATER BOILER	VEL VELOCITY
CUH CABINET UNIT HEATER	IA INTAKE AIR	VFD VARIABLE FREQUENCY DRIVE
D CONDENSATE DRAIN	LP LIQUID PETROLEUM	VI VIBRATION ISOLATOR
DDC DIRECT DIGITAL CONTROL	LWT LEAVING WATER TEMPERATURE	WCC WATER COOLED CONDENSER
EA EXHAUST AIR	MAU MAKEUP AIR UNIT	
ED EQUIPMENT DRAIN	MBH THOUSANDS OF BTU's PER HOUR	
ET EXPANSION TANK	MD MAIN DRIP	
EWT ENTERING WATER TEMPERATURE	NG NATURAL GAS	

**GENERAL NOTES:**

- ABBREVIATIONS INDICATED HERE AND NOT USED IN THE CONTRACT DOCUMENTS DO NOT APPLY TO THIS PROJECT. ADDITIONAL ABBREVIATIONS MAY BE INDICATED IN THE CONTRACT DOCUMENTS.
- THESE DRAWINGS ARE DESIGN DRAWINGS AND ARE DIAGRAMMATIC. THEY MAY NOT SHOW ALL PHYSICAL ARRANGEMENTS, OFFSETS, BENDS, OR ELBOWS WHICH MAY BE REQUIRED FOR PROPER INSTALLATION OF VARIOUS MATERIALS, EQUIPMENT, PIPING AND DUCTWORK SYSTEMS IN ALLOTTED SPACES. EXAMINE THESE AND OTHER AVAILABLE DRAWINGS TO DETERMINE SPACE LIMITATIONS AND INTERFERENCES. MAKE ANY MINOR CHANGES IN LOCATIONS OF EQUIPMENT, PIPING, AND DUCTWORK FROM THAT SHOWN ON DRAWINGS AND FOR ALL PHYSICAL DETAILS REQUIRED FOR INSTALLATION. COST FOR ADAPTING WORK TO JOB SITE CONDITIONS SHALL NOT BE CONSIDERED AS BASIS OF AN EXTRA COST TO CONTRACT.
- ELEVATION OF PIPING AND DUCTWORK INDICATED ON THESE DRAWINGS ARE TO BE USED AS GUIDELINES TO ASSIST WITH INSTALLATIONS. MINOR CHANGES TO THESE ELEVATIONS MAY BE NECESSARY TO ELIMINATE UNFORESEEN INTERFERENCES. ANY CHANGE IN ELEVATION SHALL BE APPROVED PRIOR TO CHANGE.
- ANY AND ALL INFORMATION SHOWN ON THESE DRAWINGS WITH RESPECT TO EXISTING STRUCTURES, UTILITIES, AND MECHANICAL SYSTEMS, IS AS EXACT AS COULD BE SECURED. THE INFORMATION IS NOT WARRANTED NOR GUARANTEED ACCURATE. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO PROCEEDING WITH WORK.
- ACCURATE AND LEGIBLE RECORD (AS-BUILT) DRAWINGS SHALL BE MAINTAINED AT THE JOB SITE, AND BE SUBMITTED PRIOR TO FINAL PAYMENT.
- ALL NEW AND EXISTING ROOFING SYSTEMS SHALL BE PROTECTED FROM DAMAGE DURING CONSTRUCTION ACTIVITIES.
- TEMPORARILY PATCH ALL ROOF OPENINGS WATERTIGHT UNTIL FINAL CLOSURE CAN BE MADE.
- VERIFY ALL EQUIPMENT LOCATIONS AND PIPE ROUTING WITH OWNER PRIOR TO INSTALLATION.
- SEQUENCE OF WORK AND/OR PLACE OF COMMENCEMENT OF WORK SHALL BE APPROVED PRIOR TO WORK BEING STARTED. SCHEDULED SHUTDOWNS SHALL BE CLOSELY COORDINATED WITH EXISTING OPERATIONS.

**Mead & Hunt**  
 2440 Deming Way  
 Middleton, WI 53562  
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 meadhunt.com

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**GENERAL SYMBOLS:**

	AUTOMATIC CONTROL VALVE (2-WAY)		PIPE GUIDE
	AUTOMATIC CONTROL VALVE (3-WAY)		FLEXIBLE CONNECTOR
	BALANCING VALVE		UNION
	BALL VALVE		BLIND FLANGE
	BUTTERFLY VALVE		REDUCER (CONCENTRIC)
	CHECK VALVE		REDUCER (ECCENTRIC)
	GLOBE VALVE		PIPE CAP
	GATE VALVE		PIPE PLUG
	GLOBE, ANGLE VALVE		PRESSURE GAUGE WITH COCK
	PLUG VALVE		TEMPERATURE GAUGE WITH COCK
	PRESSURE REDUCING VALVE		FLUID FLOW DIRECTION
	PRESSURE REGULATING VALVE		PIPE PITCH DIRECTION
	SHUTOFF/ISOLATION VALVE		NEW CONNECTION TO EXISTING
	SOLENOID VALVE ONE-WAY (ELECTRIC)		EXISTING - TO REMAIN
	STRAINER		EXISTING - TO BE REMOVED
	PIPE TURNED TOWARD		PROPOSED - TO BE INSTALLED
	PIPE TURNED AWAY		AIR VENT (MANUAL)
	BRANCH BOTTOM CONNECTION		VACUUM BREAKER
	BRANCH TOP CONNECTION		
	PLUGGED TEE-TURNED TOWARD		
	PIPE ANCHOR (INTERMEDIATE)		
	RELIEF VALVE		
	GAUGE CONNECTION		

**MECHANICAL SYMBOLS:**

	AIRFLOW (SUPPLY)
	AIRFLOW (RETURN)
	AIRFLOW (DOOR GRILLE)
	SUPPLY OR OUTDOOR AIR
	RETURN
	EXHAUST
	DUCT TURNED AWAY
	DUCT SIZE (FIRST FIGURE IS SIDE SHOWN)
	FLEXIBLE CONNECTION
	DUCT (RIGID ROUND)
	DUCT (FLEXIBLE ROUND)
	TURNING VANES
	TRANSITION (SQUARE-TO-ROUND)
	BACKDRAFT DAMPER
	VOLUME DAMPER
	FIRE DAMPER & ACCESS DOOR
	MOTOR OPERATED DAMPER
	OPPOSED BLADE DAMPER
	PARALLEL BLADE DAMPER
	CARBON MONOXIDE (CO) SENSOR
	NITROGEN DIOXIDE (NO2) SENSOR
	ROOM SENSOR
	STATIC PRESSURE SENSOR
	HUMIDISTAT
	TEMPERATURE SENSOR
	THERMOSTAT
	INSULATED BASE THERMOSTAT
	SMOKE DETECTOR
	AIR OUTLET/INLET TYPE (CFM)

**MECHANICAL PIPING:**

	CONDENSATE DRAIN
	NATURAL GAS

**KEYED NOTES**

- 7.001 DEMOLISH EXISTING OUTSIDE AIR INTAKE LOUVER TO ACCOMMODATE NEW INTAKE LOUVER IN NEW SKYLIGHT. DEMOLISH EXISTING OUTSIDE AIR INTAKE DUCT FROM LOUVER BACK TO THE LOCATION INDICATED ON SHEET M-301, SECTION 3.
- 7.002 DEMOLISH EXISTING EXHAUST AIR LOUVER TO ACCOMMODATE NEW EXHAUST AIR LOUVER IN NEW SKYLIGHT. DEMOLISH EXISTING EXHAUST AIR DUCT FROM LOUVER BACK TO THE LOCATION INDICATED ON SHEET M-301, SECTION 4.

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**City of Madison Water Utility**  
 Vehicle Storage Building Improvements  
 Contract No. 7823, Project No. 10442  
 Madison, Wisconsin

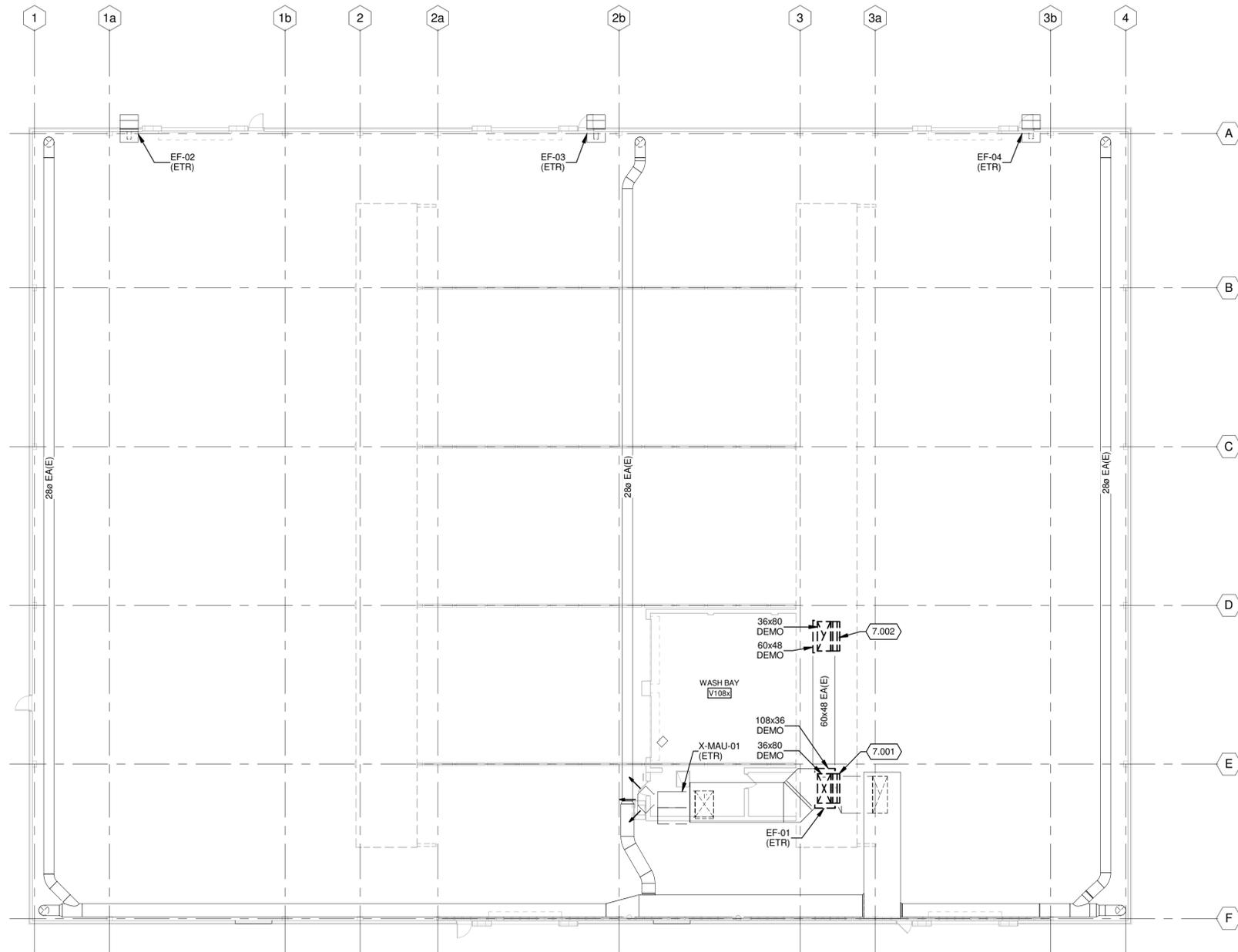
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SHEET CONTENTS  
 HVAC DEMOLITION FLOOR PLAN

SHEET NO.:

**MD101**



**GENERAL MECHANICAL  
DEMOLITION NOTES:**

1. PIPING TO BE DEMOLISHED IS BOLD AND DASHED.

**KEYED NOTES**

- 8.001 REMOVE SECTION OF PIPE TO ACCOMMODATE NEW 2" PIPE CONNECTION FOR EMERGENCY GENERATOR SERVICE. REFER TO M-131.
- 8.002 REMOVE PIPING TO ACCOMMODATE NEW PRESSURE REGULATOR. REFER TO M-131.
- 8.004 COORDINATE WITH GAS COMPANY TO REMOVE EXISTING GAS SERVICE REGULATOR AND REPLACE WITH NEW REGULATOR TO DELIVER 2psi GAS PRESSURE TO BUILDING. THIS CONTRACTOR TO INCLUDE ALL COSTS OF GAS COMPANY FOR THIS CHANGE IN THE PROJECT CONSTRUCTION COST OF THE MECHANICAL CONTRACTOR.

**Mead & Hunt**  
2440 Deming Way  
Middleton, WI 53562  
phone: 608-273-6380  
meadhunt.com

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Madison, Wisconsin

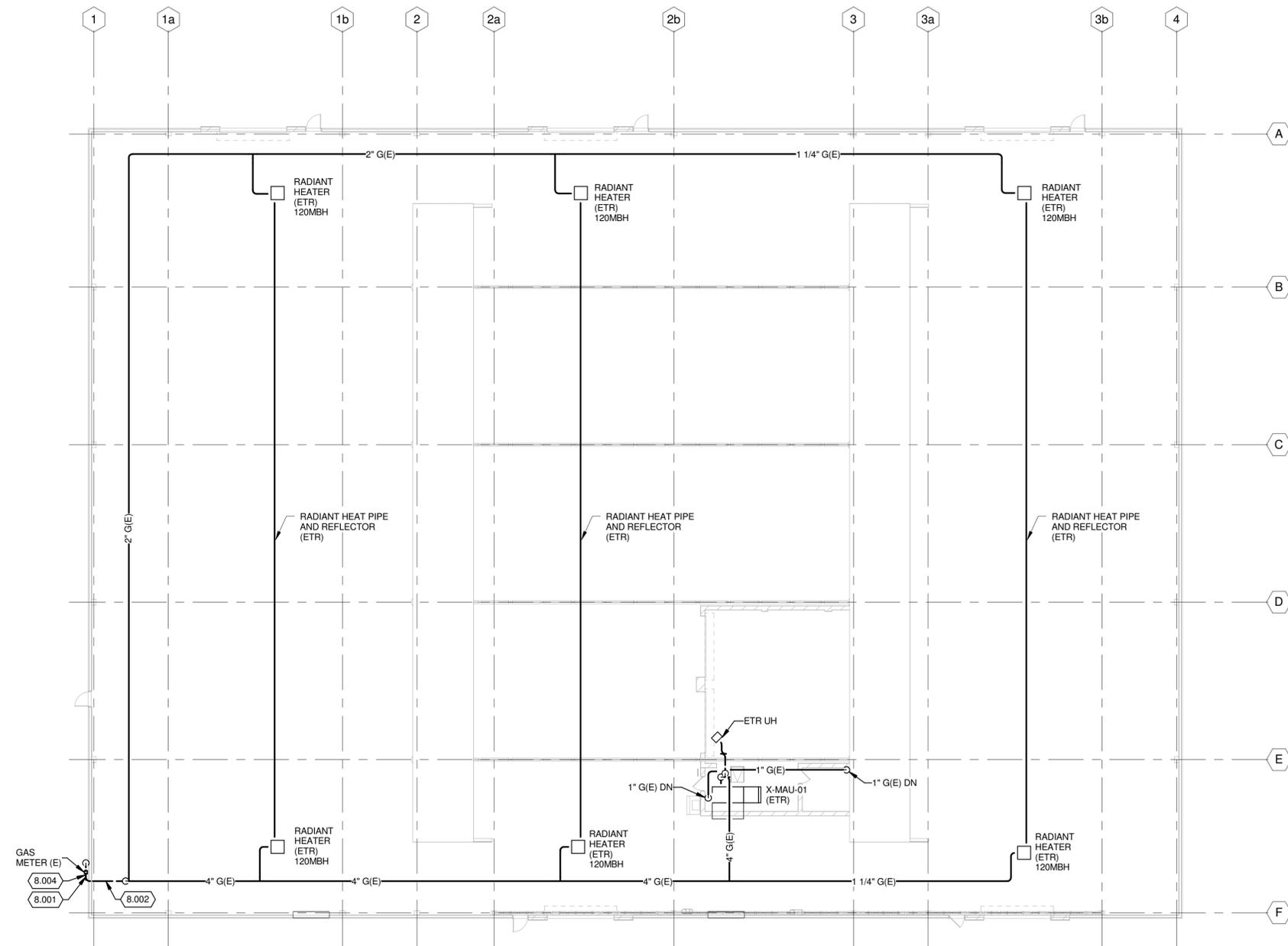
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SHEET CONTENTS  
MECHANICAL  
DEMOLITION FLOOR  
PLAN

SHEET NO.:

**MD131**



TRUE PLAN  
NORTH NORTH  
**MECHANICAL DEMOLITION FLOOR PLAN**  
1/16" = 1'-0"  
0 8 16 32

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 Vehicle Storage Building Improvements  
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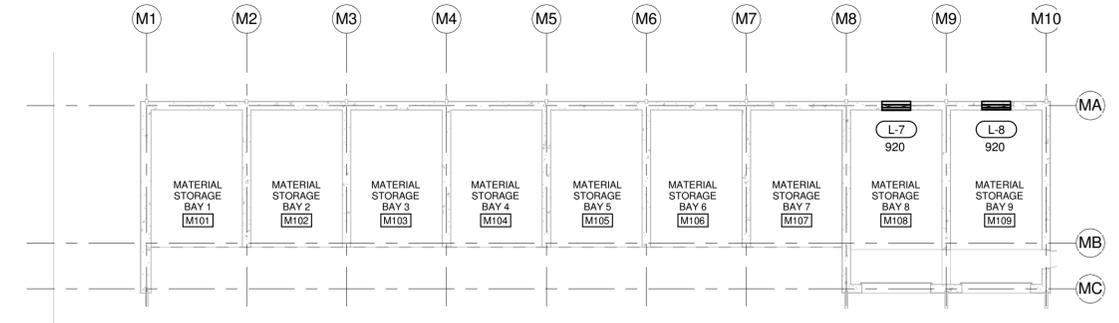
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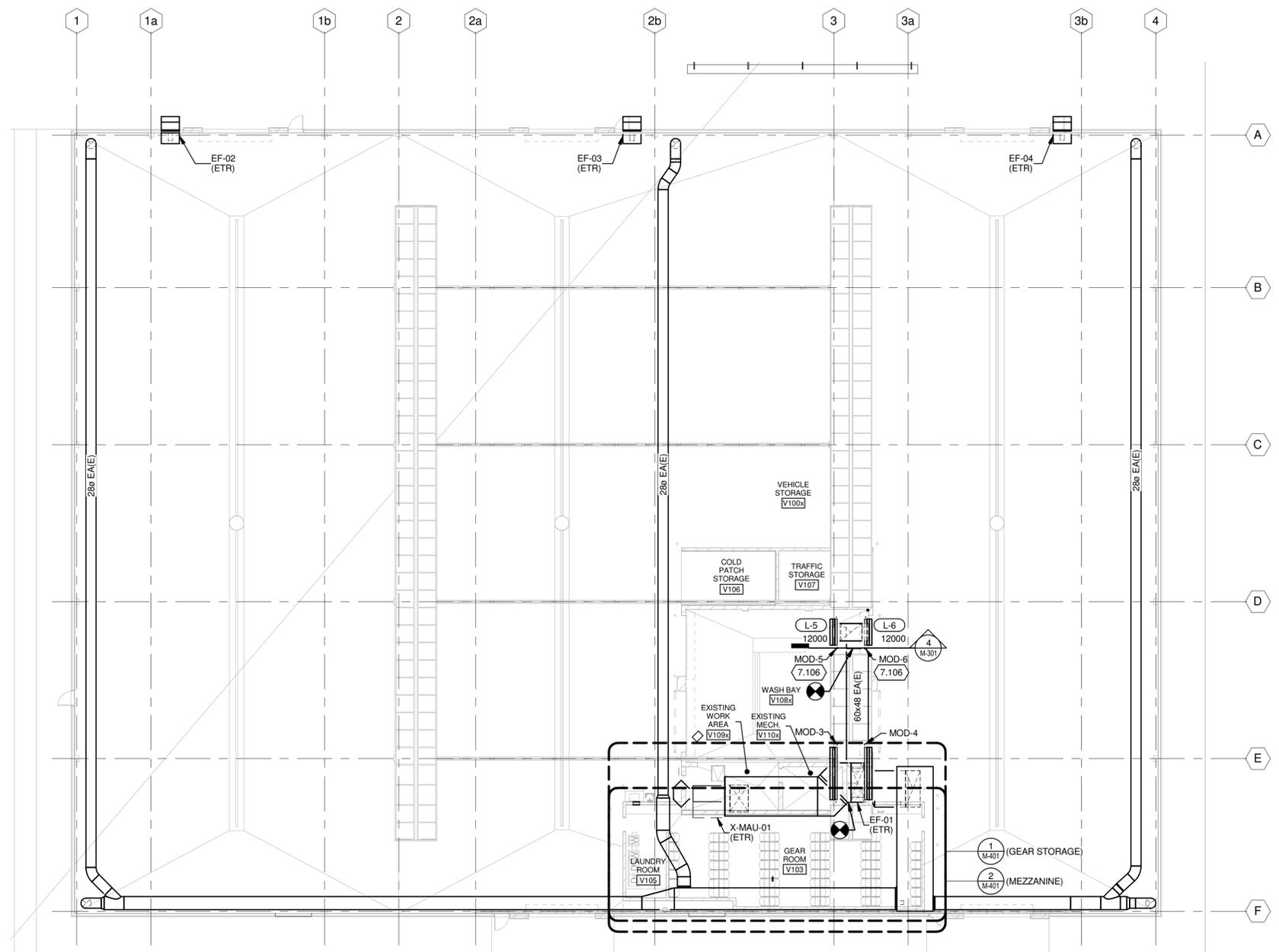
SHEET CONTENTS  
 HVAC NEW FLOOR PLAN

SHEET NO.:

**M-101**



TRUE PLAN NORTH NORTH  
**2 MATERIAL STORAGE HVAC FLOOR PLAN**  
 1/16" = 1'-0"  
 0 8 16 32



TRUE PLAN NORTH NORTH  
**1 HVAC NEW FLOOR PLAN**  
 1/16" = 1'-0"  
 0 8 16 32

**KEYED NOTES**

7.106 COORDINATE ACCESS FOR MAINTENANCE TO DAMPER AND ACTUATOR.

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**KEYED NOTES**

8.103 ADD A SECOND SHUT-OFF VALVE SERVING THE EMERGENCY GENERATOR.

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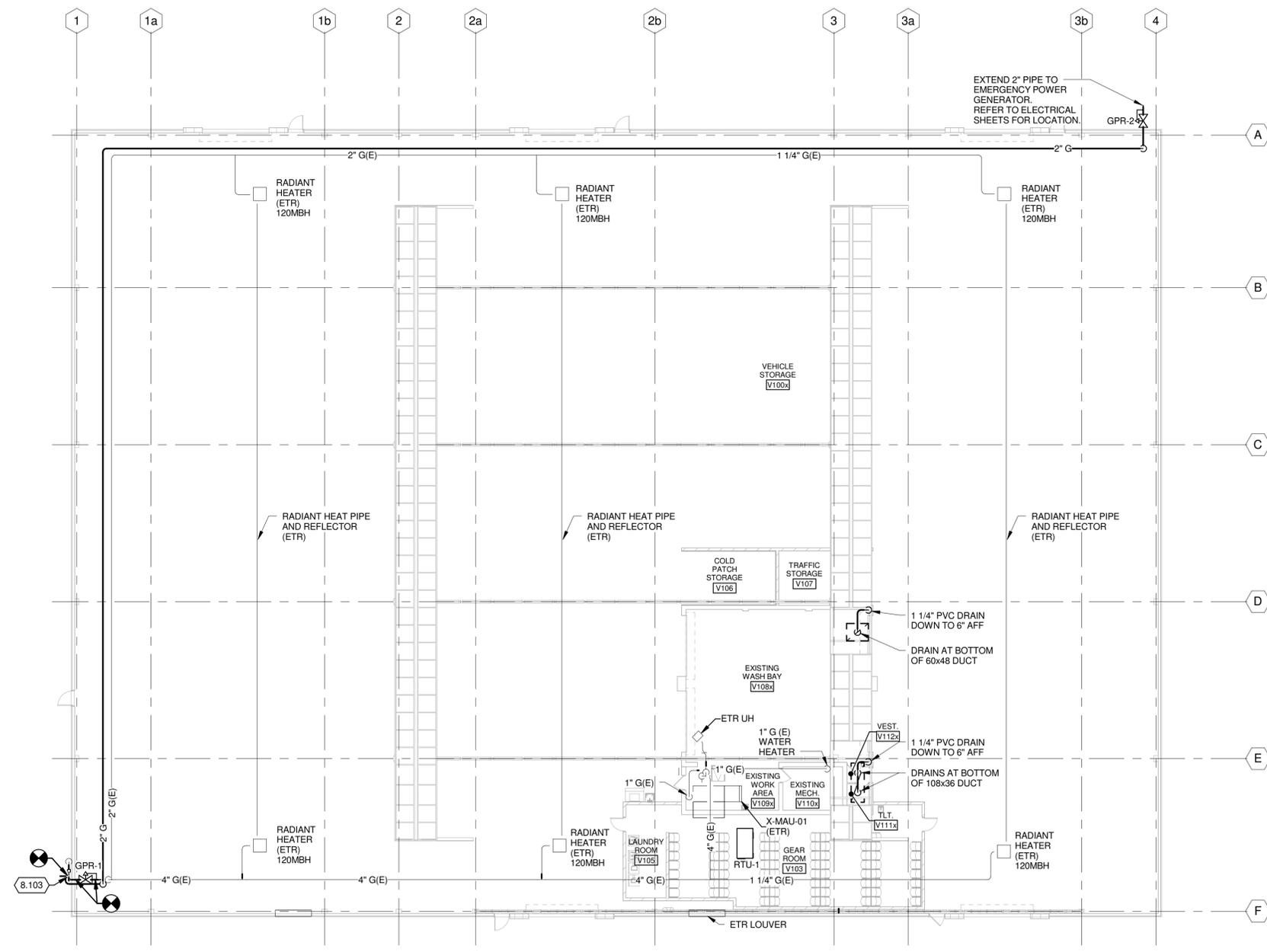
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**Vehicle Storage Building Improvements**  
 Contract No. 7823, Project No. 10442  
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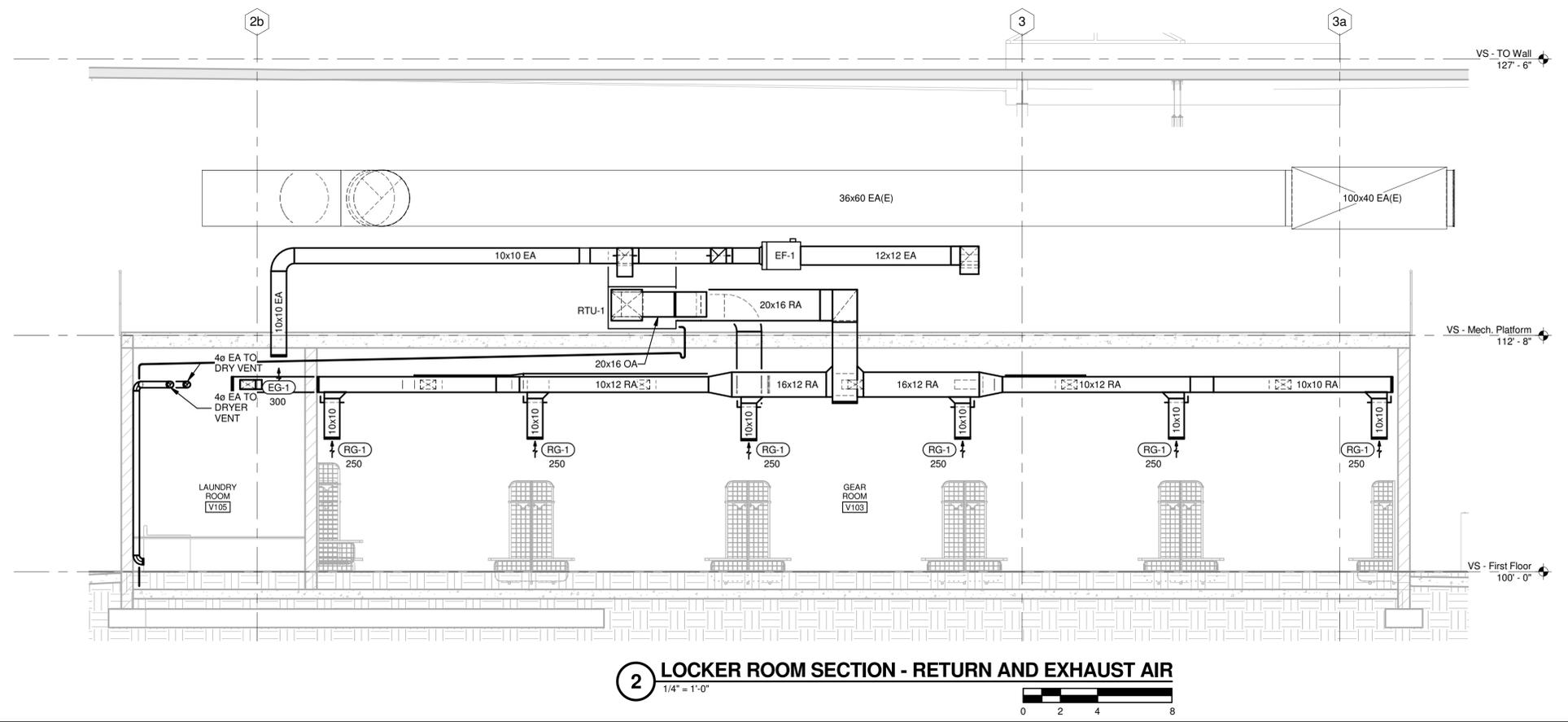
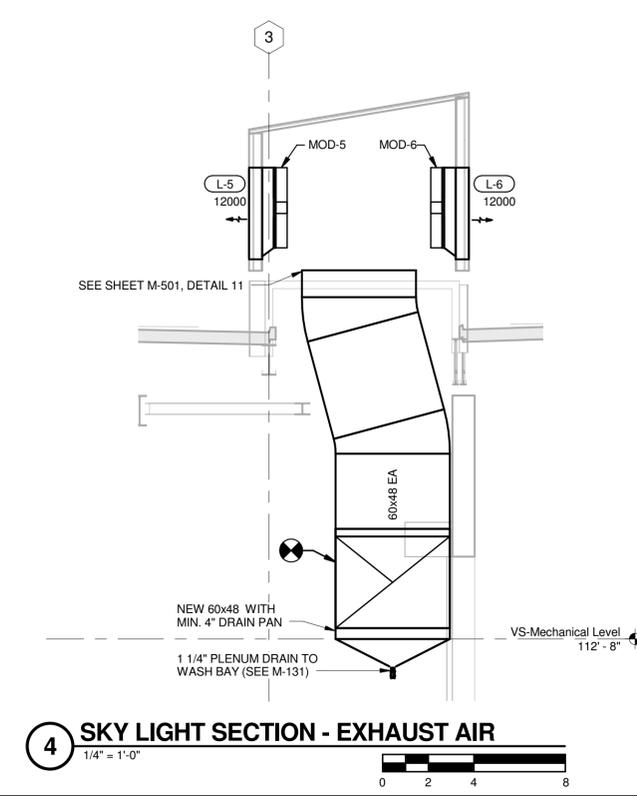
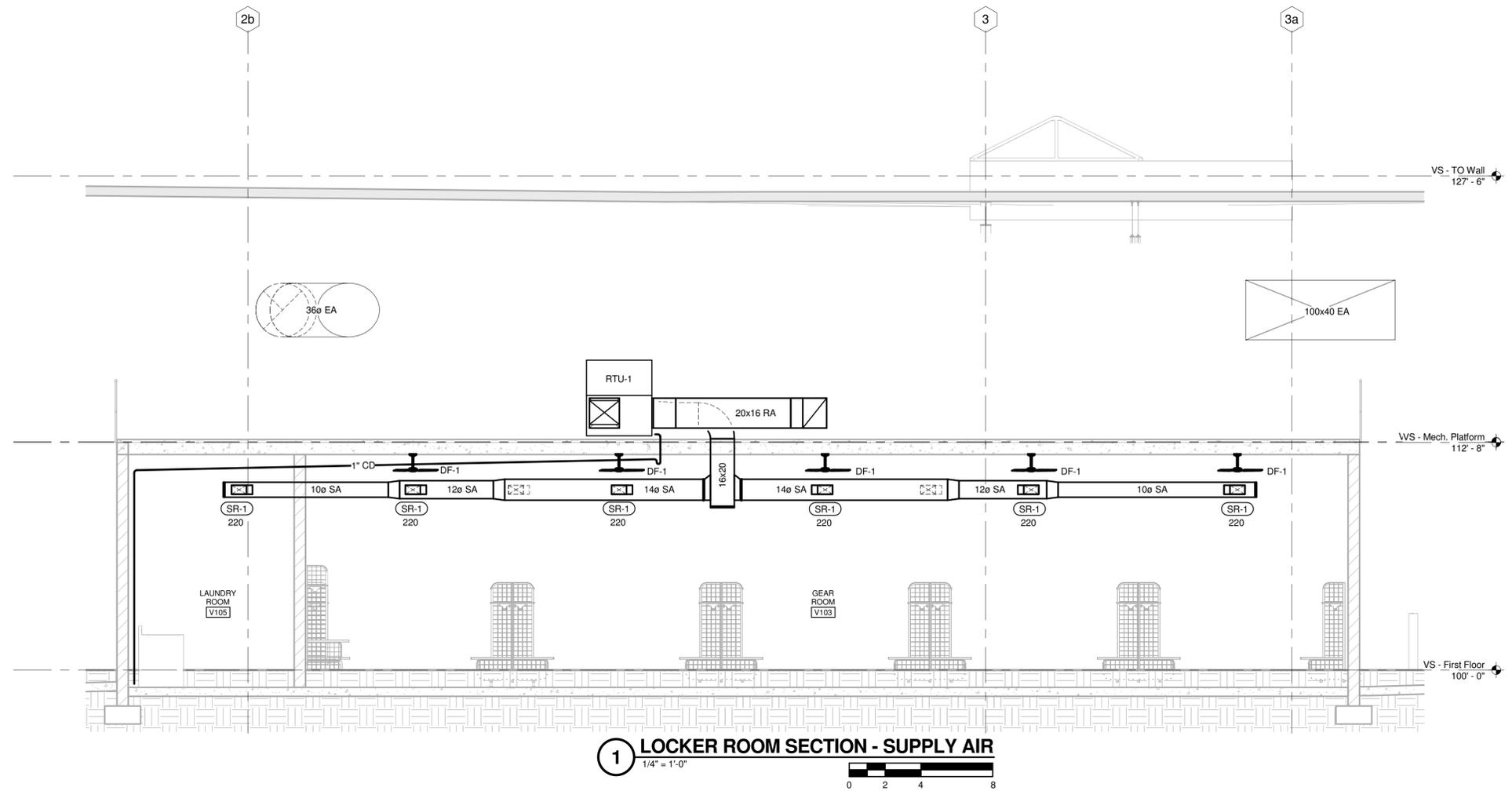
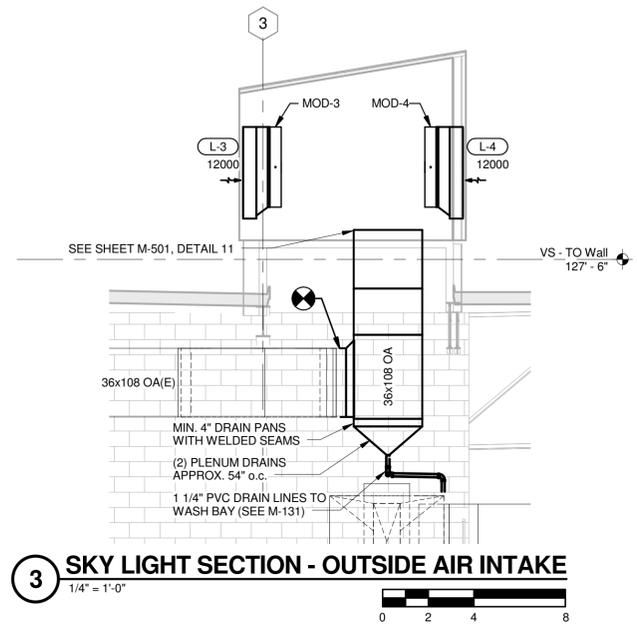
SHEET CONTENTS  
 MECHANICAL NEW FLOOR PLAN

SHEET NO.:  
**M-131**



TRUE PLAN NORTH NORTH  
**MECHANICAL NEW FLOOR PLAN**  
 1/16" = 1'-0"  
 0 8 16 32

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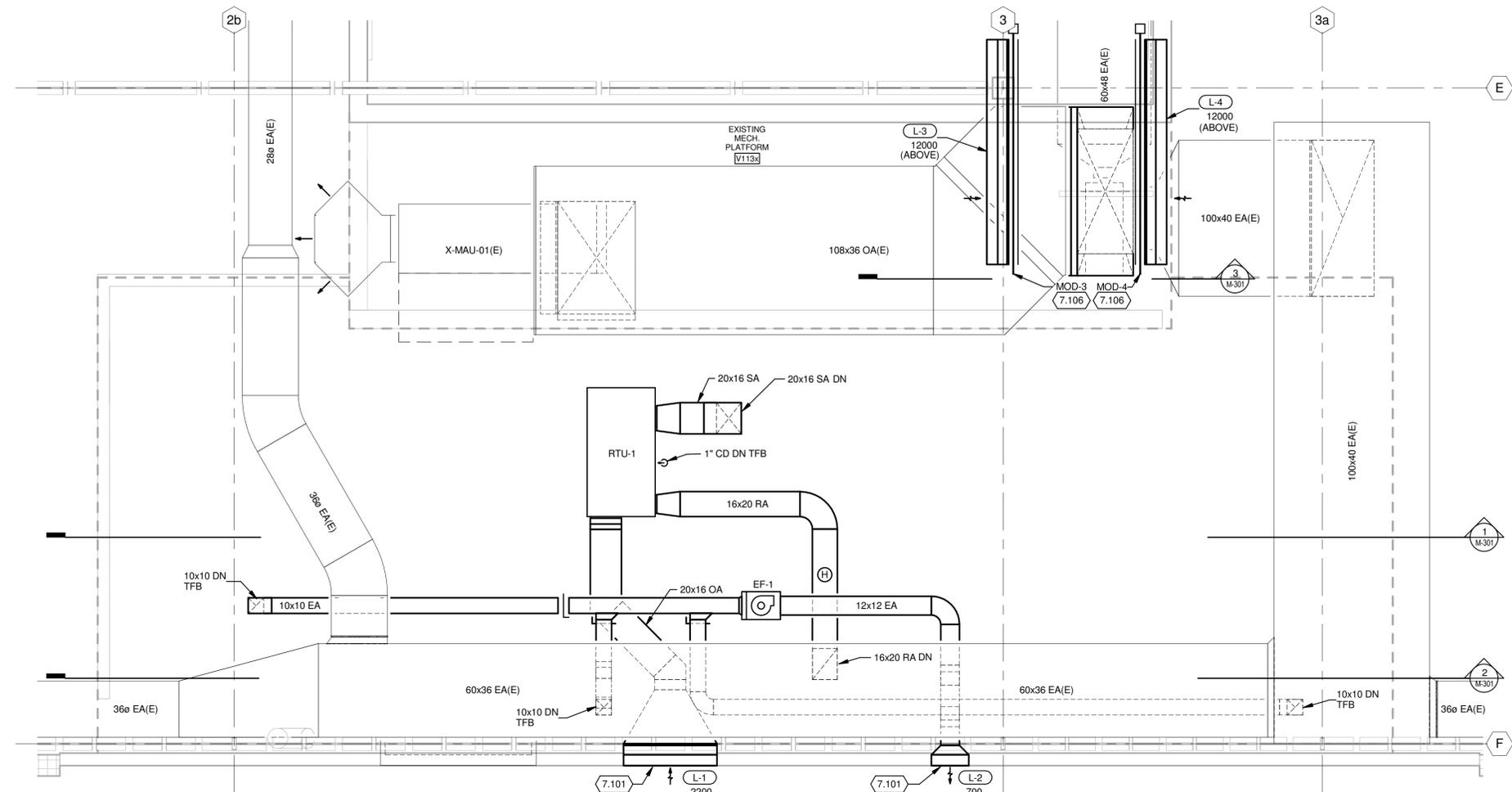
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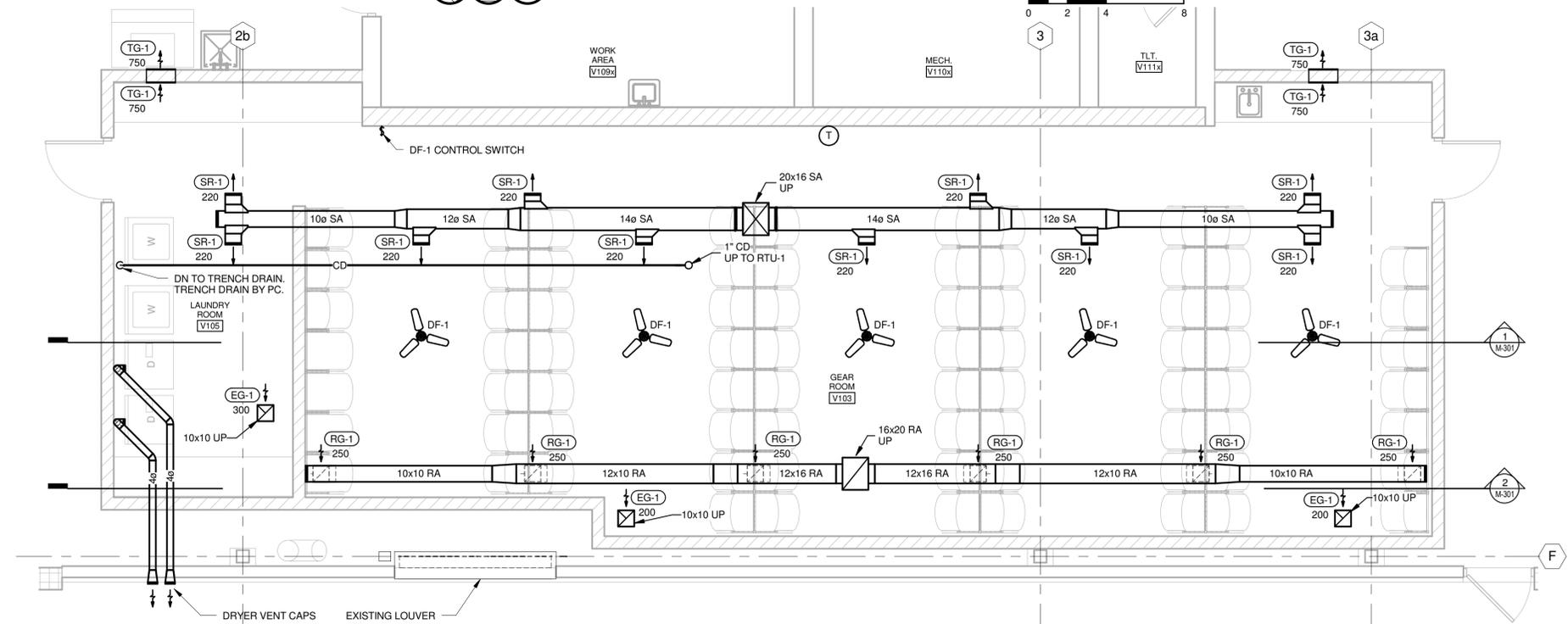
SHEET CONTENTS  
 HVAC ENLARGED PLANS

SHEET NO.:

**M-401**



TRUE PLAN NORTH NORTH  
**2 ENLARGED VEHICLE STORAGE - MECHANICAL PLATFORM PLAN**  
 1/4" = 1'-0"

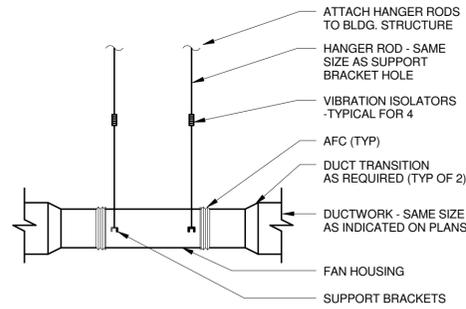


TRUE PLAN NORTH NORTH  
**1 ENLARGED VEHICLE STORAGE - MECHANICAL FLOOR PLAN**  
 1/4" = 1'-0"

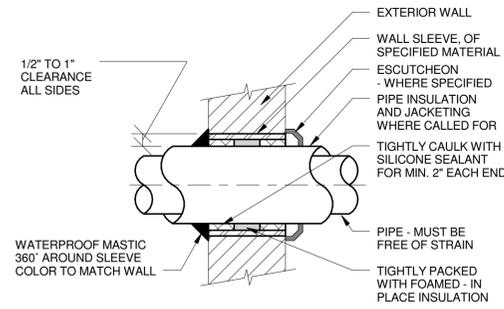
**KEYED NOTES**

- 7.101 COORDINATE INSTALLATION OF LOUVER WITH EXISTING CONDITIONS. MAINTAIN MINIMUM 10'-0" BETWEEN INTAKE LOUVER AND EXHAUST LOUVER.
- 7.106 COORDINATE ACCESS FOR MAINTENANCE TO DAMPER AND ACTUATOR.

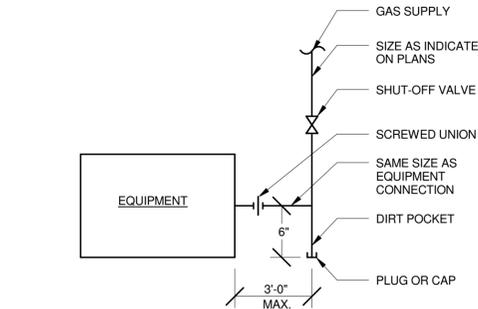
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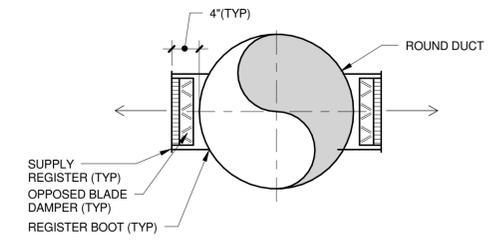
**10 DUCTED INLINE EXHAUST FAN**  
NO SCALE



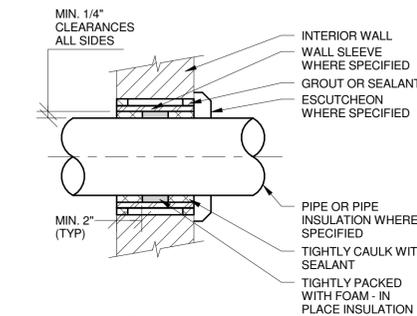
**8 EXTERIOR WALL PIPE SLEEVE**  
NO SCALE



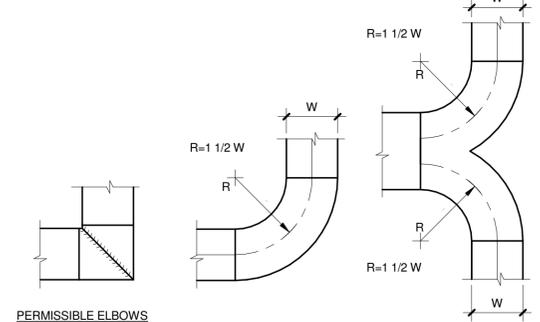
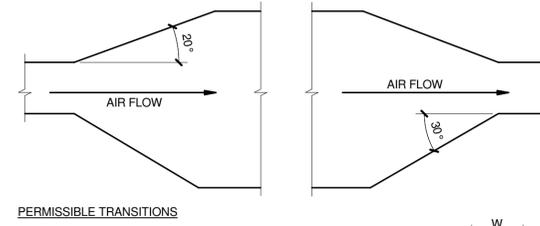
**5 EQUIPMENT GAS CONNECTION (TYP)**  
NO SCALE



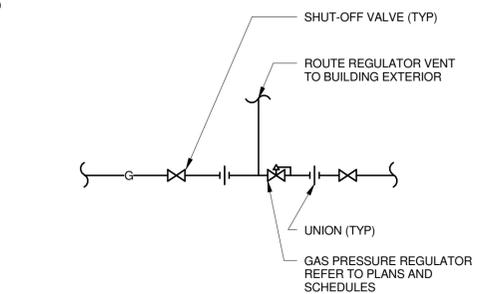
**1 DUCT MOUNTED SUPPLY REGISTER**  
NO SCALE



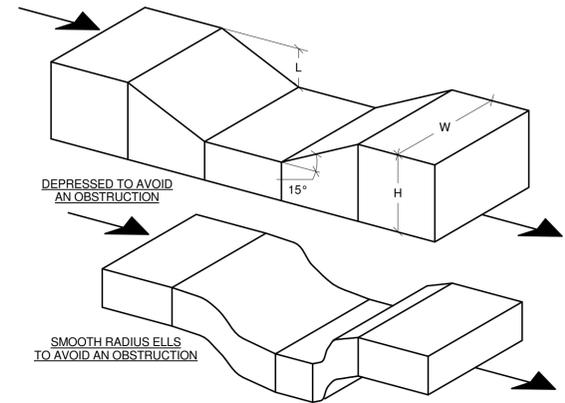
**9 NON-FIRE RATED WALL PENETRATION**  
NO SCALE



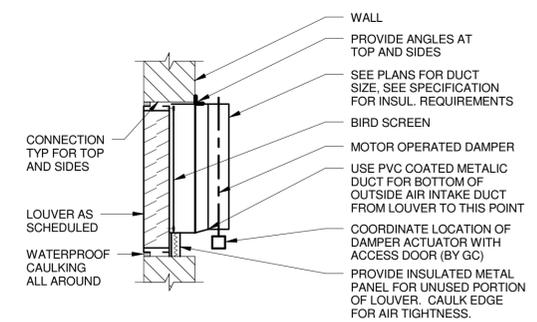
**6 TYPICAL DUCT TRANSITIONS**  
NO SCALE



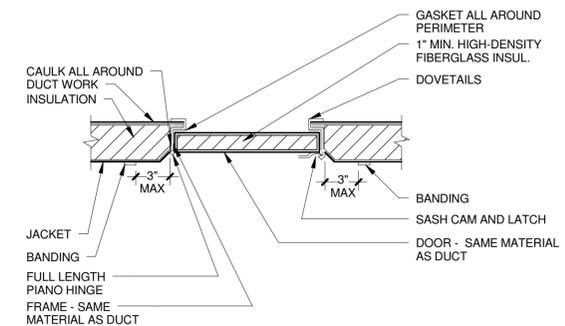
**7 GAS PRESSURE REDUCING VALVE**  
NO SCALE



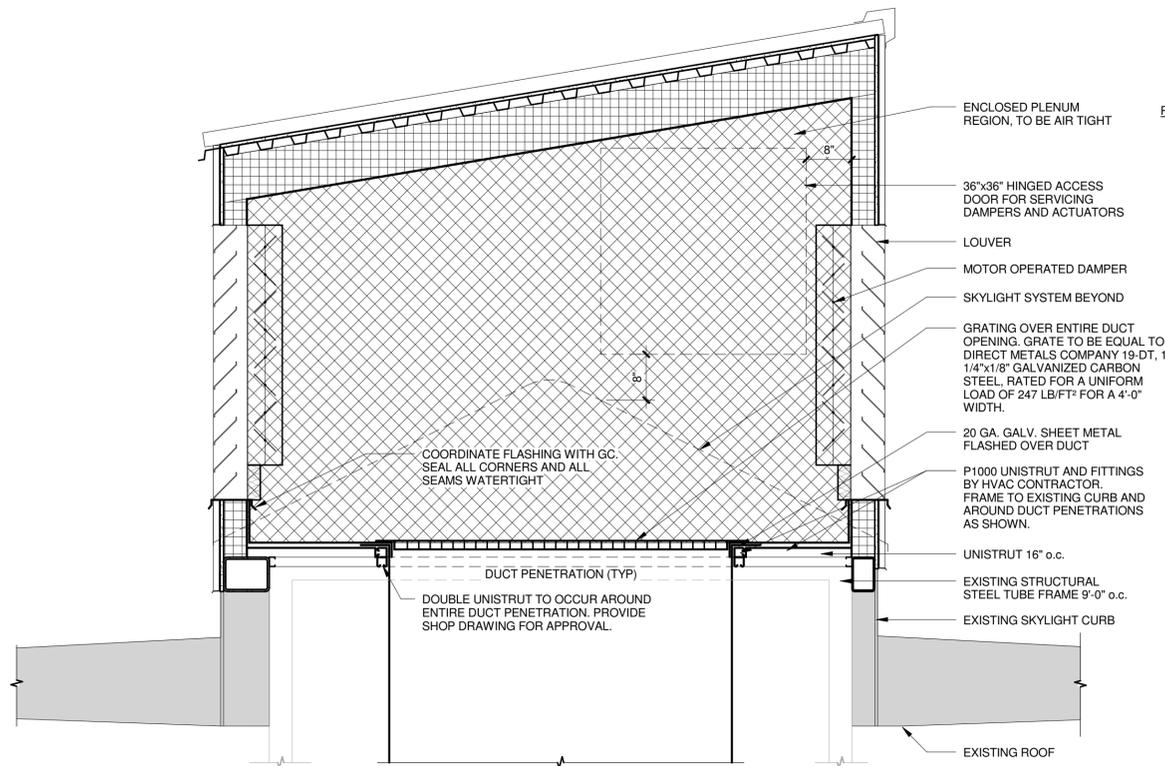
**2 TYPICAL DUCT OFFSET**  
NO SCALE



**3 DUCT CONNECTION TO LOUVER**  
NO SCALE



**4 HINGED ACCESS DOOR OR INSULATED RECTANGULAR DUCT**  
NO SCALE



**11 CLEARSTORY DUCT PENETRATION DETAIL (TYP OF TWO)**  
3/4\"/>

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SHEET CONTENTS  
 MECHANICAL HVAC SCHEDULES

SHEET NO.:

**M-601**

**EXHAUST FAN (EF) SCHEDULE**

MARK	MANUFACTURER, MODEL NUMBER	FAN TYPE	AIR FLOW RATE (CFM)	E.S.P. (IN WC)	MOTOR		FAN SPEED (RPM)	DRIVE TYPE	ELECTRICAL (VOLTS/PH)	(2) MTG. HEIGHT (IN)	MAXIMUM SOUND			(1) INTERLOCK WITH	ACCESSORIES	OPENING		WEIGHT (LB)	LOCATION	REMARKS	
					(HP)	TYPE					(3) DBA	(4) SONES	INSTALL. TYPE			L (IN)	W (IN)				
EF-1	GREENHECK, SQ-95-VG	2	700	0.35	1/6	TEAO	1704	DIRECT	115/1	49	59	10	D	RTU-1	6, 8, 9	12	12	50	MEZZ.		
		FAN TYPE		MOTOR TYPE		INSTALLATION TYPE															
		<b>CENTRIFUGAL</b>		<b>AXIAL</b>		ODP OPEN DRIP PROOF		TEFC TOTALLY ENCLOSED FAN COOLED		A FREE INLET, FREE OUTLET		B FREE INLET, DUCTED OUTLET		C DUCTED INLET, FREE OUTLET		D DUCTED INLET, DUCTED OUTLET					
1	SIDEWALL	8	ROOFTOP DOWNBLAST			XPL EXPLOSION PROOF															
2	INLINE	9	SIDEWALL PROPELLER			INV INVERTER DUTY															
3	UTILITY	10	TUBE AXIAL			TEAO TOTALLY ENCLOSED AIR OVER															
4	CABINET	11	VANE AXIAL																		
5	ROOFTOP UPBLAST	12	ROOFTOP UPBLAST																		
6	ROOFTOP HOODED	13	ROOFTOP FRP UPBLAST																		
7	ROOFTOP FILTERED SUPPLY	14	ROOFTOP HOODED																		
		ACCESSORIES																			
1	GRAVITY BACKDRAFT DAMPER	11	OUTLET WIRE GUARD	21 HOODED WALL CAP																	
2	MOTORIZED BACKDRAFT DAMPER	12	INLET FILTER GUARD	22 HOODED ROOF CAP																	
3	WEATHERHOOD	13	MOTOR COVER	23 HINGED ROOF CURB																	
4	WALL COLLAR	14	HOUSING INSULATION	24 INLET GRILLE																	
5	MOTOR WIRE GUARD	15	BELT (OSHA) WIRE GUARD	25 BASE MTD VIBRATION ISOLATORS																	
6	MOTOR (OSHA) WIRE GUARD	16	INLET BELL	26 DUCT ADAPTOR																	
7	SHUTTER GUARD	17	INLET/OUTLET FLANGES	27 HANGING SPRING ISOLATORS																	
8	FAN SPEED CONTROLLER	18	INLET VANE DAMPER	28 HANGING NEOPRENE ISOLATORS																	
9	NON-FUSED DISCONNECT SWITCH	19	EXTENDED LUBE LINES	29 FACTORY INSULATED ANGLED FILTER BOX																	
10	INLET WIRE GUARD	20	MFR'S ROOF CURB																		

**REMARKS:**  
 (1) SEE SPECIFICATION SECTION 230993 - HVAC SEQUENCE OF OPERATION.  
 (2) MOUNTING HEIGHT IS FROM FINISHED FLOOR LEVEL OF INDICATED LOCATION, TO CENTER OF FAN OUTLET DUCT...  
 (3) SOUND POWER LEVEL RATING PER AMCA 301.  
 (4) LOUDNESS VALUES AT 5FT IN A HEMISPHERICAL FREE FIELD PER AMCA 301.

**PACKAGED ROOFTOP HEAT PUMP UNIT (RTU) SCHEDULE**

MARK	MANUFACTURER, MODEL NUMBER	NOM. CAP. (TON)	SUPPLY FAN			COOLING COIL					HEATING SECTION				RE-HEAT COIL						
			AIR FLOW (CFM)	MOTOR (HP)	(1) ESP (IN WC)	MIN. OUTDOOR AIR FLOW (CFM)	FILTER TYPE	EAT (°F)		LAT (°F)		NO. OF STAGES	TOTAL CAP. (MBH)	SENS. CAP. (MBH)	EAT (°F)	LAT (°F)	NO. OF STAGES	CAPACITY (MBH)	HEATING COP	CAP. (MBH)	LEAVING AIR (DB/WB)
RTU-1	AAON, RQ-005-X-H-E609	5	2200	2	0.5	700	2" MERV 8	81.4	66.5	56.1	55.9	(2)	70.1	59.2	41	77.7	(2)	88.6	4.30	33	70.0 / 60.1

MARK	REFRIG. TYPE	CONDENSER		ELECTRICAL					ACCESSORIES	WEIGHT W/O CURB (LBS)	LOCATION	REMARKS	ACCESSORIES										
		AMB. TEMP. (°F)	MIN. EER	VOLTS	PHASE	FLA	MCA	MOCP					1	2	3	4	5	6	7	8	9	10	11
RTU-1	R-410A	45	95	9.8	208	3	31	36.0	50	2,3,4,7	1000	MEZZANINE		1 DRY BULB ECONOMIZER CONTROL	2 ENTHALPY ECONOMIZER CONTROL	3 POWER EXHAUST	4 CONDENSER COIL GUARDS	5 15A GFI CONVENIENCE OUTLET	6 STANDARD ROOF CURB OR EQUIPMENT RAILS	7 VIBRATION ISOLATION ROOF CURB	8 SEISMIC ROOF CURB	9 SUPPLY AIR SMOKE DETECTOR	10 RETURN AIR SMOKE DETECTOR

**REMARKS:**  
 (1) EXTERNAL STATIC PRESSURE INCLUDES STATIC PRESSURE OF MISCELLANEOUS OPTIONS SELECTED WITH UNIT.  
 (2) VARIABLE CAPACITY SCROLL COMPRESSOR CAPABLE OF MODULATION FROM 10-100% OF ITS CAPACITY.

**DAMPER SCHEDULE**

MARK	MANUFACTURER, MODEL NUMBER	TYPE	SIZE		AIR FLOW (CFM)	MAX. P.D. (IN WC)	CONTROL TYPE	ACTUATOR TYPE	CONSTRUCTION MATERIAL	(1) INTERLOCK WITH	SERVING	LOCATION	REMARKS
			WIDTH (IN)	HEIGHT (IN)									
MOD-1	RUSKIN, CD-60	M-PB	60	24	2200	0.1	TP	E	GALV. STEEL	RTU-1	L-1	V103	1,2
MOD-2	RUSKIN, CD-60	M-PB	24	24	700	0.1	TP	E	GALV. STEEL	EF-1	L-2	V103	1,2
MOD-3	RUSKIN, CD-60	M-PB	144	42	700	0.1	TP	E	GALV. STEEL	MAU EXT'G	L-3	V100	1,2
MOD-4	RUSKIN, CD-60	M-PB	144	42	700	0.1	TP	E	GALV. STEEL	MAU EXT'G	L-4	V100	1,2
MOD-5	RUSKIN, CD-60	M-PB	72	42	700	0.1	TP	E	GALV. STEEL	EF EXT'G	L-5	V100	1,2
MOD-6	RUSKIN, CD-60	M-PB	72	42	700	0.1	TP	E	GALV. STEEL	EF EXT'G	L-6	V100	1,2

TYPE		CONTROL TYPE		ACTUATOR TYPE	
M-PB	MOTOR OPERATED PARALLEL BLADE	MOD	MODULATING	P	PNEUMATIC
M-OB	MOTOR OPERATED OPPOSED BLADE	TP	TWO POSITION	E	ELECTRIC
G-PB	GRAVITY OPERATED PARALLEL BLADE				
M-BF	MOTOR OPERATED BUTTERFLY				

**REMARKS:**  
 (1) SEE SPECIFICATION SECTION 230993 - HVAC SEQUENCE OF OPERATIONS.  
 (2) ADJUST DAMPER SIZE DEPENDENT ON FINAL LOCATION IN DUCT WITH RELATION TO LOUVER.

**AIR OUTLETS AND INLETS SCHEDULE**

MARK	MANUFACTURER, MODEL NUMBER	APPLICATION	OUTLET/INLET	TYPE	MOUNTING SYSTEM	DAMPER	SIZE (IN)	NECK (IN)	FINISH	MATERIAL	(1) MOUNTING HEIGHT (IN)	ACCESSORIES	LOCATION	REMARKS
SR-1	TITUS, 300FS	SUPPLY	2	2	4	OB	12 x 8	10 x 6	M	ALUMINUM	120		SEE PLANS	
RG-1	TITUS, 350FL	RETURN	3	1	4	N	12 x 12	10 x 10	M	ALUMINUM	120		SEE PLANS	
EG-1	TITUS, 350FL	EXHAUST	3	1	4	N	10 x 10	8 x 8	M	ALUMINUM	120		SEE PLANS	
EG-2	TITUS, 350FL	EXHAUST	3	1	4	N	12 x 12	10 x 10	M	ALUMINUM	120		SEE PLANS	
TG-1	TITUS, 350FL	TRANSFER	3	3	6	N	20 x 20	18 x 18	M	ALUMINUM	120		SEE PLANS	

OUTLET/INLET		TYPE		MOUNTING SYSTEM		DAMPER		FINISH	
1	DIFFUSER	1	SINGLE DEFLECTION	8	EGGCRATE	1	T-BAR CEILING	N	MILL
2	REGISTER	2	DOUBLE DEFLECTION	9	LOUVERED	2	PLASTER/CONCRETE CEILING	B	MFR STANDARD WHITE
3	GRILLE	3	FIXED BLADE	10	HOODED	3	PLASTER/MASONRY WALL	G	MFR SPECIAL COLOR
4	LOUVER	4	PERFORATED	11	DOOR TRANSFER	4	EXPOSED DUCTWORK	MP	MOTORIZED-PNEUMATIC
5	PENTHOUSE	5	LINEAR	12	BRICK	5	METAL PANEL WALL	ME	MOTORIZED-ELECTRIC
6	VENT	6	SLOT	13	PUNKAH	6	BRICK WALL	OB	OPPOSED BLADE
		7	DRUM	14	LAMINAR	7	EXTERIOR STUD WALL	PB	PARALLEL BLADE
								LL	LOW-LEAKAGE, INSUL.

**REMARKS:**  
 (1) MOUNTING HEIGHT SHALL BE FROM PROJECT FLOOR ELEVATION 100'-0" TO TOP OF OPENING.

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**MECHANICAL PIPING & VALVE SCHEDULE**

SYSTEM MARK	SERVICE	ROOM TYPE	PIPING SIZE (IN)	PIPING										VALVE						REMARKS
				MATERIAL TYPE	WALL THICKNESS	ASME PIPING			PRESS. CLASS	FITTING TYPE	ENDS	JOINT TYPE	TYPE	CHECK VALVES	PRESS. CLASS	CONNECTION TYPE	BODY MATERIAL	TRIM MATERIAL	VALVE EQUAL TO: [MANUFACTURER, MODEL]	
						STD	GRADE	TYPE												
G	NATURAL GAS	OUTDOORS	1/2 TO 2	BS	SCH 40	A 53	B	F	150#	MI	PLAIN	TH	2BV	-	125#	THREADED	BRONZE	BRONZE	APOLLO, 77-100	PAINT PIPE TO MATCH EXISTING
-	- LOW PRESSURE (<= 2 PSIG)	-	2 1/2 OR MORE	BS	SCH 40	A 53	B	E or S	150#	WS	BEVELED	BW, FL	PV	-	125#	FLANGED	IRON	IRON	XOMOX TUFFLINE	PAINT PIPE TO MATCH EXISTING
-	-	INDOORS	1/2 TO 2	BS	SCH 40	A 53	B	F	150#	MI	PLAIN	TH	2BV	-	125#	THREADED	BRONZE	BRONZE	APOLLO, 77-100	PAINT PIPE TO MATCH EXISTING
-	-	-	2 1/2 OR MORE	BS	SCH 40	A 53	B	E or S	150#	WS	BEVELED	BW, FL	PV	-	125#	FLANGED	IRON	IRON	XOMOX TUFFLINE	PAINT PIPE TO MATCH EXISTING
CD	HVAC CONDENSATE DRAIN	NON-PROCESS ROOM	3/4 TO 2	PVC	SCH 40	D 1785	-	-	-	PS	PLAIN	SV	-	-	-	-	-	-	-	-

MATERIAL TYPE	JOINT TYPE	FITTING TYPE	ASME PIPING TYPE	VALVE TYPE
BS BLACK STEEL	BW BUTT WELD	CI CAST IRON (THREADED) (ASME B16.4 FOR IRON, ASME A 351 FOR S.S.) (FLANGED) (ASME B16.1)	WC WROUGHT CAST (FLANGES, ASME B16.5)	S SEAMLESS
SS STAINLESS STEEL	SW SOCKET WELD	MI MALLEABLE IRON (THREADED) (ASME B16.3)	FS FORGED STEEL (FLANGES, ASME B16.5)	E ELEC. RESISTANCE WELDED
GS GALVANIZED STEEL	TH THREADED	WS WROUGHT STEEL (ASTM A 234 FOR STEEL, ASTM A 403 FOR SS)	PS PVC SOCKET	F FURNACE BUTT WELDED
PE POLYETHYLENE	FL FLANGED	PE POLYETHYLENE (ASTM D 2683 (SOCKET) OR ASTM D 3261 (BUTT))	WCu WROUGHT COPPER (ASME B 16.22)	
Cu COPPER	SF SOCKET FUSION	WW WELDED WROUGHT STEEL (ASTM A 774 FOR SS)		
PVC PVC	BF BUTT FUSION			
	SD SOLDERED			
	BZ BRAZED			
	SV SOLVENT WELD			

- PIPING SYSTEM JOINING MATERIALS**
- PIPE-FLANGE GASKET MATERIALS: SUITABLE FOR CHEMICAL AND THERMAL CONDITIONS OF PIPING SYSTEM CONTENTS.
  - PIPE FLANGE GASKETS: ASME B16.21, NONMETALLIC, FLAT, ASBESTOS-FREE, 1/8-INCH MAXIMUM THICKNESS UNLESS SPECIFIED OTHERWISE.
    - FULL-FACE TYPE: FOR FLAT-FACE, CLASS 125, CAST-IRON AND CAST-BRONZE FLANGES.
    - NARROW-FACE TYPE: FOR RAISED-FACE, CLASS 250, CAST-IRON AND STEEL FLANGES.
  - FLANGE BOLTS AND NUTS: ASME B18.2.1, CARBON STEEL, UNLESS OTHERWISE INDICATED.
  - PLASTIC, PIPE-FLANGE GASKET, BOLTS, AND NUTS: TYPE AND MATERIAL RECOMMENDED BY PIPING SYSTEM MANUFACTURER, UNLESS OTHERWISE INDICATED.
  - SOLDER FILLER METALS: ASTM B 32, LEAD-FREE ALLOYS. INCLUDE WATER-FLUSHABLE FLUX ACCORDING TO ASTM B 813.
  - GENERAL DUTY BRAZING FILLER METALS: AWS A5.8, BCUP SERIES, COPPER-PHOSPHORUS ALLOYS UNLESS OTHERWISE INDICATED.
  - REFRIGERANT PIPING BRAZING FILLER METALS: AWS A5.8, BAG1, SILVER ALLOY UNLESS OTHERWISE INDICATED.
  - WELDING FILLER METALS: AWS D10.12 FOR WELDING MATERIALS APPROPRIATE FOR WALL THICKNESS AND CHEMICAL ANALYSIS OF STEEL PIPE.
  - SOLVENT CEMENTS FOR JOINING PLASTIC PIPING: CPVC PIPING: ASTM F 493, PVC PIPING: ASTM D 2564. INCLUDE PRIMER ACCORDING TO ASTM F 656.

- REMARKS:**
- FITTING MATERIAL SHALL MATCH PIPING MATERIAL (EXCEPTION: MI FITTINGS SHALL BE USED FOR BS PIPING WHERE INDICATED).
  - PRESS. CLASS LISTED IS MIN. REQUIRED, PROVIDE GREATER PRESS. CLASS VALVE AND PIPE SYSTEM IF PRESS. CLASS INDICATED IS NOT AVAILABLE FOR GIVEN VALVE AND PIPE TYPE.
  - FLANGES SHALL BE RAISED FACE WITH SPOT FACED BOLT HOLES.
  - AIR VENT, VACUUM BREAKER, AND SAFETY VALVE PIPING SHALL BE THE SAME AS THE CONNECTED SERVICE PIPING.
  - PROVIDE GEAR OPERATORS FOR VALVES LARGER THAN 6" IN SIZE.

**LOUVERS (L) SCHEDULE (4)**

MARK	MANUFACTURER, MODEL NUMBER	APPLICATION	LOUVER TYPE	MTG. SYSTEM	MAX. INLET VELOCITY (FPM)	CAPACITY		DAMPER	HEIGHT (IN)	WIDTH (IN)	FINISH	MATERIAL	(1) APPROX. MTG. HEIGHT (FT)	ACCESSORIES	LOCATION	REMARKS
						AIR FLOW (CFM)	P.D. (IN WC)									
L-1	GREENHECK, EHM-601	1	3,4	1	400	2200	0.04	ME	24	60	A	ALUMINUM	13	1	VS 116	2,3,4
L-2	GREENHECK, EHM-601	2	3,4	1	700	700	0.1	ME	24	24	A	ALUMINUM	13	1	VS 116	2,3,4
L-3	GREENHECK, EHM-601	1	3,4	4	500	12000	0.04	N	48	144	A	ALUMINUM	ROOF	1	ROOF	2,3,4
L-4	GREENHECK, EHM-601	1	3,4	4	500	12000	0.04	N	48	144	A	ALUMINUM	ROOF	1	ROOF	2,3,4
L-5	GREENHECK, EHM-601	2	3,4	4	700	12000	0.04	N	48	72	A	ALUMINUM	ROOF	1	ROOF	2,3,4
L-6	GREENHECK, EHM-601	2	3,4	4	700	12000	0.04	N	48	72	A	ALUMINUM	ROOF	1	ROOF	2,3,4
L-7	GREENHECK, EAD-401	3	3,4	1	400	920	0.04	N	12	60	A	ALUMINUM	13.7	1	MS 8,9	2,3,4
L-8	GREENHECK, EAD-401	3	3,4	1	400	920	0.04	N	12	60	A	ALUMINUM	13.7	1	MS 8,9	2,3,4

- REMARKS:**
- TO BOTTOM OF LOUVER ABOVE FLOOR HEIGHT. SEE ARCHITECTURAL PLANS FOR EXACT MOUNTING HEIGHT AND LOCATION.
  - PROVIDE BLANK-OFF PANELS FOR UNUSED PORTIONS OF LOUVER, SEE PLANS FOR DUCT CONNECTIONS, INSULATE SAME AS OUTDOOR AIR DUCTWORK.
  - LISTED SIZE IS BASED ON PERFORMANCE.
  - LOUVER SCHEDULE IS FOR INFORMATION ONLY. LOUVERS ARE SPECIFIED UNDER DIVISION 08. COORDINATE WITH GENERAL CONTRACTOR.

**DESTRATIFICATION FAN (DF) SCHEDULE**

MARK	MANUFACTURER, MODEL NUMBER	FAN TYPE	AIRFLOW (CFM)	MOTOR (HP)	MOTOR VOLTS/PH	FAN SPEED (RPM)	DRIVE TYPE	MOUNTING HEIGHT (1)	AIRFOIL BLADES			WEIGHT (LBS)	LOCATION	REMARKS
									NUMBER	SWEEP	INTERLOCK			
DF-1	CRAFTMADE, MND54 MONDO	CEILING	5,400	33W	120/1	195 MAX.	DC	12	3	54"	WALL CONTROL	8.9	GEAR ROOM V103	(3) (4) (5)

- REMARKS:**
- APPROXIMATE MOUNTING HEIGHT FROM FINISHED FLOOR, IN FEET.
  - AIRFOIL BLADES WITH WINGLETS.
  - PROVIDE MOUNTING HARDWARE.
  - PROVIDE SIX SPEED CONTROL.
  - CONTROL: 6 SPEEDS, SINGLE START/STOP SWITCH CONTROLLING ALL FANS.

**GAS PRESSURE REGULATOR (GPR) SCHEDULE**

MARK	MANUFACTURER, TYPE	MEDIA TYPE	VALVE SIZE (IN)	ENTERING PRESS. (PSIG)	EXITING PRESS. (PSIG)	CAPACITY (CFH)	LOCATION	REMARKS
GPR-1	MAXITROL, LINE	NG	2	2	1/2	3800	SEE PLANS	
GPR-2	MAXITROL, APPLIANCE	NG	1	2	1/2	1180	SEE PLANS	

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**City of Madison Water Utility**  
Vehicle Storage Building Improvements  
Contract No. 7823, Project No. 10442  
Madison, Wisconsin

ISSUED  
10/21/16 BID SET

MSH NO.: 3235300-131021.02  
DATE: October 21, 2016  
DESIGNED BY: BGD  
DRAWN BY: RRW  
CHECKED BY: KML  
DO NOT SCALE DRAWINGS

SHEET CONTENTS  
MECHANICAL HVAC  
SCHEDULES

SHEET NO.:

**M-603**

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HVAC DUCT SCHEDULE									
SYSTEM	DUCT MATERIAL	SHEET MATERIAL	REFERENCE STANDARD	FINISH	PRESS. CLASS (IN)	SEAL CLASS	LEAKAGE CLASS		COMMENTS
							RECT. (IN)	ROUND (IN)	
SUPPLY AIR	DUCT CONNECTED TO FAN COIL UNITS, FURNACES, HEAT PUMPS, AND TERMINAL UNITS	G90 GALVANIZED	ASTM A 653	MILL PHOSPHATIZED	2	A	12	6	
RETURN AIR	DUCT CONNECTED TO FAN COIL UNITS, FURNACES, HEAT PUMPS, AND TERMINAL UNITS	G90 GALVANIZED	ASTM A 653	MILL PHOSPHATIZED	2	A	12	6	
EXHAUST AIR	DUCT CONNECTED TO EXHAUST FANS	G90 GALVANIZED	ASTM A 653	MILL PHOSPHATIZED	2	C	12	6	
	DRYER EXHAUST	ALUMINUM, ALLOY 3003H-14	ASTM B 209	MILL PHOSPHATIZED	2	C	12	6	DO NOT SEAL DRYER DUCT IN CONDITIONED SPACE FOR ACCESS
OUTSIDE AIR	DUCT CONNECTED TO FAN COIL UNITS, FURNACES, HEAT PUMPS, AND TERMINAL UNITS	G90 GALVANIZED	ASTM A 653	MILL PHOSPHATIZED	2	A	12	6	
	FIRST 3 FEET FROM LOUVER/HOOD	PVC-COATED GALV.	ASTM A 653	4 MIL PVC	2	A	12	6	SEAL LIQUID-TIGHT. SLOPE TOWARD LOUVER.
FITTINGS									
RECTANGULAR DUCT ELBOWS (COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," FIGURE 2-2, "RECTANGULAR ELBOWS.") RADIUS TYPE RE 1 WITH MINIMUM 1.5 RADIUS-TO-DIAMETER RATIO. RADIUS TYPE RE 3 WITH MINIMUM 1.0 RADIUS-TO-DIAMETER RATIO AND TWO VANES. MITERED TYPE RE 2 WITH VANES COMPLYING WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," FIGURE 2-3, "VANES AND VANE RUNNERS," AND FIGURE 2-4, "VANE SUPPORT IN ELBOWS."									
ROUND DUCT ELBOWS (COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," FIGURE 3-3, "ROUND DUCT ELBOWS.") RADIUS TO DIAMETER RATIO: 1.5 ROUND ELBOWS, 12 INCHES AND SMALLER IN DIAMETER: STAMPED OR PLEATED ROUND ELBOWS, 14 INCHES AND LARGER IN DIAMETER: WELDED									
RECTANGULAR BRANCH DUCT CONFIGURATION (COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," FIGURE 2-6, "BRANCH CONNECTIONS.") RECTANGULAR MAIN TO RECTANGULAR BRANCH: 45-DEGREE ENTRY RECTANGULAR MAIN TO ROUND BRANCH: SPIN IN									
ROUND BRANCH DUCT CONFIGURATION (COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," FIGURE 3-4, "90 DEGREE TEES AND LATERALS," AND FIGURE 3-5, "CONICAL TEES." SADDLE TAPS ARE PERMITTED IN EXISTING DUCT) VELOCITY 1500 FPM AND LOWER: CONICAL TAP VELOCITY GREATER THAN 1500 FPM: 45-DEGREE LATERAL									

**REMARKS:**

- INSTALL DUCT ACCORDING TO SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE" UNLESS OTHERWISE INDICATED.
- INTERMEDIATE REINFORCEMENT MATERIAL SHALL MATCH DUCT MATERIAL.
- SUPPLY AIR DUCTS PASSING THROUGH UNCONDITIONED OR OUTDOOR SPACES SHALL BE SEAL CLASS A (ASHRAE 90.1 - 2007).
- SHEET METAL MATERIALS SHALL BE FREE OF PITTING, SEAM MARKS, ROLLER MARKS, STAINS, DISCOLORATIONS, AND OTHER IMPERFECTIONS.

HVAC DUCT INSULATION SCHEDULE							
INDOOR OR OUTDOOR	CONCEALED OR EXPOSED	DUCT SHAPE	DUCT SERVICE	INSULATION			REMARKS
				TYPE	THICKNESS (IN)	JACKETING TYPE	
INDOOR	CONCEALED	SQUARE	SUPPLY AIR	D1, D2	1 1/2	J1	-
			RETURN AIR	D1, D2	1 1/2	J1	-
			OUTSIDE AIR	D1, D2	3	J1	-
		ROUND	EXHAUST AIR	D1, D2	1	J1	(2)
			SUPPLY AIR	D1	1 1/2	J1	-
			RETURN AIR	D1	1 1/2	J1	-
	EXPOSED	SQUARE	OUTSIDE AIR	D1	3	J1	-
			EXHAUST AIR	D1	1	J1	(2)
			SUPPLY AIR	D1, D2	1 1/2	J1	(1)
			RETURN AIR	D1, D2	1 1/2	J1	(1)
		ROUND	OUTSIDE AIR	D1, D2	3	J1	-
			EXHAUST AIR	D1, D2	1	J1	(2)
			SUPPLY AIR	D1	1 1/2	J1	(1)
			RETURN AIR	D1	1 1/2	J1	(1)
		OUTSIDE AIR	D1	3	J1	-	
		EXHAUST AIR	D1	1	J1	(2)	
INSULATION TYPE				JACKETING TYPE			
D1	MINERAL FIBER BLANKET (ASTM C 553 TYPE II) (ASTM C 1290 TYPE III) AVAIL. MFR'S: CERTAINTEED CORP: DUCT WRAP JOHNS MANVILLE; MICROLITE. KNAUF INSULATION; DUCT WRAP OWENS CORNING; ALL-SERVICE DUCT WRAP			J1	FACTORY APPLIED FSK		
				J2	FACTORY APPLIED FSP		
				J3	FACTORY APPLIED VINYL		
				J4	FACTORY APPLIED ASJ-SSL		
				J5	PVC, 30 MIL THICK, WHITE, UVC RESISTANT, ASTM D 1784 CLASS 16354-C, AVAIL. MFR'S: JOHNS MANVILLE; ZESTON P.I.C. PLASTICS, INC.; FG SERIES PROTO PVC CORP; LOSMOKE SPEEDLINE CORPORATION; SMOKESAFE		
D2	MINERAL FIBER BOARD (ASTM C 612 TYPE 1A OR 1B) AVAIL. MFR'S: CERTAINTEED CORP.; COMMERCIAL BOARD. JOHNS MANVILLE; 800 SERIES SPIN-GLAS KNAUF INSULATION; INSULATION BOARD. OWENS CORNING; FIBERGLAS 700 SERIES.						

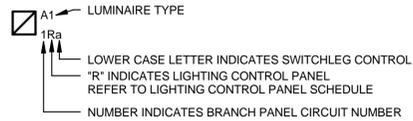
**REMARKS:**

- EXPOSED DUCTWORK BELOW CEILING WITHIN SPACE IT SERVES DOES NOT REQUIRE INSULATION.
- EXHAUST DUCTWORK ONLY REQUIRES INSULATION BETWEEN THE EXHAUST LOUVER AND THE CONTROL DAMPER UPSTREAM OF THE LOUVER.

## LUMINAIRE SYMBOLS

	SURFACE SQUARE LUMINAIRE
	SURFACE LINEAR
	SURFACE INDUSTRIAL
	SURFACE COVE STRIP
	PENDANT INDUSTRIAL
	WALL BRACKET
	WALL MOUNTED EXIT SIGN
	ARROW DENOTES EXIT SIGN CHEVRON
	EMERGENCY BATTERY UNIT

### LUMINAIRE CIRCUITRY & CONTROL KEY:



## LUMINAIRE CONTROL SYMBOLS

	OCCUPANCY SENSOR CEILING MOUNT (X REPRESENTS SCHEDULE DESIGNATION)
	LIGHTING CONTACTOR
	MOTION SENSOR
	REMOTE POWER SUPPLY OR DRIVER
	LOW VOLTAGE SWITCH SEE LIGHTING CONTROL PANEL SCHEDULE.
	SINGLE POLE SWITCH

### SWITCH NOTATIONS:

3	DENOTES 3-WAY SWITCH
4	DENOTES 4-WAY SWITCH
WL	DENOTES WET LOCATION SWITCH
D	DENOTES DIMMER SWITCH
T	DENOTES TIMER SWITCH
K	DENOTES KEY SWITCH
P	DENOTES PILOT SWITCH
O	DENOTES OCCUPANCY SENSOR (REFER TO OCCUPANCY SENSOR SCHEDULE)

## RECEPTACLE SYMBOLS

	60" DUPLEX RECEPTACLE TEXT INDICATES MOUNTING HEIGHT
	ABOVE COUNTER DUPLEX RECEPTACLE
	SPECIAL PURPOSE RECEPTACLE, NEMA TYPE ON DRAWING

### RECEPTACLE NOTATIONS:

a	DENOTES SWITCH LEG FOR SWITCHED OUTLETS
D	DENOTES DEDICATED OUTLETS
EWC	DENOTES ELECTRIC WATER COOLER OUTLETS
GFCI	DENOTES GROUND FAULT INTERRUPTER OUTLETS
IG	DENOTES ISOLATED GROUND OUTLETS
H	DENOTES HORIZONTALLY MOUNTED OUTLETS
TR	DENOTES TAMPER RESISTANT SAFETY OUTLETS
USB	DENOTES COMBINATION DUPLEX/USB OUTLETS
WP	DENOTES WEATHER PROOF OUTLETS
X1	DENOTES EXPLOSION PROOF CLASS 1 DIVISION 1 OUTLETS
X2	DENOTES EXPLOSION PROOF CLASS 1 DIVISION 2 OUTLETS

## SERVICE AND DISTRIBUTION SYMBOLS

	GENERATOR ANNUNCIATOR PANEL
	EMERGENCY POWER OFF
	NEW PANELBOARD
	EXISTING PANELBOARD

## MOTOR & EQUIPMENT CONNECTION SYMBOLS

	3 PHASE MOTOR CONNECTION
	1 PHASE MOTOR CONNECTION
	EQUIPMENT CONNECTION
	NON-FUSED DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH

## RACEWAY SYMBOLS

	JUNCTION BOX - CEILING MOUNTED
	JUNCTION BOX - WALL MOUNTED

## FIRE ALARM SYMBOLS

	FIRE ALARM CONTROL PANEL
	INTELLIGENT 135F FIXED & RATE OF RISE HEAT DETECTOR
	CEILING MOUNTED FIRE ALARM STROBE, (##) IS CANDELA RATING
	CEILING MOUNTED FIRE ALARM HORN/STROBE, (##) IS CANDELA RATING

## SITE SYMBOLS

	HANDHOLD, GENERIC
	LIGHT POLE (SINGLE)
	CARDREADER
	GATE OPERATOR

## LINE TYPE KEY

	NEW WORK BY THIS CONTRACTOR (DARK SOLID LINE)
	EXISTING TO BE REMOVED BY THIS CONTRACTOR (DARK DASHED LINE)
	EXISTING TO REMAIN WORK (THIN SOLID LINE)
	NEW WORK UNDER FLOOR BY THIS CONTRACTOR
	ONE-LINE EQUIPMENT ENCLOSURE
	PANEL DIVISION LINES

## GENERAL SYMBOLS

#/E-###	DETAIL NUMBER / SHEET NUMBER
	KEYED NOTE, USED TO DESCRIBE ADDITIONAL INFORMATION OF WORK REQUIRED, SPECIFIC TO THE SHEET AND/OR DETAIL IT IS SHOWN WITH.

## GENERAL NOTES:

- REFER TO THE G SERIES DRAWINGS FOR CODE ANALYSIS PLANS, INFORMATION AND NOTES.
- THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE DETAILS OF WORK, VERIFY DIMENSIONS IN THE FIELD, AND ADVISE THE ARCHITECT/ENGINEER OF ANY DISCREPANCY BEFORE PERFORMING ANY WORK.
- THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ADAAG (AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES).
- REFER TO ARCHITECTURAL DRAWINGS FOR FIRE RATED WALLS AND FLOORS. MAKE RATED PENETRATIONS AS REQUIRED. SEAL ALL RATED PENETRATIONS AS IDENTIFIED IN DIVISION 1 REQUIREMENTS.
- FLUSH MOUNT ALL TOGGLE SWITCHES, RECEPTACLE, FIRE ALARM PULL STATIONS AND FIRE ALARM NOTIFICATION DEVICES AT HEIGHTS ABOVE FINISHED FLOOR AS SHOWN IN THE DEVICE MOUNTING HEIGHT DETAIL, EXCEPT WHERE OTHERWISE NOTED. DEVICES MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED.
- CIRCUIT NUMBERS ARE SHOWN FOR CIRCUIT IDENTIFICATION. CIRCUITING SHALL AGREE WITH NUMBERING ON THE PANEL SCHEDULES PROVIDED. BALANCE THE LOAD ON PANELS AS EVENLY AS POSSIBLE BETWEEN EACH PHASE.
- CIRCUITS SERVING EMERGENCY AND EXIT LUMINAIRES WILL BE RUN IN SEPARATE RACEWAY FROM ALL OTHER CIRCUITS.
- A #12 GREEN INSULATED GROUND CONDUCTOR SHALL BE INSTALLED WITH CIRCUIT CONDUCTORS TO ALL RECEPTACLES.
- CONCEAL ALL CONDUIT IN WALLS, PARTITIONS, ABOVE CEILING, ETC. UNLESS OTHERWISE INDICATED ON THE PLANS OR IN THE SPECIFICATIONS. CONDUIT IN MECHANICAL ROOMS, AND STORAGE ROOMS WITHOUT CEILINGS MAY BE EXPOSED ON BUILDING STRUCTURE. WHERE RACEWAY IS REQUIRED ON EXISTING CONCRETE AND MASONRY WALLS, SURFACE RACEWAY MAY BE USED IN LIEU OF CHANNELING WALLS TO ALLOW CONCEALED ROUTING. THE RACEWAY SHALL BE SINGLE CHANNEL STYLE TYPE WITH IVORY FINISH. THIS APPLIES FOR BRANCH CIRCUIT CONDUITS UP TO 3/4" SIZE. CONDUITS LARGER THAN 3/4" MAY BE ROUTED EXPOSED, BUT INSTALLED PARALLEL AND/OR PERPENDICULAR TO BUILDING LINES AND RUN AS UNOBTUSIVLY AS POSSIBLE.
- BOXES LOCATED ON OPPOSITE SIDES OF NON-RATED WALLS SHALL BE OFFSET A MINIMUM OF 6" HORIZONTALLY. "THRU-THE-WALL" BOXES SHALL NOT BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER.
- COORDINATE AND CO-LOCATE WALL MOUNTED RECEPTACLE LOCATIONS WITH TECHNOLOGY (VOICE/DATA, ETC) OUTLETS SHOWN ON THE T-SERIES DRAWINGS. UNLESS OTHERWISE NOTED, EACH TECHNOLOGY OUTLET SHALL BE LOCATED WITHIN 24" OF ITS ASSOCIATED RECEPTACLE. ASSOCIATED RECEPTACLE SHALL BE DEFINED AS THE RECEPTACLE NEAREST THE LOCATION OF, AND AT THE SAME HEIGHT AS, THE TECHNOLOGY OUTLET WHEN MULTIPLE RECEPTACLES ARE SHOWN ON A WALL.
- CONTRACTOR SHALL VERIFY ALL FURNITURE, MODULAR FURNITURE AND EQUIPMENT LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS AND REVIEWED SHOP DRAWINGS. PRIOR TO MAKING THE ACTUAL ELECTRICAL INSTALLATION THIS CONTRACTOR SHALL ADJUST RECEPTACLES, OUTLETS OR CONNECTION LOCATIONS TO ACCOMMODATE FURNITURE AND/OR EQUIPMENT.
- ELECTRICAL AND TELECOMMUNICATIONS EQUIPMENT SHALL BE MOUNTED TO AVOID IMPEDANCE OF OPERATION OF, AND/OR ACCESS TO ELECTRICAL AND MECHANICAL EQUIPMENT. ALL MOUNTING OF ELECTRICAL AND TELECOMMUNICATIONS EQUIPMENT, ON EQUIPMENT SUPPLIED BY ANOTHER CONTRACTOR, SHALL BE APPROVED IN ADVANCE BY THE OTHER CONTRACTOR.
- CONTRACTOR TO PROVIDE SUITABLE MECHANICAL PROTECTION AROUND ALL CONDUITS STUBBED OUT FROM FLOORS, WALLS OR CEILINGS DURING CONSTRUCTION TO PREVENT BENDING OR DAMAGING OF STUB OUTS DUE TO CARELESSNESS WITH CONSTRUCTION EQUIPMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OPENINGS REQUIRED IN WALLS. ALL OPENINGS SHALL BE REPAIRED TO MATCH EXISTING BY A QUALIFIED CONTRACTOR AT THE EXPENSE OF THIS CONTRACTOR. ALL CONDUITS THROUGH WALLS SHALL BE GROUTED OR SEALED INTO OPENINGS.
- DRAWINGS INDICATE THE EXTENT OF HAZARDOUS OR WET LOCATIONS. INSTALLATION MEANS AND METHODS SHALL BE SUITABLY RATED FOR THE ENVIRONMENT INDICATED ON THE DRAWINGS.
- SCRR RATINGS LISTED FOR EQUIPMENT ARE MINIMUM REQUIREMENTS FOR BUS BRACING AND DEVICE RATING. ALL EQUIPMENT SHALL BE FULLY RATED UNLESS SPECIFICALLY NOTED AS SERIES RATED.

## DEMOLITION GENERAL NOTES:

- THE INFORMATION SHOWN IS BASED ON EXISTING DRAWINGS AND SITE OBSERVATIONS TO ASSIST CONTRACTOR IN BIDDING. THE ELECTRICAL DRAWINGS INDICATE EXISTING ELECTRICAL ITEMS TO BE REMOVED. THE DRAWINGS ARE INTENDED TO INDICATE THE SCOPE OF WORK REQUIRED AND DO NOT INDICATE EVERY BOX, CONDUIT, OR WIRE THAT MUST BE REMOVED. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID AND VERIFY EXISTING CONDITIONS. REFER TO SPECIFICATION SECTION 26 05 02 FOR ADDITIONAL REQUIREMENTS.
- DASHED WALLS ON THE FLOOR PLANS INDICATE EXISTING WALLS BEING DEMOLISHED. REFER TO THE ARCHITECTURAL DEMOLITION PLANS FOR THE EXACT EXTENT OF WORK REQUIRED BY THIS PROJECT. REMOVE ALL DEVICES ON DASHED WALLS NOT SHOWN ON THE CONTRACT DRAWINGS. REFER TO DEMOLITION DRAWINGS OF OTHER TRADES. WHERE MOTORS CONTROL PANELS, AND OTHER LOADS OR APPARATUS THAT HAVE ELECTRICAL CONNECTION ARE BEING REMOVED, INCLUDE DISCONNECTION AND REMOVAL OF ALL ASSOCIATED CONDUIT, WIRING, ETC.
- ELECTRICAL ITEMS (i.e., LIGHTING FIXTURES, PANELBOARDS, DISCONNECTS, MOTOR CONTROLLERS, ETC.) REMOVED AND NOT RELOCATED REMAIN THE PROPERTY OF THE OWNER AND SHALL BE TURNED OVER TO THE OWNER IN A STORAGE AREA TO BE DESIGNATED BY THE OWNER. EQUIPMENT BEING REMOVED SHALL BE HANDLED SO AS NOT TO FURTHER REDUCE ITS VALUE TO THE OWNER. THE CONTRACTOR SHALL DISPOSE OF MATERIAL THE OWNER DOES NOT WANT TO REUSE OR RETAIN FOR MAINTENANCE PURPOSES.
- WHERE LIGHTS, SWITCHES, RECEPTACLES, ETC., ARE BEING REMOVED ALL ASSOCIATED CONDUIT AND WIRE BACK TO THE PANELBOARD OR FEEDER JUNCTION BOX SERVING THE DEVICE SHALL ALSO BE REMOVED, UNLESS THE CONDUIT CAN BE REUSED FOR NEW CONDUCTORS. THE CONTRACTOR SHALL DISPOSE OF MATERIAL THE OWNER DOES NOT WANT TO REUSE OR RETAIN FOR MAINTENANCE PURPOSES.
- ALL BOXES THAT REMAIN IN PLACE IN EXISTING MASONRY WALLS THAT ARE TO REMAIN SHALL BE PROVIDED WITH A BLANK COVERPLATE. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS ASSOCIATED WITH TYPE AND ATTACHMENT.
- ALL CONDUIT SHALL BE REMOVED WHERE WALLS ARE BEING REMOVED. WHERE CONDUIT IS IN THE CONCRETE SLAB, CUT OFF FLUSH, PULL OUT WIRE, AND PLUG. WHERE CONDUIT IS RUN EXPOSED, ALL ASSOCIATED CLAMPS, SUPPORTS, HANGERS, ETC., SHALL ALSO BE REMOVED. CONDUIT CONCEALED IN WALL CONSTRUCTION MAY BE ABANDONED IN PLACE IF NOT AFFECTED BY OTHER CONSTRUCTION.
- THIS CONTRACTOR SHALL COORDINATE ALL HIS WORK, INCLUDING PHASING WITH OTHER CONTRACTORS AT THE JOB SITE BEFORE REMOVING EXISTING ELECTRICAL AND INSTALLING NEW ITEMS.
- EXISTING CONDUIT IN GOOD CONDITION, MAY BE REUSED IN PLACE. RELOCATED EXISTING CONDUIT SHALL NOT BE ALLOWED. BONDING CONDUCTORS SHALL BE INSTALLED IN ALL REUSED CONDUIT TO ASSURE PROPER GROUND PATH.
- MAINTAIN CONTINUITY OF DEVICES LOCATED OUTSIDE OF CONSTRUCTION AREA. DEVICE AND EQUIPMENT REMOVAL IN CERTAIN LOCATIONS MAY REQUIRE THE INSTALLATION OF A JUNCTION BOX TO RECONNECT CIRCUITS THAT REMAIN IN OPERATION. EXTEND CONDUIT AND WIRING AS REQUIRED TO MAINTAIN POWER TO REMAINING EQUIPMENT.
- BALLASTS MANUFACTURED PRIOR TO 1980 CONTAIN PCBs AND SHALL BE DISPOSED OF IN ACCORDANCE WITH SPECIFICATIONS.
- HID AND FLUORESCENT LAMPS CONTAIN MERCURY AND SHALL BE DISPOSED OF IN ACCORDANCE WITH SPECIFICATIONS.
- CONTRACTOR SHALL REMOVE AND INSTALL ALL CEILING TILES AS REQUIRED FOR THE EXECUTION OF ELECTRICAL WORK THAT IS OUTSIDE THE CONTRACT LIMITS OF CONSTRUCTION. CONTRACTOR SHALL REPLACE CEILING TILES WITH IDENTICAL MATERIAL WHERE DAMAGED BY THIS CONTRACTOR.
- PROVIDE REVISED TYPED CIRCUIT DIRECTORY IN PANELBOARDS THAT HAVE CIRCUITS REMOVED OR ADDED CIRCUITS.
- REMOVE, RELOCATE, AND EXTEND EXISTING INSTALLATIONS TO ACCOMMODATE NEW CONSTRUCTION.
- REMOVE EXPOSED ABANDONED CONDUIT, INCLUDING ABANDONED CONDUIT ABOVE ACCESSIBLE CEILING FINISHES. CUT RACEWAY FLUSH WITH WALLS AND FLOORS. PATCH SURFACES TO MATCH EXISTING. REMOVE ALL ASSOCIATED CLAMPS, HANGERS, SUPPORTS, ETC. ASSOCIATED WITH RACEWAY REMOVAL.
- DISCONNECT AND REMOVE ABANDONED LUMINAIRES, INCLUDING BRACKETS, STEMS, HANGERS, AND OTHER ACCESSORIES.
- DISCONNECT AND REMOVED ELECTRICAL DEVICES AND EQUIPMENT SERVING UTILIZATION EQUIPMENT THAT HAS BEEN REMOVED.

**Mead & Hunt**

2440 Deming Way  
Middleton, WI 53562  
phone: 608-273-6380  
meadhunt.com

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**City of Madison Water Utility**  
Vehicle Storage Building Improvements  
Contract No. 7823, Project No. 10442  
Madison, Wisconsin

ISSUED

10/21/16 BID SET

MSH NO.: 3235300-131021.02  
DATE: October 21, 2016  
DESIGNED BY: MAM  
DRAWN BY: KAF  
CHECKED BY: SDL

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SHEET CONTENTS  
NOTES, SYMBOLS &  
ABBREVIATIONS

SHEET NO.:

**E-001**

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**City of Madison Water Utility**  
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Madison, Wisconsin

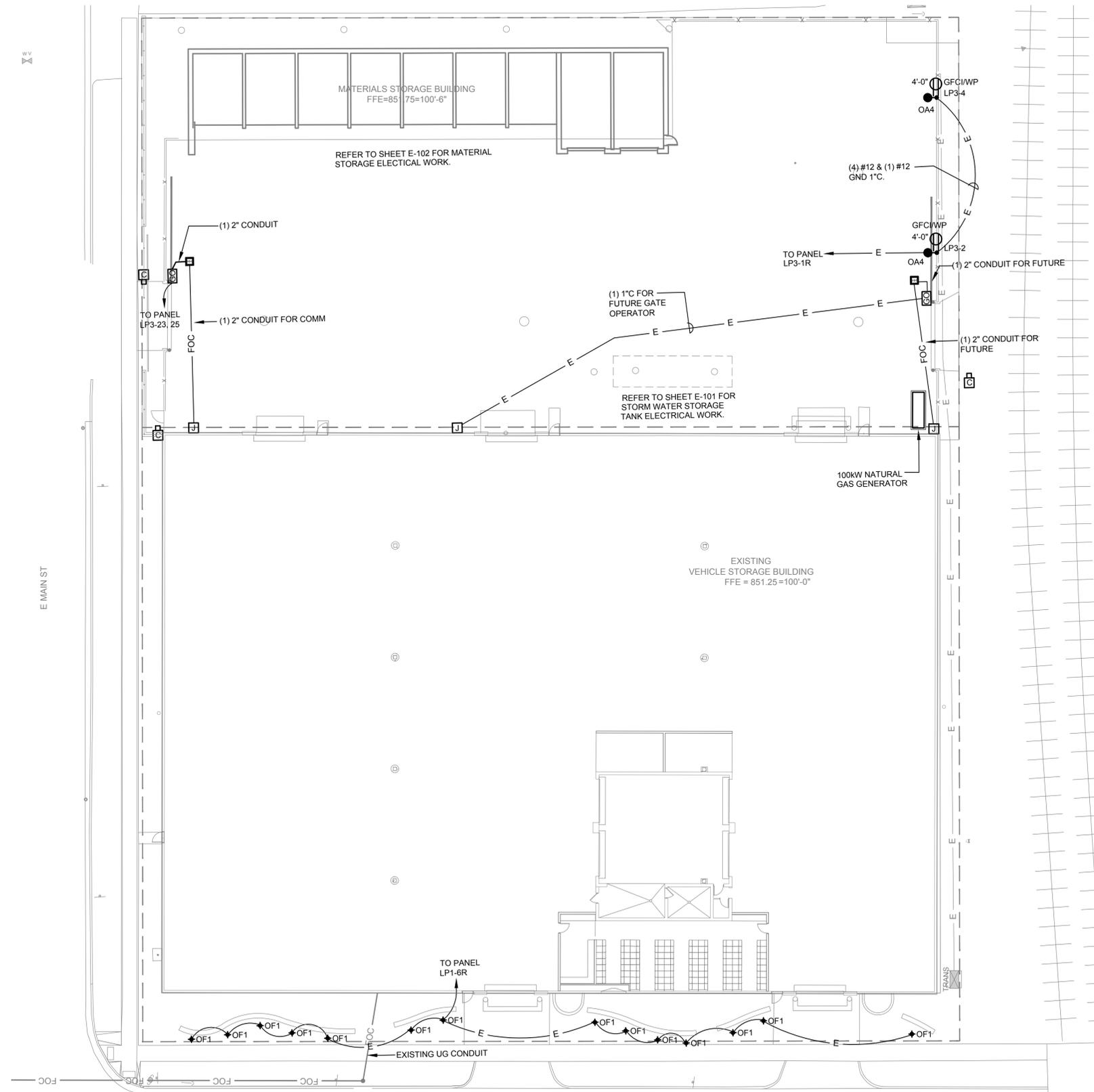
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SHEET CONTENTS  
ELECTRICAL SITE PLAN

SHEET NO.

**E-011**



**ELECTRICAL SITE LIGHTING PLAN**

1" = 20'



**Keyed Notes**

- 9.101 EXISTING FLOOD LIGHT TO BE DISCONNECTED AND REMOVED. CONDUCTORS TO BE REMOVED BACK TO SOURCE PANEL.
- 9.103 TYPICAL OF ALL EBU2 LIGHTS. MOUNT TO UNDERSIDE OF STRUCTURAL TRUSS.
- 9.104 EXISTING LIGHTING CIRCUITS 2 THRU 4, 6 THRU 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30 AND 32 ON PANEL LP TO BE INTERCEPTED AND EXTENDED TO NEW PANEL LP1 VIA NEW LIGHTING CONTROL PANEL. EC TO FIELD VERIFY CIRCUITS PRIOR TO START OF WORK. CIRCUITS NOT FIELD VERIFIED BY ENGINEER. EXISTING CIRCUITS ARE BASED ON EXISTING RECORD DRAWINGS AND SHOULD BE VERIFIED PRIOR TO START OF WORK. SEE ENLARGED DETAIL 2/E-401 FOR LOCATION OF NEW PANELS. REFER TO SHEET E-601 FOR LIGHTING CONTROL PANEL SCHEDULE AND SHEET E-602 FOR PANEL SCHEDULES FOR NEW CIRCUITRY FOR EXISTING LIGHTS.
- 9.105 LOW VOLTAGE MASTER OVERRIDE SWITCH. PROGRAM FOR ALL ON/ ALL OFF. OVERRIDE TO REVERT BACK TO PROGRAMMED SCHEDULE AFTER 30 MINUTES.
- 9.106 TYPICAL OF ALL EBU LIGHTS. CIRCUIT TO SAME CIRCUIT SERVING LIGHTING IN THE AREA. EC TO FIELD VERIFY LIGHTING CIRCUIT IN AREA PRIOR TO WIRING EBU'S IN THE AREA.
- 9.108 PROVIDE (1) 1" CONDUIT FROM TANK PUMP CONTROL PANEL TO PUMP P-1 FOR WIRING. WIRING TO BE PROVIDED AND INSTALLED BY STORM WATER STORAGE TANK INSTALLER.
- 9.109 PROVIDE (1) 3/4" CONDUIT FROM TANK PUMP CONTROL PANEL TO STORM WATER CONTROL CENTER FOR INTERCONNECTION WIRING. WIRING TO BE PROVIDED AND INSTALLED BY STORM WATER STORAGE TANK INSTALLER.
- 9.110 PROVIDE (1) 1 1/2" CONDUIT FROM STORM WATER CONTROL CENTER TO FLOAT SWITCH IN STORAGE TANK. 100'-0" OF CABLING PROVIDED BY STORM WATER STORAGE TANK MANUFACTURER. INSTALLED BY STORM WATER STORAGE TANK INSTALLER.

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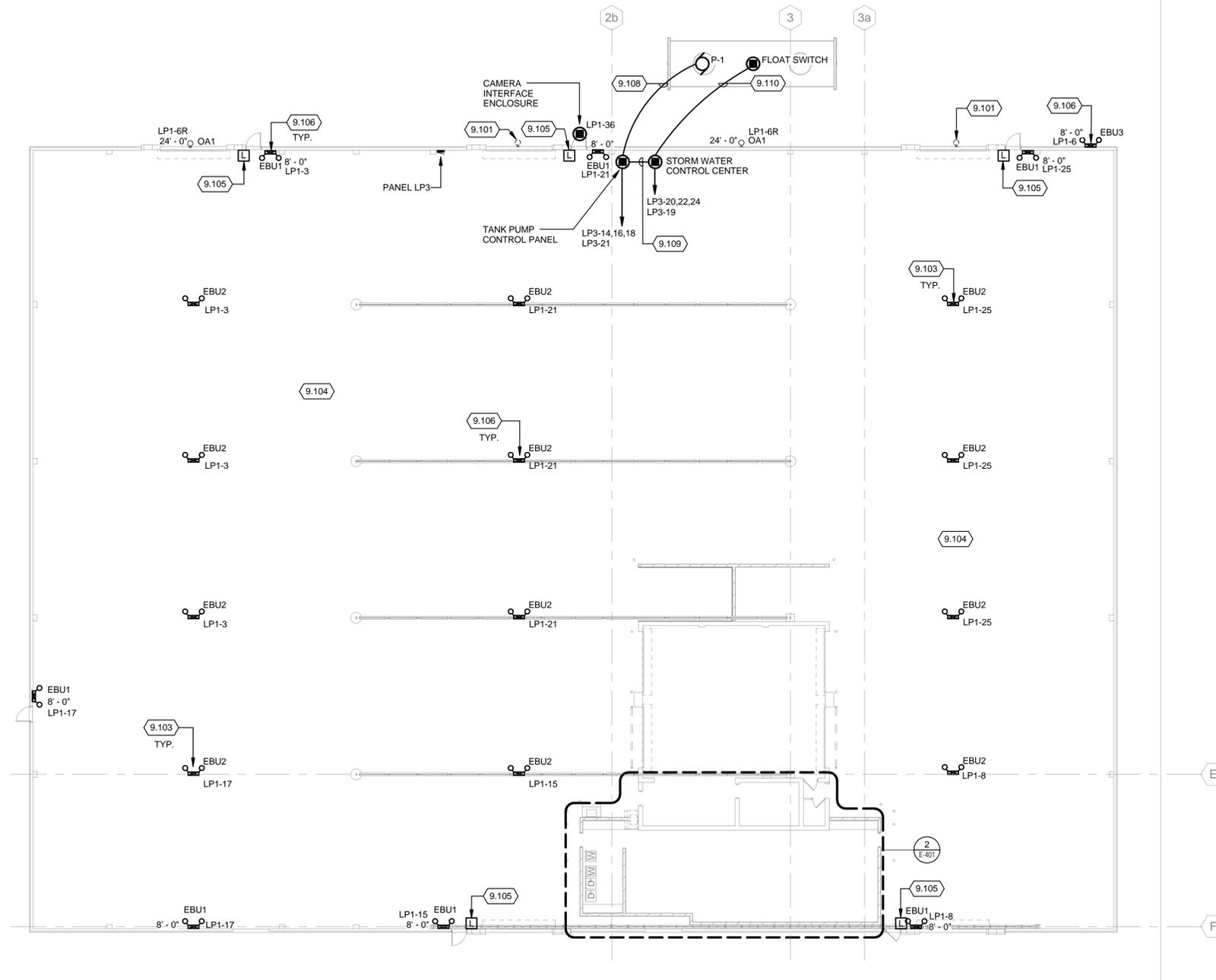
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SHEET CONTENTS  
VEHICLE STORAGE BUILDING FLOOR PLAN

SHEET NO:

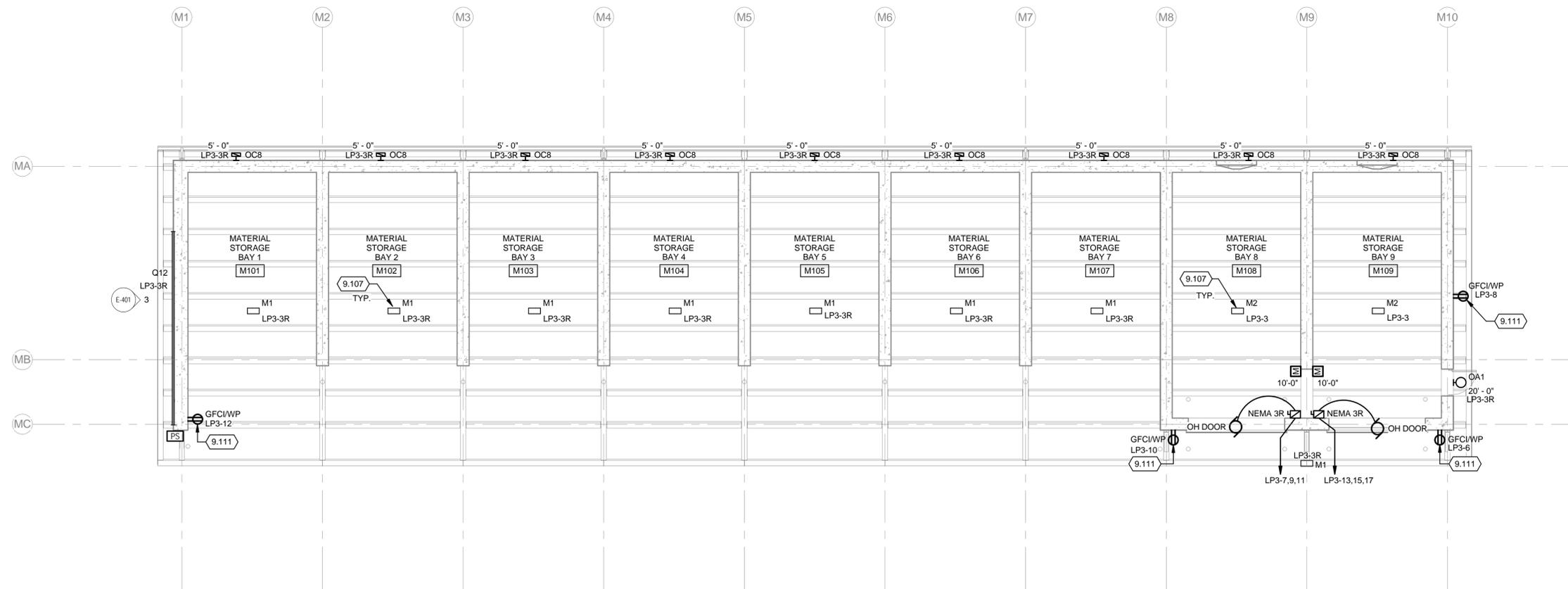
**E-101**



TRUE PLAN NORTH NORTH  
**1** VEHICLE STORAGE BUILDING FLOOR PLAN  
1/16" = 1'-0"

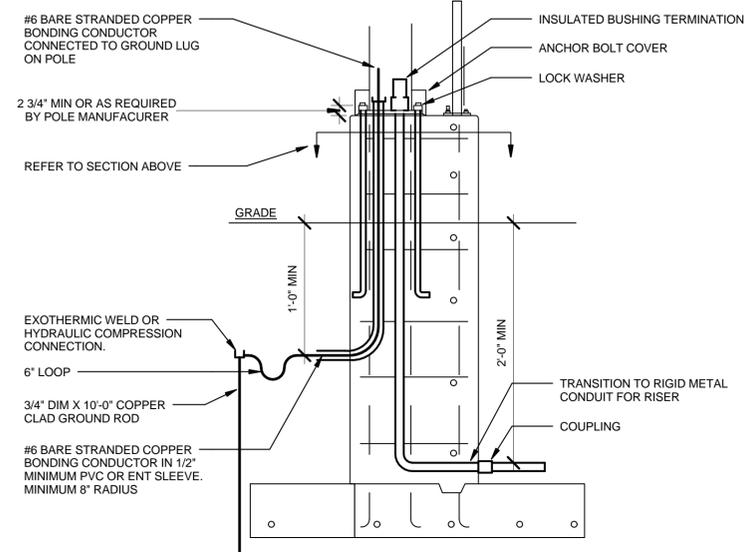
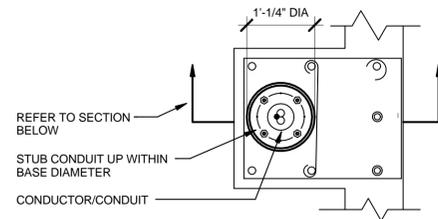
**Keyed Notes**

- 9.102 TYPICAL FOR ALL LUMINAIRES. MOUNTING HEIGHTS SHOWN ARE ABOVE FINISHED FLOOR AND TO BOTTOM OF LUMINAIRE UNLESS NOTED OTHERWISE.
- 9.107 TYPICAL OF ALL M1 AND M2 LIGHTS. FIXTURE TO BE MOUNTED BETWEEN BEAMS AT 22'-9" TO BOTTOM OF FIXTURE. UTILIZE UNISTRUT FOR MOUNTING OF FIXTURE BETWEEN PERLINS.
- 9.111 RECEPTACLE TO BE FLUSH MOUNTED IN CONCRETE.



TRUE PLAN NORTH NORTH  
**MATERIAL STORAGE BUILDING FLOOR PLAN - LIGHTING**  
1/8" = 1'-0"

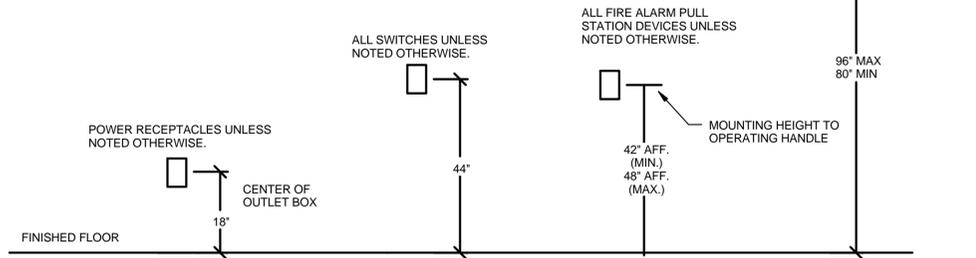




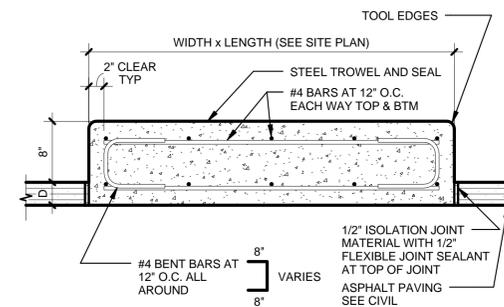
- NOTES
1. REFER TO DETAIL 6/C-502 FOR MORE INFORMATION ON DECORATIVE FENCE & LIGHT POLE BASE FOUNDATION.
  2. CONTRACTOR SHALL USE TEMPLATE FURNISHED WITH POLE TO SET ANCHOR BOLTS. CENTER ON CONCRETE BASE.
  3. ANCHOR BOLTS SHALL BE ORIENTED PARALLEL TO THE CURB LINE.
  4. NON-SHRINK GROUT BETWEEN POLE AND BASE. PROVIDE A CHANNEL THROUGH GROUT FOR POLE INTERIOR DRAINAGE.
  5. EXPOSED SURFACES TROWELLED SMOOTH.
  6. ANCHOR BOLTS FOR POLE AS REQUIRED BY MANUFACTURER.
  7. CONCRETE BASE PER SPECIFICATIONS.

**4 POLE BASE DETAIL**  
NO SCALE

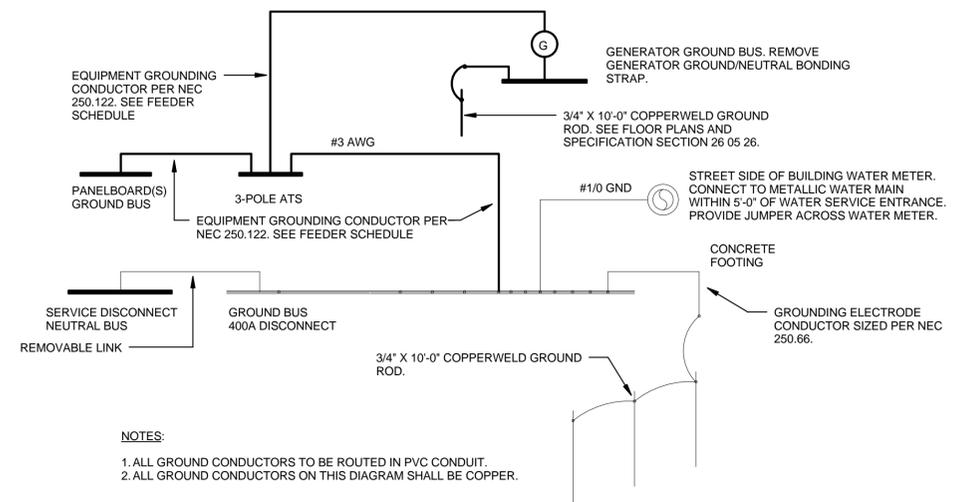
NOTE: MOUNTING HEIGHT DIMENSION FOR POWER RECEPTACLES ABOVE COUNTER 4" ABOVE COUNTERTOP OR COUNTER BACKSPLASH WHEN PRESENT.



**1 DEVICE MOUNTING HEIGHTS DETAIL**  
NO SCALE



**2 GENERATOR EQUIPMENT PAD**  
NO SCALE



- NOTES:
1. ALL GROUND CONDUCTORS TO BE ROUTED IN PVC CONDUIT.
  2. ALL GROUND CONDUCTORS ON THIS DIAGRAM SHALL BE COPPER.

**3 GROUNDING SYSTEM DETAIL (TYP)**  
NO SCALE

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SHEET CONTENTS  
DETAILS

SHEET NO.:

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**City of Madison Water Utility**  
 Vehicle Storage Building Improvements  
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 Madison, Wisconsin

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SHEET CONTENTS  
 SCHEDULES

SHEET NO.:

**E-601**

**LUMINAIRE SCHEDULE**

**NOTE:** SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION REGARDING LUMINAIRE AND INSTALLATION REQUIREMENTS. PROVIDE OPTIONS AND ACCESSORIES REFERENCED BY THE COLUMN TITLED "OPTIONS/ACCESSORIES". MANUFACTURERS LISTED ACCEPTABLE SHALL MEET ALL REQUIREMENTS AND FEATURES INDICATED. ACCEPTABLE MANUFACTURERS MUST MEET THE PHOTOMETRIC PERFORMANCE OF THE LISTED UNIT.

**ABBREVIATIONS:** GWB = GYPSUM WALL BOARD P = PENDANT R = RECESSED V = VARIES  
 ES = EXPOSED STRUCTURE PLAS = PLASTER S = SURFACE  
 LG = LAY-IN GRID PL = POLE MOUNTED W = WALL MOUNTED

DES.	MANUFACTURER	CATALOG SERIES	DESCRIPTION	LAMP DATA	VOLT	BALLAST/DRIVER	MOUNT	CEILING TYPE	FIXTURE DEPTH	LED SYSTEM INPUT WATTAGE	LED DELIVERED LUMENS	OPTIONS / ACCESSORIES	ACCEPTABLE MANUFACTURERS	SEE NOTE
M1	LITHONIA	DSXSC SERIES	LED SURFACE MOUNTED CANOPY FIXTURE WITH DIE CAST ALUMINUM HOUSING, CLEAR ACRYLIC LENS, NATURAL ALUMINUM FINISH, TYPE V MEDIUM DISTRIBUTION AND IP66 LISTED.	4100K LED	120V	D	S	ES	3 7/16"	50W	4500			2
M2	LITHONIA	DSXSC SERIES	LED SURFACE MOUNTED CANOPY FIXTURE WITH DIE CAST ALUMINUM HOUSING, CLEAR ACRYLIC LENS, NATURAL ALUMINUM FINISH, TYPE V MEDIUM DISTRIBUTION AND IP66 LISTED.	4100K LED	120V	D	S	ES	3 7/16"	50W	4500			
OA1	LITHONIA	DSX1 LED SERIES	LED WALL MOUNTED AREA FIXTURE WITH DIE CAST ALUMINUM HOUSING, ACRYLIC LENS, DARK SKY FRIENDLY CERTIFIED, IP65 RATED, SINGLE FUSE, HANDHOLE, TYPE III LIGHT DISTRIBUTION AND NATURAL ALUMINUM FINISH, 6"X30" SQUARE STRAIGHT STEEL POLE.	4000K LED	120V	D	-	-	-	105W	9500		CREE EDGE SERIES PHILIPS PUREFORM SERIES	1
OA4	LITHONIA	DSX1 LED SERIES	LED POLE MOUNTED AREA FIXTURE WITH DIE CAST ALUMINUM HOUSING, ACRYLIC LENS, DARK SKY FRIENDLY CERTIFIED, IP65 RATED, SINGLE FUSE, HANDHOLE, TYPE III LIGHT DISTRIBUTION AND NATURAL ALUMINUM FINISH, 6"X30" SQUARE STRAIGHT STEEL POLE. PROVIDE POLE WITH HANDHOLE FOR MOUNTING ONE DUPLEX RECEPTACLE MOUNTED 1'-6" ABOVE POLE BASE, ORIENTATED ON THE SAME SIDE AS THE LUMINAIRE.	4000K LED	120V	D	-	-	-	105W	9500		CREE EDGE SERIES PHILIPS PUREFORM SERIES	1
OC8	BEGA	33 065 SERIES	LED RECESSED WALL STEP LIGHT WITH DIE CAST AND EXTRUDED ALUMINIUM HOUSING AND FACEPLATE, CLEAR TEMPERED GLASS LENS AND SILVER FINISH. MOUNT AT 12" AFF TO CENTER OF FIXTURE.	4000K LED	120V	D	W	-	4"	10W	400		FC LIGHTING FCSL240 SERIES BETACALCO VERSO SERIES	
OF1	B-K LIGHTING	NITE STAR SERIES	ABOVE GRADE LED LANDSCAPE FLOOD LIGHT WITH ALUMINUM HOUSING, INTEGRAL DRIVER, MEDIUM FLOOD DISTRIBUTION, SOFT FOCUS LENS AND ROTATIONAL KNUCKLE MOUNTING. FINISH TO BE SELETECED BY ARCHITECT.	4000K LED	120V/24V	D	-	-	-	10W	350		LUMIERE CAMBRIA 203 SERIES INTENSE LIGHTING IVT104L SERIES	
Q10	LITHONIA	AW SERIES	FLUORESCENT SURFACE WRAPAROUND WITH FLAT ACRYLIC DIFFUSER.	2-F32W/8-4100K	120V	A	S	-	-	65W	5800		PHILIPS DW SERIES HUBBELL AW SERIES	
Q12	WAC	INVISILED OUTDOOR SERIES	25' COLOR CHANGING LED OUTDOOR TAPE LIGHT. COLOR SET TO BLUE. IP68 RATED, WET LOCATION LISTED, 100W REMOTE TRANSFORMER, 10' VERTICAL SECTION AND 15' HORIZONTAL SECTION REQUIRED, REFER TO ELEVATION, CONTRACTOR TO SUPPLY WITH ALL REQUIRED ACCESSORIES TO MAKE A COMPLETE INSTALLATION.	RGB LED	120V/ 24VDC	B	S	-	1/8"	1.5W/LF	-			
EBU1	LITHONIA	ELM2 SERIES	EMERGENCY BATTERY UNIT WITH TWO 1.5W/3.6V LED LAMPS WITH SELF DIAGNOSTICS	W/ UNIT	120/277V	-	W	-	-	5W	-		DUAL-LITE LZ SERIES PHILIPS VU6L SERIES	
EBU2	LITHONIA	ELM1254 SERIES	EMERGENCY BATTERY UNIT WITH TWO 12W/12V HALOGEN LAMPS WITH SELF DIAGNOSTICS AND MAINTENANCE FREE NI-CAD BATTERY CEILING MOUNTED.	W/ UNIT	120/277V	-	S	ES	-	54W	-		DUAL-LITE LZ HIGH CAPACITY SERIES PHILIPS CAX SERIES	
EBU3	LITHONIA	WLTU LED SERIES	EMERGENCY BATTERY UNIT WITH TWO 1.9W/9.6V LED LAMPS WITH WET LOCATION RATING AND SELF DIAGNOSTICS	W/ UNIT	120/277V	-	W	-	-	54W	-		DUAL-LITE LZ HIGH CAPACITY SERIES PHILIPS CAX SERIES	

**OPTIONS/ACCESSORIES CODE LISTING:**

- 08 FLAT STEEL DOOR FRAME
- 28 PATTERN 12 ACRYLIC LENS - 0.125" MIN. THICKNESS

**BALLAST CODE LISTING: (SEE SPECIFICATIONS)**

- A T8 PROGRAMMED START HIGH EFFICIENCY NORMAL BALLAST FACTOR 0.87 BY SYLVANIA, ADVANCE OR UNIVERSAL.
- B 120VAC/24VDC 100W ELECTRONIC REMOTE TRANSFORMER
- D LED DIMMABLE POWER SUPPLY (0-10V).

**GENERAL NOTES:**

- ONLY BALLAST SERIES IS INDICATED ON THIS SCHEDULE. REFER TO SPECIFICATIONS FOR FURTHER INFORMATION. EACH FIXTURE SUBMITTAL SHALL BE PROVIDED WITH FULL BALLAST AND LAMP INFORMATION.
- EACH FLUORESCENT FIXTURE SHALL BE SUPPLIED WITH QUICK DISCONNECTING MEANS FOR ALL BALLASTS AS REQUIRED BY NEC. 410.73 AND AS MANUFACTURED BY THOMAS AND BETTS LD2 OR LD3 OR EQUAL.

**SCHEDULE NOTES:**

- PROVIDE WITH PIR HIGH MOUNTING CONTROLS OPTION. PROGRAM TO APPROXIMATELY 35% LIGHT OUTPUT WHEN UNOCCUPIED AND 100% OUTPUT WHEN OCCUPIED.
- PROVIDE WITH PIR HIGH MOUNTING CONTROLS OPTION. PROGRAM TO OFF FOR UNOCCUPIED TIMES.

**LIGHTING CONTROL PANEL SCHEDULE (LCP)**

RELAY NUMBER	RELAY TYPE			CIRCUIT	OVERRIDE DEVICE	AREA CONTROLLED	KEYED NOTE
	POLES	VOLTAGE	SIZE				
1	1	120V	20A	LP3-1	MS, TS	TYPE OA4 POLE LIGHTS	
2	1	120V	20A	LP3-3	MS, TS	MATERIAL STORAGE LIGHTS	
3	1	120V	20A	LP3-3	TS	MATERIAL STORAGE TYPE Q12	
4	1	120V	20A	LP1-6	MS, TS	VEHICLE STORAGE (VS) TYPE OA1	
5	1	120V	20A	LP1-3	MOS, TS	VS NE HIGH BAY LIGHTS	
6	1	120V	20A	LP1-5	MOS, TS	VS PASSING HIGH BAY LIGHTS	
7	1	120V	20A	LP1-7	MOS, TS	VS NE HIGH BAY LIGHTS	
8	1	120V	20A	LP1-9	MOS, TS	VS SE HIGH BAY LIGHTS	
9	1	120V	20A	LP1-13	MOS, TS	VS NW HIGH BAY LIGHTS	
10	1	120V	20A	LP1-15	MOS, TS	VS NW HIGH BAY LIGHTS	
11	1	120V	20A	LP1-17	MOS, TS	VS NW HIGH BAY LIGHTS	
12	1	120V	20A	LP1-19	MOS, TS	VS SW HIGH BAY LIGHTS	
13	1	120V	20A	LP1-21	MOS, TS	VS NW HIGH BAY LIGHTS	
14	1	120V	20A	LP1-23	MOS, TS	VS NE & NW HIGH BAY LIGHTS	
15	1	120V	20A	LP1-25	MOS, TS	VS SW HIGH BAY LIGHTS	
16	1	120V	20A	LP1-2	MOS, TS	VS SE HIGH BAY LIGHTS	
17	1	120V	20A	LP1-4	MOS, TS	VS SW HIGH BAY LIGHTS	
18	1	120V	20A	LP1-6	MS, TS	VS EXTERIOR LIGHTS	
19	1	120V	20A	LP1-8	MOS, TS	VS SW HIGH BAY LIGHTS	
20	1	120V	20A	LP1-10	MOS, TS	VS WASH BAY LIGHTS	
21	1	120V	20A	LP1-12	MOS, TS	VS WASH BAY LIGHTS	
22	1	120V	20A	LP1-6	TS	VS EXTERIOR TYPE OF1	
23	1	120V	20A	LP3-3	TS	MATERIAL STORAGE TYPE OC8	

**GENERAL NOTES:**

- INTERIOR BUILDING LIGHTING TO TURN OFF AT 7:00 PM. LIGHTS SHALL BLINK 5 MINUTES PRIOR TO SHUTOFF. AUTO OFF 7:00 PM; 7:00 PM TO 5:00 AM - MASTER OVERRIDE SWITCH ON FOR 2 HRS.
- VERIFY PROGRAMMING WITH OWNER.

**KEYED NOTES:**

- 

**ABBREVIATIONS:**  
 MOS - MASTER OVERRIDE SWITCH  
 MS - INTEGRAL MOTION SENSOR & PHOTOEYE  
 TS - TIME SCHEDULE BY CONTROL PANEL

**OCCUPANCY/PHOTO SENSOR SCHEDULE**

SYMBOL	VOLTAGE	TECHNOLOGY		PATTERN	COVERAGE AREA	DESCRIPTION	MOUNTING	SEE NOTES
		PIR	US					
OS	120V	X	X	360	1000	SELF-ADJUSTING, CEILING MOUNT OCCUPANCY SENSOR. SEE SPEC SECTION 26 09 23.	CEILING	1

**GENERAL NOTES:**

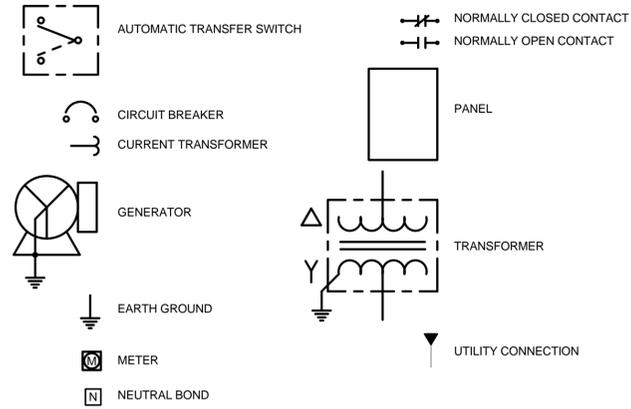
- PROVIDE ADEQUATE SUPPORT FOR CONTROL WIRING.
- COORDINATE LOCATION OF CEILING MOUNTED OCCUPANCY SENSORS WITH HVAC CEILING DIFFUSER. DO NOT INSTAL SENSOR WITHIN 3' OF DIFFUSER.

**SCHEDULE NOTES:**

- PROVIDE 20A RATED POWER PACKS WITH ZERO CROSS SWITCHING TECHNOLOGY AND MANUAL ON MODE.



ONE-LINE SYMBOLS



Keyed Notes

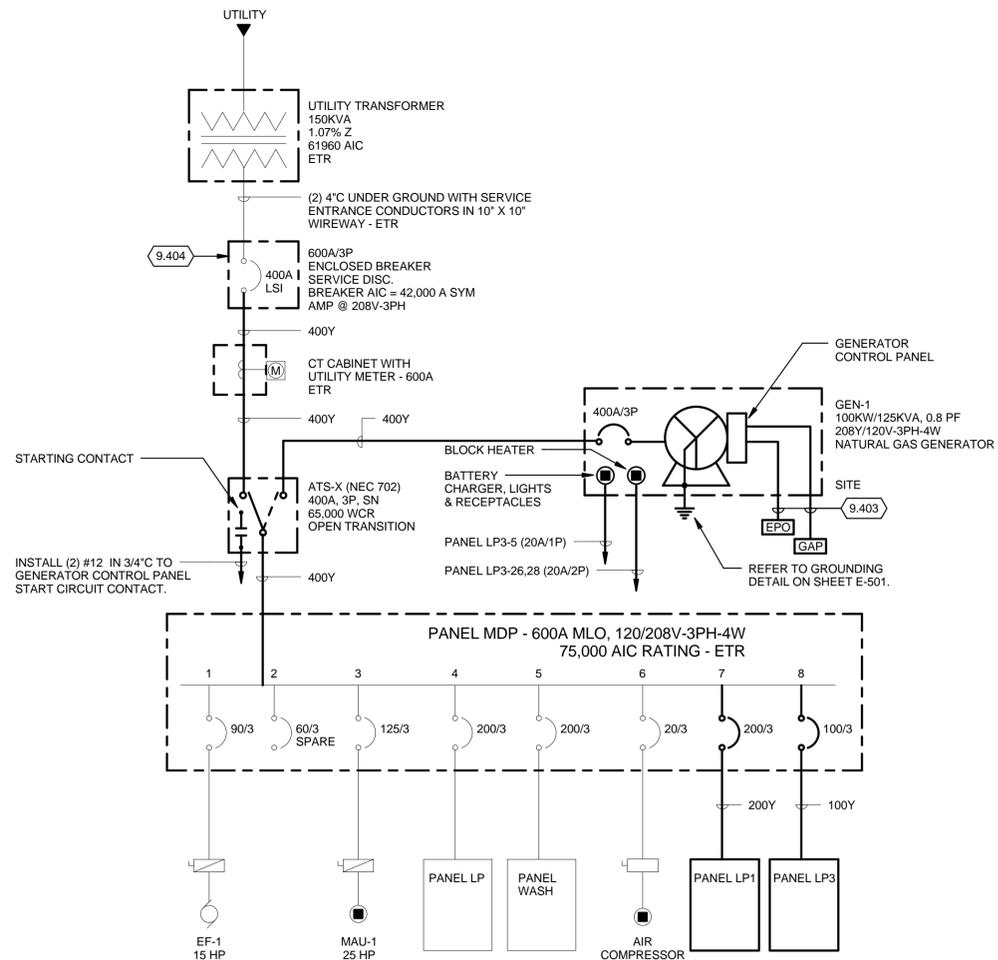
- 9.401 ENCLOSED CIRCUIT BREAKER. DISCONNECT AND REMOVE EXISTING NOTED BREAKER FOR REPLACEMENT OF NEW BREAKER AS SHOWN ON DRAWING 2/E-701.
- 9.402 DISCONNECT AND REMOVE EXISTING 4 #500 KCM IN 4"C FROM LOAD SIDE TERMINALS OF CT CABINET TO PANEL MDP AS SHOWN.
- 9.403 PROVIDE 1"C WITH CONTROL WIRING PER MANUFACTURERS WIRING REQUIREMENTS.
- 9.404 MOUNT BREAKER IN EXISTING SERVICE DISCONNECT ENCLOSURE.
- 9.405 REMOVE BREAKER ONLY AND ENCLOSURE TO REMAIN IN PLACE FOR MOUNTING NEW BREAKER AS SHOWN ON 2/E-701.

COPPER FEEDER SCHEDULE

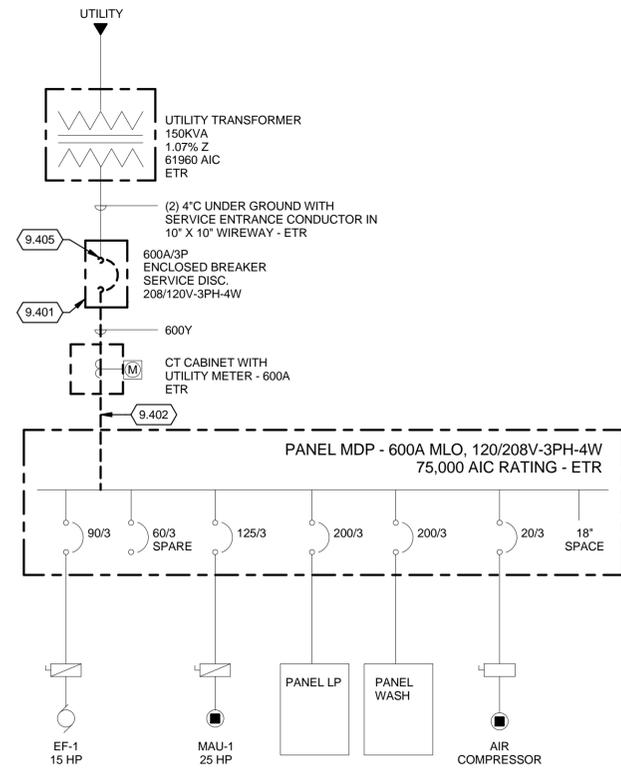
MARK	AMPACITY	NO. OF SETS	CONDUCTOR SIZES (AWG or KCMIL)				CONDUIT SIZE
			PHASE	NEUTRAL	EQ GND	ISO GND	
20	20	1	3 - # 12	-	1 - # 12	-	1/2"
20Y	20	1	3 - # 12	1 - # 12	1 - # 12	-	1/2"
25	25	1	3 - # 10	-	1 - # 10	-	1/2"
25Y	25	1	3 - # 10	1 - # 10	1 - # 10	-	1/2"
30	30	1	3 - # 10	-	1 - # 10	-	3/4"
30Y	30	1	3 - # 10	1 - # 10	1 - # 10	-	3/4"
35	35	1	3 - # 8	-	1 - # 10	-	3/4"
35Y	35	1	3 - # 8	1 - # 8	1 - # 10	-	3/4"
40	40	1	3 - # 8	-	1 - # 10	-	3/4"
40Y	40	1	3 - # 8	1 - # 8	1 - # 10	-	1"
45	45	1	3 - # 6	-	1 - # 10	-	3/4"
45Y	45	1	3 - # 6	1 - # 6	1 - # 10	-	1"
50	50	1	3 - # 6	-	1 - # 10	-	1"
50Y	50	1	3 - # 6	1 - # 6	1 - # 10	-	1-1/4"
60	60	1	3 - # 4	-	1 - # 10	-	1"
60Y	60	1	3 - # 4	1 - # 4	1 - # 10	-	1-1/4"
70	70	1	3 - # 4	-	1 - # 8	-	1-1/4"
70Y	70	1	3 - # 4	1 - # 4	1 - # 8	-	1-1/4"
80	80	1	3 - # 3	-	1 - # 8	-	1-1/4"
80Y	80	1	3 - # 3	1 - # 3	1 - # 8	-	1-1/4"
100	100	1	3 - # 1	-	1 - # 8	-	1-1/2"
100Y	100	1	3 - # 1	1 - # 1	1 - # 8	-	1-1/2"
110	110	1	3 - # 1	-	1 - # 6	-	1-1/2"
110Y	110	1	3 - # 1	1 - # 1	1 - # 6	-	2"
125	125	1	3 - # 1/0	-	1 - # 6	-	1-1/2"
125Y	125	1	3 - # 1/0	1 - # 1/0	1 - # 6	-	2"
150	150	1	3 - # 1/0	-	1 - # 6	-	1-1/2"
150Y	150	1	3 - # 1/0	1 - # 1/0	1 - # 6	-	2"
175	175	1	3 - # 2/0	-	1 - # 6	-	2"
175Y	175	1	3 - # 2/0	1 - # 2/0	1 - # 6	-	2"
200	200	1	3 - # 3/0	-	1 - # 6	-	2"
200Y	200	1	3 - # 3/0	1 - # 3/0	1 - # 6	-	2-1/2"
225	225	1	3 - # 4/0	-	1 - # 4	-	2"
225Y	225	1	3 - # 4/0	1 - # 4/0	1 - # 4	-	2-1/2"
250	250	1	3 - 250	-	1 - # 4	-	2-1/2"
250Y	250	1	3 - 250	1 - 250	1 - # 4	-	3"
300	300	1	3 - 350	-	1 - # 4	-	3"
300Y	300	1	3 - 350	1 - 350	1 - # 4	-	3-1/2"
350	350	1	3 - 500	-	1 - # 3	-	3"
350Y	350	1	3 - 500	1 - 500	1 - # 3	-	3-1/2"
380	380	1	3 - 500	-	1 - # 3	-	3"
380Y	380	1	3 - 500	1 - 500	1 - # 3	-	3-1/2"
400	400	1	3 - 500	-	1 - # 3	-	3"
400Y	400	1	3 - 500	1 - 500	1 - # 3	-	3-1/2"
450	450	2	3 - # 4/0	-	1 - # 2	-	2"
450Y	450	2	3 - # 4/0	1 - # 4/0	1 - # 2	-	2-1/2"
500	500	2	3 - 250	-	1 - # 2	-	2-1/2"
500Y	500	2	3 - 250	1 - 250	1 - # 2	-	3"
600	600	2	3 - 350	-	1 - # 1	-	3"
600Y	600	2	3 - 350	1 - 350	1 - # 1	-	3"

FEEDER SCHEDULE NOTES:

- THE SCHEDULE IS A SCHEDULE OF TYPICAL FEEDERS AND SOME OF THE SIZES MAY NOT APPLY TO THIS PROJECT.
- ALL THE CONDUCTOR AMPACITIES ARE BASED ON TABLE 310-16 OF THE NEC FOR COPPER (ALUMINUM) CONDUCTOR TYPE THHN/THWN-2
- FEEDER SIZES SHOWN ON THE RISER DIAGRAM INDICATE FEEDER AMPACITIES AND DO NOT NECESSARILY CORRESPOND TO THE CIRCUIT BREAKER AMPACITIES. CERTAIN FEEDERS MAY BE SIZED FOR DERATION FACTORS AND/OR OVERSIZED FOR VOLTAGE DROP PER NEC REQUIREMENTS.



2 ONE-LINE POWER DIAGRAM  
NO SCALE



1 EXISTING ONE-LINE POWER DIAGRAM  
NO SCALE

### LINE TYPE KEY

	NEW WORK BY THIS CONTRACTOR (DARK SOLID LINE)
	EXISTING TO BE REMOVED BY THIS CONTRACTOR (DARK DASHED LINE)
	EXISTING TO REMAIN WORK (THIN SOLID LINE)
	NEW WORK UNDER FLOOR BY THIS CONTRACTOR
	SITE UNDERGROUND CONDUIT
	SITE REMOVED UNDERGROUND CONDUIT
	SITE UNDERGROUND FIBER OPTIC
	SITE REMOVED UNDERGROUND FIBER OPTIC
	SITE UNDERGROUND TELEPHONE
	SITE OVERHEAD TELEPHONE
	SITE REMOVED TELEPHONE
	SITE UNDERGROUND TV CABLE

### TELECOMMUNICATION OUTLET SYMBOLS

	SINGLE-PORT TELECOMMUNICATIONS OUTLET
	TWO-PORT TELECOMMUNICATIONS OUTLET
	WIRELESS ACCESS POINT (WAP) TELECOMMUNICATIONS OUTLET WAP BY OWNER UNO.
	WALL MOUNTED TELEPHONE OUTLET
	FLOOR BOX MOUNTED TELECOMMUNICATIONS OUTLET (REFER TO ELECTRICAL FLOOR BOX SCHEDULE)
	FIRE-RATED POKE-THROUGH MOUNTED TELECOMMUNICATIONS OUTLET (REFER TO ELECTRICAL FLOOR BOX SCHEDULE)
	TELEPHONE SERVICE ENTRANCE PROTECTION DEVICE
	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
	ANTENNA

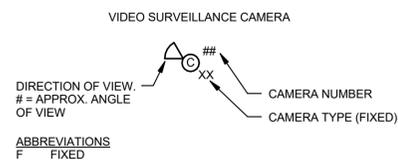
### PUBLIC ADDRESS SYSTEM SYMBOLS

	LOUDSPEAKER (HORN TYPE)
	CEILING MOUNTED SPEAKER
	WALL MOUNTED SPEAKER
	VOLUME CONTROL

### ACCESS CONTROL SYSTEM SYMBOLS

	CARDREADER
	CARDREADER-PINPAD
	KEY PAD
	MOTION DETECTOR
	DOOR POSITION SWITCH
	AUDIBLE ALARM
	MAGNETIC LOCK
	KEY SHUNT
	ELECTRIC STRIKE
	DELAY EGRESS SYSTEM
	PUSH BUTTON
	PANIC HARDWARE
	INTEGRATED LOCKSET
	OVERRIDE KEYPAD
	ACCESS CONTROL SYSTEM
	ACCESS CONTROL PANEL
	DURESS PUSHBUTTON
	GATE OPERATOR
	LOOP DETECTOR

### VIDEO SURVEILLANCE SYMBOLS



### TECHNOLOGY ABBREVIATIONS

&	AND
3R	NEMA 3R RATED
4X	NEMA 4X RATED
@	AT
A/E	ARCHITECT / ENGINEER
ACS	ACCESS CONTROL SYSTEM
AF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISH GRADE
ALT	ALTERNACE
ANT	ANTENNA
AP	(WIRELESS) ACCESS POINT
AV	AUDIO VISUAL
BET	BUILDING ENTRANCE TERMINAL
BLDG	BUILDING
C	CONDUIT
CAB	CABINET
CATV	COMMUNITY ANTENNA TELEVISION
CL	CENTERLINE
CLG	CEILING
COAX	COAXIAL
COMM	COMMUNICATIONS
DO	DOOR OPERATOR
DSS	DIGITAL SATELLITE SERVICE
DWG	DRAWING
EC	ELECTRICAL CONTRACTOR
EMT	ELECTRICAL METALLIC TUBING
ETR	EXISTING TO REMAIN
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FO	FIBER OPTIC
FPD	FLAT-PANEL DISPLAY
GC	GENERAL CONTRACTOR
GND	GROUND
GRS	GALVANIZED RIGID STEEL
HH	HAND HOLE
HPC	HIGH PAIR COUNT
HVAC	HEATING, VENTILATION, AIR CONDITIONING
IDF	INTERMEDIATE DISTRIBUTION FRAME
IDS	INFORMATION DISPLAY SYSTEM
IDS	x DENOTES SUBSYSTEM (F, B, T, G)
IDS	INTRUSION DETECTION SYSTEM
IMC	INTERMEDIATE METALLIC CONDUIT
IT	INFORMATION TECHNOLOGY
ITS	INFORMATION TRANSPORT SYSTEMS
JB	JUNCTION BOX
MAX	MAXIMUM
MDF	MAIN DISTRIBUTION FRAME
MH	MAN HOLE
MIN	MINIMUM
MMFO	MULTIMODE FIBER OPTIC
MNS	MASS NOTIFICATION SYSTEM
MON	MONITOR
MTD	MOUNTED
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
PA	PUBLIC ADDRESS
PROJ	PROJECTOR
PTZ	PAN - TILT - ZOOM
PVC	POLYVINYL CHLORIDE
RCV	RECEIVER
REQ'D	REQUIRED
SCHED	SCHEDULE
SE	SERVICE ENTRANCE
SMFO	SINGLEMODE FIBER OPTIC
SS	STAINLESS STEEL
SYS	SYSTEM
TBR	TO BE REPLACED
TC	TELECOMMUNICATIONS CONTRACTOR
TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
TSE	TELEPHONE SERVICE EQUIPMENT
TV	TELEVISION
TYP	TYPICAL
UF	UNDER FLOOR
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
UTP	UNSHIELDED TWISTED PAIR
VSS	VIDEO SURVEILLANCE SYSTEM
WL	WET LOCATION LISTED
WP	WEATHERPROOF
WS	WORKSTATION

### TECHNOLOGY DEMOLITION GENERAL NOTES

1. THE INFORMATION SHOWN IS BASED ON EXISTING DRAWINGS AND SITE OBSERVATIONS TO ASSIST THE CONTRACTOR IN BIDDING. THE CONTRACTOR SHOULD VISIT THE SITE TO VERIFY EXISTING CONDITIONS. THE TECHNOLOGY SYSTEMS DRAWINGS INDICATE EXISTING TECHNOLOGY SYSTEMS ITEMS TO BE REMOVED. THE DRAWINGS ARE INTENDED TO INDICATE THE SCOPE OF WORK REQUIRED AND DO NOT INDICATE EVERY DEVICE, BOX, CONDUIT, WIRE OR CABLE THAT MUST BE REMOVED.
2. DASHED WALLS ON THE FLOOR PLANS INDICATE EXISTING WALLS BEING DEMOLISHED. REFER TO THE ARCHITECTURAL DEMOLITION PLANS FOR THE EXACT EXTENT OF WORK REQUIRED BY THIS PROJECT. REMOVE ALL DEVICES ON DASHED WALLS NOT SHOWN ON THE CONTRACT DRAWINGS. REFER TO DEMOLITION DRAWINGS OF OTHER TRADES, WHERE CONTROL PANELS AND ACCESSORIES THAT HAVE TECHNOLOGY SYSTEMS CONNECTIONS ARE BEING REMOVED. INCLUDE DISCONNECTION AND REMOVAL OF ALL ASSOCIATED CONDUIT, WIRING AND CABLES.
3. TECHNOLOGY SYSTEMS ITEMS (E.G. TELECOMMUNICATIONS OUTLETS, SECURITY SYSTEMS DEVICES, AUDIO DEVICES) THAT ARE REMOVED AND NOT RELOCATED SHALL REMAIN THE PROPERTY OF THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISPOSAL OF MATERIAL THE OWNER DOES NOT WANT TO REUSE OR RETAIN FOR MAINTENANCE PURPOSES.
4. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER BEFORE TURNING OFF POWER TO TECHNOLOGY SYSTEMS EQUIPMENT OR DEVICES. COORDINATE ALL OUTAGES WITH THE OWNER. CONDUIT CONCEALED IN WALL CONSTRUCTION MAY BE ABANDONED IN PLACE IF NOT AFFECTED BY OTHER CONSTRUCTION.
5. ALL BOXES THAT REMAIN IN PLACE IN EXISTING MASONRY WALLS THAT ARE TO REMAIN SHALL BE PROVIDED WITH A BLANK COVER PLATE. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS ASSOCIATED WITH TYPE AND ATTACHMENT.
6. ALL CONDUIT SHALL BE REMOVED WHERE WALLS ARE BEING REMOVED. WHERE CONDUIT IS IN THE CONCRETE SLAB, CUT OFF FLUSH, PULL OUT WIRE OR CABLE AND PLUG. WHERE CONDUIT IS RUN EXPOSED, ALL ASSOCIATED CLAMPS, SUPPORTS, HANGERS, ETC. SHALL ALSO BE REMOVED.
7. THIS CONTRACTOR SHALL COORDINATE ALL HIS WORK WITH OTHER CONTRACTORS AT THE JOB SITE BEFORE REMOVING EXISTING TECHNOLOGY SYSTEMS ITEMS AND INSTALLING NEW ITEMS.
8. EXISTING CONDUIT IN GOOD CONDITION, MAY BE REUSED IN PLACE. RELOCATED EXISTING CONDUIT SHALL NOT BE ALLOWED.
9. REFER TO ELECTRICAL SITE DEMOLITION PLAN SHEET ED011 FOR ALL TECHNOLOGY SITE DEMOLITION WORK.

### TECHNOLOGY GENERAL NOTES

1. WORK PERFORMED INCLUDES ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED TO INSTALL COMPLETE TECHNOLOGY SYSTEMS AS INDICATED ON THESE DRAWINGS AND AS SPECIFIED.
2. ALL TELECOMMUNICATIONS OUTLETS SHALL BE MOUNTED AT HEIGHTS ABOVE FINISHED FLOOR AS SHOWN IN THE DEVICE MOUNTING HEIGHT DETAIL U.N.O.
3. SEE ELECTRICAL SPECIFICATIONS FOR LOCATIONS WHERE GRS CONDUIT SHALL BE USED, OR WHERE IMC, EMT, OR PVC CONDUIT MAY BE USED.
4. BOXES LOCATED ON OPPOSITE SIDES OF NON-RATED WALLS SHALL BE OFFSET A MINIMUM OF 6" HORIZONTALLY. BOXES ON OPPOSITE SIDES OF FIRE-RATED WALLS SHALL BE OFFSET A MINIMUM OF 24" HORIZONTALLY. THROUGH-WALL BOXES SHALL NOT BE ALLOWED WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER.
5. CONTRACTOR SHALL VERIFY ALL EQUIPMENT SIZES AND POWER REQUIREMENTS FOR EQUIPMENT SUPPLIED BY OTHERS PRIOR TO INSTALLATION OF CONDUIT.
6. TECHNOLOGY SYSTEMS EQUIPMENT/DEVICES SHALL BE MOUNTED SO AS TO ALLOW ACCESS TO ELECTRICAL AND MECHANICAL EQUIPMENT. ALL MOUNTING OF TECHNOLOGY SYSTEMS EQUIPMENT/DEVICES ON EQUIPMENT SUPPLIED BY ANOTHER CONTRACTOR SHALL BE COORDINATED WITH AND APPROVED BY THAT CONTRACTOR IN ADVANCE OF INSTALLATION.
7. ALL ELECTRICAL CONDUITS AND JUNCTION BOXES SHALL BE CONCEALED. CONTRACTOR SHALL COORDINATE WITH THE OTHER TRADES AND USE CHASES AND CEILING SPACES PROVIDED. WHERE BOXES AND CONDUIT ARE NOTED TO BE INSTALLED EXPOSED, THEY SHALL BE PAINTED TO MATCH THE SURFACE.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ALL OPENINGS REQUIRED IN WALLS. ALL OPENINGS SHALL BE REPAIRED TO MATCH EXISTING BY A QUALIFIED CONTRACTOR AT THE EXPENSE OF THIS CONTRACTOR. ALL CONDUITS THROUGH WALLS SHALL BE GROUDED OR SEALED INTO OPENINGS. PENETRATIONS THROUGH FLOORS AND FIRE-RATED WALLS SHALL BE FIRESTOPPED IN A MANNER THAT MAINTAINS THE RATING OF THE FLOOR OR WALL PENETRATED.
9. ALL TRENCHING AND BACKFILL FOR BURIED ELECTRICAL CONDUITS SHALL BE BY THE CONTRACTOR UNLESS NOTED OTHERWISE.
10. PROVIDE METALLIC TAPE ABOVE BURIED PVC CONDUIT FOR FUTURE LOCATING.
11. CONDUIT ROUTED UNDER THE BUILDING SHALL BE MINIMUM 18" BELOW SLAB.
12. ALL TELEPHONE AND DATA JACKS SHALL BE TERMINATED WITH ALL 4 PAIRS TO ALLOW FOR INTERCHANGEABILITY. ALL ELEVATOR AND FIRE ALARM CONNECTIONS SHALL NOT BE TERMINATED ON PATCH PANEL OR JACKS; THESE LOCATIONS MUST BE CONNECTED DIRECTLY TO THE EQUIPMENT AND THE INCOMING SERVICE.
13. ALL TELEPHONE AND DATA CABLES SHALL BE INSTALLED IN CONDUIT OR CABLE TRAY.
14. ALL CONDUIT STUBS SHALL HAVE PLASTIC OR NYLON BUSHINGS INSTALLED PRIOR TO THE INSTALLATION OF CABLES.
15. DO NOT SCALE DRAWINGS. USE GIVEN DIMENSIONS. CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT THE PROJECT SITE PRIOR TO THE START OF CONSTRUCTION. WHERE SPECIFIC DIMENSIONS, DETAILS OR DESIGN INTENT CANNOT BE DETERMINED, CONSULT ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK.
16. THE EXISTING BUILDING INFORMATION, INCLUDING BUT NOT LIMITED TO, ARCHITECTURAL, MECHANICAL, FIRE PROTECTION, PLUMBING, ELECTRICAL AND TECHNOLOGY, DEPICTED IN THESE CONSTRUCTION DOCUMENTS ARE BASED UPON EXISTING BUILDING DRAWINGS PROVIDED BY THE OWNER AND LIMITED FIELD VERIFICATION. THE ARCHITECT/ENGINEER MAKES NO WARRANTY OR REPRESENTATION WITH REFERENCE TO THE ACCURACY AND COMPLETENESS OF THE ORIGINAL DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY THE ACCURACY OF THE EXISTING CONDITIONS.
17. REFER TO ELECTRICAL SITE PLAN SHEET E-011 FOR ALL TECHNOLOGY SITE WORK.

**Mead & Hunt**  
2440 Deming Way  
Middleton, WI 53562  
phone: 608-273-6380  
meadhunt.com

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City of Madison Water Utility  
Vehicle Storage Building Improvements  
Contract No. 7823, Project No. 10442  
Madison, Wisconsin

ISSUED  
10/21/16 BID SET

M&H NO.: 3235300-131021.02  
DATE: October 21, 2016  
DESIGNED BY: DP  
DRAWN BY: KAS  
CHECKED BY: RL

DO NOT SCALE DRAWINGS

SHEET CONTENTS  
NOTES, SYMBOLS & ABBREVIATIONS

SHEET NO.:

T-001



**City of Madison Water Utility**  
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Madison, Wisconsin

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SHEET CONTENTS  
MOUNTING HEIGHTS  
AND SCOPE

SHEET NO.:

**T-002**

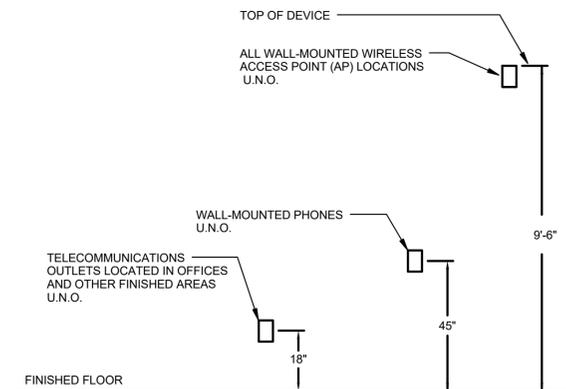
**TECHNOLOGY SCOPE RESPONSIBILITY MATRIX**

ITEM	SHOWN ON	FURNISHED BY	INSTALLED BY	NOTES
UNDERGROUND CONDUITS IN/OUT OF BUILDING, INCLUDING ASSOCIATED HANDHOLES	T-SERIES	EC	EC	1
FLOOR BOX ROUGH-IN, INCLUDING FLOOR BOXES AND CONDUITS	E AND T-SERIES	EC	EC	2
TECHNOLOGY SYSTEMS ROUGH-IN, INCLUDING BACKBOXES, TRIM RINGS, CONDUIT AND SLEEVES	T-SERIES	EC	EC	3
CABLE TRAY, INCLUDING ALL REQUIRED SUPPORT HARDWARE AND FITTINGS	T-SERIES	EC OR TC	EC OR TC	4
EQUIPMENT ROOM FITTINGS (PER SPECIFICATION SECTION 271100)	T-SERIES	TC	TC	
EQUIPMENT ROOM POWER RECEPTACLES	E-SERIES (PWR)	EC	EC	
GROUND BARS (TMGB, TGB) AND ELECTRICAL SERVICE BONDING	T-SERIES	EC	EC	
GROUNDING OF CABLE TRAY AND EQUIPMENT ROOM COMPONENTS	T-SERIES	TC	TC	
BACKBONE CABLING, TERMINATION COMPONENTS (e.g. WALL-FIELDS), TERMINATION, TESTING AND LABELING	T-SERIES	TC	TC	
PATCH PANELS	T-SERIES	TC	TC	
TELECOMMUNICATIONS OUTLET (TO) FACEPLATES AND JACKS	T-SERIES	TC	TC	
HORIZONTAL CABLING, TERMINATIONS, TESTING AND LABELING	T-SERIES	TC	TC	
FLOOR BOX AND TELECOMMUNICATION OUTLET (TO) ASSOCIATED POWER RECEPTACLES	E-SERIES (PWR)	EC	EC	5
EQUIPMENT ROOM PLYWOOD WALL COVERINGS	T-SERIES	GC	GC	6
ROOF PENETRATION CONDUITS	T-SERIES	EC	EC	7
PA SYSTEM ROUGH-IN, INCLUDING BACKBOXES, TRIM RINGS AND CONDUIT	T-SERIES	EC	EC	
PA SYSTEM COMPONENTS (HEAD-END, MICROPHONES, SPEAKERS/HORNS, VOLUME CONTROLS) AND CABLING	T-SERIES	TC	TC	
DISPLAY AND TV ROUGH-IN, INCLUDING BACKBOXES, TRIM RINGS AND CONDUIT	T-SERIES	EC	EC	
DISPLAY AND TV LOCATION BLOCKING FOR DISPLAY MOUNT ATTACHMENT/SUPPORT	T-SERIES	GC	GC	8
DISPLAY AND TV OUTLETS, MOUNTS, DISPLAYS AND CABLING	T-SERIES	TC	TC	
DISPLAY HEAD-END COMPONENTS AND MONITOR INTERFACES	T-SERIES	OWNER	OWNER	
TV SERVICE, DISTRIBUTION EQUIPMENT AND RECEIVERS	N/A	OWNER	OWNER	
SECURITY SYSTEMS (ACS, VSS) ROUGH-IN, INCLUDING BACKBOXES, TRIM RINGS AND CONDUIT	T-SERIES	EC	EC	
ACS FIELD DEVICES (e.g. CARD READERS, STATUS SENSORS, REX) AND CABLING	T-SERIES	TC	TC	
ACS DOOR HARDWARE INCLUDING ELECTRIC STRIKES, MAGNETIC LOCKS AND ASSOCIATED POWER SUPPLIES	T-SERIES	GC	GC / EC / TC	9
VSS HEAD-END, CAMERAS, MOUNTS AND CABLING	T-SERIES	TC	TC	

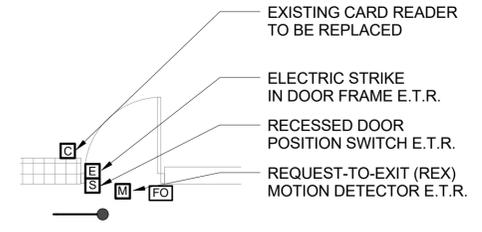
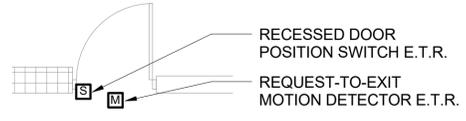
**TECHNOLOGY SYSTEMS RESPONSIBILITY MATRIX NOTES:**

- UNDERGROUND CONDUITS IN/OUT OF BUILDING ARE SHOWN FOR INTENT ONLY. ACTUAL LOCATIONS SHALL BE COORDINATED IN THE FIELD WITH OTHER UNDERGROUND WORK (STORM, SEWER, POWER, ETC).
- FLOOR BOX LOCATIONS SHALL BE COORDINATED WITH THE LOCATION(S) OF ASSOCIATED MILLWORK AND FURNITURE.
- PENETRATIONS THROUGH FLOORS AND FIRE-RATED WALLS WHERE APPLICABLE SHALL BE FIRESTOPPED IN A MANNER THAT MAINTAINS THE RATING OF THE FLOOR OR WALL PENETRATED. REFER TO ARCHITECTURAL SPECIFICATIONS.
- CABLE TRAY INDICATED ON DRAWINGS IS SHOWN FOR INTENT, AND THE INSTALLATION OF THE CABLE TRAY SHALL BE COORDINATED WITH OTHER TRADES (MECHANICAL, PLUMBING).
- LOCATIONS OF TECHNOLOGY SYSTEMS ROUGH-IN SHALL BE COORDINATED WITH ASSOCIATED POWER RECEPTACLES.
- PLYWOOD WALL COVERINGS SHALL BE AS SPECIFIED IN ARCHITECTURAL SPECIFICATIONS.
- ROOF PENETRATIONS SHALL BE INSTALLED AS INDICATED ON THE DRAWINGS AND SHALL BE SEALED AS SPECIFIED IN ARCHITECTURAL SPECIFICATIONS.
- BLOCKING FOR ALL TV AND IDS (FPD) LOCATIONS SHALL BE AS SPECIFIED IN ARCHITECTURAL SPECIFICATIONS OR AS INDICATED ON ARCHITECTURAL DRAWINGS.
- CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL ACCESS CONTROL SYSTEM COMPONENTS WITH DOOR AND DOOR HARDWARE VENDOR.

**DEVICE MOUNTING HEIGHT NOTE:**  
MOUNTING HEIGHT DIMENSION FOR TELECOMMUNICATIONS OUTLETS ABOVE COUNTER IS HEIGHT A.F.F. TO BOTTOM OF OUTLET BOX.



TYPICAL DEVICE MOUNTING HEIGHTS - TECHNOLOGY DEVICES



**Keyed Notes**

- 9.305 EXISTING WALL-MOUNTED NETWORK EQUIPMENT CABINET.
- 9.306 EXISTING LONGWATCH SYSTEM TO BE REMOVED AND TURNED OVER TO OWNER.
- 9.381 NEW POWERED, VENTILATED CAMERA INTERFACE ENCLOSURE. REFER TO DETAIL 4 ON SHEET T-501. MOUNT ENCLOSURE AT 8'-0" A.F.F. ABOVE PERSONNEL DOOR.
- 9.382 1" CONDUIT WITH 6-STRAND FIBER OPTIC CABLE BETWEEN EXISTING WALL-MOUNT NETWORK CABINET (KEYED NOTE 9.305) AND NEW CAMERA INTERFACE ENCLOSURE (KEYED NOTE 9.381). ROUTE CONDUIT WITHIN ROOF JOIST SPACE.
- ACS-2 EXISTING ACCESS-CONTROLLED DOOR TYPE ACS-2 CONSISTING OF: EXTERIOR SINGLE DOOR WITH (1) CARD READER (TBR) ON UNSECURED SIDE OF DOOR, (1) SURFACE DOOR POSITION SWITCH (ETR), (1) ELECTRIC STRIKE IN DOOR FRAME (ETR) AND (1) PASSIVE INFRARED REQUEST-TO-EXIT (REX) MOTION DETECTOR (ETR) ON SECURED SIDE OF DOOR.
- ACS-6 EXISTING ACCESS-CONTROLLED DOOR TYPE ACS-6 CONSISTING OF: SINGLE DOOR WITH (1) SURFACE DOOR POSITION SWITCH (ETR) AND (1) PASSIVE INFRARED REQUEST-TO-EXIT (REX) MOTION DETECTOR (ETR) ON SECURED SIDE OF DOOR.
- ACS-8 EXISTING ACCESS-CONTROLLED DOOR TYPE ACS-8 CONSISTING OF: OVERHEAD DOOR WITH (1) SURFACE-MOUNTED DOOR POSITION SWITCH (ETR).
- ETR EXISTING EQUIPMENT TO REMAIN. IF NECESSARY, REMOVE AND SECURELY STORE EQUIPMENT DURING DEMOLITION AND CONSTRUCTION. BEFORE RE-INSTALLATION, THOROUGHLY CLEAN AND VERIFY PROPER OPERATION OF EQUIPMENT.

**Mead & Hunt**  
2440 Deming Way  
Middleton, WI 53562  
phone: 608-273-6380  
meadhunt.com

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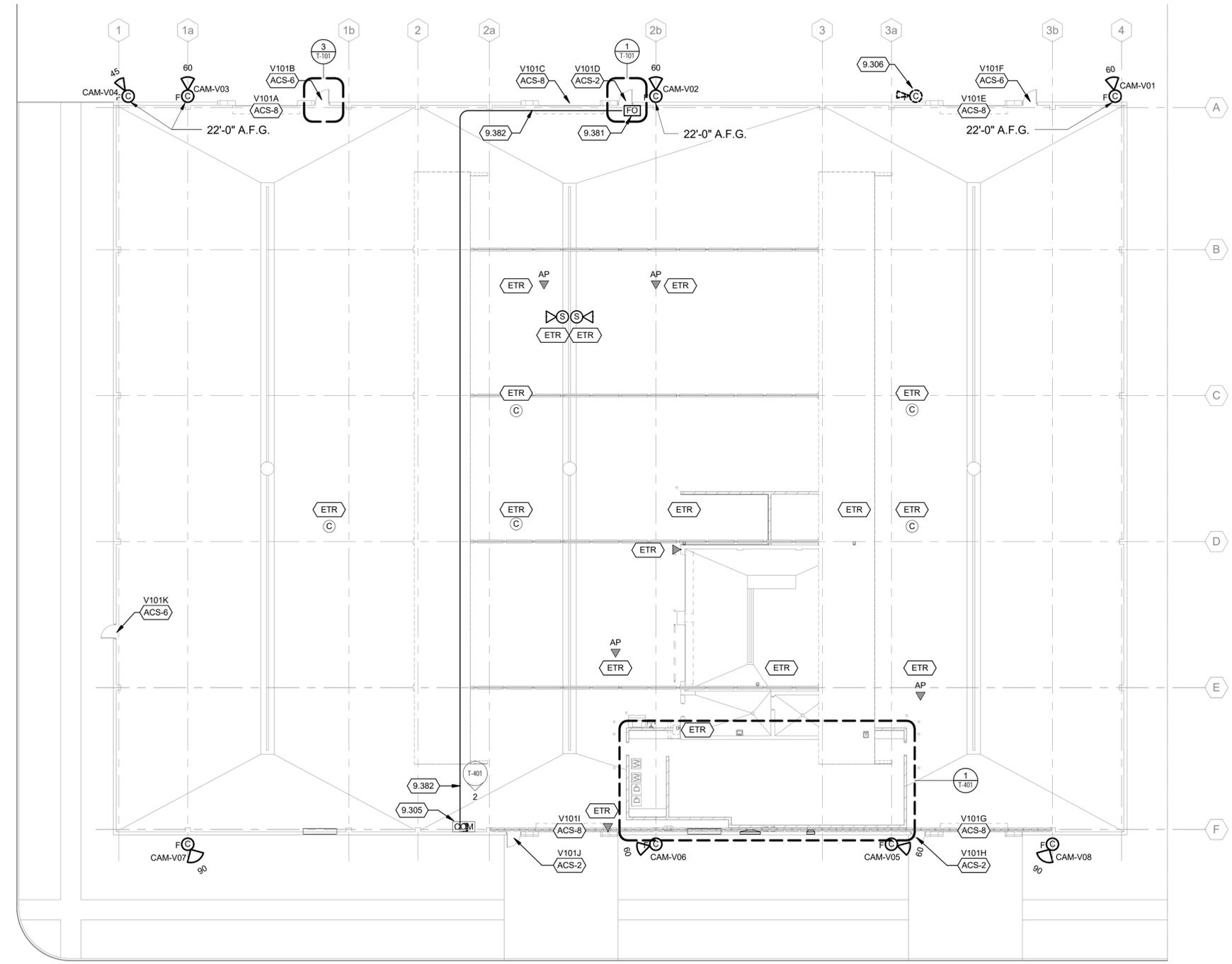
SHEET CONTENTS  
VEHICLE STORAGE BUILDING FLOOR PLAN

SHEET NO:

**T-101**

**3 ENLARGED ACCESS CONTROL - DOORS V101B, V101F, V101K**  
1/4" = 1'-0"

**1 ENLARGED ACCESS CONTROL - DOORS V101D, V101H, V101J**  
1/4" = 1'-0"



TRUE PLAN NORTH NORTH  
**VEHICLE STORAGE BUILDING FLOOR PLAN - TECHNOLOGY**  
1/16" = 1'-0"

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**Keyed Notes**

- 9.302 EXISTING UNDERGROUND CONDUIT TO HANDHOLE ON PATERSON STREET - REFER TO ELECTRICAL SITE PLAN E-011. N.I.C. - SHOWN FOR REFERENCE ONLY.
- 9.303 LEGACY INCOMING TELEPHONE SERVICE. N.I.C. - SHOWN FOR REFERENCE ONLY.
- 9.304 TEMPORARY FIBER OPTIC / CATEGORY CABLING TO TEMPORARY FIXED WIRELESS ANTENNA FOR NETWORK COMMUNICATIONS TO TEMPORARY MWU OFFICE IN MATERIAL STORAGE YARD. N.I.C. - SHOWN FOR REFERENCE ONLY.
- 9.305 EXISTING WALL-MOUNTED NETWORK EQUIPMENT CABINET.
- 9.306 EXISTING LONGWATCH SYSTEM TO BE REMOVED AND TURNED OVER TO OWNER.
- 9.307 EXISTING 'REMOTE RADIO PANEL'. N.I.C. - SHOWN FOR REFERENCE ONLY.
- 9.308 EXISTING LEGACY ACCESS CONTROL SYSTEM PANEL (TBR.)
- 9.362 MOUNT TELECOMMUNICATIONS OUTLET TO CEILING.
- 9.382 1" CONDUIT WITH 6-STRAND FIBER OPTIC CABLE BETWEEN EXISTING WALL-MOUNT NETWORK CABINET (KEYED NOTE 9.305) AND NEW CAMERA INTERFACE ENCLOSURE (KEYED NOTE 9.381). ROUTE CONDUIT WITHIN ROOF JOIST SPACE.

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**City of Madison Water Utility**  
 Vehicle Storage Building Improvements  
 Contract No. 7823, Project No. 10442  
 Madison, Wisconsin

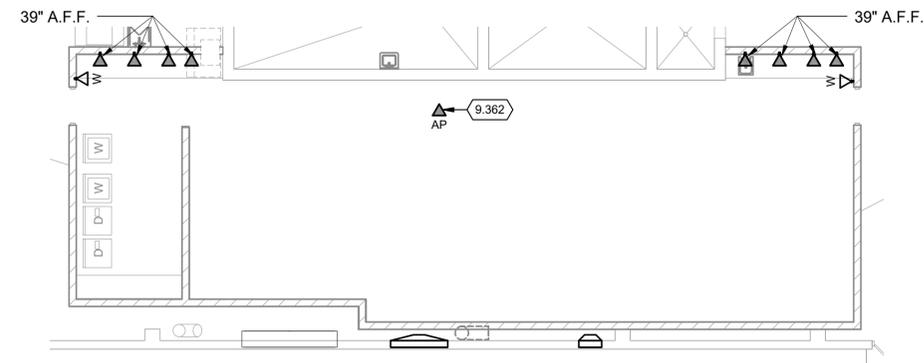
ISSUED  
 10/21/16 BID SET

MSH NO.: 3235300-131021.02  
 DATE: October 21, 2016  
 DESIGNED BY: DP  
 DRAWN BY: KAS  
 CHECKED BY: RL  
 DO NOT SCALE DRAWINGS

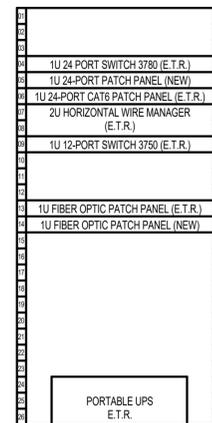
SHEET CONTENTS  
 ENLARGED PLANS

SHEET NO.:

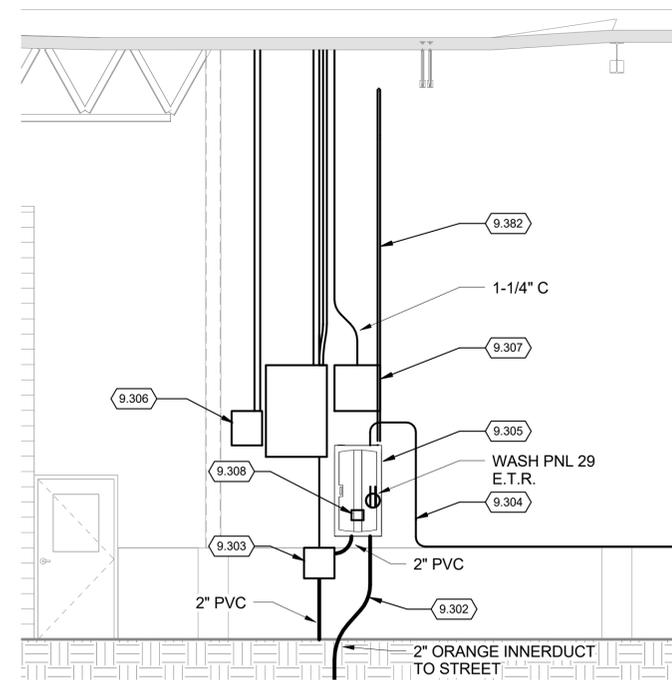
**T-401**



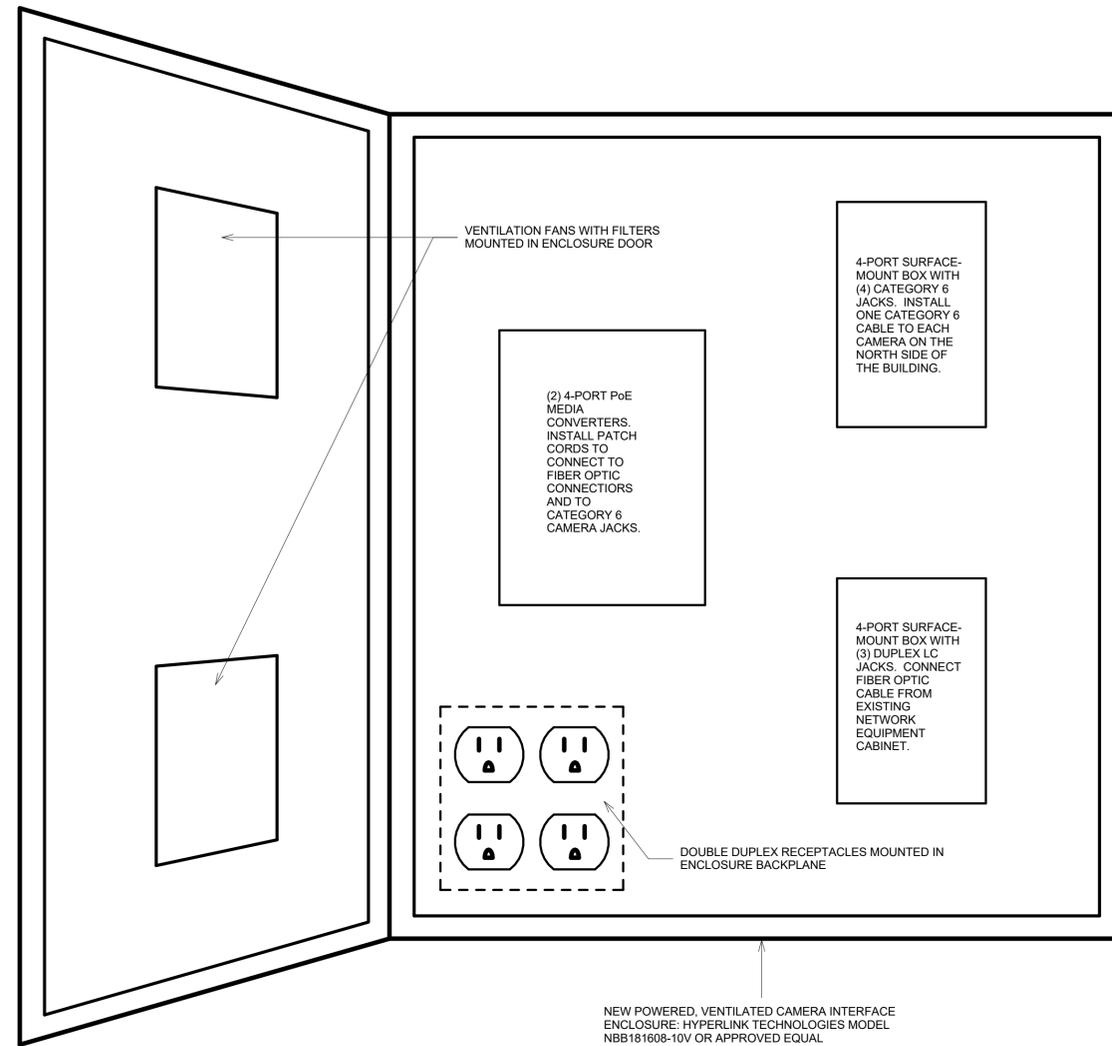
**1 ENLARGED LOCKER ROOM AND LAUNDRY ROOM PLAN**  
 1/8" = 1'-0"



**3 EXISTING EQUIPMENT CABINET LAYOUT**  
 12" = 1'-0"



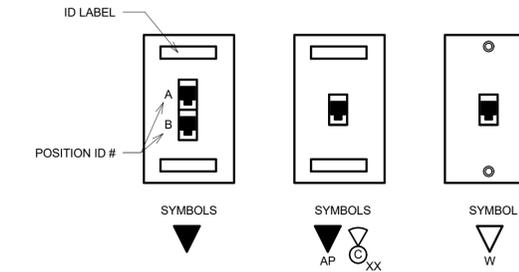
**2 ENLARGED TELECOMMUNICATIONS CABINET LOCATION**  
 1/4" = 1'-0"



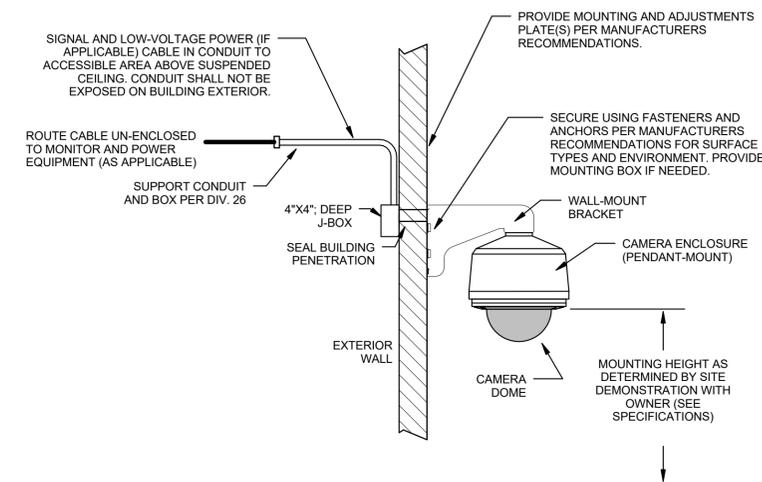
**4 CAMERA INTERFACE ENCLOSURE DETAIL**  
NO SCALE

**DETAIL NOTES:**  
 1. REFER TO DIVISION 27 SPECIFICATIONS FOR PERFORMANCE, PIN/PAIR ASSIGNMENTS AND COLOR.  
 2. REFER TO DIVISION 27 SPECIFICATIONS FOR FACEPLATE MATERIAL & COLOR (TYPICAL)

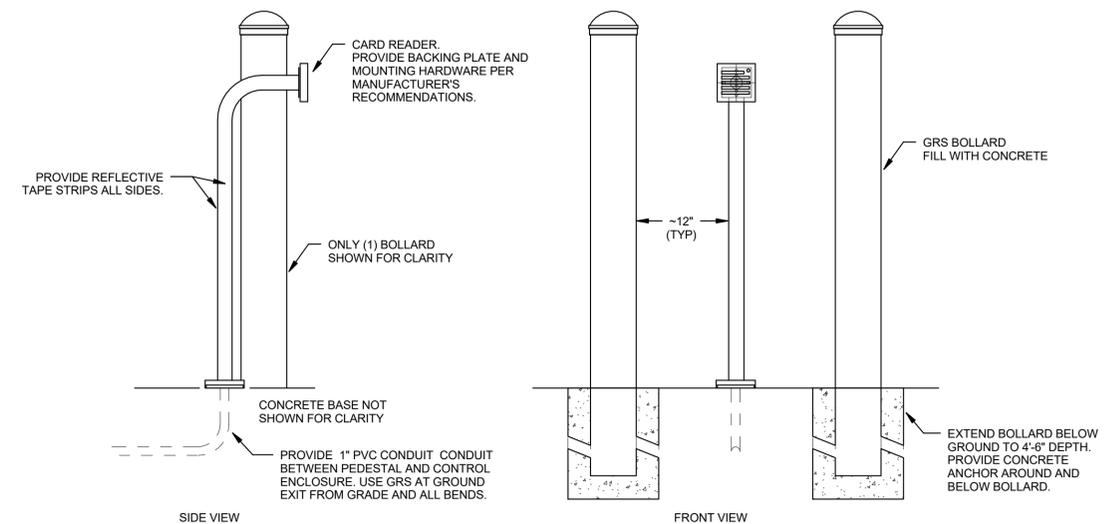
**KEY**  
 MODULAR JACK - DATA



**1 TELECOMMUNICATIONS OUTLET CONFIGURATIONS**  
NO SCALE



**2 CAMERA DOME - EXTERIOR WALL**  
NO SCALE



**3 PEDESTAL CARD READER**  
NO SCALE

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SHEET CONTENTS  
 DETAILS

SHEET NO.:



**City of Madison Water Utility**  
Vehicle Storage Building Improvements  
Contract No. 7823, Project No. 10442  
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SHEET CONTENTS  
SCHEDULES

SHEET NO.:

**T-601**

**ACCESS CONTROLLED DOOR SCHEDULE**

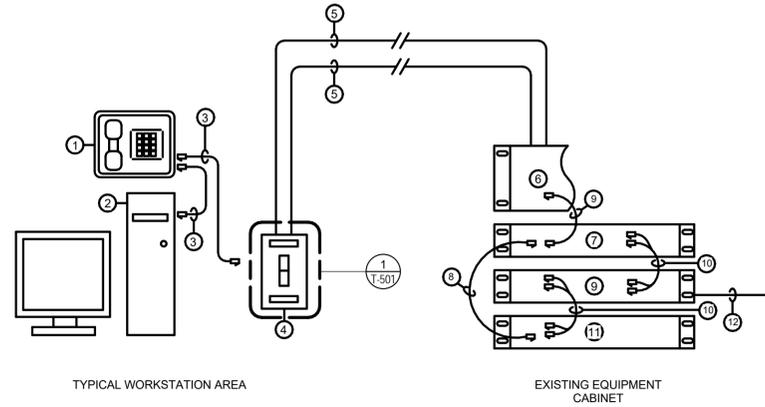
DOOR					HARDWARE								
DOOR NO.	ID	TYPE	SGL / DBL	DESCRIPTION	ACS ID	UNSECURED SIDE ROOM	DEVICE	SECURED SIDE ROOM	DEVICE	LOCK	STATUS	FAIL	COMMENTS
V101K	111	EXTERIOR	SINGLE		ACS-6	MAIN STREET	N/A	MVS	M (ETR)	N/A	S (ETR)	N/A	
V101B	113	EXTERIOR	SINGLE		ACS-6	YARD	N/A	MVS	M (ETR)	N/A	S (ETR)	N/A	
V101D	121	EXTERIOR	SINGLE		ACS-2	YARD	C (NEW)	MVS	M (ETR)	E (ETR)	S (ETR)	SECURE	REPLACE CARD READER ONLY
V101F	122	EXTERIOR	SINGLE		ACS-6	YARD	N/A	MVS	M (ETR)	N/A	S (ETR)	N/A	
V101H	141	EXTERIOR	SINGLE		ACS-2	PATERSON STREET	C (NEW)	MVS	M (ETR)	E (ETR)	S (ETR)	SECURE	REPLACE CARD READER ONLY
V101J	142	EXTERIOR	SINGLE		ACS-2	PATERSON STREET	C (NEW)	MVS	M (ETR)	E (ETR)	S (ETR)	SECURE	REPLACE CARD READER ONLY
V101A	113OH	EXTERIOR	OVERHEAD		ACS-8	YARD	N/A	MVS	N/A	N/A	S (ETR)	N/A	
V101C	121OH	EXTERIOR	OVERHEAD		ACS-8	YARD	IL	MVS	N/A	N/A	S (ETR)	N/A	
V101E	122OH	EXTERIOR	OVERHEAD		ACS-8	YARD	N/A	MVS	N/A	N/A	S (ETR)	N/A	
V101G	141OH	EXTERIOR	OVERHEAD		ACS-8	PATERSON STREET	N/A	MVS	N/A	N/A	S (ETR)	N/A	
V101I	142OH	EXTERIOR	OVERHEAD		ACS-8	PATERSON STREET	N/A	MVS	N/A	N/A	S (ETR)	N/A	
EXTERIOR	PED	EXTERIOR	SINGLE	PEDESTRIAN GATE	ACS-10	PUBLIC SPACE	C	YARD	P	ML	BS	N/A	
EXTERIOR	DRIVE	EXTERIOR	DOUBLE	DRIVE GATE (WEST)	ACS-11	PUBLIC SPACE	C	YARD	LOOP	GATE	N/A	N/A	
EXTERIOR	DRIVE	EXTERIOR	DOUBLE	DRIVE GATE (EAST)	ACS-11	PUBLIC SPACE	C	YARD	LOOP	GATE	N/A	N/A	CONDUIT INFRASTRUCTURE ONLY FOR FUTURE...

SYMBOL KEY:  
C CARD READER  
E ELECTRIC STRIKE  
ML MAGNETIC LOCK  
BS BOND SENSOR  
S DOOR POSITION SWITCH  
M MOTION DETECTOR  
ETR EXISTING TO REMAIN

**VIDEO SURVEILLANCE CAMERA SCHEDULE**

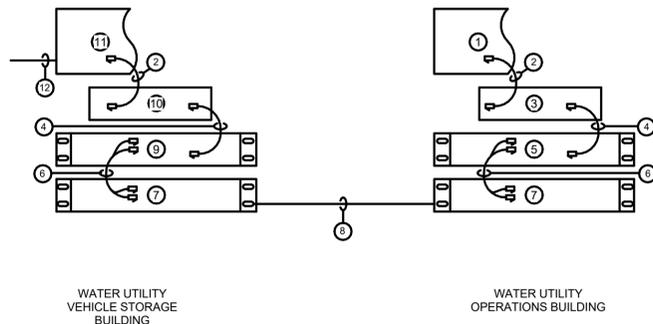
CAMERA NUMBER	CAMERA LOCATION	TYPE	RESOLUTION	VIEW ANGLE	CAMERA CONFIGURATION	
					AREA OF COVERAGE	MOUNTING
CAM-V01	NORTHEAST CORNER	FIXED	SMP	60	EAST YARD / GATE	WALL
CAM-V02	NORTHWEST CORNER	FIXED	SMP	60	YARD	WALL
CAM-V03	NORTHWEST FACE	FIXED	SMP	60	YARD	WALL
CAM-V04	NORTHEAST FACE	FIXED	SMP	45	WEST YARD / GATE	WALL
CAM-V05	PATERSON STREET	FIXED	SMP	60	PATERSON STREET DOORS	WALL
CAM-V06	PATERSON STREET	FIXED	SMP	60	PATERSON STREET DOORS	WALL
CAM-V07	PATERSON STREET	FIXED	SMP	90	OPS BUILDING	WALL
CAM-V08	PATERSON STREET	FIXED	SMP	90	OPS BUILDING	WALL

COMMUNICATION EQUIPMENT SCHEDULE			
NUMBER	DESCRIPTION	COMMENTS	SCHEDULE NOTES
1	VOIP TELEPHONE	BY AGENCY	SEE DIVISION 27 SECTIONS FOR CABLE AND CONNECTIVITY PERFORMANCE AND PHYSICAL CONFIGURATION AS APPLICABLE TO EACH COMPONENT.  REFER TO TELECOMMUNICATIONS OUTLET DETAIL INDICATED FOR CONFIGURATIONS, JACK POSITIONS, ETC.  ALL TELECOMMUNICATIONS OUTLETS SHALL BE CATEGORY 6 COMPLIANT FOR DATA USE BUT MAY BE USED FOR VOICE.
2	COMPUTER	BY AGENCY	
3	MODULAR PATCH CORD		
4	TELECOMMUNICATIONS OUTLET		
5	HORIZONTAL CABLING		
6	MODULAR PATCH PANEL		
7	NETWORK EQUIPMENT	BY OWNER	
8	MODULAR PATCH CORD		
9	FIBER OPTIC PATCH PANEL		
10	FIBER OPTIC PATCH CORD		
11	MEDIA CONVERTER CHASSIS / MODULES	FOR SITE SEC. DEVICES	
12	FIBER OPTIC CABLES TO CAM. INT. ENCL.		

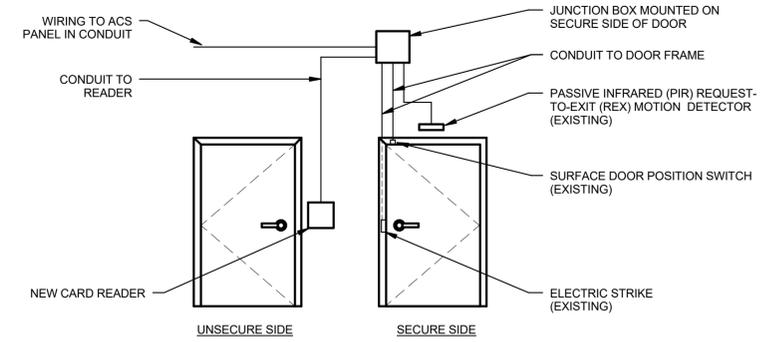


**4 COMMUNICATIONS HORIZONTAL CABLE AND EQUIPMENT**  
NO SCALE

COMMUNICATION EQUIPMENT SCHEDULE			
NUMBER	DESCRIPTION	COMMENTS	SCHEDULE NOTES
1	PA SYSTEM HEAD END	EXISTING	SEE DIVISION 27 SECTIONS FOR CABLE AND CONNECTIVITY PERFORMANCE AND PHYSICAL CONFIGURATION AS APPLICABLE TO EACH COMPONENT.  REFER TO TELECOMMUNICATIONS OUTLET DETAIL INDICATED FOR CONFIGURATIONS, JACK POSITIONS, ETC.  ALL TELECOMMUNICATIONS OUTLETS SHALL BE CATEGORY 6 COMPLIANT FOR DATA USE BUT MAY BE USED FOR VOICE.
2	LINE-LEVEL AUDIO PATCH CORD	NEW	
3	AUDIO ENCODER	NEW	
4	UTP PATCH CORD	NEW	
5	MEDIA CONVERTER (NEW)	EXISTING CHASSIS	
6	DUPLEX FIBER OPTIC PATCH CORD	NEW	
7	FIBER OPTIC PATCH PANEL	EXISTING	
8	FIBER OPTIC CABLE BETWEEN BUILDINGS	EXISTING	
9	MEDIA CONVERTER / CHASSIS	NEW	
10	AUDIO DECODER	NEW	
11	MEDIA CONVERTER CHASSIS / MODULES	NEW	
12	SPEAKER CABLE AND SPEAKERS	EXISTING	

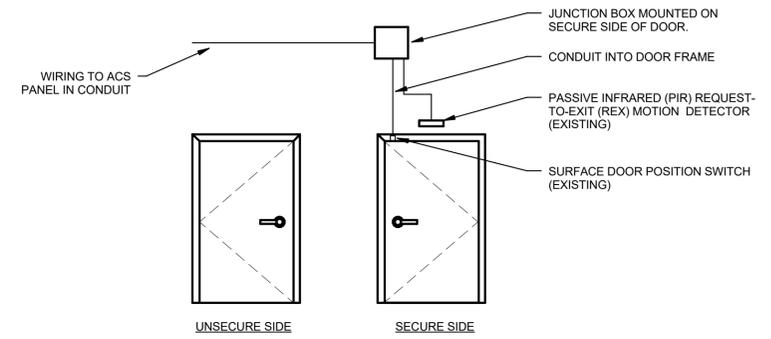


**5 PA SYSTEM ONE-LINE DIAGRAM**  
NO SCALE



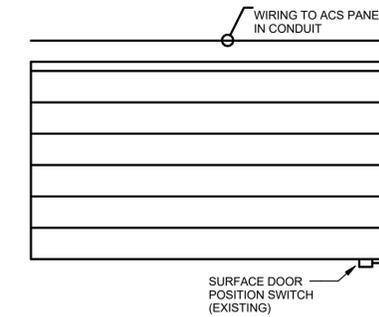
NOTE: ALL CABLING PER MANUFACTURER'S RECOMMENDATIONS

**1 TYPE ACS-2 DOOR DETAIL**  
NO SCALE



NOTE: ALL CABLING PER MANUFACTURER'S RECOMMENDATIONS

**2 TYPE ACS-6 DOOR DETAIL**  
NO SCALE



**3 TYPE ACS-8 DOOR DETAIL**  
NO SCALE