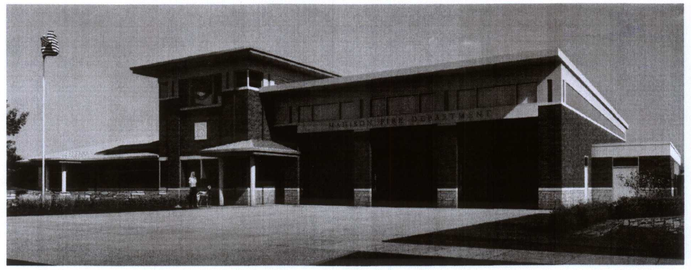

Madison Fire Station 13

6350 Town Center Drive
Madison, WI 53718

PROJECT TEAM

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P101	First Floor and Mezzanine Plumbing Plan
P200	Waste and Vent Piping Isometric
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VICINITY MAP

Zimmerman
ARCHITECTURAL STUDIOS, INC.

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Madison Fire Station 13

Bid Set-General Contractor Package

Madison Project Number: 53W1152
Madison Contract Number: 6590

PUBLIC IMPROVEMENT PROJECT APPROVED
RES-13-00088, ID; FILE ID 28811
FEBRUARY 5, 2013
BY THE COMMON COUNCIL OF MADISON, WISCONSIN

PUBLIC IMPROVEMENT DESIGN APPROVED BY:
City Engineer
5/2/13
Date

ZAS PROJECT NUMBER: 120062.00
May 3, 2013

LIFE SAFETY INFORMATION

Construction documents prepared using the Wisconsin Commercial Building Code utilizing the 2009 International Building Code.

Occupancy Classification:	Business - B Storage - S-2 Note: Community Room is less than 10% of story, therefore is an accessory occupancy.
Construction Type:	IIB
Non-Separated Uses:	The allowable area and height of the building or portion thereof shall be based on the most restrictive allowances for the occupancy group under consideration for the type of construction of the building in accordance with Table 503. Most restrictive occupancy classification in construction type IIB: Business - B.
Fire Protection:	The building is fully equipped with an automatic sprinkler system.
Fire Separation:	South Wall: greater than 30'. North Wall: greater than 30'. East Wall: greater than 30' West Wall: greater than 30' Unlimited openings in walls at greater than 30' separation distance.
Exit Access Travel Distance:	300 feet.
Common Path of Egress Travel:	100 feet.
Dead End Corridor Length:	20 feet.

Occupant Load (calculated for egress):

First Floor
- Group S-2 Area
  - Parking garage area: 4,220sf/200sf per person = 22 occupants
- Group B Area
  - Business area: 3,480sf/100sf per person = 35 occupants
  - Accessory storage areas, mechanical equipment room: 1,164sf/300sf per person = 4 occupants
  - Assembly/concentrated areas: 616sf/15 net sf per person = 42 occupants
- Total First Floor occupants: 144

Penthouse
- Group B Area
  - Accessory storage areas, mechanical equipment room: 1,766sf/300sf per person = 6 occupant
- Total Penthouse occupants: 6

Total Building Occupants: 150

Building Area
- First Floor: 11,958sf
- Penthouse: 1,766sf
- Total building area: 13,724sf

Maximum Building Area	Per table 503, maximum area allowed for an entire building with type IIB construction and B occupancy as the most restrictive is 23,000sf not considering increases.
Required Height and Stories	55' height and 3 stories
Required Egress Width	Stairways: .30" per occupant; other egress components: .20" per occupant First Floor: 144 occupants x .20" = 29" Penthouse: 6 occupants x .30 = 2" Total egress width: 31"
Corridor Rating	This building does not require rated corridors as required by table 1017.1 as the building is sprinklered.

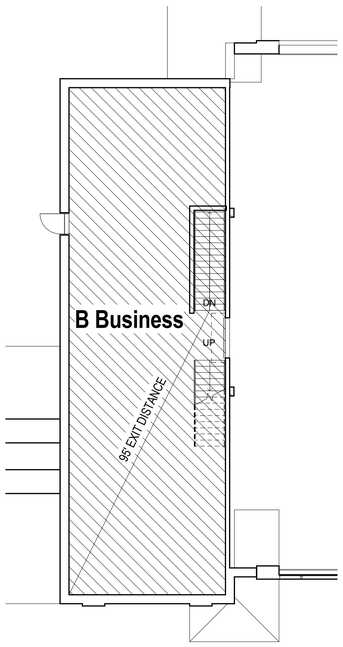
Plumbing Requirements

Water Closets
150 occupants/1 per 25 for 1st 50, then 1 per 50 = 4 total

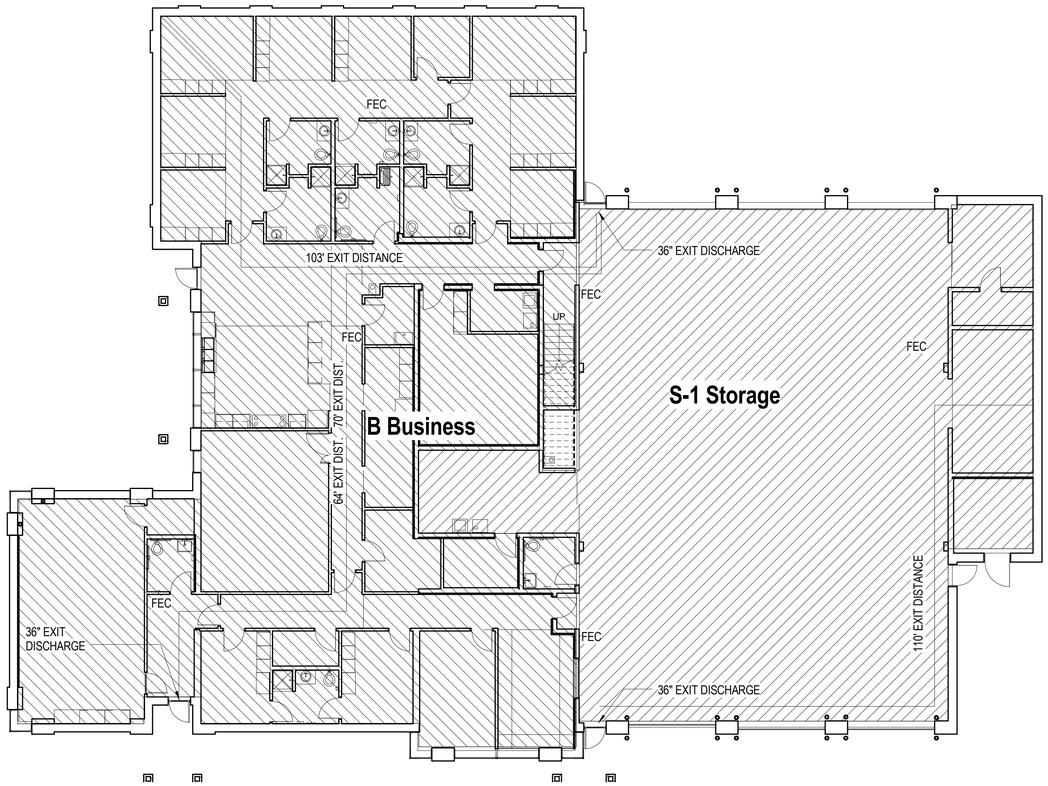
Lavatories
150 occupants/1 per 40 for 1st 80, then 1 per 80 = 3 total

Drinking Fountains
150 occupants/1 per 100 occupants = 2 total

Other
1 service sink



2 Penthouse Life Safety Plan
3/32" = 1'-0"



1 First Floor Life Safety Plan
3/32" = 1'-0"

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PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

Madison

ISSUANCE AND REVISIONS

Construction Document Set

KEY PLAN

SHEET INFORMATION

REVISIONS

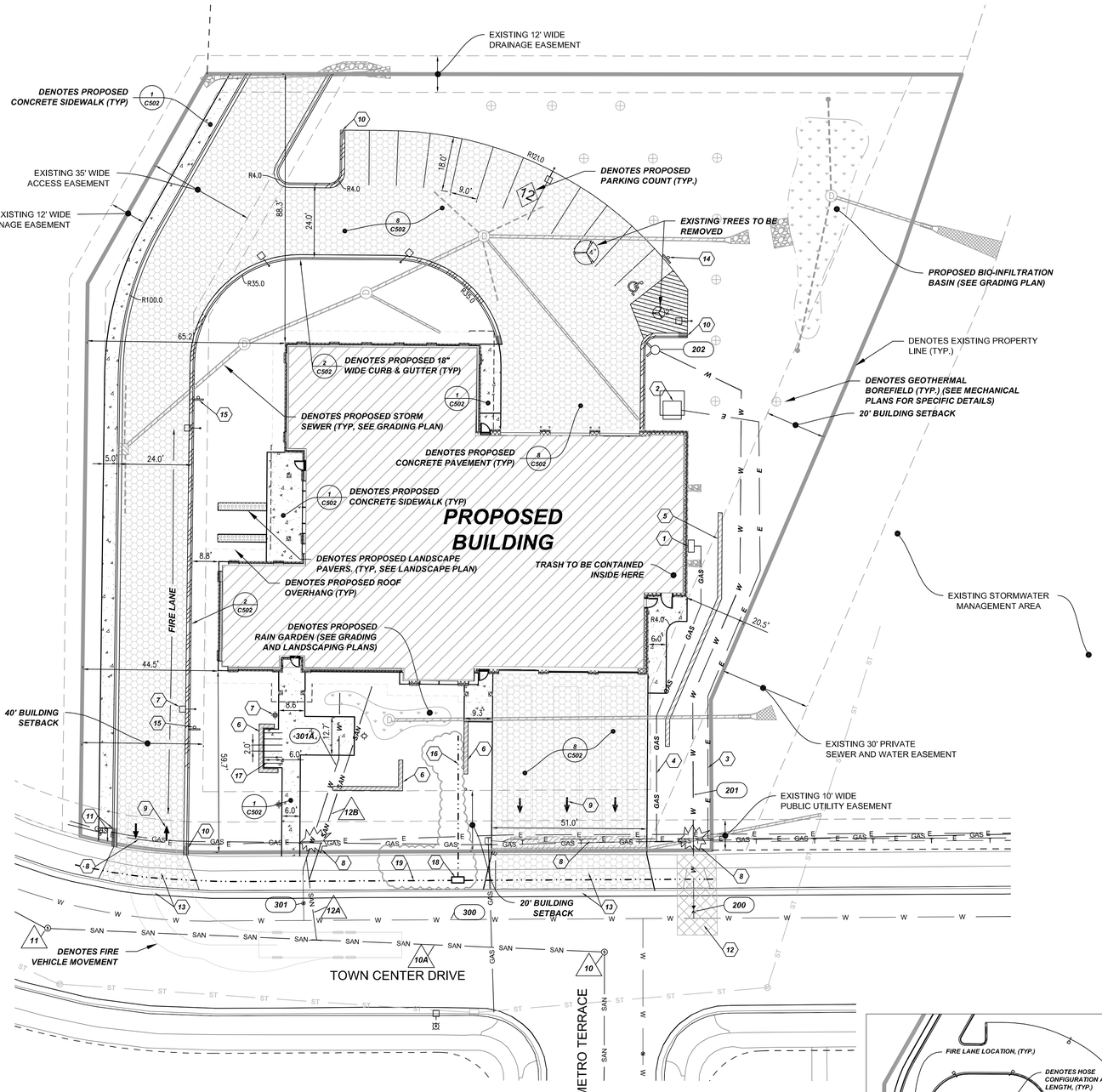
#	DATE	DESCRIPTION

DATE
May 3, 2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

Code Information

G100



UTILITY TAGS

SANITARY

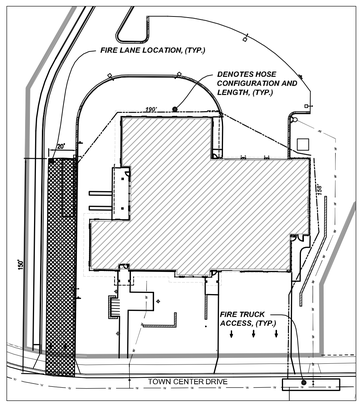
#	
10	EXIST. SANITARY MANHOLE RIM = 952.47 INV (W) = 942.54 (8") INV (S) = 942.50 (8")
10A	EXIST. 8" PVC SANITARY SEWER
11	EXIST. SANITARY MANHOLE RIM = 960.85 INV (W) = 950.86 (8") INV (E) = 950.79 (8")
12A	EXIST. 6" SANITARY SERVICE STUB (VERIFY STUB ELEVATION PRIOR TO CONSTRUCTION)
12B	PROP. 67 L.F. 6" PVC SANITARY SERVICE @ 1.0 % (MIN). INV @ BLDG = 950.50 INSTALL CITY OF MADISON LATERAL MARKERS PER SPECS

WATER

#	
200	PROP. LIVE TAP AND 8" GATE VALVE (CITY OF MADISON TO MAKE CONNECTION TO WATERMAIN. CONTRACTOR TO COORDINATE. EXCAVATE/PREP TRENCH AND PAY FOR ANY CONNECTION FEES)
201	PROP. 206 LF 8" WATERMAIN, D.I. CL 52
202	PROP. FIRE HYDRANT AND AUXILIARY VALVE. BURY ELEV = 957.65 +/-
300	EXIST. WATERMAIN
301	EXIST. 6" WATER SERVICE STUB
301A	PROP. 60 L.F. 6" D.I. (CL 52) WATER SERVICE

DIGGER'S HOTLINE — CALL BEFORE YOU DIG — 1-800-242-8511

IN ACCORDANCE WITH WISCONSIN STATUTE 182.0175, DAMAGE TO TRANSMISSION FACILITIES, EXCAVATOR SHALL BE SOLELY RESPONSIBLE TO PROVIDE ADVANCE NOTICE TO THE DESIGNATED "ONE CALL SYSTEM" NOT LESS THAN THREE WORKING DAYS PRIOR TO COMMENCEMENT OF ANY EXCAVATION REQUIRED TO PERFORM WORK CONTAINED ON THESE DRAWINGS, AND FURTHER, EXCAVATOR SHALL COMPLY WITH ALL OTHER REQUIREMENTS OF THIS STATUTE RELATIVE TO EXCAVATOR'S WORK.



FIRE LANE EXHIBIT
Scale: 1" = 50'

SITE ZONING AND LOCATION TABLE

LEGAL DESCRIPTION:
ALL OF LOT 1, CERTIFIED SURVEY MAP NUMBER 12761, AS RECORDED IN VOLUME 80 OF CERTIFIED SURVEY MAPS, ON PAGES 304–307, AS DOCUMENT NUMBER 4593131, DANE COUNTY REGISTRY, LOCATED IN THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 02, TOWNSHIP 07 NORTH, RANGE 10 EAST, CITY OF MADISON, DANE COUNTY, WISCONSIN.

PROPERTY LOCATION:	6350 TOWN CENTER DRIVE MADISON WISCONSIN
EXISTING ZONING:	PUD - (GDP)
PROPOSED ZONING:	PUD - (GDP)
ZONING SETBACKS:	
BUILDING SETBACK:	20 FEET (FRONT & EAST SIDE) 40 FEET (WEST SIDE)
PROPERTY OWNER:	CITY OF MADISON
PROPOSED USEAGE:	FIRE STATION

SITE CALCULATION TABLE

TOTAL SITE AREA	1.38 AC
TOTAL DISTURBED AREA	1.52 AC
EXISTING IMPERVIOUS AREA	0.00 AC
PROPOSED IMPERVIOUS AREA	0.69 AC
PROPOSED GREENSPACE	0.69 AC (50% OF SITE)
PROPOSED REGULAR PARKING SPACES	11
PROPOSED HANDICAP PARKING	1
PROPOSED TOTAL PARKING	12

UTILITY LEGEND

SYMBOL	DESCRIPTION
W W	EXISTING WATER MAIN
	PROPOSED WATER SERVICE
E E	EXISTING ELECTRICAL LINE
E E	PROPOSED ELECTRICAL LINE
GAS GAS	EXISTING GAS MAIN
GAS GAS	PROPOSED GAS MAIN
SAN SAN	EXISTING SANITARY SEWER
	PROPOSED SANITARY SEWER
ST ST	EXISTING STORM SEWER
	PROPOSED STORM SEWER
OHW OHW	OVERHEAD WIRES
	EXISTING POWER POLES
M	EXISTING LIGHT POLES
SN	SANITARY MANHOLE
	FIRE HYDRANT
W	EXISTING WATER VALVE
	PROPOSED WATER VALVE
ST	EXISTING STORM STRUCTURE
D	PROPOSED STORM STRUCTURE
	DENOTES EMERGENCY OVERFLOW ROUTE / DRAINAGE PATH
100.00 100.00	PROPOSED & EXISTING SPOT GRADE

NOTES

1. DENOTES PROPOSED GAS METER LOCATION. SEE MECHANICAL PLANS.
2. DENOTES PROPOSED TRANSFORMER LOCATION. CONTRACTOR TO COORDINATE EXACT LOCATION WITH UTILITY COMPANY.
3. DENOTES PROPOSED ELECTRIC SERVICE. CONTRACTOR TO COORDINATE EXACT LOCATION WITH UTILITY COMPANY.
4. DENOTES PROPOSED GAS SERVICE. CONTRACTOR TO COORDINATE EXACT LOCATION WITH UTILITY COMPANY.
5. DENOTES PROPOSED RETAINING WALL. SEE LANDSCAPE PLANS.
6. DENOTES PROPOSED LANDSCAPE WALL. SEE LANDSCAPE PLANS.
7. DENOTES PROPOSED SITE LIGHTING. (TYP, SEE ELECTRIC PLANS)
8. CAUTION! EXISTING UTILITIES. VERIFY EXACT LOCATION AND ELEVATION PRIOR TO STARTING CONSTRUCTION.
9. DENOTES PROPOSED PAVEMENT MARKING DIRECTIONAL ARROWS. (TYP)
10. DENOTES PROPOSED 3' CURB TAPER.
11. DENOTES PROPOSED 6' CURB TAPER AND SIDEWALK RAMP. FIRST 6' OF SIDEWALK TO BE RAMPED AT 8% MAX SLOPE.
12. REMOVE AND REPLACE PAVEMENT, CURB, SIDEWALK AND ADA RAMP AS REQUIRED TO INSTALL WATERMAIN. SLURRY BACKFILL REQUIRED WITHIN ROADWAY. CONSTRUCT NEW ADA RAMP TO MATCH DETAIL 3, C502
13. CUT CURB HEAD PER DETAIL 6, C502 WITHIN DRIVEWAY AREA AND INSTALL DRIVEWAY PER DETAIL 7, C502. REMOVE EXISTING SIDEWALK WITHIN DRIVEWAY AREA AND REPLACE MATCHING THE CONCRETE PAVEMENT SECTION.
14. DENOTES PROPOSED ADA SIGN. SEE DETAIL 4, C502.
15. DENOTES PROPOSED "NO PARKING FIRE LANE" SIGN.
16. EXTEND CONDUITS FROM BUILDING TO UTILITY ACCESS VAULT. ONE-3" FOR FUTURE FIBER, ONE-2" FOR PHONE SERVICE, TWO-4" FOR FUTURE RADIO/WIRELESS, AND ONE-2" FOR CABLE TV. (SEE ELECTRICAL PLANS)
17. PROPOSED BIKE PARKING. SEE LANDSCAPE PLANS FOR SPECIFIC BIKE RACK DETAILS AND CONFIGURATION.
18. PROVIDE UTILITY ACCESS VAULT MEETING CITY OF MADISON REQUIREMENTS.
19. DENOTES PROPOSED 3" CONDUIT FOR FUTURE FIBER SERVICE. SCH 80 REQUIRED UNDER DRIVEWAYS, SCH 40 MAY BE USED ELSEWHERE. INSTALL WITH TRACER WIRE AND LONG SWEEP BENDS.

GENERAL NOTES AND SPECIFICATIONS

1. THE EXISTING SITE INFORMATION ON THIS PLAN WAS TAKEN FROM A SITE SURVEY PROVIDED BY BURSE SURVEYING AND ENGINEERING, INC. THE ENGINEER MAKES NO WARRANTY OR REPRESENTATION WITH REFERENCE TO THE ACCURACY AND COMPLETENESS OF THE EXISTING CONDITIONS INDICATED OR NOT INDICATED ON THE ENGINEERING PLANS PROVIDED. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING SITE CONDITIONS INCLUDING UNDERGROUND UTILITIES, UNDERGROUND UTILITY ELEVATIONS, BUILDING SETBACKS AND EXISTING BUILDING LOCATIONS. THE CONTRACTOR SHALL INFORM THE OWNER AND ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCING WITH WORK. QUESTIONS REGARDING THE EXISTING SURVEY SHALL BE DIRECTED TO THE PARTIES LISTED ABOVE.
2. BEFORE PROCEEDING WITH ANY UTILITY CONSTRUCTION, CONTRACTOR SHALL EXCAVATE EACH EXISTING LATERAL TO BE CONNECTED TO (VERIFYING ELEVATION, LOCATION AND SIZE). SHOULD THE EXISTING UTILITY NOT BE AS INDICATED ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR EVALUATION.
3. ALL UTILITY CONSTRUCTION SHALL ADHERE TO THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN (2003), AS WELL AS, THE CITY OF MADISON CONSTRUCTION STANDARDS AND THE DEPT. OF COMMERCE SEC. 82-87.
4. ALL UTILITY PERMITS MUST BE RECEIVED FROM THE CITY OF MADISON PRIOR TO THE START OF CONSTRUCTION.
5. NOTIFY THE PUBLIC WORKS INSPECTION DEPT. AT LEAST 48 HOURS BEFORE STARTING CONSTRUCTION.
6. BACKFILL REQUIREMENTS AND ROADWAY/SIDEWALK RESTORATION SHALL ADHERE TO LOCAL STANDARDS (GRANULAR BACKFILL UNDER OR WITHIN 5' OF CURBS, SIDEWALK, OR PAVEMENT. SPOIL MAY BE USED ELSEWHERE. SLURRY BACKFILL WILL BE REQUIRED IN PUBLIC ROADWAYS.)
7. ALL BUILDING UTILITIES SHALL BE VERIFIED WITH THE ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION.
8. ALL PROPOSED WATERMAIN SHALL BE DUCTILE IRON, CLASS 52
.
9. PROPOSED SANITARY SEWER PIPE SHALL BE PVC, ASTM D-3034, SDR 35 WITH RUBBER GASKETED JOINTS CONFORMING TO ASTM D-3212.
10. PROPOSED STORM SEWER SHALL BE PVC, ASTM D-3034, SDR 35 WITH RUBBER ELASTOMERIC JOINTS CONFORMING TO ASTM D-3212 (UNLESS OTHERWISE NOTED).
11. UTILITY TRENCHES SHALL BE MECHANICALLY COMPACTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.
12. SILT FENCE AND ALL OTHER EROSION CONTROL METHODS MUST BE INSTALLED PRIOR TO COMMENCEMENT OF CONSTRUCTION. ALSO, CONTRACTOR IS RESPONSIBLE FOR REMOVING EROSION CONTROL METHODS ONCE THE SITE IS STABILIZED.
13. THE PROPOSED SITE LOCATION AND SURROUNDING STREETS MUST BE KEPT DEBRIS FREE. SWEEP STREETS AS NEEDED TO MAINTAIN CLEAN STREETS.
14. ALL EXCAVATED OR STRIPPED MATERIALS NOT BEING REPLACED IN UTILITY TRENCHES OR BEING USED FOR FILL SHALL BE REMOVED FROM THE SITE, UNLESS OTHERWISE DIRECTED BY THE OWNER.
15. ALL DISTURBED GRASS AREAS SHALL BE STABILIZED (PER DNR TECHNICAL STANDARDS) WITHIN 7 DAYS OF COMPLETION. DISTURBED GRASS AREAS SHALL BE TOPSOILED (6"), RESEEDED AND STABILIZED. AREAS WITH A SLOPE OF 3H:1V OR STEEPER SHALL BE COVERED WITH A CLASS 1 - TYPE A EROSION FABRIC. (SEE SPECIFICATIONS)
16. SEE ARCHITECTURAL PLANS FOR EXACT BUILDING & FOUNDATION DETAILS AND ORIENTATION.
17. ALL ON-SITE CONCRETE CURB AND GUTTER TO BE 18" WIDE VERTICAL FACE, UNLESS OTHERWISE NOTED. REVERSE OR REGULAR STYLE CURB DENOTED ON PLANS.
18. ALL CURB ELEVATIONS ARE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED. SEE CURB DETAIL FOR TOP OF CURB ELEVATIONS.
19. ALL CURB RADII ARE MEASURED TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
20. CONTRACTOR SHALL MATCH PROPOSED CONCRETE CURB AND GUTTER, SIDEWALK AND PAVEMENT TO EXISTING IN ELEVATION AND ALIGNMENT.
21. REMOVAL OF CURB AND GUTTER, SIDEWALK AND PAVEMENT SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE WISCONSIN D.O.T.
22. ALL CONCRETE FOR CURB AND GUTTER, ROADWAY AND SIDEWALKS MUST CONFORM TO THE STANDARD SPECIFICATIONS FOR READY MIXED CONCRETE. MINIMUM 28 DAY COMPRESSIVE STRENGTH TEST MUST EQUAL 4000 PSI.
23. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL PROPERTY CORNERS.
24. CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING UTILITIES OR SITE IMPROVEMENTS. CONTRACTOR SHALL DOCUMENT ALL EXISTING DAMAGE PRIOR TO START OF CONSTRUCTION AND NOTIFY CONSTRUCTION MANAGER OF ANY FINDINGS.
25. PROJECT SAFETY ON-SITE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
26. CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING SOIL CONDITIONS, CONSTRUCTION MANAGER MAY HAVE SOILS REPORT FOR MORE INFO.
27. CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH A SET OF MARKED UP PLANS (AS-BUILTS) SHOWING ANY CHANGES DURING CONSTRUCTION.

HATCH LEGEND

- PROPOSED CONCRETE SIDEWALK
- PROPOSED POROUS ASPHALT PAVEMENT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED DEPRESSED CURB
- PROPOSED TAPER CURB
- PROPOSED REVERSE CURB

CIVIL PLAN SET INDEX:

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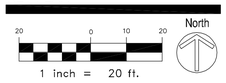
PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN



SHEET INFORMATION

REVISIONS

DATE	DESCRIPTION
05-10-2013	FIBER OPTIC DUCT PACKAGE IN TERRACE

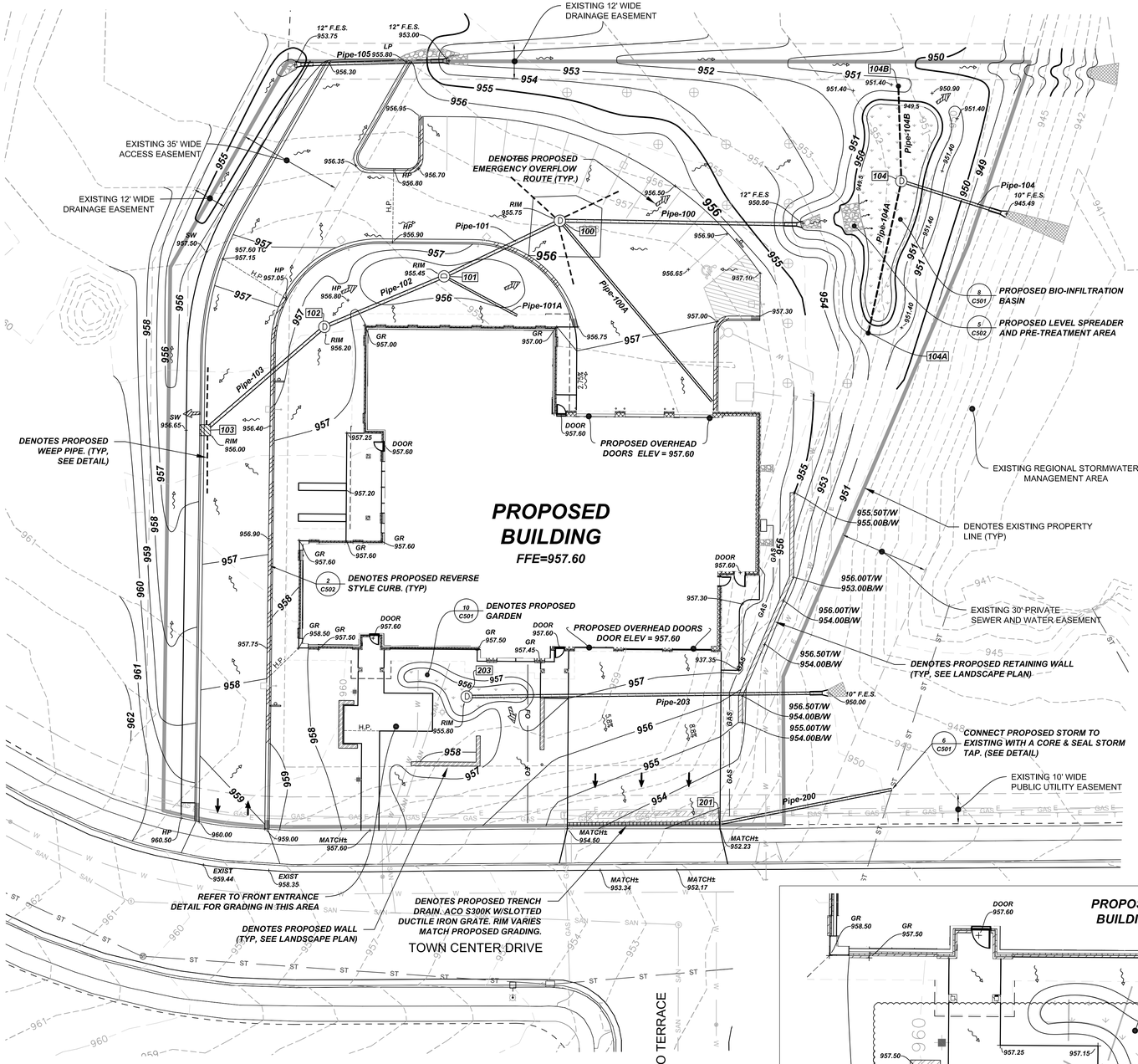
DATE
May 03, 2013

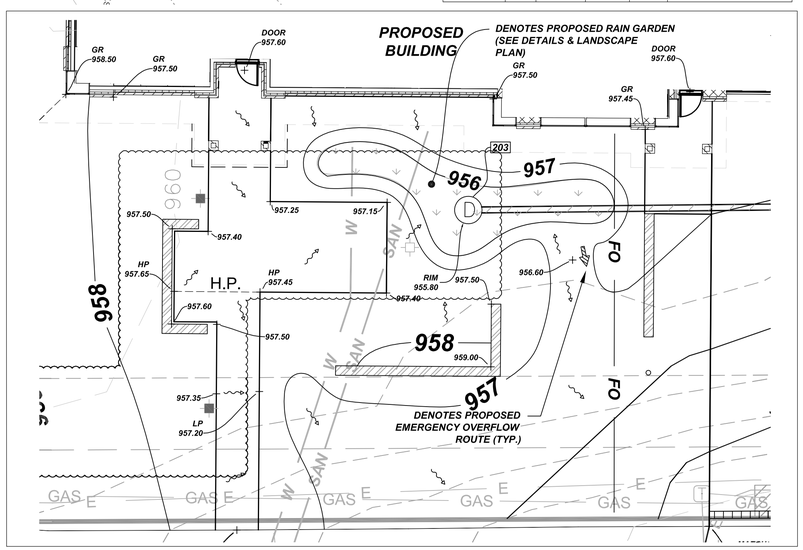
PROJECT NUMBER	STUDIO
120062.00	Sabinash

Site Plan

C100

HARWOOD ENGINEERING CONSULTANTS, LTD
255 North 21st Street Milwaukee Wisconsin 53233
414.475.5554 414.773.9299 fax harwood@hecl.com
HEC Project Number: 12-0062.00





ENTRANCE GRADING DETAIL
SCALE: 1" = 10'

Storm Structure Table	
#	Structure Details
100	CATCH BASIN (4' DIA) W/ 3' SUMP W/ NEENAH R-1550 OPEN W/ WEEP PIPES (3) RIM = 955.75 Pipe-101 = 951.29 Pipe-100A = 951.29 Pipe-100 = 951.29
101	CATCH BASIN (3' DIA) RIM = 955.45 Pipe-101A = 951.72 Pipe-102 = 951.72 Pipe-101 = 951.72
102	CATCH BASIN (3' DIA) RIM = 956.20 Pipe-103 = 952.15 Pipe-102 = 952.15
103	CURB INLET W/ WEEP PIPES (2) RIM = 956.00 Pipe-103 = 952.68
104	OUTLET STRUCTURE (SEE DETAIL) RIM = 950.50 Pipe-104B = 945.91 Pipe-104A = 945.91 Pipe-104 = 945.91
104A	CLEANOUT RIM = 951.40 Pipe-104A = 945.91
104B	CLEANOUT RIM = 951.40 Pipe-104B = 945.91
201	TRECH DRAIN ACO POWERDRAIN S300K W/ SLOTTED DUCTILE IRON GRATE & INLINE CATCH BASIN & DEEP BASE RIM ELEV VARIES (MATCH PROPOSED GRADING) Pipe-200 = 944.35
203	24" ADS INLET W/ DOME GRATE RIM = 955.80 Pipe-203 = 954.00

Storm Pipe Table					
Pipe Name	Size	Material	Length	Slope	Description
Pipe-100	12	RCP	79	1.00%	W/ F.E.S. W/ GRATE
Pipe-100A	8	PVC	79	1.00%	C900 PVC REFER TO PLUMB. PLANS FOR INV @ BLDG (1.00% MIN)
Pipe-101	12	RCP	43	1.00%	
Pipe-101A	8	PVC	28	1.00%	1.00% (MIN) SLOPE REFER TO PLUMB. PLANS FOR INV @ BLDG
Pipe-102	12	RCP	43	1.00%	
Pipe-103	12	RCP	53	1.00%	
Pipe-104	10	PVC	35	1.00%	
Pipe-104A	6	HDPE	52	0.00%	UNDERDRAIN W/ 3" ORIFICE ADS N-12 PERFORATED
Pipe-104B	6	HDPE	32	0.00%	UNDERDRAIN W/ 3" ORIFICE ADS N-12 PERFORATED
Pipe-105	12	RCP	48	1.58%	CL IV RCP
Pipe-200	10	PVC	58	7.08%	
Pipe-203	10	PVC	119	3.65%	C900 PVC PIPE F,E,S, W/ RODENT GUARD

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UTILITY LEGEND

SYMBOL	DESCRIPTION
W W	EXISTING WATER MAIN
	PROPOSED WATER SERVICE
E E	EXISTING ELECTRICAL LINE
E E	PROPOSED ELECTRICAL LINE
GAS GAS	EXISTING GAS MAIN
GAS GAS	PROPOSED GAS MAIN
SAN SAN	EXISTING SANITARY SEWER
	PROPOSED SANITARY SEWER
ST ST	EXISTING STORM SEWER
	PROPOSED STORM SEWER
OHW OHW	OVERHEAD WIRES
	EXISTING POWER POLES
M	EXISTING LIGHT POLES
SN	SANITARY MANHOLE
	FIRE HYDRANT
W	EXISTING WATER VALVE
	PROPOSED WATER VALVE
D	EXISTING STORM STRUCTURE
D	PROPOSED STORM STRUCTURE
	DENOTES EMERGENCY OVERFLOW ROUTE / DRAINAGE PATH
100.00 100.00	PROPOSED & EXISTING SPOT GRADE

HARWOOD ENGINEERING CONSULTANTS, LTD
255 North 21st Street Milwaukee Wisconsin 53233
414.475.5554 414.773.9299 fax harwood@hecltd.com
HEC Project Number: 12-0062.00

Zimmerman ARCHITECTURAL STUDIOS, INC.
2122 West Mt. Vernon Avenue | Milwaukee, WI 53233 | zastudios.com
TELEPHONE [414] 476.9500
FACSIMILE [414] 476.8582

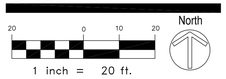
PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN



SHEET INFORMATION

REVISIONS

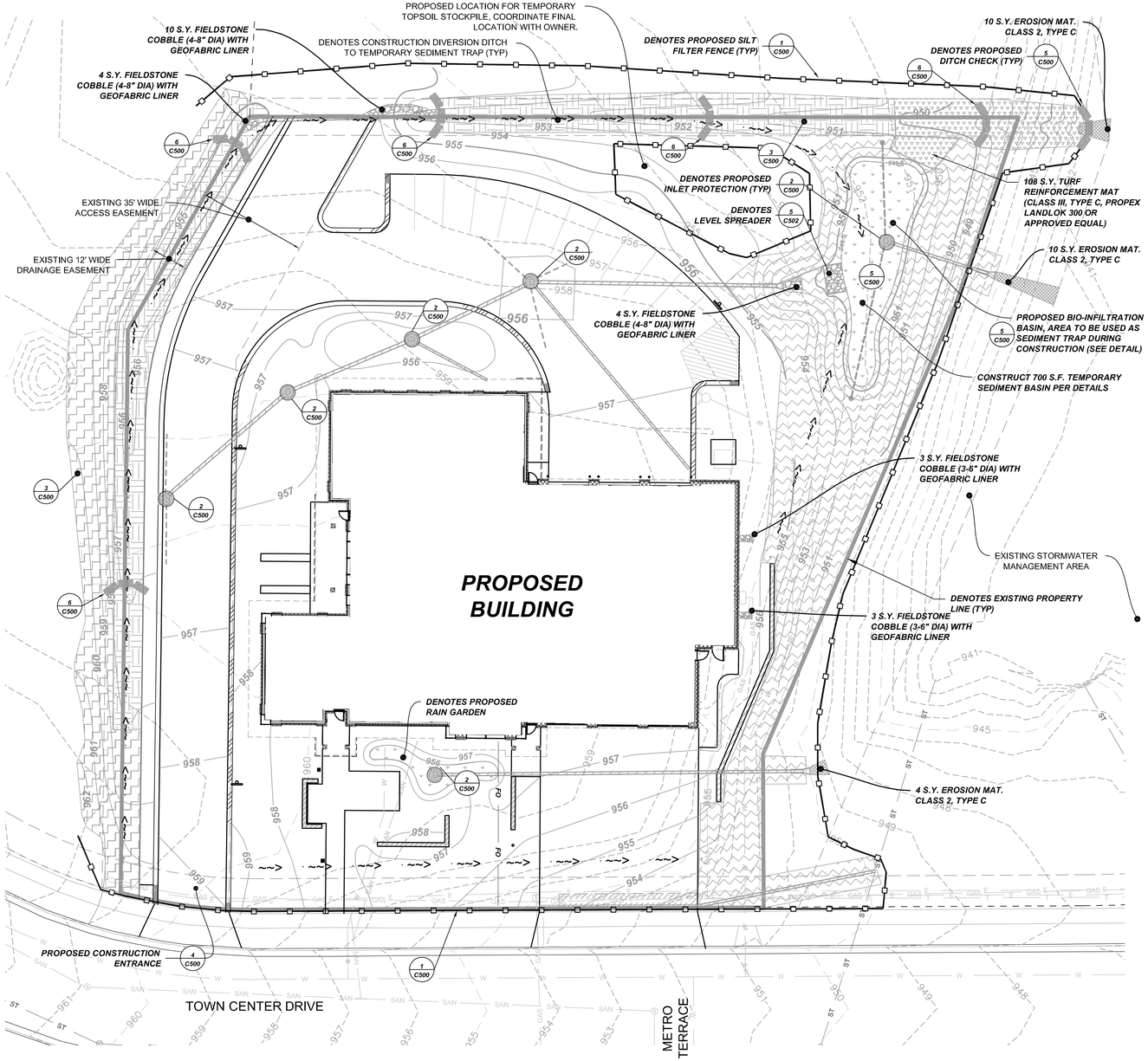
#	DATE	DESCRIPTION

DATE
May 03, 2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

Grading Plan

C101



UTILITY LEGEND

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GAS GAS	PROPOSED GAS MAIN
SAN SAN	EXISTING SANITARY SEWER
SAN SAN	PROPOSED SANITARY SEWER
ST ST	EXISTING STORM SEWER
ST ST	PROPOSED STORM SEWER
OHW OHW	OVERHEAD WIRES
	EXISTING POWER POLES
	EXISTING LIGHT POLES
SN	SANITARY MANHOLE
	FIRE HYDRANT
W	EXISTING WATER VALVE
	PROPOSED WATER VALVE
D	EXISTING STORM STRUCTURE
D	PROPOSED STORM STRUCTURE
	DENOTES EMERGENCY OVERFLOW ROUTE / DRAINAGE PATH
100.00 100.00	PROPOSED & EXISTING SPOT GRADE

EROSION CONTROL NOTES AND PHASING

ESTIMATED CONSTRUCTION TIMEFRAMES:
INSTALL EROSION CONTROL = JUNE 2013
GRADING AND UTILITY INSTALLATION = JUNE 2013
BEGIN BUILDING CONSTRUCTION = JUNE 2013
SITE GRADING AND SEEDING/STABILIZATION = AUGUST 2013
BIO-FILTER / RAINGARDEN INSTALLATION = EARLY-OCTOBER 2013
FINAL SITE RESTORATION AND SPOT REPAIR = OCTOBER 2013
COMPLETE BUILDING CONSTRUCTION = MARCH 2014

ALL CHANGES TO THE ABOVE SCHEDULE SHALL BE REVIEWED AND APPROVED BY THE MUNICIPALITY.

1. CONTRACTOR SHALL INSPECT ALL EROSION CONTROL PRACTICES WEEKLY AND AFTER ANY RAINFALL EVENT OF 0.5 INCHES OR GREATER. THE CONTRACTOR SHALL PERFORM ALL INSPECTIONS AND DOCUMENTATION PER WISCONSIN DEPARTMENT NATURAL RESOURCES. ALL REQUIRED REPAIRS SHALL BE MADE WITHIN 24 HOURS.
2. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR WILL HAVE IN PLACE, ALL APPLICABLE PLAN APPROVALS AND PERMITS.
3. INSTALL CONSTRUCTION ENTRANCES, SEDIMENT TRACKING PADS, AND ALL SILT FILTER FENCING, AS INDICATED ON PLANS. SEDIMENT TRACKING PADS TO BE MAINTAINED THROUGHOUT CONSTRUCTION PROJECT. SEDIMENT TRACKED ONTO STREETS SHALL BE REMOVED (BY SWEEPING) AT END OF EACH WORK DAY.
4. BEGIN ROUGH GRADING BIO-INFILTRATION BASIN, BUT NOT BIO-INFILTRATION PROFILE , TEMPORARILY SEED/STABILIZE. ALSO, PROTECT THE BIO-INFILTRATION AREA WITH CONSTRUCTION FENCING TO PREVENT CONSTRUCTION TRAFFIC IN THIS AREA (THIS AREA WILL BE USED AS A SEDIMENT TRAP DURING CONSTRUCTION (SEE DETAILS). AFTER SITE GRADING/SEEDING/STABILIZATION, THE BIO-INFILTRATION SECTION SHALL BE INSTALLED).
5. PLACE GEO-FABRIC AND ROCK AT OUTFALLS, AS INDICATED ON PLANS.
6. STRIP TOPSOIL FROM REMAINDER OF SITE (WHERE PROPOSED IMPROVEMENTS OR GRADING IS SHOWN ONLY). TOPSOIL STOCKPILE(S) REMAINING FOR MORE THAN SEVEN DAYS SHALL BE STABILIZED WITH VEGETATIVE COVER, MULCH, TARPS OR OTHER APPROVED PRACTICE. EROSION FROM TOPSOIL PILES LEFT FOR LESS THAN SEVEN DAYS SHALL BE CONTROLLED WITH SILT FENCE OR OTHER APPROVED METHOD. ANY TOPSOIL STOCKPILE WITHIN 25' OF A ROADWAY OR DRAINAGE DITCH SHALL BE COVERED WITH TARPS OR OTHER APPROVED METHOD. ALL DISTURBED GROUND LEFT INACTIVE FOR SEVEN OR MORE DAYS IS TO BE STABILIZED BY SEED, SOD, MULCH, OR OTHER APPROVED METHOD.
7. INSTALL OTHER UTILITIES
8. BEGIN BUILDING CONSTRUCTION.
9. REDISTRIBUTE TOPSOIL FROM STOCKPILE(S) TO A DEPTH OF 6 INCHES. SURPLUS TOPSOIL SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR, COORDINATE W/ OWNER. FINAL GRADE, SEED AND MULCH SITE. PLACE EROSION CONTROL MATTING WHERE INDICATED ON PLANS. (SEEDING AND MULCHING TO CONFORM WITH APPROVED SEED MIXTURES AND APPLICATION RATES, SEE LANDSCAPE PLAN FOR FINAL SEED AND SOD SPECS. EROSION CONTROL MATTING TO BE INSTALLED PER MANUFACTURE'S SPECIFICATIONS.)
10. INSTALL AGGREGATE BASE COURSE IN AREAS TO BE PAVED.
11. INSTALL CONCRETE PAVEMENT SECTIONS.
12. REMOVE ACCUMULATED SEDIMENT IN BIO-INFILTRATION AREA AND INSTALL ENGINEERED SOIL AND STONE LAYER AND CONSTRUCT BIO-INFILTRATION AREA AS DESIGNED (PER PROFILES SHOWN IN DETAILS). MINIMIZE COMPACTION AND CONSTRUCTION TRAFFIC IN THESE AREAS THROUGHOUT THE PROJECT. CONSTRUCT RAINGARDEN AREA AT THIS TIME AS WELL. STABILIZE & SEED PER PLAN.
13. UPON SITE STABILIZATION, REMOVE TEMPORARY EROSION CONTROL PRACTICES. CLEAN STRUCTURES OF ANY SEDIMENT AND/OR CONSTRUCTION DEBRIS, AND REMOVE CONSTRUCTION DEBRIS AND ACCUMULATED SEDIMENT FROM BIO-FILTRATION AREA.
14. CONSTRUCTION AND WASTE MATERIALS SHALL BE PROPERLY DISPOSED OF ON A ROUTINE BASIS. NO CONSTRUCTION OR WASTE MATERIALS SHALL BE TRACKED, BLOWN OR OTHERWISE LOCATED OR STORED ON ADJACENT PROPERTIES. MINIMIZE COMPACTION AND CONSTRUCTION TRAFFIC IN THE BIO-INFILTRATION AREA THROUGHOUT THE PROJECT.
15. DUST CONTROL SHALL BE MAINTAINED ONSITE WITH USE OF A WATER TRUCK (IF NECESSARY).
16. THE TEMPORARY SEDIMENT TRAP CONSTRUCTED ON-SITE SHALL BE USED TO REDUCE THE SEDIMENT/SOIL LOSS DURING CONSTRUCTION TO UNDER THE ACCEPTABLE LIMITS. THE BASIN WILL BE PRIMARILY CONSTRUCTED TO CAPTURE THE 50 - 80 MICRON PARTICLE TO ACHIEVE THE REQUIRED PERCENTAGE REDUCTION.

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EROSION CONTROL LEGEND

1 C500	SILT FILTER FENCE	4 C500	CONSTRUCTION ENTRANCE
2 C500	INLET SEDIMENT GUARD	5 C500	DITCH CHECK
3 C500	EROSION MAT		

Universal Soil Loss Equation for Construction Sites

Dane County Land Conservation Division

Developer: City of Madison
Project: Fire Station 13
Date: 1/9/2013

DETENTION | SOIL | PRINT | HELP

Version 2.2

Land Disturbing Activity	Begin Date	End Date	Period % R	Annual R Factor	Soil Map Unit	Soil Erodibility K Factor	Slope (%)	Slope Length (feet)	LS Factor	Land Cover C Factor	Soil loss A=%R•R•K•LS•C (tons/acre)	Percent Reduction Required
												(7.5 tons/acre)
disturb ground	6/10/2013	9/15/2013	61.9%	150	PnB	0.43	2.0%	150	0.23	1.00	9.0	
seed and mulch	9/15/2013	10/16/2013	10.9%	150	PnB	0.43	2.0%	150	0.23	0.12	0.2	
paving	10/16/2013	------	2.1%	150	PnB	0.43	2.0%	150	0.23	0.00	0.0	
		------	------	------		------				------	------	------
		------	------	------		------				------	------	------
		------	------	------		------				------	------	------
		------	------	------		------				------	------	------
										TOTAL	9.2	19%

DANE COUNTY USLE CALCULATION*
*(SEE EROSION CONTROL NOTE 16 FOR MORE INFO)

DIGGER'S HOTLINE CALL BEFORE YOU DIG 1-800-242-8511

IN ACCORDANCE WITH WISCONSIN STATUTE 182.0175, DAMAGE TO TRANSMISSION FACILITIES, EXCAVATOR SHALL BE SOLELY RESPONSIBLE TO PROVIDE ADVANCE NOTICE TO THE DESIGNATED "ONE CALL SYSTEM" NOT LESS THAN THREE WORKING DAYS PRIOR TO COMMENCEMENT OF ANY EXCAVATION REQUIRED TO PERFORM WORK CONTAINED ON THESE DRAWINGS, AND FURTHER, EXCAVATOR SHALL COMPLY WITH ALL OTHER REQUIREMENTS OF THIS STATUTE RELATIVE TO EXCAVATOR'S WORK.

Zimmerman ARCHITECTURAL STUDIOS, INC.
2122 West Mt. Vernon Avenue | Milwaukee, WI 53233 | zastudios.com
TELEPHONE [414] 476.9500
FACSIMILE [414] 476.8582

PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

20 0 10 20 North
1 inch = 20 ft.

SHEET INFORMATION

REVISIONS

#	DATE	DESCRIPTION

DATE
May 03, 2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

Erosion Control Plan

C102

HARWOOD ENGINEERING CONSULTANTS, LTD
255 North 21st Street Milwaukee Wisconsin 53233
414.475.5554 414.273.9299 fax harwood@hecltd.com
HEC Project Number: 12-0062.00

BOUNDARY AND TOPOGRAPHIC SURVEY

ALL OF LOT 1, CERTIFIED SURVEY MAP NUMBER 12761, AS RECORDED IN VOLUME 80 OF CERTIFIED SURVEY MAPS, ON PAGES 304–307, AS DOCUMENT NUMBER 4593131, DANE COUNTY REGISTRY, LOCATED IN THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 02, TOWNSHIP 07 NORTH, RANGE 10 EAST, CITY OF MADISON, DANE COUNTY, WISCONSIN.

TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

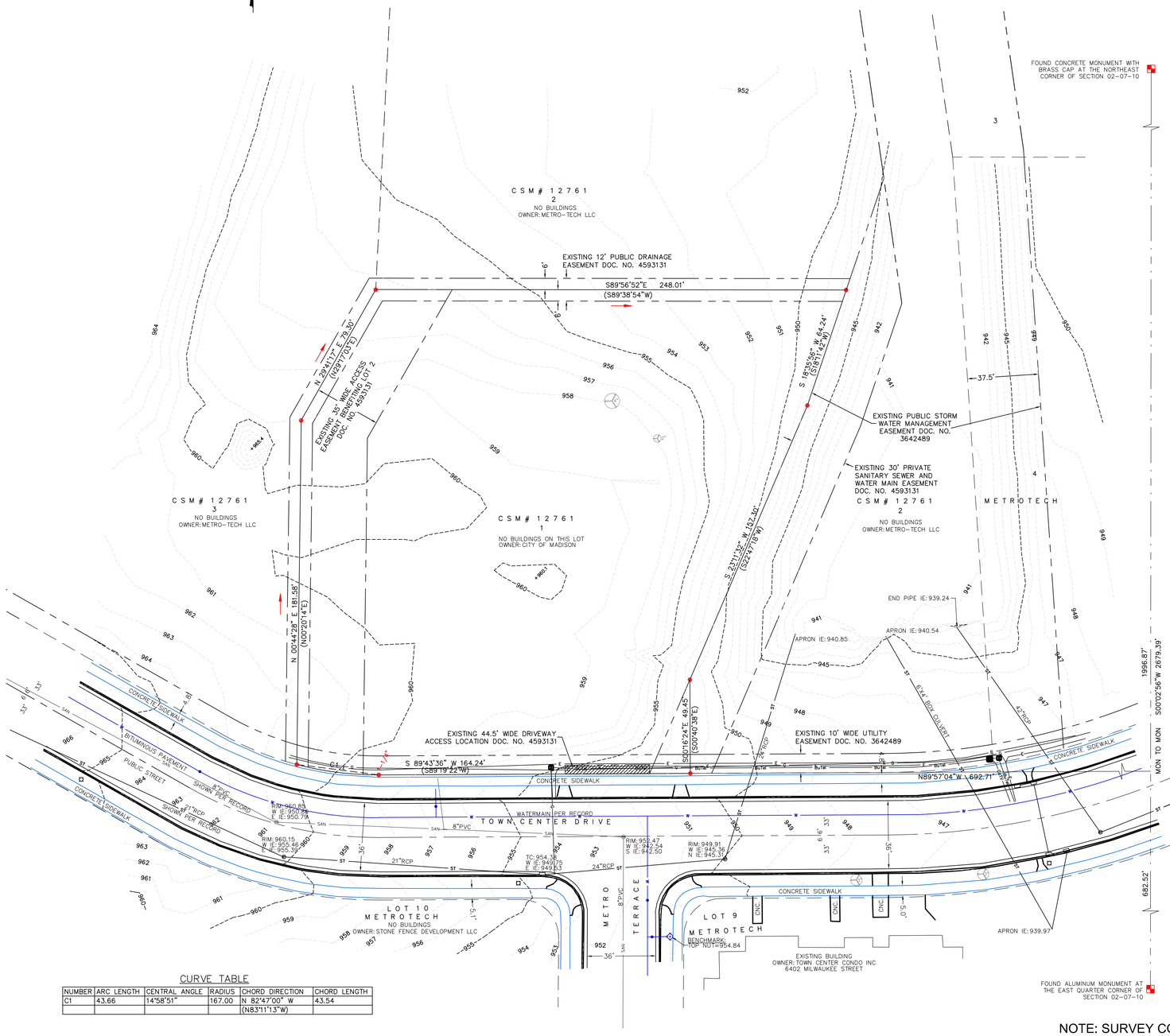
CALL DIGGERS HOTLINE
1-800-242-8511 OR 811
TOLL FREE

TDD(FOR THE HEARING IMPAIRED)(800)542-2289

WIS. STATUTE 182.0175 (1974)
REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

GRID NORTH
BEARINGS ARE BASED UPON THE WISCONSIN COUNTY COORDINATE SYSTEM (DANE ZONE)

0 30 60 90
SCALE : ONE INCH = THIRTY FEET



CURVE TABLE

NUMBER	ARC LENGTH	CENTRAL ANGLE	RADIUS	CHORD DIRECTION	CHORD LENGTH
C1	43.66	14°58'51"	167.00	N 82°47'00" W	43.54
				(N83°11'13"W)	

LEGEND

BURIED GAS MAIN	FIRE HYDRANT
WATER MAIN	STORM SEWER INLET
SANITARY SEWER	ELECTRIC MANHOLE
STORM SEWER	TELECOMM. MANHOLE
BURIED TELEPHONE	STORM SEWER MANHOLE
BURIED ELECTRIC	SANITARY SEWER MANHOLE
BURIED CABLE TV	WATER UTILITY MANHOLE
BURIED FIBER OPTIC	3/4" SOLID IRON ROD FOUND UNLESS NOTED
WATER VALVE	DECIDUOUS TREE
GAS VALVE	CONIFEROUS TREE
CABLE TV PEDESTAL	DRAINAGE ARROW SEE NOTE 9
ELECTRIC PEDESTAL	( ) INDICATES RECORDED AS
TELEPHONE PEDESTAL	
LIGHT POLE	
SIGN	

NOTES:

1) Except as specifically stated or shown on this map, this survey does not purport to reflect any of the following which may be applicable to the subject real estate: unrecorded easements; building setback lines; restrictive covenants; subdivision restrictions; zoning or other land use regulations; and any other facts that an accurate and current title search may disclose.

2) No attempt has been made as a part of this boundary survey to obtain or show data concerning condition or capacity of any utility or municipal/public service facility. For information regarding these utilities or facilities, please contact the appropriate agencies.

3) Date of field work: 07–24–12 and 08–10–12.

4) Surveyor has made no investigation or independent search for easements of record, encumbrances, restrictive covenants, ownership title evidence, or any other facts that an accurate and current title search may disclose.

5) All buildings, and surface and subsurface improvements on and adjacent to the site are not necessarily shown hereon.

6) All trees, hedges and ground cover on the site may not necessarily be shown hereon.

7) Routing of public utilities is based upon drawings obtained from the City of Madison Engineering Department, markings provided by Digger's Hotline Ticket Number 20122914095 and visible above ground structures. Additional buried utilities/structures may be encountered. No excavations were made to located utilities. Before excavations are performed contact Digger's Hotline.
–No communications markings were found.
–No gas or electrical markings were found.
–Sanitary and water service were marked in the field.
–Watermain in the street was not marked in the field.

8) Elevations are based upon City of Madison NAVD88 datum. Surveyor set on site benchmark using Trimble 5700 Receiver and the City of Madison Community RTK GPS Base Station.

9) Surveyor was provided a copy of Title Report File Number NCS–408097–MAD from First American Title Insurance Company, dated September 15, 2009. Title Report references the following: Numbers in parenthesis represent the Exceptions on Schedule B of said Title Report.
(4) Limitations imposed upon ingress to and egress from the above–described premises to Interstate Highway 94, including ramps and connection roads on the right–of–way thereof, as set forth in finding, determination and declaration by the State Highway Commission of Wisconsin establishing a controlled–access highway Recorded: July 24, 1951 in the Office of the Register of Deeds for Dane County, Wisconsin in Volume 240 of Miscellaneous, page 332 as Document No. 820381, wherein said highway is designated a controlled–access highway under the provisions of Section 94.35 of the Wisconsin Statutes.
(5) Access restrictions contained in Award of Damages recorded: August 2, 1960, in Volume 351 of Miscellaneous, page 395, as Document No. 1007335.
(6) Public Storm Water Management Easement, Landscape Buffer Zone Easement, Highway Setback Lines and Utility Easements as shown on the recorded plat of Metrotech.
(7) Notes as disclosed on the recorded plat of Metrotech.
(8) No direct access to Interstate 94 as shown on the recorded plat of Metrotech.
(9) Plans Recorded: May 14, 2002, as Document No. 3487367. Alteration to Specific Implementation Plan recorded: February 3, 2003, as Document No. 3645406. Alteration to Specific Implementation Plan recorded: June 3, 2005, as Document No. 4061997. Plans/Modifications recorded: September 11, 2009, as Document No. 4594318.
(10) Declaration of Covenants and Restrictions for the Plat of Metrotech recorded: April 15, 2003, as Document No. 3691111.
(11) Declaration of Conditions and Covenants recorded: May 22, 2003, as Document No. 3718614.
(12) Declaration of Conditions and Covenants recorded: January 29, 2006, as Document No. 3867634.
(13) Declaration of Conditions and Covenants recorded: January 29, 2006, as Document No. 3867635.
(14) Declaration of Conditions and Covenants recorded: January 5, 2009, as Document No. 4490477.
(15) Utility Easement, access easement benefiting Lot 2, driveway access location and arrows indicating direction of drainage flow as disclosed on Certified Survey Map No. 12761.
Notations set forth on Certified Survey Map No. 12761, stating:
–Arrows indicate the direction of surface drainage swale at individual property lines. Said drainage swale shall be graded with the construction of each principal structure and maintained by the lot owner unless modified with the approval of the City Engineer. Elevations given are for property corners at ground level and shall be maintained by the lot owner.
–All lots within this survey are subject to a public easement for drainage purposes which shall be a minimum of 6–feet in width measured from the property line to the interior of each lot except that the easement shall be 12–feet in width on the perimeter of the certified survey. For purposes of two (2) or more lots combined for a single development site, or where two (2) or more lots have a shared driveway agreement, the public easement for drainage purposes shall be a minimum of six (6) feet in width and shall be measured only from the exterior property lines of the combined lots that create a single development site, or have a shared driveway agreement, except that the easement shall be twelve (12) feet in width along the perimeter of the certified survey. Easements shall not be required on property lines shared with green ways or public streets. No buildings, driveways, or retaining walls shall be placed in any easement for drainage purposes. Fences may be placed in the easement only if they do not impede the anticipated flow of water. In the event of the City of Madison Plan Commission and/or Common Council approved redivision of a previously subdivided property, the underlying public easements for drainage purposes are released and replaced by those required and created by the current approved subdivision.
–All lots created be this CSM are responsible for compliance with Chapter 37 of the Madison General Ordinances in regard to stormwater management at the time it is developed.
– Lot 1 & 2 shall comply with M.G.O. Sec. 16.23(3)(d) – Highway Noise Lane Use Provisions Policies and Ordinances. Prior to construction on Lot 1 or further subdivision, the provisions of this section shall be complied with.
–Lands within this certified survey map are subject to the following documents: Doc. No. 820381, 1007335, 3691111, 3718614, 3867634, 3867635 and 4490477.
–At the time of recording, lots within this CSM are zoned PUD(GDP) and are not dependent upon each other for storm water drainage. If future development requires shared drainage by any lots within this CSM an agreement detailing the rights and responsibilities of each parcel owner shall be required.
–Noise note: The lots of this land division may experience noise at levels exceeding levels in s. Trans 405.04 Table 1. These levels are based on federal standards. The department of transportation is not responsible for abating noise from existing state trunk highways or connecting highways, in the absence of any increase by the department to the highway's through–lane capacity.
–Utility Easement Note: Utility easements. No poles or buried cables are to be placed such that the installation would disturb any survey stake, or obstruct vision along any lot line. The disturbance of a survey monument by anyone is a violation of section 236.32 of Wisconsin Statutes. Utility easements as herein set forth are for the use of public bodies and private public utilities having the right to serve the area.
(16) The terms and provisions contained in the document entitled "Access Easement Agreement" recorded September 15, 2009 as document 4595093 of Official Records.

10) Total parcel area = 60,030 square feet

11) Parcel Address: 6350 Town Center Drive, Madison, WI

DESCRIPTION FURNISHED:

LOT 1, CERTIFIED SURVEY MAP NUMBER 12761, AS RECORDED IN VOLUME 80 OF CERTIFIED SURVEY MAPS, ON PAGES 304–307, AS DOCUMENT NUMBER 4593131, DANE COUNTY REGISTRY, LOCATED IN THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 02, TOWNSHIP 07 NORTH, RANGE 10 EAST, CITY OF MADISON, DANE COUNTY, WISCONSIN.

SURVEYOR'S CERTIFICATE:

I, Frank J. Lapacek, Registered Land Surveyor, No. 2658, hereby certify that the foregoing survey was executed under my direction and control, and that said survey meets the minimum standards for property surveys of the Wisconsin Administrative Code (A–E7), and the map hereon is correct to the best of my knowledge and belief.

Dated this _____ day of _____ , 201_.

Signed: _____
Frank J. Lapacek, R.L.S. No. 2658

SURVEYED FOR :
City of Madison
210 Martin Luther King Jr. Blvd.
Madison WI 53703

SURVEYED BY :
Burse
surveying & engineering Inc.
1400 E. Washington Ave, Suite 158
Madison, WI 53703 608.250.9263
Fax: 608.250.9266
email: Mburse@BSE-INC.net
www.burseurveyengr.com
SHEET 1 OF 1

NOTE: SURVEY COMPLETED BY BURSE SURVEYING AND ENGINEERING. THE ENGINEER MAKES NO WARRANTY OR REPRESENTATION WITH REFERENCE TO THE ACCURACY AND COMPLETENESS OF THE EXISTING CONDITIONS INDICATED OR NOT INDICATED ON THE ENGINEERING PLANS PROVIDED.

Zimmerman
ARCHITECTURAL STUDIOS, INC.
2122 West Mt. Vernon Avenue | Milwaukee, WI 53233 | zastudios.com
TELEPHONE [414] 476.9500
FACSIMILE [414] 476.8582

PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

Madison

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

SHEET INFORMATION

REVISIONS

#	DATE	DESCRIPTION

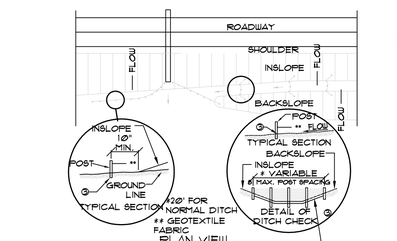
DATE
May 03, 2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

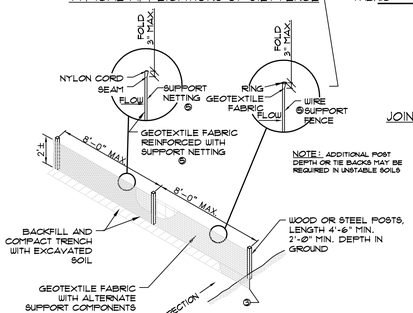
Existing Site Survey

C103

HARWOOD ENGINEERING CONSULTANTS, LTD
255 North 21st Street Milwaukee Wisconsin 53233
414.475.5554 414.773.9299 fax harwood@hecl.com
HEC Project Number: 12-0062.00

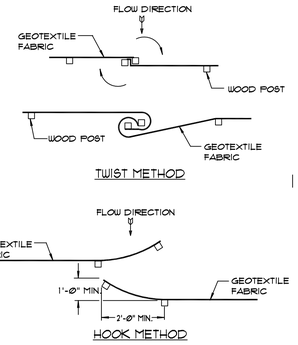


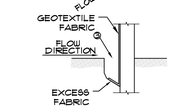
PLAN VIEW
TYPICAL APPLICATIONS OF SILT FENCE



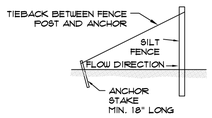
NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

JOINING TWO LENGTHS OF SILT FENCE





TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

GENERAL NOTES:

DETAIL OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

WHEN POSSIBLE THE SILT FENCE SHOULD BE CONSTRUCTED IN AN ARC OR HORSESHOE SHAPE, WITH THE ENDS POINTING UPSLOPE TO MAXIMIZE BOTH STRENGTH AND EFFECTIVENESS.

① CROSS BRACE WITH 2" x 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS AS DIRECTED BY THE ENGINEER.

② MINIMUM 14 GAGE WIRE REQUIRED, FOLD FABRIC 3" OVER THE WIRE AND STAPLE OR PLACE WIRE RINGS ON 12" C-C.

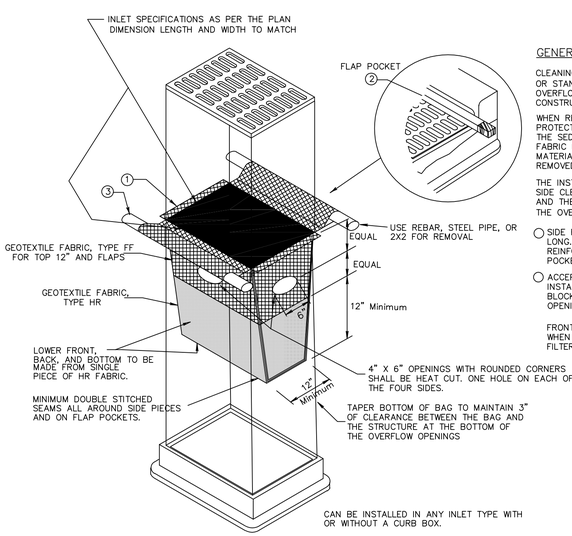
③ EXCAVATE A TRENCH A MINIMUM OF 4" WIDE AND 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC, FOLD MATERIAL TO FIT TRENCH AND BACKFILL AND COMPACT TRENCH WITH EXCAVATED SOIL.

④ WIRE SUPPORT FENCE SHALL BE 14 GAGE MINIMUM WOVEN WIRE WITH A MAXIMUM MESH SPACING OF 6". SECURE TOP OF GEOTEXTILE FABRIC TO TOP OF FENCE WITH STAPLES OR WIRE RINGS AT 12" C-C.

⑤ GEOTEXTILE FABRIC SHALL BE REINFORCED WITH AN INDUSTRIAL POLY-PROPYLENE NETTING WITH A MAXIMUM MESH SPACING OF 3/4" OR EQUAL. A HEAVY DUTY NYLON TOP SUPPORT CORD OR EQUIVALENT IS REQUIRED.

⑥ STEEL POSTS SHALL BE STUDDED "TEE" OR "U TYPE" WITH A MINIMUM WEIGHT OF 1.28 lbs/lin. ft. (WITHOUT ANCHOR). FIN ANCHORS SUFFICIENT TO RESIST POST MOVEMENT ARE REQUIRED. WOOD POSTS SHALL BE A MINIMUM SIZE OF 4" DIA. OR 1-1/2" x 3-1/2" EXCEPT WOOD POSTS FOR GEOTEXTILE FABRIC REINFORCED WITH NETTING SHALL BE A MINIMUM SIZE OF 1-1/8" x 1-1/8" OAK OR HICKORY. ALTERNATIVES A AND B ARE EQUAL AND EITHER MAY BE USED.

1 SILT FENCE DETAIL 101
NTS 08/08/11



GENERAL NOTES

CLEANING SHALL BE REQUIRED WHEN SEDIMENT OR STANDING WATER IS WITHIN 6" OF THE OVERFLOW HOLES OR AS DIRECTED BY THE CONSTRUCTION ENGINEER.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

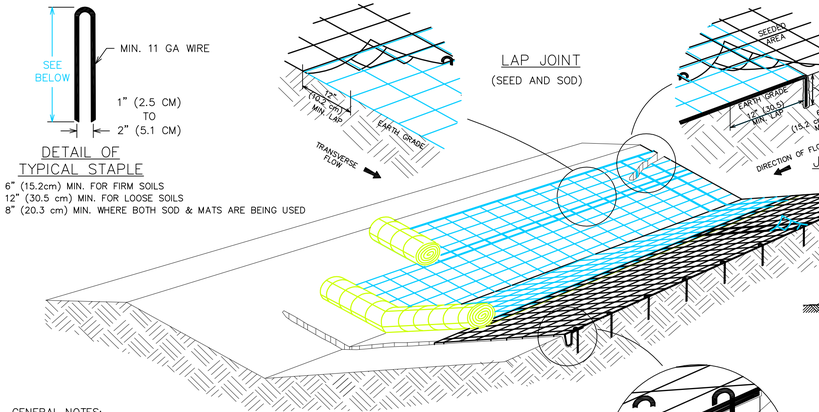
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG,MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3".

○ SIDE FLAPS SHALL BE A MAXIMUM OF 2" LONG. FOLD THE FABRIC OVER AND REINFORCE WITH MULTIPLE STICHES. FLAP POCKETS SHALL BE LARGE ENOUGH TO

○ ACCEPT WOOD 2X2. THE 2X2 SHALL BE INSTALLED IN THE REAR FLAP AND SHALL NOT BLOCK THE TOP HALF OF THE CURB FACE OPENING.

FRONT LIFTING FLAP IS TO BE USED WHEN REMOVING AND MAINTAINING FILTER BAG.

2 INLET PROTECTION
NTS



GENERAL NOTES:

DETAILS OF CONSTRUCTION MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

VARIATIONS IN THE DIMENSIONS OR MATERIALS SHOWN HEREON SHALL BE PERMITTED IF THEY PROVIDE EQUIVALENT PROTECTION AND MATERIAL STRENGTH AND IF PRIOR APPROVAL OF THE ENGINEER IS OBTAINED.

LAP JOINTS SHALL NOT BE PLACED IN THE BOTTOM OF V-SHAPED DITCHES.

JUNCTION SLOTS ON ADJACENT STRIPS OF MATTING SHALL BE STAGGERED A MINIMUM OF 4 FEET (1.219 m) APART.

EROSION MAT SHALL BE MEASURED AND PAID FOR IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

EROSION MAT OVER SOD:

a. ONLY JUTE FABRIC WILL BE PERMITTED OVER SOD.

b. WOOD STAKES FOR SOD MAY BE OMITTED BY THE ENGINEER IF EXISTING SLOPE AND SOIL CONDITIONS SO WARRANT.

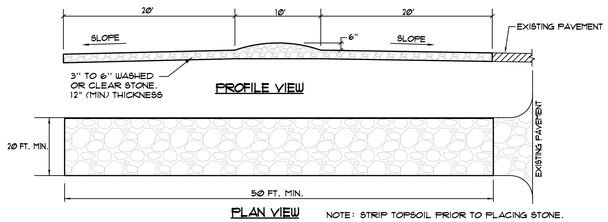
c. THE WIDTH OF EROSION MAT SHALL ALWAYS EXCEED THE SOD WIDTH.

EROSION MAT OVER SEEDING:

JUNCTION OR ANCHOR SLOTS SHALL BE AT MINIMUM INTERVALS OF 100 FEET (30.48 m) ON GRADES UP TO AND INCLUDING 3 PERCENT, AND 50 FEET (15.24 m) ON GRADES EXCEEDING 3 PERCENT.

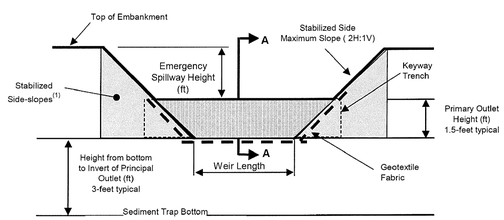
ANCHOR SLOT
AT BEGINNING OF EROSION MAT
EXTRA STAPLE AT END ONLY
(SEED AND SOD)

3 EROSION MAT
NTS



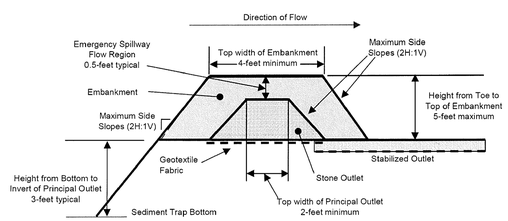
4 CONSTRUCTION ENTRANCE AND TRACKING PAD DETAIL 102
NTS 07/29/11

Figure 1: Sediment Trap Outlet Detail



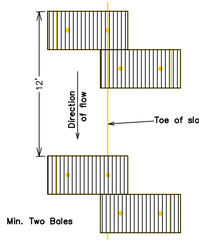
Cross-section View of Principal Outlet

Notes: (1) Side-slopes and faces of earthen embankment around outlet shall be armored with riprap or stabilized with erosion mat sufficient to handle flows from the 10-year storm.

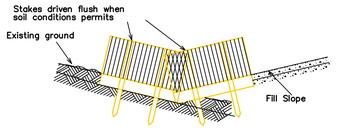


View A - A of Principal Outlet

5 SEDIMENT TRAP 107
NTS 11/19/10

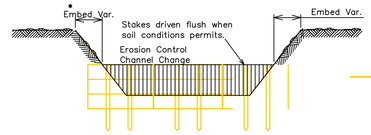


PLAN VIEW

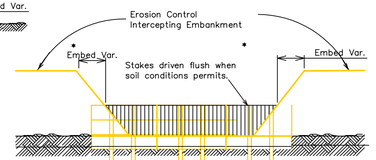


FRONT ELEVATION

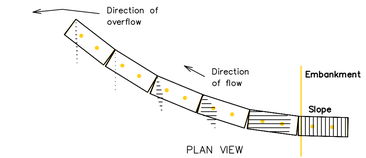
EROSION BALES AT TOE OF SLOPE
WHEN EXISTING GROUND SLOPES TOWARD FILL SLOPE



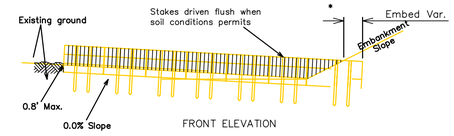
EROSION CONTROL CHANNEL CHANGE



EROSION CONTROL INTERCEPTING EMBANKMENT

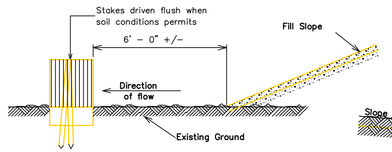


PLAN VIEW



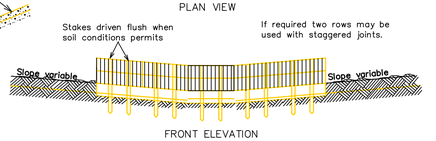
FRONT ELEVATION

EROSION BALES AT TOE OF SLOPE



FRONT ELEVATION

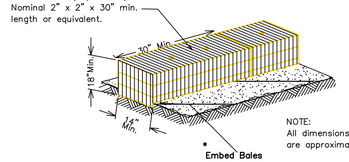
PLAN VIEW



FRONT ELEVATION

EROSION BALES AT TOE OF SLOPE
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES ACROSS DITCH BOTTOM



DETAIL OF EROSION BALE INSTALLATION

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

BALES SHALL BE PLACED END TO END OR OVERLAPPING AT RIGHT ANGLES TO THE DIRECTION OF FLOW AND FAR ENOUGH UP THE SIDES OF THE DITCH TO PREVENT ERODING AROUND ENDS.

BALES SHALL BE PLACED WITH TWINE OR TIE WIRES PARALLEL TO THE GROUND.

STAKES TO BE BATTERED IN OPPOSITE DIRECTIONS. ACCUMULATED SEDIMENT REMOVAL SHALL BE COMPLETED ONCE SEDIMENT DEPTH EQUALS TO HALF THE HEIGHT OF THE BALES.

* AS DETERMINED BY THE ENGINEER.

6 EROSION BALES
NTS

Zimmerman
ARCHITECTURAL STUDIOS, INC.
2122 West Mt. Vernon Avenue | Milwaukee, WI 53233 | zastudios.com
TELEPHONE [414] 476.9500
FACSIMILE [414] 476.8582

PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

SHEET INFORMATION

REVISIONS

#	DATE	DESCRIPTION

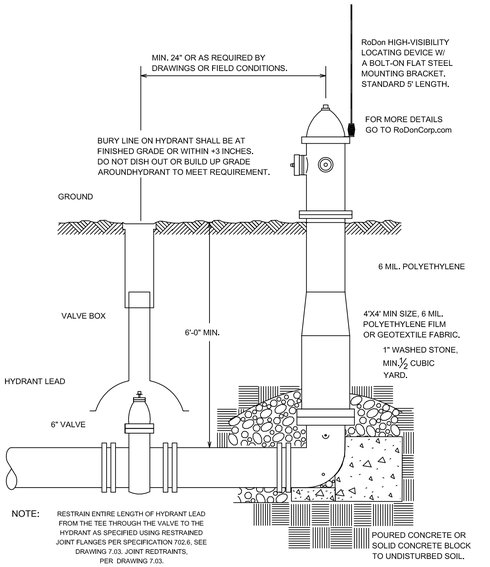
DATE
May 03, 2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

Construction Details

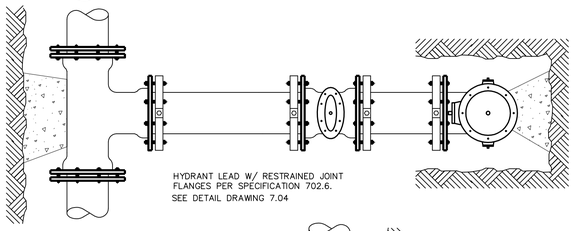
C500

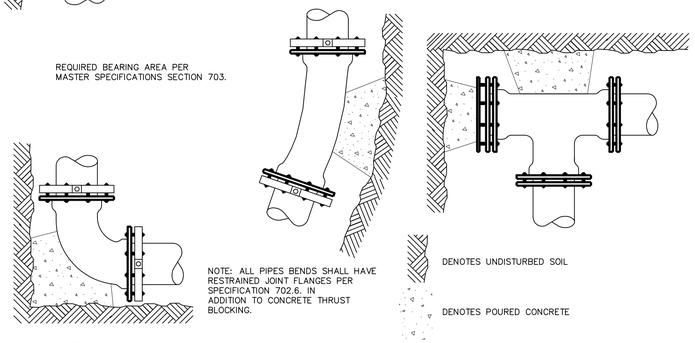
HARWOOD ENGINEERING CONSULTANTS, LTD
255 North 21st Street Milwaukee Wisconsin 53233
414.475.5554 414.773.9299 fax harwood@hecl.com
HEC Project Number: 12-0062.00



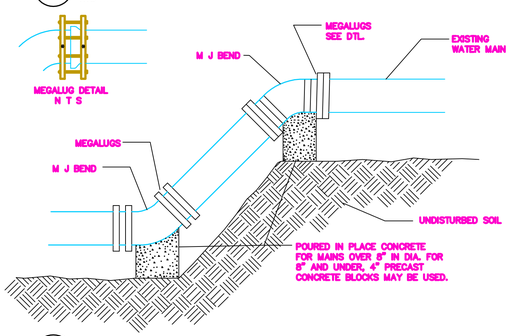
SOLID CONCRETE MASONRY UNIT

1 HYDRANT
NTS

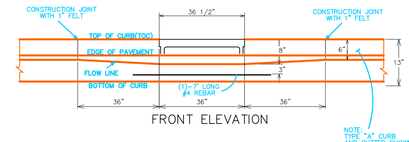


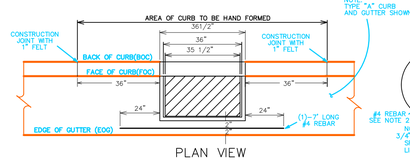


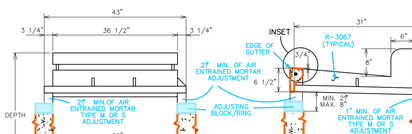
2 THRUST BLOCKING
NTS

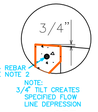


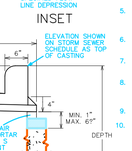
3 THRUST BLOCKING - BENDS
NTS

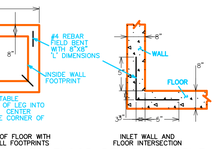






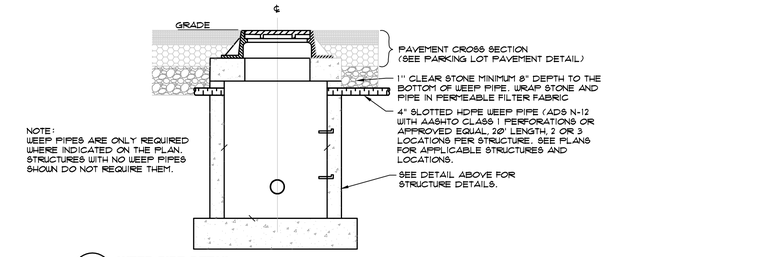




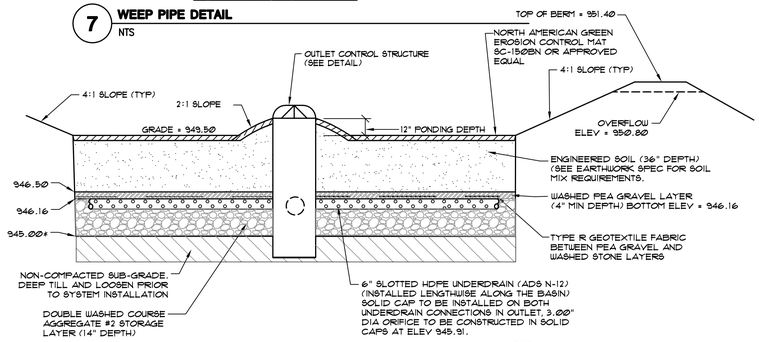


FIELD POURED FLOOR REINFORCEMENT

NOTES:
1. PRECAST REINFORCED CONCRETE STRUCTURES MAY BE USED IF APPROVED ACCORDING TO SECTION 106.3, 507.3 (b) OF THE STANDARD SPECIFICATIONS.
2. INSTALLATION COST OF INLETS SHALL INCLUDE THE COST OF REINFORCING BARS AS FOLLOWS:
   - (1)-#4 BARS 7'-0" LONG IN CONCRETE GUTTER ALONG THE FRONT OF INLET.
   - (4) #4 REBARS FIELD BENT WITH 8"x8" 'L' DIMENSIONS.
3. WHEN AN "S" INLET IS SPECIFIED, THE INSIDE DIMENSIONS OF THE STANDARD "A" INLET SHALL BE ALTERED TO 2'-4" x 1'-6".
4. PRECAST INLETS REQUIRE 2" OF CONCRETE FROM THE EDGE OF CUTOUT/KNOCKOUT TO THE INSIDE WALLS AND TO THE TOP OF STRUCTURE.
5. FIELD POURED STRUCTURES SHALL HAVE A BENCH POURED INSIDE TO THE SPRINGLINE OF THE PIPES CREATING A POSITIVE LOW FLOW CHANNEL AS SHOWN IN THE TYPICAL FRONT SECTION VIEW.
6. ASSUMING 90 DEGREE PIPE CONNECTIONS, THE MAXIMUM PIPE OUT A 3' SIDE IS 21" AND THE MAXIMUM PIPE OUT A 2' SIDE IS 12".
7. WALL THICKNESS DIMENSIONS OF 8" AND 6" CORRESPOND TO CAST-IN-PLACE AND PRECAST STRUCTURES, RESPECTIVELY.
8. THERE SHALL BE AN 8" FLOWLINE DEPRESSION FROM TOC ALONG THE INLET TAPERED FROM THE TYPICAL 6" FLOWLINE AS SHOWN IN THE FRONT ELEVATION.
9. SEE STANDARD DETAIL DRAWING S.7.29 FOR INLET CASTING OFFSET CRITERIA FOR H INLETS.
10. FLOOR REINFORCEMENT REQUIRED IN ALL FIELD POURED INLETS



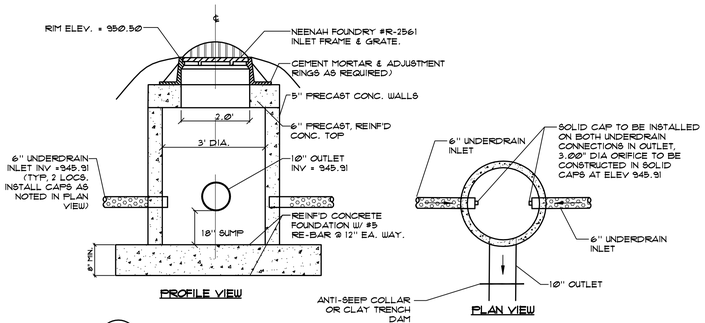
7 WEEP PIPE DETAIL
NTS



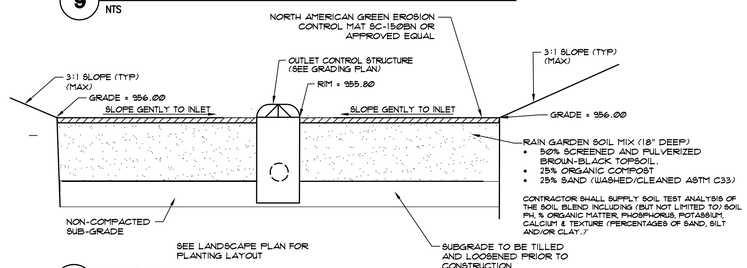
#NOTE: BIOFILTER BASIN TO EXTEND DOWN TO SAND SOIL LAYER. (ESTIMATED AT 949.0± PER GEOTECH REPORT) GEOTECHNICAL REPRESENTATIVE TO VERIFY SAND LAYER HAS BEEN MET.

8 BIO-INFILTRATION BASIN
NTS

220
11/19/10

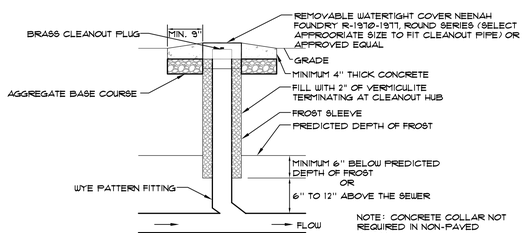


9 BIO-INFILTRATION BASIN OUTLET CONTROL STRUCTURE
NTS



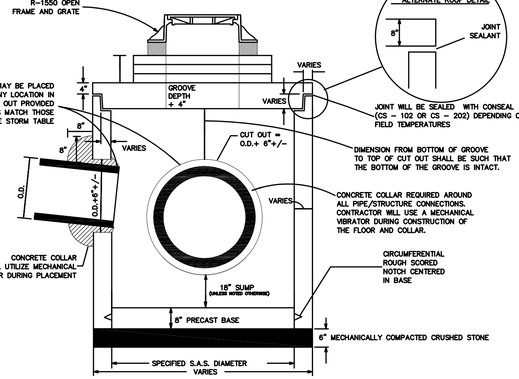
10 RAIN GARDEN
NTS

220
11/19/10

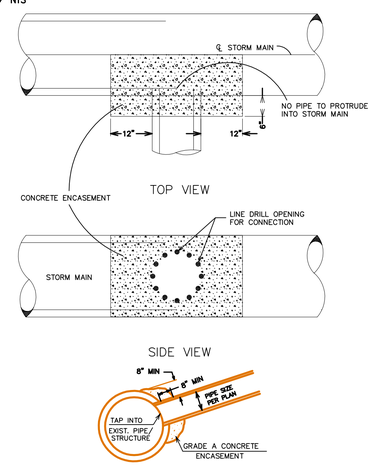


11 STORM CLEANOUT DETAIL
NTS

209
06/03/2011



5 CATCH BASIN DETAIL
NTS



6 STORM TAP DETAIL
NTS

Zimmerman
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2122 West Mt. Vernon Avenue | Milwaukee, WI 53233 | zastudios.com
TELEPHONE [414] 476.9500
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PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

SHEET INFORMATION

REVISIONS

#	DATE	DESCRIPTION

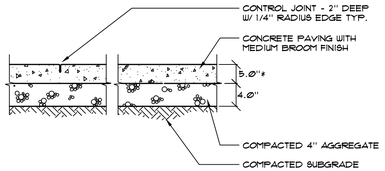
DATE
May 03, 2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

Construction Details

C501

HARWOOD ENGINEERING CONSULTANTS, LTD
255 North 21st Street Milwaukee Wisconsin 53233
414.475.5554 414.773.9299 fax harwood@hecl.com
HEC Project Number: 120062.00

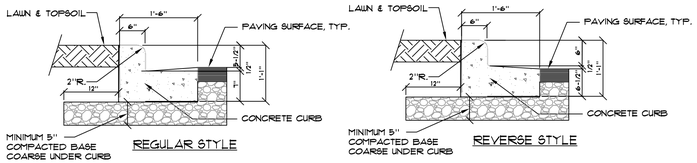


NOTES:

- CONTROL JOINT SPACING SHALL BE A MAXIMUM OF 5' AND CONSTRUCTED IN CONFORMANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) RECOMMENDATIONS.
- EXPANSION JOINTS SHOULD BE PROVIDED WHERE PAVEMENT ABUTS FIXED OBJECTS.
- MATRIX BI BLEND MICRO FIBER TO BE ADDED AT A RATE OF 1.5 POUNDS PER CUBIC YARD.

* NOTE:
SIDEWALK SHALL BE 7" AT DRIVEWAY SECTIONS

1 CONCRETE SIDEWALK SECTION
NTS — 524 — 11/19/10

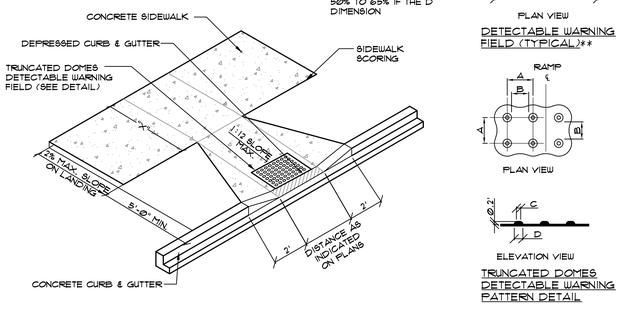


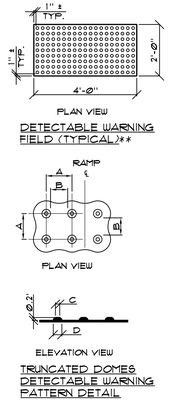
NOTE:
- REVERSE STYLE CURB LOCATIONS ARE NOTED ON THE PLANS.

2 VERTICAL FACE CURB - 18" WIDE
NTS — 504 — 11/19/10

	MIN.	MAX.
A	1.6"	2.4"
B	Ø.65"	1.5"
C	*	*
D	Ø.9"	1.4"

* THE C DIMENSION IS 50% TO 65% IF THE D DIMENSION

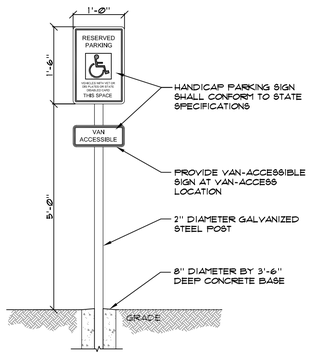




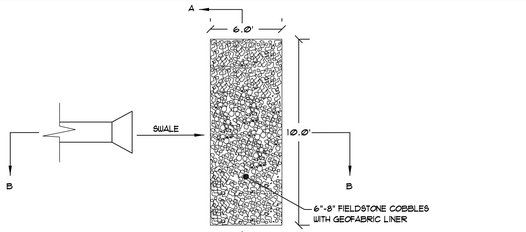
\# IF DIMENSION "X" IS LESS THAN 48" THEN THE SLOPE OF THE FLARED SIDES SHALL NOT EXCEED 1:12.

***DETECTABLE WARNING FIELDS TO BE NEENAH FOUNDRY DETECTABLE WARNING FIELDS (OR APPROVED EQUAL), EPOXY PAINTED FEDERAL YELLOW COLOR (VERIFY COLOR W/ OWNER PRIOR TO INSTALLATION)

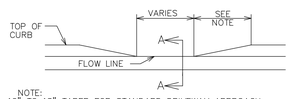
3 HANDICAP RAMP DETAIL
NTS — 601 — 11/19/10



4 HANDICAP SIGN
NTS — 603 — 11/19/10



5 LEVEL SPREADER DETAIL
NTS

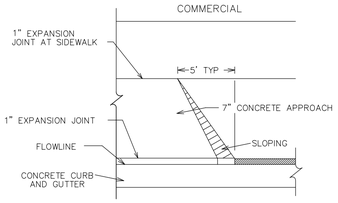


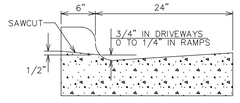
NOTE:
12" TO 18" TAPER FOR STANDARD DRIVEWAY APPROACH
18" TO 24" TAPER FOR STANDARD RAMP

TYPICAL CURB CUT TAPER

GENERAL NOTE:
IF THE CURB CUT IS NOT CONSTRUCTED WITH THE INITIAL CURB AND GUTTER CONSTRUCTION, THE CURB CUT CAN BE MADE BY REMOVING AND REPLACING THE ENTIRE CURB AND GUTTER SECTION OR BY SAWCUTTING THE EXISTING CURB HEAD BY MEANS OF A SPECIAL SAW DESIGNED TO MEET THE DETAILS ABOVE FOR MADISON STANDARD CURB CUTS.

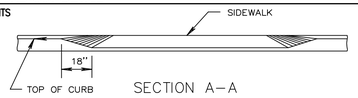
ALL EXPANSION JOINTS SHALL EXTEND THROUGH THE ENTIRE THICKNESS OF THE APPROACH OR SIDEWALK, WHICHEVER IS THICKER.



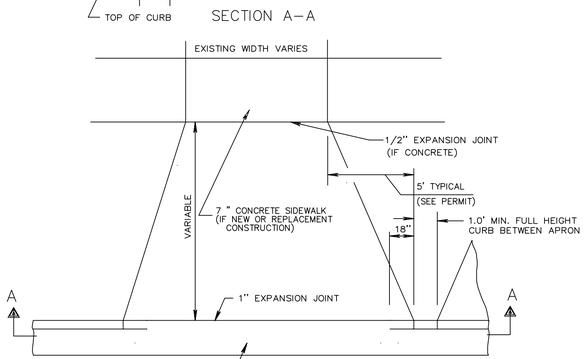


DRIVEWAY SECTION TYPE 'A'
CONCRETE CURB & GUTTER
SECTION A-A

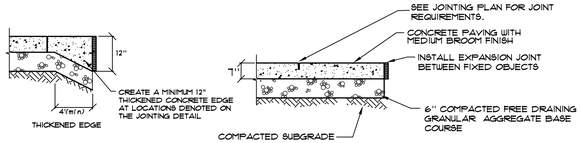
6 CURB CUT DETAIL
NTS



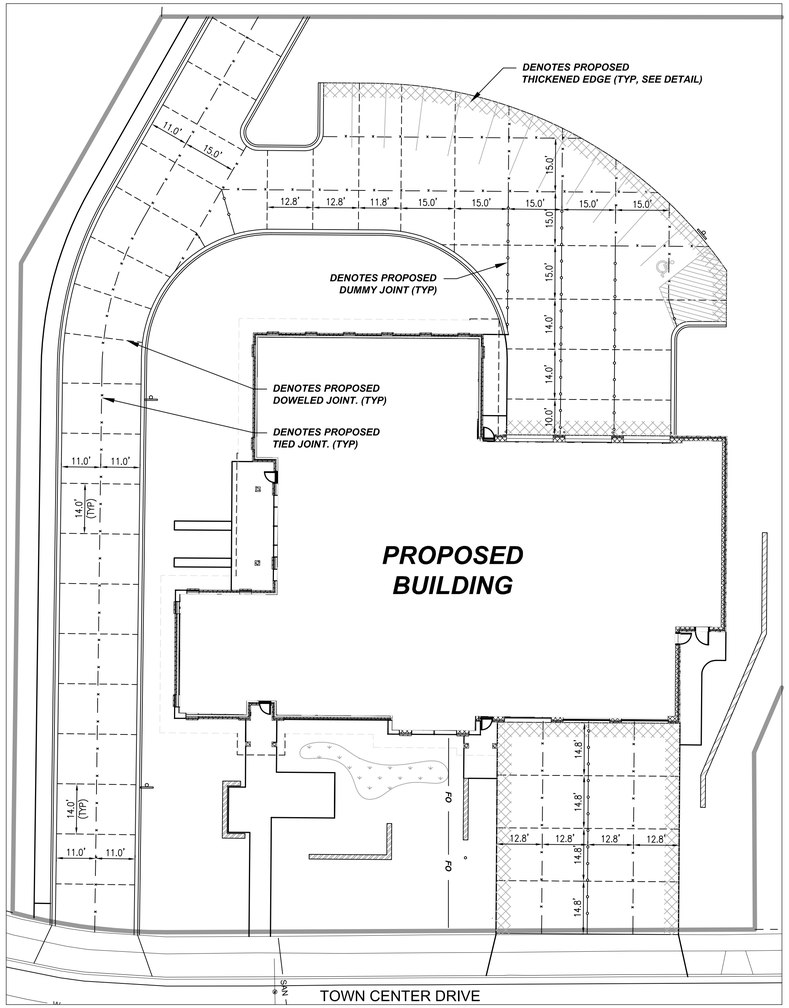
SECTION A-A



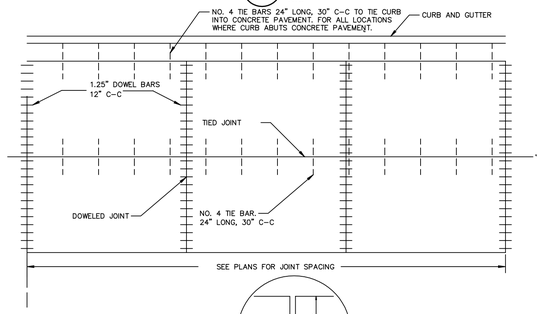
7 COMMERCIAL DRIVEWAY DETAIL
NTS



8 CONCRETE PAVEMENT SECTION
NTS — 523 — 06/08/11



9 CONCRETE PAVEMENT JOINTING DETAIL
NTS — 504 — 11/19/10



GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

CONTRACTION JOINTS (DOWELED AND TIED):

UNLESS OTHERWISE SPECIFIED, THE LOCATION OF CONTRACTION JOINTS SHALL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

JOINTS SHALL NOT BE SEALED OR FILLED.

DOWEL AND TIE BARS SHALL BE INSTALLED PARALLEL TO THE PAVEMENT SURFACE.

DOWEL BARS ARE TO BE 1.25" DIAMETER, 18" IN LENGTH AND EPOXY COATED.

TIE BARS TO BE NO. 4 – 24" IN LENGTH.

ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY MAY BE USED WHEN APPROVED BY THE ENGINEER.

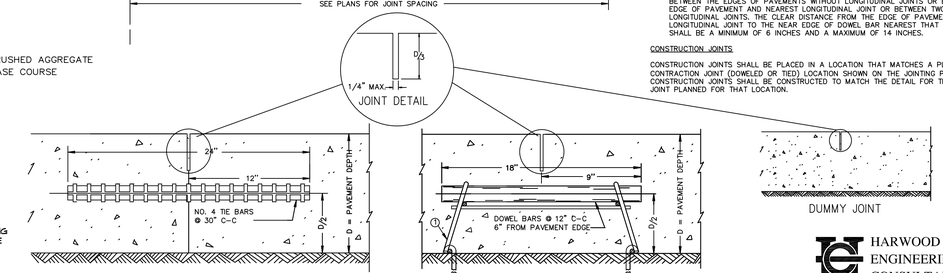
MECHANICAL DOWEL BAR IMPLANTERS MAY BE USED INSTEAD OF DOWEL ASSEMBLIES.

DOWEL BARS INSTALLED BY DRILLING SHALL BE SPACED 1'-3" ON CENTER.

THE GROUPING OF DOWEL BARS SHALL BE CENTERED INSIDE THE SLAB BASED ON ALL THE FOLLOWING SITUATIONS:
- BETWEEN THE EDGES OF PAVEMENTS WITHOUT LONGITUDINAL JOINTS OR BETWEEN THE EDGE OF PAVEMENT AND NEAREST LONGITUDINAL JOINT OR BETWEEN TWO ADJACENT LONGITUDINAL JOINTS. THE CLEAR DISTANCE FROM THE EDGE OF PAVEMENT OR LONGITUDINAL JOINT TO THE NEAR EDGE OF DOWEL BAR NEAREST THAT EDGE OR JOINT SHALL BE A MINIMUM OF 6 INCHES AND A MAXIMUM OF 14 INCHES.

CONSTRUCTION JOINTS

CONSTRUCTION JOINTS SHALL BE PLACED IN A LOCATION THAT MATCHES A PLANNED CONTRACTION JOINT (DOWELED OR TIED) LOCATION SHOWN ON THE JOINTING PLAN. CONSTRUCTION JOINTS SHALL BE CONSTRUCTED TO MATCH THE DETAIL FOR THE TYPE OF JOINT PLANNED FOR THAT LOCATION.



10 CONCRETE PAVEMENT JOINTING DETAIL
NTS

HARWOOD ENGINEERING CONSULTANTS, LTD
255 North 21st Street Milwaukee Wisconsin 53233
414.475.5554 414.773.9299 fax harwood@hecl.com
HEC Project Number: 12-0062.00

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ARCHITECTURAL STUDIOS, INC.
2122 West Mt. Vernon Avenue | Milwaukee, WI 53233 | zastudios.com
TELEPHONE [414] 476.9500
FACSIMILE [414] 476.8582

PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

SHEET INFORMATION

REVISIONS

#	DATE	DESCRIPTION

DATE
May 03, 2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

Construction Details

C502

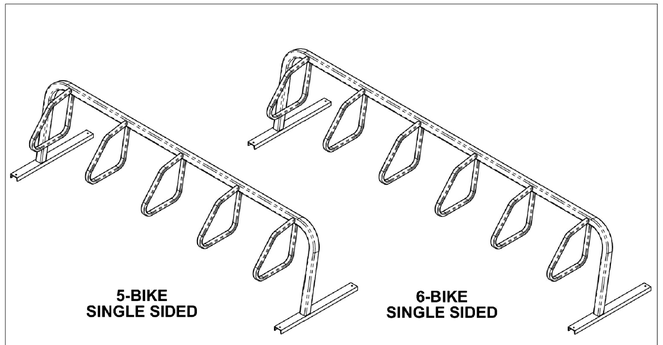
Hardscape Notes

5.01 Integral colored concrete: Install where shown. Coordinate construction w/ Civil dwgs, incl. pavement sub-base, crushed stone, conc. thickness, reinforcing (if any) & joint type. Color shall be 'CHROMIX' admixture with corresponding 'Cureseal-S' solvent-based sealant. Supplied by LM Scofield Co., St. Charles IL, 630-377-5959. Final color TBD, assume 'C-15 Coachella Sand' for pricing purposes. Friction additive shall be Increte 'ShurGrip' or similar.

Contractor shall provide up to three 2x2' sample pours w/ correct sealer & medium broom finish. A final 4x4' proof sample shall be poured and left @ the job site for the duration of construction.

Note: integral coloring system substitutions will be considered only if submitted for approval 7 days before the close of bidding.

5.02 Site furnishings: See Section 12 93 00 for tables, chairs, benches & waste receptacles. Shall be Keystone Ridge or approved equal. See Section 12 93 13 for bicycle racks. Shall be Saris "City Rack 2400 Series", capacity five bicycles, single-sided, flange mount, or approved equal.



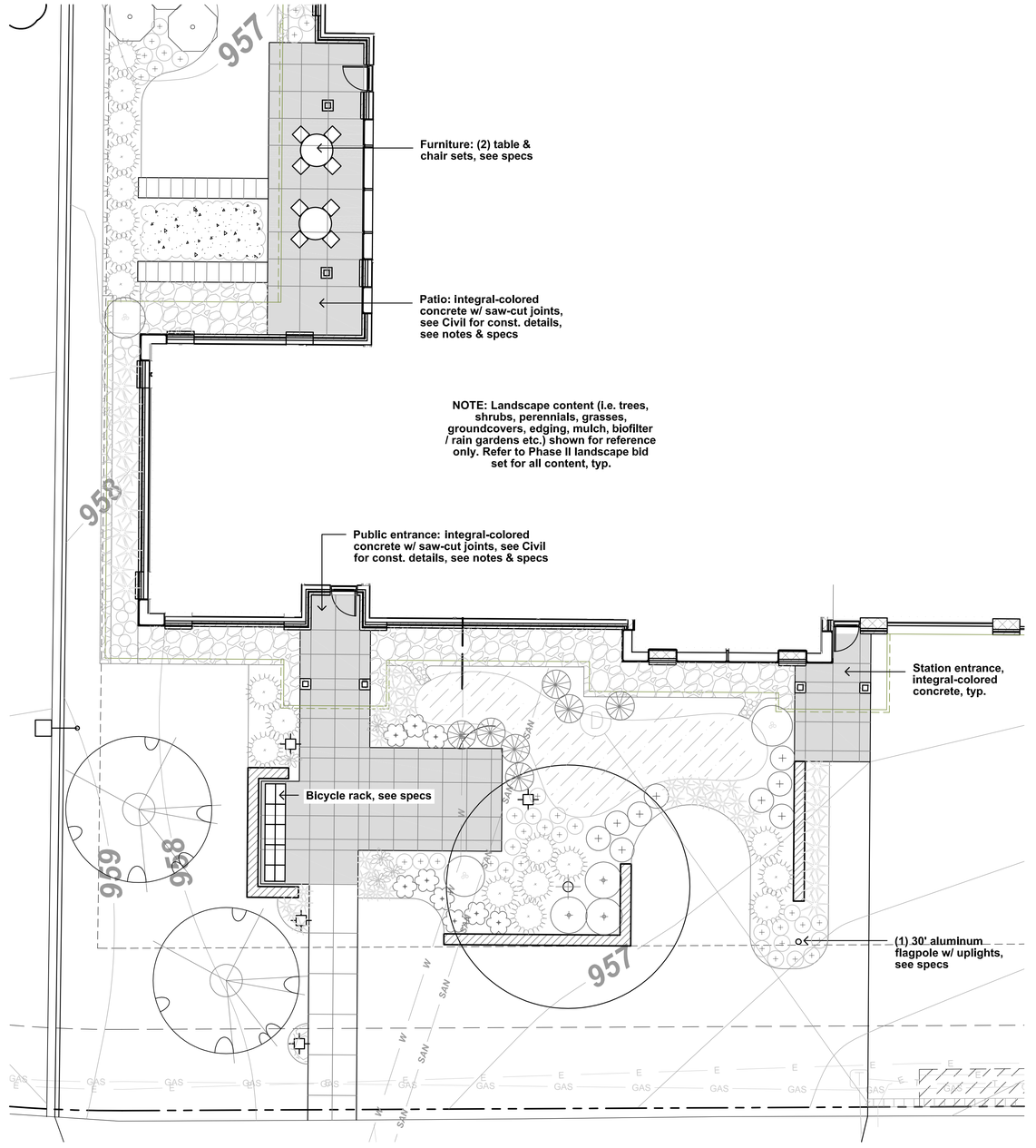
SARIS CYCLING GROUP
WE BRING CYCLING TO LIFE

SARIS CYCLING GROUP
5253 VERONA RD., MADISON WI. 53711
1-800-783-7257 / 1-608-274-1702
WWW.SARISPARKING.COM

TITLE: CITY RACK, 2400 SERIES, SGL, FS

Bicycle Rack

Not To Scale, see specs



Site Amenities Plan

Scale: 1/8"=1'-0"

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PROJECT NFORMATION

Madison Fire Station 13

Madison

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

0' 4' 8' 16'

Scale: 1/8"=1'-0" @ 36x24"

SHEET INFORMATION

REVISIONS

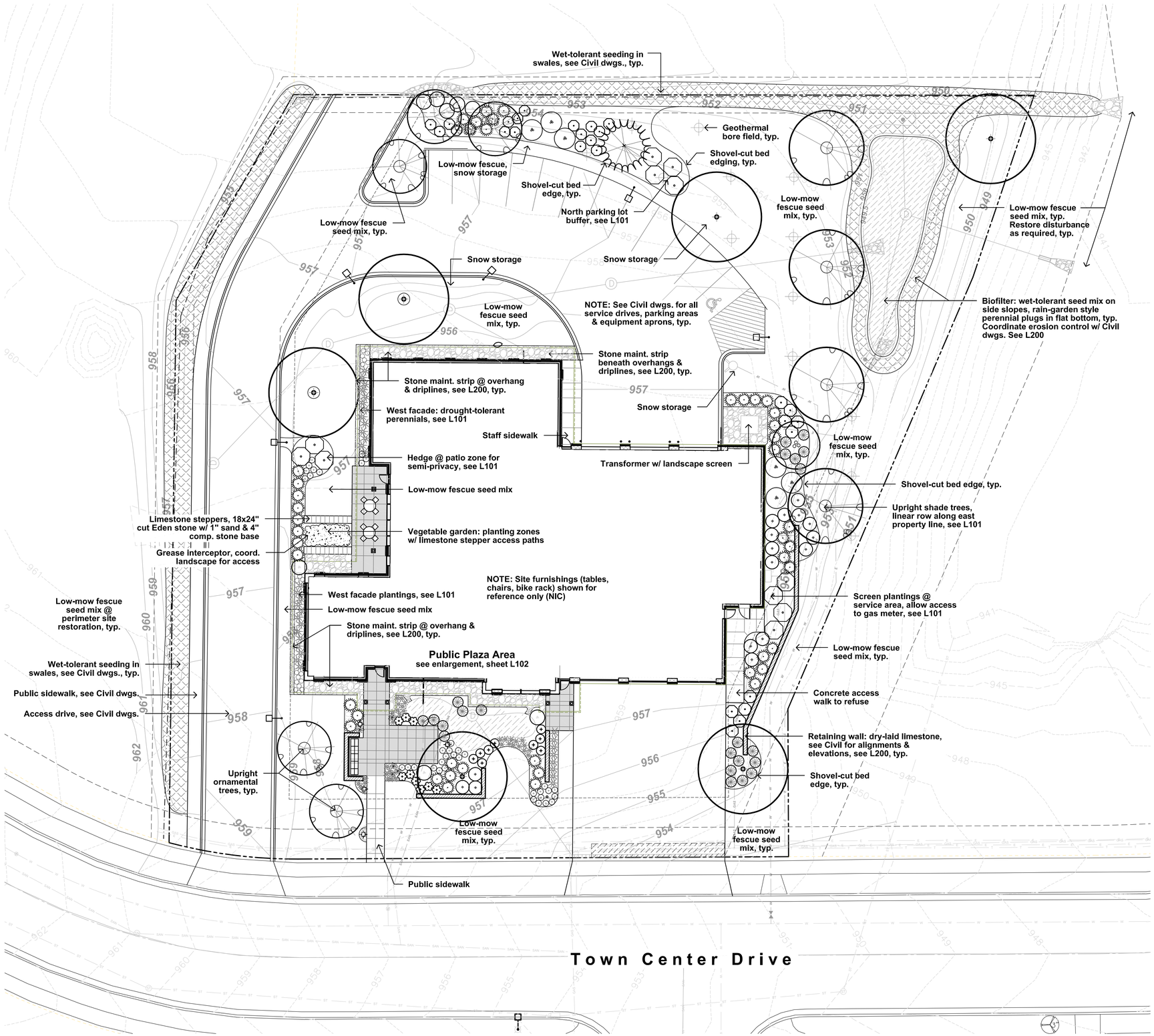
#	DATE	DESCRIPTION

DATE
05/03/2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

Site Amenities Plan

C503



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PROJECT NFORMATION

Madison Fire Station 13

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

0 8' 16' 32'

SCALE: 1/16"=1'-0" @ 36x24"

SHEET INFORMATION

REVISIONS

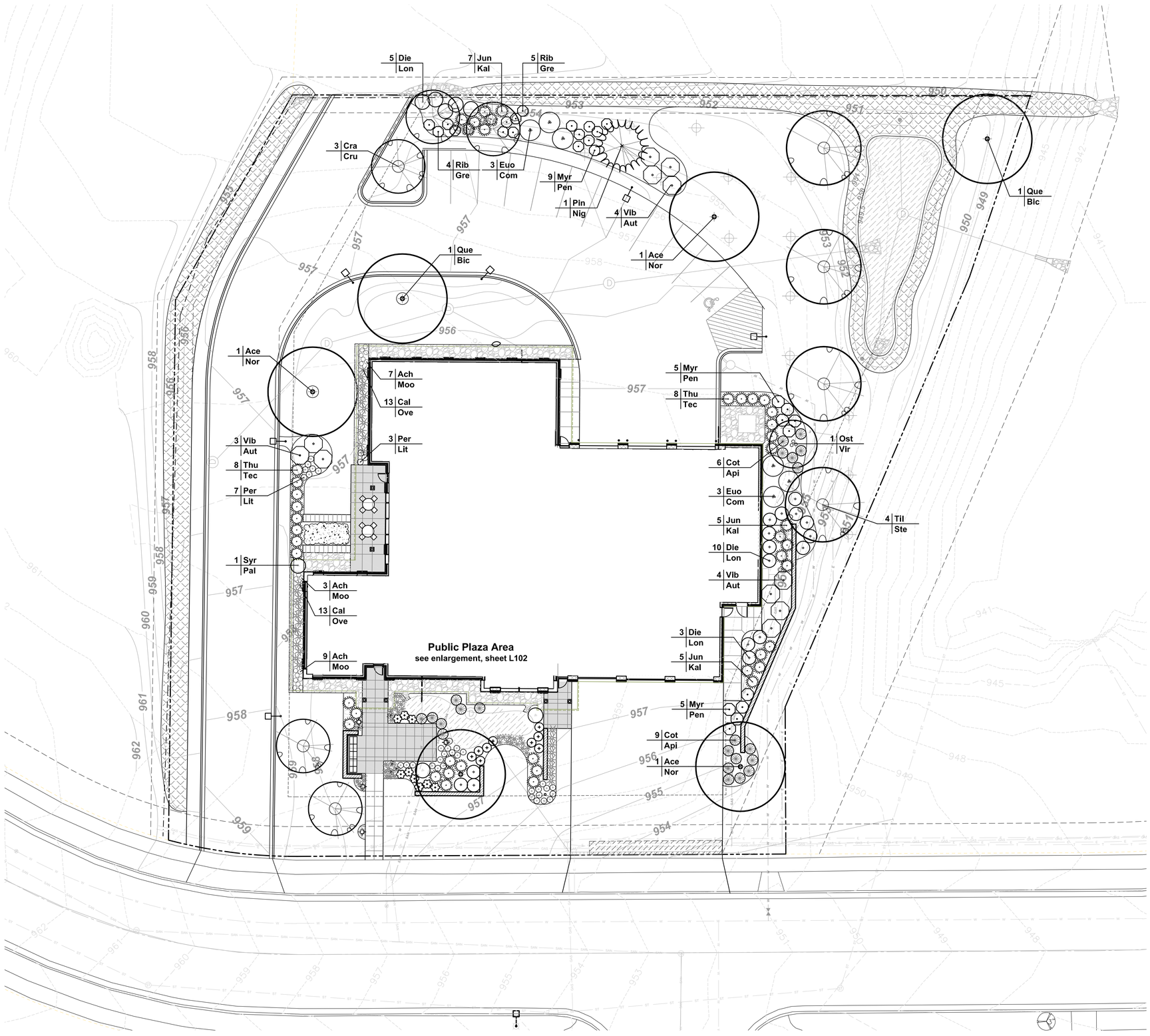
#	DATE	DESCRIPTION

DATE
05/03/2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

Site / Landscape Plan

L100



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2122 West Mt. Vernon Avenue | Milwaukee, WI 53233 | zastudios.com
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PROJECT NFORMATION

Madison Fire Station 13

Madison

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

0 8' 16' 32'

SCALE: 1/16"=1'-0" @ 36x24"

SHEET INFORMATION

REVISIONS

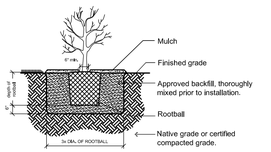
#	DATE	DESCRIPTION

DATE
05/03/2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

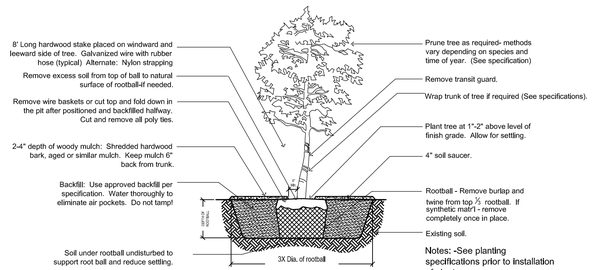
Planting Plan

L101



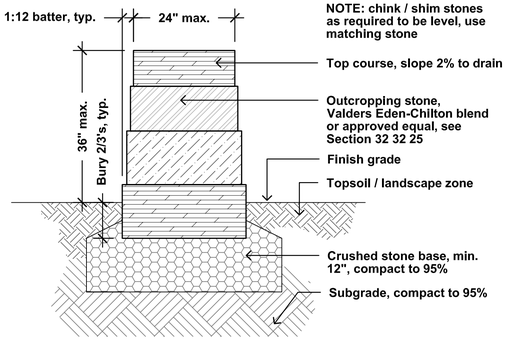
NOTES:
-See planting specifications prior to installation of plants.

6 Shrub Planting Detail
Not To Scale

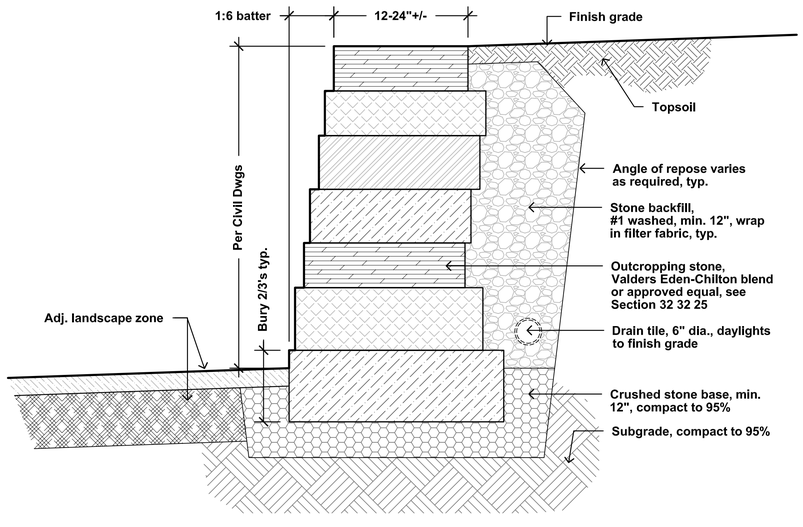


Notes: -See planting specifications prior to installation of plants.

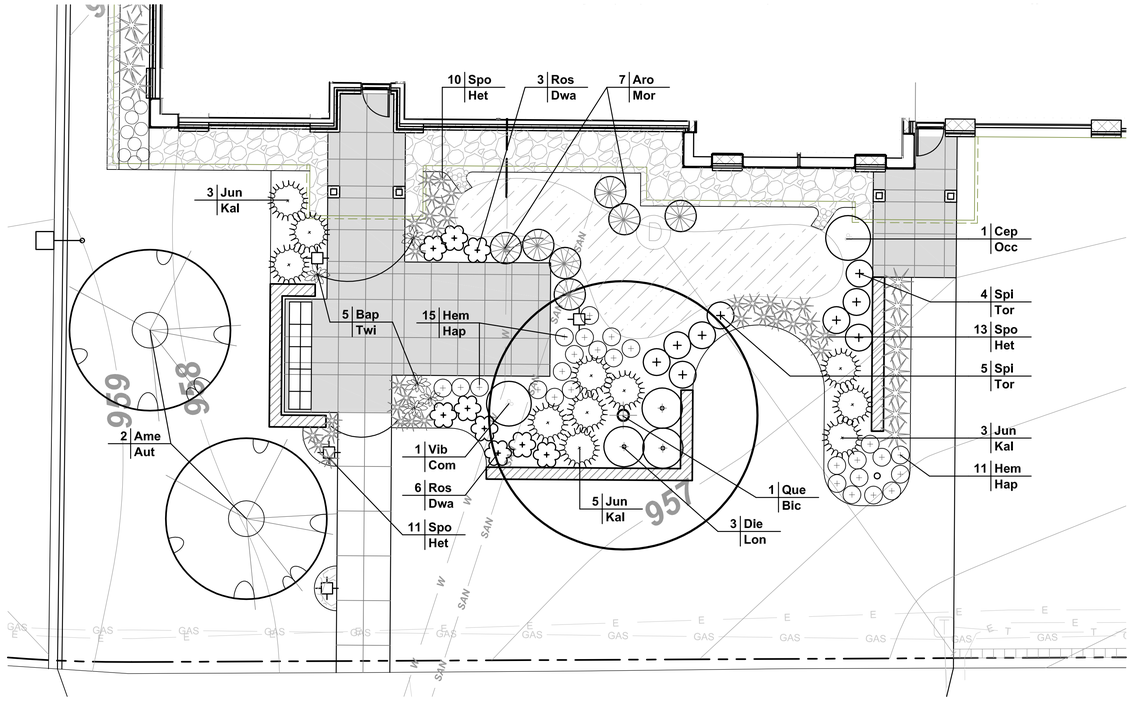
5 Tree Planting Detail
Not To Scale



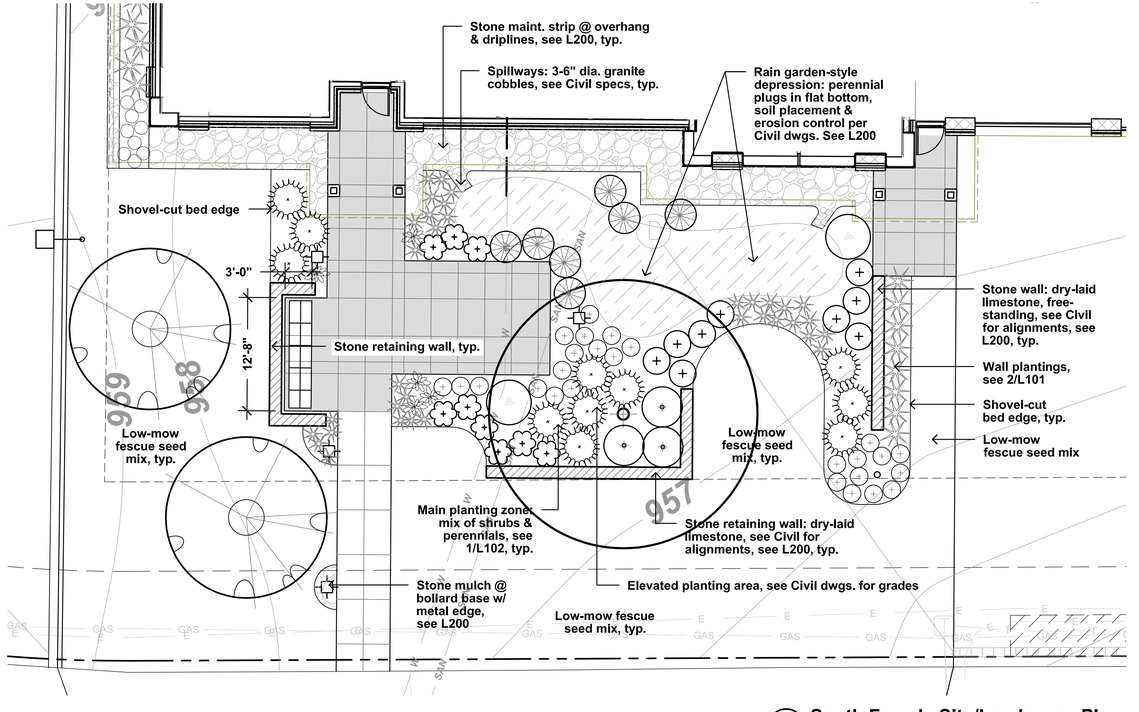
4 Dry-Laid Freestanding Wall Detail
Scale: 3/4"=1'-0"



3 Dry-Laid Retaining Wall Detail
Scale: 3/4"=1'-0"



2 South Facade Planting Plan
Scale: 1/8"=1'-0"



1 South Facade Site/Landscape Plan
Scale: 1/8"=1'-0"

Zimmerman
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TELEPHONE [414] 476.9500
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PROJECT NFORMATION

Madison Fire Station 13

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

Scale: As shown @ 36x24"

SHEET INFORMATION

REVISIONS

#	DATE	DESCRIPTION

DATE
05/03/2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

Landscape Enlargements & Details

L102

General Notes

1.01 All landscape installation & maintenance to conform with all applicable local codes & ordinances, including (but not limited to) the City of Madison Municipal Code.

1.02 See Site & Civil dwgs. for work limits, scope of construction, dimensions &/or construction notes. See Civil dwgs. for all hardscape, grading, stormwater management, site utilities & erosion control. See Landscape dwgs. for landscape plans, coverage/restoration requirements, details, schedules & notes. See Site electrical dwgs. for exterior lighting. See Architectural dwgs. for all building construction & signage.

1.03 Contractor shall provide shop drawings and material submittals of **all** hardscape & landscape construction elements shown in plan set for Landscape Architect review prior to construction.

1.04 Contractor to provide samples for Owner approval on all colors, finishes & materials (including but not limited to imported topsoil, gravels, mulches, seed mixes et al) prior to installation.

1.05 Caution: underground utilities are present on site. The Contractor shall verify location of all above- and below-grade utilities, both public & private, prior to commencement of site construction. If unanticipated above- or below-grade conditions are encountered, notify Client & Landscape Architect prior to proceeding. Coordinate with local public & private utility locating entities as needed.

1.06 Contractor to verify layout prior to construction. Contact Landscape Architect or Civil Engineer if discrepancies are found.

1.07 Contractor to limit construction traffic to within work limit lines. All adjacent damage shall be the responsibility of the contractor to restore. See Civil drawings for limits of disturbance.

1.08 All written dimensions supersede scaled dimensions. All dimensions are taken from face of curb, wall or existing building foundations.

Landscape Notes

2.01 Rough grading, utility installation & topsoil placement shall be completed by others. Landscape contractor shall coordinate with GC and/or earthwork contractor to ensure correct topsoil depths & fine grading. Landscape contractor shall also verify (in writing) to the Owner that site topsoil is acceptable. Any discrepancies shall be identified to the GC for remedy prior to beginning of planting operations. Seed area and ornamental planting bed preparation shall be the landscape contractor's responsibility. Verify all existing site and grading conditions prior to construction.

2.02 Contaminated soil shall be removed from the project immediately site as discovered. The contractor shall coordinate with the CG and/or earthwork contractor to properly remove any excessive clay, gravel, debris, wood chips, stones and/or other deleterious materials greater than 1" diameter from all ornamental or seeded areas. Use of appropriate equipment (i.e. portable on-site screener or other equipment) will be required.

2.03 All ornamental planting beds (trees, shrubs, perennials, grasses etc.) shall contain blended topsoil mix to a min. depth of 18". Depth shall be deeper as required at all tree rootball locations. All seeded areas shall have a min. depth of 6". Suitable existing soil may be used & mixed if previously approved. Prior to construction, the contractor shall be responsible for obtaining soil tests to include (but are not limited to) soil pH, % organic matter, phosphorus, potassium, calcium & texture (percentages of sand, silt and/or clay.)

2.04 All areas disturbed by grading or site construction shall be fine graded and restored with vegetative cover as shown in the plans. Areas outside of the work limit lines are to be left as-is unless disturbed by contractor's staging or stockpiling. See plans for cover types & locations. Coordinate restoration of staging / stockpile areas with LA prior to construction.

2.05 Contractor shall verify plant quantities shown on plan. Prior to construction, provide to the LA applicable material invoice(s) from commercial nurseries identifying the species, sizes & plant sources obtained throughout the project.

2.06 Owner and/or LA shall inspect plant materials prior to installation. Place all materials per the plan but do not dig in until the LA inspects & approves the layout(s.) The LA reserves the right to reject any substandard planting material. Such rejected material shall be removed from the project site immediately and replaced with material meeting the specifications set forth in the plans & schedules.

2.07 All nursery tags/labels shall be left on plant materials until the LA completed the landscape punch-list inspection. Untagged materials will be assumed to be deficient.

2.08 Contractor is responsible for ensuring that all tree pits & planting areas drain properly. Notify Landscape Architect if drainage or moisture problems are encountered while planting.

2.09 Contractor shall backfill all trees, shrubs & evergreens with a mix of 1/3 plant starter mix & 2/3 remaining soil. Plant Starter Mix available from Liesener Soils, Jackson WI, or approved equal.

2.10 All existing trees to remain shall be protected. Prior to clearing/grubbing, install snow fencing @ 15' radius from trunks or driplines, whichever is farther. Fencing is to remain for duration of project. No grading or earthwork to occur in fenced zones except as indicated. No storage, traffic or parking to occur in fenced zones for the duration of the project.

2.11 All perennial and groundcover areas shall receive a 3" layer of plant starter mix and perennial starter fertilizer, rototilled into the top 6" of blended topsoil in beds.

2.12 All perennial areas shall receive a 1-2" layer of shredded hardwood bark mulch. Do not allow mulch to touch stems or leaves of perennials! All woody planting areas shall receive a 3" layer. Unless otherwise shown in the plans, no landscape fabric or weed barrier is to be installed.

2.13 Groundcover beds DO NOT receive a cover of shredded bark mulch.

2.14 Unless otherwise shown, all perennials & shrubs to be planted in triangular arrangements. For plants not shown individually, refer to the spacing shown in the plant schedule.

2.15 Stone mulch areas (maintenance strips, at XFMR, etc.) to contain 2-3" of 1" dia. stone installed over poly weed barrier. Edge with 3/16" x 4" mill-finish aluminum edging. Stone to be "Mississippi Washed" or approved equal.

2.16 Contractor shall provide positive drainage away from all structures for a minimum of 10'.

2.17 Contractor shall provide all required landscape maintenance activities (including but not limited to mowing, trimming, pruning, fertilizing, watering, spring/fall clean-up, weed control other necessary care and IPM) for a period of 36 months after installation. A 36-month calendar of prescribed maintenance activities shall be provided for LA review/approval prior to beginning work. A log book detailing all maintenance activities shall be given to the Owner at the end of each season of care. Before 60-day maintenance period ends, Contractor to install 6" shovel-cut edges wherever noted. See specs for more maintenance details.

2.18 Seeded coverage (low-mow, wet-tolerant, etc.) and rain garden plantings shall be prepped, established & maintained per the materials supplier's recommendations. at the same 36-month duration. An outline of required activities shall be included in the 36-month calendar. See specs for more warranty details.

2.19 Ornamental woody materials (trees, shrubs) shall be warrantied for one year after installation. All herbaceous materials shall be warrantied for one season (not shorter than three months) after installation. See specs for more warranty details.

Seeding Notes & Mixes

3.01 This work shall consist of preparing the seed beds and furnishing, sowing and mulching the required seed on the various seeded areas, as outlined in the site plans and specifications.

3.02 Rough grading, drainage work, topsoiling and fine grading shall be completed before sowing the seed mixes. The areas to be seeded shall be worked with plow chisels, discs & harrows, soil finishers and/or other appropriate equipment until a reasonably even and loose seedbed is obtained. Seed beds shall be prepared immediately in advance of the seeding. Do not seed over compacted topsoil. If proposed seed areas are weedy, contractor to apply herbicide or other weed control measures to eliminate weeds. Conform with seed supplier's specifications if required.

3.03 Confirm that anticipated project schedule date(s) fall within the respective seed supplier's approved calendar prior to installation. Installations completed outside of acceptable seeding dates shall be the performed at the sole responsibility and expense of the contractor. For dormant seeding, a min. of one over-seed application in the following season will be required.

3.04 Seeds shall be PLS and shall be mixed in accordance w/ mfr's specifications. Provide invoices, bag-tags or mix analysis results for approval prior to installation.

3.05 The seed mixtures shall be sown by means of equipment adapted to the purpose. Mechanical distribution of seed (i.e. Truax seed drill, Brillion seeder, cultipacker, slit-seeder, drop spreader or broadcast spreader) are the only accepted methods. No hand-broadcasting of seed.

3.06 No seeding shall occur if the wind exceeds 12 MPH.

3.07 Coordinate erosion control and/or mulching with Civil dwgs. In sloped areas steeper than 4:1, erosion matting shall be installed by others (see 3.09); installation coordination will be required. In areas with slopes between 4:1 and 8:1, landscape contractor shall apply clean hay or straw mulch, free of debris and seeds, on all newly seeded areas. Mulch shall be uniformly spread over the designated area at a rate of 55 bales per acre or as indicated in the respective seed supplier's specifications. Mulch material shall be chopped and blown into the seeded area. Lightweight E.C. matting and/or hydromulch will be accepted as a no-cost alternate if approved by Landscape Architect.

3.08 See Civil dwgs for erosion control devices. Coordinate with erosion control contractor where required to ensure that topsoil, seeding and/or mat installations are properly coordinated.

3.09 Contractor is responsible for obtaining soil tests for all seeded areas prior to construction. Soil testing results shall include (but is not limited to) soil pH, % organic matter, phosphorus, potassium, calcium & texture (percentages of sand, silt and/or clay.) Should test results indicate potential conflict with the specified seed mixes, the contractor shall notify the LA prior to application and shall request an alternate seed spec from the specified supplier.

3.10 Seed source / mix substitutions shall be considered only if submitted for approval 10 days before the close of bidding. All mixes shall be installed & maintained per supplier's specifications. In addition to the mixes, with exception of the bluegrass zones, apply cover crop @ 5 lbs per AC in spring/summer or 15 lbs per AC in fall. Species to be Annual Rye, Annual Oats or Winter Wheat depending on season, confirm final selection with LA prior to application.

LOW MOW MIX:
"No-Mow Lawn Seed Mix" shall be supplied by Prairie Nursery, Westfield WI, 800-476-9453. Apply @ 220 lbs per AC.

WET MIX:
Custom mix based on "Detention Basin Wet Prairie Mix". Species to be pre-selected by supplier horticulturalist for greater tolerance to drought / dry conditions. Shall be supplied by Prairie Nursery. Apply @ 10 lbs per AC.

Wet Tolerant Plug Notes

4.01 This work shall consist of preparing the plug areas and furnishing, installing and mulching the required wet-tolerant perennial plugs on the various seeded areas, as outlined in the site plans and specifications.

4.02 Rough grading, drainage work & engineered soil spreading shall be completed by others before installing the plugs. See the Civil plans for the areas of engineered soil and its placement.

4.03 Install plugs during the respective plug supplier's approved calendar. Installations completed outside of acceptable install dates shall be the performed at the sole responsibility and expense of the contractor.

4.04 See Civil dwgs for erosion control req's. Plugs are to be installed into the engineered soil via slits cut through the mat. See Civil dwgs for balance of site erosion control measures.

4.05 Plug kit/source substitutions will be considered only approved 10 days before the close of bidding.

4.06 Perennial Plugs: Custom kit based on "Rain Garden For Sandy Soil in Full Sun" kit(s.) Species to be pre-selected by supplier horticulturalist for high tolerance to drought / dry conditions. Final species list to be reviewed/approved by LA. Shall be provided by Prairie Nursery. To be installed & maintained per supplier's specifications. Install @ 12-15" o.c., staggered / triangular spacing, with species organized in clusters of 3-5 plugs each.

Plant Schedule

NOTE: Contractors shall be responsible for calculating all plant quantities, typ.

Symbol	Qty Prop.	Botanical Name	Common Name	Installed Size	Mature Size	Root	Spacing	Highly Drought Tol.	Notes
Shade Trees									
Ace Nor	3	Acer x. 'Norwegian Sunset'	Norwegian Sunset Maple	3" Cal.	35x25'	B/B	As Shown	X	
Que Bic	3	Quercus bicolor	Swamp White Oak	4" Cal.	75x65'	B/B	As Shown	X	
Til Ste	4	Tilia tom. 'Sterling Silver'	Sterling Silver Linden	3" Cal.	40x25'	B/B	As Shown	X	
Ornamental Trees									
Ame Aut	2	Amelanchier x. 'Autumn Brilliance'	Autumn Brilliance Serviceberry	8-10' Ht.	20x20'	B/B	As Shown		Heavy Three Stem
Cra Cru	3	Crat. crus-galli var. inermis	Thornless Cockspur Hawthorn	2.5" Cal.	20x25'	B/B	As Shown	X	
Ost Vir	1	Ostrya virginiana	Ironwood	2.5" Cal.	25x15'	B/B	As Shown	X	
Evergreen Trees									
Pin Nig	1	Pinus nigra	Austrian Pine	7-8' Ht.	50x20'	B/B	As Shown	X	
Decidduous Shrubs									
Aro Mor	7	Aronia mel. 'Morton'	Iroquois Beauty Chokeberry	15-18" Ht.	3x4'	2 Gal.	36-42" o.c.		
Cep Occ	1	Cephalanthus occidentalis	Buttonbush	36" Ht.	6x6'	7 Gal.	As Shown		
Cot Api	15	Cotoneaster apiculatus	Cranberry Cotoneaster	15-18" Ht.	2x4'	2 Gal.	42" o.c.	X	
Die Lon	21	Diervilla lonicera	Dwarfbush Honeysuckle	24" Ht.	3x4'	2 Gal.	54" o.c.	X	
Euo Com	6	Euonymus alata 'Compactus'	Compact Burning Bush	48" Ht.	8x8'	B/B	As Shown		
Myr Pen	19	Myrica pennsylvanica	Northern Bayberry	24" Ht.	3x4'	2 Gal.	48" o.c.	X	
Rib Gre	9	Ribes alpinum 'Green Mound'	Green Mound Alpine Currant	24" Ht.	3x3'	2 Gal.	48" o.c.	X	
Ros Dwa	9	Rosa rugosa 'Dwarf Pavement'	Dwarf Pavement Rose	15-18" Ht.	3x3'	2 Gal.	30" o.c.	X	
Spi Tor	9	Spiraea betulifolia 'Tor'	Tor Bircheaf Spirea	24" Ht.	3x3'	2 Gal.	42" o.c.		
Syr Pal	1	Syringa meyeri 'Palibin'	Palibin Dwf. Lilac	24-30" Ht.	5x6'	2 Gal.	48-54" o.c.		
Vib Com	1	Viburnum carlesii 'Compactum'	Compact Koreanspice Viburnum	36" Ht.	5x7'	7 Gal.	60" o.c.		
Vib Aut	11	Viburnum dentatum 'Autumn Jazz'	Autumn Jazz Arrowwood Viburnum	48" Ht.	8x8'	B/B	As Shown		
Evergreen Shrubs									
Jun Kal	28	Juniperus chinensis 'Kallay'	Kallay Compact Juniper	24" sprd.	4x8'	7 Gal.	54-60" o.c.	X	
Thu Tec	16	Thuja occidentalis 'Technito'	Dwarf Techny Arborvitae	5' Ht.	15x8'	B/B	As Shown		
Perennials & Grasses									
Ach Moo	19	Achillea 'Moonshine'	Moonshine Yarrow	4.5"	30x18"	Cont.	18" o.c.	X	
Bap Twi	5	Baptisia x. var. 'Twilite Prairieblues'	Twilite Prairieblues Wild Indigo	1 Gal.	40x36"	Cont.	36" o.c.	X	
Cal Ove	26	Calamagrostis acu. 'Overdam'	Overdam Reed Grass	1 Gal.	48x24"	Cont.	30" o.c.	X	
Hem Hap	26	Hemerocallis 'Happy Returns'	Happy Returns Daylily	4.5"	16x18"	Cont.	18-24" o.c.	X	
Per Lit	10	Perovskia atr. 'Little Spire'	Little Spire Russian Sage	1 Gal.	25x18"	Cont.	24" o.c.	X	
Spo Het	34	Sporobolus heterolepsis	Prairie Dropseed	1 Gal.	36x15"	Cont.	18" o.c.	X	

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PROJECT NFORMATION

Madison Fire Station 13

Madison

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

SCALE: As Shown @ 36x24"

SHEET INFORMATION

REVISIONS

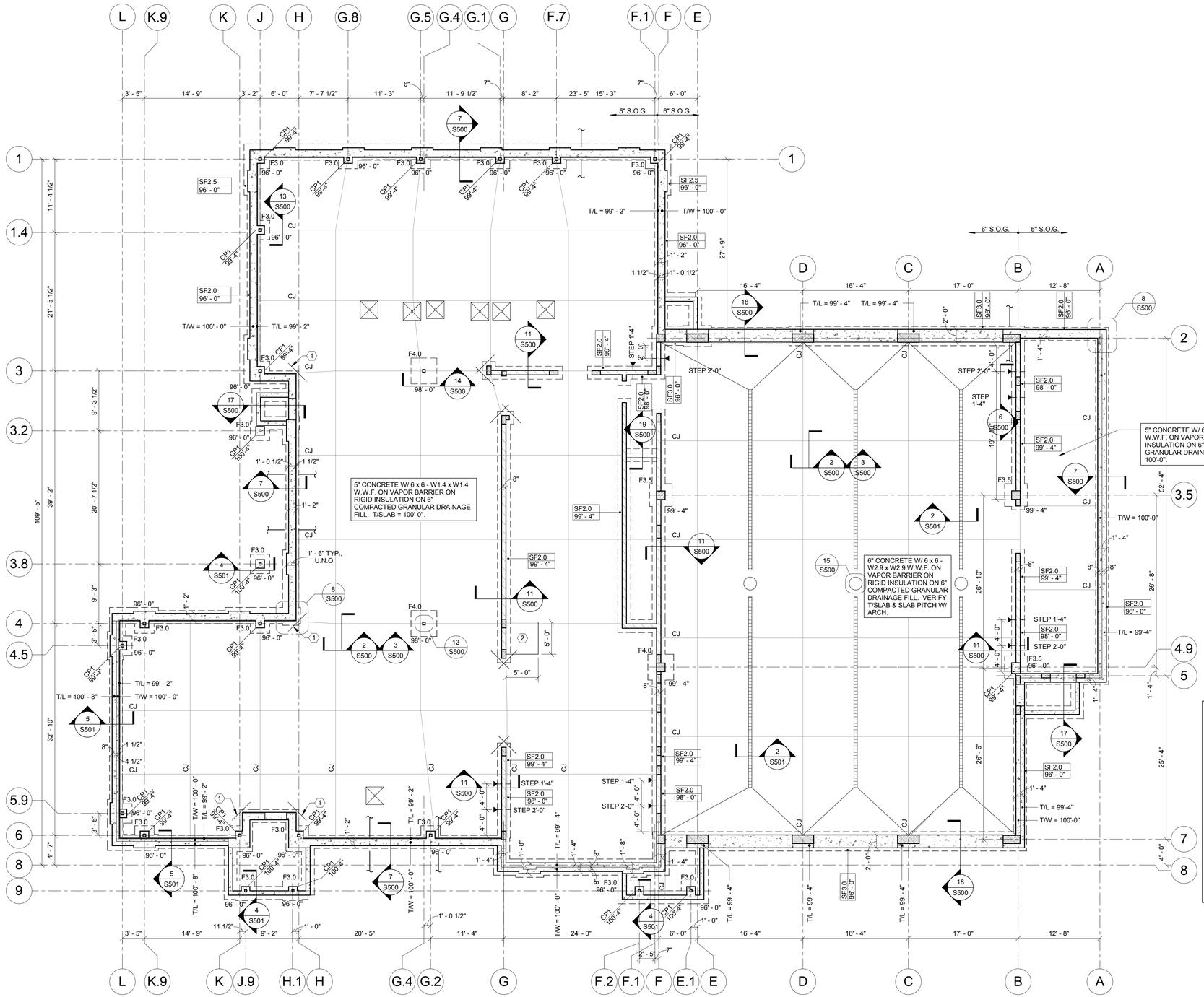
#	DATE	DESCRIPTION

DATE
05/03/2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

Landscape Schedules & Notes

L200



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

PLAN NORTH

PLAN NOTES

- ELEVATION 100'-0" ON THIS PLAN = ELEVATION 957.60' ON SITE PLAN.
- TOP OF TYPICAL FOUNDATION WALL EL. = 100' - 0" U.N.O.
- TOP OF FOUNDATION WALL AT DOORS AT EL. = 99' - 0" U.N.O.
- TOP OF PIER EL. = 99' - 4" U.N.O.
- SEE SHEET S900 AND S901 FOR GENERAL NOTES, SCHEDULES AND OTHER ADDITIONAL REQUIREMENTS.
- ALL DIMENSIONS AND ELEVATIONS SHALL BE VERIFIED BY CONTRACTOR TO CONFORM WITH THOSE SHOWN ON ARCHITECTURAL PLANS.
- SEE ARCHITECTURAL DRAWINGS FOR FLOOR PITCHES, DEPRESSIONS, ETC.
- WHERE REQUIRED, REMOVE UNSUITABLE EXISTING SOILS BELOW FOOTINGS, SLABS ON GRADE, ETC. TO APPROVED BEARING SOIL. REPLACE WITH LEAN CONCRETE OR ENGINEERED FILL TO RAISE SITE TO ELEVATIONS CALLED FOR ON PLANS. SEE SECTION 1/S500. REVIEW SOIL REPORT AND ARCHITECTURAL SITE PLAN. FILL MATERIAL SHALL HAVE A MINIMUM 5000 PSF BEARING CAPACITY. TYPE OF FILL MATERIAL AND PLACEMENT SHALL CONFORM TO SPECIFICATIONS UNDER THE DIRECTION AND SUPERVISION OF THE SOIL ENGINEER. SOIL ENGINEER SHALL FIELD VERIFY ALL BEARING CAPACITIES BEFORE FOOTINGS ARE POURED.
- PROVIDE DOWELS TO MATCH ALL VERTICAL REINFORCING IN MASONRY PIERS AND WALLS.
- CONTRACTOR SHALL PROVIDE FROST AND MOISTURE PROTECTION FOR FOOTINGS EXPOSED DURING CONSTRUCTION.
- " —— —— " REPRECENTS UTILITY LINE COORDINATE LOCATION WITH PLUMBING CONTRACTOR. SEE DETAILS 4 AND 5/S500 FOR LOCATIONS WHERE UTILITY PENETRATES FOUNDATION WALLS
- PROVIDE SLAB DEPRESSIONS AND/OR CURBS AT SHOWERS WHERE REQUIRED. SEE 16/S500 & 3/S501 COORDINATE WITH ARCHITECT.

FOR BIDDING PURPOSES CONTRACTOR SHALL ASSUME THE FOLLOWING ELEVATIONS OF SUITABLE SOIL. EXISTING SOILS SHALL BE REMOVED ABOVE THIS ELEVATION AND REPLACED WITH 5000 PSF LEAN CONCRETE OR ENGINEERED FILL. PROVIDE UNIT PRICES AND ESTIMATED QUANTITIES IN BID. ACTUAL PAYMENTS WILL BE A CREDIT OR ADDITIONAL COMPENSATION BASED ON ACTUAL QUANTITIES.
1. IN A 400 SQUARE FOOT AREA NEAR L-6, USE EL = 92' - 0" FOR BIDDING

KEYED NOTES

1. PROVIDE #5 x 4' - 0" (LOCATED AT THE CENTER OF THE CONCRETE SLAB ON GRADE) AT ALL REENTRANT CORNERS (INCLUDING CORNERS AT EXTERIOR DOORS).
2. 5" CONCRETE PAD - W/ W6 x 6-W2.1 x 2.1 WWF CENTERED IN SLAB TO BE ISOLATED FROM SLAB ON GRADE WITH 1/2" ISOLATION FELT. CONCRETE PAD TO BE REMOVED PRIOR TO INSTALLATION OF FUTURE EQUIPMENT. VERIFY LOCATION W/ OWNER AND ARCHITECT. SEE 15/S500 FOR REINFORCEMENT IN SLAB AROUND PAD OPENING.

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PROJECT NFORMATION

Madison Fire Station 13

Madison

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

HARWOOD ENGINEERING CONSULTANTS, LTD
255 North 21 Street Milwaukee Wisconsin 53233
414.475.5554 414.473.9299 fax harwood@hecl.com
HEC Project Number: 12-0062.00

SHEET INFORMATION

REVISIONS

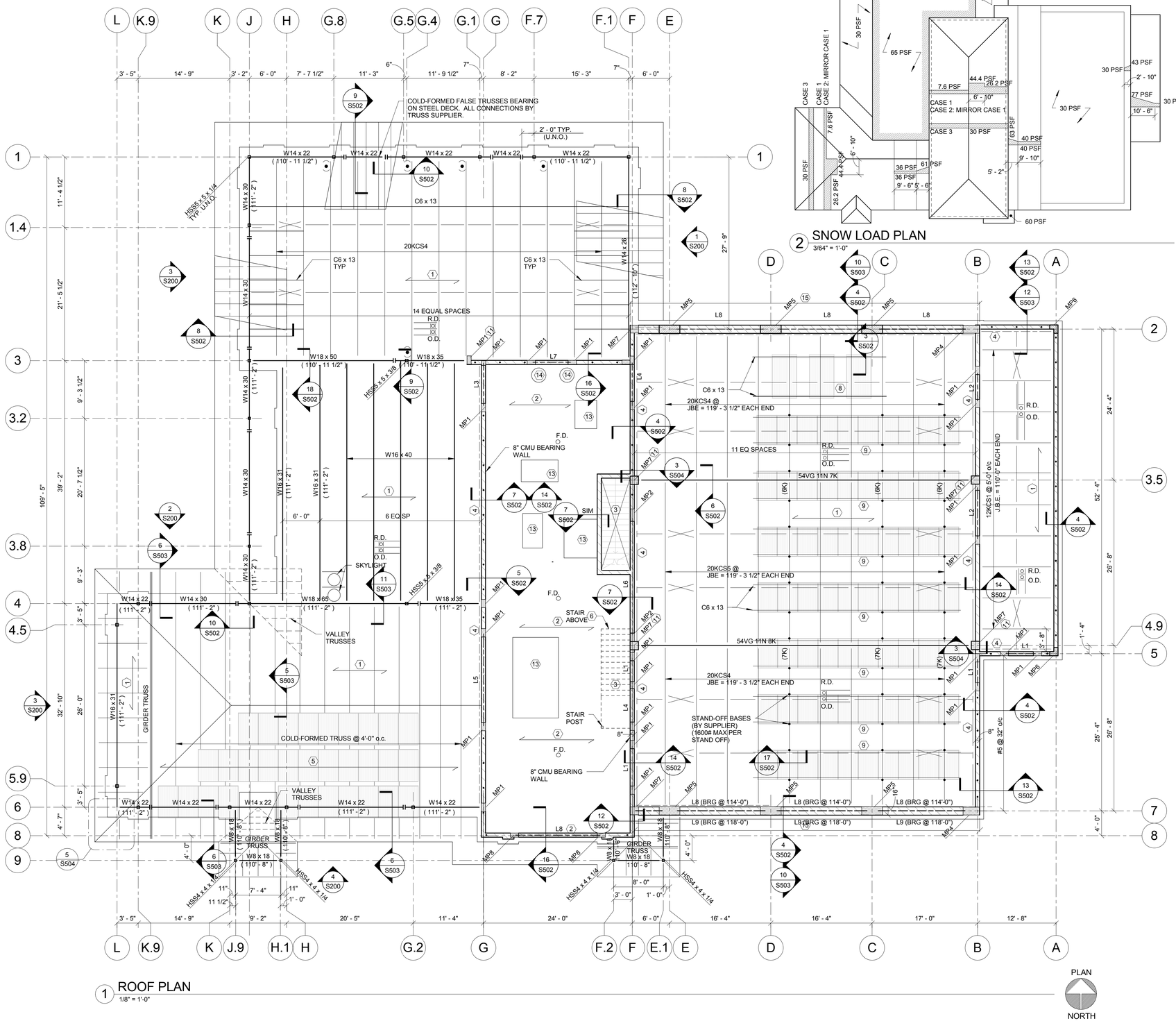
#	DATE	DESCRIPTION

DATE
May 3, 2013

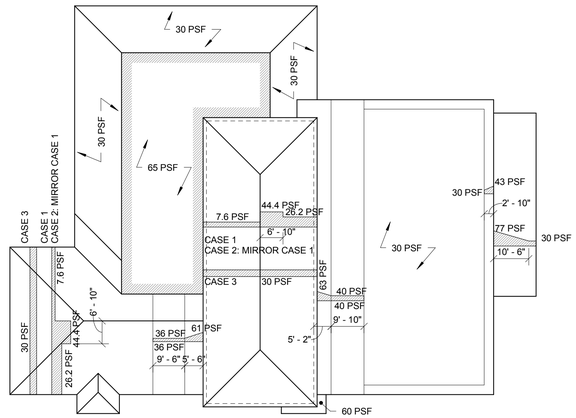
PROJECT NUMBER	STUDIO
120062.00	Sabinash

FOUNDATION PLAN

S100



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



2 SNOW LOAD PLAN
3/64" = 1'-0"

PLAN NORTH

PLAN NOTES

- SEE SHEET S900 & S901 FOR GENERAL NOTES, SCHEDULES AND OTHER ADDITIONAL REQUIREMENTS.
- "(XXX'-XX")" INDICATES TOP OF STEEL BEAM ELEVATION JBE = XXX'-XX" INDICATES JOIST BEARING ELEVATION
- JOIST GIRDER BEARING ELEVATION = 118'-8"
- "(●)"INDICATES BRACE FROM TOP CHORD OF JOIST AT PANEL POINT TO BOTTOM FLANGE OF BEAM OR JOIST GIRDER. SEE SEC 11/S502
- "(#.#K)" ON JOIST GIRDERS INDICATES ADDITIONAL LOAD FROM ROOF TOP UNITS OR DRIFT.
- " ◎ R.D. " INDICATES ROOF DRAIN LOCATION. SEE SECTION 2/S502 FOR FRAMING AROUND ROOF DRAIN. COORDINATE SIZE AND LOCATION WITH MECHANICAL DRAWINGS.
- ROOF STRUCTURE IS DESIGNED FOR A MAXIMUM STANDING WATER HEIGHT OF 6". PROVIDE SCUPPERS AND/OR OVERFLOW DRAINS AS REQUIRED TO LIMIT STANDING WATER TO 6".
- SEE SECTION 2/S502 FOR FRAMING AROUND MISCELLANEOUS OPENINGS SHOWN OR NOT SHOWN. COORDINATE SIZE AND LOCATION WITH ARCH, HVAC, PLUMBING, AND ELECTRICAL DWGS.
- SEE LOOSE LINTEL SCHEDULE AND GENERAL NOTES FOR ANY LINTELS NOT SPECIFICALLY CALLED OUT.
- PROVIDE CONCRETE CLOSURE AT ALL COLUMN LOCATIONS.
- HORIZONTAL JOIST BRIDGING TOP AND BOTTOM PER SJI w/ X-BRIDGING WHERE SHOWN ON PLAN. PROVIDE ADDITIONAL UPLIFT BRIDGING AT EACH END OF JOIST AND AS REQUIRED BY DESIGN. SEE JOIST GENERAL NOTES FOR ADDITIONAL REQUIREMENTS
- WHERE JOISTS RUN THROUGH NON-BEARING WALLS, PROVIDE POCKET IN MASONRY FOR JOIST CLEARANCE ON ALL SIDES. FILL WITH FIRESAFING IN FIRE RATED WALLS ONLY. BATT INSULATION EVERYWHERE ELSE. SEE ARCHITECTURAL PLANS FOR DETAILS.
- FOR TOP LATERAL SUPPORT OF MASONRY PARTITION WALLS SEE 8, 9, 13 AND 14/S503
- SEE 2/S120 FOR SNOW LOADS
- STRUCTURAL STEEL CONNECTORS SHALL BE DESIGNED BY LICENSED ENGINEER WORKING FOR THE FABRICATOR. (#K) ON A WF MEMBER INDICATES A SHEAR REACTION. USE ASD; DATA IS GIVEN AT SERVICE LOAD LEVEL. FOR ANY SHEAR CONNECTION WHERE REACTION IS NOT SPECIFICALLY NOTED OR NOT SHOWN OTHERWISE ON PLANS, DESIGN FOR A MINIMUM OF A 12K SHEAR REACTION

BEARING WALL :
1. 8" CONCRETE BLOCK W/ VERT. REINFORCING, #5 @ 48" o/c (U.N.O.) GROUTED FULL HEIGHT IN CENTER OF WALL. PROVIDE DOWELS TO MATCH INTO FOOTING.
2. PROVIDE HORIZONTAL JOINT REINFORCEMENT AT 16" o/c MAXIMUM, VERTICALLY FOR THE FULL WALL HEIGHT.
3. PROVIDE (1) - #5 AT CORNERS, ENDS AND EACH SIDE OF CONTROL AND EXPANSION JOINTS, OPENINGS, DOORS, WINDOWS, JAMBS, ETC. U.N.O. SEE PLAN FOR MASONRY PIER REQUIREMENTS.
4. REINFORCE STUB WALLS BELOW OPENINGS EXCEEDING 6'-0" IN LENGTH W/ #5 @ 48" o/c VERTICALLY WITH DOWELS TO MATCH INTO FOOTING, THICKENED SLAB OR TOPPING.

MASONRY STAIR WALLS:
1. GROUT COMPLETELY SOLID ALL CELLS. USE STANDARD WEIGHT BLOCK REINFORCE AS SPECIFIED ELSEWHERE

TYPICAL NON-BEARING MASONRY PARTITIONS:
1. PROVIDE HORIZONTAL JOINT REINFORCEMENT AT 16" o/c MAXIMUM VERTICALLY FOR THE FULL WALL HEIGHT.
2. PROVIDE (1) - #5 AT CORNERS, ENDS AND EACH SIDE OF CONTROL AND EXPANSION JOINTS, OPENINGS, DOORS, WINDOWS, JAMBS, ETC. U.N.O. SEE PLAN FOR MASONRY PIER REQUIREMENTS.
3. REINFORCE STUB WALLS BELOW OPENINGS EXCEEDING 6'-0" IN LENGTH W/ #5 @ 32" o/c VERTICALLY WITH DOWELS TO MATCH INTO FOOTING, THICKENED SLAB OR TOPPING.

" ⊏·-·⊐ " INDICATES REBAR GROUTED SOLID IN CMU WALL. (SHOWN FOR CONCEPT, ACTUAL PLACEMENT BY MASON)

KEYED NOTES

(1) TYPICAL ROOF CONSTRUCTION: 1 1/2" x 22 GAUGE WIDE RIB GALVANIZED METAL ROOF DECK, 3 SPAN MINIMUM. SEE DETAIL 1/S502 FOR ROOF DECK ATTACHMENT AND GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.

(2) TYPICAL FLOOR CONSTRUCTION: 8" PRECAST FLOOR PLANK W/ 3" (MAX) COMPOSITE CONCRETE TOPPING W/ 6 x 6 - W1.4 x W1.4 WWF CENTERED IN TOPPING. PRECAST BEARING ELEV. = 111' - 4". DESIGN PLANK FOR SUPERIMPOSED DEAD LOAD = 10 PSF AND TOPPING SUPERIMPOSED LIVE LOAD = 175 PSF PRECASTER TO DESIGN HEADER FOR ALL OPENINGS SHOWN OR NOT SHOWN.

(3) NEW STEEL STAIR; ALL STAIR FRAMING, LANDINGS, STAIR CONNECTIONS, HANDRAILS, AND RAILING CONNECTIONS SHALL BE DESIGNED BY STAIR SUPPLIER. SEE GENERAL NOTES ON S900

(4) L3 x 3 x 1/4 x CONT. FOR DECK SUPPORT. SEE SECTION 13/S502

(5) GALVANIZED COLD-FORMED STEEL TRUSSES @ 48" o/c U.N.O. SEE SEC 1, 2, 3, AND 4/S503 AND 4/S504 FOR TRUSS BRACING REQUIREMENTS SEE SEC 1/S502 FOR STEEL DECK ATTACHMENT TO TRUSSES. ATTACH SHEATHING TO STEEL DECK FOR ROOFING REQUIREMENTS

(6) PRECASTER TO COORDINATE STAIR LOADS ON PRECAST W/ STAIR SUPPLIER

(7) NOT USED

(8) SEE PLUMBING FOR SOLAR HOT WATER PANELS. CONNECTION TO C6 x 13 BY SOLAR PANEL SUPPLIER. ATTACH CHANNEL TO ROOF PER 3/S502.

(9) SEE ELECTRICAL FOR MOUNTED PHOTO VOLTAIC SYSTEM.

(10) NOT USED

(11) TOP OF MASONRY PIER IS AT BEAM/JOIST GIRDER BEARING

(12) RUN 24" DEEP MASONRY BEAM FULL LENGTH OF WALL AND RETURN 6' - 8" AROUND CORNERS PROVIDE CORNER BARS AT BOTH FACES TOP AND BOTTOM, 6' - 0" x 6' - 0". RUN VERTICAL BARS AT PIERS THRU THE BEAM.

(13) 4" CONCRETE PAD FOR MECHANICAL EQUIPMENT GC TO COORDINATE DIMENSIONS AND LOCATION WITH HVAC SEE 6/S501

(14) HOT WATER HEATER W/ MAX.OPERATING WEIGHT = 2000# DESIGN PRECAST PLANK FOR SUPERIMPOSED WEIGHT OF UNIT PLUS 4" CONCRETE CURB. COORDINATE WITH PLUMBING CONTRACTOR

(15) 16" CONCRETE BLOCK, GROUTED SOLID W/ #5 @ 48" o.c., VERTICAL. SEE BEARING WALL NOTE FOR HORIZONTAL REINFORCEMENT AND PROVISIONS AT OPENINGS

COLD-FORMED ROOF TRUSS DESIGN PARAMETERS:

1. TOP CHORD: SUPERIMPOSED LIVE LOAD = 30 PSF
   SUPERIMPOSED DEAD LOAD = 10 PSF TYP, 15 PSF WHERE SOLAR PANELS ARE INDICATED BY ARCH

   BOTTOM CHORD: SUPERIMPOSED DEAD LOAD = 10

   THESE LOADS DO NOT INCLUDE THE WEIGHT OF TRUSSES OR THE FALSE WORK (TRUSSES) BUILT OVER THE TOP OF ANOTHER TRUSS. DESIGNER TO ADD THESE LOADS TO SUPERIMPOSED LOADS.

2. WIND LOAD = SEE S900.
3. MAXIMUM LIVE LOAD DEFLECTION = L/480
   MAXIMUM TOTAL LOAD DEFLECTION = L/360
4. ALL TRUSS CONNECTIONS (INCLUDING TRUSS TO GIRDER, AND HIP TRUSS TO STRUCTURAL TRUSS) ARE TO BE DESIGNED, DETAILED, AND SUPPLIED BY TRUSS SUPPLIER.
5. COORDINATE ALL TRUSS PROFILES AND DIMENSIONS WITH ARCHITECT. TRUSS CHORD MEMBER DEPTHS AND SINGLE LINE REPRESENTATION ARE FOR GENERAL INTENT ONLY DEEPEN TOP AND BOTTOM CHORDS, DOUBLE UP TRUSSES, ETC. AS REQUIRED TO ACCOMPLISH DESIGN INTENT.
6. SPECIFY ERECTION, TOP AND BOTTOM CHORD BRACING REQUIREMENTS.
7. REFER TO SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
8. TRUSS DESIGNER/MANUFACTURER MAY REVISE AND OPTIMIZE TRUSS LAYOUT AND QUANTITY SUBJECT TO ENGINEERS, ARCHITECTS, AND GENERAL CONTRACTORS APPROVAL. DO NOT RELOCATE GIRDER TRUSSES OVER LINTELS AT OPENINGS.
9. PROVIDE HEADER TRUSSES AS REQUIRED TO FRAME ALL OPENINGS GREATER THAN CLEAR DISTANCE BETWEEN TRUSSES. COORDINATE WITH MECHANICAL DRAWINGS.
10. ALL HANGERS AND CONNECTIONS BY TRADES SHALL BE COORDINATED AND APPROVED BY TRUSS SUPPLIER

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HEC Project Number: 12-0062.00

PROJECT NFORMATION

Madison Fire Station 13

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

SHEET INFORMATION

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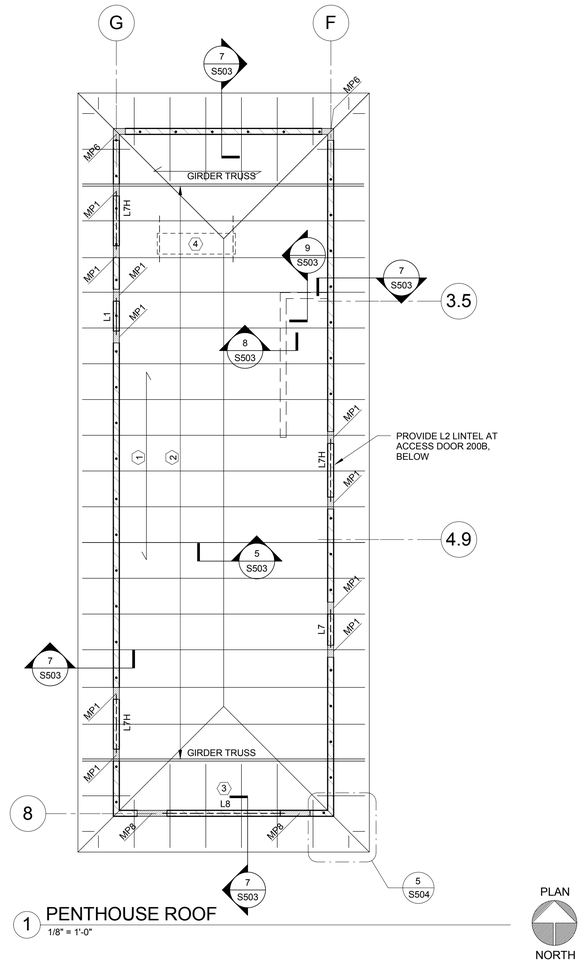
120062.00	Sabinash

ROOF FRAMING PLAN

S120



1 PENTHOUSE ROOF
1/8" = 1'-0"

PLAN NOTES

- SEE SHEET S900 & S901 FOR GENERAL NOTES, SCHEDULES AND OTHER ADDITIONAL REQUIREMENTS.

- "(#.#K)"INDICATES ADDITIONAL LOAD FROM ROOF TOP UNITS OR DRIFT.

- " R.D. " INDICATES R.D. LOCATION. SEE SECTION 2/S502 FOR FRAMING AROUND ROOF DRAIN COORDINATE SIZE AND LOCATION WITH MECHANICAL DRAWINGS. - ROOF STRUCTURE IS DESIGNED FOR A MAXIMUM STANDING WATER HEIGHT OF 6". PROVIDE SCUPPERS AND/OR OVERFLOW DRAINS AS REQUIRED TO LIMIT STANDING WATER TO 6".

- SEE SECTION 2/S502 FOR FRAMING AROUND MISCELLANEOUS OPENINGS SHOWN OR NOT SHOWN. COORDINATE SIZE AND LOCATION WITH ARCH, HVAC, PLUMBING, AND ELECTRICAL DWGS.

- SEE LOOSE LINTEL SCHEDULE AND GENERAL NOTES FOR ANY LINTELS NOT SPECIFICALLY CALLED OUT.

- HORIZONTAL JOIST BRIDGING TOP AND BOTTOM PER SJI w/ X-BRIDGING WHERE SHOWN ON PLAN. PROVIDE ADDITIONAL UPLIFT BRIDGING AT EACH END OF JOIST AND AS REQUIRED BY DESIGN. SEE JOIST GENERAL NOTES FOR ADDITIONAL REQUIREMENTS

- WHERE JOISTS RUN THROUGH NON-BEARING WALLS, PROVIDE POCKET IN MASONRY FOR JOIST CLEARANCE ON ALL SIDES. FILL WITH FIRESAFING IN FIRE RATED WALLS ONLY, BATT INSULATION EVERYWHERE ELSE. SEE ARCHITECTURAL PLANS FOR DETAILS.

- SEE 2/S120 FOR SNOW LOADS.

- BEARING WALL :
1. 8" CONCRETE BLOCK W/ VERT. REINFORCING, #5 @ 48" o/c (U.N.O.) GROUTED FULL HEIGHT IN CENTER OF WALL. PROVIDE DOWELS TO MATCH INTO FOOTING.
2. PROVIDE HORIZONTAL JOINT REINFORCEMENT AT 16" o/c MAXIMUM, VERTICALLY FOR THE FULL WALL HEIGHT.
3. PROVIDE (1) - #5 AT CORNERS, ENDS AND EACH SIDE OF CONTROL AND EXPANSION JOINTS, OPENINGS, DOORS, WINDOWS, JAMBS, ETC. U.N.O. SEE PLAN FOR MASONRY PIER REQUIREMENTS.
4. REINFORCE STUB WALLS BELOW WINDOWS EXCEEDING 6'-0" IN LENGTH W/ #5 @ 32" o/c VERTICALLY WITH DOWELS TO MATCH INTO FOOTING, THICKENED SLAB OR TOPPING.

MASONRY STAIR WALLS:
1. GROUT COMPLETELY SOLID ALL CELLS. USE STANDARD WEIGHT BLOCK REINFORCE AS SPECIFIED ELSEWHERE

TYPICAL NON-BEARING MASONRY PARTITIONS:
1. PROVIDE HORIZONTAL JOINT REINFORCEMENT AT 16" o/c MAXIMUM VERTICALLY FOR THE FULL WALL HEIGHT.
2. PROVIDE (1) - #5 AT CORNERS, ENDS AND EACH SIDE OF CONTROL AND EXPANSION JOINTS, OPENINGS, DOORS, WINDOWS, JAMBS, ETC. U.N.O. SEE PLAN FOR MASONRY PIER REQUIREMENTS.
3. REINFORCE STUB WALLS BELOW WINDOWS EXCEEDING 6'-0" IN LENGTH W/ #5 @ 32" o/c VERTICALLY WITH DOWELS TO MATCH INTO FOOTING, THICKENED SLAB OR TOPPING.

" " INDICATES REBAR GROUTED SOLID IN CMU WALL. (SH0WN FOR CONCEPT, ACTUAL PLACEMENT BY MASON)

KEYED NOTES

1. TYPICAL ROOF CONSTRUCTION: 1 1/2" x 22 GAUGE WIDE RIB GALVANIZED METAL ROOF DECK, 3 SPAN MINIMUM. SEE DETAIL 1/S502 FOR ROOF DECK ATTACHMENT AND GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.
2. GALVANIZED COLD-FORMED STEEL TRUSSES @ 48" o/c U.N.O. SEE SEC 1, 2, 3, AND 4/S503 AND 4/S504 FOR TRUSS BRACING REQUIREMENTS SEE SEC 1/S502 FOR STEEL DECK ATTACHMENT TO TRUSSES. ATTACH SHEATHING TO STEEL DECK FOR ROOFING REQUIREMENTS. TRUSS BEARING ELEVATION = 128'-0".
3. RUN 24" DEEP MASONRY BEAM FULL LENGTH OF WALL AND RETURN 6' - 8" AROUND CORNERS PROVIDE CORNER BARS AT BOTH FACES TOP AND BOTTOM, 6' - 0" x 6' - 0". RUN VERTICAL BARS AT PIERS THRU THE BEAM
4. TRUSS TO BE DESIGNED TO CARRY 600# MUA TO BE HUNG FROM BOTTOM CHORD SEE 6/S504

COLD-FORMED ROOF TRUSS DESIGN PARAMETERS:

1. TOP CHORD: SUPERIMPOSED LIVE LOAD = 30 PSF
SUPERIMPOSED DEAD LOAD = 10 PSF TYP. 15 PSF WHERE SOLAR PANELS ARE INDICATED BY ARCH

BOTTOM CHORD: SUPERIMPOSED DEAD LOAD = 20 PSF AT PENTHOUSE

THESE LOADS DO NOT INCLUDE THE WEIGHT OF TRUSSES OR THE FALSE WORK (TRUSSES) BUILT OVER THE TOP OF ANOTHER TRUSS. DESIGNER TO ADD THESE LOADS TO SUPERIMPOSED LOADS.

2. WIND LOAD = SEE S900.
3. MAXIMUM LIVE LOAD DEFLECTION = L/480
MAXIMUM TOTAL LOAD DEFLECTION = L/360
4. ALL TRUSS CONNECTIONS (INCLUDING TRUSS TO GIRDER, AND HIP TRUSS TO STRUCTURAL TRUSS) ARE TO BE DESIGNED, DETAILED, AND SUPPLIED BY TRUSS SUPPLIER.
5. COORDINATE ALL TRUSS PROFILES AND DIMENSIONS WITH ARCHITECT. TRUSS CHORD MEMBER DEPTHS AND SINGLE LINE REPRESENTATION ARE FOR GENERAL INTENT ONLY DEEPEN TOP AND BOTTOM CHORDS, DOUBLE UP TRUSSES, ETC. AS REQUIRED TO. ACCOMPLISH DESIGN INTENT.
6. SPECIFY ERECTION, TOP AND BOTTOM CHORD BRACING REQUIREMENTS.
7. REFER TO SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
8. TRUSS DESIGNER/MANUFACTURER MAY REVISE AND OPTIMIZE TRUSS LAYOUT AND QUANTITY SUBJECT TO ENGINEERS, ARCHITECTS, AND GENERAL CONTRACTORS APPROVAL. DO NOT RELOCATE GIRDER TRUSSES OVER LINTELS AT OPENINGS.
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Madison

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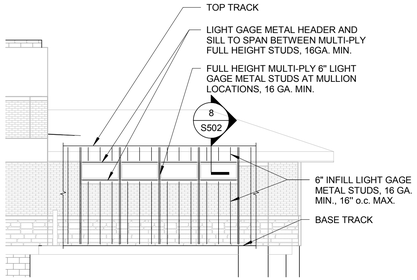
PENTHOUSE ROOF FRAMING PLAN

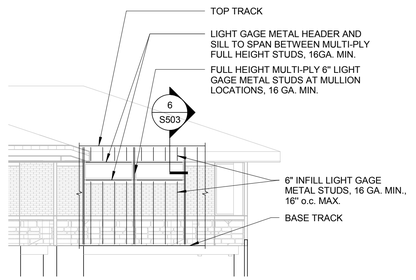
S130



- SEE SPEC 05 40 00 AND WIND LOAD ON S900 FOR DESIGN CRITERIA.

1 EAST ELEVATION: SLEEP QUARTERS AT LINE F

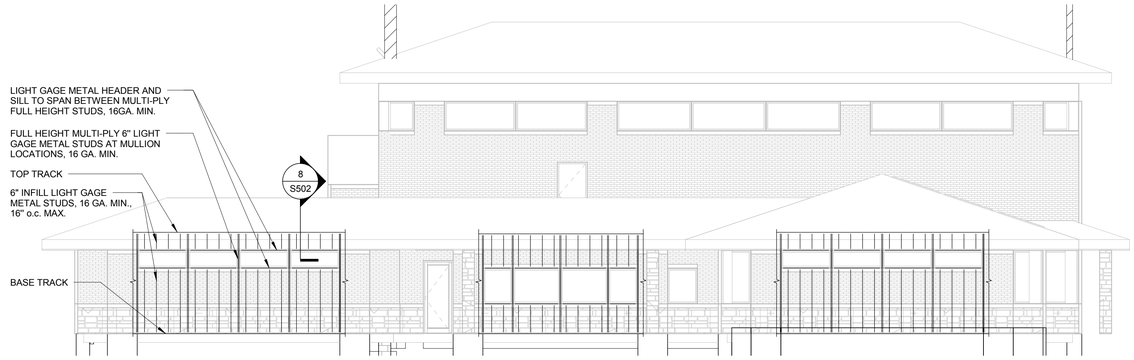
REF. 1/A200



- SEE SPEC 05 40 00 AND WIND LOAD ON S900 FOR DESIGN CRITERIA.

2 NORTH ELEVATION: COMMUNITY ROOM @ LINE 4

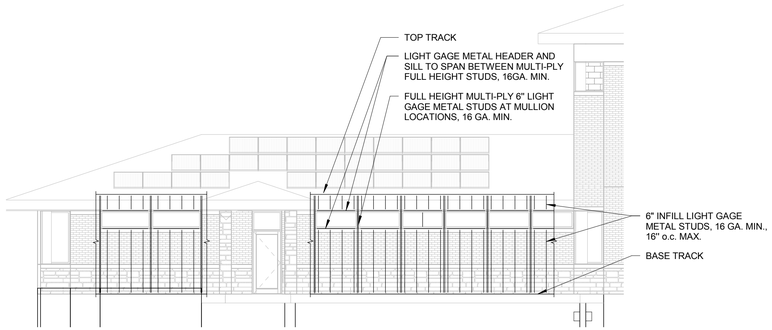
REF. 4/A200



- SEE SPEC. 05 40 00 AND WIND LOAD ON S900 FOR DESIGN CRITERIA.

3 WEST ELEVATION: KITCHEN AT LINE H, COMMUNITY ROOM AT LINE L

REF. 2/A201



- SEE SPEC 05 40 00 AND WIND LOADS ON S900 FOR DESIGN CRITERIA.

4 SOUTH ELEVATION AT LINE 6

REF. 1/A201

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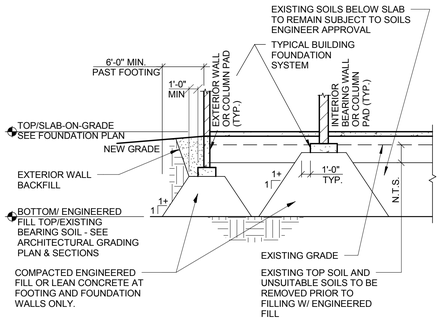
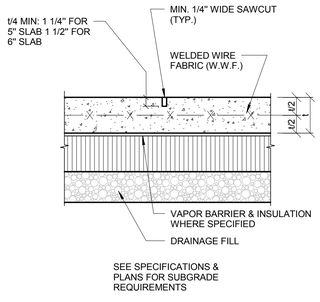
LIGHTGAGE FRAMING ELEVATIONS

S200



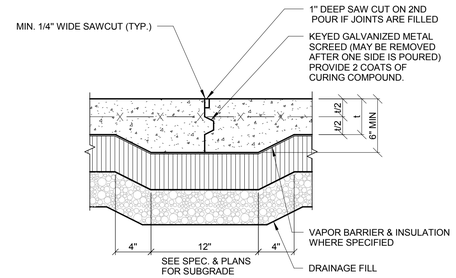
- THIS DETAIL SHALL APPLY TO ISOLATED AREAS WHERE GEOTECHNICAL ENGINEER DETERMINES THE EXISTING SOILS DO NOT PROVIDE THE SPECIFIED BEARING CAPACITY OR REQUIRED SETTLEMENT STRENGTH.
- SEE SPECIFICATION AND SOIL REPORT FOR ADDITIONAL REQUIREMENTS.
- PROVIDE ADEQUATE SLOPES TO EXCAVATION CONFORMING TO OSHA REQUIREMENTS.

1 ENGINEERED FILL DETAIL



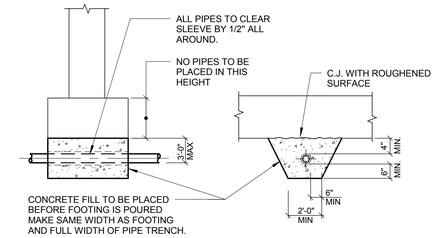
- FILL JOINT WITH POLYURETHANE SEALANT AT EXPOSED CONCRETE.
- SAWCUT WITHIN 4 TO 12 HOURS AFTER SLAB IS FINISHED:
  1. BEFORE CONCRETE STARTS TO COOL.
  2. AS SOON AS SURFACE IS FIRM ENOUGH NOT TO BE TORN OR DAMAGED.
  3. BEFORE RANDOM-DRYING-SHRINKAGE CRACKS CAN FORM.

2 SLAB ON GRADE CONTROL JOINT



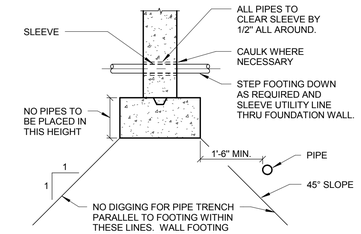
- FILL JOINT WITH POLYURETHANE SEALANT AT EXPOSED CONCRETE.

3 SLAB ON GRADE CONSTRUCTION JOINT



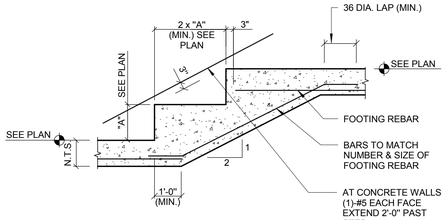
NOTE:
IF UTILITY LINE RUNNING PERPENDICULAR TO FOOTING IS MORE THAN 3'-0" BELOW BOTTOM OF FOOTING, IT IS NOT NECESSARY TO PLACE CONCRETE FILL AROUND PIPE.

4 PIPE PENETRATION AT STRIP FOOTING



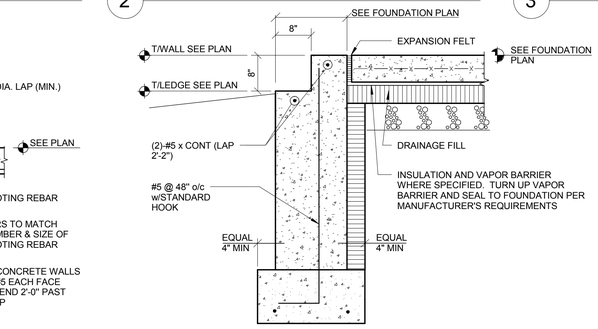
NOTE:
IF UTILITY LINE RUNNING PERPENDICULAR TO FOOTING IS MORE THAN 3' - 0" BELOW BOTTOM OF FOOTING, IT IS NOT NECESSARY TO DROP FOOTING AND SLEEVE LINE THRU WALL AS SHOWN ABOVE

5 PIPE PENETRATION AT WALL

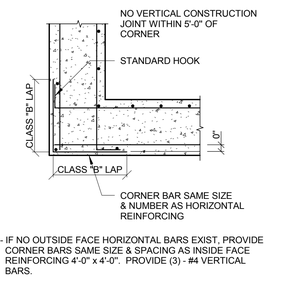


- TOP OF FOOTING STEP INDICATED ON PLAN BY ▼

6 TYPICAL STEPPED WALL FOOTING

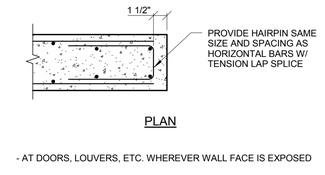


7 TYPICAL FOUNDATION DETAIL



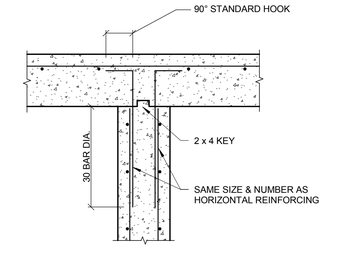
- IF NO OUTSIDE FACE HORIZONTAL BARS EXIST, PROVIDE CORNER BARS SAME SIZE & SPACING AS INSIDE FACE REINFORCING 4'-0" x 4'-0". PROVIDE (3) - #4 VERTICAL BARS.

8 TYPICAL CORNER REINFORCING

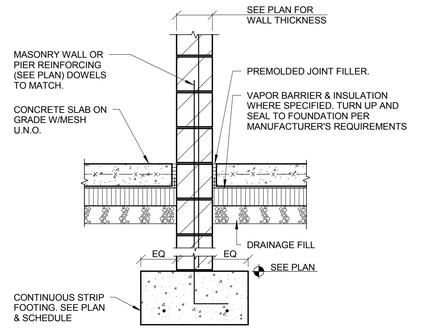


- AT DOORS, LOUVERS, ETC. WHEREVER WALL FACE IS EXPOSED

9 END OF WALL/JAMB DETAIL

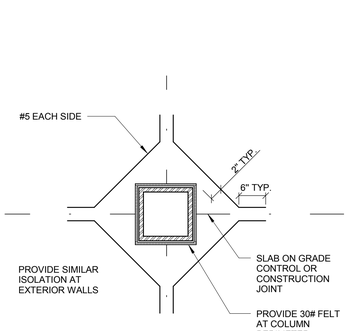


10 WALL INTERSECTION REINFORCING



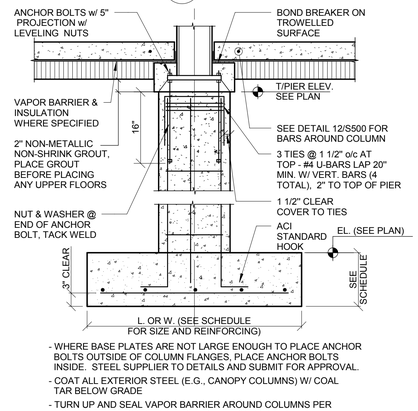
- CONTRACTOR OPTION; DRILL 8" AND EPOXY MASONRY DOWELS.

11 INTERIOR WALL FOOTING



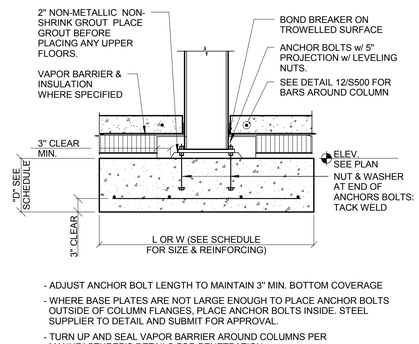
- PIPE COLUMN SIMILAR.

12 PLAN AT INTERIOR COLUMNS



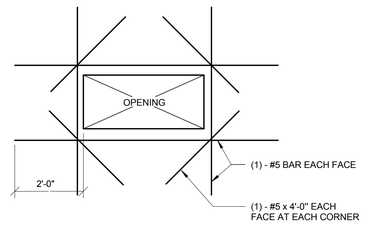
- WHERE BASE PLATES ARE NOT LARGE ENOUGH TO PLACE ANCHOR BOLTS OUTSIDE OF COLUMN FLANGES, PLACE ANCHOR BOLTS INSIDE. STEEL SUPPLIER TO DETAILS AND SUBMIT FOR APPROVAL.
- COAT ALL EXTERIOR STEEL (E.G., CANOPY COLUMNS) W/ COAL TAR BELOW GRADE
- TURN UP AND SEAL VAPOR BARRIER AROUND COLUMNS PER MANUFACTURER'S DETAILS FOR PENETRATION.

13 STEEL COLUMN ON CONCRETE PIER



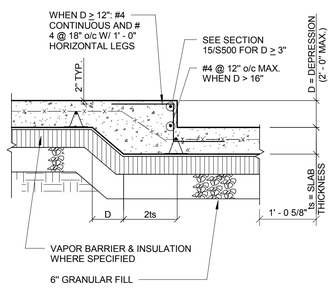
- ADJUST ANCHOR BOLT LENGTH TO MAINTAIN 3" MIN. BOTTOM COVERAGE
- WHERE BASE PLATES ARE NOT LARGE ENOUGH TO PLACE ANCHOR BOLTS OUTSIDE OF COLUMN FLANGES, PLACE ANCHOR BOLTS INSIDE. STEEL SUPPLIER TO DETAIL AND SUBMIT FOR APPROVAL.
- TURN UP AND SEAL VAPOR BARRIER AROUND COLUMNS PER MANUFACTURER'S DETAILS FOR PENETRATION.

14 STEEL COLUMN ON FOOTING



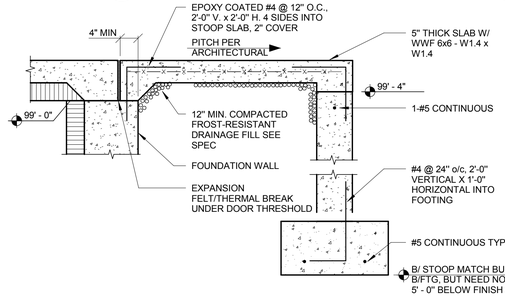
- SEE ARCHITECTURAL, MECHANICAL, AND PLUMBING PLANS FOR SIZES AND LOCATIONS

15 TYPICAL OPENING OR DEPRESSION IN CONCRETE FLOOR SLAB OR WALL



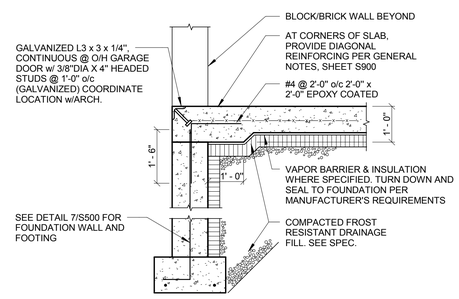
NOTE: AT ELECTRICAL DUCT DEPRESSIONS (EG. WALKER DUCT): FILL DEPRESSION w/ 4000 PSI CONCRETE, 3/8" MAX. AGGREGATE AFTER ELECTRICAL DUCT IS INSTALLED. COORDINATE SIZES AND LOCATIONS WITH ELECTRICAL PLANS, ARCHITECTURAL PLANS, AND DUCT SUPPLIER

16 SLAB ON GRADE DEPRESSION

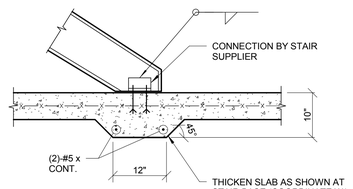


- PROVIDE STOOP FOUNDATIONS ON 3 SIDES. PROVIDE CORNER BARS AND DOWEL INTO BUILDING FOUNDATION.
- UNLESS SHOWN OTHERWISE, PROVIDE SEALED CONTROL JOINTS PARALLEL TO THE SHORT DIRECTION OF THE STOOP AT A SPACING OF 2 TIMES THE SLAB WIDTH BUT NOT TO EXCEED 10 FEET ON CENTER.
- EXTEND STOOPS A MINIMUM OF 18" PAST THE ROUGH OPENING ON THE PULL SIDE OF DOOR.

17 CONCRETE STOOP DETAIL



18 EXTERIOR FOUNDATION WALL AT O.H. DOOR



19 STAIR STRINGER CONNECTION

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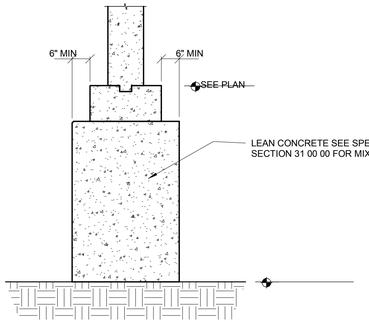
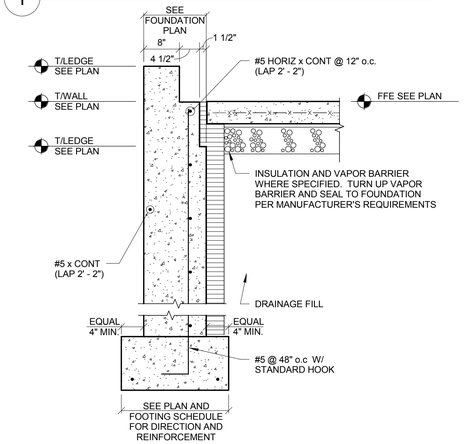
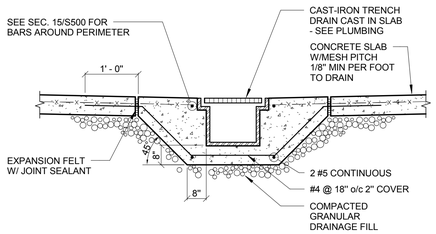


- PROVIDE FORMWORK IF CANNOT HOLD VERTICAL TRENCH FACE, OR EXTEND AS REQUIRED TO MATCH EMBANKMENT SLOPE.

1 LEAN CONCRETE UNDER FOOTINGS



5 FOUNDATION DETAIL WITH LEDGE

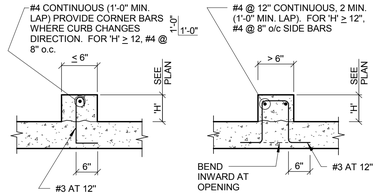


- ALL BARS EPOXY COATED.
- PROVIDE CONTROL JOINTS AT TRENCH DRAIN CONCRETE PERPENDICULAR TO DRAIN AT 8' - 0" o/c, FILL WITH SEALANT

2 TRENCH DRAIN

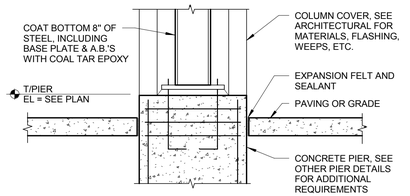
- COORDINATE W/ARCHT, HVAC, PLUMBING & ELECTRICAL PLANS FOR LOCATION/DIMENSIONS.
- PROVIDE EPOXY COATED BARS AT PARKING STRUCTURES AND EXTERIOR CONSTRUCTION.
- PRECASTER SHALL RECESS MEMBERS TO CAST WITH POURSTRIP, OR PROVIDE CAST-IN-DOWELS.

6 TYPICAL EQUIPMENT PAD/ISLAND DETAIL



- COORDINATE W/ ARCHITECTURAL, HVAC, PLUMBING & ELECTRICAL PLANS FOR LOCATION/DIMENSIONS.
- PROVIDE EPOXY COATED BARS AT PARKING STRUCTURES AND EXTERIOR CONSTRUCTION.

3 TYPICAL CURB DETAILS



- COORDINATE TOP OF PIER AND LEDGE ELEVATIONS WITH ARCHITECTURAL INTENT. ARCHITECTURAL TAKES PRECEDENCE OVER STRUCTURAL.
- FOR ALL CLADDING MATERIALS USED AS COLUMN COVERS, TOP OF PIER OR LEDGE SHALL BE 2" MIN. ABOVE FINISH GRADE.
- DO NOT PLACE COLUMN COVERS ON PAVING. PROVIDE ISOLATION FROM ADJACENT SURFACES.
- WHERE COLUMN IS COVERED WITH BRICK OR MASONRY, PROVIDE ADJUSTABLE ANCHORS/TIES EACH SIDE @ 16" o/c.
- SIMILAR AT CONCRETE COLUMNS.
- ALL EXTERIOR STEEL COLUMNS SHALL BE GALVANIZED

4 EXTERIOR PIERS WITH COLUMN COVERS

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2122 West Mt. Vernon Avenue | Milwaukee, WI 53233 | zastudios.com
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PROJECT NFORMATION

Madison Fire Station 13

Madison

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

HARWOOD ENGINEERING CONSULTANTS, LTD
255 North 21 Street Milwaukee Wisconsin 53233
414.475.5554 414.475.9299 fax harwood@hecl.com
HEC Project Number: 12-0062.00

SHEET INFORMATION

REVISIONS

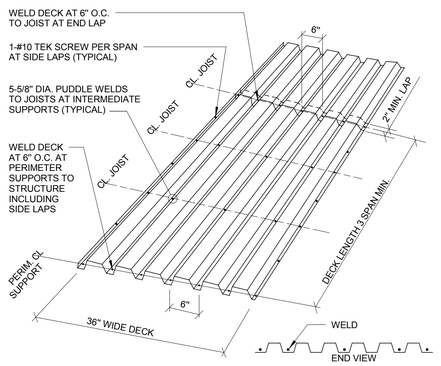
#	DATE	DESCRIPTION

DATE
May 3, 2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

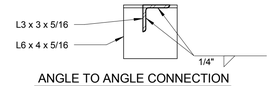
DETAILS

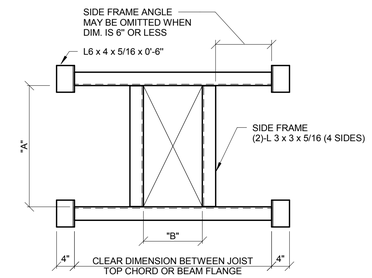
S501



- NOTE: 5 WELDS PER SHEET ARE REQUIRED IN EXACT LOCATIONS SHOWN OR ADDITIONAL WELDING WILL BE REQUIRED
- CONTRACTORS OPTION: 30" WIDE ROOF DECK w/ 30/4/2 PATTERN

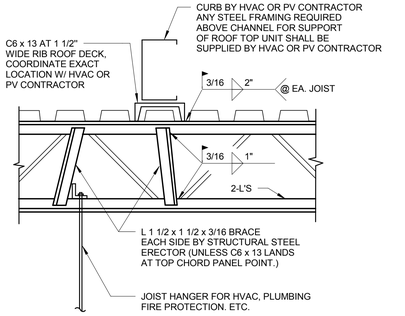
1 ROOF DECK WELD PATTERN





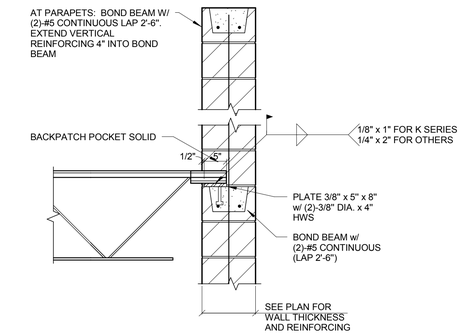
- DETAIL APPLIES TO METAL CENTERING OR ROOF DECK.
- SEE MECHANICAL/PLUMBING FOR LOCATION & SIZE REQUIRED
- DETAIL TYPICAL AT OPENINGS GREATER THAN 10", INCLUDING ROOF DRAIN/SUMPS
- DIMENSIONS "A" & "B" BY MECHANICAL CONTRACTOR OR ROOF SUMP SUPPLIER

2 FRAMING AT DECK OPENING (1 1/2" HIGH DECK OR LESS)

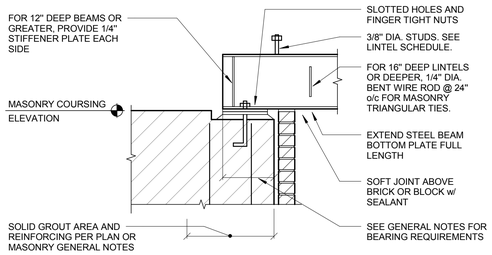


- IF JOIST CHORD THICKNESS IS LESS THAN 3/16" THAN USE AN EQUIVALENT 1/8" WELD.
- NO L BRACE REQUIRED IF LOAD OCCURS WITHIN 3" OF JOIST PANEL POINT CENTERLINE.
- DETAIL APPLIES TO LOADS ABOVE OR HUNG BELOW JOISTS. SEE GENERAL NOTES FOR HANGER SPACING FOR PIPING
- WHERE IT IS REQUIRED TO REMOVE JOIST BRIDGING FOR DUCTS, PROVIDE L 1 1/2 x 1 1/2 x 3/16 CROSS BRACING ON EACH SIDE OF DUCT.
- EQUIPMENT PROVIDER RESPONSIBLE FOR DESIGNING CONNECTION TO STRUCTURE TO RESIST UPLIFT

3 JOIST REINFORCING AT CONCENTRATED LOADS

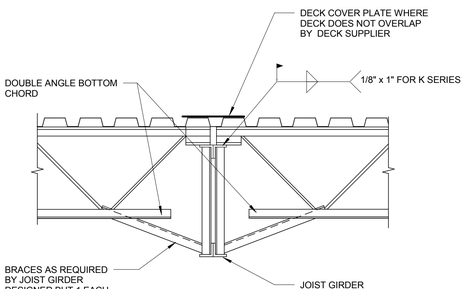


4 JOIST BEARING ON MASONRY

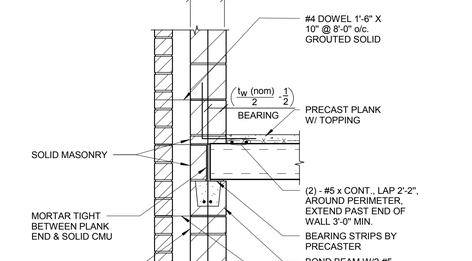


- WHERE BEAMS FRAME INTO STEEL COLUMNS FACED BY MASONRY, CAULK ABOVE BRICK OR BLOCK BELOW BEAM AS SHOWN ABOVE
- BACKPATCH SOLID AT BEAM POCKET
- SIMILAR FOR CONCRETE WALLS.
- CONTRACTOR OPTION TO ANCHOR BOLTS: PROVIDE (2) - 1/2" DIA. x 4" HEADED STUDS WELDED TO BOTTOM OF PLATE. PROVIDE (2) - 3/4" DIA. THREADED STUDS TO TOP OF PLATE WITH NUT AND WASHER.

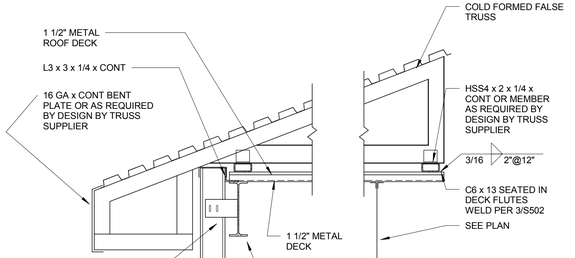
5 STEEL BEARING ON MASONRY



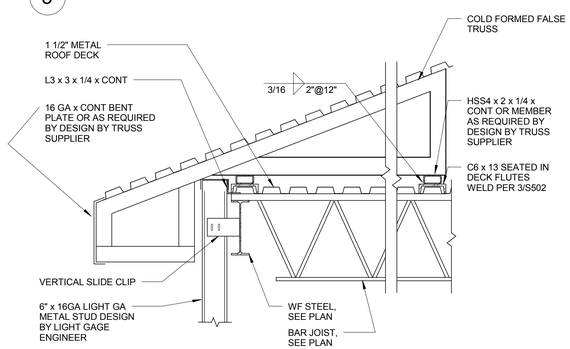
6 JOIST BEARING ON JOIST GIRDER



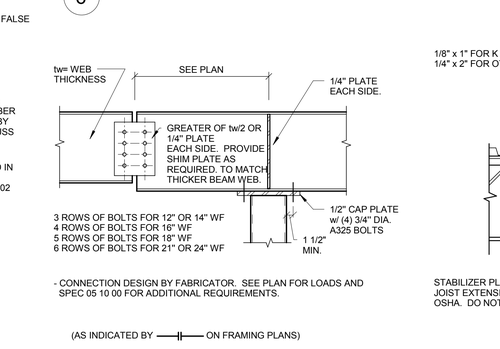
7 PRECAST PLANK BEARING



8 SPANDREL AT ROOF FRAMING

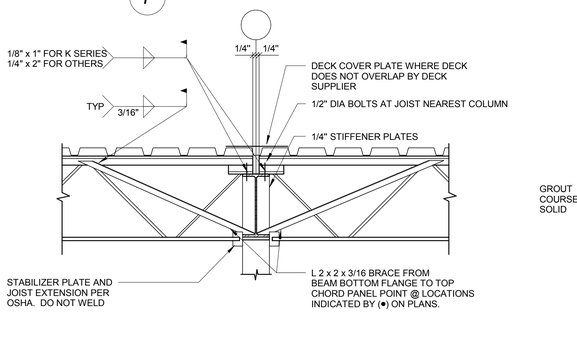


9 SPANDREL AT ROOF FRAMING

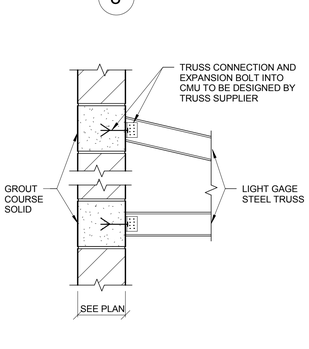


- CONNECTION DESIGN BY FABRICATOR. SEE PLAN FOR LOADS AND SPEC 05 10 00 FOR ADDITIONAL REQUIREMENTS.

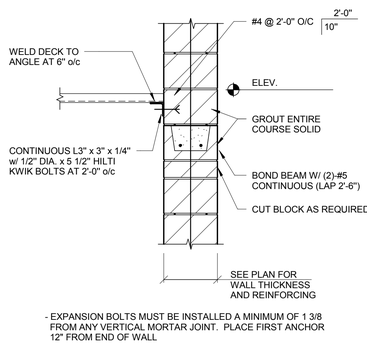
10 TYPICAL SHEAR SPLICE DETAIL



11 BRACE AT COLUMN SUPPORT

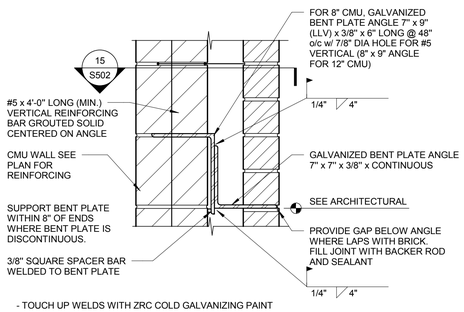


12 TRUSS TO CMU WALL CONNECTION



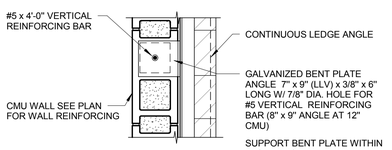
- EXPANSION BOLTS MUST BE INSTALLED A MINIMUM OF 1 3/8 FROM ANY VERTICAL MORTAR JOINT. PLACE FIRST ANCHOR 12" FROM END OF WALL

13 DECK SUPPORT AT WALL

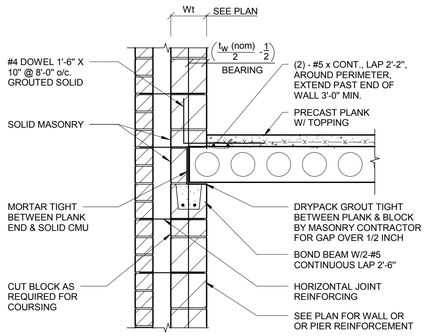


- TOUCH UP WELDS WITH ZRC COLD GALVANIZING PAINT
- SEE ARCHITECTURAL DETAILS FOR FLASHING, WEEP HOLES, ETC.

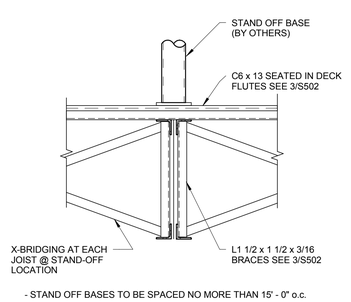
14 TYPICAL SECTION AT BRICK LEDGE ANGLE



15 PLAN VIEW AT BRICK LEDGE ANGLE

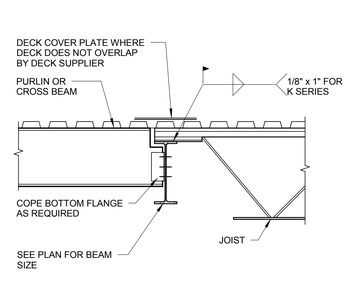


16 PRECAST PLANK SIDELAP



- STAND OFF BASES TO BE SPACED NO MORE THAN 15' - 0" o.c.
- EQUIPMENT PROVIDER RESPONSIBLE FOR DESIGNING CONNECTION TO STRUCTURE TO RESIST UPLIFT

17 STAND OFF BASE DETAIL



18 BEAM & JOIST BEARING ON BEAM

Zimmerman
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PROJECT NFORMATION

Madison Fire Station 13

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

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414.475.5554 414.475.9299 fax harwood@hecl.com
HEC Project Number: 12-0062.00

SHEET INFORMATION

REVISIONS

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DATE
May 3, 2013

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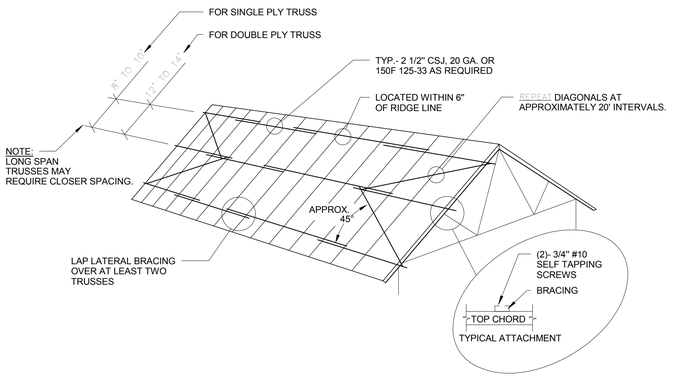
120062.00	Sabinash

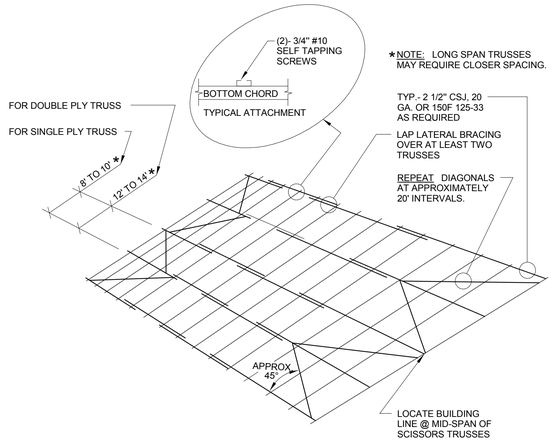
DETAILS

S502

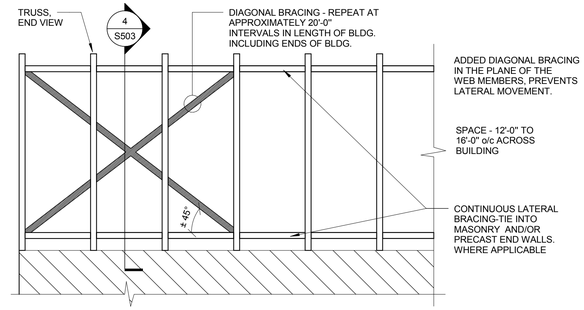


- SEE ALSO - BOTTOM CHORD BRACING REQUIREMENTS, DTL. 2/S503 AND WEB BRACING REQUIREMENTS, DTL. 4/S503
- BRACING MAY BE PLACED BELOW TRUSS TOP CHORD AND LEFT PERMANENTLY IN PLACE

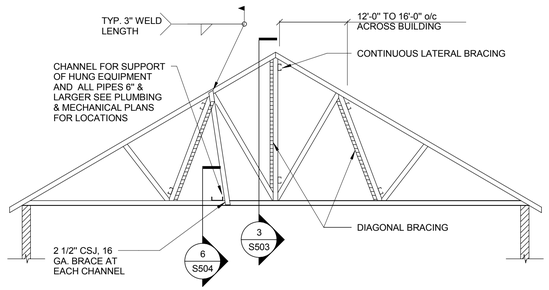
1 TEMPORARY TOP CHORD LIGHT GAGE TRUSS BRACING



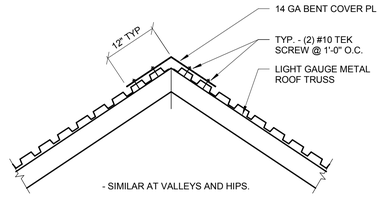
2 PERMANENT BOTTOM CHORD LIGHT GAGE GABLE & SCISSORS TRUSS BRACING



3 PERMANENT TRUSS BRACING

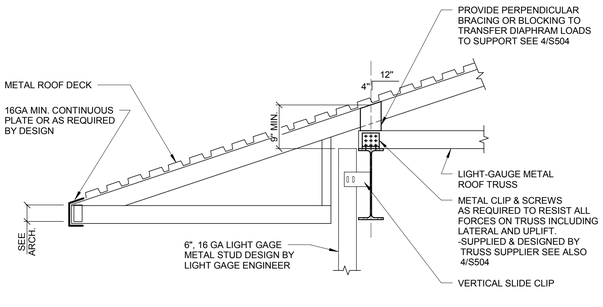


4 PERMINENT DIAGONAL TRUSS WEB BRACING AND BOTTOM CHORD SUPPORT AT HUNG LOADS

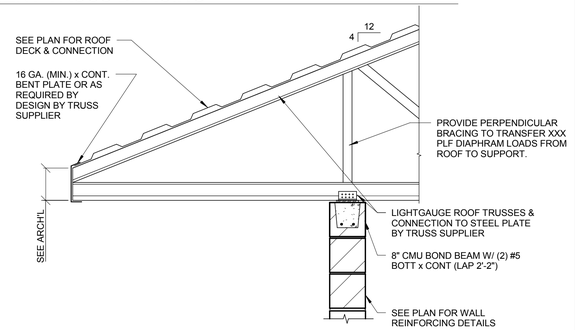


- SIMILAR AT VALLEYS AND HIPS.

5 COVER PLATE AT RIDGE

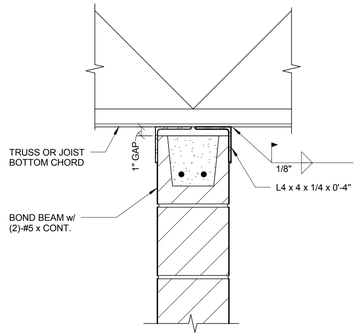


6 LIGHT-GAUGE TRUSS BEARING ON STEEL BEAM

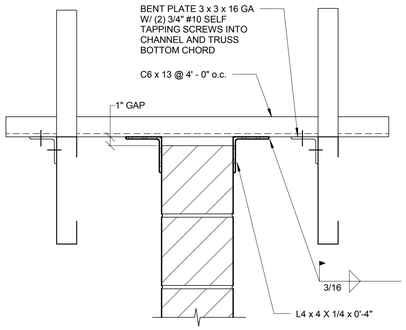


- TRUSS SUPPLIER TO DESIGN TRUSS CONNECTION FOR UPLIFT & LATERAL LOADS PER DETAIL

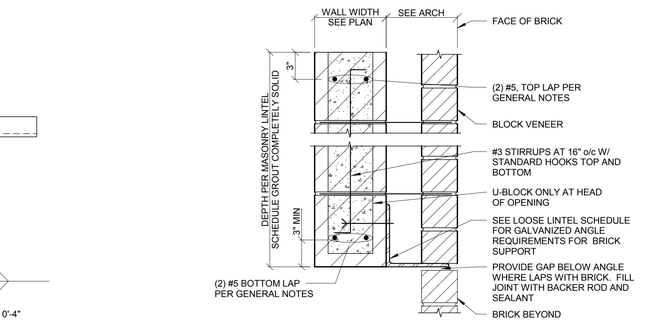
7 LIGHTGAGE TRUSS BEARING AT CMU WALL



8 LATERAL SUPPORT AT NON-BEARING WALL

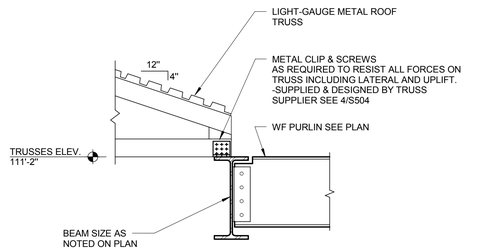


9 LATERAL SUPPORT AT OF CMU PARTITION WALL AT TRUSS

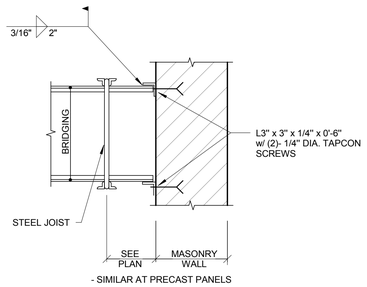


- BARS TO BE CONTINUOUS WITH ACI CLASS "B" LAP SPLICE FOR MULTIPLE SPANS, DO NOT INTERRUPT BARS AT INTERMEDIATE BEARING POINTS. BEAR LINTELS 16" AT END OF SPANS.
- SEE ARCHITECTURAL DETAILS FOR FLASHING, WEEP HOLES, ETC.

10 DEEP MASONRY LINTEL DETAIL (M8)

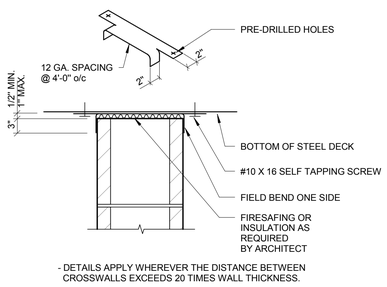


11 TRUSS AND BEAM BEARING ON BEAM



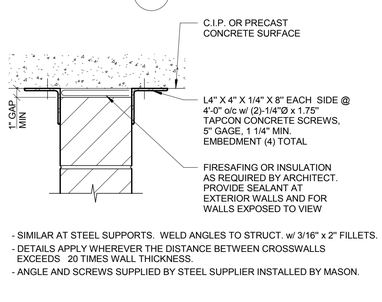
- SIMILAR AT PRECAST PANELS

12 JOIST BRIDGING AT MASONRY WALL



- DETAILS APPLY WHEREVER THE DISTANCE BETWEEN CROSSWALLS EXCEEDS 20 TIMES WALL THICKNESS.

13 LATERAL SUPPORT AT NON-BEARING WALL



- SIMILAR AT STEEL SUPPORTS. WELD ANGLES TO STRUCT. w/ 3/16" x 2" FILLETS.
- DETAILS APPLY WHEREVER THE DISTANCE BETWEEN CROSSWALLS EXCEEDS 20 TIMES WALL THICKNESS.
- ANGLE AND SCREWS SUPPLIED BY STEEL SUPPLIER INSTALLED BY MASON.

14 LATERAL SUPPORT AT NON-BEARING WALL

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PROJECT NFORMATION

Madison Fire Station 13

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Bid Set

KEY PLAN

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255 North 21 Street Milwaukee Wisconsin 53233
414.475.5554 414.473.9299 fax harwood@hecl.com
HEC Project Number: 12-0062.00

SHEET INFORMATION

REVISIONS

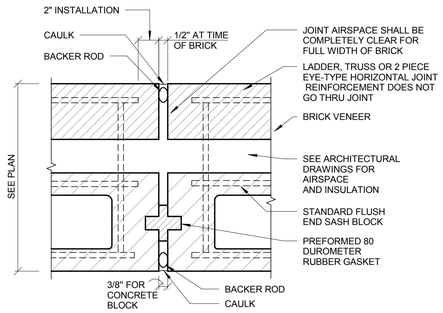
#	DATE	DESCRIPTION

DATE
May 3, 2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

DETAILS

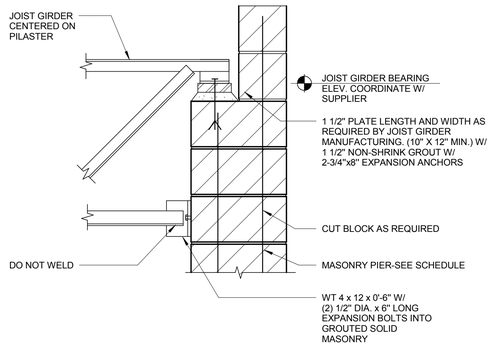
S503



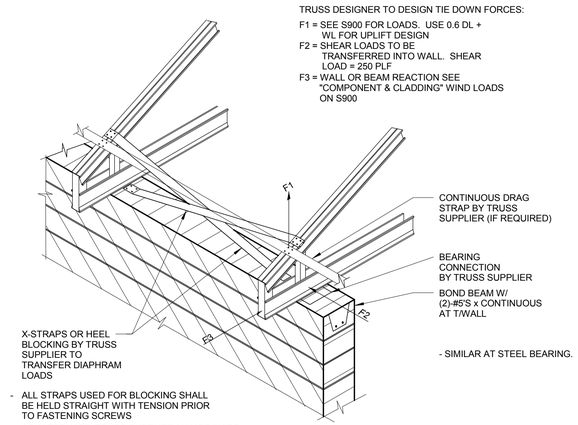
- SIMILAR AT ALL INTERIOR CMU WALLS INCLUDING PARTITIONS, SIMILAR AT BRICK C.J. WITH STEEL STUD BACKUP
- BRICK LEDGE ANGLES AND BOND BEAMS SHALL BE DISCONTINUOUS AT CONTROL JOINTS.
- SEE ARCHITECTURAL DRAWINGS FOR BRICK EXPANSION/CMU CONTROL JOINT LOCATIONS. UNLESS SHOWN OTHERWISE: MAXIMUM JOINT TO CORNER DISTANCE SHALL NOT BE LESS THAN 2 FEET OR EXCEED 10 FEET. MAXIMUM JOINT TO JOINT SPACING SHALL NOT EXCEED THE LESSER OF 25 FEET OR 2 TIMES THE WALL HEIGHT FOR SHORT HEIGHT WALLS BELOW OR BETWEEN WINDOWS AND AT PARAPETS. JOINTS SHOULD BE LOCATED AT CRITICAL LOCATIONS SUCH AS (BUT NOT LIMITED TO) CHANGES IN BUILDING HEIGHTS, CHANGES IN FRAMING SYSTEMS, COLUMNS BUILT INTO EXTERIOR WALLS, MAJOR WALL OPENINGS, AND CHANGES IN MATERIALS.
- PROVIDE A BOND BREAKER OR JOINT REINFORCING AT HORIZONTAL JOINT BETWEEN BRICK AND EXPOSED MASONRY BLOCK OR CONCRETE VENEER. FOR CMU VENEERS LESS THAN 2 FEET HIGH, PROVIDE JOINT REINFORCING IN EVERY COURSE.

1 VERTICAL BRICK EXPANSION AND BLOCK CONTROL JOINT

2 NOT USED



3 JOIST GIRDER BEARING



- SIMILAR AT STEEL BEARING.
- ALL STRAPS USED FOR BLOCKING SHALL BE HELD STRAIGHT WITH TENSION PRIOR TO FASTENING SCREWS
- AS ALTERNATE, TRUSS SUPPLIER MAY PROVIDE BLOCKING TRUSSES BETWEEN TRUSS BEARING LOCATIONS.

4 COLD-FORMED TRUSS BLOCKING DETAIL

- COORDINATE HEADER SIZE AND LOCATION WITH ARCHITECTURAL DETAILS AND CONSTRAINTS.

5 PLAN VIEW - CORNER FRAMING DETAIL

6 SECTION AT HUNG MECHANICAL EQUIPMENT

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120062.00	Sabinash

DETAILS

S504

GENERAL:

THE FOLLOWING NOTES SHALL APPLY TO ALL CONTRACTORS, SUBCONTRACTORS, AND SUPPLIERS ENGAGED IN EXECUTION OF THE WORK SHOWN ON THESE PLANS.

ALL CONSTRUCTION SHALL BE EXECUTED IN CONFORMANCE WITH THE FOLLOWING:

- PLANS AND SPECIFICATIONS
- ALL LOCAL BUILDING AND SAFETY CODES
- STATE OF WISCONSIN BUILDING CODE AND IBC 2009
- WHEREVER CONFLICTS EXIST, THE MORE STRINGENT OR COSTLY SHALL APPLY.

CONTRACTOR TO CROSS CHECK AND COORDINATE WITH CIVIL, ARCHITECTURAL, HVAC, PLUMBING, FIRE PROTECTION, AND ELECTRICAL PLANS INCLUDING OTHER BID PACKAGES, FOR OTHER DETAILS, DIMENSIONS, ELEVATIONS, OPENINGS, INSERTS, BRICK LEDGES, ETC. ARCHITECT OR ENGINEER TO BE NOTIFIED OF ANY VARIANCE BEFORE CONTRACTOR BEGINS WORK OR SHOP DRAWINGS. RESOLVE APPARENT DEFICIENCIES, CONTRADICTIONS, INCONSISTENCIES AND AMBIGUITIES IN CONTRACT DOCUMENTS WITH ARCHITECT/ENGINEER DURING THE BID PERIOD. IF ANY SUCH CONDITION CANNOT BE RESOLVED DURING THE BID PERIOD, SUBMIT BID USING THE INTERPRETATION RESULTING IN THE GREATEST COST AND RESOLVE SUCH ITEMS PRIOR TO BEGINNING THE WORK.

DIMENSIONS SHOWN ON ARCHITECTURAL DRAWINGS SUPERSEDE DIMENSIONS SHOWN ON STRUCTURAL PLANS. THE USE OF A SCALE TO OBTAIN DIMENSIONS NOT SHOWN ON DRAWINGS IS NOT PERMITTED.

IN NO CASE SHALL STRUCTURAL REPAIRS, CORRECTIONS, ALTERATIONS OR WORK AFFECTING A STRUCTURAL MEMBER BE MADE, UNLESS APPROVED BY ENGINEER. SUBMIT DETAILS AND CALCULATIONS PREPARED BY A PROFESSIONAL ENGINEER AND EMPLOYED BY CONTRACTOR. A/E DESIGN AND/OR REVIEW IS CONTRACTOR'S EXPENSE.

THE STRUCTURE SHOWN IN THESE DRAWINGS IS STRUCTURALLY SOUND ONLY IN THE COMPLETED FORM. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE-DOWNS AS MAY BE NECESSARY. ALL CONSTRUCTION AND ERECTION TO CONFORM TO APPLICABLE SAFETY CODES AND REGULATIONS. WHERE TEMPORARY BRACING, GUYS OR TIE-DOWNS ARE ANCHORED TO STRUCTURE E.G. SLAB-ON-GRADE, CONTRACTOR SHALL HIRE A BRACING DESIGNER/ENGINEER TO VERIFY, THROUGH CALCULATION, STRUCTURAL ADEQUACY FOR APPLIED LOADS, AND SHALL PROVIDE NECESSARY DESIGN AND DETAILS IF FOUND DEFICIENT.

WHERE DETAILS ARE CALLED FOR IN A CERTAIN PORTION OF THE BUILDING, THEY SHALL BE DUPLICATED IN SIMILAR PORTIONS OF THE BUILDING UNLESS SHOWN OTHERWISE.

PRIOR TO CONSTRUCTION AND SHOP DRAWINGS, CONTRACTOR SHALL SURVEY AND VERIFY BUILDING DIMENSIONS, ELEVATIONS, ORIENTATION AND CONDITIONS AND REPORT ANY NON-CONFORMANCE WITH DESIGN DRAWINGS. ACTUAL SURVEY LOCATION OF EXISTING CONSTRUCTION SHALL BE COORDINATED WITH CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING.

PROVIDE A COMPLETE SET OF CONTRACT DRAWINGS, SPECIFICATIONS, AND ADDENDA TO ALL ENGINEERS RESPONSIBLE FOR COMPONENT DESIGNS, E.G. COLD-FORMED TRUSSES, JOISTS, PRECAST, LIGHT GAGE, ETC.

THE ENGINEER'S REVIEW OF SHOP DRAWINGS, PRODUCT DATA, DESIGN CALCULATIONS, ETC. DOES NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL INFORM THE ENGINEER IN WRITING OF ANY SPECIFIC DEVIATIONS TO THE CONTRACT DOCUMENTS AND OBTAIN ENGINEER'S WRITTEN APPROVAL BEFORE PROCEEDING.

A/E SERVICES RELATED TO SUBSTITUTIONS OR CHANGES PROPOSED BY THE CONTRACTOR OR TRADE SUBCONTRACTORS ARE THE CONTRACTOR'S EXPENSE. DO NOT RELY ON ACCEPTANCE IN PREPARING BIDS. THE A/E MAY REJECT WITHOUT CAUSE.

WORK AFFECTED BY OTHERS: FRAMING, BRACING, LOADS, OPENINGS, PENETRATIONS AND STRUCTURE IN ANY WAY RELATED TO OTHER TRADES INCLUDING ELEVATORS, HVAC, PLUMBING, OR ELECTRICAL REQUIREMENTS (IF SHOWN) IS FOR BIDDING PURPOSES ONLY. RESPONSIBILITY FOR COORDINATING THE WORK OF THIS SECTION WITH THESE REQUIREMENTS IS SOLELY THAT OF THE CONTRACTOR. CONTRACTOR'S REVIEW OF SHOP DRAWINGS WILL BE TAKEN TO INDICATE THAT THIS COORDINATION HAS BEEN ACCOMPLISHED.

REINFORCED CONCRETE:

ALL CONCRETE WORK TO CONFORM TO ACI 318 AND ACI 301. REINFORCING, DETAILING, FABRICATION, AND ERECTION TO CONFORM TO ACI 315, MANUAL OF STANDARD PRACTICE. (LATEST EDITION)

CONCRETE CONTRACTOR TO PROVIDE AND COORDINATE WITH ALL OTHER TRADES FOR SIZE AND LOCATIONS OF ALL OPENINGS, SLEEVES, ETC. OCCURRING IN WALLS, FOOTINGS AND FLOORS. NO PIPES OR DUCTS SHALL BE PLACED IN STRUCTURAL CONCRETE UNLESS SPECIFICALLY DETAILED OR APPROVED BY STRUCTURAL ENGINEER. ALL OPENINGS THROUGH CONCRETE WALLS AND SLABS SHALL HAVE 2 - #5 BARS PLACED ALONG FACES AND EXTENDING 2'-0" BEYOND CORNERS UNLESS OTHERWISE NOTED. PROVIDE 1 -#5 x 4'-0" DIAGONAL BAR AT EACH CORNER PLACED IN EACH FACE OF WALL OR SLAB.

NO PLUMBING OR MECHANICAL OPENINGS, SLEEVES, ETC. ARE ALLOWED THRU CONCRETE BEAMS OR FOOTINGS UNLESS SHOWN ON CONCRETE SHOP DRAWINGS AND APPROVED BY ENGINEER.

PROVIDE ADDITIONAL BENT CORNER BARS OF SAME SIZE AND SPACING AS HORIZONTAL BARS AT ALL CORNERS AND WALL INTERSECTIONS.

SLABS ON GRADE SHALL HAVE WWF 6x6 - W1.4xW1.4 REINFORCING MESH UNLESS OTHERWISE NOTED. ALL MESH TO BE LAPPED A MINIMUM OF 12". REINFORCE WITH TWO (2) - #5, 3'-0" LONG AT ALL RE-ENTRANT (INSIDE) CORNERS.

PROVIDE 3/8" APPROVED EXPANSION JOINT MATERIAL WHERE SLABS ON GRADE ABUT WALLS, COLUMNS, AND OTHER VERTICAL SURFACES UNLESS OTHERWISE INDICATED ON PLANS. PROVIDE ISOLATION JOINTS AROUND EQUIPMENT PADS, DRAINS, MANHOLES, SUMPS OR OTHER POINTS OF RESTRAINT.

MAXIMUM SLAB ON GRADE SPACING BETWEEN CONTROL OR CONSTRUCTION JOINTS SHALL BE AS FOLLOWS: 10FT FOR 4" SLABS, 12.5FT FOR 5" SLABS, 15FT FOR 6" SLABS OR GREATER.

MAXIMUM LENGTH OF CONCRETE WALL POUR IS 60 FEET. PROVIDE CONSTRUCTION JOINT KEY WITH 1/2 OF HORIZONTAL WALL REINFORCEMENT CONTINUOUS THRU JOINT. WATERSTOPS SHALL BE PROVIDED FOR RETAINING WALLS AND BASEMENT WALLS EXPOSED TO EARTH OR WEATHER.

CENTER PIERS AND COLUMN FOOTINGS ON COLUMN CENTERLINES, AND CENTER WALL FOOTINGS ON WALL CENTERLINES, UNLESS NOTED OTHERWISE.

TEMPORARY BRACING MUST BE PROVIDED FOR ALL VERTICAL DOWELS IN RETAINING WALLS IN ORDER TO INSURE PROPER POSITION (PLUMB) AND LOCATION.

PROVIDE POCKETS IN CONCRETE WALLS FOR STEEL BEAMS AND COLUMN BASE PLATES WHERE REQUIRED. BACK PATCH WITH CONCRETE.

DO NOT BACKFILL AGAINST WALLS UNTIL WALLS ARE TIED INTO FLOORS ABOVE.

THE NUMBER OF BARS REQUIRED BY NOTES AND SCHEDULES CONTROLS OVER THE NUMBER OF BARS SHOWN ON DETAILS.

SPLICES IN CONTINUOUS REINFORCING: ALL BARS TO BE CLASS "B" LAP SPLICES PER LATEST ACI 318 UNLESS OTHERWISE NOTED. DIMENSION LENGTHS OF ALL LAP SPLICES ON SHOP DRAWING PLANS AND ELEVATIONS. COLUMN TIE SPLICES SHALL BE SUCCESSIVELY STAGGERED 90 DEGREES OR 180 DEGREES.

WHERE CONCRETE BACKS UP BRICK, CAST DOVETAIL SLOTS AT 2'-0" MAXIMUM. PROVIDE DOVETAIL ANCHORS TO BRICK AT 16" ON CENTER. COORDINATE PRECAST ATTACHMENT REQUIREMENTS WITH PRECASTER.

REFER TO ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR LOCATION AND DIMENSIONS OF CURBS, CHASES, INSERTS, OPENINGS, SLEEVES, WASHES, DRIPS, REVEALS, NOTCHES, BLOCKOUTS, REGLETS, FINISHES, DEPRESSIONS, AND OTHER PROJECT REQUIREMENTS NOT SHOWN ON STRUCTURAL DRAWINGS. VERIFY ALL REQUIREMENTS WITH PERTINENT CONTRACTORS. CAST-IN ANCHORS AND PLATES SHALL NOT DISPLACE REINFORCING FROM SPECIFIED LOCATION OR REDUCE MINIMUM COVER. CONTRACTOR SHALL HIRE A SURVEYOR TO ACCURATELY LOCATE CAST-IN WELD PLATES. CONTRACTOR IS RESPONSIBLE FOR ENGINEERING COSTS ASSOCIATED WITH MISLOCATED EMBED PLATES.

CONCRETE CURBS AND PADS 1'-0" OR NARROWER SHALL BE REINFORCED WITH 1 - #5 CONTINUOUS IN CENTER UNLESS SHOWN OTHERWISE.

NO CONDUITS, PIPES OR DUCTS SHALL BE PLACED IN CONCRETE COLUMNS OR PARALLEL AND WITHIN BEAM.

SLEEVES, CONDUITS, AND PIPES EMBEDDED IN OR PASSING THROUGH SLABS AND WALLS SHALL BE LOCATED AND PLACED SO THAT:

1. THEY ARE NOT CLOSER THAN THREE DIA. OR 6" MINIMUM ON CENTER, WITH NO MORE THAN THREE CONDUITS PER SIX-FOOT WIDTH OF SLAB.
2. THE CONCRETE COVER IS NOT LESS THAN 1-1/2 INCHES.
3. THEY RUN BETWEEN REINFORCING AND DO NOT DISPLACE IT IN ANY MANNER.
4. THEY ARE LOCATED AT MID THICKNESS OF THE SLAB OR WALL.
5. THEY SHALL NOT BE LARGER IN OUTSIDE DIAMETER AT ITS WIDEST POINT (OR FITTING) THAN 2 INCHES OR 1/4 THE THICKNESS OF THE SLAB OR WALL, WHICHEVER IS LESS. THIS RESTRICTION APPLIES TO THE TOTAL HEIGHT AT CONDUIT INTERSECTIONS/CROSSOVERS.

CONCRETE COVER FOR REINFORCEMENT TO CONFORM TO SECTION 7.7 OF LATEST ACI 318 UNLESS NOTED OTHERWISE ON PLANS:

NON-CORROSIVE ENVIRONMENTS		
- BEAMS, GIRDERS, COLUMNS (TO TIES AND STIRRUP)		1 1/2"
- SLABS:	TOP	1"
	BOTTOM	1"
- FOOTINGS:	TOP	2"
	BOTTOM AND SIDES	3"
- BASEMENT WALLS:	EARTH SIDE	2"
	EXPOSED SIDE	1"
- SHEAR WALLS:	EACH FACE, TO VERTICAL BARS:	
	FOR WALLS 12" THICK OR GREATER	2"
	FOR WALLS LESS THAN 12" THICK	1 1/2"

PRECAST CONCRETE:

PRECASTER SHALL DESIGN ALL PRECAST COMPONENTS AND CONNECTIONS FOR THE FIRE RESISTIVE REQUIREMENTS OF THE BUILDING. COORDINATE WITH ARCHITECT AND CONFORM TO ALL APPLICABLE CODE REQUIREMENTS AND UL ASSEMBLIES.

MARK STRAND LOCATIONS ON TOP OF PLANK WITH PAINT WHERE HVAC, PLUMBING, AND ELECTRICAL TRADES CORE THE PLANK FOR THEIR WORK.

PROVIDE HEADERS AS REQUIRED AT OPENINGS, NOTCHES AT COLUMNS, ETC. COORDINATE SIZES AND LOCATIONS WITH HVAC, PLUMBING, ELECTRICAL AND SPECIALTY CONTRACTORS.

DESIGN PLANK TO CARRY STAIR STRINGER LOADS.

REINFORCE THE CONCRETE TOPPING ON PRECAST PLANK WITH FLAT SHEETS OF WWF 6 x 6 W1.4 X W1.4.

FINISH CONCRETE TOPPING ON PRECAST TO A LEVEL SURFACE WITH A MINIMUM THICKNESS AT PLANK BEARING AS CALLED FOR ON PLANS.

PROVIDE #4 DOWELS BETWEEN EXTERIOR MASONRY WALLS AND P.C. PLANK FOR BOTH PLANK BEARING AND SIDE LAP CONDITIONS.

PRECASTER SHALL DESIGN, FURNISH, AND ERECT ALL PRECAST ARCHITECTURAL AND STRUCTURAL CONCRETE MEMBERS AND CONNECTIONS AS SHOWN ON DRAWINGS AND IN CONFORMANCE WITH SPECIFIED CODES. PRECASTER SHALL BE THE ENGINEER OF RECORD FOR THE PRECAST. PRECASTER SHALL VERIFY ALL LOADS, CRITERIA, ETC. PROVIDED ON THESE DOCUMENTS. ANY CHANGES TO DESIGN INTENT MUST BE APPROVED BY ARCHITECT/ENGINEER.

PRECASTER SHALL SUPPLY TO APPROPRIATE CONCRETE OR STEEL CONTRACTOR ALL ANCHOR BOLTS, CLIP ANGLES, WELD PLATES, INSERTS, AND BEARING PLATES NOT CAST INTO PRECAST UNITS, BUT REQUIRED FOR ERECTION BY PRECASTER.

PRECASTER SHALL DESIGN TEES, PLANK, BEAMS, COLUMNS, AND SHEAR WALLS TO RESIST VERTICAL AND WIND FORCES SPECIFIED ON THE DRAWINGS AND IN APPLICABLE CODES. PRECASTER SHALL DESIGN ALL CONNECTIONS BETWEEN PRECAST ELEMENTS AS WELL AS PRECAST BEARING AND CONNECTION DETAILS TO POURED CONCRETE AND STEEL.

PROVIDE DOVETAIL RECESSES FOR P.C. BEAM OR COLUMN VERTICAL FACES IN CONTACT WITH MASONRY OR POURED CONCRETE.

PROVIDE ANCHORAGE FOR P.C. BEAMS BEARING ON MASONRY (DETAILS TO BE APPROVED BY ENGINEER).

TOPPING MUST BE PLACED BEFORE INSTALLING PARTITION WALLS.

SHORE PRECAST CONCRETE BEAMS TO PREVENT BEAMS FROM TWISTING AND CAUSING NEOPRENE BEARING PADS TO DEFORM UNEQUALLY DURING CONSTRUCTION.

MASONRY:

MASONRY SHALL CONFORM TO NCMA SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF LOAD BEARING CONCRETE MASONRY, MSJC TMS 402/ACI 530 AND TMS 602/ACI 530.1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE APPLICABLE CODES AND THE IBC CODE. PILASTER LOCATIONS, BOND BEAMS, EXPANSION JOINTS, ETC. ARE TO FOLLOW THESE GUIDELINES, UNLESS NOTED OTHERWISE ON DRAWINGS. CONFORM TO MSJC CODE FOR COLD WEATHER CONSTRUCTION PROTECTION REQUIREMENTS.

THESE NOTES APPLY TO MASONRY SHOWN ON STRUCTURAL AND ARCHITECTURAL DRAWINGS.

GROUTING AND REINFORCING: ALL MASONRY, GROUTING, AND REINFORCING WORK SHALL BE PREFORMED BY MASONRY CRAFTWORKERS WHO HAVE SUCCESSFULLY COMPLETED THE INTERNATIONAL MASONRY INSTITUTE (1.800.IMI.0988) TRAINING COURSE FOR GROUTING AND REINFORCING MASONRY CONSTRUCTION, OR EQUAL. ALTERNATIVELY, INSTALLING CONTRACTOR SHALL ASSIGN SUPERVISION OF ALL GROUTING AND REINFORCING TO PERSONNEL WHO HAVE SUCCESSFULLY COMPLETED THE INTERNATIONAL MASONRY INSTITUTE (1.800.IMI.0988) TRAINING COURSE FOR GROUTING AND REINFORCED MASONRY CONSTRUCTION, OR EQUAL. THE SUPERVISOR RESPONSIBLE FOR THE PLACEMENT OF REINFORCED ASSEMBLIES WILL BE PRESENT AT THE TIME OF EACH GROUT POUR.

BOND BEAMS, PILASTERS, AND LINTELS SHALL BE FILLED WITH CONCRETE GROUT HAVING F'c = 3000 PSI UNLESS NOTED OTHERWISE. COARSE AGGREGATE SHALL BE PEA GRAVEL. REINFORCE ALL CONTINUOUS BOND BEAMS WITH 2 - #5, U.N.O. PROVIDE CORNER BARS TO MATCH. SEE MASONRY BAR SPLICE SCHEDULE FOR REQUIRED LAPS.

LINTELS: PROVIDE PRECAST OR MASONRY LINTELS OVER ALL MASONRY OPENINGS LESS THAN 6'-0" CLEAR UNLESS NOTED OTHERWISE ON PLANS. MASON CONTRACTOR MAY USE STEEL LINTEL PER LOOSE LINTEL SCHEDULE AS AN ALTERNATE TO PRECAST OR MASONRY AT HIS EXPENSE. UNLESS SHOWN OTHERWISE, REINFORCE PRECAST AND MASONRY LINTELS AS FOLLOWS:

CLEAR SPAN	HEIGHT	REINFORCEMENT
UP TO 4'-0"	8"	1 - #5 PER 4" OF WALL THICKNESS BOTTOM
4'-0" TO 6'-0"	16"	1 - #5 PER 4" OF WALL THICKNESS, TOP & BOTTOM

6'-0" AND GREATER REFER TO LOOSE STEEL LINTEL SCHEDULE.

USE ONLY U-SHAPED LINTEL BLOCK FOR MASONRY LINTELS. CENTERLINE OF REINFORCING TO BE LOCATED 3" MAX FROM BOTTOM OF LINTEL BLOCK.

LINTELS SHALL BEAR A MINIMUM OF 8" AT EACH END. THE FIRST COURSE OF MASONRY ABOVE THE LINTEL SHALL BE LAID WITH FULL MORTAR BEDDING. AT BEARING WALLS, GROUT END CELL SOLID TO FLOOR BELOW. SEE ARCHITECTURAL AND STRUCTURAL PLANS FOR SPECIAL BOND BEAM AND LINTEL CONDITIONS. SHORE LINTELS AND DOOR FRAMES UNTIL MORTAR AND GROUT ACHIEVE REQUIRED STRENGTH. DO NOT PLACE CONTROL OR EXPANSION JOINTS AT LINTEL BEARING POINTS OR ANYWHERE WITHIN THE LINTEL.

WHERE STEEL BEAMS BEAR ON MASONRY WITH BEARING PLATES, DO NOT MORTAR TIGHT TO UNDERSIDE OF BEAM. AT EXPOSED AREAS, CAULK UNDER BEAM. SEE STEEL NOTES FOR BASE PLATE REQUIREMENTS.

FOR STEEL BEAMS OR LINTELS BEARING PARALLEL TO MASONRY WALL, GROUT EACH CELL UNDER BEAM BEARING TO FOUNDATION AND PROVIDE 1 - #5 BAR IN THE END CELL, UNLESS NOTED OTHERWISE. PROVIDE 16" BEARING AT EACH END FOR SPANS GREATER THAN 10'-0", 8" BEARING FOR SPANS LESS THAN 10'-0".

FOR STEEL BEAMS BEARING PERPENDICULAR TO MASONRY WALL, GROUT AN AREA 4 CELLS WIDE, 4 COURSES DEEP, UNLESS NOTED OTHERWISE.

GROUT COMPLETELY SOLID ALL CELLS AT ALL STAIR AND ELEVATOR WALLS. SEE PLANS FOR ADDITIONAL MASONRY PIERS AND REINFORCING, WALLS AT STAIRS AND ELEVATORS SHALL BE STANDARD WEIGHT BLOCK.

GROUT CELLS SOLID AT: REINFORCING, BOND BEAMS, INSERTS, ANCHORS, ELEVATOR GUIDE RAILS, AND STAIR CONNECTIONS. MASONRY CONTRACTOR TO GROUT ENTIRE COURSE(S) SOLID WHERE EXPANSION ANCHORS ARE SHOWN/CALLED OUT ON DRAWINGS.

GROUTING & REINFORCING FOR PIERS ON UPPER FLOORS OF MULTI-STORY BUILDINGS MUST EXTEND DOWN TO FOOTINGS

CONCRETE GROUT PLACEMENT IN REINFORCED MASONRY WALLS OR PIERS SHALL FOLLOW THE PROCEDURES DESCRIBED IN NCMA TEK MANUAL 23A FOR EITHER LOW-LIFT OR HIGH-LIFT GROUTING. FILLING CORES WITH MORTAR IS NOT ALLOWED. TIE BARS OR PROVIDE VERTICAL BAR POSITIONERS AT 32" o.c. TO MAINTAIN PROPER BAR POSITION DURING GROUT PLACEMENT.

REINFORCING STEEL SHALL BE SECURED IN PLACE BEFORE GROUTING. CONTINUE VERTICAL REINFORCING FLOOR TO FLOOR (OR ROOF) AND EXTEND TO THE TOP OF PARAPET, U.N.O.

VERTICAL CELLS THAT WILL BE GROUTED SHALL HAVE A VERTICAL ALIGNMENT TO MAINTAIN A CONTINUOUS UNOBSTRUCTED CELL AREA NOT LESS THAN 3" x 4".

GROUTING SHALL BE STOPPED 1 1/2" BELOW THE TOP OF A COURSE SO AS TO FORM A KEY AT THE POUR JOINT.

PROVIDE FULL MORTAR BEDDING (FACE SHELLS AND WEBS) FOR ALL STARTER COURSES AND FOR ALL COURSES OF PIERS AND PILASTERS.

PROVIDE POCKETS IN MASONRY WALLS FOR STEEL BEAMS, JOISTS AND COLUMN BASE PLATES AND BACK PATCH SOLID.

DO NOT BACKFILL AGAINST WALLS UNTIL WALLS ARE TIED INTO FLOORS ABOVE.

PROVIDE HORIZONTAL JOINT REINFORCEMENT SUCH AS DUR-O-WALL, 16 INCHES ON CENTER VERTICALLY (8" ON CENTER FOR PARAPETS) FOR RUNNING BOND WALLS, AND 8" AND 10" STACK BOND WALLS. FOR 12" STACK BOND WALLS, STANDARD HORIZONTAL JOINT REINFORCEMENT AT 8" ON CENTER, OR EXTRA HEAVY (A = 0.056` MIN) JOINT REINFORCEMENT AT 16" ON CENTER.

CONSTRUCTION SHALL BE RUNNING BOND U.N.O.

STRUCTURAL STEEL:

FABRICATION AND ERECTION OF STRUCTURAL STEEL MEMBERS SHALL BE GOVERNED BY AISC CODE OF STANDARD PRACTICE (LATEST EDITION).

STEEL CONTRACTOR TO PUNCH ALL HOLES FOR ARCHITECTURAL DETAILS.

PROVIDE AND MAINTAIN TEMPORARY BRACING OF STEEL UNTIL SECURELY INCORPORATED INTO CONSTRUCTION SUCH AS SHEAR WALLS, X-BRACING, ETC.

STEEL COLUMNS BUILT IN MASONRY SHALL HAVE ADJUSTABLE MASONRY WALL ANCHORS AT 2'-0" ON CENTER VERTICALLY EACH SIDE, LOCATED IN COURSING.

WIDE FLANGE BEAMS 12" OR DEEPER SHALL HAVE A 1/4" STIFFENER PLATE EACH SIDE AT ALL POINTS OF SUPPORT INCLUDING BEARING ENDS ON CONCRETE OR MASONRY. PROVIDE 5/8" BEARING PLATES WITH (2) - 3/4" ANCHOR BOLTS 12" LONG WITH 3" HOOKS.

PROVIDE CLIP ANGLES AT COLUMNS FOR SUPPORT OF DECK.

EDGE ANGLES AND BENT PLATES SHALL BE FIELD INSTALLED AND STRING LINE STRAIGHT AND PLUMB FLOOR TO FLOOR. ERECTION TOLERANCE 1/4 INCH FROM PLAN DIMENSIONS. BUTT WELD EDGE ANGLES AT ALL LOCATIONS TO FORM A CONTINUOUS MEMBER.

THE THICKNESS OF FIREPROOFING SHALL CONFORM TO THE U.L. FORMULA LISTED UNDER RESTRAINED BEAM RATINGS IN THE UNDERWRITER'S LABORATORY "FIRE RESISTANCE DIRECTORY". REFER TO APPLICABLE CODE AND ARCHITECTURAL DOCUMENTS FOR REQUIRED ASSEMBLY RATINGS.

CONTRACTOR SHALL INCLUDE IN PROPOSAL COST TO FURNISH, DELIVER, FABRICATE, AND ERECT 3000 LBS OF STEEL, VALUED AT $3 PER LB., IN ADDITION TO THAT INDICATED OR SPECIFIED TO BE USED AS DIRECTED BY THE ARCHITECT. THE UNUSED MATERIAL SHALL BE CREDITED TO THE PROJECT AT THE CONTRACT UNIT PRICE.

STAIRS AND HANDRAILS

ALL STAIRS, LANDINGS, HANDRAILS, AND CONNECTIONS SHALL BE DESIGNED BY A REGISTERED STRUCTURAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED, AND IN CONFORMANCE TO APPLICABLE CODES AND NAAMM STANDARDS INCLUDING 510, 521 AND 555.

STAIR STRINGERS, TREADS, AND RISERS SHALL BE DESIGNED TO SUPPORT 100 PSF LIVE LOAD.

INDIVIDUAL STAIR STRINGERS SHALL BE DESIGNED TO SUPPORT A MINIMUM 300 POUND CONCENTRATED LOAD PLACED IN A POSITION THAT WOULD CAUSE MAXIMUM STRESS.

THE TOP RAILS OF HANDRAILS SHALL BE DESIGNED TO WITHSTAND A LOAD OF 50 PLF APPLIED IN ANY DIRECTION, OR A 200 POUND CONCENTRATED LOAD APPLIED IN ANY DIRECTION AT ANY POINT, AND HAVE ATTACHMENT DEVICES AND SUPPORTING STRUCTURE TO TRANSFER THIS LOADING TO APPROPRIATE STRUCTURAL ELEMENTS OF THE BUILDING. THESE LOADS NEED NOT BE ASSUMED TO ACT CONCURRENTLY

MAXIMUM LIVE LOAD DEFLECTION = L/360, MAXIMUM TOTAL DEFLECTION = L/240

COORDINATE WITH ARCHITECTURAL PLANS FOR FINISHES, MINIMUM SIZES, DETAILS, AND GENERAL INTENT.

STEEL JOIST & JOIST GIRDERS:

ALL JOISTS, JOIST BRIDGING, PLATES, HEADERS, AS WELL AS JOIST CONNECTIONS, SHALL CONFORM TO REQUIREMENTS OF THE "STEEL JOIST INSTITUTE SPECIFICATIONS" (LATEST EDITION).

JOIST MANUFACTURER TO DESIGN JOISTS FOR ROOFTOP UNIT LOADS AND SUSPENDED UNIT LOADS SHOWN ON DRAWINGS. COORDINATE EXACT LOCATION WITH CONTRACTOR.

ALL HUNG EQUIPMENT SHALL BE SUPPORTED WITHIN 3" OF JOIST PANEL POINTS OR PROVIDE JOIST STIFFENERS AS INDICATED ON PLANS.

UNLESS OTHERWISE SPECIFIED, SUPPORT 6" DIAMETER OR LARGER PIPES AS FOLLOWS:

1. ATTACH TO JOIST PANEL POINTS AT 8'-0" ON CENTER MAXIMUM
2. IF PIPE RUNS PARALLEL TO JOISTS, LOCATE PIPE MIDWAY BETWEEN TWO JOISTS.

DESIGN JOIST TOP AND BOTTOM CHORDS AND BRIDGING FOR THE FOLLOWING WIND

UPLIFT LOADS:
ADHERED MEMBRANE ROOFS = 12 PSF

STEEL DECK - ROOF:

DECK, ACCESSORIES, AND ATTACHMENTS SHALL CONFORM TO "STEEL DECK INSTITUTE SPECIFICATIONS" (LATEST EDITION).

DECK TYPE: 1-1/2", 22 GAUGE GALVANIZED WIDE RIB DECK (THREE SPAN MINIMUM).

DECK ATTACHMENT: WELD 12" ON CENTER MAXIMUM AT SUPPORTS IN A 36/5 PATTERN AND ONE INTERMEDIATE SCREWED SIDELAP CONNECTION BETWEEN SUPPORTS. ATTACH DECK 6" ON CENTER ALONG PERIMETER WALLS AND END LAPS. WELD SPLIT OR PARTIAL PANELS IN EVERY VALLEY. SHOP DRAWINGS SHALL SPECIFY TYPE OF ATTACHMENT AND FASTENER SIZES. DO NOT USE WELD WASHERS.

WELDS: 5/8" DIAMETER PUDDLE WELDS. SCREWS AT SIDELAPS: #10 TEK OR EQUIVALENT.

FOR OPENING LESS THAN 10" IN DIAMETER, PROVIDE A 22 GAUGE COVERPLATE, 6" x 24", EACH SIDE PERPENDICULAR TO DECK SPAN.

DO NOT SUSPEND POINT LOADS FROM ROOF DECK EXCEPT FOR HANGERS FOR SUSPENDED CEILINGS. SEE "WORK BY OTHERS".

THE NAME OF THE DECK FABRICATOR SHALL BE CLEARLY NOTED ON ALL SHOP DRAWING SUBMITTALS

WORK BY OTHERS

ALL SUPPORTS, FRAMING, SUB-FRAMING, LIGHT GAGE FRAMING, MISCELLANEOUS STEEL FRAMING, METAL FABRICATIONS, BRACING, BRACKETS, HANGERS, CONNECTORS, EMBEDMENTS, FASTENERS AND ATTACHMENTS NOT SHOWN ON THE STRUCTURAL DRAWINGS ARE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE ENGINEERED AND PROVIDED BY THE TRADE CONTRACTOR WITH ITEMS BEING SUPPORTED BRACED AT THE TRADE CONTRACTOR'S EXPENSE. COMPLY WITH THE GOVERNING BUILDING CODE. SUCH ITEMS ARE NOT PART OF THE STRUCTURAL CONTRACT DOCUMENTS.

DESIGN OF PRE-ENGINEERED SYSTEMS SPECIFIED IN THE CONTRACT DOCUMENTS WHICH ARE DESIGNED OR ENGINEERED BY OTHERS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. SUBMITTALS OF SUCH SYSTEMS SHALL BE SEALED BY AN ENGINEER LICENSED IN THE PROJECT STATE. REVIEW OF SUBMITTALS BY THE ARCHITECT AND STRUCTURAL ENGINEER SHALL BE FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS WITH REGARD TO THE ARRANGEMENT AND SIZES OF MEMBERS SHOWN ON THE STRUCTURAL CONTRACT DOCUMENTS AND THE CONTRACTORS INTERPRETATION OF THE DESIGN INFORMATION INCLUDED IN THE CONTRACT DOCUMENTS. SUCH REVIEW BY THE ARCHITECT AND STRUCTURAL ENGINEER SHALL NOT IMPLY ANY RESPONSIBILITY FOR THE ACTUAL DESIGN OF SUCH SYSTEMS. CONTRACTOR HAS FULL RESPONSIBILITY FOR DIMENSIONAL ACCURACY AND CONFORMANCE WITH THE INFORMATION CONTAINED IN THE CONTRACT DOCUMENTS.

CONSTRUCTION MEANS AND METHODS ARE THE CONTRACTORS RESPONSIBILITY AND SHALL BE ENGINEERED AND PROVIDED BY THE TRADE CONTRACTOR. SUCH WORK INCLUDES BUT IS NOT LIMITED TO:

- DESIGN OF CRANE FOUNDATIONS AND INTERMEDIATE SUPPORTS.
- EVALUATION OF STRUCTURE FOR CONSTRUCTION EQUIPMENT LOADS SUCH AS FORKLIFTS, CONCRETE PLACING EQUIPMENT, ETC.
- EVALUATION OF STRUCTURE AND INSTALLATION OF ANY NECESSARY SHORING FOR MOVING LOADS DURING INSTALLATION OF HEAVY EQUIPMENT.

CLADDING DESIGN, INCLUDING BACK-UP SUPPORT SYSTEMS, ARE BY THE RESPECTIVE TRADE INCLUDING BUT NOT LIMITED TO LIGHT GAGE FRAMING, PRECAST, GRANITE OR OTHER STONES. CLADDING SHALL NOT RESTRICT INDEPENDENT VERTICAL OR LATERAL MOVEMENT OF THE BUILDING LEVELS.

- INFORMATION SPECIFIED ON CONTRACT DOCUMENTS SHALL BE CONSIDERED AS MINIMUM AND TO ESTABLISH DESIGN INTENT. THEY DO NOT RELIEVE THE CONTRACTOR OF DESIGN RESPONSIBILITY.
- UNLESS SPECIFIC DETAILS OR BRACING ARE SHOWN ON THE STRUCTURAL CONSTRUCTION DOCUMENTS AND SPECIFICALLY COORDINATED WITH THE ENGINEER OF RECORD, SUPPORT AND BRACING SYSTEMS SHALL NOT TRANSMIT LATERAL LOADS TO COLUMNS BETWEEN FLOORS OR TO THE BOTTOMS OR SIDES OF STEEL BEAMS OR JOISTS. THE TRADE CONTRACTORS RESPONSIBLE FOR THE ITEMS TRANSMITTING SUCH LATERAL LOADS SHALL INCLUDE THE COST IN THEIR BID FOR ENGINEERING AND PROVIDING BRACING FROM THE POINT OF ATTACHMENT TO THE TOP OF THE NEXT ADJACENT BEAM OR JOIST.

INSTALLER OF ANCHORS OR CONNECTIONS TO STRUCTURE IS RESPONSIBLE FOR ANCHOR DESIGN AND DETERMINATION OF STRUCTURAL COMPONENT ADEQUACY. DO NOT CUT REINFORCING BARS OR DAMAGE OTHER EMBEDMENTS.

MECHANICAL EQUIPMENT WEIGHTS SHOWN ON THE STRUCTURAL DRAWINGS ARE THE MAXIMUM OPERATING WEIGHTS INCLUDING CURBS AND ACCESSORIES. WHERE DIMENSIONS OR WEIGHTS OF EQUIPMENT OR SYSTEMS ARE VARIABLE FROM MANUFACTURER TO MANUFACTURER, VERIFY DIMENSIONS AND WEIGHTS SHOWN ON DRAWINGS WITH SELECTED MANUFACTURER PRIOR TO ORDERING MATERIALS AND SHOP DRAWINGS SUBMITTALS. NOTIFY STRUCTURAL ENGINEER WHEN ACTUAL TOTAL WEIGHTS EXCEED THE WEIGHT SHOWN ON CONTRACT DOCUMENTS. THE CONTRACTOR SHALL COORDINATE ALL MECHANICAL EQUIPMENT OPENINGS AND CURB SUPPORTS WITH THE STEEL FABRICATOR AND THE EQUIPMENT SUPPLIER, PRIOR TO THE SUBMISSION OF SHOP DRAWINGS.

DO NOT SUSPEND POINT LOADS FROM CONCRETE SLABS TOTALING MORE THAN 500 LBS WITHIN ANY 50 SQUARE FEET OF CONTIGUOUS FLOOR SLAB AREA. ENGINEER AND PROVIDE SUB-FRAMING AND BRACING TO TRANSFER SUCH LOADS TO JOISTS, BEAMS, OR GIRDERS AT EXPENSE OF TRADE CONTRACTOR SUSPENDING LOADS.

UNLESS SPECIFICALLY NOTED ON THE CONTRACT DOCUMENTS, NO SUPPORT PROVISION HAVE BEEN MADE FOR MISCELLANEOUS MECHANICAL, ELECTRICAL, PLUMBING OR SPRINKLER PIPE LOADS WHICH INDUCE A COMBINED AVERAGE LOAD GREATER THAN 3 PSF ON ANY GIVEN STRUCTURAL FRAMING MEMBER. THE CONTRACTOR SHALL COORDINATE ALL MISCELLANEOUS LOADS WITH ALL TRADES AND NOTIFY THE ENGINEER IF LOADS ARE EXCEEDED, PRIOR TO INSTALLATION BEFORE SUCH PIPING IS PLACED.

DO NOT SUSPEND POINT LOADS FROM ROOF DECK. POINT LOADS INCLUDE, BUT ARE NOT LIMITED TO: HANGERS FOR CEILINGS, PIPES, DUCTS, STEEL STUDS, EQUIPMENT, ETC. CONTRACTOR INSTALLING SUCH POINT LOADS SHALL PROVIDE SUB-FRAMING TO TRANSFER LOAD TO THE STRUCTURE SUPPORTING DECK.

SUSPENDED HORIZONTAL CEILINGS EXCLUDING BULKHEADS FRAMED WITH STEEL STUDS MAY BE SUSPENDED FROM METAL ROOF DECK. SUSPENDED CEILING SYSTEMS SHALL BE LIMITED TO 4 POUNDS PER SQUARE FOOT INCLUDING THE WEIGHT OF MECHANICAL, ELECTRICAL, AND PLUMBING COMPONENTS SUPPORTED BY THE CEILING. CEILINGS SHALL BE SUPPORTED AT A MAXIMUM OF 4 FEET ON CENTER. THE DESIGN OF THE ATTACHMENT OF THE SUSPENDED CEILING TO THE ROOF DECK SHALL BE BY THE RESPECTIVE TRADE.

DESIGN STRESSES:

CONCRETE AT 28 DAYS	F'c = 4000 PSI INTERIOR SLAB ON GRADE, PRECAST KEYWAYS AND TOPPING, SUPPORTED FLOORS, WALLS, PIERS, COLUMNS. F'c = 4500 PSI EXTERIOR WALLS, PIERS, COLUMNS, TRENCH FOOTINGS, GRADE BEAMS. AIR ENTRAIN EXTERIOR EXPOSED CONCRETE. F'c = 3000 PSI FOOTINGS
CONCRETE MASONRY UNIT	F'm = 2000 PSI (NET AREA COMPRESSIVE STRENGTH = 2800 PSI MIN.) NORMAL WEIGHT BLOCK . TYPE "M" MORTAR SHALL BE USED FOR FOUNDATION WALLS AND TYPE "S" OR "M" MORTAR SHALL BE USED ON WALLS ABOVE GRADE.
REINFORCING STEEL	Fy = 60,000 PSI PER ASTM A615 GRADE 60.
STRUCTURAL STEEL	
W SHAPES	ASTM A572 GR 50 OR ASTM A992 GR50
S, M, OR HP	ASTM A572 GR 50
CHANNELS, ANGLES AND PLATES	ASTM A36, Fy = 36000 psi, OR ASTM A572 GR50
PIPE, ROUND HSS	Fy = 42,000 PSI PER ASTM A500 GRADE B.
TUBES, RECTANGULAR HSS	Fy = 46,000 PSI PER ASTM A500 GRADE B.
HANDRAILS	Fy = 42,000 PSI PER ASTM A500 GRADE B.
SOIL BEARING PRESSURE	5,000 PSF PER SOIL REPORT NO. C12075-11 DATED 10/05/2012 BY CGC, INC. SOIL ENGINEER TO FIELD VERIFY SOIL BEARING CAPACITY BEFORE FOOTINGS ARE PLACED. PROVIDE WRITTEN VERIFICATION TO ENGINEER.

DESIGN LIVE LOADS & FACTORS:

GENERAL:

- BUILDING CATEGORY	IBC 2009 CATEGORY IV

DESIGN DEAD LOADS:

- FLAT ROOF AT APPARATUS BAY	15 PSF
- FLAT ROOF EVERYWHERE ELSE	20 PSF
* AT MANSARD LOCATIONS ADD	10 PSF
- TRUSSED ROOF	17 PSF
* AT SOLAR PANEL LOCATIONS ADD 5 PSF OF EQUIV CONCENTRATED LOAD	

DESIGN LIVE LOADS:

- STAIRS	100 PSF
- MECHANICAL ROOMS (INCLUDING 4" EQUIPMENT PAD)	175 PSF
- LIVE LOAD REDUCTIONS IN ACCORDANCE WITH DESIGN CODE	

ROOF:

- GROUND SNOW LOAD Pg	30 PSF
- TYPICAL FLAT ROOF SNOW LOAD (WORST CASE AT APPARATUS BAY)	Pf = 0.7 x Ce x Ct x Is x Pg = 0.7 x 1.0 x 1.1 x 1.2 x 30 PSF 27.2 = PSF, USE 30 PSF MIN.

ROOF RAIN LOADS:

- RAINFALL RATE (FIG. 1611.1)	i = 3.0 INCHES/HR
- RAIN LOAD AT DRAINS	R = 5.2 (ds+dh)
- RAIN LOAD AT OVERFLOW DRAIN	R = 5.2 (4" + 1") = 26 PSF R = 5.2 (1") = 5.2 PSF
- AVE. RAIN LOAD	Rave = 15.6 PSF
- PONDING	OK

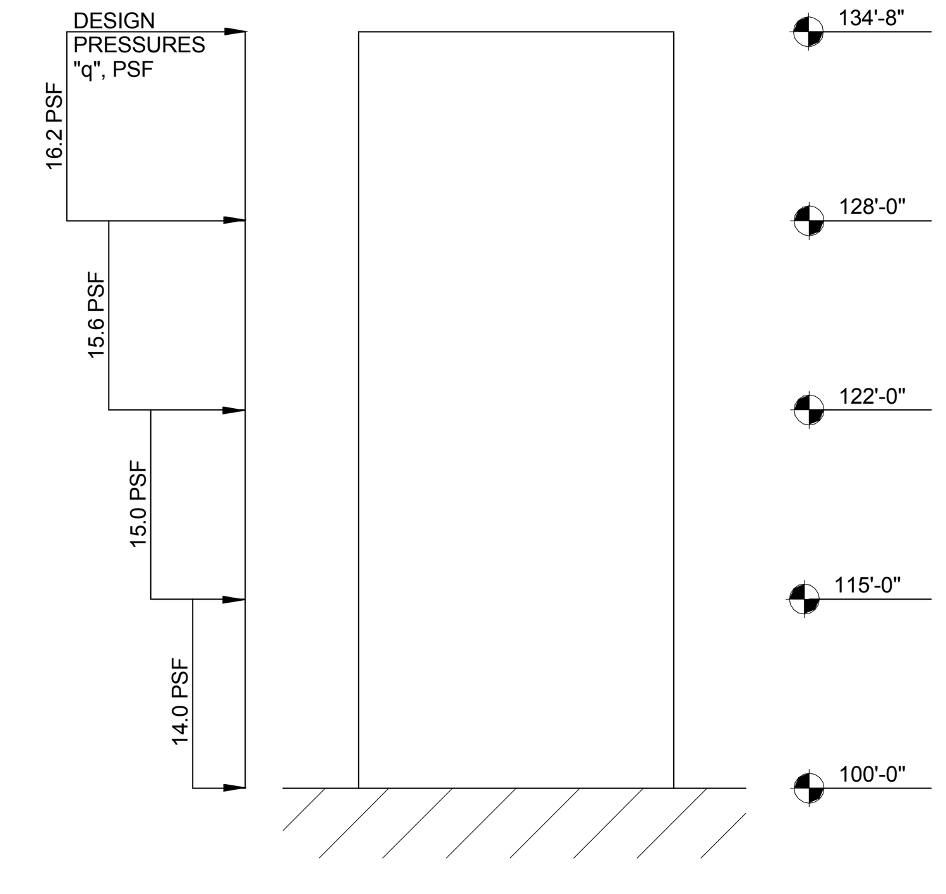
WIND:

ASCE 7-05 METHOD 2: ANALYTICAL PROCEDURE

- BASIC WIND SPEED	V_{3s} = 90 MPH
- IMPORTANCE FACTOR	I_w = 1.15
- EXPOSURE CATEGORY	"B", ALL DIRECTIONS
- VELOCITY PRESSURE COEFFICIENT	K_h =
- TOPOGRAPHIC FACTOR	K_t = 1.0
- WIND DIRECTIONALITY FACTOR	K_d = 0.85
- MAXIMUM DESIGN FORCE, MAIN WIND FORCE RESISTING SYSTEM	SEE "MAIN WIND FORCE DIAGRAM"
- MAXIMUM DESIGN FORCE, COMPONENTS AND CLADDING	SEE "COMPONENTS AND CLADDING DIAGRAM"

SEISMIC:

- SEISMIC OCCUPANCY CATEGORY	IV
- IMPORTANCE FACTOR	I_E = 1.5
- MAPPED SPECTRAL RESPONSE COEFFICIENTS	S_S = 0.106g S_1 = 0.044g
- SITE CLASS	C
- SPECTRAL RESPONSE COEFFICIENTS	S_{DS} = 0.084g S_{D1} = 0.050g
- SEISMIC DESIGN CATEGORY	A
- BASIC SEISMIC FORCE RESISTING SYSTEM	INTERMEDIATE REINFORCED MASONRY SHEAR WALLS
- SEISMIC RESPONSE COEFFICIENT	C_s = 0.01
- RESPONSE MODIFICATION FACTOR	R = 3.5, ASCE, TABLE 12.2-1 SYSTEM A8 BEARING WALL SYSTEMS
- ANALYSIS PROCEDURE	INDEX FORCE ANALYSIS PROCEDURE, ASCE 7, 11.7.2
- DESIGN BASE SHEAR	7.4 K



MAIN WIND FORCE RESISTING SYSTEM DESIGN WIND PRESSURE (ASCE 7-05 METHOD 2)

ROOF	SURFACE PRESSURE (PSF)		
ZONE	A = 20 SF	A = 50 SF	A = 100 SF
ZONE 1	- 16.6 PSF	- 16.0 PSF	- 15.6 PSF
ZONE 2	- 25.5 PSF	- 21.5 PSF	- 18.4 PSF
ZONE 3	- 35.5 PSF	- 25.8 PSF	- 18.4 PSF

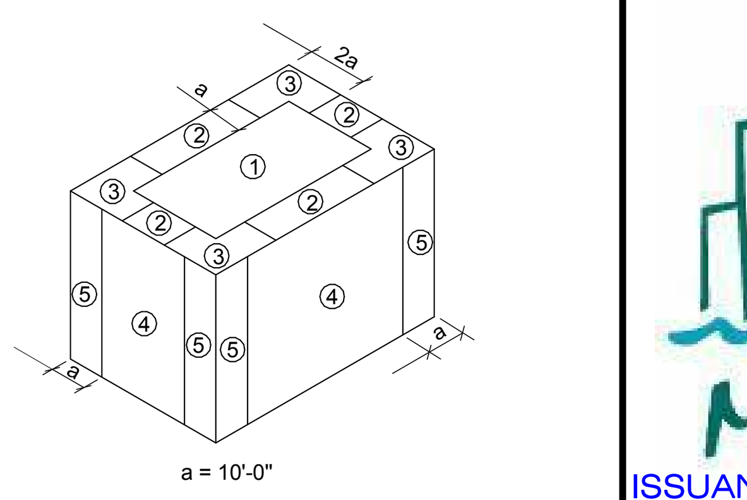
1. A IS WIND TRIBUTARY AREA OF COMPONENT OR CLADDING.

PARAPET	SURFACE PRESSURE (PSF)		
ZONE	A = 10 SF	A = 100 SF	A = 500 SF
CASE A: INTERIOR ZONE 4	PSF 38.3	PSF 26.1	PSF 24.6
CORNER ZONE 5	PSF 52.5	PSF 26.1	PSF 24.6
CASE B: INTERIOR ZONE 4	PSF -26.8	PSF -22.3	PSF - 19.2
CORNER ZONE 5	PSF -30.7	PSF - 23.9	PSF -19.2

1. A = WIND TRIBUTARY AREA OF PARAPET.
2. CASE A = PRESSURE TOWARDS BUILDING
CASE B = PRESSURE AWAY FROM BUILDING

WALLS	SURFACE PRESSURE (PSF)		
ZONE	A = 20 SF	A = 50 SF	A = 100 SF
ZONE 4	+14.9 PSF -16.2 PSF	+14.0 PSF -15.2 PSF	+13.3 PSF -14.6 PSF
ZONE 5	+14.9 PSF -19.4 PSF	+14.0 PSF -17.5 PSF	+13.3 PSF -16.2 PSF

1. A IS WIND TRIBUTARY AREA OF COMPONENT OR CLADDING.
2. ZONES 4 & 5 NEGATIVE PRESSURES APPLY TO ALL HEIGHTS. "+" INDICATES POSITIVE PRESSURE AGAINST WALLS & "-" INDICATES SUCTION PRESSURE



COMPONENT AND CLADDING DESIGN WIND PRESSURE (ASCE 7-05 METHOD 2)

ABBREVIATIONS

@	AT
AB	ANCHOR BOLT
ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE
ANCH	ANCHOR
ARCH	ARCHITECT
BM	BEAM
BOTT	BOTTOM
BLDG	BUILDING
BOF, B/FTG	BOTTOM OF FOOTING
BP	BASE PLATE
BRG	BEARING
BSMNT	BASEMENT
BFG	BELOW FINAL GRADE
CB	CATCH BASIN
C.I.P.	CAST IN PLACE
CJ	CONTROL JOINT/CONSTRUCTION JOINT
CLG	CEILING
CLR	CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CONC	CONCRETE
CONT	CONTINUOUS
COL	COLUMN
CONST	CONSTRUCTION
COORD	COORDINATE
℄	CENTERLINE
CMU	CONCRETE MASONRY UNIT
CP	COMPLETE PENETRATION
DBE	DECK BEARING ELEVATION
DBL	DOUBLE
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DN	DOWN
DO	DITTO (THE SAME AS ADJACENT CONSTRUCTION)
DS	DOWNSPOUT
DWG	DRAWING
EA	EACH
EB	EXPANSION BOLT
ELEV	ELEVATION
EJ	EXPANSION JOINT
EQ	EQUAL
EQUIP	EQUIPMENT
E-W	EAST-WEST
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
F.D.	FLOOR DRAIN
FF	FINISHED FLOOR
FLD	FIELD
FLR	FLOOR
FND	FOUNDATION
FS	FAR SIDE
FTG	FOOTING
F.V.	FIELD VERIFY
GALV	GALVANIZED
GB	GRADE BEAM
GC	GENERAL CONTRACTOR
H&V	HORIZONTAL AND VERTICAL
HORIZ.	HORIZONTAL
HRS	HOURS
HT	HEIGHT
HWS	HEADED WELDED STUDS
I.F.	INSIDE FACE
JBE	JOIST BEARING ELEVATION
JST	JOIST
JT	JOINT
K	KIPS
LB	POUNDS
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LT GAGE	LIGHTGAGE METAL
LVL	LAMINATED VENEER LUMBER
LW	LIGHT WEIGHT
MFR	MANUFACTURER
MIN.	MINIMUM
M.O.	MASONRY OPENING
MP	MASONRY PIER
N.A.	NEUTRAL AXIS
NS	NEAR SIDE
NTS	NOT TO SCALE
N	NORTH
NOM	NOMINAL
N-S	NORTH-SOUTH
NW	NORMAL WEIGHT
O.C.	ON CENTER
O/C	ON CENTER
O.D.	OVERFLOW DRAIN
O/O	OUT TO OUT
O.F.	OUTSIDE FACE
O.H.	OVERHEAD DOOR
OPNG	OPENING
OPP	OPPOSITE
PC	PRECAST
PCF	POUNDS PER CUBIC FOOT
ℙ	PLATE
PLF	POUNDS PER LINEAR FOOT
PP	PARTIAL PENETRATION
PSL	PARALLAM STRAND LUMBER
PT	PRESSURE TREATED
RD	ROOF DRAIN
REF	REFERENCE
REINF	REINFORCING
REQ'D	REQUIRED
RTU	ROOF TOP UNIT
SHT	SHEET
SIM	SIMILAR
SOG	SLAB ON GRADE
SCHED	SCHEDULED
SP	SPACES
SPEC	SPECIFICATION
SQ	SQUARE
STD	STANDARD
STIFF	STIFFENER
SS	STAINLESS STEEL
THRD	THREADED
T&B	TOP AND BOTTOM
T/BM	TOP OF BEAM
T/L	TOP OF LEDGE
T&G	TONGUE AND GROOVE
T/ST	TOP OF STEEL
TOS	TOP OF SLAB
TOF, T/FTG	TOP OF FOOTING
T/W	TOP OF WALL
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VSC	VERTICAL SLIDE CLIP (TO BRACE LT GAGE STUD
W/	WITH
WF	WIDE FLANGE STEEL MEMBER
WP	WORKING POINT
WWF	WELDED WIRE FABRIC

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PROJECT NFORMATION

Madison Fire Station 13

Madison

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

HARWOOD ENGINEERING CONSULTANTS, LTD
255 North 21 Street Milwaukee Wisconsin 53233
414.475.5554 414.473.9299 fax harwood@hecl.com
HEC Project Number: 12-0062.00

SHEET INFORMATION

REVISIONS

#	DATE	DESCRIPTION

DATE
May 3, 2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

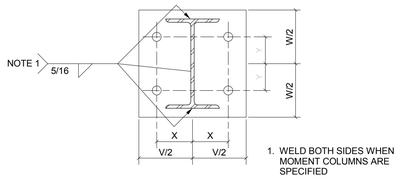
GENERAL NOTES & SCHEDULES

S900

BASE PLATE SCHEDULE

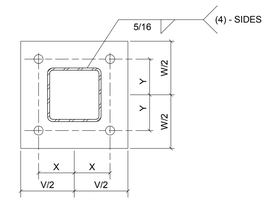
COLUMN	THICKNESS T	DIMENSIONS V	DIMENSIONS W	BOLT LOCATION X	BOLT LOCATION Y	BOLT PROJECTION	ANCHOR BOLT MARK	BASE PLATE DETAIL
HSS 4 x 4	3/4"	10"	10"	3 1/2"	3 1/2"	5"	C	B
HSS 5 x 5	1"	11"	11"	4"	4"	5"	C	B

- USE (4) - 3/4" DIAMETER ANCHOR BOLTS, UNLESS NOTED OTHERWISE
- PROVIDE 1/4" SET PLATE OF SAME AREA. UNLESS NOTED OTHERWISE



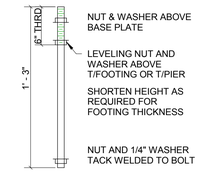
1. WELD BOTH SIDES WHEN MOMENT COLUMNS ARE SPECIFIED

A BASE PLATE DETAIL



B BASE PLATE DETAIL

- DO NOT RUN WELDS PAST TOE OF WIDE FLANGE OR CORNERS OF TUBES



C BOLT TYPE AB-1

ANCHOR ROD HOLE AND WASHER SIZE

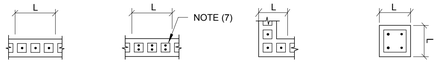
ANCHOR ROD DIAMETER, IN.	HOLE DIAMETER, IN..	MIN. WASHER DIMENSION, IN..	MIN. WASHER THICKNESS, IN..
3/4"	1 5/16"	2"	1/4"
7/8"	1 9/16"	2 1/2"	5/16"
1"	1 13/16"	3"	3/8"
1 1/4"	2 1/16"	3 1/4"	1/2"
1 1/2"	2 5/16"	3 1/2"	1/2"
1 3/4"	2 3/4"	4"	5/8"
2"	3 1/4"	5"	3/4"
2 1/2"	3 3/4"	5 1/2"	7/8"

LOOSE STEEL LINTEL SCHEDULE (U.N.O.)

WALL THICKNESS	CLEAR MASONRY OPENING WIDTH	SECTION
4" BRICK	TO 5'-0"	L3 1/2 x 3 1/2 x 5/16
4" BRICK	TO 7'-0"	L4 x 3 1/2 x 5/16 (LLV)
4" BRICK	TO 9'-0"	L5 x 3 1/2 x 3/8 (LLV)
4" BRICK	TO 11'-0"	L6 x 3 1/2 x 3/8 (LLV)
4" BRICK	TO 12'-5"	L7 x 4 x 3/8 (LLV)
8"	TO 5'-0"	(2) - L3 1/2 x 3 1/2 x 5/16 OR W8 x 10 w/ 5/16 PLATE
8"	TO 7'-0"	(2) - L4 x 3 1/2 x 5/16 LLV OR W8 x 10 w/ 5/16 PLATE
8"	TO 9'-0"	WT 7 x 15 OR W8 x 15 w/ 5/16" PLATE
ANGLES SUPPORTING BRICK OR STONE	_____	BENT PLATE 5/16 x 7"V x AS REQUIRED. STOP HORIZONTAL LEG 1/2" FROM BRICK FACE. (FOR SPANS GREATER THAN 4'-6" o/c, EXPANSION BOLT TO BOND BEAM w/ 1/2" DIA. x 5" BOLTS AT 2'-0" o/c)

1. AT EXTERIOR WALLS, POOLS AND OTHER CORROSIVE ENVIROMENTS, BOTTOM PLATE OF LINTELD, ANGLES AND OTHER STEEL SHALL BE GALVANIZED OR PAINTED FOR EXTEIOR EXPOSURE WITH TWO COAT SYSTEM ZINC RICH EPOXY
2. MAY BE USED AS ALTERNATE TO MASONRY GENERAL NOTES FOR PRECAST OR BOND BEAM LINTELS
3. USE OVER RECESSED DRINKING FOUNTAINS (DF) FIRE EXTINGUISHER CABINETS (FEC) CONNECTORS, LOUVERS, DAMPERS, DUCTS, KNOCKOUT PANELS, WINDOWS, DOORS AND OPENINGS THROUGH MASONRY WALLS WHERE OTHER LINTELS ARE NOT DETAILED OR SCHEDULED.
4. PROVIDE MINIMIUM 8" BEARING EACH END OF LINTEL
5. CENTER LINTELS IN WALL UNLESS NOTED.
6. BOTTOM PLATES UNDER WIDE FLANGE SHAPES SHALL BE EXTENDED FULL LENGTH OF LINTEL
7. WELD LINTELS INTO SINGLE UNITS
8. NO LINTEL REQUIRED FOR 4" AND 6" NON-BEARING MASONRY WALLS WHERE GROUTED HOLLOW METAL FRAMES HAVE HEADSPAN OF 4'-0" OR LESS
9. FOR BEAMS WITH PLATES, WIDTH OF PLATE = NOMINAL MASONRY WALL THICKNESS (INCLUDING BRICK) - 1

MASONRY PIER SCHEDULE

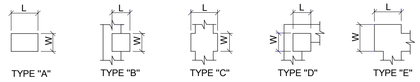


MARK	TYPE	SIZE (L) IN INCHES	VERTICAL REINFORCEMENT (NOTE 2)	TIES	REMARKS
MP1	A	16	(2) - #5		
MP2	A	24	(3) - #5		
MP3	B	16	(4) - #5		
MP4	B	24	(6) - #5		
MP5	B	40	(10) - #6		
MP6	C	16	(3) - #5		
MP7	D	16	(4) - #5		
MP8	A	40	(5) - #5		

NOTES

1. W = WALL WIDTH -- SEE PLAN
2. PROVIDE DOWELS OF SAME SIZE AND NUMBER AS VERTICAL REINFORCEMENT. MINIMUM LAP PER GENERAL NOTES WITH STANDARD ACI HOOK INTO FOOTING
3. RUN HORIZONTAL REINFORCEMENT THROUGH PIER. WHERE PIERS ARE ISOLATED AND NOT PART OF THE CONTINUOUS WALL e.g. BETWEEN WINDOWS, PROVIDE #2 TIES @ 8" o/c
4. FILL CELLS SOLID WITH 3000 PSI CONCRETE USE ONLY 2 CELL BLOCK. SEE MASONRY GENERAL NOTES FOR GROUTING METHODS ALLOWED.
5. PROVIDE (1) - #5 AT EACH SIDE OF OPENINGS, DOORS, WINDOWS, DUCT OPENINGS ETC. U.N.O. SEE PLAN FOR MASONRY PIER REQUIREMENTS.
6. USE ONLY STANDARD, HOLLOW PILASTER BLOCK
7. PROVIDE 1/2" CLEAR GROUT COVER BETWEEN BLOCK FACE AND BAR

CONCRETE COLUMN/PIER SCHEDULE



MARK	TYPE	SIZE (W) x (L) IN INCHES	VERTICAL REINFORCING (NOTE 1)	TIES	CONCRETE STRENGTH F'c, PSI	REMARKS
CP1	A,B,D	16 x 16	(4) - #6	#3 @ 12	4500	

NOTES

1. PROVIDE DOWELS OF SAME SIZE AND NUMBER AS VERTICAL REINFORCEMENT. MINIMUM LAP = 30 BAR DIAMETERS UNLESS NOTED OTHERWISE SEE TYPICAL PIER DETAIL.
2. RUN HORIZONTAL WALL REINFORCING THROUGH PIER
3. PROVIDE TIES PER ACI 7.10 AND 3 ADDITIONAL TIES AT TOP OF PIER.

FOOTING SCHEDULE

MARK	SIZE	DEPTH	REINFORCEMENT	REMARKS
F3.0	3' - 0" x 3' - 0"	12"	(4) - #4, EACH WAY, BOTTOM	
F3.5	3' - 6" x 3' - 6"	12"	(5) - #4, EACH WAY, BOTTOM	
F4.0	4' - 0" x 4' - 0"	13"	(5) - #5, EACH WAY, BOTTOM	
F4.5	4' - 6" x 4' - 6"	14"	(5) - #5, EACH WAY, BOTTOM	
F5.0	5' - 0" x 5' - 0"	15"	(6) - #5, EACH WAY, BOTTOM	
F5.5	5' - 6" x 5' - 6"	17"	(5) - #6, EACH WAY, BOTTOM	
F6.0	6' - 0" x 6' - 0"	18"	(6) - #6, EACH WAY, BOTTOM	
SF2.0	2' - 0" x CONT.	1' - 2"	(2) - #5, BOTTOM x CONT.	
SF2.5	2' - 6" x CONT.	1' - 4"	(2) - #6, BOTTOM x CONT.	
SF3.0	3' - 0" x CONT.	1' - 8"	(3) - #6, BOTTOM x CONT.	

- SOIL BEARING PRESSURE PER SOIL REPORT 5,000 PSF
- FOOTINGS LISTED MAY NOT ALL BE USED ON THIS PROJECT.

MASONRY LINTEL SCHEDULE

MARK	SIZE	REMARKS
L1	8" HIGH BOND BEAM OR PRECAST BEAM w/ (2) #5 BOTTOM BY MASONRY CONTRACTOR	
L2	W8 x 10	
L3	W8 x 18	
L4	W16 x 26	
L5	W16 x 36	BEARING PLATE 5/8" x 7 1/2" x 7 1/2"
L6	W24 x 55	BEARING PLATE 5/8" x 7 1/2" x 7 1/2"
L7	16" DEEP MASONRY BEAM	SEE 10/S503, SIM
L8	24" DEEP MASONRY BEAM	SEE 10/S503
L9	16" HIGH PRECAST LINTEL DESIGNED BY SUPPLIER	DL = 935 PLF LL = 520 PLF

1. AT EXTERIOR WALLS, OTHER CORROSIVE ENVIRONMENTS, LINTELS AND BOTTOM PLATES, ANGLES AND OTHER STEEL SHALL BE GALVANIZED OR PAINTED FOR EXTERIOR EXPOSURE WITH TWO COAT SYSTEM ZINC RICH EPOXY.
2. SEE MASONRY GENERAL NOTES AND 5/S502 FOR BEARING REQUIREMENTS.
3. COORDINATE BOTTOM OF LINTEL ELEVATION WITH ARCHITECTURAL PLANS.
4. FOR STEEL LINTELS, PROVIDE 5/16" BOTTOM PLATE UNLESS NOTED OTHERWISE. WIDTH OF PLATE = NOMINAL MASONRY THICKNESS (INCLUDING VENEER) -1".
5. FOR STEEL LINTELS GREATER THAN OR EQUAL TO 10'-0" LONG, PROVIDE 3/8" DIAMETER x 4" LONG HEADED WELDED STUDS AT 32" O/C ON TOP FLANGE. LINTELS LESS THAN 10'-0" LONG MAY BE PLACED LOOSE WITHOUT ANCHOR BOLTS OR BEARING PLATES, UNLESS NOTED OTHERWISE
6. PRECAST LINTELS: f'c = 4000 psi, MIN. (3000 PSI FOR L1) fy = 60000 psi. REINFORCEMENT FOR PRECAST BEAMS TO BE DESIGNED BY PRECASTER UNLESS SPECIFICALLY CALLED OUT. PRECAST DESIGNER SHALL DOUBLE CHECK LOADS PROVIDED AND DESIGN FOR WORST CASE.
7. FOR PRECAST OR BOND BEAM LINTELS BACKING VENEER, SEE LOOSE LINTEL SCHEDULE FOR BRICK SUPPORT ANGLE REQUIREMENTS.
8. ALL DIMENSIONS ARE NOMINAL MASONRY DIMENSIONS U.N.O.
9. LINTELS WITH L-"H INDICATES LINTELS OVER MECHANICAL OPENINGS.
10. DO NOT PLACE CONTROL OR EXPANSION JOINTS AT LINTEL BEARING POINTS OR ANYWHERE WITHIN THE LINTEL.

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PROJECT NFORMATION

Madison Fire Station 13

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

HARWOOD ENGINEERING CONSULTANTS, LTD
255 North 21 Street Milwaukee Wisconsin 53233
414.475.5554 414.473.9299 fax harwood@hecl.com
HEC Project Number: 12-0062.00

SHEET INFORMATION

REVISIONS

#	DATE	DESCRIPTION

DATE
May 3, 2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

SCHEDULES

S901

BUILDING SYSTEMS, ASSEMBLIES AND COMPONENTS

COMPOSITION OF SYSTEMS INDICATED ON WALL SECTIONS

COPING 1: (Apparatus Bay)
Two-piece, prefinished sheet metal assembly with continuous hold down clips (color selected by architect) over plywood nailer anchored to top of wall.

FLOOR 1: (Slab on grade-living space)
5" concrete slab w/6x6 W2.1xW2.1 WWF over 10-mil polyethylene vapor barrier on 4" rigid insulation and 6" freely draining compacted granular fill sub-base. Provide pre-molded joint fill at columns and perimeter (See structural drawings for reinforcing, control joint locations and additional information).

FLOOR 2: (Penthouse)
3" concrete topping over 10" hollow core precast concrete plank. Topping pitched per floor plan.

FLOOR 3: (Slab on grade-apparatus bay)
6" concrete slab w/6x6 W2.1xW2.1 WWF over 10-mil polyethylene vapor barrier on 4" rigid insulation and 6" freely draining compacted granular fill sub-base. Provide pre-molded joint fill at columns and perimeter (See structural drawings for reinforcing, control joint locations and additional information).

FOUNDATION 1:
Reinforced, formed-in-place, poured concrete foundation wall over reinforced concrete footing. Provide 4" rigid insulation (R-10 min.) from top of concrete footing to top of foundation wall on the interior face of the concrete foundation wall and under entire slab. Provide joint fill at columns and exterior wall once concrete slab is poured.

GLAZING SYSTEM 1:
Fixed fiberglass storefront window w/ integral color.

GLAZING SYSTEM 2:
Fixed painted aluminum storefront window.

HANDRAIL 1:
1-1/2" dia. painted steel rail system to be mounted 3'-0" A.F.F. and attached to wall.

ROOF 1:
Non-ballasted, fully adhered EPDM white on 1/2" roof board on minimum 6" expanded polystyrene foam insulation on 1-1/2" wide galvanized roof deck on joist and girder system.

ROOF 2:
Prefinished metal roof panels w/ standing seams @ 16" o.c. on minimum 6" expanded polystyrene foam insulation on 6' wide ice and water shield at eave on 1/2" gypsum fiber sheathing on 1-1/2" wide galvanized roof deck on metal stud truss system.

STAIR 1:
Concrete-filled painted metal pan stair on steel framing as designed by steel stair supplier.

STAIR 2:
Steel grate, framing and railing stair system, including upper landing.

EXTERIOR WALL SYSTEM 1A: (Brick exterior wall w/ steel stud)
Modular brick with plastic weeps and vents at 36" o.c. with 1" airspace (U.N.O.) on 3" polyisocyanurate insulation on air and vapor barrier on (3-5/8" structural steel stud wall at pilaster on) 6" structural steel stud wall with 5/8" GWB on inside face. Polyeurethane foam air barrier to be applied to inside face of polyiscyanurate insulation.

EXTERIOR WALL SYSTEM 1B: (Brick exterior wall w/ CMU)
Modular brick with plastic weeps and vents at 36" o.c. with 1" airspace (U.N.O.) on 3" polyisocyanurate insulation on (3-5/8" structural steel stud wall at pilaster on) air and vapor barrier on 8" or 16" nom. CMU.

EXTERIOR WALL SYSTEM 2A: (Stone exterior wall w/ steel stud)
Modular stone in a ashlar pattern with plastic weeps and vents at 36" o.c. with 1" airspace (U.N.O.) on 3" polyisocyanurate insulation on air and vapor barrier on (3-5/8" structural steel stud wall at pilaster on) 6" structural steel stud wall with 5/8" GWB on inside face. Polyeurethane foam air barrier to be applied to inside face of polyiscyanurate insulation.

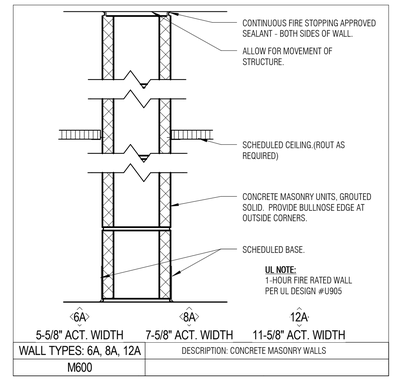
EXTERIOR WALL SYSTEM 2B: (Stone exterior wall w/ CMU)
Modular stone in a ashlar pattern with plastic weeps and vents at 36" o.c. with 1" airspace (U.N.O.) on 3" polyisocyanurate insulation on air and vapor barrier on (3-5/8" structural steel stud wall at pilaster on) 8" nom. CMU wall.

EXTERIOR WALL SYSTEM 3A: (Composite Aluminum soffit panel)
Composite aluminum panel system on 1/2" fiber reinforced gypsum sheathing on 3" polyisocyanurate insulation.

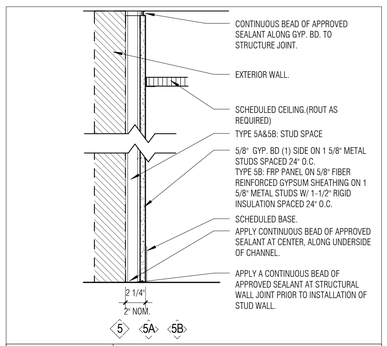
EXTERIOR WALL SYSTEM 3B: (Composite Aluminum wall panel)
Composite aluminum panel system on 3" polyisocyanurate insulation on air and vapor barrier on 16" nom. CMU wall.

NOTE: TYPICAL VAPOR PROFILE INFORMATION IS INDICATED ON 3/A310, 3/A311 AND 4/A312.

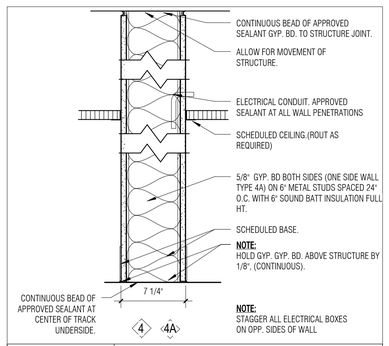
INTERIOR WALL TYPES



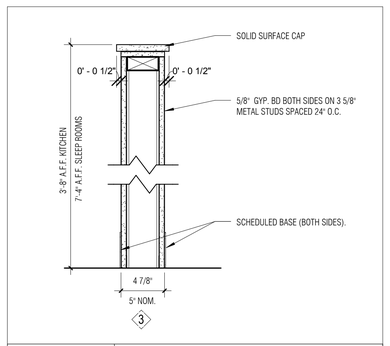
WALL TYPES: 6A, 8A, 12A	DESCRIPTION: CONCRETE MASONRY WALLS
M600	



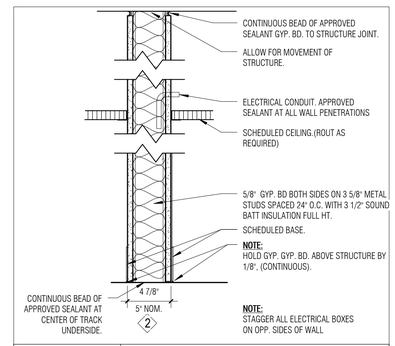
WALL TYPE: 5	DESCRIPTION: FLOOR TO STRUCTURE
	NON-PERIMETER WALLS



WALL TYPE: 4	DESCRIPTION: STRUCTURE TO STRUCTURE



WALL TYPE: 3	DESCRIPTION: ACCESS FLOOR TO 5' PARTIAL HEIGHT
	KITCHEN



WALL TYPE: 2	DESCRIPTION: STRUCTURE TO STRUCTURE

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PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

Madison

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

SHEET INFORMATION

REVISIONS

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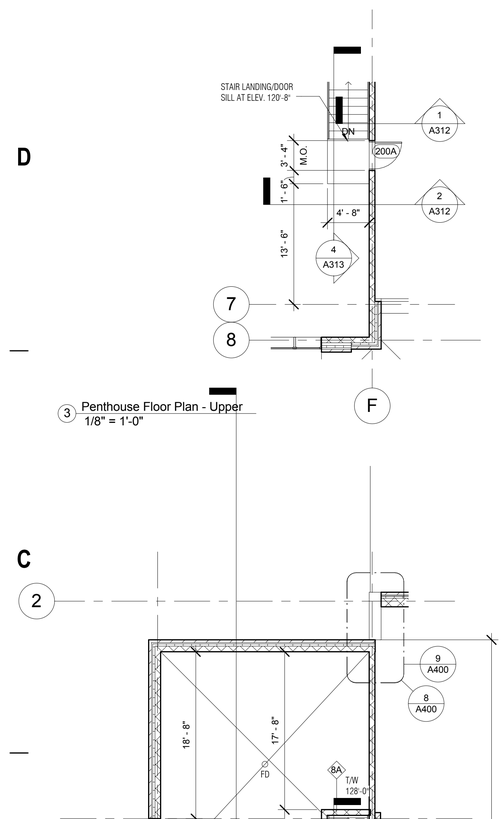
DATE
May 3, 2013

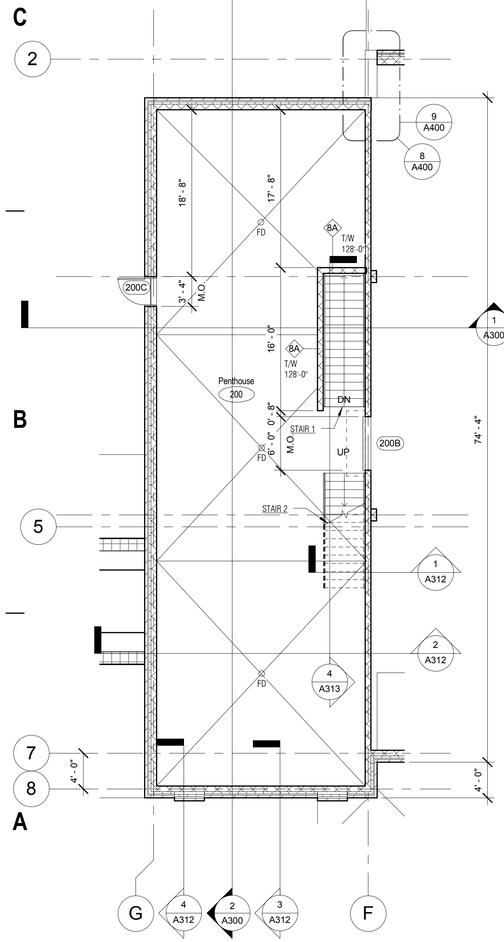
PROJECT NUMBER	STUDIO
120062.00	Sabinash

Building Systems

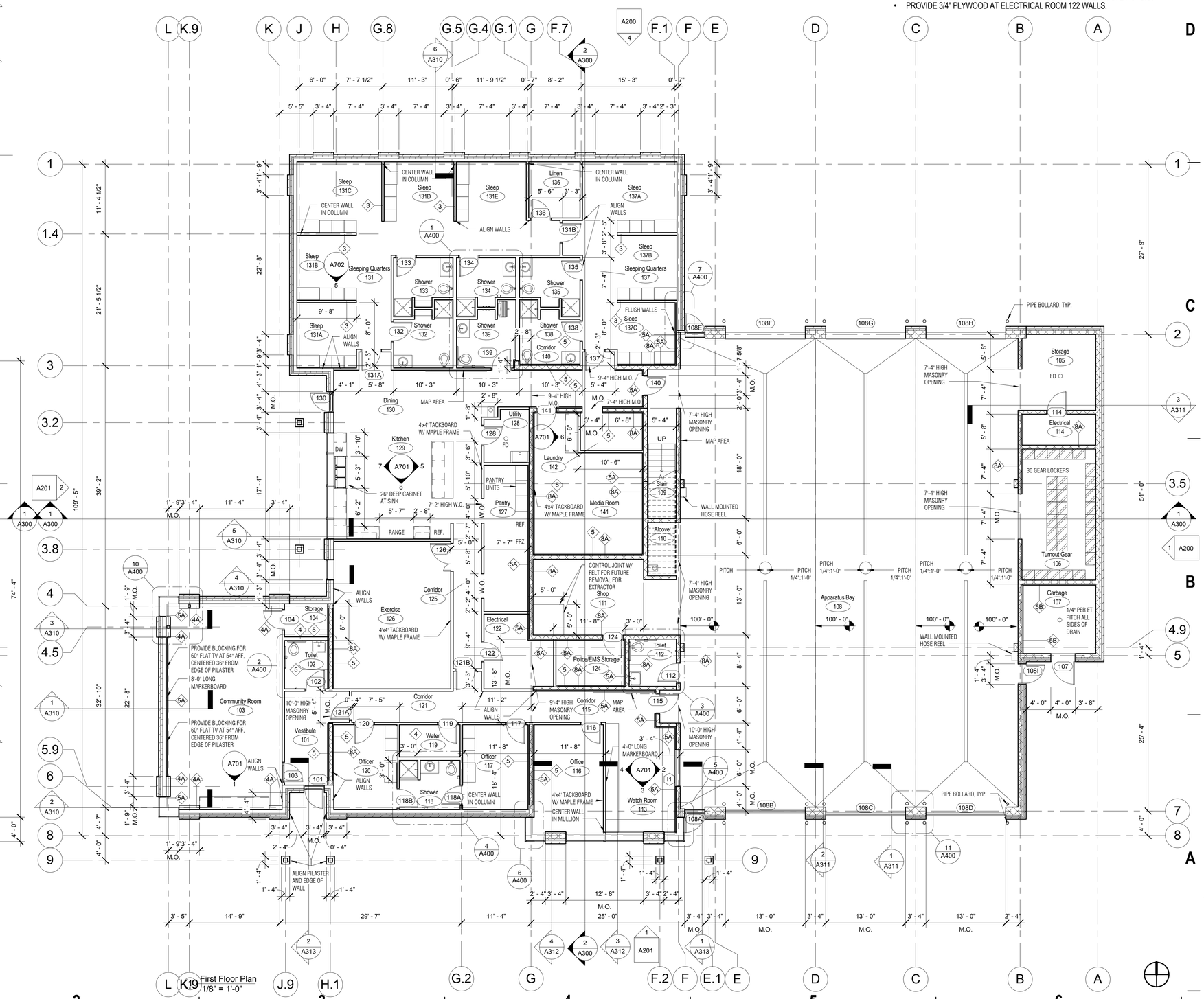
A010



3 Penthouse Floor Plan - Upper
1/8" = 1'-0"



2 Penthouse Floor Plan
1/8" = 1'-0"



1 First Floor Plan
1/8" = 1'-0"

FLOOR PLAN GENERAL NOTES

- WALLS ARE TO BE WALL TYPE 2, UNLESS NOTED OTHERWISE.
- FIRST FLOOR TOP OF SLAB ELEVATION 100'-0", UNLESS NOTED OTHERWISE. ROOMS WITH FLOOR DRAINS TO PITCH 1":10' TOWARD DRAINS.
- PENTHOUSE TOPPING ELEVATION 112'-3" AT PERIMETER WITH TOPPING PITCH 1":10' TOWARD DRAINS.
- EXTERIOR WINDOW TYPES INDICATED ON EXTERIOR ELEVATIONS; INTERIOR WINDOW TYPES ON FLOOR PLANS.
- TOP OF TACKBOARDS AND MARKERBOARDS TO BE INSTALLED WITH TOP OF BOARD AT 7'-2" A.F.F.
- CMU WALL VERTICAL CONTROL JOINTS TO BE NO MORE THAN 24'-0" O.C.
- PROVIDE 3/4" PLYWOOD AT ELECTRICAL ROOM 122 WALLS.

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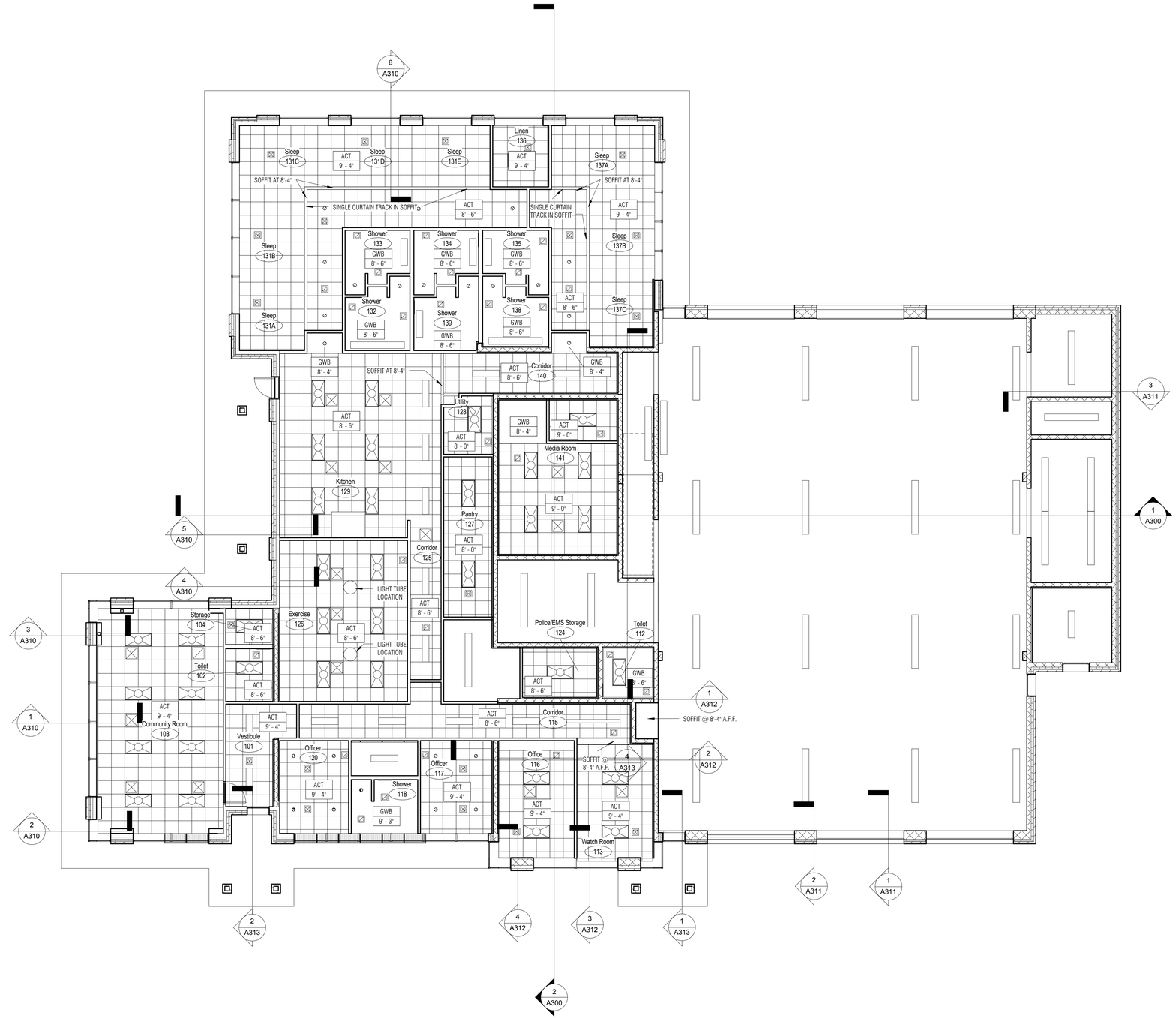
Floor Plan

A100



1 First Floor Plan
1/8" = 1'-0"

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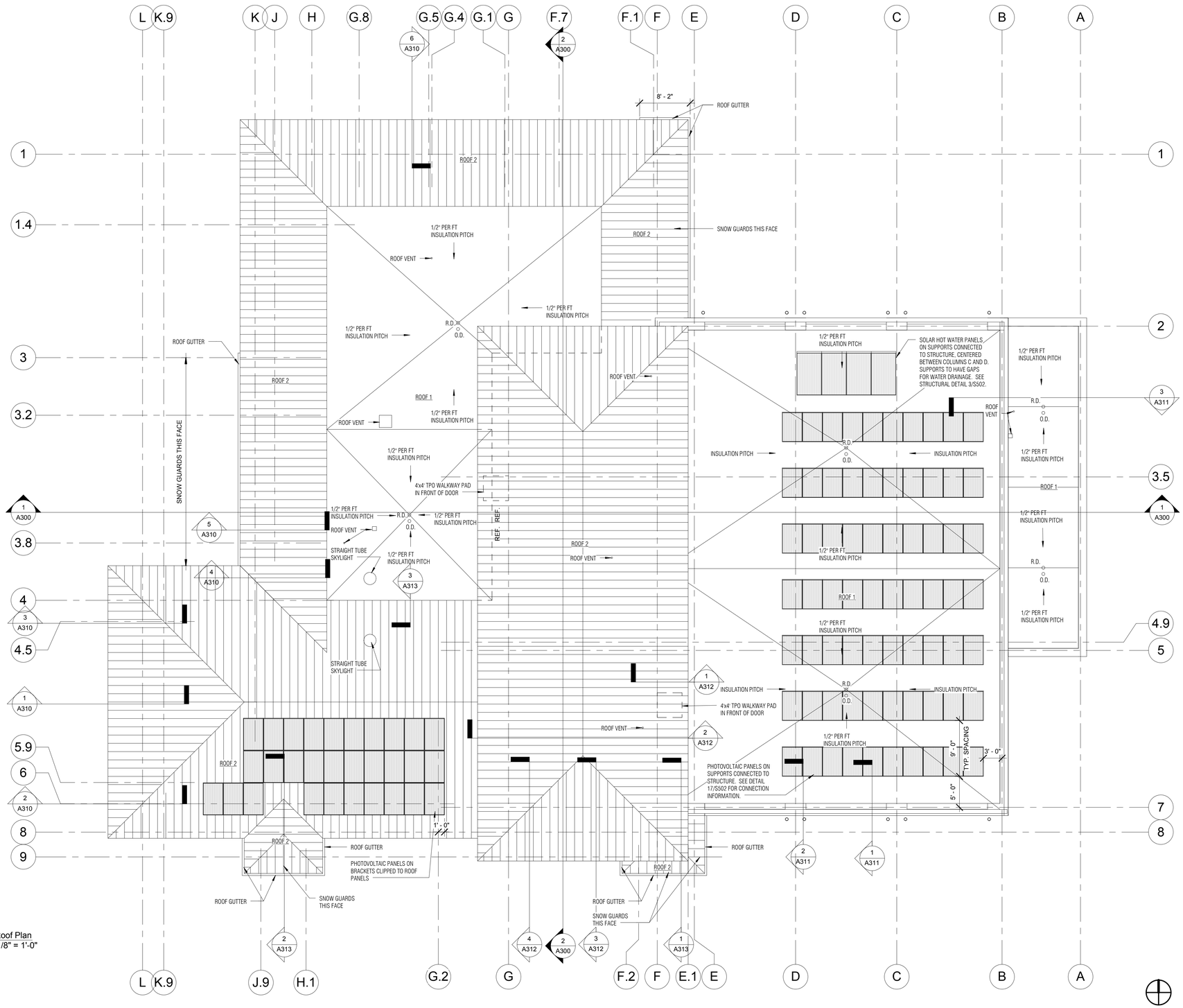
Reflected Ceiling Plan

A110



1 Roof Plan
1/8" = 1'-0"

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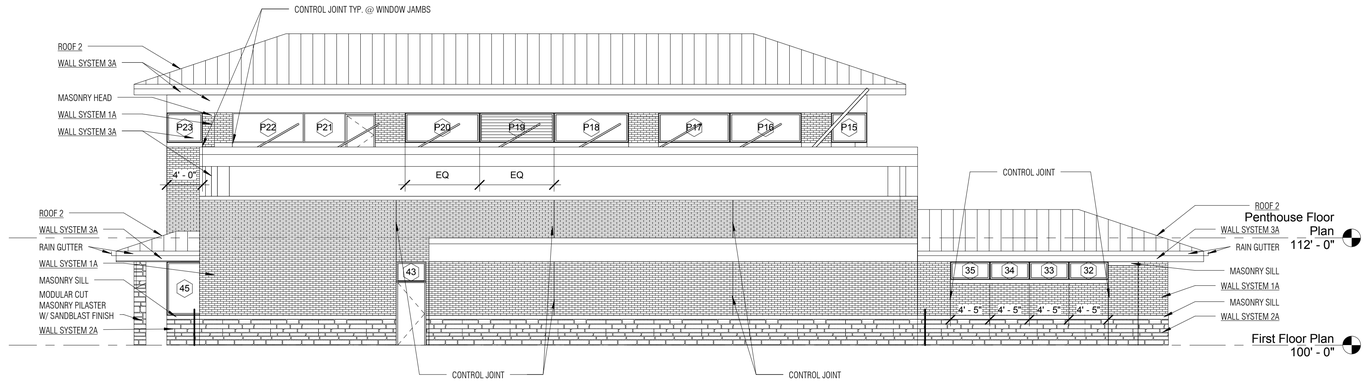
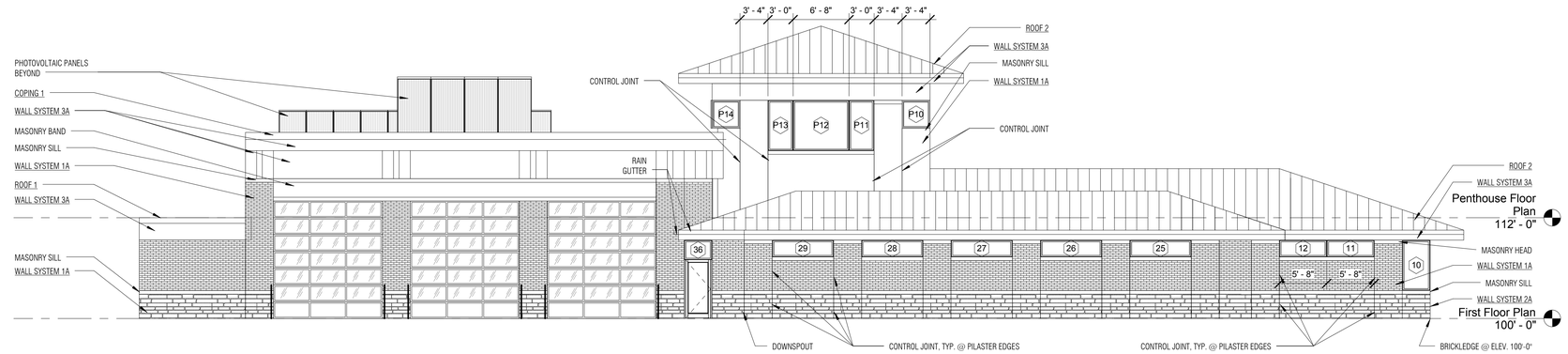
Roof Plan

A120



1 East Elevation
1/8" = 1'-0"



4 North Elevation
1/8" = 1'-0"

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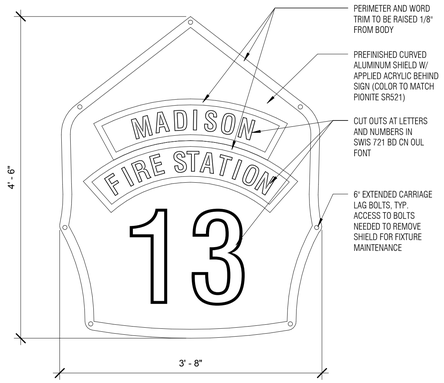
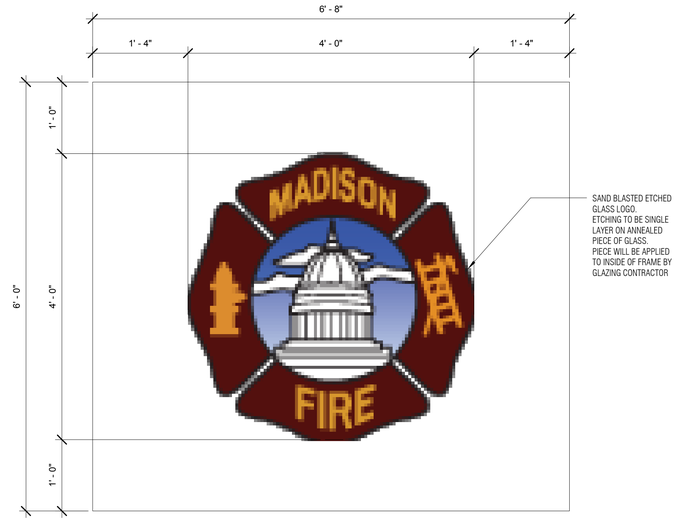
Exterior Elevations

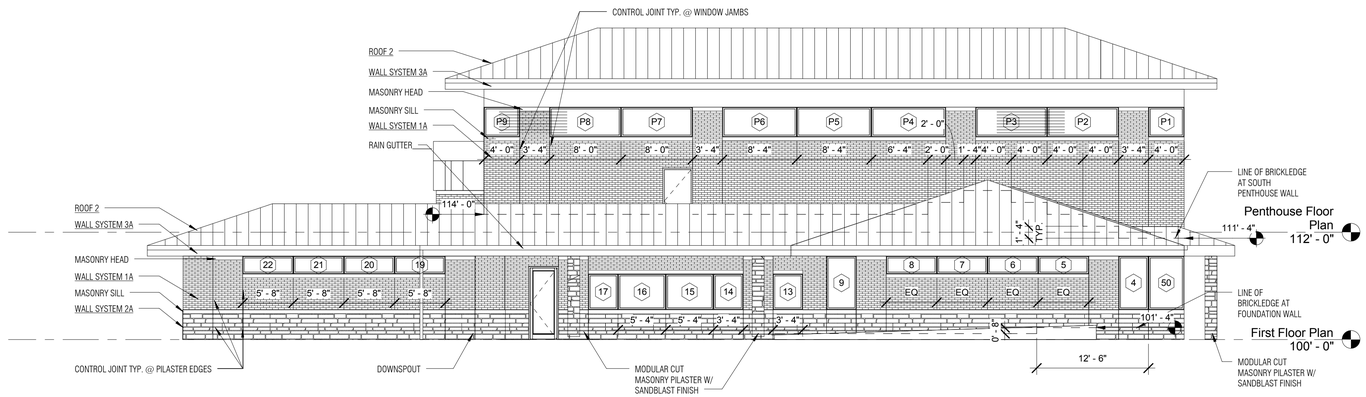
A200



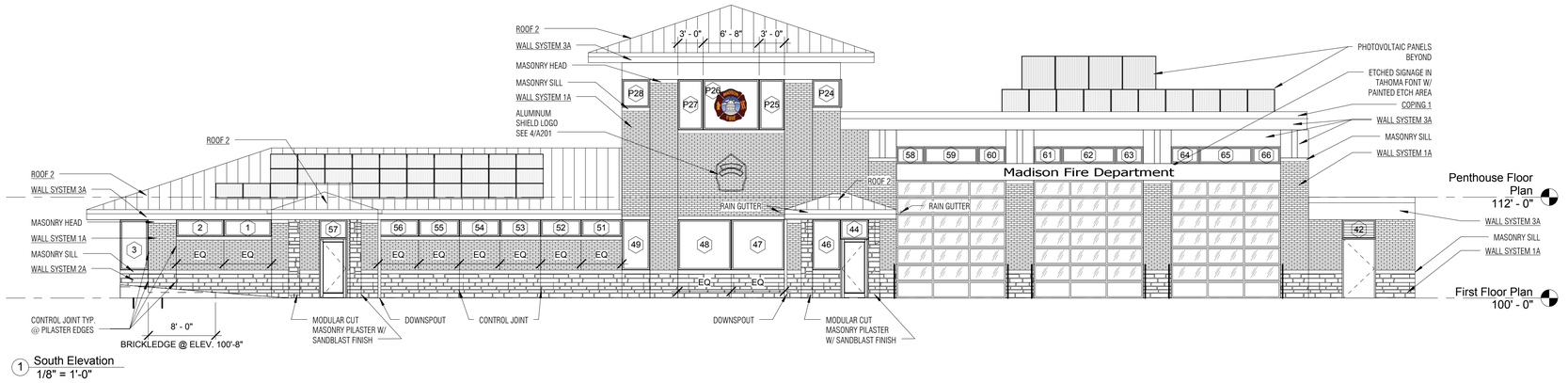
4 Shield Detail
1" = 1'-0"



3 Etched Glass Elevation
1" = 1'-0"



2 West Elevation
1/8" = 1'-0"



1 South Elevation
1/8" = 1'-0"

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PROJECT NFORMATION

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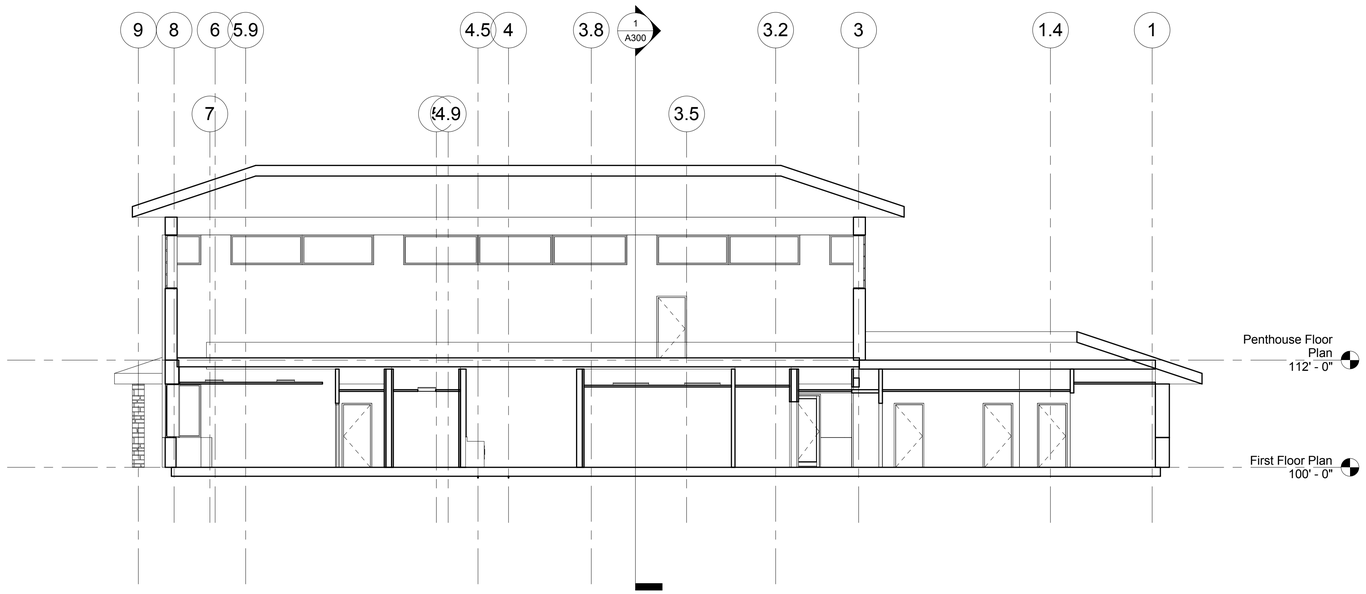
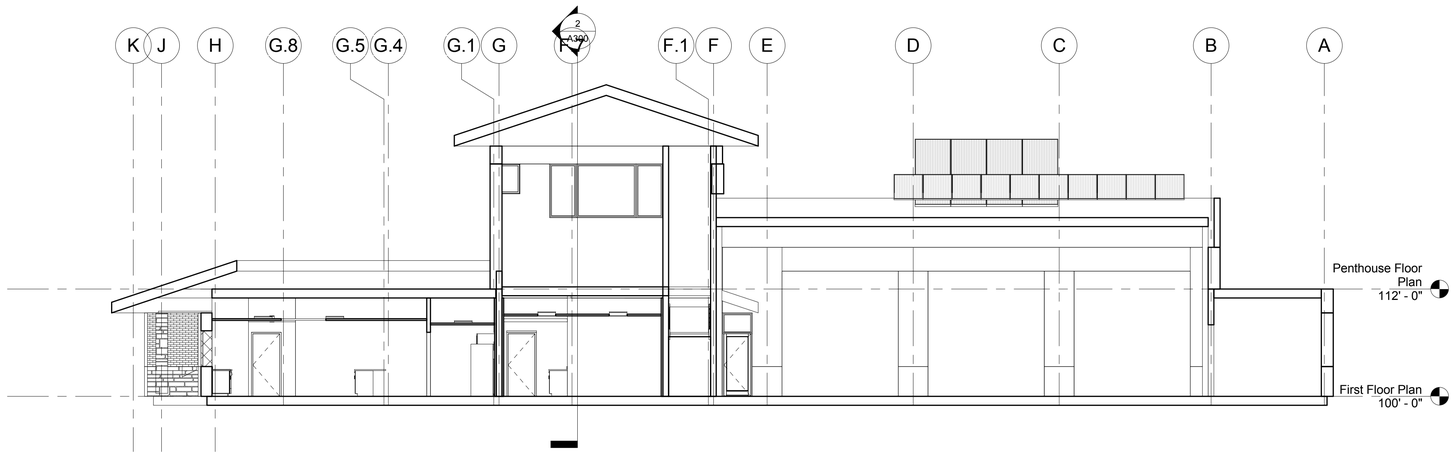
Exterior Elevations

A201



2 Building Section Looking West
1/8" = 1'-0"



1 Building Section Looking North
1/8" = 1'-0"

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PROJECT NFORMATION

Madison Fire Station 13

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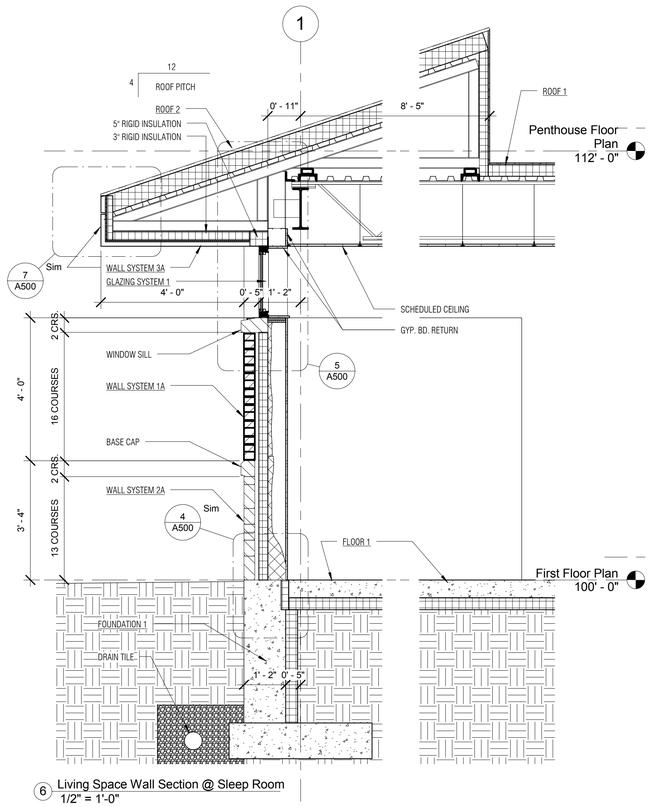
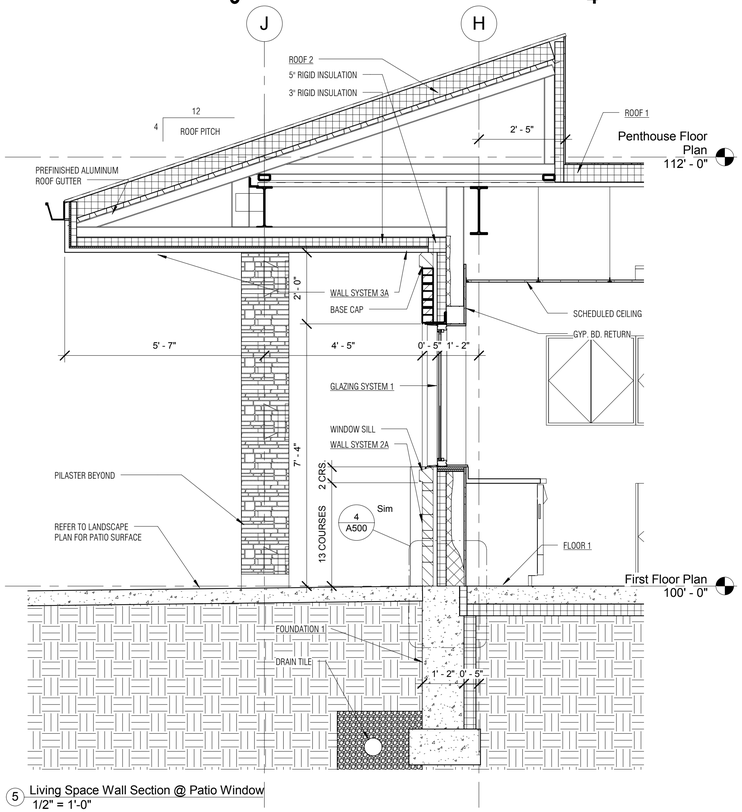
Building Sections

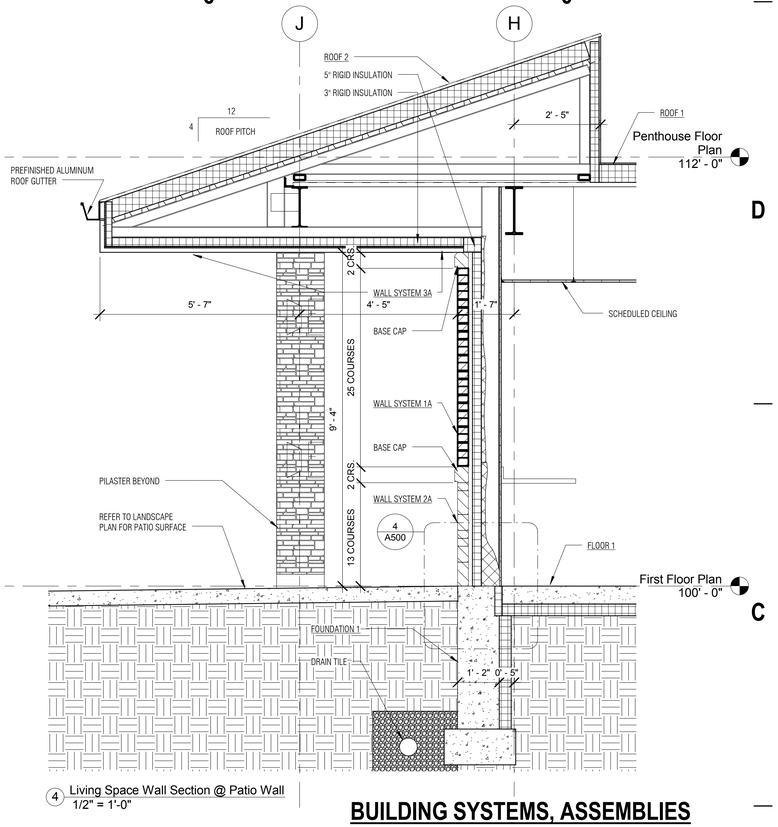
A300



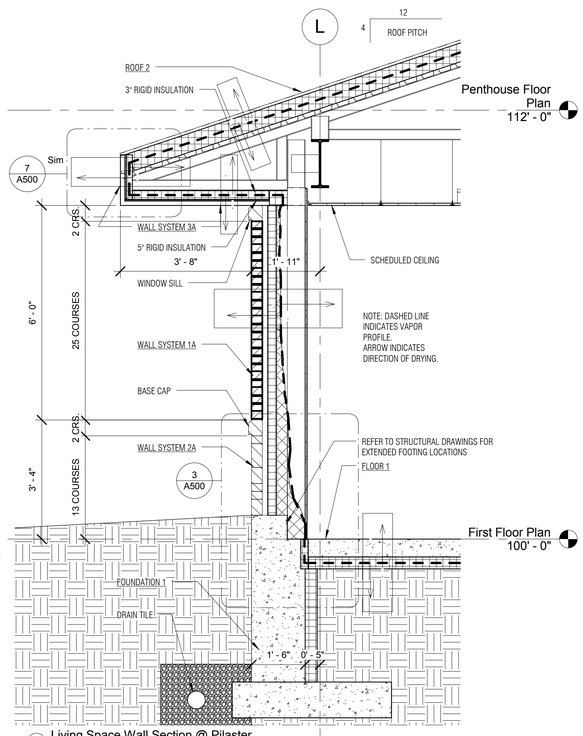
6 Living Space Wall Section @ Sleep Room
1/2" = 1'-0"



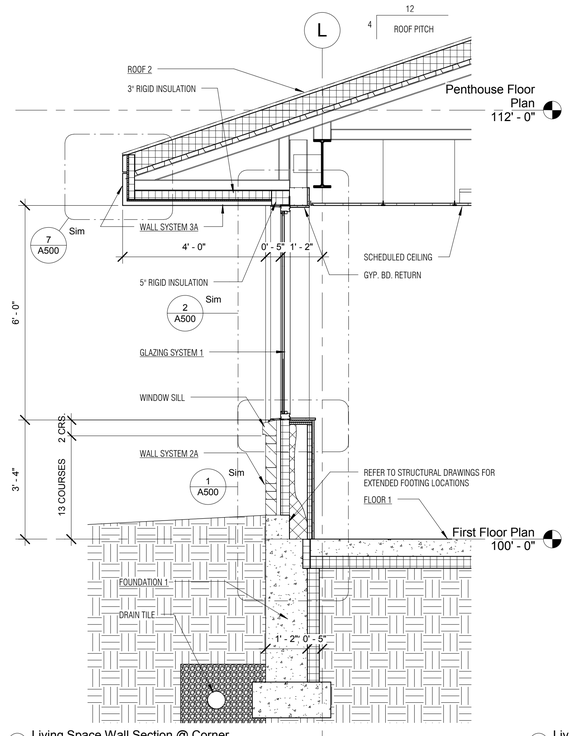
5 Living Space Wall Section @ Patio Window
1/2" = 1'-0"



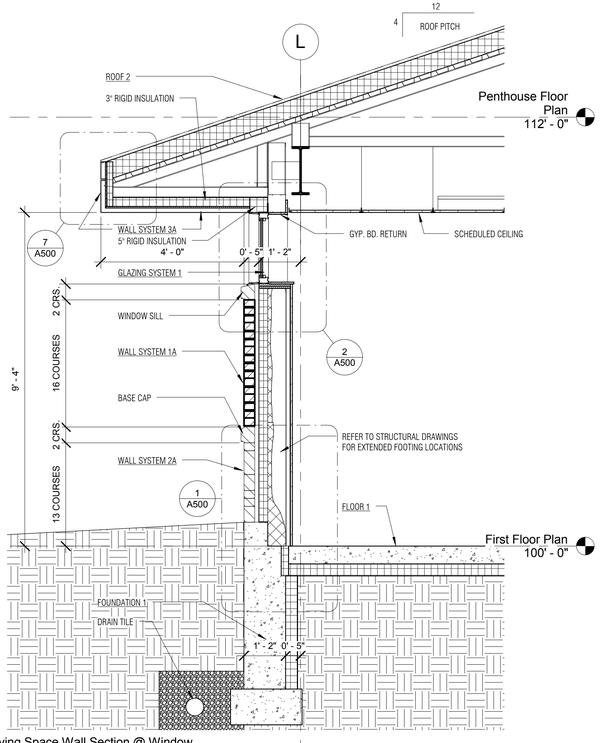
4 Living Space Wall Section @ Patio Wall
1/2" = 1'-0"



3 Living Space Wall Section @ Pilaster
1/2" = 1'-0"



2 Living Space Wall Section @ Corner
1/2" = 1'-0"



1 Living Space Wall Section @ Window
1/2" = 1'-0"

BUILDING SYSTEMS, ASSEMBLIES AND COMPONENTS

COMPOSITION OF SYSTEMS INDICATED ON WALL SECTIONS

COPING 1: (Apparatus Bay)
Two-piece, prefinished sheet metal assembly with continuous hold down clips (color selected by architect) over plywood nailer anchored to top of wall.

FLOOR 1: (Slab on grade-living space)
5" concrete slab w/6x6 W2.1xW2.1 WWF over 10-mil polyethylene vapor barrier on 4" rigid insulation and 6" freely draining compacted granular fill sub-base. Provide pre-molded joint fill at columns and perimeter (See structural drawings for reinforcing, control joint locations and additional information).

FLOOR 2: (Penthouse)
3" concrete topping over 10" hollow core precast concrete plank. Topping pitched per floor plan.

FLOOR 3: (Slab on grade-apparatus bay)
6" concrete slab w/6x6 W2.1xW2.1 WWF over 10-mil polyethylene vapor barrier on 4" rigid insulation and 6" freely draining compacted granular fill sub-base. Provide pre-molded joint fill at columns and perimeter (See structural drawings for reinforcing, control joint locations and additional information).

FOUNDATION 1:
Reinforced, formed-in-place, poured concrete foundation wall over reinforced concrete footing. Provide 4" rigid insulation (R-10 min.) from top of concrete footing to top of foundation wall on the interior face of the concrete foundation wall and under entire slab. Provide joint fill at columns and exterior wall once concrete slab is poured.

GLAZING SYSTEM 1:
Fixed fiberglass storefront window w/ integral color.

GLAZING SYSTEM 2:
Fixed painted aluminum storefront window.

HANDRAIL 1:
1-1/2" dia. painted steel rail system to be mounted 3'-0" A.F.F. and attached to wall.

ROOF 1:
Non-ballasted, fully adhered EPDM white on 1/2" roof board on minimum 6" expanded polystyrene foam insulation on 1-1/2" wide galvanized roof deck on joist and girder system.

ROOF 2:
Prefinished metal roof panels w/ standing seams @ 16" o.c. on minimum 6" expanded polystyrene foam insulation on 6" wide ice and water shield at eave on 1/2" gypsum fiber sheathing on 1-1/2" wide galvanized roof deck on metal stud system.

STAIR 1:
Concrete-filled painted metal pan stair on steel framing as designed by steel stair supplier.

STAIR 2:
Steel grate, framing and railing stair system, including upper landing.

EXTERIOR WALL SYSTEM 1A: (Brick exterior wall w/ steel stud)
Modular brick with plastic weeps and vents at 36" o.c. with 1" airspace (U.N.O.) on 3" polyisocyanurate insulation on air and vapor barrier on (3-5/8" structural steel stud wall at pilaster on) 6" structural steel stud wall with 5/8" GWB on inside face. Polyeurethane foam air barrier to be applied to inside face of polyisocyanurate insulation.

EXTERIOR WALL SYSTEM 1B: (Brick exterior wall w/ CMU)
Modular brick with plastic weeps and vents at 36" o.c. with 1" airspace (U.N.O.) on 3" polyisocyanurate insulation on (3-5/8" structural steel stud wall at pilaster on) air and vapor barrier on 8" or 16" nom. CMU.

EXTERIOR WALL SYSTEM 2A: (Stone exterior wall w/ steel stud)
Modular stone in a ashlar pattern with plastic weeps and vents at 36" o.c. with 1" airspace (U.N.O.) on 3" polyisocyanurate insulation on air and vapor barrier on (3-5/8" structural steel stud wall at pilaster on) 6" structural steel stud wall with 5/8" GWB on inside face. Polyeurethane foam air barrier to be applied to inside face of polyisocyanurate insulation.

EXTERIOR WALL SYSTEM 2B: (Stone exterior wall w/ CMU)
Modular stone in a ashlar pattern with plastic weeps and vents at 36" o.c. with 1" airspace (U.N.O.) on 3" polyisocyanurate insulation on air and vapor barrier on (3-5/8" structural steel stud wall at pilaster on) 8" nom. CMU wall.

EXTERIOR WALL SYSTEM 3A: (Composite Aluminum soffit panel)
Composite aluminum panel system on 1/2" fiber reinforced gypsum sheathing on 3" polyisocyanurate insulation.

EXTERIOR WALL SYSTEM 3B: (Composite Aluminum wall panel)
Composite aluminum panel system on 3" polyisocyanurate insulation on air and vapor barrier on 16" nom. CMU wall.

NOTE: TYPICAL VAPOR PROFILE INFORMATION IS INDICATED ON 3/A310, 3/A311 AND 4/A312.

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PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

Madison

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

SHEET INFORMATION

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120062.00	Sabinash

Wall Sections

A310

BUILDING SYSTEMS, ASSEMBLIES AND COMPONENTS

COMPOSITION OF SYSTEMS INDICATED ON WALL SECTIONS

COPING 1: (Apparatus Bay)
Two-piece, prefinished sheet metal assembly with continuous hold down clips (color selected by architect) over plywood nailer anchored to top of wall.

FLOOR 1: (Slab on grade-living space)
5" concrete slab w/6x6 W2.1xW2.1 WWF over 10-mil polyethylene vapor barrier on 4" rigid insulation and 6" freely draining compacted granular fill sub-base. Provide pre-molded joint fill at columns and perimeter (See structural drawings for reinforcing, control joint locations and additional information).

FLOOR 2: (Penthouse)
3" concrete topping over 10" hollow core precast concrete plank. Topping pitched per floor plan.

FLOOR 3: (Slab on grade-apparatus bay)
6" concrete slab w/6x6 W2.1xW2.1 WWF over 10-mil polyethylene vapor barrier on 4" rigid insulation and 6" freely draining compacted granular fill sub-base. Provide pre-molded joint fill at columns and perimeter (See structural drawings for reinforcing, control joint locations and additional information).

FOUNDATION 1:
Reinforced, formed-in-place, poured concrete foundation wall over reinforced concrete footing. Provide 4" rigid insulation (R-10 min.) from top of concrete footing to top of foundation wall on the interior face of the concrete foundation wall and under entire slab. Provide joint fill at columns and exterior wall once concrete slab is poured.

GLAZING SYSTEM 1:
Fixed fiberglass storefront window w/ integral color.

GLAZING SYSTEM 2:
Fixed painted aluminum storefront window.

HANDRAIL 1:
1-1/2" dia. painted steel rail system to be mounted 3'-0" A.F.F. and attached to wall.

ROOF 1:
Non-ballasted, fully adhered EPDM white on 1/2" roof board on minimum 6" expanded polystyrene foam insulation on 1-1/2" wide galvanized roof deck on joist and girder system.

ROOF 2:
Prefinished metal roof panels w/ standing seams @ 16" o.c. on minimum 6" expanded polystyrene foam insulation on 6" wide ice and water shield at eave on 1/2" gypsum fiber sheathing on 1-1/2" wide galvanized roof deck on metal stud truss system.

STAIR 1:
Concrete-filled painted metal pan stair on steel framing as designed by steel stair supplier.

STAIR 2:
Steel grate, framing and railing stair system, including upper landing.

EXTERIOR WALL SYSTEM 1A: (Brick exterior wall w/ steel stud)
Modular brick with plastic weeps and vents at 36" o.c. with 1" airspace (U.N.O.) on 3" polyisocyanurate insulation on air and vapor barrier on (3-5/8" structural steel stud wall at pilaster on) 6" structural steel stud wall with 5/8" GWB on inside face. Polyeurethane foam air barrier to be applied to inside face of polyiscyanurate insulation.

EXTERIOR WALL SYSTEM 1B: (Brick exterior wall w/ CMU)
Modular brick with plastic weeps and vents at 36" o.c. with 1" airspace (U.N.O.) on 3" polyisocyanurate insulation on (3-5/8" structural steel stud wall at pilaster on) air and vapor barrier on 8" or 16" nom. CMU.

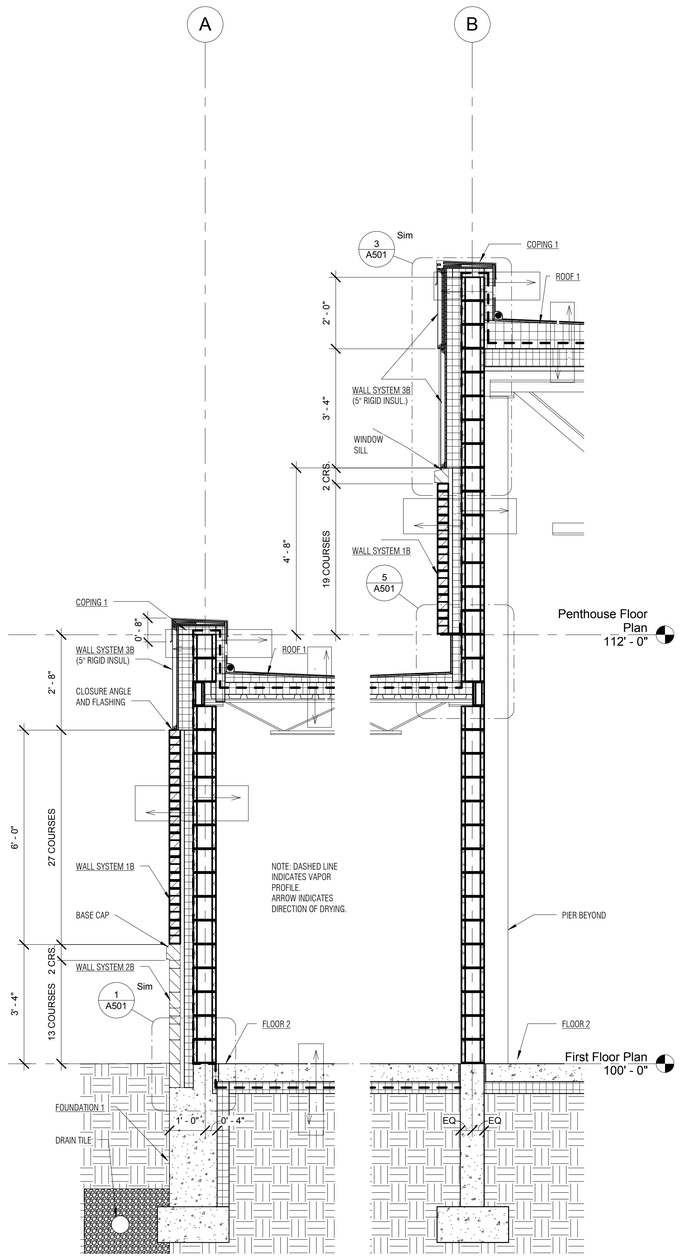
EXTERIOR WALL SYSTEM 2A: (Stone exterior wall w/ steel stud)
Modular stone in a ashlar pattern with plastic weeps and vents at 36" o.c. with 1" airspace (U.N.O.) on 3" polyisocyanurate insulation on air and vapor barrier on (3-5/8" structural steel stud wall at pilaster on) 6" structural steel stud wall with 5/8" GWB on inside face. Polyeurethane foam air barrier to be applied to inside face of polyiscyanurate insulation.

EXTERIOR WALL SYSTEM 2B: (Stone exterior wall w/ CMU)
Modular stone in a ashlar pattern with plastic weeps and vents at 36" o.c. with 1" airspace (U.N.O.) on 3" polyisocyanurate insulation on air and vapor barrier on (3-5/8" structural steel stud wall at pilaster on) 8" nom. CMU wall.

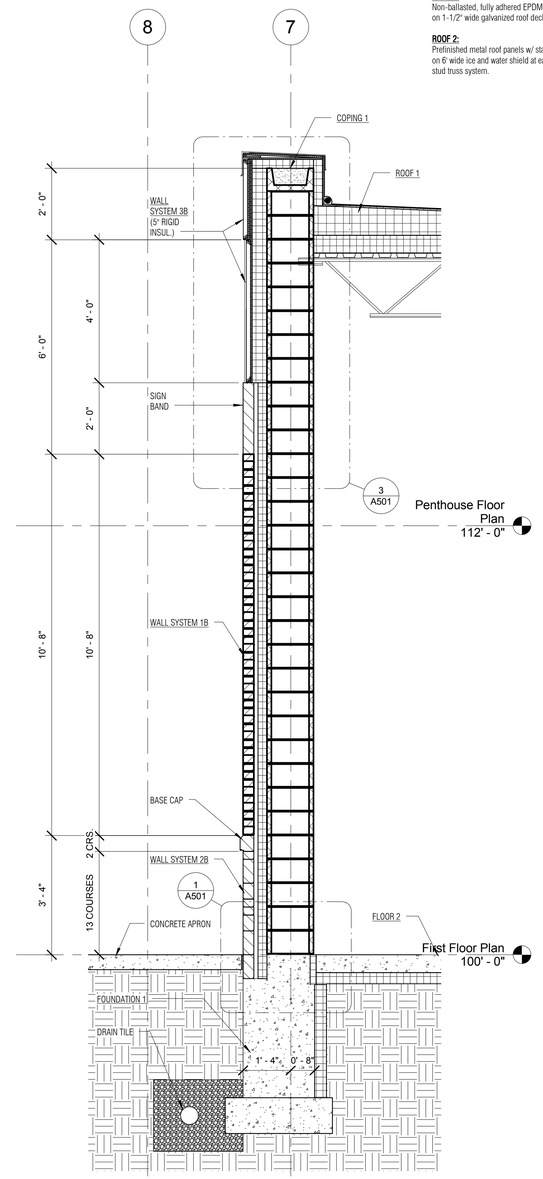
EXTERIOR WALL SYSTEM 3A: (Composite Aluminum soffit panel)
Composite aluminum panel system on 1/2" fiber reinforced gypsum sheathing on 3" polyisocyanurate insulation.

EXTERIOR WALL SYSTEM 3B: (Composite Aluminum wall panel)
Composite aluminum panel system on 3" polyisocyanurate insulation on air and vapor barrier on 16" nom. CMU wall.

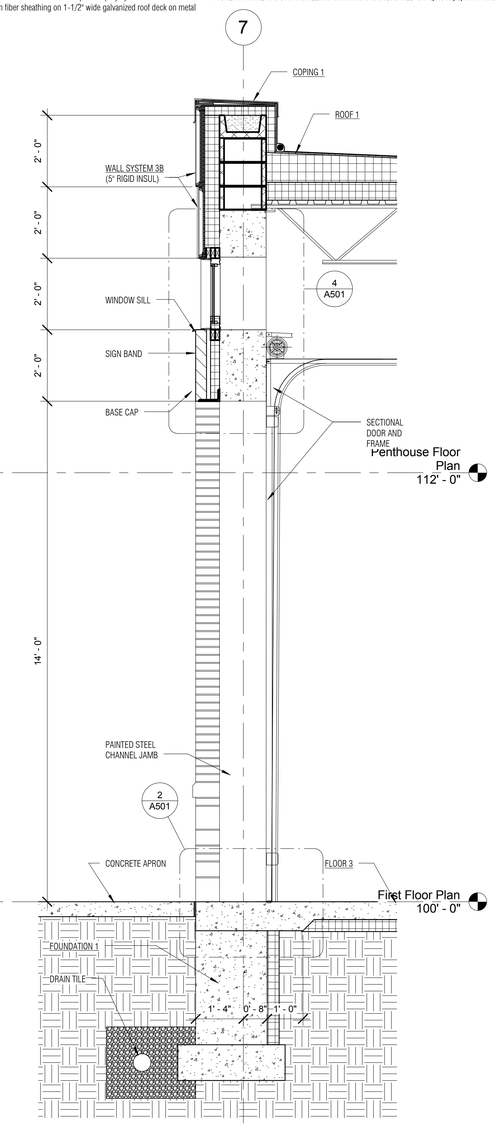
NOTE: TYPICAL VAPOR PROFILE INFORMATION IS INDICATED ON 3/A310, 3/A311 AND 4/A312.



3 Storage Area Wall Section
1/2" = 1'-0"



2 Apparatus Bay Wall Section @ Pilaster
1/2" = 1'-0"



1 Apparatus Bay Wall Section @ Door
1/2" = 1'-0"

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PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

Madison

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

SHEET INFORMATION

REVISIONS

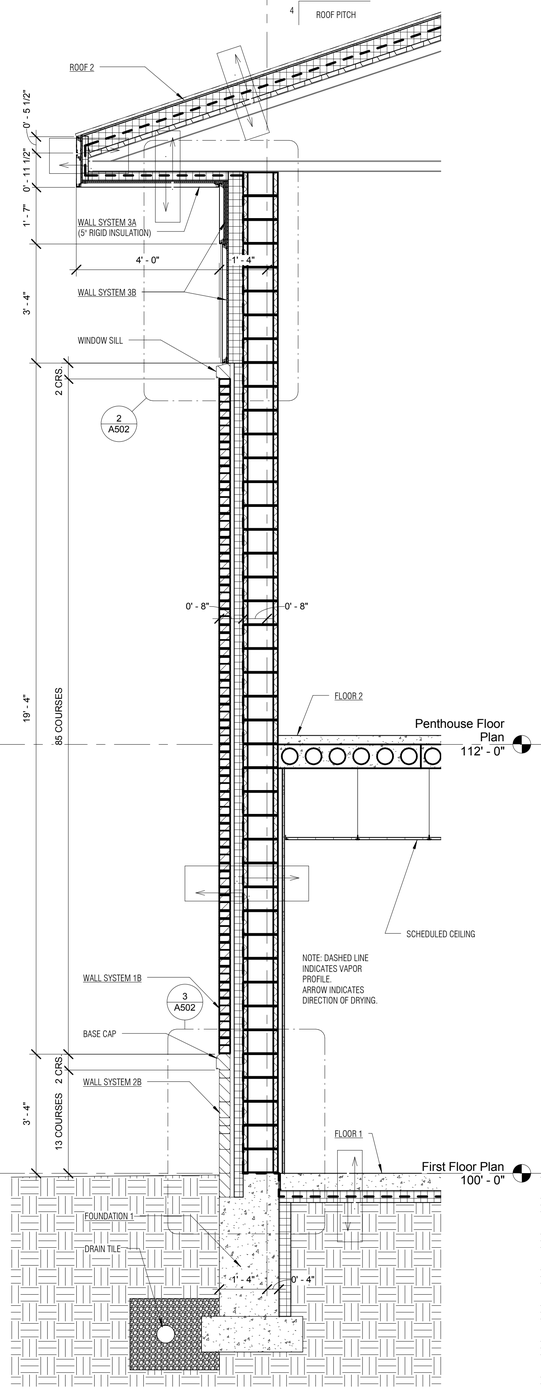
#	DATE	DESCRIPTION

DATE
May 3, 2013

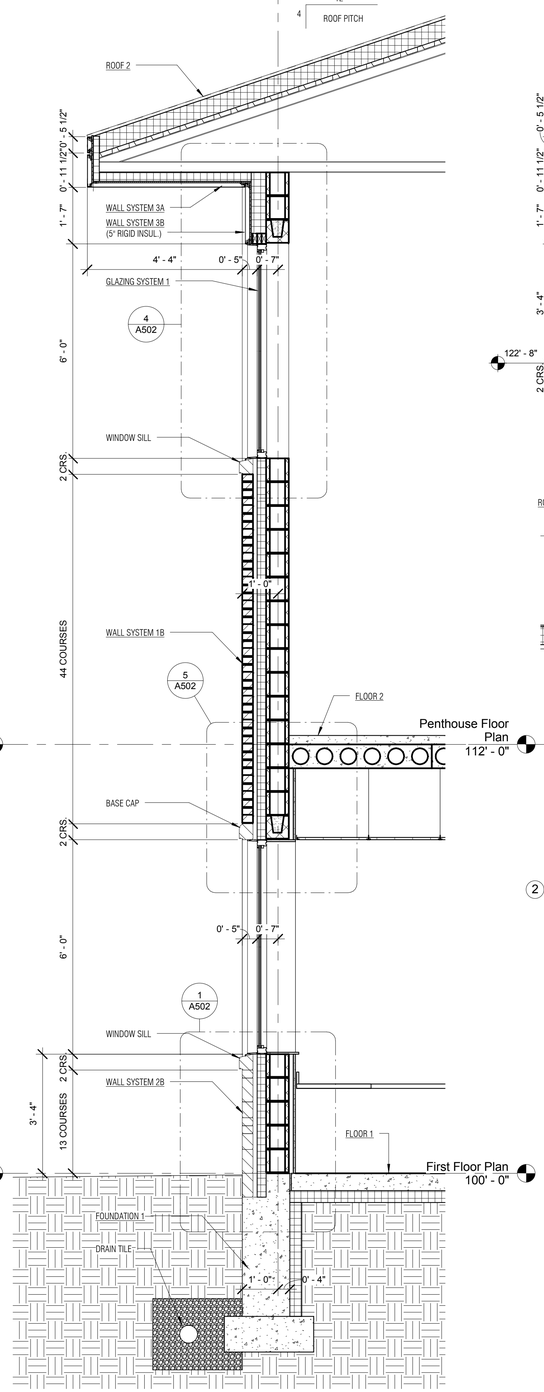
PROJECT NUMBER	STUDIO
120062.00	Sabinash

Wall Sections

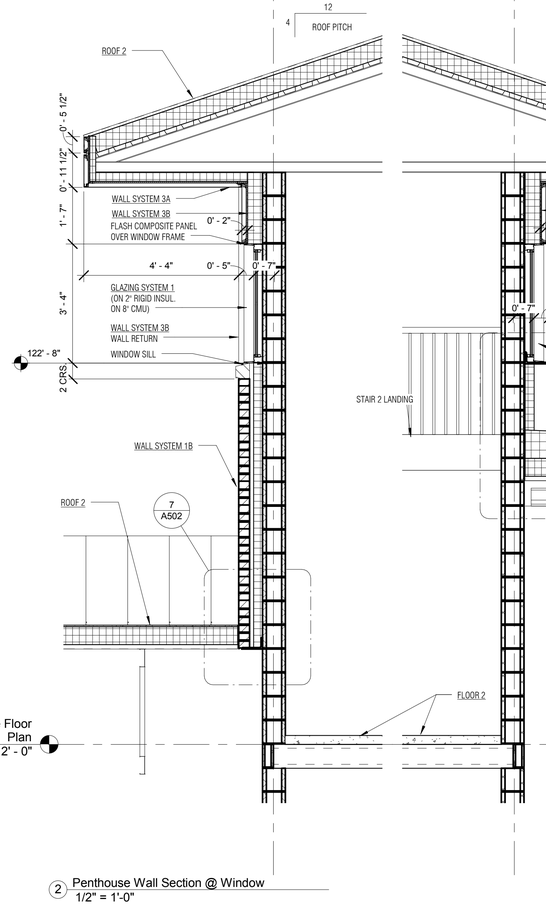
A311



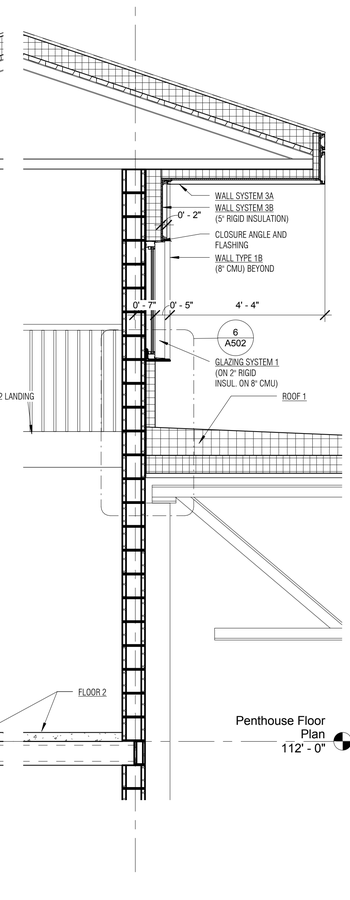
4 Two Story Wall Section @ South Pilaster
1/2" = 1'-0"

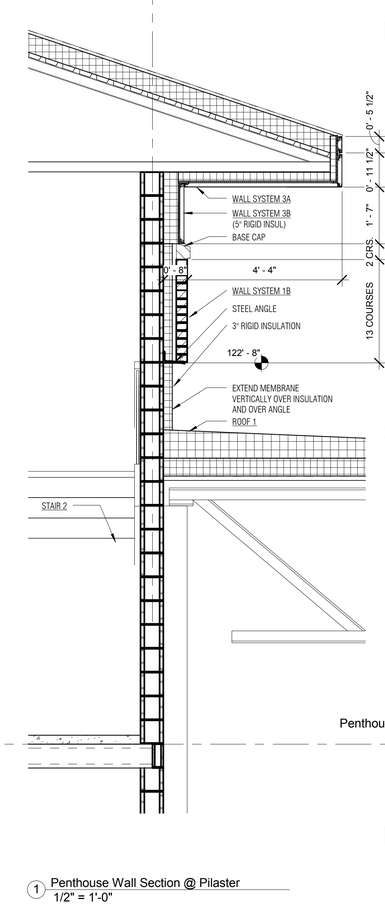


3 Two Story Wall Section @ Window
1/2" = 1'-0"



2 Penthouse Wall Section @ Window
1/2" = 1'-0"





1 Penthouse Wall Section @ Pilaster
1/2" = 1'-0"

BUILDING SYSTEMS, ASSEMBLIES AND COMPONENTS

COMPOSITION OF SYSTEMS INDICATED ON WALL SECTIONS

COPING 1: (Apparatus Bay)
Two-piece, prefinished sheet metal assembly with continuous hold down clips (color selected by architect) over plywood nailer anchored to top of wall.

FLOOR 1: (Slab on grade-living space)
5" concrete slab w/6x6 W2.1xW2.1 WWF over 10-mil polyethylene vapor barrier on 4" rigid insulation and 6" freely draining compacted granular fill sub-base. Provide pre-molded joint fill at columns and perimeter (See structural drawings for reinforcing, control joint locations and additional information).

FLOOR 2: (Penthouse)
3" concrete topping over 10" hollow core precast concrete plank. Topping pitched per floor plan.

FLOOR 3: (Slab on grade-apparatus bay)
6" concrete slab w/6x6 W2.1xW2.1 WWF over 10-mil polyethylene vapor barrier on 4" rigid insulation and 6" freely draining compacted granular fill sub-base. Provide pre-molded joint fill at columns and perimeter (See structural drawings for reinforcing, control joint locations and additional information).

FOUNDATION 1:
Reinforced, formed-in-place, poured concrete foundation wall over reinforced concrete footing. Provide 4" rigid insulation (R-10 min.) from top of concrete footing to top of foundation wall on the interior face of the concrete foundation wall and under entire slab. Provide joint fill at columns and exterior wall once concrete slab is poured.

GLAZING SYSTEM 1:
Fixed fiberglass storefront window w/ integral color.

GLAZING SYSTEM 2:
Fixed painted aluminum storefront window.

HANDRAIL 1:
1-1/2" dia. painted steel rail system to be mounted 3'-0" A.F.F. and attached to wall.

ROOF 1:
Non-ballasted, fully adhered EPDM white on 1/2" roof board on minimum 6" expanded polystyrene foam insulation on 1-1/2" wide galvanized roof deck on joist and girder system.

ROOF 2:
Prefinished metal roof panels w/ standing seams @ 16" o.c. on minimum 6" expanded polystyrene foam insulation on 6' wide ice and water shield at eave on 1/2" gypsum fiber sheathing on 1-1/2" wide galvanized roof deck on metal stud truss system.

STAIR 1:
Concrete-filled painted metal pan stair on steel framing as designed by steel stair supplier.

STAIR 2:
Steel grate, framing and railing stair system, including upper landing.

EXTERIOR WALL SYSTEM 1A: (Brick exterior wall w/ steel stud)
Modular brick with plastic weeps and vents at 36" o.c. with 1" airspace (U.N.O.) on 3" polyisocyanurate insulation on air and vapor barrier on (3-5/8" structural steel stud wall at pilaster on) 6" structural steel stud wall with 5/8" GWB on inside face. Polyeurethane foam air barrier to be applied to inside face of polyisocyanurate insulation.

EXTERIOR WALL SYSTEM 1B: (Brick exterior wall w/ CMU)
Modular brick with plastic weeps and vents at 36" o.c. with 1" airspace (U.N.O.) on 3" polyisocyanurate insulation on (3-5/8" structural steel stud wall at pilaster on) air and vapor barrier on 8" or 16" nom. CMU.

EXTERIOR WALL SYSTEM 2A: (Stone exterior wall w/ steel stud)
Modular stone in a ashlar pattern with plastic weeps and vents at 36" o.c. with 1" airspace (U.N.O.) on 3" polyisocyanurate insulation on air and vapor barrier on (3-5/8" structural steel stud wall at pilaster on) 6" structural steel stud wall with 5/8" GWB on inside face. Polyeurethane foam air barrier to be applied to inside face of polyisocyanurate insulation.

EXTERIOR WALL SYSTEM 2B: (Stone exterior wall w/ CMU)
Modular stone in a ashlar pattern with plastic weeps and vents at 36" o.c. with 1" airspace (U.N.O.) on 3" polyisocyanurate insulation on air and vapor barrier on (3-5/8" structural steel stud wall at pilaster on) 8" nom. CMU wall.

EXTERIOR WALL SYSTEM 3A: (Composite Aluminum soffit panel)
Composite aluminum panel system on 1/2" fiber reinforced gypsum sheathing on 3" polyisocyanurate insulation.

EXTERIOR WALL SYSTEM 3B: (Composite Aluminum wall panel)
Composite aluminum panel system on 3" polyisocyanurate insulation on air and vapor barrier on 16" nom. CMU wall.

NOTE: TYPICAL VAPOR PROFILE INFORMATION IS INDICATED ON 3/A310, 3/A311 AND 4/A312.

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PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

Madison

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

SHEET INFORMATION

REVISIONS

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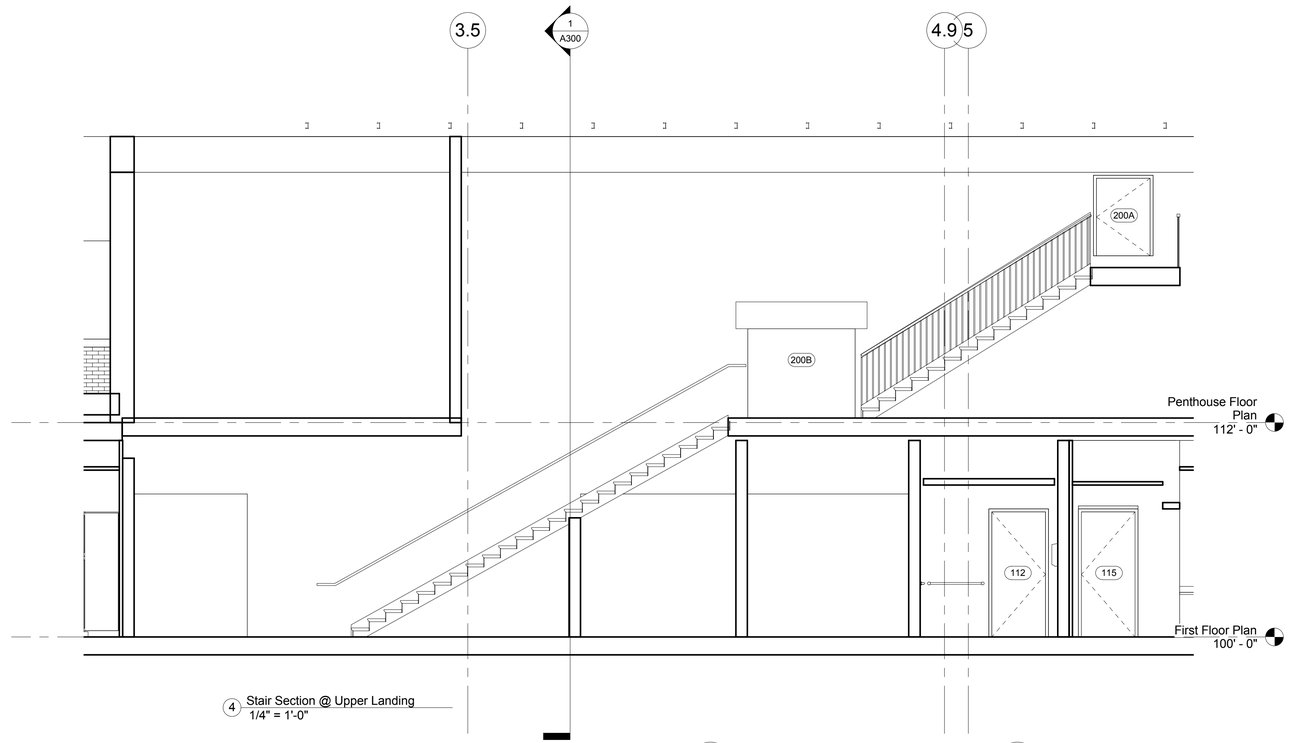
DATE
May 3, 2013

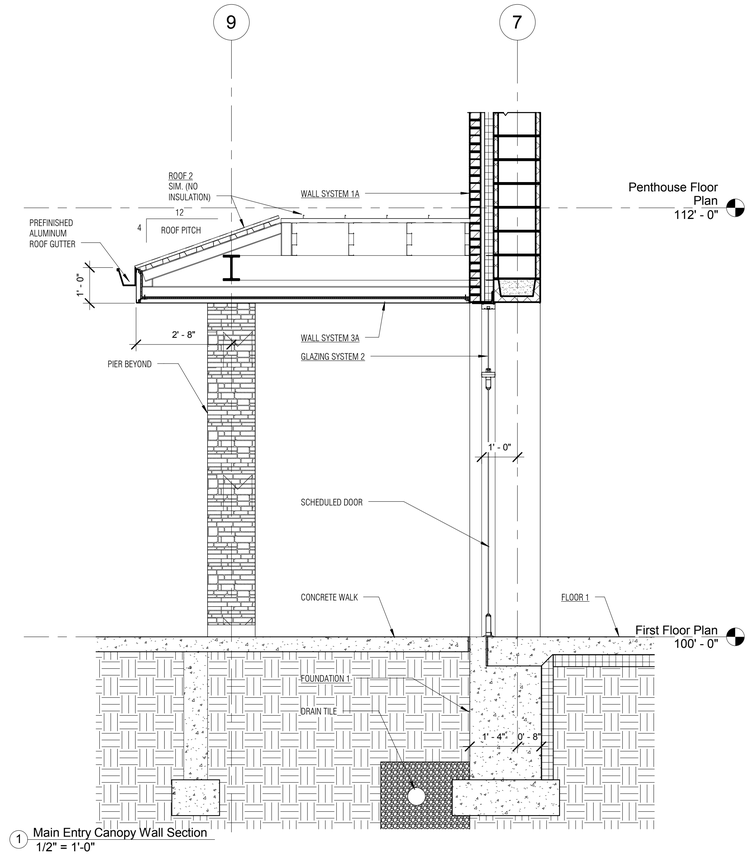
PROJECT NUMBER	STUDIO
120062.00	Sabinash

Wall Sections

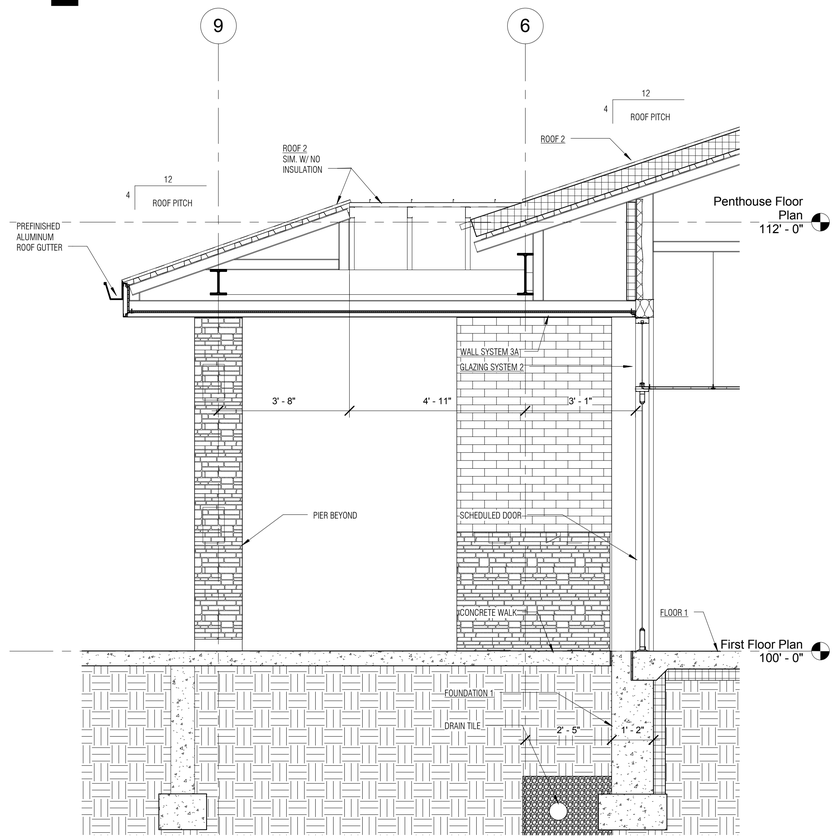
A312



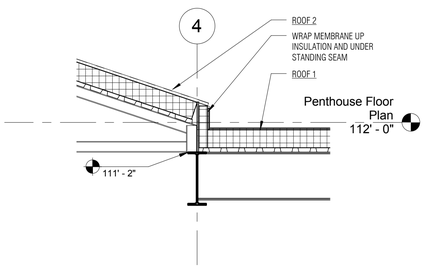
4 Stair Section @ Upper Landing
1/4" = 1'-0"



1 Main Entry Canopy Wall Section
1/2" = 1'-0"



2 Community Entry Canopy Wall Section
1/2" = 1'-0"



3 Roof Section at Gridline 4
1/2" = 1'-0"

BUILDING SYSTEMS, ASSEMBLIES AND COMPONENTS

COMPOSITION OF SYSTEMS INDICATED ON WALL SECTIONS

COPING 1: (Apparatus Bay)
Two-piece, prefinished sheet metal assembly with continuous hold down clips (color selected by architect) over plywood nailer anchored to top of wall.

FLOOR 1: (Slab on grade-living space)
5" concrete slab w/6x6 W2.1xW2.1 WWF over 10-mil polyethylene vapor barrier on 4" rigid insulation and 6" freely draining compacted granular fill sub-base. Provide pre-molded joint fill at columns and perimeter (See structural drawings for reinforcing, control joint locations and additional information).

FLOOR 2: (Penthouse)
3" concrete topping over 10" hollow core precast concrete plank. Topping pitched per floor plan.

FLOOR 3: (Slab on grade-apparatus bay)
6" concrete slab w/6x6 W2.1xW2.1 WWF over 10-mil polyethylene vapor barrier on 4" rigid insulation and 6" freely draining compacted granular fill sub-base. Provide pre-molded joint fill at columns and perimeter (See structural drawings for reinforcing, control joint locations and additional information).

FOUNDATION 1:
Reinforced, formed-in-place, poured concrete foundation wall over reinforced concrete footing. Provide 4" rigid insulation (R-10 min.) from top of concrete footing to top of foundation wall on the interior face of the concrete foundation wall and under entire slab. Provide joint fill at columns and exterior wall once concrete slab is poured.

GLAZING SYSTEM 1:
Fixed fiberglass storefront window w/ integral color.

GLAZING SYSTEM 2:
Fixed painted aluminum storefront window.

HANDRAIL 1:
1-1/2" dia. painted steel rail system to be mounted 3'-0" A.F.F. and attached to wall.

ROOF 1:
Non-ballasted, fully adhered EPDM white on 1/2" roof board on minimum 6" expanded polystyrene foam insulation on 1-1/2" wide galvanized roof deck on joist and girder system.

ROOF 2:
Prefinished metal roof panels w/ standing seams @ 16" o.c. on minimum 6" expanded polystyrene foam insulation on 6' wide ice and water shield at eave on 1/2" gypsum fiber sheathing on 1-1/2" wide galvanized roof deck on metal stud truss system.

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Modular brick with plastic weeps and vents at 36" o.c. with 1" airspace (U.N.O.) on 3" polyisocyanurate insulation on air and vapor barrier on (3-5/8" structural steel stud wall at pilaster on) 6" structural steel stud wall with 5/8" GWB on inside face. Polyeurethane foam air barrier to be applied to inside face of polyisocyanurate insulation.

EXTERIOR WALL SYSTEM 1B: (Brick exterior wall w/ CMU)
Modular brick with plastic weeps and vents at 36" o.c. with 1" airspace (U.N.O.) on 3" polyisocyanurate insulation on (3-5/8" structural steel stud wall at pilaster on) air and vapor barrier on 8" or 16" norm. CMU.

EXTERIOR WALL SYSTEM 2A: (Stone exterior wall w/ steel stud)
Modular stone in a ashlar pattern with plastic weeps and vents at 36" o.c. with 1" airspace (U.N.O.) on 3" polyisocyanurate insulation on air and vapor barrier on (3-5/8" structural steel stud wall at pilaster on) 6" structural steel stud wall with 5/8" GWB on inside face. Polyeurethane foam air barrier to be applied to inside face of polyisocyanurate insulation.

EXTERIOR WALL SYSTEM 2B: (Stone exterior wall w/ CMU)
Modular stone in a ashlar pattern with plastic weeps and vents at 36" o.c. with 1" airspace (U.N.O.) on 3" polyisocyanurate insulation on air and vapor barrier on (3-5/8" structural steel stud wall at pilaster on) 8" nom. CMU wall.

EXTERIOR WALL SYSTEM 3A: (Composite Aluminum soffit panel)
Composite aluminum panel system on 1/2" fiber reinforced gypsum sheathing on 3" polyisocyanurate insulation.

EXTERIOR WALL SYSTEM 3B: (Composite Aluminum wall panel)
Composite aluminum panel system on 3" polyisocyanurate insulation on air and vapor barrier on 16" nom. CMU wall.

NOTE: TYPICAL VAPOR PROFILE INFORMATION IS INDICATED ON 3/A310, 3/A311 AND 4/A312.

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KEY PLAN

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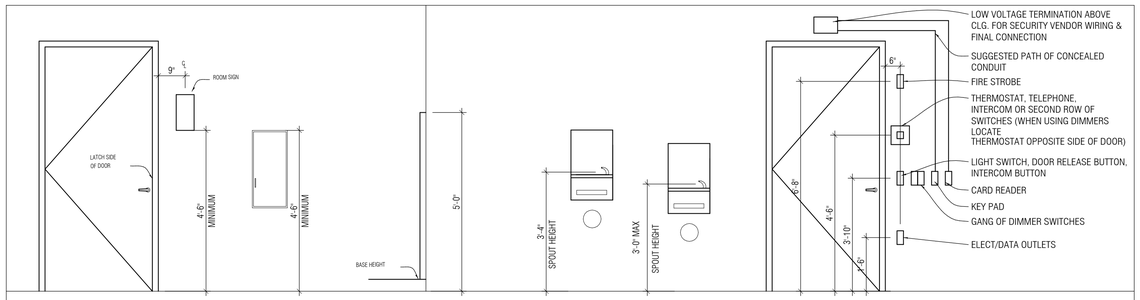
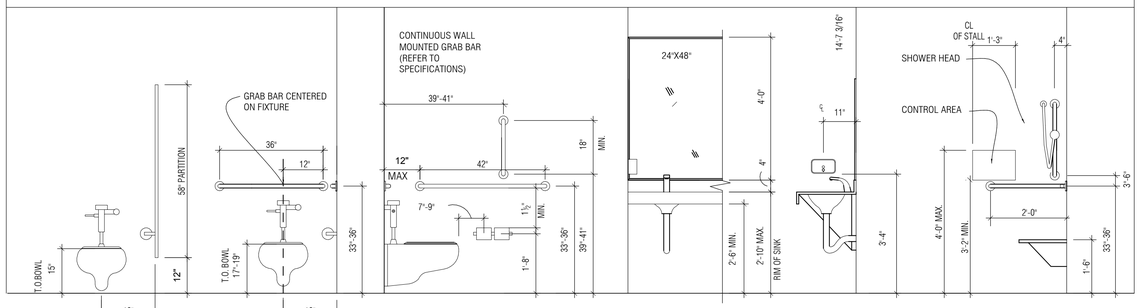
Wall Sections

A313



ROOM SIGNAGE | FIRE EXTINGUISHER CABINET | TYPICAL CORNER GUARD | STANDARD E.W.C | ADA E.W.C. | TYPICAL DEVICES @ DOOR



STANDARD WATER CLOSET | ADA WATER CLOSET | ADA WATER CLOSET-SIDE ELEVATION | LAVATORY, SOAP DISPENSER, AND MIRROR | SHOWER COMPARTMENT

GENERAL NOTE:

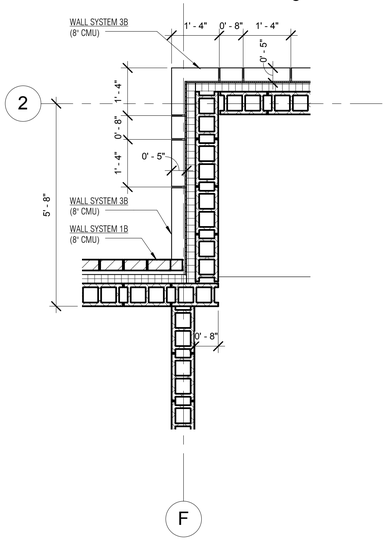
LIGHT SWITCHES, ELECTRICAL OUTLETS, AND OTHER ENVIRONMENTAL CONTROLS SHALL BE MOUNTED NO HIGHER THAN 48" AND NO LOWER THAN 15"\ ABOVE FINISHED FLOOR. IF THE CONTROL IS MOUNTED ABOVE A COUNTER OR OTHER OBSTRUCTION, WHICH IS BETWEEN 20-25" IN DEPTH, THE MAXIMUM MOUNTING HEIGHT SHALL BE LOWERED TO 44".

FLOOR PLAN GENERAL NOTES

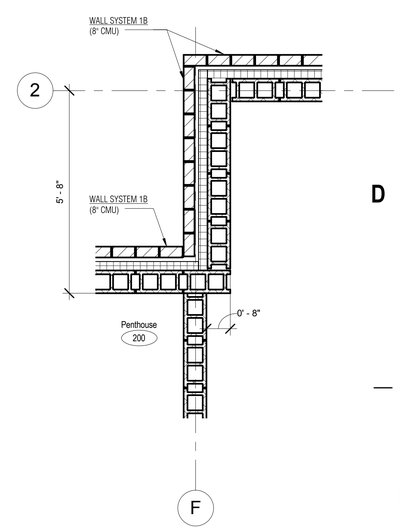
- WALLS ARE TO BE WALL TYPE 2, UNLESS NOTED OTHERWISE.
- FIRST FLOOR TOP OF SLAB ELEVATION 100'-0", UNLESS NOTED OTHERWISE. ROOMS WITH FLOOR DRAINS TO PITCH 1":10' TOWARD DRAINS.
- PENTHOUSE TOPPING ELEVATION 112'-3" AT PERIMETER WITH TOPPING PITCH 1":10' TOWARD DRAINS.
- EXTERIOR WINDOW TYPES INDICATED ON EXTERIOR ELEVATIONS; INTERIOR WINDOW TYPES ON FLOOR PLANS.
- TOP OF TACKBOARDS AND MARKERBOARDS TO BE INSTALLED WITH TOP OF BOARD AT 7'-2" A.F.F.
- CMU WALL VERTICAL CONTROL JOINTS TO BE NO MORE THAN 24'-0" O.C.
- PROVIDE 3/4" PLYWOOD AT ELECTRICAL ROOM 122 WALLS.

TOILET ACCESSORIES SCHEDULE

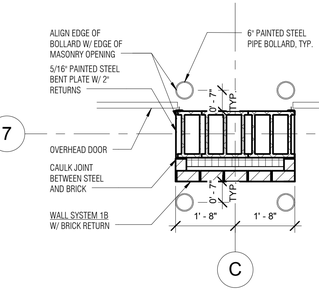
A GRAB BARS - 36" HORIZONTAL BEHIND TOILET, 42" HORIZONTAL AND 18" VERTICAL SIDE OF TOILET
B DOUBLE ROLL TOILET TISSUE DISPENSER - SUPPLIED BY OWNER. G.C. TO INSTALL BLOCKING AT DISPENSER LOCATION AFTER COORDNATING W/ OWNER.
C HAND TOWEL DISPENSER - SUPPLIED BY OWNER. G.C. TO INSTALL BLOCKING AT DISPENSER LOCATION AFTER COORDINATING W/ OWNER.
D WALL MOUNTED SOAP DISPENSER - SUPPLIED BY OWNER
E FRAMELESS 24"x48" MIRROR W/ METAL CLIP FASTENERS
F SINGLE ROBE HOOK
G TRANSFER TYPE SHOWER ACCESSIBLE GRAB BAR(S)
H TRANSFER TYPE SHOWER ACCESSIBLE FOLDING SEAT



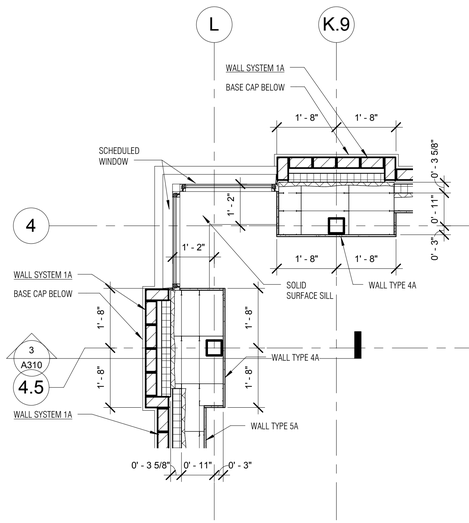
9 Penthouse 200 Enlarged Plan (Elev. 118'-0")
1/2" = 1'-0"



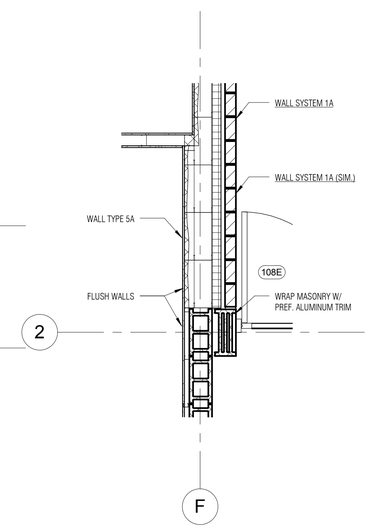
8 Penthouse 200 Enlarged Plan (Elev. 116'-0")
1/2" = 1'-0"



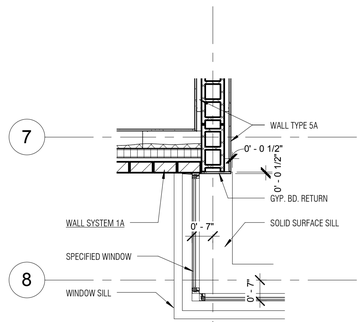
11 Apparatus Bay Door Enlarged Plan
1/2" = 1'-0"



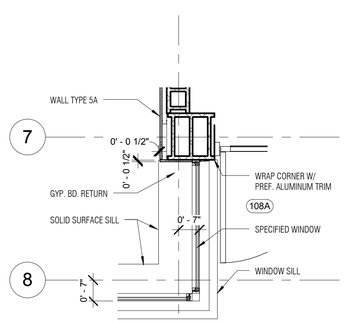
10 Community Room 103 Enlarged Plan
1/2" = 1'-0"



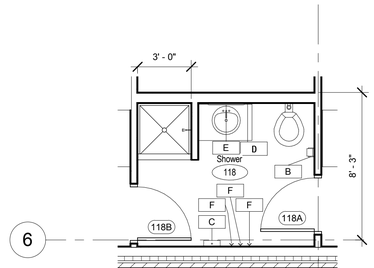
7 Sleep 137C Enlarged Plan
1/2" = 1'-0"



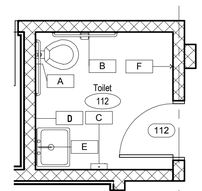
6 Office 116 Enlarged Plan
1/2" = 1'-0"



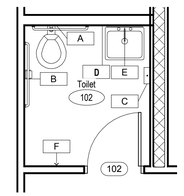
5 Watch Room 113 Enlarged Plan
1/2" = 1'-0"



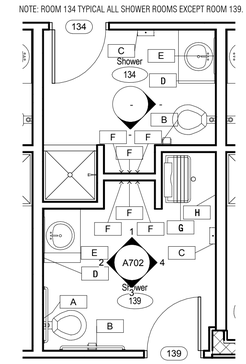
4 Shower 118 Enlarged Plan
1/4" = 1'-0"



3 Toilet 112 Enlarged Plan
1/4" = 1'-0"



2 Toilet 102 Enlarged Plan
1/4" = 1'-0"



1 Typical Shower Area Enlarged Plan
1/4" = 1'-0"

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PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

Madison

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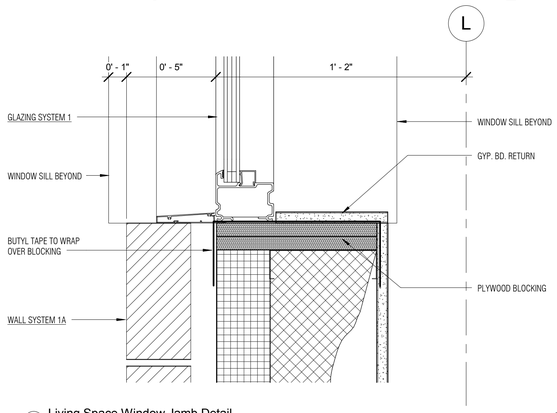
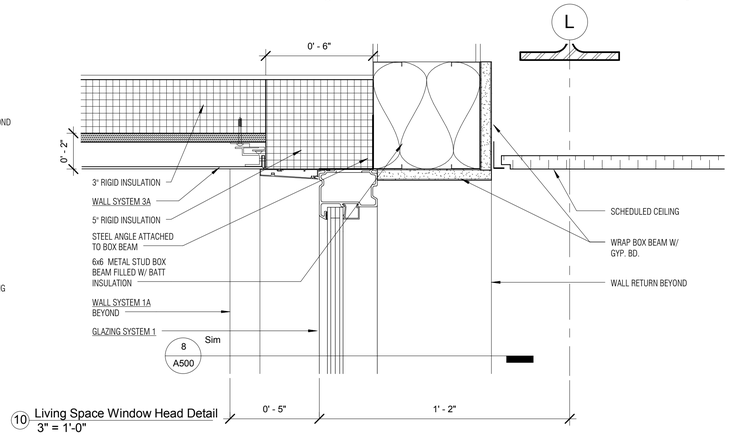
Enlarged Floor Plans

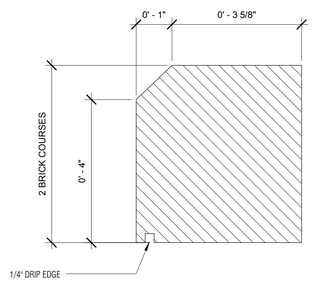
A400



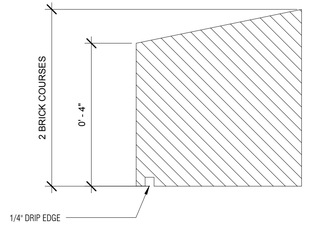
8 Living Space Window Jamb Detail
3" = 1'-0"



10 Living Space Window Head Detail
3" = 1'-0"

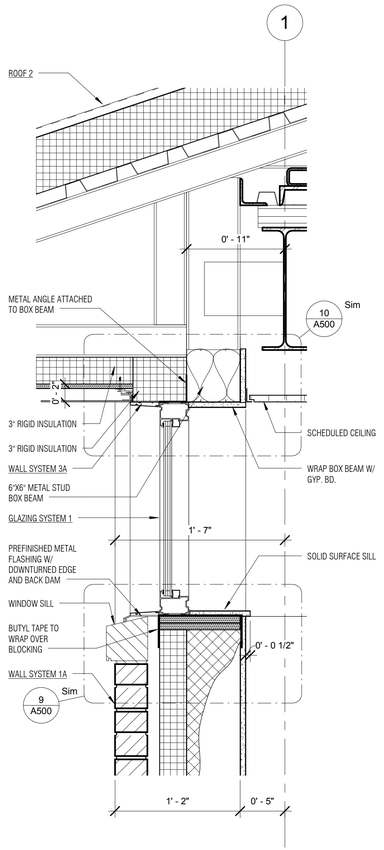


BASE CAP

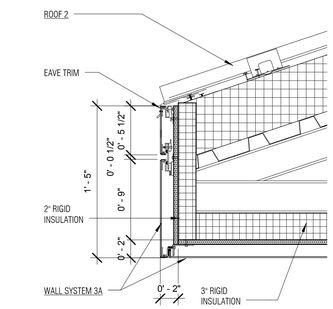


WINDOW SILL

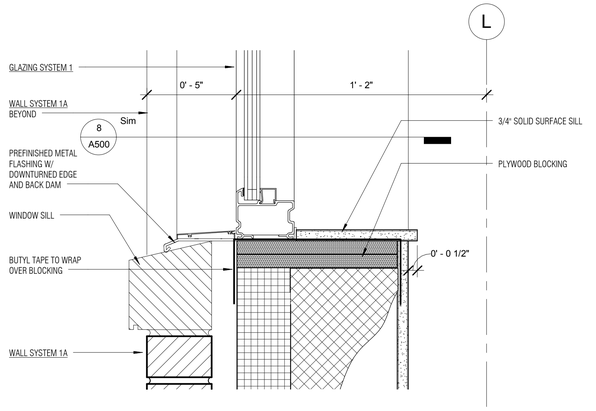
6 Stone Profiles
6" = 1'-0"



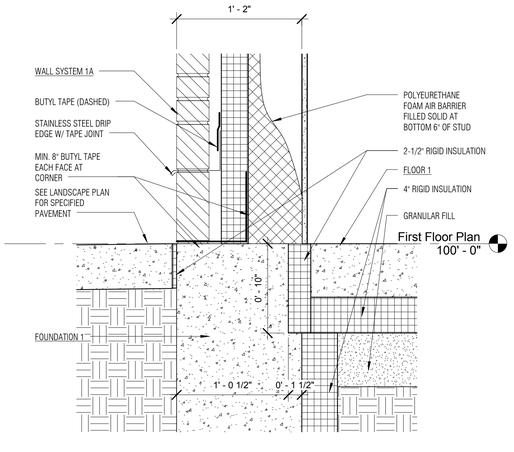
5 Sleep Area Head Detail
1 1/2" = 1'-0"



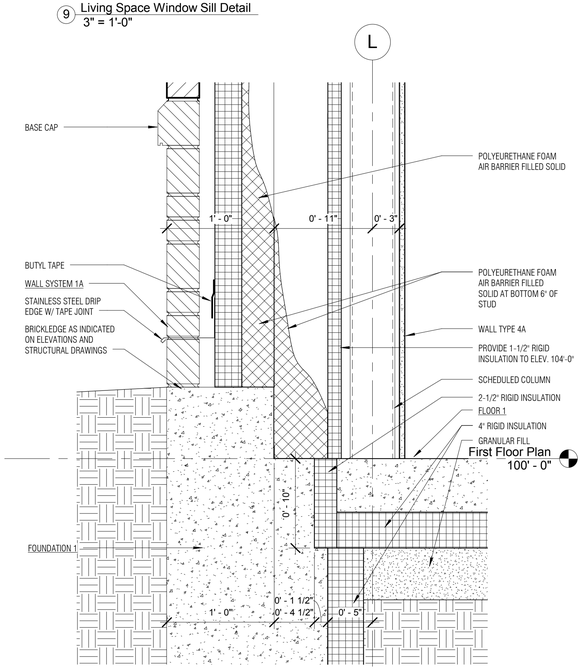
7 Soffit Edge Detail
1 1/2" = 1'-0"



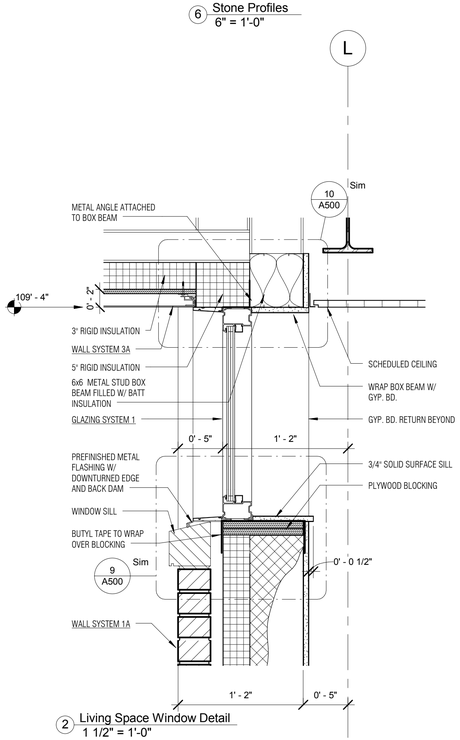
9 Living Space Window Sill Detail
3" = 1'-0"



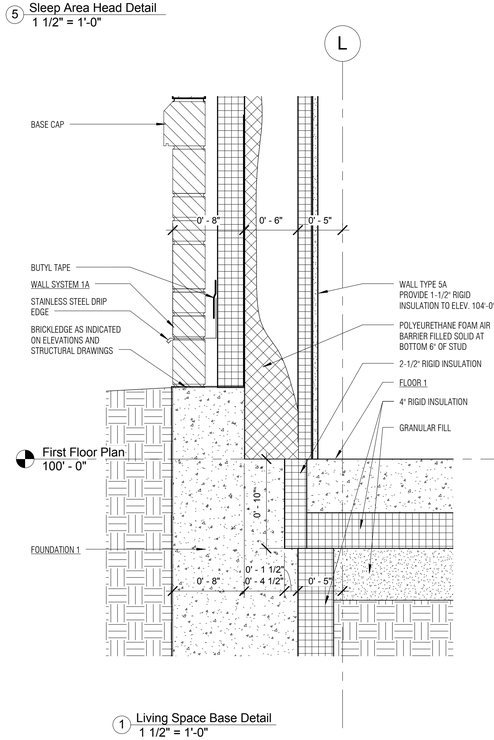
4 Typical Wall Base Detail
1 1/2" = 1'-0"



3 Living Space Pier Base Detail
1 1/2" = 1'-0"



2 Living Space Window Detail
1 1/2" = 1'-0"



1 Living Space Base Detail
1 1/2" = 1'-0"

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PROJECT NFORMATION

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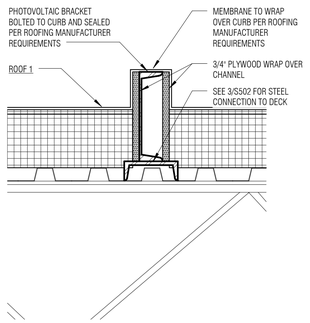
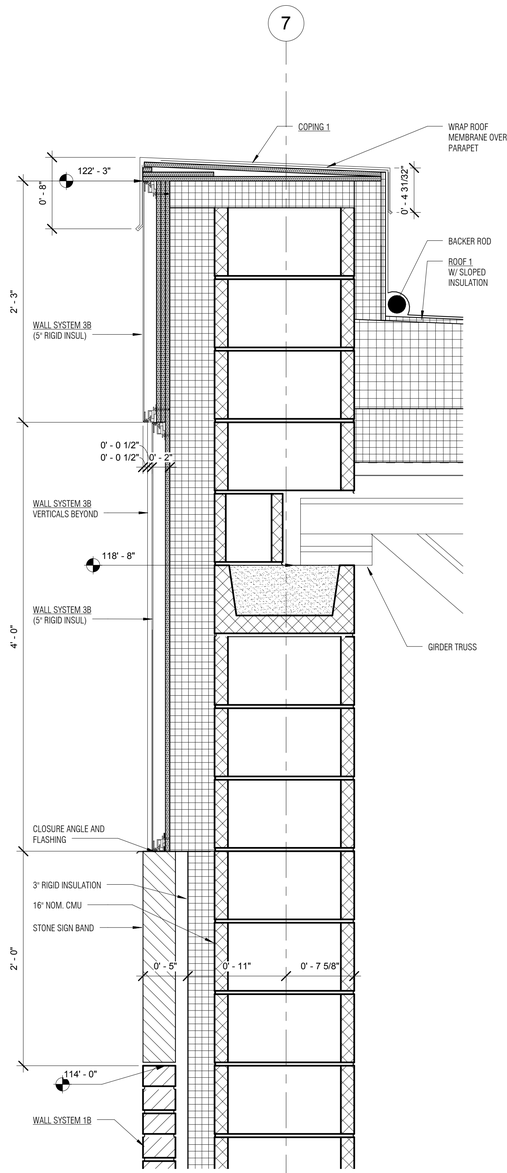
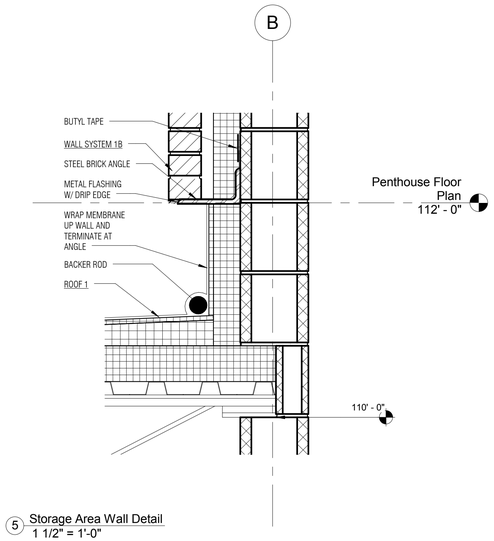


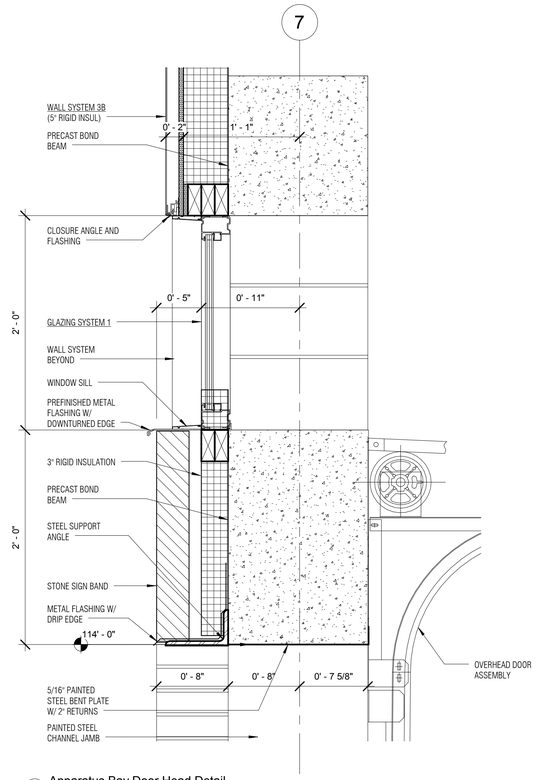
6 Photovoltaic Curb Detail
1 1/2" = 1'-0"



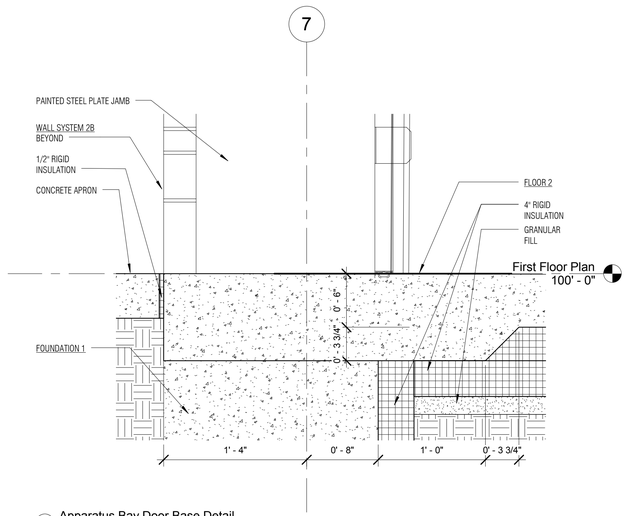
3 Apparatus Bay Head Detail
1 1/2" = 1'-0"



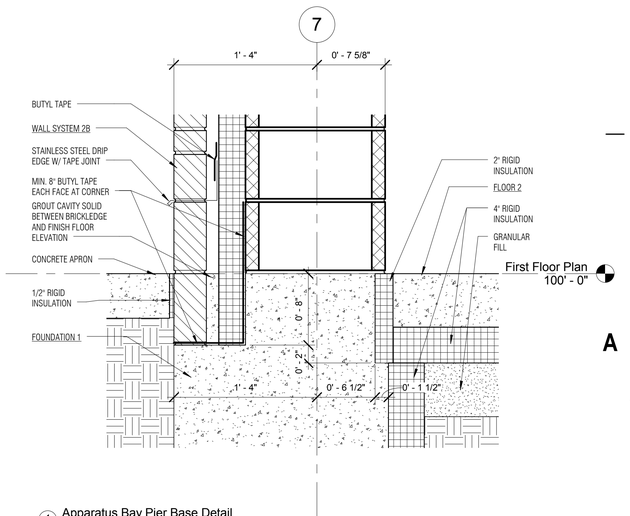
5 Storage Area Wall Detail
1 1/2" = 1'-0"



4 Apparatus Bay Door Head Detail
1 1/2" = 1'-0"



2 Apparatus Bay Door Base Detail
1 1/2" = 1'-0"



1 Apparatus Bay Pier Base Detail
1 1/2" = 1'-0"

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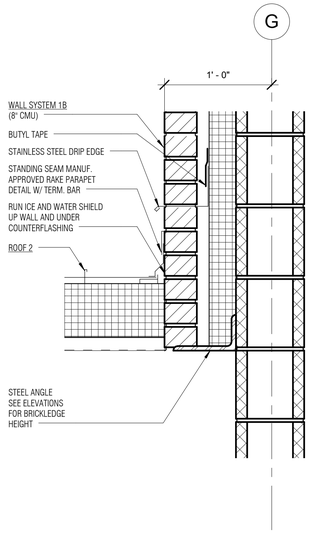
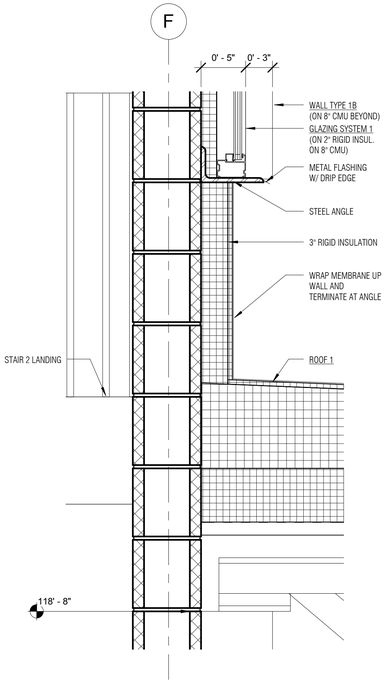
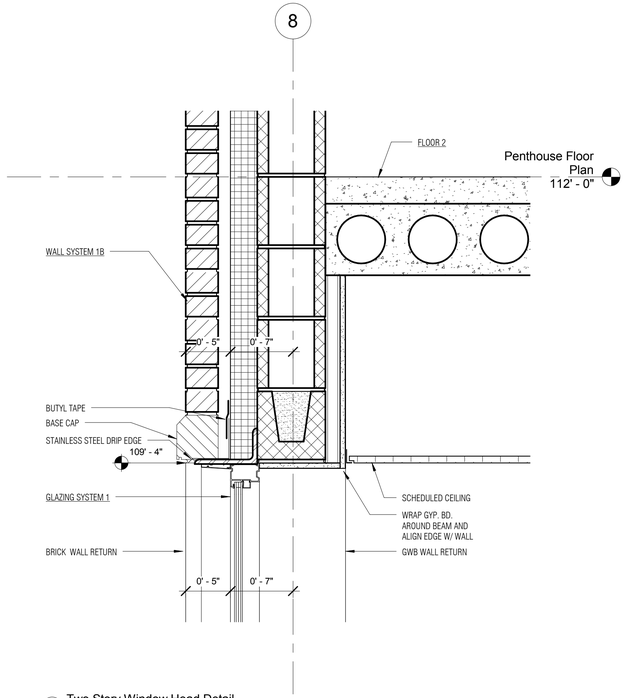


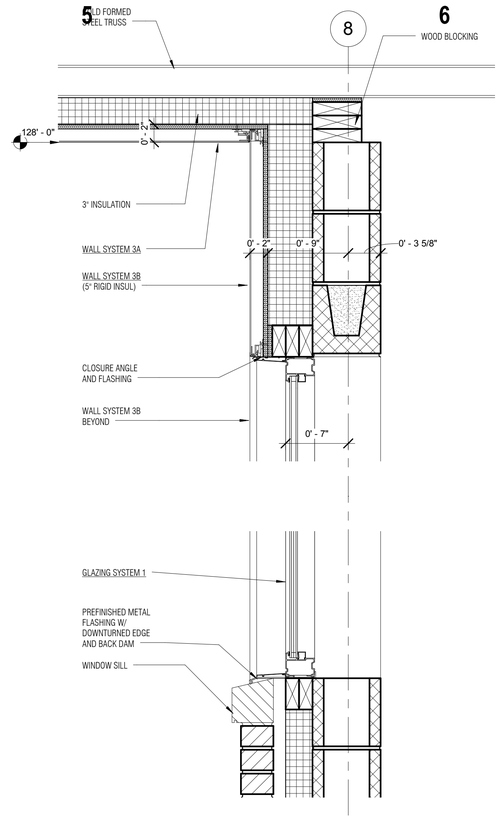
7 Penthouse Detail @ East Wall
1 1/2" = 1'-0"



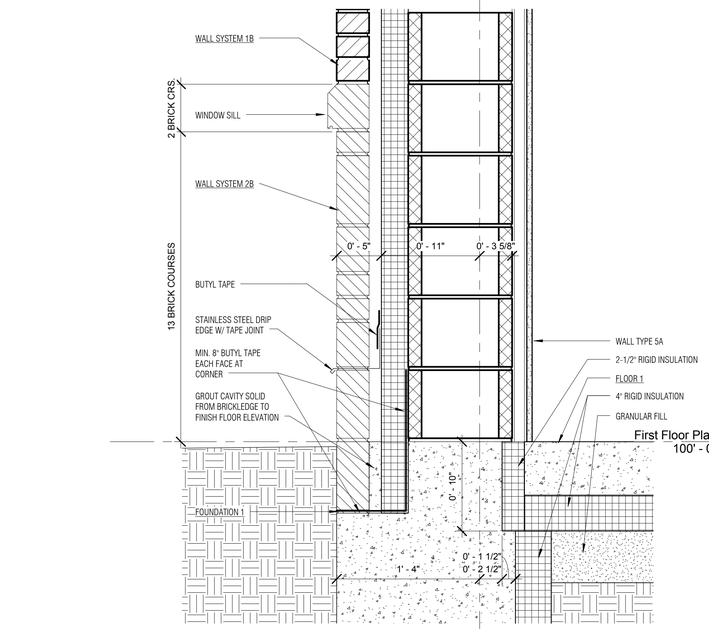
6 Two Story Roof Detail at Apparatus Bay
1 1/2" = 1'-0"



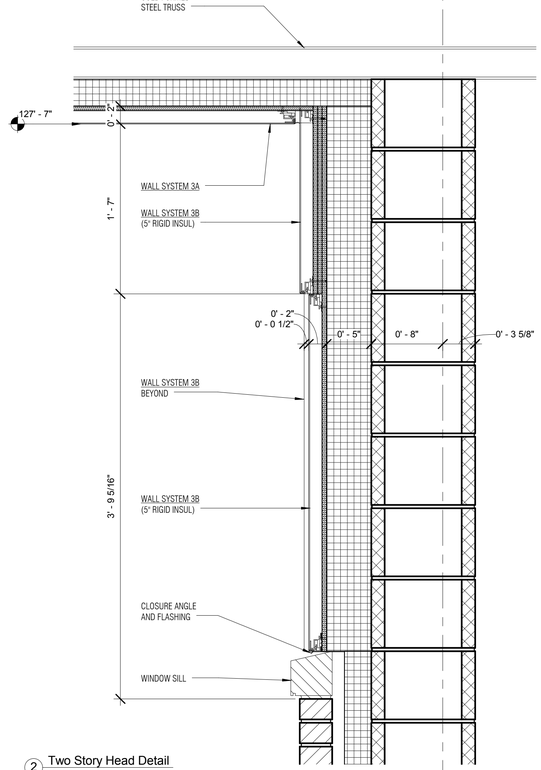
5 Two Story Window Head Detail
1 1/2" = 1'-0"



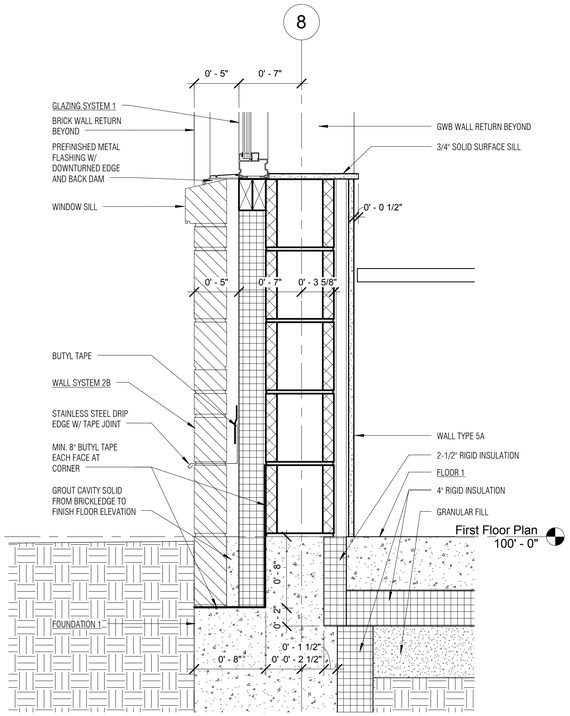
4 Two Story Upper Window Detail
1 1/2" = 1'-0"



3 Two Story Pier Base Detail
1 1/2" = 1'-0"



2 Two Story Head Detail
1 1/2" = 1'-0"



1 Two Story Base Detail
1 1/2" = 1'-0"

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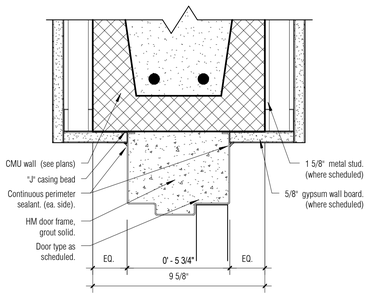
Door Schedule

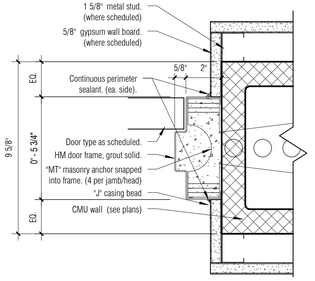
Mark	Width	Height	Door Material	Door Type	Finish	Frame Material	Frame Type	Frame Finish	Hardware	Frame Head Detail	Frame Detail Jamb	Comments
101	3' - 0"	7' - 0"	ALUM	FG	PT	ALUM	B	PT	1	5/A600	4/A600	
102	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	16	3/A600	1, 2/A600	
103	3' - 0"	8' - 0"	ALUM	FG	PT	ALUM	A	PT	4	3/A600	1, 2/A600	
104	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	18	3/A600	1, 2/A600	
107	3' - 8"	7' - 0"	FRP	F	--	ALUM	C	PT	8	5/A600	4/A600	LOUVER IN DOOR AND TRANSOM
108A	3' - 0"	7' - 0"	ALUM	FG	PT	ALUM	B	PT	3	5/A600	4/A600	
108B	13' - 0"	14' - 0"	ALUM	OH	PT	ST	--	PT	5	--	--	
108C	13' - 0"	14' - 0"	ALUM	OH	PT	ST	--	PT	5	--	--	
108D	13' - 0"	14' - 0"	ALUM	OH	PT	ST	--	PT	5	--	--	
108E	3' - 0"	7' - 0"	ALUM	FG	PT	ALUM	B	PT	3	5/A600	4/A600	
108F	13' - 0"	14' - 0"	ALUM	OH	PT	ST	--	PT	5	--	--	
108G	13' - 0"	14' - 0"	ALUM	OH	PT	ST	--	PT	5	--	--	
108H	13' - 0"	14' - 0"	ALUM	OH	PT	ST	--	PT	5	--	--	
108I	3' - 0"	7' - 0"	FRP	F	PT	ALUM	C	PT	7	5/A600	4/A600	WIRELESS ACCESS CONTROLLER, WINDOW TRANSOM
112	3' - 0"	7' - 0"	HM	F	--	HM	B	PT	16	5/A600	4/A600	
114	3' - 0"	7' - 0"	HM	F	PT	HM	B	PT	27	5/A600	4/A600	
115	3' - 0"	7' - 0"	HM	NL	PT	HM	B	PT	25	5/A600	4/A600	
116	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	19	3/A600	1, 2/A600	
117	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	17	3/A600	1/A600	
118A	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	15	3/A600	1, 2/A600	
118B	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	15	3/A600	1, 2/A600	
119	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	22	3/A600	1, 2/A600	
120	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	17	3/A600	1/A600	
121A	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	10	3/A600	1, 2/A600	WIRELESS ACCESS CONTROLLER
121B	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	12	3/A600	1, 2/A600	
122	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	26	3/A600	1, 2/A600	
124	3' - 0"	7' - 0"	HM	F	PT	HM	B	PT	23	5/A600	4/A600	
126	4' - 6"	7' - 0"	WD	F	ST	HM	A	PT	24	3/A600	1, 2/A600	
128	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	20	3/A600	1/A600	
130	3' - 0"	8' - 0"	ALUM	FG	PT	ALUM	B	PT	2	5/A600	4/A600	WIRELESS ACCESS CONTROLLER
131A	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	21	3/A600	1, 2/A600	
131B	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	21	3/A600	1, 2/A600	
132	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	16	3/A600	1, 2/A600	
133	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	16	3/A600	1, 2/A600	
134	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	16	3/A600	1, 2/A600	
135	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	16	3/A600	1, 2/A600	
136	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	11	3/A600	1, 2/A600	
137	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	21	3/A600	1, 2/A600	
138	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	16	3/A600	1, 2/A600	
139	3' - 0"	7' - 0"	WD	F	ST	HM	A	PT	16	3/A600	1, 2/A600	
140	3' - 0"	7' - 0"	HM	NL	PT	HM	B	PT	25	5/A600	4/A600	
141	3' - 0"	7' - 0"	WD	F	ST	HM	B	PT	13	5/A600	4/A600	
200A	3' - 0"	4' - 4"	FRP	F	--	ALUM	B	PT	9	5/A600	4/A600	
200B	6' - 0"	5' - 0"	ALUM	OC	PT	HM	--	PT	6	--	--	
200C	3' - 0"	7' - 0"	FRP	F	--	ALUM	B	PT	9	5/A600	4/A600	

Window Schedule

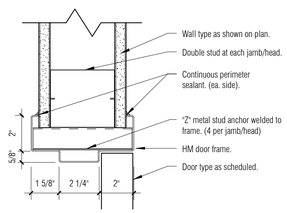
Mark	Type Mark	Construction Type	Width	Height	Frame Finish	Sill Height	Comments
1	I	FIBERGLASS	5' - 8"	2' - 0"	PT	7' - 4"	
2	I	FIBERGLASS	5' - 8"	2' - 0"	PT	7' - 4"	
3	II	FIBERGLASS	3' - 4"	6' - 0"	PT	3' - 4"	
4	II	FIBERGLASS	3' - 4"	6' - 0"	PT	3' - 4"	
5	I	FIBERGLASS	5' - 8"	2' - 0"	PT	7' - 4"	
6	I	FIBERGLASS	5' - 8"	2' - 0"	PT	7' - 4"	
7	I	FIBERGLASS	5' - 8"	2' - 0"	PT	7' - 4"	
8	I	FIBERGLASS	5' - 8"	2' - 0"	PT	7' - 4"	
9	II	FIBERGLASS	3' - 4"	6' - 0"	PT	3' - 4"	
10	II	FIBERGLASS	3' - 4"	6' - 0"	PT	3' - 4"	
11	I	FIBERGLASS	5' - 8"	2' - 0"	PT	7' - 4"	
12	I	FIBERGLASS	5' - 8"	2' - 0"	PT	7' - 4"	
13	III	FIBERGLASS	3' - 4"	4' - 0"	PT	3' - 4"	
14	III	FIBERGLASS	3' - 4"	4' - 0"	PT	3' - 4"	
15	XIX	FIBERGLASS	5' - 4"	4' - 0"	PT	3' - 4"	
16	XIX	FIBERGLASS	5' - 4"	4' - 0"	PT	3' - 4"	
17	III	FIBERGLASS	3' - 4"	4' - 0"	PT	3' - 4"	
19	I	FIBERGLASS	5' - 8"	2' - 0"	PT	7' - 4"	
20	I	FIBERGLASS	5' - 8"	2' - 0"	PT	7' - 4"	
21	I	FIBERGLASS	5' - 8"	2' - 0"	PT	7' - 4"	
22	I	FIBERGLASS	5' - 8"	2' - 0"	PT	7' - 4"	
25	VI	FIBERGLASS	7' - 4"	2' - 0"	PT	7' - 4"	
26	VI	FIBERGLASS	7' - 4"	2' - 0"	PT	7' - 4"	
27	VI	FIBERGLASS	7' - 4"	2' - 0"	PT	7' - 4"	
28	VI	FIBERGLASS	7' - 4"	2' - 0"	PT	7' - 4"	
29	VI	FIBERGLASS	7' - 4"	2' - 0"	PT	7' - 4"	
32	VII	FIBERGLASS	4' - 5"	2' - 0"	PT	7' - 4"	
33	VII	FIBERGLASS	4' - 5"	2' - 0"	PT	7' - 4"	
34	VII	FIBERGLASS	4' - 5"	2' - 0"	PT	7' - 4"	
35	VII	FIBERGLASS	4' - 5"	2' - 0"	PT	7' - 4"	
36	XX	FIBERGLASS	3' - 4"	2' - 4"	PT	7' - 0"	DOOR TRANSOM
42	XX	ALUM	4' - 0"	2' - 4"	PT	7' - 0"	DOOR TRANSOM, LOUVER INFILL
43	XX	FIBERGLASS	3' - 4"	2' - 4"	PT	7' - 0"	DOOR TRANSOM
44	XX	FIBERGLASS	3' - 4"	2' - 4"	PT	7' - 0"	DOOR TRANSOM
45	X	FIBERGLASS	4' - 0"	6' - 0"	PT	3' - 4"	
46	II	FIBERGLASS	3' - 4"	6' - 0"	PT	3' - 4"	
47	XI	FIBERGLASS	6' - 4"	6' - 0"	PT	3' - 4"	
48	XI	FIBERGLASS	6' - 4"	6' - 0"	PT	3' - 4"	
49	II	FIBERGLASS	3' - 4"	6' - 0"	PT	3' - 4"	
50	X	FIBERGLASS	4' - 0"	6' - 0"	PT	3' - 4"	
51	XII	FIBERGLASS	4' - 10"	2' - 0"	PT	7' - 4"	
52	XII	FIBERGLASS	4' - 10"	2' - 0"	PT	7' - 4"	
53	XII	FIBERGLASS	4' - 10"	2' - 0"	PT	7' - 4"	
54	XII	FIBERGLASS	4' - 10"	2' - 0"	PT	7' - 4"	
55	XII	FIBERGLASS	4' - 10"	2' - 0"	PT	7' - 4"	
56	XII	FIBERGLASS	4' - 10"	2' - 0"	PT	7' - 4"	
57	XX	FIBERGLASS	3' - 4"	2' - 4"	PT	7' - 0"	DOOR TRANSOM
58	IV	FIBERGLASS	3' - 4"	2' - 0"	PT	16' - 0"	
59	YY	FIBERGLASS	6' - 4"	2' - 0"	PT	4' - 0"	
60	IV	FIBERGLASS	3' - 4"	2' - 0"	PT	4' - 0"	
61	IV	FIBERGLASS	3' - 4"	2' - 0"	PT	4' - 0"	
62	YY	FIBERGLASS	6' - 4"	2' - 0"	PT	4' - 0"	
63	IV	FIBERGLASS	3' - 4"	2' - 0"	PT	4' - 0"	
64	IV	FIBERGLASS	3' - 4"	2' - 0"	PT	4' - 0"	
65	YY	FIBERGLASS	6' - 4"	2' - 0"	PT	4' - 0"	
66	IV	FIBERGLASS	3' - 4"	2' - 0"	PT	4' - 0"	
I1	XIII	FIBERGLASS	6' - 0"	3' - 4"	PT	3' - 4"	
P1	XV	FIBERGLASS	4' - 0"	3' - 4"	PT	10' - 8"	
P2	XVI	FIBERGLASS	8' - 0"	3' - 4"	PT	10' - 8"	LOUVER INFILL
P3	XVI	FIBERGLASS	8' - 0"	3' - 4"	PT	10' - 8"	COMPOSITE METAL INFILL
P4	XVII	FIBERGLASS	8' - 4"	3' - 4"	PT	10' - 8"	COMPOSITE METAL INFILL
P5	XVII	FIBERGLASS	8' - 4"	3' - 4"	PT	10' - 8"	COMPOSITE METAL INFILL
P6	XVII	FIBERGLASS	8' - 4"	3' - 4"	PT	10' - 8"	COMPOSITE METAL INFILL
P7	XVI	FIBERGLASS	8' - 0"	3' - 4"	PT	10' - 8"	COMPOSITE METAL INFILL
P8	XVI	FIBERGLASS	8' - 0"	3' - 4"	PT	10' - 8"	LOUVER INFILL
P9	XV	FIBERGLASS	4' - 0"	3' - 4"	PT	10' - 8"	COMPOSITE METAL INFILL
P10	VIII	FIBERGLASS	3' - 4"	3' - 4"	PT	10' - 8"	COMPOSITE METAL INFILL
P11	XVIII	FIBERGLASS	3' - 0"	6' - 0"	PT	8' - 0"	COMPOSITE METAL INFILL
P12	XIX	FIBERGLASS	6' - 8"	6' - 0"	PT	8' - 0"	COMPOSITE METAL INFILL
P13	XVIII	FIBERGLASS	3' - 0"	6' - 0"	PT	8' - 0"	COMPOSITE METAL INFILL
P14	VIII	FIBERGLASS	3' - 4"	3' - 4"	PT	10' - 8"	COMPOSITE METAL INFILL
P15	XV	FIBERGLASS	4' - 0"	3' - 4"	PT	10' - 8"	COMPOSITE METAL INFILL
P16	XVI	FIBERGLASS	8' - 0"	3' - 4"	PT	10' - 8"	COMPOSITE METAL INFILL
P17	XVI	FIBERGLASS	8' - 0"	3' - 4"	PT	10' - 8"	COMPOSITE METAL INFILL
P18	XVII	FIBERGLASS	8' - 4"	3' - 4"	PT	10' - 8"	COMPOSITE METAL INFILL
P19	XVII	FIBERGLASS	8' - 4"	3' - 4"	PT	10' - 8"	LOUVER INFILL
P20	XVII	FIBERGLASS	8' - 4"	3' - 4"	PT	10' - 8"	COMPOSITE METAL INFILL
P21	XIII	FIBERGLASS	4' - 8"	3' - 4"	PT	10' - 8"	COMPOSITE METAL INFILL
P22	XVI	FIBERGLASS	8' - 0"	3' - 4"	PT	10' - 8"	COMPOSITE METAL INFILL
P23	XV	FIBERGLASS	4' - 0"	3' - 4"	PT	10' - 8"	
P24	VIII	FIBERGLASS	3' - 4"	3' - 4"	PT	10' - 8"	
P25	XVIII	FIBERGLASS	3' - 0"	6' - 0"	PT	8' - 0"	
P26	XIX	FIBERGLASS	6' - 8"	6' - 0"	PT	8' - 0"	ADDITIONAL STOP FOR ETCHED GLASS; SEE 3/A201
P27	XVIII	FIBERGLASS	3' - 0"	6' - 0"	PT	8' - 0"	
P28	VIII	FIBERGLASS	3' - 4"	3' - 4"	PT	10' - 8"	



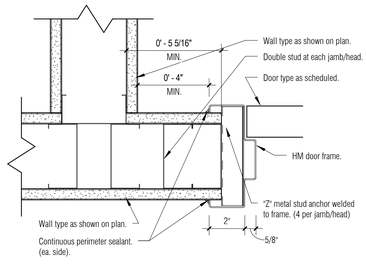
5 Detail - HM Door Frame - Head - CMU
3" = 1'-0"



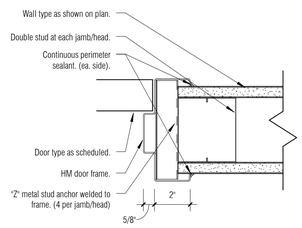
4 Detail - HM Door Frame - Jamb - CMU
3" = 1'-0"



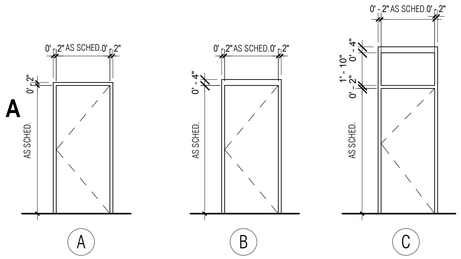
3 Detail - HM Door Frame - Head
3" = 1'-0"



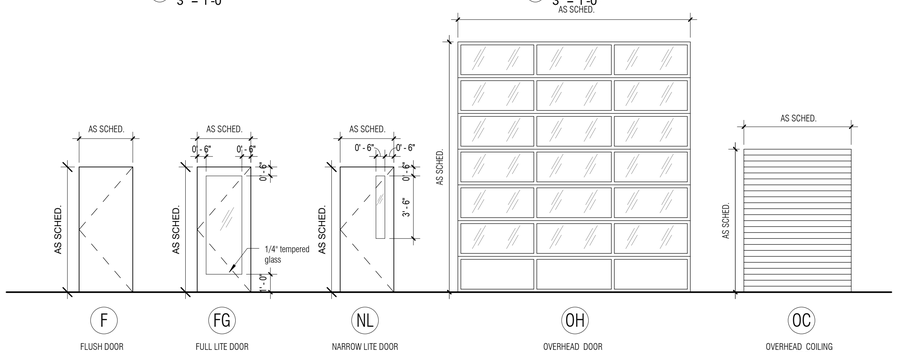
2 Detail - HM Door Frame - Hinge Side
3" = 1'-0"



1 Detail - HM Door Frame - Jamb - Latch Side
3" = 1'-0"



DOOR FRAME TYPES



DOOR TYPES

Zimmerman
ARCHITECTURAL STUDIOS, INC.
2122 West Mt. Vernon Avenue | Milwaukee, WI 53233 | zastudios.com
TELEPHONE [414] 476.9500
FACSIMILE [414] 476.8582

PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

Madison

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

SHEET INFORMATION

REVISIONS

#	DATE	DESCRIPTION

DATE
May 3, 2013

PROJECT NUMBER
120062.00

STUDIO
Sabinash

Door and Frame Schedules

A600

COLOR AND MATERIAL SCHEDULE

MATERIAL ABBREVIATIONS:

ACT	ACOUSTICAL CEILING TILE
APT	ARCHITECTURAL PAVER TILE
APTB	ARCHITECTURAL PAVER TILE BASE
APTT	ARCHITECTURAL PAVER TILE TRIM
CG	CORNER GUARDS
CONC	CONCRETE
CPT	CARPET
CTB	CERAMIC TILE BASE
CTW	CERAMIC TILE WALL
EQB	EPOXY QUARTZ BASE
EQF	EPOXY QUARTZ FLOORING
EXP	EXPOSED
FRP	FIBER REINFORCED PLASTIC PANELS
LAV	LAVATORY
MIR	MIRROR
P	PAINT
PC	PRIVACY CURTAIN
PL	PLASTIC LAMINATE
RCB	RUBBER COVE BASE
RF	RUBBER FLOORING
S	SEALED/SEALER
SSM	SOLID SURFACE MATERIAL
STN	STAIN
WCR	WOOD CHAIR RAIL
WDD	WOOD DOOR
WT	WINDOW TREATMENT

GENERAL NOTES:

1. SUBMIT 8" X 10" COLOR FINISH SAMPLES OF ALL ITEMS FOR ARCHITECT'S APPROVAL BEFORE WORK PROCEEDS.
2. VERIFY ALL STOPPING AND STARTING POINTS FOR COLORS AND FINISHES WITH THE ARCHITECT BEFORE WORK PROCEEDS.
3. ALL GRILLES, FIRE EXTINGUISHER CABINETS, LOUVERS, VENTS, ETC. SHALL BE PAINTED TO MATCH THE SURFACE ON WHICH THEY OCCUR.
4. ALL INTERIOR HOLLOW METAL DOOR AND BORROWED LIGHT FRAMES SHALL BE PAINTED TO MATCH P-4.
5. NEW WOOD DOORS SHALL BE WDD-1.
6. INTERIOR HARDWARE SHALL BE US26D SATIN CHROME.
7. STRINGER, HANDRAIL, GUARDRAIL AND REMAINING METAL STAIR ASSEMBLY SHALL BE PAINTED TO MATCH P-4.
8. ALL WINDOW SILLS SHALL BE SSM-3.
9. WHERE MULTIPLE MATERIALS ARE LOCATED ON FLOOR, SEE FLOOR PATTERN PLAN.
10. WHERE MULTPLE MATERIALS ARE LOCATED ON WALLS, SEE ELEVATIONS.

FINISH COMMENTS:

1. WINDOW TREATMENT: WT-1
2. WINDOW TREATMENT: WT-2
3. PRIVACY CURTAIN: PC-1
4. WALL TILE PATTERN:
   RANDOM, 85% CTW-1, 10% CTW-2 W/ 5% CTW-3 FROM 5'-6" AFF TO CEILING ONLY
   SEE ELEVATIONS 1, 2, 7, 8/A702
   ALL EXPOSED EDGES & OUTSIDE CORNERS OF WALL TILE SHALL BE FINISHED WITH APTT-2
5. SHOWER WALLS: SSM-2
   SHOWER BASIN: ACORN ENGINEERING COMPANY, PALOMINO TAN
6. P-2 OR P-3 AS SCHEDULED TO 7'-2" TO ALIGN WITH TOP OF DOOR FRAME, P-1 ABOVE
7. P-5 TO 9'-0" ABOVE FINISHED FLOOR, P-2 ABOVE
8. TREADS: CONC/S WITH LIGHT BROOM FINISH AND ABRASIVE STRIP AT NOSING
9. PIPES SHALL BE PAINTED TO MATCH P-2
10. FRP TO 4' HIGH AT SINK
11. CAP AT PARTIAL HEIGHT WALL: SSM-3
12. CAP AT PARTIAL HEIGHT WALL: SSM-1
13. INCLUDE HOLD-DOWN CLIPS AT ACT
14. SOFFIT: P-1
15. AT PAINTED WALLS, CTB-1 SHALL BE BUILT UP TO 6" WITH 2" H BULLNOSE TRIM PIECE.
16. WALL TILE PATTERN: RANDOM, 85% CTW-1, 10% CTW-2, 5% CTW-3
17. MARKERBOARD, TACKBOARD OR MAP AREA AS INDICATED ON FLOOR PLAN A100

MATERIAL LIST:

ACT-1 ACOUSTICAL CEILING TILE
ARMSTRONG
CIRRUS
ANGLED TEGULAR
SIZE: 2' X 2' X 3/4"
ITEM #: 584
GRID: 15/16" PRELUDE GRID
(WHITE)
* INCLUDE HOLD-DOWN CLIPS AS SCHEDULED

ACT-2 ACOUSTICAL CEILING TILE
ARMSTRONG
OPTIMA OPEN PLAN
SQUARE TEGULAR
SIZE: 2' X 2' X 1-1/2"
ITEM #: 3253
GRID: 15/16" PRELUDE GRID
(WHITE)

APT-1 ARCHITECTURAL PAVER TILE
CROSSVILLE
SERIES: SHADES
COLOR: AV247 HAZE
SIZE: 12" X 24"
THICKNESS: 10.5MM
FINISH: UPS
GROUT: MAPEI COLOR 47 CHARCOAL
GROUT JOINT: 1/8"
INSTALLATION: OFFSET 1/3 LENGTH OF TILE
(GREY)

APT-2 ARCHITECTURAL PAVER TILE
CROSSVILLE
SERIES: SHADES
COLOR: AV247 HAZE
SIZE: 6" X 24"
THICKNESS: 10.5MM
FINISH: UPS
GROUT: MAPEI COLOR 47 CHARCOAL
GROUT JOINT: 1/8"
INSTALLATION: OFFSET 1/3 LENGTH OF TILE
(GREY)

MATERIAL LIST (CONTINUED):

APTB-1 ARCHITECTURAL PAVER TILE BASE
CROSSVILLE
SERIES: SHADES
COLOR: AV247 HAZE
SIZE: 6" X 12" COVE BASE
THICKNESS: 10MM
FINISH: UPS
GROUT: MAPEI COLOR 47 CHARCOAL
GROUT JOINT: 1/8"
INSTALLATION: JOINTS TO ALIGN W/FLOOR JOINTS
(GREY)

APTT-1 ARCHITECTURAL PAVER TILE TRIM
SCHLUTER
PROFILE: QUADEC IN ANODIZED ALUMINUM
FINISH: SATIN - AE
FOR 10.5MM TILE

APTT-2 ARCHITECTURAL PAVER TILE TRIM
SCHLUTER
PROFILE: QUADEC IN ANODIZED ALUMINUM
FINISH: SATIN - AE
FOR 1/4" TILE

CG-1 CORNER GUARD
INPRO CORPORATION
SURFACE MOUNT BLUNOSE CORNER GUARDS
SERIES 160BN
SIZE: 2" X 2" X 4', 90
COLOR: SAND DUNE 0278
SEE SHEET A800 FOR LOCATIONS
(NEUTRAL)

CG-2 CORNER GUARD
INPRO CORPORATION
SURFACE MOUNT BLUNOSE CORNER GUARDS
SERIES 160BN
SIZE: 2" X 2" X 4', 90
COLOR: CABERNET 0241
SEE SHEET A800 FOR LOCATIONS
(RED)

CONC CONCRETE
SEE SPECIFICATION SECTION 03 30 00

CPT-1 CARPET
TANDUS
STYLE: SPELLBOUND 02744
COLOR: MAGICAL 19504
SIZE: 24" X 24" TILE
METHOD: RANDOM
INSTALLATION: DIRECT GLUE PER MANUFACTURER
(RUST/GREY/BEIGE)

CPT-2 CARPET
TANDUS
STYLE: CONSEQUENCE 03724
COLOR: MUDD 43501
SIZE: 24" X 24" TILE
METHOD: RANDOM
INSTALLATION: DIRECT GLUE PER MANUFACTURER
(GREY)

CPT-3 CARPET
MANNINGTON
STYLE: RECOURSE II
COLOR: TERRACOTTA TRAIL (6514)
SIZE: 24" X 24" TILE
METHOD: QUARTER-TURN
INSTALLATION: DIRECT GLUE PER MANUFACTURER
PROVIDE REDUCER AT APPARATUS BAY LOCATIONS
(RUST)

CTB-1 CERAMIC TILE BASE
CROSSVILLE
SERIES: COLOR BY NUMBERS
COLOR: WT10 A PERFECT TEN
SIZE: 4" X 8" COVE BASE
THICKNESS: 1/4"
FINISH: SATIN
GROUT: MAPEI COLOR 47 CHARCOAL
JOINTS TO ALIGN WITH FLOOR JOINTS WHEN POSSIBLE
(GREY)

CTW-1 CERAMIC TILE WALL
CROSSVILLE
SERIES: COLOR BY NUMBERS
COLOR: WT07 SEVENTH INNING STRETCH
SIZE: 4" X 8" FIELD TILE
THICKNESS: 1/4"
FINISH: GLOSS
GROUT: MAPEI COLOR 11 SAHARA BEIGE
INSTALLATION: RUNNING BOND, JOINTS TO ALIGN W/BASE JOINTS
(LT GREY)

CTW-2 CERAMIC TILE WALL
CROSSVILLE
SERIES: COLOR BY NUMBERS
COLOR: WT10 A PERFECT TEN
SIZE: 4" X 8" FIELD TILE
THICKNESS: 1/4"
FINISH: GLOSS
GROUT: MAPEI COLOR 11 SAHARA BEIGE
INSTALLATION: RUNNING BOND, JOINTS TO ALIGN W/BASE JOINTS
(MED GREY)

CTW-3 CERAMIC TILE WALL
CROSSVILLE
SERIES: COLOR BY NUMBERS
COLOR: WT16 SIXTEEN CANDLES
SIZE: 4" X 8" FIELD TILE
THICKNESS: 1/4"
FINISH: GLOSS
GROUT: MAPEI COLOR 11 SAHARA BEIGE
INSTALLATION: RUNNING BOND, JOINTS TO ALIGN W/BASE JOINTS
(RED)

EQB-1 EPOXY QUARTZ BASE
DEX-O-TEX
DECOR-FLOR BROADCAST
COLOR: DFS-B-14
INTEGRAL BASE TO 6" HIGH
(RED)

EQF-1 EPOXY QUARTZ FLOORING
DEX-O-TEX
DECOR-FLOR BROADCAST
COLOR: DFS-B-14
THICKNESS: 1/8"
(RED)

FRP FIBER REINFORCED PLASTIC PANELS
SEE SPECIFICATION SECTION 09 77 00

LAV-1 LAVATORY
BRADLEY CORPORATION
4000 SERIES NATURAL QUARTZ OMNIDECK WITH RECT EVERO BOWL
COLOR: IVORY COAST
BOWL COLOR: EVERO ANTARCTICA
(NEUTRAL/WHITE)

MATERIAL LIST (CONTINUED):

MIR-1 MIRROR
SEE SPECIFICATION SECTION 08 83 00

P-1 PAINT
SHERWIN WILLIAMS
COLOR: AESTHETIC WHITE 7035
FINISH: SATIN
(WHITE)

P-2 PAINT
SHERWIN WILLIAMS
COLOR: BALANCED BEIGE 7037
FINISH: SATIN
(NEUTRAL)

P-3 PAINT
SHERWIN WILLIAMS
COLOR: ROOKWOOD RED 2802
FINISH: SATIN
(RED)

P-4 PAINT
SHERWIN WILLIAMS
COLOR: DOVETAIL 7018
FINISH: SEMI-GLOSS
(GREY)

P-5 PAINT
SHERWIN WILLIAMS
COLOR: BALANCED BEIGE 7037
FINISH: SEMI-GLOSS
(NEUTRAL)

PC-1 PRIVACY CURTAIN
CF STINSON
PATTERN: RAZZLE
COLOR: TORTOISE SHELL
LENGTH: FROM CEILING TO 6" AFF
FINAL PRODUCT SHALL BE FINISHED ON BOTH SIDES
DO NOT INCLUDE MESH AT TOP
(NEUTRAL WEAVE)

PL-1 PLASTIC LAMINATE
FORMICA
COLOR: BLOSSOM CHERRYWOOD
ITEM #: 758-58
(WOOD GRAIN)

PL-2 PLASTIC LAMINATE
PIONITE
COLOR: CORIANDER FIBER
ITEM #: AT981 SUEDE
(NEUTRAL FLECK)

RCB-1 RUBBER COVE BASE
ROPPE
COLOR: 114 LUNAR DUST
SIZE: 6" HIGH W/ LONG TOE (EXTENDS 1")
(GREY)

RF-1 RUBBER FLOORING
NORA SYSTEMS, INC.
NORAMENT
SERIES: SATURA
COLOR: TO BE DETERMINED
SIZE: ~40" X 40" (1004MM) TILE
THICKNESS: ~0.14" (3.5MM)
(DK RED)

RF-2 RUBBER FLOORING
NORA SYSTEMS, INC.
NORAMENT
SERIES: SATURA
COLOR: TO BE DETERMINED
SIZE: ~40" X 40" (1004MM) TILE
THICKNESS: ~0.14" (3.5MM)
(DK GREY)

RF-3 RUBBER FLOORING
EVERLAST SPORTS SURFACING
SERIES: ZONE THREE
COLOR: EL63 RED FLAG
SIZE: 4' WIDE ROLL GOODS
THICKNESS: 8MM
(BLACK/RED/GREY)

S SEALED/SEALER
SEE SPECIFICATION SECTION 03 35 00

SSM-1 SOLID SURFACE MATERIAL
DUPONT
CORIAN
COLOR: GRANOLA
(NEUTRAL FLECK)

SSM-2 SOLID SURFACE MATERIAL
LG HAUSYS
HI-MACS GALAXY
COLOR: VENUS T001
(NEUTRAL FLECK)

SSM-3 SOLID SURFACE MATERIAL
LG HAUSYS
HI-MACS CLASSIC
COLOR: MOON HAZE G118
(LT NEUTRAL)

STN-1 STAIN
COLOR TO MATCH PL-1
FINISH TO MATCH PL-1

WCR-1 WOOD CHAIR RAIL
SPECIES: PLAIN-SLICED HARD MAPLE, NO HEARTWOOD PERMITTED
PROFILE: TO MATCH A. FILLINGER E-68
SEE ARCHITECTURAL DRAWINGS FOR DETAILS
HEIGHT: 6"
STAIN: STN-1
SUBMIT SAMPLES FOR ARCHITECT APPROVAL PRIOR TO ORDERING

WDD-1 WOOD DOOR
SPECIES: PLAIN-SLICED HARD MAPLE, NO HEARTWOOD PERMITTED
STAIN: STN-1
SUBMIT SAMPLES FOR ARCHITECT APPROVAL PRIOR TO ORDERING

WT-1 WINDOW TREATMENT
MECHOSHADE
MANUAL SHADE SYSTEM
EUROVEIL 5300 SERIES
BASKET WEAVE SHADECLOTH
COLOR: 5313 BRONZE
OPENNESS FACTOR: 5-6%
PROVIDE FASCIA AND ALL NECESSARY TRIM FOR A COMPLETE INSTALLATION

WT-2 WINDOW TREATMENT
MECHOSHADE
MANUAL SHADE SYSTEM
MIDNITE BLACKOUT 0200 SERIES
OPAQUE SHADECLOTH
COLOR: 0212 JAVA
OPENNESS FACTOR: 0% (OPAQUE)
PROVIDE FASCIA AND ALL NECESSARY TRIM FOR A COMPLETE INSTALLATION

Room Schedule

Number	Name	Floor Finish	Base	Wall Finish North	Wall Finish East	Wall Finish South	Wall Finish West	Ceiling	Cabinet	Countertop	Comments
101	Vestibule	CPT-3	RCB-1	P-2	P-2	P-2	P-2	ACT-1			13
102	Toilet	APT-2	CTB-1	CTW-1, 2, 3	P-2	P-2	P-2	ACT-1			4, 15
103	Community Room	CPT-1, 2	RCB-1	P-2, WCR-1	P-3, WCR-1	P-2, WCR-1	P-2, WCR-1	ACT-1	WOOD/STN-1	SSM-1	1, 17
104	Storage	CPT-2	RCB-1	P-2	P-2	P-2	P-2	ACT-1			
105	Storage	EQF-1	EQB-1	P-2, 5	P-2, 5	P-2, 5	P-2, 5	P-1			7
106	Turnout Gear	EQF-1	EQB-1	P-2, 5	P-2, 5	P-2, 5	P-2, 5	P-1			7
107	Garbage	CONC/S	EXP	FRP	EXP	EXP	FRP	EXP			
108	Apparatus Bay	EQF-1, CPT-3	EQB-1	P-2, 5	P-2, 5	P-2, 5	P-2, 5	P-1			7
109	Stair	CONC/S	RCB-1	P-2	P-2	P-2	P-2	P-1			8
110	Alcove	EQF-1	EQB-1	P-2, 5	P-2, 5	P-2, 5	P-2, 5	P-1			7
111	Shop	EQF-1	EQB-1	P-2, 5	P-2, 5	P-2, 5	P-2, 5	P-1			7
112	Toilet	EQF-1	EQB-1	P-2	P-2	P-2	P-2	ACT-1			
113	Watch Room	RF-1, 2	RCB-1	P-1, 2	P-1, 2	P-1, 2	P-1, 2	ACT-1		SSM-1	1, 6, 14, 17
114	Electrical	CONC/S	EXP	EXP	EXP	EXP	EXP	EXP			
115	Corridor	RF-1, 2	RCB-1	P-1, 3	P-1, 2	P-1, 2	--	ACT-1			6, 14
116	Office	RF-1, 2	RCB-1	P-1, 2, WCR-1	P-1, 3, WCR-1	P-1, 2, WCR-1	P-1, 2, WCR-1	ACT-1			1, 6, 14, 17
117	Officer	RF-1, 2	RCB-1	P-2, WCR-1	P-4, WCR-1	P-2, WCR-1	P-2, WCR-1	ACT-1			2
118	Shower	APT-1	CTB-1	CTW-1, 2, 3, SSM-2	CTW-1, 2, 3	CTW-1, 2, 3	CTW-1, 2, 3, SSM-2	P-1		LAV-1	4, 5
119	Water	CONC/S	RCB-1	P-2	P-2	P-2	P-2	EXP			
120	Officer	RF-1, 2	RCB-1	P-2, WCR-1	P-2, WCR-1	P-2, WCR-1	P-4, WCR-1	ACT-1			2
121	Corridor	RF-1, 2	RCB-1	P-1, 2	--	P-1, 2	P-1, 2	ACT-1			6
122	Electrical	CONC/S	RCB-1	P-2	P-2	P-2	P-2	P-1			
124	Police/EMS Storage	EQF-1	EQB-1	P-2	P-2	P-2	P-2	ACT-1			
125	Corridor	RF-1, 2	RCB-1	--	P-1, 3	P-1, 2	P-1, 2	ACT-1			6, 14, 17
126	Exercise	RF-3	RCB-1	P-3	P-2	P-2, MIR-1	P-2	ACT-1			17
127	Pantry	RF-2	RCB-1	P-2	P-2	P-2	P-2	ACT-1	WOOD/STN-1		14
128	Utility	CONC/S	RCB-1	P-2	P-2, FRP	P-2, FRP	P-2	P-1			10
129	Kitchen	APT-1, 2	APTB-1, APTT-1	--	P-1, 2	P-1, 2, CTW-1, 2, 3, APTT-2	P-1, 2	ACT-1	WOOD/STN-1	SSM-1	1, 6, 12, 16
130	Dining	RF-1, 2	RCB-1	P-1, 2, WCR-1	--	--	P-1, 2, WCR-1	ACT-1			6, 14, 17
131	Sleeping Quarters	RF-1, 2	RCB-1	P-2, WCR-1	P-2, WCR-1	P-2, WCR-1	P-2, WCR-1	ACT-2			11, 14
131A	Sleep	RF-1, 2	RCB-1	P-2, WCR-1	P-2, WCR-1	P-2, WCR-1	P-3, WCR-1	ACT-2	PL-1	PL-2	2, 3, 11, 14
131B	Sleep	RF-1, 2	RCB-1	P-2, WCR-1	--	P-2, WCR-1	P-3, WCR-1	ACT-2	PL-1	PL-2	2, 3, 11, 14
131C	Sleep	RF-1, 2	RCB-1	P-3, WCR-1	P-2, WCR-1	P-2, WCR-1	P-3, WCR-1	ACT-2	PL-1	PL-2	2, 3, 11, 14
131D	Sleep	RF-1, 2	RCB-1	P-3, WCR-1	P-2, WCR-1	--	P-2, WCR-1	ACT-2	PL-1	PL-2	2, 3, 11, 14
131E	Sleep	RF-1, 2	RCB-1	P-3, WCR-1	P-2, WCR-1	--	P-2, WCR-1	ACT-2	PL-1	PL-2	2, 3, 11, 14
132	Shower	APT-1	CTB-1	CTW-1, 2, 3, SSM-2	CTW-1, 2, 3, SSM-2	CTW-1, 2, 3	CTW-1, 2, 3	P-1		LAV-1	4, 5
133	Shower	APT-1	CTB-1	CTW-1, 2, 3	CTW-1, 2, 3	CTW-1, 2, 3, SSM-2	CTW-1, 2, 3, SSM-2	P-1		LAV-1	4, 5
134	Shower	APT-1	CTB-1	CTW-1, 2, 3	CTW-1, 2, 3	CTW-1, 2, 3, SSM-2	CTW-1, 2, 3, SSM-2	P-1		LAV-1	4, 5
135	Shower	APT-1	CTB-1	CTW-1, 2, 3	CTW-1, 2, 3, SSM-2	CTW-1, 2, 3, SSM-2	CTW-1, 2, 3	P-1		LAV-1	4, 5
136	Linen	RF-2	RCB-1	P-2	P-2	P-2	P-2	ACT-2			
137	Sleeping Quarters	RF-1, 2	RCB-1	P-2, WCR-1	P-2, WCR-1	P-2, WCR-1	P-2, WCR-1	ACT-2			11, 14
137A	Sleep	RF-1, 2	RCB-1	P-3, WCR-1	P-3, WCR-1	P-2, WCR-1	P-2, WCR-1	ACT-2	PL-1	PL-2	2, 3, 11, 14
137B	Sleep	RF-1, 2	RCB-1	P-2, WCR-1	P-3, WCR-1	P-2, WCR-1	--	ACT-2	PL-1	PL-2	2, 3, 11, 14
137C	Sleep	RF-1, 2	RCB-1	P-2, WCR-1	P-3, WCR-1	P-2, WCR-1	P-2, WCR-1	ACT-2	PL-1	PL-2	2, 3, 11, 14
138	Shower	APT-1	CTB-1	CTW-1, 2, 3, SSM-2	CTW-1, 2, 3	CTW-1, 2, 3	CTW-1, 2, 3, SSM-2	P-1		LAV-1	4, 5
139	Shower	APT-1	CTB-1	CTW-1, 2, 3, SSM-2	CTW-1, 2, 3, SSM-2	CTW-1, 2, 3	CTW-1, 2, 3	P-1		LAV-1	4, 5
140	Corridor	RF-1, 2	RCB-1	P-1, 2	P-1, 2	P-1, 3	--	ACT-1			6, 14
141	Media Room	RF-1, 2	RCB-1	P-2	P-2	P-2	P-3	ACT-1 & P-2	WOOD/STN-1	SSM-1	17
142	Laundry	RF-2	RCB-1	P-1, 3	P-2	P-2	P-2	ACT-1			6, 14
200	Penthouse	CONC/S	P-2	P-2	P-2	P-2	P-2	P-1			9

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PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

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Bid Set

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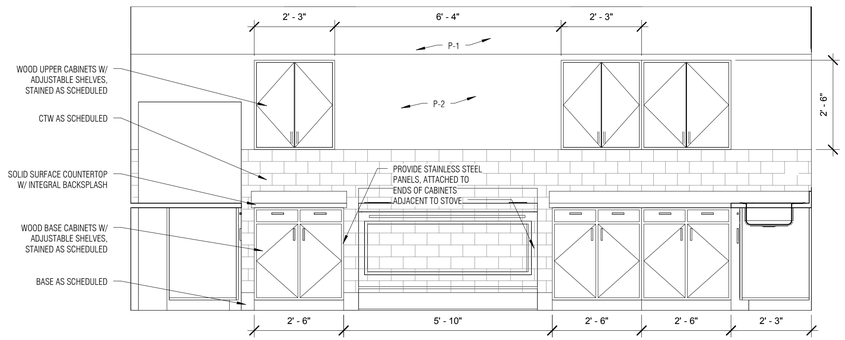
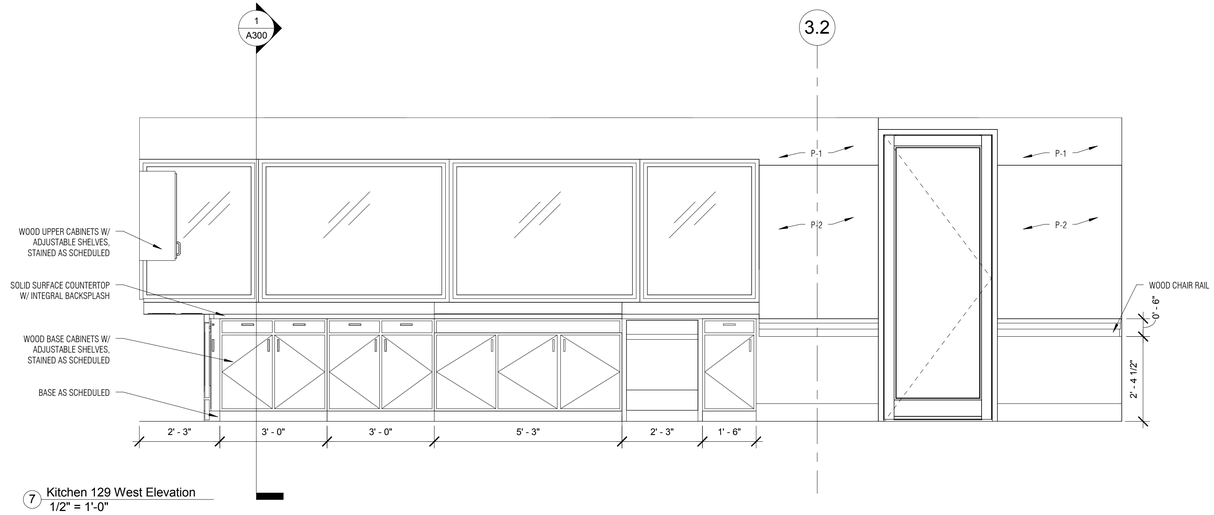
Room Finish Schedule

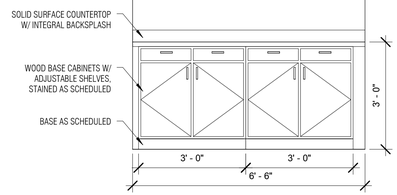
A700



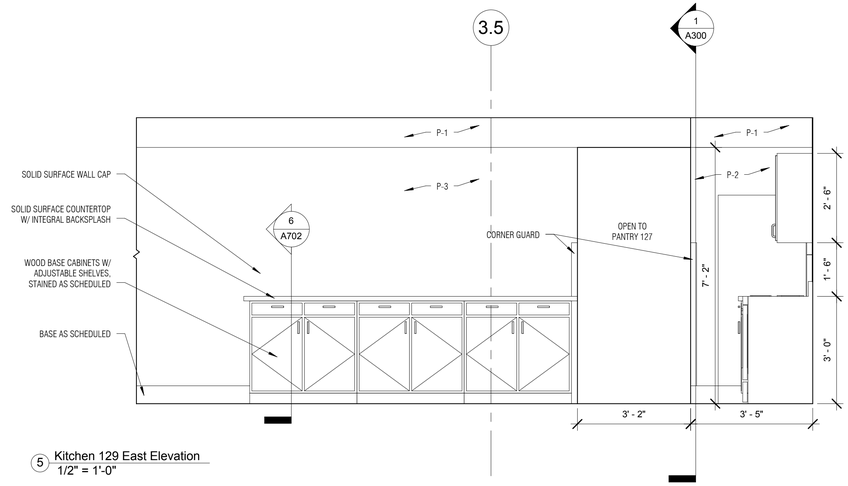
8 Kitchen 129 South Elevation
1/2" = 1'-0"



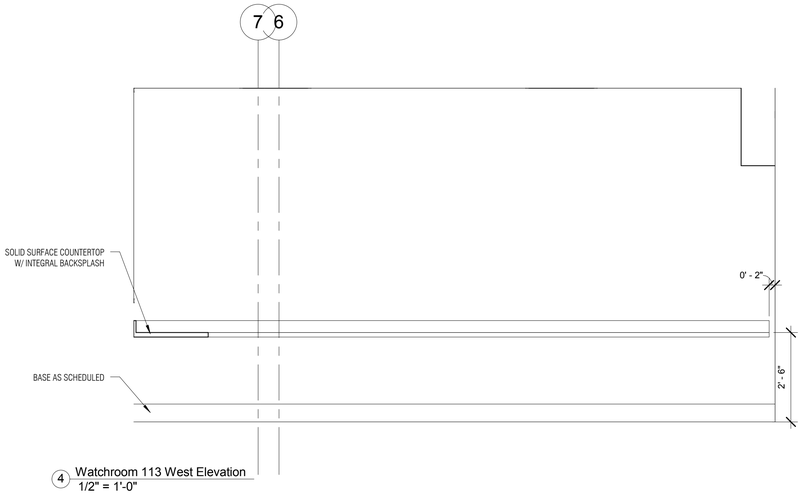
7 Kitchen 129 West Elevation
1/2" = 1'-0"



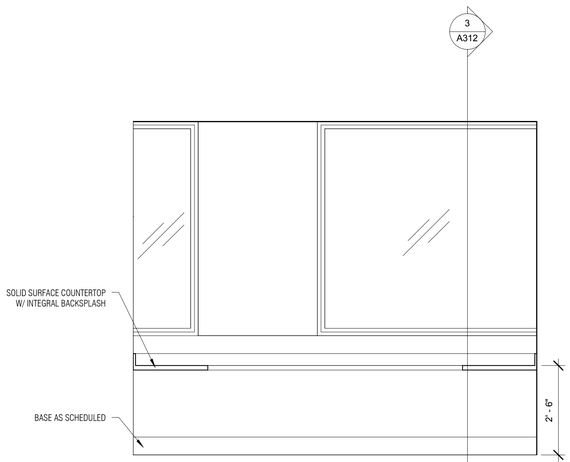
6 Media Room 141 East Elevation
1/2" = 1'-0"



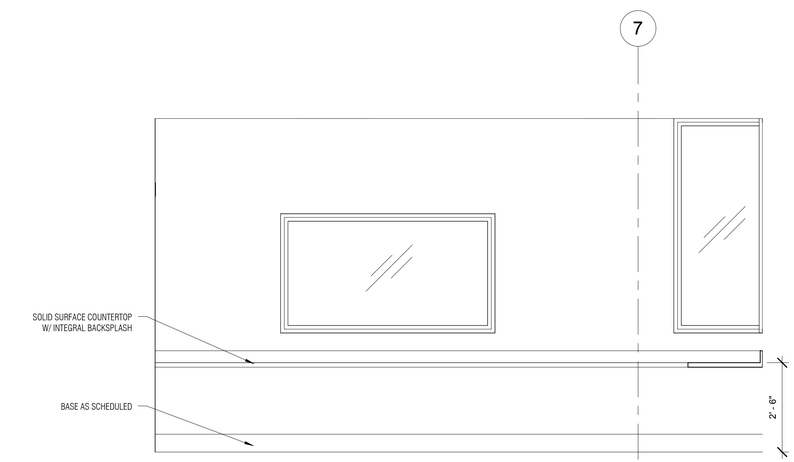
5 Kitchen 129 East Elevation
1/2" = 1'-0"



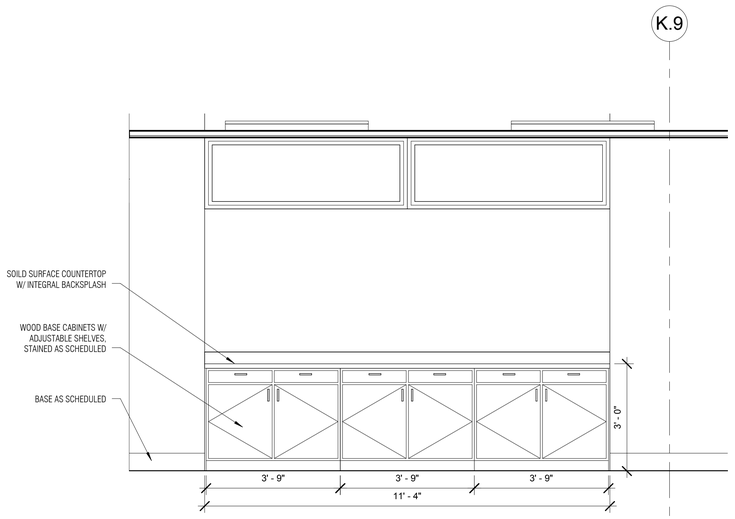
4 Watchroom 113 West Elevation
1/2" = 1'-0"



3 Watchroom 113 South Elevation
1/2" = 1'-0"



2 Watchroom 113 East Elevation
1/2" = 1'-0"



1 Community Room 103 South Elevation
1/2" = 1'-0"

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PROJECT NFORMATION

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Madison

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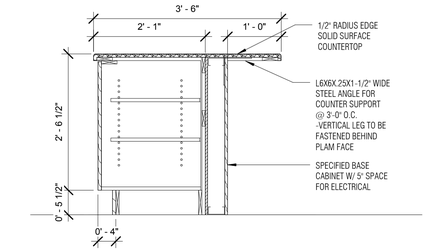
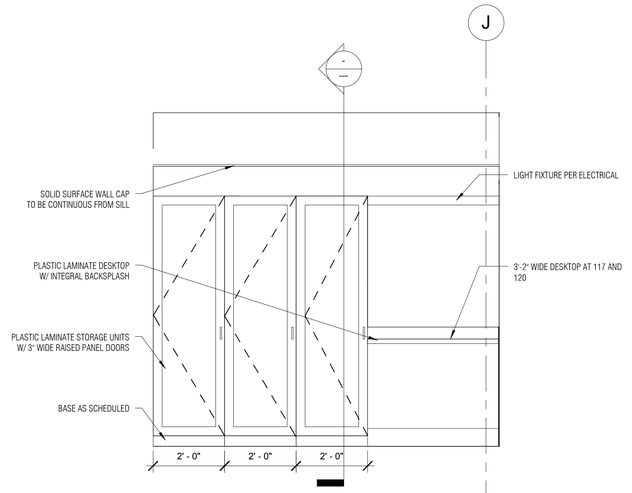
Interior Elevations

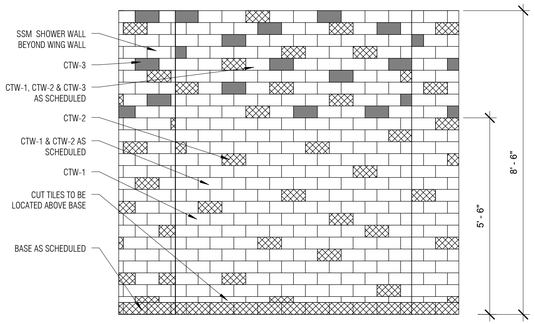
A701



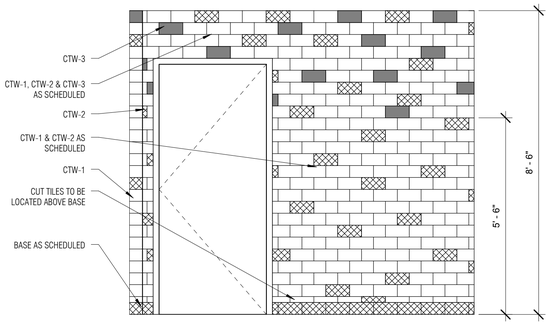
6 Section Thru Kitchen Island
3/4" = 1'-0"



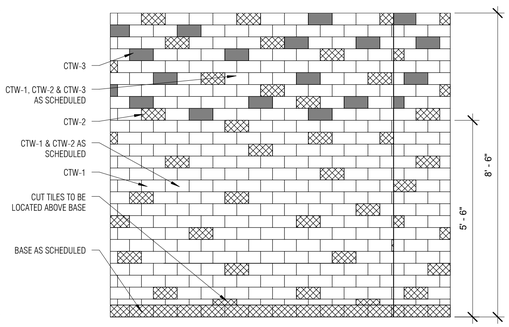
5 Sleep Area Casework Elevation
1/2" = 1'-0"



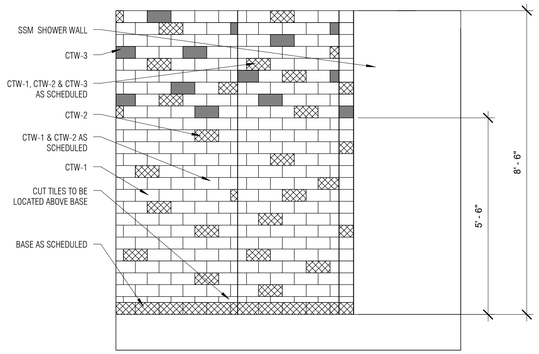
4 South Shower Room East Elevation
1/2" = 1'-0"



3 South Shower Room South Elevation
1/2" = 1'-0"



2 South Shower Room West Elevation
1/2" = 1'-0"



1 South Shower Room North Elevation
1/2" = 1'-0"

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PROJECT NFORMATION

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Interior Elevations

A702

1 Finish Plan
1/8" = 1'-0"

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Finish Plan

A800

1 First Floor Furniture Plan
1/8" = 1'-0"

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ISSUANCE AND REVISIONS

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KEY PLAN

SHEET INFORMATION

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DATE
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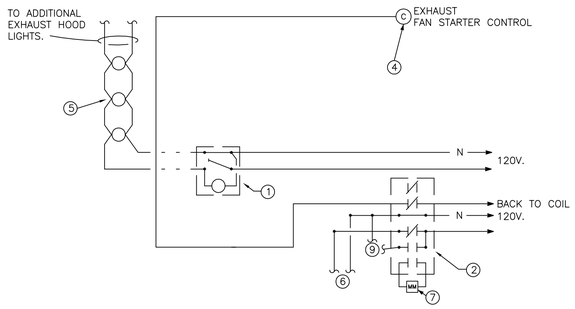
Furniture Plan- Information Only

A900

EXHAUST HOOD FAN CONTROL DETAIL

NTS



1. EXHAUST FAN IS CONTROLLED BY THERMAL SENSOR WITHIN THE HOOD.
2. CONTACTS IN HOOD FIRE EXTINGUISHING SYSTEM.
3. PROVIDE AN ELECTRICALLY HELD, 6 POLE CONTACTOR WITH CONTACTS AS SHOWN. PROVIDE UNSWITCHED 120VOLT CIRCUIT TO COIL VIA MICROSWITCH IN EXTINGUISHING SYSTEM CONTROL PANEL.
4. FURNISH DISCONNECT SWITCH AT FANS.
5. HOOD LIGHTS PROVIDED WITH HOOD. MOUNT AND CONNECT FIXTURES AS REQUIRED.
6. TIE TO GAS SOLENOID VALVE(S) SERVING ALL GAS EQUIPMENT UNDER COMMON HOOD. (FOR SHUTDOWN VIA ANSUL SYSTEM).
7. FIRE ALARM SYSTEM SHALL MONITOR AGENT RELEASE SYSTEM FOR ALARM.
8. COORDINATE WITH AUTHORITY HAVING JURISDICTION FOR HOOD FANS SHUT DOWN SEQUENCE.
9. CONTRACTOR TO PROVIDE POWER WIRING FOR FUEL SOURCE SHUT OFF OF COOKING EQUIPMENT WHERE REQUIRED PER NFPA CODE 96 & N.E.C. ACTIVATE ALL SHUNT TRIP BREAKERS FEEDING ELECTRICAL EQUIPMENT UNDER EXHAUST HOOD.
10. HOODS AND ALL ASSOCIATED DEVICES AND WIRING SHALL BE DONE IN ACCORDANCE WITH NFPA CODE 96 AND N.E.C.
11. WHERE REQUIRED, FURNISH AND INSTALL CONTACTOR WITH ALL NECESSARY CONTROLS & WIRING FOR HOODS, ANSUL SYSTEMS & EXHAUST FANS.
12. INTERLOCK HOOD FANS WITH EQUIPMENT UNDER THE HOOD SO THAT FANS WILL BE RUNNING WHEN THE COOKING EQUIPMENT IS BEING USED
13. COORDINATE WITH KITCHEN EQUIPMENT SUPPLIER FOR CONTROL INTERLOCKING WITH THE COOKING EQUIPMENT.

1 / EL — EXHAUST HOOD FAN CONTROL DETAIL

NTS

GENERAL NEW CONSTRUCTION NOTES:

1. CIRCUITS INDICATED ARE INTENDED TO DENOTE WHICH DEVICES/FIXTURES ARE TO BE WIRED TO A COMMON CIRCUIT BREAKER, AND NOT ITS POSITION IN THE PANEL. REBALANCE LOADS BETWEEN PHASES (MAX. 7.5%) UPON COMPLETION OF WIRING.
2. BRANCH CIRCUITS FOR RECEPTACLES MOUNTED ON ROOF TOP EQUIPMENT MAY BE ROUTED UP THROUGH UNIT CURB OR UNIT ITSELF IF RECOMMENDED BY ROOF TOP EQUIPMENT MANUFACTURER.
3. NEW EXIT LIGHTS SHALL BE WIRED TO THE NEAREST AVAILABLE UNSWITCHED LIGHTING CIRCUIT SERVING THE AREA THAT EXIT LIGHT IS INSTALLED.
4. ELECTRICAL RACEWAYS SHALL BE CONCEALED IN CEILING CAVITY OR IN WALLS. EXPOSED RACEWAYS ARE NOT ACCEPTABLE UNLESS SPECIFICALLY INDICATED AND/OR APPROVED BY A/E.
5. EXACT LOCATION OF SPECIAL PURPOSE OUTLETS SHALL BE VERIFIED IN FIELD. VERIFY SPECIFIC WIRING REQUIREMENTS WITH VENDORS' DRAWINGS/INSTRUCTION, COORDINATING ELECTRICAL WORK WITH WORK OF VENDOR AND OTHER TRADES.
6. INCLUDE FISH WIRE IN ALL NON-POWER CONDUITS.
7. VERIFY EXACT LOCATION OF LIGHTING FIXTURES IN THE FIELD TO AVOID CONFLICT WITH MECHANICAL EQUIPMENT, DUCT WORK, AND PIPES.
8. PAINT ALL EXPOSED CONDUIT TO MATCH ADJACENT AREAS WHEN THE CONDUIT IS IN A FINISHED AREA.
9. FIRE AND/OR SMOKE RATINGS OF WALLS, FLOORS AND CEILINGS SHALL BE MAINTAINED. IF THE INTEGRITY IS SACRIFICED THEN THE BARRIER SHALL BE REPAIRED TO ITS ORIGINAL RATING. ALL PENETRATIONS SHALL BE PROPERLY SEALED.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING AND AIMING ALL FIXTURES TO THE OPTIMUM DISTRIBUTION AND OWNER'S SATISFACTION.
11. COORDINATE CABLE TYPES AND INSTALLATIONS FOR WORK ABOVE CEILING WITH HVAC FOR PLENUM VS. NON-PLENUM RATING OF CEILING SPACE. INSTALLATION SHALL FOLLOW GUIDELINES FOR RATINGS OF CEILING CAVITY.
12. VERIFY LOCATION OF MARKER BOARDS, TACK BOARDS, ARTWORK, SIGNS AND ANY OTHER WALL MOUNTED ITEMS PRIOR TO ROUGH-IN OF FIRE ALARM DEVICES AND ANY OTHER WALL MOUNTED DEVICE. DO NOT ROUGH IN BEHIND BOARDS.
13. WHEN THE KITCHEN HOOD FIRE SUPPRESSION SYSTEM IS ACTIVATED, ALL ELECTRICAL SOURCES SERVING COOKING APPLIANCES AND EQUIPMENT ASSOCIATED WITH THE HOODS SHALL BE AUTOMATICALLY DEACTIVATED VIA A SHUNT TRIP CIRCUIT BREAKER INTERCONNECTED TO THE HOOD FIRE SUPPRESSION SYSTEM SHUTDOWN CIRCUIT. THE HOOD EXHAUST FAN SHALL REMAIN IN OPERATION UNLESS NOTED OTHERWISE.
14. SEE MECHANICAL/ELECTRICAL SHEETS FOR ELECTRICAL INFORMATION OF HVAC EQUIPMENT INDICATED ON DRAWINGS.
15. JUNCTION BOXES INSTALLED IN EXTERIOR WALLS SHALL NOT PENETRATE THE VAPOR BARRIER. IF THE INTEGRITY IS SACRIFICED THEN THE BARRIER SHALL BE REPAIRED TO ORIGINAL RATING.

ABBREVIATIONS

A/E	ARCHITECT/ENGINEER	IMC	INTERMEDIATE METAL CONDUIT
AF	AMP FUSE	I	INSTALLED
AFC	AVAILABLE FAULT CURRENT	IU	INTEGRAL TO UNIT
AFF	ABOVE FINISHED FLOOR	JB	JUNCTION BOX
ARCH	ARCHITECT	KW	KILOWATT
AFG	ABOVE FINAL GRADE	LIG	LAY-IN GRID
AHJ	AUTHORITY HAVING JURISDICTION	LOC	LOCATION
AR	AS REQUIRED	LTG	LIGHTING
AS	AMP SWITCH	MAG	MAGNETIC STARTER
ATS	AUTOMATIC TRANSFER SWITCH	MAN	MANUAL STARTER
BKR	BREAKER	MC	MECHANICAL CONTRACTOR
BFG	BELOW FINAL GRADE	MLO	MAIN LUGS ONLY
C	MOUNTED 6" ABOVE COUNTER	MSB	MAIN SWITCHBOARD
CAB	CABINET	MTD	MOUNTED
CB	CIRCUIT BREAKER	MTS	MANUAL TRANSFER SWITCH
cd	CANDELA	NU	NEAR UNIT
CKT	CIRCUIT	NIC	NOT IN CONTRACT
CLG	CEILING	NL	NIGHT LIGHT FIXTURE WITH NO MANUAL OR AUTOMATIC CONTROL
CONC	CONCRETE		
CP	CONTROL PANEL	O	OTHERS
CS	COMBINATION STARTER/DISC. SWITCH	OC	ON CENTER
D	DISCONNECT SWITCH	ORS	OVER RIDE SWITCH
DISC	DISCONNECT SWITCH	OU	ON UNIT
DLS	DUAL LEVEL SWITCH	P	POLE
DN	DOWN	PC	PHOTOCELL
DNLT	DOWN LIGHT	PEND	PENDANT
EWC	ELECTRIC WATER COOLER	PLBG	PLUMBING CONTRACTOR
E.C	ELECTRICAL CONTRACTOR	PNL	PANEL
ELEV	ELEVATION	PB	PUSH-BUTTON
EMT	ELECTRICAL METALLIC TUBING	R	RECEPTACLE
ENT	ELECTRICAL NON-METALLIC TUBING	RAI	REMAIN AS IS
EP	EXPLOSION PROOF	REC	RECESSED
ER	EXISTING TO BE REMOVED	SS	SWITCH STATION
EXP	EXPOSED	SURF	SURFACE
EXR	EXISTING IN NEW LOCATION	SUSP	SUSPENDED
EX	EXISTING TO REMAIN	SW	SWITCH
EXT	EXISTING TO BE RELOCATED	TC	TIME CLOCK
F	FURNISHED	TCC	TEMPERATURE CONTROL CONTRACTOR
FBO	FURNISHED BY OTHER		
FIXT	FIXTURE	TYP	TYPICAL
FLUOR	FLUORESCENT	UM	UNIT MANUFACTURER
G.C.	GENERAL CONTRACTOR	VER	VERIFY
GFI	GROUND FAULT INTERRUPTING	VFD	VARIABLE FREQUENCY DRIVE
GRC	GALVANIZED RIGID CONDUIT	W	WIRED
GYP	GYPSUM BOARD	WP	WEATHERPROOF
HOA	HAND-OFF-AUTO SELECTOR SWITCH	XFMR	TRANSFORMER
HP	HORSEPOWER		
HVAC / HV	HEATING, VENTILATING, AND AIR CONDITIONING CONTRACTOR		
HW	HEAVYWALL		

SYMBOLS

ANY SYMBOLS UTILIZED ON THE FLOOR PLANS NOT OTHERWISE ON THE SYMBOLS LIST SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEERS PRIOR TO BIDDING FOR CLARIFICATION.

- FLUORESCENT LIGHTING FIXTURE – SEE SCHEDULE
- UNDERCABINET LIGHTING FIXTURE.
- WALL MOUNTED FLUORESCENT FIXTURE
- STAGGERED STRIPLIGHT
- EMERGENCY BATTERY UNIT LIGHT FIXTURE – SURFACE MOUNTED
- POLE MOUNTED LIGHT FIXTURE – SIDE ARM
- POLE MOUNTED LIGHT FIXTURE – POST TOP
- LIGHT BOLLARD
- GROUND MOUNTED FLOOD LIGHT
- CEILING RECESSED LIGHTING FIXTURE.
- WALL RECESSED LIGHTING FIXTURE.
- CEILING SURFACE MOUNTED LIGHTING FIXTURE.
- WALL MOUNTED LIGHTING FIXTURE.
- EXIT LIGHTING FIXTURE
- NL NIGHT LIGHT
- EMERGENCY LIGHT
- DUAL LEVEL SWITCHING – TWO SINGLE-POLE SWITCHES FOR CONTROL OF INBOARD & OUTBOARD LAMPS OR STEP DIMMING BALLAST
- LOCAL SWITCH, SINGLE POLE – MOUNTED 48" AFF.
- C LOCAL SWITCH, SINGLE POLE – MOUNTED 6" ABOVE COUNTER.
- 3 LOCAL SWITCH, SINGLE POLE – 3-WAY.
- 4 LOCAL SWITCH, SINGLE POLE – 4-WAY.
- PL LOCAL SWITCH – PILOT LIGHT SWITCH.
- SS LOCAL SWITCH – SWITCH STATION
- CR9 STANDARD RANGE 360' SENSOR-CEILING MOUNT, LINE VOLTAGE, PASSIVE INFRARED (PIR)
- CR10 EXTENDED RANGE 360' SENSOR-CEILING MOUNT, LINE VOLTAGE, PASSIVE INFRARED (PIR)
- CRP STANDARD RANGE 360' SENSOR-CEILING MOUNT, LINE VOLTAGE, DUAL TECHNOLOGY (PDT)
- CMR6 HIGH BAY 360' SENSOR-CEILING MOUNT, LINE VOLTAGE, PASSIVE INFRARED (PIR)
- CMR6P HIGH BAY 360' SENSOR-CEILING MOUNT, LINE VOLTAGE, PASSIVE INFRARED (PIR): PHOTOCELL
- LOCAL SWITCH, SINGLE POLE, WITH DUPLEX RECEPTACLE –MOUNTED 48" AFF.
- DUPLEX RECEPTACLE – MOUNTED 18" AFF.
- C DUPLEX RECEPTACLE – MOUNTED VERTICALLY 6" ABOVE COUNTER OR HORIZONTALLY 4" ABOVE BACKSPLASH.
- GFI DUPLEX RECEPTACLE – GROUND FAULT CIRCUIT INTERRUPTER TYPE.
- WP DUPLEX RECEPTACLE – WEATHER PROOF. GFI WEATHER RESISTANT WITH METAL WHILE-IN-USE. COVER AS SPECIFIED
- QUADRUPLEX RECEPTACLE – TWO DUPLEX RECEPTACLES UNDER A COMMON COVERPLATE.
- SPECIAL PURPOSE OUTLET – SEE SCHEDULE.
- MOTOR – SEE SCHEDULE. SEE MECHANICAL/ELECTRICAL SHEETS FOR ELECTRICAL INFORMATION OF HVAC EQUIPMENT INDICATED ON DRAWINGS.
- DISCONNECT SWITCH.
- SYSTEM CLOCK – MOUNTED AT 7'-0" AFF MINIMUM.
- DOOR BELL/ CHIME
- DOORBELL SPEAKER – FLUSH MOUNTED IN CEILING
- PLUGMOLD
- DATA OUTLET – MOUNTED AT 18" AFF
- W TELEPHONE OUTLET – MOUNTED AT 48" AFF.
- FLOORBOX COMBINATION – POWER, DATA
- CURRENT TRANSFORMER.
- M METER.
- AUTOMATIC TRANSFER SWITCH
- ELECTRICAL DISTRIBUTION PANEL – NEW
- GROUND
- OR T TRANSFORMER
- MANUAL PULL STATION – MOUNTED AT 48" AFF.
- AUDIO/VISUAL SIGNAL DEVICE (HORN/STROBE) – MOUNTED AT 80" AFF OR 6" BELOW CEILING, WHICHEVER IS LOWER 75 CANDELA UNLESS NOTED OTHERWISE
- MANUAL PULL STATION WITH AUDIO/VISUAL SIGNAL DEVICE MOUNTED ABOVE. 75 CANDELA UNLESS NOTED OTHERWISE
- VISUAL SIGNAL DEVICE (STROBE) – MOUNTED AT 80" AFF OR 6" BELOW CEILING, WHICHEVER IS LOWER 75 CANDELA UNLESS NOTED OTHERWISE
- AUDIO/VISUAL SIGNAL DEVICE (HORN/STROBE) CEILING MOUNTED.
- S SMOKE DETECTOR.
- S/CO COMBINATION SMOKE/CARBON MONOXIDE DETECTOR.
- D OR DUCT SMOKE DETECTOR.
- H HEAT DETECTOR.
- TS TAMPER SWITCH.
- FS FLOW SWITCH.
- FA CP FIRE ALARM CONTROL PANEL (FACP).
- FA ANN FIRE ALARM REMOTE ANNUNCIATOR.
- INDICATES DETAIL NUMBER / SEE DETAIL / INDICATES SHEET NUMBER
- INDICATES NOTE NUMBER / SEE NOTE / INDICATES SHEET NUMBER
- SIGNAL BELL
- COMBINATION POWER/TELEVISION OUTLET – SEE DETAIL 7/E400
- DATA OUTLET MOUNTED IN FINISHED CEILING FOR USE WITH ACCESS POINT.

SHEET INDEX

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PROJECT NFORMATION

Madison Fire Station 13

Madison Project #53W1152, Contract # 6590

Madison

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

SHEET INFORMATION

REVISIONS

#	DATE	DESCRIPTION

DATE

May 03, 2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

Symbols, Abbreviations and Notes

EL

1 GENERAL ABBREVIATIONS

A	ARCHITECT
A/E	ARCHITECT–ENGINEER
AFF	ABOVE FINISHED FLOOR
ALD	ACOUSTICALLY LINED DUCTWORK
ALT	ALTERNATE
AP	ACCESS PANEL
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
CA	COMBUSTION AIR
CAV	CONSTANT AIR VOLUME
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CFM	CUBIC FEET PER MINUTE
CL	CENTERLINE
CLG	CEILING
CM	CONSTRUCTION MANAGER
COND	CONDENSATE
COP	CENTER OF PIPE
DAT	DISCHARGE AIR TEMPERATURE
DB	DRY BULB
DDC	DIRECT DIGITAL CONTROL
DG	DOOR GRILLE
DR	DRAIN
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
EDR	EQUIVALENT DIRECT RADIATION
EL	ELEVATION
ESP	EXTERNAL STATIC PRESSURE
ETR	EXISTING TO REMAIN
EWT	ENTERING WATER TEMPERATURE
FC	FAIL CLOSED
FD	FLOOR DRAIN
FLA	FULL LOAD AMPS
FO	FAIL OPEN
FPI	FINS PER INCH
FPM	FEET PER MINUTE
FT	FEET
GA	GAUGE
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
HC	HEATING CONTRACTOR
HD	HUB DRAIN
IE	INVERT ELEVATION
LAT	LEAVING AIR TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
LR	90° LONG RADIUS ELBOW
MBH	THOUSANDS OF BTU PER HOUR
MC	MECHANICAL CONTRACTOR
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NPS	NOMINAL PIPE SIZE
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OC	ON CENTER
OED	OPEN END DUCT
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OPP	OWNER PRE–PURCHASED
OV	OUTLET VELOCITY
PC	PLUMBING CONTRACTOR
PCF	POUNDS PER CUBIC FOOT
PD	PRESSURE DROP
POR	POINT OF REMOVAL
PS	PIPE STAND
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
RA	RETURN AIR
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SOG	SLAB ON GRADE
SP	STATIC PRESSURE
TCC	TEMPERATURE CONTROLS CONTRACTOR
TWR	TOWER WATER RETURN
TWS	TOWER WATER SUPPLY

2 EQUIPMENT ABBREVIATIONS

AD	AUTOMATIC DAMPER
AHU	AIR HANDLING UNIT
ALD	ACOUSTICAL LINED DUCT
AS	AIR SEPARATOR
B	BOILER
BB	BASEBOARD
BDD	BACK DRAFT DAMPER
C	CONVECTOR
CC	COOLING COIL
CP	CONDENSATE PUMP
CRU	COMPUTER ROOM UNIT
CUH	CABINET UNIT HEATER
DSF	DESTRATIFICATION FAN
E	EXHAUST GRILLE – EXHAUST REGISTER
EF	EXHAUST FAN
EH	EXHAUST HOOD
EJ	EXPANSION JOINT
EL	EXPANSION LOOP
ERU	ENERGY RECOVERY UNIT
ET	EXPANSION TANK
EUH	ELECTRIC UNIT HEATER
EWH	ELECTRIC WALL HEATER
F	FILTER
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FTR	FINNED TUBE RADIATION
F/SD	COMBINATION FIRE & SMOKE DAMPER
GP	GLYCOL PUMP
HC	HEATING COIL
HP	HEAT PUMP
HWG	HOT WATER GENERATOR
HX	HEAT EXCHANGER
IH	INTAKE HOOD
L	LOUVER
MOD	MOTORIZED OPERATING DAMPER
MAU	MAKE–UP AIR UNIT
P	PUMP
PRV	POWER ROOF VENTILATOR
PRV	PRESSURE REDUCING VALVE
R	RETURN GRILLE – RETURN REGISTER
RF	RETURN FAN
RH	RELIEF HOOD
S	SUPPLY GRILLE – SUPPLY REGISTER
SD	SMOKE DAMPER
SD	SUCTION DIFFUSER
SF	SUPPLY FAN
SFM	STEAM FLOW METER
SIL	DUCT SILENCER
T	TRANSFER GRILLE
TCP	TEMPERATURE CONTROL PANEL
UH	UNIT HEATER
UV	UNIT VENTILATOR
V	VALVE
VD	VOLUME DAMPER
VF	VENTILATION FAN
VF	VARIABLE AIR VOLUME BOX – FAN POWERED NO HEAT
VFD	VARIABLE FREQUENCY DRIVE
VS	VARIABLE AIR VOLUME BOX – SHUT OFF NO HEAT
VSE	VARIABLE AIR VOLUME BOX – SHUT OFF ELECTRIC HEAT
VSH	VARIABLE AIR VOLUME BOX – SHUT OFF HOT WATER HEAT
WF	WATER FILTER
WFM	WATER FLOW METER

PIPING SYMBOLS

- TEE OUTLET UP
- TEE OUTLET DOWN
- ELBOW UP
- ELBOW DOWN
- UNION
- FLANGED JOINT
- CAP OR BLIND FLANGE
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- DROP (D) OR RISE (R)

SPECIAL DESIGNATION

- KEYED NOTE
- PLAN CONTINUATION REFERENCE (REFER)
- DETAIL REFERENCE
- PLAN / DETAIL
- REVISION REFERENCE
- PITCH
- FLOW

ACTUATORS

- GENERAL
- MOTORIZED (M)
- PNEUMATIC (P)
- SOLENOID (S)
- MANUAL

PIPING SPECIALTIES

- THERMOMETER
- PRESSURE GAUGE AND GAUGE VALVE
- FLEXIBLE CONNECTOR
- BALANCING VALVE
- GAS SHUT–OFF VALVE
- DIAL THERMOMETER
- PRESSURE/ TEMPERATURE PLUG (PETE'S PLUG)
- DRAIN VALVE W/ CAPPED HOSE CONNECTION
- FLOW SENSING DEVICE (PITOT TYPE)
- FLOW SENSING DEVICE (INLINE STYLE)
- PIPE SLEEVE
- BALL JOINT
- COIL SYPHON
- SNUBBER
- AIR VENT MANUAL
- THERMOSTATIC AIR VENT
- VACUUM BREAKER
- THERMOSTATIC TRAP
- FLOAT & THERMOSTATIC TRAP
- INVERTED BUCKET TRAP
- STRAINER
- STRAINER W/ BLOWDOWN
- STRAINER W/ BLOWDOWN
- NOISE SUPPRESSER
- FLOW SWITCH
- AUTOMATIC FLOW REGULATOR (AFR)
- FLOW SENSOR
- FLOW METER
- EXPANSION JOINT
- DRIP PAN ELBOW
- DIFFERENTIAL PRESSURE TRANSMITTER (DPT)
- BASKET STRAINER
- AUTOMATIC AIR VENT

3 GRILLES & DIFFUSERS

- CEILING DIFFUSER WITH FLEX DUCTWORK
- CEILING DIFFUSER WITH HARD DUCTWORK
- CEILING DIFFUSER WITH HARD DUCTWORK
- CEILING RETURN OR TRANSFER GRILLE WITH HARD DUCTWORK
- CEILING RETURN OR TRANSFER GRILLE WITH FLEX DUCTWORK
- CEILING RETURN OR TRANSFER GRILLE WITH HARD DUCTWORK
- CEILING EXHUAST GRILLE WITH HARD DUCTWORK
- CEILING EXHUAST GRILLE WITH FLEX DUCTWORK
- CEILING EXHUAST GRILLE WITH HARD DUCTWORK
- SLOT DIFFUSER WITH FLEXIBLE CONNECTION
- SIDEWALL GRILLE

DAMPERS

- MANUAL VOLUME DAMPER
- AUTOMATIC DAMPER (M)
- BACKDRAFT DAMPER (BDD)
- SMOKE DAMPER (SD)
- FIRE DAMPER (HORIZONTAL) (FD)
- FIRE DAMPER (VERTICAL) (FD)
- COMBINATION FIRE/SMOKE DAMPER (F/SD)
- COMBINATION FIRE/SMOKE DAMPER (F/SD)
- OPPOSED BLADE DAMPER
- PARALLEL BLADE DAMPER

FIELD MOUNTED CONTROLS

- THERMOSTAT (T)
- DUCT MOUNTED THERMOSTAT (T_D)
- ROOM NIGHT SETBACK THERMOSTAT (N)
- ROOM ASPIRATING THERMOSTAT (A)
- ROOM HUMIDISTAT (H)
- PRESSURE SENSOR (P)
- ROOM SENSOR (S)
- SWITCH (SW)
- DUCT SMOKE DETECTOR (S)
- OCCUPANCY SENSOR (O)

4 DUCTWORK

- SUPPLY DUCT (UP OR SECTION)
- OUTDOOR AIR DUCT (UP OR SECTION)
- SUPPLY OR OUTSIDE AIR DUCT (DOWN\OR AWAY)
- EXHAUST DUCT (UP OR SECTION)
- RETURN DUCT (UP OR SECTION)
- EXHAUST OR RETURN DUCT (DOWN\OR AWAY)
- ROUND DUCTWORK UP
- ROUND DUCTWORK DOWN
- ACOUSTICALLY LINED DUCT
- FLEXIBLE CANVAS CONNECTION
- SECURITY BARS
- DROP (D) OR RISE (R)

EQUIPMENT

- ROOF VENTILATOR, INTAKE (ROOF PLAN)
- ROOF VENTILATOR, EXHAUST (ROOF PLAN)
- ROOF VENTILATOR, INTAKE (PLAN VIEW)
- ROOF VENTILATOR, EXHAUST (PLAN VIEW)
- VARIABLE AIR VOLUME BOX W/ REQUIRED 36" CLEARANCE
- LOCATION OF ACCESS CLEARANCE (EQUIPMENT)
- UNIT HEATER
- REHEAT COIL
- HUMIDIFIER (H)
- PUMP
- SUCTION DIFFUSER
- REDUCER
- REDUCER
- SQUARE TO ROUND TRANSITION

5 VALVES

- PILOT OPERATED PRESSURE REDUCING VALVE
- BACK PRESSURE VALVE
- BALL VALVE
- BUTTERFLY VALVE
- MOTORIZED BUTTERFLY VALVE (M)
- GAUGE VALVE
- DRAIN BALL VALVE
- CHECK SWING GATE VALVE (FLOW)
- SPRING LOADED CHECK VALVE
- BALANCING VALVE
- PRESSURE REDUCING VALVE
- SELF CONTAINED PRESSURE REDUCING VALVE
- THERMAL EXPANSION VALVE
- QUICK OPENING VALVE
- GATE ANGLE VALVE
- RELIEF VALVE / SAFETY VALVE
- GLOBE ANGLE VALVE
- SOLENOID VALVE (S)
- THREE WAY CONTROL VALVE
- THREE WAY VALVE
- TRIPLE DUTY VALVE
- BACKFLOW PREVENTOR
- DIAPHRAM VALVE
- TWO–WAY CONTROL VALVE
- GLOBE VALVE
- GATE VALVE
- PLUG VALVE
- GAS SHUT–OFF VALVE

6 PIPING SYSTEMS

BF	BOILER FEED
CPD	CONDENSATE PUMP DISCHARGE
D	DRAIN
G	GAS (LOW PRESSURE, 0.25 PSIG OR LESS)
GR	GLYCOL RETURN
GS	GLYCOL SUPPLY
HPG(XXX)	HIGH PRESSURE GAS
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
NPCW	NON–POTABLE COLD WATER
MU	MAKEUP WATER
PC	PUMPED CONDENSATE
RHG	REFRIGERANT HOT GAS
RL	REFRIGERANT LIQUID LINE
RS	REFRIGERANT SUCTION LINE
V	VENT
VAC	VACUUM (AIR)

MECHANICAL SHEET INDEX

NOTE:
ABBREVIATIONS AND SYMBOLS INDICATED HERE AND NOT USED IN THE CONTRACT DOCUMENTS DO NOT APPLY TO THIS PROJECT. ADDITIONAL SYMBOLS MAY BE INDICATED IN THE CONTRACT DOCUMENTS.

SYSTEM DESCRIPTION

LIVING QUARTERS

A. A VARIABLE AIR VOLUME AIR HANDLER WITH SPLIT SYSTEM, VARIABLE SPEED COMPRESSOR GEOTHERMAL HEAT PUMP WILL PROVIDE COOLING FOR THE SPACES. THE AIR HANDLER WILL PROVIDE AIR TO EIGHT COOLING ONLY VARIABLE AIR VOLUME SHUT OFF BOXES.

B. HOT WATER RADIANT FLOORING WILL PROVIDE HEAT FOR EACH ZONE. THERE WILL BE A DEDICATED RADIANT FLOORING MANIFOLD FOR EACH ZONE THAT IS REGULATED BY A PRESSURE INDEPENDENT CONTROL VALVE.

C. A FIXED PLATE ENTHALPIC ENERGY RECOVERY UNIT WITH VARIABLE SPEED FANS WILL PRECONDITION THE REQUIRED VENTILATION AIR. A SPLIT SYSTEM, VARIABLE SPEED COMPRESSOR GEOTHERMAL HEAT PUMP WITH DUCT MOUNTED DX COIL WILL COOL/DEHUMIDIFY OR HEAT THE VENTILATION AIR PRIOR TO DISTRIBUTION OF THE AIR TO EACH OCCUPIED SPACE.

LIVING QUARTERS BASIS OF DESIGN		
SUMMER	DB	WB
OUTDOOR	95	75
INDOOR	75	*50–60% RH
WINTER		
OUTDOOR	–15	**
INDOOR	72	**

* ANTICIPATED CALCULATED POINT. ACTUAL HUMIDITY PER ROOM MAY VARY.
** BUILDING IS NOT HUMIDIFIED IN THE WINTER.
* BUILDING IS DEHUMIDIFIED IN THE SUMMER DUE TO AIR CONDITIONING BUT LEVEL IS NOT AUTOMATICALLY REGULATED.

APPARATUS BAY

1. HOT WATER RADIANT FLOORING WILL PROVIDE HEAT FOR THE SPACE. THERE WILL BE A DEDICATED RADIANT FLOORING MANIFOLD SERVING THE NORTH HALF AND ONE SERVING THE SOUTH HALF. EACH MANIFOLD IS REGULATED BY A PRESSURE INDEPENDENT CONTROL VALVE.
2. AN INLINE EXHAUST FAN WILL MAINTAIN THE CODE REQUIRED 0.05 CFM/SQ.FT. OF CONTINUOUS EXHAUST LOCATED 18" ABOVE THE FINISHED FLOOR. UPON DETECTION OF CO OR NO2, BEYOND 35 PPM AND 1 PPM RESPECTIVELY, AND FOR A MINIMUM OF 5 HOURS PER 24 HOURS, A FIXED PLATE ENTHALPIC ENERGY RECOVERY UNIT SHALL EXHAUST AND VENTILATE AT A RATE OF 0.7 CFM/SQ.FT. THE ENERGY RECOVERY UNIT WILL PRECONDITION THE REQUIRED VENTILATION AIR. A HOT WATER HEATING COIL WILL TEMPER THE PRECONDITIONED AIR TO THE SPACE SETPOINT TEMPERATURE.
3. WHEN THE SPACE TEMPERATURE FALLS AND THE RADIANT FLOORING IS UNABLE TO PICK THE SPACE TEMPERATURE UP QUICKLY, THE ENERGY RECOVERY UNIT WILL ENTER INTO RECIRCULATION MODE. DURING RECIRCULATION MODE THE EXHAUST IS SHUT OFF, AIR IS RETURNED FROM THE SPACE, HEATED, AND SUPPLIED INTO THE APPARATUS BAY TO ASSIST WITH SPACE TEMPERATURE PICKUP. THIS OPERATION WILL BE LOCKED OUT ABOVE 40°F (ADJUSTABLE).

APPARATUS BAY BASIS OF DESIGN		
SUMMER	DB	WB
OUTDOOR	*	*
INDOOR	*	*
WINTER		
OUTDOOR	–15	
INDOOR	55	**

* SPACE IS NOT CONDITIONED IN THE SUMMER
** SPACE IS NOT HUMIDIFIED IN THE WINTER

GEOTHERMAL SYSTEM

A. A VERTICAL GEOTHERMAL BOREFIELD WILL SERVE AS THE HEAT SINK/SOURCE FOR THE BUILDING COOLING AND HEATING SYSTEMS. THE GEOTHERMAL SYSTEM WILL BE DESIGNED WITH 25% PROPYLENE GLYCOL CONCENTRATION FOR FREEZE PROTECTION. A VARIABLE FLOW PUMPING CIRCUIT WILL CIRCULATE THE BOREFIELD AND GEOTHERMAL EQUIPMENT IN SERIES. MANUFACTURER PROVIDED 2–WAY MODULATING CONTROL VALVES WILL VARY FLOW TO EACH PIECE OF EQUIPMENT.

HOT WATER GENERATION

A. TWO GEOTHERMAL HOT WATER GENERATORS, EACH SIZED FOR APPROXIMATELY 75% OF THE TOTAL HOT WATER LOAD, WILL SUPPLY 105°F HOT WATER TO THE TERMINAL HEATING DEVICES. A VARIABLE FLOW PUMPING CIRCUIT WILL CIRCULATE THE HOT WATER GENERATORS AND TERMINAL DEVICES IN SERIES. PRESSURE INDEPENDENT CONTROL VALVES WILL REGULATE FLOW TO EACH TERMINAL DEVICE.

MISCELLANEOUS

A. A CLASS I KITCHEN HOOD WILL BE PROVIDED FOR THE RANGE IN THE KITCHEN. THE HOOD WILL BE PROVIDED WITH AN ANSUL FIRE PROTECTION SYSTEM, AND THERMAL SENSOR FOR EXHAUST FAN INTERLOCK. A CONSTANT VOLUME DIRECT FIRED MAKE UP AIR UNIT WILL SUPPLY AN EQUAL AMOUNT OF MAKE UP AIR FOR THE KITCHEN HOOD EXHAUST.

B. THE ELECTRICAL/IT ROOM WILL BE COOLED BY A TRANSFER FAN. THE FAN WILL TRANSFER AIR FROM THE ADJACENT CORRIDOR TO MAINTAIN THE SPACE TEMPERATURE. THE TRANSFER FAN WILL OPERATE TO MAINTAIN 82°F IN THE SPACE.

C. THE GAS CLOTHES DRYER LOCATED IN SHOP 111 WILL BE VENTED TO THE OUTDOORS.

D. A GAS METER WILL SERVE THE FACILITY AT 2 PSIG DISCHARGE PRESSURE. A GAS PRESSURE REGULATOR WILL BE PROVIDED FOR EACH GAS FIRED PIECE OF EQUIPMENT.

E. A HOT WATER UNIT HEATER WILL MAINTAIN 55°F IN THE MECHANICAL MEZZANINE EQUIPMENT ROOM

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Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

ISSUANCE AND REVISIONS

Bid Set

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Mechanical Legend

M001

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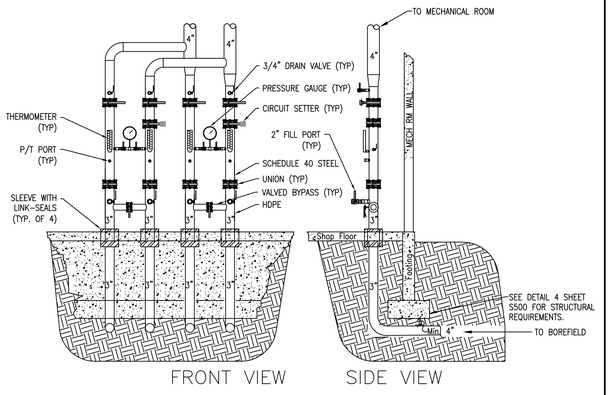
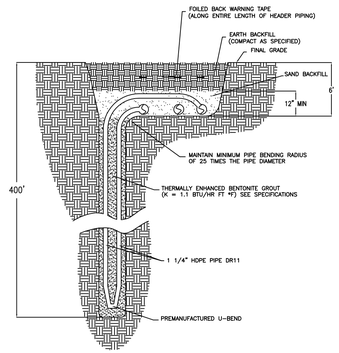
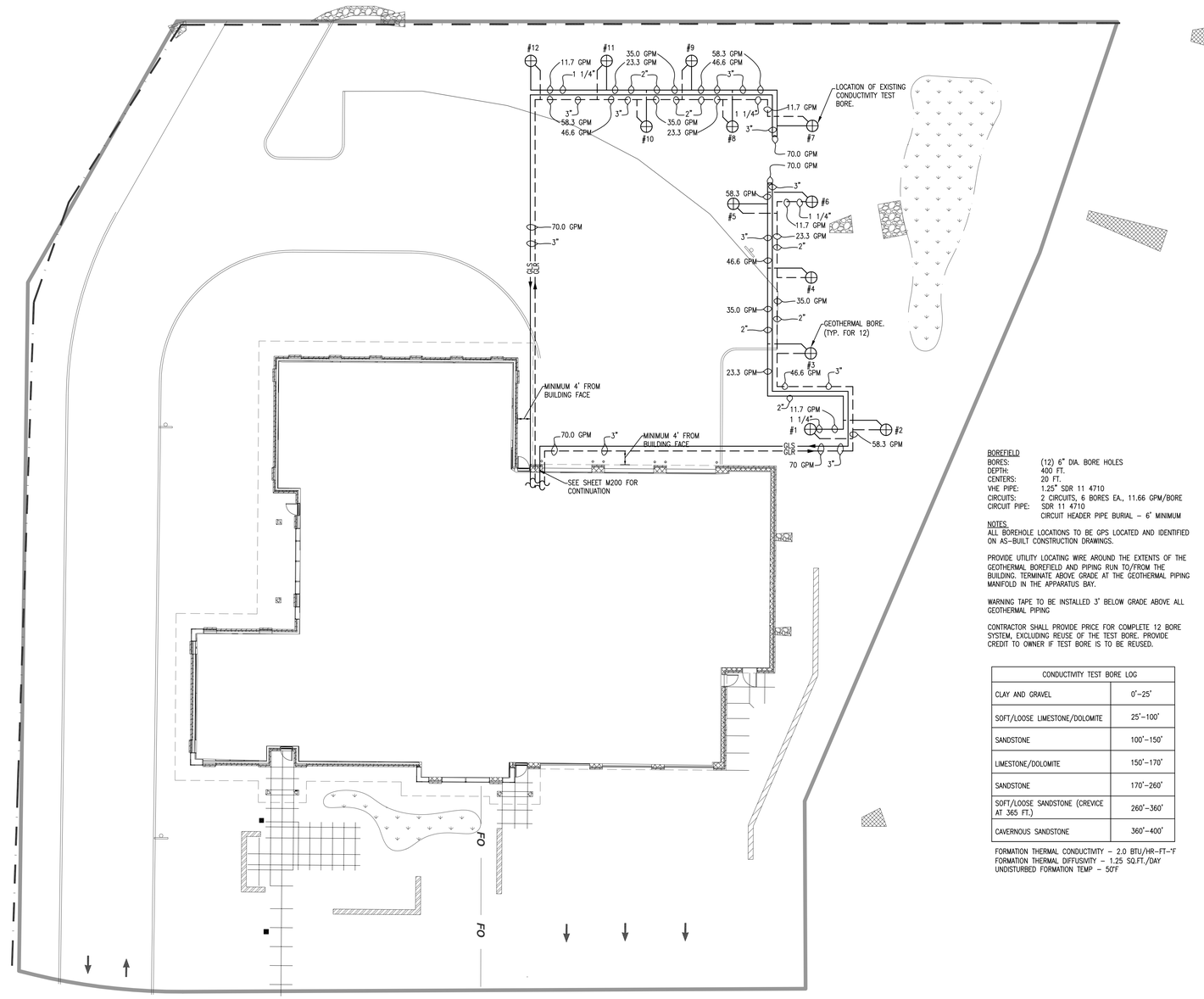


2 GEOTHERMAL PIPE MAINS – BUILDING STUB-OUT DETAILS
NO SCALE



3 TYPICAL BOREHOLE DETAIL
NO SCALE



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

BOREFIELD
BORES: (12) 6" DIA. BORE HOLES
DEPTH: 400 FT.
CENTERS: 20 FT.
VHE PIPE: 1.25" SDR 11 4710
CIRCUITS: 2 CIRCUITS, 6 BORES EA., 11.66 GPM/BORE
CIRCUIT PIPE: SDR 11 4710
CIRCUIT HEADER PIPE BURIAL – 6' MINIMUM

NOTES
ALL BOREHOLE LOCATIONS TO BE GPS LOCATED AND IDENTIFIED ON AS-BUILT CONSTRUCTION DRAWINGS.

PROVIDE UTILITY LOCATING WIRE AROUND THE EXTENTS OF THE GEOTHERMAL BOREFIELD AND PIPING RUN TO/FROM THE BUILDING. TERMINATE ABOVE GRADE AT THE GEOTHERMAL PIPING MANIFOLD IN THE APPARATUS BAY.

WARNING TAPE TO BE INSTALLED 3' BELOW GRADE ABOVE ALL GEOTHERMAL PIPING

CONTRACTOR SHALL PROVIDE PRICE FOR COMPLETE 12 BORE SYSTEM, EXCLUDING REUSE OF THE TEST BORE. PROVIDE CREDIT TO OWNER IF TEST BORE IS TO BE REUSED.

CONDUCTIVITY TEST BORE LOG	
CLAY AND GRAVEL	0'–25'
SOFT/LOOSE LIMESTONE/DOLOMITE	25'–100'
SANDSTONE	100'–150'
LIMESTONE/DOLOMITE	150'–170'
SANDSTONE	170'–260'
SOFT/LOOSE SANDSTONE (CREVICE AT 365 FT.)	260'–360'
CAVERNOUS SANDSTONE	360'–400'

FORMATION THERMAL CONDUCTIVITY – 2.0 BTU/HR-FT-°F
FORMATION THERMAL DIFFUSIVITY – 1.25 SQ.FT./DAY
UNDISTURBED FORMATION TEMP – 50°F

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Mechanical Site Plan

MS100

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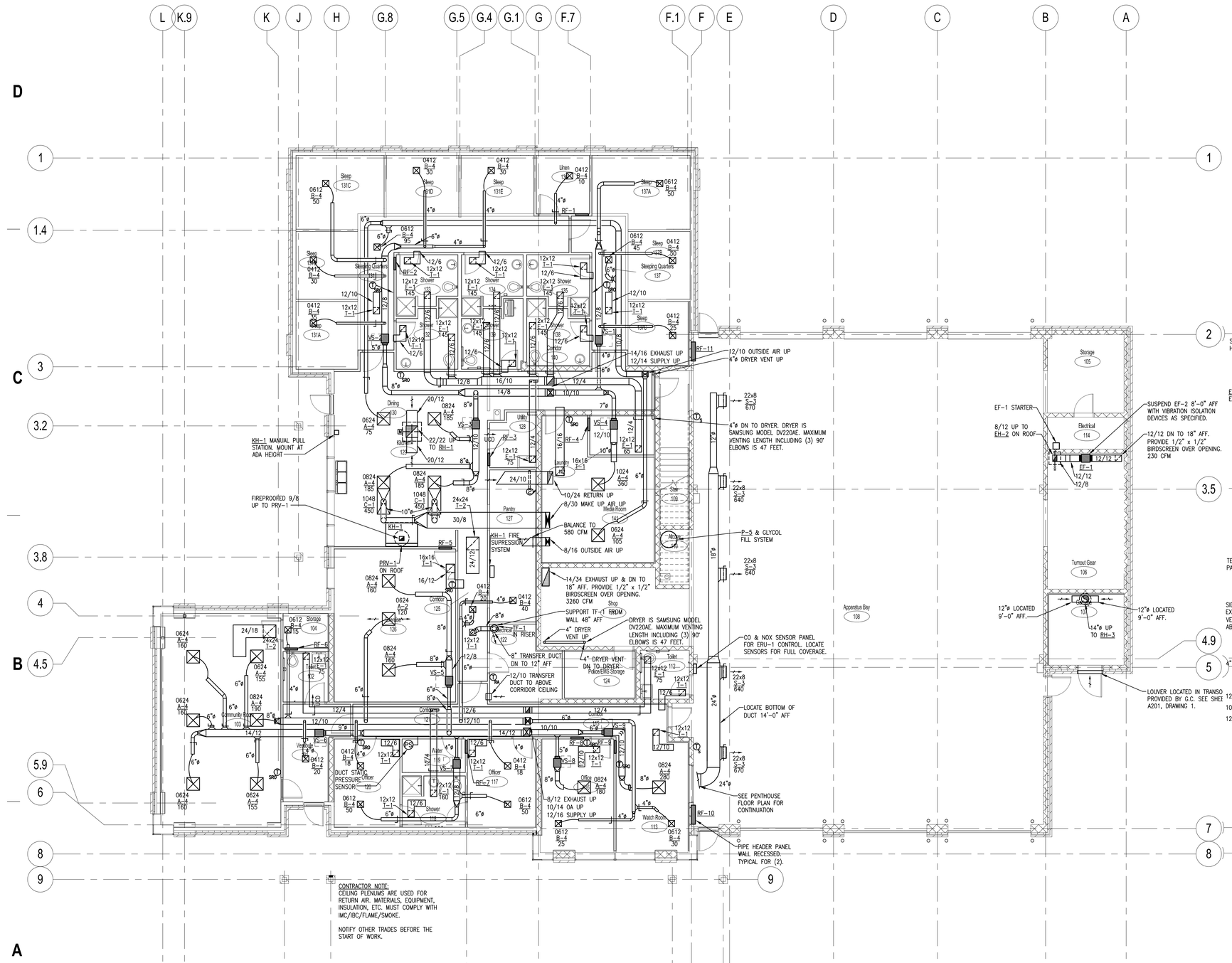

CONTRACTOR NOTE:
CEILING PLENUMS ARE USED FOR RETURN AIR MATERIALS, EQUIPMENT, INSULATION, ETC. MUST COMPLY WITH IMC/IBC/FLAME/SMOKE.

NOTIFY OTHER TRADES BEFORE THE START OF WORK.

1 MECHANICAL FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"

2 MECHANICAL PENTHOUSE PLAN
SCALE: 1/8" = 1'-0"

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Mechanical Ductwork Plans

M100

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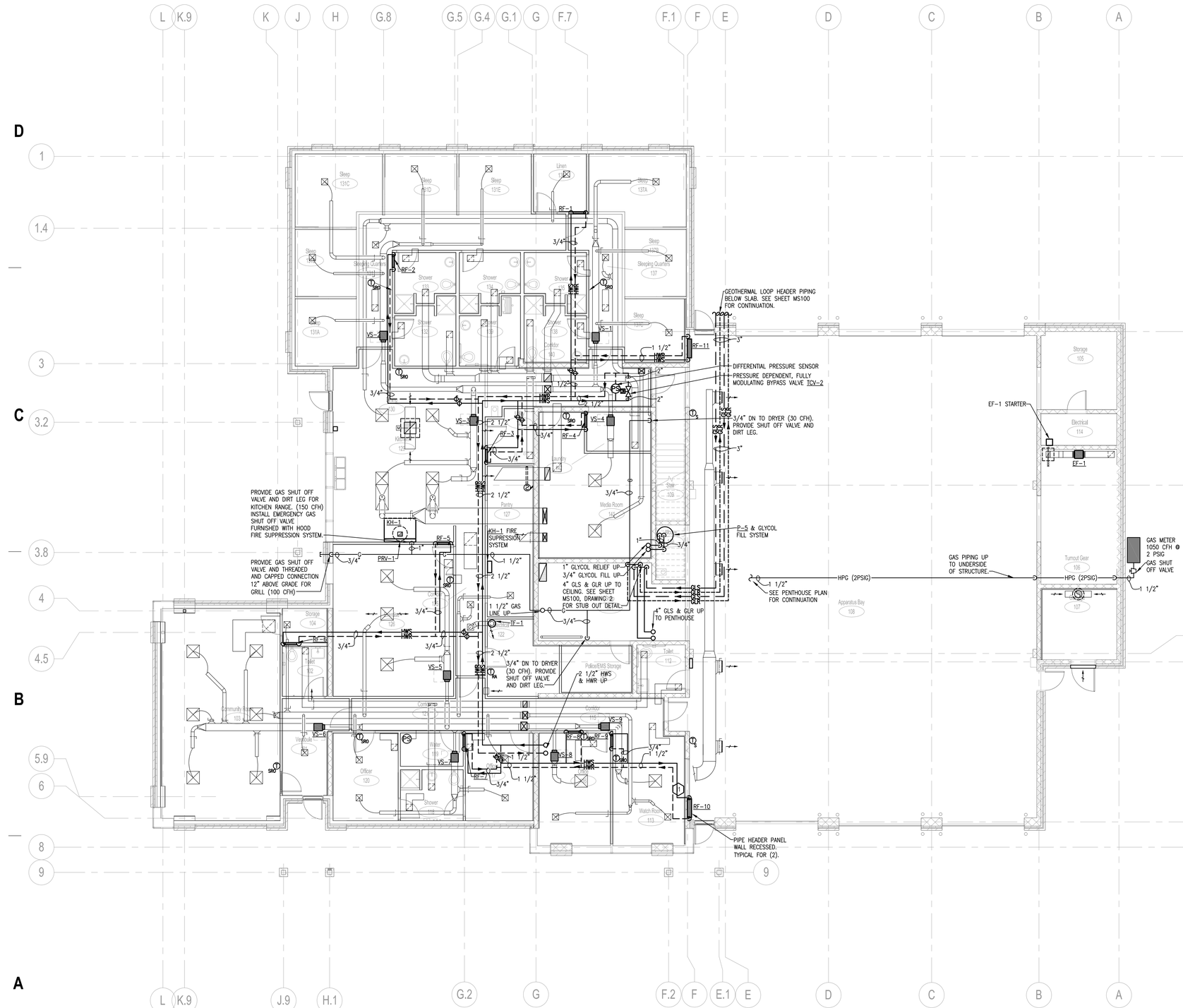
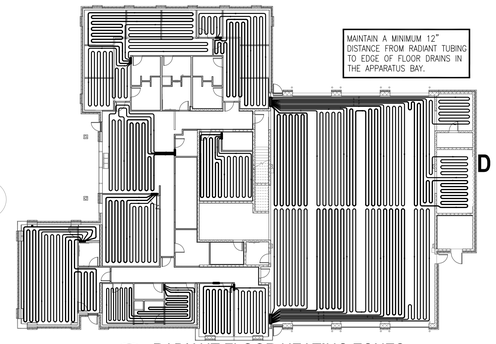
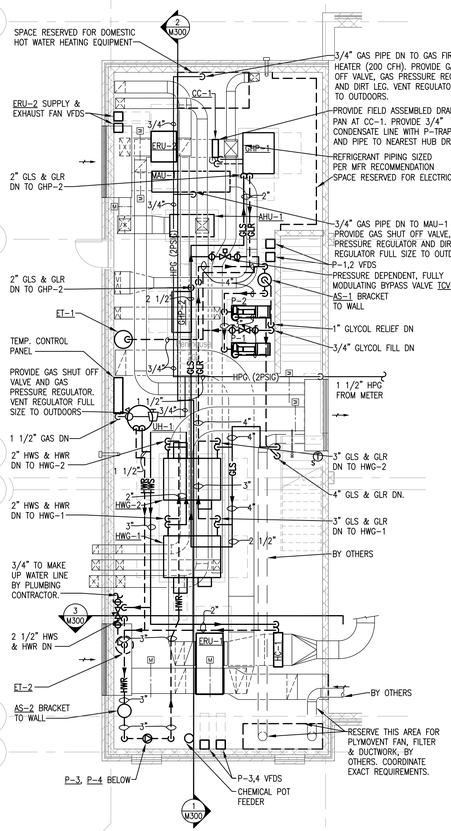


1 MECHANICAL FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"



3 RADIANT FLOOR HEATING ZONES
NO SCALE



2 MECHANICAL PENTHOUSE PLAN
SCALE: 1/8" = 1'-0"

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Mechanical Piping Plans

M200

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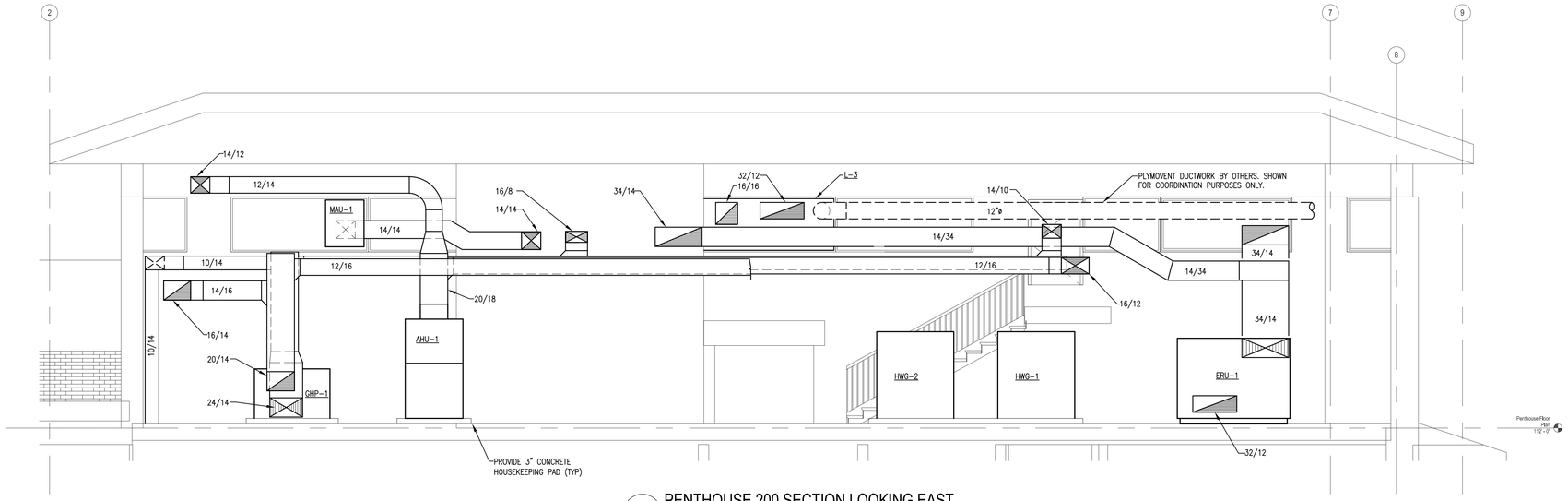
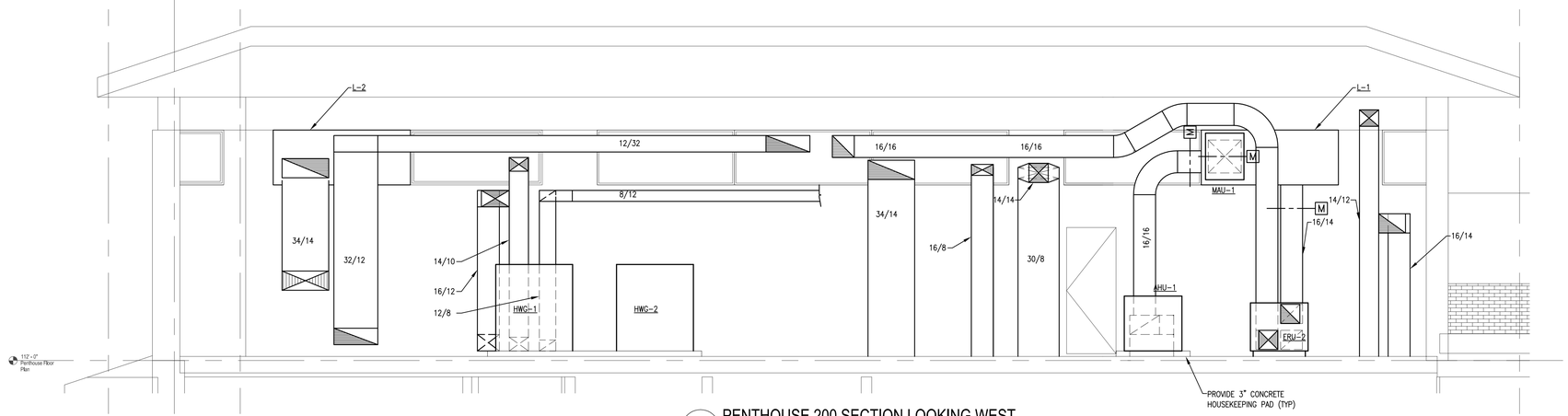
HEC Project Number: 12-0062.00



1 PENTHOUSE 200 SECTION LOOKING EAST
SCALE: 1/4" = 1'-0"



2 PENTHOUSE 200 SECTION LOOKING WEST
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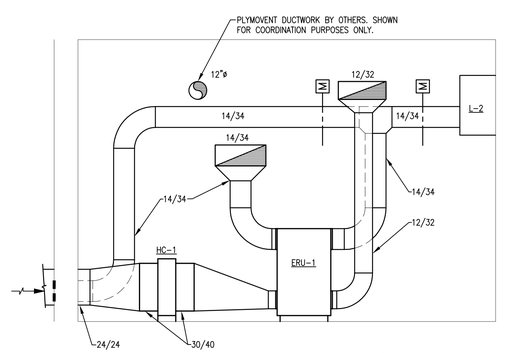

3 PENTHOUSE 200 SECTION LOOKING SOUTH
SCALE: 1/4" = 1'-0"

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PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

Madison

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

SHEET INFORMATION

REVISIONS

#	DATE	DESCRIPTION

DATE
May 03, 2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

Mechanical Sections

M300

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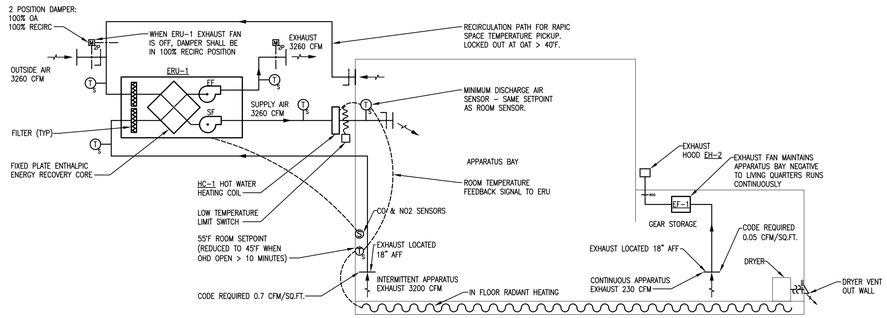
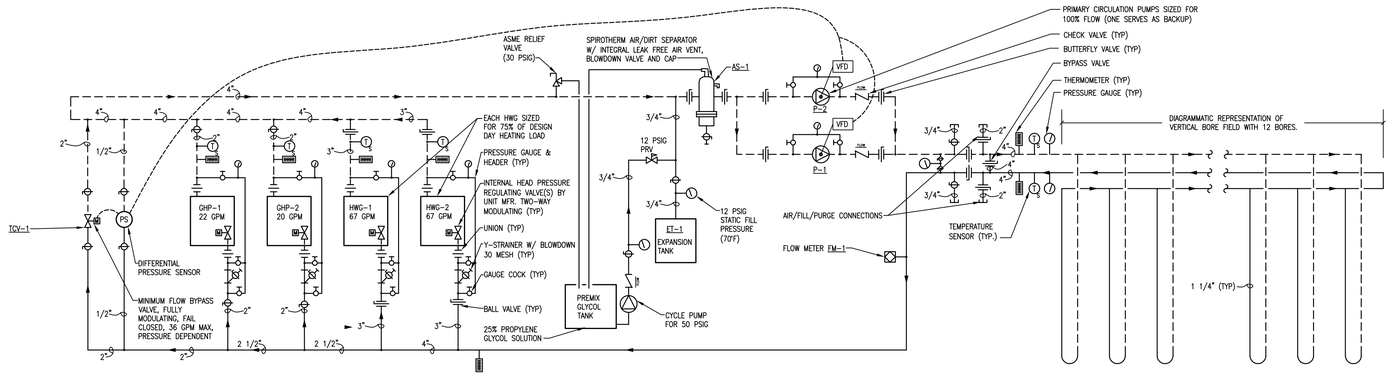


2 APPARATUS BAY SYSTEM CONCEPT DIAGRAM
NO SCALE



3 GEOTHERMAL SYSTEM CONCEPT DIAGRAM
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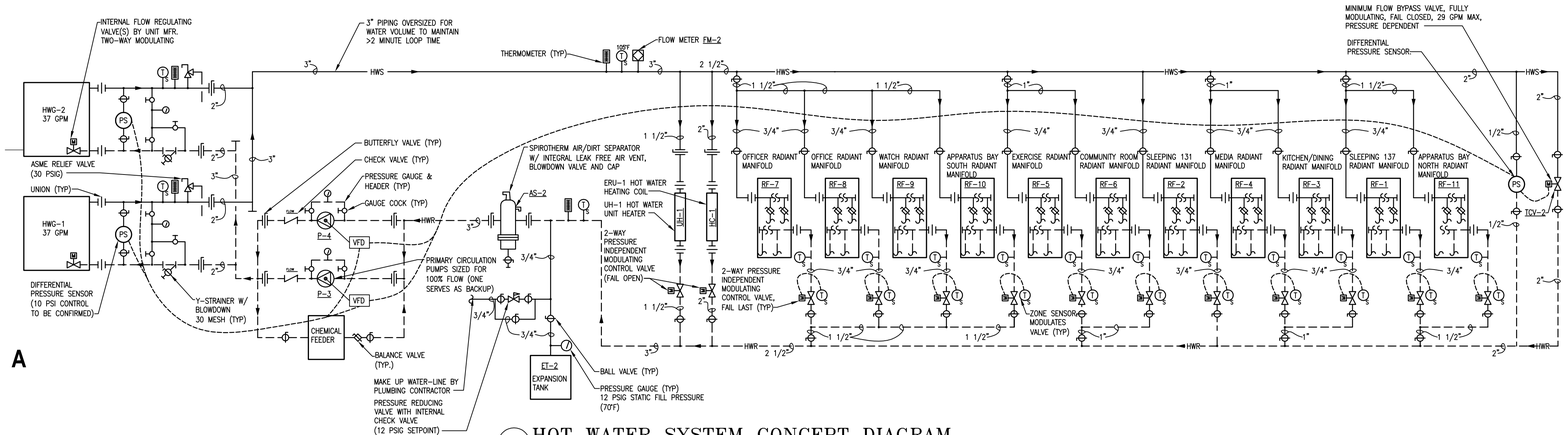
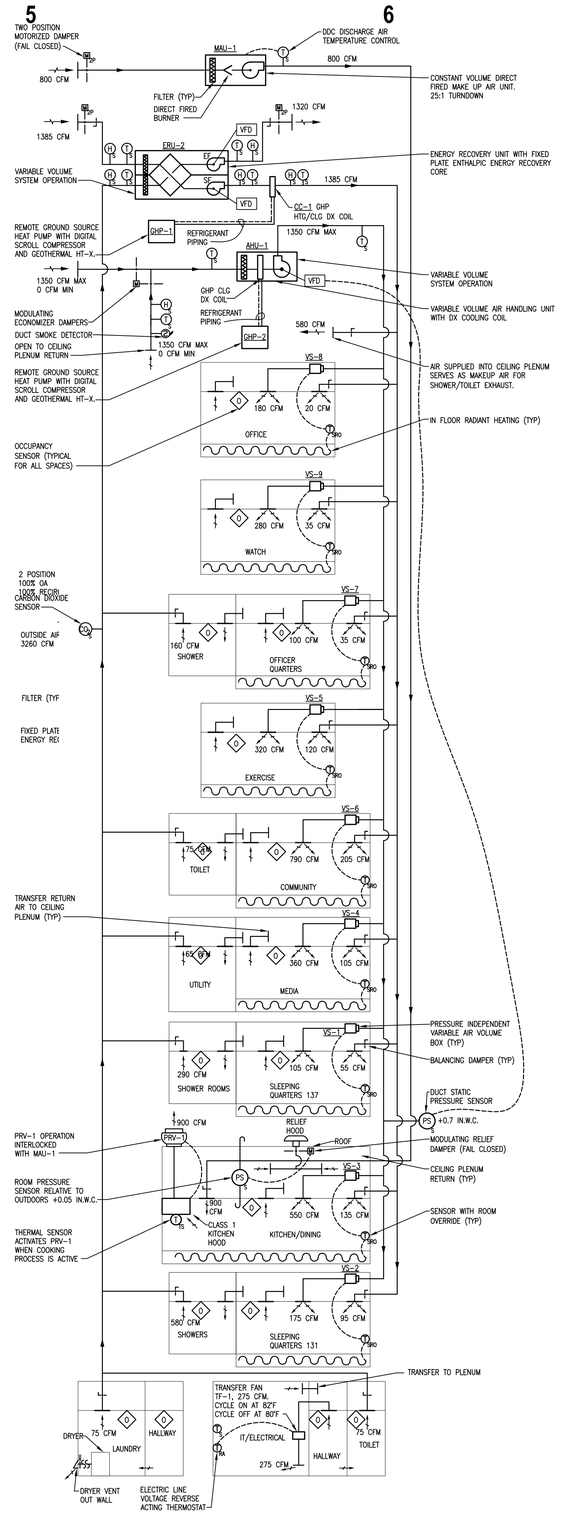


4 HOT WATER SYSTEM CONCEPT DIAGRAM
NO SCALE



1 AIRSIDE DISTRIBUTION SYSTEM CONCEPT DIAGRAM
NO SCALE

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Madison Project #53W1152, Contract # 6590

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Mechanical System Concept Diagrams

M400

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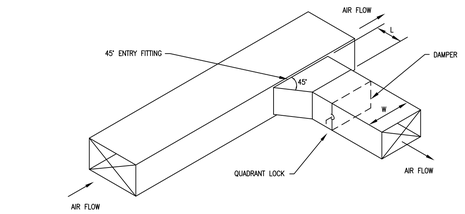
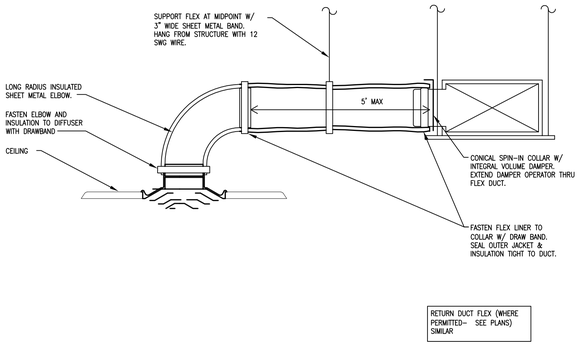
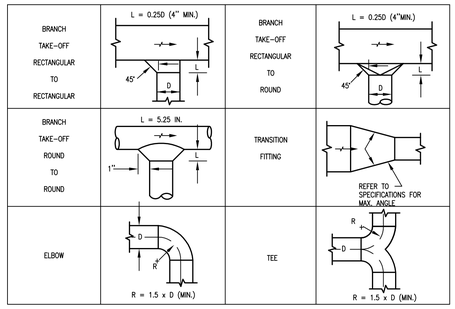


NOTE: L = 1/4W (4" MIN) (REVERSE FLOW ARROWS FOR EXHAUST AND RETURN)

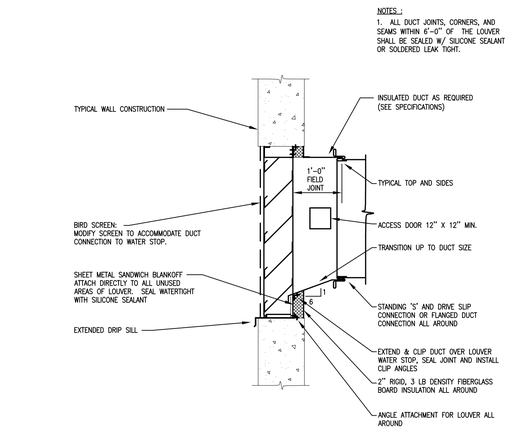
7 BRANCH DUCT TAKEOFF DETAIL
NO SCALE



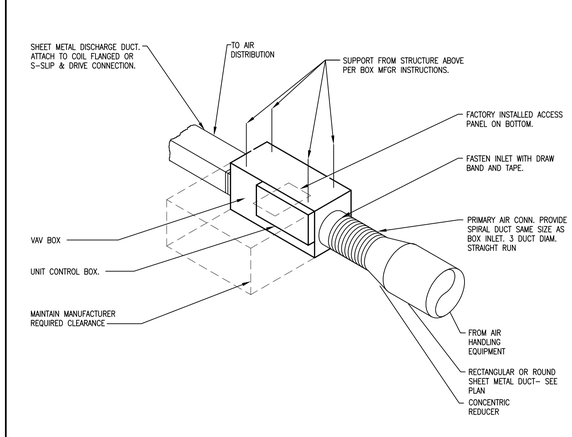
4 CEILING DIFFUSER TO DUCT CONNECTION
NO SCALE



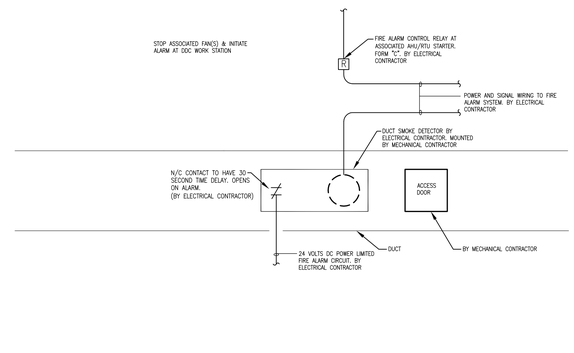
1 TYPICAL DUCT TAKE-OFF DETAIL
NO SCALE



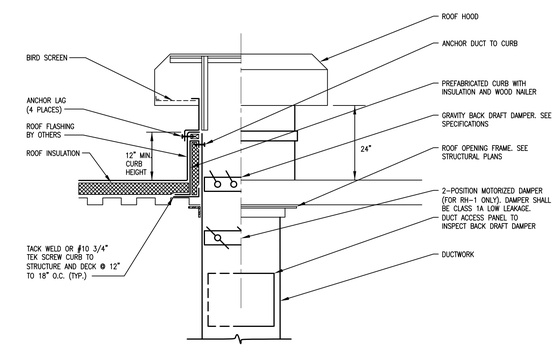
8 LOUVER INSTALLATION DETAIL
NO SCALE



5 TYPICAL VAV BOX
NO SCALE

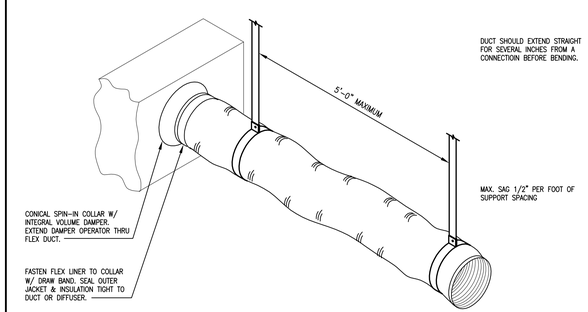


2 DUCT SMOKE DETECTOR DETAIL
NO SCALE

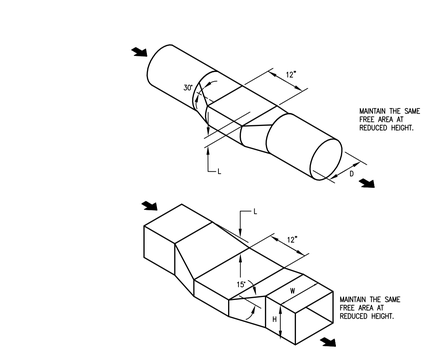


9 ROOF HOOD DETAIL – RELIEF/EXHAUST
NO SCALE

METAL ROOF DECK WITH MEMBRANE ROOF FLASHING



6 FLEXIBLE DUCT SUPPORT DETAIL
NO SCALE



3 DUCT DEPRESSED TO MISS OBSTRUCTION DETAIL
NO SCALE

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PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

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Mechanical Details

M500

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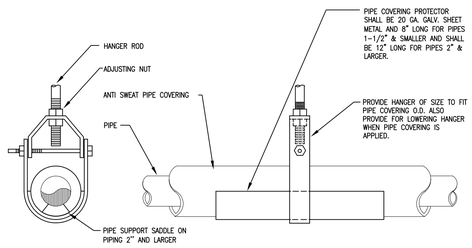
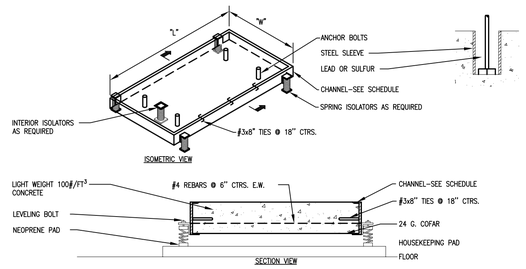
HEC Project Number: 12-0062.00



7 PIPE SUPPORT DETAIL
NO SCALE



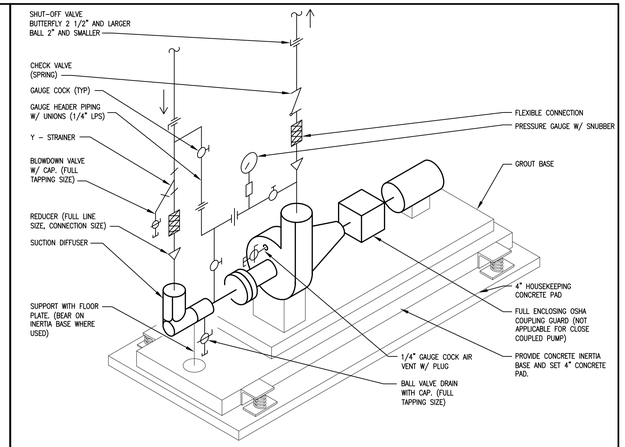
LOAD PER SQUARE FOOT	MAXIMUM "W"	SLAB THICKNESS	CHANNEL SIZE
0-75	10'	6"	6" ⌴ @ 8.2#
75-120	12'	8"	8" ⌴ @ 11.5#
120-150	16'	12"	12" ⌴ @ 20.7#
150-200	18'	15"	15" ⌴ @ 33.9#

NOTE-1: LOAD PER SQUARE FOOT = WEIGHT OF MACHINE / AREA OF BASE

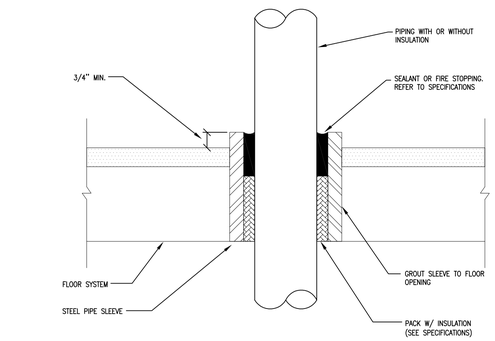
NOTE-2: MINIMUM "L" AND "W" SHALL BE 12", WITH 6" ON EACH SIDE OF EQUIPMENT BASE.

NOTE-3: FACTORY BUILT UNITS BY CONSOLIDATED KINETICS EQUALLY ACCEPTABLE.

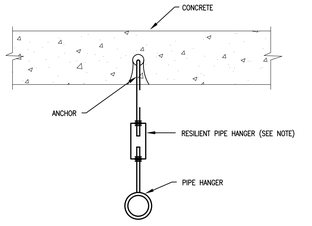
4 INERTIA BASE DETAIL
NO SCALE



1 BASE MOUNTED END SUCTION PUMP W/ INERTIA BASE
NO SCALE

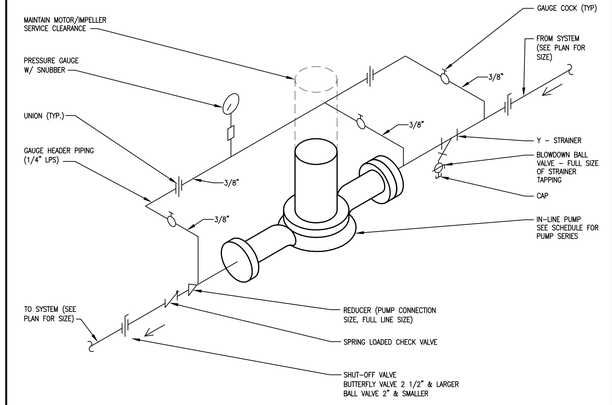


8 PIPE THROUGH FLOOR DETAIL
NO SCALE

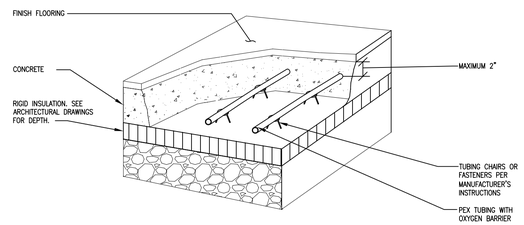


NOTE:
PROVIDE RESILIENT PIPE HANGERS WITHIN 15'-0" OF VIBRATING (ROTATING) EQUIPMENT.

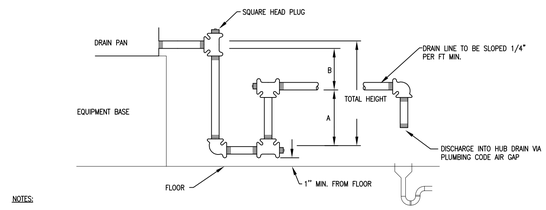
5 TYPICAL PIPE HANGER DETAIL
NO SCALE



2 IN-LINE PUMP DETAIL
NO SCALE

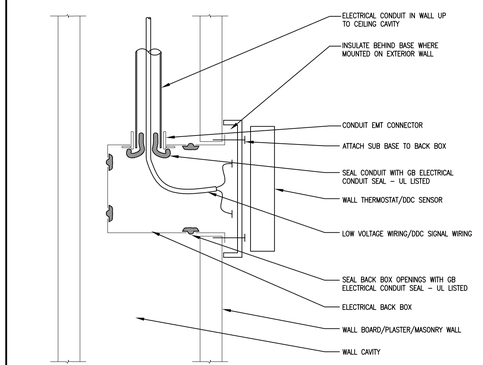


9 RADIANT FLOOR SLAB ON GRADE DETAIL
NO SCALE



NOTES:
1. FILL TRAP MANUALLY ON INITIAL START-UP
2. TRAP EACH COMPONENT DRAIN CONNECTION.
3. PIPE SIZE SHALL NOT BE LESS THAN DRAIN PAN CONNECTION SIZE
4. POSITIVE PRESSURE AT DRAIN PAN
   A = POS. S.P. ON THE DRAIN PAN + 2"
   B = 1"
   TOTAL HEIGHT OF TRAP = A+B+(1 1/2 x PIPE DIAMETER)
5. NEGATIVE PRESSURE AT DRAIN PAN
   A = B/2
   B = NEG. S.P. + 2"
   TOTAL HEIGHT OF TRAP = A+B+(1 1/2 x PIPE DIAMETER)
6. CONTRACTOR MAY USE GALVANIZED STEEL OR COPPER PIPE
7. PROVIDE 2" AIR GAP AT DISCHARGE OF DRAIN PIPE TO HUB DRAIN

6 CONDENSATE DRAIN TRAP DETAIL
NO SCALE



3 TYPICAL WALL THERMOSTAT/DDC SENSOR MOUNTING DETAIL
NO SCALE

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PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

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Mechanical Details

M501

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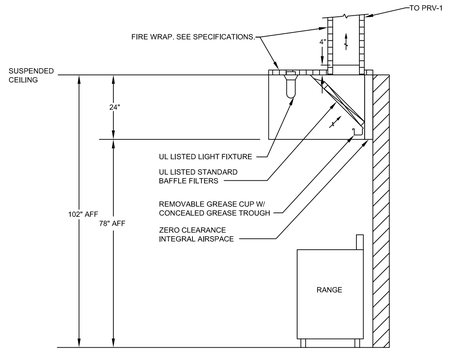
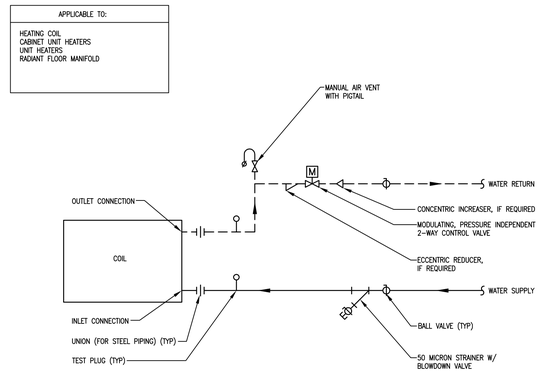
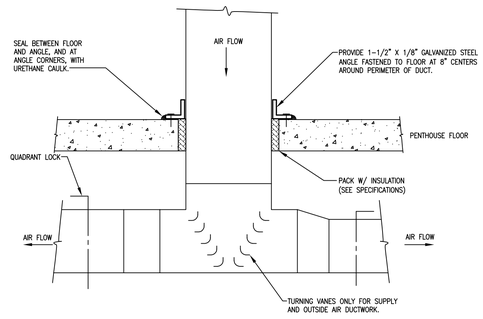


4 KITCHEN HOOD DETAIL
NO SCALE

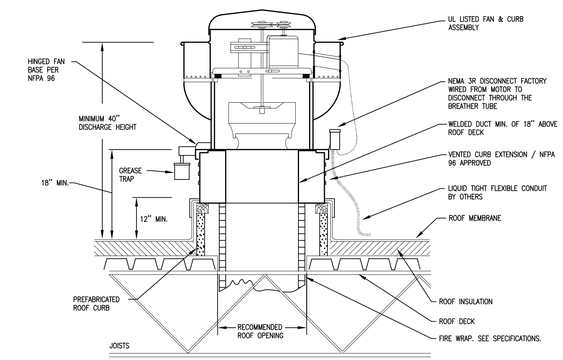


1 TERMINAL UNIT WATER COIL PIPING CONNECTIONS 2-WAY MODULATING VALVE
NO SCALE



NOTE: REVERSE FLOW ARROWS FOR EXHAUST AND RETURN.

5 BRANCH DUCT TAKEOFF FROM RISER DETAIL
NO SCALE



2 TYPICAL KITCHEN HOOD EXHAUST FAN DETAIL
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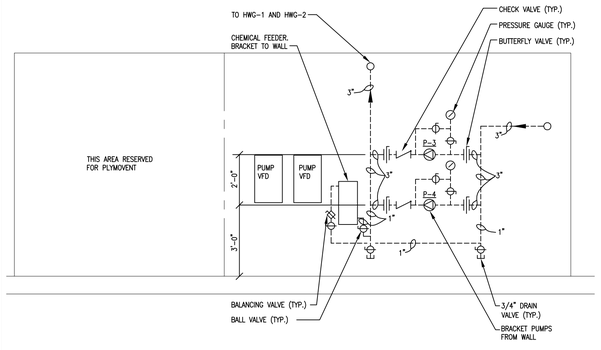

3 PUMP P-3/P-4 DETAIL
NO SCALE

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Mechanical Details

M502

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HEC Project Number: 12-0062.00

DIAPHRAGM EXPANSION TANK SCHEDULE

PLAN MARK ET–	LOCATION	SYSTEM	ACCEPTANCE VOL. (GAL)	RELIEF VALVE SETTING (PSIG)	SYSTEM FILL PRESSURE (PSIG)	TANK PRE–CHARGE PRESSURE (PSIG)	MANUFACTURER	MODEL NO.	COMMENTS
1	PENTHOUSE 200	GEOTHERMAL	34.0	30	12	12	AMTROL	AX–180V	–
2	PENTHOUSE 200	HOT WATER	11.3	30	12	12	AMTROL	AX–40V	–

VARIABLE AIR VOLUME SHUT OFF BOX SCHEDULE

PLAN MARK VS–	SERVES	BOX INLET DIA. (IN.)	MAX. A.P.D. @ MAX. AIRFLOW (IN. W.G.)	MAX. RADIATED NC	MAX. DISCHARGE NC	AIRFLOW CLG. MIN. (CFM)	AIRFLOW CLG. MAX. (CFM)	MANUFACTURER	MODEL	COMMENTS
1	SLEEPING QUARTERS 137	4	0.10	<20	<20	0	105	PRICE	SDV	–
2	SLEEPING QUARTERS 131	5	0.10	<20	<20	0	175	PRICE	SDV	–
3	KITCHEN 129/DINING 130	8	0.10	<20	<20	0	550	PRICE	SDV	–
4	MEDIA 141	7	0.10	<20	<20	0	360	PRICE	SDV	–
5	EXERCISE 126	6	0.10	<20	<20	0	320	PRICE	SDV	–
6	COMMUNITY 103	9	0.10	<20	<20	0	790	PRICE	SDV	–
7	OFFICER 120 & OFFICER 117	4	0.10	<20	<20	0	100	PRICE	SDV	–
8	OFFICE 116	5	0.10	<20	<20	0	180	PRICE	SDV	–
9	WATCH 113	6	0.10	<20	<20	0	280	PRICE	SDV	–

RELIEF/EXHAUST HOOD SCHEDULE

PLAN MARK	SERVICE	CFM	HOOD HEIGHT	THROAT AREA	THROAT VELOCITY (FPM)	MOUNTING LOCATION	FINISH	MANUFACTURER	MODEL NO.	COMMENTS
RH–1	AHU–1 RELIEF	1350	16	2.78	485	ROOF	ALUMINUM	GREENHECK	FGR	BIRD SCREEN, FABRIC BLADE BACKDRAFT DAMPER UPSTREAM OF ISOLATION DAMPER
EH–2	EXHAUST EF–1	230	14	1.0	230	ROOF	ALUMINUM	GREENHECK	FGR	BIRD SCREEN, GRAVITY BACKDRAFT DAMPER
RH–3	GARBAGE 107	205	12	1.07	192	ROOF	WHITE	PENNBARRY	PA–14	ALUMINUM CONSTRUCTION

NATURAL GAS PRESSURE REGULATOR SCHEDULE

MANUFACTURER														
SENSUS METERING SYSTEMS – I VENSYS – EQUIMETER					FISHER					ACTARIS US GAS				
CAPACITY RANGE (CFH)	MODEL NUMBER	BODY SIZE INLET–OUTLET (INCHES)	SPRING RANGE (IN. W.C.)	MINIMUM ORIFICE (INCHES)	CAPACITY RANGE (CFH)	MODEL NUMBER	BODY SIZE INLET–OUTLET (INCHES)	SPRING RANGE (IN. W.C.)	MINIMUM ORIFICE (INCHES)	CAPACITY RANGE (CFH)	MODEL NUMBER	BODY SIZE INLET–OUTLET (INCHES)	SPRING RANGE (IN. W.C.)	MINIMUM ORIFICE (INCHES)
0–150	143–80–2	3/4–3/4	6–14	5/16	0–150	HSR	3/4–3/4	6–8 OR 10–12.5	1/4	0–150	B–42R	3/4–3/4	5–9 OR 8–14	1/2 x 9/16
151–400	143–80–2	3/4–3/4	6–14	5/16	151–370	HSR	3/4–1	6–8 OR 10–12.5	1/2	151–360	B–42R	3/4–1	5–9 OR 8–14	1/2 x 9/16

GENERAL INFORMATION (ALL REGULATORS)
1. MINIMUM INLET PRESSURE, 1.5 PSI; SET OUTLET PRESSURE TO 7 IN. W.C. UNLESS NOTED OTHERWISE ON PLAN.
2. VERIFY CAPACITY SHOWN ON PLANS WITH CAPACITY SCHEDULED FOR EACH REGULATOR MANUFACTURER BEFOR ORDERING. CAPACITIES VARY BETWEEN MANUFACTURERS.
3. PROVIDE WITH INTEGRAL RELIEF VALVE.

* CONFIRM REQUIRED OUTLET GAS PRESSURE FOR EACH PIECE OF EQUIPMENT. SELECT AND PROVIDE SUITABLE SPRING RANGE

HEATING COIL SCHEDULE

PLAN MARK HC–	LOCATION	ACFM	MAX. FACE VELOCITY (FPM)	AIR DATA ENTERING (°F) DB	AIR DATA ENTERING (°F) WB	AIR DATA LEAVING (°F) DB	AIR DATA LEAVING (°F) WB	PRESSURE DROP (IN. WG.)	SENSIBLE HEATING LOAD (MBH)	WATER GPM	WATER PRESSURE DROP (FT. HD.)	E.W.T. (°F)	L.W.T. (°F)	ROWS	FPI	CIRCUIT	MANUFACTURER	MODEL NO.	COMMENTS
1	PENTHOUSE 200	3260	391	55	–	85	–	0.27	105.7	21.4	2.5	105	95	3	10	HALF	AEROFIN	W–10.0AW	–

DX COIL SCHEDULE

PLAN MARK CC–	LOCATION	ACFM	FACE VELOCITY (FPM)	TYPE	AIR DATA E.A.T. °F DB	AIR DATA E.A.T. °F WB	AIR DATA L.A.T. °F DB	AIR DATA L.A.T. °F WB	PRESSURE DROP (IN. WG.) WET	COOLING LOAD (MBH) SENSIBLE	COOLING LOAD (MBH) TOTAL	TOTAL HEATING LOAD (MBH)	REFRIGERANT REFRIG. TYPE	REFRIGERANT SUCTION TEMPERATURE (°F)	REFRIGERANT HEATING HOT GAS TEMPERATURE (°F)	REFRIGERANT CIRCUIT TYPE	REFRIGERANT NUMBER OF CIRCUITS	ROWS	FPI	COIL FACE AREA (SQ. FT.)	MANUFACTURER	MODEL NO.	COMMENTS
1	PENTHOUSE 200	1385	370	HEAT PUMP HTG/CLG	79.4	68.4	52.0	50.5	0.35	51.1	81.1	62.5	R–410A	49.2	–	NORMAL	1	6	12	3.75	AAON	V3B–24X22	SUITABLE FOR DIGITAL SCROLL COMPRESSOR APPLICATION, H1, H3
2	AHU–1	1350	359	COOLING	78.1	63.5	53.0	52.0	0.35	37.6	45	–	R–410A	46.9	–	NORMAL	1	6	12	3.7	AAON	INTEGRAL TO AHU–1	SUITABLE FOR DIGITAL SCROLL COMPRESSOR APPLICATION, H2, H3

H1. CC–1 CONDITIONS 100% OA AFTER ERV. REFRIGERANT METERING TO SUIT. FURNISH SUITABLE ACCESSORIES FOR HEAT PUMP DUTY.
H2. CC–2 CONDITIONS VIA VAV AIR SUPPLY. REFRIGERANT METERING TO SUIT.
H3. DX COIL AND GHP TO BE BY THE SAME MFR. GHP MFR TO PROVIDE REFRIGERANT PIPING DIAGRAMS AND ACCESSORIES TO SUIT.

LOUVER SCHEDULE

PLAN MARK L–	SERVES	SIZE (W" x H" x D")	FREE AREA (SF)	CFM	MATERIAL	FINISH	COLOR	MANUFACTURER	MODEL NO.	COMMENTS
1	ERU–2 & MAU–1 OUTSIDE AIR	96 x 36 x 6	11.96	2185	ALUMINUM	KYNAR	BY ARCHITECT	GREENHECK	ESD–603	EXTERIOR BIRD SCREEN
2	ERU–1 OUTSIDE AIR	96 x 36 x 6	11.96	3260	ALUMINUM	KYNAR	BY ARCHITECT	GREENHECK	ESD–603	EXTERIOR BIRD SCREEN
3	ERU–1 & ERU–2 EXHAUST AIR	96 x 36 x 6	11.96	4580	ALUMINUM	KYNAR	BY ARCHITECT	GREENHECK	ESD–603	EXTERIOR BIRD SCREEN

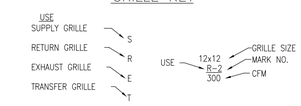
DIFFUSER KEY

DIFFUSER SCHEDULE

MARK NO.	PANEL SIZE	FACE SIZE	NECK SIZE	MANUFACTURER	MODEL NO.	FINISH	NECK VOLUME DAMPER	COMMENTS
A	24x24	24x24	SEE PLAN	PRICE	SPD	WHITE	NO	SQUARE PLAQUE DIFFUSER
B	24x24	12x12	SEE PLAN	PRICE	SPD	WHITE	NO	SQUARE PLAQUE DIFFUSER
C	24x48	24x48	10"ø	PRICE	LFD	ALUMINUM	NO	LAMINAR FLOW DIFFUSER

1. CONTRACTOR SHALL VERIFY CEILING TYPE PRIOR TO ORDERING GRILLES AND DIFFUSERS. SEE PLANS FOR LOCATION, NECK SIZE AND CFM.

GRILLE KEY



SUPPLY, RETURN, EXHAUST & TRANSFER GRILLE SCHEDULE

MARK NO.	GRILLE SIZE	MANUFACTURER	MODEL NO.	FINISH	NECK VOLUME DAMPER	COMMENTS
1	SEE PLAN	PRICE	81	WHITE	NO	1/2" x 1/2" x 1" EGG CRATE, SURFACE MOUNTED
2	24x24	PRICE	81	WHITE	NO	1/2" x 1/2" x 1" EGG CRATE, LAY–IN
3	SEE PLAN	PRICE	520	WHITE	NO	DOUBLE DEFLECTION SIDEWALL GRILLE
4	SEE PLAN	PRICE	530	WHITE	NO	SINGLE DEFLECTION SIDEWALL GRILLE

1. CONTRACTOR SHALL VERIFY CEILING TYPE PRIOR TO ORDERING GRILLES AND DIFFUSERS. SEE PLANS FOR LOCATION, NECK SIZE AND CFM.
2. PROVIDE ALUMINUM GRILLES AND FASTENERS IN SHOWER AREA.

AIR SEPARATOR SCHEDULE

PLAN MARK AS–	LOCATION	SERVES	SIZE (IN.)	WATER FLOW (GPM)	MAX. W.P.D. (FT.)	BUILT–IN STRAINER	MANUFACTURER	MODEL NO.	COMMENTS
1	PENTHOUSE 200	GEOTHERMAL	4	140	–	YES	SPIROTHERM	SPIROVENT	–
2	PENTHOUSE 200	HOT WATER	3	64.5	–	YES	SPIROTHERM	SPIROVENT	–

RADIANT FLOOR MANIFOLD SCHEDULE

PLAN MARK RF–	SERVES	# OF LOOPS	TUBING SIZE (IN.)	TOTAL TUBING LENGTH (FT.)	LONGEST LOOP LENGTH (FT.)	PRESSURE DROP (FT. HD)	MAX. MANIFOLD FLOW (GPM)	SUPPLY WATER TEMP (°F)	WATER TEMP DIFFERENCE (°F)	TUBE SPACING (IN.)	REQUIRED HEAT OUTPUT (MBH)
1	SLEEPING QUARTERS 137	2	1/2"	522	261	13.1	2.4	99	10	12	12.0
2	SLEEPING QUARTERS 131	3	1/2"	770	262	11.2	3.3	97	10	12	16.5
3	KITCHEN 129/DINING 130	2	1/2"	443	238	8.5	2.0	99	10	12	9.9
4	MEDIA 141	2	1/2"	335	172	4.3	1.0	89	10	12	5.0
5	EXERCISE 126	2	1/2"	410	215	1.7	0.9	100	10	12	4.2
6	COMMUNITY 103	3	1/2"	720	266	15.0	4.6	103	10	12	23.1
7	OFFICER 120, SHOWER 119 & OFFICER 117	2	1/2"	395	213	8.4	2.1	103	15	9	15.7
8	OFFICE 116	1	1/2"	172	172	3.2	0.7	103	15	12	5.0
9	WATCH 113	1	1/2"	175	175	4.0	0.9	103	15	12	6.4
10	APPARATUS BAY 108 SOUTH	5	5/8"	1919	417	8.3	6.0	103	20	12	60.0
11	APPARATUS BAY 108 NORTH, STORAGE 105 & TURNOUT 106	6	5/8"	2235	394	8.0	7.0	99	20	12	70.0

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PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

SHEET INFORMATION

REVISIONS

#	DATE	DESCRIPTION

DATE
May 03, 2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

Mechanical Schedules

M600

HARWOOD ENGINEERING CONSULTANTS, LTD
255 North 21st Street Milwaukee Wisconsin 53233
414.475.5554 414.773.9299 fax harwood@hecl.com
HEC Project Number: 12-0062.00

ENERGY RECOVERY UNIT

PLAN MARK ERU–	LOCATION	SERVES	MANUFACTURER	MODEL NO.	ACFM SUPPLY	ACFM EXHAUST	FILTER OUTSIDE AIR	FILTER EXHAUST	COOLING EFFICIENCY (%) (SENS/TOTAL)	COOLING E.A.T. (°F) (DB/WB)	COOLING L.A.T. (°F) (DB/WB)	HEATING EFFICIENCY (%) (SENS/TOTAL)	HEATING E.A.T. (°F)	HEATING L.A.T. (°F)	MOTOR SUPPLY HP	MOTOR SUPPLY E.S.P.	MOTOR EXHAUST HP	MOTOR EXHAUST E.S.P.	FROST PROTECTION PREHEATER (KW)
1	PENTHOUSE 200	APPARATUS 108	RENEWAIRE	HE4XINV	3260	3030	MERV 8	MERV 7	–	–	–	70/67	–15	33.8	2	0.5	2	0.3	–
2	PENTHOUSE 200	LIVING QUARTERS	RENEWAIRE	HE2XINV	1385	1320	MERV 8	MERV 7	68/50	95/75	79/68	68/65	–15	42.8	1.5	0.8	1.5	0.8	–

PLAN MARK ERU–	STARTER DESCRIPTION FURNISHED BY	INSTALLED BY	LOCATION	TYPE	COVER MODIFICATION NEMA RATING	COMB.	BLANK	S/S P.B.	H.O.A.	P.L.	CONTL TFMR (24V/120V)	ELECTRICAL DATA VOLTS/ PHASE	AMPS MCA	AMPS MOCP	FED FROM PNL	FED FROM NO	BKR SIZE	BKR POLE	BR WIRING NO	BR WIRING SIZE	BR WIRING GND	BR WIRING COND	DISCONNECT SWITCH FURN. BY	DISCONNECT SWITCH INST. BY	DISCONNECT SWITCH FUSES	EMERGENCY POWER (YES/NO)	COMMENTS
1	MFR	MFR	INTEGRAL	INTEGRAL	–						–	208/3	13.5	20	M	1,3,5	20	3	3	12	12	1/2	M.C.	E.C.	YES	NO	–
2	T.C.C.	E.C.	PENTHOUSE 200	SUPLY VFD	1						–	208/3	10.1	20	M	20,22,24	20	3	3	12	12	1/2	M.C.	E.C.	YES	NO	–
	T.C.C.	E.C.	PENTHOUSE 200	EXHAUST VFD	1						–	208/3	10.1	20	M	37,39,41	20	3	3	12	12	1/2	M.C.	E.C.	YES	NO	–

HOT WATER UNIT HEATER

PLAN MARK UH–	LOCATION	SERVES	MANUFACTURER	MODEL NO.	CFM	CAT. GPM	FAN RPM	CAPACITY (MBH)	TYPE	HOT WATER (°F) E.W.T.	HOT WATER (°F) L.W.T.	WATER BRANCH PIPING SIZE	STARTER DESCRIPTION FURNISHED BY	STARTER DESCRIPTION INSTALLED BY	STARTER DESCRIPTION LOCATION	STARTER DESCRIPTION TYPE	ELECTRICAL DATA VOLTS/ PHASE	HP	AMPS MCA	AMPS MOCP	FED FROM PNL	FED FROM NO	BKR SIZE	BKR POLE	BR WIRING NO	BR WIRING SIZE	BR WIRING GND	BR WIRING COND	DISCONNECT SWITCH FURN. BY	DISCONNECT SWITCH INST. BY	DISCONNECT SWITCH FUSES	EMERGENCY POWER (YES/NO)	COMMENTS
1	PENTHOUSE 200	PENTHOUSE 200	MODINE	V–139	2660	11.1	1075	34.1	VERTICAL	105	85	1 1/2	M.C.	M.C.	PENTHOUSE	MANUAL	120/1	1/5	–	–	M	9	20	1	2	12	12	1/2	M.C.	E.C.	YES	NO	H1

H1: WITH LOUVER CONE DIFFUSER

PUMP SCHEDULE

PLAN MARK P–	LOCATION	SERVES	MANUFACTURER	MODEL NO.	WATER FLOW (GPM) MAX	WATER FLOW (GPM) MIN	HEAD (FT)	NPSH (FT)	PUMP EFFIC. (%)	SUCT. (IN.)	DISCH. (IN.)	IMPELLER (IN.)	STARTER DESCRIPTION FURNISHED BY	STARTER DESCRIPTION INSTALLED BY	STARTER DESCRIPTION LOCATION	STARTER DESCRIPTION TYPE	COVER MODIFICATION NEMA RATING	COMB.	BLANK	S/S P.B.	H.O.A.	P.L.	CONTL TFMR (24V/120V)	HP	BHP	INVERT. DUTY (YES/NO)	MOTOR EFFIC. (%)	PUMP SPEED (RPM)	ELECTRICAL DATA VOLTS/ PHASE	AMPS MCA	AMPS MOCP	FED FROM PNL	FED FROM NO	BKR SIZE	BKR POLE	BR WIRING NO	BR WIRING SIZE	BR WIRING GND	BR WIRING COND	DISCONNECT SWITCH FURN. BY	DISCONNECT SWITCH INST. BY	DISCONNECT SWITCH FUSES	EMERGENCY POWER YES/NO	COMMENTS
1	PENTHOUSE 200	GEOTHERMAL SYSTEMS	B&G	1510–2BC	140*	36*	80*	5.1	69.1	2.5	2	9	T.C.C.	E.C.	PENTHOUSE 200	VFD	1						–	7.5	4.16	YES	–	1750	208/3	–	–	M	13,15,17	50	3	3	6	10	1	M.C.	E.C.	–	NO	H1, H2, H3, H4
2	PENTHOUSE 200	GEOTHERMAL SYSTEMS	B&G	1510–2BC	140*	36*	80*	5.1	69.1	2.5	2	9	T.C.C.	E.C.	PENTHOUSE 200	VFD	1						–	7.5	4.16	YES	–	1750	208/3	–	–	M	19,21,23	50	3	3	6	10	1	M.C.	E.C.	–	NO	H1, H2, H3, H4
3	PENTHOUSE 200	HOT WATER SYSTEM	B&G	90 1–1/2AA	64.5	18	52	13.1	56.4	1.5	1.5	4.125	T.C.C.	E.C.	PENTHOUSE 200	VFD	1						–	2	1.58	YES	–	3450	208/3	–	–	M	25,27,29	20	3	3	12	12	1/2	M.C.	E.C.	–	NO	H1
4	PENTHOUSE 200	HOT WATER SYSTEM	B&G	90 1–1/2AA	64.5	18	52	13.1	56.4	1.5	1.5	4.125	T.C.C.	E.C.	PENTHOUSE 200	VFD	1						–	2	1.58	YES	–	3450	208/3	–	–	M	26,28,30	20	3	3	12	12	1/2	M.C.	E.C.	–	NO	H1
5	ALCOVE	GEOTHERMAL FILL SYSTEM	AXIOM	SF100	1.0	1.0	50 PSIG	–	–	–	–	–	MFR	MFR	INTEGRAL	INTEGRAL	–						–	–	–	NO	–	–	120/1	0.9	–	M	11	20	1	2	12	12	1/2	–	–	–	NO	E1

*ADJUSTED FOR 25% PROPYLENE GLYCOL
H1. MOTOR WITH AEGIS SGP SHAFT GROUNDING BRUSH
H2. SPECIAL VFD DUTY PUMP/MOTOR COUPLING. SEE SPECIFICATION
H3. OSHA COUPLING GUARD
H4. REQUIRE INERTIA BASE WITH VIBRATION ISOLATION PADS

E1. PROVIDE A CORD AND PLUG

POWER ROOF VENTILATOR SCHEDULE

PLAN MARK PRV–	LOCATION	SERVES	MANUFACTURER	MODEL NO.	TYPE	ACFM	EXTERNAL STATIC PRESSURE (IN. W.G.)	FAN RPM	MOTOR BHP	DRIVE	STARTER DESCRIPTION FURNISHED BY	STARTER DESCRIPTION INSTALLED BY	STARTER DESCRIPTION LOCATION	STARTER DESCRIPTION TYPE	COVER MODIFICATION NEMA RATING	COMB.	BLANK	S/S P.B.	H.O.A.	P.L.	CONTL TFMR (24V/120V)	CONTROLLED BY	ELECTRICAL DATA VOLTS/ PHASE	MOTOR HP	AMPS FLA	AMPS MOCP	FED FROM PNL	FED FROM NO	BKR SIZE	BKR POLE	BR WIRING NO	BR WIRING SIZE	BR WIRING GND	BR WIRING COND	DISCONNECT SWITCH FURN. BY	DISCONNECT SWITCH INST. BY	DISCONNECT SWITCH FUSES	EMERGENCY POWER (YES/NO)	COMMENTS
1	ROOF	KH–1	GREENHECK	USGF–160XP–5	UPBLAST	800	1.1	1557	0.37	BELT	M.C.	E.C.	PENTHOUSE 200	MAGNETIC	1				•	•	•	KH–1	208/3	1/2	2.4	–	M	2,4,6	20	3	3	12	12	1/2	MFR	MFR	YES	NO	H1, H2

H1. UL LISTED FOR GREASE HOOD EXHAUST
H2. UL LISTED ROOF HOOD WITH HINGED BASE PER NFPA 96

KITCHEN EXHAUST HOOD/VENTILATION SCHEDULE

PLAN MARK KH–	SERVES	MANUFACTURER	MODEL NO.	LENGTH x WIDTH x HEIGHT	MATERIAL	EXHAUST CFM	EXHAUST SP. IN W.C.	EXHAUST DUCT SIZE IN. x IN.	ELECTRICAL DATA VOLTS/ PHASE	AMPS MCA	AMPS MOCP	FED FROM PNL	FED FROM NO	BKR SIZE	BKR POLE	BR WIRING NO	BR WIRING SIZE	BR WIRING GND	BR WIRING COND	DISCONNECT SWITCH FURN. BY	DISCONNECT SWITCH INST. BY	DISCONNECT SWITCH FUSES	EMERGENCY POWER (YES/NO)	HARDWIRE INTERLOCK WITH PLAN MARK NO.	COMMENTS
1	MODEL HOME 026	GREENHECK	GHEW	60x39x24	430 SS	800	0.375	9 x 8	120/1	3	20	M	7	20	1	2	12	12	1/2	–	–	–	NO	PRV–1	H1, H2, H3, H4, H5

H1. PROVIDE ANSUL FIRE SUPPRESSION SYSTEM FOR HOOD.
H2. PROVIDE HEAT SENSOR IN HOOD. INTERLOCK HEAT SENSOR WITH PRV–1.
H3. PROVIDE BACK SUPPLY PLENUM.
H4. PROVIDE HOOD WITH (2) 120 W INCANDESCENT LAMPS. PROVIDE SWITCH FOR LIGHTS ON HOOD.
H5. NSF/NFPA 96/IMC LABEL AND APPROVED

MAKE UP AIR UNIT – GAS FIRED SCHEDULE

PLAN MARK MAU–	LOCATION	SERVES	MANUFACTURER	MODEL NO.	WEIGHT (LBS)	TYPE	CFM	EXTERNAL SP	FUEL TYPE	GAS PRESSURE TO UNIT	GAS PRESSURE FROM METER	INLET HOOD (Y/N)	INLET DAMPER (Y/N)	MODULATION PERCENTAGE (RA/ OA) 100% OA (Y/N)	80/20 (Y/N)	70/30 (Y/N)	60/40 (Y/N)	50/50 (Y/N)	EAT/LAT (°F)	BURNER TURNDOWN	MBH IN/OUT	STARTER DESCRIPTION FURNISHED BY	STARTER DESCRIPTION INSTALLED BY	STARTER DESCRIPTION LOCATION	STARTER DESCRIPTION TYPE	COVER MODIFICATION NEMA RATING	COMB.	BLANK	S/S P.B.	H.O.A.	P.L.	CONTL TFMR (24V/120V)	ELECTRICAL DATA VOLTS/ PHASE	HP	AMPS MCA	AMPS MOCP	FED FROM PNL	FED FROM NO	BKR SIZE	BKR POLE	BR WIRING NO	BR WIRING SIZE	BR WIRING GND	BR WIRING COND	DISCONNECT SWITCH FURN. BY	DISCONNECT SWITCH INST. BY	DISCONNECT SWITCH FUSES	EMERGENCY POWER (YES/NO)	HARDWIRE INTERLOCK WITH PLAN MARK NO.	COMMENTS
1	PENTHOUSE 200	KH–1	GREENHECK	DG–108–H10	600	DIRECT FIRED	900	0.6	NG	7" WC	2 PSIG	N	N	Y					–15/70	25 TO 1	90/83	MFR	MFR	INTEGRAL	INTEGRAL	–						–	208/3	1/2	3.7	15	M	8,10,12	20	3	3	12	12	1/2	M.C.	E.C.	YES	NO	PRV–1	–

WATER TO WATER HEAT PUMP CRITERIA

PLAN MARK HWG–	MANUFACTURER	MODEL NO.	LOCATION	NOMINAL SIZE (TONS)	COMP. TYPE	REFR. TYPE	BOREFIELD WATER FLUID TYPE	BOREFIELD WATER E.W.T. (°F)	BOREFIELD WATER L.W.T. (°F)	BOREFIELD WATER WATER FLOW (GPM)	BOREFIELD WATER PRESS. DROP (FT)	HOT WATER FLUID TYPE	HOT WATER E.W.T. (°F)	HOT WATER L.W.T. (°F)	HOT WATER WATER FLOW (GPM)	HOT WATER PRESS. DROP (FT)	STARTER DESCRIPTION FURNISHED BY	STARTER DESCRIPTION INSTALLED BY	STARTER DESCRIPTION LOCATION	STARTER DESCRIPTION TYPE	COVER MODIFICATION NEMA RATING	COMB.	BLANK	S/S P.B.	H.O.A.	P.L.	CONTL TFMR (24V/120V)	FUSES	ELECTRICAL DATA VOLTS/ PHASE	AMPS MCA	AMPS MOCP	FED FROM PNL	FED FROM NO	BKR SIZE	BKR POLE	BR WIRING NO	BR WIRING SIZE	BR WIRING GND	BR WIRING COND	DISCONNECT SWITCH FURN. BY	DISCONNECT SWITCH INST. BY	DISCONNECT SWITCH FUSES	EMERGENCY POWER (YES/NO)	HARDWIRE INTERLOCK WITH PLAN MARK NO.	COMMENTS
1	MULTISTACK	(2)MS010XC5A2H2AA–410A	PENTHOUSE 200	20	SCROLL	R–410A	25% GLYCOL MIX	30	25	67	15.06	WATER	93	105	37	9.0	MFR	MFR	UNIT CONTROL PANEL	INTEGRAL	–						–	–	208/3	97	125	MDP	–	125	3	3	1/0	6	1–1/2	M.C.	E.C.	YES	NO	P–1/P–2 P–3/P–4	H1, H2
2	MULTISTACK	(2)MS010XC5A2H2AA–410A	PENTHOUSE 200	20	SCROLL	R–410A	25% GLYCOL MIX	30	25	67	15.06	WATER	93	105	37	9.0	MFR	MFR	UNIT CONTROL PANEL	INTEGRAL	–						–	–	208/3	97	125	MDP	–	125	3	3	1/0	6	1–1/2	M.C.	E.C.	YES	NO	P–1/P–2 P–3/P–4	H1, H2

H1. (2) 10 TON MODULES
H2. EITHER P–1 OR P–2, P–3 OR P–4 MUST BE RUNNING TO START HWG

GROUND LOOP SOURCE HEAT PUMP SCHEDULE

PLAN MARK	LOCATION	SERVES	MANUFACTURER	MODEL NO.	COMP. TYPE	DX COIL AIRFLOW (CFM)	RATED CAPACITIES 90° EWT CLG, 30° EWT HTG (25% PROPOLYNE GLYCOL) HEATING TOTAL MBH	HEATING EAT (°F)	HEATING LAT (°F)	HEATING COP	HEATING HEAT OF ABSORB. (MBH)	COOLING SENS. MBH	COOLING TOTAL MBH	COOLING NOMINAL TONS	COOLING EAT DB/WB (°F)	COOLING LAT DB/WB (°F)	COOLING EER	COOLING HEAT OF REJECT. (MBH)	MAX. GPM	WPD (FT)	STARTER DESCRIPTION FURNISHED BY	STARTER DESCRIPTION INSTALLED BY	STARTER DESCRIPTION LOCATION	STARTER DESCRIPTION TYPE	COVER MODIFICATION NEMA RATING	COMB.	BLANK	S/S P.B.	H.O.A.	P.L.	24V CONTL TFMR	FUSES	ELECTRICAL DATA VOLTS/ PHASE	AMPS MCA	AMPS MOCP	FED FROM PNL	FED FROM NO	BKR SIZE	BKR POLE	BR WIRING NO	BR WIRING SIZE	BR WIRING GND	BR WIRING COND	DISCONNECT SWITCH FURN. BY	DISCONNECT SWITCH INST. BY	DISCONNECT SWITCH FUSES	EMERGENCY POWER (YES/NO)	HARDWIRE INTERLOCK WITH PLAN MARK NO.	COMMENTS
GHP–1	PENTHOUSE 200	CC–1	AAON	CC–B–005	DIGITAL SCROLL	1385	62.5	42.0	83.8	3.55	46.6	40.0	59.4	5	79.4/68.4	54.8/52.8	12.1	75.3	22	7.8	MFR	MFR	UNIT CONTROL PANEL	INTEGRAL	–						–	–	208/3	28.6	40	M	32,34,36	40	3	3	8	10	3/4	M.C.	E.C.	YES	NO	ERV–2	H1, H2, H3
GHP–2	PENTHOUSE 200	AHU–1	AAON	CC–B–004	DIGITAL SCROLL	1350	–	–	–	–	–	37.6	45	4	78.1/63.5	53.0/52.0	11.2	57.9	20	7.0	MFR	MFR	UNIT CONTROL PANEL	INTEGRAL	–						–	–	208/3	20	30	M	38,40,42	30	3	3	10	10	3/4	M.C.	E.C.	YES	NO	AHU–1	H1, H2, H3

H1. ALL UNITS SHALL HAVE WATER REGULATING VALVES, THERMAL EXPANSION VALVES, AND REVERSING VALVES
H2. BASED ON AAON
H3. HEAT PUMPS ARE DESIGNED WITH 25% PROPOLYNE GLYCOL.

FAN SCHEDULE

PLAN MARK	LOCATION	SERVES	MANUFACTURER	MODEL NO.	AIRFLOW (CFM)	STATIC PRESSURE (IN. W.G.)	FAN TYPE	FAN DRIVE	FAN SPEED (RPM)	FAN POWER (BHP)	STARTER DESCRIPTION FURNISHED BY	STARTER DESCRIPTION INSTALLED BY	STARTER DESCRIPTION LOCATION	STARTER DESCRIPTION TYPE	COVER MODIFICATION NEMA RATING	COMB.	BLANK	S/S P.B.	H.O.A.	P.L.	CONTL TFMR (24V OR 120 V)	CONTROLLED BY	ELECTRICAL DATA VOLTS/ PHASE	MOTOR HP	AMPS MCA	AMPS MOCP	FED FROM PNL	FED FROM NO	BKR SIZE	BKR POLE	BR WIRING NO	BR WIRING SIZE	BR WIRING GND	BR WIRING COND	DISCONNECT SWITCH FURN. BY	DISCONNECT SWITCH INST. BY	DISCONNECT SWITCH FUSES	EMERGENCY POWER (YES/NO)	HARDWIRE INTERLOCK WITH PLAN MARK NO.	COMMENTS
EF–1	GEAR STORAGE	GEAR STORAGE	GREENHECK	SQ–80–D	230	0.5	INLINE	DIRECT	–	0.05	M.C.	E.C.	ELECTRICAL 114	MANUAL	1					•	–	TEMP. CONTROLS	120/1	1/12	–	–	B	15	20	1	2	12	12	1/2	M.C.	E.C.	YES	NO	–	–
TF–1	ELECTRICAL 122	ELECTRICAL 122	FANTECH	FG8	275	0.3	INLINE	DIRECT	–	119 W	M.C.	E.C.	ELECTRICAL 122	MANUAL	1					•	–	TEMP. CONTROLS	120/1	140 W	–	–	L	1	20	1	2	12	12	1/2	M.C.	E.C.	YES	NO	–	–

AIR HANDLING UNIT SCHEDULE

PLAN MARK AHU–	SERVES	LOCATION	MANUFACTURER	MODEL	FAN AIRFLOW TOTAL (CFM)	FAN AIRFLOW O.A. (CFM)	FAN STATIC PRESSURE TOTAL (IN. W.G.)	FAN STATIC PRESSURE EXTERNAL (IN. W.G.)	FAN SIZE	FAN TYPE	FAN SPEED (RPM)	FAN CAPACITY CONTROL	UNIT SECTIONS COOLING COIL	UNIT SECTIONS FILTER	STARTER DESCRIPTION FURNISHED BY	STARTER DESCRIPTION INSTALLED BY	STARTER DESCRIPTION LOCATION	STARTER DESCRIPTION TYPE	COVER MODIFICATION NEMA RATING	COMB.	BLANK	S/S P.B.	H.O.A.	P.L.	CONTL TFMR (24V/120V)	HARDWIRE INTERLOCK WITH PLAN MARK NO.	ELECTRICAL DATA VOLTS/ PHASE	HP	AMPS MCA	AMPS MOCP	FED FROM PNL	FED FROM NO	BKR SIZE	BKR POLE	BR WIRING NO	BR WIRING SIZE	BR WIRING GND	BR WIRING COND	DISCONNECT SWITCH FURN. BY	DISCONNECT SWITCH INST. BY	DISCONNECT SWITCH FUSES	EMERGENCY POWER (YES/NO)	DUCT SMOKE DETECTOR (YES/NO) SUPPLY	DUCT SMOKE DETECTOR (YES/NO) RETURN	COMMENTS
1	LIVING QUARTERS	PENTHOUSE 200	AAON	V3–BRB–8	1350	0	2.09	1.5	–	PLENUM	1943	VFD	SEE GHP–2 AND CC–2	MERV 7	T.C.C.	E.C.	PENTHOUSE 200	VFD	1						–	GHP–2	208/3	2	9	20	M	43,45,47	20	1	2	12	12	1/2	M.C.	E.C.	YES	NO	NO	NO	–

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PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

Madison

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

SHEET INFORMATION

REVISIONS

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DATE
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PROJECT NUMBER	STUDIO
120062.00	Sabinash

Mechanical-Electrical Schedules

ME100

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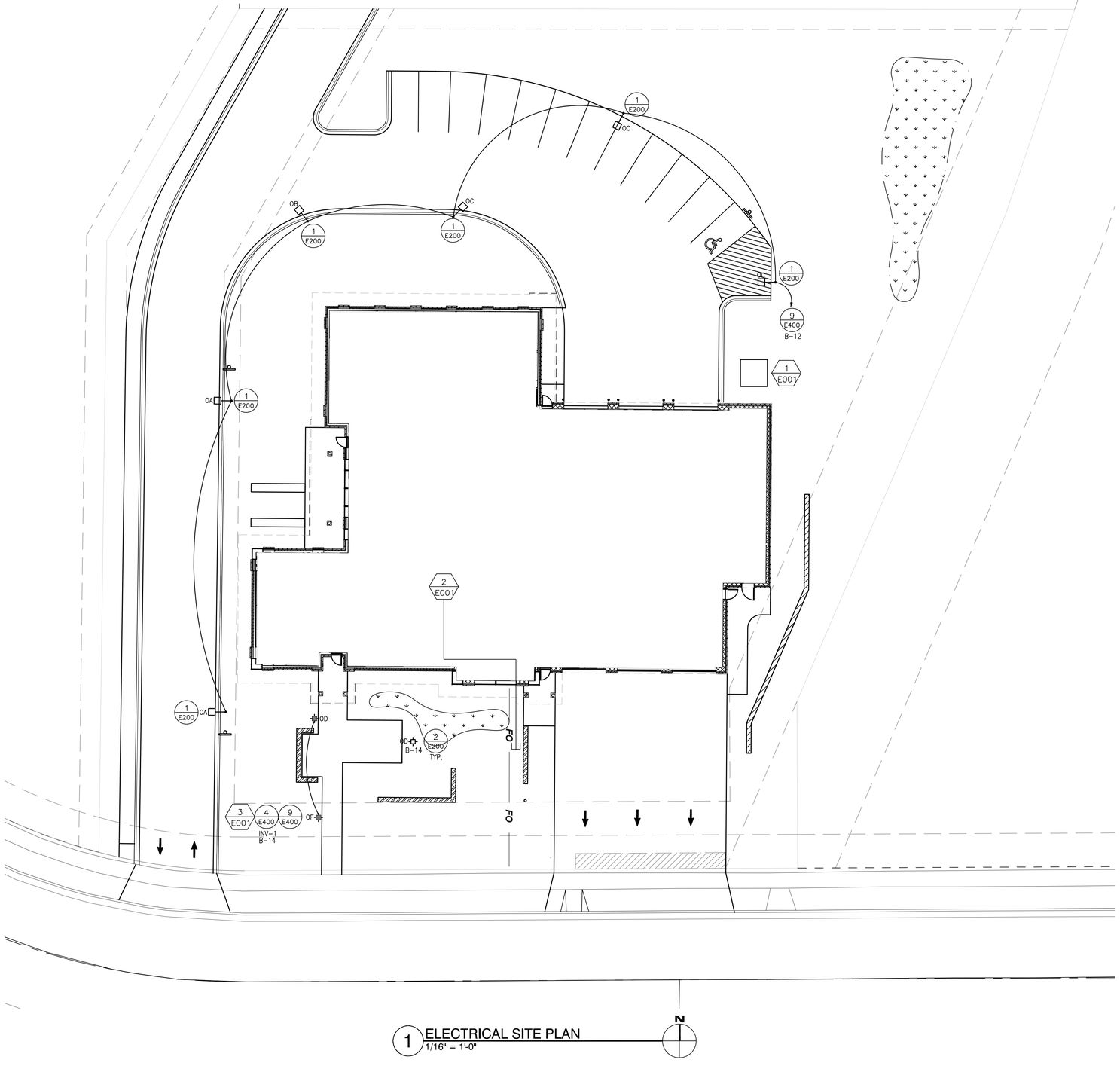

1 ELECTRICAL SITE PLAN
1/16" = 1'-0"

E001 PLAN NOTES:

1. APPROXIMATE LOCATION OF UTILITY PADMOUNT TRANSFORMER.

2. PROVIDE 1-3"C FOR FUTURE FIBER, 1-2"C FOR PHONE SERVICE, 2-4" FOR FUTURE RADIO/WIRELESS, AND 1-2"C. FOR CABLE TV TO ELECTRICAL ROOM 122. COORDINATE EXACT TERMINATION LOCATIONS AND ROUTING WITH OWNER. STUB CONDUITS OUT 10'-0" FROM EXTERIOR WALL AND 36"AFF INSIDE. EMPTY CONDUITS SHALL BE PROVIDED WITH TRACER WIRE AND CONSTRUCTED WITH LONG SWEEP RADII BENDS.

3. CIRCUIT VIA INVERTER SERVED FROM PANEL E. SEE DETAIL "4/E400" FOR UL924 RELAY WIRING DETAIL. CIRCUIT INV-1 SHALL BE THE EMERGENCY CIRCUIT VIA THE INVERTER AND CIRCUIT B-14 IS THE NORMAL SENSING/CONTROL CIRCUIT. LVS RELAY SHALL BE LOCATED ON LOAD SIDE OF INVERTER.

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Electrical Site Plan

E001

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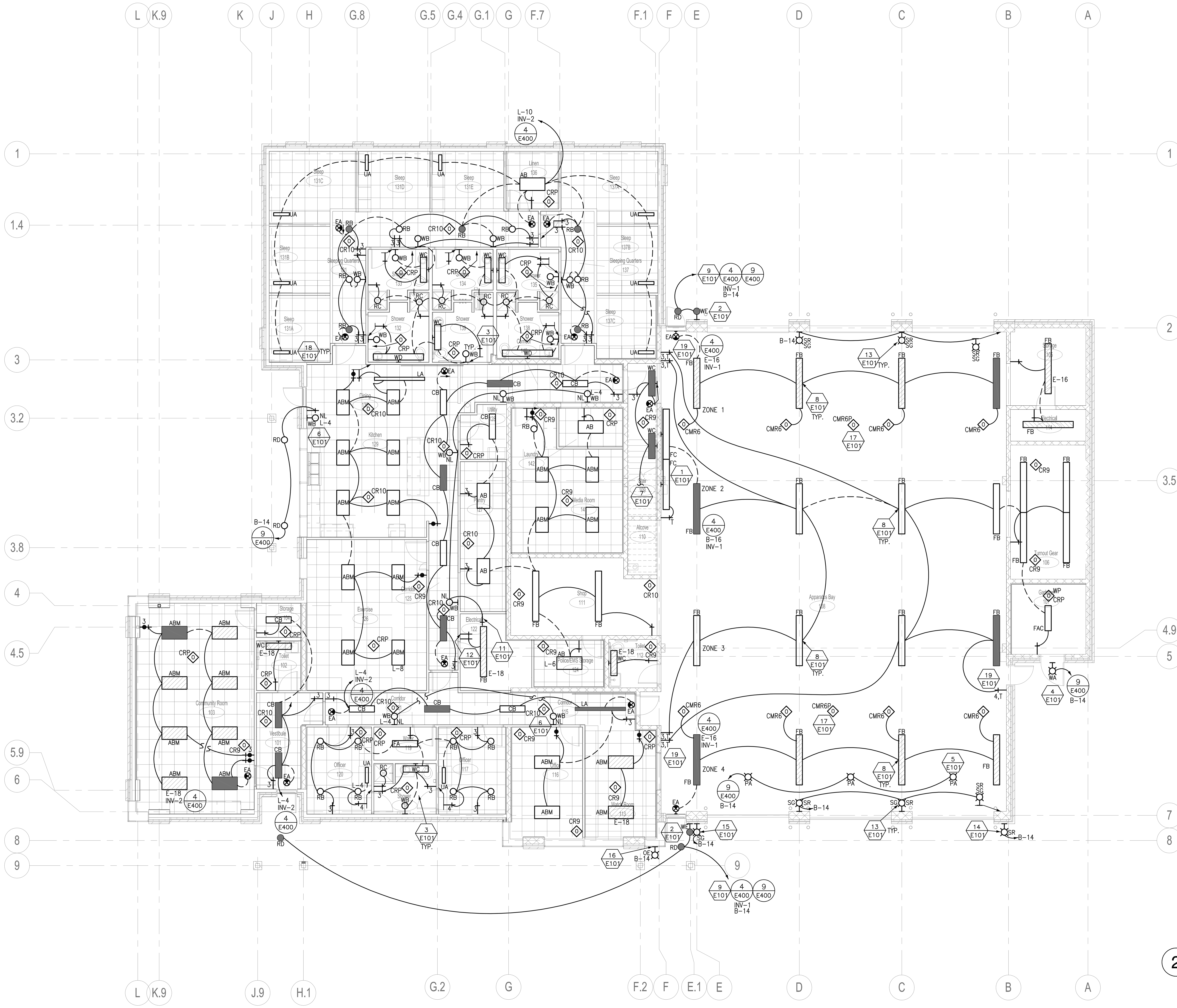


1 FIRST FLOOR LIGHTING PLAN

1/8" = 1'-0"

GENERAL NOTES:

1. ALL TYPE "WB" FIXTURES SHALL BE MOUNTED AT THE SAME HEIGHT AS STANDARD RECEPTACLES, 18" AFF.

2. ALL TYPE "WC" AND "WD" FIXTURES SHALL BE MOUNTED SO THAT THE BOTTOM OF THE FIXTURE IS 2" ABOVE THE TOP OF THE MIRROR. REFER TO INTERIOR ELEVATIONS.

3. ALL EXIT SIGNS SHALL BE WIRED TO THE UNSWITCHED INVERTER CIRCUIT SERVING THE AREA.

E101 PLAN NOTES:

1. COORDINATE FIXTURES TYPE "FC" LOCATION WITH WALL MOUNTED MAP. FIXTURES SHALL BE MOUNTED TO UNISTRUT ARMATURE WITH ASYMMETRIC DISTRIBUTION AIMING LIGHT DOWN AT MAP. COORDINATE MOUNTING HEIGHT AND ARMATURE STRUCTURE WITH ARCHITECT.

2. LOCATE TYPE "WE" OVER DOOR ACCESS KEYPAD. VERIFY FINAL LOCATION PRIOR TO INSTALLATION.

3. IN TOILET ROOMS TYPE "WB" FIXTURES ON/OFF CONTROL SHALL BE VIA THE CEILING MOUNTED OCCUPANCY SENSOR. ALL OTHER SWITCHED FIXTURES SHALL BE WIRED FOR AUTOMATIC SHUTOFF THROUGH THIS SAME SENSOR.

4. TYPE "WA" FIXTURE SHALL BE CENTERED OVER DOOR IN HORIZONTAL BAND ABOVE LOUVER, APPROXIMATELY 10'-0" AFG TO CENTER OF FIXTURE.

5. TYPE "PA" FIXTURES MOUNTING HEIGHT SHALL BE SUCH THAT BOTTOM OF FIXTURE IS 15'-0" AFF. PROVIDE UNISTRUT BRIDGING AS REQUIRED PER REQUIREMENTS ESTABLISHED IN NOTE 8/E101.

6. WIRE TO SWITCH IN ROOM 122. REFER TO NOTE 11/E101.

7. WIRE TO LIGHTING AND 3-WAY AND 4-WAY SWITCHES ABOVE. REFER TO SHEET E104. MOUNT ALL FIXTURES IN STAIR APPROXIMATELY 8'-0" AFF.

8. FOR FIXTURES TYPE "FB" MOUNTED IN APPARATUS BAY PROVIDE UNISTRUT BRIDGING BETWEEN STRUCTURAL JOISTS (JOISTS LOCATED AT APPROXIMATELY 17'-10" AFF) AND MOUNT FIXTURES TO BRIDGING. BRIDGING SHALL BE MOUNTED SUCH THAT IT IN NO WAY ALTERS THE STRUCTURAL INTEGRITY OF THE JOISTS. MOUNTING HEIGHT SHALL BE ESTABLISHED BY THE HEIGHT OF EAST-WEST JOIST GIRDERS, SUCH THAT THE BOTTOM OF FIXTURES IS EVEN WITH THE BOTTOM OF GIRDERS, APPROXIMATELY 14'-9" AFF. ALL FIXTURES SHALL HANG AT THE SAME HEIGHT, PROVIDE SWIVEL STEM CANOPIES AND STEMS AS REQUIRED. ALL BRIDGING AND ADDED MOUNTING ELEMENTS SHALL BE PAINTED TO MATCH STRUCTURE.

9. CIRCUIT VIA INVERTER SERVED FROM PANEL E. SEE DETAIL "4/E400" FOR UL924 RELAY WIRING DETAIL. CIRCUIT INV-1 SHALL BE THE EMERGENCY CIRCUIT VIA THE INVERTER AND CIRCUIT B-14 IS THE NORMAL SENSING/CONTROL CIRCUIT. LVS RELAY SHALL BE LOCATED ON LOAD SIDE OF INVERTER.

10. NOT USED.

11. PROVIDE TYPEWRITTEN LABEL AT SWITCH "CORRIDOR NIGHT LIGHTS TURN OFF ONLY FOR SERVICING".

12. PROVIDE A MANUAL OVERRIDE SWITCH FOR THE EXTERIOR CONTROL CIRCUITS. REFER TO DETAIL "9/E400". PROVIDE TYPEWRITTEN LABEL AT SWITCH "EXTERIOR LIGHTING OVERRIDE".

13. DOOR OPEN AND CLOSE SIGNAL LIGHTS TYPE "SR" AND "SG" MOUNTED AT 6'-0" AFF. ("SR" RED ABOVE "SG" GREEN LIGHT). VERIFY FINAL HEIGHT WITH OWNER. INTERLOCK WITH N.O. 2-SPDT DOOR POSITION SWITCH (SQ. "D" HD IND. XCKT4-SERIES) IN NEMA 1 ENCLOSURE. PROVIDE (120/24VOLT) TRANSFORMER FOR DOOR POSITION CONTROL WITH TOGGLE SWITCH DISCONNECT. SEQUENCE: RED LIGHT SHALL BE ACTIVATED UPON OH DOOR OPENING; GREEN LIGHT COMES ON WITH OH DOOR IN FULL POSITION; RED LIGHT COMES ON WITH DOOR CLOSING AND REMAINS ON UNTIL 30 SECONDS (TIME DELAY ADJ.) AFTER DOOR CLOSES. REFER TO DETAIL "2/E101".

14. MOUNT FIXTURE TYPE "SR" AT 8'-0" AFG AT THIS LOCATION.

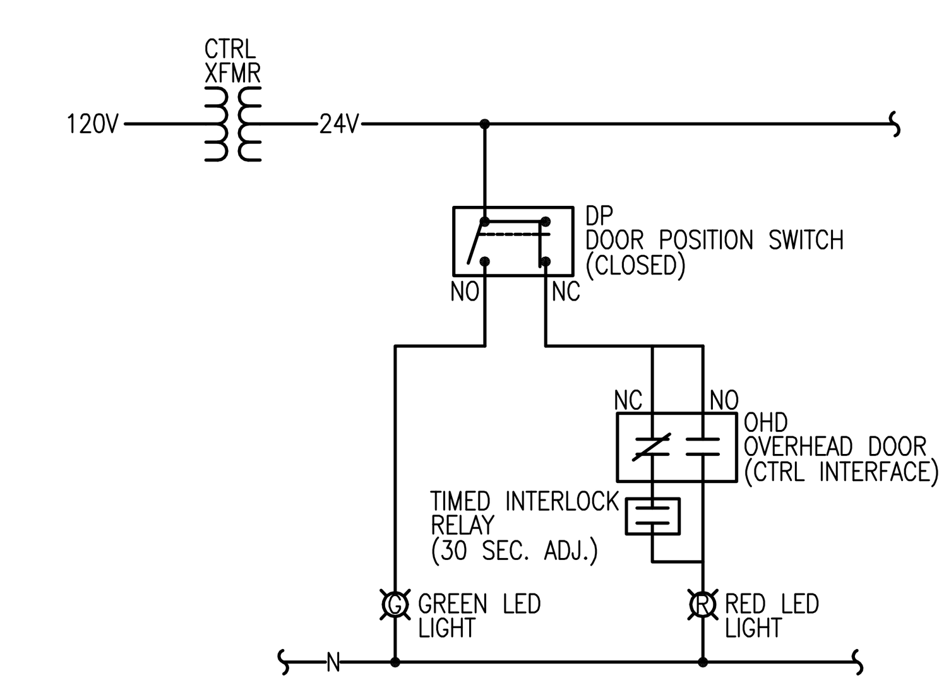
15. MOUNT FIXTURE TYPE "SG" AT 8'-0" AFG AT THIS LOCATION.

16. LOCATE FIXTURE TYPE "OE" ON WALL JUST ABOVE ROOF AT ENTRY CANOPY. VERIFY MOUNTING LOCATION WITH A/E PRIOR TO INSTALLATION. FIXTURE SHALL BE AIMED TO ILLUMINATE FLAG.

17. PROVIDE A DAYLIGHT SENSOR TO CONTROL THE NORTH AND SOUTH ROW OF LIGHT FIXTURES. DAYLIGHT SENSOR TAKES PRECEDENT OVER THE OCCUPANCY SENSOR. PROVIDE AN OVERRIDE SWITCH FOR EACH SET OF LIGHTS TO BY PASS THE DAYLIGHT SENSOR DURING DAY OPERATIONS.

18. MOUNT FIXTURES TYPE "UA" TO MILLWORK. COORDINATE WITH ARCHITECT.

19. PROVIDE A 60 MINUTE MASTER TIMER WITH MATCHING DIGITAL REMOTE SWITCHES (LEVITON LTT60-1L-MASTER & VPOSR-SLAVES) OR EQUAL.



2 OH DOOR ANNUNCIATION WIRING DIAGRAM

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1. SEE NOTE 13/E101 FOR MORE INFORMATION.

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PROJECT NFORMATION

Madison Fire Station 13

Madison Project #53W1152, Contract # 6590

Madison

ISSUANCE AND REVISIONS

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KEY PLAN

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120062.00	Sabinash

First Floor Lighting Plan

E101

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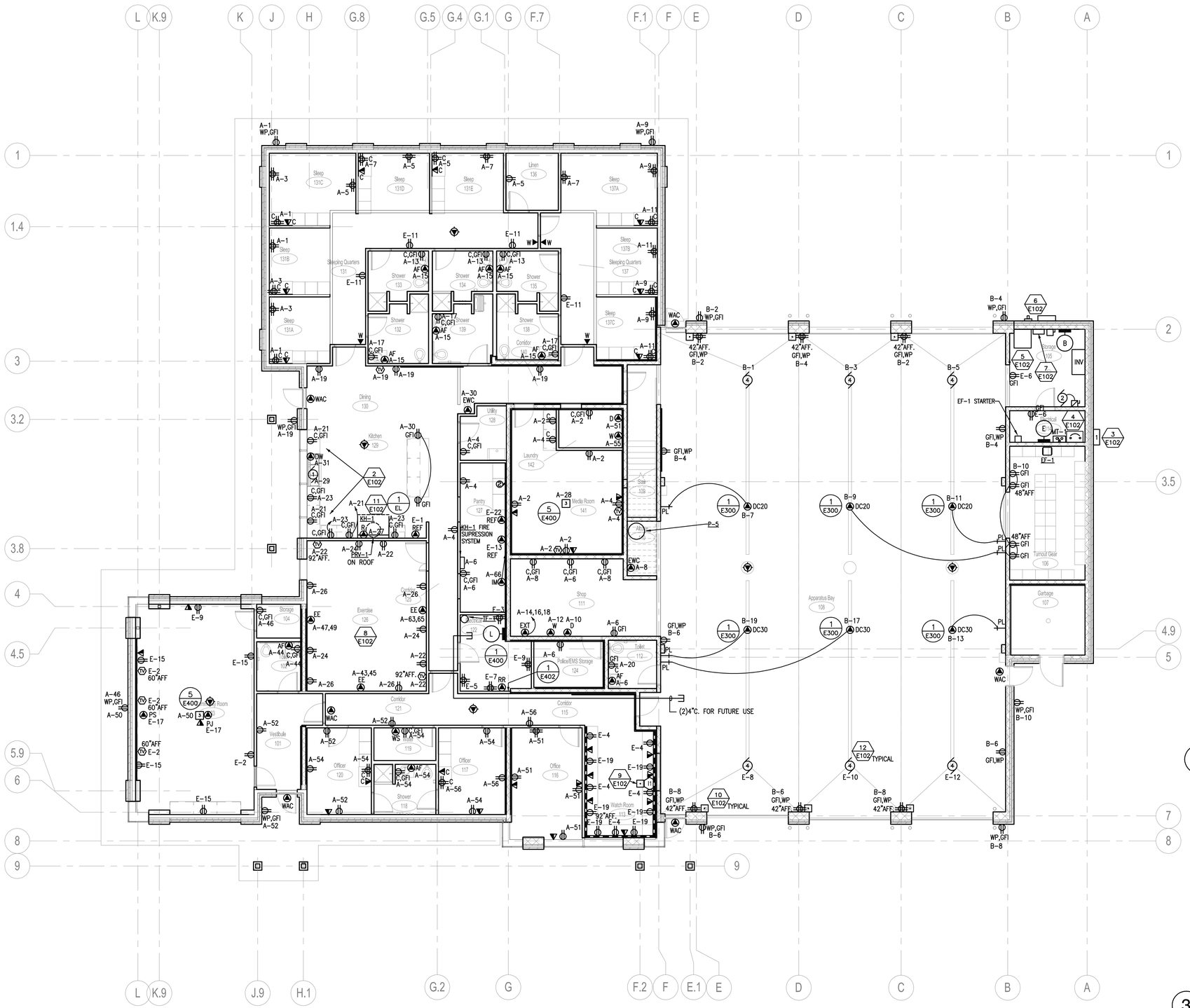


1 FIRST FLOOR POWER PLAN
1/8" = 1'-0"

PLAN NOTES:

1. NOT USED.
2. E.C. SHALL PROVIDE RECEPTACLES AND SWITCHES TO ACCOMODATE OWNER FURNISHED UNDER CABINET LIGHTING. COORDINATE SWITCH AND RECEPTACLE QUANTITIES AND LOCATIONS WITH OWNER PRIOR TO ROUGH-IN.
3. PORTABLE GENERATOR TAP BOX.
4. SERVICE ENTRANCE RATED ENCLOSED CIRCUIT BREAKER.
5. SERVICE ENTRANCE SWITCHBOARD DISCONNECT.
6. E.C. SHALL PROVIDE A CT CABINET AND A METER SOCKET PER MG&E'S REQUIREMENTS. PROVIDE A 1"C. BETWEEN CT CABINET AND METER.

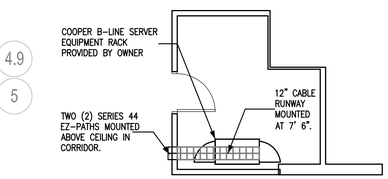
ELECTRIC METERING: CONTRACTOR SHALL ARRANGE WITH THE PROJECT ELECTRIC UTILITY FOR PROVIDING AN ISOLATION RELAY AT THE SERVICE ELECTRIC METER TO ALLOW INDEPENDENT PULSE SIGNALS TO BE MONITORED BY THE DDC CONTROL SYSTEM FOR ELECTRIC UTILITY KWH POWER USAGE AND PEAK KW DEMAND. COST FOR ADDING THE ISOLATION RELAY SHALL BE PAID FOR BY THE CONTRACTOR.

1. CONTRACTOR SHALL PROVIDE POWER FOR THE RELAY.
2. THE CONTRACTOR SHALL OBTAIN THE PULSE SIGNAL MULTIPLIERS FROM THE UTILITY

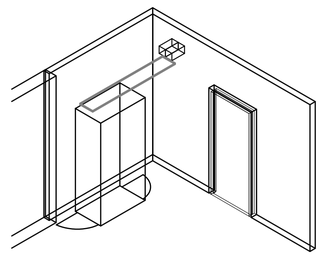
7. APPROXIMATE LOCATION OF TVSS EQUIPMENT.
8. COORDINATE RECEPTACLE LOCATIONS WITH OWNER PRIOR TO COMMENCING WORK. EXERCISE EQUIPMENT HAS NOT BEEN SELECTED. INFORMATION SHOWN IS FOR BIDDING PURPOSES ONLY.
9. IN ADDITION TO THE O/H DOOR OPERATORS AT EACH DOOR, PROVIDE A MASTER SWITCH THAT WILL CONTROL ALL DOORS AND AN ADDITIONAL CENTRAL STATION FOR EACH INDIVIDUAL DOOR AT THIS LOCATION.
10. PROVIDE REMOTE MOUNT ANTENNA PER DOOR OPENER REQUIREMENTS ON ROOF FOR EACH GARAGE DOOR CONTROL DEVICE. COORDINATE LOCATION WITH OWNER. PROVIDE PENETRATIONS FOR EACH SET OF DOORS (3). TOTAL OF 2 PENETRATIONS.
11. PROVIDE AN EMERGENCY OFF BUTTON FOR THE GAS RANGE INTERLOCKED WITH GAS SOLENOID VALVE PROVIDED BY THE MECHANICAL CONTRACTOR. PROVIDE NECESSARY CONDUIT AND WIRE BETWEEN THE TWO DEVICES. CIRCUIT A-27.
12. PROVIDE A DOOR POSITION SWITCH AT EACH DOOR. REFER TO DETAIL 2/E101 FOR MORE INFORMATION.

GENERAL PLAN NOTES:

1. E.C. SHALL COORDINATE ALL WIRING DEVICE LOCATIONS AND HEIGHTS WITH THE FINAL FURNITURE LAYOUT PRIOR TO ROUGH-IN.
2. COORDINATE LOCATION OF OUTLET AND SWITCHES LOCATED ON TILED WALLS WITH TILE CONTRACTOR.



2 DATA LAYOUT FOR ROOM 122
NTS



3 ISOMETRIC VIEW OF DATA IN ROOM 122
NTS

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PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

ISSUANCE AND REVISIONS

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KEY PLAN

SHEET INFORMATION

REVISIONS

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120062.00	Sabinash

First Floor Power Plan

E102

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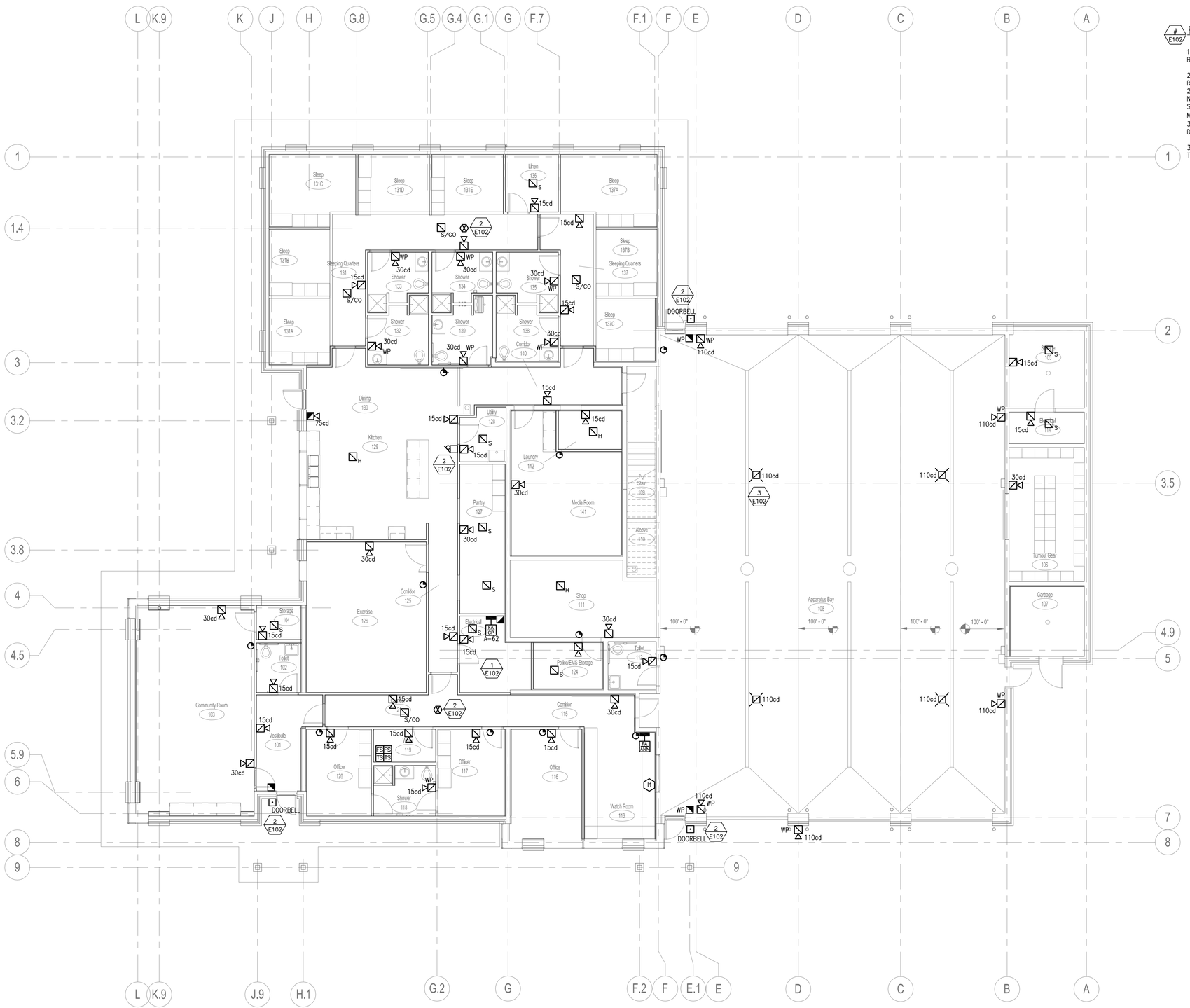

1 FIRST FLOOR SYSTEMS PLAN
1/8" = 1'-0"

PLAN NOTES:

1. WIRELESS CLOCK TRANSMITTER SHALL BE LOCATED IN THE TELECOMMUNICATIONS RACK. COORDINATE EXACT LOCATION WITH TELECOM VENDOR.

2. PROVIDE A WIRED DOORBELL SYSTEM FOR THE INDICATED DOORS. DECORATIVE RECESSED CHIME MODEL NUTONE LA174WH. FURNISH AND INSTALL TWO ADDITIONAL 25-45 OHMS SPEAKERS AND BACKBOXES IN PARALLEL WITH THIS UNIT. THE EIGHT NOTE TUNE SHALL BE FOR THE SOUTHWEST DOOR, TWO NOTE TUNE FOR THE SOUTHEAST DOOR, AND A SINGLE NOTE TUNE FOR THE NORTH DOOR. SURFACE MOUNTED PUSH-BUTTON POLISHED CHROME MODEL NUTONE PB69LPC (TYPICAL OF 3). TRANSFORMER IS PROVIDED WITH THE CHIME. (CIRCUIT A-64) COORDINATE DOORBELL WORK WITH IT CONTRACTOR FOR INTERFACE WORK.

3. CEILING MOUNT FIRE ALARM DEVICES IN THE APPARATUS BAY SHALL BE MOUNTED TO THE BOTTOM OF JOIST. TYPICAL OF ALL 4 LOCATIONS.

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PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

Madison

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KEY PLAN

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First Floor Systems Plan

E103

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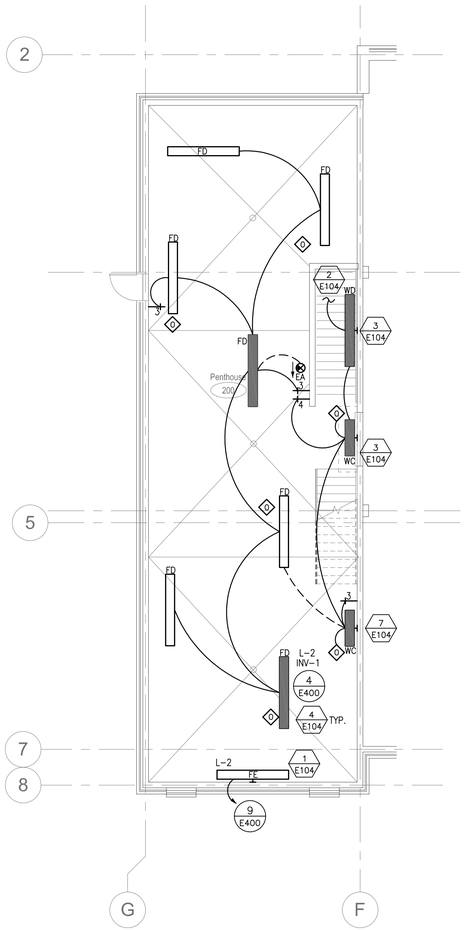
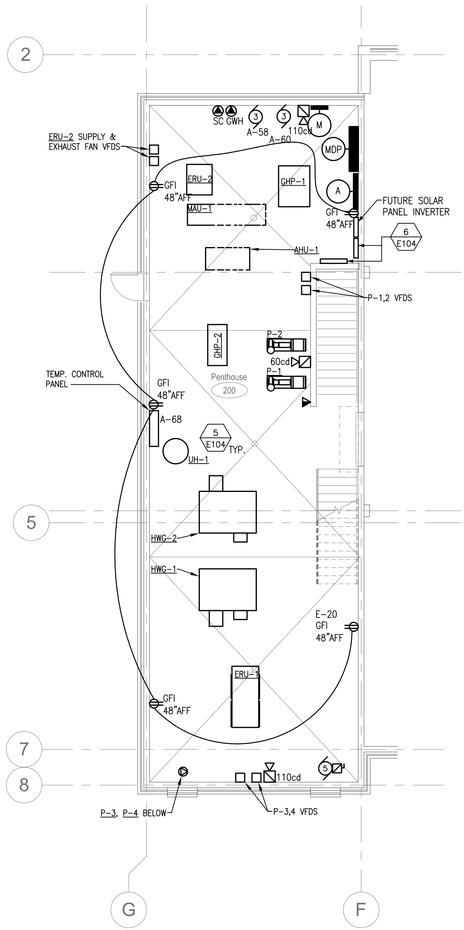


2 MEZZANINE LIGHTING PLAN
1/8" = 1'-0"



1 MEZZANINE POWER AND SYSTEMS PLAN
1/8" = 1'-0"

PLAN NOTES:

1. CENTER TYPE "FE" ON CENTER WINDOW TO ILLUMINATE ART GLASS. FIXTURES SHALL BE MOUNTED TO UNISTRUT ARMATURE LOCATED AT BOTTOM OF WINDOW FRAME SUCH THAT THE FIXTURE IS AIMED UP AND TOWARD THE ART GLASS WINDOW. MOUNTING HEIGHT OF FIXTURE SHALL BE APPROXIMATELY 7'-8" AFF. COORDINATE EXACT MOUNTING HEIGHT AND ARMATURE STRUCTURE WITH ARCHITECT. FIXTURE IS WIRED TO EXTERIOR LIGHTING CIRCUIT FOR DUSK TO DAWN OPERATION.

2. WIRE TO LIGHTING AND 3-WAY SWITCH BELOW. REFER TO SHEET E101.

3. FIXTURES IN STAIRS MOUNTING HEIGHT SHALL BE 8'-0" AFF.

4. COORDINATE LIGHTING FIXTURE LOCATIONS TO AVOID CONFLICT WITH DUCTWORK, PIPING, ETC. RELOCATE LIGHTING AS REQUIRED. CHAIN MOUNT TO HANG BELOW DUCTS AS NEEDED.

5. COORDINATE GENERAL PURPOSE OUTLET LOCATIONS WITH WORK OF OTHER TRADES SO THAT THEY ARE ACCESSIBLE. RELOCATE IF NECESSARY.

6. TWO (2) FRONIUS IG PLUS V 11.4-1 SOLAR PANEL INVERTERS (TYPICAL OF 2).

7. LOCATE FIXTURE AND SWITCH AT DOOR TO ROOF OF APPARATUS BAY (AT TOP OF STAIRS, ABOVE AREA SHOWN ON PLAN).

GENERAL PLAN NOTES:

1. COORDINATE FIRE ALARM DEVICES WITH DUCTWORK, PIPES, EQUIPMENT, ETC. LOCATE RECEPTACLES IN AN ACCESSIBLE LOCATION.

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PROJECT NFORMATION

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Mezzanine Electrical Plan

E104

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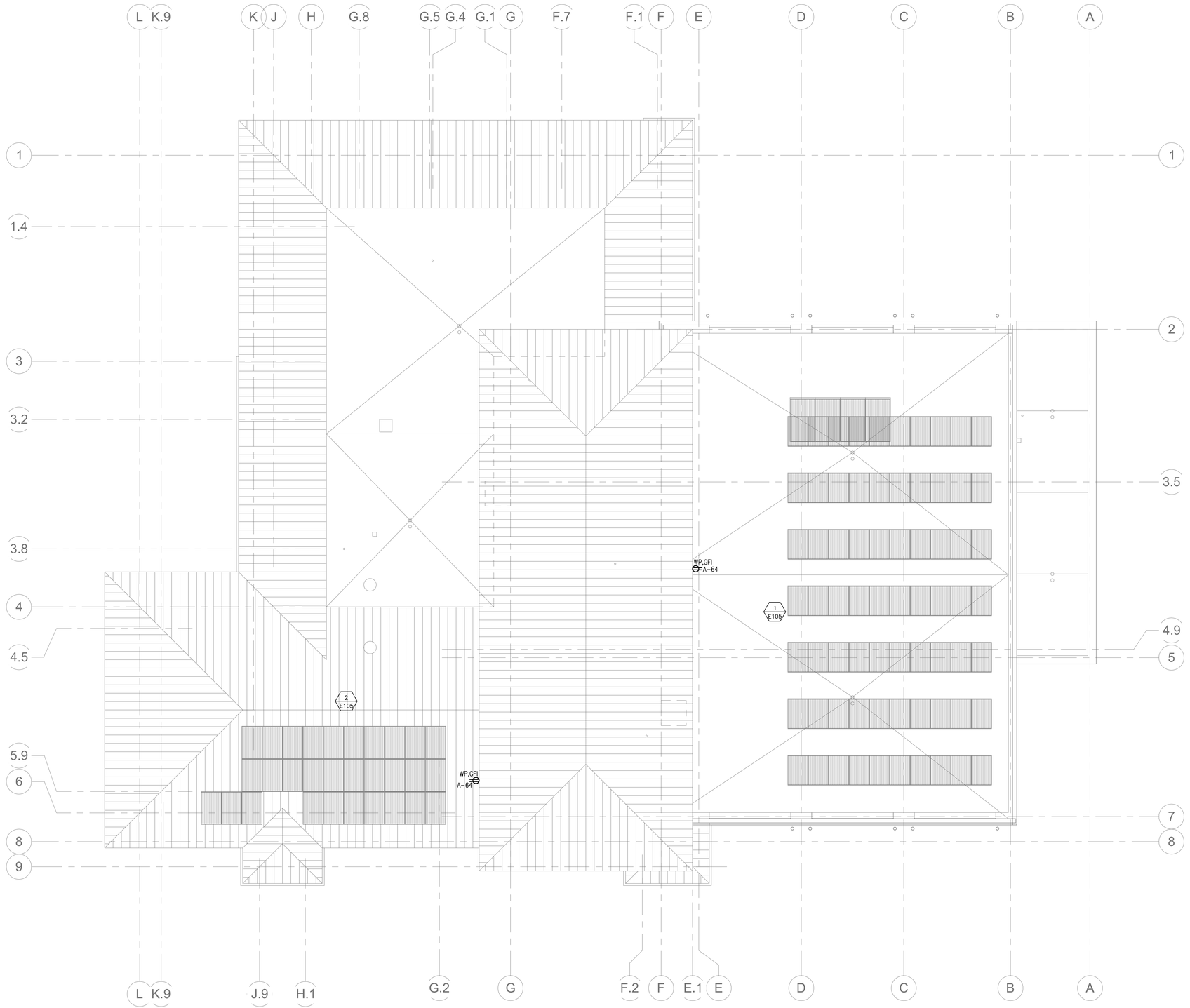

1 ELECTRICAL ROOF PLAN
1/8" = 1'-0"

N

1
E105 PLAN NOTES:

1. PV PANELS SHALL BE MOUNTED ON A PREFABRICATED STEEL STRUCTURE. SEE SPECIFICATION SECTION 48 14 00 SOLAR ENERGY ELECTRICAL POWER GENERATION EQUIPMENT. ALSO, SEE STRUCTURAL DRAWINGS FOR MOUNTING AND ATTACHING SOLAR SUPPORT STRUCTURE DIRECTLY TO THE BUILDING'S STRUCTURE. THE SOLAR SUPPORT STRUCTURE SHALL NOT SIT ON THE ROOF OR BE SUPPORTED BY THE ROOF.

2. PV PANELS SHALL BE MOUNTED ON A SUPPORT SYSTEM ATTACHED TO THE STANDING SEAMS. SEE SPECIFICATION SECTION 48 14 00 SOLAR ENERGY ELECTRICAL POWER GENERATION EQUIPMENT.

GENERAL NOTES:

1. COORDINATE SOLAR INSTALLATION WITH THE ROOF INSTALLATION. SOLAR SUPPORT STRUCTURE COMPONENETS ON THE EAST ROOF WILL PENETRATE THE ROOF IN ORDER TO BE ATTACHED DIRECTLY TO STRUCTURE BENEATH THE ROOF. ALL PENETRATIONS SHALL BE PROPERLY SEALED.

2. SOLAR PANELS SHALL BE WIRED TOGETHER SO THAT THE EFFECTS OF SHADING FROM THE PENTHOUSE AND DORMER ON THE POWER PRODUCTION OF THIS INSTALLATION ARE MINIMIZED.

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Electrical Roof Plan

E105

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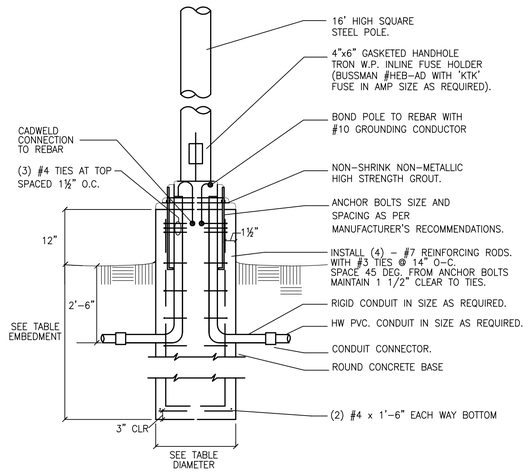


1 / E200 **POLE BASE DETAIL - TYPE "OA-OB-OC"**

NTS

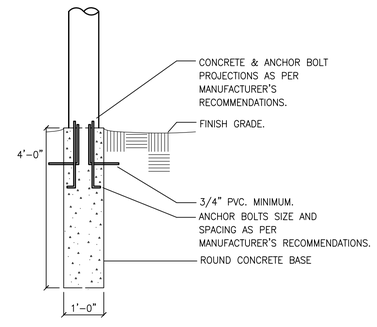
NOTES:
1. DIMENSIONS GIVEN ARE MINIMUM. PROVIDE POLE BASE DIAMETER AND DEPTH AS REQUIRED IN ACCORDANCE WITH LOCAL SOIL AND WIND VELOCITY CONDITIONS.

2. ALL LIGHTING POLE CONCRETE BASES SHALL BE LOCATED A MINIMUM OF 12 INCHES OFF THE FACE OF THE CURBING OR CENTERED WITHIN AN ISLAND. IN ALL CASES, HOWEVER, FINAL LOCATIONS OF LIGHTING POLES MUST BE VERIFIED WITH THE ARCHITECT/ENGINEER PRIOR TO INSTALLATION.

3. ALL DIMENSIONS POLE BASE ARE FOR BIDDING ONLY. POLE BASE SHALL MATCH THOSE AT EXISTING POLES, IF APPLICABLE.

POLE HEIGHT	BASE EMBEDMENT/DIAMETER			
	1 HEAD	2 HEAD	3 HEAD	4 HEAD
15'-0"	6'-5"/2'-0"	6'-5"/2'-0"	6'-5"/2'-0"	6'-5"/2'-0"
20'-0"	6'-5"/2'-0"	6'-5"/2'-0"	8'-0"/2'-0"	8'-0"/2'-0"
25'-0"	6'-5"/2'-0"	8'-0"/2'-0"	9'-0"/2'-0"	10'-0"/2'-0"
30'-0"	8'-0"/2'-6"	9'-0"/2'-6"	10'-0"/2'-6"	10'-0"/2'-6"

NOTES:
1. TABLE IS BASED ON SOIL BEARING PRESSURE OF 3000 PSF.



2 / E200 **BOLLARD BASE DETAIL - TYPE "OD" AND "OF"**

NTS

NOTES:
1. DIMENSIONS GIVEN ARE MINIMUM. PROVIDE POLE BASE DIAMETER AND DEPTH AS REQUIRED IN ACCORDANCE WITH LOCAL SOIL AND WIND VELOCITY CONDITIONS.

2. ALL LIGHTING POLE CONCRETE BASES SHALL BE LOCATED A MINIMUM OF 6 INCHES OFF THE FACE OF THE CURBING OR CENTERED WITHIN AN ISLAND. IN ALL CASES, HOWEVER, FINAL LOCATIONS OF LIGHTING POLES MUST BE VERIFIED WITH THE ARCHITECT/ENGINEER PRIOR TO INSTALLATION.

LIGHTING FIXTURE NOTES:

NOTES LF1 - LF24 ARE GENERAL NOTES APPLICABLE TO ENTIRE LIGHTING FIXTURE SCHEDULE WHERE APPROPRIATE.

LF1 - PROVIDE ALL TROFFERS WITH SPRING LOADED LATCHES, AND PAINT AFTER FABRICATION WITH POLYESTER PAINT.

LF2 - PROVIDE SEMI-SPECULAR LOW IRIDESCENT TYPE LOUVERS AND REFLECTORS.

LF3 - PROVIDE ALL NECESSARY COMPONENTS AND ACCESSORIES FOR A COMPLETE OPERATING INSTALLATION PER APPLICABLE CODES AND MANUFACTURER'S RECOMMENDATIONS.

LF4 - PROVIDE SLOPE ADAPTERS FOR ALL SURFACE MOUNTED, RECESSED, SUSPENDED FIXTURES AND LIGHT TRACK AS NEEDED TO ACCOMMODATE THE SLOPE OF THE CEILING.

LF5 - INCLUDE IN THE BASE BID THE COST FOR FURNISHING, INSTALLING, WIRING AND CONNECTING FOR A COMPLETE OPERATING INSTALLATION AN ADDITIONAL EXIT FIXTURE OF EACH TYPE INDICATED IN THE LIGHTING FIXTURE SCHEDULE.

LF6 - CONTRACTOR SHALL REVIEW THE ENTIRE LIGHTING FIXTURE SCHEDULE INCLUDING THE DESCRIPTION AND CATALOG NUMBER. CONTRACTOR SHALL NOTIFY THE A/E OF ANY DISCREPANCIES PRIOR TO BIDDING.

LF7 - VERIFY ALL FINISHES/COLORS OF FIXTURES WITH A/E PRIOR TO ORDERING.

LF8 - CONTRACTOR SHALL VERIFY THAT THE FIXTURE INSTALLATION TYPE IS COMPATIBLE WITH CEILING CONSTRUCTION PRIOR TO INSTALLATION.

LF9 - FOR FIXTURES LISTED IN SCHEDULE WITH (E) ELECTRONIC TYPE BALLASTS PROVIDE A BALLAST AS INDICATED IN SPECIFICATION.

LF10 - CONTRACTOR SHALL PROVIDE BALLASTS AND WIRING IN COMPLIANCE WITH THE STATE ENERGY CODE INCLUDING BUT NOT LIMITED TO BALLASTS REQUIRED FOR DUAL-LEVEL SWITCHING AND CODE-REQUIRED REDUCTION OF SINGLE-LAMP BALLASTS.

LF11 - FIELD VERIFY THE EXACT LOCATIONS OF THE LIGHTING FIXTURES TO AVOID CONFLICT WITH MECHANICAL EQUIPMENT, DUCTWORK, PIPES, AND STRUCTURAL MEMBERS. ANY CONFLICT SHALL BE BROUGHT TO THE ATTENTION OF THE A/E.

LF12 - IN ALL INSULATED CEILINGS, WALLS, AND WHERE RECESSED FIXTURES PENETRATE THE BUILDING ENVELOPE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AN AIRTIGHT INSTALLATION AND PROPER CLEARANCES BETWEEN RECESSED FIXTURES AND THE INSULATION. THIS CAN BE ACCOMPLISHED BY PROPER TENTING OR BOXING-OUT AROUND RECESSED FIXTURES THAT DO NOT HAVE IC RATINGS, OR REPLACEMENT OF THOSE FIXTURES WITH EQUAL FIXTURES HAVING PROPER IC AND AIRTIGHT RATINGS. REFER TO THE ARCHITECTURAL PLANS FOR APPLICABLE AREAS.

LF13 - IN ALL FIRE-RATED CEILINGS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE FIRE RATING. REFER TO ARCHITECTURAL PLANS FOR APPLICABLE AREAS.

LF14 - PROVIDE OCCUPANCY SENSORS AS SHOWN ON THE PLANS. REFER TO THE SPECIFICATIONS FOR MORE INFORMATION.

LF15 - PROVIDE LUTRON NOVA T SERIES DIMMERS, OR APPROVED EQUAL, FLUORESCENT AND INCANDESCENT AS APPROPRIATE, IN RATINGS NECESSARY TO ACCOMMODATE LOADS. SEE SPECIFICATIONS FOR MORE INFORMATION.

LF16 - FIELD VERIFY THE EXACT LOCATION OF ALL SURFACE MOUNTED FIXTURES TO AVOID CONFLICT WITH ARCHITECTURAL FEATURES, INCLUDING PAINT/WALL COVERING SCHEMES, DECORATIVE TRIMS, ETC. CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE A/E.

LF17 - PROVIDE 12 EXTRA LAMPS OF EACH TYPE INDICATED IN LIGHT FIXTURE SCHEDULE AND TURN OVER TO OWNER.

LF18 - FOR ALL FIXTURES EMPLOYING "T5" AND "T8" FLUORESCENT LAMPS PROVIDE ROTATING TYPE LAMP SOCKETS. FOR ALL GRID LAY-IN TROFFERS INCLUDE INTEGRAL GRID "CLIPS" FOR ATTACHING ON TO THE "TEE" BAR IN ACCORDANCE WITH N.E.C.

LF19 - IN ALL PLENUM RATED CEILING CAVITIES PROVIDE PLENUM RATED TROFFERS AND OTHER TYPES OF LIGHTING FIXTURES IF REQUIRED BY LOCAL CODE(S).

LF20 - IN LOCATIONS OF LIFE SAFETY EGRESS ROUTE, WHERE ONE LIGHT FIXTURE IS EMPLOYED, 2 LAMPS AND 2 BALLASTS ARE REQUIRED IN THE FIXTURE TO COMPLY TO N.E.C. ARTICLE 700.16 EMERGENCY ILLUMINATION.

LF21 - FOR WALL MOUNTED FIXTURES, PROVIDE SEALANT AROUND MOUNTING PLATE TO PROTECT AGAINST MOISTURE INSIDE OF FIXTURE.

LF22 - EXCEPT FOR HAZARDOUS RATED AND BATTERY COMPONENTS OF EMERGENCY FIXTURES, ALL FLUORESCENT BALLASTS SHALL HAVE A DISCONNECTING MEANS DESCRIBED IN NEC 410.73G. THIS DISCONNECT MUST ACCESSIBLE WITHIN THE FIXTURE AT OR NEAR THE BALLAST.

LF23 - LIGHT FIXTURES SPECIFIED ESTABLISH A LEVEL OF QUALITY WHICH SHALL BE MET BY ALL FIXTURES PROVIDED. FIXTURES SHALL BE COMPARABLE IN PERFORMANCE, OVERALL EFFICIENCY, EFFICACY (FOR LED'S), CONSTRUCTION, PHYSICAL APPEARANCE, FINISH AND FEATURES IN ORDER TO BE CONSIDERED EQUIVALENT. FIXTURES NOT DEEMED "EQUIVALENT" MAY NOT BE SUBMITTED AS AN "ALTERNATE" OR "SUBSTITUTE" FIXTURE TO THAT WHICH WAS SPECIFIED. DETERMINATION OF "EQUIVALENCY" SHALL BE THE RESPONSIBILITY OF A/E. THERE SHALL BE NO ADDITIONAL COST ASSOCIATED WITH REJECTION OF A FIXTURE NOT DEEMED "EQUIVALENT" BY THE A/E.

LF24 - PROVIDE WITH LAMPS AND BALLAST AS LISTED BELOW OR EQUAL. REFER TO SPECIFICATION.
a. ON/OFF BALLAST: GE (2-3-4)/32-MVPS-N PROVIDE FOR LAMP QUANTITY AS REQUIRED BY FIXTURE AND CONTROLS.
b. STEP-DIM BALLAST: UNIVERSAL B232PUSSO-A
c. 4' T8 LAMP: SYLVANIA F032-841-XPS-ECO

LF25 - OWNER'S SPECIFICATION, NO EQUALS.

LF26 - PROVIDE WITH INCANDESCENT HOUSING WITH MEDIUM BASE, CAPRI CATALOG NO. CR1-QP-LED-NIC.

LF27 - IN ADDITION TO FUNCTION, PERFORMANCE, AND APPEARANCE AS OUTLINED IN LF23, EQUAL FIXTURE SHALL MOUNT IN A SINGLE GANG BOX.

LF28 - PROVIDE WITH LED PAR38 MEDIUM BASE RETROFIT LAMP, 1000 LUMENS MINIMUM, 25,000 HOUR LIFE MINIMUM, 4000K, 25 DEG. NFL BEAM SPREAD. PROVIDE GE LIGHTING LED20DP38S840/25 OR EQUAL. REFER TO SPECIFICATION.

LF29 - LUMINAIRES WITH MULTI-LEVEL CONTROL OPTION SHALL INCLUDE MANUFACTURER'S INTEGRAL OCCUPANCY SENSOR.

LIGHTING FIXTURE SCHEDULE

HARWOOD ENGINEERING CONSULTANTS

DES.	DESCRIPTION	LAMP DATA NO.	LAMP DATA TYPE	VOLT	DEPTH	LIGHTING FIXTURE MFR.	LIGHTING FIXTURE SERIES	LIGHTING FIXTURE OPTIONS/ACCESSORIES	BALLAST TYPE	MTG.	MTG. SURF	SEE NOTE LF___
AB	2X4 VOLUMETRIC TROFFER W/(2) SINGLE LAMP CHAMBERS W/BATWING DISTRIBUTION	2	F32T8/4100K	120	4.5"	DAYBRITE	2-AT-W-G-232-D-1/2 SERIES	03,06,23	E	REC	LIG	23,24
ABM	SAME AS TYPE "AB" EXCEPT W/STEP-DIM BALLAST FOR DUAL-LEVEL CONTROL	2	F32T8/4100K	120	4.5"	DAYBRITE	2-AT-W-G-232-D-1/2 SERIES	03,06,23 STEP-DIM BALLAST	E	REC	LIG	23,34
CB	1X4 VOLUMETRIC TROFFER W/(1) SINGLE LAMP CHAMBER W/BATWING DISTRIBUTION	1	F32T8/4100K	120	4.5"	DAYBRITE	1-AT-W-G-132-D-1/1 SERIES	03,06,23	E	REC	LIG	23,24
EA	EXIT SIGN-UNIVERSAL FACE UNIVERSAL MOUNTING WHITE W/RED LETTERS	-	LED (INCLUDED)	120	-	LITHONIA	LQM-S-W-3-R SERIES	20	-	SURF	VARIES	23
FA	4' FLUORESCENT INDUSTRIAL W/WIRE GUARD	2	F32T8/4100K	120	-	LITHONIA	L-232-SSR-WGL SERIES	03,06,14,23	E	SURF / PEND	EXP	23,24
FAC	SAME AS TYPE "FA" EXCEPT W/COLD WEATHER BALLAST	2	F32T8/4100K	120	-	LITHONIA	L-232-SSR-WGL SERIES	03,06,14,23	E	SURF / PEND	EXP	23,24
FB	8' FLUORESCENT INDUSTRIAL W/ WIRE GUARD	4	F32T8/4100K	120	-	LITHONIA	TL-232-SSR-WGL SERIES	03,06,14,23	E	SURF / PEND	EXP	23,24
FC	8' FLUORESCENT STRIPLIGHT W/ASYMMETRIC REFLECTOR MTD. TO UNISTRUT BRACKET, TBD	4	F32T8/4100K	120	-	LITHONIA	TC-232-CASR48 SERIES	03,06,23	E	SURF	SPEC	23,24
FD	8' FLUORESCENT STRIPLIGHT W/WIRE GUARD AND CHAIN HANGING KIT	4	F32T8/4100K	120	-	LITHONIA	TC-232-HC36-WGCUN NST SERIES	03,06,14,23	E	SURF	SPEC	23,24
FE	8' FLUORESCENT STRIPLIGHT W/ASYMMETRIC REFLECTOR MTD. TO UNISTRUT BRACKET, TBD	2	F32T8/4100K	120	-	LITHONIA	TC-132-CASR48 SERIES	03,06,23	E	SURF	SPEC	23,24
LA	8' RECESSED LINEAR WALL WASH ASYMMETRIC DISTRIBUTION	1	F32T8/4100K PER 4 FT.	120	4.5"	PRUDENTIAL	P5900-1T8-08-X1 SERIES	03,06,23	E	REC	LIG	23,24
OA	SINGLE HEAD POLE MT. FIXTURE W/15'H POLE ON 1'H BASE TYPE I DIST; HOUSE SIDE SHIELD	1	40 LED MODULE 5700K 525mA/102W	120	-	BETA/CREE	ARE-EDG-1S-DA-04-D-WH-525-ML SERIES	18,26	DRV	SURF	CONC. BASE	25,29
OB	SINGLE HEAD POLE MT. FIXTURE W/15'H POLE ON 1'H BASE TYPE II DIST; HOUSE SIDE SHIELD	1	40 LED MODULE 5700K 525mA/102W	120	-	BETA/CREE	ARE-EDG-2MB-DA-04-D-WH-525-ML SERIES	18,26	DRV	SURF	CONC. BASE	25,29
OC	SINGLE HEAD POLE MT. FIXTURE W/15'H POLE ON 1'H BASE TYPE IV DIST; HOUSE SIDE SHIELD	1	40 LED MODULE 5700K 525mA/102W	120	-	BETA/CREE	ARE-EDG-4MB-DA-04-D-WH-525-ML SERIES	18,26	DRV	SURF	CONC. BASE	25,29
OD	42"H BOLLARD; TYPE III DIST. 100% SHIELDED DOWNLIGHT	1	34W LED MODULE 5700K	120	-	BETA/CREE	PWY-EDG-3M-P4-02-D-WH-525 SERIES	18,26	DRV	SURF	CONC. BASE	25
OE	ADJUSTABLE SPOTLIGHT YOKE MT. ON RECESSED J-BOX W/VISOR; SPOT OPTICS	1	21W LED MODULE 520mA	120	-	PRECISION PARAGON	TMF-21W-SP-TG-50K-18C-UL-520-YC-AJ SERIES	18,26	DRV	SURF	WALL	25
OF	42"H BOLLARD; TYPE II DIST. 100% SHIELDED DOWNLIGHT	1	34W LED MODULE 5700K	120	-	BETA/CREE	PWY-EDG-2M-P4-02-D-WH-525 SERIES	18,26	DRV	SURF	CONC. BASE	25
PA	6" APERTURE X 9"H PENDANT DAMP LOC.; SWIVEL STEM CANOPY W/LED RETROFIT LAMP	1	20W LED PAR38 4000K	120	-	GOTHAM	CA6-6MB-PM-DWHG SERIES	11,19	-	PEND	EXP	23,28
RB	6" APERTURE DOWNLIGHT 600 LUMEN LED MODULE W/MEDIUM BASE HOUSING	1	13W LED MODULE 3500K	120	7.5"	CAPRI	CRL6K-G2-6-35K-CRL6-R-CLR SERIES MODULE	09	DRV	REC	VARIES	23,26
RC	6" APERTURE DOWNLIGHT; WET LISTED; 600 LUMEN LED MODULE W/MEDIUM BASE HOUSING	1	13W LED MODULE 3500K	120	7.5"	CAPRI	CRL6K-G2-6-35K-CRL6-R-CLR SERIES MODULE	09,18	DRV	REC	GYP	23,26
RD	SQUARE RECESSED SOFFIT LIGHT TYPE V DISTRIBUTION	1	36W LED MODULE	120	6.5"	BETA/CREE	SFT-227-5S-RM-03-D-WH-350 SERIES	18	DRV	REC	GYP	25
SG	SIGNAL LIGHT - GREEN GLOBE VAPORTITE JELLY JAR W/DIE CAST GUARD; WHITE FINISH	1	13W LED MODULE 5000K	120	-	RAB LIGHTING	VXBRLED13DG GREEN GLASS GLOBE WHITE FINISH	18,26	DRV	SURF	WALL	25
SR	SIGNAL LIGHT - RED GLOBE VAPORTITE JELLY JAR W/DIE CAST GUARD; WHITE FINISH	1	13W LED MODULE 5000K	120	-	RAB LIGHTING	VXBRLED13DG RED GLASS GLOBE WHITE FINISH	18,26	DRV	SURF	WALL	25
UA	30" LED UNDERCABINET LIGHT W/INTEGRAL ROCKER SWITCH W/INTEGRAL OCCUPANCY SENSOR	1	18W LED MODULE 4000K	120	-	ALBEO	TP-6-5-D-P-6-O SERIES	-	DRV	SURF	UNDER CAB.	25
WA	WALL MOUNTED AREA LIGHT TYPE IV DISTRIBUTION	1	20 LED MODULE 5700K 525mA/37W	120	-	BETA/CREE	SEC-EDG-4M-WM-02-D-WH-525-ML SERIES	18,26	DRV	SURF	WALL	25
WB	SHIELDED STEP LIGHT 3000K WHITE LED; AMBER LENS SATIN ALUMINUM FINISH	1	4W LED MODULE 3000K	120	2.25"	LIGHTOLIER	DSO01WLSAAM-LED-4W-3000K SERIES	26	DRV	REC	WALL	27
WC	2.5" SQUARE PROFILE WALL MT. W/WHITE DIFFUSE ACRYL. LENS 4' LONG	1	F32T8/4100K	120	-	PRUDENTIAL	R1-1T8-04'-WA-YGW-SUR-X3 SERIES	03,06,23	E	SURF	WALL	23,24
WD	2.5" SQUARE PROFILE WALL MT. W/WHITE DIFFUSE ACRYL. LENS 8' LONG	2	F32T8/4100K	120	-	PRUDENTIAL	R1-1T8-08'-WA-YGW-SUR-X3 SERIES	03,06,23	E	SURF	WALL	23,24
WE	SHIELDED STEP LIGHT WHITE LED'S; WET LOCATION WHITE FINISH	1	4W LED MODULE 3000K	120	2.25"	LIGHTOLIER	DSO01WLW-LED-4W 3000K SERIES	18,26	DRV	REC	WALL	27

ABBREVIATIONS:

AR	AS REQUIRED	GRD	GROUND	NA	NOT APPLICABLE	S	STANDARD (HID)	VAR	VARIES
CONC. BASE	CONCRETE BASE	GYP.	GYPSUM BOARD	PS	PULSE START BALLAST	SPEC	SPECIAL	LAS	LENGTH AS SHOWN
E	ELECTRONIC	LAS	LENGTH AS SHOWN	PEND	PENDANT	STAN	STANTION	DRV	LED DRIVER
EXP	EXPOSED STRUCTURE	LIG	LAY-IN GRID	REC	RECESSED	SURF	SURFACE	DDRV	LED DIMMABLE DRIVER

OPTIONS/ACCESSORIES CODE LISTING:

01. 0.125" PATTERN 12 ACRYLIC LENS
02. HOLOPHANE 8246 LENS
03. PAINT AFTER FABRICATION
04. SPRING LOADED LATCHES
05. FLUSH ALUMINUM DOOR FRAME
06. ELECTRONIC BALLAST, TOTAL HARMONIC DISTORTION ≤ 10%
07. FLUORESCENT DIMMING BALLAST
08. WHITE TRIM RING
09. SEMI-DIFFUSE, LOW-IRIDESCENT CLEAR ALZAK REFLECTOR
10. CUSTOM COLOR
11. PENDANT MOUNT
12. SAFETY CHAIN
13. NEMA HOOK, CORD AND PLUG
14. WIRE GUARD
15. EMERGENCY BALLAST
16. TOP AND BOTTOM LENSING
17. TIME DELAY
18. WET LOCATION LABEL
19. DAMP LOCATION CONSTRUCTION
20. FURNISH WITH UNIVERSAL ARROWS AND RED STENCIL FACE
21. QUARTZ RESTRIKE
22. EMERGENCY OPERATION-INTEGRAL NICAD BATTERY
23. LOCKING TYPE SOCKETS
24. SLOPE ADAPTER
25. TWO BALLAST COVERS
26. STANDARD FINISH TO BE SELECTED BY ARCHITECT
27. 120/24 VOLT TRANSFORMER
28. LEAD-CALCIUM BATTERY
29. INCLUDE SELF-DIAGNOSTICS

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PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

Madison

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

SHEET INFORMATION

REVISIONS

#	DATE	DESCRIPTION

DATE
May 03, 2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

Lighting Fixture Schedule and Notes

E200

SPECIAL OUTLET SCHEDULE

NO.	TO FEED	LOC.	FEED FROM		BREAKER		WIRING				TERMINAL			VOLT	ø	LOAD (KW)	SEE NOTE
			PANEL	CKT.	SIZE	POLE	NO.	SIZE	GND	COND.	R	D	B				
REF	REFRIGERATOR	KITCHEN 129	SEE	DWG	20	1	2	12	12	1/2	X			120	1	1.2	1
EWC	ELECTRIC WATER COOLER	SEE DWG	SEE	DWG	20	1	2	12	12	1/2	X			120	1	0.5	2
RR	ROOF RECEPTACLE	OUTSIDE	SEE	DWG	20	1	2	12	12	1/2	X			120	1	0.2	3
R	GAS RANGE	KITCHEN 129	SEE	DWG	20	1(S)	2	12	12	1/2	X			120	1	0.2	
DW	DISH WASHER	KITCHEN 129	SEE	DWG	20	1	2	12	12	1/2		X		120	1	0.8	4
W	WASHER	SHOP 111	SEE	DWG	20	1	2	12	12	1/2			X	120	1	0.8	
D	GAS DRYER	SHOP 111	SEE	DWG	20	1	2	12	12	1/2			X	120	1	0.8	
EXT	EXTRACTOR	SHOP 111	SEE	DWG	20	3	4	12	12	1/2"		X		208	3	9A	5
EE	EXERCISE EQUIPMENT	EXERCISE 126	SEE	DWG	20	2	3	12	12	1/2"	X			208	1	2.5	5
PROJ	PROJECTOR	SEE DWG	SEE	DWG	20	1	2	12	12	1/2	X			120	1	1.0	6,7
PS	PROJECTION SCREEN	SEE DWG	SEE	DWG	20	1	2	12	12	1/2			X	120	1	1.0	8
GWH	GAS WATER HEATER	PENTHOUSE 200	A	57	20	1	2	12	12	1/2"			X	120	1	6.2A	
SC	HOT WATER SOLAR CONTRLS	PENTHOUSE 200	A	59	20	1	2	12	12	1/2"			X	120	1	0.5	
WS	WATER SOFTENER	WATER 119	A	DWG	20	1	2	12	12	1/2"	X			120	1	0.5	9
AF	AUTOMATIC FAUCET	SEE DWG	SEE	DWG	20	1	2	12	12	1/2	X			120	1	0.4	10
DC20	20A DROP CORD	SEE DWG	SEE	DWG	20	1	2	10	10	3/4	X			120	1	1.0	11
DC30	30A DROP CORD	SEE DWG	SEE	DWG	30	1	2	10	10	3/4	X			120	1	1.0	11
IM	ICE MAKER	SEE DWG	SEE	DWG	20	1	2	12	12	1/2	X			120	1	0.8	
RR	RACK RECEPTACLE 30A	SEE DWG	E	21	30	1	2	10	10	3/4	X			120	1	2.0	12
WAC	WIRELESS ACCESS CONTROL	SEE DWG	SEE	DWG	20	1	2	12	12	1/2			X	120	1	0.4	13

SPECIAL OUTLET SCHEDULE NOTES:

1. MOUNT RECEPTACLE AT 36" AFF.

2. PROVIDE A GFI RECEPTACLE PER NEC 422.52.

3. PROVIDE A WP/GFI DUPLEX RECEPTACLE MOUNTED ON OR ADJACENT TO ROOF TOP EQUIPMENT. RUN SERVICE UP THROUGH UNIT CURB. CIRCUIT TO THE NEAREST MAINTENANCE RECEPTACLE BELOW ROOF.

4. PROVIDE A TOGGLE SWITCH AS DISCONNECTING MEANS.

5. INFORMATION SHOWN IS FOR BIDDING PURPOSES ONLY. COORDINATE OWNER PURCHASED ITEM REQUIREMENTS PRIOR TO ROUGH-IN.

6. EQUIPMENT REQUIRES A TELECOMMUNICATIONS OUTLET ROUGH-IN.

7. VERIFY EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN. MOUNT OUTLET FLUSH BELOW CEILING. PROVIDE APPROPRIATE SUPPORT BEHIND OUTLET.

8. PROVIDE A UP/STOP/DOWN SWITCH FOR PROJECTION SCREEN CONTROLS INCLUDING ALL CONTROL WIRING & BACKBOXES.

9. FURNISH AND INSTALL A PILOT LIGHT SWITCH FOR DISCONNECTING MEANS.

10. PROVIDE A GFI RECEPTACLE BELOW THE COUNTER TO SERVE THE LOW VOLTAGE TRANSFORMER PROVIDED BY THE PLUMBING CONTRACTOR. COORDINATE RECEPTACLE LOCATION WITH P.C. PRIOR TO ROUGH-IN.

11. REFER TO DETAIL 1/E300.

12. PROVIDE A NEMA L5-30P OUTLET. VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.

13. PROVIDE A 120V CIRCUIT FROM THE NEAREST AVAILABLE UNSWITCHED CIRCUIT TO ALL POWER SUPPLIES LOCATED ABOVE THE ENTRY/EXIT DOORS. IN ADDITION, PROVIDE TWO RECEPTACLES IN ELECTRICAL RM 122 FOR (2) PORTAL GATEWAY POWER OVER ETHERNET INJECTORS. COORDINATE LOCATION OF OUTLETS WITH SECURITY SYSTEM INSTALLER PRIOR TO ROUGH-IN.

MOTOR WIRING SCHEDULE

NOTE: VERIFY ALL INFORMATION EXPRESSED BELOW FROM THE RESPECTIVE ARCHITECTURAL, MECHANICAL (HVAC) AND PLUMBING DRAWINGS AND SPECIFICATIONS. FOR ADDITIONAL INFORMATION ON HVAC WIRING SEE COMBINED MECHANICAL/ELECTRICAL (ME) SHEETS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THIS ENGINEER.

NO	HP	VOLTS	ø	LOC	DRIVING	FED FROM		BKR		BR. WIRING				STARTER					SEE NOTE
						PNL.	NO.	SIZE	POLE	NO	SIZE	GND	COND	TYPE	F	I	W	LOC	
1	1/2	120	1	KITCHEN 129	DISPOSER	SEE	DWG	20	1	2	12	12	1/2	MAN	NU	NU	EC	NU	3
2	5	208	3	MEZZANINE 201	AIR COMPRESSOR	B	20,22,24	35	3	4	8	10	3/4	MAG	NU	NU	EC	NU	2,6
3	MIN	120	1	MEZZANINE 201	CIRCULATING PUMP (TYP. OF 2)	SEE	DWG	20	1	2	12	12	1/2	MAN	NU	NU	NU	NU	1
4	1/2	120	1	APPARATUS 108	OVERHEAD DOOR	SEE	DWG	20	1	2	12	12	1/2	MAN	NU	NU	NU	NU	4
5	5	208	3	APPARATUS ATTIC	PLYMOVENT MOTOR	M	31,33,35	35	3	4	8	10	3/4	MAG	NU	NU	NU	NU	5

MOTOR WIRING SCHEDULE NOTES:

1. FURNISH AND INSTALL A PILOT LIGHT SWITCH FOR DISCONNECTING MEANS.

2. FURNISH AND INSTALL A DISCONNECT NEAR THE UNIT.

3. FURNISH AND INSTALL A HORSEPOWER RATED TOGGLE SWITCH FOR CONTROLS. (RECEPTACLE CONNECTION)

4. FURNISH AND INSTALL A HORSEPOWER RATED TOGGLE SWITCH AT THE UNIT. E.C. SHALL WIRE PUSHBUTTONS AND ALL SAFETY DEVICES AS DIRECTED BY MANUFACTURER'S INSTALLATION INSTRUCTIONS. IN ADDITION TO THE HORSEPOWER RATED TOGGLE SWITCH AT THE MOTOR, PROVIDE A SEPARATE TOGGLE SWITCH ADJACENT TO THE O/H DOOR CONTROLS AS AN ADDITIONAL MANUAL DISCONNECT MEANS. THIS SWITCH SHALL OVERRIDE ALL MOTOR CONTROLS TO THIS DOOR. PROVIDE CONDUIT FOR ALL LOW VOLTAGE CONTROL CABLES. I.E. SAFETY PHOTO-EYE MECHANISM CABLING. EXPOSED LOW VOLTAGE CABLES ARE NOT ACCEPTABLE. REFER TO DETAIL 1/E501.

5. INFORMATION SHOWN IS FOR BIDDING PURPOSES ONLY. COORDINATE EXACT REQUIREMENTS AND LOCATION PRIOR TO ROUGH-IN. PROVIDE POWER TO THE CONTROLLER AND THE AIR COMPRESSOR.

6. INFORMATION SHOWN IS FOR BIDDING PURPOSES ONLY. COORDINATE EXACT REQUIREMENTS AND LOCATION PRIOR TO ROUGH-IN.

PANEL SCHEDULE

NO.	CIRCUIT BREAKERS						1 POLE SPACES	MAINS BUSING	VOLTS	AIC	LOCATION	CABINET	REMARKS	SEE NOTE
	QTY.	POLE	AMP.	QTY.	POLE	AMP.								
MDP	SEE	ONE	LINE	RISER	DIAGRAM		–	1200A	208Y/120V 3ø, 4W	42kAIC	PENTHOUSE 200	SURFACE	–	
A(L)	37	1	20				0	250A MLO	208Y/120V 3ø, 4W	42kAIC	PENTHOUSE 200	SURFACE	42 CIRCUITS FEED THRU LUGS	
	1	1(S)	20											
	1	3	20											
A(R)	34	1	20				0	250A MLO	208Y/120V 3ø, 4W	42kAIC	PENTHOUSE 200	SURFACE	42 CIRCUITS	
	3	2	20											
	1	2	30											
B	30	1	20	1	3	35	3	225A MLO	208Y/120V 3ø, 4W	65kAIC	STORAGE 105	SURFACE	42 CIRCUITS	
	3	1(G)	20											
	3	1(G)	30											
L	20	1	20				10	100A MLO	208Y/120V 3ø, 4W	42kAIC	ELECTRICAL 122	SURFACE	30 CIRCUITS	
E	30	1	20				10	100A MLO	208Y/120V 3ø, 4W	65kAIC	ELECTRICAL 114	SURFACE	42 CIRCUITS	
	1	1	30											
	1	1	40											
M	3	1	20	1	3	40	9	250A MLO	208Y/120V 3ø, 4W	42kAIC	PENTHOUSE 200	SURFACE	54 CIRCUITS	
	9	3	20	2	3	50								
	2	3	30											

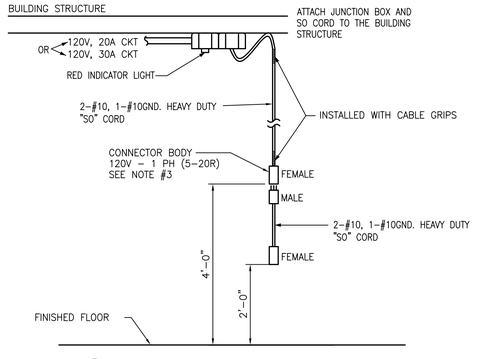
PANEL SCHEDULE GENERAL NOTES:

1. FAULT CURRENT INDICATED IS PROVIDED FOR BID PURPOSES ONLY. ALL EQUIPMENT INCLUDING CIRCUIT BREAKERS SHALL BE FULLY RATED, SERIES RATING NOT ACCEPTABLE. THE CONTRACTOR SHALL VERIFY WITH A WRITTEN STATEMENT FROM THE UTILITY THE MAXIMUM SHORT CIRCUIT CAPACITY. USING THE MAXIMUM FAULT, PREPARE A SHORT CIRCUIT ANALYSIS, COORDINATION STUDY AND ARC FLASH STUDY OF THE ELECTRICAL DISTRIBUTION SYSTEM. THIS STUDY WITH THE UTILITY LETTER SHALL BE SUBMITTED WITH THE ELECTRICAL DISTRIBUTION SHOP DRAWINGS.

2. PROVIDE TERMINATION LUGS COMPATIBLE WITH FEEDER SIZE.

3. (L) INDICATES LEFT PANEL, (R) INDICATES RIGHT PANEL OF DOUBLE TUB PANELS.

4. (G) INDICATES GFI CIRCUIT BREAKER, (S) INDICATES SHUNT TRIP CIRCUIT BREAKER.



1 / E300 TYPICAL DROP CORD RECEPTACLE

NTS

NOTES:

1. FURNISH AND INSTALL A CORD DROP WITH A 20AMP GFI RECEPTACLE 48" AFF. UTILIZE 3-#10 HEAVY DUTY "SO" CORD WITH KELLUM'S GRIP FOR SUPPORT AT JUNCTION BOX. IN ADDITION, PROVIDE AN ADDITIONAL SAFETY EXTENSION TO THE CORD DROP 24"AFF.

2. VERIFY EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN.

3. FOR THE 30A CORD DROP, PROVIDE A PASS AND SEYMOUR D0533 CONNECTOR AND D0531 PLUG OR EQUAL.

4. PROVIDE A 20A/30A PILOT LIGHT SWITCH AT THE WALL AS CLOSE TO THE DROP AS POSSIBLE TO INDICATE WHETHER POWER TO THE DROP IS "ON" OR "OFF". REFER TO DRAWINGS FOR APPROXIMATE SWITCH LOCATIONS. IN ADDITION, PROVIDE A 110V AC RED INDICATOR LIGHT ADJACENT TO THE CORD DROP AT THE CEILING. EATON E22 SERIES OR EQUAL.

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PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

Madison

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

SHEET INFORMATION

REVISIONS

#	DATE	DESCRIPTION

DATE
May 03, 2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

Electrical Schedules

E300

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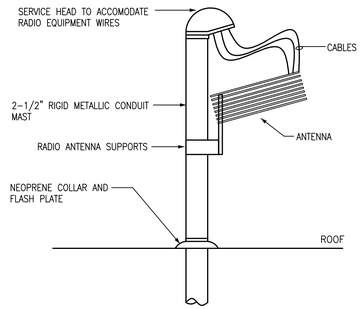
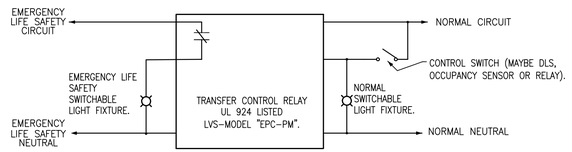
414.475.5554 414.773.9299 fax harwood@hecl.com
HEC Project Number: 12-0062.00



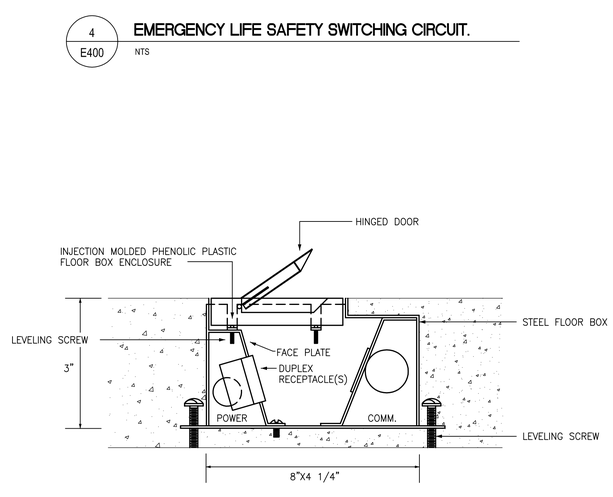
1 E400 **RADIO EQUIPMENT SERVICE MAST ON ROOF**

NO SCALE



4 E400 **EMERGENCY LIFE SAFETY SWITCHING CIRCUIT.**

NTS



5 E400 **TYPICAL FLUSH FLOOR BOX** 3

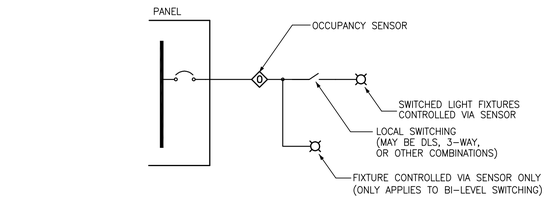
NTS

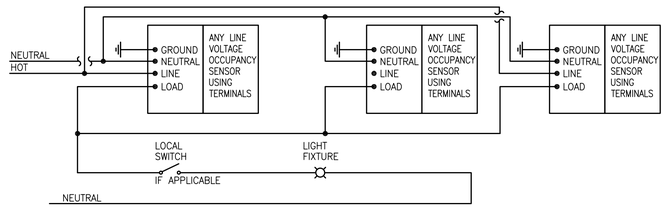
NOTES:

1. ACCOMMODATE ALL AVAILABLE SPACE IN FLOOR BOX WITH POWER AND COMMUNICATION OUTLETS.

6 E400 **NOT USED**

NTS





3 OR 4 WAY OCCUPANCY SENSOR WIRING DIAGRAM

2 E400 **OCCUPANCY SENSOR DETAIL**

NTS

OCCUPANCY SENSOR NOTES:

1. UNLESS NOTED OTHERWISE, OCCUPANCY SENSORS USED IN CONJUNCTION WITH LOCAL LINE VOLTAGE SWITCHING SHALL BE ELECTRICALLY LOCATED ON THE PANEL SIDE OF THE SWITCH, AS INDICATED IN THE ABOVE DIAGRAM.

2. USE OF THE OCCUPANCY SENSOR SYMBOL IN A ROOM INDICATES THE TYPE OF SENSOR TO BE USED TO CONTROL ALL LIGHTS IN THAT SPACE. EXACT LOCATION, MOUNTING, AND CONFIGURATION OF SENSOR SHALL BE DETERMINED IN THE FIELD, BASED UPON MANUFACTURERS RECOMMENDATIONS AND GUIDELINES. TOTAL LOAD FOR OCCUPANCY SENSOR SHALL NOT EXCEED 800 WATTS OR RATING OF OCCUPANCY SENSOR.

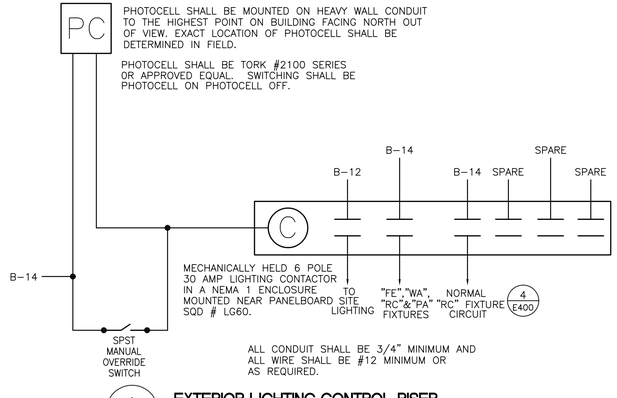
3. SPECIFIC MODEL OF OCCUPANCY SENSOR SHALL BE COORDINATED WITH ROOM SIZE, LAYOUT, CEILING HEIGHT AND MOUNTING REQUIREMENTS, SENSOR MANUFACTURER, AND CONTRACTOR. VERIFY DEVICE COLOR WITH ARCHITECT PRIOR TO ORDERING.

4. OCCUPANCY SENSOR MANUFACTURER SHALL PROVIDE HARD COPIES AND ELECTRONIC AUTOCAD DRAWINGS FILES OF THE LOCATION AND MODEL NUMBERS OF ALL ASSOCIATED EQUIPMENT.

5. CONTRACTOR SHALL PROVIDE A COIL OF WIRING 4'-5' IN LENGTH IN A J-BOX AT EACH OCCUPANCY SENSOR LOCATION FOR FUTURE RELOCATION IF DESIRED BY OWNER.

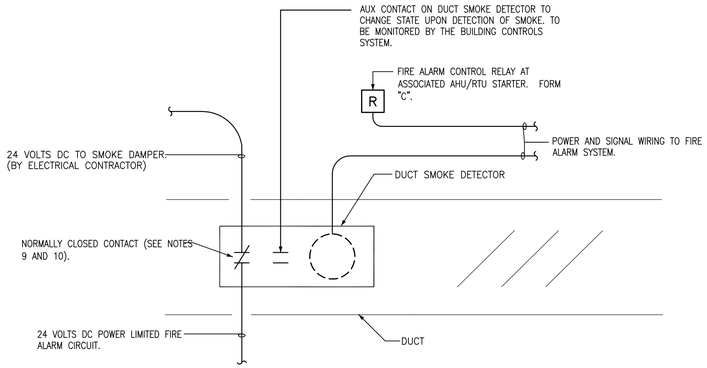
6. MOTION SENSORS SHALL BE LINKABLE OR HAVE AUXILARY CONTACTS TO CONTROL MULTIPLE LOADS SUCH AS BUT NOT LIMITED TO HVAC LOADS.

7. SEE 3 OR 4 WAY WIRING DIAGRAM WHEN MORE THAN ONE OCCUPANCY SENSOR IS USED TO CONTROL A ZONE OF LIGHTS. WHIPS FROM OCCUPANCY SENSOR TO LIGHTS INDICATES LIGHT ZONE TO BE CONTROLLED BY OCCUPANCY SENSORS. IF NO WHIPS ARE INDICATED, THEN OCCUPANCY SENSOR CONTROLS ALL LIGHTS UNLESS INDICATED OTHERWISE.



9 E400 **EXTERIOR LIGHTING CONTROL RISER**

NO SCALE

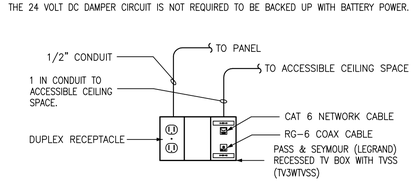


3 E400 **DUCT SMOKE DETECTOR DETAIL**

NO SCALE

NOTES:

1. PROVIDE CONTACTS AS SHOWN.
2. SEE SPECIFICATIONS FOR COORDINATION OF WORK WITH THE HVAC CONTRACTOR.
3. POWER SOURCE FOR DUCT SMOKE DETECTOR SHALL BE A 24 VOLT DC CIRCUIT FROM THE FIRE ALARM SYSTEM.
4. ALL DEVICES SHALL BE ACCESSIBLE FOR NORMAL MAINTENANCE.
5. RELAY CONTACT FOR RTU/AHU CONTROL SHALL CHANGE STATE IMMEDIATELY UPON SMOKE DETECTION.
6. DETECTOR SHALL BE LOCATED WHITEN 5 FEET OF DAMPER. SEE MECHANICAL DRAWINGS FOR EXACT LOCATION.
7. FIRE ALARM RELAY AT STARTER SHALL BE RATED FOR COIL/CONTROL VOLTAGE OF THE STARTER.
8. DAMPER CONTROL SHALL BE RESETTABLE FROM THE FIRE ALARM CONTROL PANEL. MAINTENANCE STAFF SHALL NOT NEED TO BE AT THE DETECTOR OR THE DAMPER TO RESET TO NORMAL CONDITION.
9. CONTACT FOR CONTROL OF SMOKE DAMPER SHALL OPEN ON DETECTION OF SMOKE. CONTACT OPENING SHALL BE DELAYED BY 30 SECONDS AFTER DETECTION.
10. AS SHOWN, NORMALLY CONTACT WITH 30 SECOND TIME DELAY APPLIES TO DUCT SMOKE DETECTORS CONTROLLING SMOKE DAMPERS. FOR DETECTORS INSTALLED FOR DIRECT CONTROL OF AIR HANDLING UNITS THE 24 VOLT DC CIRCUIT AND TIME DELAY CONTACT ARE NOT NEEDED FOR THE SMOKE DAMPER CONTROL.
11. THE 24 VOLT DC DAMPER CIRCUIT IS NOT REQUIRED TO BE BACKED UP WITH BATTERY POWER.

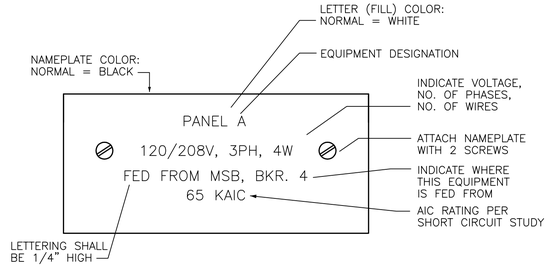


7 E400 **RECEPTACLE/TV OUTLET DETAIL** TV

NTS

NOTES:

1. VERIFY CHALK AND TACK LOCATIONS PRIOR TO ROUGH-IN. DO NOT ROUGH-IN BEHIND BOARDS.
2. PROVIDE BUSHING AT END OF DATA CONDUIT.
3. EC TO FURNISH AND INSTALL PASS & SEYMOUR BOX AND ALL CONDUITS.
4. LOW VOLTAGE CONTRACTOR TO PROVIDE CAT 6 DATA AND RG-6 COAX CABLE.
5. TV / DISPLAYS TO BE PROVIDED BY OWNER, UNLESS OTHERWISE NOTED



8 E400 **PANELBOARD NAMEPLATE DETAIL**

NTS

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PROJECT NFORMATION

Madison Fire Station 13

Madison Project #53W1152, Contract # 6590

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

SHEET INFORMATION

REVISIONS

#	DATE	DESCRIPTION

DATE

May 03, 2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

Electrical Details

E400

HARWOOD ENGINEERING CONSULTANTS, LTD
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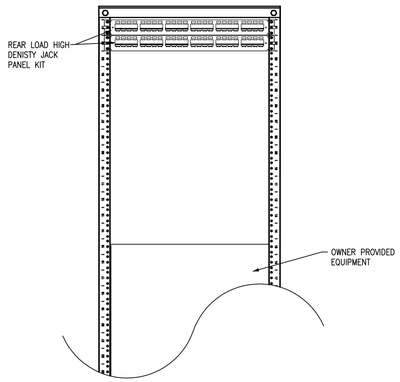
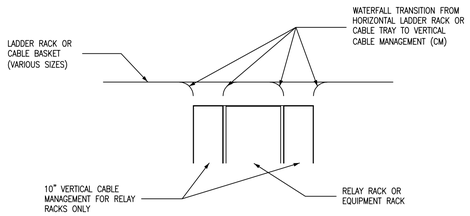
HEC Project Number: 12-0062.00



3 E401 **TYPICAL RACK LAYOUT**
NTS

NOTES:

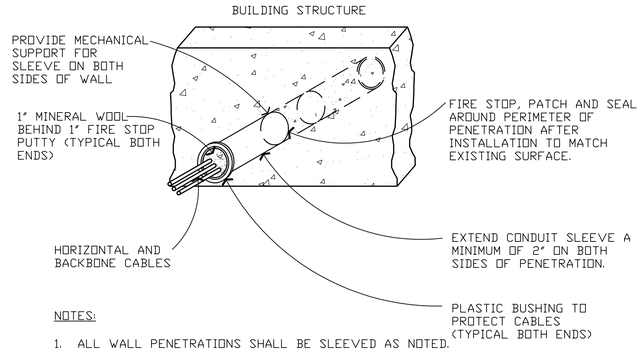
1. PICTURE ABOVE IS OF GENERIC PARTS, ACTUAL PARTS WILL BE DIFFERENT.



2 E401 **RACK INTERGRATION WITH HORIZONTAL DISTRIBUTION**
NTS

NOTES:

1. CONTRACTOR SHALL INSTALL CABLE BASKET/LADDER RACK PER DRAWING.
2. WATERFALL SHALL BE INSTALLED TO TRANSITION CABLES BETWEEN HORIZONTAL AND VERTICAL CABLE MANAGEMENT.
3. ALL CABLE BASKET/LADDER RACK SHALL BE GROUNDED. SEE DETAIL "9/E5.04".



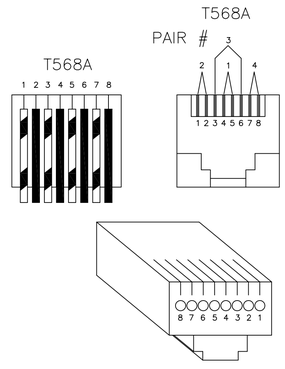
NOTES:

1. ALL WALL PENETRATIONS SHALL BE SLEEVED AS NOTED.
2. ALL FLOOR AND WALL PENETRATIONS SHALL BE SLEEVED AND FIRE STOPPED AT BOTH ENDS BY THIS CONTRACTOR.
3. IF EXISTING SLEEVES IN FLOORS OR WALLS ARE ARE TO BE REUSED, ELECTRICAL CONTRACTOR SHALL FIRE STOP SLEEVE AT BOTH ENDS AFTER THE INSTALLATION OF CABLE IS COMPLETE. PROVIDE SUPPORT ON BOTH SIDES, IF NONE EXISTS.
4. ELECTRICAL CONTRACTOR TO PROVIDE SUPPORT FOR SLEEVE ON BOTH SIDES OF WALL.
5. BUSHINGS SHALL BE INSTALLED ON BOTH ENDS OF CONDUIT SLEEVES PRIOR TO THE INSTALLATION OF ANY CABLES. BUSHINGS SHALL NOT BE CUT AND INSTALLED AFTER CABLES ARE INSTALLED.
6. INSTALL FIRE STOP MATERIALS PER MANUFACTURERS RECOMMENDATIONS, WITH A MINIMUM OF 1" THICKNESS.
7. ALL METAL SLEEVES SHALL BE GROUNDED.
8. ALL CORING PERFORMED BY ELECTRICAL CONTRACTOR.

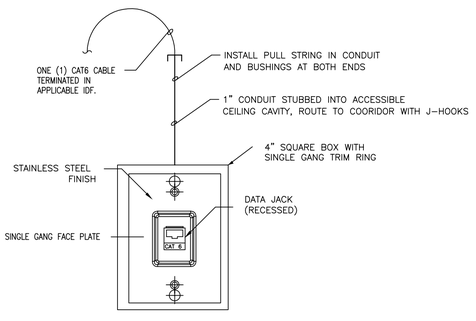
1 E401 **TYP. WALL/FLOOR PENETRATION**
NO SCALE

WIRING PAIR COLORS – EIA/TIA 568A

PAIR #	ID	PIN# PDS	BRAND MARKED CODE	SOLID CODE
1	T1	5	WHITE/BLUE	GREEN
	R1	4	BLUE/WHITE	RED
2	T2	1	WHITE/ORANGE	WHITE
	R2	2	ORANGE/WHITE	BLUE
3	T3	3	WHITE/GREEN	BLACK
	R3	6	GREEN/WHITE	YELLOW
4	T4	7	WHITE/BROWN	ORANGE
	R4	8	BROWN/WHITE	BROWN



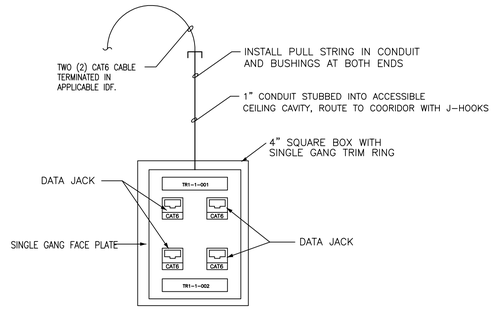
6 E401 **WIRING FORMAT EIA/TIA 568A**
NO SCALE



5 E401 **WALL MOUNTED COMMUNICATIONS OUTLET** ∇_w
NO SCALE

NOTES:

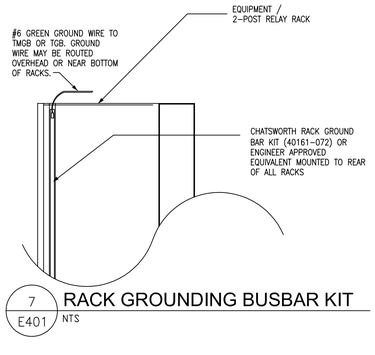
1. MOUNTED 46" ABOVE FINISHED FLOOR.



4 E401 **STANDARD INFORMATION OUTLET (SIO)** ∇
NO SCALE

NOTES:

1. MOUNTED 18" ABOVE FINISHED FLOOR.
2. FACEPLATE DEPICTS 4 POSITIONS, ACTUAL FACEPLATE MAY HAVE FEWER POSITIONS
3. PROVIDE BLANK COVERS FOR ALL UNUSED POSITIONS



7 E401 **RACK GROUNDING BUSBAR KIT**
NTS

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PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

Madison

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

SHEET INFORMATION

REVISIONS

#	DATE	DESCRIPTION

DATE
May 03, 2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

Telecom Details

E401

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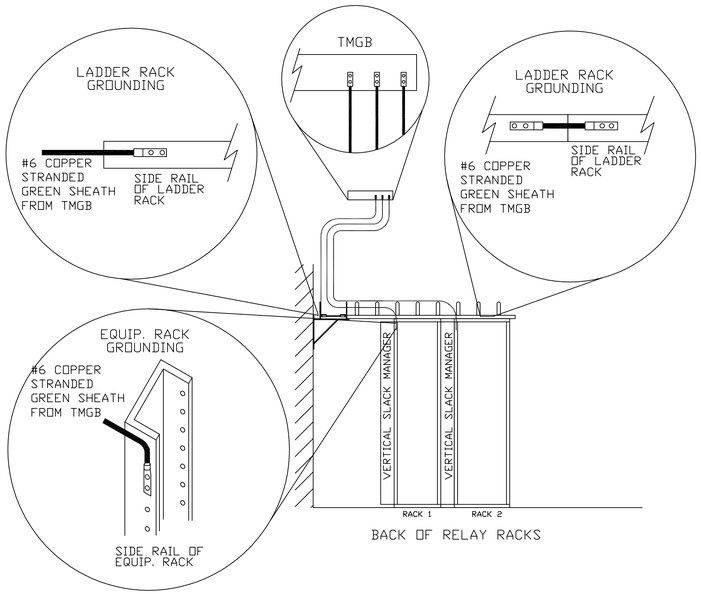
414.475.5554 414.773.5299 fax harwood@hecl.com
HEC Project Number: 12-0062.00



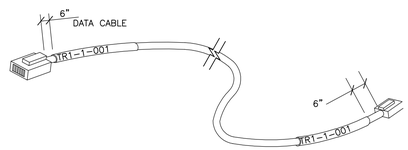
BACK OF RELAY RACKS

5 E402 TELECOMMUNICATIONS GROUNDING

NO SCALE

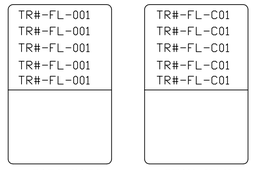
NOTES:

1. SCRAPE PAINT TO BARE METAL AT ALL BONDING POINTS. GROUNDING CONNECTIONS SHALL BE MADE TO CLEAN, BARE METAL SURFACES. COPPER WIRE SHALL BE COATED WITH AN ANTIOXIDANT COMPOUND BEFORE MAKING CRIMP AND BONDING CONNECTIONS. APPLY COMPOUND BETWEEN CLEAN SURFACES AND ALL BOLT CONNECTIONS.
2. ALL GROUNDING CONNECTIONS TO FLOOR RACKS SHALL BE MADE ON THE BACK SIDE OF FLOOR RACKS.
3. ALL RACKS SHALL HAVE A #6 GROUND WIRE HOME RUN TO THE TELECOMMUNICATIONS GROUNDING BUSBAR, DAISY CHAINING OF RACKS WILL NOT BE PERMITTED.
4. THIS CONTRACTOR SHALL SECURE THE #6 GROUND WIRES TO THE TMGB (TELECOMMUNICATIONS MAIN GROUNDING BUSBAR) IF IT IS INSTALLED. IF THE TMGB IS NOT INSTALLED THIS CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR FOR THE EXACT LOCATION AND TERMINATION OF THE #6 GROUND WIRES TERMINATED WITH COMPRESSION LUGS. THIS CONTRACTOR SHALL COIL 3' OF SLACK IN THE GROUND WIRE AT THE LOCATION OF THE TMGB. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING THE GROUND CABLES TO THE TMGB AFTER IT IS INSTALLED.



3 E402 CABLE LABEL DETAIL

NO SCALE

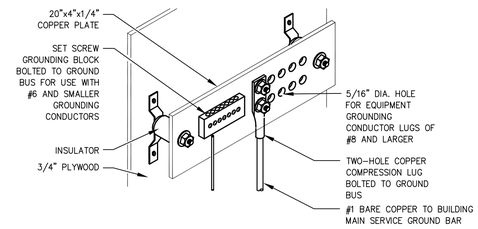


2 E402 LABELING DETAIL

NO SCALE

INSTALLATION NOTES:

1) THIS CONTRACTOR SHALL LABEL ALL CABLES ON BOTH ENDS.
2) THE OUTLET IDENTIFICATION SHALL BE PRINTED A MINIMUM OF THREE TIMES ON EACH LABEL.
3) THE 1ST THREE DIGIT NUMBER REPRESENTS THE TELECOMMUNICATIONS ROOM NUMBER THAT THE CABLE IS TERMINATED IN. (I.E. TR1 REFERS TO TELECOMMUNICATIONS ROOM 1)
4) FL REPRESENTS WHICH FLOOR THE OUTLET RESIDES IN.
5) THE LAST THREE DIGITS REPRESENT THE SEQUENCE OF TOTAL OUTLETS ON THE FLOOR. FOR COAX CABLE, THE FIRST CHARACTER IS THE LETTER C.
6) ALL LABELS ARE TO BE PERMANENT IN NATURE AND BE MACHINE GENERATED. HANDWRITTEN LABELS ARE NOT ACCEPTABLE.
7) CONTRACTOR SHALL CONFIRM LABELING WITH SPECIFICATION 27 00 05, SECTION 3: CABLE TERMINATION / TESTING / IDENTIFICATION / LABELING.

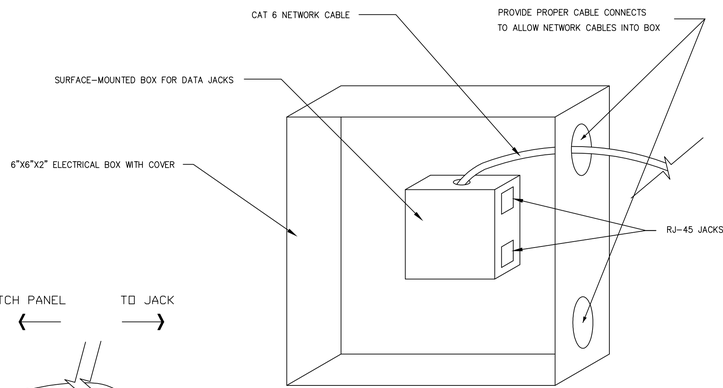


1 E402 GROUND BAR RISER DETAIL

NTS

NOTES:

1. TELECOMMUNICATIONS CONTRACTOR SHALL BOND ALL RACKS, TRAYS AND ENCLOSURES TO THE GROUND BUS BAR WITH #6 AWG COPPER OR LARGER.
2. LENGTH OF BUS BAR SHALL BE ADEQUATE TO GROUND ALL EQUIPMENT AND HAVE ROOM FOR 20% GROWTH.
3. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL TMGB AND TMG AS INDICATED BY DRAWINGS. EC TO COORDINATE WITH TELECOMMUNICATIONS CONTRACTOR THE SIZE OF GROUND BUS BAR TO BE INSTALLED.
4. EC TO PROVIDE AND INSTALL SET SCREW GROUNDING BLOCK AT EACH DISPATCH STATION. THE BLOCK TO SUPPORT A MINIMUM OF TEN (10) CONNECTIONS.

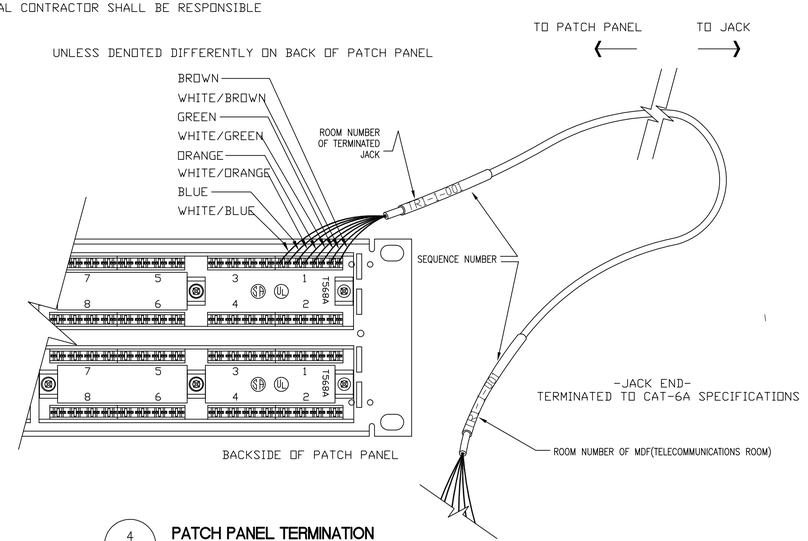


6 E402 CEILING-MOUNTED WIRELESS ACCESS POINT

NO SCALE

NOTES:

1) ELECTRICAL BOX TO BE PAINTED BLUE TO INDICATE DATA LOCATION
2) ELECTRICAL BOX REQUIRED IN ALL PLENUM SPACES. ELECTRICAL BOX MAY BE ELIMINATE IN NON-PLENUM AREAS.



4 E402 PATCH PANEL TERMINATION

NO SCALE

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HEC Project Number: 12-0062.00

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PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

Madison

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

SHEET INFORMATION

REVISIONS

#	DATE	DESCRIPTION

DATE
May 03, 2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

Telecom Details

E402

FEEDER SCHEDULE

IDENTIFIER	AMPACITY (SEE NOTE 1)	SINGLE-PHASE TWO-WIRE CIRCUIT [#]		SINGLE-PHASE THREE-WIRE CIRCUIT <#>		THREE-PHASE FOUR-WIRE CIRCUIT (#)		EQUIPMENT GROUNDING CONDUCTOR
		CIRCUIT CONDUCTORS	CONDUIT	CIRCUIT CONDUCTORS	CONDUIT	CIRCUIT CONDUCTORS	CONDUIT	
1	SEE MOTOR, SPECIAL OUTLET, ME SHEETS FOR FEEDER INFORMATION							
2	20	(2) #12	1/2"	(3) #12	1/2"	(4) #12	1/2"	#12
3	25	(2) #10	3/4"	(3) #10	3/4"	(4) #10	3/4"	#10
4	30	(2) #10	3/4"	(3) #10	3/4"	(4) #10	3/4"	#10
5	35	(2) #8	3/4"	(3) #8	3/4"	(4) #8	3/4"	#10
6	40	(2) #8	3/4"	(3) #8	3/4"	(4) #8	3/4"	#10
7	45	(2) #6	3/4"	(3) #6	3/4"	(4) #6	3/4"	#10
8	50	(2) #6	3/4"	(3) #6	3/4"	(4) #6	3/4"	#10
9	60	(2) #4	1"	(3) #4	1"	(4) #4	1-1/4"	#10
10	70	(2) #4	1"	(3) #4	1"	(4) #4	1-1/4"	#8
11	80	(2) #3	1"	(3) #3	1-1/4"	(4) #3	1-1/4"	#8
12	90	(2) #2	1"	(3) #2	1-1/4"	(4) #2	1-1/4"	#8
13	100	(2) #1	1-1/4"	(3) #1	1-1/4"	(4) #1	1-1/2"	#8
14	110	N/A	N/A	(3) #1	1-1/4"	(4) #1	1-1/2"	#6
15	125	N/A	N/A	(3) 1/0	1-1/2"	(4) 1/0	2"	#6
16	150	N/A	N/A	(3) 1/0	1-1/2"	(4) 1/0	2"	#6
17	175	N/A	N/A	(3) 2/0	2"	(4) 2/0	2"	#6
18	200	N/A	N/A	(3) 3/0	2"	(4) 3/0	2"	#6
19	225	N/A	N/A	(3) 4/0	2"	(4) 4/0	2-1/2"	#4
20	250	N/A	N/A	(3) 250KCMIL	2-1/2"	(4) 250KCMIL	2-1/2"	#4
21	300	N/A	N/A	(3) 350KCMIL	3"	(4) 350KCMIL	3"	#4
22	350	N/A	N/A	(3) 500KCMIL	3"	(4) 500KCMIL	3-1/2"	#3
23	400	N/A	N/A	(3) 600KCMIL	3-1/2"	(4) 600KCMIL	4"	#3
24	450	N/A	N/A	2 SETS OF (3) 4/0	(2) 2"	2 SETS OF (4) 4/0	(2) 2-1/2"	#2
25	500	N/A	N/A	2 SETS OF (3) 250KCMIL	(2) 2-1/2"	2 SETS OF (4) 250KCMIL	(2) 2-1/2"	#2
26	600	N/A	N/A	2 SETS OF (3) 350KCMIL	(2) 3"	2 SETS OF (4) 350KCMIL	(2) 3"	#1
27	700	N/A	N/A	2 SETS OF (3) 500KCMIL	(2) 3"	2 SETS OF (4) 500KCMIL	(2) 3-1/2"	#1/0
28	800	N/A	N/A	2 SETS OF (3) 600KCMIL	(2) 3-1/2"	2 SETS OF (4) 600KCMIL	(2) 4"	#1/0
29	900	N/A	N/A	3 SETS OF (3) 350KCMIL	(3) 3"	3 SETS OF (4) 350KCMIL	(3) 3"	#3/0
30	1000	N/A	N/A	3 SETS OF (3) 400KCMIL	(3) 3"	3 SETS OF (4) 400KCMIL	(3) 3"	#2/0
31	1200	N/A	N/A	3 SETS OF (3) 600KCMIL	(3) 3-1/2"	3 SETS OF (4) 600KCMIL	(3) 4"	#3/0
32	1600	N/A	N/A	4 SETS OF (3) 600KCMIL	(4) 3-1/2"	4 SETS OF (4) 600KCMIL	(4) 4"	#4/0
33	1800	N/A	N/A	5 SETS OF (3) 500KCMIL	(5) 3"	5 SETS OF (4) 500KCMIL	(5) 3-1/2"	250 kcmil
34	2000	N/A	N/A	5 SETS OF (3) 600KCMIL	(5) 3-1/2"	5 SETS OF (4) 600KCMIL	(5) 4"	250 kcmil
35	2500	N/A	N/A	7 SETS OF (3) 500KCMIL	(7) 3"	7 SETS OF (4) 500KCMIL	(7) 3-1/2"	350 kcmil
36	3000	N/A	N/A	8 SETS OF (3) 500KCMIL	(8) 3"	8 SETS OF (4) 500KCMIL	(8) 3-1/2"	400 kcmil
37	4000	N/A	N/A	10 SETS OF (3) 600KCMIL	(10) 3-1/2"	10 SETS OF (4) 600KCMIL	(10) 4"	500 kcmil

PLAN NOTATION:

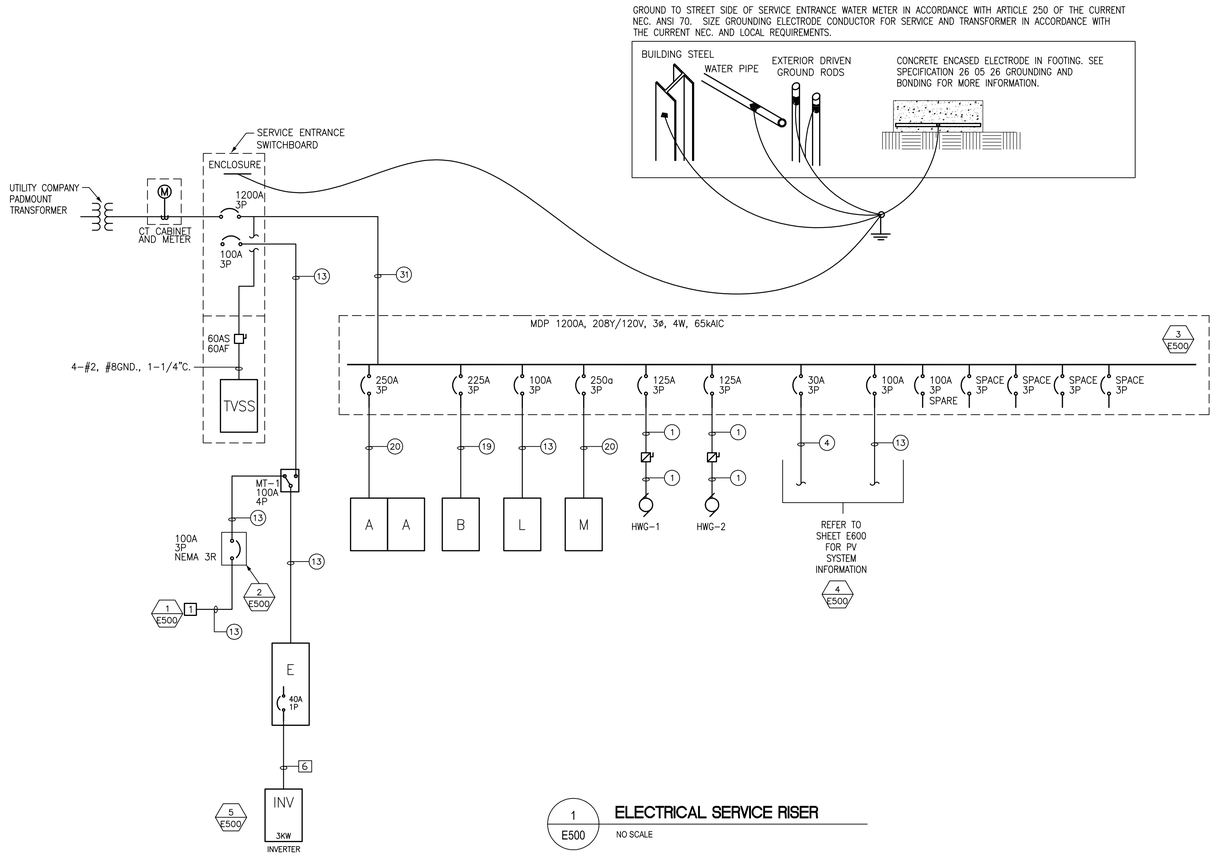
[#] SINGLE-PHASE, TWO-WIRE FEEDER, NUMBER IS THE FEEDER IDENTIFIER

<#> SINGLE-PHASE, THREE-WIRE FEEDER, NUMBER IS THE FEEDER IDENTIFIER

(#) THREE-PHASE, FOUR-WIRE FEEDER, NUMBER IS THE FEEDER IDENTIFIER

FEEDER SCHEDULE NOTES:

1. SOME FEEDERS MAY BE OVERSIZED FOR THE OVERCURRENT PROTECTION DEVICE TO ACCOMODATE FOR VOLTAGE DROP.



1 E500 **ELECTRICAL SERVICE RISER**

NO SCALE

E500 PLAN NOTES:

1. PORTABLE GENERATOR TAP BOX POWERTRON SERIES 400 UL FOR A 208Y/120, 3 PHASE 4 WIRE, 100AMPS SYSTEM IN A NEMA 3R ENCLOSURE. BOND NEUTRAL TO GROUND SYSTEM. TIE GROUND SYSTEM OF TAP BOX TO BUILDING GROUND SYSTEM.

2. NEMA 3R ENCLOSED CIRCUIT BREAKER SHALL BE REQUIRED IF THE FEEDER DISTANCE INTO THE BUILDING IS LONGER THAN 8'-0".

3. MAIN DISTRIBUTION PANEL BUSSING SHALL EXTEND THROUGHOUT THE ENTIRE PANEL. BUSS SHALL BE TAPPED FOR PROVISIONAL CIRCUIT BREAKERS.

4. ELECTRICAL INFORMATION SHOWN IS FOR BIDDING PURPOSES ONLY. E.C. SHALL VERIFY FINAL EQUIPMENT SELECTIONS AND MAKE ADJUSTMENTS AT NO ADDITIONAL COST.

5. PROVIDE (4) 20A/1P CIRCUIT BREAKERS WITHIN THE IPS DISTRIBUTION CENTER. TWO OUT OF THE FOUR BREAKERS ARE SPARES.

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PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

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Electrical Service Riser Diagram

E500

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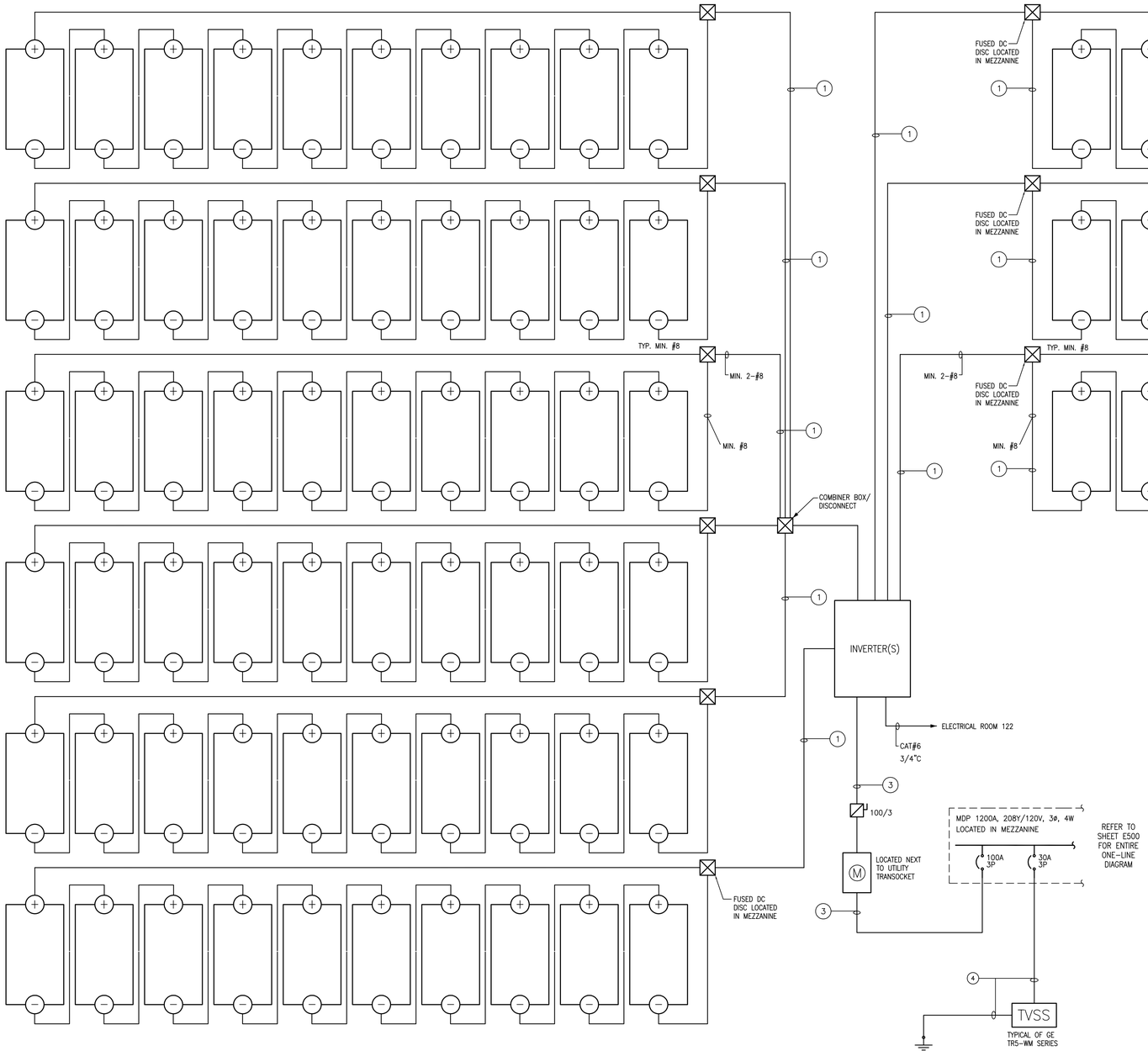

FEEDER SCHEDULE

(X) NO	AMPS	# OF SETS	ø+N CONDUCTORS NO	ø+N CONDUCTORS SIZE	ISOLATED GROUND NO	ISOLATED GROUND SIZE	EQUIP. GROUND NO	EQUIP. GROUND SIZE	CONDUIT PER SET	
1	60A	1	2	4			1	10	1"	
2	40A	1	3	8			1	10	1"	
3	100A	1	3	3			1	8	1 1/2"	
4	30A	1	3	10			1	10	1"	

FEEDER GENERAL NOTES:

1. SOME EQUIPMENT SELECTIONS WILL REQUIRE A NEUTRAL (IF NOT SHOWN). THIS CONTRACT REQUIRES THE EC TO PROVIDE THIS FEEDER, THEREBY ACCOMMODATING A DESIGN OR LAYOUT WHICH WOULD NEED IT.

GENERAL NOTES

1. SYSTEM CONFIGURATION AND DESIGN AS SHOWN SHALL BE ADJUSTED TO REFLECT THE ACTUAL COMPONENTS CHOSEN. THE DESIGN SHOWN IS A TYPICAL LAYOUT AND WIRING SCHEME WHICH IS INTENDED TO SHOW THE FUNDAMENTAL OBJECTIVE.
2. DISCONNECTS SHALL BE GROUPED TOGETHER IN VICINITY OF ARRAY.
3. EACH PV DISCONNECTING MEANS SHALL BE MARKED TO IDENTIFY IT AS A PHOTOVOLTAIC SYSTEM DISCONNECT AND TO WHICH ARRAY/INVERTER IT SERVES. IT SHALL ALSO READ "WARNING ELECTRIC SHOCK HAZARD. THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED."
4. ALL CONDUCTORS IN PARALLEL SHALL BE THE SAME LENGTH.
5. 3Ø, 208Y/120 VOLT, 200 AMP UTILITY APPROVED METER SOCKET. SOCKET PROVIDED BY EC, METER PROVIDED BY UTILITY.
6. TVSS SHALL BE 3ø, AND USE AT LEAST #10 CU WIRE.
7. BALANCE ALL LOADS IN BRANCH PANEL TO BE INTERCONNECTED.
8. AT MDP, PROVIDE PLAQUE-STYLE LABEL AT TOP FRONT TO READ "WARNING INVERTER OUTPUT CONNECTION, DO NOT RELOCATE THIS OVER CURRENT DEVICE" .
9. ALL CONDUCTORS SHALL BE 90° RATED SHALL BE IN METAL CONDUIT IMC OR EMT.
10. TRANSITION FROM WIRING CONNECTED TO AND EMERGING FROM THE MODULE TO THE INTERCONNECTING CONDUIT WIRING. PROVIDE NEMA 4X JUNCTION BOX, SOLDERED SPLICE WITH LISTED HEAT SHRINK ON SPLICE. ALL SPLICES TO USE SUNLIGHT RESISTANT, WP HEAT SHRINK SLEEVES.
11. E.C. MAY REVISE CIRCUITING TO THE MODULES TO FIT THE PHYSICAL LOCATION OF PANELS IN ORDER TO MAKE WIRING MORE CONVENIENT. SUBMIT PROPOSED WIRING PRIOR TO PROCEEDING.
12. MODULES SHALL BE CIRCUITED TOGETHER IN LOOPS AS NEEDED TO MINIMIZE EFFECTS SHADING WILL HAVE ON OVERALL ELECTRICAL PRODUCTION.
13. ELECTRICAL INFORMATION SHOWN IS FOR BIDDING PURPOSES ONLY. E.C. SHALL VERIFY FINAL EQUIPMENT SELECTIONS AND MAKE ADJUSTMENTS AT NO ADDITIONAL COST.
14. REFER TO DETAIL 3/S502 FOR CONNECTION INFORMATION.

THE DESIGN SHOWN IS BASED ON USING THE FOLLOWING PRODUCTS. OTHER MANUFACTURER'S PRODUCTS MAY BE USED (SEE SPECIFICATIONS FOR ACCEPTABLE ALTERNATE MANUFACTURERS), HOWEVER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE A SYSTEM THAT MEETS THE GOALS OF THIS DESIGN AND THE CONSTRAINTS OF THIS PROJECT. A MINIMUM 24,000 WATT SYSTEM SHALL BE PROVIDED AND THAT SYSTEM MUST FIT AND OPERATE EFFICIENTLY WITHIN THE CONFINES OF THIS PROJECT. ANY EXTRA COSTS REQUIRED TO ACCOMMODATE OTHER MANUFACTURERS OTHER THAN THOSE LISTED HERE SHALL BE INCLUDED IN THE CONTRACTOR'S BID.

- ROOF MOUNTING SYSTEM: SCHLETTER ISOTOP
- STANDING SEAM ROOF MOUNTING: S-5 CLIPS AND UNIRACK RAILS
- COMBINER BOX/DISCONNECT: COOPER BCBD SERIES

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PV System Wiring Diagram and Detail

E600

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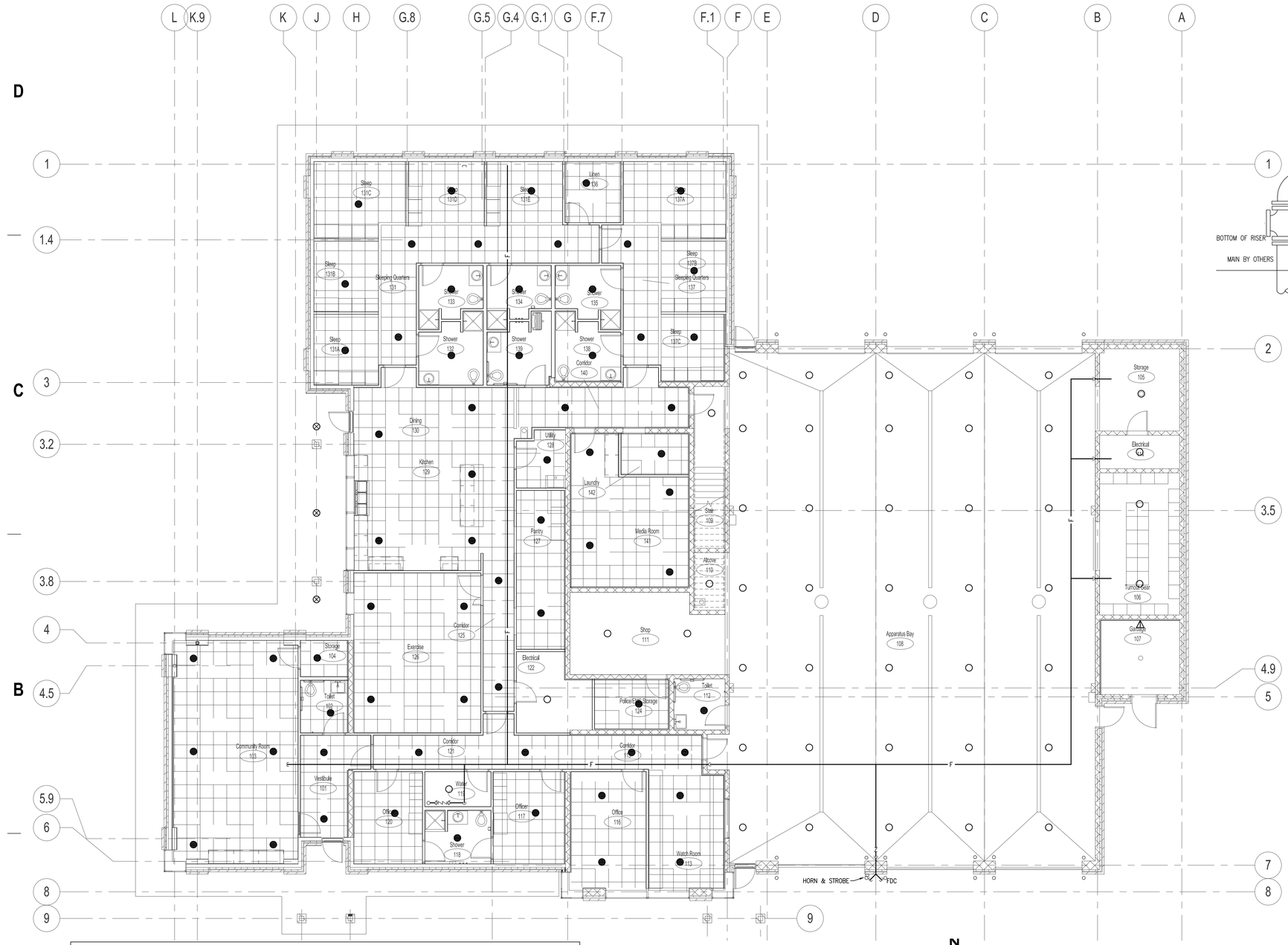
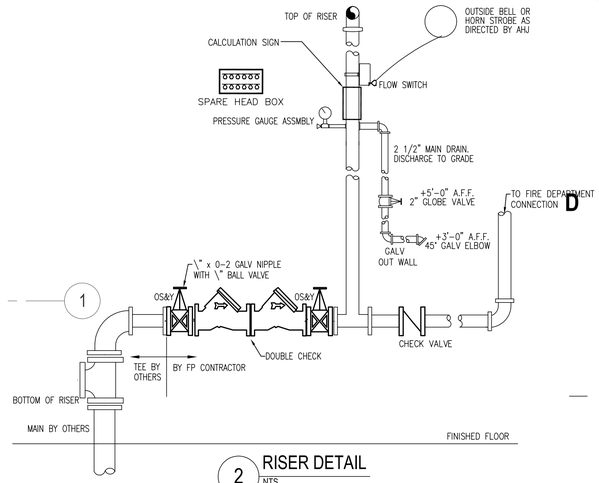
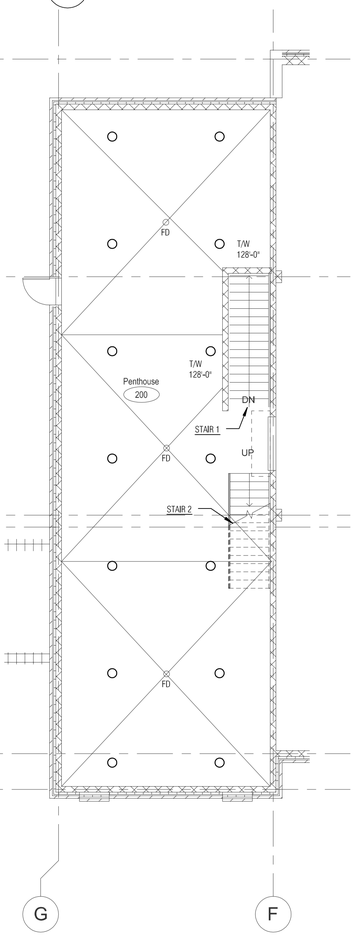




2 RISER DETAIL
NTS



FIRE PROTECTION GENERAL NOTES:

1. THE FIRE PROTECTION DRAWINGS ARE CONCEPTUAL, FOR GENERAL INFORMATION ONLY AND SHALL NOT BE CONSTRUED AS FINAL DESIGN OR INSTALLATION DOCUMENTS. THE SPRINKLER DESIGN AND INSTALLATION SHALL BE THE RESPONSIBILITY OF THE DESIGN BUILD FIRE PROTECTION CONTRACTOR. REFER TO SPECIFICATIONS FOR DESIGN CRITERIA.
2. QUANTITIES OF SPRINKLER HEADS, VALVES, FLOW AND TAMPER SWITCHES SHOWN ARE APPROXIMATE. FINAL QUANTITIES TO BE THE RESPONSIBILITY OF THE DESIGN BUILD FIRE PROTECTION CONTRACTOR.
3. THE EXACT LOCATION, ELEVATION, AND CONFIGURATION OF SPRINKLER PIPING AND SPRINKLER HEADS SHALL BE COORDINATED WITH ALL TRADES PRIOR TO COMMENCING WORK. THE FIRE PROTECTION CONTRACTOR DOES NOT HAVE PRIORITY.
4. ADD ADDITIONAL SPRINKLER HEADS AS REQUIRED BY NFPA 13 TO ACCOMMODATE OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO COLUMNS, DUCTWORK, CLEARSTORY, OVERHEAD DOORS AND EQUIPMENT. TYPICAL.
5. PROVIDE ISOLATION VALVES AS REQUIRED PER NFPA 13, 14. ALL OS&Y VALVES SHALL BE SUPERVISED WITH TAMPER SWITCHES.
6. SPRINKLER PIPING MAY BE REQUIRED TO BE INSTALLED WITHIN BLOCK WALLS TO FEED ISOLATED AREAS. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR TIMELY COORDINATION WITH MASONRY CONTRACTOR.
7. INSTALL SPRINKLER HEAD GUARDS ON EXPOSED SPRINKLER HEADS IN ALL MECHANICAL ROOMS.

1 FIRST FLOOR SCHEMATIC FIRE PROTECTION PLAN
SCALE: 1/8" = 1'-0"

FIRE PROTECTION LEGEND

SYMBOL	ABBR.	DESCRIPTION
—○—		QUICK RESPONSE BRASS UPRIGHT SPRINKLER HEAD
—●—		QUICK RESPONSE CONCEALED PENDANT SPRINKLER HEAD
—⊗—		QUICK RESPONSE CONCEALED DRY PENDANT SPRINKLER HEAD
—F—		FIRE PROTECTION PIPING
—△—		QUICK RESPONSE DRY SIDEWALL SPRINKLER HEAD

2 MEZZANINE SCHEMATIC FIRE PROTECTION PLAN
SCALE: 1/8" = 1'-0"

FIRE PROTECTION SHEET INDEX:

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First Floor and Mezzanine Schematic Fire Protection Plan

F101

SDHW w/ HX in Backup Waterheater

A

_ Operation Solar Circulation Pump:

1. Operate when temperature difference between collector and storage tank is larger than 10°F (adjs.)
a. operate 300 s (adjs.) after dT is below setpoint
2. Operate when storage tank temperature is above 180°F (adjustable) AND collector temperature is below this temperature (overheat protection)

B

_ Operation 3-way Valve:

1. Open to divert flow through water heater when collector is 10°F (adjs.) warmer than water heater
2. De-activate (spring return) when solar circulation pump is off

C

_ Capacity Control Solar Circulation Pump:

1. Vary pump speed to maintain 12°F (adjs.) temperature differential between solar collector and water heater WHEN 3-way valve is open (flow through water heater)
2. Vary pump speed to maintain 12°F (adjs.) temperature differential between solar collector and solar storage tank WHEN 3-way valve is closed (no flow through water heater)

D

_ Operation Building Circulation Pump:

1. Operate when schedule is occupied AND water temperature at point of use is below 100°F (adjs.)
a. when schedule is unoccupied, maintain 80°F (adjs.)
2. Operate when water heater temperature is above 180°F (adjs.) regardless of schedule (heat shedding overheat protection).

Enable Solar Pump when dT between Collector and Storage: 10°F

Maintain dT between Collector and Storage: 12°F

Maintain dT between Collector and Water Heater: 12°F

Enable Solar Pump for Overheat Protection when Storage is above: 180°F

Enable Building circulation Pump for Overheat Protection when Water Heater is above: 180°F

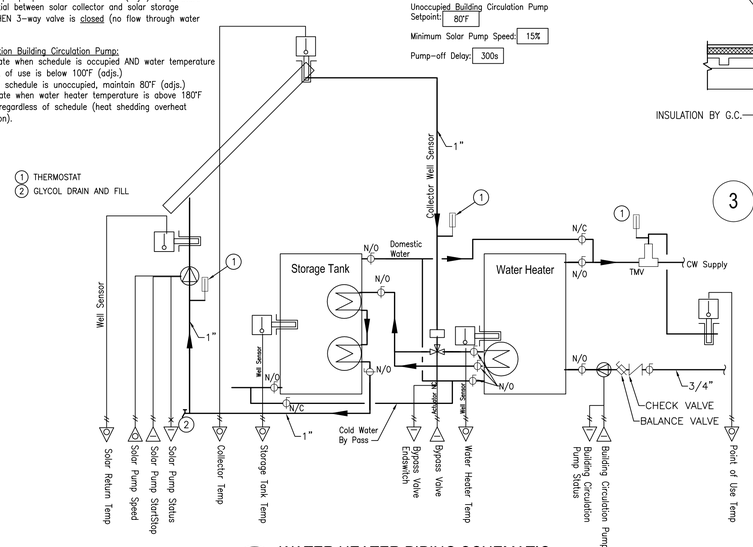
Open Diverting Valve when dT between Collector and Water Heater is: 10°F

Building Circulation Pump Setpoint: 100°F

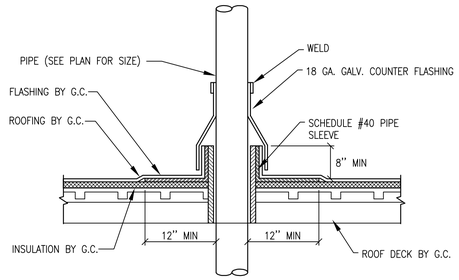
Unoccupied Building Circulation Pump Setpoint: 80°F

Minimum Solar Pump Speed: 15%

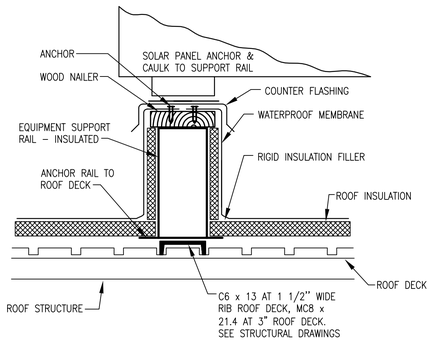
Pump-off Delay: 300s



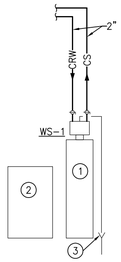
1 WATER HEATER PIPING SCHEMATIC
NTS



3 PIPE THROUGH ROOF DETAIL
NTS



4 ROOF EQUIPMENT RAIL SUPPORT DETAIL
NTS



WATER SOFTENER KEY

1. WATER SOFTENER
2. BRINE TANK
3. TERMINATE BACKWASH OVER HUB DRAIN WITH AIR GAP

2 WATER SOFTENER PIPING SCHEMATIC
NTS

PLUMBING LEGEND

SYMBOL	ABBR.	DESCRIPTION
	CW	COLD RAW WATER PIPING
	CW	COLD WATER PIPING BELOW GROUND
	CS	COLD SOFT WATER PIPING
	HW	HOT WATER PIPING
		HOT WATER RETURN PIPING
	W	SANITARY PIPING ABOVE GROUND
	W	SANITARY PIPING BELOW GROUND
	GW	GREASE WASTE PIPING BELOW GROUND
	V	SANITARY VENT PIPING ABOVE GROUND
	V	SANITARY VENT PIPING BELOW GROUND
	ST	STORM PIPING ABOVE GROUND
	ST	STORM PIPING BELOW GROUND
	UP	PIPING UP
	DN	PIPING DOWN
	C.O.	CLEANOUT
	HB / WH	HOSE BIBB / WALL HYDRANT
	FCO	FLOOR CLEANOUT
		BALANCING VALVE
		BALL VALVE
FLOW		CHECK VALVE
		BUTTERFLY VALVE
	TPV	TRAP PRIMER VALVE
	FD	FLOOR DRAIN
	HD	HUB DRAIN OR SITE DRAIN
	RD/OD	ROOF DRAIN/ OVERFLOW DRAIN
I.E.=00.00'	I.E.	INVERT ELEVATION
		SHOCK ARRESTOR
		FIXTURE UNIT TAGS
	ET	EXPANSION TANK
	GWH	GAS WATER HEATER
	WS	WATER SOFTENER
	SST	SOLAR STORAGE TANK
	CP	CIRCULATING PUMP
	EWC	ELECTRIC WATER COOLER
	WC	WATER CLOSET
	LAV /L-	LAVATORY
	MB	MOP BASIN
	SH	SHOWER
	SINK /S-	SINK
	CB	CATCH BASIN
	TD	TRENCH DRAIN
	RPPBP	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER
	WMB	WASH MACHINE BOX
	GI	GREASE INTERCEPTOR

GENERAL NOTES:

1. DRAWINGS OF ALL OTHER TRADES SHALL BE REVIEWED. THIS CONTRACTOR SHALL COORDINATE THE INSTALLATION AND SCHEDULING OF HIS WORK WITH OTHER TRADES TO PREVENT INTERFERENCE WITH THEIR RESPECTIVE INSTALLATIONS.
2. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL PLUMBING FIXTURES, EQUIPMENT, STRUCTURAL DIMENSIONS, AND LAYOUT.
3. DEVIATIONS FROM THE ROUTING OF NEW PIPING SHOWN MAY BE NECESSARY IN ORDER TO CLEAR WORK OF OTHER TRADES. HOWEVER, ALL SUCH DEVIATIONS SHALL BE PREVIOUSLY APPROVED BY THE ARCHITECT/ENGINEER.
4. ALL SANITARY, STORM, AND CLEAR WATER WASTE PIPING SHALL BE PITCHED AS FOLLOWS: PIPING 2" AND SMALLER AT 1/4"/FT, PIPING 3" AND LARGER AT 1/8"/FT UNLESS OTHERWISE NOTED.
5. PENETRATIONS THROUGH FLOORS AND WALLS SHALL BE SEALED WITH A U. L. LISTED SYSTEM OF MATERIAL THAT MEETS OR EXCEEDS THE FIRE RATING OF THE WALL OR FLOOR PENETRATED. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, NEW OPENINGS OR EXISTING OPENINGS MADE OBSOLETE BY THE REMOVAL OF EXISTING PLUMBING PIPING.
6. INSTALL ALL INTERIOR HORIZONTAL STORM, WATER, WASTE, AND VENT PIPING AS HIGH AS POSSIBLE. ALL HORIZONTAL PIPING LOCATED ABOVE CEILINGS SHALL BE INSTALLED WITHIN THE JOIST SPACE UNLESS OTHERWISE INDICATED.
7. INSTALL CLEANOUT AT THE BASE OF ALL ROOF CONDUCTORS AND WASTE STACKS. ALL CLEANOUTS SHALL BE INSTALLED WHERE EASILY ACCESSIBLE. COORDINATE ALL CLEANOUT LOCATIONS WITH ALL EQUIPMENT, CABINETS, ETC. PRIOR TO INSTALLATION.
8. ALL WORK SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH THE WISCONSIN PLUMBING CODE AND ALL OTHER APPLICABLE CODES AS ADOPTED BY THE LOCAL INSPECTING AUTHORITIES.
9. ALL SLEEVES THROUGH CONCRETE FRAMING REQUIRED FOR THE INSTALLATION OF PLUMBING WORK SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR.
10. CORE-DRILLING OR SLEEVING THROUGH BEAMS, JOISTS, OR BRIDGING SHALL NOT BE PERMITTED UNLESS SPECIFICALLY SHOWN ON STRUCTURAL DRAWINGS. INCLUDE SUFFICIENT ALLOWANCES FOR OFFSETS OF PIPING TO CLEAR STRUCTURAL MEMBERS.
11. TRAPS AT ALL SINKS AND LAVATORIES SHALL BE INSTALLED STRAIGHT BACK TO THE WALL WITH ALL PIPING OFFSETS LOCATED WITHIN THE WALL.
12. LOCATE ALL VENT TERMINALS A MINIMUM OF 10'-0" FROM ANY OUTSIDE AIR INTAKES.
13. ALL VALVES, SHOCK ARRESTORS, ETC. SHOWN IN WALLS OR ABOVE NON-ACCESSIBLE CEILINGS SHALL BE CENTRALLY LOCATED BEHIND ACCESS PANELS.
14. REFER TO PIPING ISOMETRICS FOR SIZES NOT SHOWN ON PLANS.

GAS FIRED WATER HEATER SCHEDULE

TAG	LOCATION	MANUFACTURER	MODEL	INPUT BTU	RECOVERY GPH	° TEMPERATURE RISE	REMARKS
GWH-1	MEZZANINE	HEAT TRANSFER PRODUCTS	PH130-119S	35,000 TO 130,000	152	100°	NATURAL GAS FIRED MODULATING BURNER. 5 : 1 TURNDOWN RATIO. INTEGRAL SOLAR HEAT EXCHANGER

WATER SOFTENER SCHEDULE

TAG	LOCATION	MANUFACTURER	MODEL	LOW SALT GRAINS/LB	FLOW RATE @ 15 PSI	BACKWASH RATE	REMARKS
WS-1	ROOM 119	CAPITAL	FCM-160	105,000/30	67 GPM	10.0 GPM	SIMPLEX SYSTEM; 24"x51" BRINE TANK; 2" INLET AND OUTLET

INLINE SYSTEM LUBRICATED PUMP SCHEDULE

TAG	LOCATION	MANUFACTURER	MODEL	SERVICE	FLOW (GPM)	HEAD	MOTOR	RPM	PUMP SIZE VOLTAGE /HERTZ /PHASE	REMARKS
CP-1	MEZZANINE	BELL & GOSSETT HONEYWELL	NBF-22 L6006A	DOMESTIC HOT WATER DOMESTIC HOT WATER	3	12'	115/60/1	2800	120V/60/1	SET AQUASTAT AT 100° ON - 115° OFF
CP-2	MEZZANINE	GRUNDFOS	UP	SOLAR GLYCOL					VARIABLE SPEED	SEE SPECIFICATIONS FOR SIZING

EXPANSION TANK

TAG	LOCATION	MANUFACTURER	MODEL	SERVICE	ACCEPTABLE VOLUME	TOTAL VOLUME	HEIGHT	DIAMETER	
ET-1	MEZZANINE	WESSELS	25TX	DOMESTIC HOT WATER	10.6	10.6	17"	11"	
ET-2	MEZZANINE	CALLEFFI SOLAR		SOLAR GLYCOL					SEE SPECIFICATIONS FOR SIZING

SOLAR STORAGE TANK

TAG	LOCATION	MANUFACTURER	MODEL	STORAGE CAPACITY	HEAT EXCHANGER SURFACE AREA	REMARKS
SST-1	MEZZANINE	STIEBL ELTRON	SBB-600-PLUS	162 GALLONS	5425 SQ. IN.	

PLUMBING SHEET INDEX:

HARWOOD ENGINEERING CONSULTANTS, LTD
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HEC Project Number: 120062.00

Zimmerman ARCHITECTURAL STUDIOS, INC.
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PROJECT NFORMATION

Madison Fire Station 13
Madison Project #53W1152, Contract # 6590

ISSUANCE AND REVISIONS

Bid Set

KEY PLAN

SHEET INFORMATION

REVISIONS

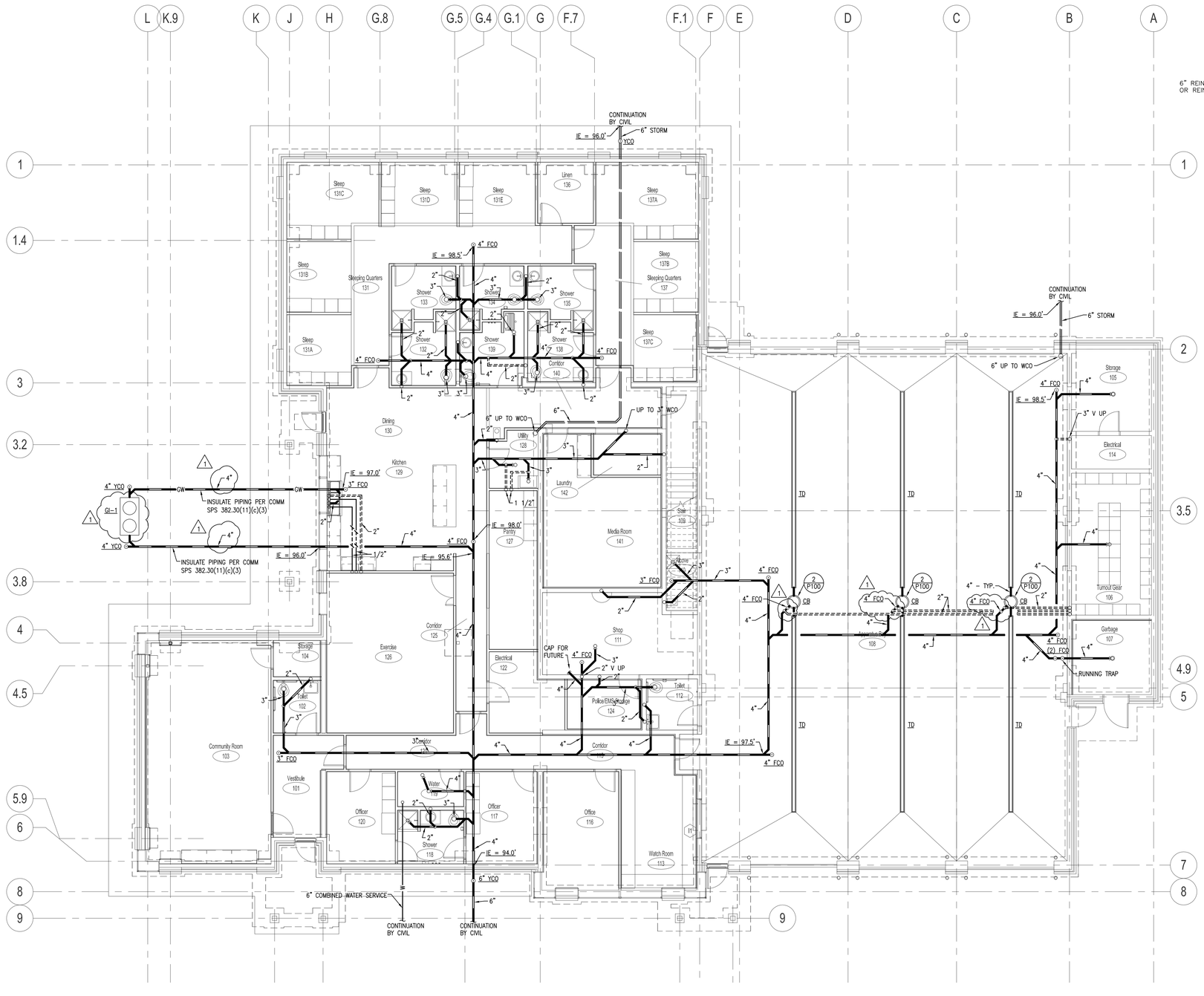
#	DATE	DESCRIPTION

DATE
May 03, 2013

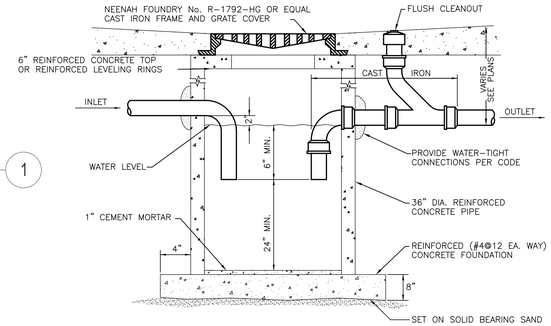
PROJECT NUMBER	STUDIO
120062.00	Sabinash

Plumbing Schedules, Notes and Details

P001



1 FOUNDATION PLUMBING PLAN
SCALE: 1/8" = 1'-0"



2 GARAGE CATCH BASIN DETAIL
NTS

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Madison

ISSUANCE AND REVISIONS

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KEY PLAN

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REVISIONS

DATE	DESCRIPTION
05-16-2013	1 ADDENDUM No.1

DATE
May 03, 2013

PROJECT NUMBER	STUDIO
120062.00	Sabinash

Foundation Plumbing Plan

P100

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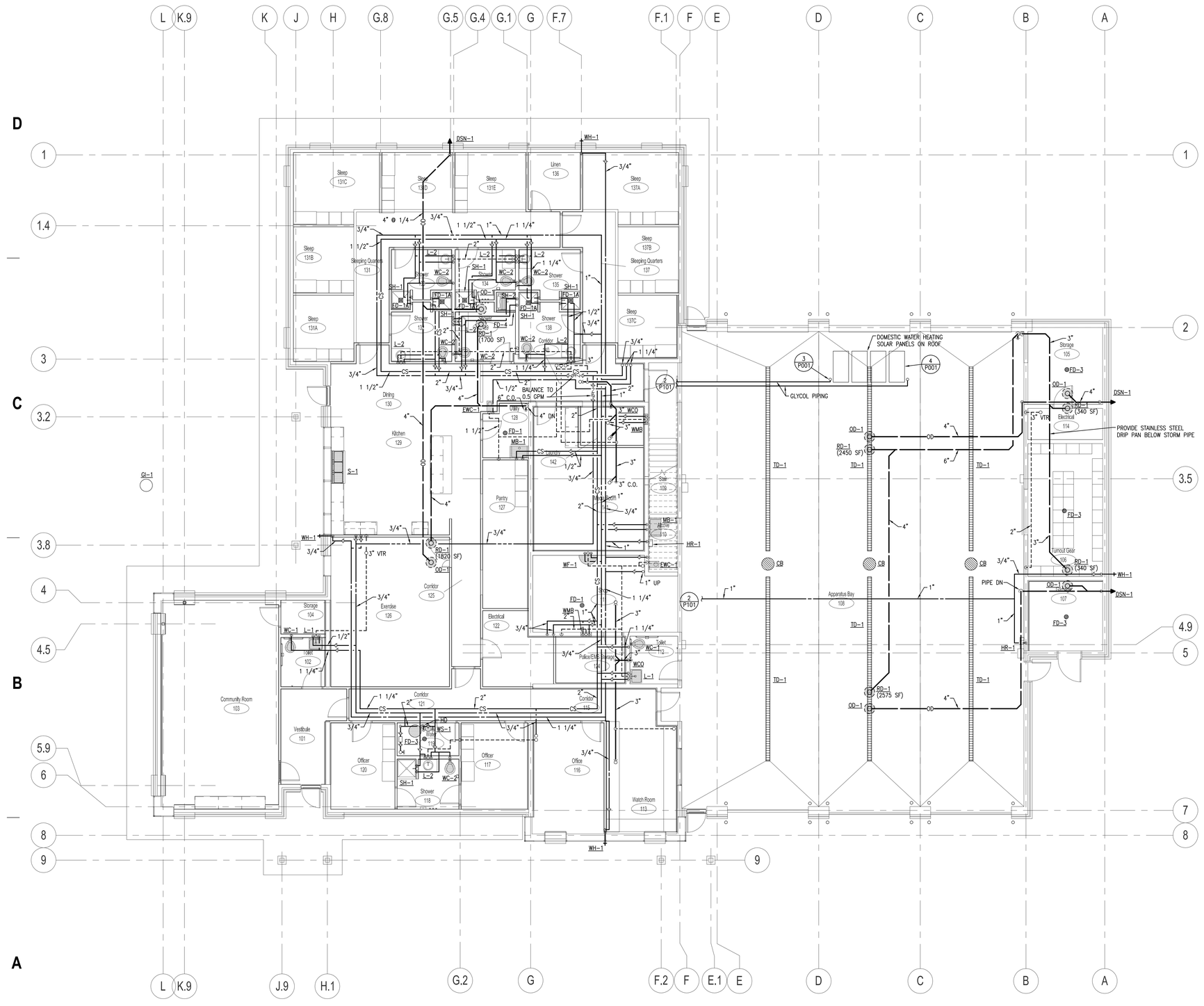

1 FIRST FLOOR PLUMBING PLAN
SCALE: 1/8" = 1'-0"

2 MEZZANINE PLUMBING PLAN
SCALE: 1/8" = 1'-0"

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First Floor and Mezzanine Plumbing Plan

P101

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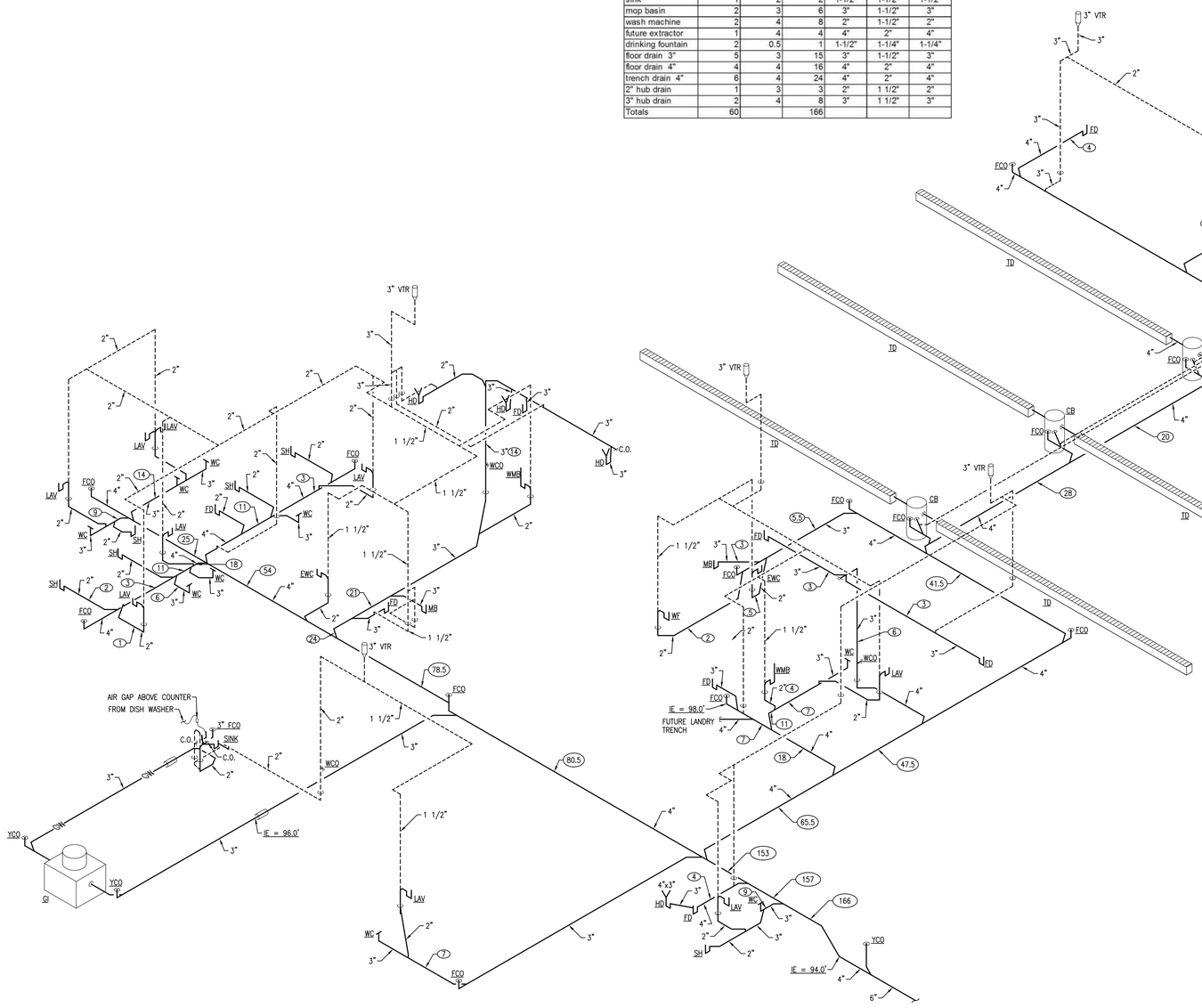
DRAIN PIPE SIZING CHART						
Fixture	qty	dfu's	total dfu's	waste	vent	trap
water closet	9	6	54	4"	1-1/2"	integral
lavatory	9	1	9	1-1/2"	1-1/4"	1-1/4"
wash fountain	1	2	2	2"	1-1/2"	2"
shower	7	2	14	2"	1-1/2"	2"
sink	1	2	2	1-1/2"	1-1/2"	1-1/2"
mop basin	2	3	6	3"	1-1/2"	3"
wash machine	2	4	8	2"	1-1/2"	2"
future extractor	1	4	4	4"	2"	4"
drinking fountain	2	0.5	1	1-1/2"	1-1/4"	1-1/4"
floor drain 3"	5	3	15	3"	1-1/2"	3"
floor drain 4"	4	4	16	4"	2"	4"
trench drain 4"	6	4	24	4"	2"	4"
2" hub drain	1	3	3	2"	1 1/2"	2"
3" hub drain	2	4	8	3"	1 1/2"	3"
Totals	60		166			



1 WASTE AND VENT PIPING ISOMETRIC
NTS

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Waste and Vent Piping Isometric

P200

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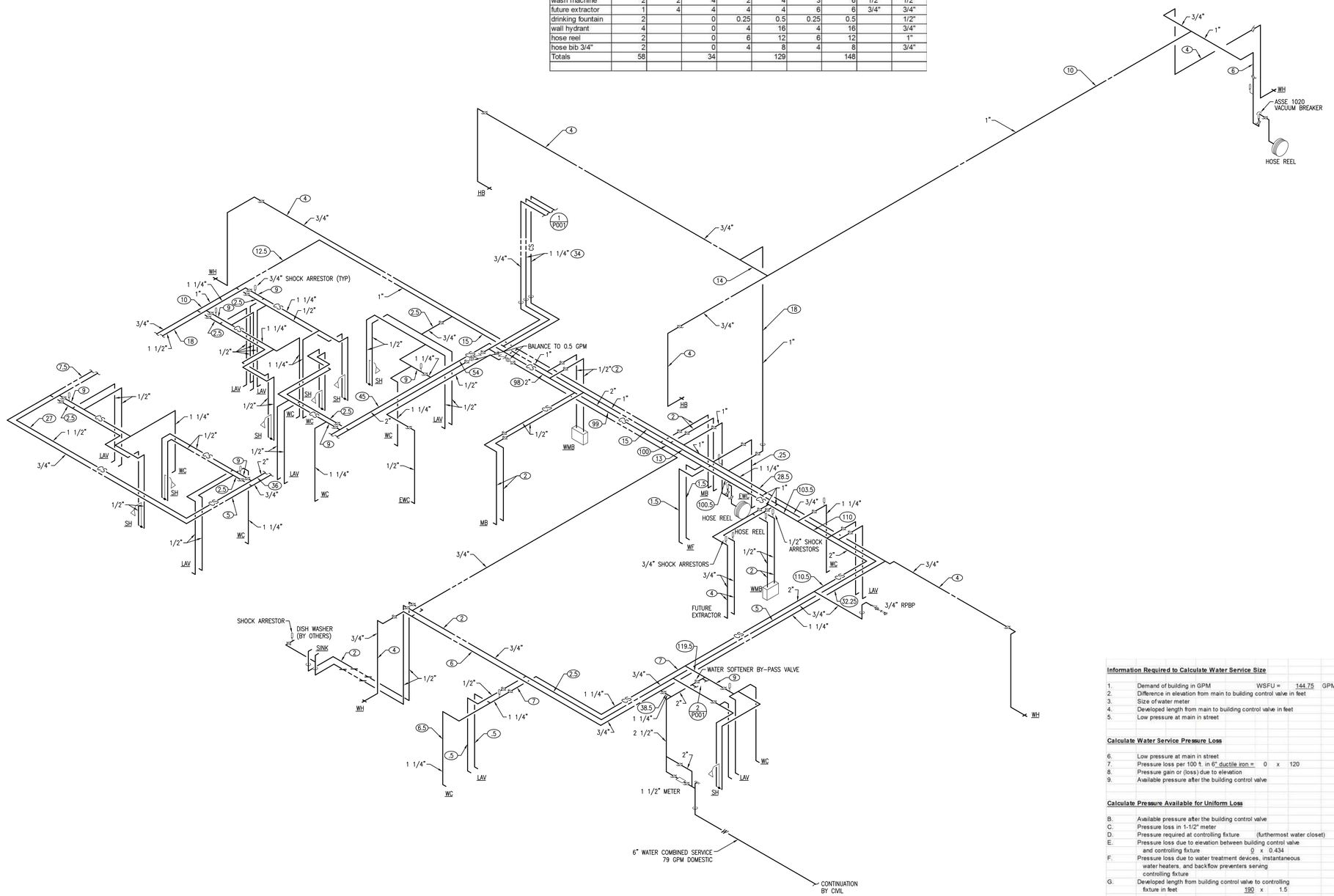
WATER PIPE SIZING CHART									
Fixture	qty	hwsfu	total hwsfu	cwsfu	total cwsfu	wsfu	total wsfu	hw	cw
water closet	9		0	6.5	58.5	6.5	58.5		1"
lavatory	9	0.5	4.5	0.5	4.5	1	9	1/2"	1/2"
wash fountain	1	1.5	1.5	1.5	1.5	2	2	1/2"	1/2"
shower	7	2	14	2	14	3	21	1/2"	1/2"
sink	1	2	2	2	2	3	3	1/2"	1/2"
mop basin	2	2	4	2	4	3	6	1/2"	1/2"
wash machine	2	2	4	2	4	3	6	1/2"	1/2"
future extractor	1	4	4	4	4	6	6	3/4"	3/4"
drinking fountain	2		0	0.25	0.5	0.25	0.5		1/2"
wall hydrant	4		0	4	16	4	16		3/4"
hose reel	2		0	6	12	6	12		1"
hose bib 3/4"	2		0	4	8	4	8		3/4"
Totals	58		34		129		148		



1 WATER PIPING ISOMETRIC
NTS

Information Required to Calculate Water Service Size							
1.	Demand of building in GPM	WSFU =	144.75	GPM =	79		
2.	Difference in elevation from main to building control valve in feet				8		
3.	Size of water meter				1-1/2"		
4.	Developed length from main to building control valve in feet				120		
5.	Low pressure at main in street				78		78
Calculate Water Service Pressure Loss							
6.	Low pressure at main in street				78		
7.	Pressure loss per 100 ft. in 6" ductile iron =	0	x	120	0		
8.	Pressure gain or (loss) due to elevation				3.472		
9.	Available pressure after the building control valve				74.528		74.528
Calculate Pressure Available for Uniform Loss							
B.	Available pressure after the building control valve				74.528		
C.	Pressure loss in 1-1/2" meter				5		
D.	Pressure required at controlling fixture (furthermost water closet)				25		
E.	Pressure loss due to elevation between building control valve and controlling fixture	0	x	0.434	0.00		
F.	Pressure loss due to water treatment devices, instantaneous water heaters, and backflow preventers serving controlling fixture				15		
G.	Developed length from building control valve to controlling fixture in feet	190	x	1.5	285		
A.	Pressure available for uniform loss = (B - (C + D + E + F)) / G X 100 =				10.36		or 11 psi

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PROJECT NFORMATION

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ISSUANCE AND REVISIONS

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KEY PLAN

SHEET INFORMATION

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Water Piping Isometric

P201

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